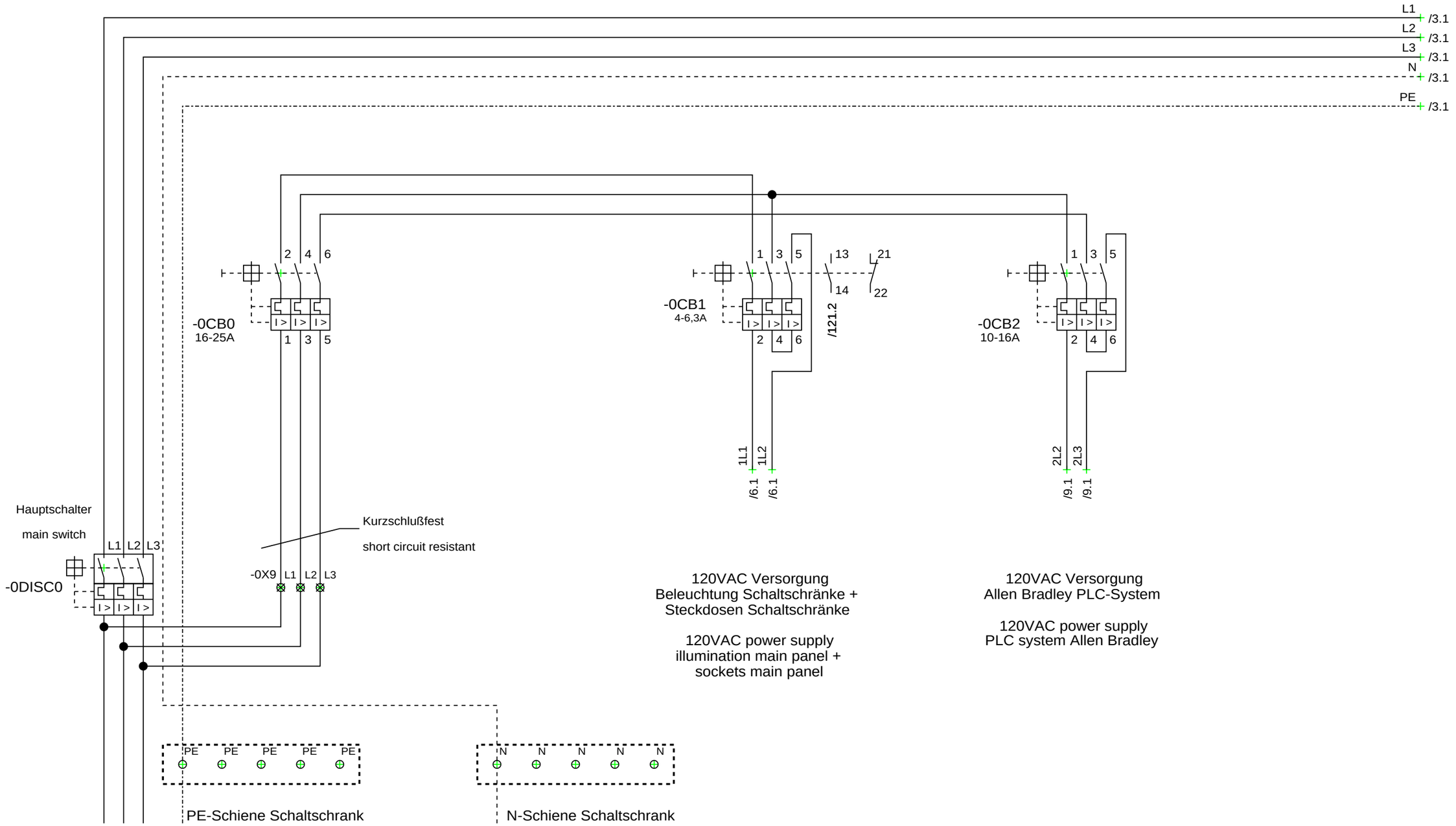
NESTLE USA

HA/S900

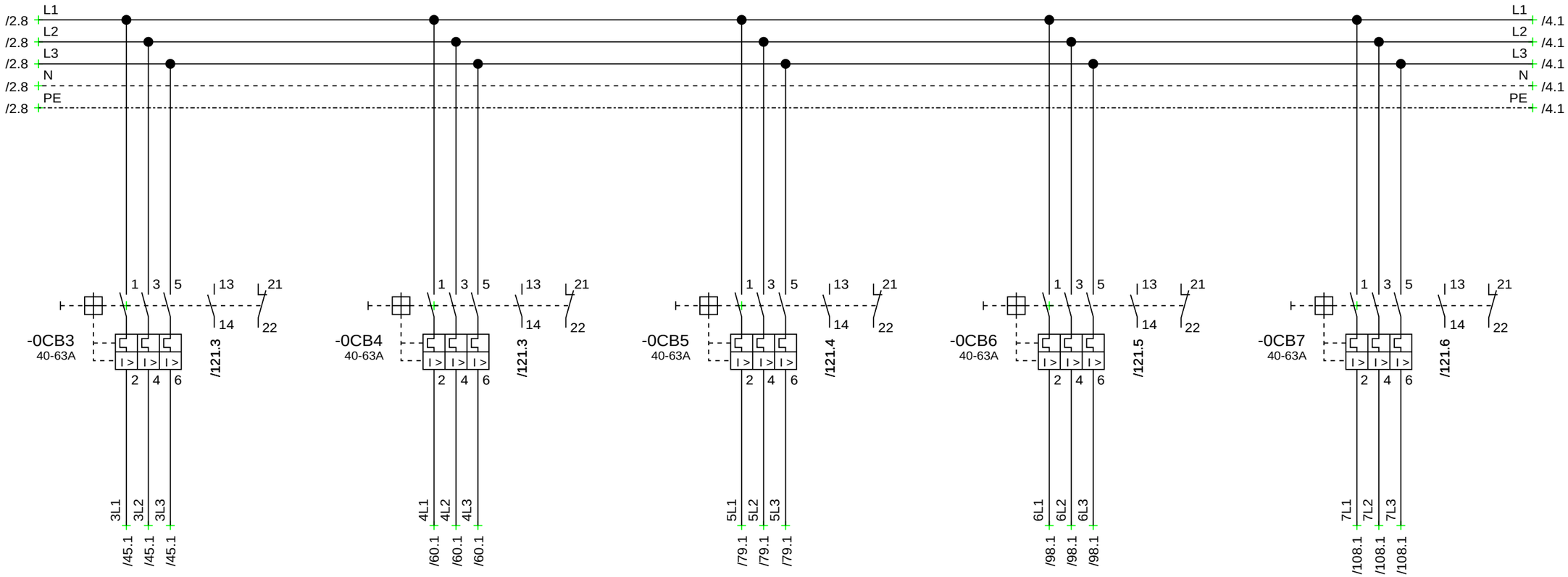
98.05.12.100

BÜHLER		customer 474 :P_NR2		+HSS		page 1	
				=A1.F1		of 271	
comm. nr. :P_NR1		cover sheet		drawing nr. A474			
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 2
		=A1.F1	of 271
comm. nr. :P_NR1	incoming power supply		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



480VAC Versorgung
Position 3,4

480VAC power supply
position 3,4

480VAC Versorgung
Position 5,8,9

480VAC power supply
position 5,8,9

480VAC Versorgung
Position 11,13,16

480VAC power supply
position 11,13,16

480VAC Versorgung
Position 18,22

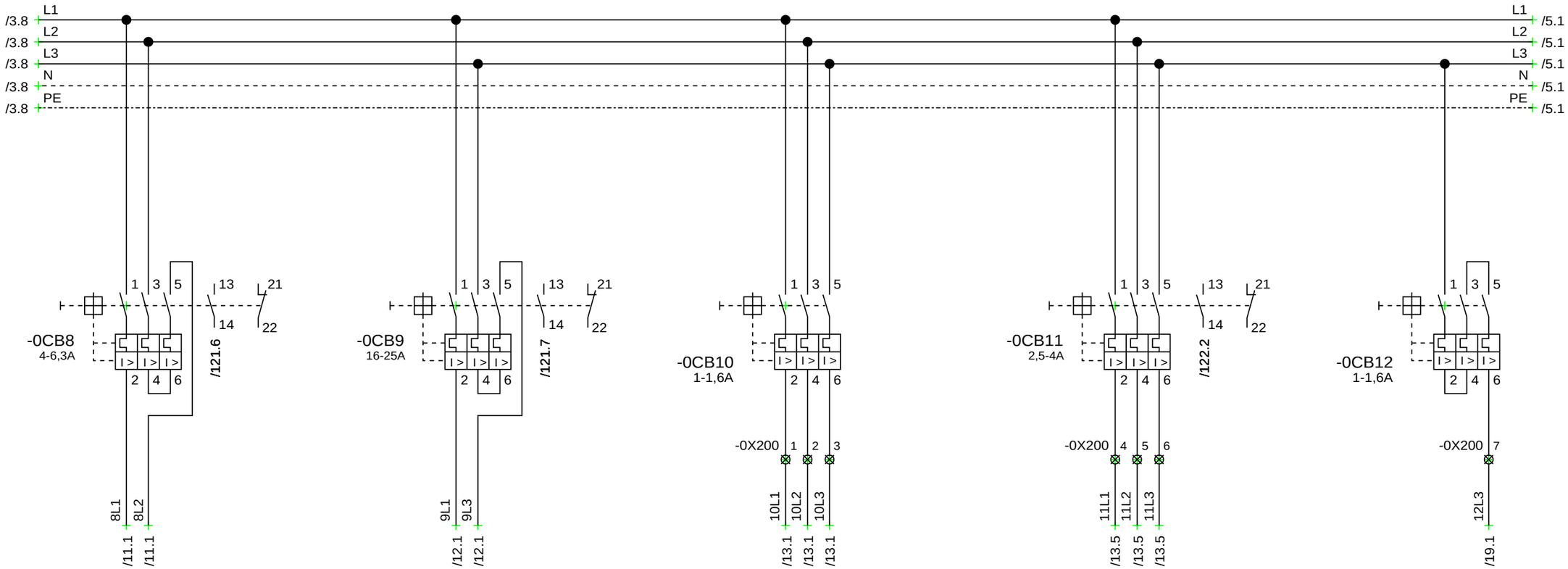
480VAC power supply
position 18,22

480VAC Versorgung
Position 23,24

480VAC power supply
position 23,24

BÜHLER	customer 474 :P_NR2	+HSS	page 3
		=A1.F1	of 271
comm. nr. :P_NR1	400VAC power supply	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Trafo 120VAC
Versorgung Allgemeinteil/
Beleuchtung Anlage/
LFK/IR-Sensoren GKs

transformer 120VAC
power supply general part/
illumination plant/
empty mould detection

Trafo 230VAC
Versorgung Steckdosen
Service

transformer 230VAC
power supply sockets
service

Netzteil 24VDC/20A
Sensorik

power pack 24VDC/20A
sensors

Netzteil 24VDC/40A
Aktoren

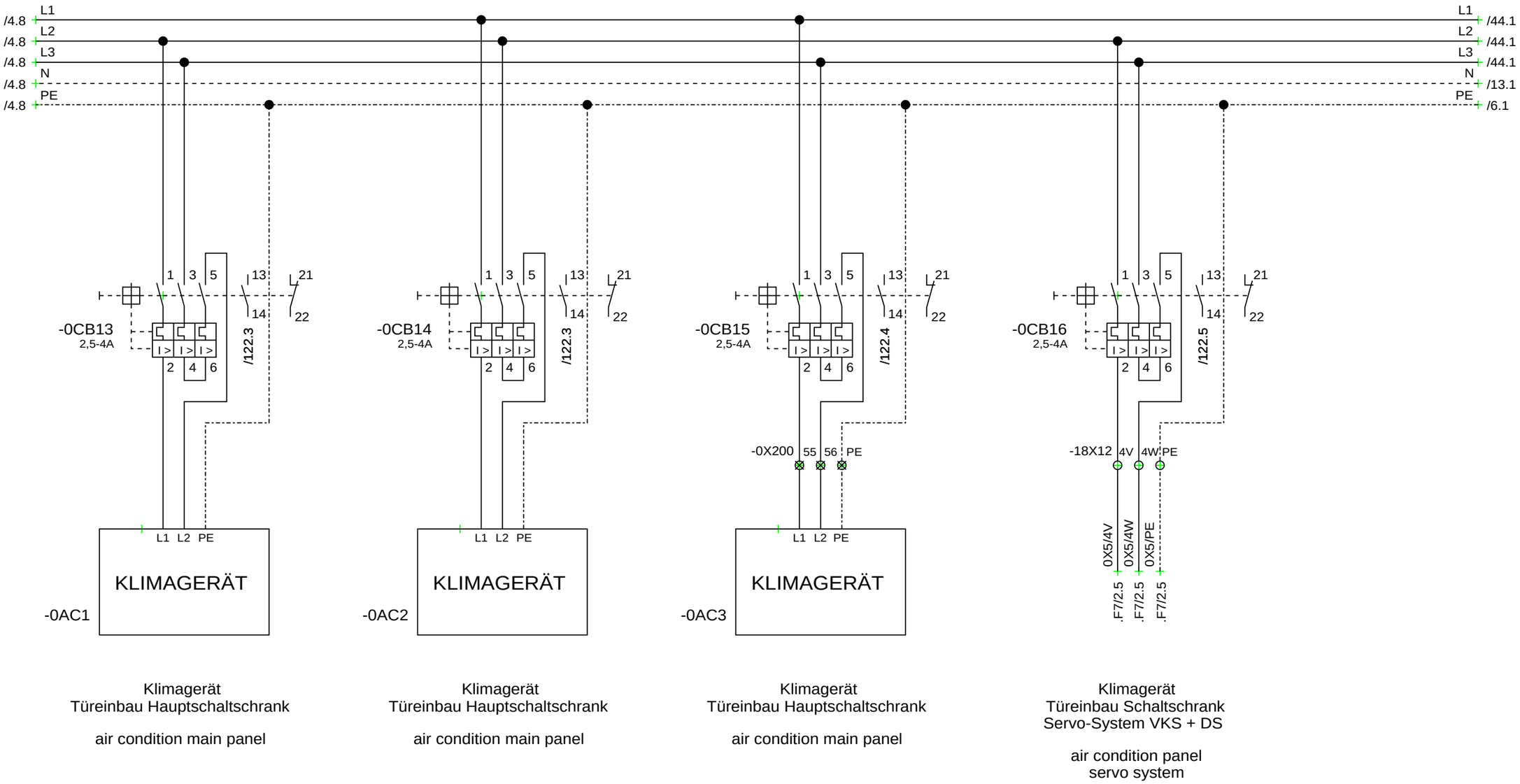
power pack 24VDC/40A
actors

Überwachung Steuerspannung

monitoring control voltage

BÜHLER	customer 474 :P_NR2	+HSS	page 4
		=A1.F1	of 271
comm. nr. :P_NR1	400VAC power supply	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



Klimagerät
Türeinbau Hauptschaltschrank

air condition main panel

Klimagerät
Türeinbau Hauptschaltschrank

air condition main panel

Klimagerät
Türeinbau Hauptschaltschrank

air condition main panel

Klimagerät
Türeinbau Schaltschrank
Servo-System VKS + DS

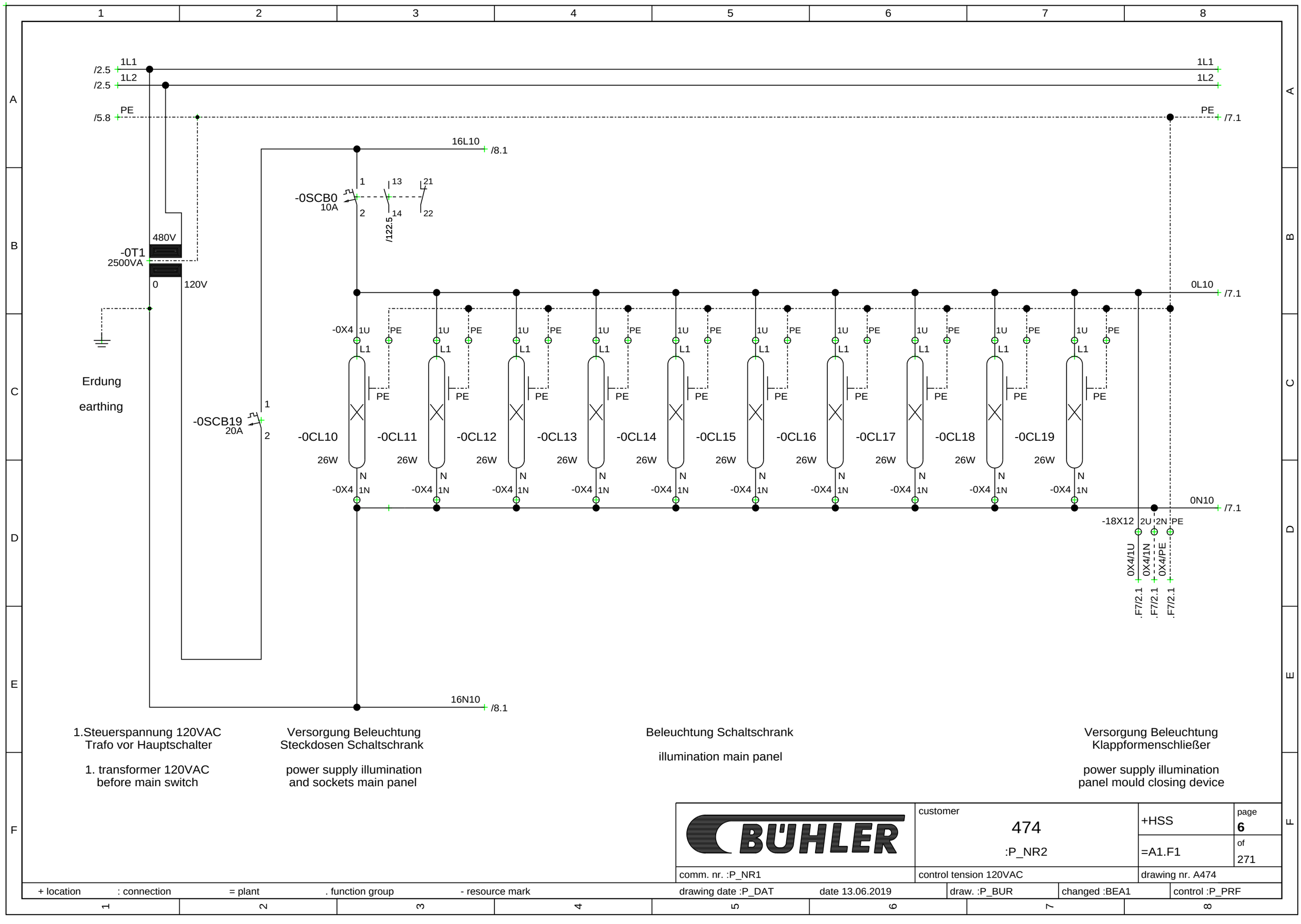
air condition panel
servo system

BÜHLER

customer 474 :P_NR2 | +HSS =A1.F1 | page 5 of 271

comm. nr. :P_NR1 | power supply air condition main panel | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



1.Steuerspannung 120VAC
Trafo vor Hauptschalter

1. transformer 120VAC
before main switch

Versorgung Beleuchtung
Steckdosen Schaltschrank

power supply illumination
and sockets main panel

Beleuchtung Schaltschrank

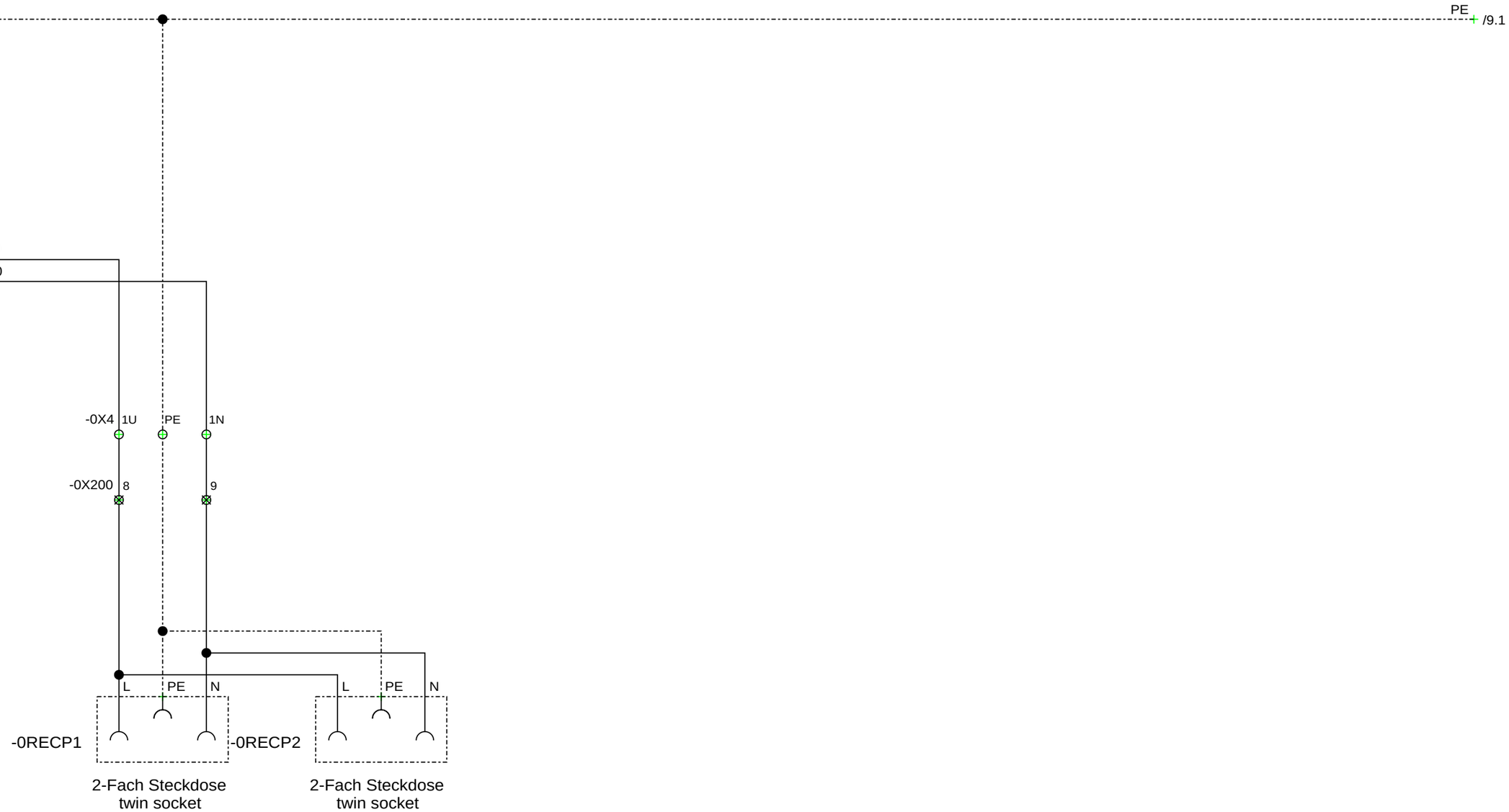
illumination main panel

Versorgung Beleuchtung
Klappformenschließer

power supply illumination
panel mould closing device

BÜHLER	customer 474 :P_NR2	+HSS	page 6
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 120VAC	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

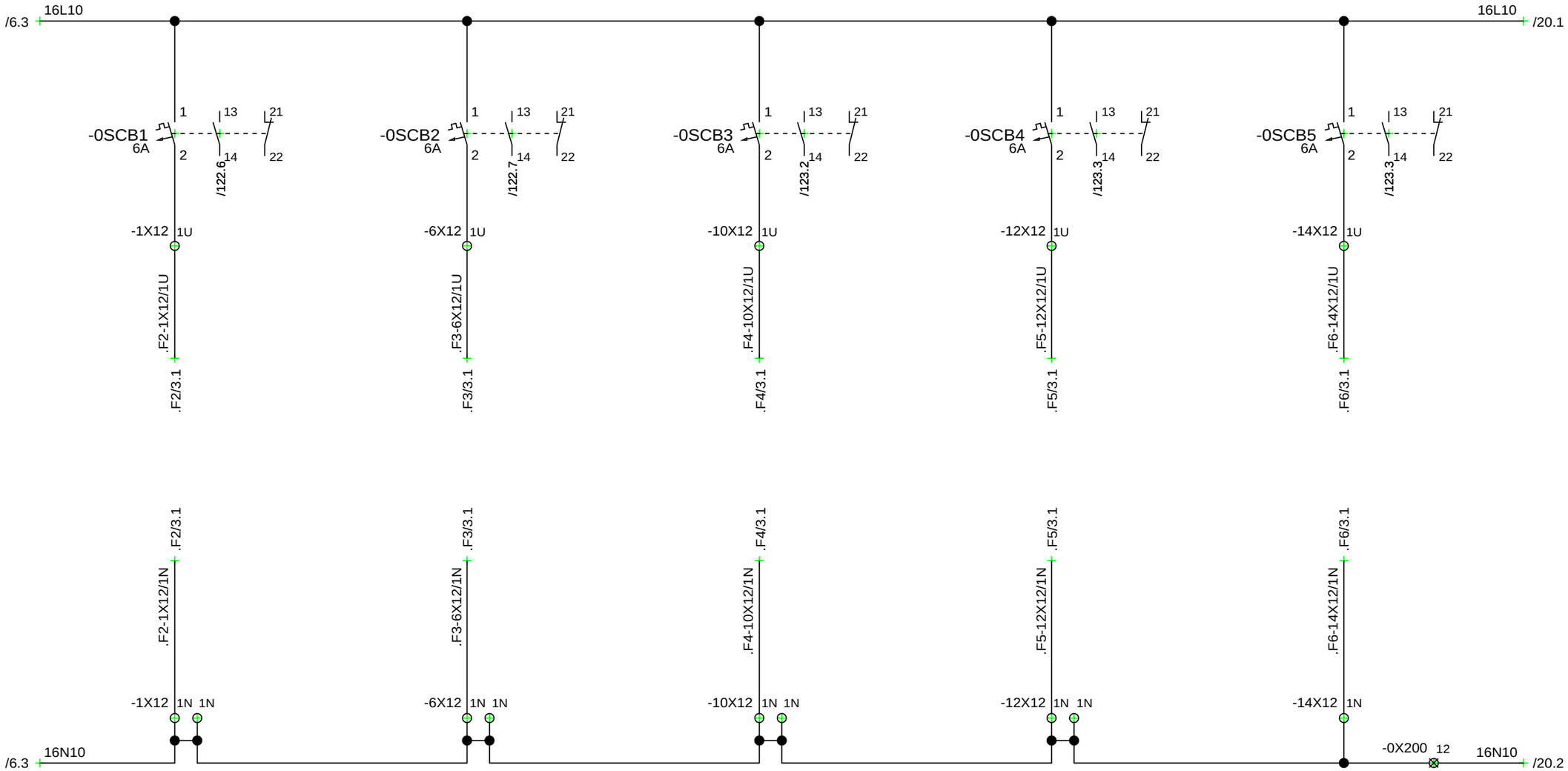


Steckdosen 120VAC Schaltschrank

sockets 120VAC main panel

BÜHLER	customer 474 :P_NR2	+HSS	page 7
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 120VAC	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Versorgung Beleuchtung +
Steckdose Schaltschrank
Hülsen-Dosiermaschine

power supply illumination +
socktes panel shell depositor

Versorgung Beleuchtung +
Steckdose Schaltschrank
1.Füllungs-Dosiermaschine

power supply illumination +
socktes panel 1.filling depositor

Versorgung Beleuchtung +
Steckdose Schaltschrank
2.Füllungs-Dosiermaschine

power supply illumination +
socktes panel 2.filling depositor

Versorgung Beleuchtung +
Steckdose Schaltschrank
3.Füllungs-Dosiermaschine

power supply illumination +
socktes panel 3.filling depositor

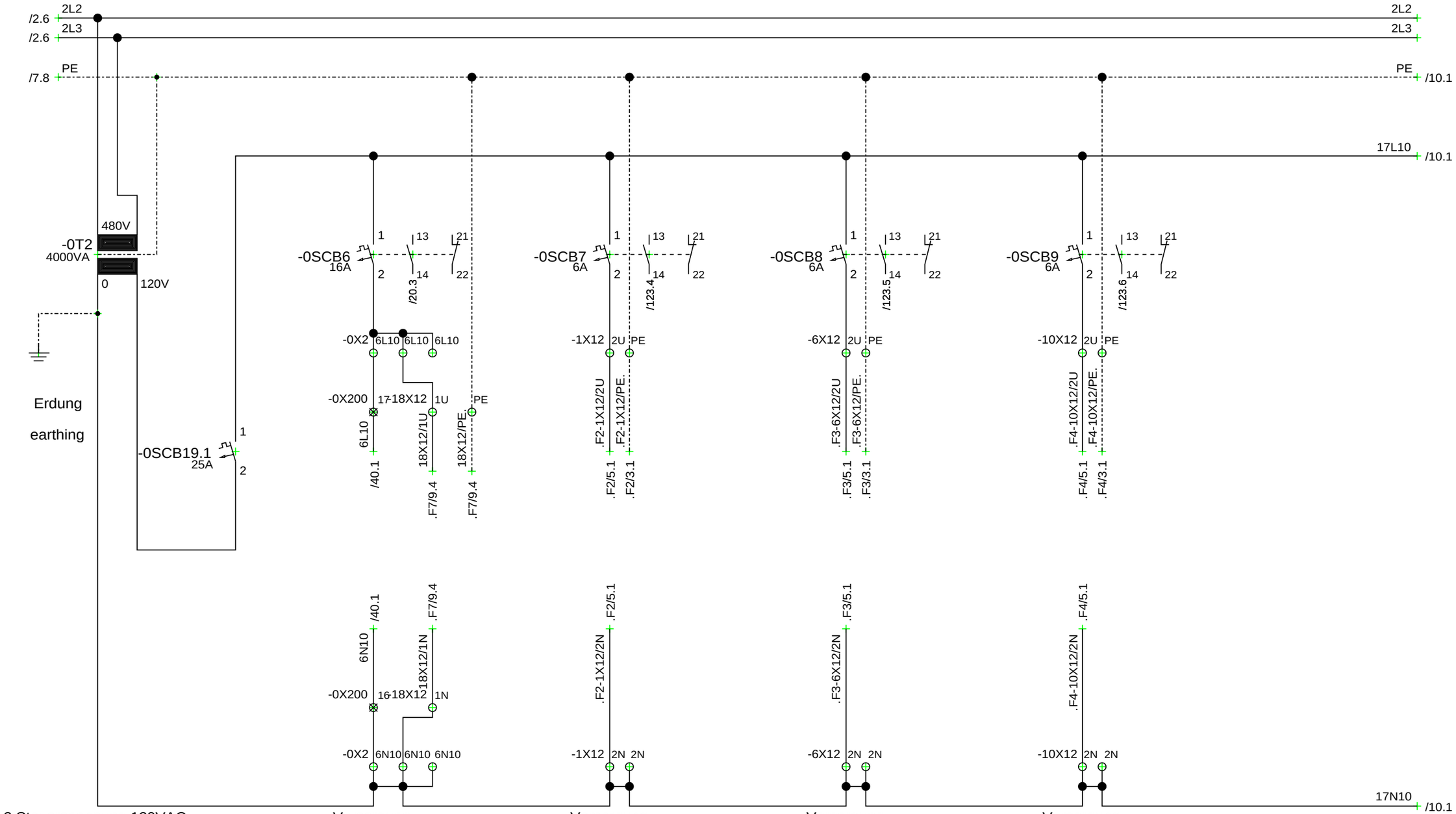
Versorgung Beleuchtung +
Steckdose Schaltschrank
Deckel-Dosiermaschine

power supply illumination +
socktes panel bottom depositor

BÜHLER

customer 474 :P_NR2		+HSS	page **8**
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 120VAC		drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



2.Steuerspannung 120VAC
Trafo vor Hauptschalter

2.transformer 120VAC
before main switch

Versorgung
PLC- System HSS +
Bedienpult +
IMC Servo Schrank

power supply
PLC-system main panel +
operator panel +
IMC servo system

Versorgung
PLC-System Schaltschrank
Hülsen-Dosiermaschine

power supply PLC sytsem
panel shell depositor

Versorgung
PLC-System Schaltschrank
1.Füllungs-Dosiermaschine

power supply PLC sytsem
panel 1.filling depositor

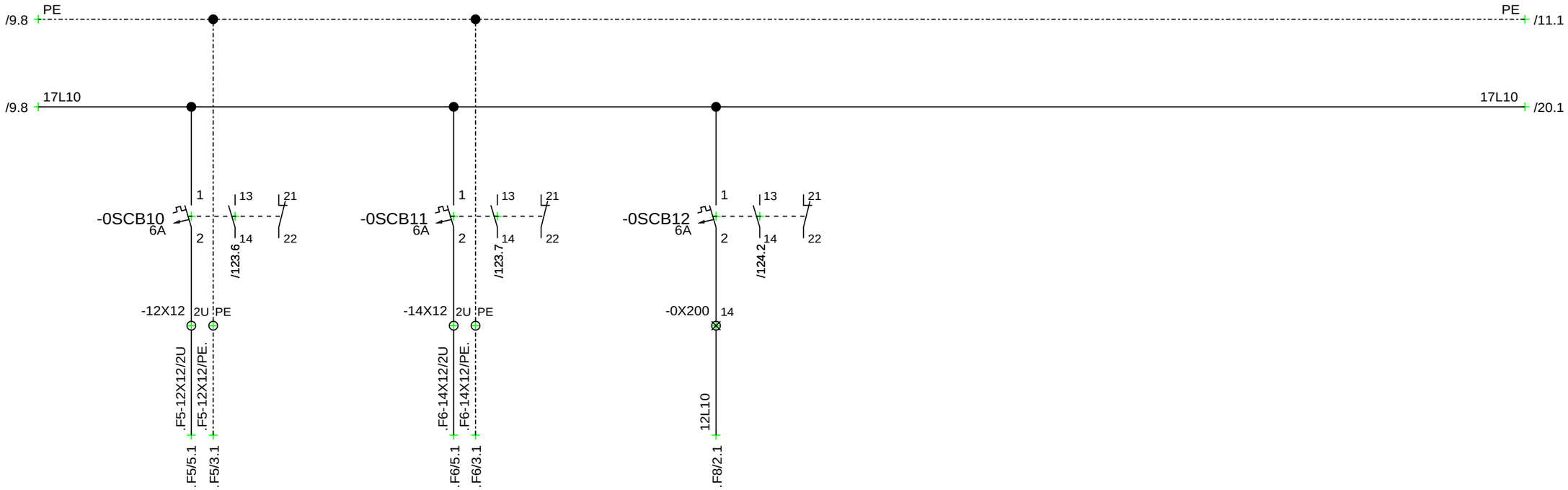
Versorgung
PLC-System Schaltschrank
2.Füllungs-Dosiermaschine

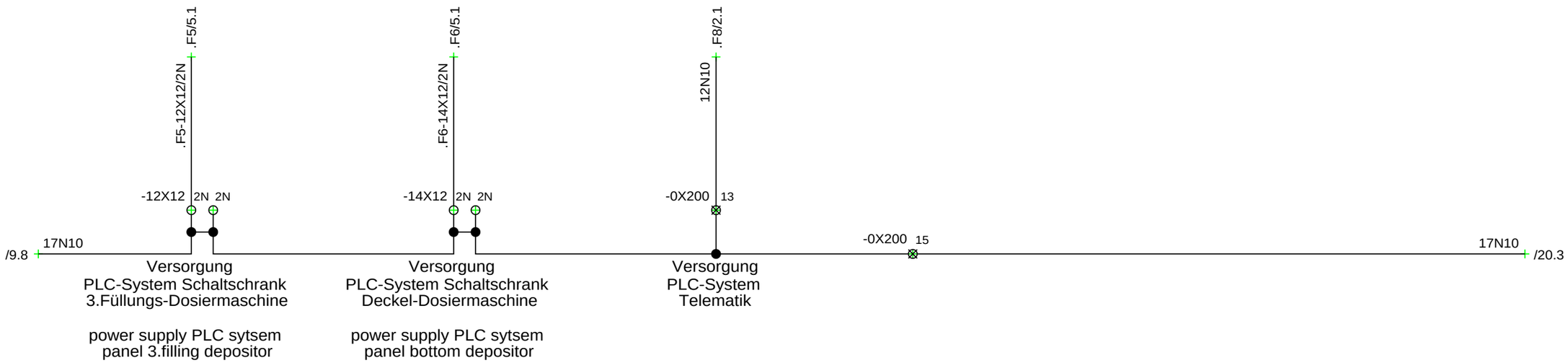
power supply PLC sytsem
panel 2.filling depositor

BÜHLER

customer 474 :P_NR2		+HSS	page 9
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 120VAC		drawing nr. A474

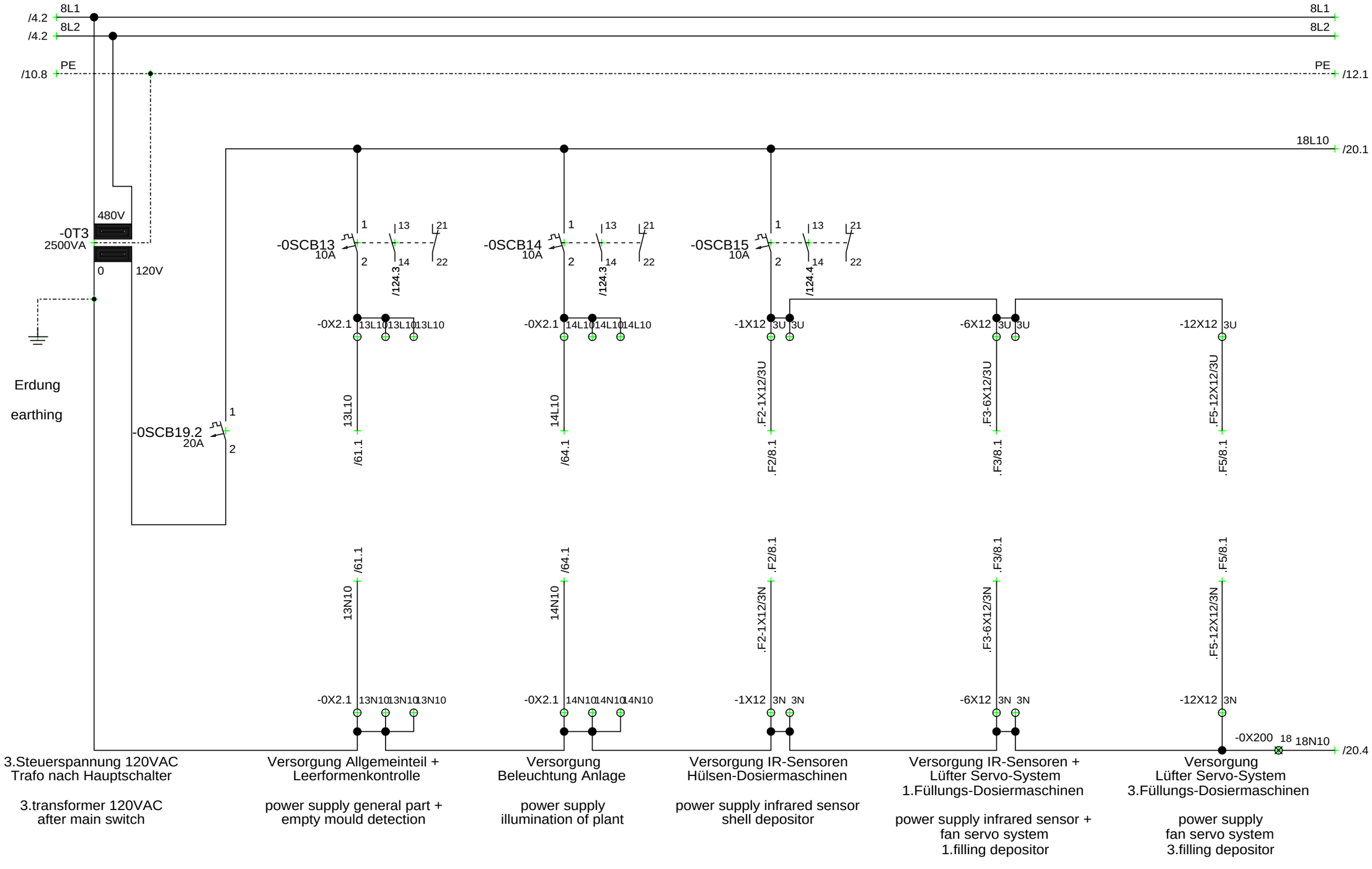
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		





BÜHLER	customer 474 :P_NR2	+HSS	page **10**
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 120VAC	drawing nr. A474	

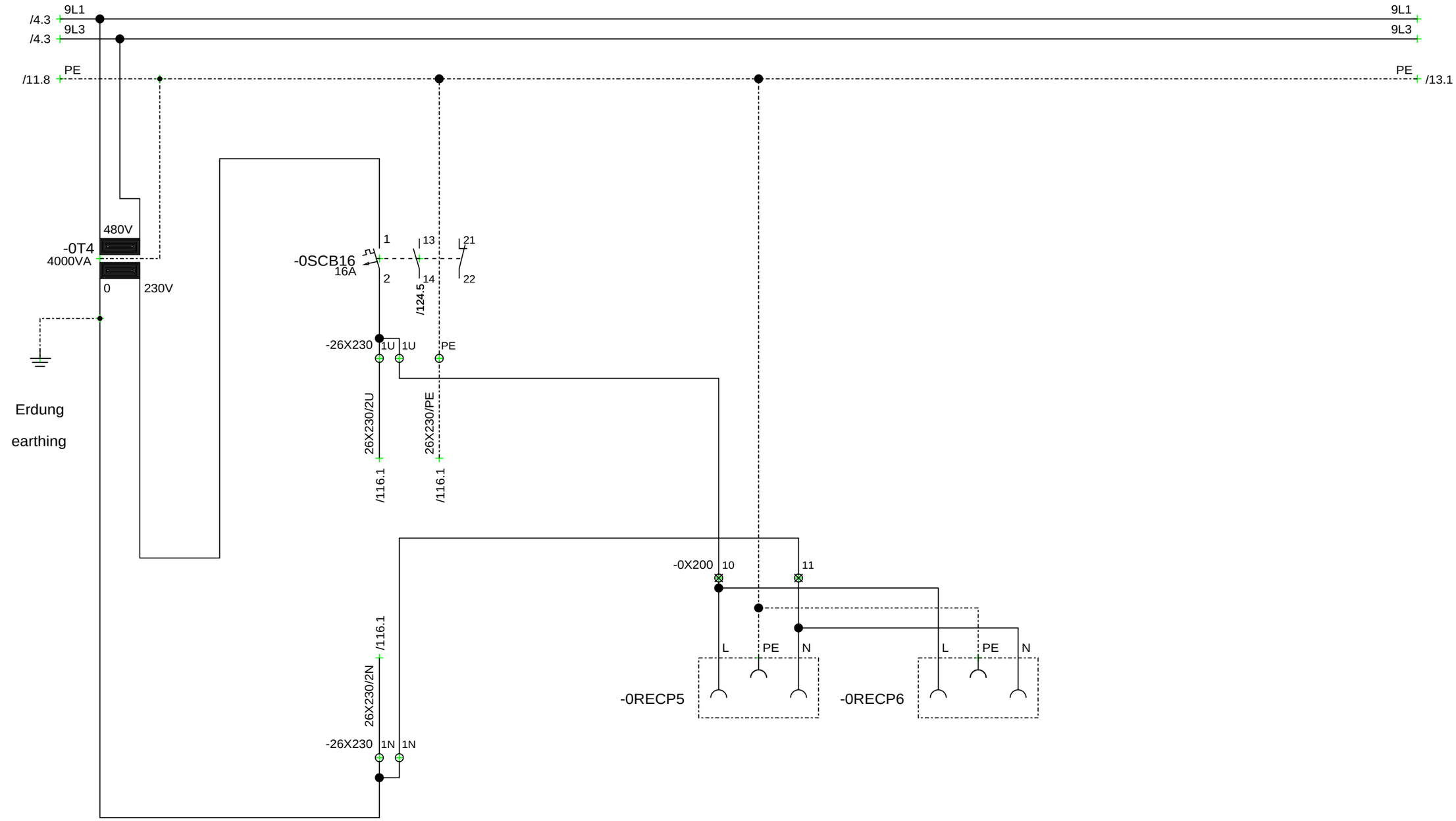
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

customer 474 :P_NR2		+HSS	page **11**
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 120VAC	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1 control :P_PRF



4.Steuerspannung 230VAC
Trafo nach Hauptschalter

4.transformer 230VAC
after main switch

Versorgung
Steckdosen Bedienpult

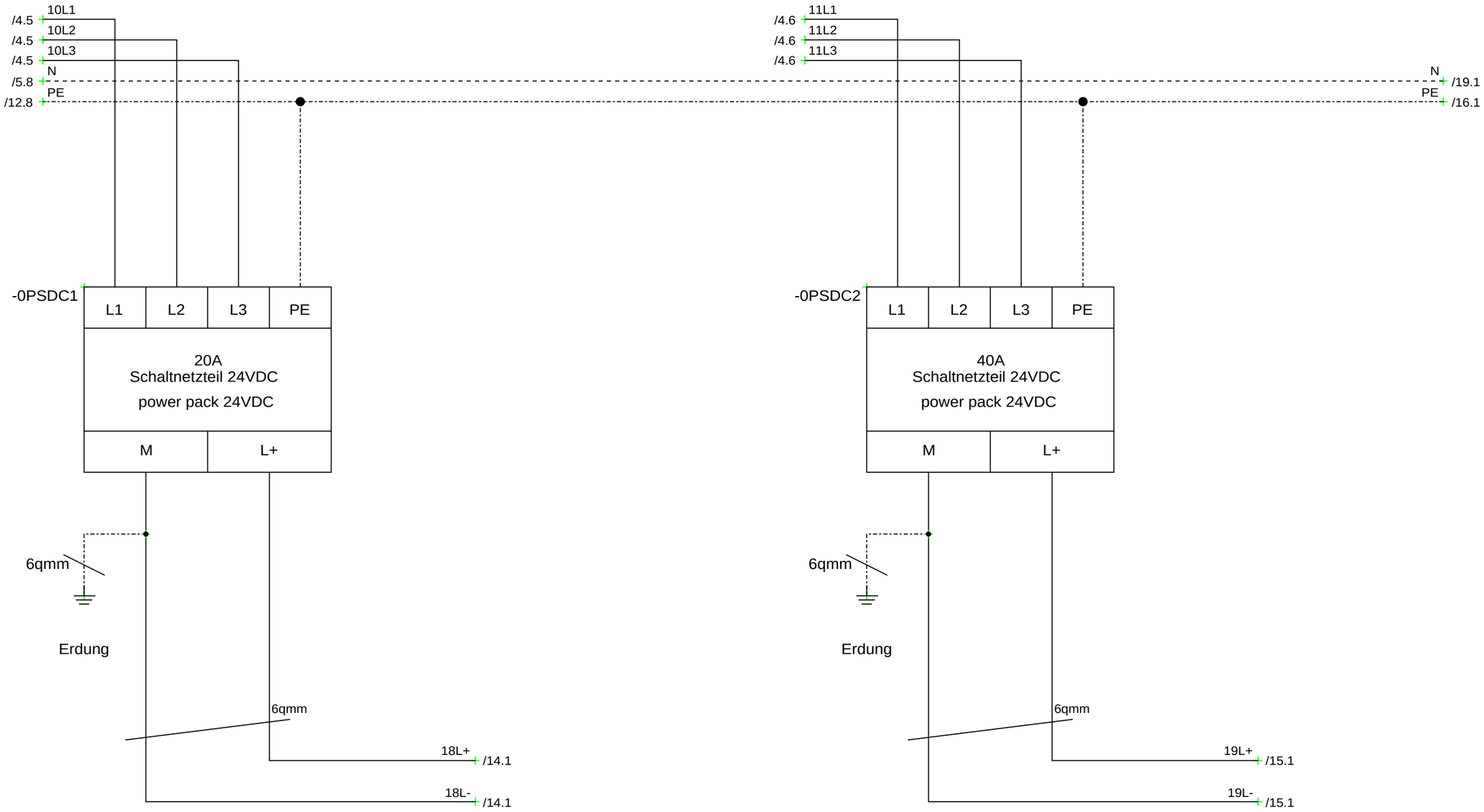
power supply
sockets operator panel

Versorgung
Steckdosen Schaltschrank (Service)

power supply
sockets main panel (service)

BÜHLER	customer 474 :P_NR2	+HSS	page **12**
		=A1.F1	of 271
comm. nr. :P_NR1	control tension 230VAC	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



24VDC Versorgung Sensorik

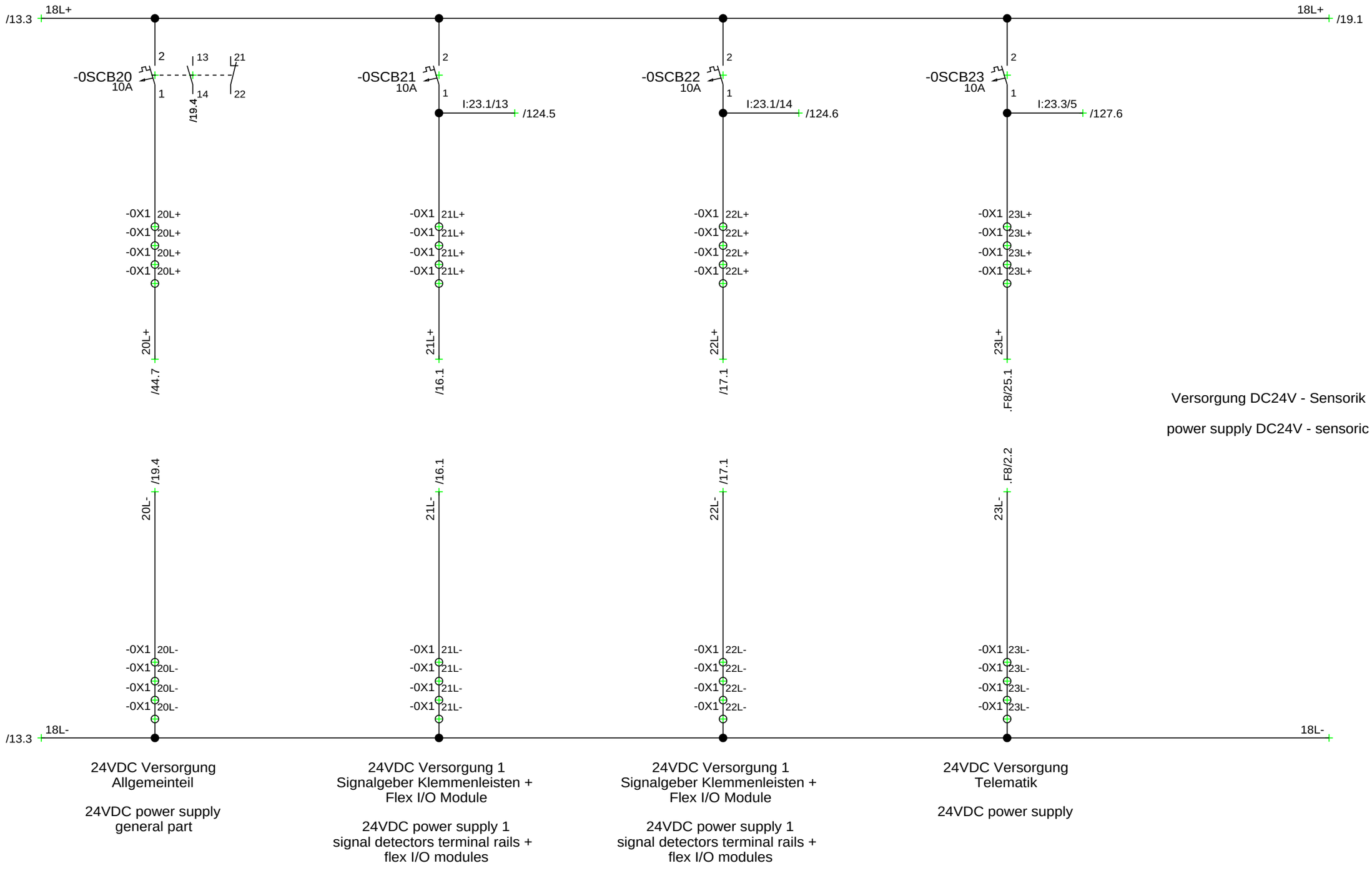
24VDC power supply sensoric

24VDC Versorgung Aktoren

24VDC power supply actors

BÜHLER	customer 474 :P_NR2	+HSS	page **13**	
		=A1.F1	of 271	
comm. nr. :P_NR1	24VDC power pack	drawing nr. A474		

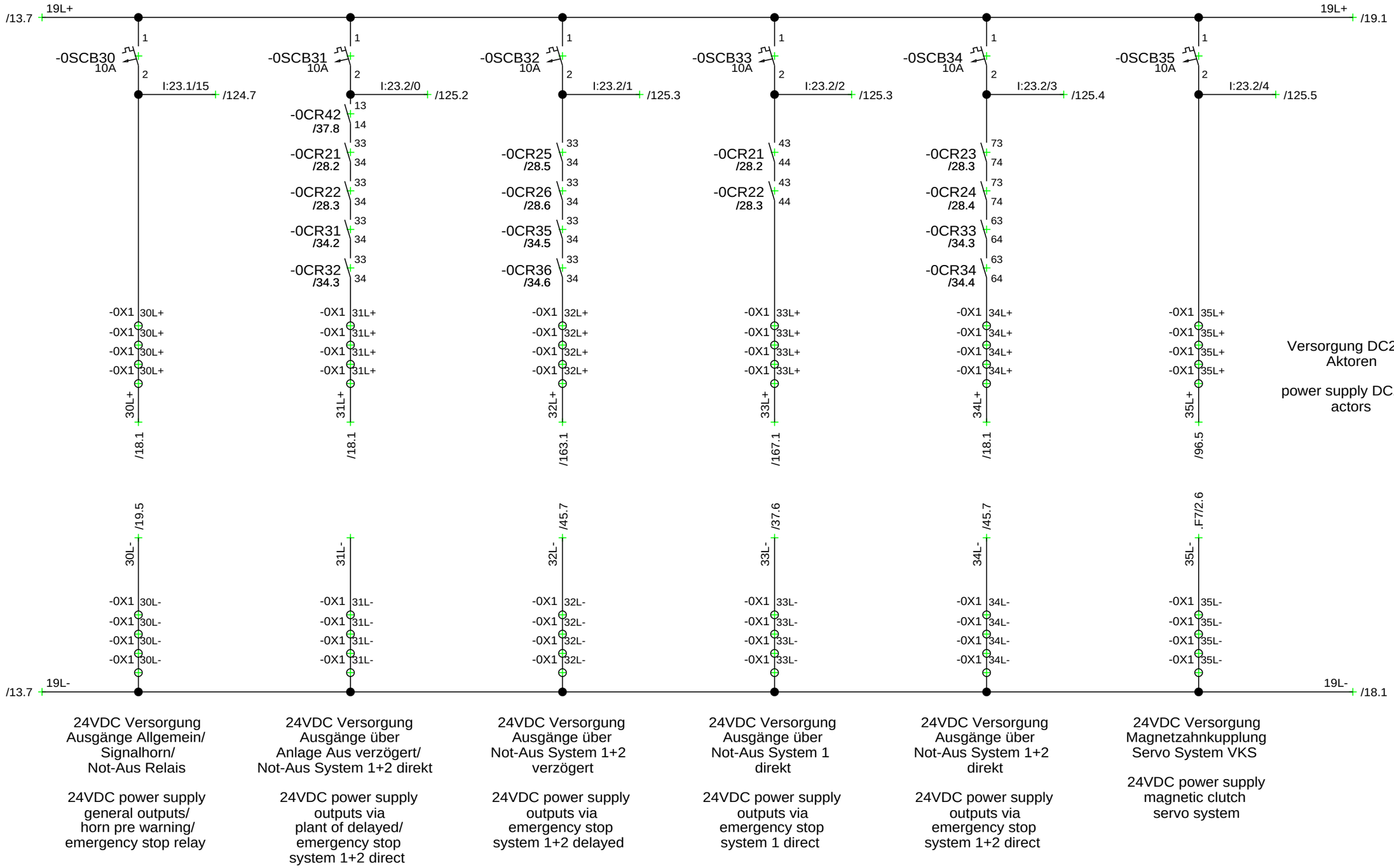
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Hinweis: Verdrahtung vor Sicherungsautomaten in 6mm²

pointat: wire before fuses 6mm²

BÜHLER	customer 474 :P_NR2		+HSS	page **14**			
			=A1.F1	of 271			
comm. nr. :P_NR1	24VDC power supply		drawing nr. A474				
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Versorgung DC24V
Aktoren

power supply DC24V
actors

24VDC Versorgung
Ausgänge Allgemein/
Signalhorn/
Not-Aus Relais

24VDC power supply
general outputs/
horn pre warning/
emergency stop relay

24VDC Versorgung
Ausgänge über
Anlage Aus verzögert/
Not-Aus System 1+2 direkt

24VDC power supply
outputs via
plant of delayed/
emergency stop
system 1+2 direct

24VDC Versorgung
Ausgänge über
Not-Aus System 1+2
verzögert

24VDC power supply
outputs via
emergency stop
system 1+2 delayed

24VDC Versorgung
Ausgänge über
Not-Aus System 1
direkt

24VDC power supply
outputs via
emergency stop
system 1 direct

24VDC Versorgung
Ausgänge über
Not-Aus System 1+2
direkt

24VDC power supply
outputs via
emergency stop
system 1+2 direct

24VDC Versorgung
Magnetzahnkupplung
Servo System VKS

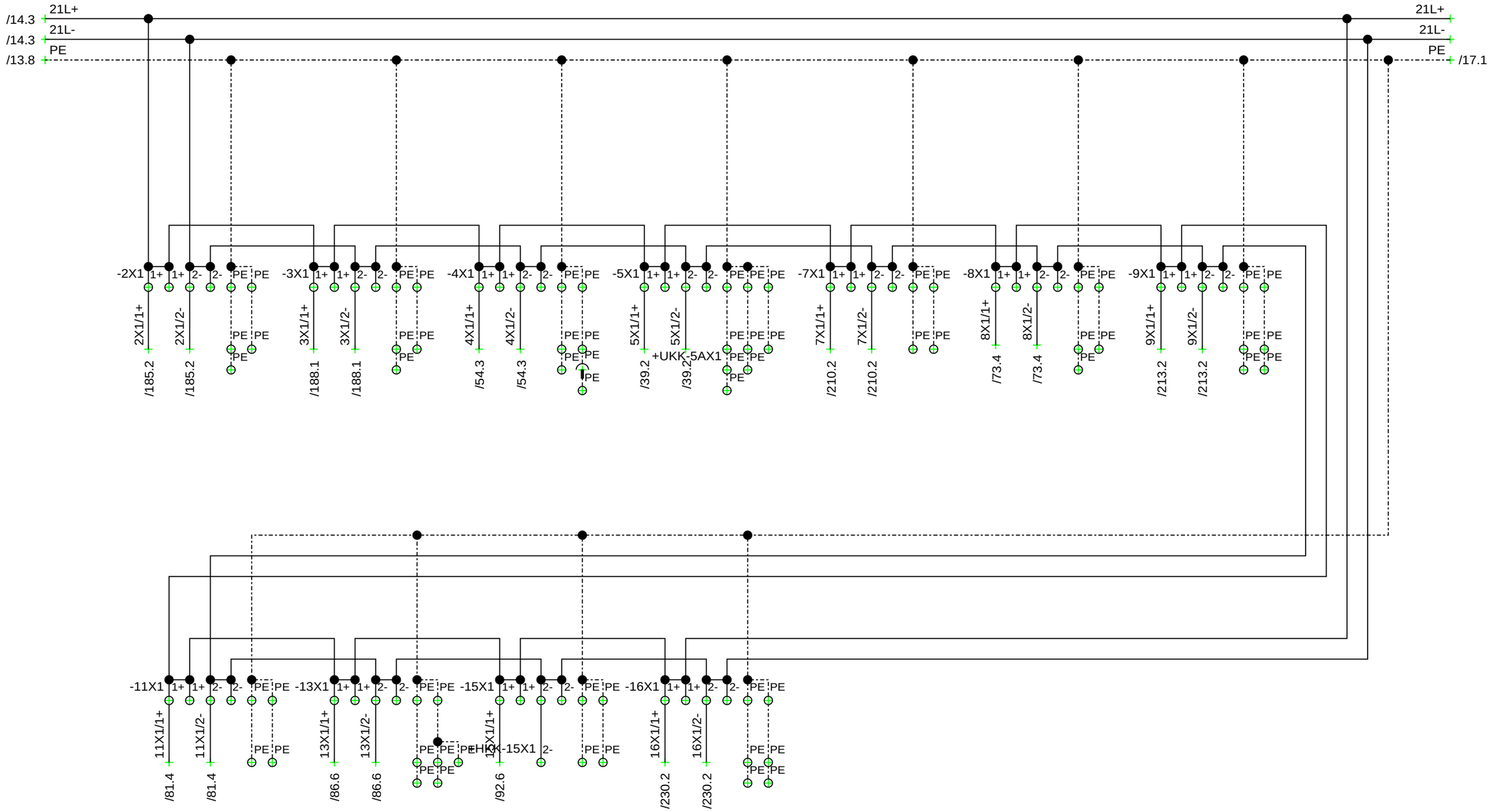
24VDC power supply
magnetic clutch
servo system

Hinweis: Verdrahtung vor Sicherungsautomaten in 6mm²

pointat: wire before fuses 6mm²

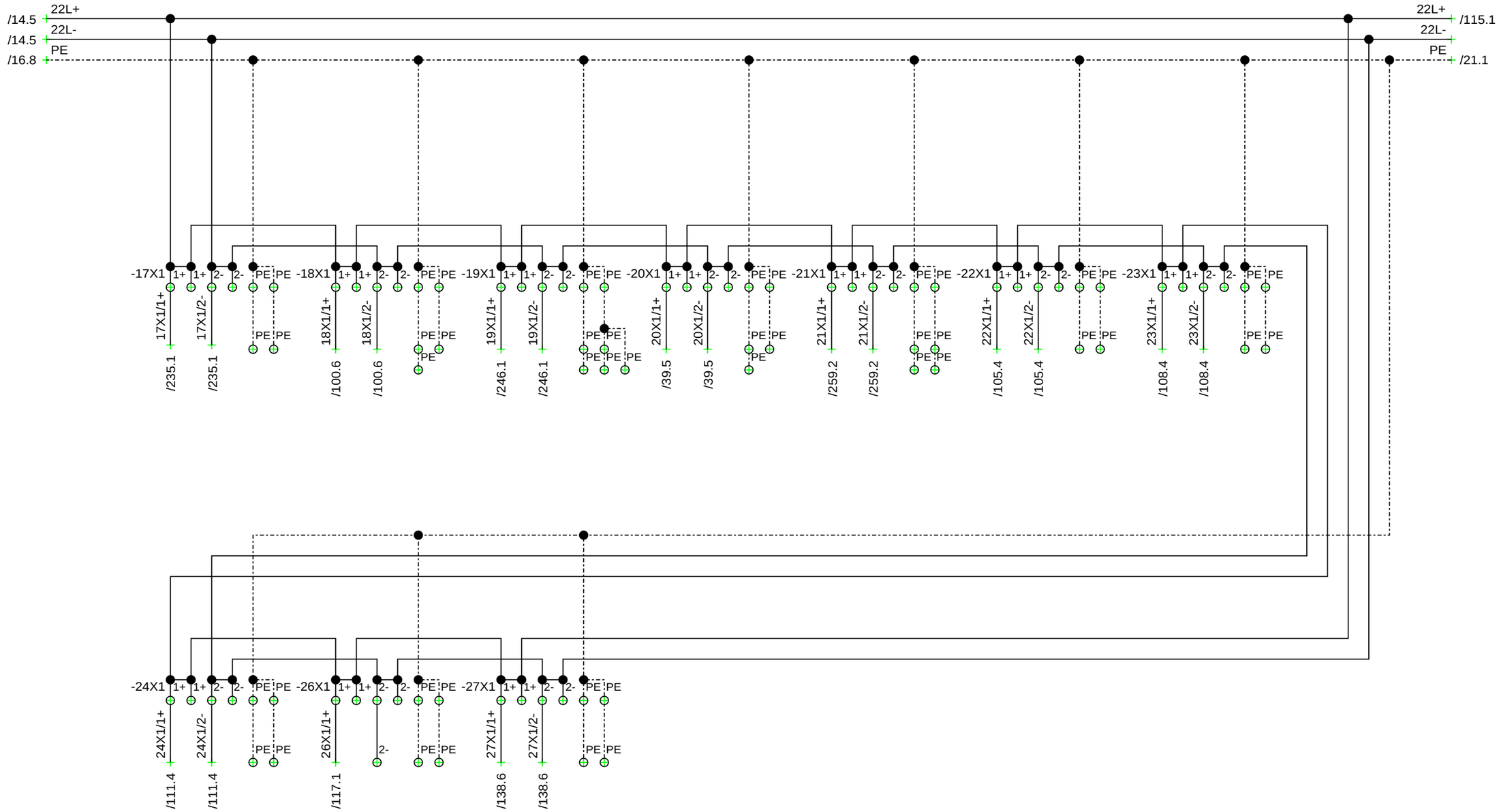
BÜHLER	customer 474 :P_NR2	+HSS	page 15
		=A1.F1	of 271
comm. nr. :P_NR1	24VDC power supply	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



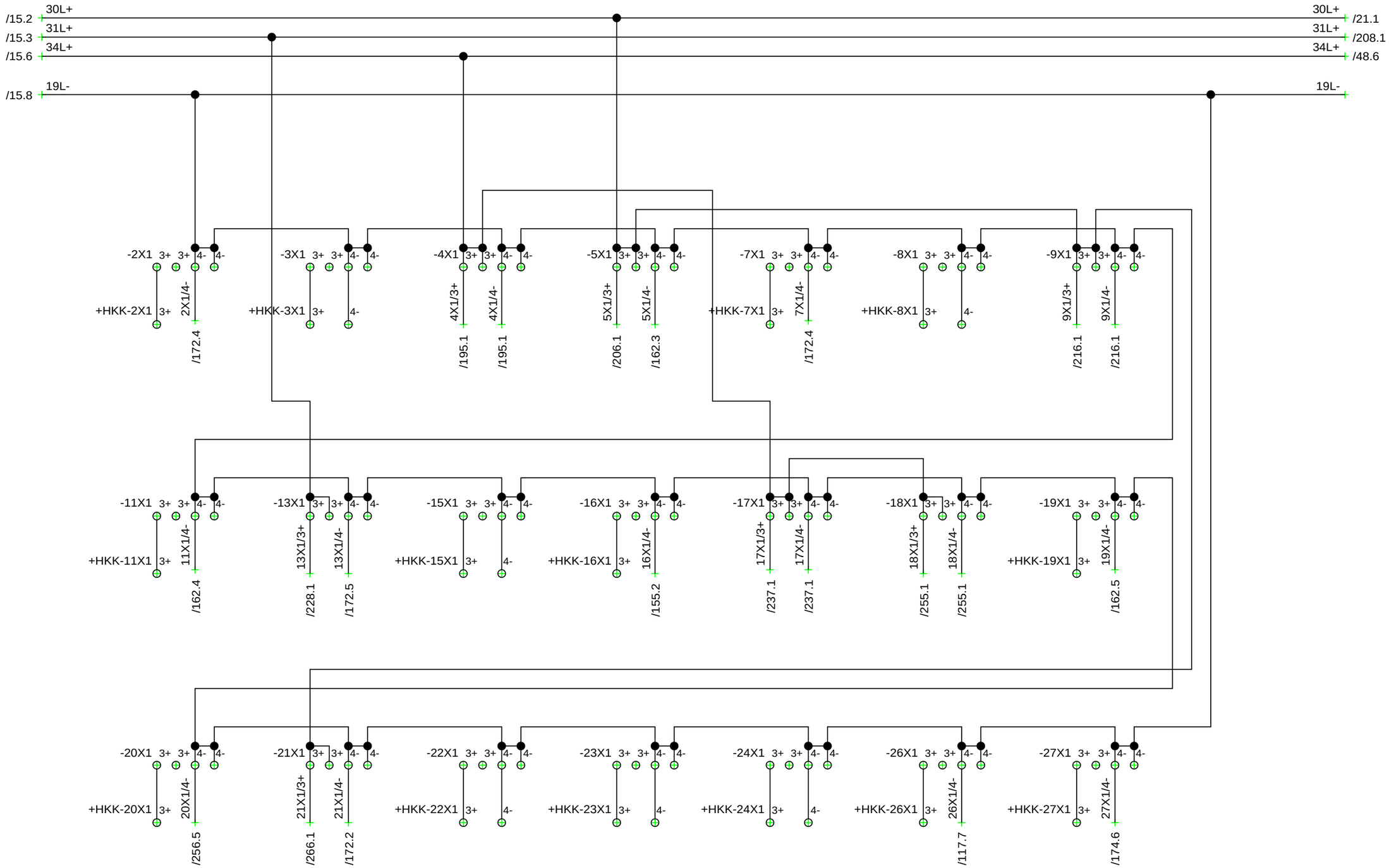
BÜHLER	customer 474 :P_NR2	+HSS	page **16**
		=A1.F1	of 271
comm. nr. :P_NR1	24VDC power supply terminal strip	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **17**
		=A1.F1	of 271
comm. nr. :P_NR1	24VDC power supply terminal strip	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER

customer 474 :P_NR2		+HSS	page **18**
		=A1.F1	of 271
comm. nr. :P_NR1	24VDC power supply terminal strip		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/14.8 18L+
/15.8 19L+
/4.8 12L3

-0SCB17 6A 2 1
-0SCB17.1 6A 2 1
-0SCB20 /14.2 13 14

-0CR1 .4 21 22
-0CR2 .6 21 22
-0CR3 .7 21 22
-0CR4 /20.2 21 22
-0CR5 /20.3 21 22
-0CR6 /20.5 21 21 22

277V
6V
A1
-0LT1
6V/1,2W
A2
N
/13.8
N
/44.1

Leuchtmelder
Fehler Steuerspannungen

monitoring light
fault control tension

-0CR1 A1 A2
/14.2 20L- 20L- /40.2
14 13 /26.4
21 22 .2
33 34 /32.7
43 44

Überwachung 24VDC
Steuerspannung Sensorik

monitoring 24VDC
sensoric

-0CR2 A1 A2
/15.2 30L- 30L- /21.1
13 14 /26.4
21 22 .2
33 34 /32.7
43 44 /125.6

Überwachung 24VDC
Steuerspannung Aktoren

monitoring 24VDC
actors

O:17/0 /151.2

-0CR3 A1 A2
14 13 /26.4
21 22 .2
33 34 /32.7
43 44

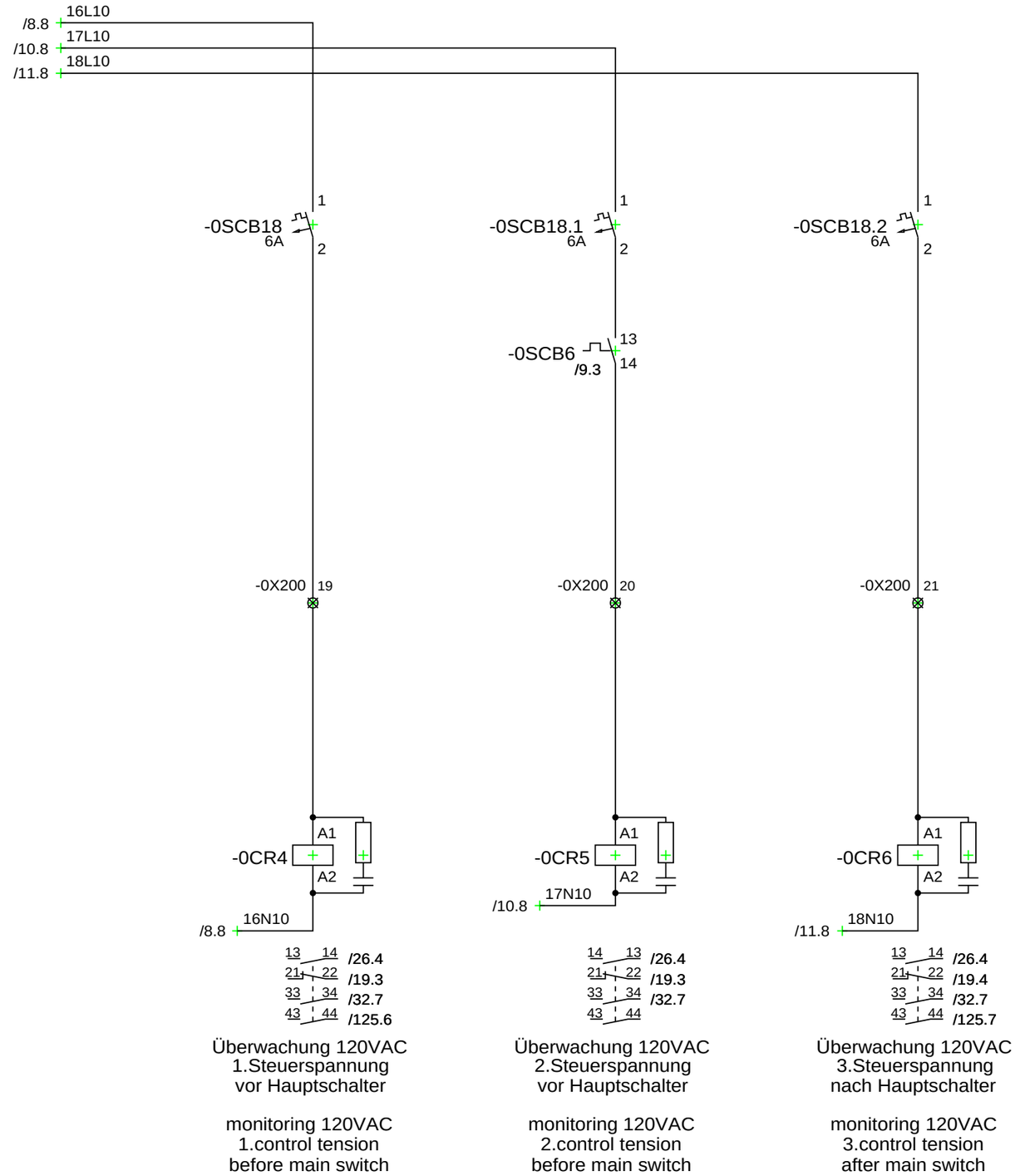
Überwachung 24VDC
Steuerspannung allgemein

monitoring 24VDC
general control tension

BÜHLER

customer 474 :P_NR2		+HSS	page 19
		=A1.F1	of 271
comm. nr. :P_NR1	monitoring control tension 24VAC	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



Überwachung 120VAC
1.Steuerspannung
vor Hauptschalter

monitoring 120VAC
1.control tension
before main switch

Überwachung 120VAC
2.Steuerspannung
vor Hauptschalter

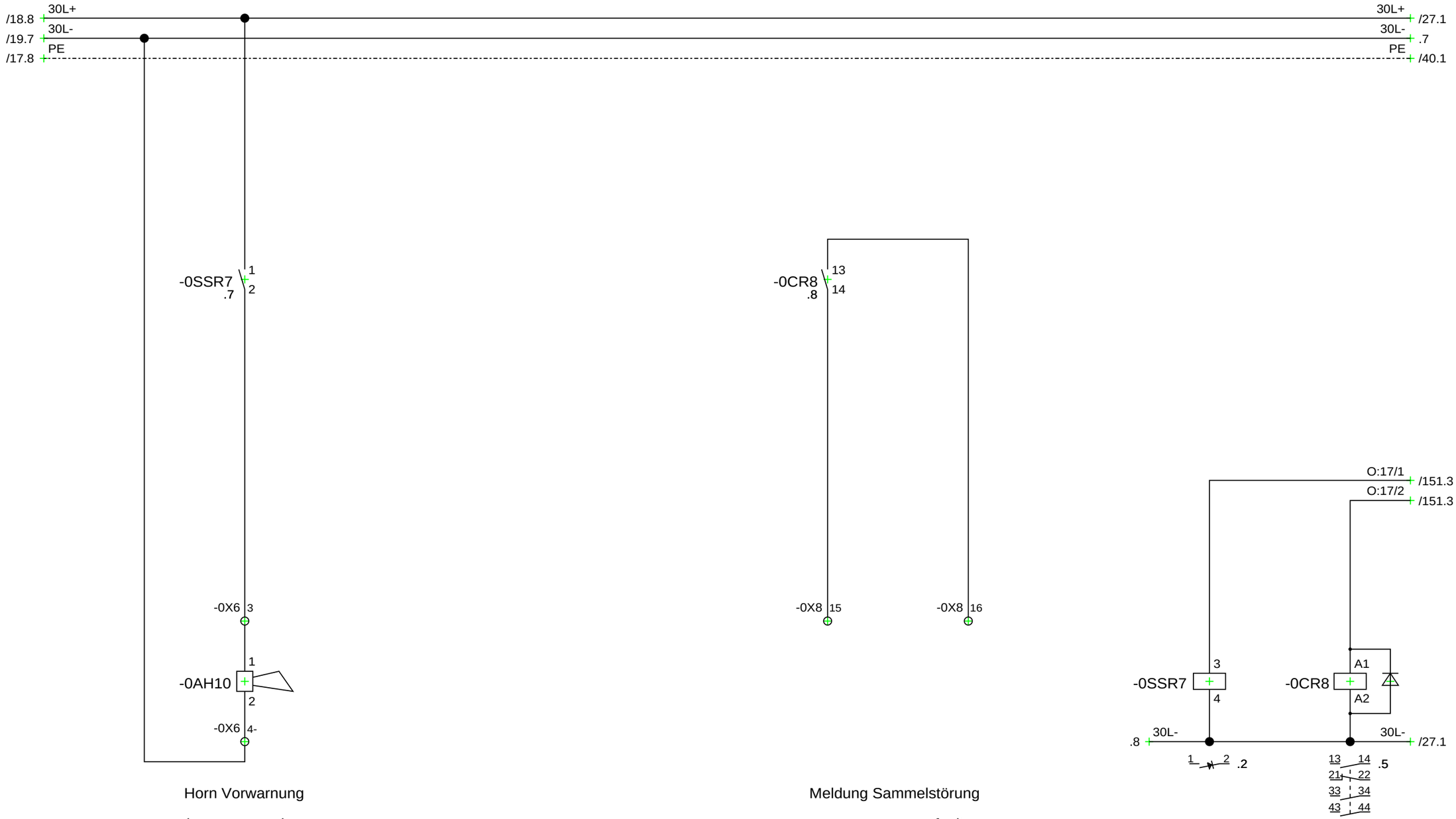
monitoring 120VAC
2.control tension
before main switch

Überwachung 120VAC
3.Steuerspannung
nach Hauptschalter

monitoring 120VAC
3.control tension
after main switch

BÜHLER	customer 474 :P_NR2	+HSS	page 20
		=A1.F1	of 271
comm. nr. :P_NR1	monitoring control tension 120VAC	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Horn Vorwarnung

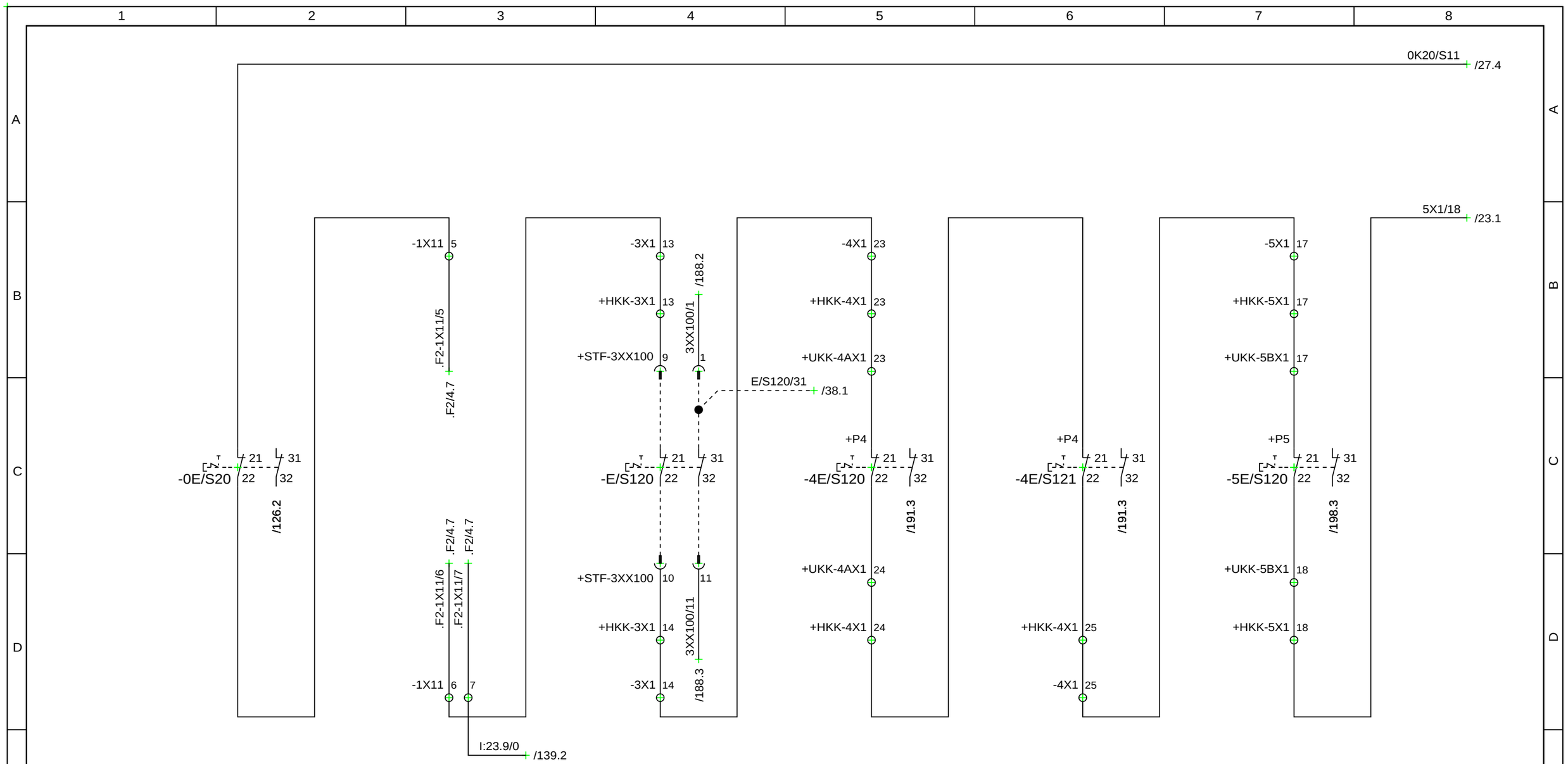
horn pre warning

Meldung Sammelstörung

message comon faults

BÜHLER	customer 474 :P_NR2	+HSS	page 21
		=A1.F1	of 271
comm. nr. :P_NR1	horn pre warning,monitoring comon faults	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Not-Aus
Hauptschaltschrank

emergency stop
main panel

Not-Aus
Hülsen-GK

emergency stop
shell depositor

Not-Aus
Steuerflasche
Position 3

emergency stop
remote control
position 3

Not-Aus
Hülsenbildung
Bedienseite

emergency stop
shell forming
operator side

Not-Aus
Hülsenbildung
Antriebsseite

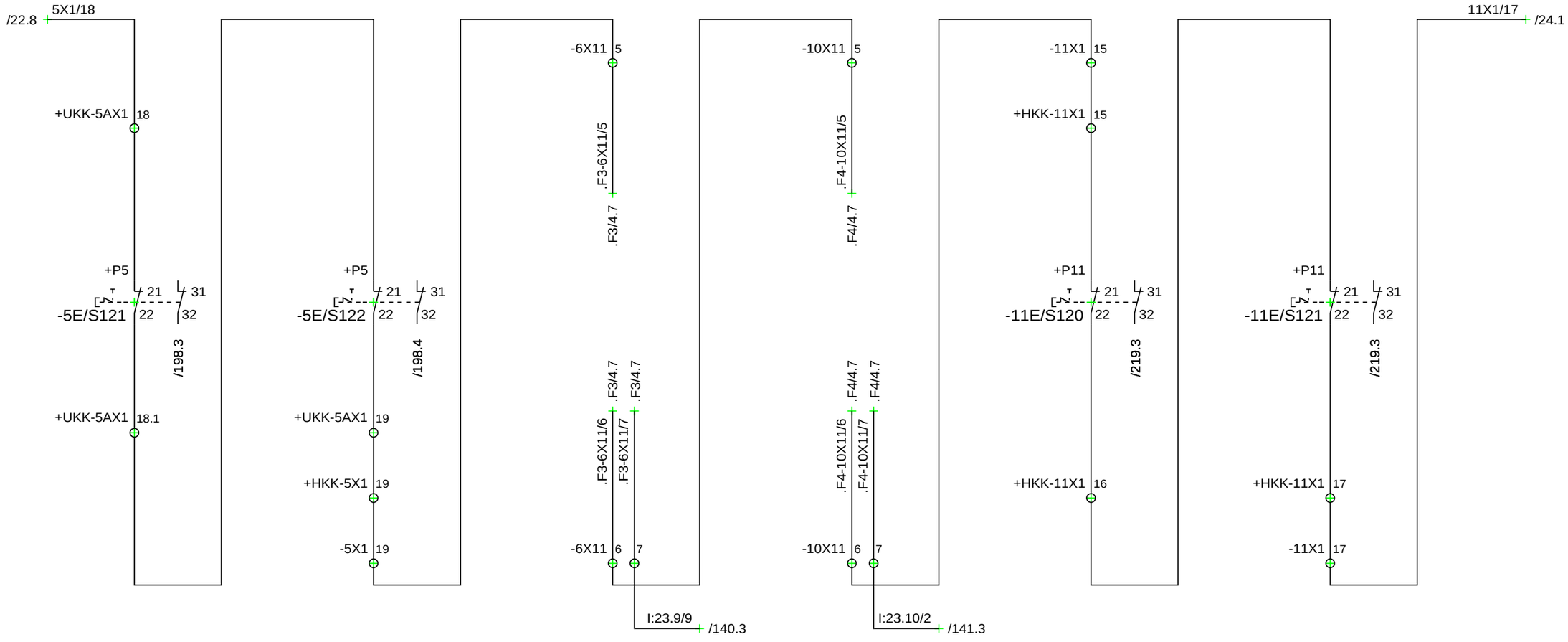
emergency stop
shell forming
drive side

Not-Aus
Eingang Hülsenkühler
Bedienseite
neben Fernbedienung

emergency stop
entry shell cooler
operator side

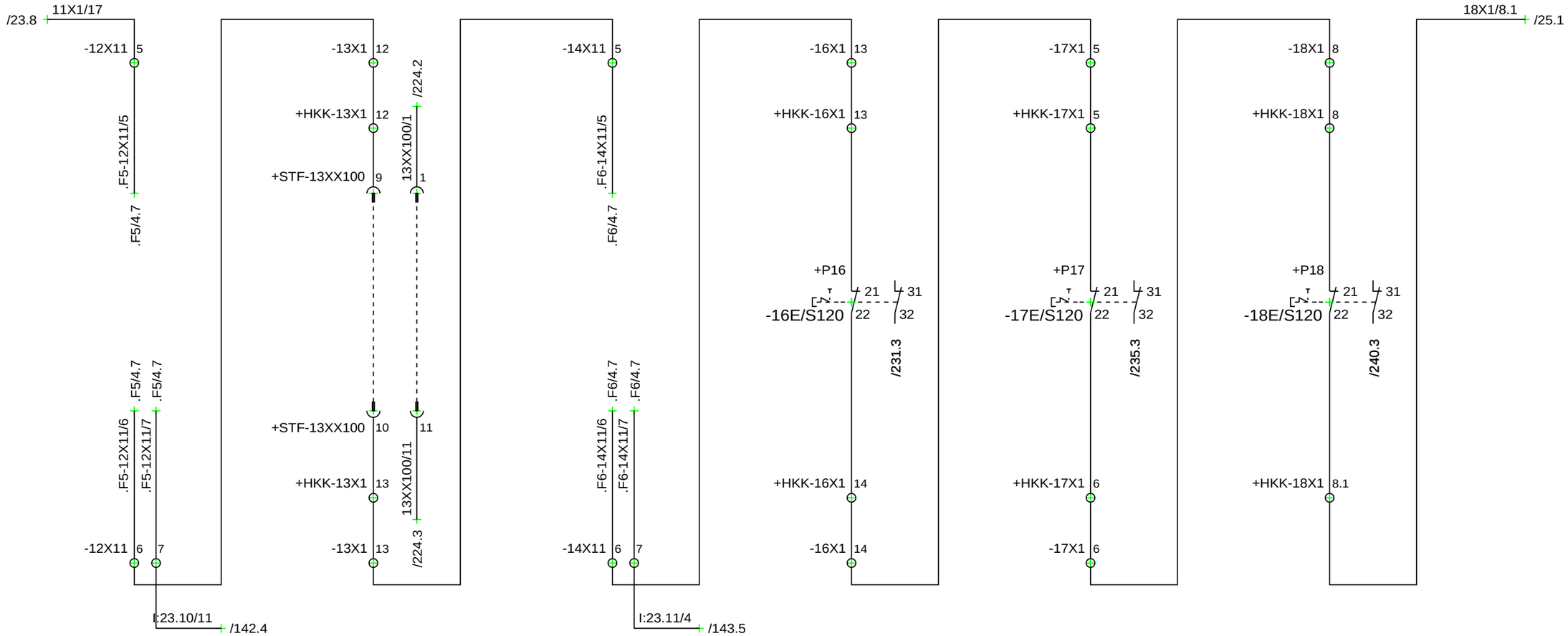
BÜHLER	customer 474 :P_NR2	+HSS	page **22**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop chain		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **23**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop chain	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Not-Aus
3.Füllungs-GK

emergency stop
3.filling depositor

Not-Aus
Steuerflasche
Position 13

emergency stop
remote control
position 13

Not-Aus
Deckel-GK

emergency stop
bottom depositor

Not-Aus
Eingang 2.Füllungskühler
Bedienseite
neben Fernbedienung

emergency stop
entry 2.filling cooler
operator side

Not-Aus
Deckelschaber
Bedienseite
neben Fernbedienung

emergency stop
bottom scraper
operator side

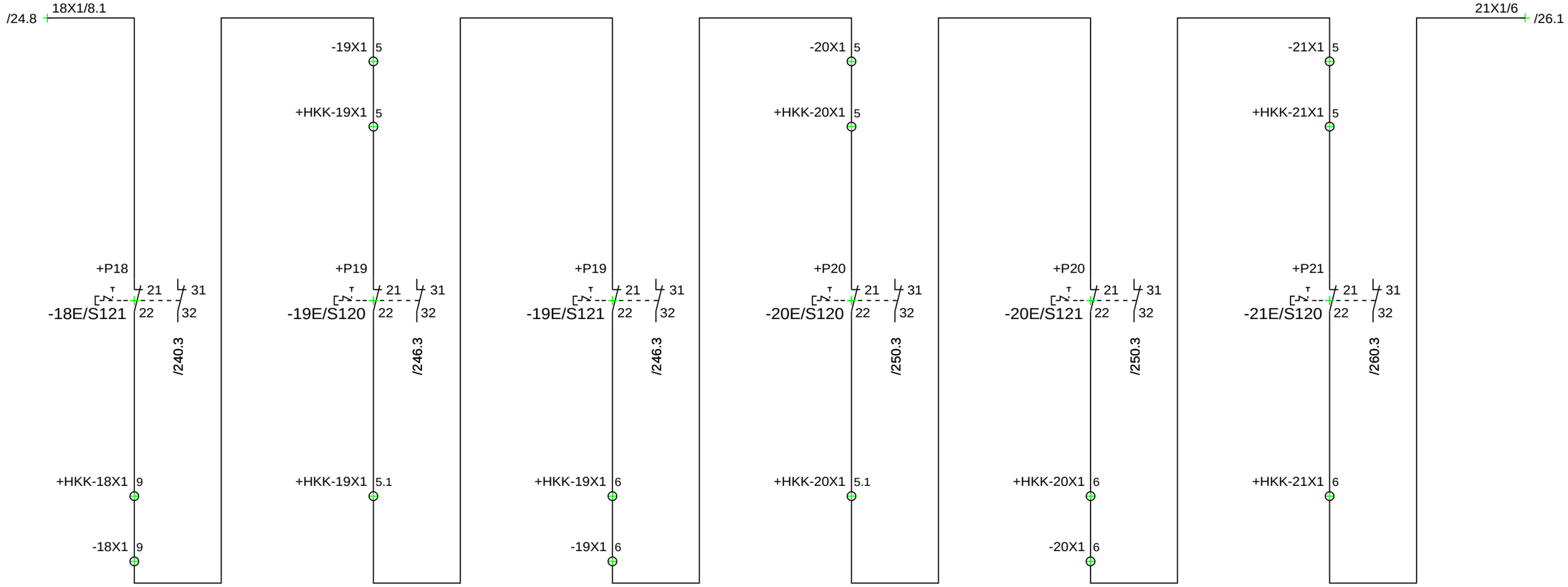
Not-Aus
Klappformenschließer
Bedienseite
neben Fernbedienung

emergency stop
mould closing device
operator side

BÜHLER

customer 474 :P_NR2		+HSS	page **24**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop chain		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



Not-Aus
nach Klappformenschließer
Bedienseite
neben Fernbedienung

emergency stop
after mould closing device
operator side

Not-Aus
Klappformenöffner
Bedienseite

emergency stop
double mould
opening device
operator side

Not-Aus
Klappformenöffner
Antriebsseite

emergency stop
double mould
opening device
drive side

Not-Aus
Ausgang AW-Bereich
Bedienseite
neben Fernbedienung

emergency stop
exit demoulder
operator side

Not-Aus
AW-Bereich
Antriebsseite

emergency stop
demoulder
drive side

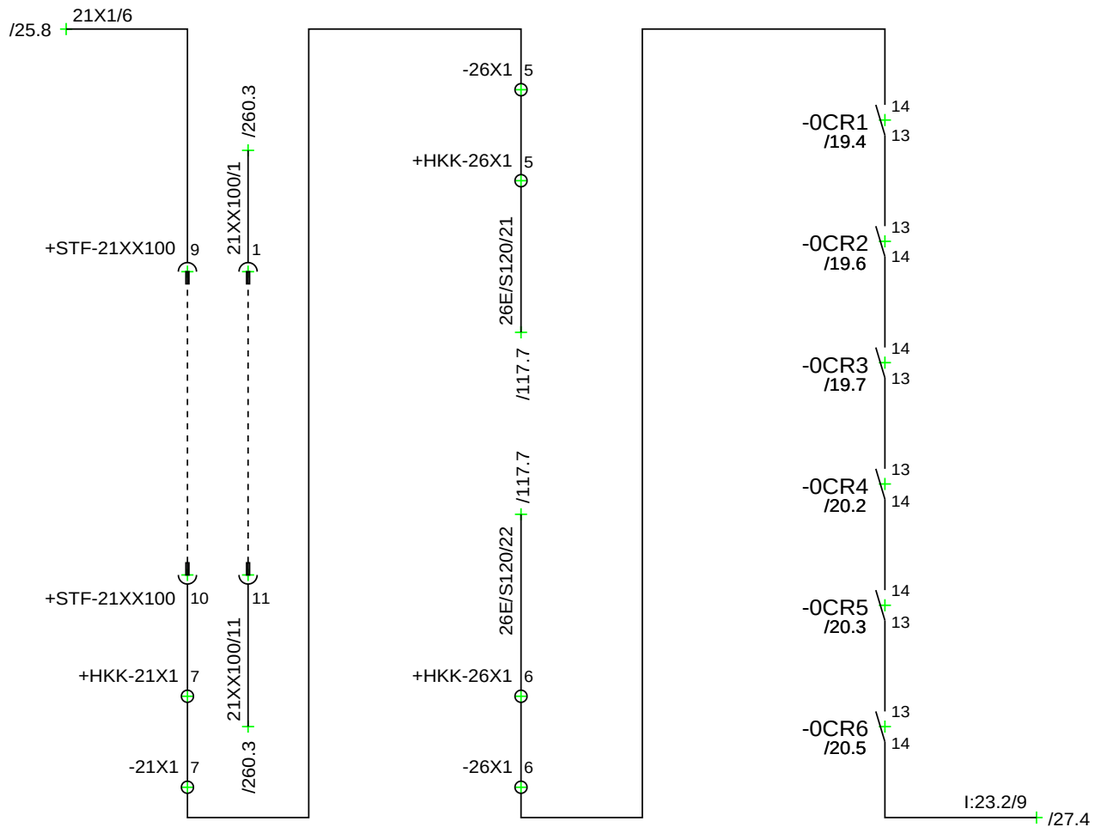
Not-Aus
Ein/Ausstapler

emergency stop
stacker/destacker

BÜHLER

customer 474 :P_NR2		+HSS	page **25**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop chain		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Not-Aus
Steuerflasche
Position 21

emergency stop
remote control
position 21

Not-Aus
Bedienpult Anlage

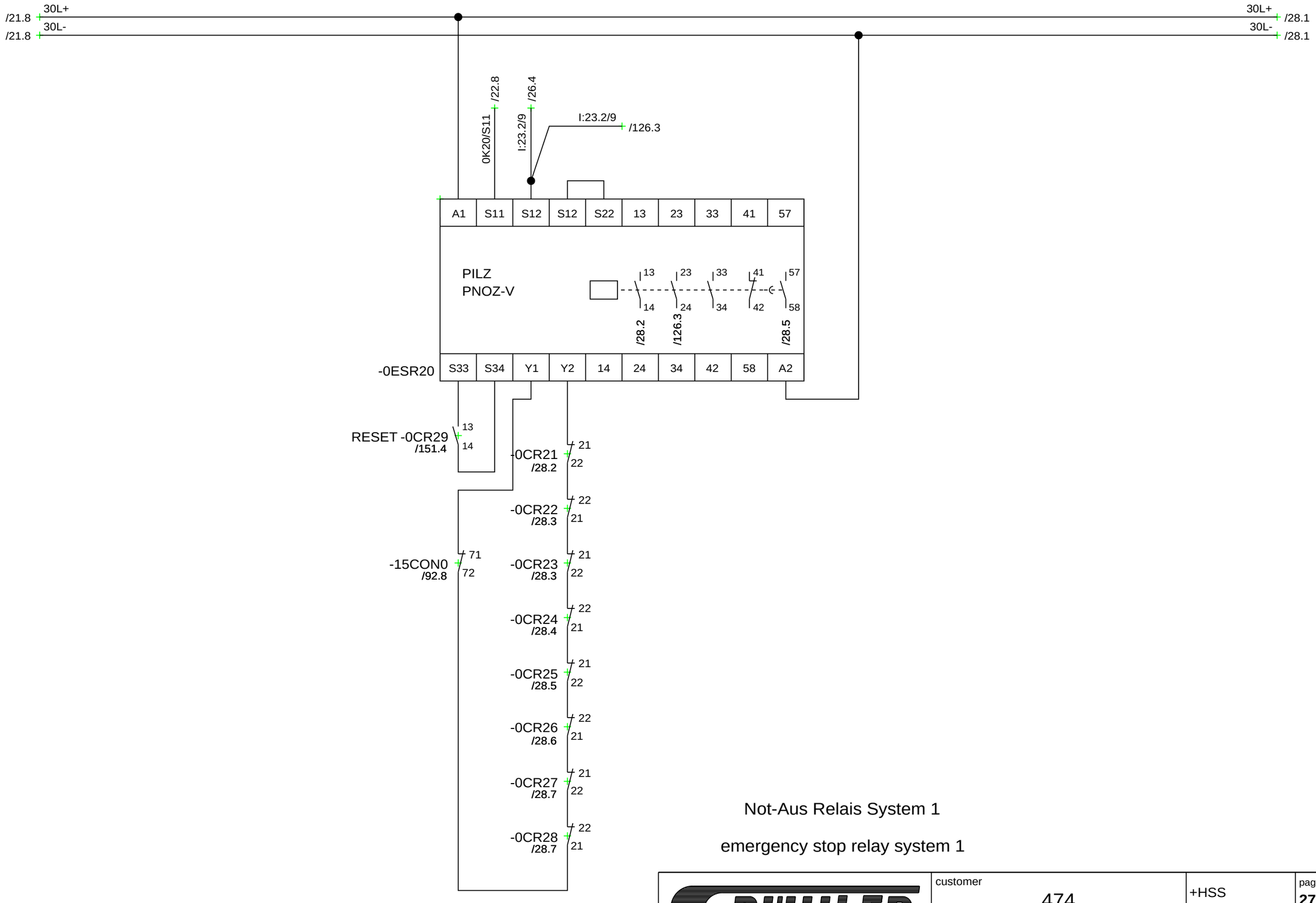
emergency stop
operator panel

Störung Not-Aus

fault emergency stop

BÜHLER	customer 474 :P_NR2	+HSS	page **26**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop chain	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

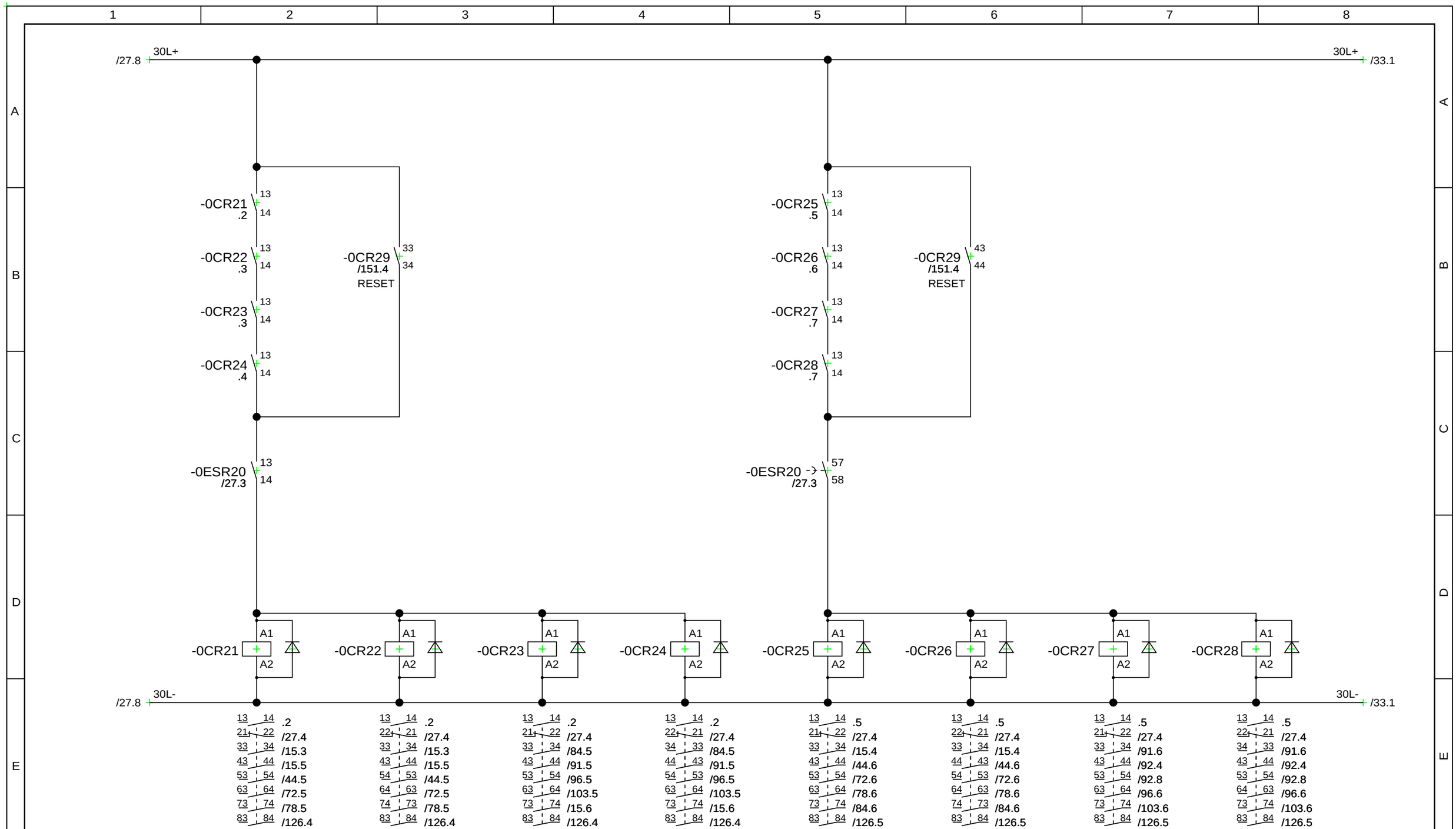


Not-Aus Relais System 1

emergency stop relay system 1

BÜHLER	customer 474 :P_NR2	+HSS	page **27**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop relay		drawing nr. A474

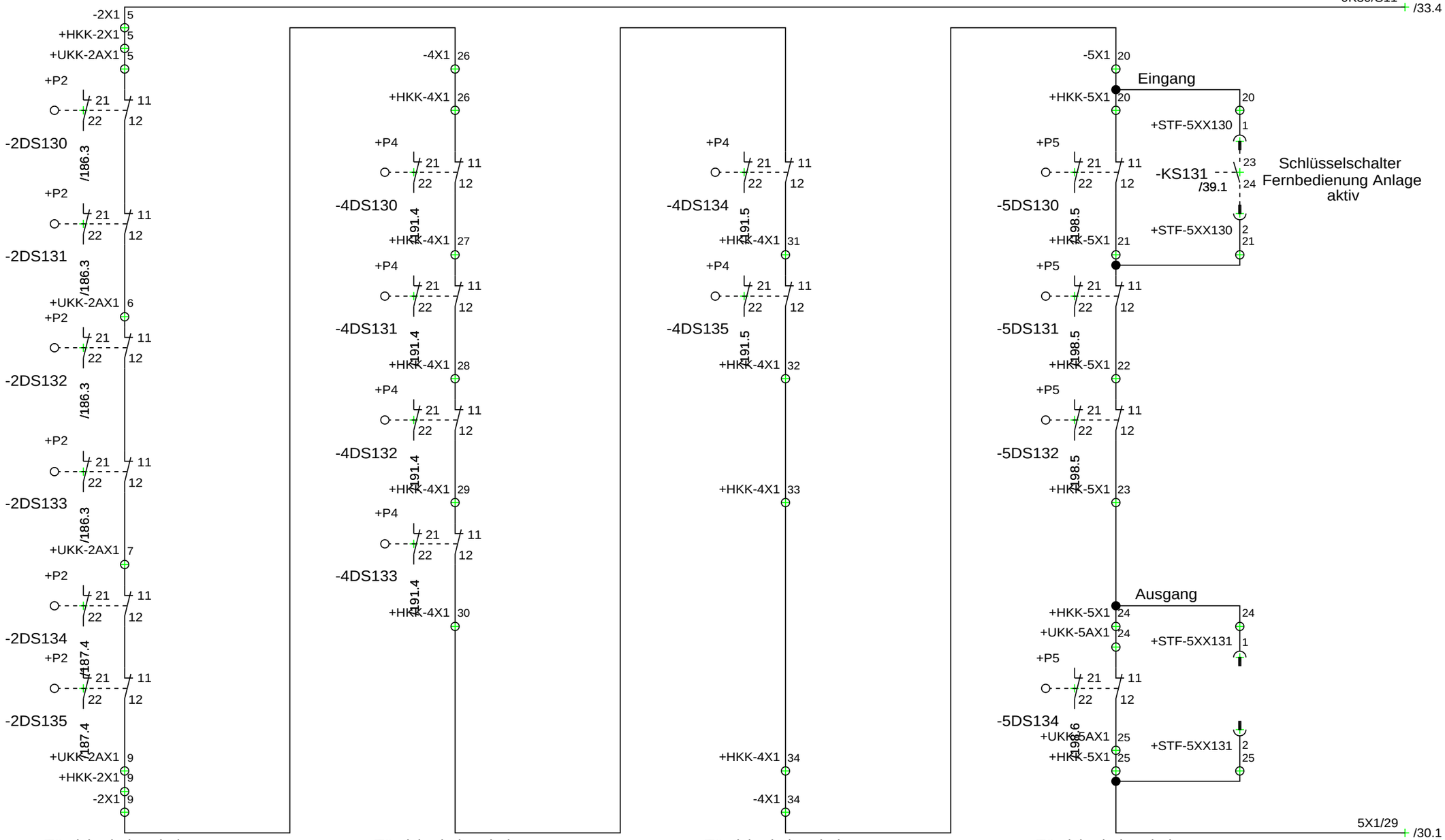
+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER

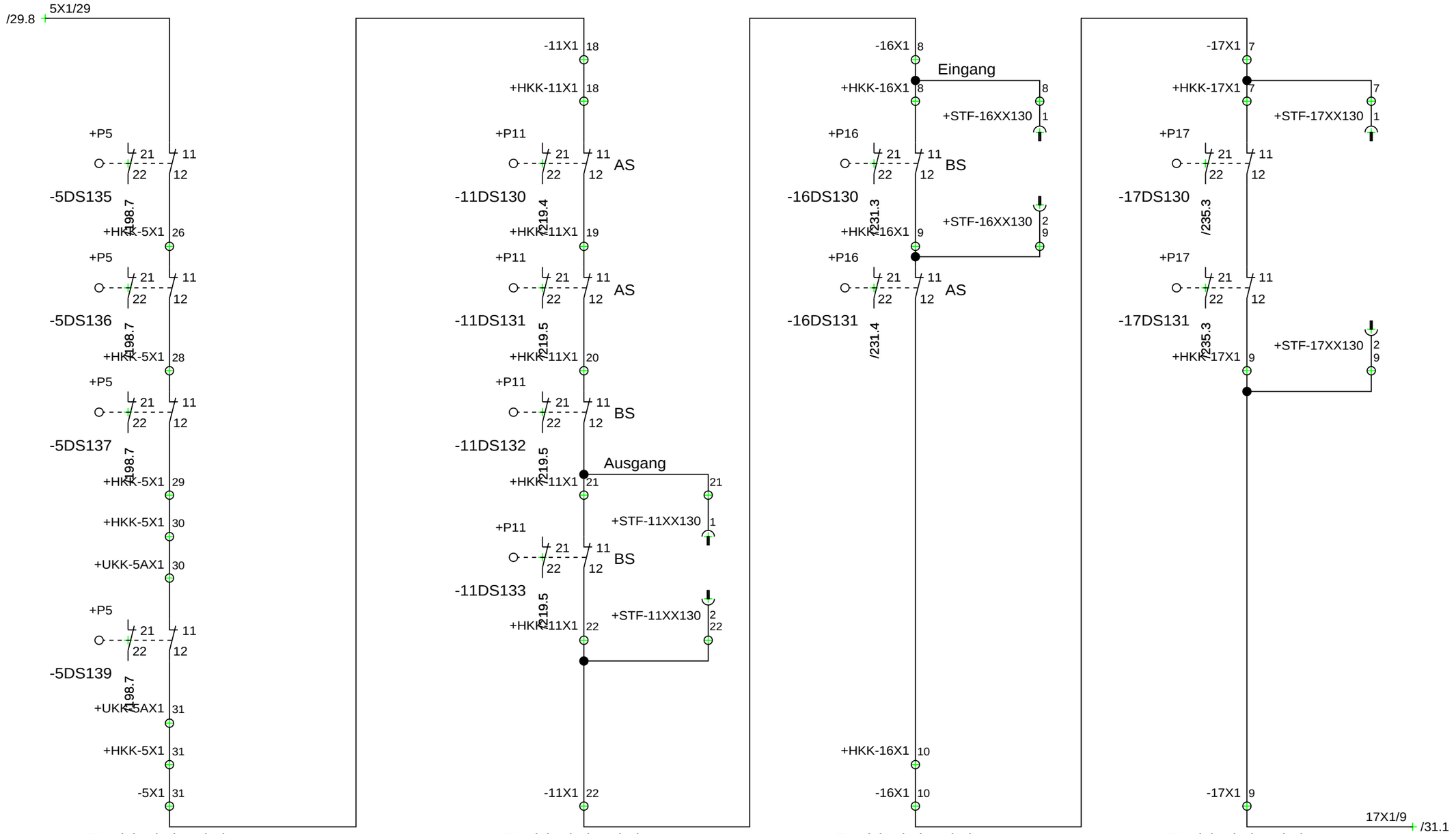
customer 474 :P_NR2		+HSS	page 28
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop contactor direct/delayed		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



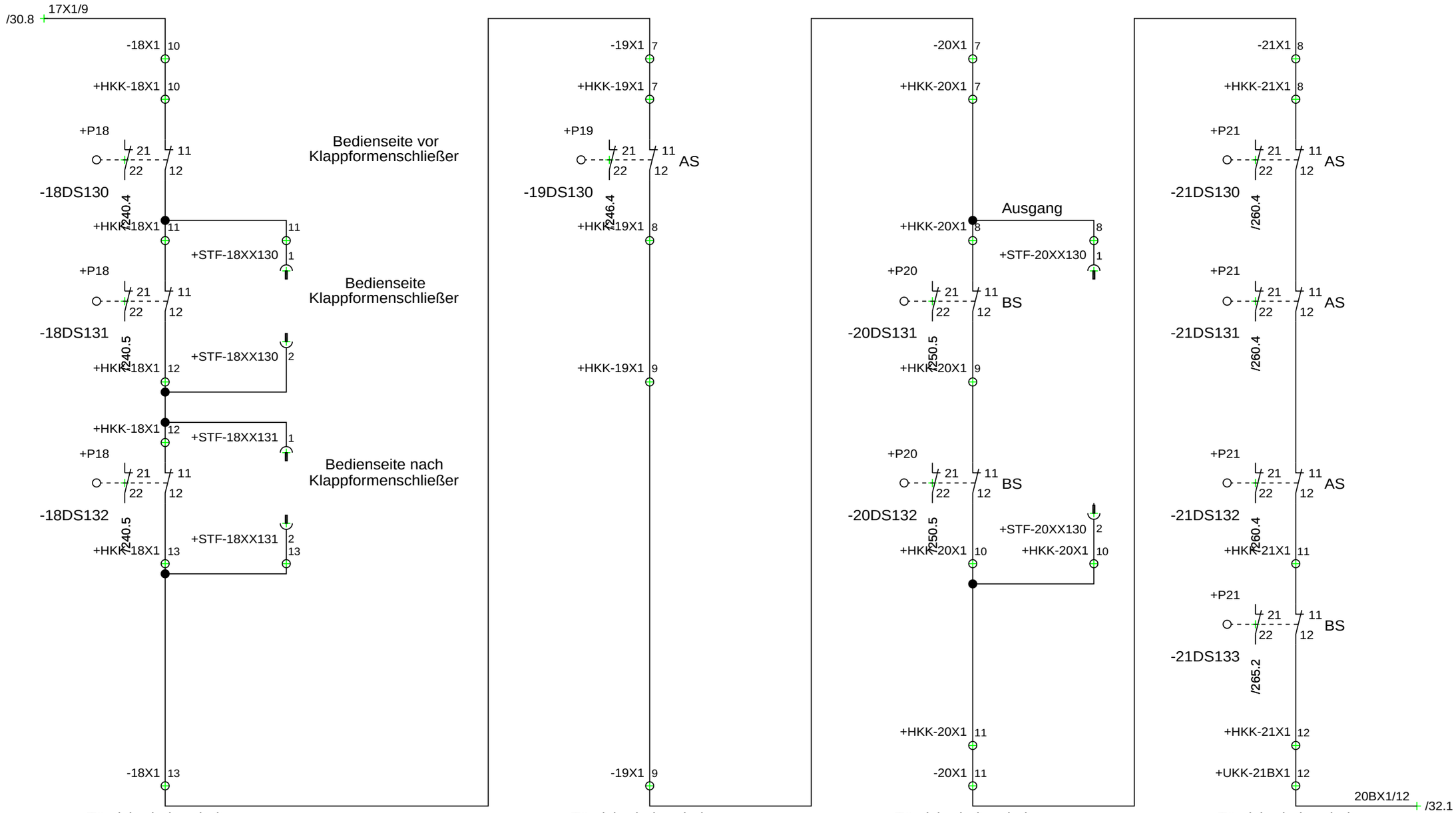
BÜHLER	customer 474 :P_NR2	+HSS	page 29
		=A1.F1	of 271
comm. nr. :P_NR1	door safety switches		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



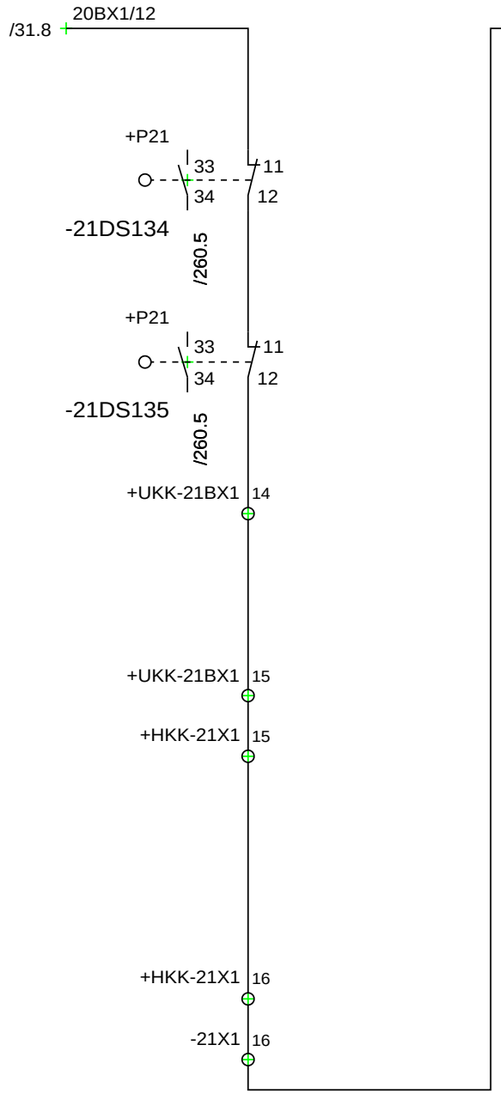
BÜHLER	customer 474 :P_NR2	+HSS	page 30
		=A1.F1	of 271
comm. nr. :P_NR1	door safety switches	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



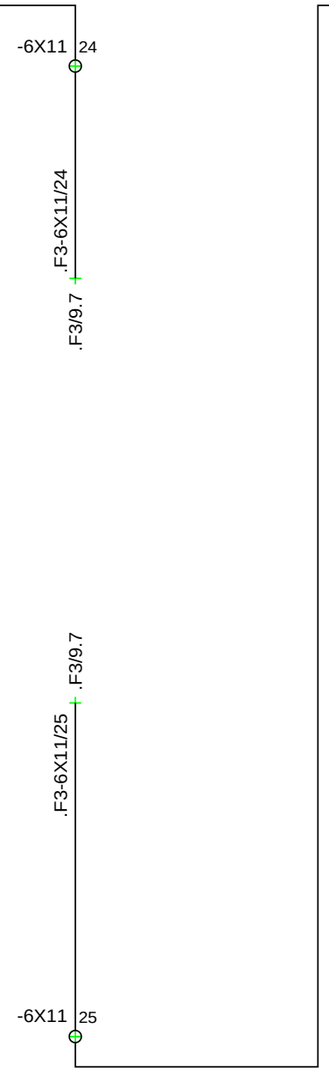
BÜHLER	customer 474 :P_NR2	+HSS	page **31**
		=A1.F1	of 271
comm. nr. :P_NR1	door safety switches		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



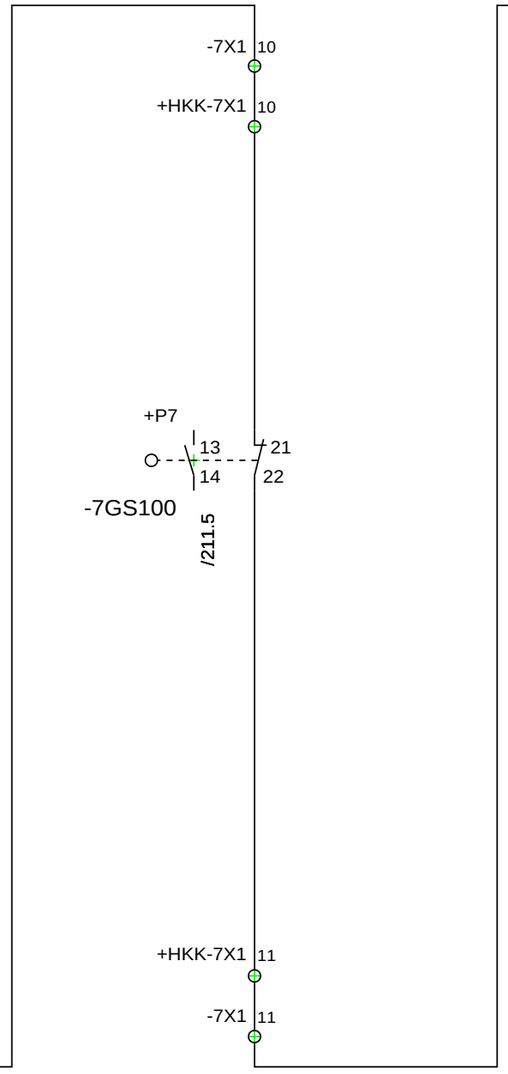
Türsicherheitsschalter
Aufwärtspaternoster nach
Ein/Ausstapler

door safety switch
upwards paternoster after
stacker/destacker



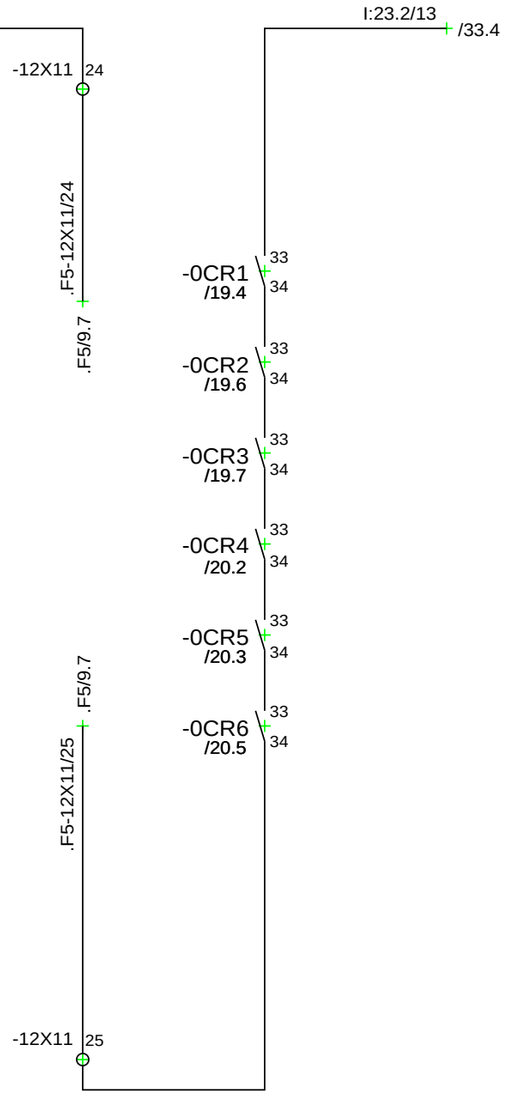
Sicherheitsschalter
Fronthaube
1.Füllungs-GK

safety switch
front cover
1.filling depositor



Sicherheitsschalter
Fronthaube
Formenlagekontrolle

safety switch
front cover
mould up side down control

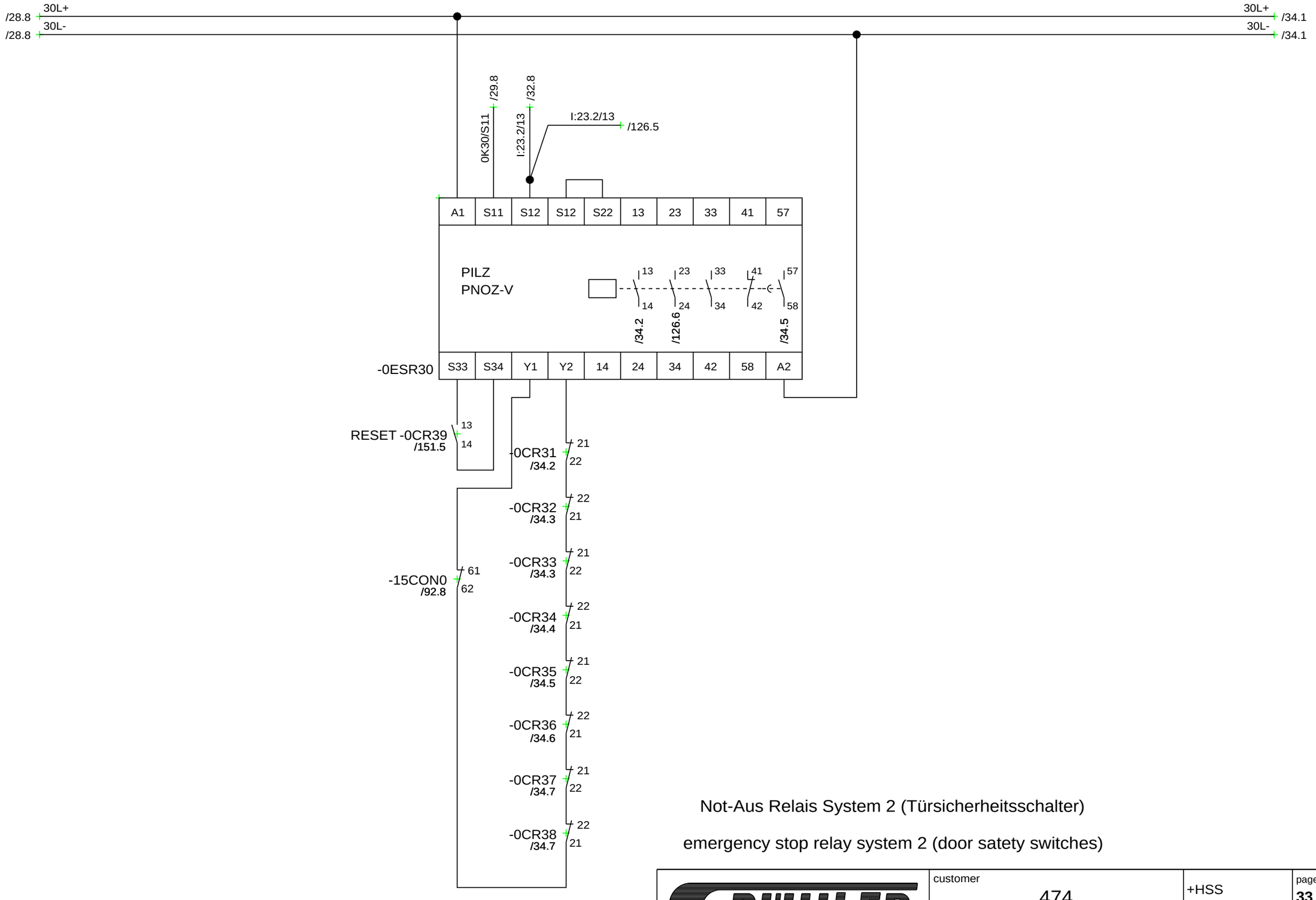


Sicherheitsschalter
Fronthaube
3.Füllungs-GK

safety switch
front cover
3.filling depositor

BÜHLER	customer 474 :P_NR2	+HSS	page 32
		=A1.F1	of 271
comm. nr. :P_NR1	door safety switches		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

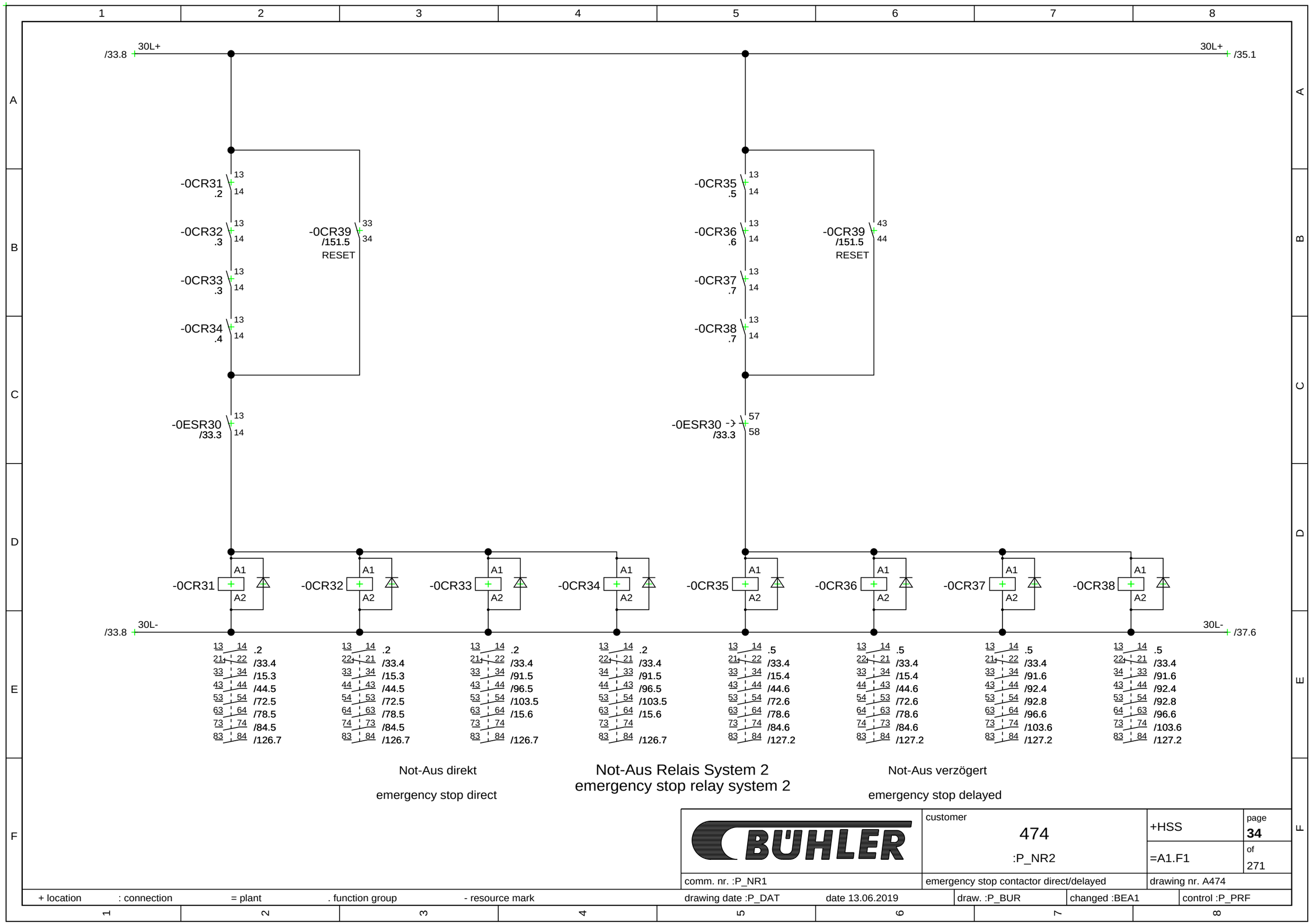


Not-Aus Relais System 2 (Türsicherheitsschalter)

emergency stop relay system 2 (door satety switches)

BÜHLER	customer 474 :P_NR2	+HSS	page **33**
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop relay	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



Not-Aus direkt

emergency stop direct

Not-Aus Relais System 2
emergency stop relay system 2

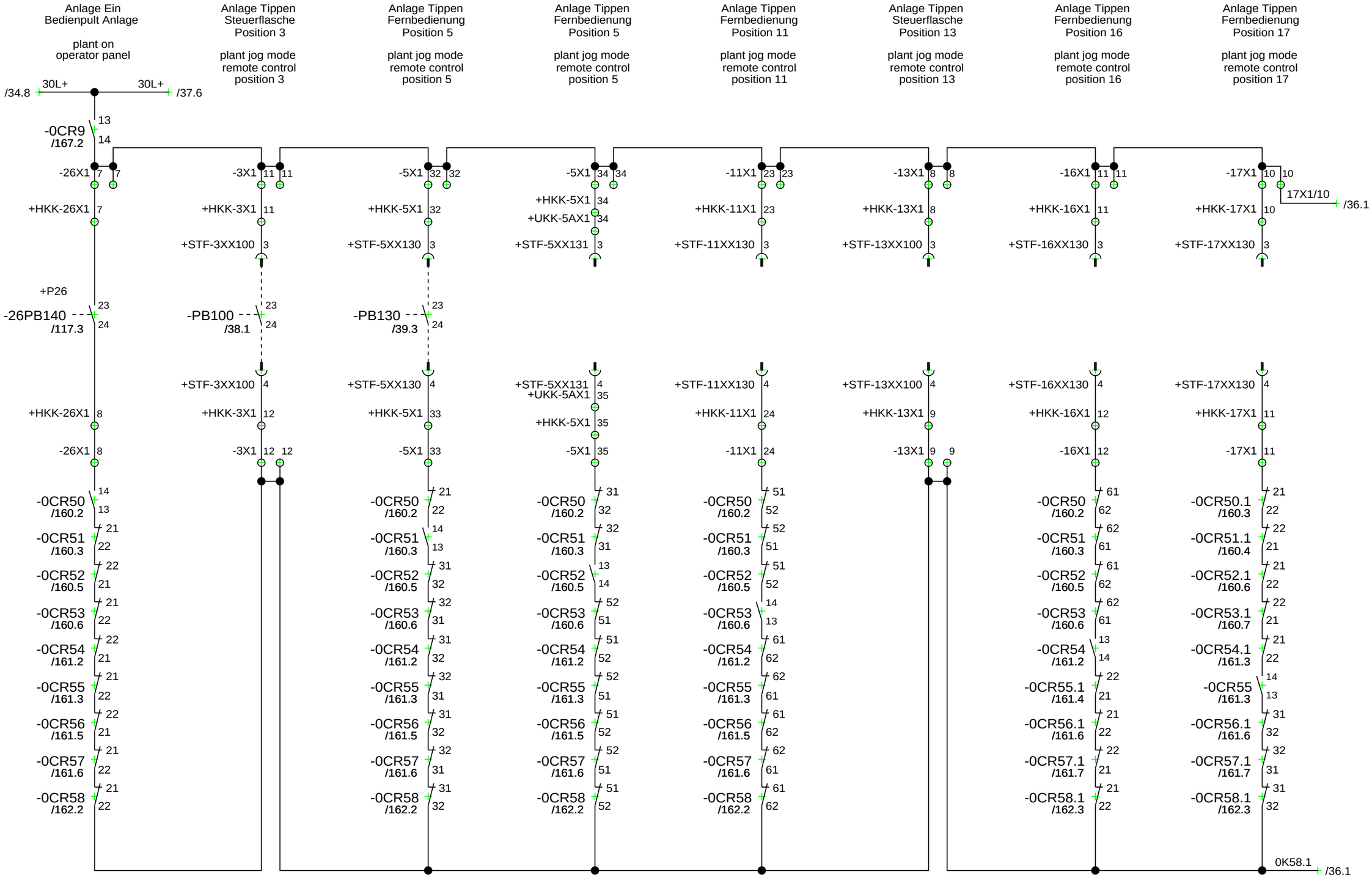
Not-Aus verzögert

emergency stop delayed

BÜHLER	customer 474 :P_NR2	+HSS	page 34
		=A1.F1	of 271
comm. nr. :P_NR1	emergency stop contactor direct/delayed	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

1	2	3	4	5	6	7	8



BÜHLER		customer 474 :P_NR2		+HSS		page 35	
				=A1.F1		of 271	
comm. nr. :P_NR1		switches on/off main motor		drawing nr. A474			
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

1	2	3	4	5	6	7	8

Anlage Tippen Fernbedienung Position 18

plant jog mode remote control position 18

Anlage Tippen Fernbedienung Position 18

plant jog mode remote control position 18

Anlage Tippen Fernbedienung Position 20

plant jog mode remote control position 20

Anlage Tippen Steuerflasche Position 21

plant jog mode remote control position 21

/35.8 17X1/10

-18X1 14 14 | +HKK-18X1 14 | +STF-18XX130 3

-18X1 16 16 | +HKK-18X1 16 | +STF-18XX131 3

-20X1 12 12 | +HKK-20X1 12 | +STF-20XX130 3

-21X1 17 17 | +HKK-21X1 17 | +STF-21XX100 3

+STF-18XX130 4 | +HKK-18X1 15 | -18X1 15 | 31

-0CR50.1 /160.3 31 32
-0CR51.1 /160.4 32 31
-0CR52.1 /160.6 31 32
-0CR53.1 /160.7 32 31
-0CR54.1 /161.3 31 32
-0CR55.1 /161.4 32 31
-0CR56 /161.5 13 14
-0CR57.1 /161.7 52 51
-0CR58.1 /162.3 51 52

+STF-18XX131 4 | +HKK-18X1 17 | -18X1 17 | 51

-0CR50.1 /160.3 51 52
-0CR51.1 /160.4 52 51
-0CR52.1 /160.6 51 52
-0CR53.1 /160.7 52 51
-0CR54.1 /161.3 51 52
-0CR55.1 /161.4 52 51
-0CR56.1 /161.6 51 52
-0CR57 /161.6 14 13
-0CR58.1 /162.3 61 62

+STF-20XX130 4 | +HKK-20X1 13 | -20X1 13 | 61

-0CR50.1 /160.3 61 62
-0CR51.1 /160.4 62 61
-0CR52.1 /160.6 61 62
-0CR53.1 /160.7 62 61
-0CR54.1 /161.3 61 62
-0CR55.1 /161.4 62 61
-0CR56.1 /161.6 61 62
-0CR57.1 /161.7 62 61
-0CR58 /162.2 13 14

+STF-21XX100 4 | +HKK-21X1 18 | -21X1 18 18

/35.8 0K58.1

-0CR41 /37.7 13 14

Anlage Ein aktiv

plant on is active

Steuerflasche + Fernbedienung nicht gesteckt + Bedienpult Anlage aktiv

remote control not pluged operator panel is active

-0CR43 /151.6 13 14

26X1/9 /37.1

BÜHLER

customer 474 :P_NR2		+HSS	page 36
		=A1.F1	of 271
comm. nr. :P_NR1	switches on/off main motor		drawing nr. A474

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Anlage Stop
Bedienpult Anlage

plant stop
operator panel

Anlage Stop
vor Hülsenbildung

plant stop
before shell forming

Anlage Stop
vor 2.Füllungs-GK

plant stop
before
2.filling depositor

Anlage Stop
vor Deckel-GK

plant stop
before
bottom depositor

Anlage Stop
Ein/Ausstapler

plant stop
stacker/destacker

/35.2 30L+ 30L+ /151.1

/36.6 26X1/9 I:23.3/2 /127.3

-26X1 9 9 | -3X1 15 | -9X1 5 | -13X1 10 | -21X1 19

+HKK-26X1 9 | +HKK-3X1 15 | +HKK-9X1 5 | +HKK-13X1 10 | +HKK-21X1 19

+P26
-26PB141 /117.4 21 22

+P3 11 21 -3PB141 12 22 /189.4

+P9 11 21 -9PB141 12 22 /214.3

+P13 11 21 -13PB141 12 22 /224.7

+P21 11 21 -21PB141 12 22 /260.5

+HKK-26X1 10 | +HKK-3X1 16 | +HKK-9X1 6 | +HKK-13X1 11 | +HKK-21X1 20

-26X1 10 | -3X1 16 | -9X1 6 | -13X1 11 | -21X1 20

-0TD40 15 18 .7

-0TD40 B1 A1 A2 | -0CR41 A1 A2 | -0CR42 A1 A2

/15.5 33L- 33L- /54.6

/34.8 30L- 30L- /53.7

15 18 16 .8

13 14 21 22 33 34 43 44 /36.6 /127.4

13 14 23 24 33 34 43 44 /15.3 .F7/4.2 /92.8 /127.5

Betriebsart B

BÜHLER

comm. nr. :P_NR1	customer 474 :P_NR2	+HSS	page 37
	switches on/off main motor	=A1.F1	of 271
	drawing nr. A474		

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

Haupmotor Ein
Steuerflasche

main motor on
remote control

Störung quittieren
Steuerflasche

reset faults
remote control

Hauptmotor schneller
Steuerflasche

main motor faster
remote control

Hauptmotor langsam
Steuerflasche

main motor slower
remote control

Steuerflasche
gesteckt

remote control
is in use

Steuerflasche

remote control

E/S120/31
/22.5

-PB100 13 14 23 24
-PB101 13 14
-PB102 13 14
-PB103 13 14

/35.2

Taster Steuerflasche

push button remote control

+STF-3XX100 2
+STF-13XX100 2
+STF-21XX100 2

+STF-3XX100 5
+STF-13XX100 5
+STF-21XX100 5

+STF-3XX100 6
+STF-13XX100 6
+STF-21XX100 6

+STF-3XX100 7
+STF-13XX100 7
+STF-21XX100 7

+STF-3XX100 8
+STF-13XX100 8
+STF-21XX100 8

3XX100/2 /188.3
3XX100/5 /188.4
3XX100/6 /188.5
3XX100/7 /188.5
3XX100/8 /188.6

13XX100/2 /224.3
13XX100/5 /224.4
13XX100/6 /224.5
13XX100/7 /224.5
13XX100/8 /224.6

21XX100/2 /260.6
21XX100/5 /260.7
21XX100/6 /260.7
21XX100/7 /261.2
21XX100/8 /261.3

Not-Aus Steuerflasche
Siehe Not-Aus Kette !

emergency stop button
see emergency chain !

BÜHLER

customer 474 :P_NR2

+HSS

page **38**

=A1.F1

of 271

comm. nr. :P_NR1

remote control service

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT

date 13.06.2019

draw. :P_BUR

changed :BEA1

control :P_PRF

Schlüsselschalter
Fernbedienung aktiv

key switch
remote control is active

Anlage Tippen

plant jog mode

Störung quittieren

reset faults

Fernbedienung gesteckt

remote control is in use

Fernbedienung Anlage

remote control

-KS131

-PB130

-PB131

+HKK-5X1

+UKK-5AX1

+HKK-20X1

+UKK-20X11

+STF-5XX130

+STF-5XX131

+STF-11XX130

+STF-16XX130

+STF-17XX130

+STF-18XX130

+STF-18XX131

+STF-20XX130

BÜHLER	customer 474 :P_NR2	+HSS	page 39
		=A1.F1	of 271
comm. nr. :P_NR1	remote control	drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

PLC System Allen Bradley

PLC system Allen Bradley

/9.3 6L10 — 6L10 /41.1
/9.3 6N10 — 6N10 /41.1
/21.8 PE — PE /41.1
/19.5 20L- — 20L- /41.2

-0PF0 power filter (N P PE / N1 P1)

-0PLC0

1746-P2	1747-L543 CPU	digital output 1746-OB16 O:1.0 - O:1.15	digital output 1746-OB16 O:2.0 - O:2.15	digital output 1746-OB16 O:3.0 - O:3.15	digital output 1746-OB16 O:4.0 - O:4.15	digital output 1746-OB16 O:5.0 - O:5.15	digital output 1746-OB16 O:6.0 - O:6.15	digital output 1746-OB16 O:7.0 - O:7.15	digital output 1746-OB16 O:8.0 - O:8.15	digital output 1746-OB16 O:9.0 - O:9.15	digital output 1746-OB16 O:10.0 - O:10.15	digital output 1746-OB16 O:11.0 - O:11.15	digital output 1746-OB16 O:12.0 - O:12.15
PWR OUT +24VOLTS DC													
PWR OUT COM													
120/240 VOLTS													
VAC NEUT													
CHASSIS GROUND													
0PLCM0.1	0PLCM 0	0PLCM 1	0PLCM 2	0PLCM 3	0PLCM 4	0PLCM 5	0PLCM 6	0PLCM 7	0PLCM 8	0PLCM 9	0PLCM 10	0PLCM 11	0PLCM 12

(1746-C9)

-0PF1 power filter (N P PE / N1 P1)

-0PLC1

1746-P4	analogue output 1746-NO4I O:13.0 - O:13.4	analogue output 1746-NO4I O:14.0 - O:14.4	analogue output 1746-NO4I O:15.0 - O:15.4	analogue output 1746-NO4I O:16.0 - O:16.4	analogue output 1746-NO4I O:17.0 - O:17.4	analogue output 1746-NO4I O:18.0 - O:18.4	analogue input 1746-NI4 O:19.0 - O:19.4	analogue input 1746-NI4 O:20.0 - O:20.4	analogue input 1746-NI4 O:21.0 - O:21.4	digital input 1746-IB16 I:22.0 - I:22.15	remote I/O scanner module 1747-SN I:23.0/0 - I:23.14/15	remote I/O scanner module 1747-SN I:24.0/0 - I:24.14/15 O:24.0/0 - O:24.14/15	remote I/O scanner module 1747-SN I:25.0/0 - I:25.19/15 O:25.0/0 - O:25.19/15
PWR OUT +24VOLTS DC													
PWR OUT COM													
120/240 VOLTS													
VAC NEUT													
CHASSIS GROUND													
0PLCM1.1	0PLCM 13	0PLCM 14	0PLCM 15	0PLCM 16	0PLCM 17	0PLCM 18	0PLCM 19	0PLCM 20	0PLCM 21	0PLCM 22	0PLCM 23	0PLCM 24	0PLCM 25

BÜHLER

customer 474 :P_NR2 | +HSS | page 40 | =A1.F1 | of 271

comm. nr. :P_NR1 | power supply PLC system | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

PLC System Allen Bradley

PLC system Allen Bradley

/40.3 6L10 → 6L10 /116.1
/40.3 6N10 → 6N10 /116.1
/40.3 PE → PE /44.1
/40.3 20L- → 20L- /92.2

-0PF2 power filter: N P PE / N1 P1

-0PF3 power filter: N P PE / N1 P1

-0PLC2

1746-P2	1747-ASB remote I/O interface module	digital input 1746-IB16 I:23.1/0 - I:23.1/15	digital input 1746-IB16 I:23.2/0 - I:23.2/15	digital input 1746-IB16 I:23.3/0 - I:23.3/15	digital input 1746-IB16 I:23.4/0 - I:23.4/15	digital input 1746-IB16 I:23.5/0 - I:23.5/15	digital input 1746-IB16 I:23.6/0 - I:23.6/15	digital input 1746-IB16 I:23.7/0 - I:23.7/15	digital input 1746-IB16 I:23.8/0 - I:23.8/15	digital input 1746-IB16 I:23.9/0 - I:23.9/15	digital input 1746-IB16 I:23.10/0 - I:23.10/15	digital input 1746-IB16 I:23.11/0 - I:23.11/15	digital input 1746-IB16 I:23.12/0 - I:23.12/15
PWR OUT +24VOLTS DC													
PWR OUT COM													
120/240 VOLTS													
VAC NEUT													
CHASSIS GROUND													
0PLCM2.1	0PLCM 26	0PLCM 27	0PLCM 28	0PLCM 29	0PLCM 30	0PLCM 31	0PLCM 32	0PLCM 33	0PLCM 34	0PLCM 35	0PLCM 36	0PLCM 37	0PLCM 38

(1746-C9)

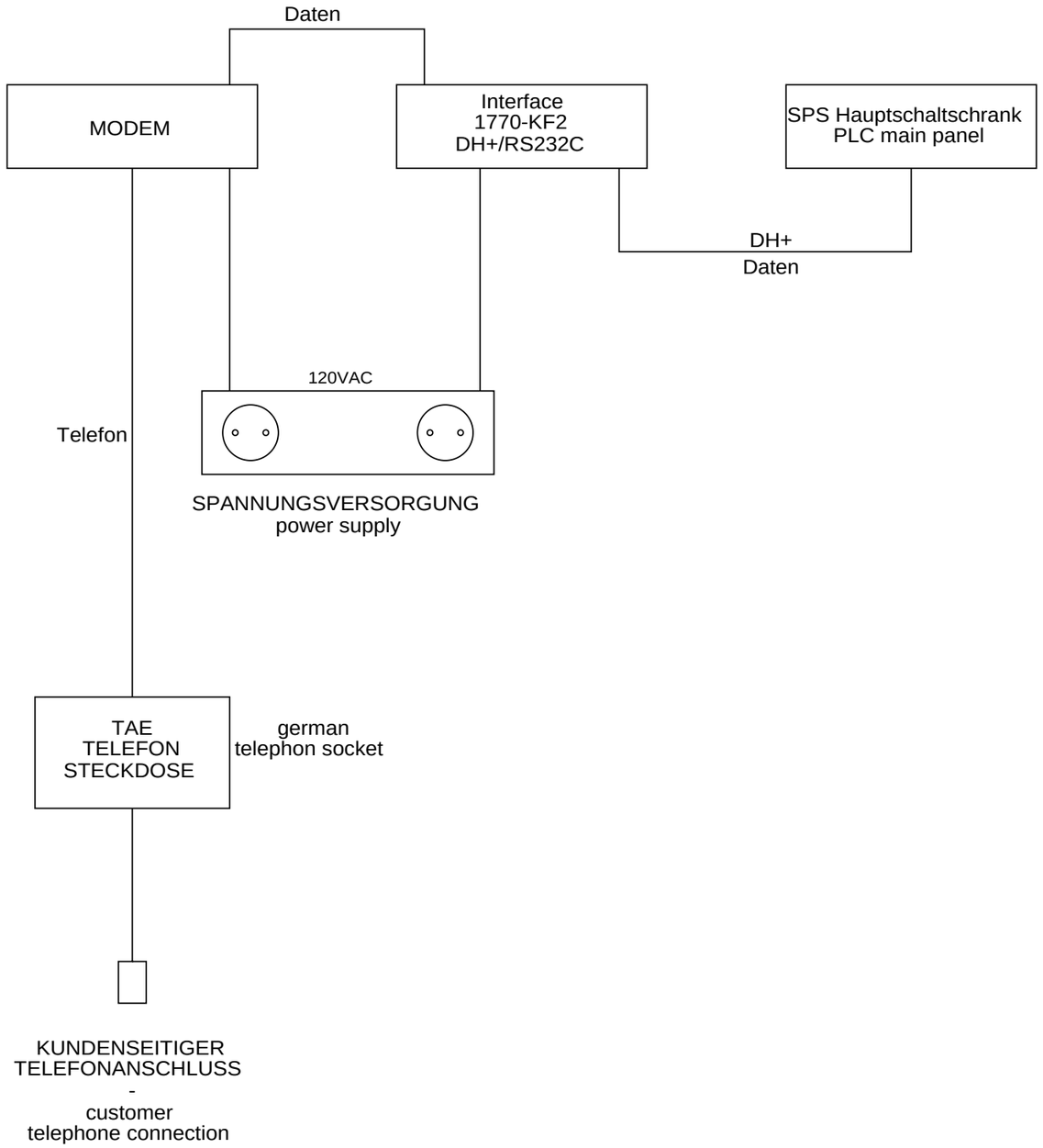
-0PLC3

1746-P2	digital input 1746-IB16 I:23.13/0 - I:23.13/15	digital input 1746-IB16 I:23.14/0 - I:23.14/15	digital input 1746-IB16 I:23.15/0 - I:23.15/15	analogue output 1746-NO4I O: - O:	spare	spare	spare	spare	spare	spare	spare	spare	spare
PWR OUT +24VOLTS DC													
PWR OUT COM													
120/240 VOLTS													
VAC NEUT													
CHASSIS GROUND													
0PLCM3.1	0PLCM 39	0PLCM 40	0PLCM 41	0PLCM 42	0PLCM 43	0PLCM 44	0PLCM 45	0PLCM 46	0PLCM 47	0PLCM 48	0PLCM 49	0PLCM 50	0PLCM 51

BÜHLER

customer	474 :P_NR2	+HSS	page **41**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply PLC-system	drawing nr. A474	

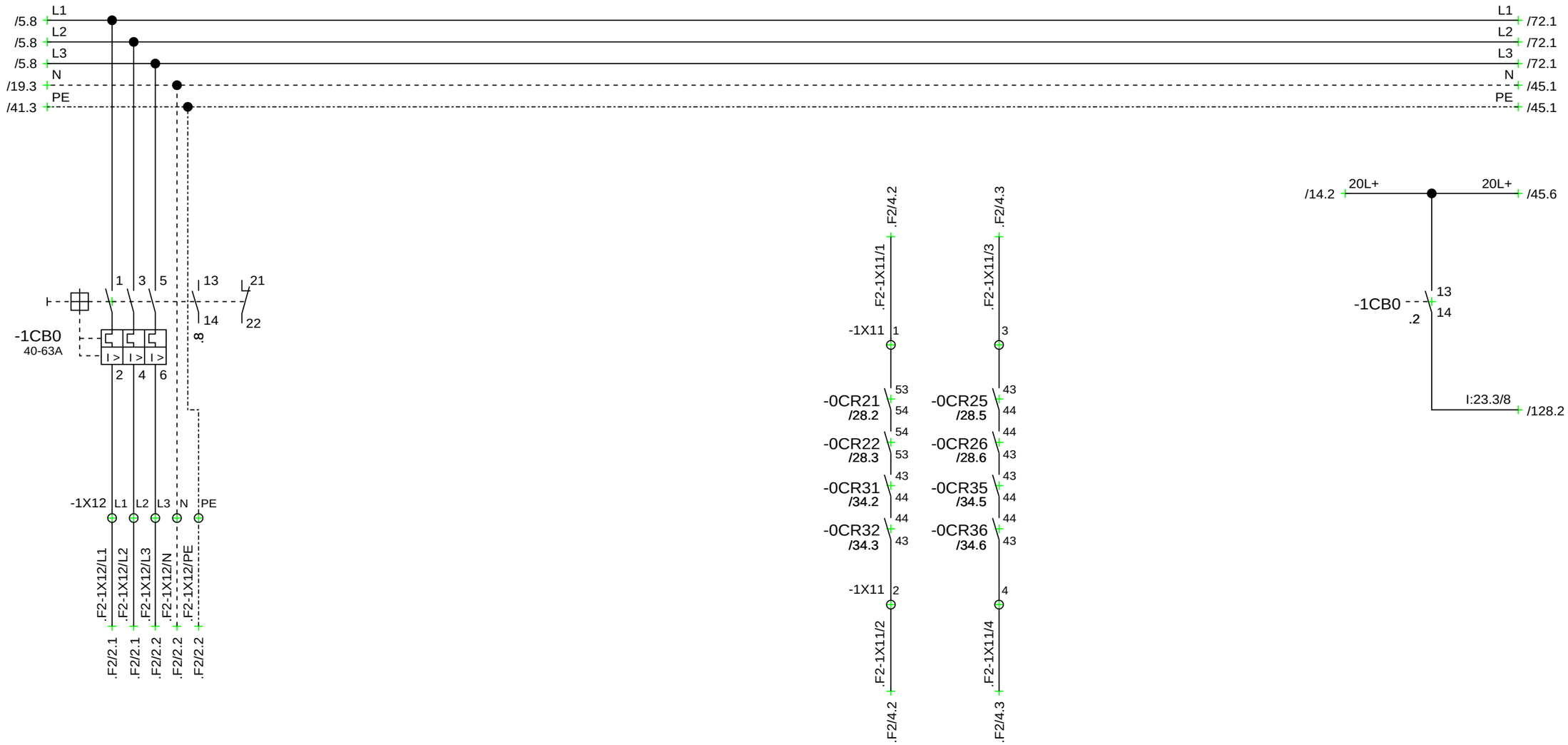
+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2		+HSS	page **42**	
			=A1.F1	of 271	
comm. nr. :P_NR1	laptop interface cable modem		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer		+HSS	page 43
	474 :P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



480VAC Versorgung
Hülsen-Dosiermaschine

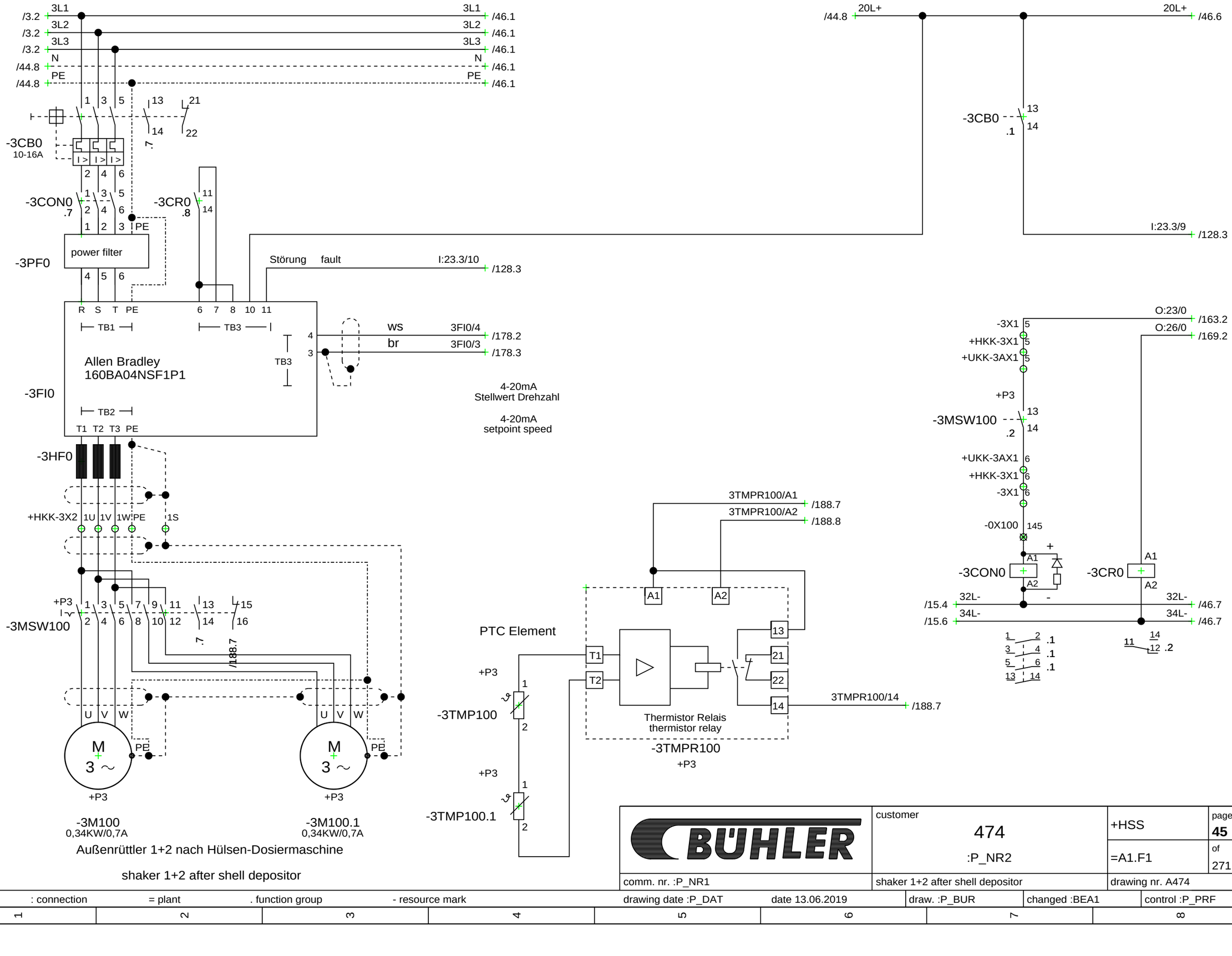
480VAC power supply
shell depositor

Signalaustausch Not-Aus
Hülsen-Dosiermaschine

signal exchange emergency stop
shell depositor

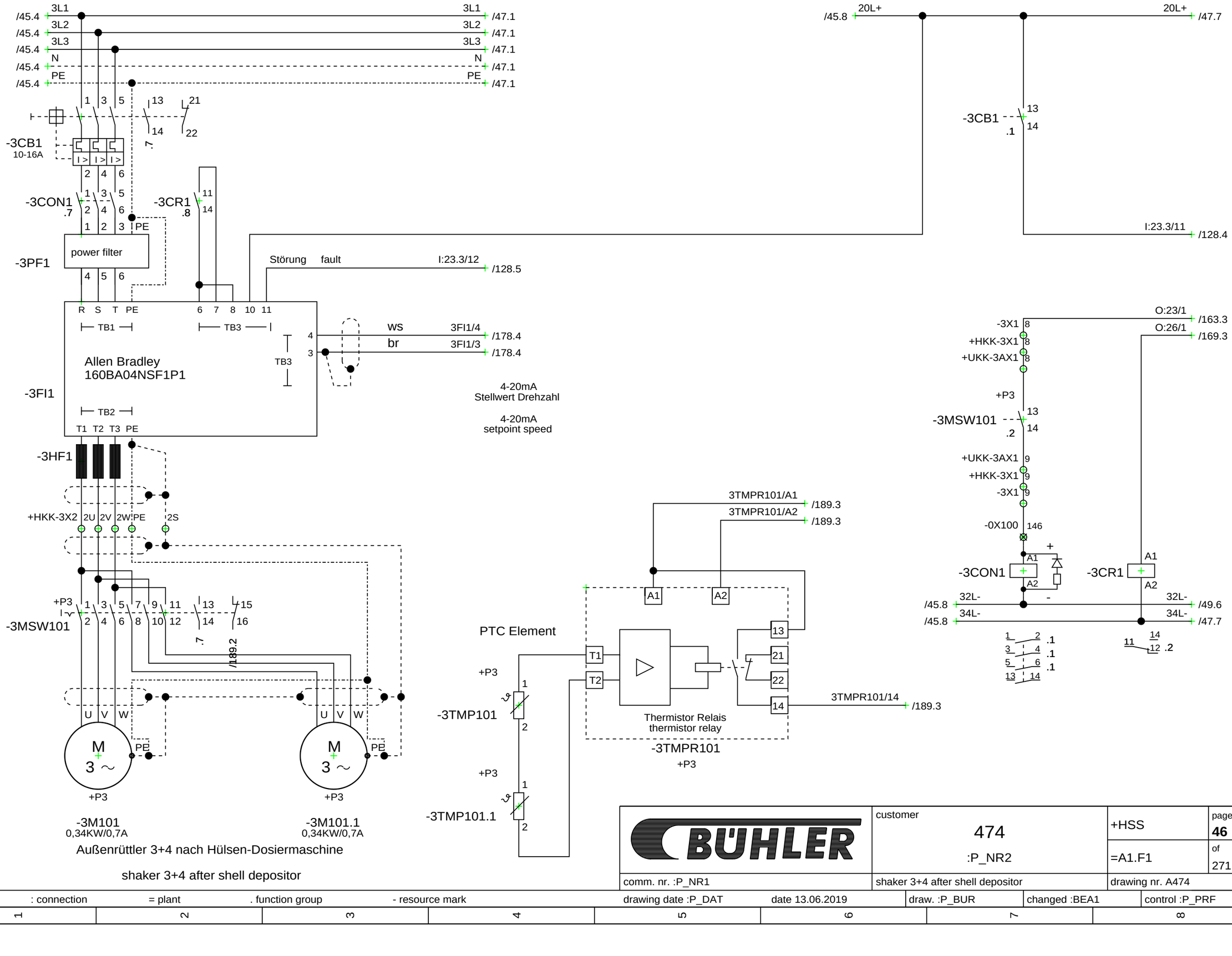
BÜHLER	customer 474 :P_NR2	+HSS	page **44**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply shell depositor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



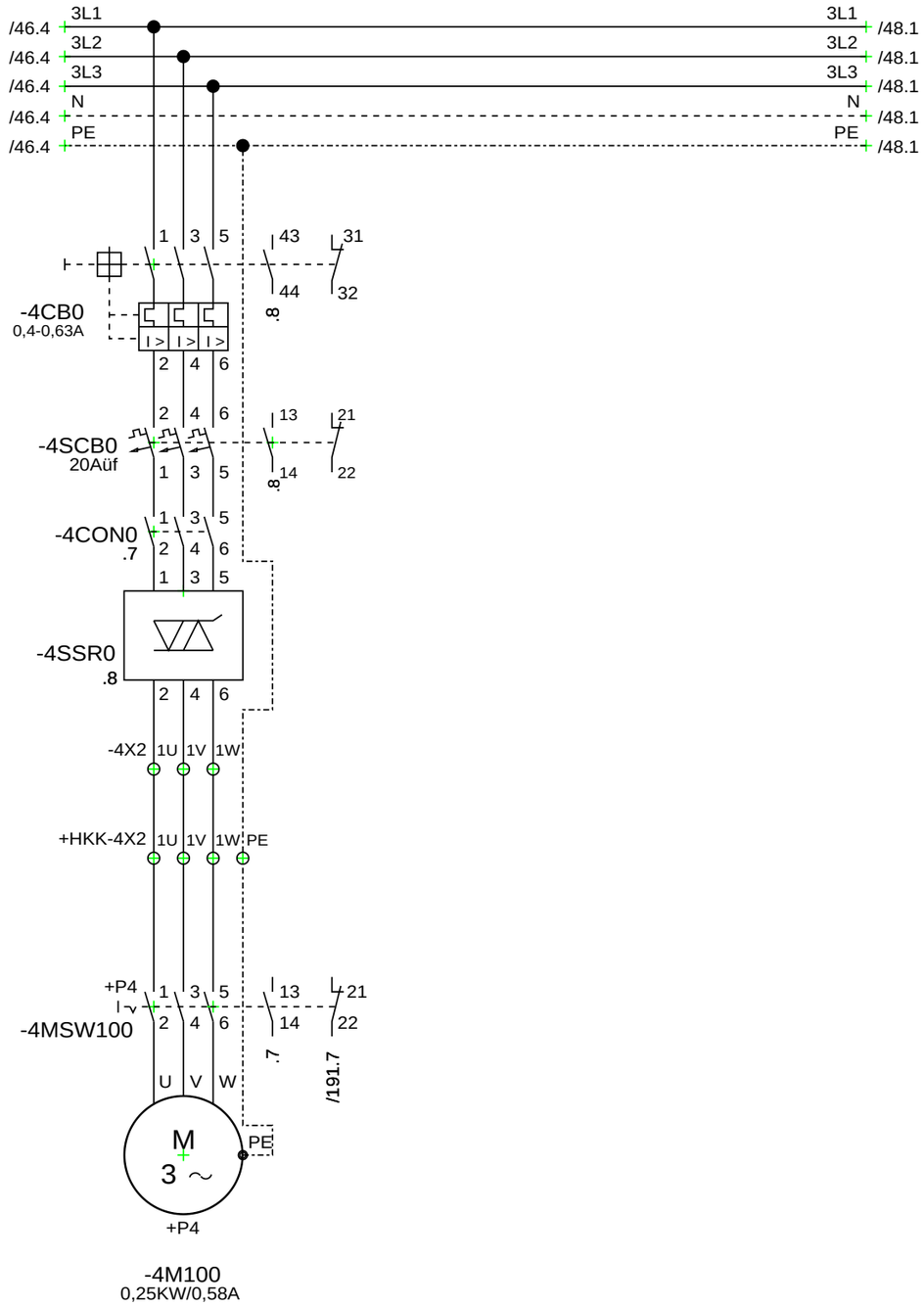
BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 45 of 271
comm. nr. :P_NR1	shaker 1+2 after shell depositor		drawing nr. A474

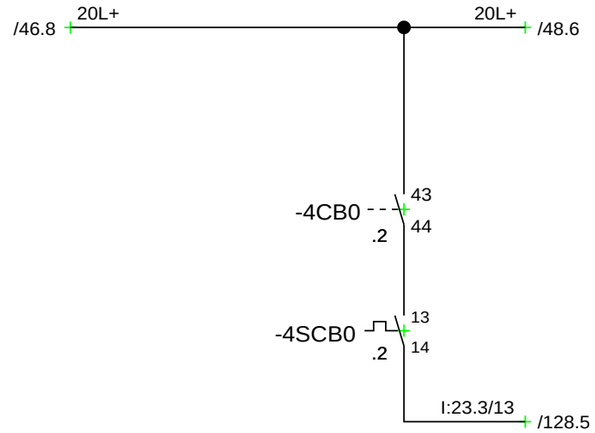
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

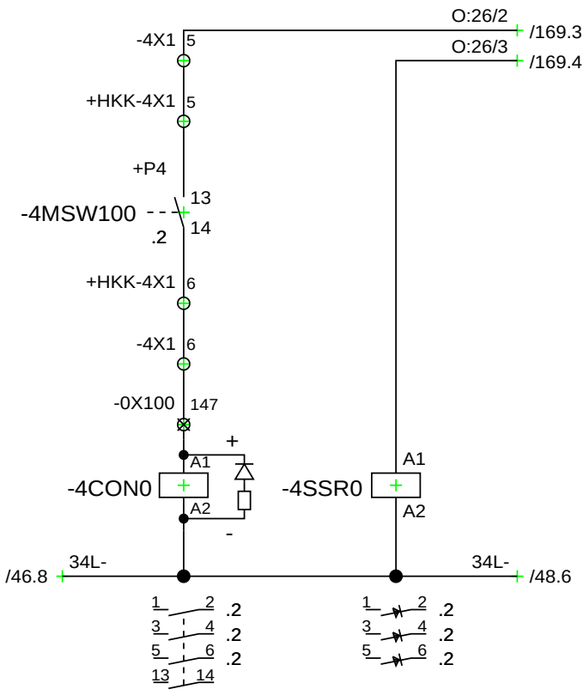


BÜHLER	customer 474 :P_NR2	+HSS	page 46
		=A1.F1	of 271
comm. nr. :P_NR1	shaker 3+4 after shell depositor		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF





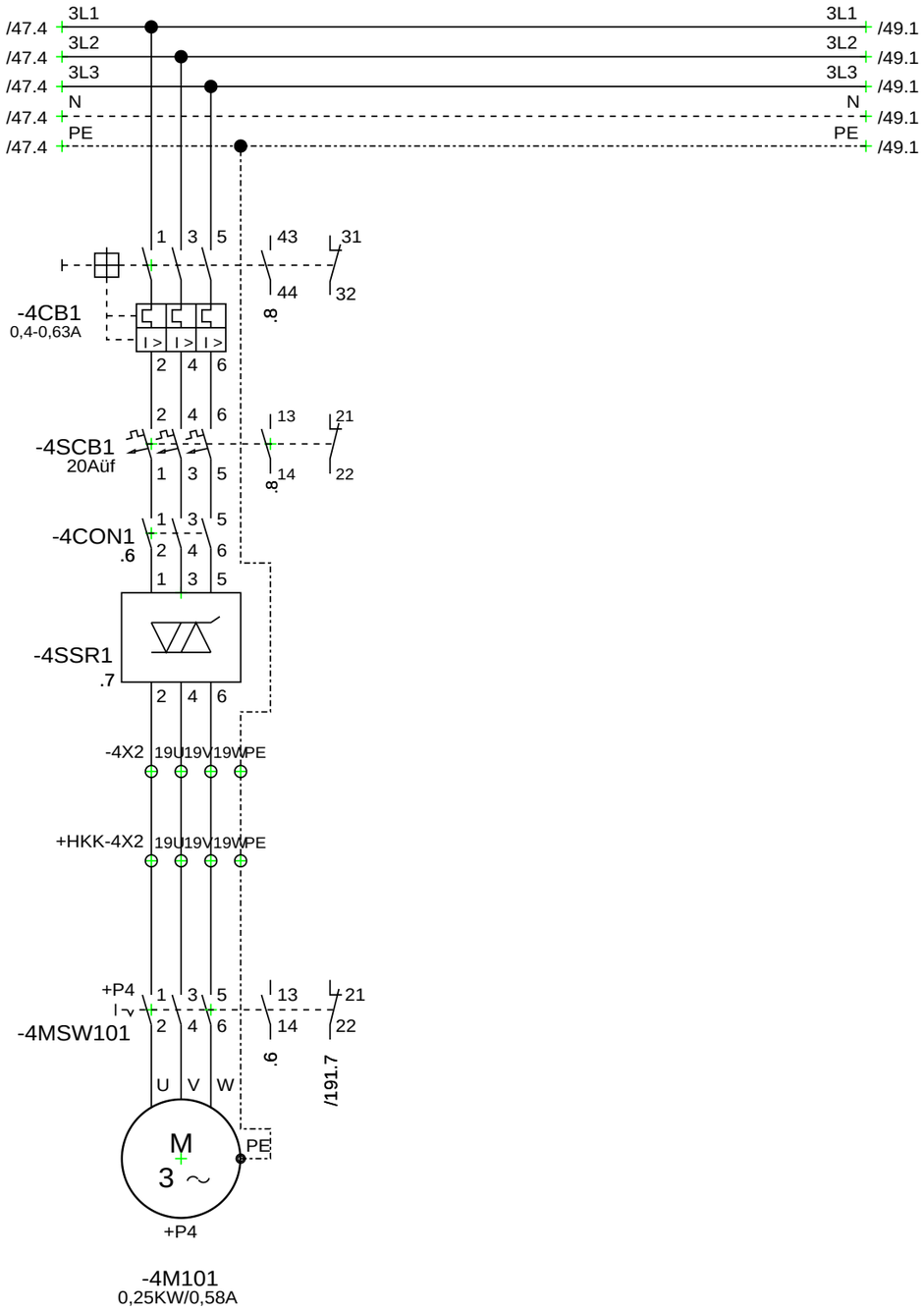


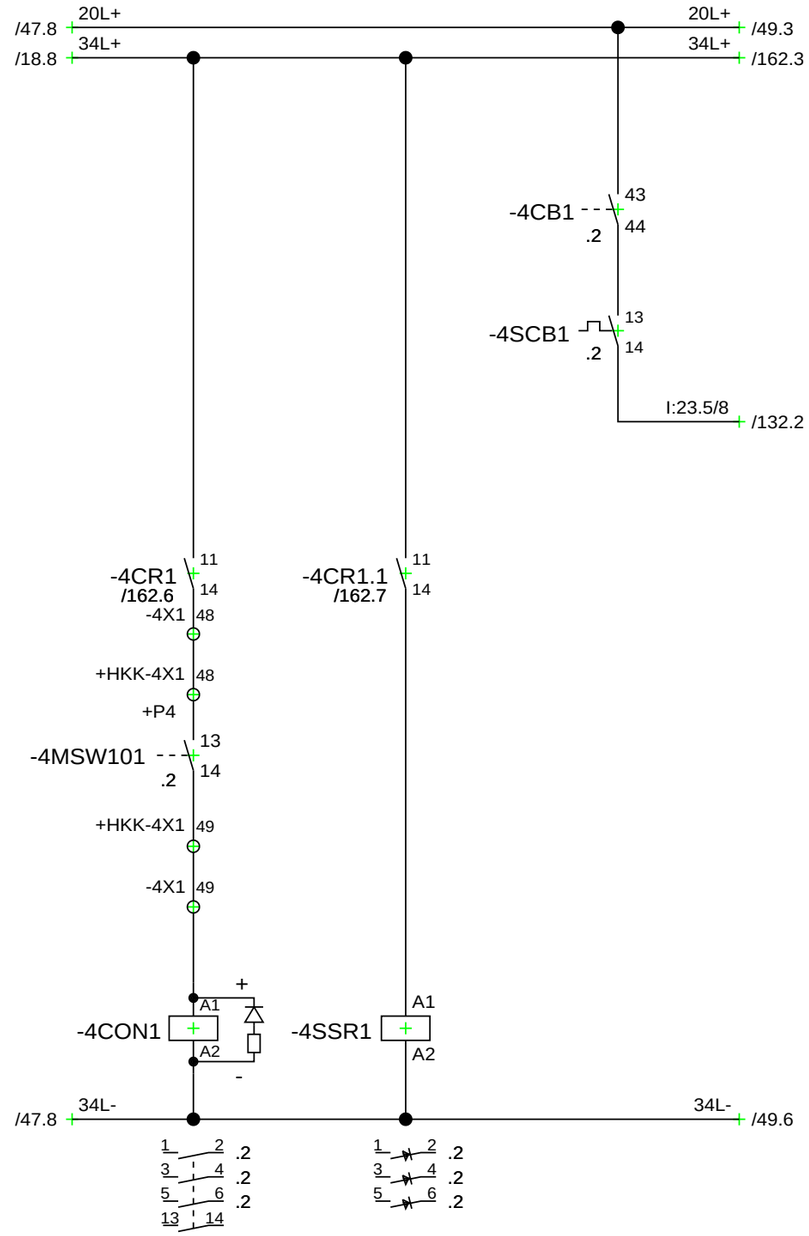
Antrieb 1. Wender
Hülsenbildung (Getriebebremsmotor)

drive 1. mould turn over
device shell forming

BÜHLER	customer 474 :P_NR2	+HSS	page 47
		=A1.F1	of 271
comm. nr. :P_NR1	1.drive mould turn over device	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



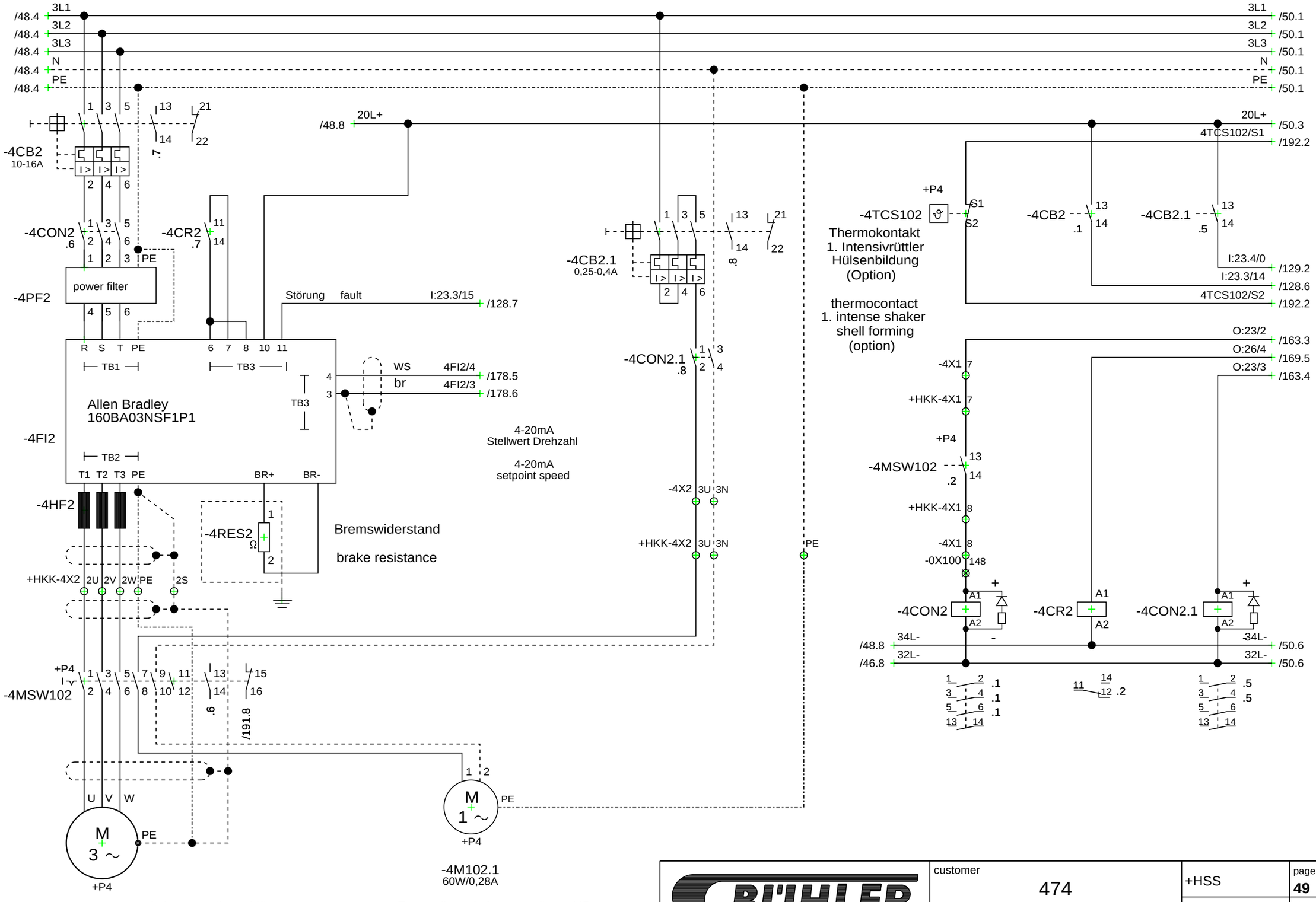


Antrieb 2. Wender
Hülsenbildung (Getriebebremsmotor)

drive 2. mould turn over
device shell forming

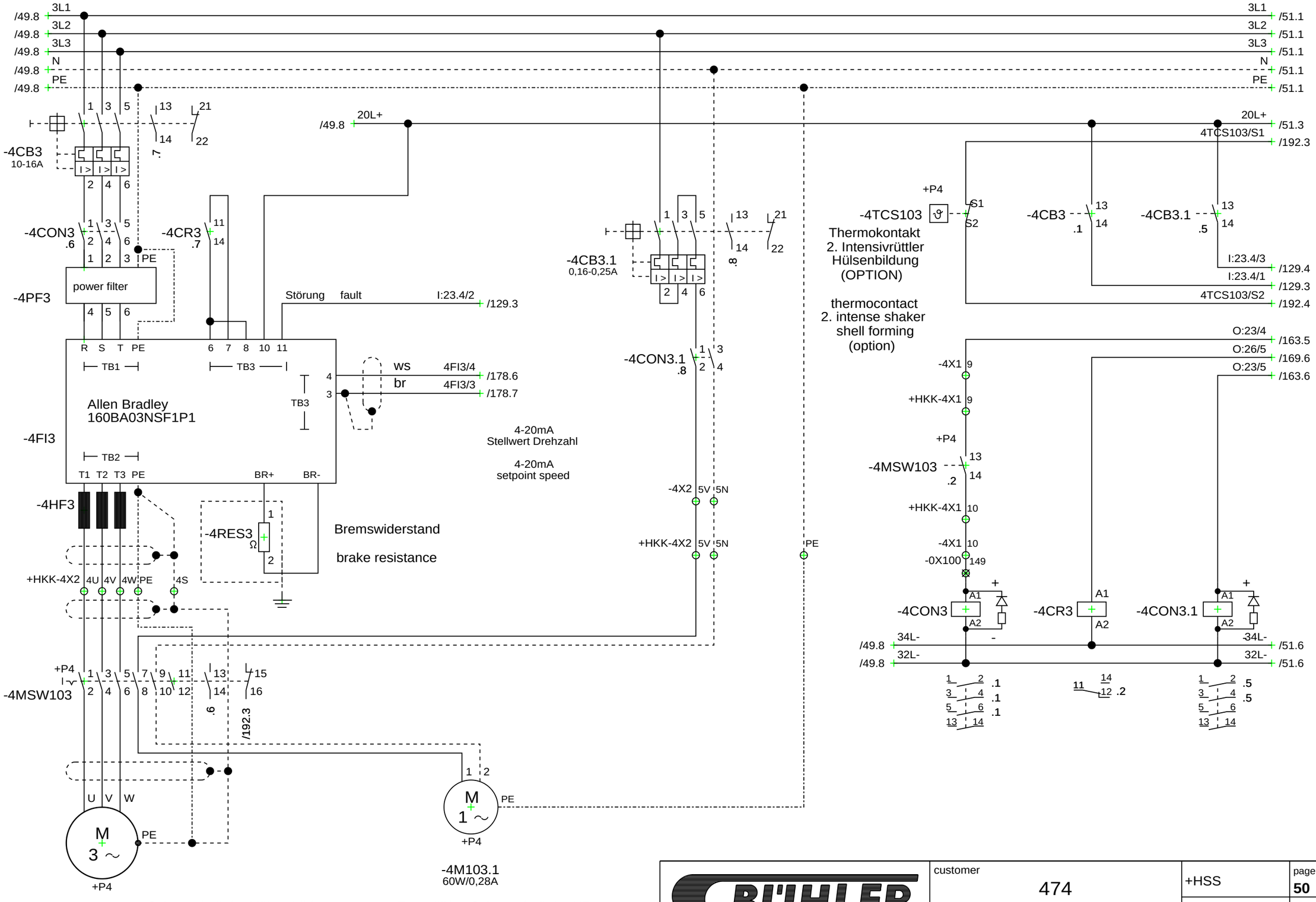
BÜHLER	customer 474 :P_NR2	+HSS	page 48
		=A1.F1	of 271
comm. nr. :P_NR1	2.drive mould turn over device	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



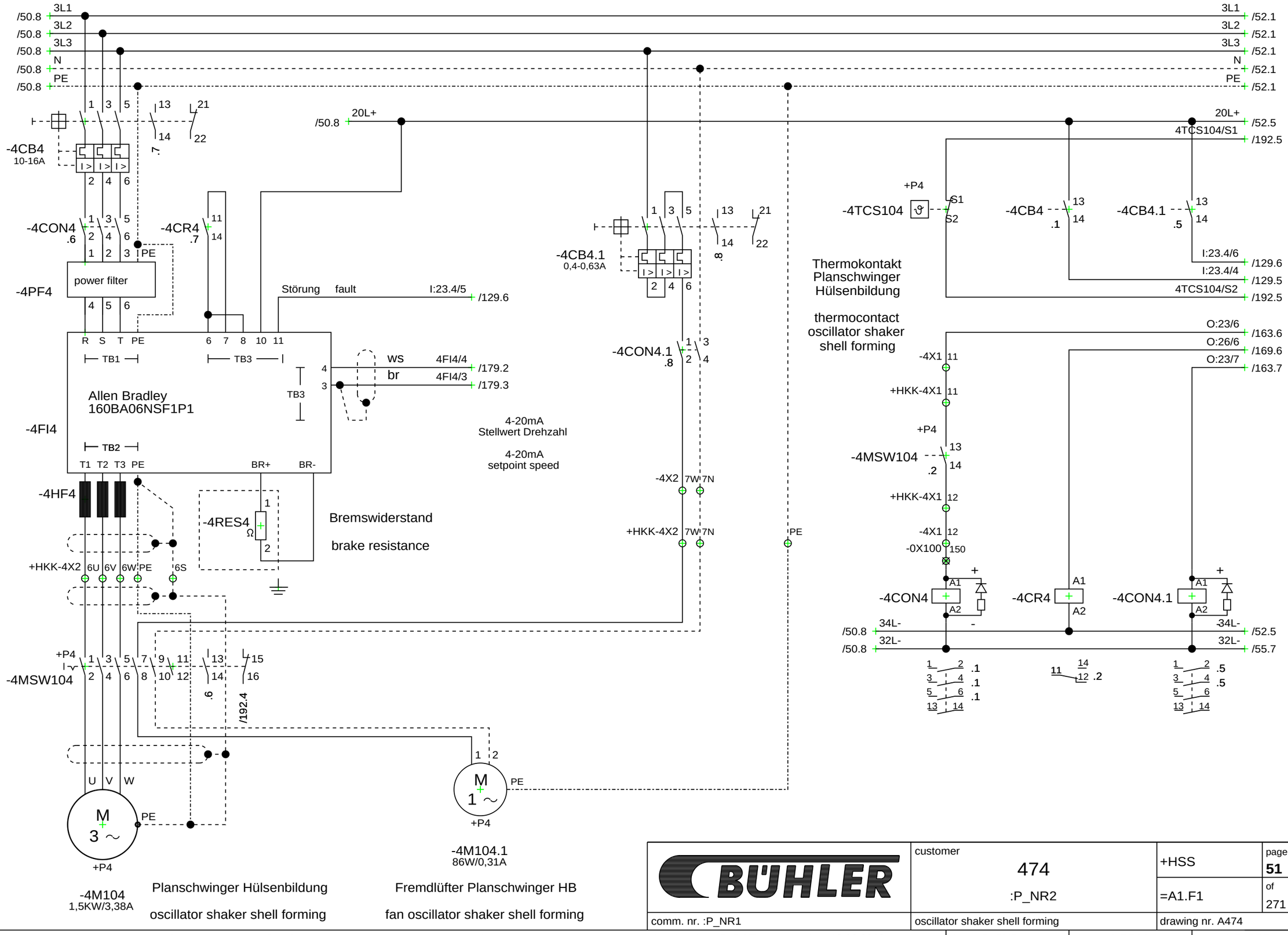
BÜHLER	customer 474 :P_NR2	+HSS	page 49
		=A1.F1	of 271
comm. nr. :P_NR1	1. intense shaker shell forming	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



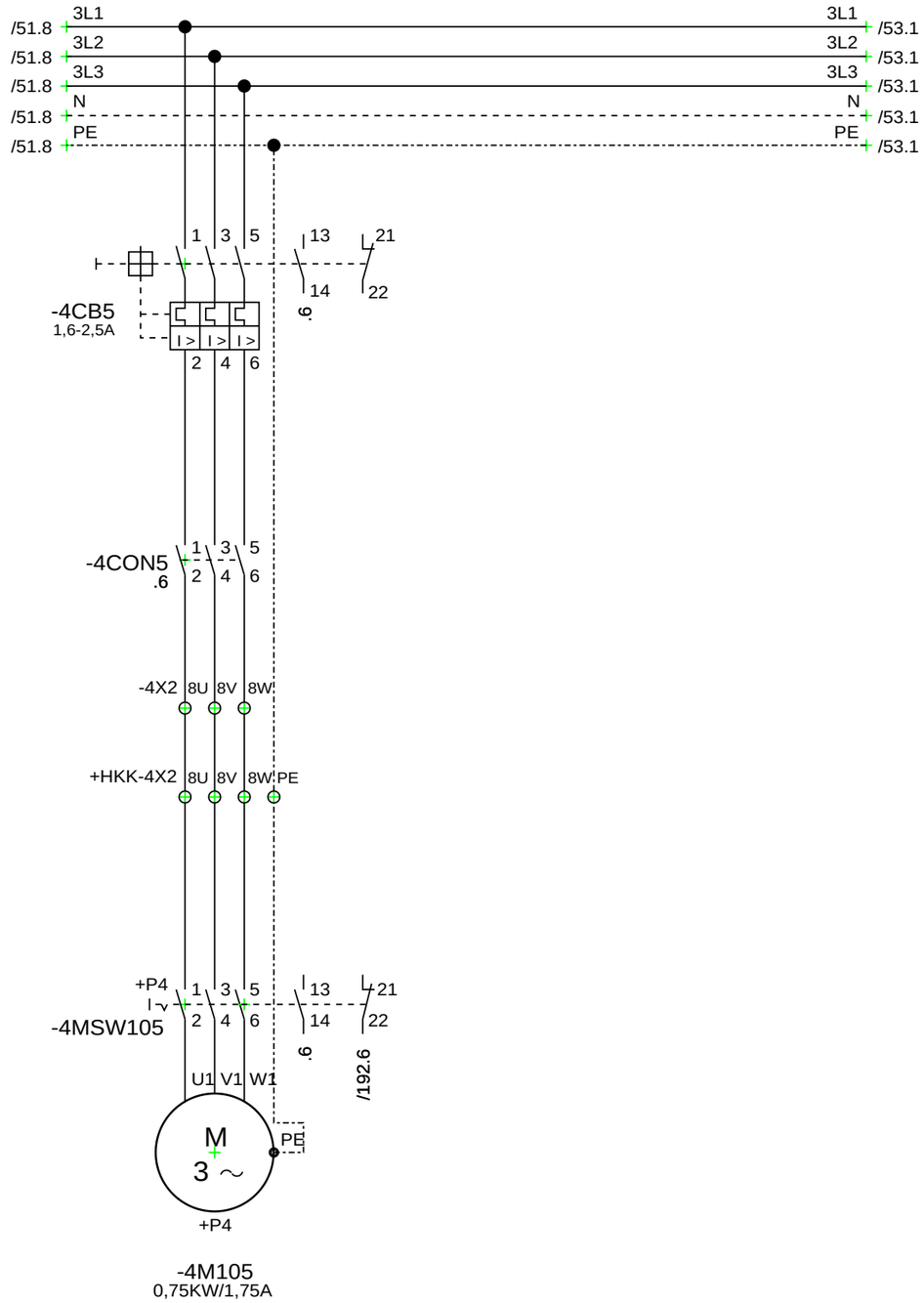
BÜHLER	customer 474 :P_NR2	+HSS	page 50
		=A1.F1	of 271
comm. nr. :P_NR1	2. intense shaker shell forming	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



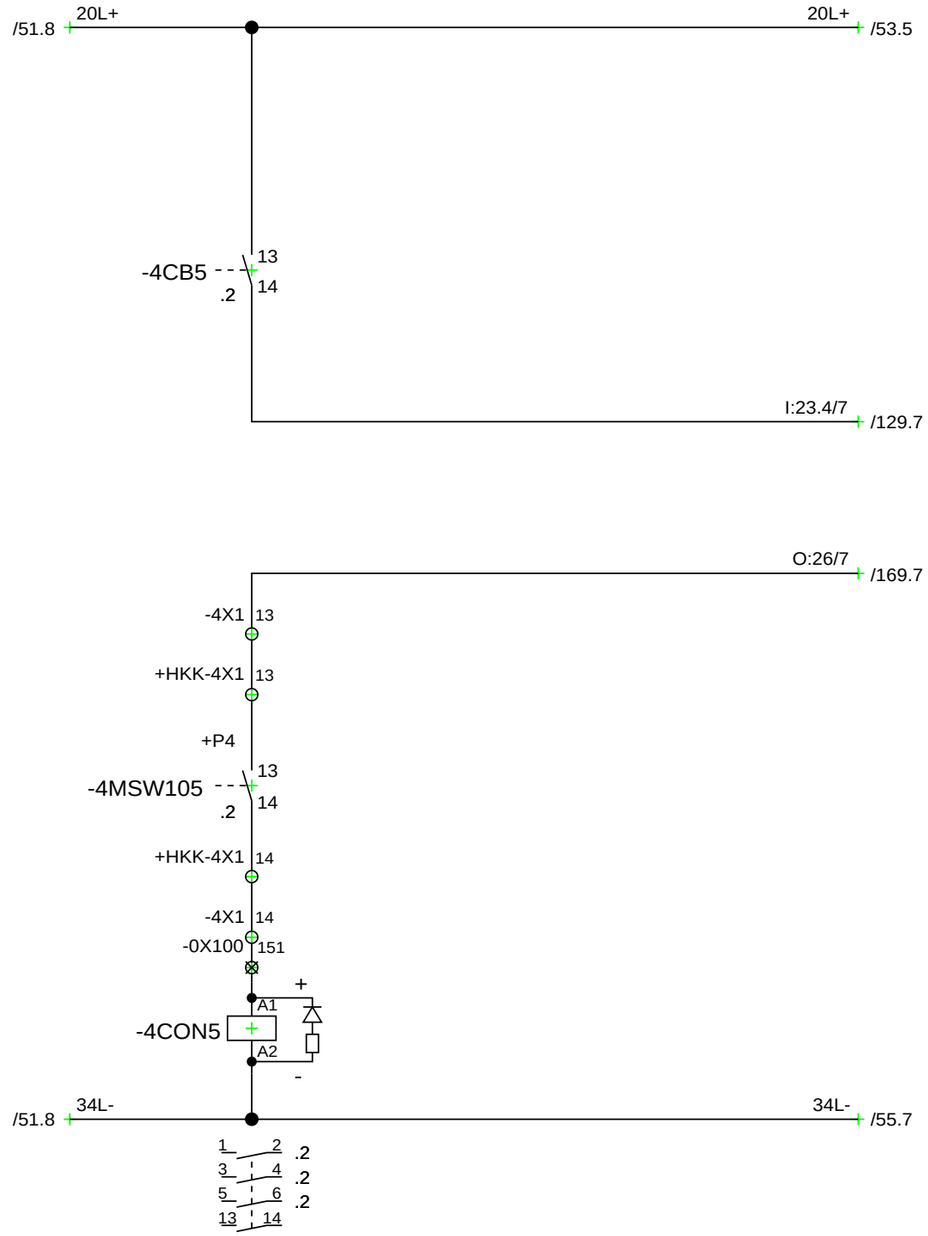
BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 51 of 271
comm. nr. :P_NR1	oscillator shaker shell forming	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



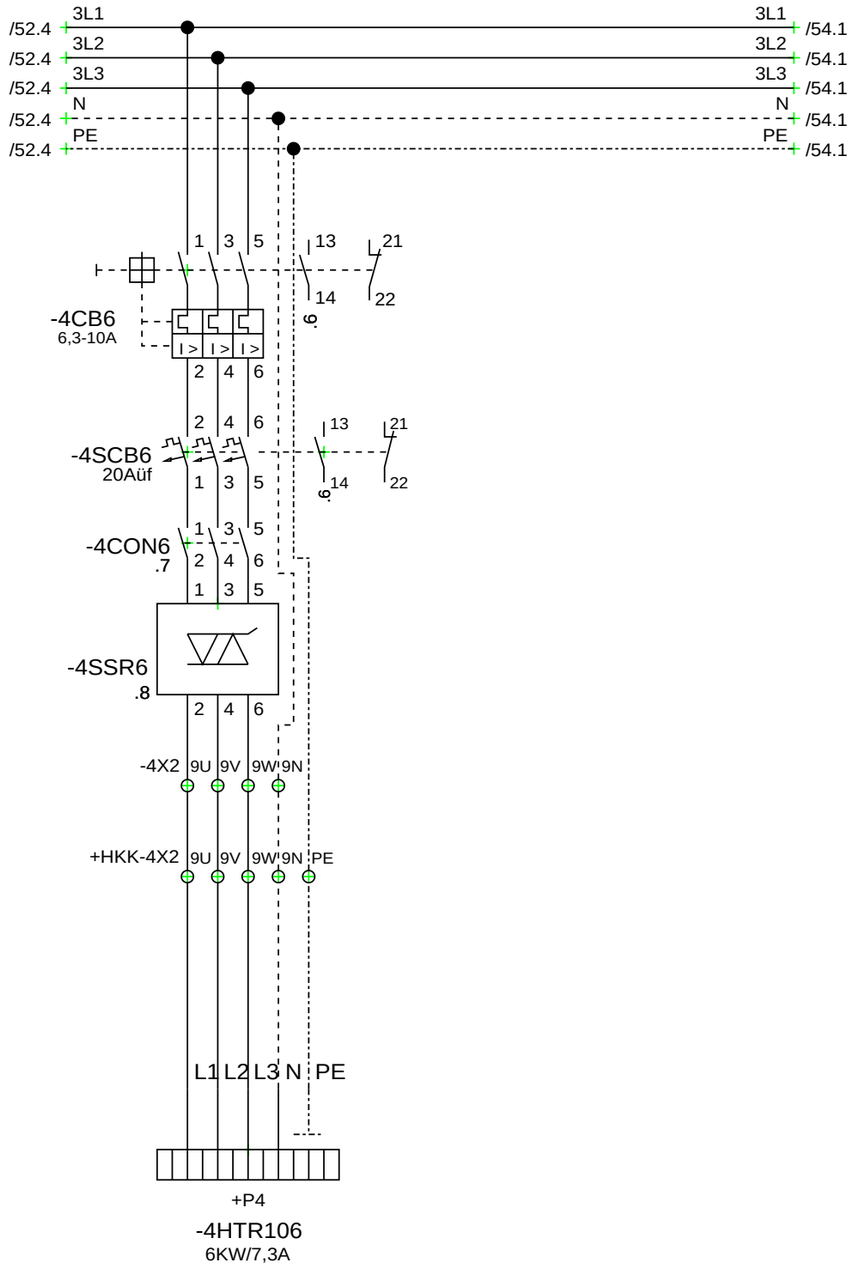
Stahbandantrieb Hülsenbildung

belt drive shell forming



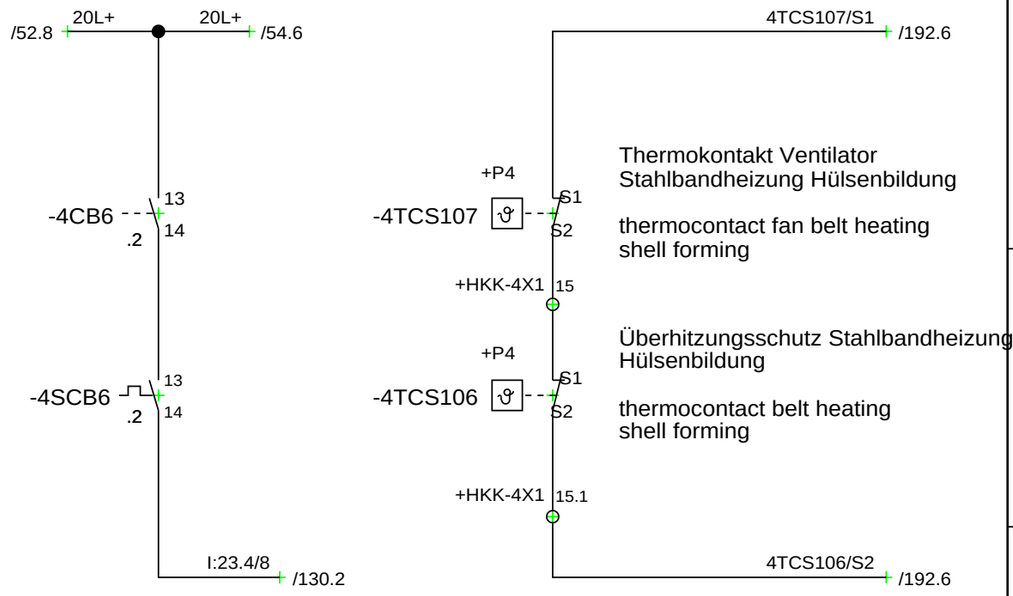
BÜHLER	customer 474 :P_NR2	+HSS	page 52
		=A1.F1	of 271
comm. nr. :P_NR1	belt drive shell forming	drawing nr. A474	

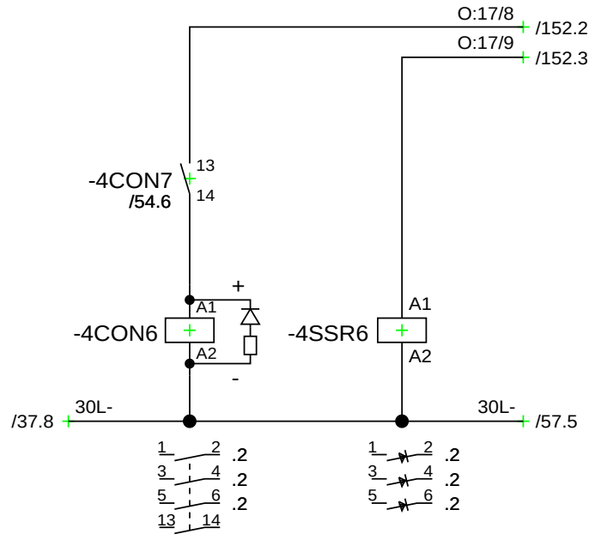
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Stahlbandheizung Hülsenbildung

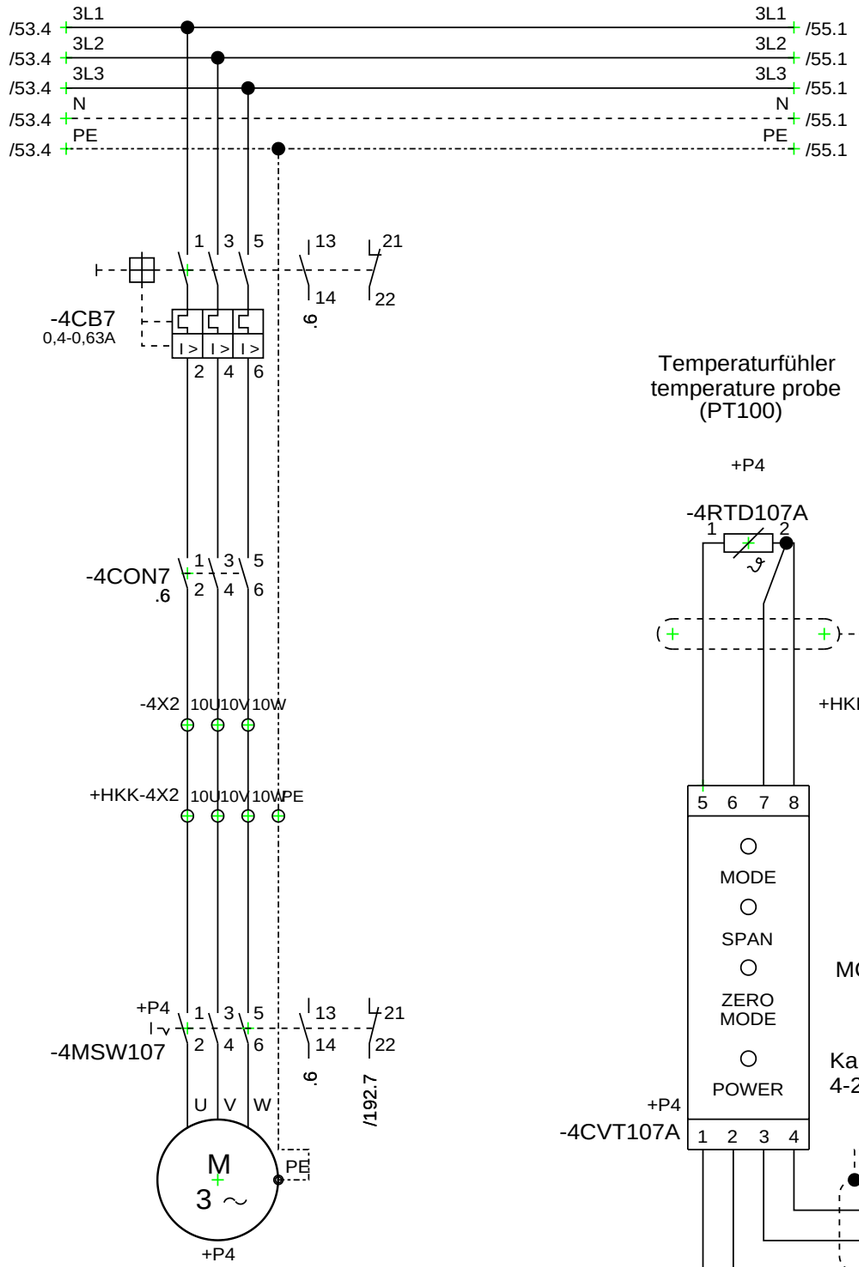
belt heating shell forming

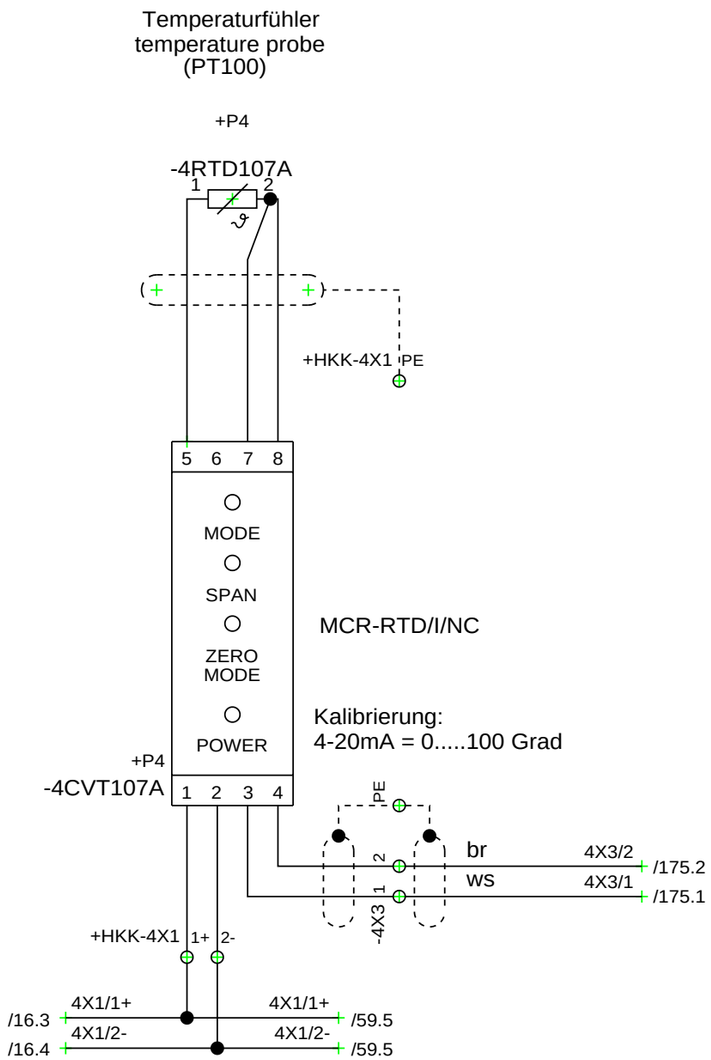


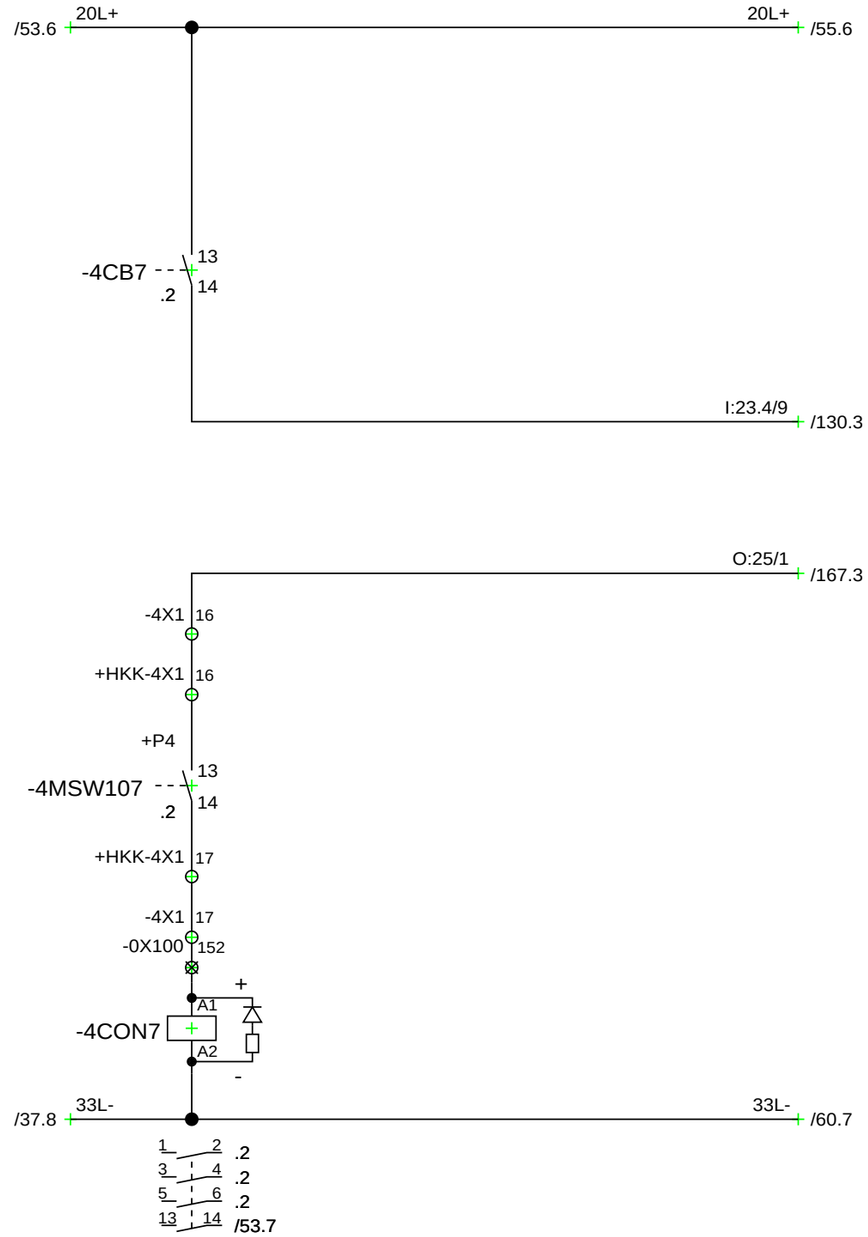


BÜHLER	customer 474 :P_NR2	+HSS	page 53
		=A1.F1	of 271
comm. nr. :P_NR1	belt heating shell forming		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

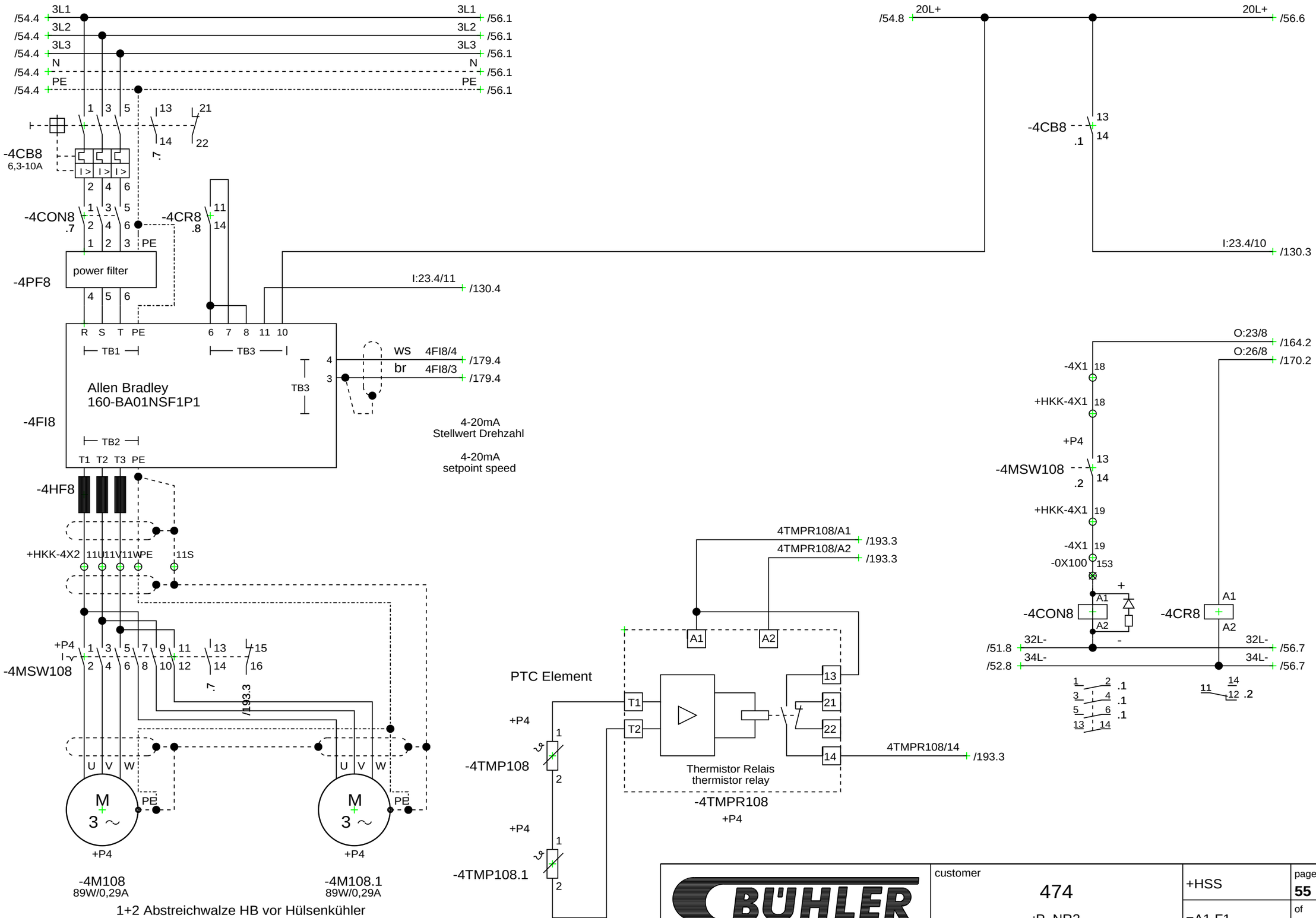






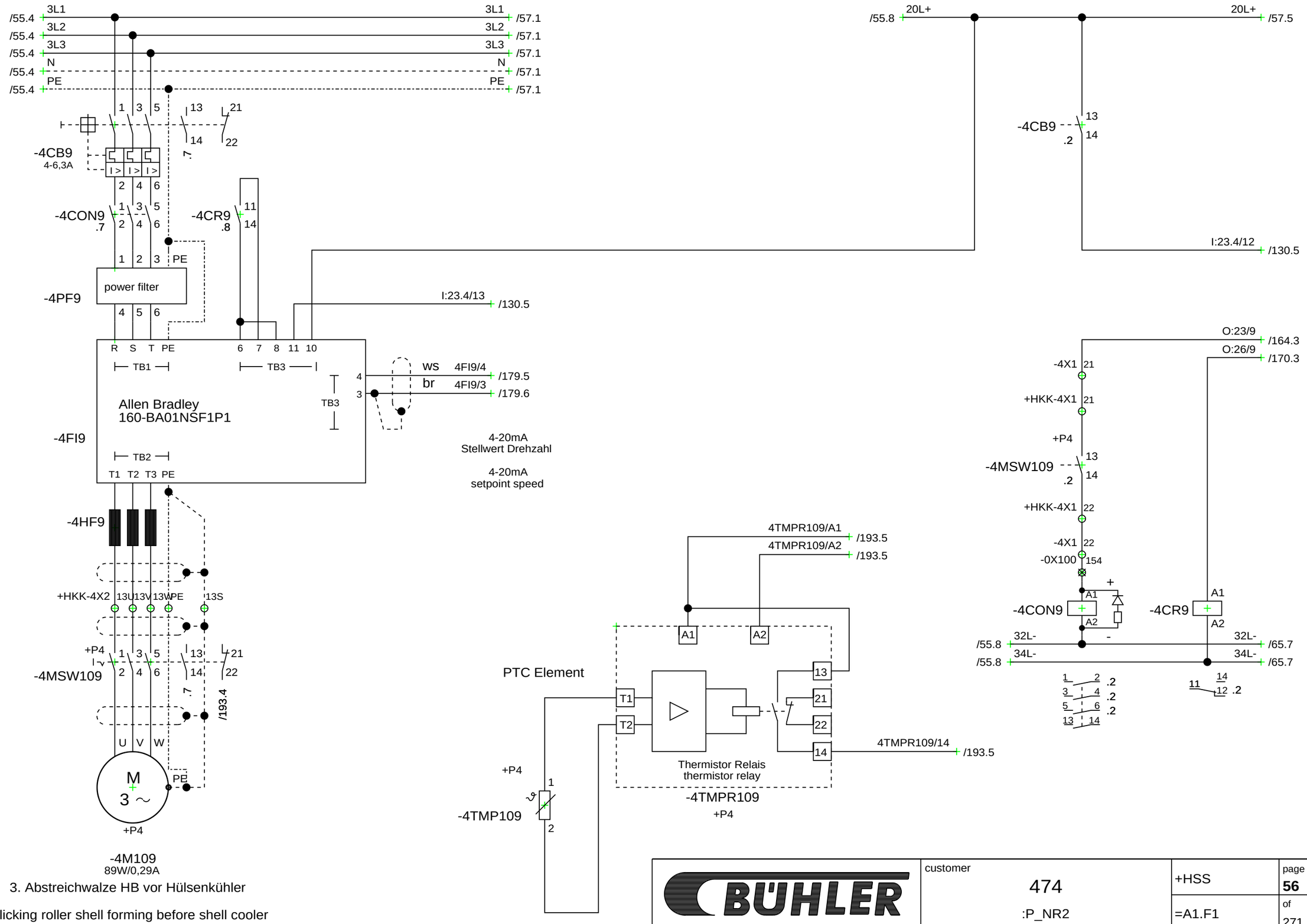
BÜHLER	customer 474 :P_NR2	+HSS	page 54
		=A1.F1	of 271
comm. nr. :P_NR1	fan belt heating shell forming	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



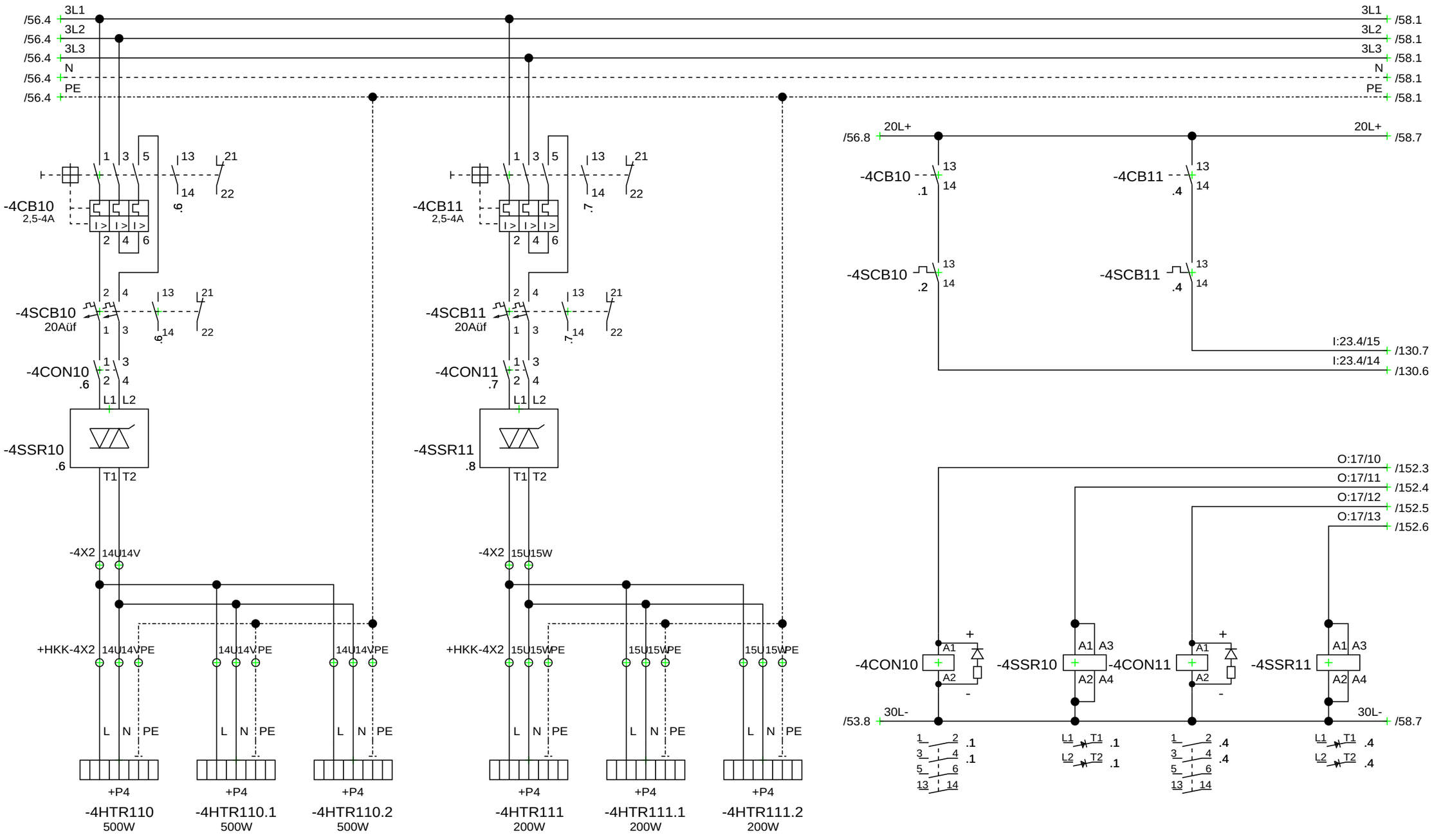
BÜHLER	customer 474 :P_NR2	+HSS	page 55
		=A1.F1	of 271
comm. nr. :P_NR1	1+2 licking roller before shell cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 56
		=A1.F1	of 271
comm. nr. :P_NR1	3. licking roller before shell cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Walzenheizung Leckwalze 1-3
vor Hülsenkühler

heating licking roller 1-3
before shell cooler

Schaberheizung Leckwalze 1-3
vor Hülsenkühler

scraper heating licking roller 1-3
before shell cooler

BÜHLER	customer 474 :P_NR2	+HSS	page 57
		=A1.F1	of 271
comm. nr. :P_NR1	heat. licking roller 1-3 before shell c.	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

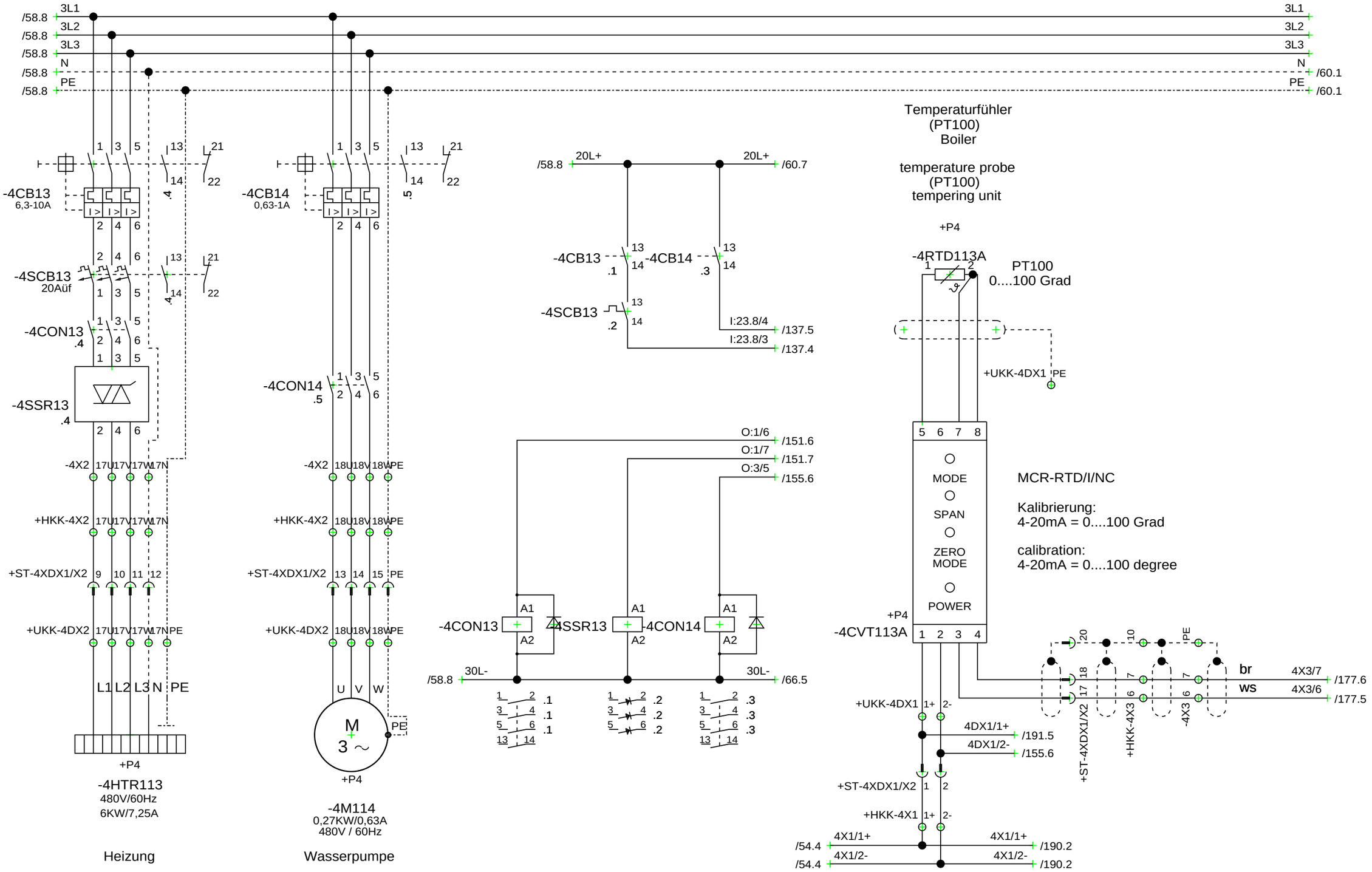


Reserve

spare

BÜHLER	customer 474 :P_NR2	+HSS	page **58**
		=A1.F1	of 271
comm. nr. :P_NR1	side scraper heating before shell cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

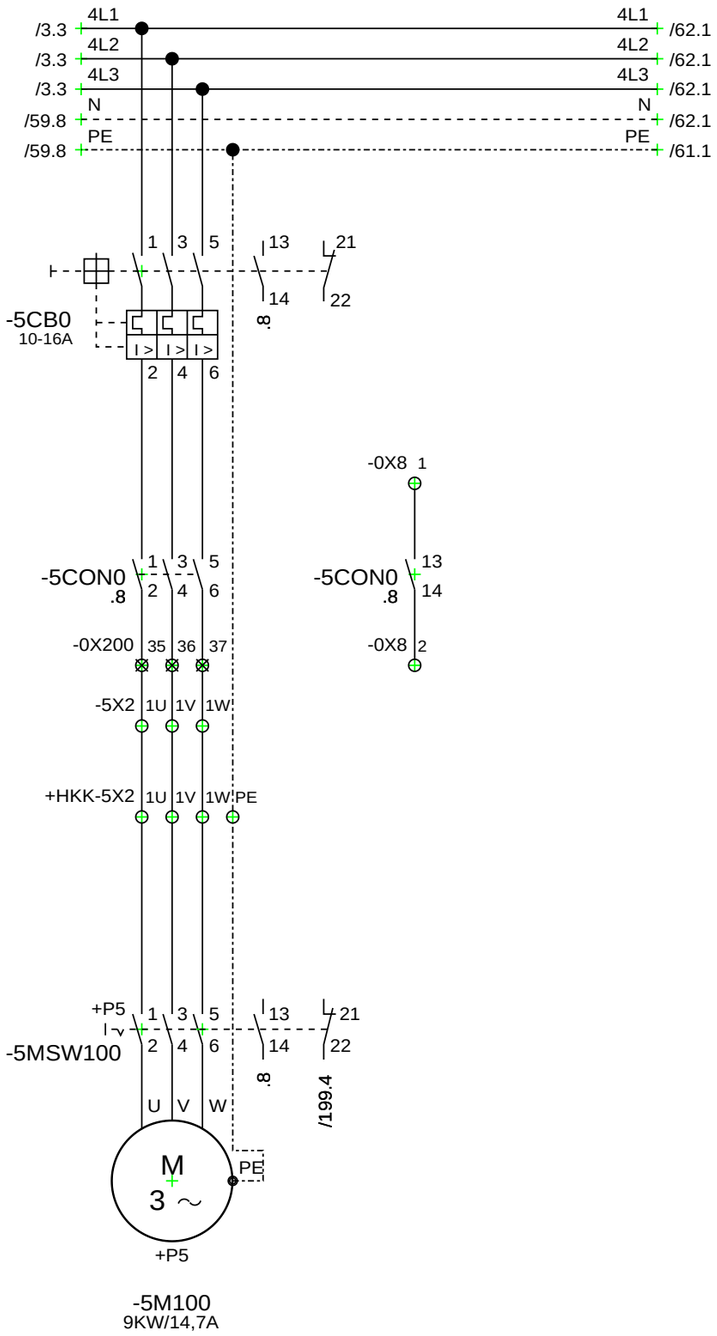


Boiler Massewanne Hülsenbildung

tempering unit mass hopper shell forming

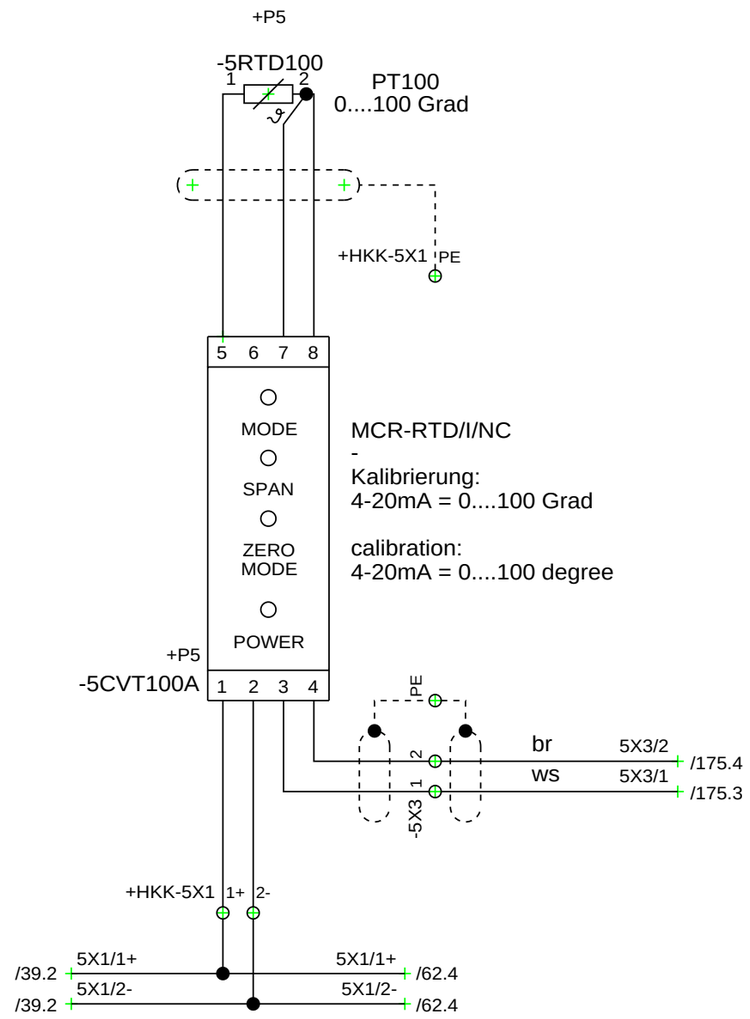
BÜHLER	customer 474 :P_NR2	+HSS	page 59
		=A1.F1	of 271
comm. nr. :P_NR1	tempering unit shell forming		drawing nr. A474

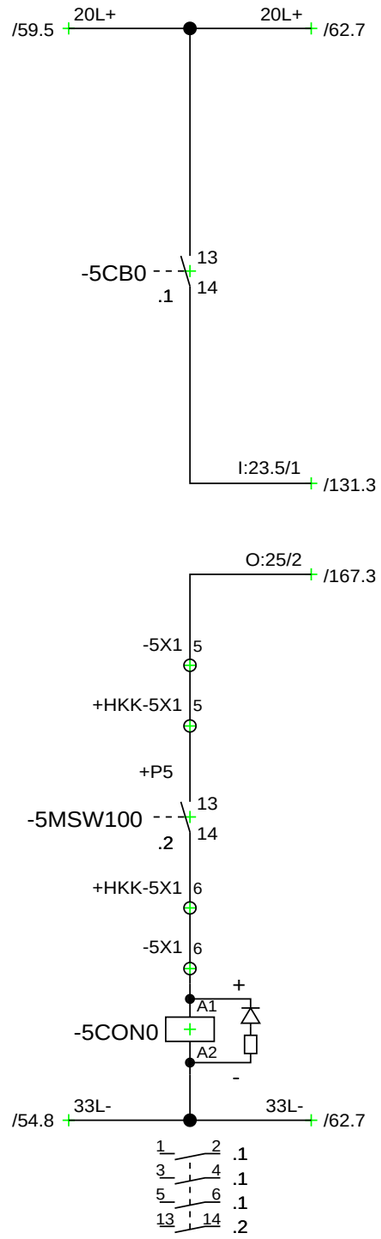
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Temperaturfühler
(PT100)
Hülsenkühler Zone 1

temperature probe
(PT100)
shell cooler zone 1





BÜHLER	customer 474 :P_NR2	+HSS	page 60
		=A1.F1	of 271
comm. nr. :P_NR1	fan shell cooler zone 1	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

/11.3 13L10
/11.3 13N10
/60.3 PE

13L10 /82.1
13N10 /82.1
PE /62.1

Sollwert
0-20mA

5RV100/A
5RV100/B
5RV100/C
5RV100/D

ws 5X3/7 /182.2
br 5X3/8 /182.3

-5X3 11 12
+HKK-5X3 11 12

-5X2 12U12N
5X2/12U /63.6
5X2/12N /63.6
+HKK-5X2 12U12NPE

+P5-5RV100
+P5-5RV100 13 12
+P5-5RV100 L1 N PE

Endstellung
auf zu

open close

Sollwert 0....20mA

setpoint 0....20mA

Stellantrieb
Samson
Typ 3274

Versorgung 120VAC

power supply 120VAC

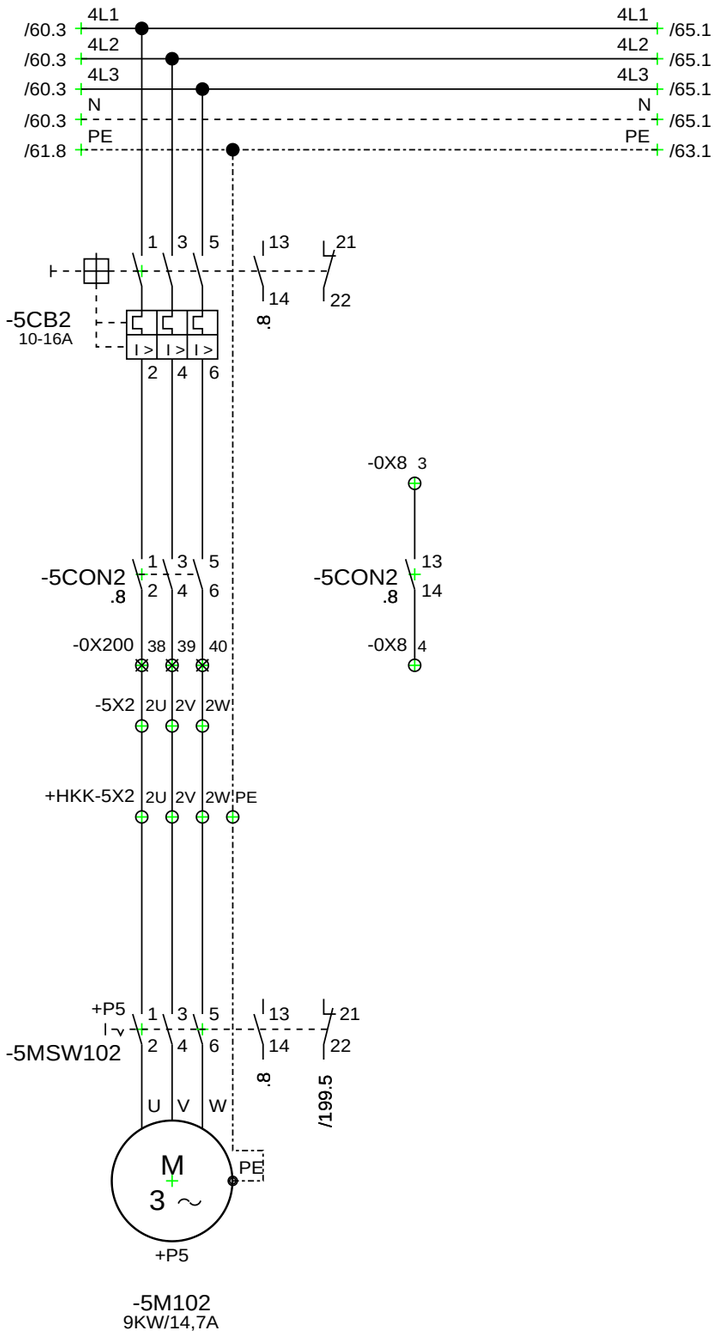
+P5
5RV100

Temperaturreglung Hülsenkühler Zone 1

regulation of the temperature of the shell cooler zone 1

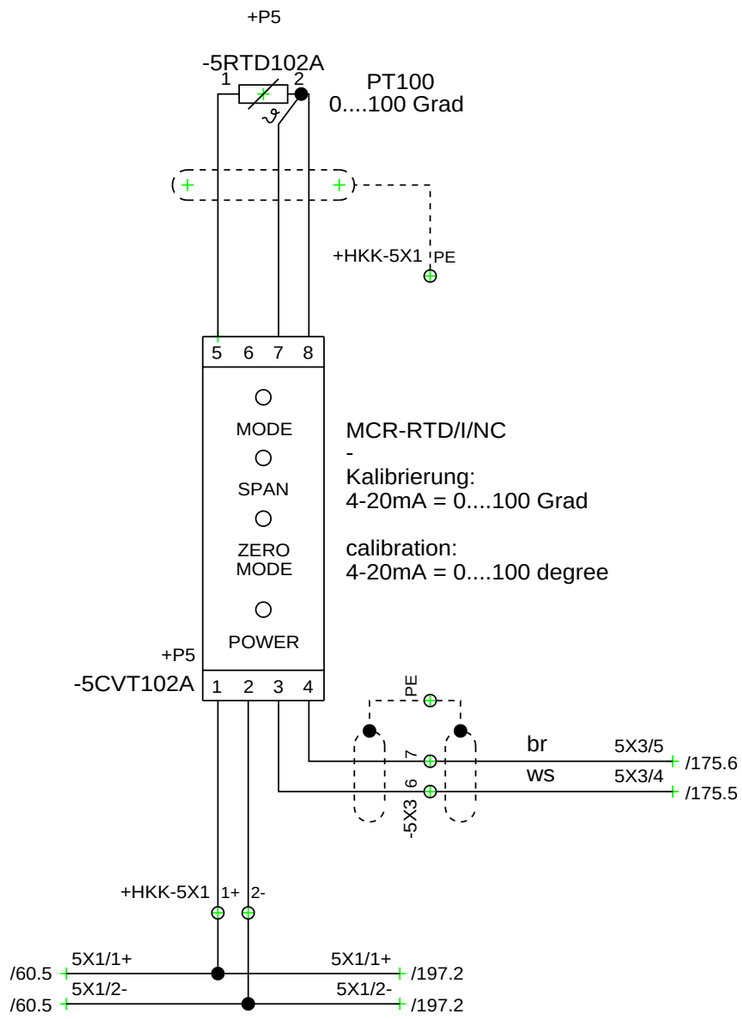
BÜHLER	customer 474 :P_NR2	+HSS	page 61
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve shell cooler zone 1	drawing nr. A474	

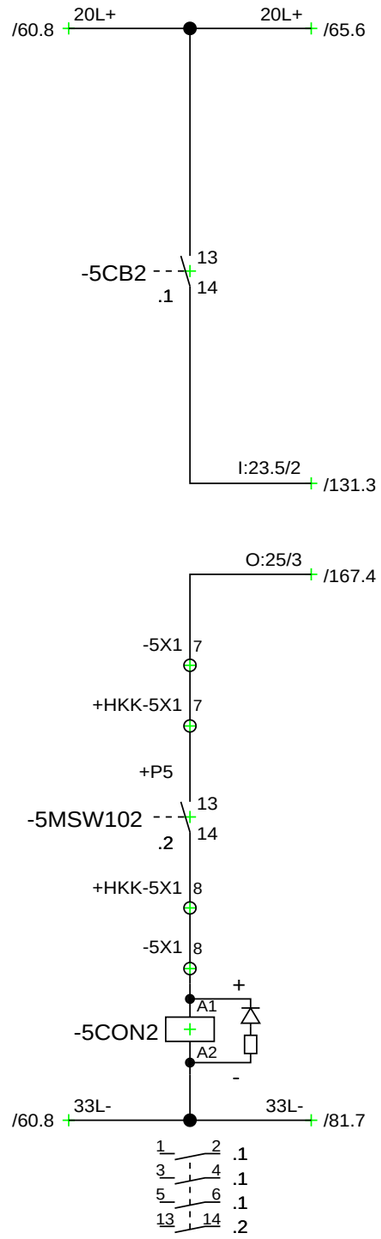
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



Temperaturfühler
(PT100)
Hülsenkühler Zone 2

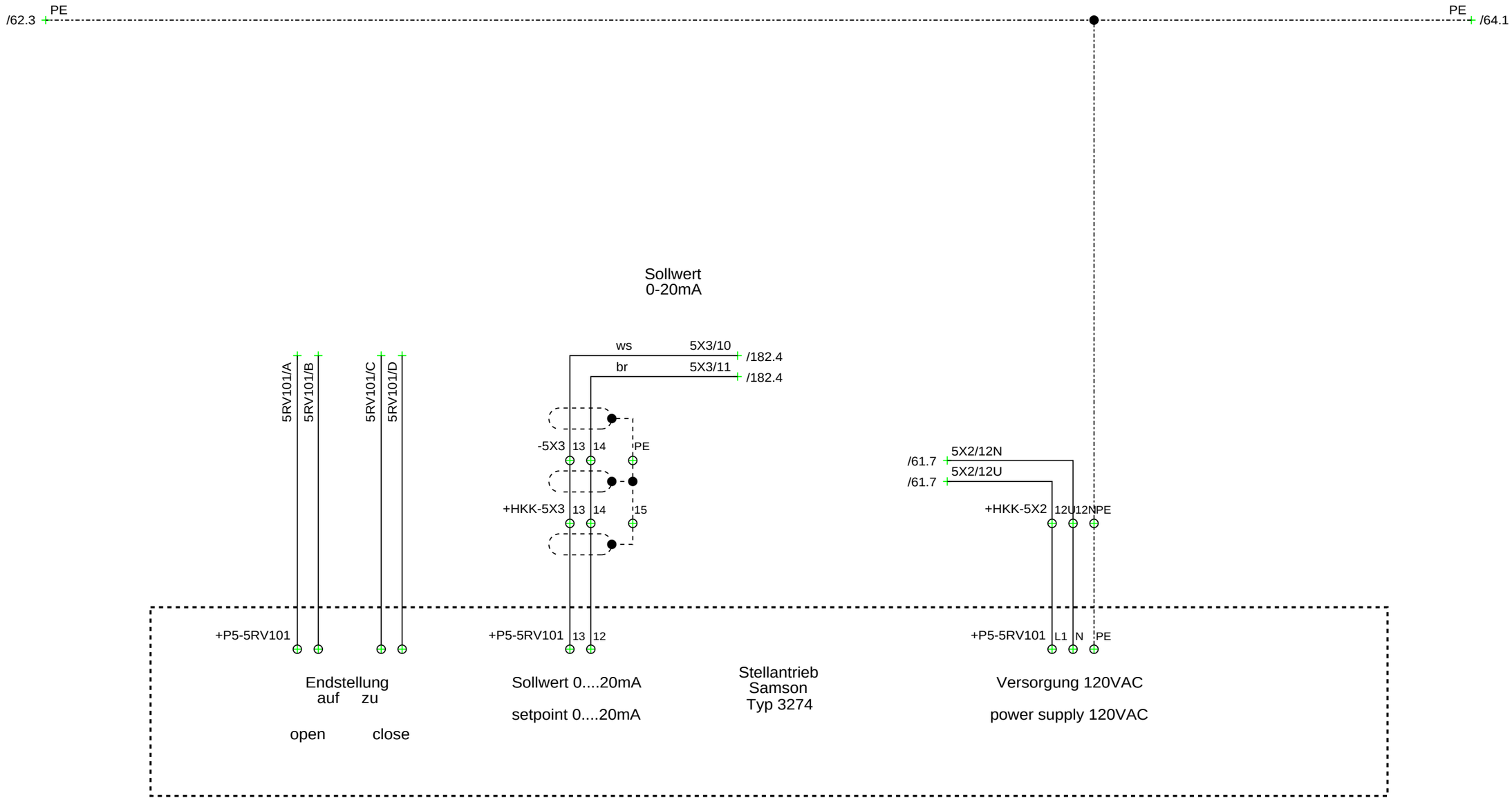
temperature probe
(PT100)
shell cooler zone 2





BÜHLER	customer 474 :P_NR2	+HSS	page 62
		=A1.F1	of 271
comm. nr. :P_NR1	fan shell cooler zone 2	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



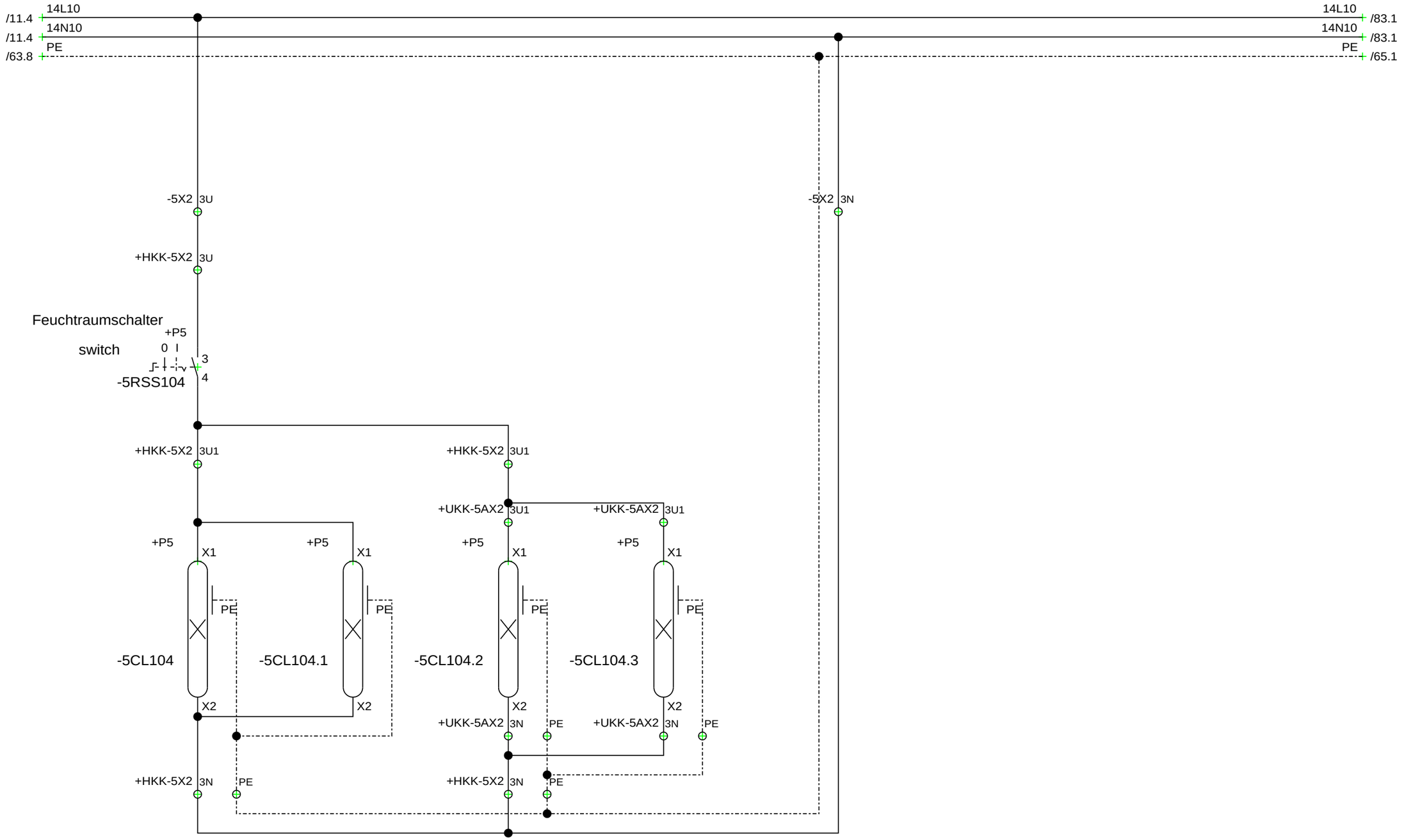
+P5
5RV101

Temperaturreglung Hülsenkühler Zone 2

regulation of the temperature of the shell cooler zone 2

BÜHLER	customer 474 :P_NR2	+HSS	page **63**
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve shell cooler zone 2	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

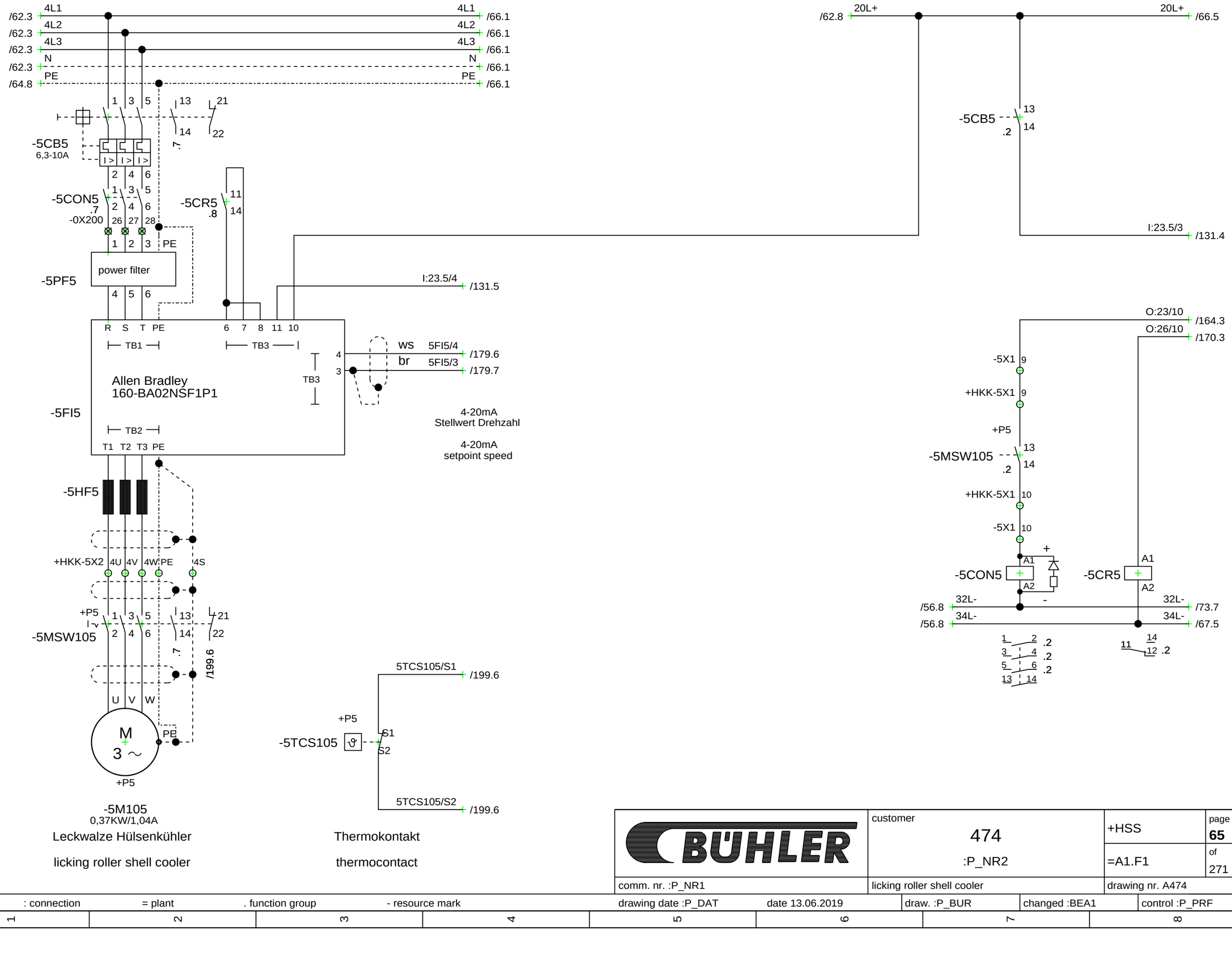


Beleuchtung Hülsenkühler

illumination shell cooler

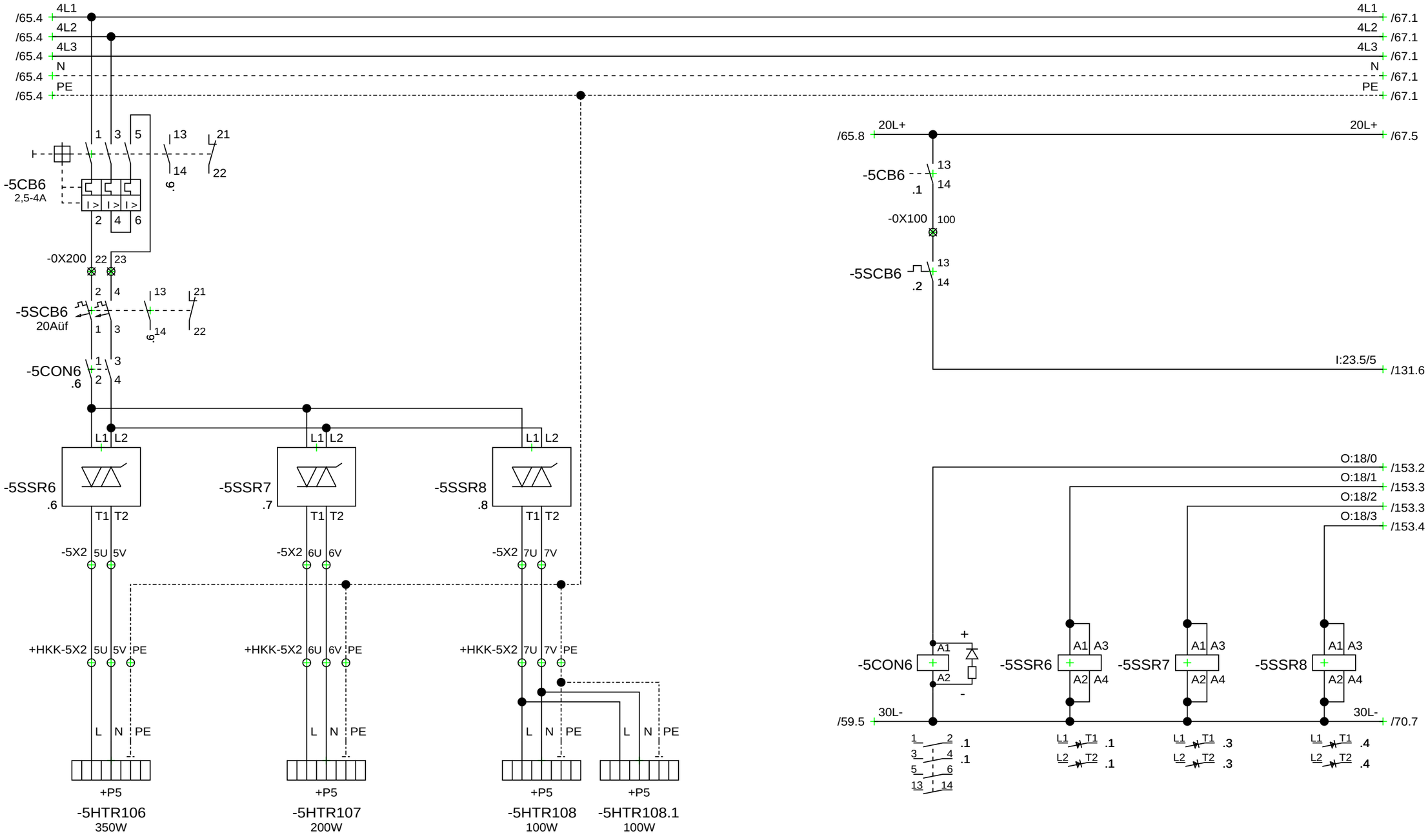
BÜHLER	customer 474 :P_NR2	+HSS	page 64
		=A1.F1	of 271
comm. nr. :P_NR1	illumination shell cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



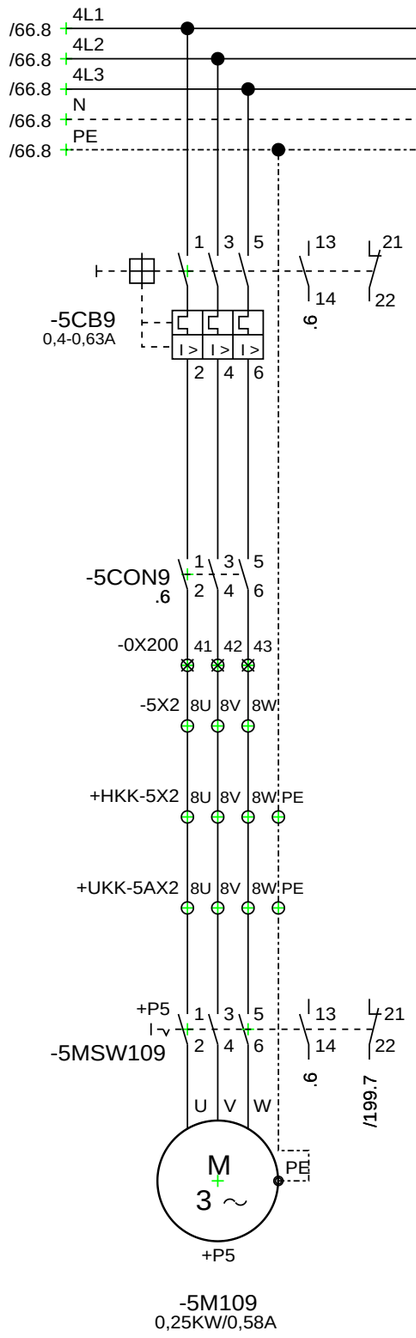
BÜHLER	customer 474 :P_NR2	+HSS	page 65
		=A1.F1	of 271
comm. nr. :P_NR1	licking roller shell cooler		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



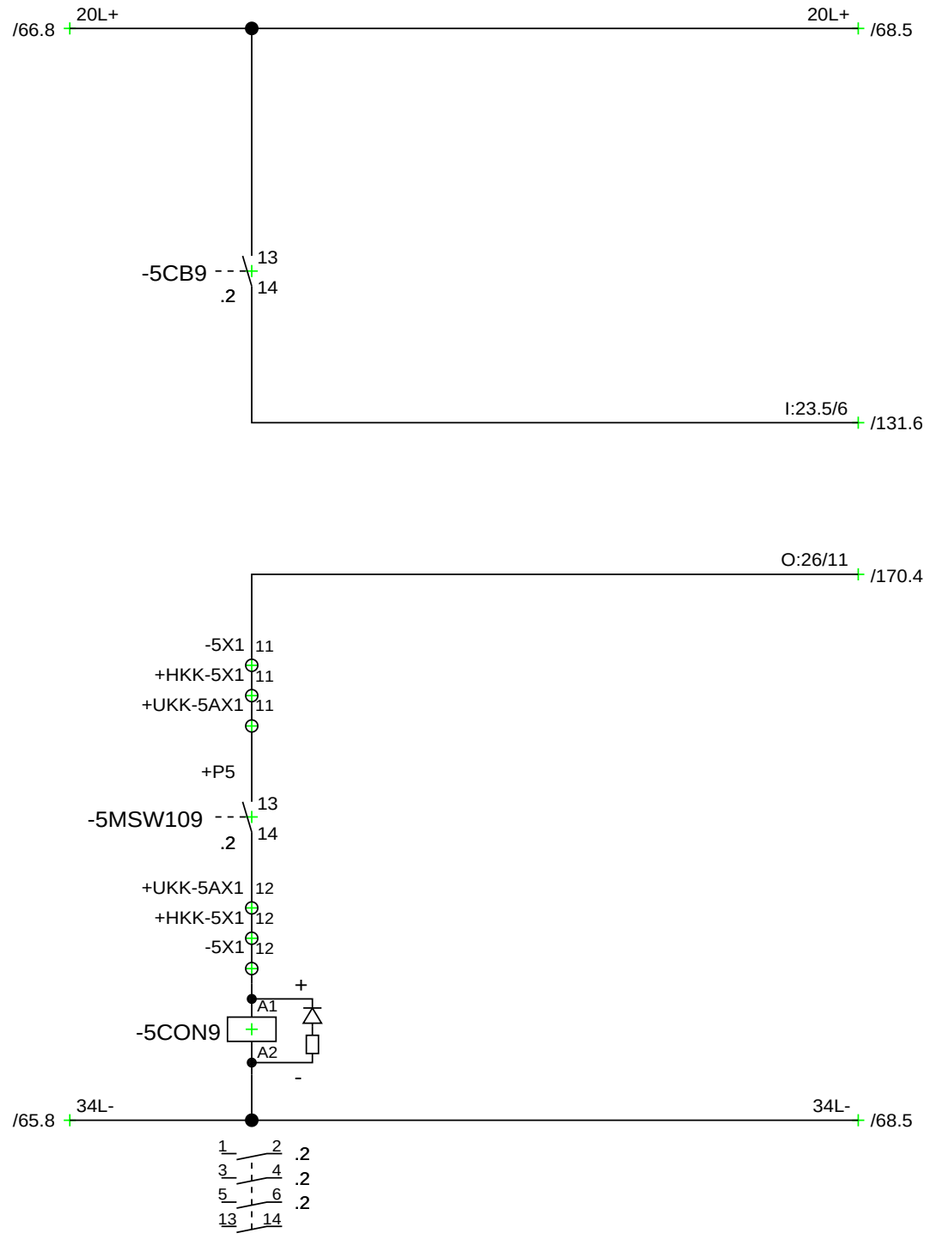
BÜHLER	customer 474 :P_NR2	+HSS	page 66
		=A1.F1	of 271
comm. nr. :P_NR1	heating licking roller shell cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

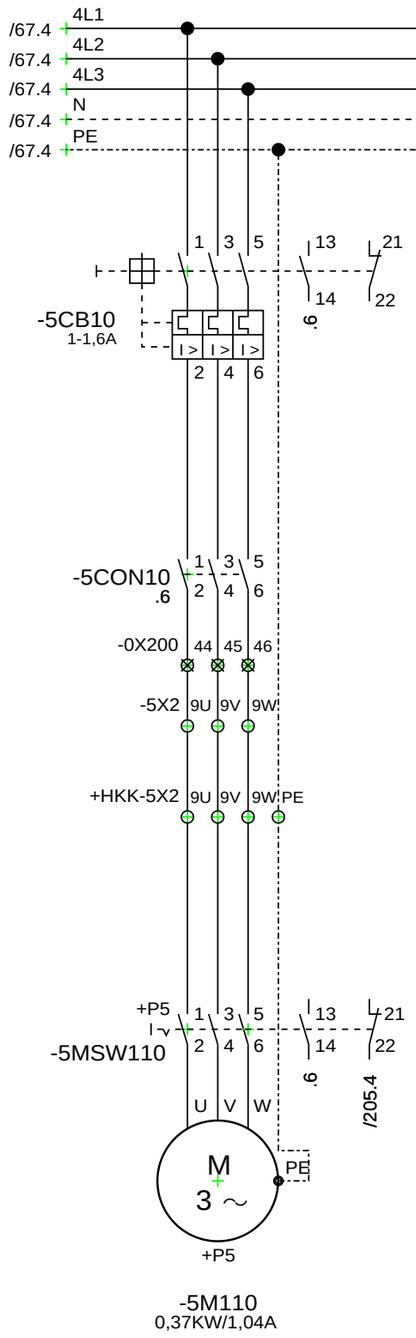


Abtropfband unter Hülsenkühler

belt drive below shell cooler

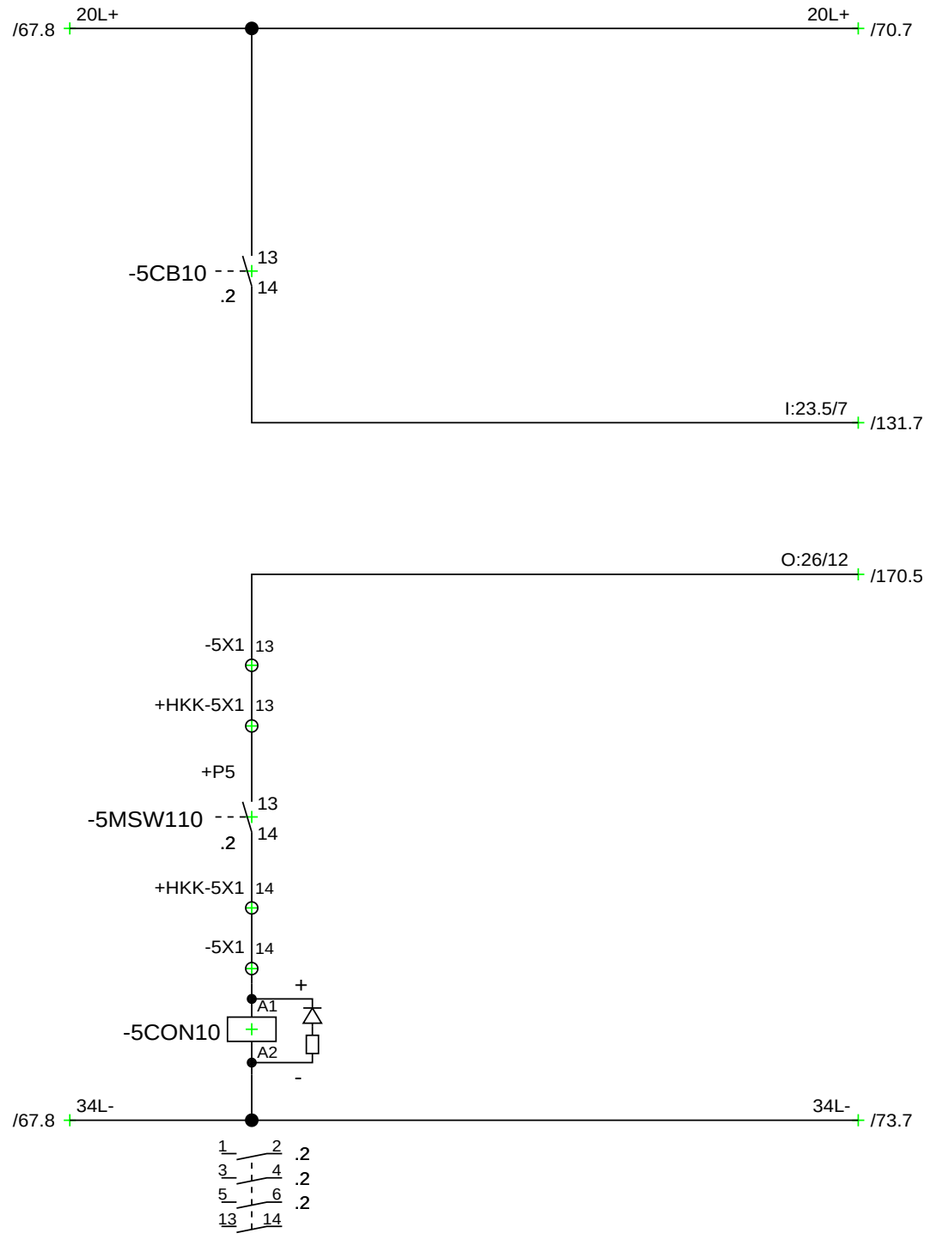


BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 67 of 271
comm. nr. :P_NR1	belt drive entry shell cooler	drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1	control :P_PRF



Schneckenantrieb Masserückführung
Hülsenkühler

worm drive mass return
shell cooler

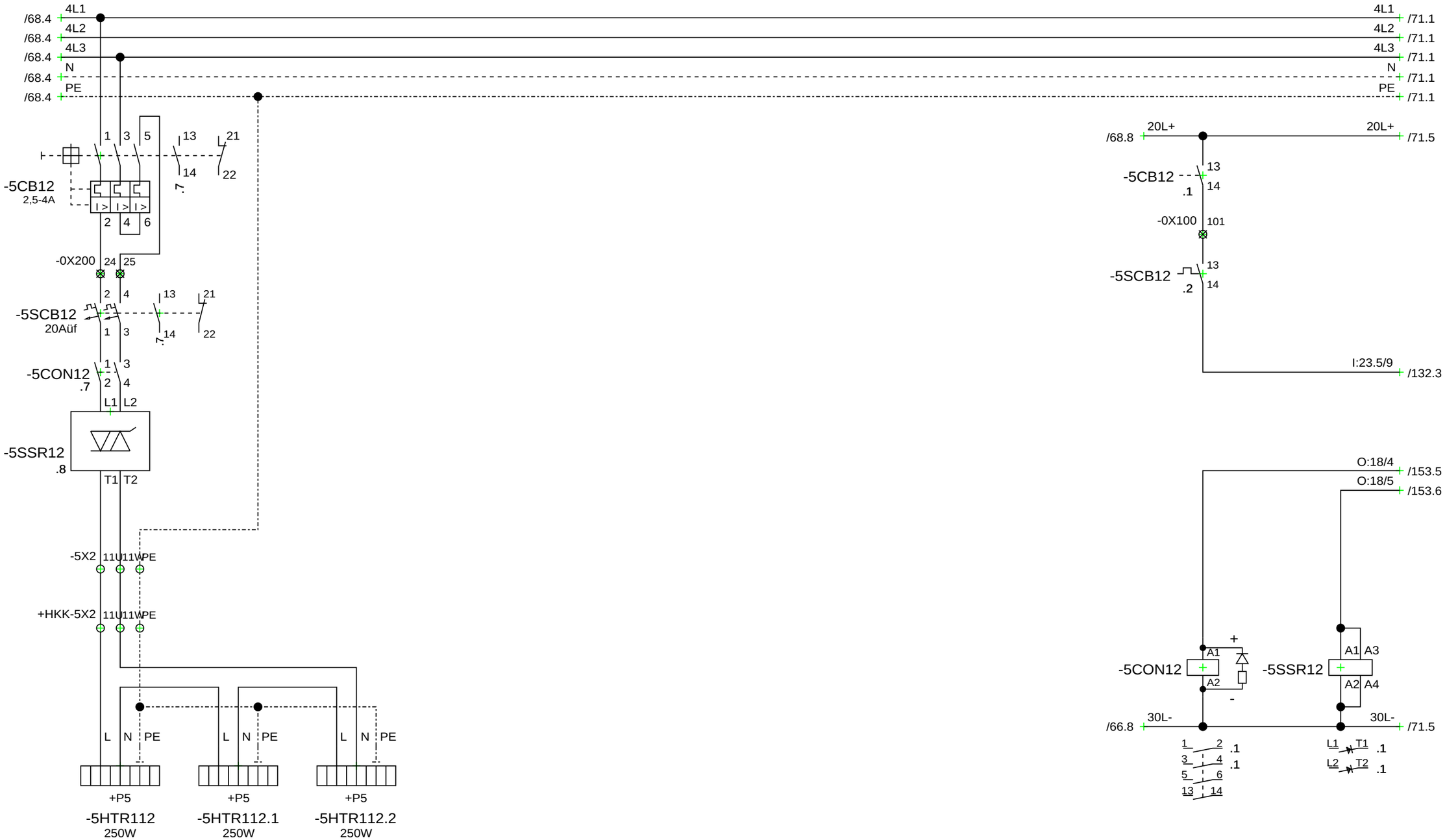


BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 68 of 271
comm. nr. :P_NR1	worm conveyor mass return shell cooler	drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1	control :P_PRF

customer			
	474	+HSS	page **69**
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	spare	drawing nr. A474	

drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

+ location : connection = plant . function group - resource mark

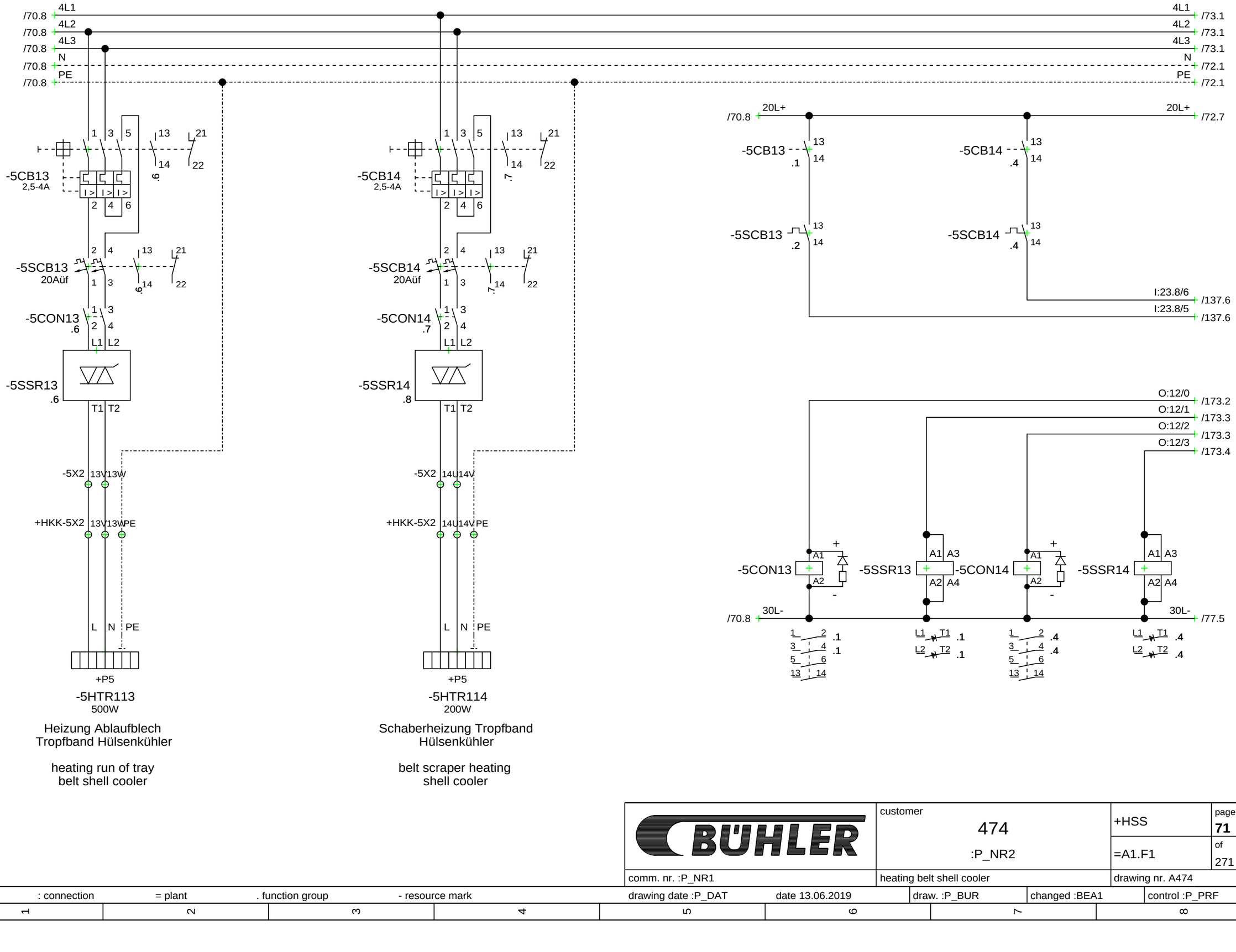


Heizstab 1-3 Wanne für Schneckenantrieb

heating 1-3 mass hopper worm drive

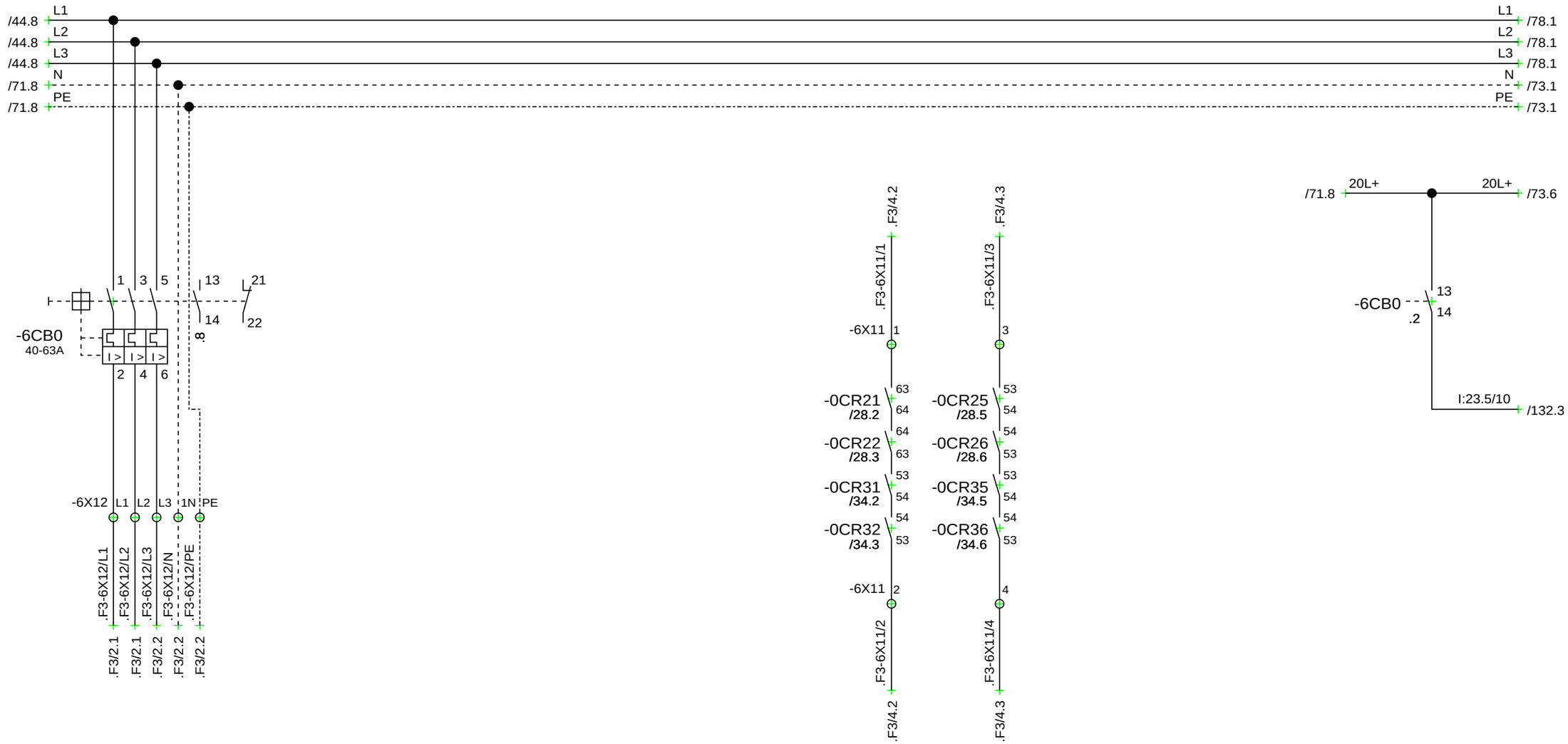
BÜHLER	customer 474 :P_NR2	+HSS	page 70
		=A1.F1	of 271
comm. nr. :P_NR1	heating mass hopper worm conveyor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page 71
		=A1.F1	of 271
comm. nr. :P_NR1	heating belt shell cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



480VAC Versorgung
1. Füllungs-Dosiermaschine

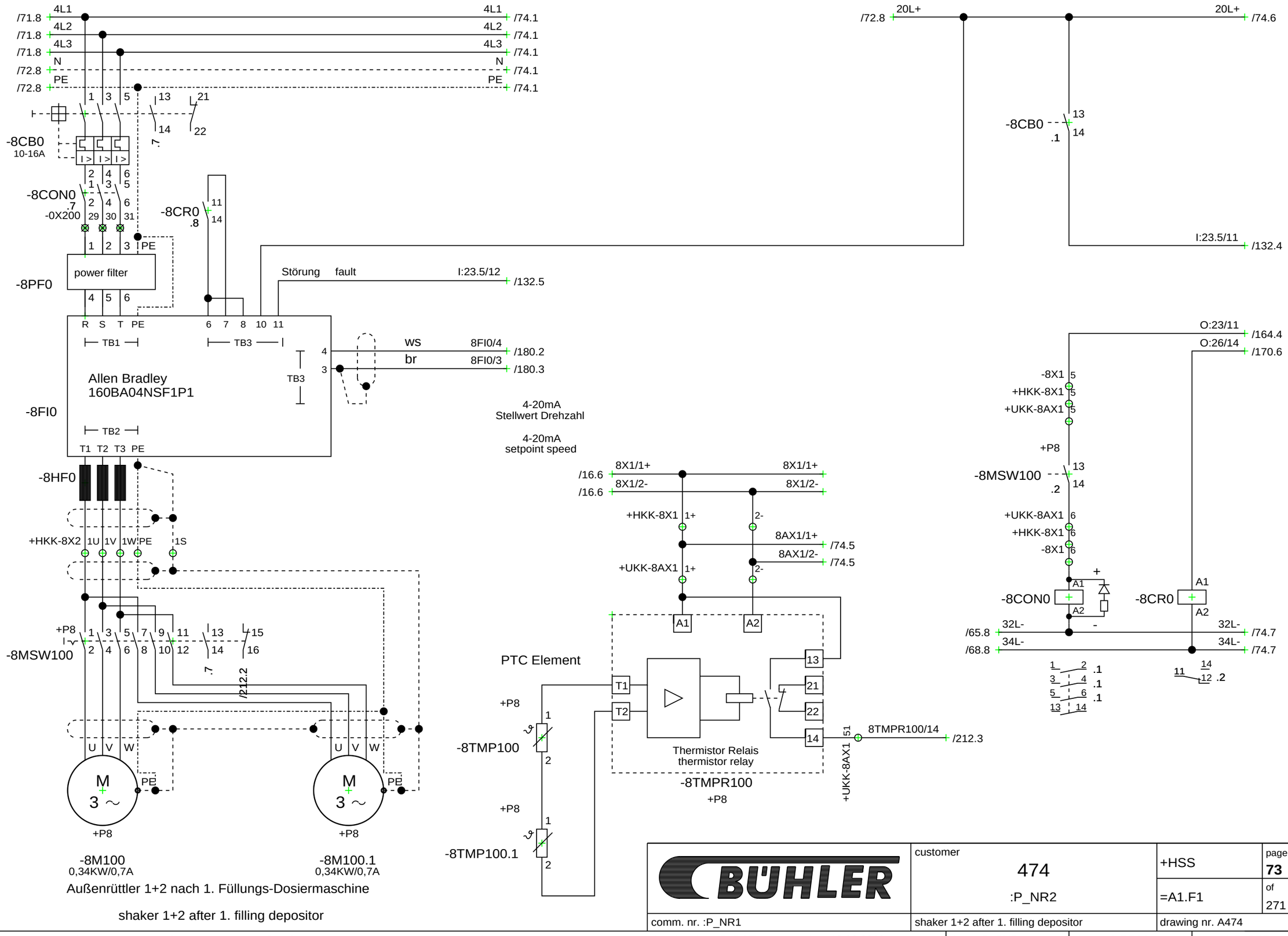
480VAC power supply
1. filling depositor

Signalaustausch Not-Aus
1. Füllungs-Dosiermaschine

signal exchange emergency stop
1. filling depositor

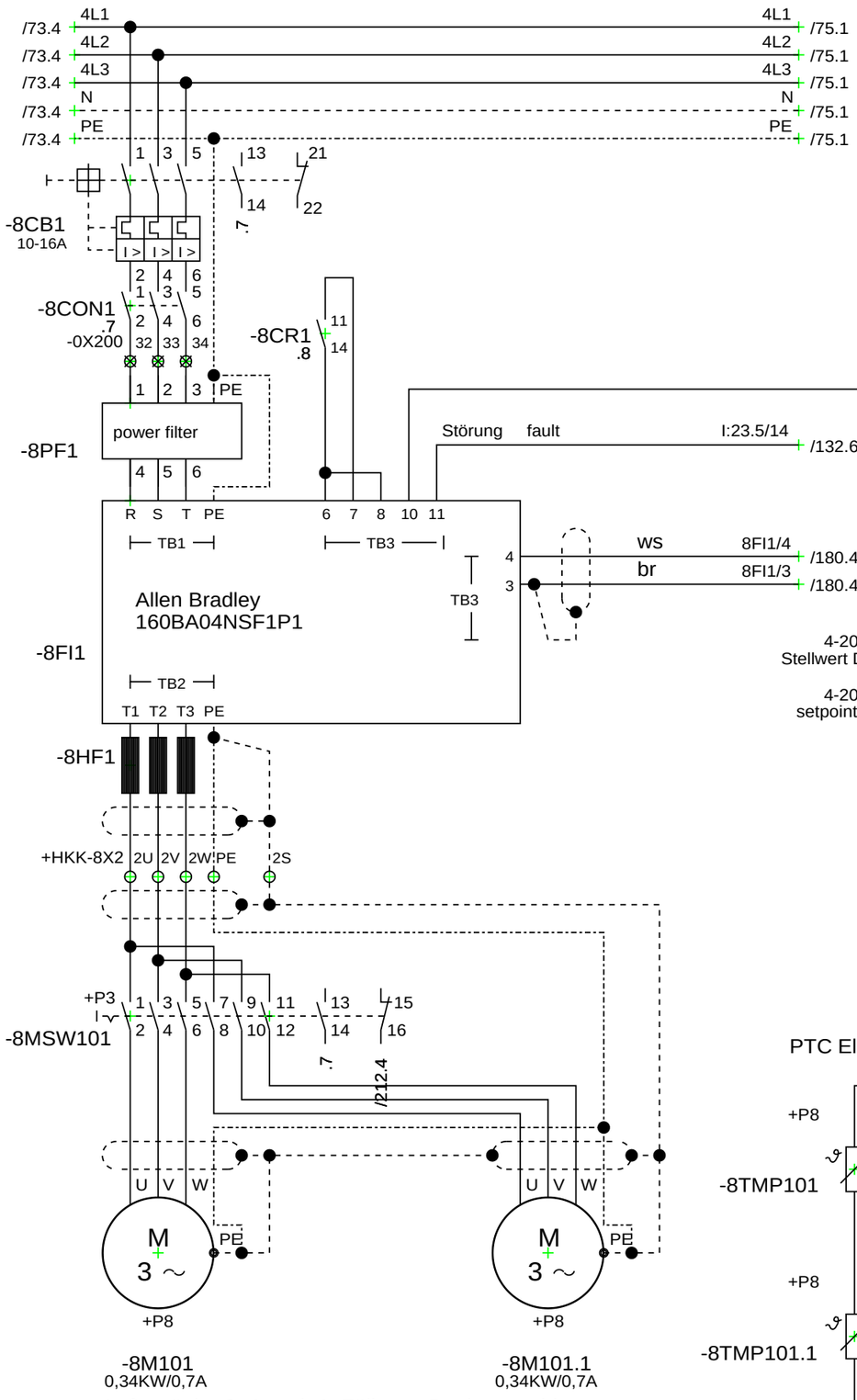
BÜHLER	customer 474 :P_NR2	+HSS	page **72**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply 1. filling depositor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 73
		=A1.F1	of 271
comm. nr. :P_NR1	shaker 1+2 after 1. filling depositor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



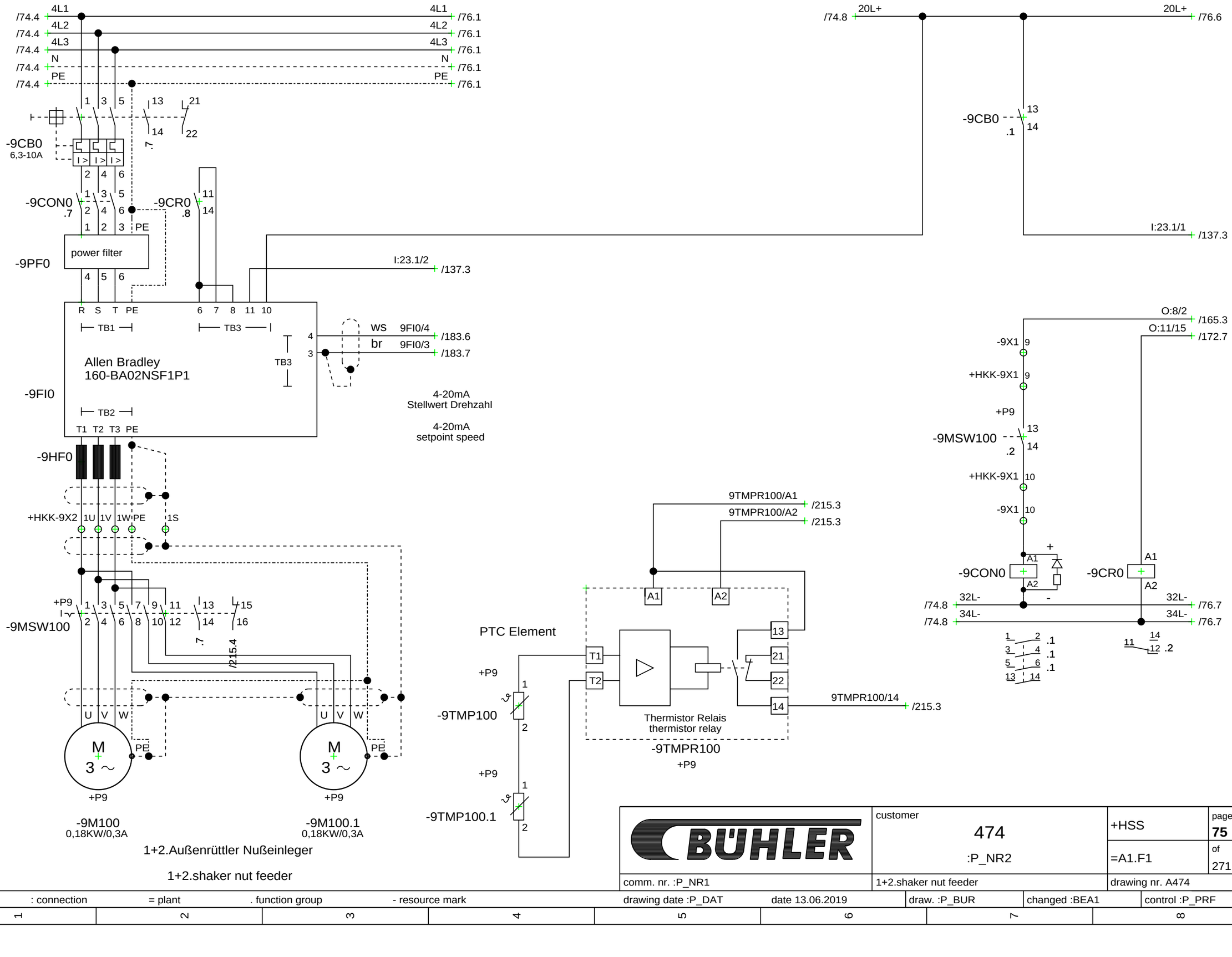
BÜHLER

customer	474	+HSS	page 74
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	shaker 3+4 after 1. filling depositor	drawing nr. A474	

Außenrüttler 3+4 nach 1. Füllungs-Dosiermaschine

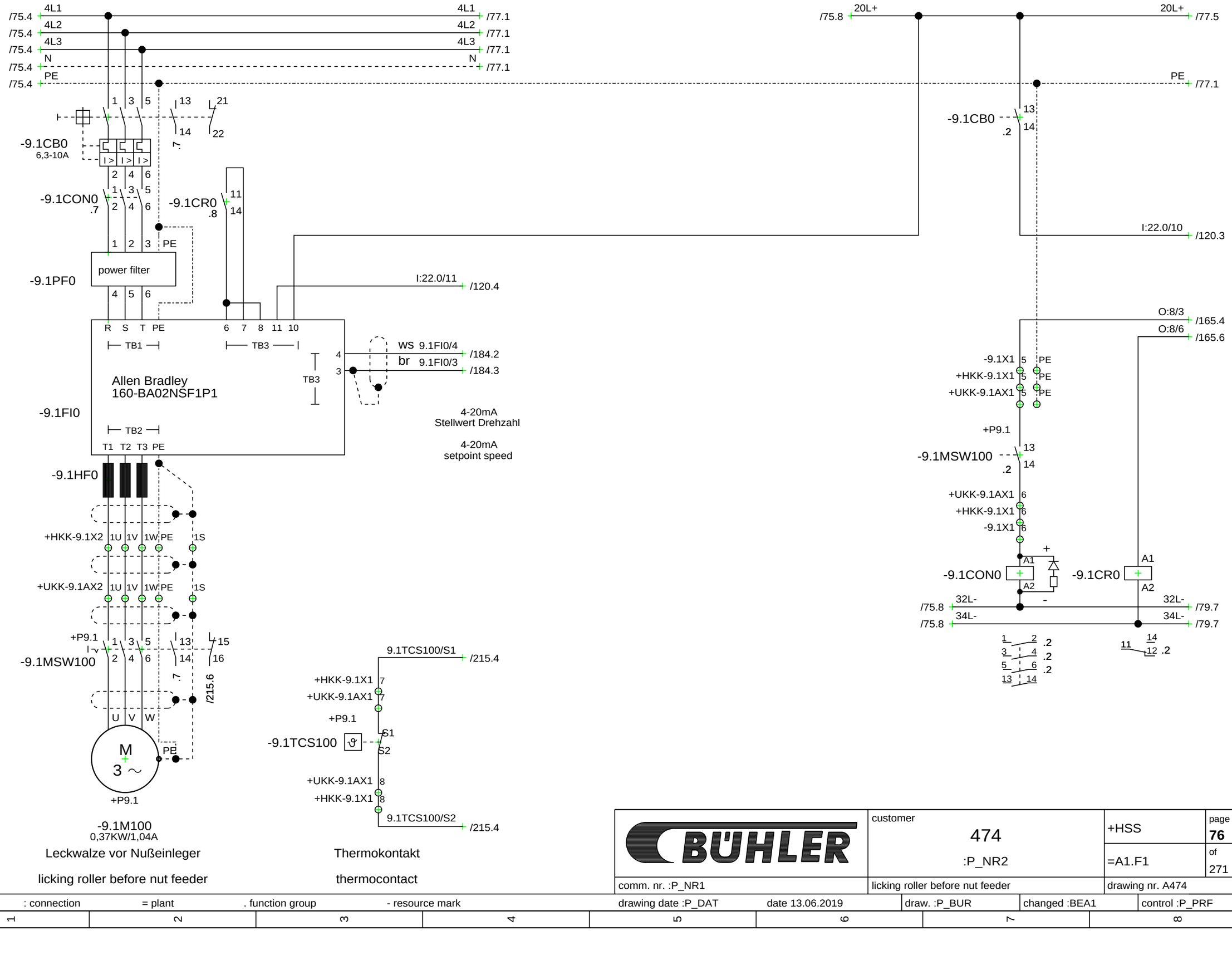
shaker 3+4 after 1. filling depositor

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



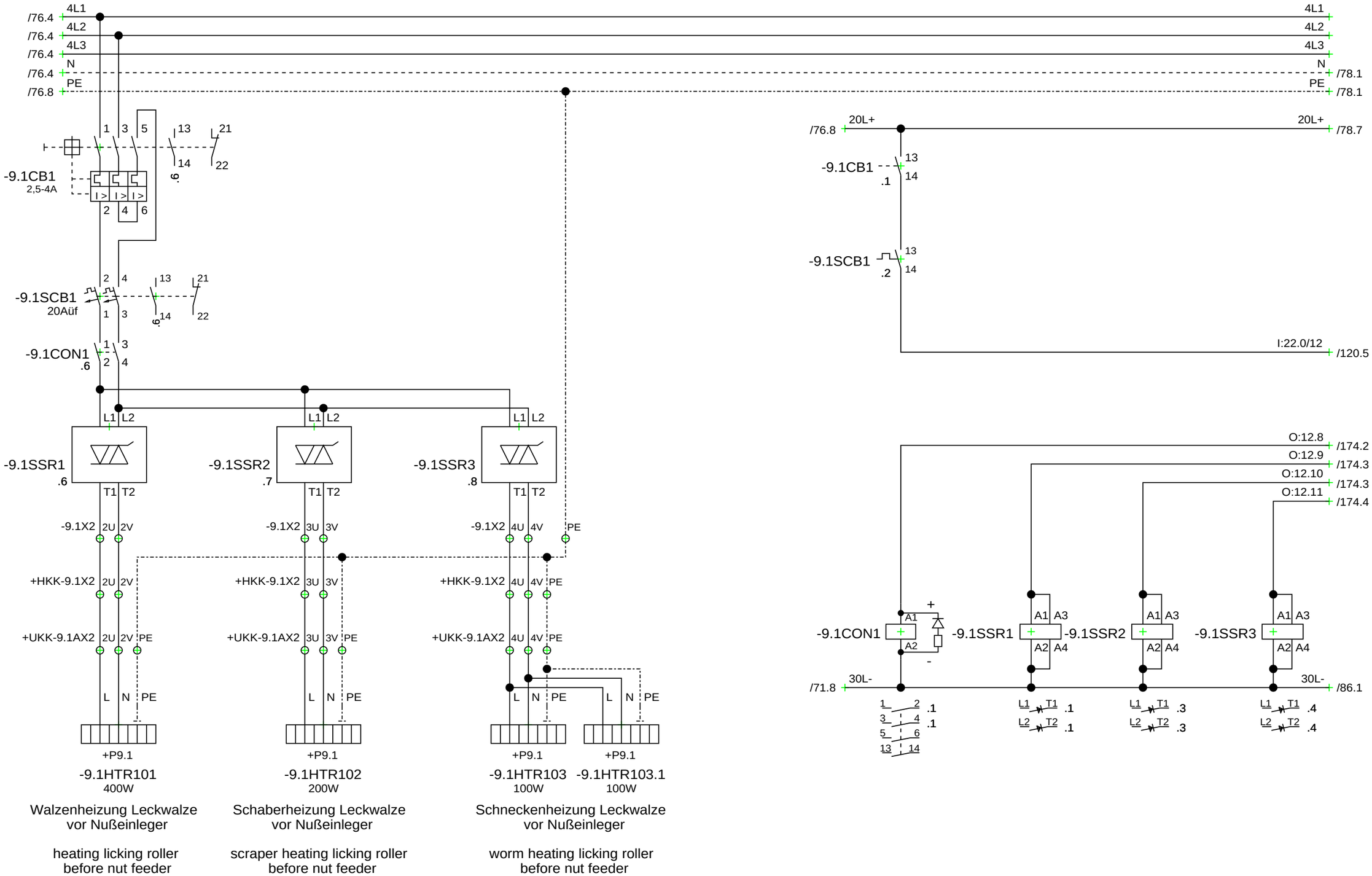
BÜHLER	customer 474 :P_NR2	+HSS	page 75
		=A1.F1	of 271
comm. nr. :P_NR1	1+2.shaker nut feeder	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



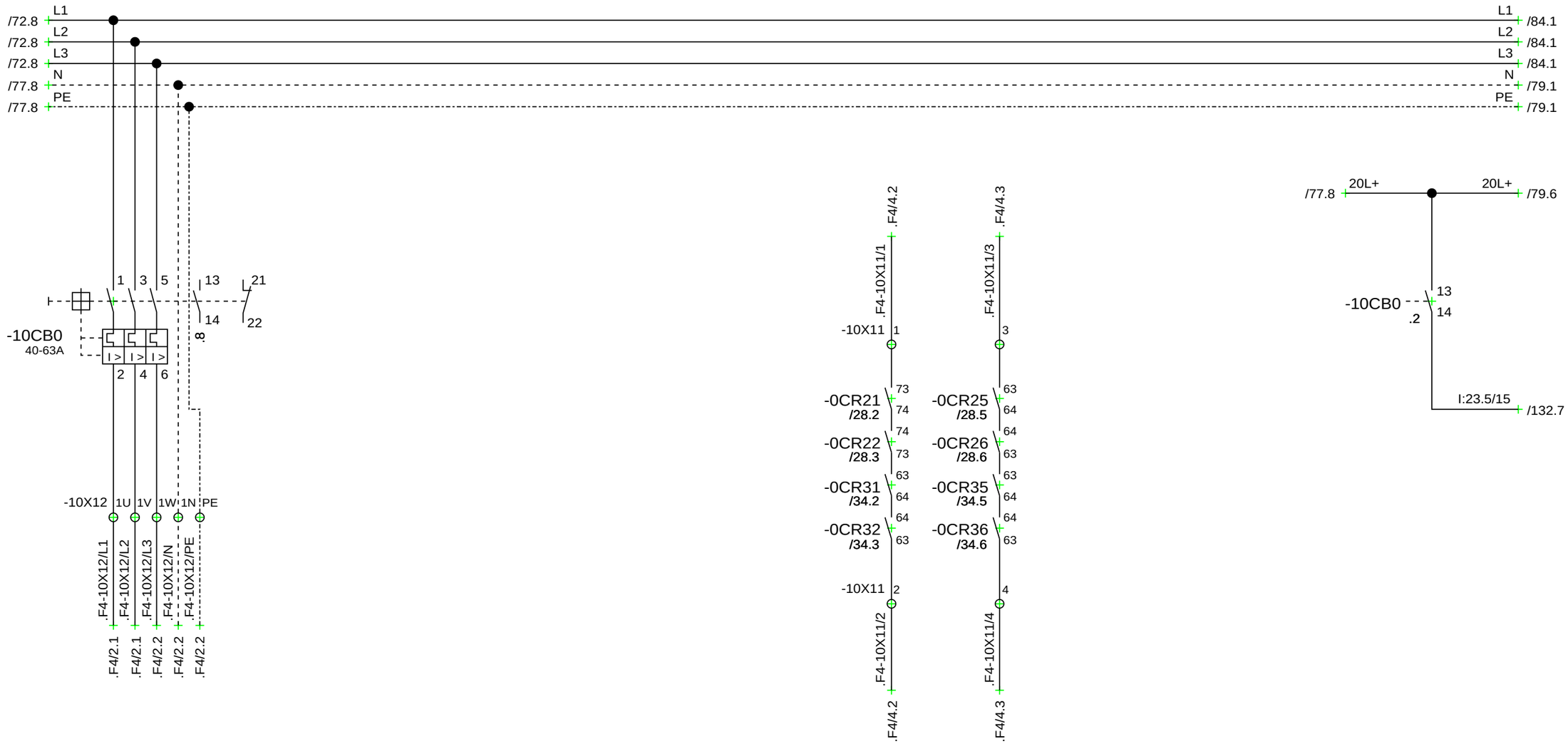
BÜHLER	customer 474 :P_NR2	+HSS	page 76
		=A1.F1	of 271
comm. nr. :P_NR1	licking roller before nut feeder		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page 77
		=A1.F1	of 271
comm. nr. :P_NR1	heating licking roller before nut feeder	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



480VAC Versorgung
2. Füllungs-Dosiermaschine

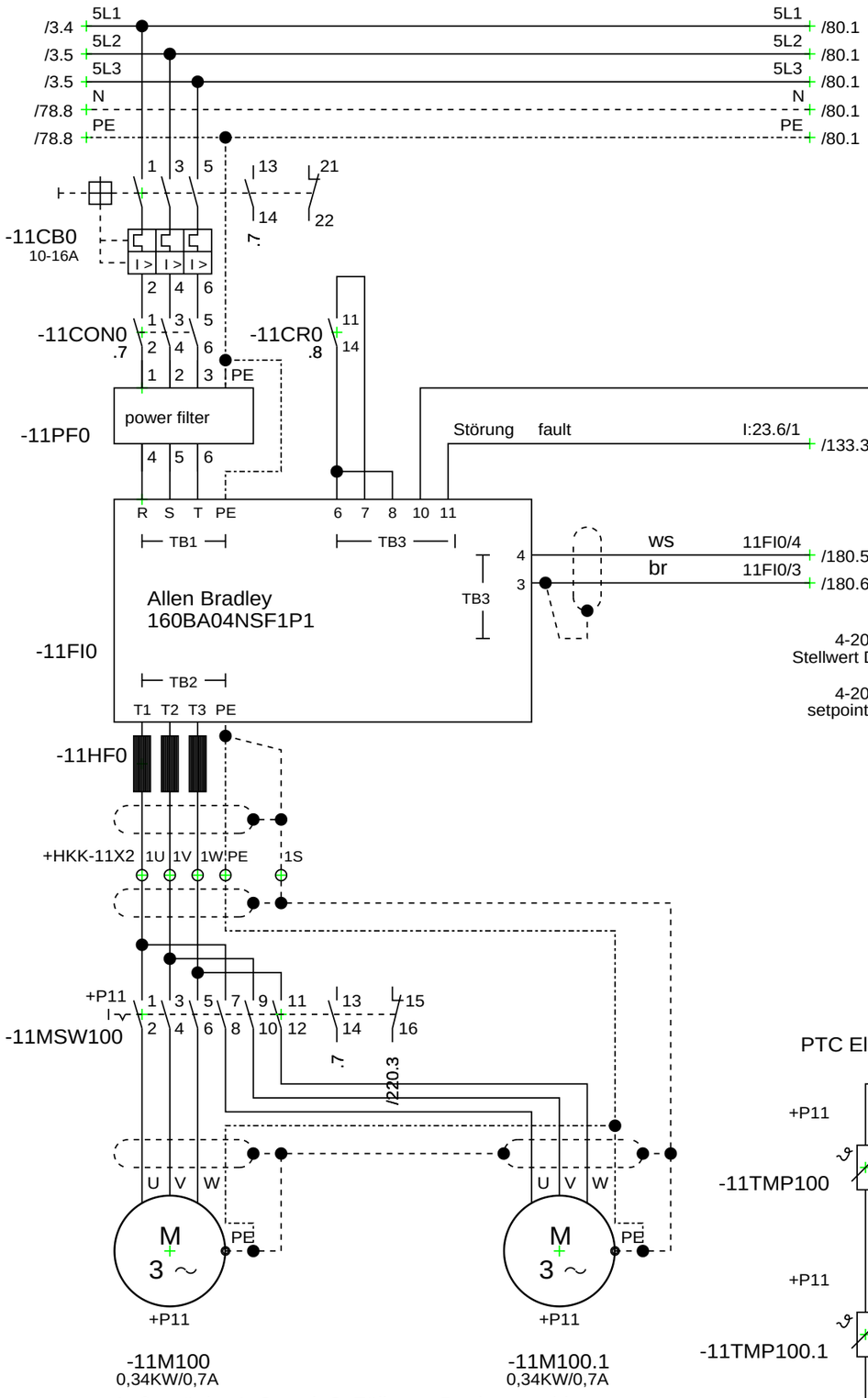
480VAC power supply
2. filling depositor

Signalaustausch Not-Aus
2. Füllungs-Dosiermaschine

signal exchange emergency stop
2. filling depositor

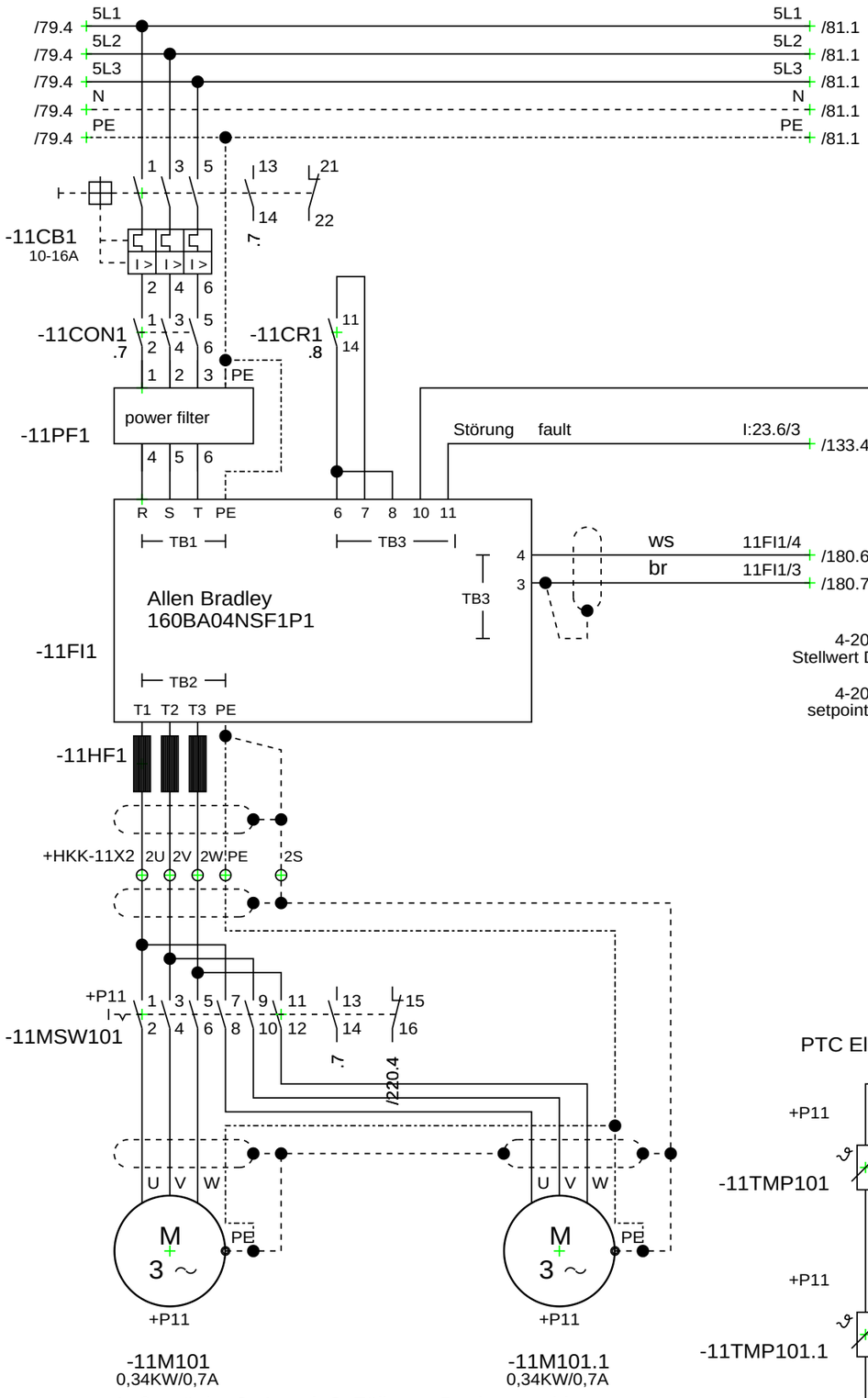
BÜHLER	customer 474 :P_NR2	+HSS	page **78**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply 2. filling depositor		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 79 of 271
comm. nr. :P_NR1	shaker 1+2 after 2. filling depositor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

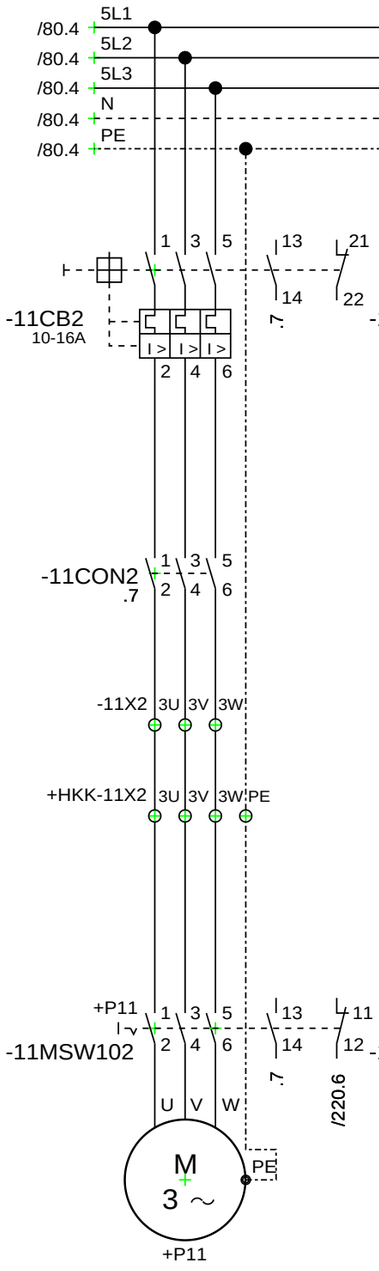


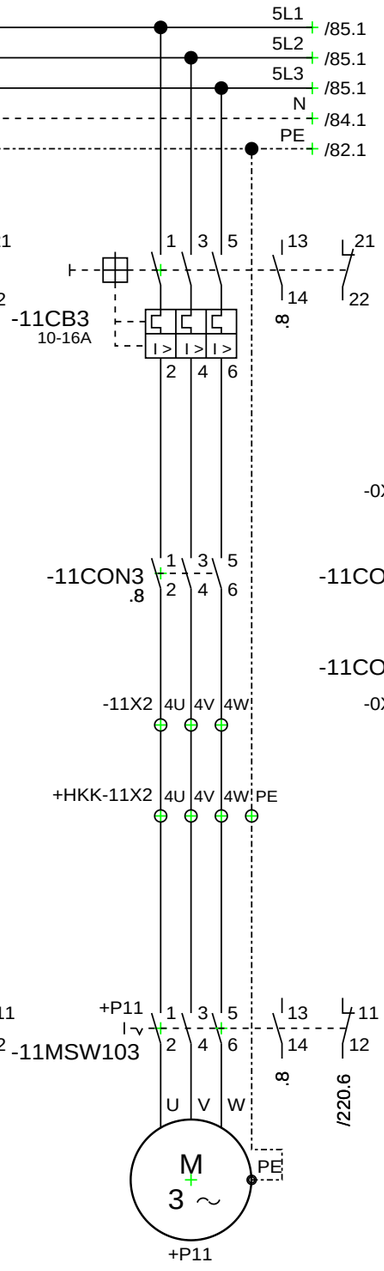
Außenrüttler 3+4 nach 2. Füllungs-Dosiermaschine

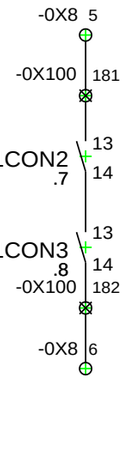
shaker 3+4 after 2. filling depositor

BÜHLER	customer 474 :P_NR2	+HSS	page **80**
		=A1.F1	of 271
comm. nr. :P_NR1	shaker 3+4 after 2. filling depositor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

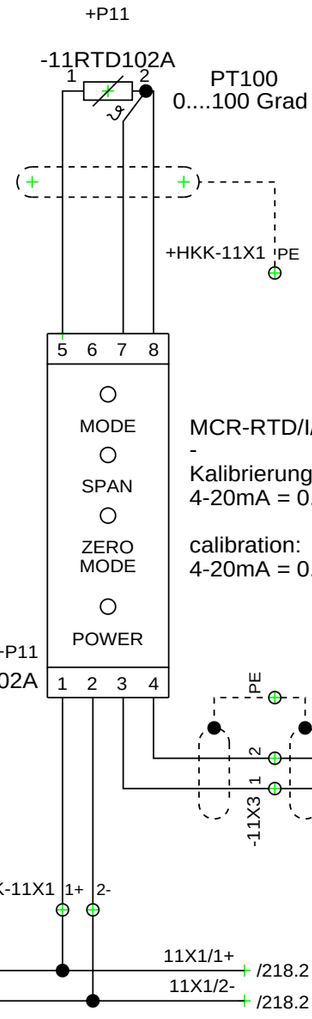






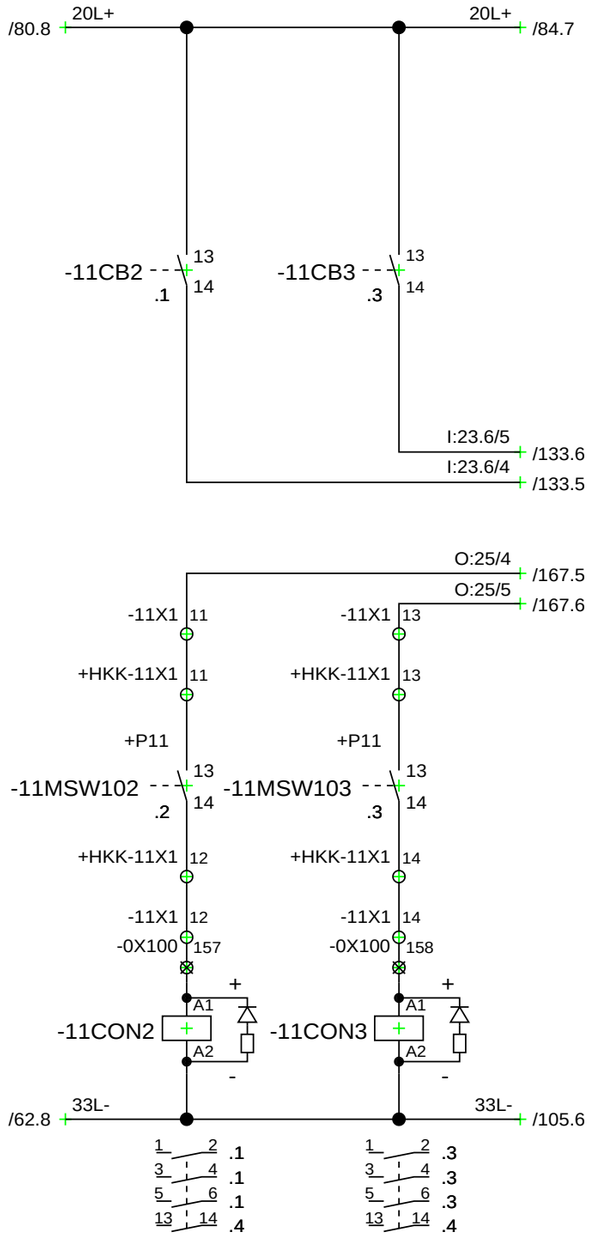
Temperaturfühler
(PT100)
1. Füllungskühler

temperature probe
(PT100)
1. filling cooler



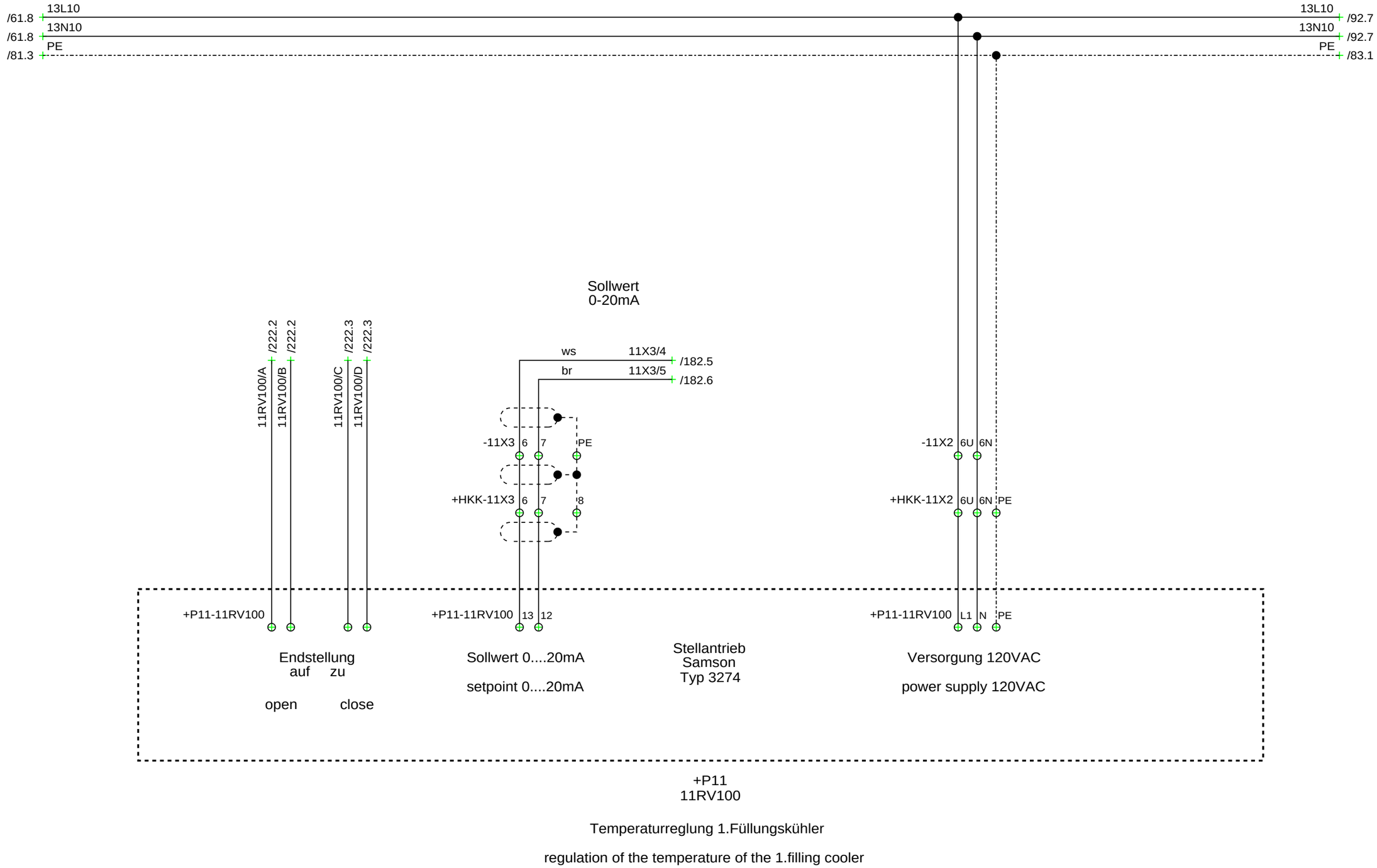
MCR-RTD/I/NC
-
Kalibrierung:
4-20mA = 0....100 Grad

calibration:
4-20mA = 0....100 degree



BÜHLER	customer 474 :P_NR2	+HSS	page 81
		=A1.F1	of 271
comm. nr. :P_NR1	1+2.fan 1. filling cooler		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



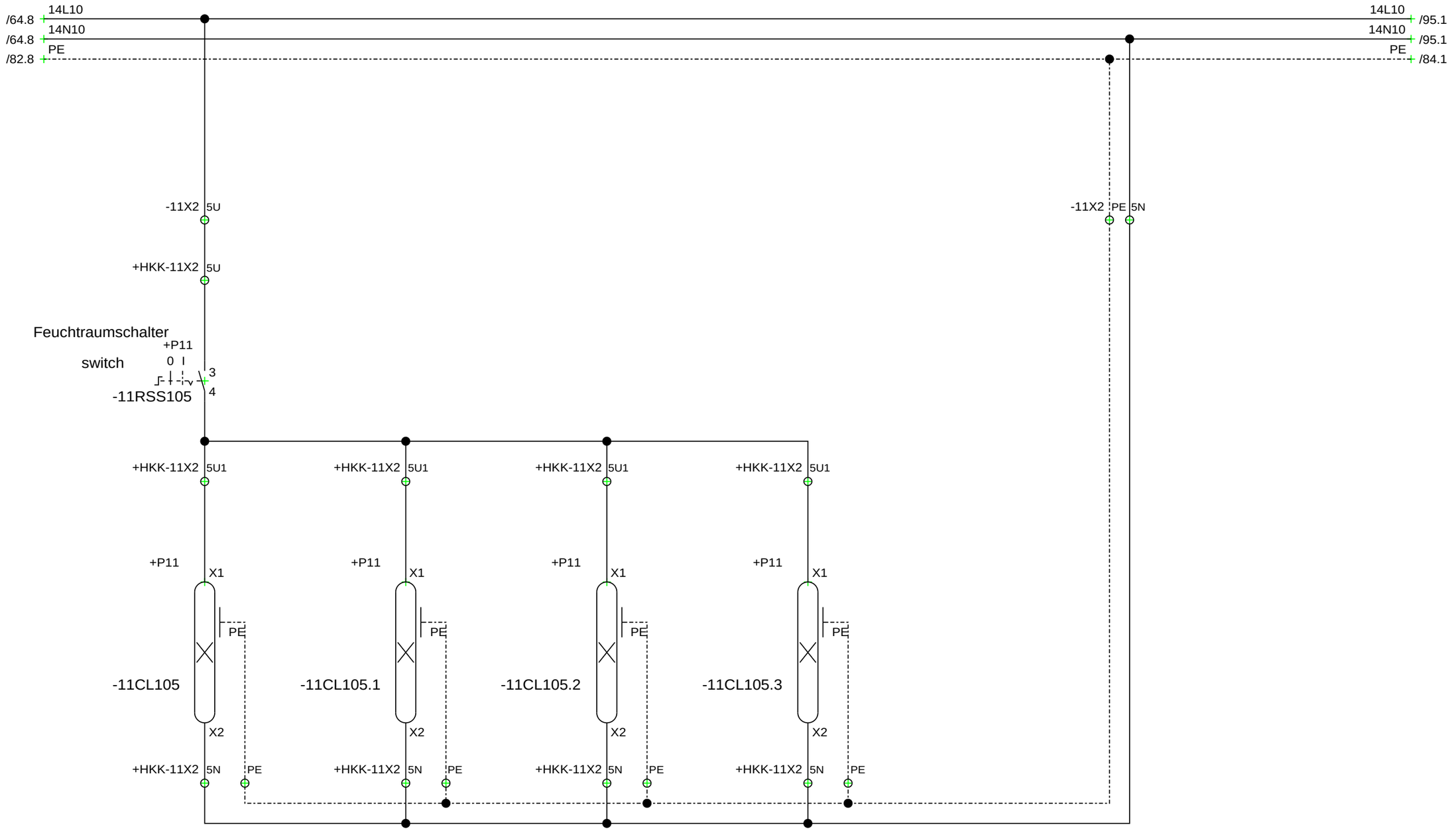
+P11
11RV100

Temperaturreglung 1.Füllungskühler

regulation of the temperature of the 1.filling cooler

BÜHLER	customer 474 :P_NR2	+HSS	page 82
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve 1.filling cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

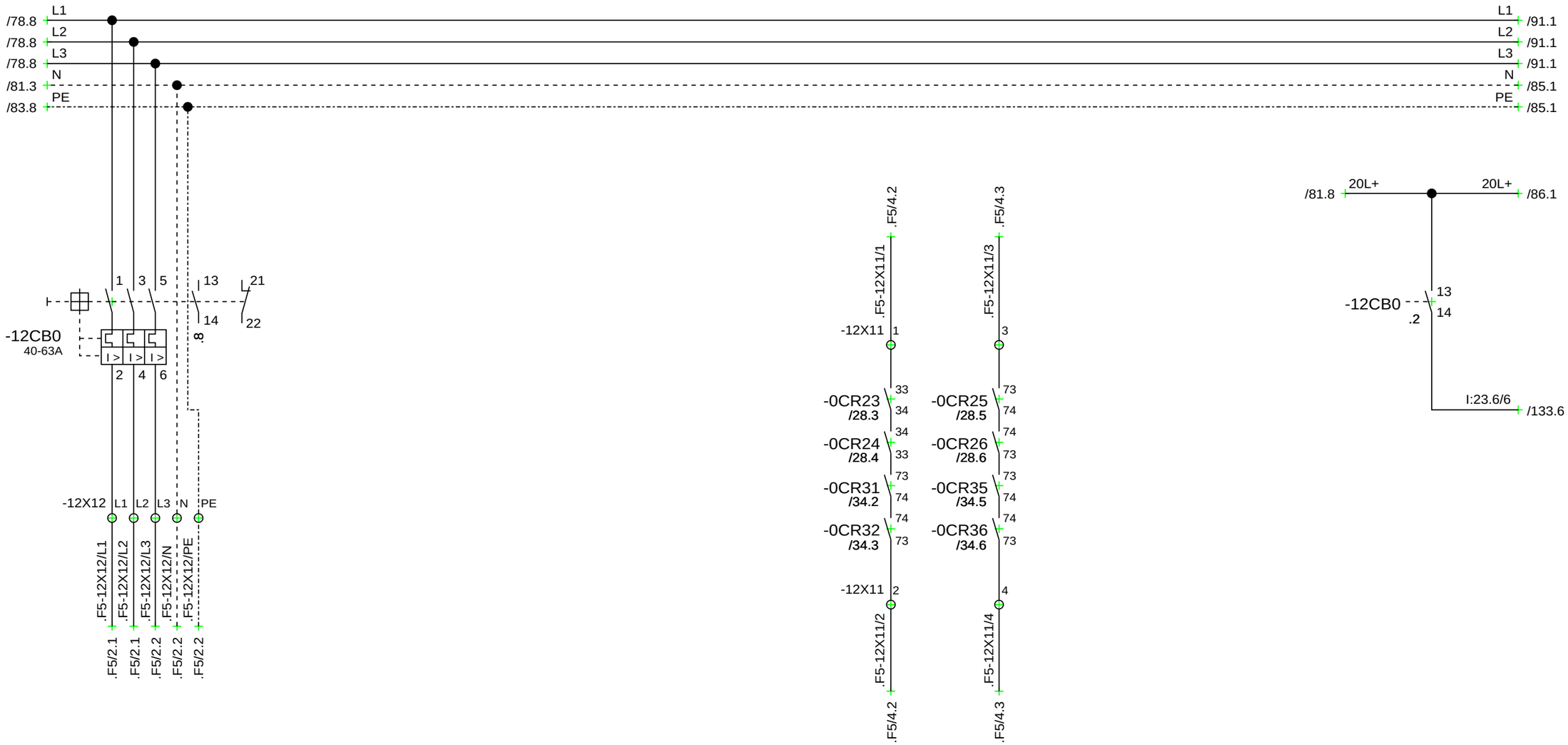


Beleuchtung 1. Füllungskühler

illumination 1. filling cooler

BÜHLER	customer 474 :P_NR2	+HSS	page 83
		=A1.F1	of 271
comm. nr. :P_NR1	illumination 1. filling cooler		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



480VAC Versorgung
3. Füllungs-Dosiermaschine

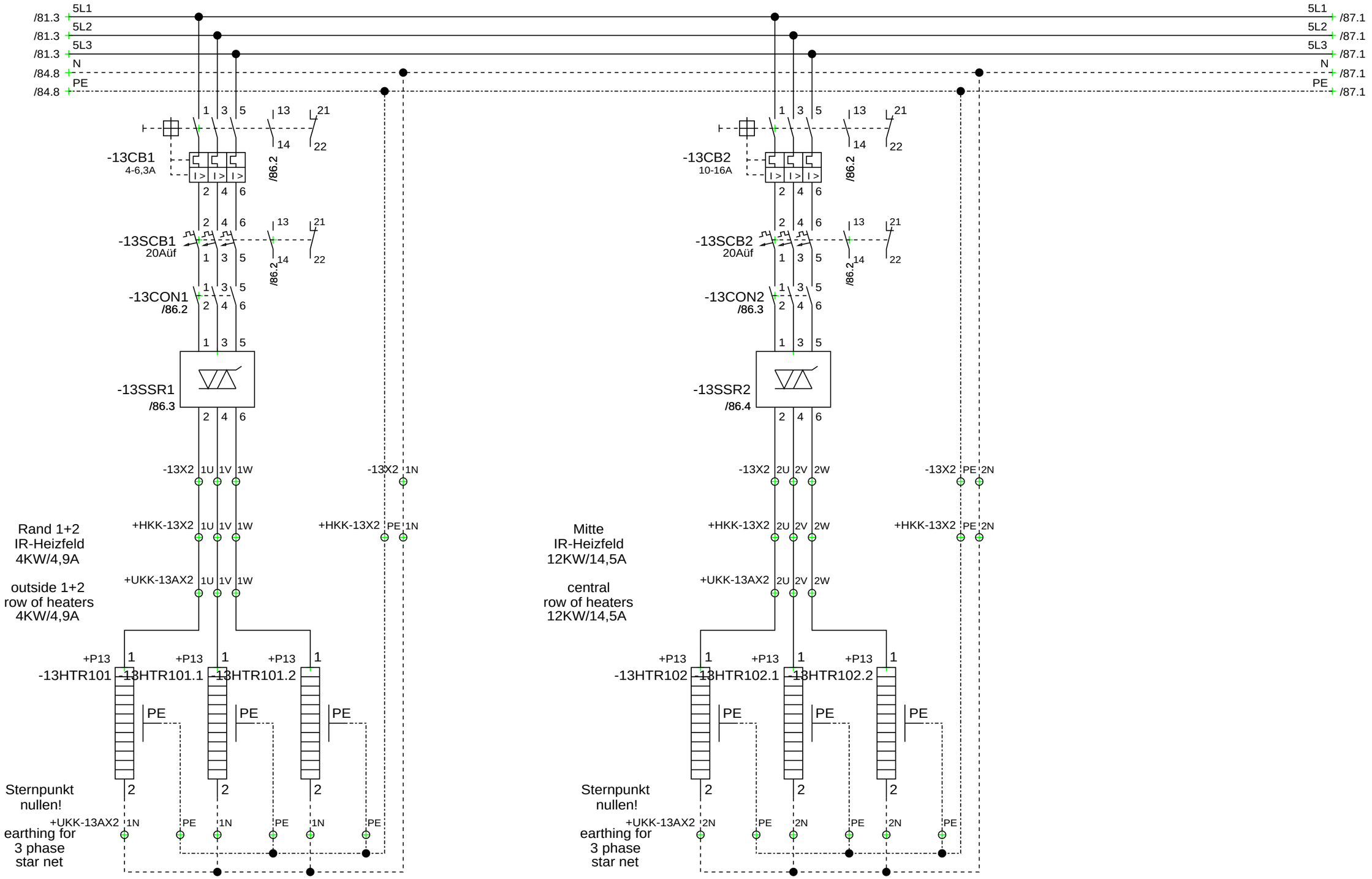
480VAC power supply
3. filling depositor

Signalaustausch Not-Aus
3. Füllungs-Dosiermaschine

signal exchange emergency stop
3. filling depositor

BÜHLER	customer 474 :P_NR2	+HSS	page **84**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply 3. filling depositor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

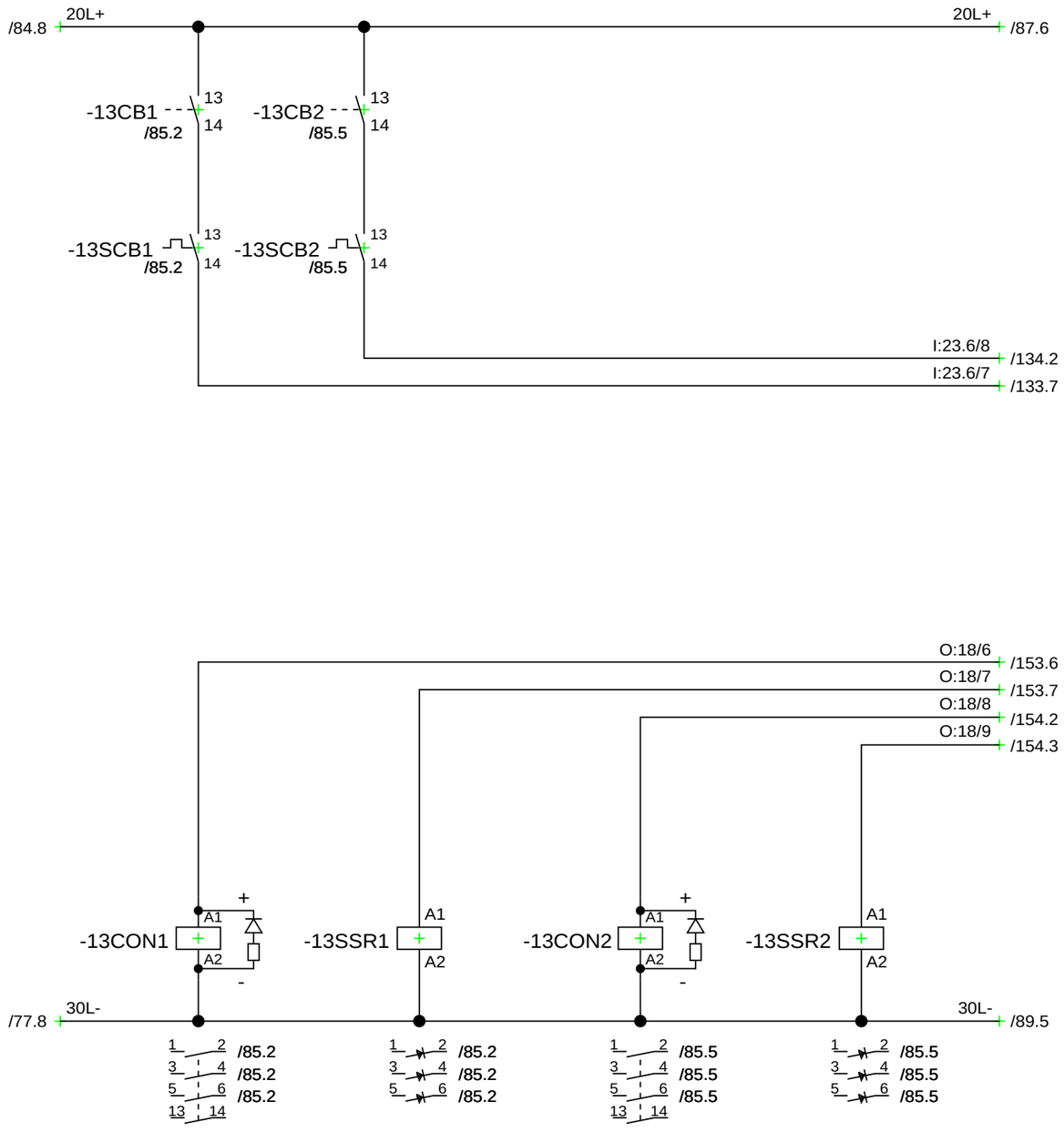


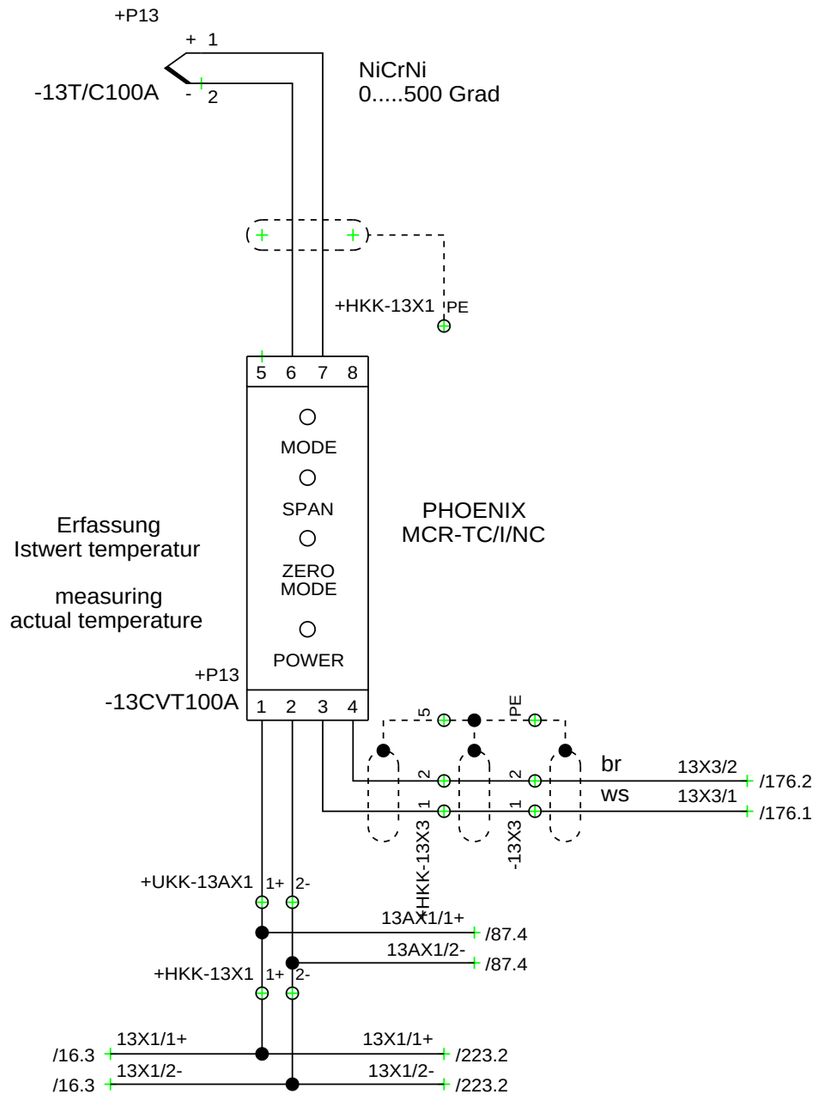
IR-Heizfeld
vor Deckel-Dosiermaschine

IR-heating
before bottom depositor

BÜHLER	customer 474 :P_NR2	+HSS	page 85
		=A1.F1	of 271
comm. nr. :P_NR1	IR-heating before bottom depositor		drawing nr. A474

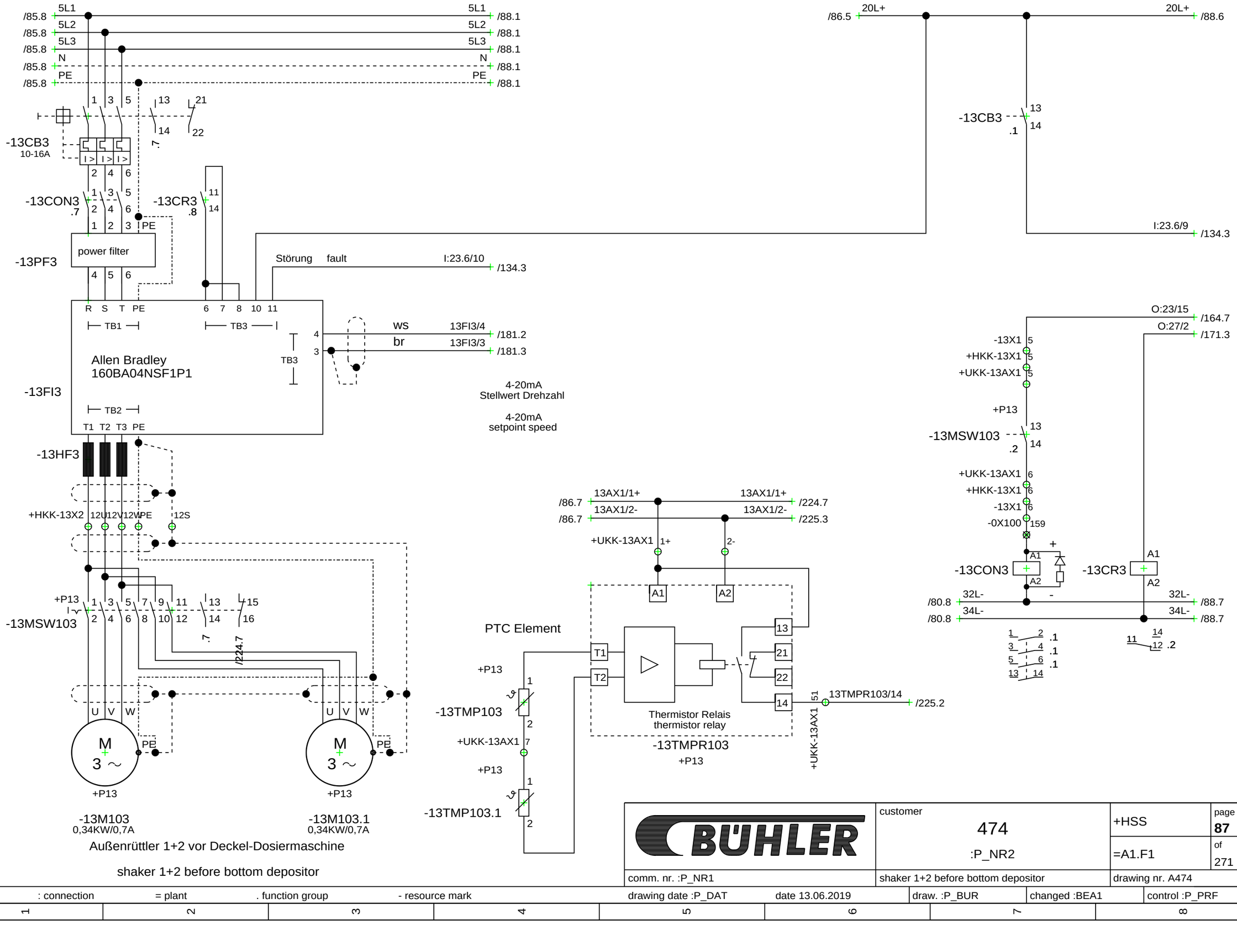
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

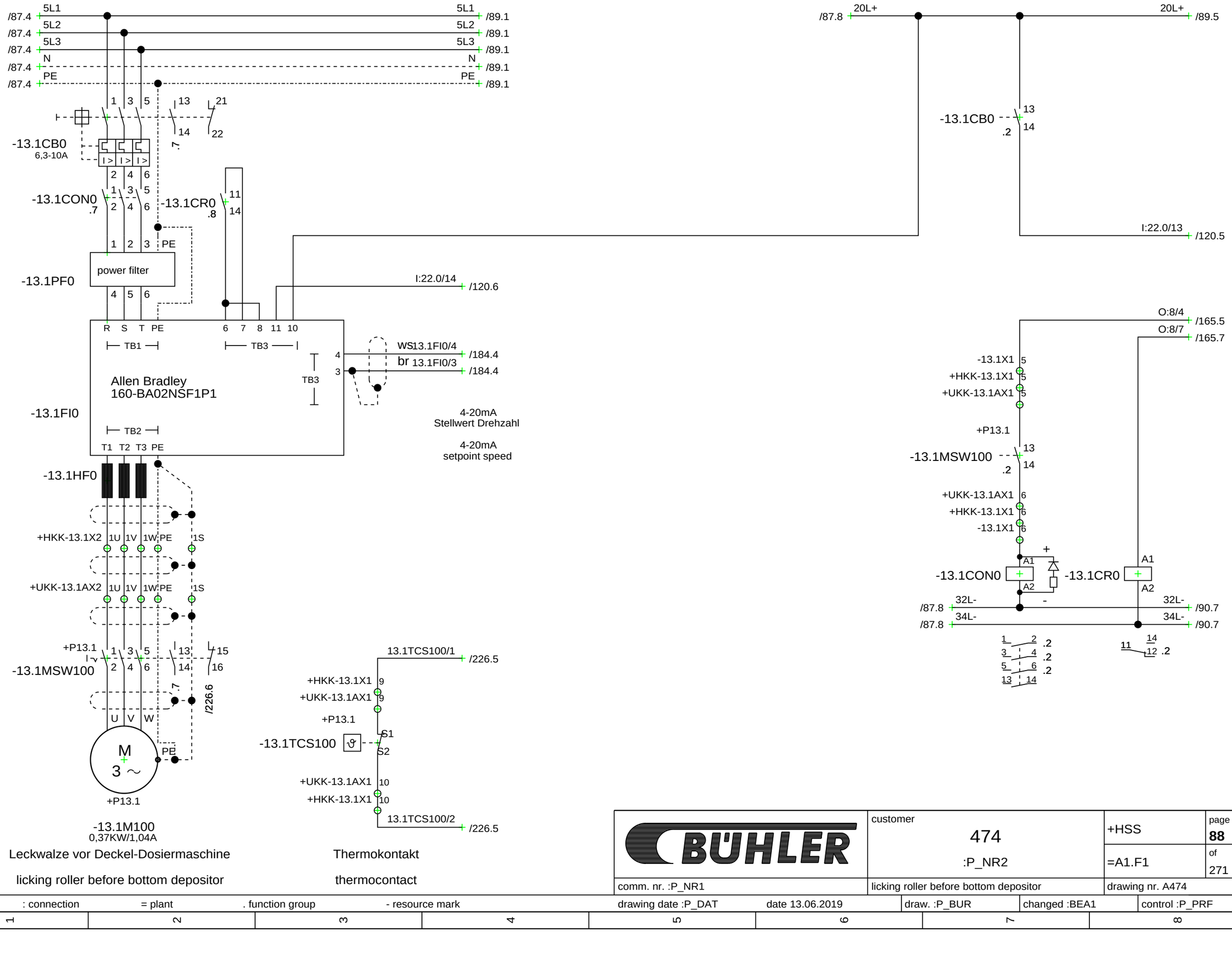




BÜHLER	customer 474 :P_NR2	+HSS	page 86
		=A1.F1	of 271
comm. nr. :P_NR1	IR-heating before bottom depositor		drawing nr. A474

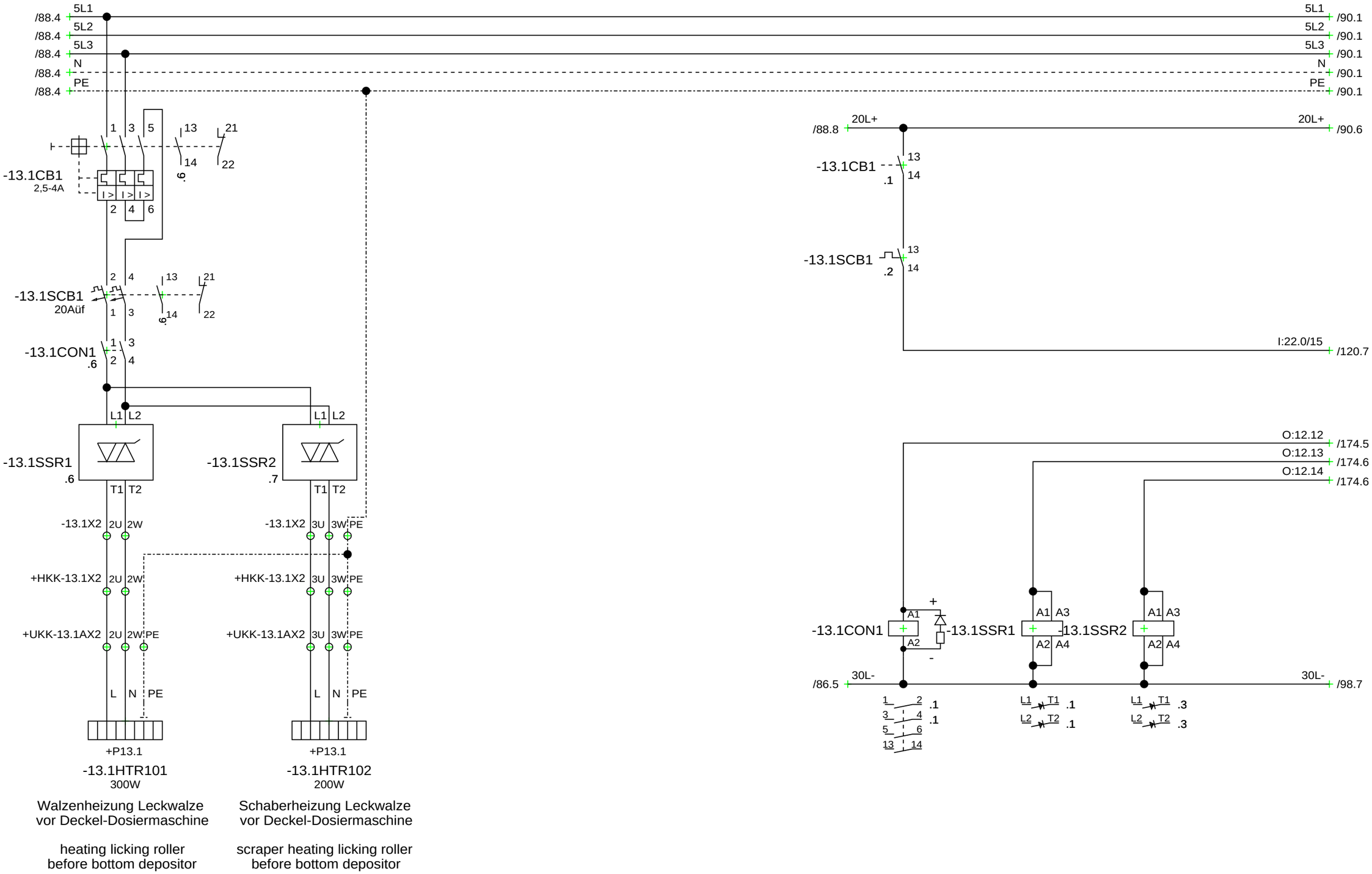
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		


5L1
5L2
5L3
N
PE
/85.8
/88.1
-13CB3
10-16A
-13CON3
.7
-13CR3
.8
power filter
-13PF3
Störung fault
I:23.6/10
/134.3
R S T PE
TB1
TB3
TB2
Allen Bradley
160BA04NSF1P1
-13FI3
ws
br
13FI3/4
13FI3/3
/181.2
/181.3
4-20mA
Stellwert Drehzahl
4-20mA
setpoint speed
-13HF3
+HKK-13X2
12U 12V 12W PE
12S
-13MSW103
/224.7
U V W
M
3 ~
PE
+P13
-13M103
0,34KW/0,7A
-13M103.1
0,34KW/0,7A
Außenrüttler 1+2 vor Deckel-Dosiermaschine
shaker 1+2 before bottom depositor
/86.5
20L+
/88.6
I:23.6/9
/134.3
O:23/15
/164.7
O:27/2
/171.3
-13X1
+HKK-13X1
+UKK-13AX1
-13MSW103
-0X100
159
-13CON3
-13CR3
32L-
34L-
/80.8
/88.7
13AX1/1+
13AX1/2-
/86.7
/224.7
/225.3
+UKK-13AX1
PTC Element
-13TMP103
-13TMP103.1
Thermistor Relais
thermistor relay
-13TMPR103
13TMPR103/14
/225.2
BÜHLER
customer
474
:P_NR2
+HSS
=A1.F1
page
87
of
271
comm. nr. :P_NR1
shaker 1+2 before bottom depositor
drawing nr. A474
+ location
: connection
= plant
. function group
- resource mark
drawing date :P_DAT
date 13.06.2019
draw. :P_BUR
changed :BEA1
control :P_PRF



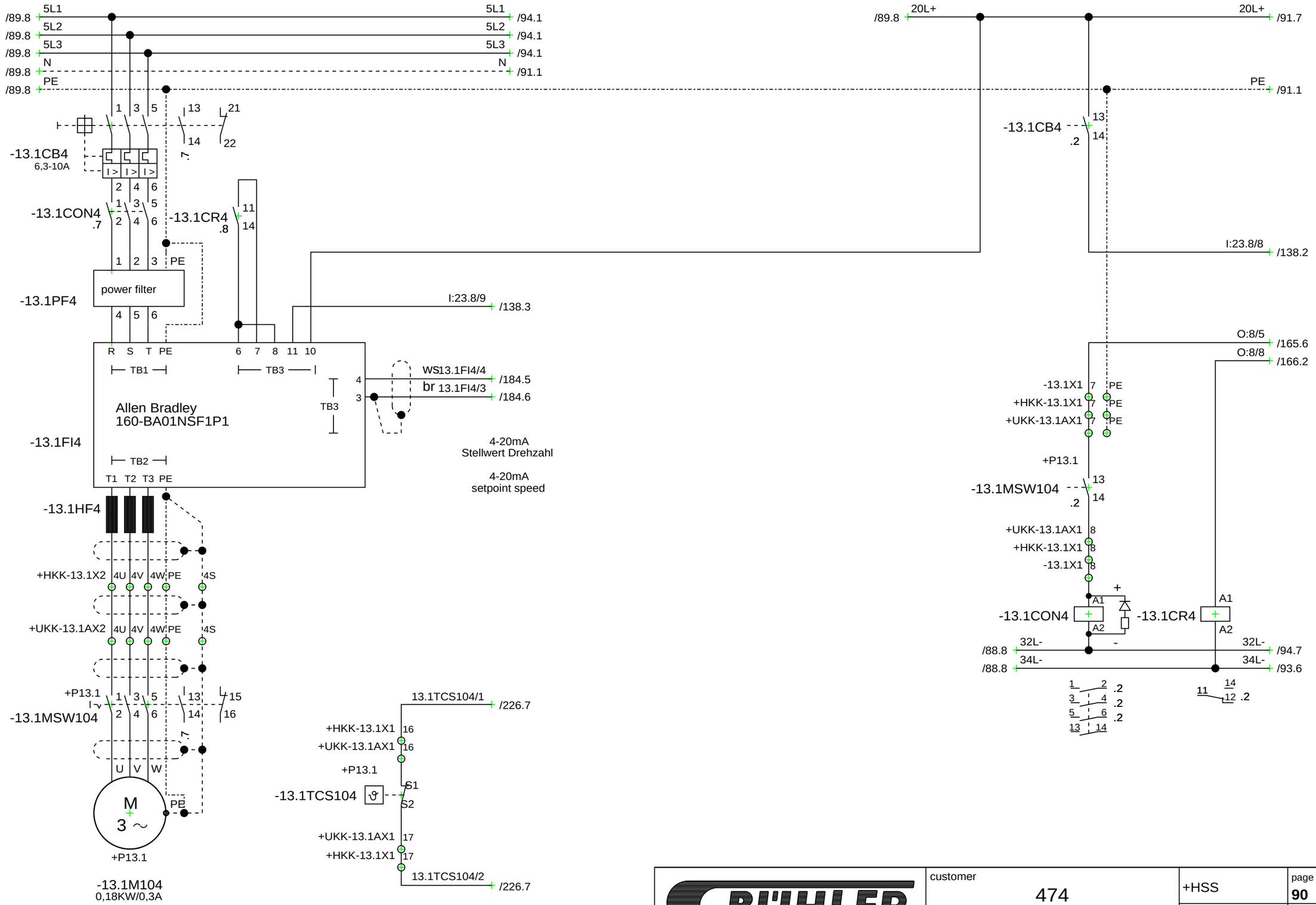
BÜHLER	customer 474 :P_NR2	+HSS	page 88
		=A1.F1	of 271
comm. nr. :P_NR1	licking roller before bottom depositor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



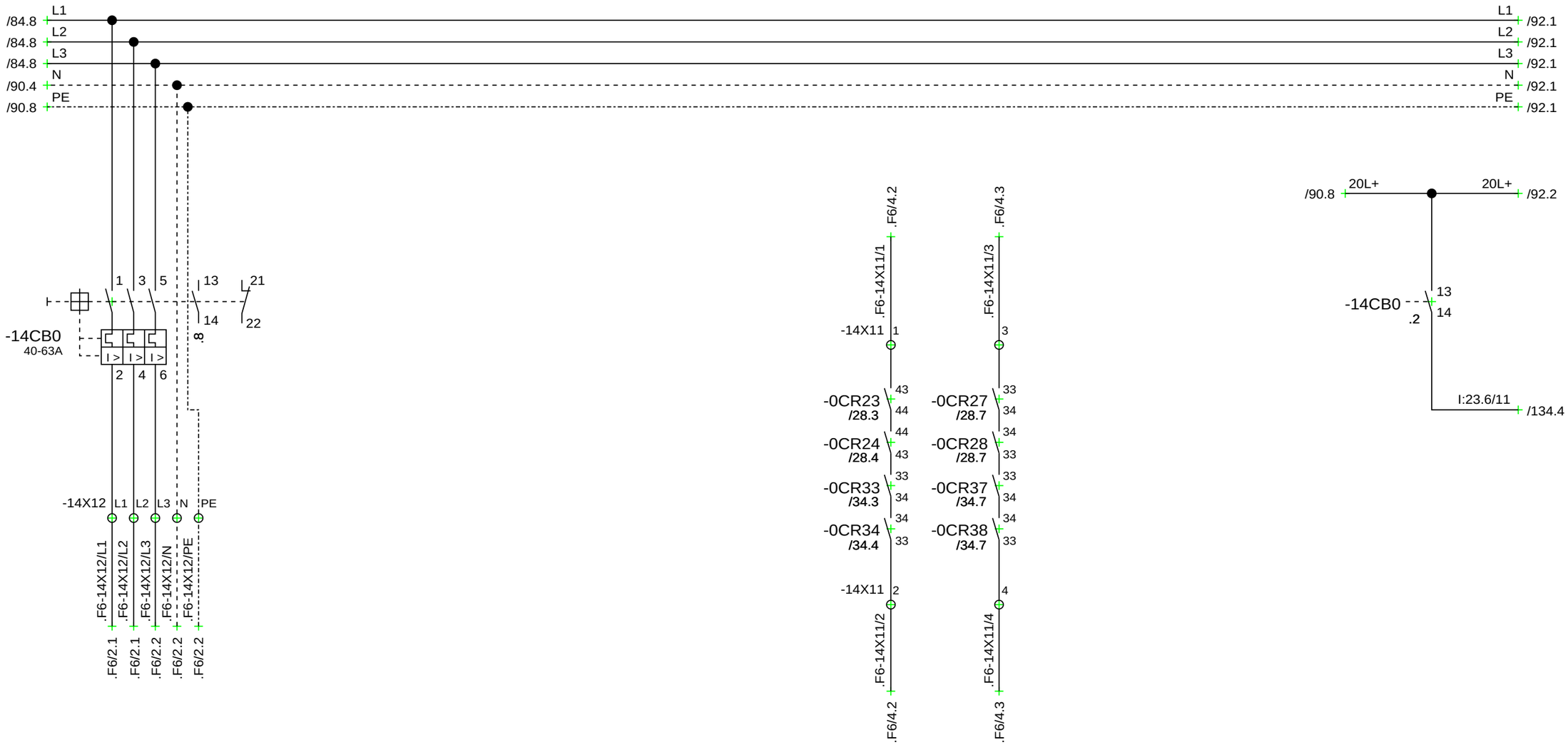
BÜHLER	customer 474 :P_NR2	+HSS	page 89
		=A1.F1	of 271
comm. nr. :P_NR1	heating licking roller before bottom dep	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 90 of 271
comm. nr. :P_NR1	worm conveyor licking roller	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



480VAC Versorgung
Deckel-Dosiermaschine

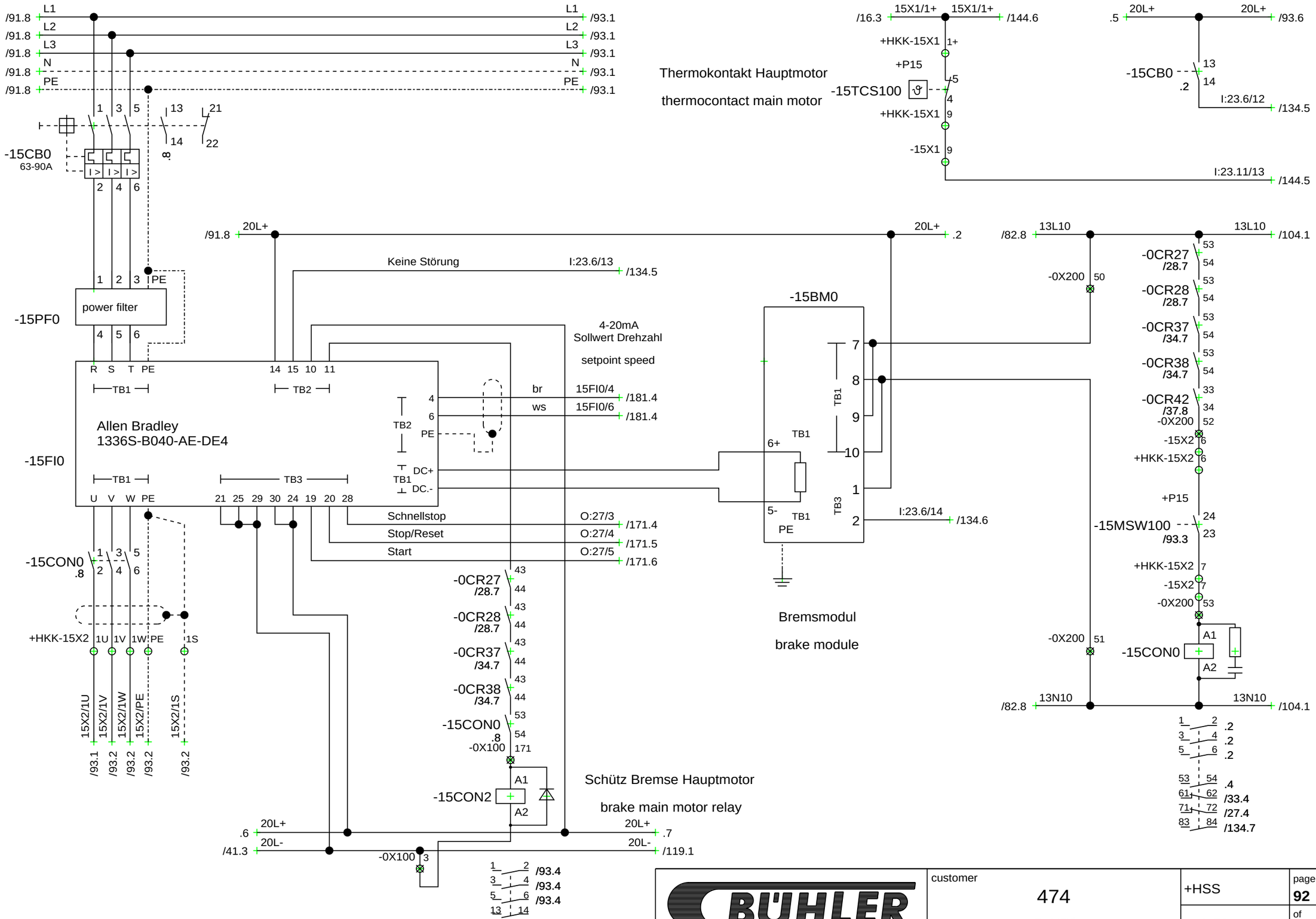
480VAC power supply
bottom depositor

Signalaustausch Not-Aus
Deckel-Dosiermaschine

signal exchange emergency stop
bottom depositor

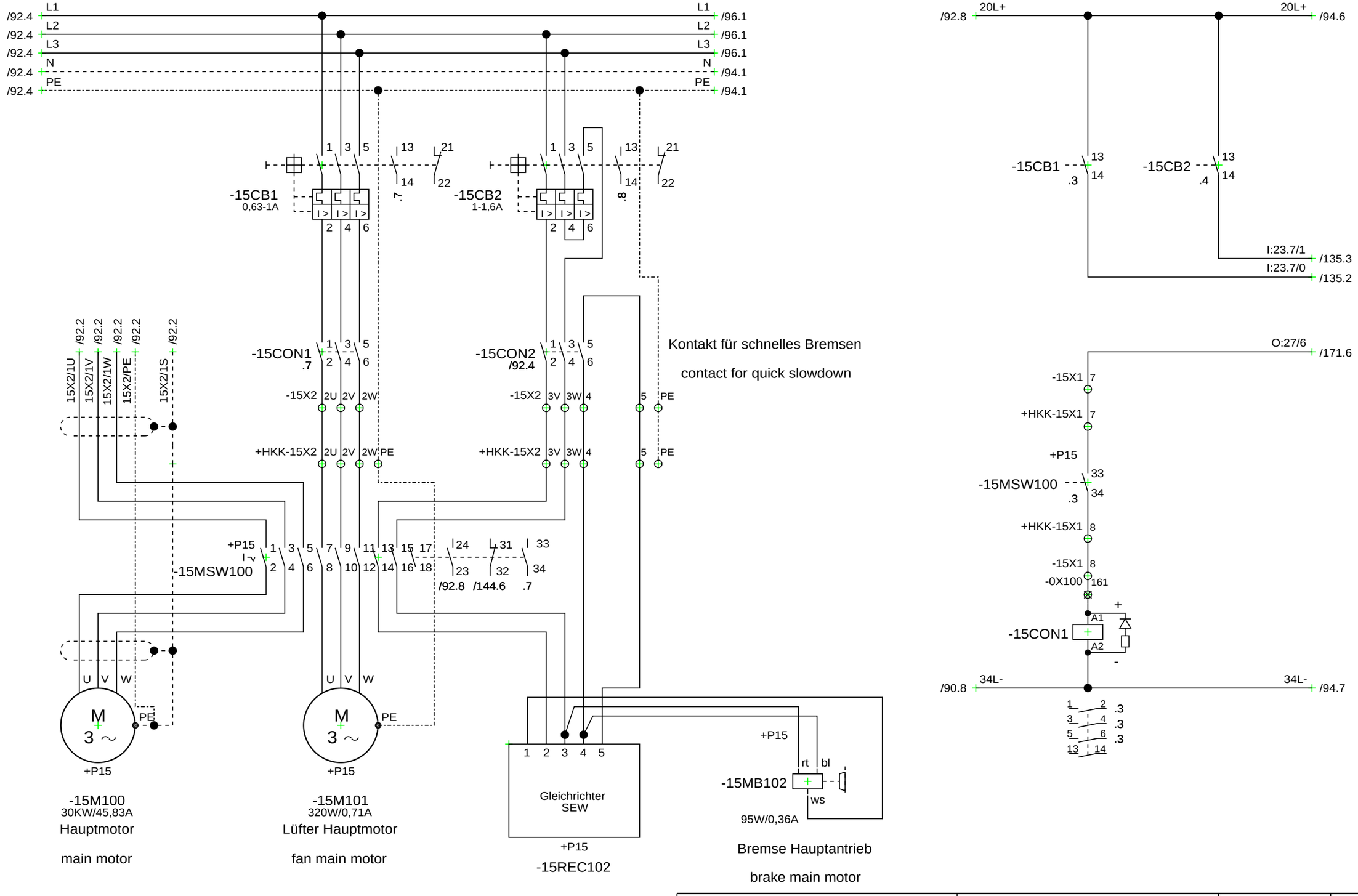
BÜHLER	customer 474 :P_NR2	+HSS	page **91**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply bottom depositor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



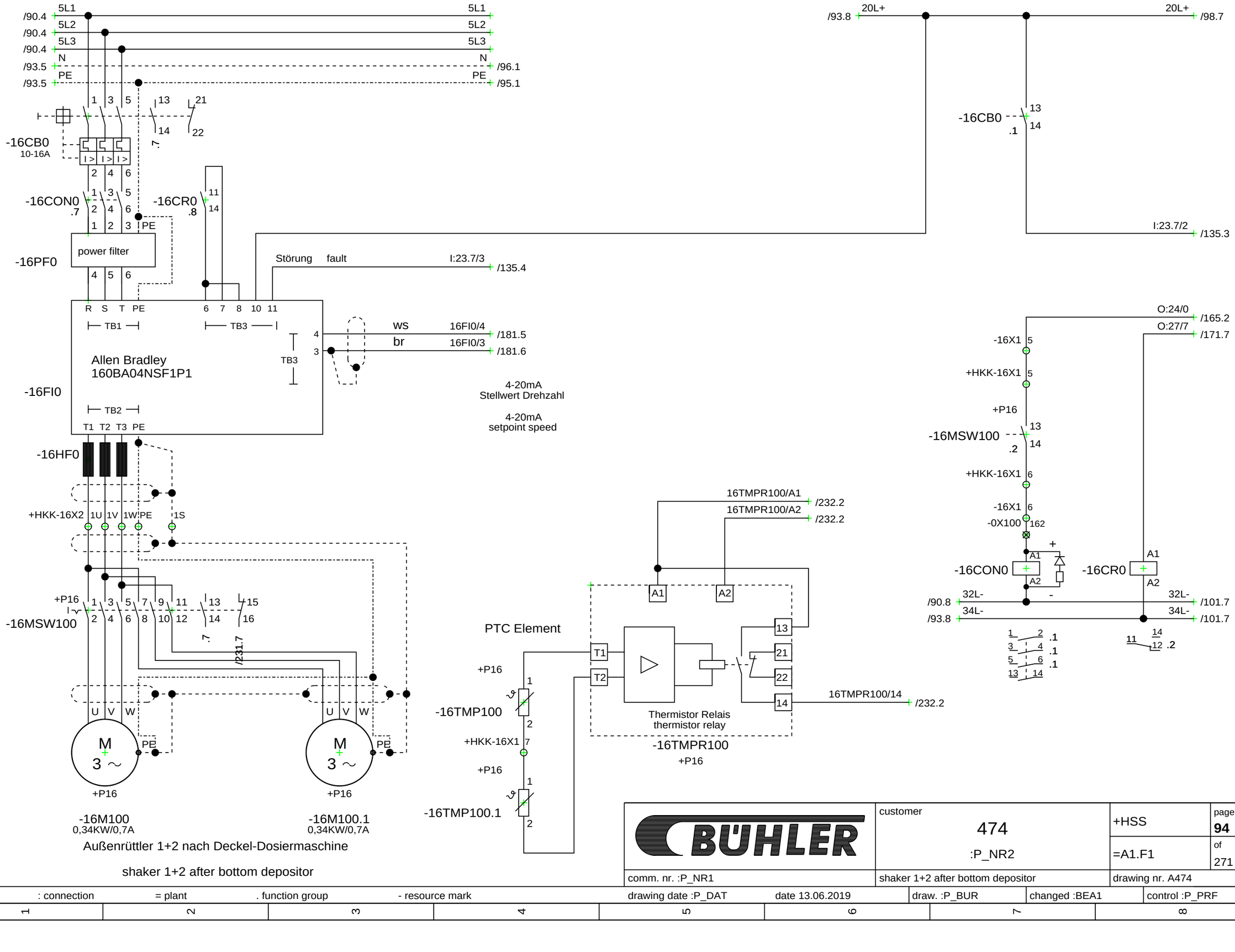
BÜHLER	customer 474 :P_NR2	+HSS	page 92
		=A1.F1	of 271
comm. nr. :P_NR1	main motor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



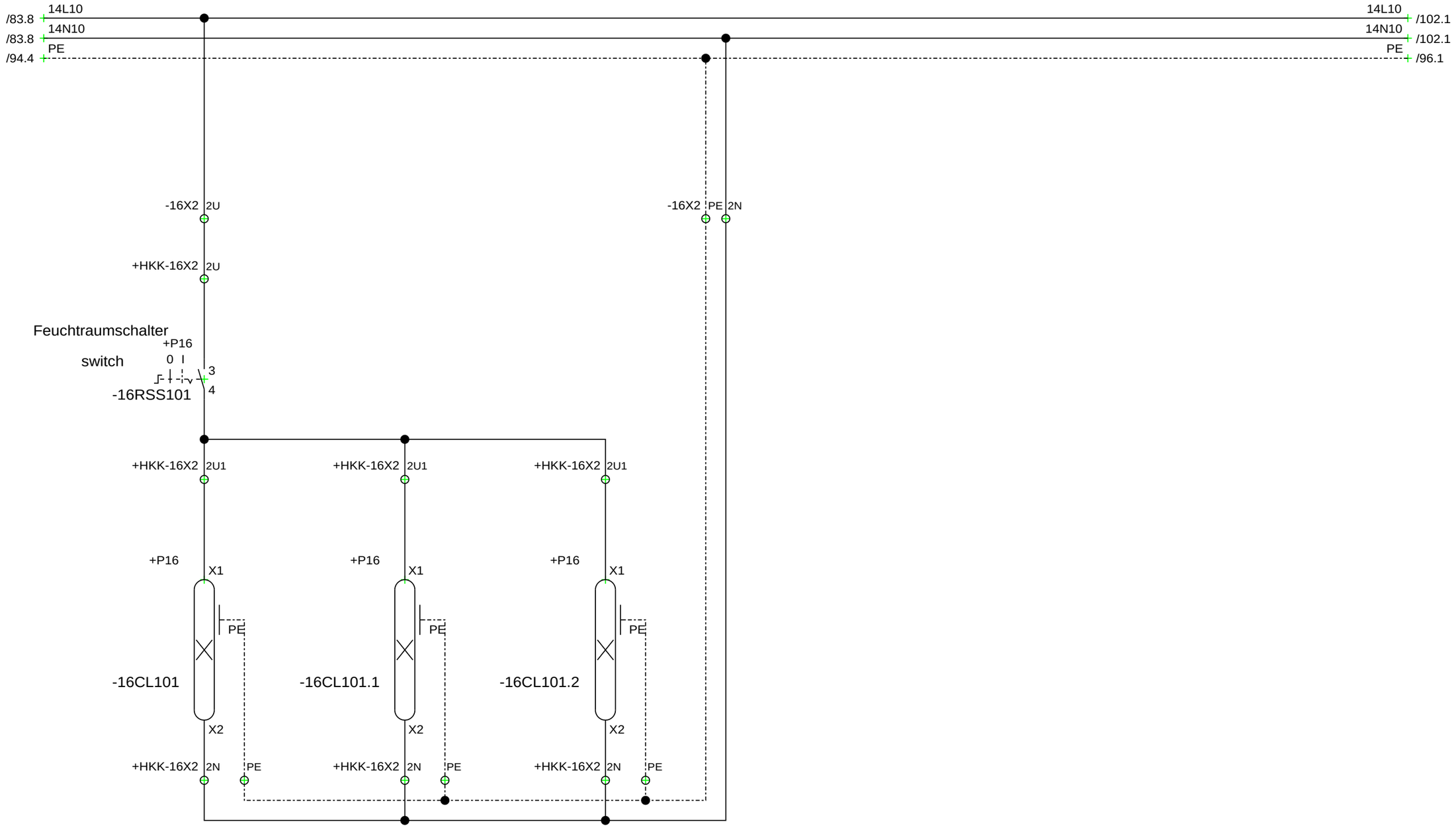
BÜHLER	customer 474 :P_NR2	+HSS	page 93
		=A1.F1	of 271
comm. nr. :P_NR1	fan, brake main motor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS =A1.F1	page 94 of 271
comm. nr. :P_NR1	shaker 1+2 after bottom depositor		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

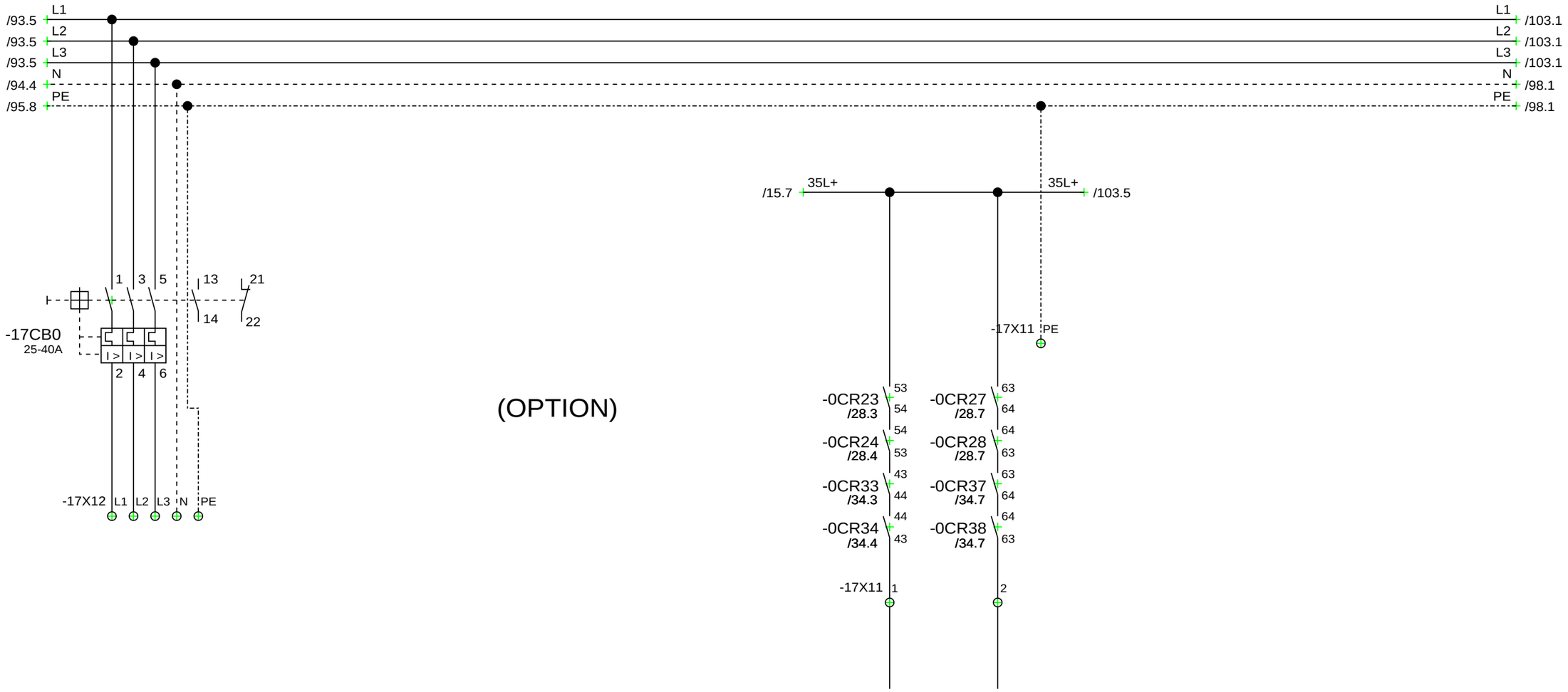


Beleuchtung 2. Füllungskühler unten

illumination 2. filling cooler above

BÜHLER	customer 474 :P_NR2	+HSS	page 95
		=A1.F1	of 271
comm. nr. :P_NR1	illumination 2. filling cooler above		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



480VAC Versorgung
Servosystem
Deckelschaber

480VAC power supply
servo system
bottom scraper

Signalaustausch Not-Aus
Servosystem
Deckelschaber

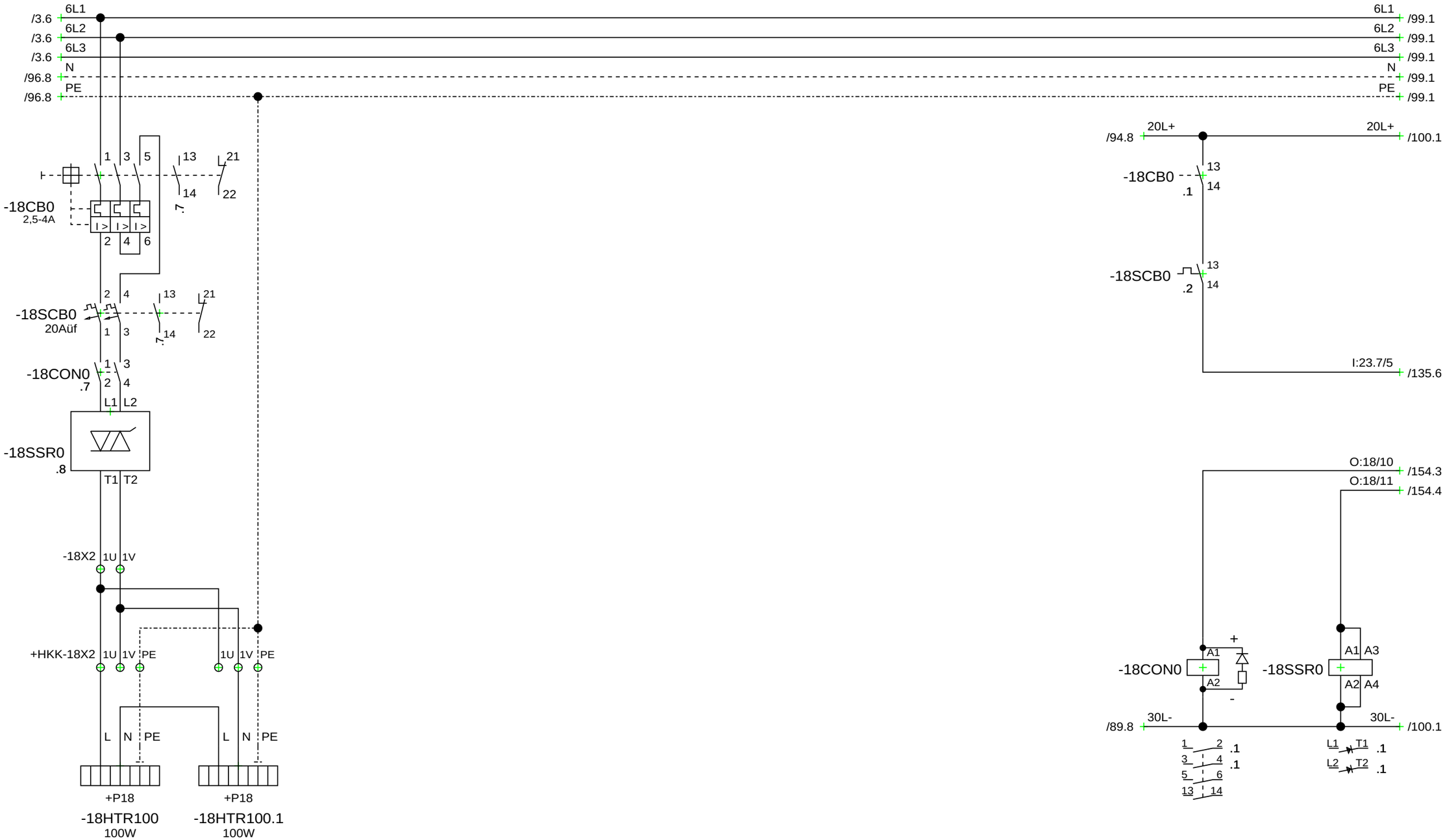
signal exchange emergency stop
servo system
bottom scraper

BÜHLER	customer 474 :P_NR2		+HSS	page **96**	
			=A1.F1	of 271	
comm. nr. :P_NR1	power supply servo drive bottom scraper		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Option für
Rüttler 1+2 nach Deckelschaber
2x Lüfter Raumheizung DS
2x Raumheizungen DS
4x Heiztaschen DS
2x Seitenreinigung nach DS
(Geräteadapter vorsehen)

option for
bottom scraper

BÜHLER	customer 474 :P_NR2		+HSS	page **97**	
			=A1.F1	of 271	
comm. nr. :P_NR1	spare		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

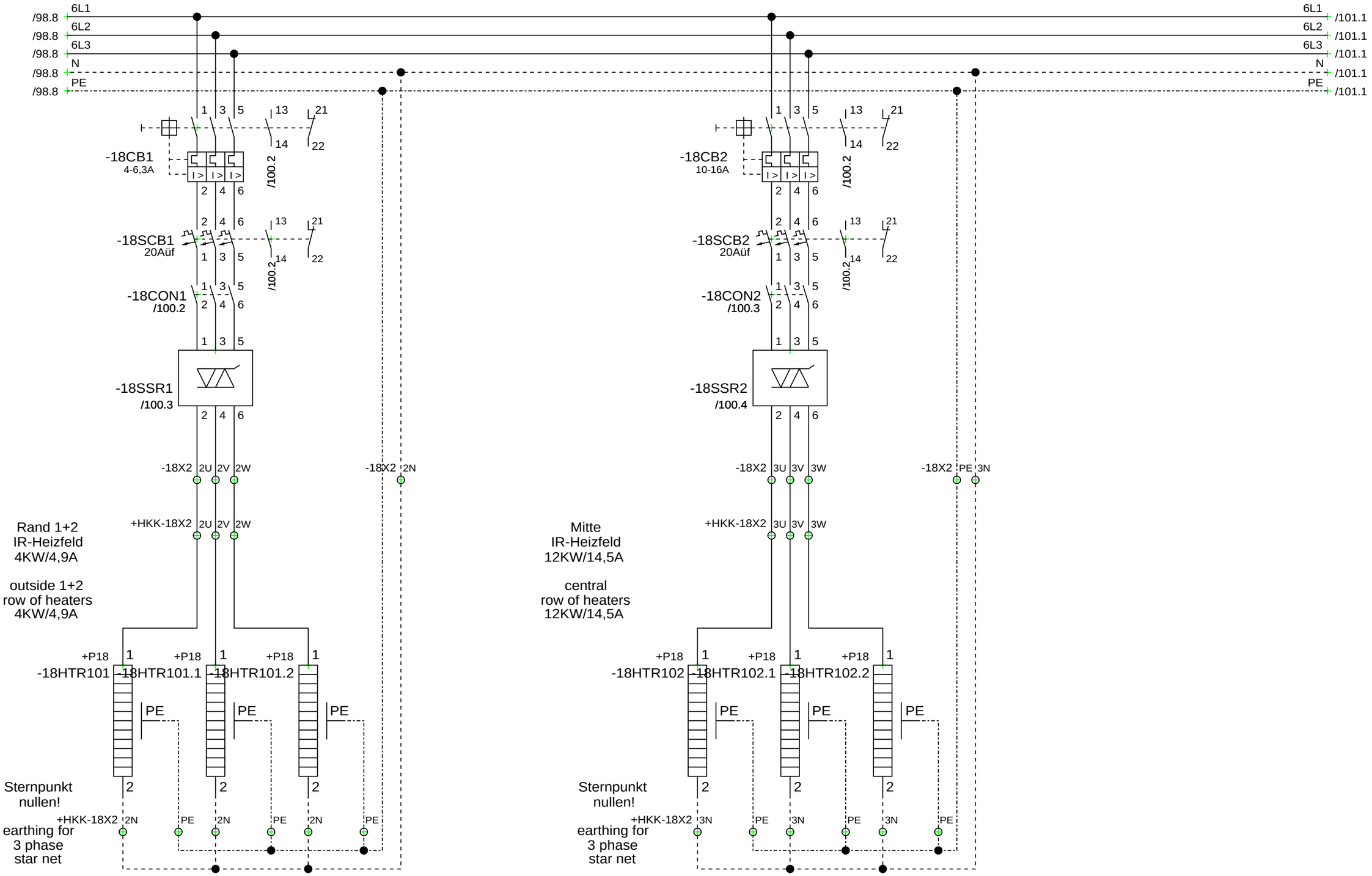


Seitenschaberheizung vor Klappformenschließer

side scraper heating before mould closing device

BÜHLER	customer 474 :P_NR2	+HSS	page 98
		=A1.F1	of 271
comm. nr. :P_NR1	heating side cleaning after bottom dep.	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

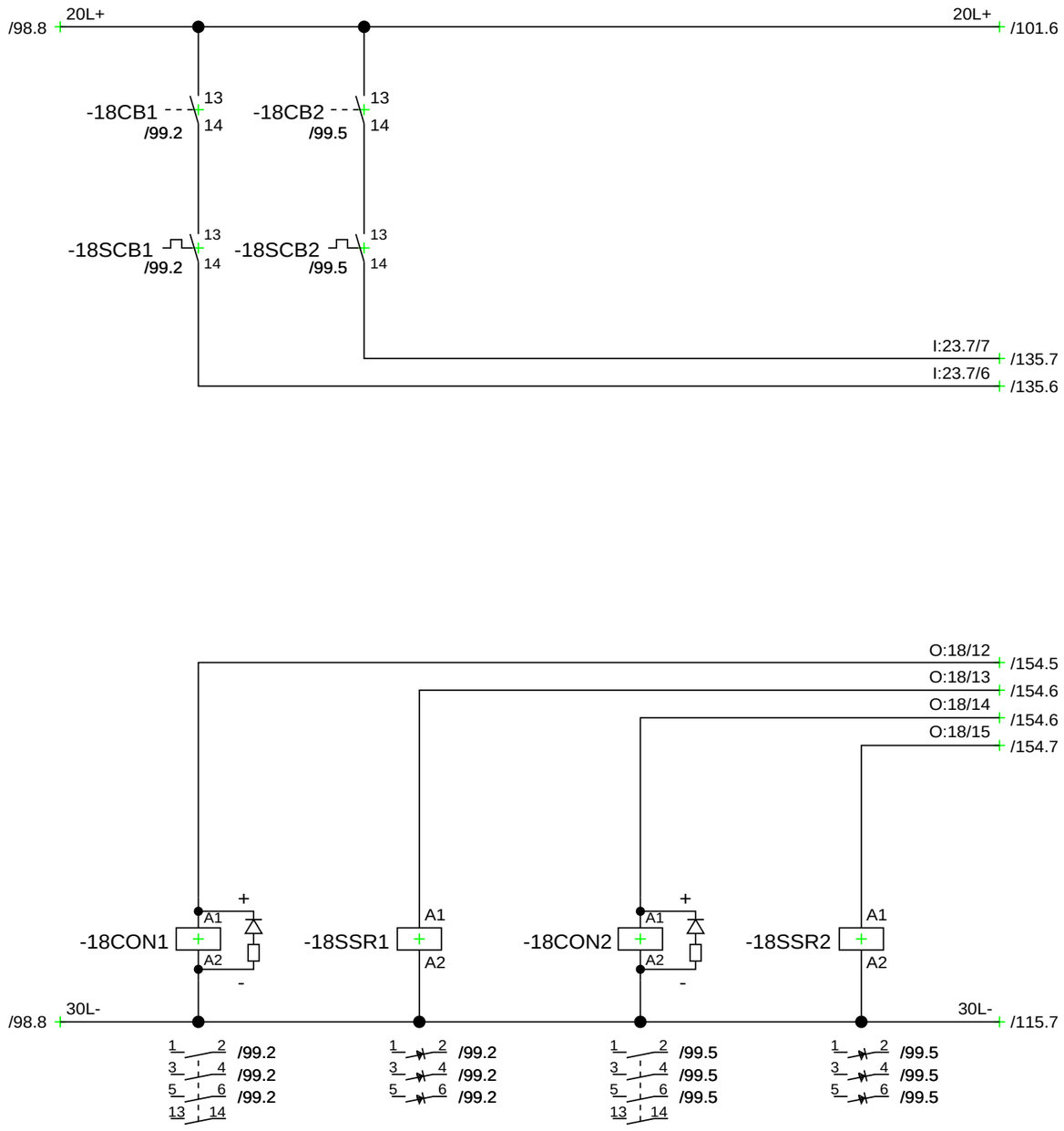


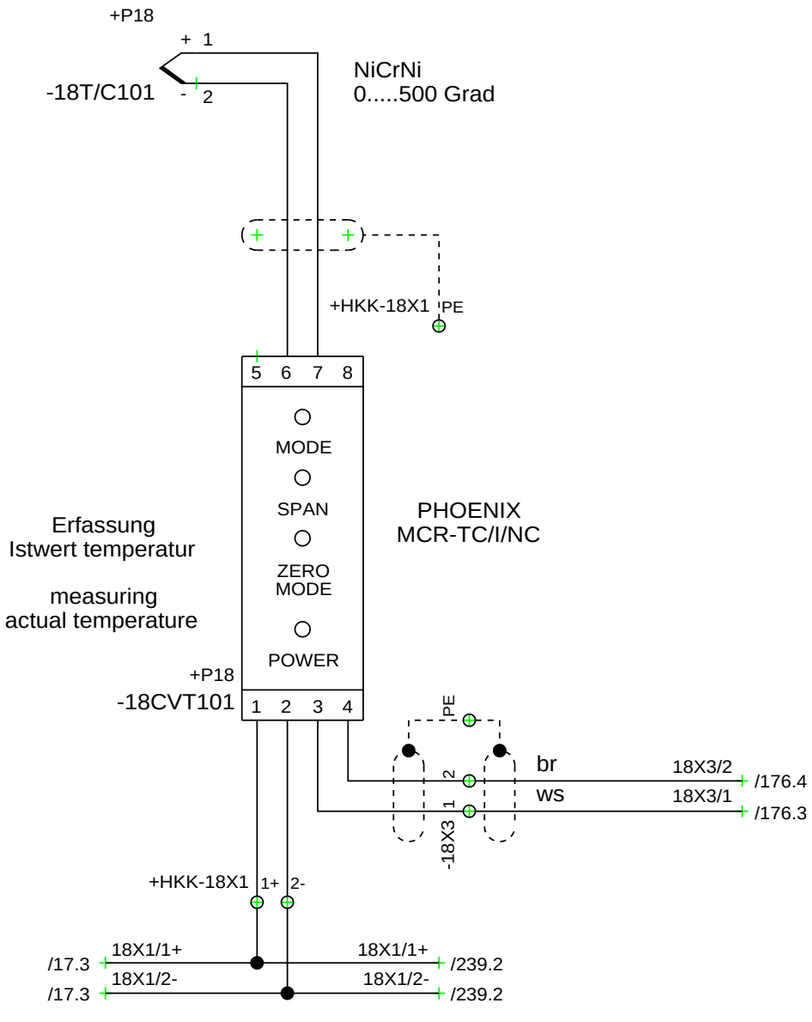
IR-Heizfeld
vor Klappformenschließer

IR-heating
before mould closing device

BÜHLER	customer 474 :P_NR2	+HSS	page 99
		=A1.F1	of 271
comm. nr. :P_NR1	IR-heating before mould closing device		drawing nr. A474

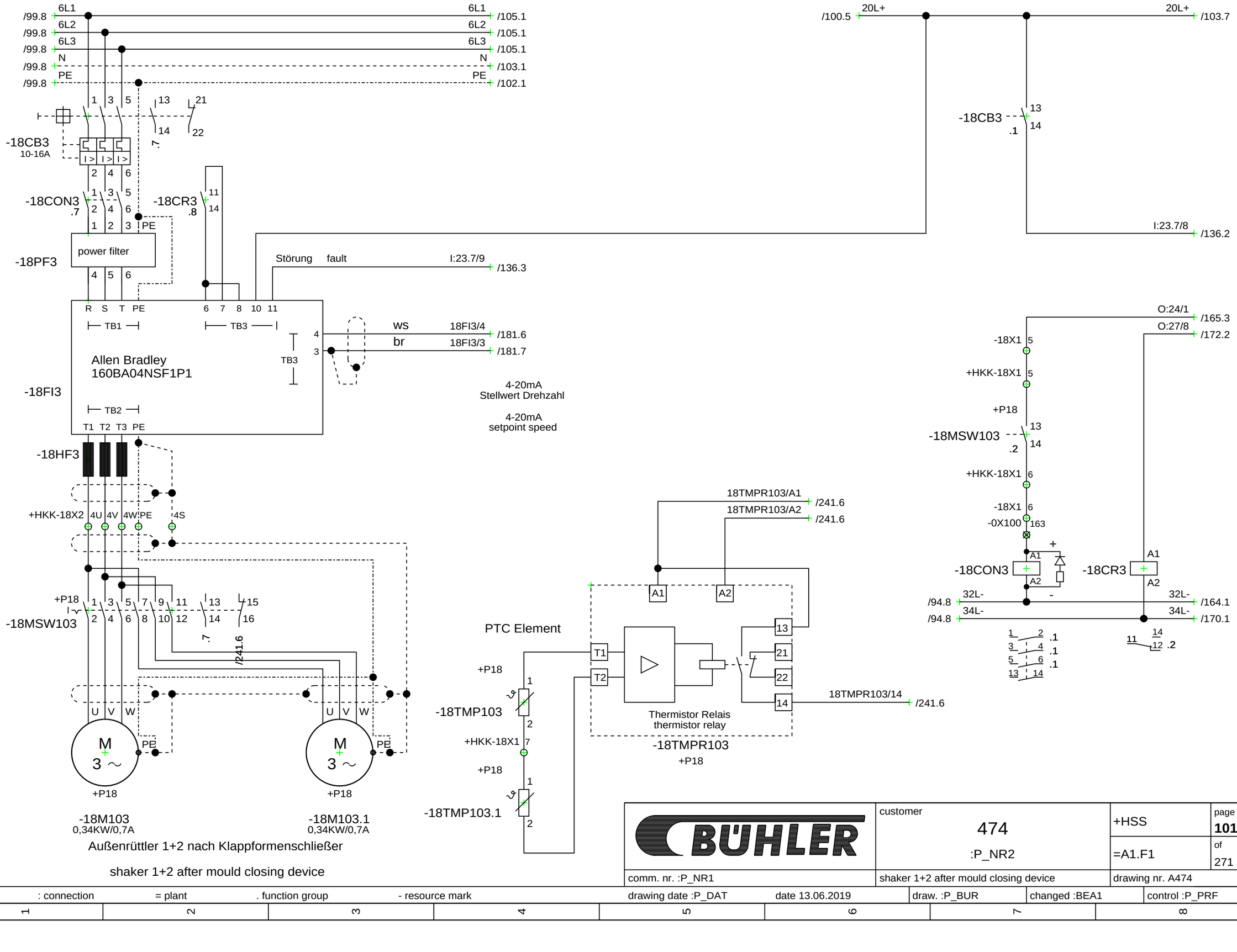
+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

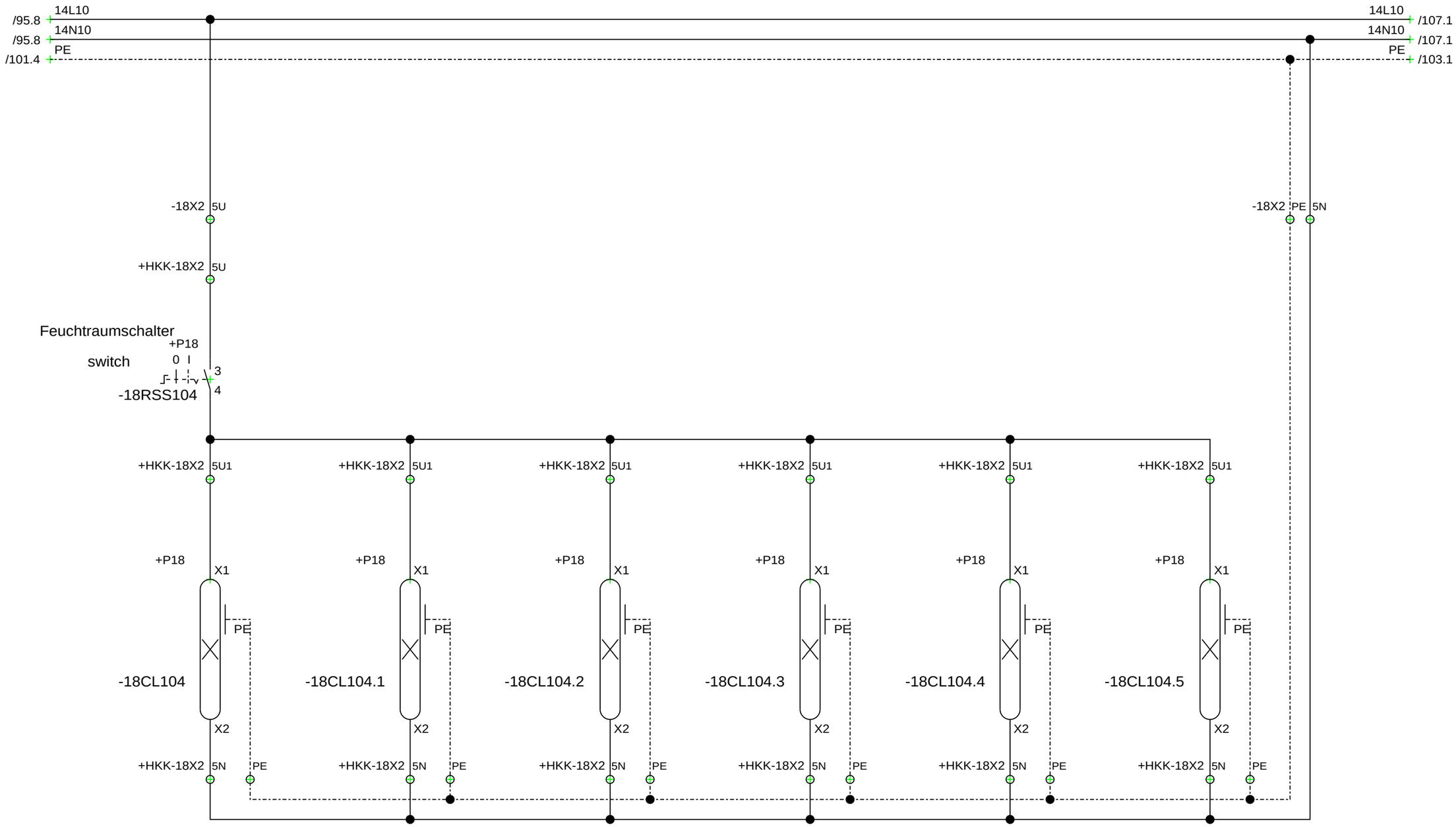




BÜHLER	customer 474 :P_NR2	+HSS	page 100
		=A1.F1	of 271
comm. nr. :P_NR1	IR-heating before mould closing device		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		


/99.8 6L1
/99.8 6L2
/99.8 6L3
/99.8 N
/99.8 PE
6L1 /105.1
6L2 /105.1
6L3 /105.1
N /103.1
PE /102.1
-18CB3
10-16A
-18CON3
.7
-18CR3
.8
power filter
-18PF3
Störung fault
I:23.7/9 /136.3
R S T PE 6 7 8 10 11
TB1 TB3 TB2
Allen Bradley
160BA04NSF1P1
-18FI3
ws 18FI3/4 /181.6
br 18FI3/3 /181.7
4-20mA
Stellwert Drehzahl
4-20mA
setpoint speed
-18HF3
+HKK-18X2 4U 4V 4W PE 4S
+P18
-18MSW103
/241.6
U V W PE
M
3 ~
-18M103
0,34KW/0,7A
-18M103.1
0,34KW/0,7A
Außenrüttler 1+2 nach Klappformenschließer
shaker 1+2 after mould closing device
/100.5 20L+
20L+ /103.7
-18CB3
.1
I:23.7/8 /136.2
O:24/1 /165.3
O:27/8 /172.2
-18X1 5
+HKK-18X1 5
+P18
-18MSW103
.2
+HKK-18X1 6
-18X1 6
-0X100 163
-18CON3
-18CR3
32L- /94.8
34L- /94.8
32L- /164.1
34L- /170.1
18TMPR103/A1 /241.6
18TMPR103/A2 /241.6
PTC Element
-18TMP103
-18TMP103.1
+HKK-18X1 7
Thermistor Relais
thermistor relay
-18TMPR103
18TMPR103/14 /241.6
BÜHLER
customer
474
:P_NR2
+HSS
=A1.F1
page
101
of
271
comm. nr. :P_NR1
shaker 1+2 after mould closing device
drawing nr. A474
+ location : connection = plant . function group - resource mark
drawing date :P_DAT
date 13.06.2019
draw. :P_BUR
changed :BEA1
control :P_PRF

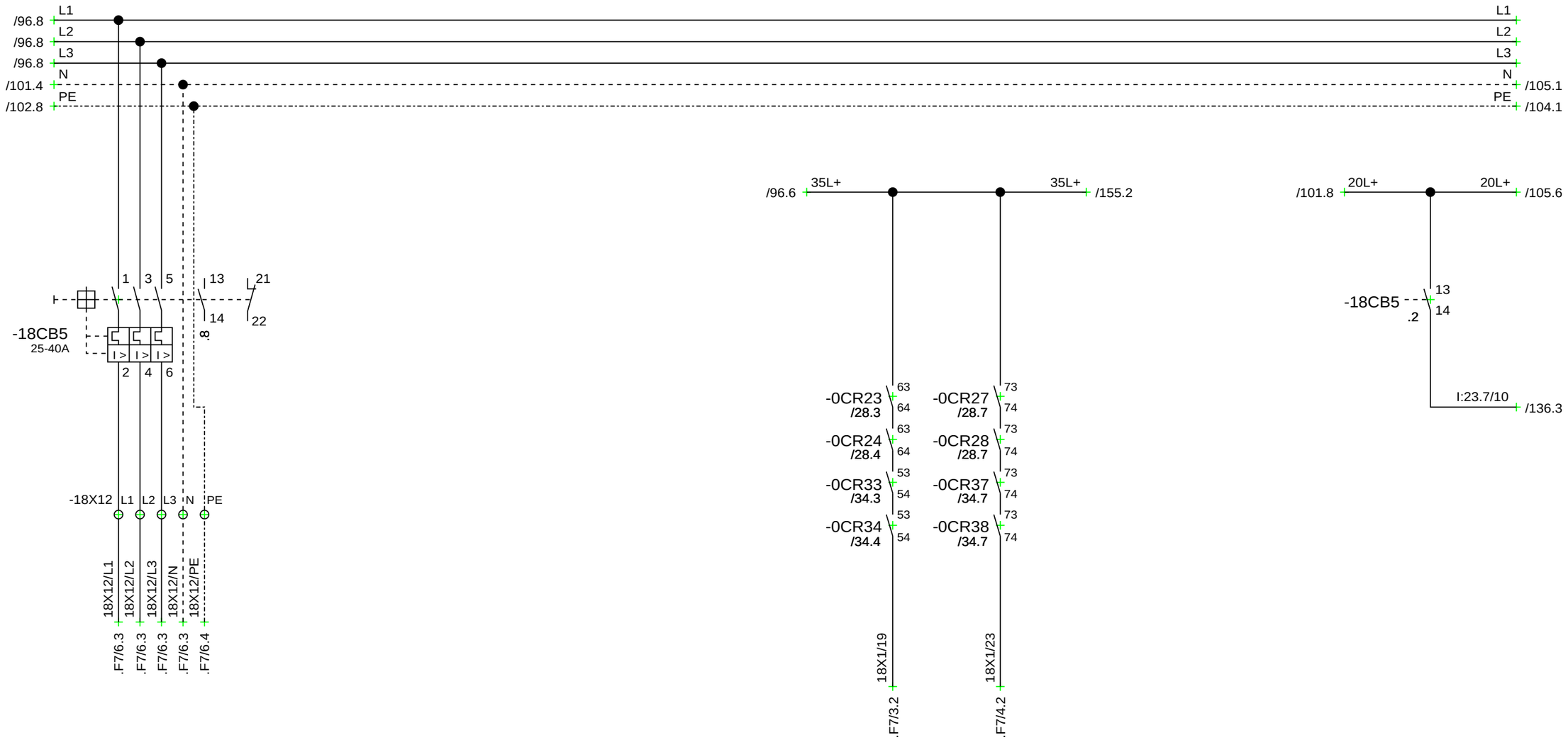


Beleuchtung Endkühler unten

illumination final cooler above

BÜHLER	customer 474 :P_NR2	+HSS	page **102**
		=A1.F1	of 271
comm. nr. :P_NR1	illumination final cooler above		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



400VAC Versorgung
Servosystem
Klappformenschließer

400VAC power supply
servo system
mould closing device

Signalaustausch Not-Aus
Servosystem
Klappformenschließer

signal exchange emergency stop
servo system
mould closing device

BÜHLER	customer 474 :P_NR2	+HSS	page **103**
		=A1.F1	of 271
comm. nr. :P_NR1	power supply servo drive VKS	drawing nr. A474	

drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

+ location : connection = plant . function group - resource mark

/92.8 13L10
/92.8 13N10
/103.8 PE

13L10 /106.1
13N10 /106.1
PE /105.1

-21X2 1U 1N PE

21X2/1U .F9/3.1
21X2/1N .F9/3.2
21X2/PE .F9/3.2

Reserve

spare

Start an LFK

start to empty mould detection

Start Ausstapler

start destacker

Betriebsbereit

operative

Reserve

spare

24VDC Versorgung
von Klemmen 21X1/1+
und 21X1/2-

24VDC power supply
from 21X1/1+
and 21X1/2-

+P21
Leerformenkontrolle
Digitale Ein/Ausgänge auf FLEX I/O

empty mould detection
digital in/outputs
FLEX I/O

Versorgung
Leerformenkontrolle

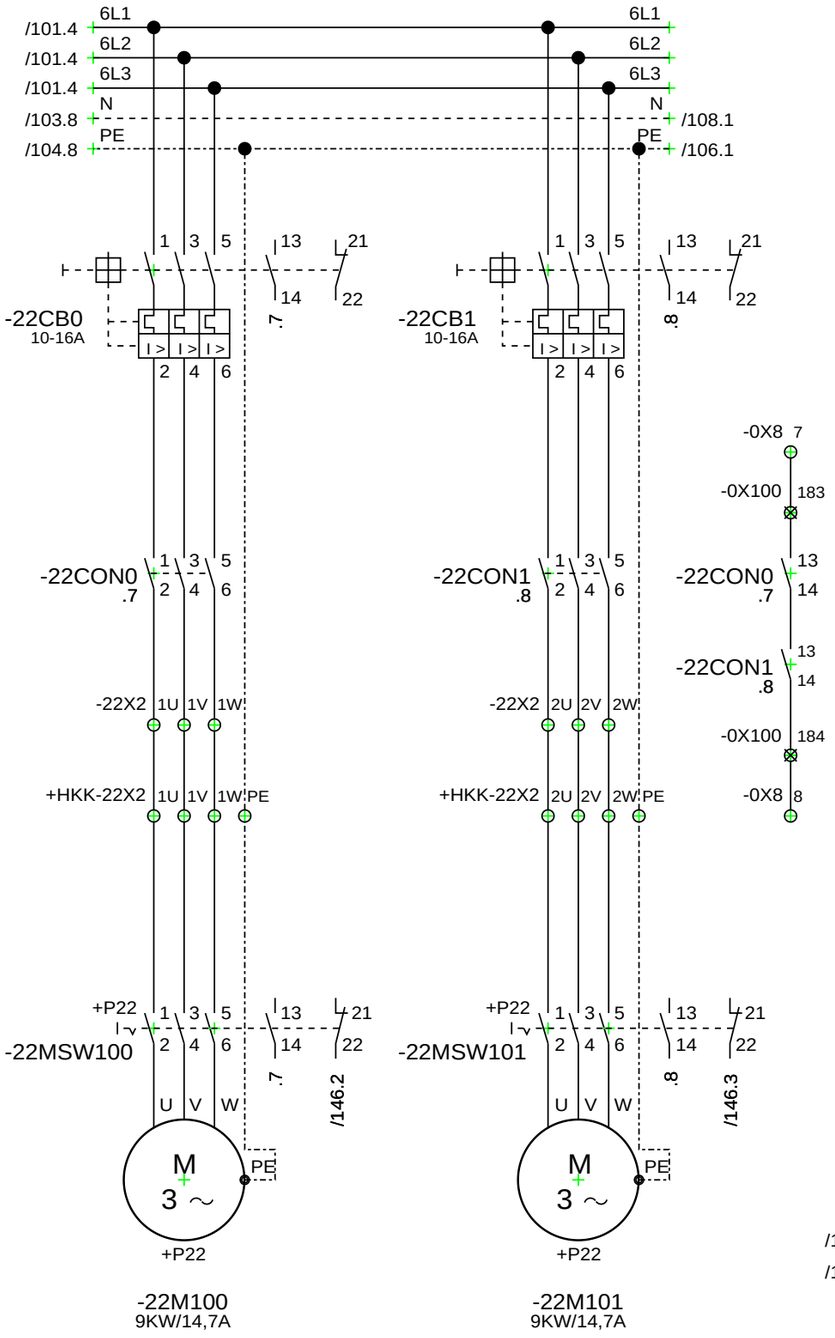
power supply
empty mould detection

BÜHLER

customer 474 :P_NR2 | +HSS | =A1.F1 | page 104 | of 271

comm. nr. :P_NR1 | power supply empty mould detection | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



1.Ventilator Endkühler

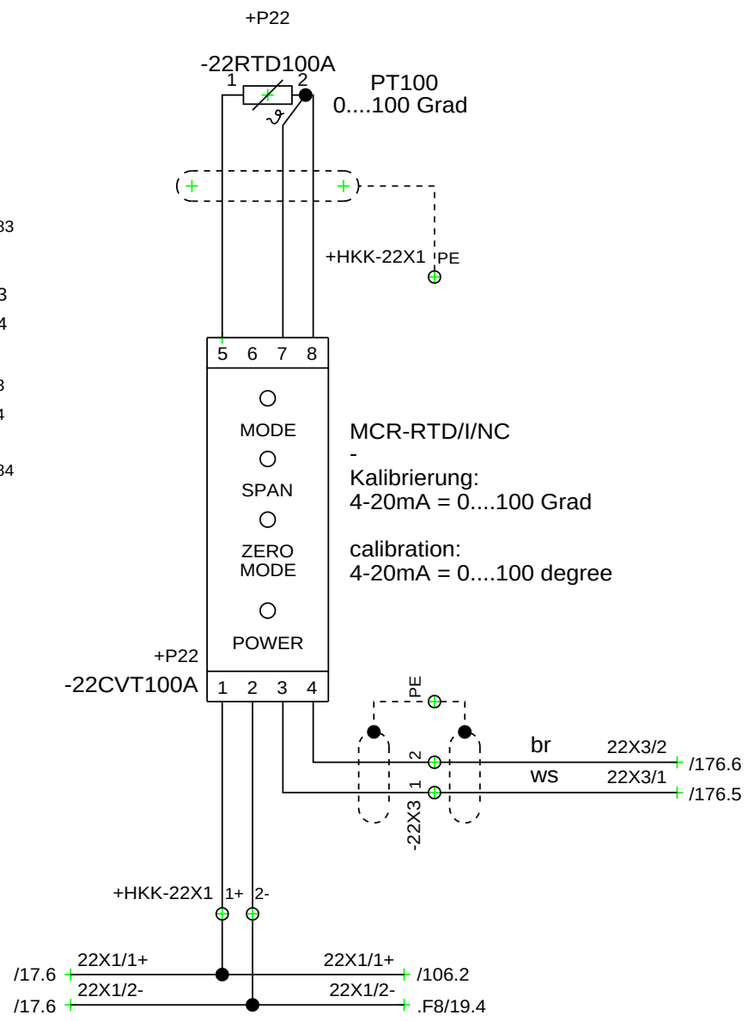
1.fan final cooler

2.Ventilator Endkühler

2.fan final cooler

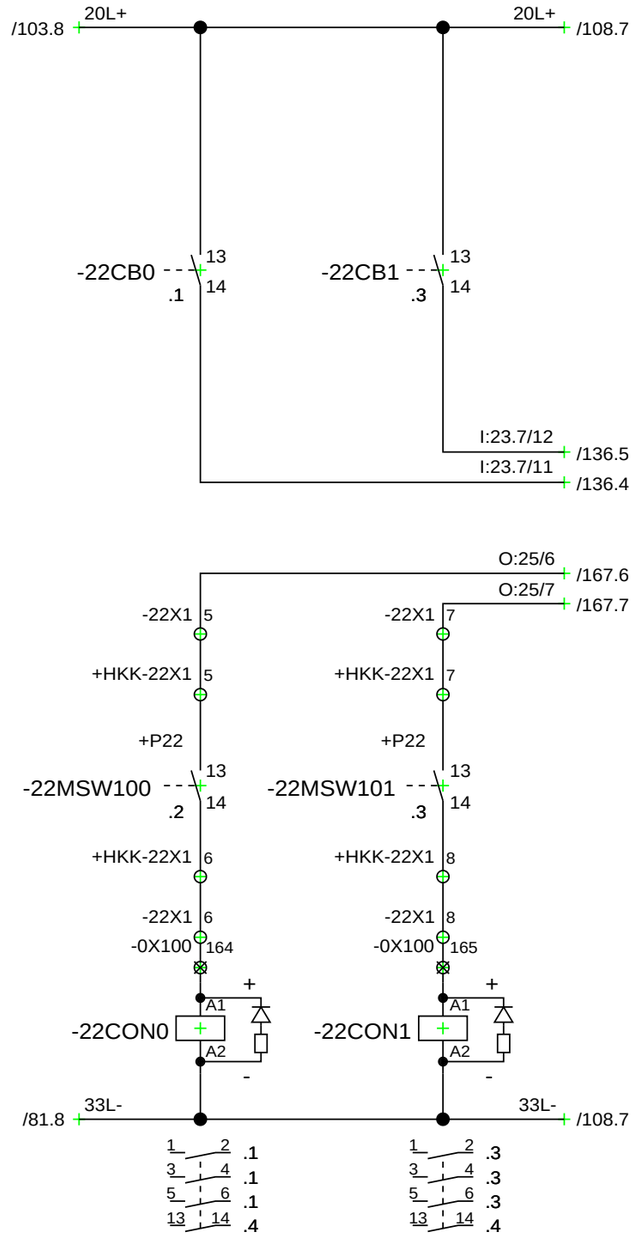
Temperaturfühler
(PT100)
Endkühler

temperature probe
(PT100)
final cooler



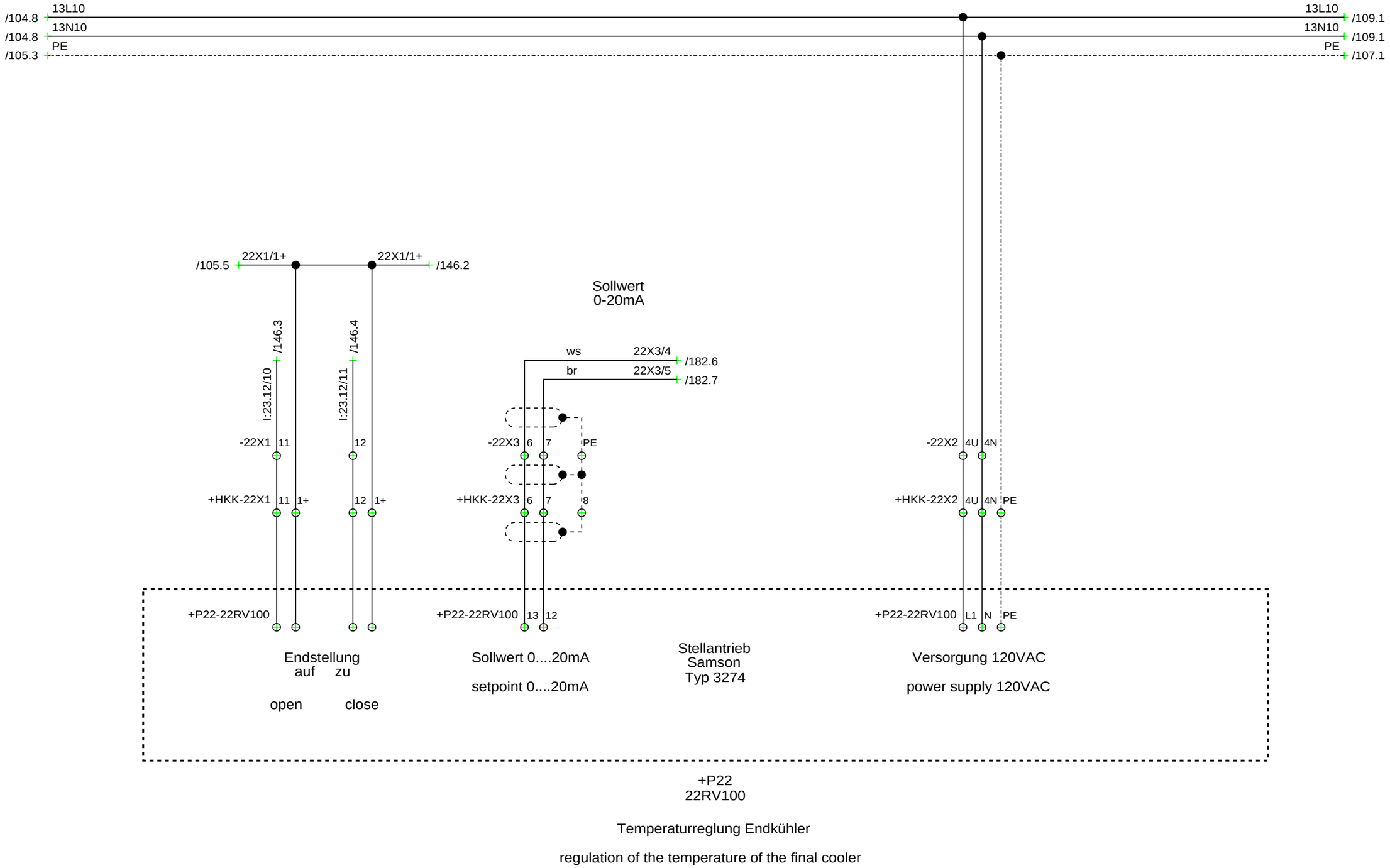
MCR-RTD/I/NC
-
Kalibrierung:
4-20mA = 0....100 Grad

calibration:
4-20mA = 0....100 degree



BÜHLER	customer 474 :P_NR2	+HSS	page 105
		=A1.F1	of 271
comm. nr. :P_NR1	fan final cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



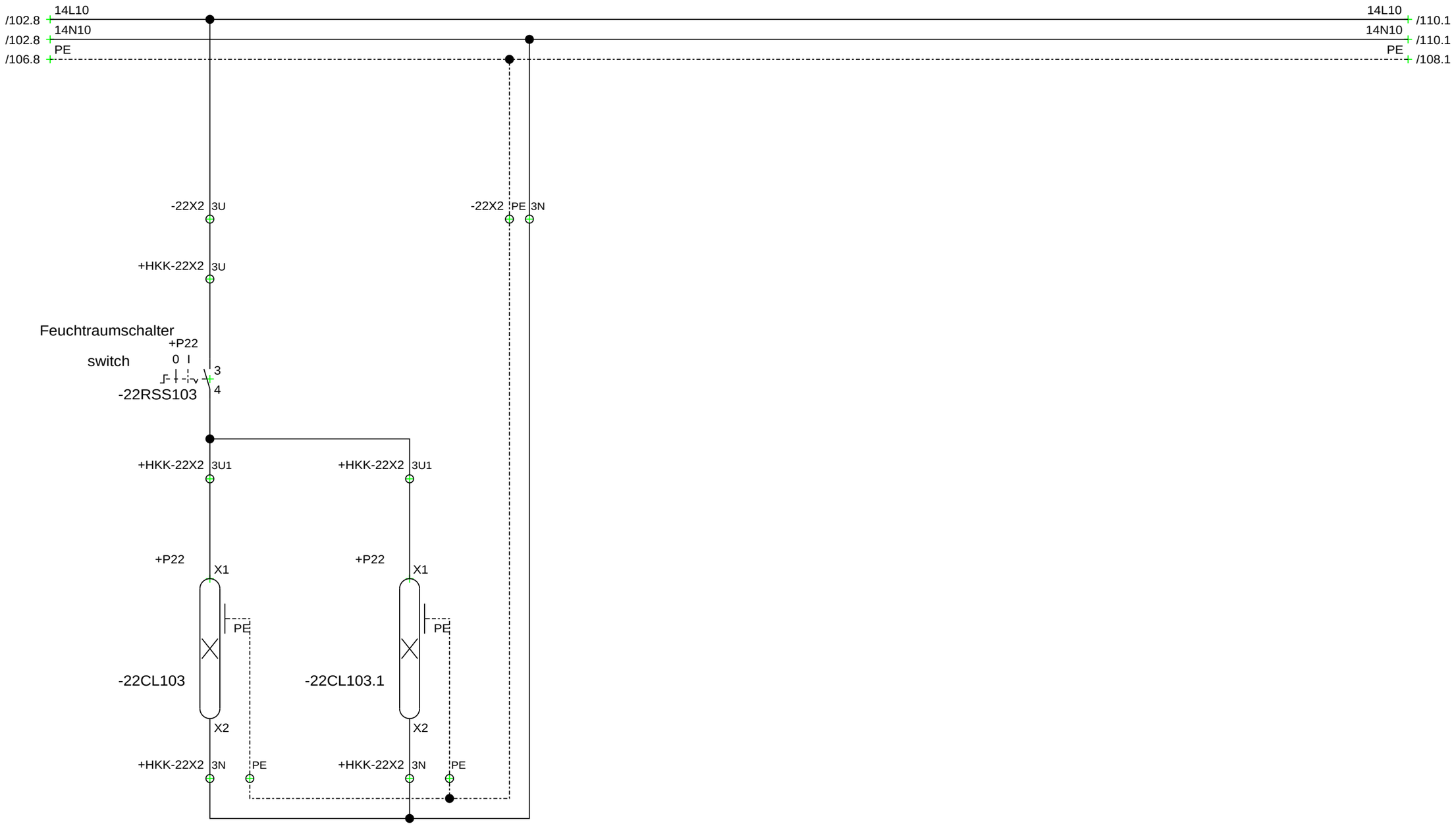
+P22
22RV100

Temperaturreglung Endkühler

regulation of the temperature of the final cooler

BÜHLER	customer 474 :P_NR2	+HSS	page 106
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve final cooler	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

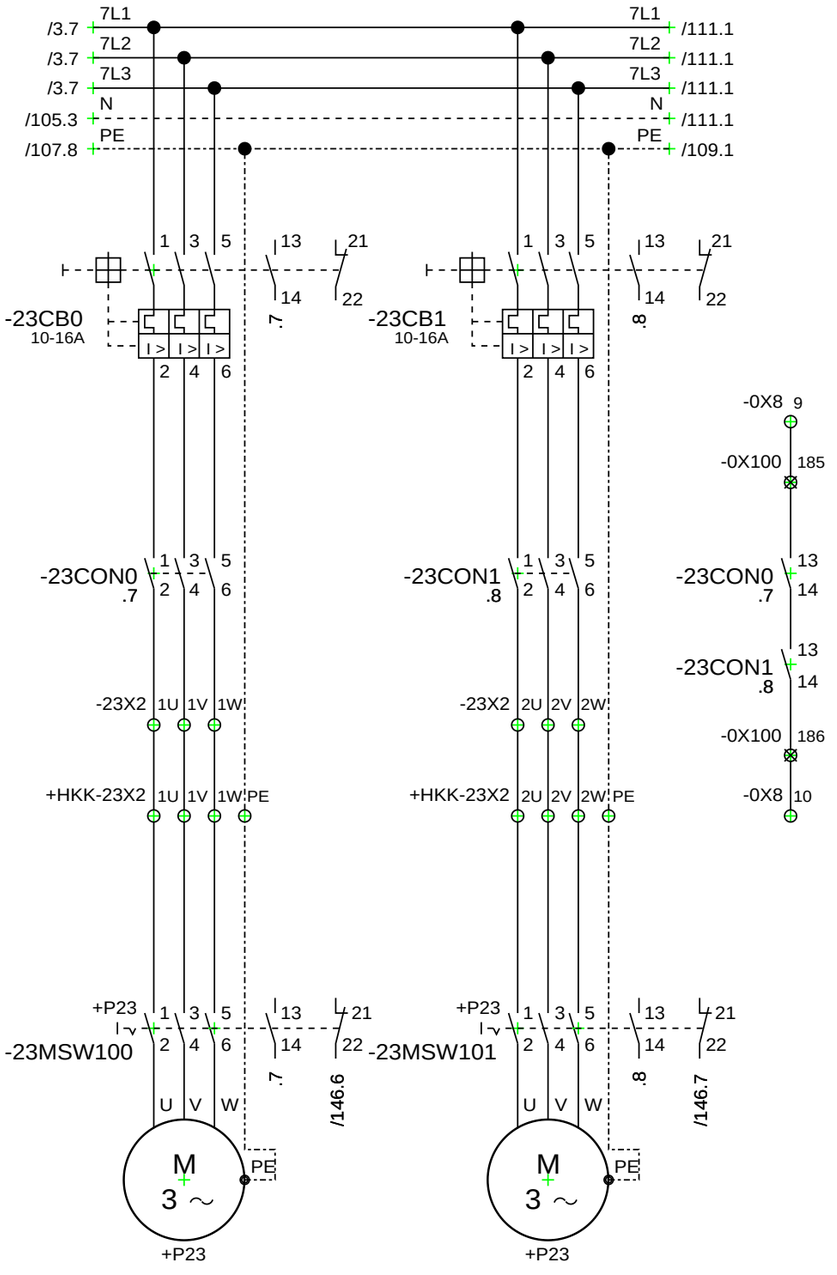


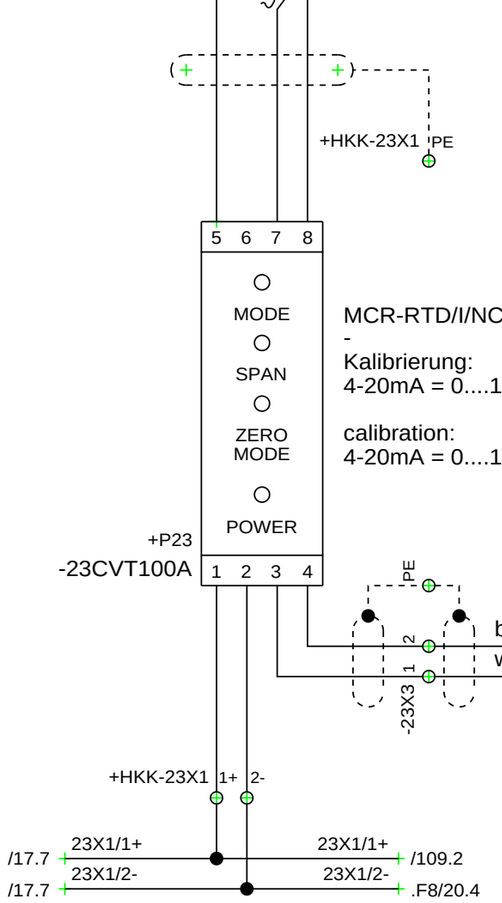
Beleuchtung Endkühler oben

illumination final cooler below

BÜHLER	customer 474 :P_NR2	+HSS	page **107**
		=A1.F1	of 271
comm. nr. :P_NR1	illumination final cooler		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



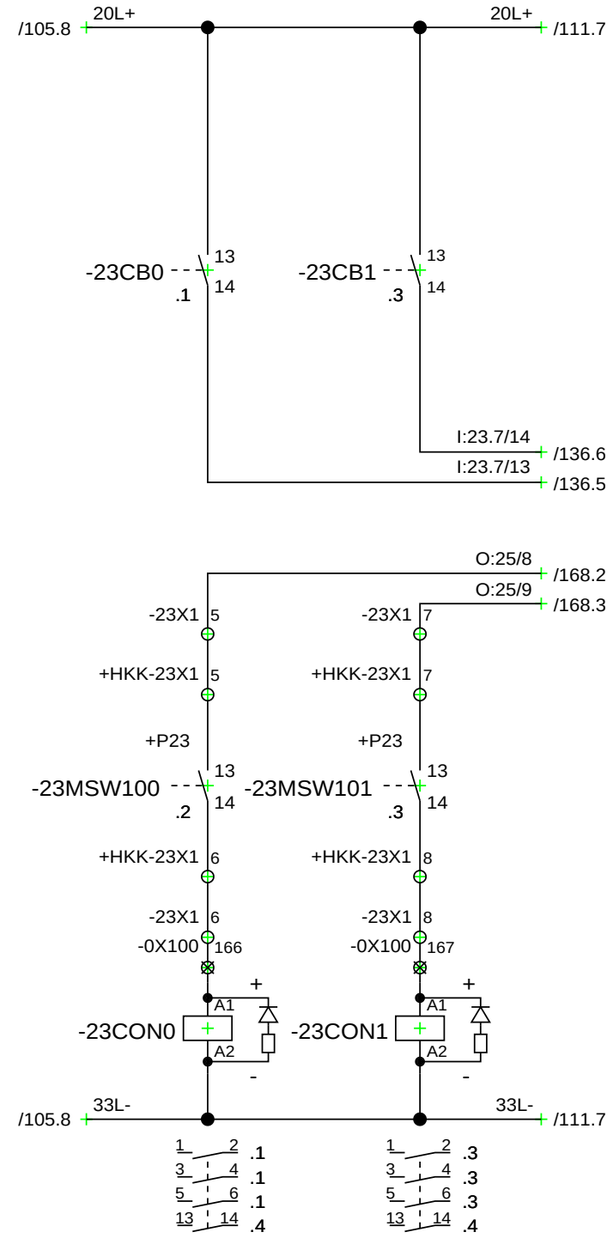


Temperaturfühler
(PT100)
2. Füllungskühler

temperature probe
(PT100)
2. filling cooler

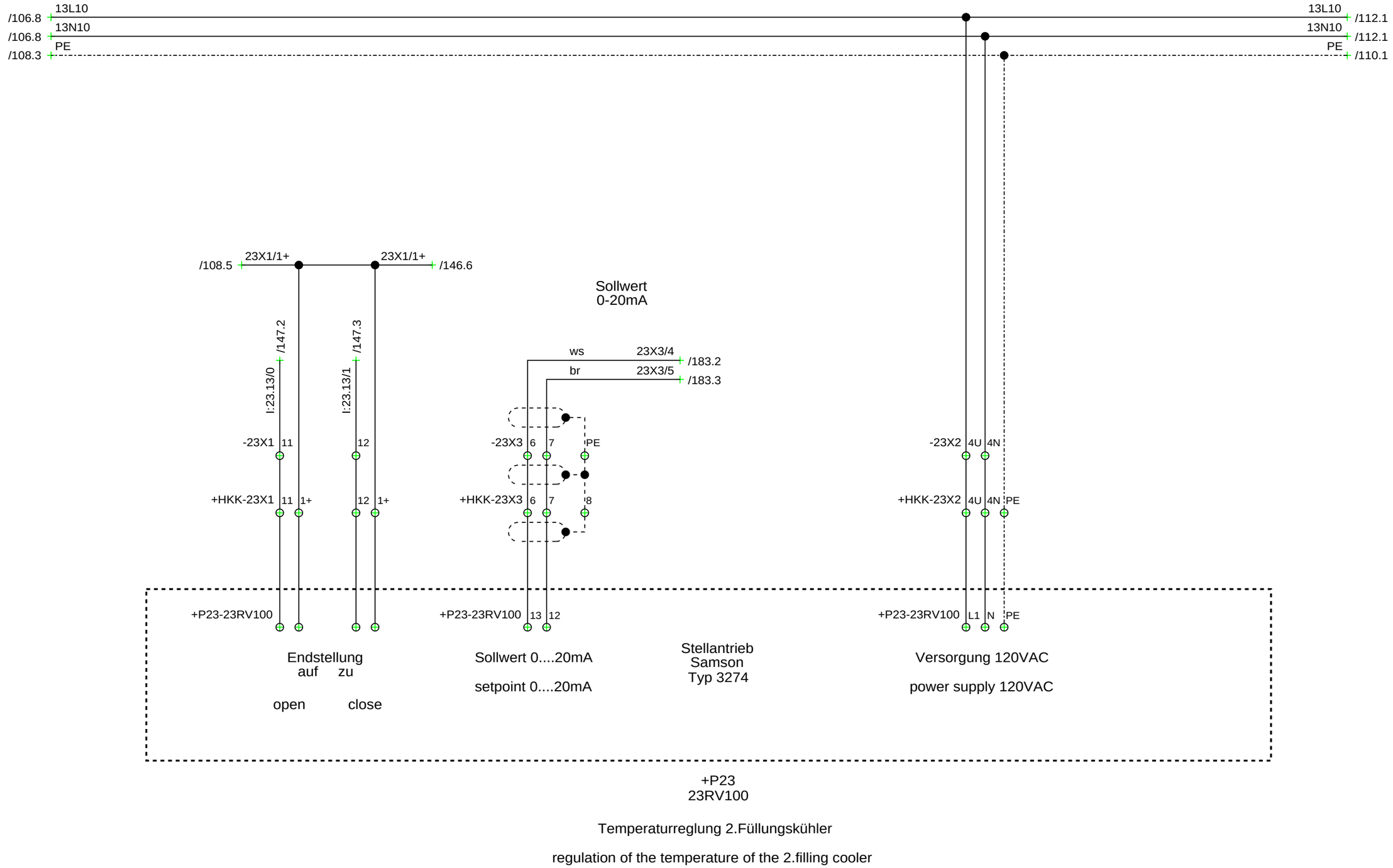
MCR-RTD/I/NC
-
Kalibrierung:
4-20mA = 0....100 Grad

calibration:
4-20mA = 0....100 degree



BÜHLER	customer 474 :P_NR2	+HSS	page 108
		=A1.F1	of 271
comm. nr. :P_NR1	1+2.fan 2. filling cooler		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



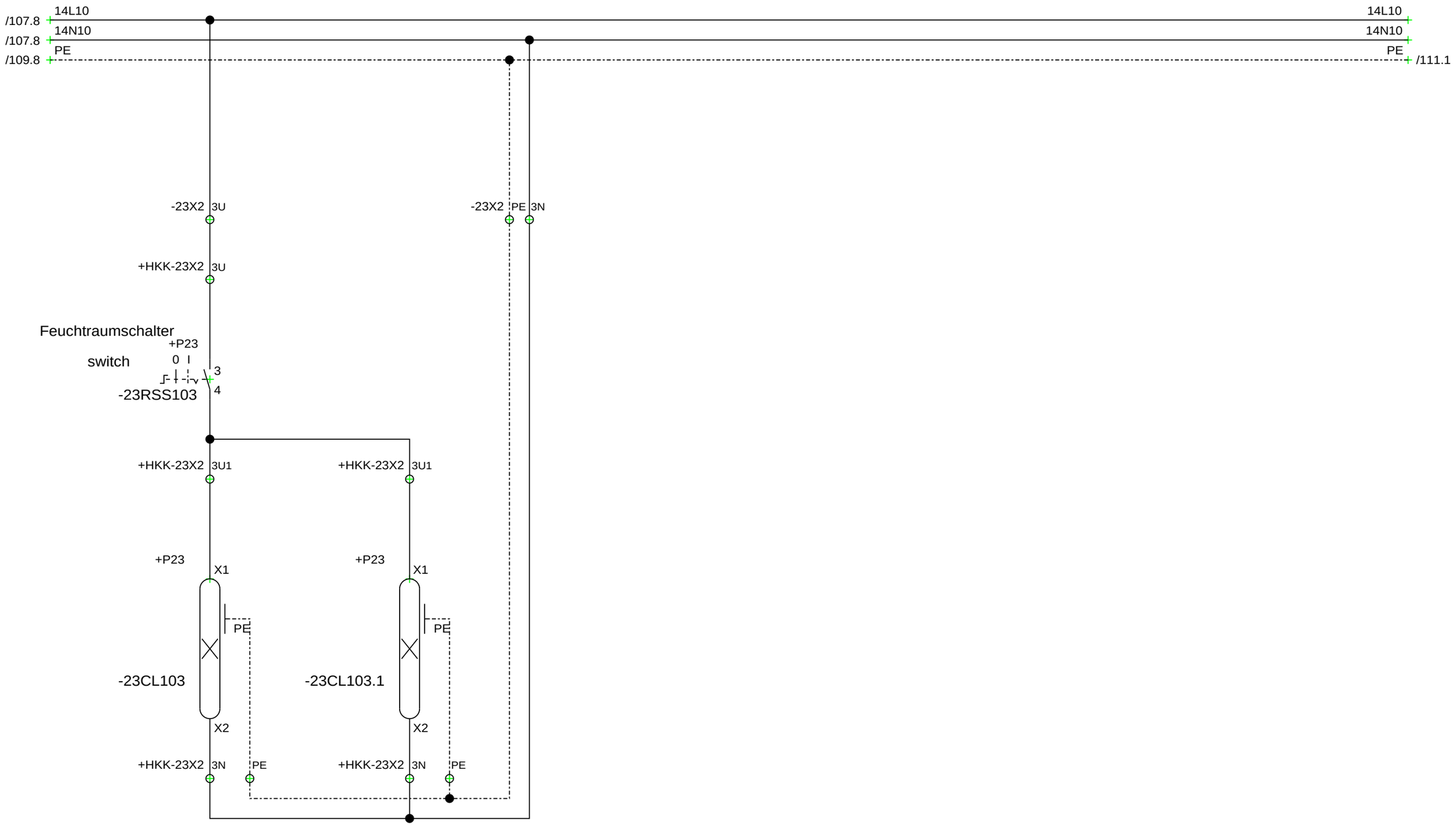
+P23
23RV100

Temperaturreglung 2.Füllungskühler

regulation of the temperature of the 2.filling cooler

BÜHLER	customer 474 :P_NR2	+HSS	page 109
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve 2.filling cooler	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF

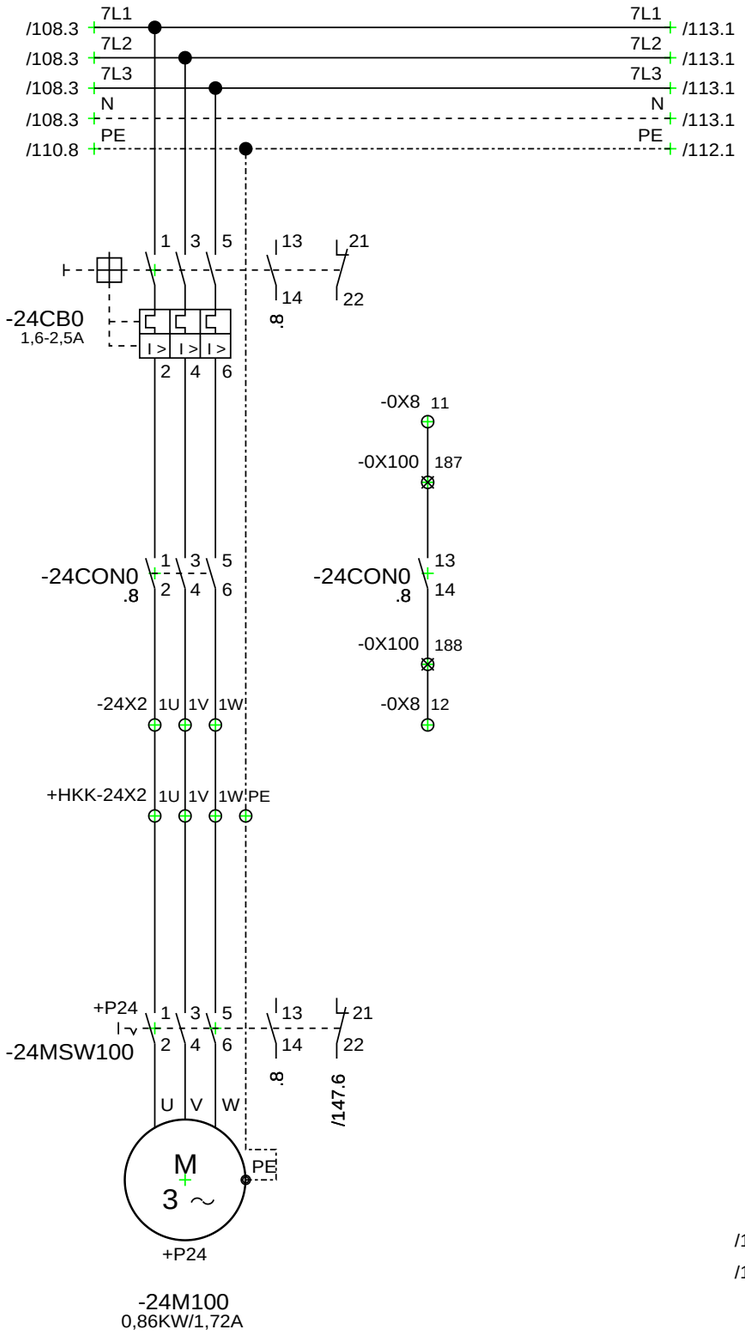


Beleuchtung 2. Füllungskühler oben

illumination 2. filling cooler below

BÜHLER	customer 474 :P_NR2	+HSS	page 110
		=A1.F1	of 271
comm. nr. :P_NR1	illumination 2. filling cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

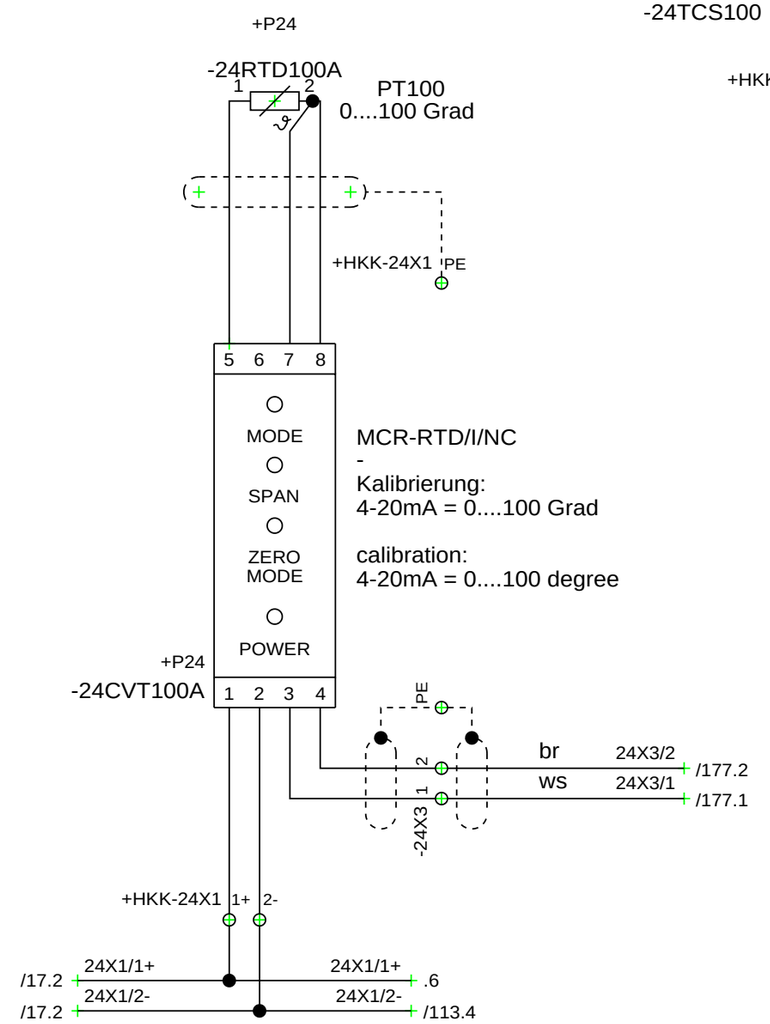


Ventilator Wärmebahn Zone 1

fan mould heating section zone 1

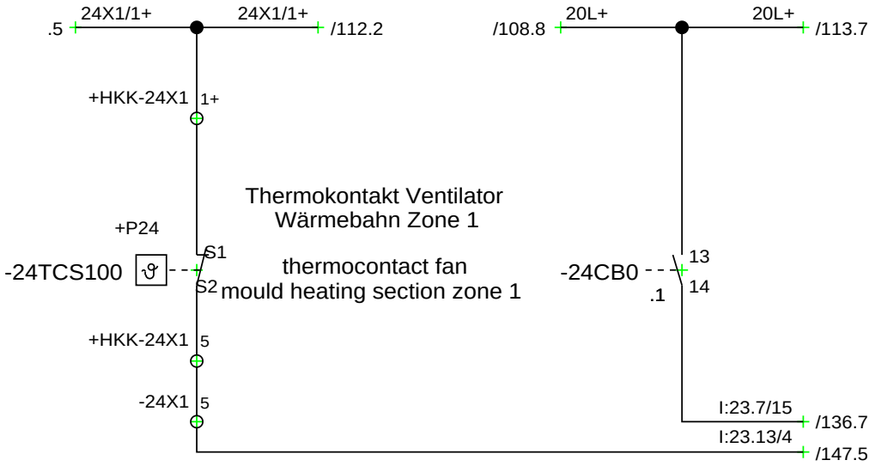
Temperaturfühler
(PT100)
Wärmebahn Zone 1

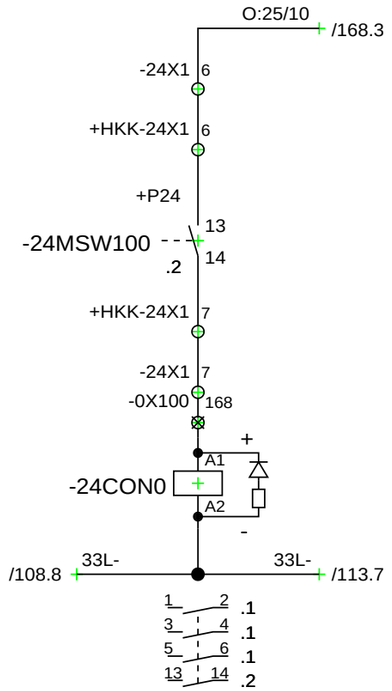
temperature probe
(PT100)
mould heating section zone 1



Thermokontakt Ventilator
Wärmebahn Zone 1

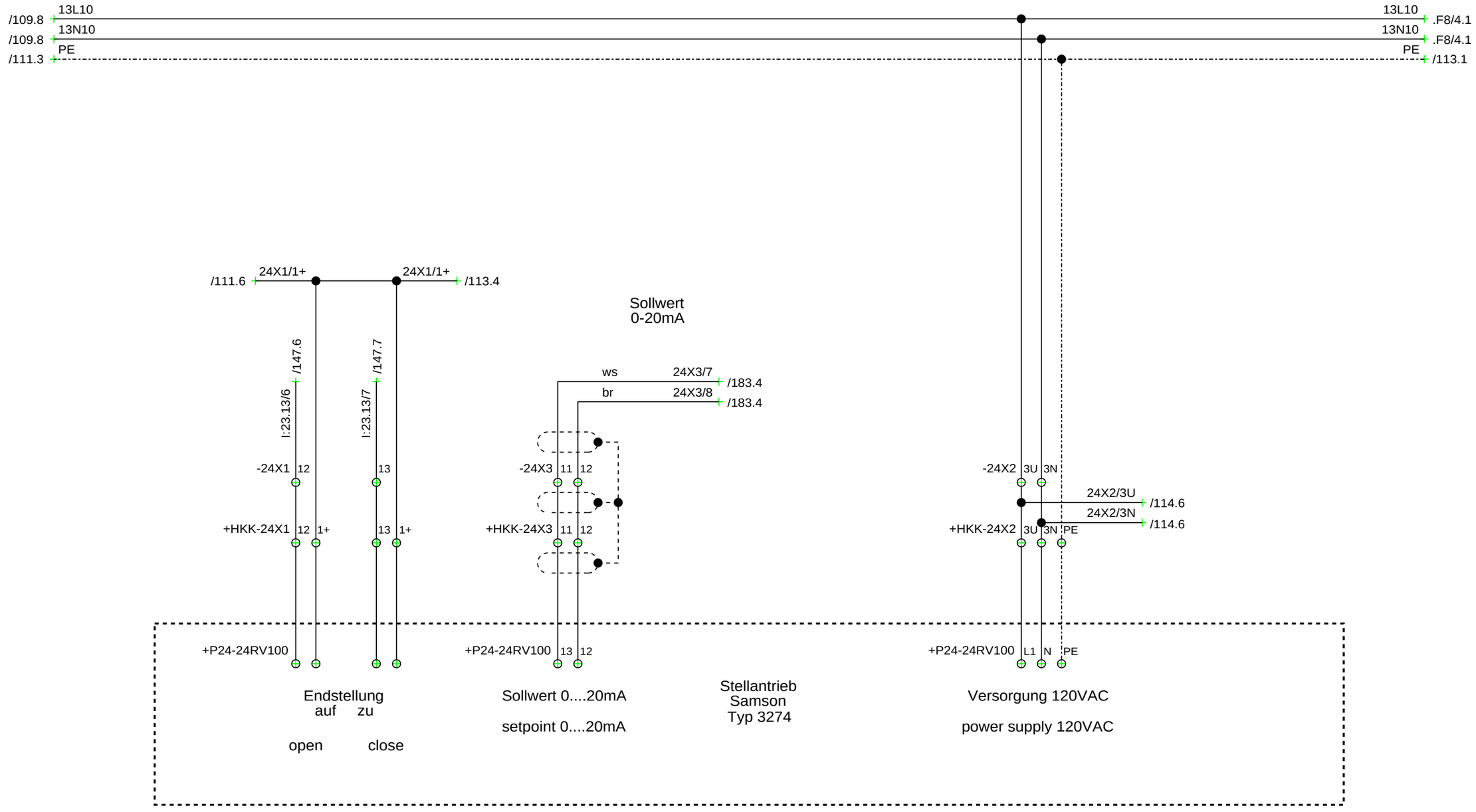
thermocontact fan
mould heating section zone 1





BÜHLER	customer 474 :P_NR2	+HSS	page 111
		=A1.F1	of 271
comm. nr. :P_NR1	fan mould heating section zone 1	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

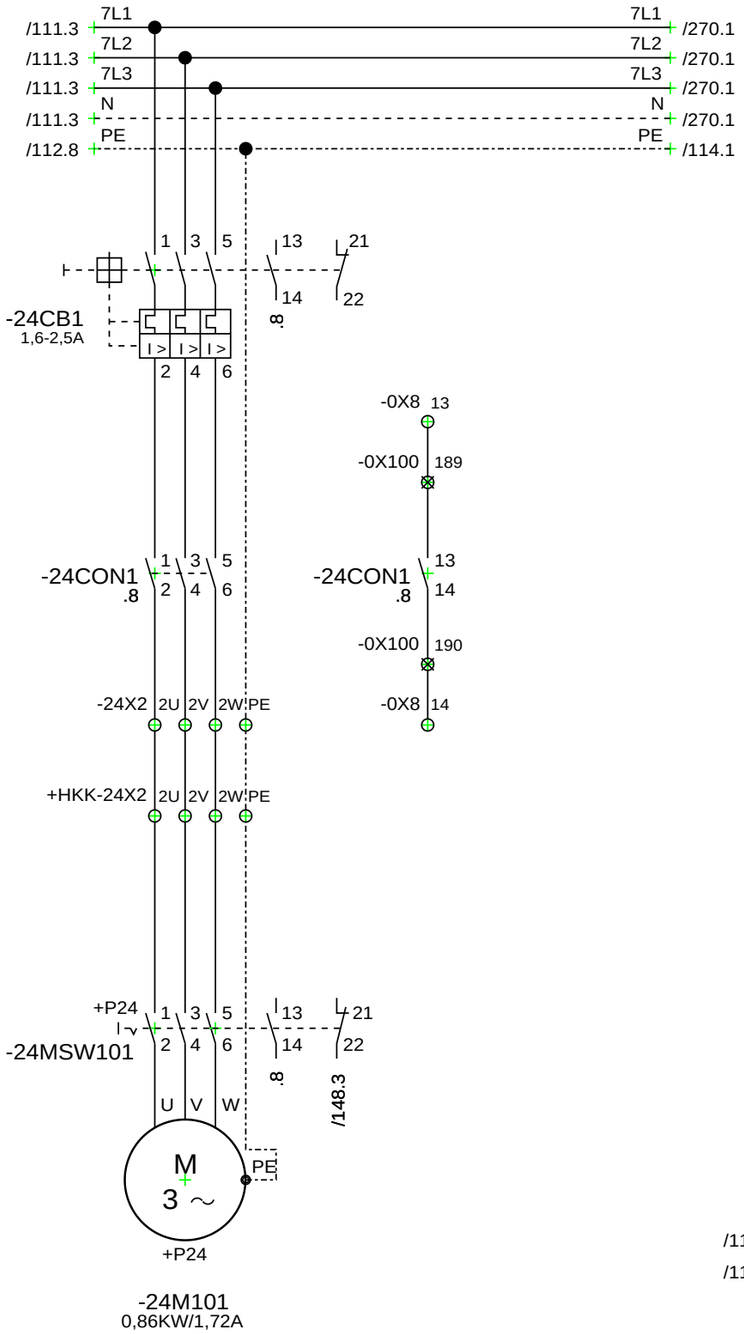


Temperaturreglung Wärmebahn Zone 1

regulation of the temperature of the mould heating section zone 1

BÜHLER	customer 474 :P_NR2	+HSS	page **112**
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve mould heating section zone 1	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

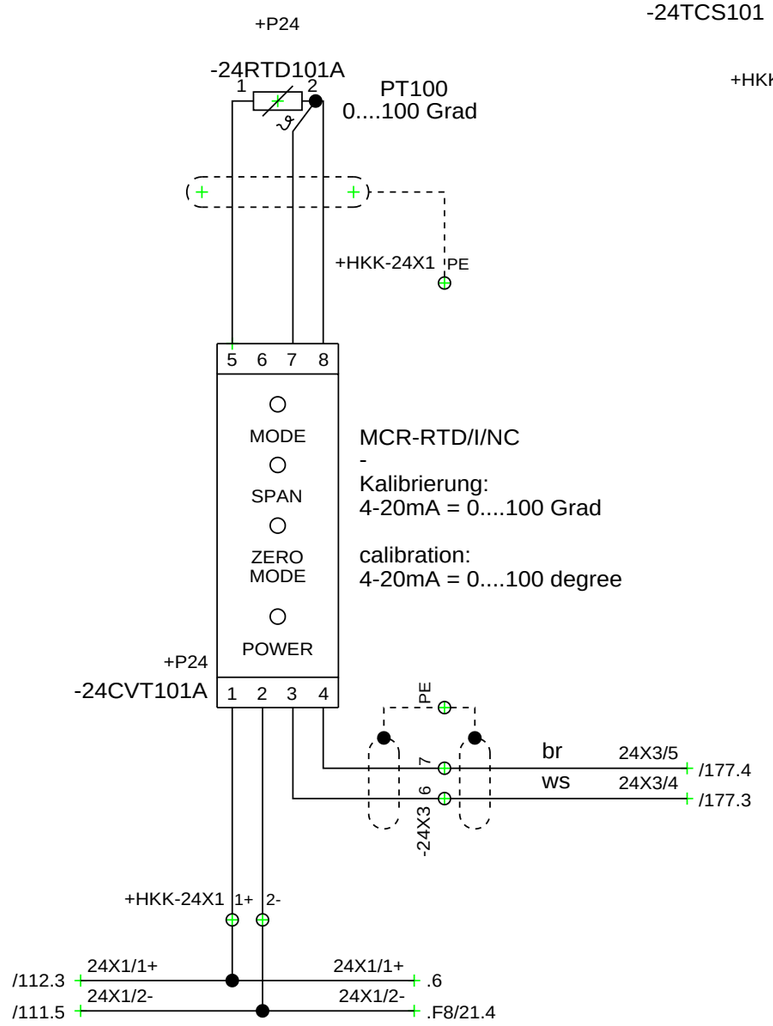


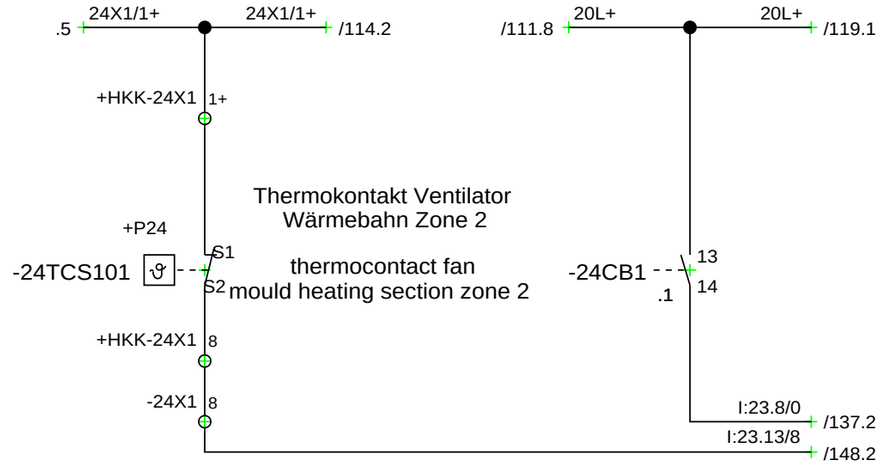
Ventilator Wärmebahn Zone 2

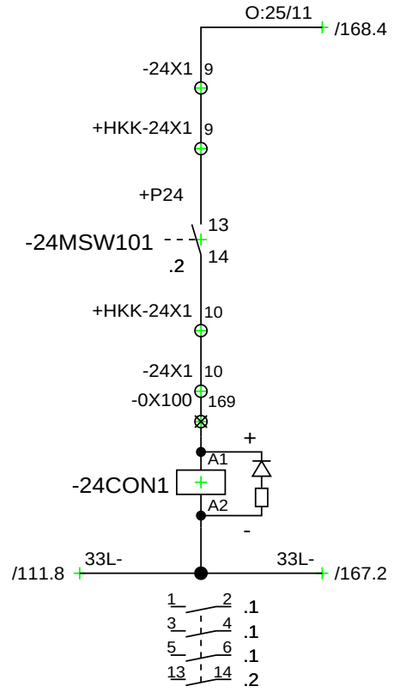
fan mould heating section zone 2

Temperaturfühler
(PT100)
Wärmebahn Zone 2

temperature probe
(PT100)
mould heating section zone 2

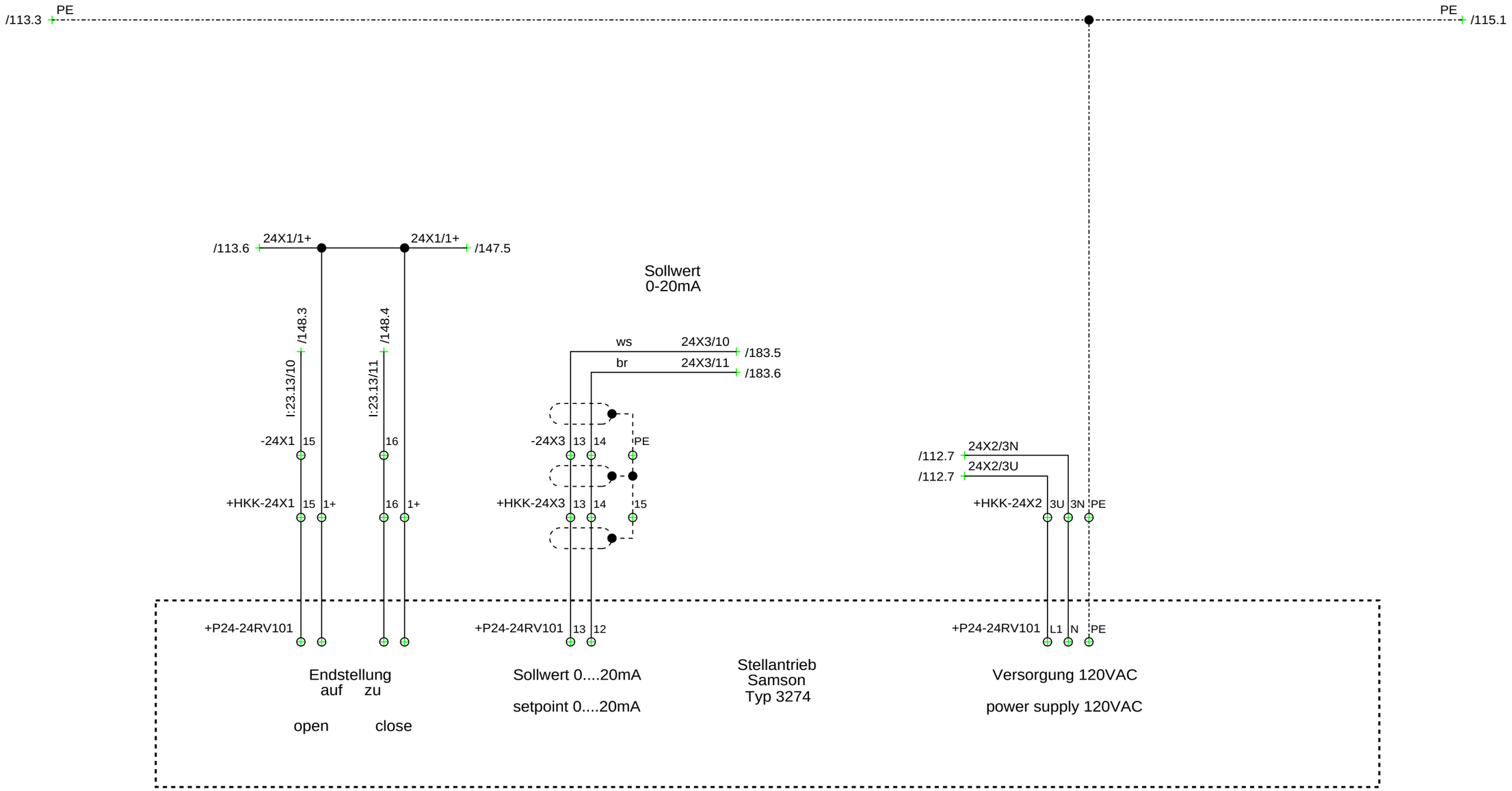






BÜHLER	customer 474 :P_NR2	+HSS	page 113
		=A1.F1	of 271
comm. nr. :P_NR1	fan mould heating section zone 2	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



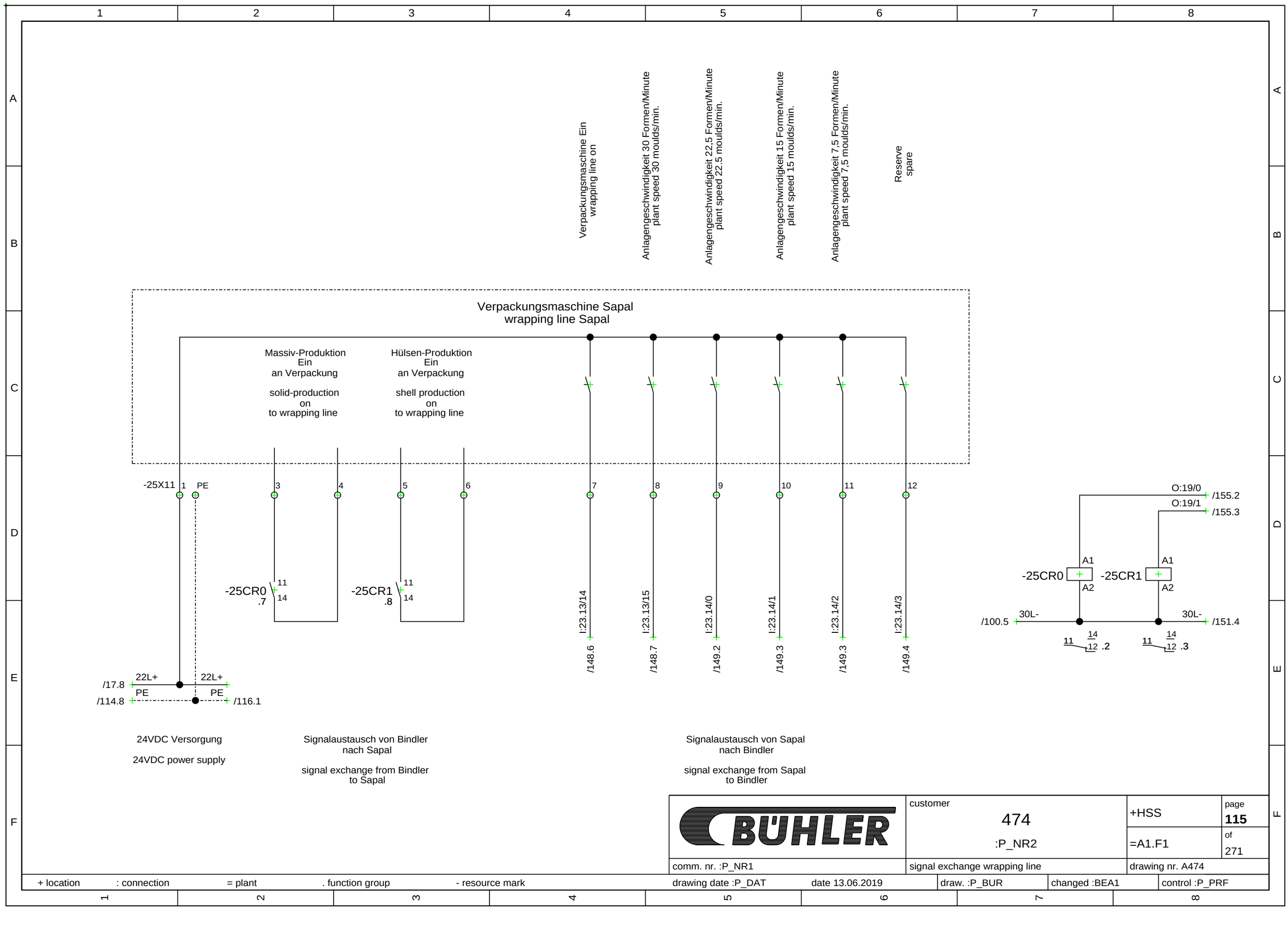
+P24
24RV101

Temperaturreglung Wärmebahn Zone 2

regulation of the temperature of the mould heating section zone 2

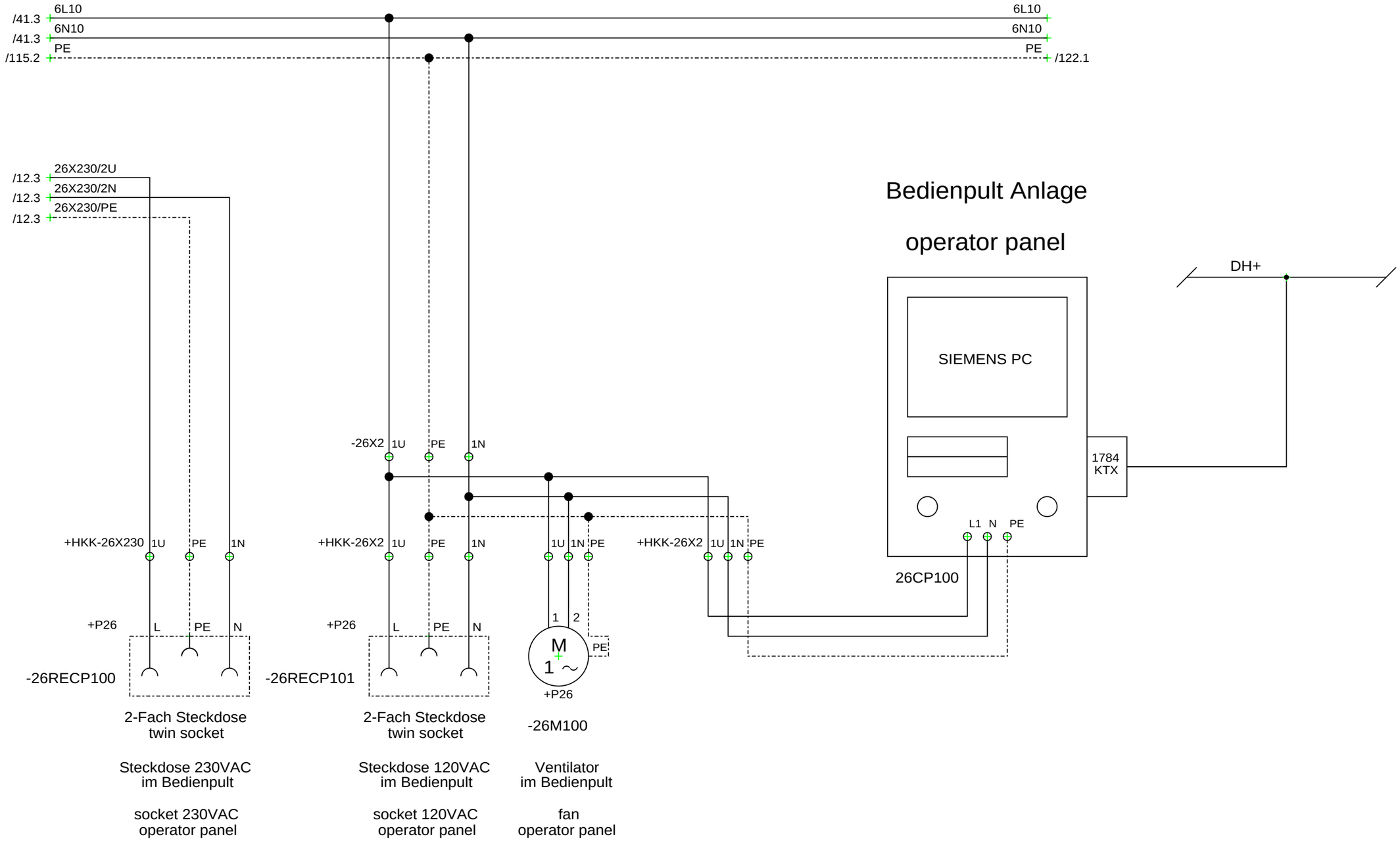
BÜHLER	customer 474 :P_NR2	+HSS	page **114**
		=A1.F1	of 271
comm. nr. :P_NR1	prop. valve mould heating section zone 2	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **115**
		=A1.F1	of 271
comm. nr. :P_NR1	signal exchange wrapping line		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page **116**
		=A1.F1	of 271
comm. nr. :P_NR1	operator panel	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Schalter Bedienpult Anlage

switches operator panel plant

Schlüsselschalter Bedienpult Anlage aktiv key switch operator panel is activ	Anlage Ein plant on	Anlage Stop plant stop	Störung quittieren reset faults	Vorwarnung pre warning	Not-Aus emergemcy stop	Warnleuchte Fernbedienung aktiv warning light remote control is activ
/17.3 26X1/1+ 26X1/1+						/18.6 26X1/4- 26X1/4-
+HKK-26X1 1+						+HKK-26X1 4-
					/26.3 26E/S120/21	
+P26 13 14 -26KS142	+P26 13 23 14 24 -26PB140 /35.1	+P26 11 21 12 22 -26PB141 /37.1	+P26 13 14 -26PB143	+P26 13 14 -26PB144	+P26 21 31 22 32 -26E/S120	+P26 1 2 -26LT100
					26E/S120/22 /26.3	
+HKK-26X1 11	+HKK-26X1 12	+HKK-26X1 13	+HKK-26X1 14	+HKK-26X1 15	+HKK-26X1 16	+HKK-26X1 17
-26X1 11	-26X1 12	-26X1 13	-26X1 14	-26X1 15	-26X1 16	-26X1 17
I:23.14/4 /149.5	I:23.14/5 /149.6	I:23.14/6 /149.6	I:23.14/7 /149.7	I:23.14/8 /150.2	I:23.14/9 /150.3	O:22/8 /159.6

BÜHLER	customer 474 :P_NR2	+HSS	page **117**
		=A1.F1	of 271
comm. nr. :P_NR1	switches operator panel	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

1	2	3	4	5	6	7	8

A B C D E F

BÜHLER	customer 474 :P_NR2	+HSS	page **118**
		=A1.F1	of 271
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

1	2	3	4	5	6	7	8

/113.8 20L+
/92.5 20L-

-19X4 2- 1+

ws/0,5 br/0,5

+P19

1 2

-19ENC100

70 140 CA-1024
Hohner

3 4 5 6 7 8 9 10 11 12

gn/0,5 ge/0,5 gr rs bl rt sw vio gr/rs rt/bl

20L+ /121.1
20L- /120.1

I:22/9 /120.3
I:22/8 /120.2

-19X4 PE

-19X4 3 19X4/3 3 F8/29.2
-19X4 4 19X4/4 4 F8/29.3
-19X4 5 19X4/5 5 F8/29.3
-19X4 6 19X4/6 6 F8/29.4
-19X4 7 19X4/7 7 F8/29.5
-19X4 8 19X4/8 8 F8/29.5
-19X4 9 19X4/9 9 F8/29.6
-19X4 10 19X4/10 10 F8/29.7

	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:22.0/0	I:22.0/1	I:22.0/2	I:22.0/3	I:22.0/4	I:22.0/5	I:22.0/6	I:22.0/7	DCCOM
	Winkelgeber Bit 0	Winkelgeber Bit 1	Winkelgeber Bit 2	Winkelgeber Bit 3	Winkelgeber Bit 4	Winkelgeber Bit 5	Winkelgeber Bit 6	Winkelgeber Bit 7	power supply
	-0PLCM22	-0PLCM22	-0PLCM22	-0PLCM22	-0PLCM22	-0PLCM22	-0PLCM22	-0PLCM22	-0PLCM22
	encoder bit 0	encoder bit 1	encoder bit 2	encoder bit 3	encoder bit 4	encoder bit 5	encoder bit 6	encoder bit 7	

BÜHLER

customer 474 :P_NR2

+HSS

page **119**

=A1.F1

of 271

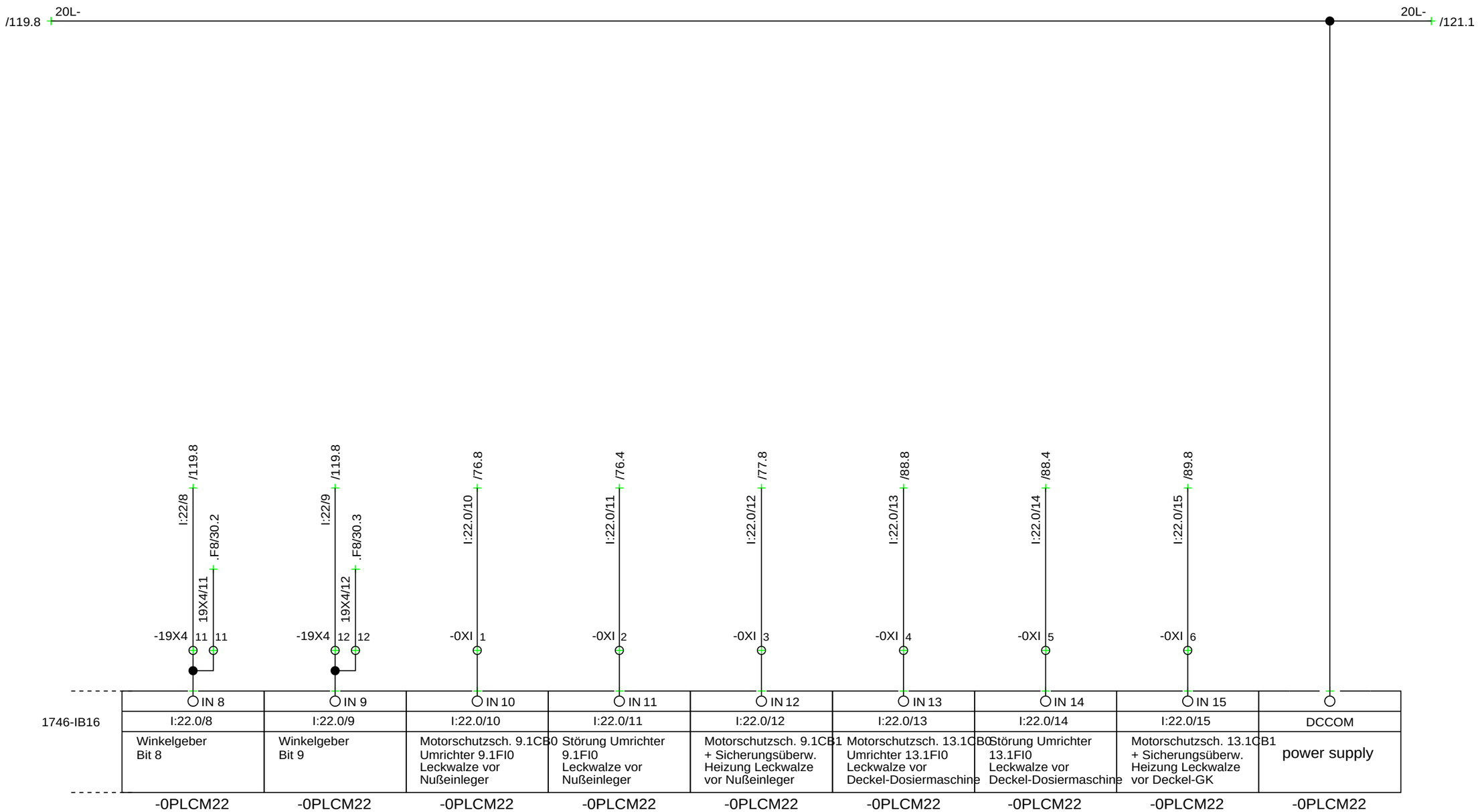
comm. nr. :P_NR1

digital inputs I:22.0/0 - I:22.0/7

drawing nr. A474

+ location : connection = plant . function group - resource mark

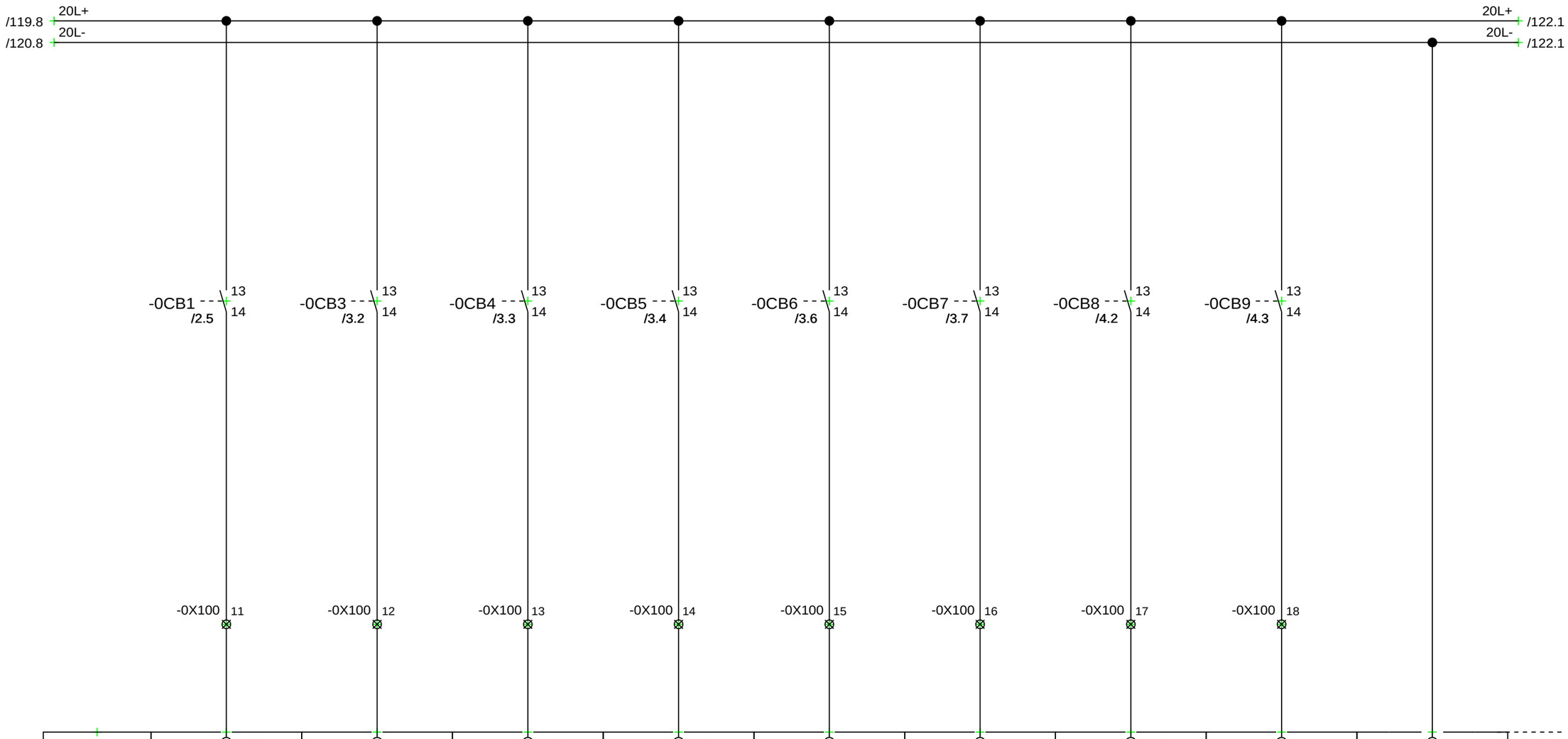
drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page **120**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:22.0/8 - I:22.0/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

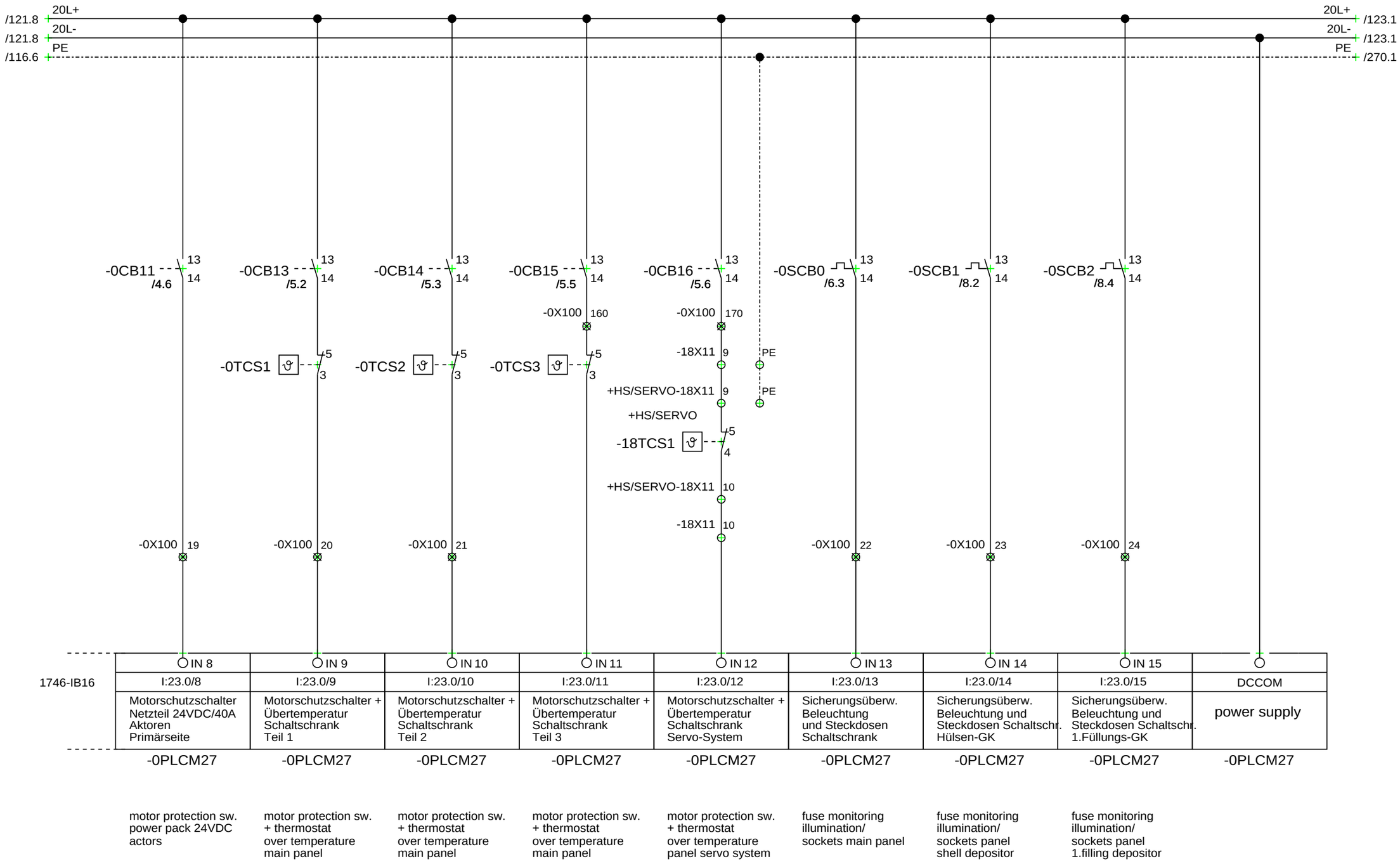


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.0/0	I:23.0/1	I:23.0/2	I:23.0/3	I:23.0/4	I:23.0/5	I:23.0/6	I:23.0/7	DCCOM
	Motorschutzschalter 1.Steuerspannung 120VAC Trafo vor Hauptschalter	Motorschutzschalter 480VAC Versorgung Position 3,4	Motorschutzschalter 480VAC Versorgung Position 5,8,9	Motorschutzschalter 480VAC Versorgung Position 11,13,16	Motorschutzschalter 480VAC Versorgung Position 18,22	Motorschutzschalter 480VAC Versorgung Position 23,24	Motorschutzschalter 3.Steuerspannung 120VAC Trafo nach Hauptschalter	Motorschutzschalter 4.Steuerspannung 230VAC Trafo nach Hauptschalter	power supply
	-0PLCM27	-0PLCM27	-0PLCM27	-0PLCM27	-0PLCM27	-0PLCM27	-0PLCM27	-0PLCM27	-0PLCM27
	motor protection sw. 1.control voltage 120VAC Transformer before main switch	motor protection sw. 480VAC power supply position 3,4	motor protection sw. 480VAC power supply position 5,8,9	motor protection sw. 480VAC power supply position 11,13,16	motor protection sw. 480VAC power supply position 18,22	motor protection sw. 480VAC power supply position 23,24	motor protection sw. 3.control voltage 120VAC Transformer after main switch	motor protection sw. 4.control voltage 230VAC Transformer after main switch	

BÜHLER

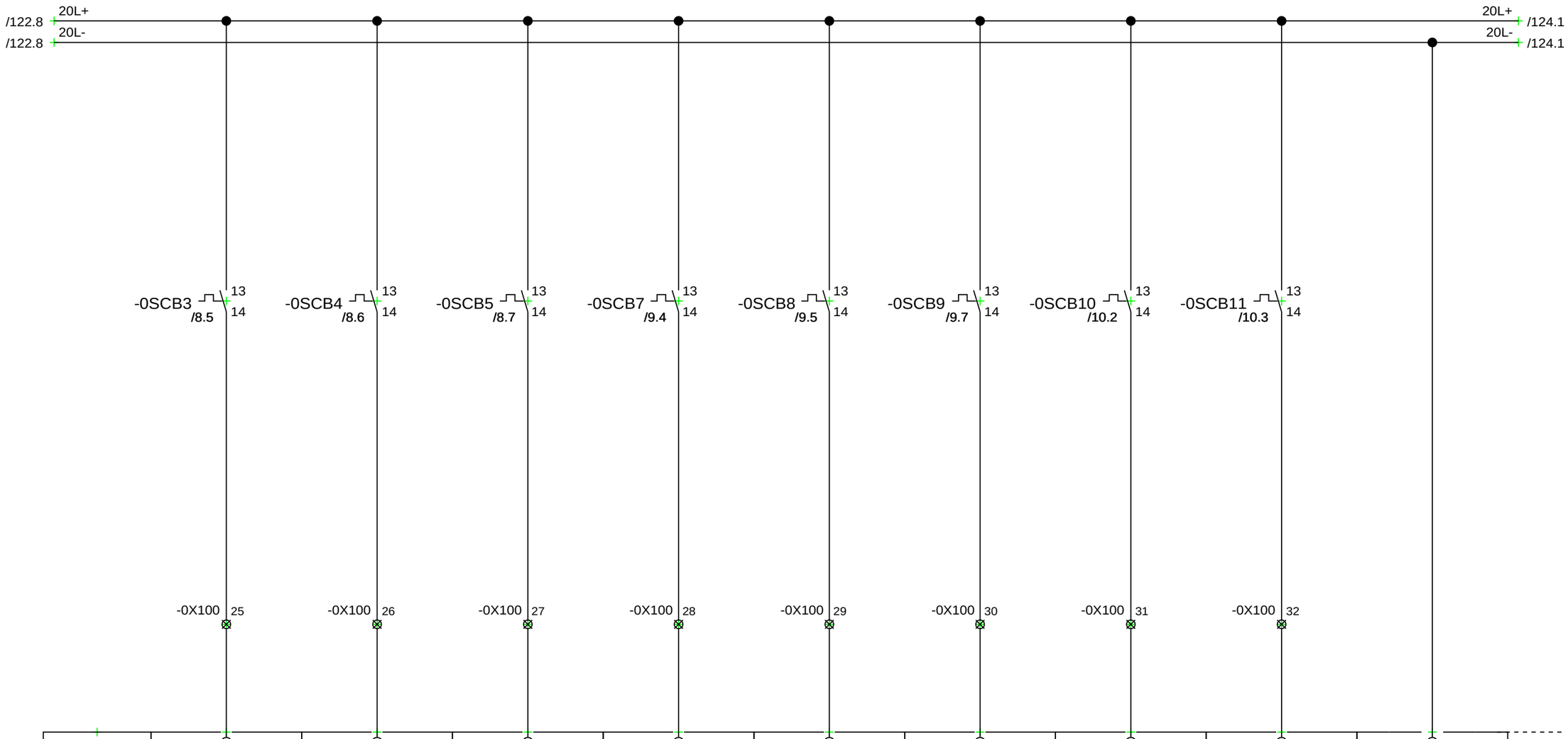
customer 474 :P_NR2		+HSS	page **121**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.0/0 - I:23.0/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **122**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.0/8 - I:23.0/15		drawing nr. A474

+ location : connection	= plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

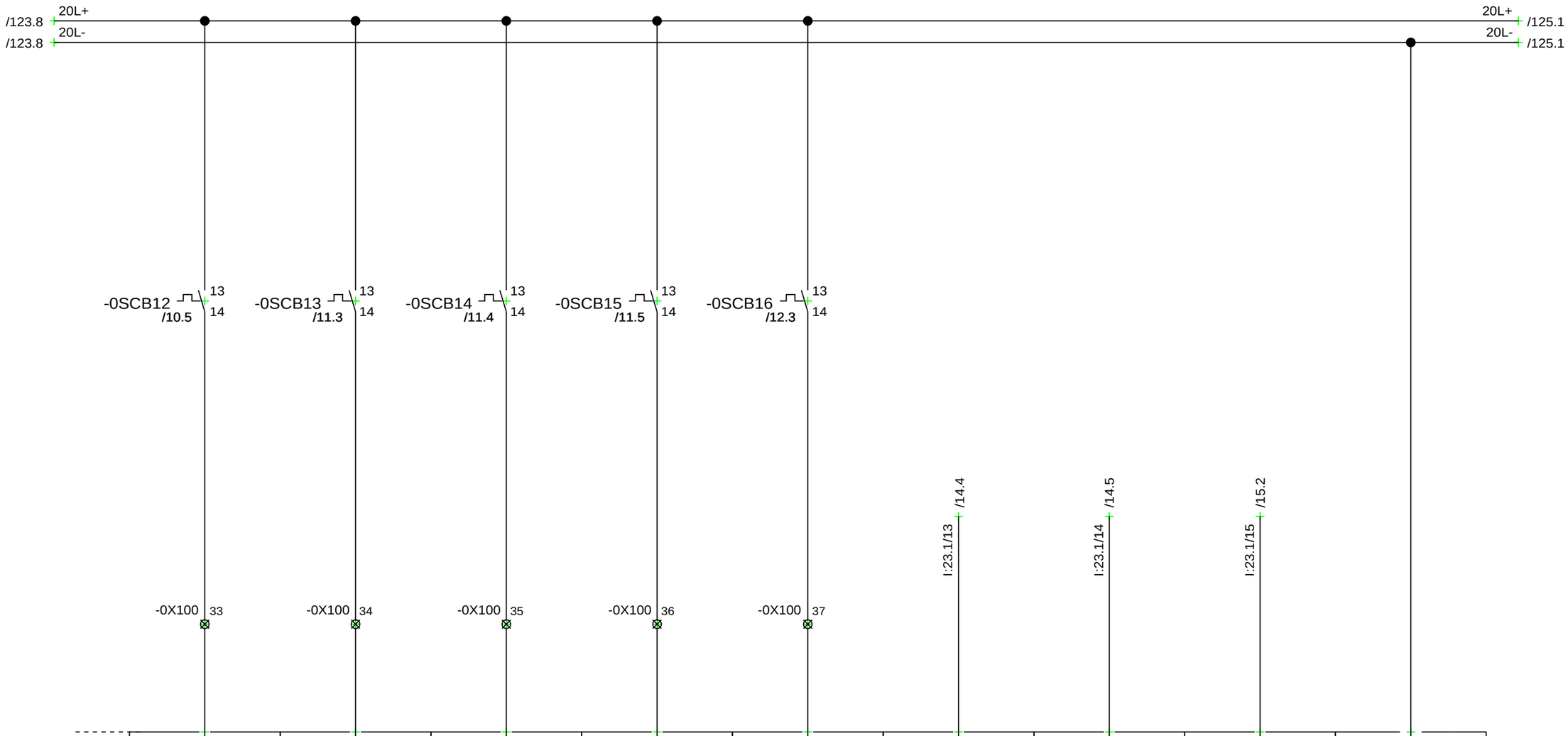


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.1/0	I:23.1/1	I:23.1/2	I:23.1/3	I:23.1/4	I:23.1/5	I:23.1/6	I:23.1/7	DCCOM
	Sicherungsüberw. Beleuchtung und Steckdosen Schaltschr. 2.Füllungs-GK	Sicherungsüberw. Beleuchtung und Steckdosen Schaltschr. 3.Füllungs-GK	Sicherungsüberw. Beleuchtung und Steckdosen Schaltschr. Deckel-GK	Sicherungsüberw. Versorgung PLC-System Hülsen-GK	Sicherungsüberw. Versorgung PLC-System 1.Füllungs-GK	Sicherungsüberw. Versorgung PLC-System 2.Füllungs-GK	Sicherungsüberw. Versorgung PLC-System 3.Füllungs-GK	Sicherungsüberw. Versorgung PLC-System Deckel-GK	power supply
	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28
	fuse monitoring illumination/ sockets panel 2.filling depositor	fuse monitoring illumination/ sockets panel 3.filling depositor	fuse monitoring illumination/ sockets panel bottom depositor	fuse monitoring power supply PLC-system shell depositor	fuse monitoring power supply PLC-system 1.filling depositor	fuse monitoring power supply PLC-system 2.filling depositor	fuse monitoring power supply PLC-system 3.filling depositor	fuse monitoring power supply PLC-system bottom depositor	

BÜHLER

customer 474 :P_NR2		+HSS	page **123**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.1/0 - I:23.1/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



1746-IB16	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
	I:23.1/8	I:23.1/9	I:23.1/10	I:23.1/11	I:23.1/12	I:23.1/13	I:23.1/14	I:23.1/15	DCCOM
	Sicherungsüberw. Versorgung PLC-System Telematik	Sicherungsüberw. Versorgung 120VAC Allgemeinteil/ Leerformenkontrolle	Sicherungsüberw. Versorgung Beleuchtung Anlage	Sicherungsüberw. Versorgung IR-Sensoren/Lüfter Gießmaschinen	Sicherungsüberw. Versorgung 230VAC Steckdosen Service / Steckdosen Bedienpult	0SCB21 Sp.-Überw. 1 Signalgeber/ Klemmenleisten/ Flex I/O Module	0SCB22 Sp.-Überw. 2 Signalgeber/ Klemmenleisten/ Flex I/O Module	0SCB30 Sp.-Überw. Ausgänge allgemein Signalhorn / Not-Aus Relais	power supply
	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28	-0PLCM28
	fuse monitoring power supply PLC-system	fuse monitoring power supply 120VAC general part/ empty mould detection	fuse monitoring power supply illumination of plant	fuse monitoring power supply IR-sensor/fan depositors	fuse monitoring power supply 230VAC sockets service/ sockets operator panel	voltage monitoring 1 signal detectors/ terminal rail flex I/O	voltage monitoring 2 signal detectors/ terminal rail flex I/O	voltage monitoring general outputs horn pre warning/ emergency stop relay	

BÜHLER

customer 474 :P_NR2		+HSS	page **124**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.1/8 - I:23.1/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

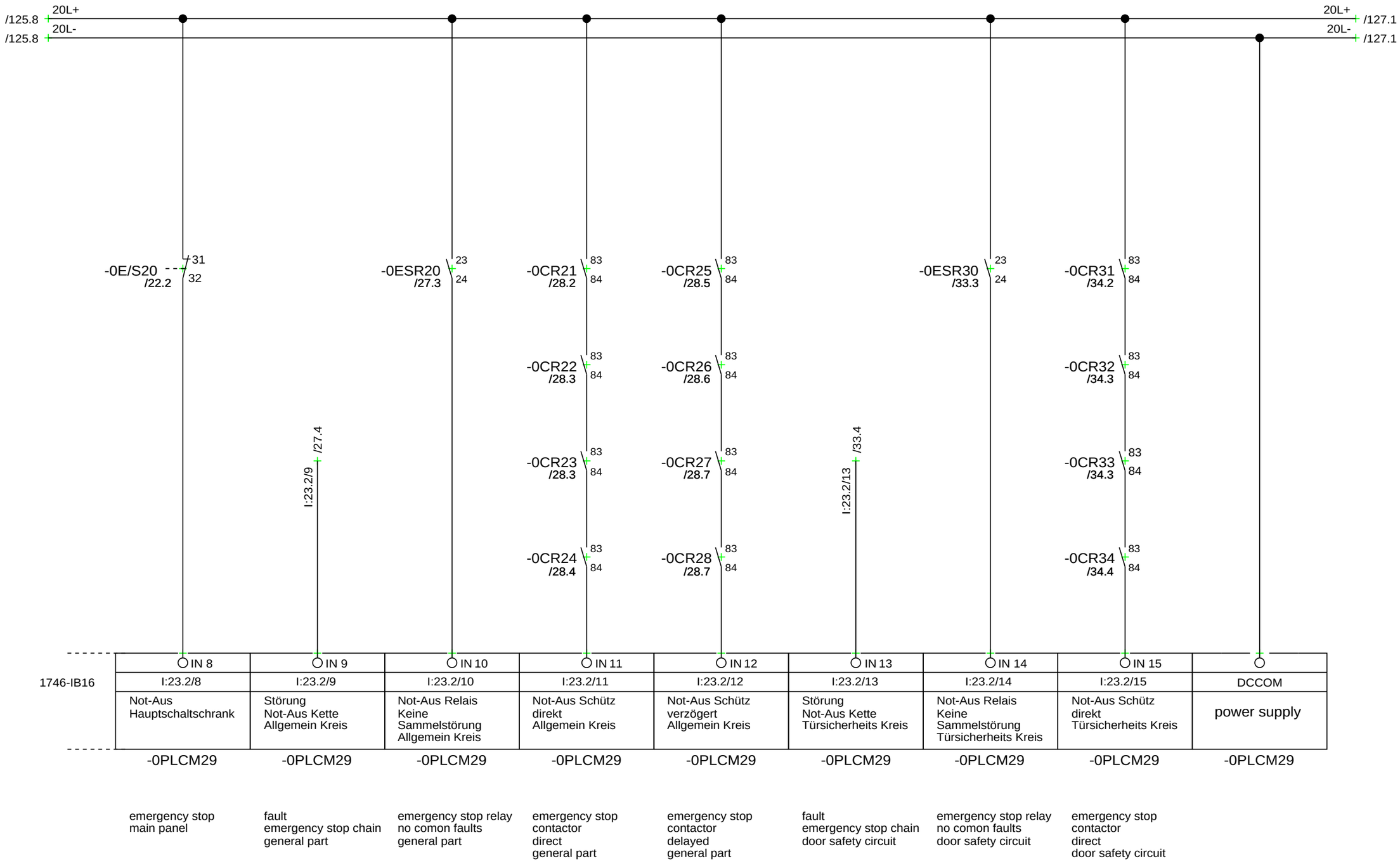


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.2/0	I:23.2/1	I:23.2/2	I:23.2/3	I:23.2/4	I:23.2/5	I:23.2/6	I:23.2/7	DCCOM
	0SCB31 Sp.-Überw. Ausgänge über Anl. Aus verzögert/ Not-Aus 1+2 direkt	0F32 Sp.-Überw. Ausgänge über Not-Aus System 1+2 verzögert	0F33 Sp.-Überw. Ausgänge über Not-Aus System 1 direkt	0F34 Sp.-Überw. Ausgänge über Not-Aus System 1+2 direkt	0F35 Sp.-Überw. Versorgung Magnetzahnkupplung + Servo System	Spannungsüberw. 24VDC Netzteil Aktoren	Spannungsüberw. 1.Steuerspannung vor Hauptschalter	Spannungsüberw. 3.Steuerspannung nach Hauptschalter	power supply
	-0PLCM29	-0PLCM29	-0PLCM29	-0PLCM29	-0PLCM29	-0PLCM29	-0PLCM29	-0PLCM29	-0PLCM29
	voltage monitoring outputs via plant of delayed/ em. stop system 1+2 direct	voltage monitoring outputs via em. stop System 1+2 delayed	voltage monitoring outputs via em. stop System 1 direct	voltage monitoring outputs via em. stop System 1+2 direct	voltage monitoring power supply magnetic clutch + servo system	voltage monitoring 24VDC power pack actors	voltage monitoring 1.control trension 120VAC before main switch	voltage monitoring 3.control trension 120VAC before after main switch	

BÜHLER

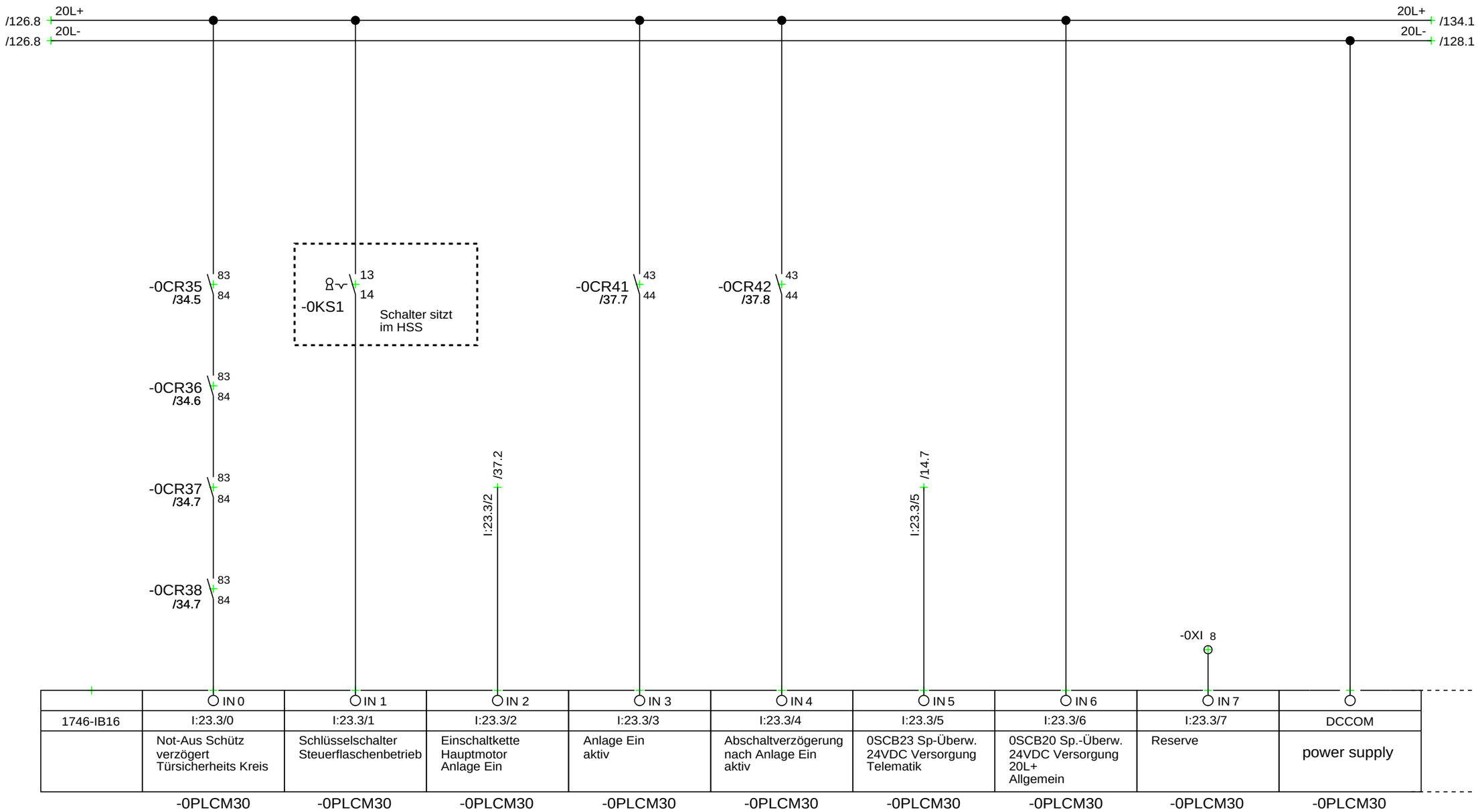
customer 474 :P_NR2		+HSS	page **125**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.2/0 - I:23.2/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



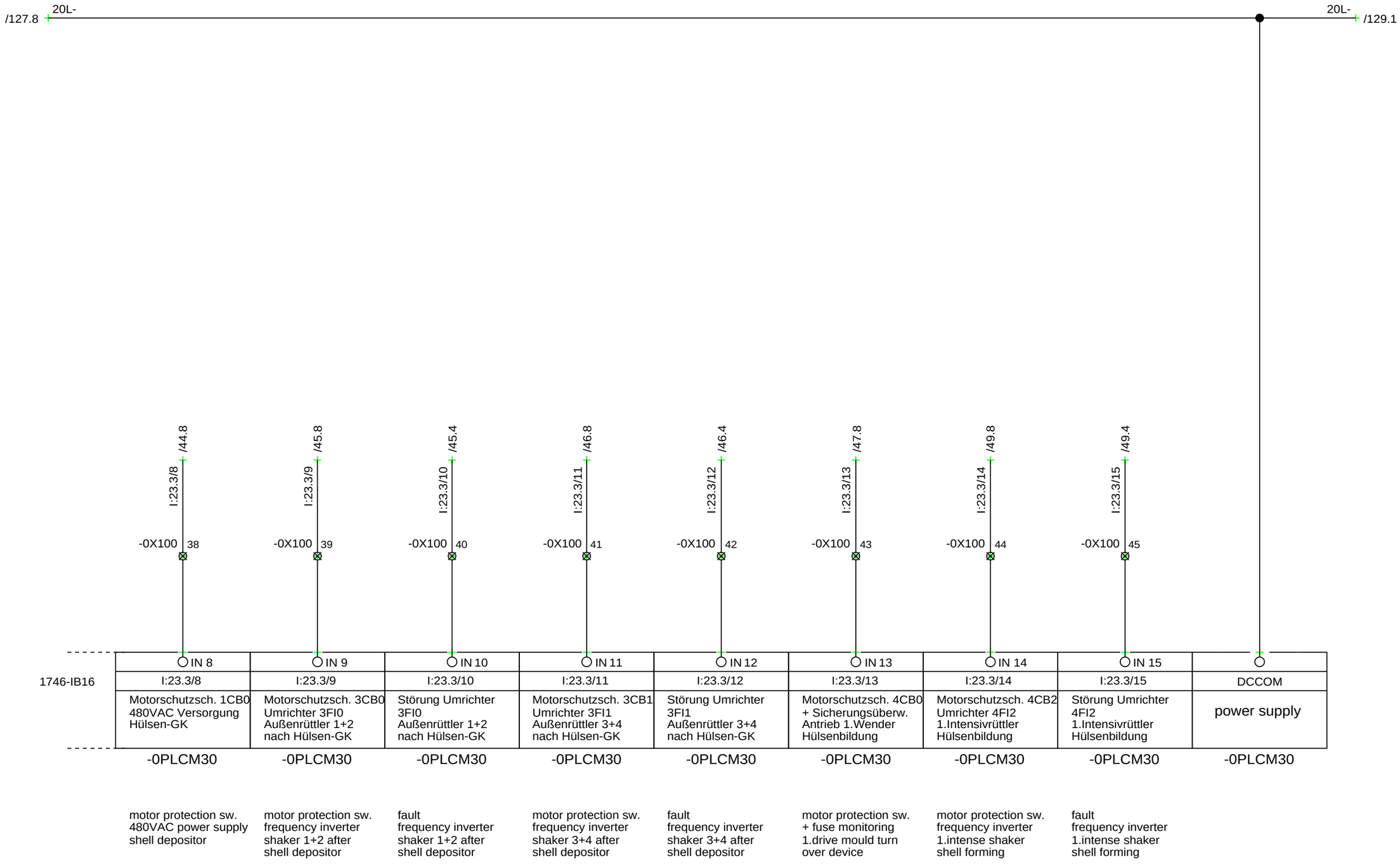
BÜHLER	customer 474 :P_NR2	+HSS	page **126**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.2/8 - I:23.2/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



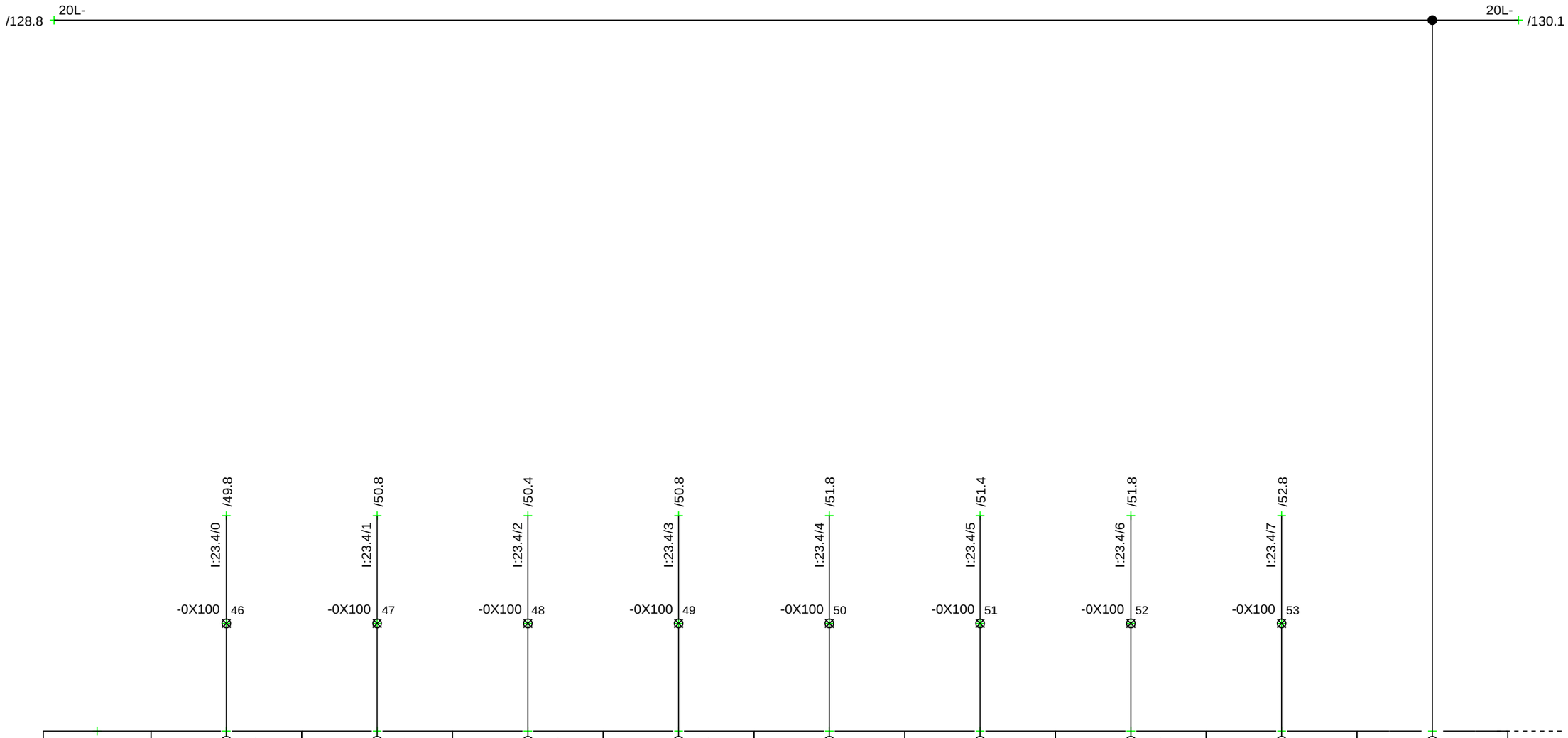
BÜHLER	customer 474 :P_NR2	+HSS	page 127
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.3/0 - I:23.3/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **128**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.3/8 - I:23.3/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.4/0	I:23.4/1	I:23.4/2	I:23.4/3	I:23.4/4	I:23.4/5	I:23.4/6	I:23.4/7	DCCOM
	Motorschutz 4CB2.1 Fremdlüfter 1.Intensivrüttler Hülsenbildung	Motorschutzsch. 4CB3 Umrichter 4FI3 2.Intensivrüttler Hülsenbildung	Störung Umrichter 4FI3 2.Intensivrüttler Hülsenbildung	Motorschutz 4CB3.1 Fremdlüfter 2.Intensivrüttler Hülsenbildung	Motorschutzsch. 4CB4 Umrichter 4FI4 Planschwinger Hülsenbildung	Störung Umrichter 4FI4 Planschwinger Hülsenbildung	Motorschutz 4CB4.1 Fremdlüfter Planschwinger Hülsenbildung	Motorschutzsch. 4CB5 Stahlbandantrieb Hülsenbildung	power supply
	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31
	motor protection sw. fan 1.intense shaker shell forming	motor protection sw. frequency inverter 2.intense shaker shell forming	fault frequency inverter 2.intense shaker shell forming	motor protection sw. fan 2.intense shaker shell forming	motor protection sw. frequency inverter oscillator shaker shell forming	fault frequency inverter oscillator shaker shell forming	motor protection sw. fan oscillator shaker shell forming	motor protection sw. belt drive shell forming	

BÜHLER

customer	474 :P_NR2	+HSS	page **129**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.4/0 - I:23.4/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
1746-IB16	I:23.4/8	I:23.4/9	I:23.4/10	I:23.4/11	I:23.4/12	I:23.4/13	I:23.4/14	I:23.4/15	DCCOM
	Motorschutzsch. 4CB6 + Sicherungsüberw. Stahlbandheizung Hülsenbildung	Motorschutzsch. 4CB7 Ventilator Stahlbandheizung Hülsenbildung	Motorschutzsch. 4CB8 Umrichter 4FI8 1+2 Abstreichwalze vor Hülsenkühler	Störung Umrichter 4FI8 1+2 Abstreichwalze vor Hülsenkühler	Motorschutzsch. 4CB9 Umrichter 4FI9 3. Abstreichwalze vor Hülsenkühler	Störung Umrichter 4FI9 3. Abstreichwalze vor Hülsenkühler	Motorschutzsch. 4CB10 + Sicherungsüberw. Walzenheizung 1-3 vor Hülsenkühler	Motorschutzsch. 4CB11 + Sicherungsüberw. Schaberheizung 1-3 vor Hülsenkühler	power supply
	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31	-0PLCM31
	motor protection sw. + fuse monitoring belt heating shell forming	motor protection sw. fan belt heating shell forming	motor protection sw. frequency inverter 1+2 licking roller before shell cooler	fault frequency inverter 1+2 licking roller before shell cooler	motor protection sw. frequency inverter 3.licking roller before shell cooler	fault frequency inverter 3.licking roller before shell cooler	motor protection sw. + fuse monitoring heating licking r. 1-3 before shell cooler	motor protection sw. + fuse monitoring scraper heating licking roller 1-3 before shell cooler	

BÜHLER

customer 474 :P_NR2		+HSS	page **130**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.4/8 - I:23.4/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

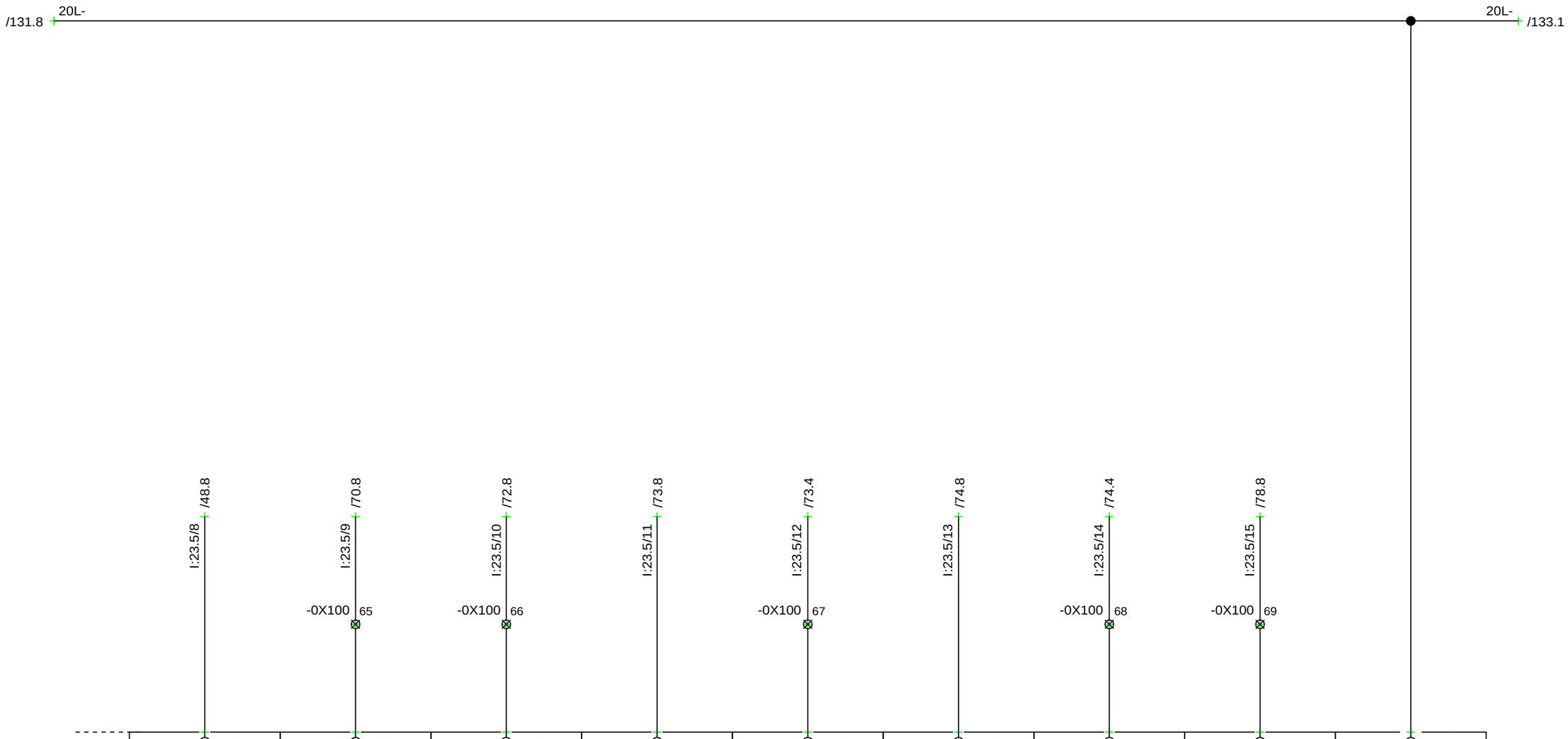


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.5/0	I:23.5/1	I:23.5/2	I:23.5/3	I:23.5/4	I:23.5/5	I:23.5/6	I:23.5/7	DCCOM
	Motorschutzsch. 4CB12 + Sicherungsüberw. Seitenschaberheizung vor Hülsenkühler	Motorschutzsch. 5CB0 Ventilator Hülsenkühler Zone 1	Motorschutzsch. 5CB2 Ventilator Hülsenkühler Zone 2	Motorschutzsch. 5CB5 Umrichter 5FI5 Leckwalze Hülsenkühler	Störung Umrichter 5FI5 Leckwalze Hülsenkühler	Motorschutzsch. 5CB6 + Sicherungsüberw. Heizungen Leckwalze Hülsenkühler	Motorschutzsch. 5CB9 Abtropfband unter Leckwalze Hülsenkühler	Motorschutzsch. 5CB10 1.Schneckenantrieb Masserückführung Hülsenkühler	power supply
	-0PLCM32	-0PLCM32	-0PLCM32	-0PLCM32	-0PLCM32	-0PLCM32	-0PLCM32	-0PLCM32	-0PLCM32
	motor protection sw. + fuse monitoring side scraper heating before shell cooler	motor protection sw. fan shell cooler zone 1	motor protection sw. fan shell cooler zone 2	motor protection sw. frequency inverter licking roller shell cooler	fault frequency inverter licking roller shell cooler	motor protection sw. + fuse monitoring side scraper heating before shell cooler	motor protection sw. belt drive below licking roller shell cooler	motor protection sw. 1.worm drive mass return shell cooler	

BÜHLER

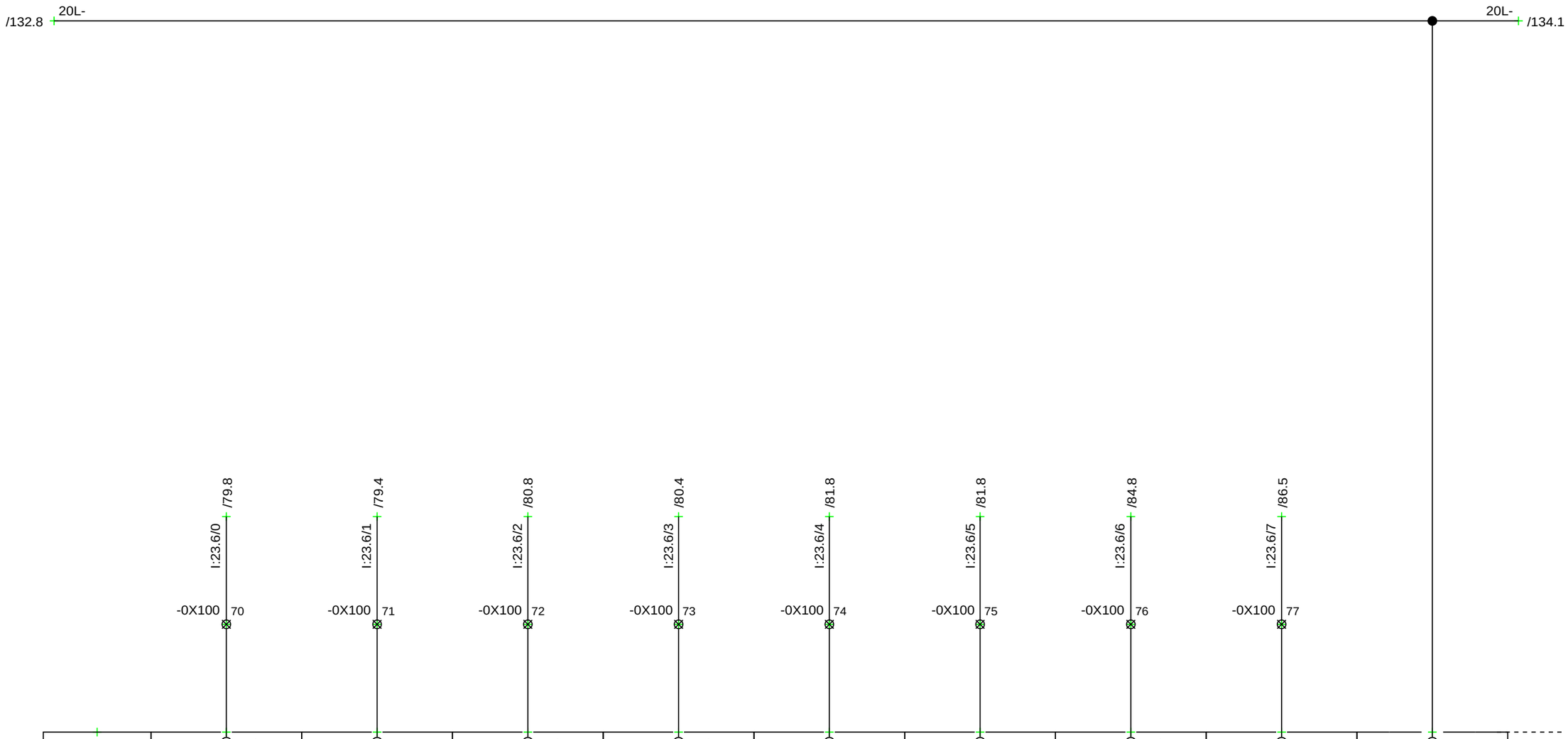
customer	474	+HSS	page 131
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.5/0 - I:23.5/7	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **132**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.5/8 - I:23.5/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.6/0	I:23.6/1	I:23.6/2	I:23.6/3	I:23.6/4	I:23.6/5	I:23.6/6	I:23.6/7	DCCOM
	Motorschutzsch. 11CB0 Umrichter 11FI0 Außenrüttler 1+2 nach 2.Füllungs-GK	Störung Umrichter 11FI0 Außenrüttler 1+2 nach 2.Füllungs-GK	Motorschutzsch. 11CB1 Umrichter 11FI1 Außenrüttler 3+4 nach 2.Füllungs-GK	Störung Umrichter 11FI1 Außenrüttler 3+4 nach 2.Füllungs-GK	Motorschutzsch. 11CB2 1.Ventilator 1.Füllungskühler	Motorschutzsch. 11CB3 2.Ventilator 1.Füllungskühler	Motorschutzsch. 12CB0 480VAC Versorgung 3.Füllungs-GK	Motorschutzsch. 13CB1 + Sicherungsüberw. IR-Heizfeld Rand vor Deckl-GK	power supply
	-0PLCM33	-0PLCM33	-0PLCM33	-0PLCM33	-0PLCM33	-0PLCM33	-0PLCM33	-0PLCM33	-0PLCM33
	motor protection sw. frequency converter shaker 1+2 after 2.filling depositor	fault frequency converter shaker 1+2 after 2.filling depositor	motor protection sw. frequency converter shaker 3+4 after 2.filling depositor	fault frequency converter shaker 3+4 after 2.filling depositor	motor protection sw. 1.fan 1.filling cooler	motor protection sw. 2.fan 1.filling cooler	motor protection sw. 480VAC power supply 3.filling depositor	motor protection sw. + fuse monitoring IR-heating edge before bottom dep.	

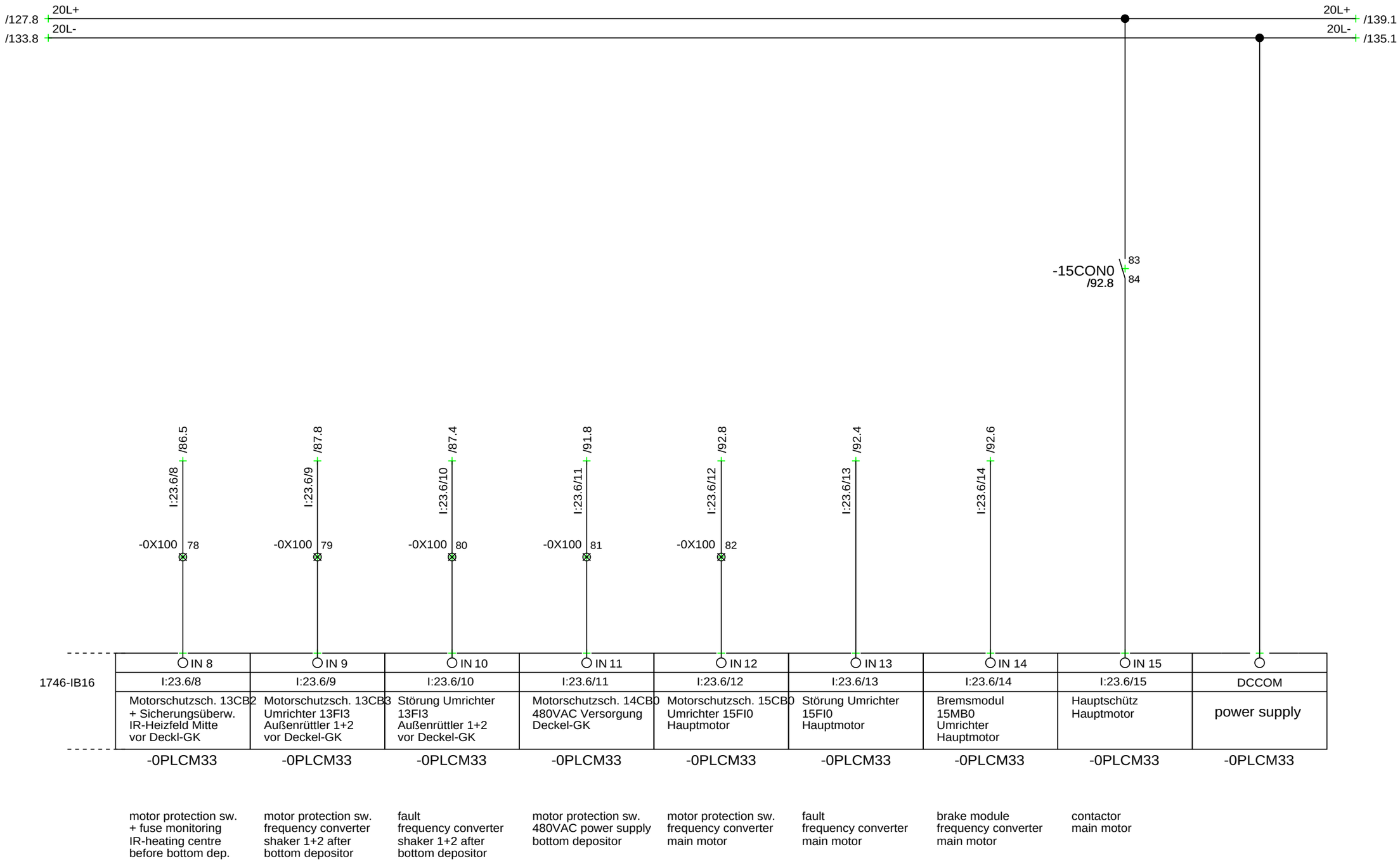
BÜHLER

customer 474 :P_NR2 | +HSS | page 133

=A1.F1 | of 271

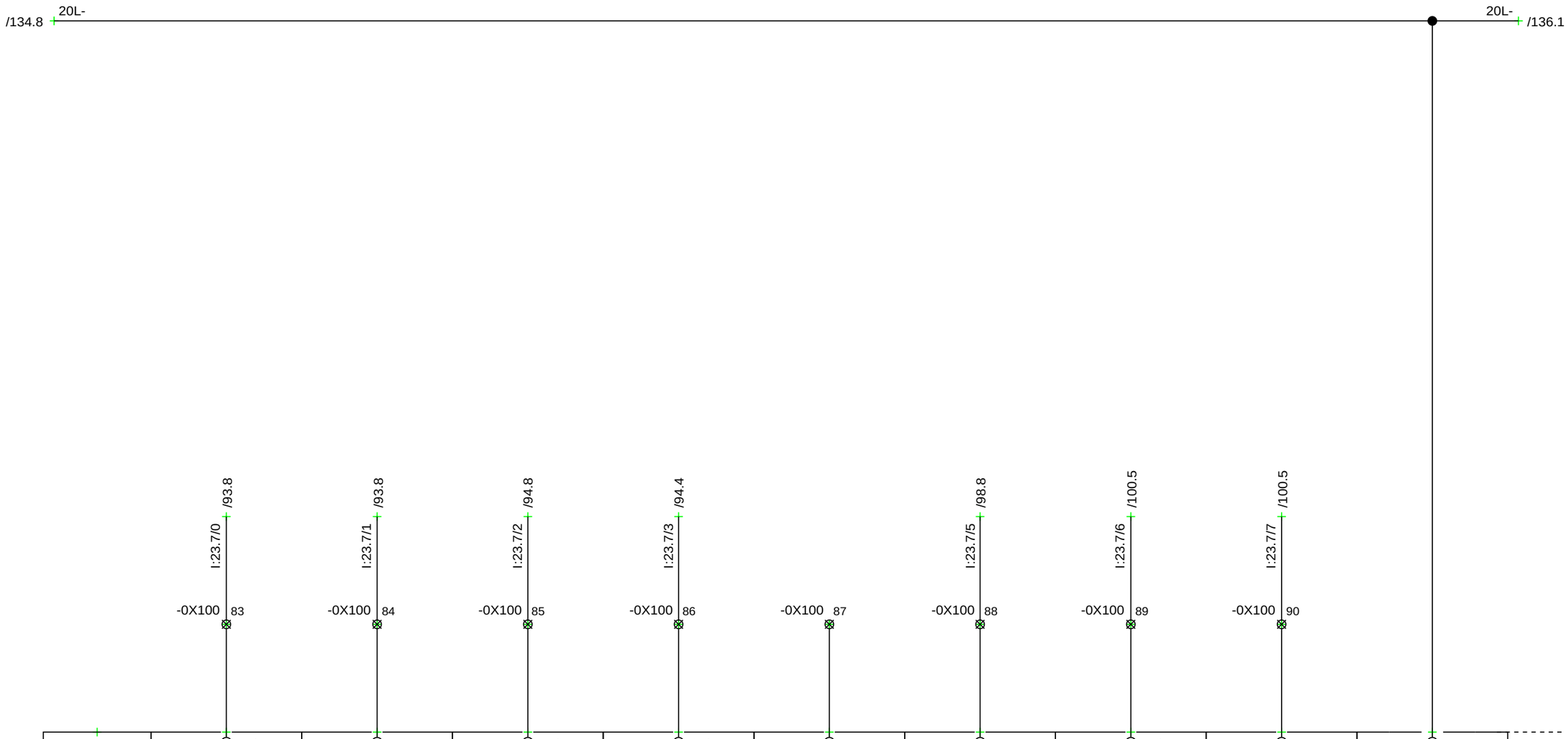
comm. nr. :P_NR1 | digital inputs I:23.6/0 - I:23.6/7 | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **134**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.6/8 - I:23.6/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



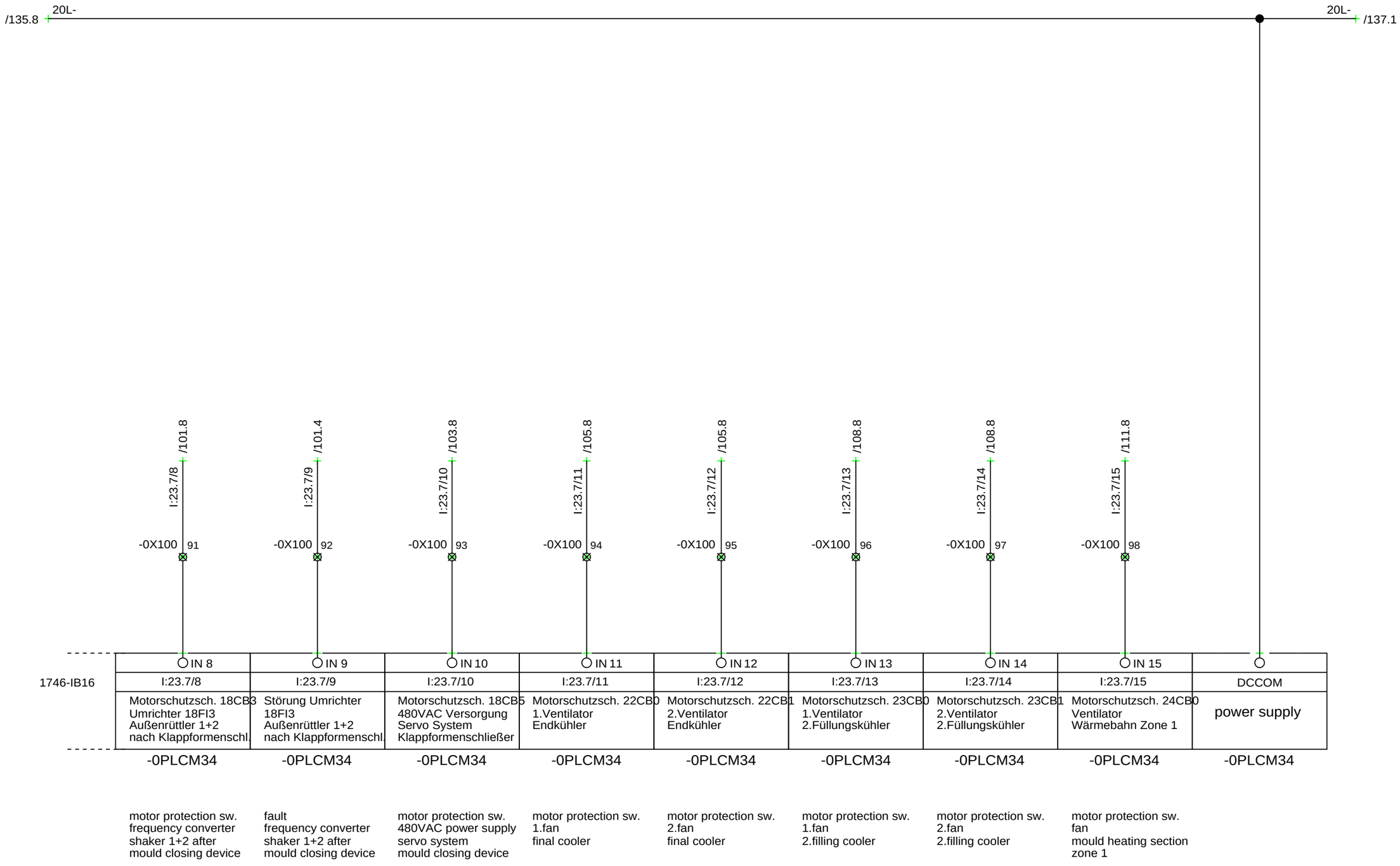
	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.7/0	I:23.7/1	I:23.7/2	I:23.7/3	I:23.7/4	I:23.7/5	I:23.7/6	I:23.7/7	DCCOM
	Motorschutzsch. 15CB1 Lüfter Hauptmotor	Motorschutzsch. 15CB2 Bremse Hauptmotor	Motorschutzsch. 16CB0 Umrichter 16FI0 Außenrüttler 1+2 nach Deckel-GK	Störung Umrichter 16FI0 Außenrüttler 1+2 nach Deckel-GK	Reserve	Motorschutzsch. 18CB0 + Sicherungsüberw. Seitenschaberheizung vor Klappformenschl.	Motorschutzsch. 18CB1 + Sicherungsüberw. IR-Heizfeld Rand vor Klappformenschl.	Motorschutzsch. 18CB2 + Sicherungsüberw. IR-Heizfeld Mitte vor Klappformenschl.	power supply
	-0PLCM34	-0PLCM34	-0PLCM34	-0PLCM34	-0PLCM34	-0PLCM34	-0PLCM34	-0PLCM34	-0PLCM34
	motor protection sw. fan main motor	motor protection sw. brake main motor	motor protection sw. frequency converter shaker 1+2 after bottom depositor	fault frequency converter shaker 1+2 after bottom depositor	spare	motor protection sw. + fuse monitoring side scraper heating before mould closing device	motor protection sw. + fuse monitoring IR-heating edge bedore mould closing device	motor protection sw. + fuse monitoring IR-heating centre bedore mould closing device	

BÜHLER

customer 474 :P_NR2 | +HSS | page 135 | =A1.F1 | of 271

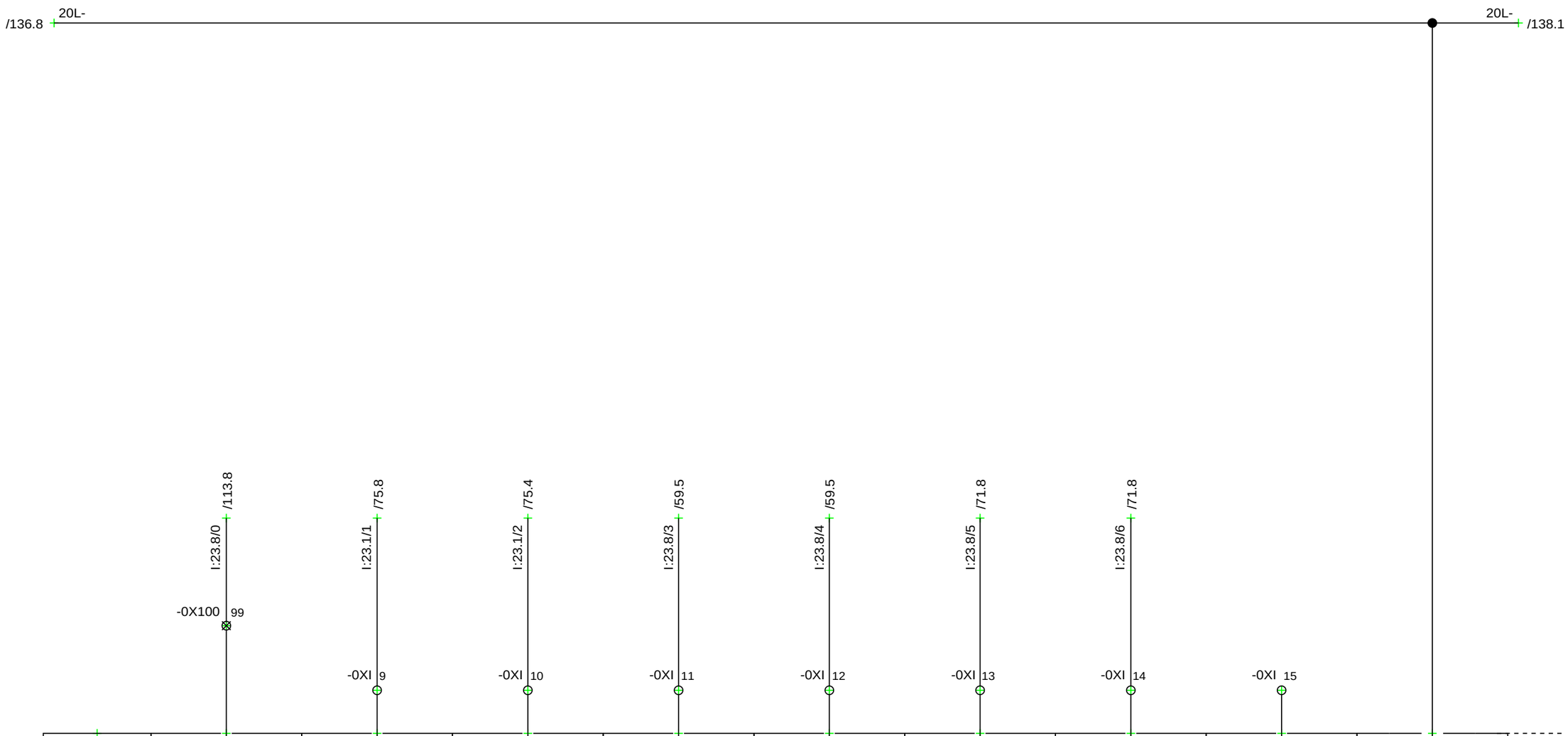
comm. nr. :P_NR1 | digital inputs I:23.7/0 - I:23.7/7 | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **136**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.7/8 - I:23.7/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

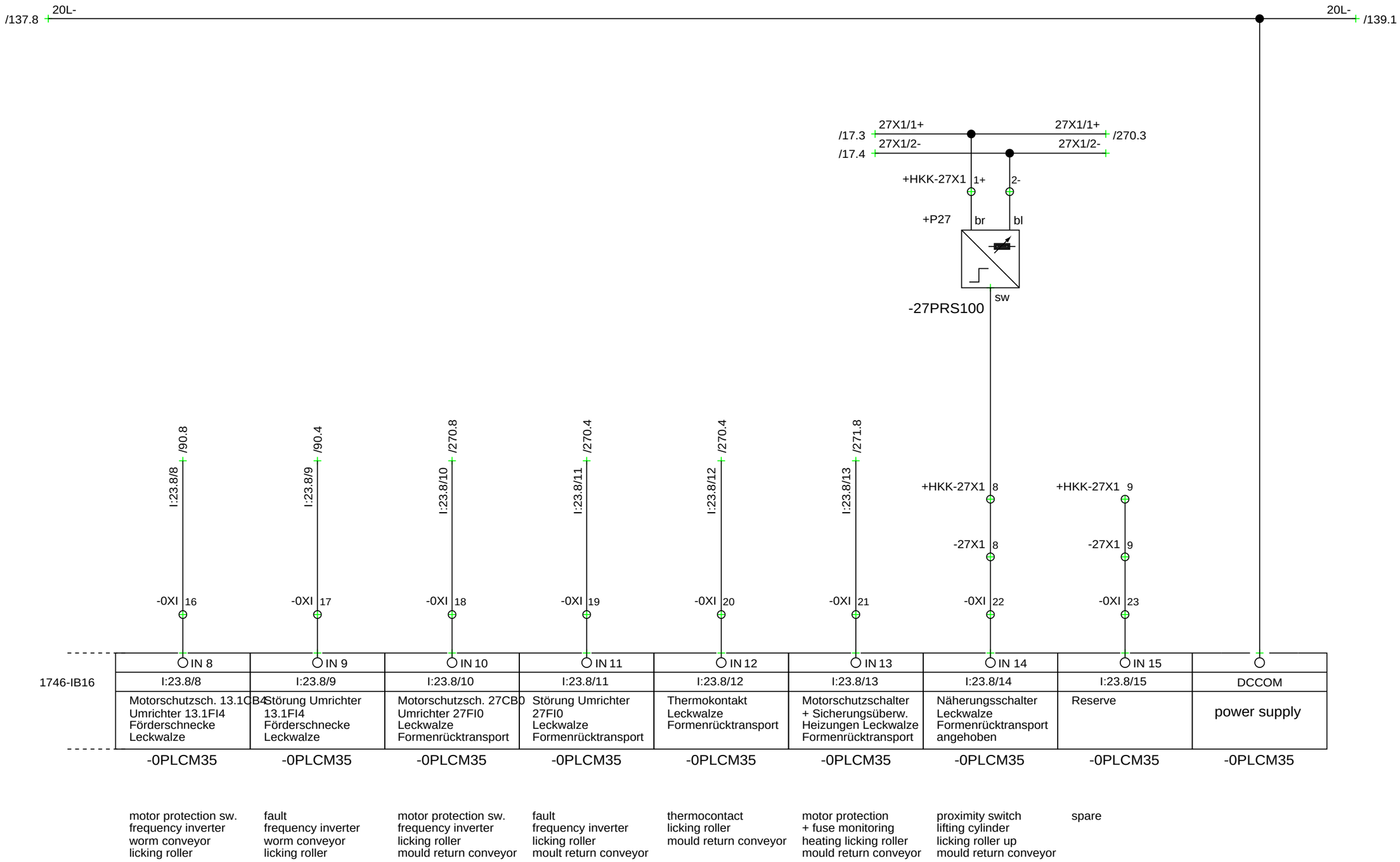


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.8/0	I:23.8/1	I:23.8/2	I:23.8/3	I:23.8/4	I:23.8/5	I:23.8/6	I:23.8/7	DCCOM
	Motorschutzsch. 24CB1 Ventilator Wärmebahn Zone 2	Motorschutzsch. 9CB0 Umrichter 9FI0 Außenrüttler 1+2 Nußeinleger	Störung Umrichter 9FI0 Außenrüttler 1+2 Nußeinleger	Motorschutzschalter + Sicherungsüberw. Heizung Boiler Massew. Hülsenbildung	Motorschutzschalter Wasserpumpe Boiler Massewanne Hülsenbildung	Motorschutzschalter + Sicherungsüberw. Heizung Ablaufblech Tropfband Hülsenk.	Motorschutzschalter + Sicherungsüberw. Schaberheizung Tropfband Hülsenk.	Reserve	power supply
	-0PLCM35	-0PLCM35	-0PLCM35	-0PLCM35	-0PLCM35	-0PLCM35	-0PLCM35	-0PLCM35	-0PLCM35
	motor protection sw. fan mould heating section zone 2	motor protection sw. frequency converter shaker 1+2 nut feeder	fault frequency converter shaker 1+2 nut feeder	motor protection + fuse monitoring heating tempering unit mass hopper shell forming	motor protection water pump tempering unit mass hopper shell forming	motor protection + fuse monitoring heating run of tray belt shell cooler	motor protection + fuse monitoring belt scraper heating shell cooler	spare	

BÜHLER

customer 474 :P_NR2		+HSS	page 137
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.8/0 - I:23.8/7	drawing nr. A474	

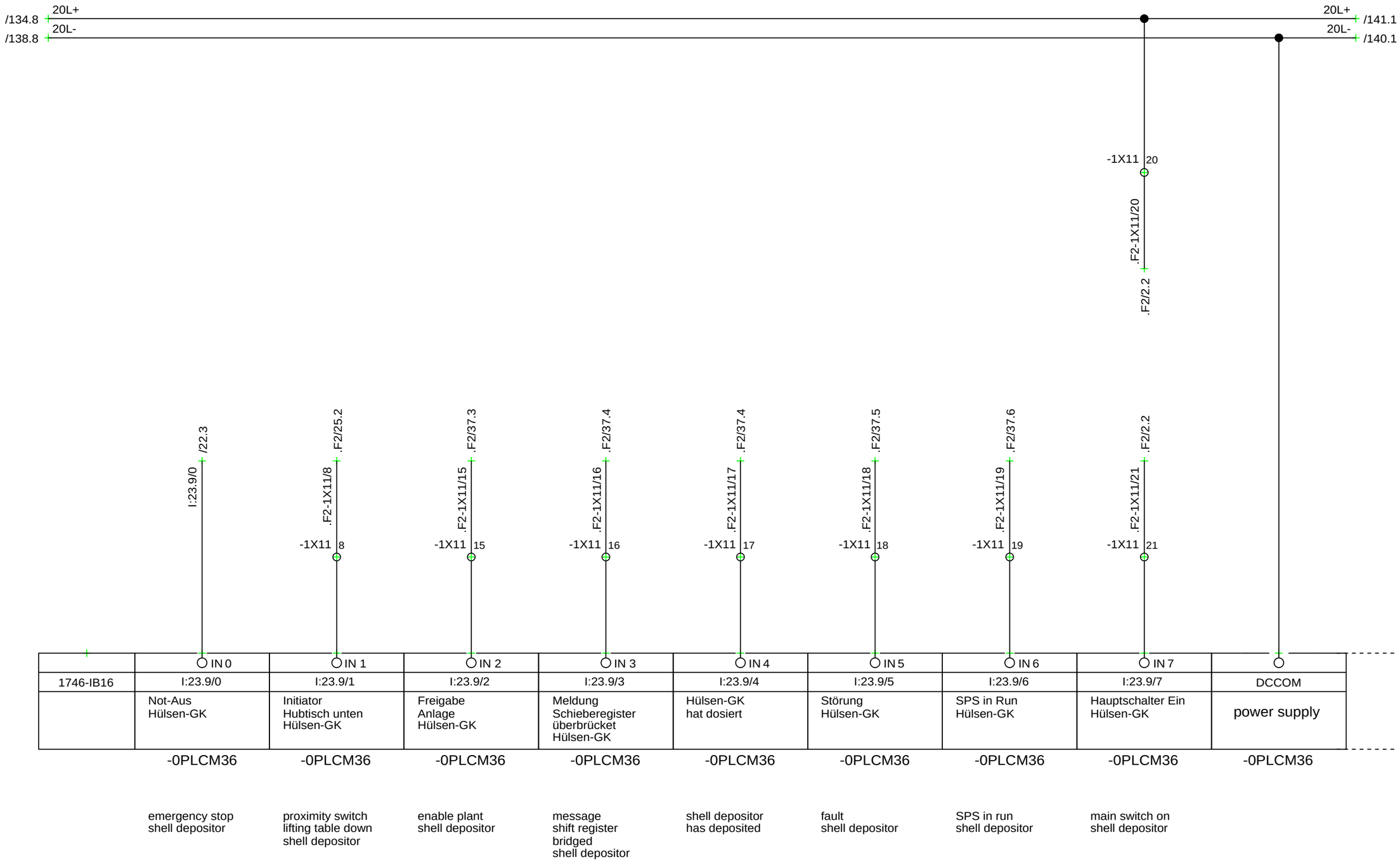
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

customer 474 :P_NR2		+HSS	page 138
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.8/8 - I:23.8/15		drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.9/0	I:23.9/1	I:23.9/2	I:23.9/3	I:23.9/4	I:23.9/5	I:23.9/6	I:23.9/7	DCCOM
	Not-Aus Hülsen-GK	Initiator Hubtisch unten Hülsen-GK	Freigabe Anlage Hülsen-GK	Meldung Schieberegister überbrücket Hülsen-GK	Hülsen-GK hat dosiert	Störung Hülsen-GK	SPS in Run Hülsen-GK	Hauptschalter Ein Hülsen-GK	power supply
	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36
	emergency stop shell depositor	proximity switch lifting table down shell depositor	enable plant shell depositor	message shift register bridged shell depositor	shell depositor has deposited	fault shell depositor	SPS in run shell depositor	main switch on shell depositor	

BÜHLER

customer 474 :P_NR2		+HSS	page **139**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.9/0 - I:23.9/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

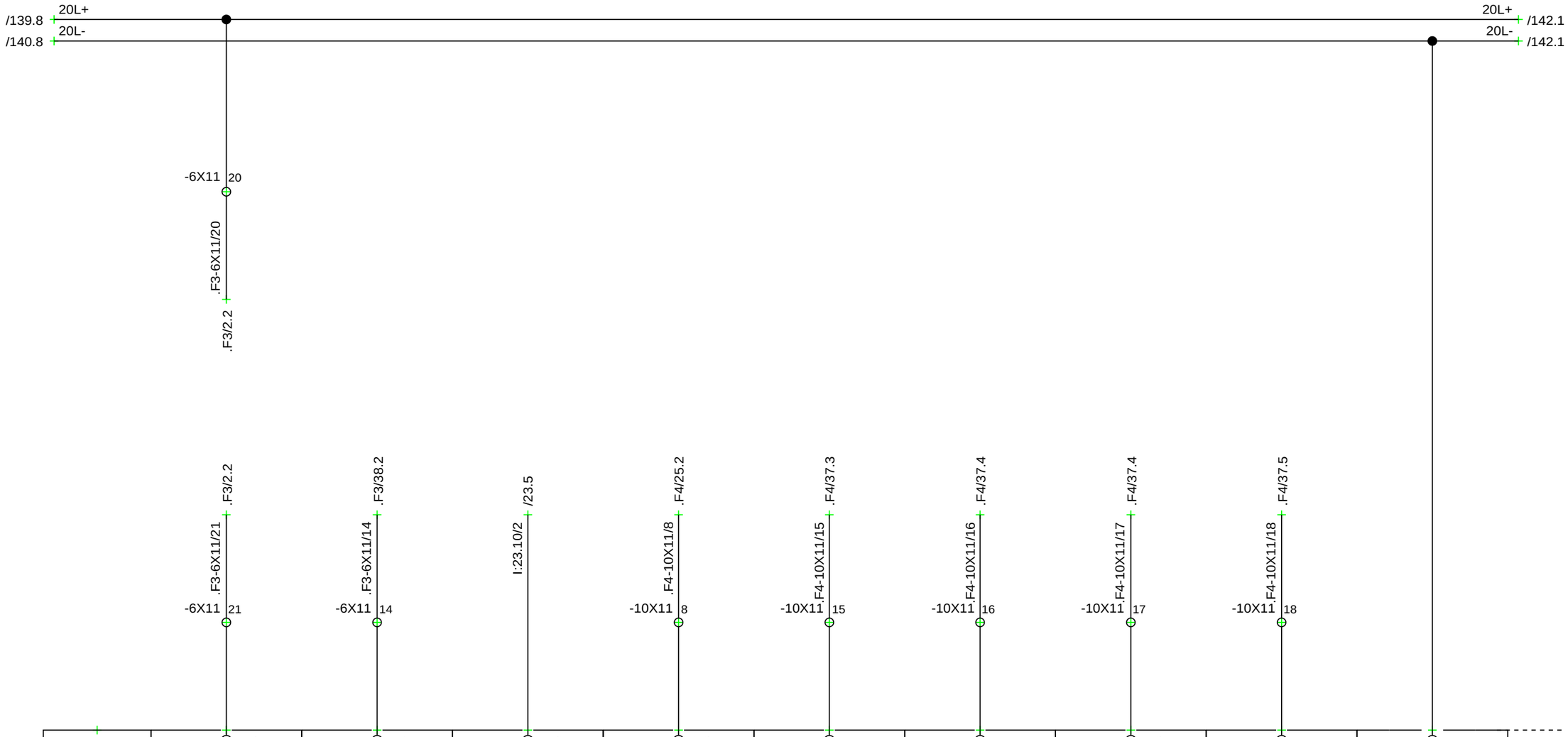
/139.8 20L- 20L- /141.1

	.F2/37.2	/23.4	.F3/26.2	.F3/38.3	.F3/38.4	.F3/38.4	.F3/38.5	.F3/38.6
	.F2-1X11/14	I:23.9/9	.F3-6X11/8	.F3-6X11/15	.F3-6X11/16	.F3-6X11/17	.F3-6X11/18	.F3-6X11/19
	-1X11 14		-6X11 8	-6X11 15	-6X11 16	-6X11 17	-6X11 18	-6X11 19
1746-IB16	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
	I:23.9/8	I:23.9/9	I:23.9/10	I:23.9/11	I:23.9/12	I:23.9/13	I:23.9/14	I:23.9/15	DCCOM
	Reserve Hülsen-GK	Not-Aus 1.Füllungs-GK	Initiator Hubtisch unten 1.Füllungs-GK	Freigabe Anlage 1.Füllungs-GK	Meldung Schieberegister überbrücket 1.Füllungs-GK	1.Füllungs-GK hat dosiert	Störung 1.Füllungs-GK	SPS in Run 1.Füllungs-GK	power supply
	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36	-0PLCM36
	spare shell depositor	emergency stop 1.filling depositor	proximity switch lifting table down 1.filling depositor	enable plant 1.filling depositor	message shift register bridged 1.filling depositor	1.filling depositor has deposited	fault 1.filling depositor	SPS in run 1.filling depositor	

BÜHLER

customer	474 :P_NR2	+HSS	page **140**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.9/8 - I:23.9/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

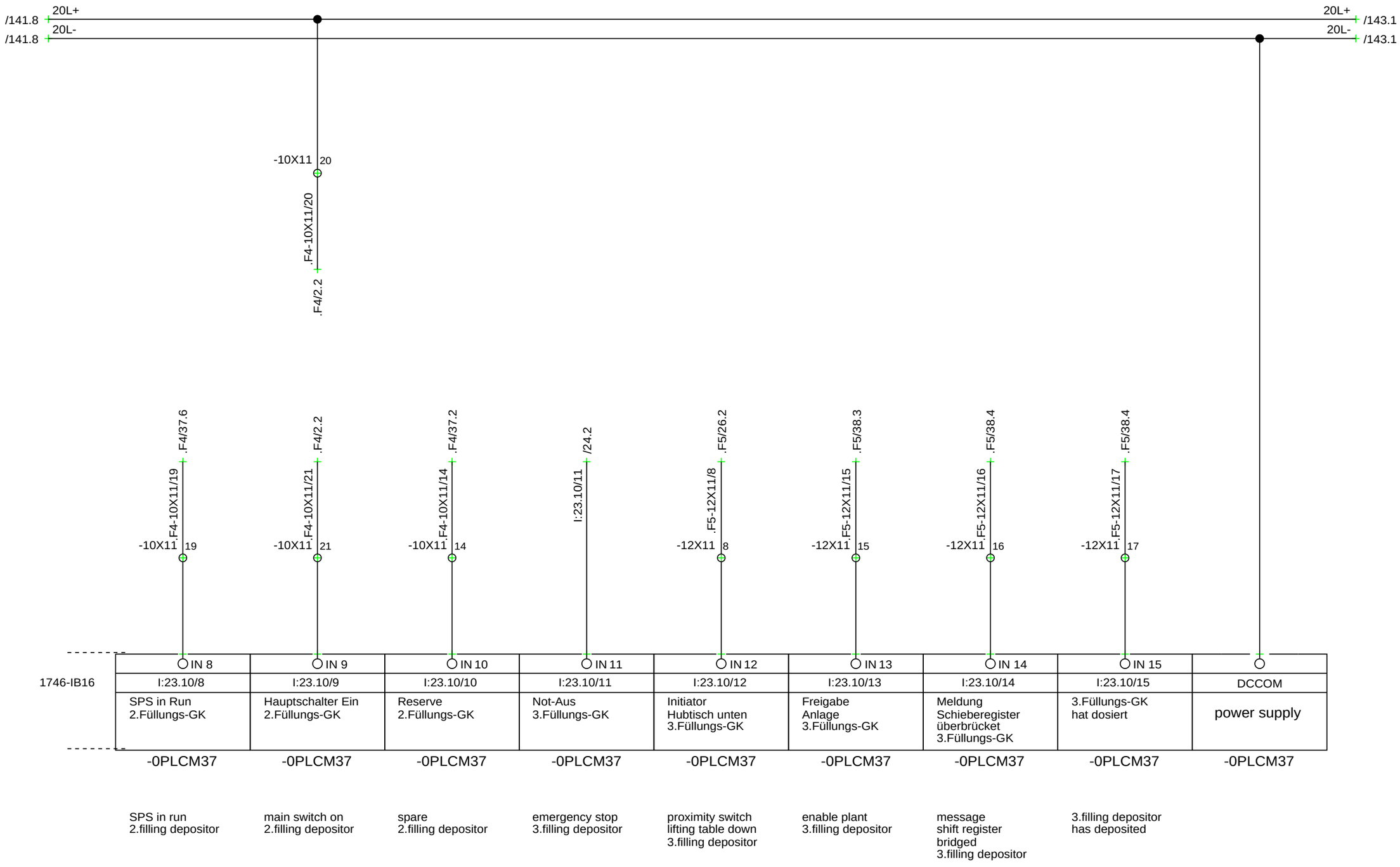


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.10/0	I:23.10/1	I:23.10/2	I:23.10/3	I:23.10/4	I:23.10/5	I:23.10/6	I:23.10/7	DCCOM
	Hauptschalter Ein 1.Füllungs-GK	Reserve 1.Füllungs-GK	Not-Aus 2.Füllungs-GK	Initiator Hubtisch unten 2.Füllungs-GK	Freigabe Anlage 2.Füllungs-GK	Meldung Schieberegister überbrücket 2.Füllungs-GK	2.Füllungs-GK hat dosiert	Störung 2.Füllungs-GK	power supply
	-0PLCM37	-0PLCM37	-0PLCM37	-0PLCM37	-0PLCM37	-0PLCM37	-0PLCM37	-0PLCM37	-0PLCM37
	main switch on 1.filling depositor	spare 1.filling depositor	emergency stop 2.filling depositor	proximity switch lifting table down 2.filling depositor	enable plant 2.filling depositor	message shift register bridged 2.filling depositor	2.filling depositor has deposited	fault 2.filling depositor	

BÜHLER

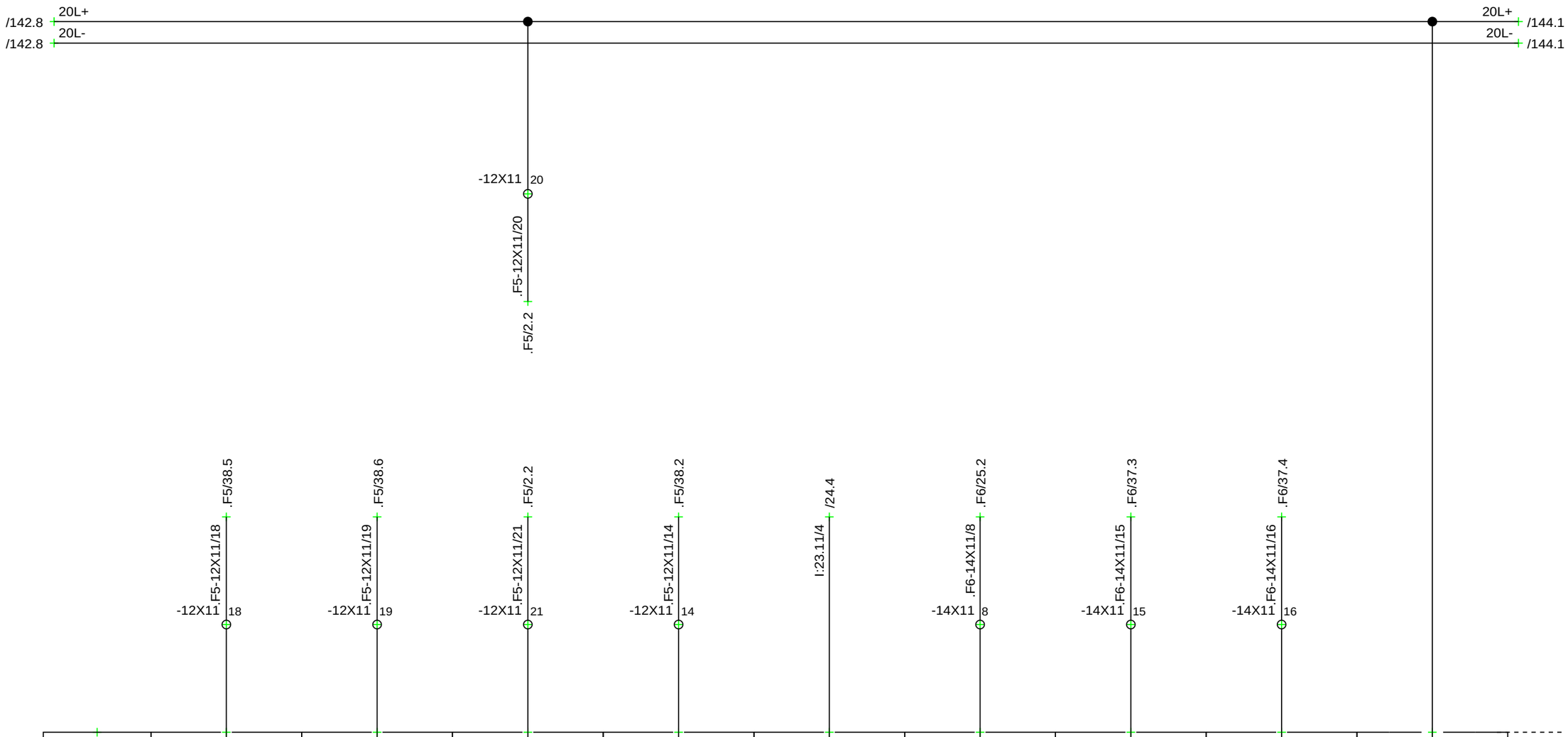
customer	474 :P_NR2	+HSS	page 141
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.10/0 - I:23.10/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **142**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.10/8 - I:23.10/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

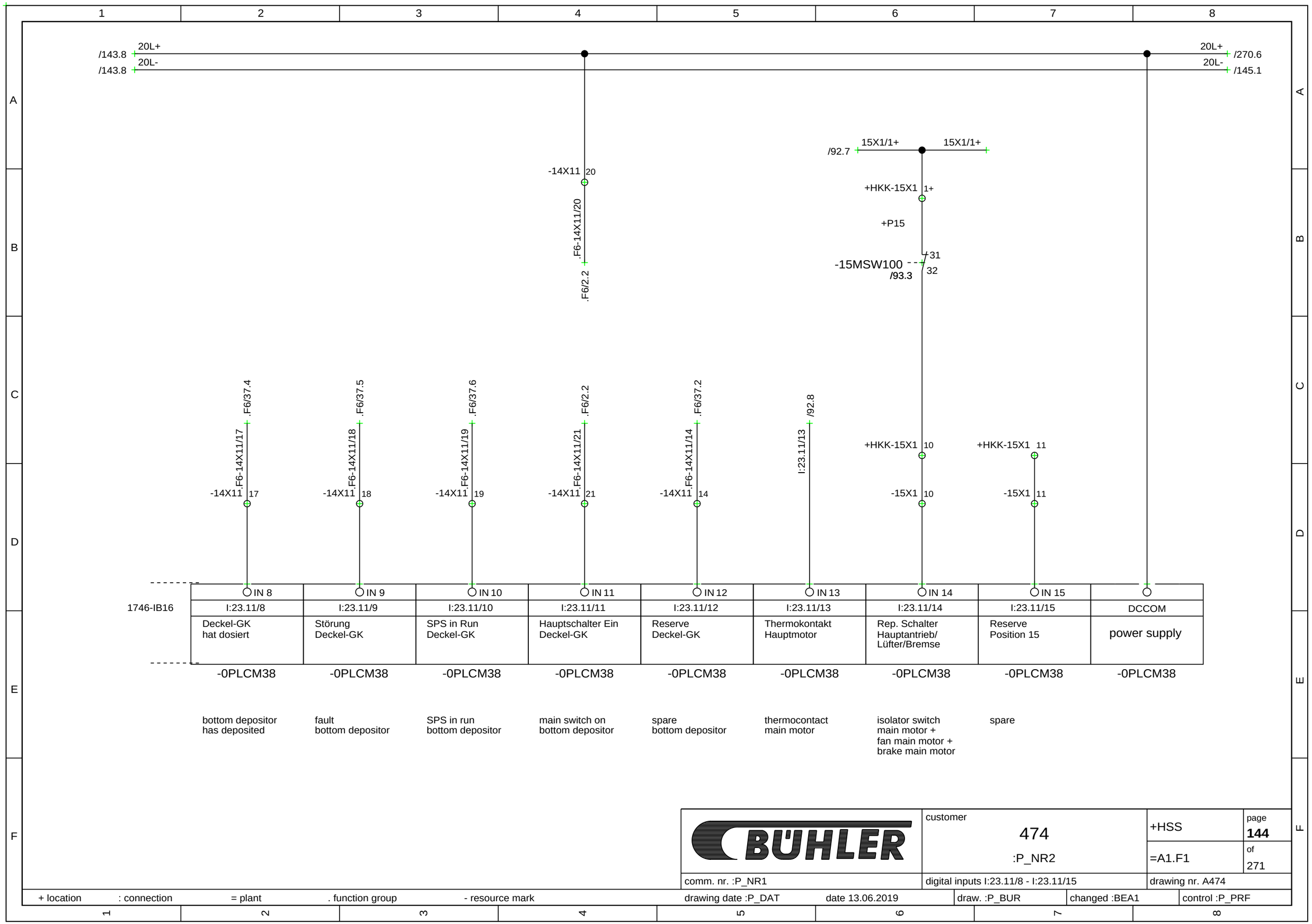


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.11/0	I:23.11/1	I:23.11/2	I:23.11/3	I:23.11/4	I:23.11/5	I:23.11/6	I:23.11/7	DCCOM
	Störung 3.Füllungs-GK	SPS in Run 3.Füllungs-GK	Hauptschalter Ein 3.Füllungs-GK	Reserve 3.Füllungs-GK	Not-Aus Deckel-GK	Initiator Hubtisch unten Deckel-GK	Freigabe Anlage Deckel-GK	Meldung Schieberegister überbrücket Deckel-GK	power supply
	-0PLCM38	-0PLCM38	-0PLCM38	-0PLCM38	-0PLCM38	-0PLCM38	-0PLCM38	-0PLCM38	-0PLCM38
	fault 3.filling depositor	SPS in run 3.filling depositor	main switch on 3.filling depositor	spare 3.filling depositor	emergency stop bottom depositor	proximity switch lifting table down bottom depositor	enable plant bottom depositor	message shift register bridged bottom depositor	

BÜHLER

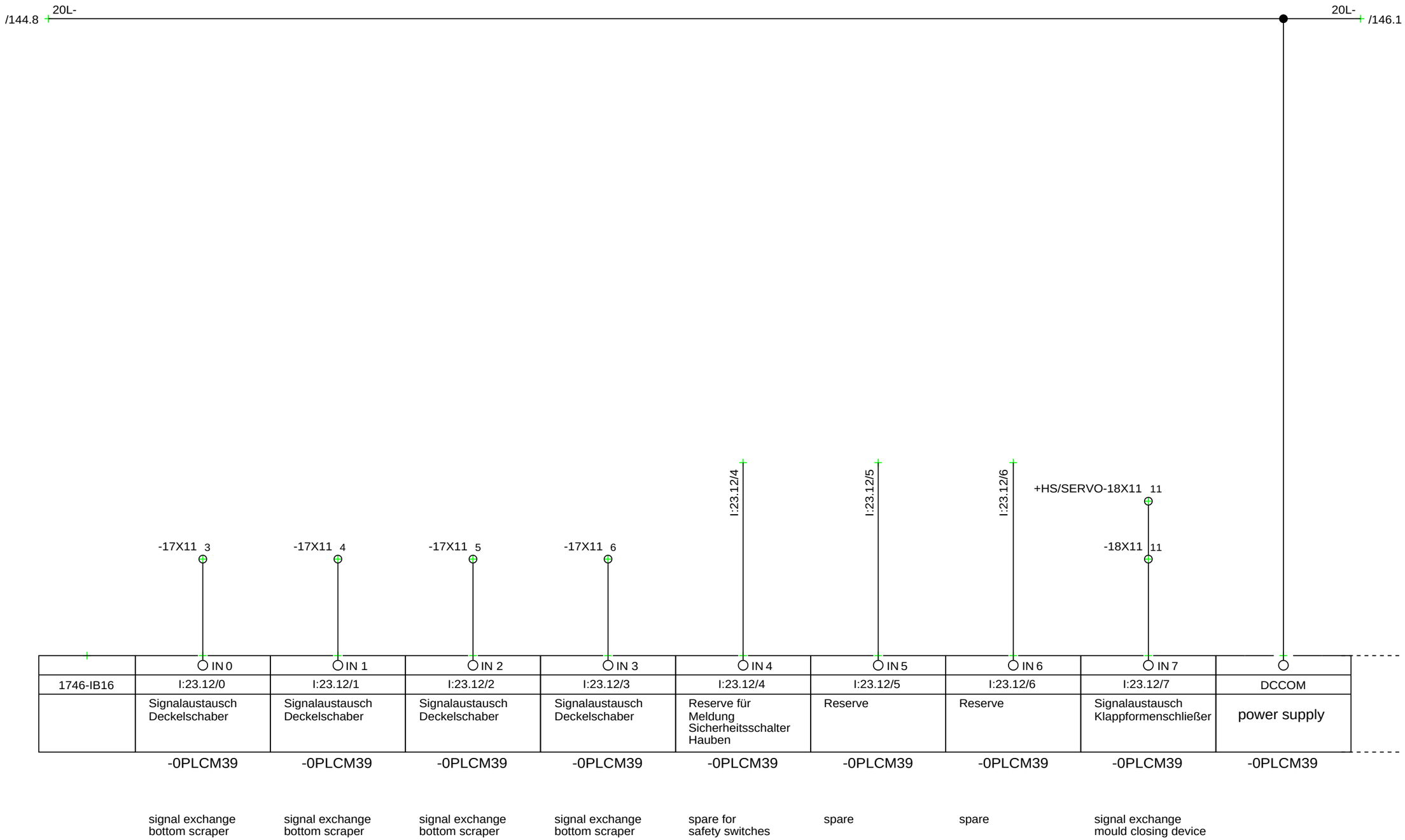
customer 474 :P_NR2		+HSS	page **143**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.11/0 - I:23.11/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



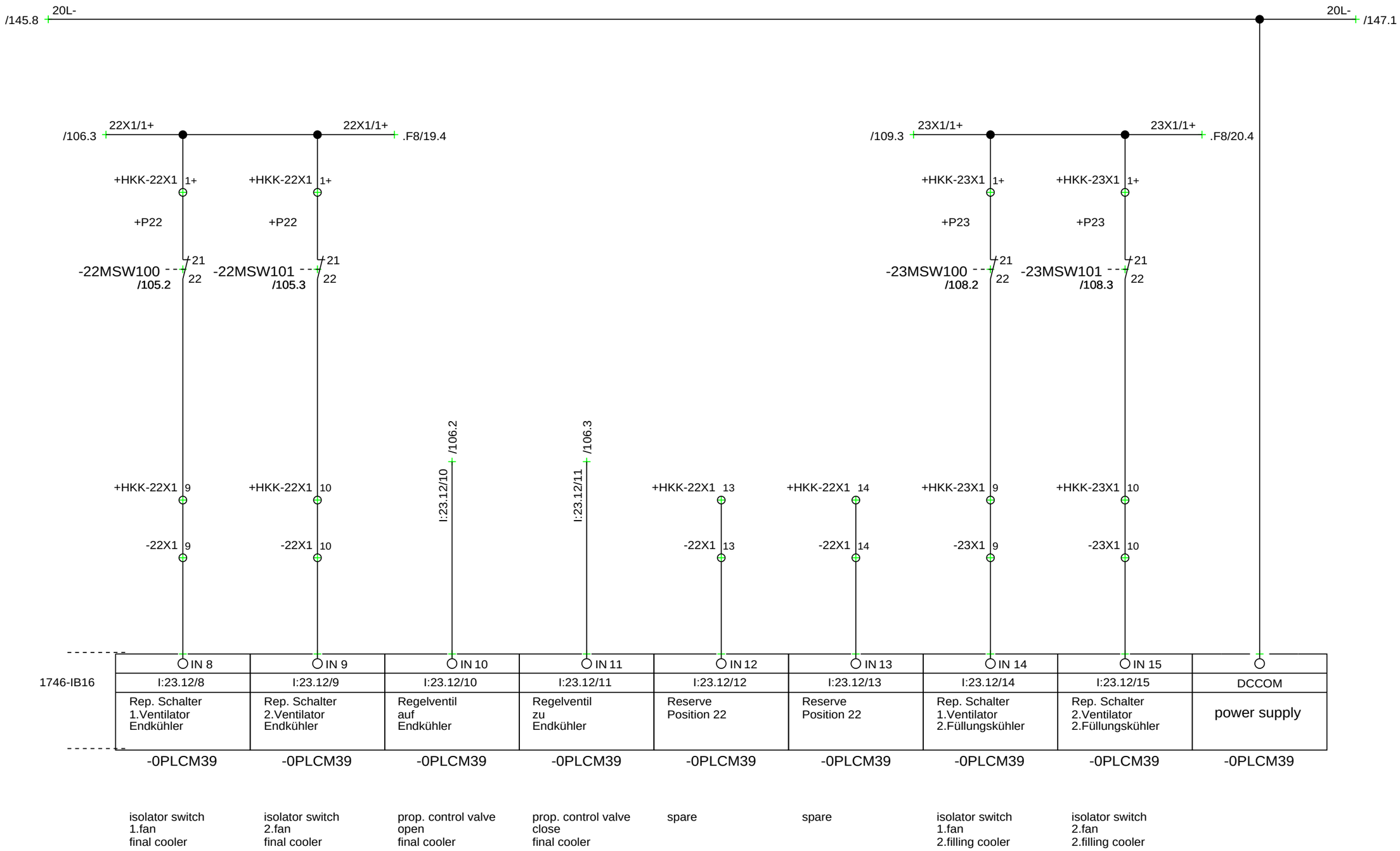
BÜHLER	customer 474 :P_NR2	+HSS	page **144**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.11/8 - I:23.11/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



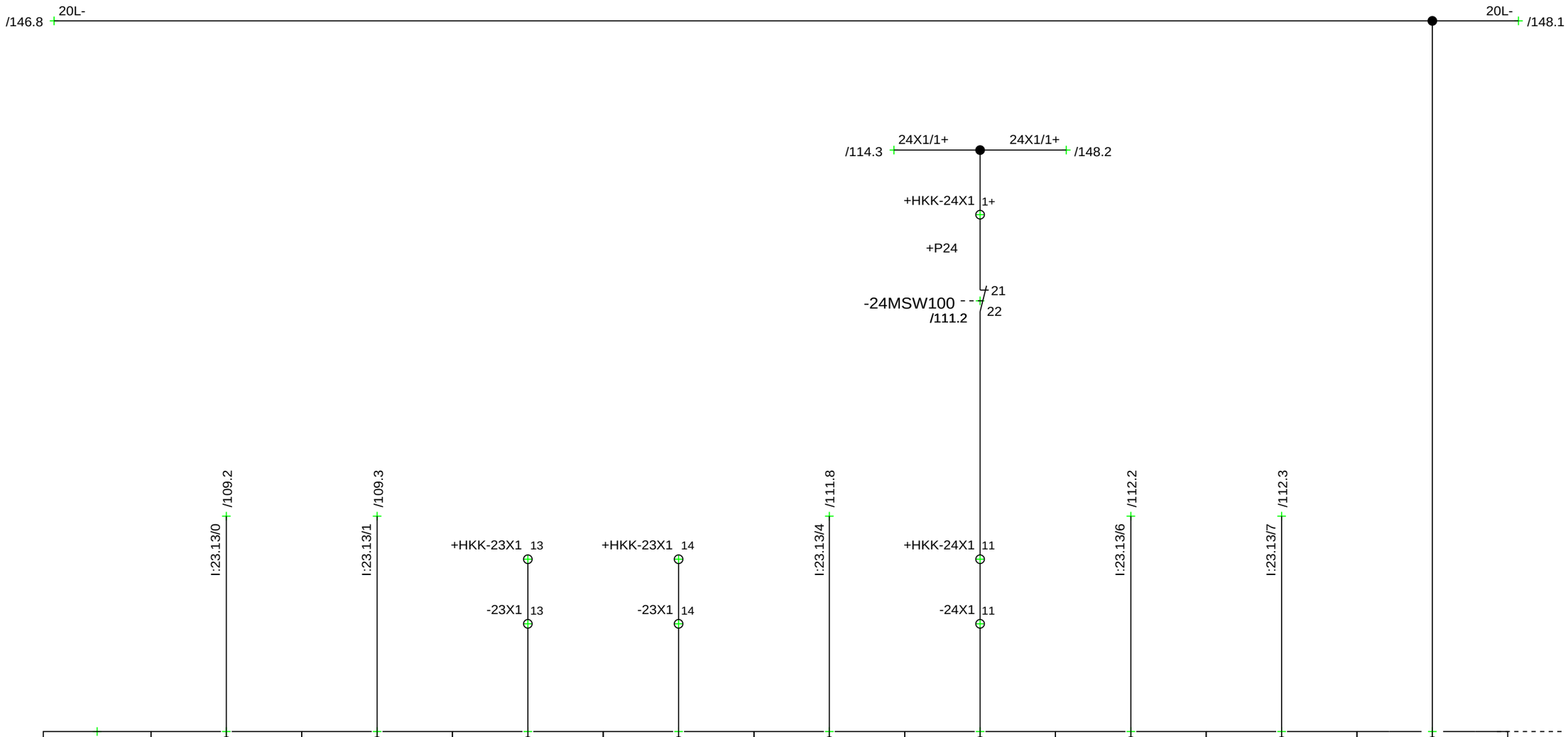
BÜHLER	customer 474 :P_NR2	+HSS	page **145**	
		=A1.F1	of 271	
comm. nr. :P_NR1	digital inputs I:23.12/0 - I:23.12/7	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **146**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.12/8 - I:23.12/15	drawing nr. A474	

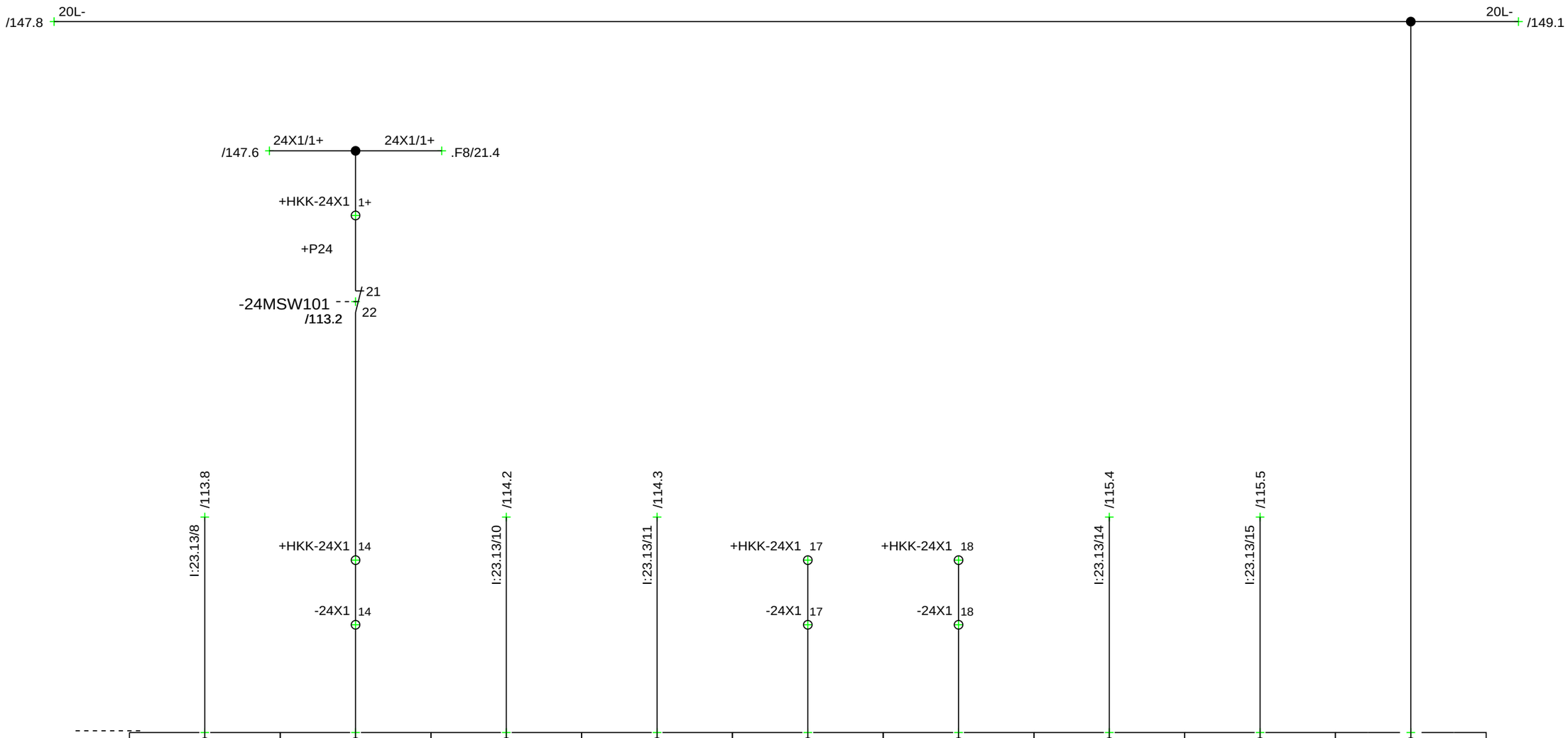
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.13/0	I:23.13/1	I:23.13/2	I:23.13/3	I:23.13/4	I:23.13/5	I:23.13/6	I:23.13/7	DCCOM
	Regelventil auf 2.Füllungskühler	Regelventil zu 2.Füllungskühler	Reserve Position 23	Reserve Position 23	Thermokontakt Ventilator Wärmebahn Zone 1	Rep. Schalter Ventilator Wärmebahn Zone 1	Regelventil auf Wärmebahn Zone 1	Regelventil zu Wärmebahn Zone 1	power supply
	-0PLCM40	-0PLCM40	-0PLCM40	-0PLCM40	-0PLCM40	-0PLCM40	-0PLCM40	-0PLCM40	-0PLCM40
	prop. control valve open 2.filling cooler	prop. control valve close 2.filling cooler	spare	spare	thermocontact fan mould heating section zone 1	isolator switch fan mould heating section zone 1	prop. control valve open mould heating section zone 1	prop. control valve close mould heating section zone 1	

BÜHLER	customer 474 :P_NR2	+HSS	page **147**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.13/0 - I:23.13/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **148**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.13/8 - I:23.13/15	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:23.14/0	I:23.14/1	I:23.14/2	I:23.14/3	I:23.14/4	I:23.14/5	I:23.14/6	I:23.14/7	DCCOM
	Verpackungsmaschine Anlagengeschwindigkeit 22,5 Formen/Minute	Verpackungsmaschine Anlagengeschwindigkeit 15 Formen/Minute	Verpackungsmaschine Anlagengeschwindigkeit 7,5 Formen/Minute	Verpackungsmaschine Reserve	Schlüsselschalter Bedienpult Anlage aktiv	Anlage Ein Bedienpult	Anlage Stop Bedienpult	Störung quittieren Bedienpult	power supply
	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41
	wrapping line plant speed 22,5 moulds/min.	wrapping line plant speed 15 moulds/min.	wrapping line plant speed 7,5 moulds/min.	wrapping line spare	key switch operator panel plant is active	plant on operator panel	plant stop operator panel	reset faults operator panel	

BÜHLER

customer 474 :P_NR2

+HSS =A1.F1

page **149** of 271

comm. nr. :P_NR1

digital inputs I:23.14/0 - I:23.14/7

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

/149.8 20L- 20L-

	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
1746-IB16	I:23.14/8	I:23.14/9	I:23.14/10	I:23.14/11	I:23.14/12	I:23.14/13	I:23.14/14	I:23.14/15	DCCOM
	Vorwarnung Bedienpult	Not-Aus Bedienpult	Sicherheitsschalter Front-Haube 1.Füllungs-GK	Sicherheitsschalter Reinigungsendposition 1.Füllungs-GK	Sicherheitsschalter Front-Haube 3.Füllungs-GK	Sicherheitsschalter Reinigungsendposition 3.Füllungs-GK	Reserve	Reserve	power supply
	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41	-0PLCM41
	pre warning operator panel	emergency stop operator panel	safety switch front cover 1.filling depositor	safety switch cleaning end position 1.filling depositor	safety switch front cover 3.filling depositor	safety switch cleaning end position 3.filling depositor	spare	spare	

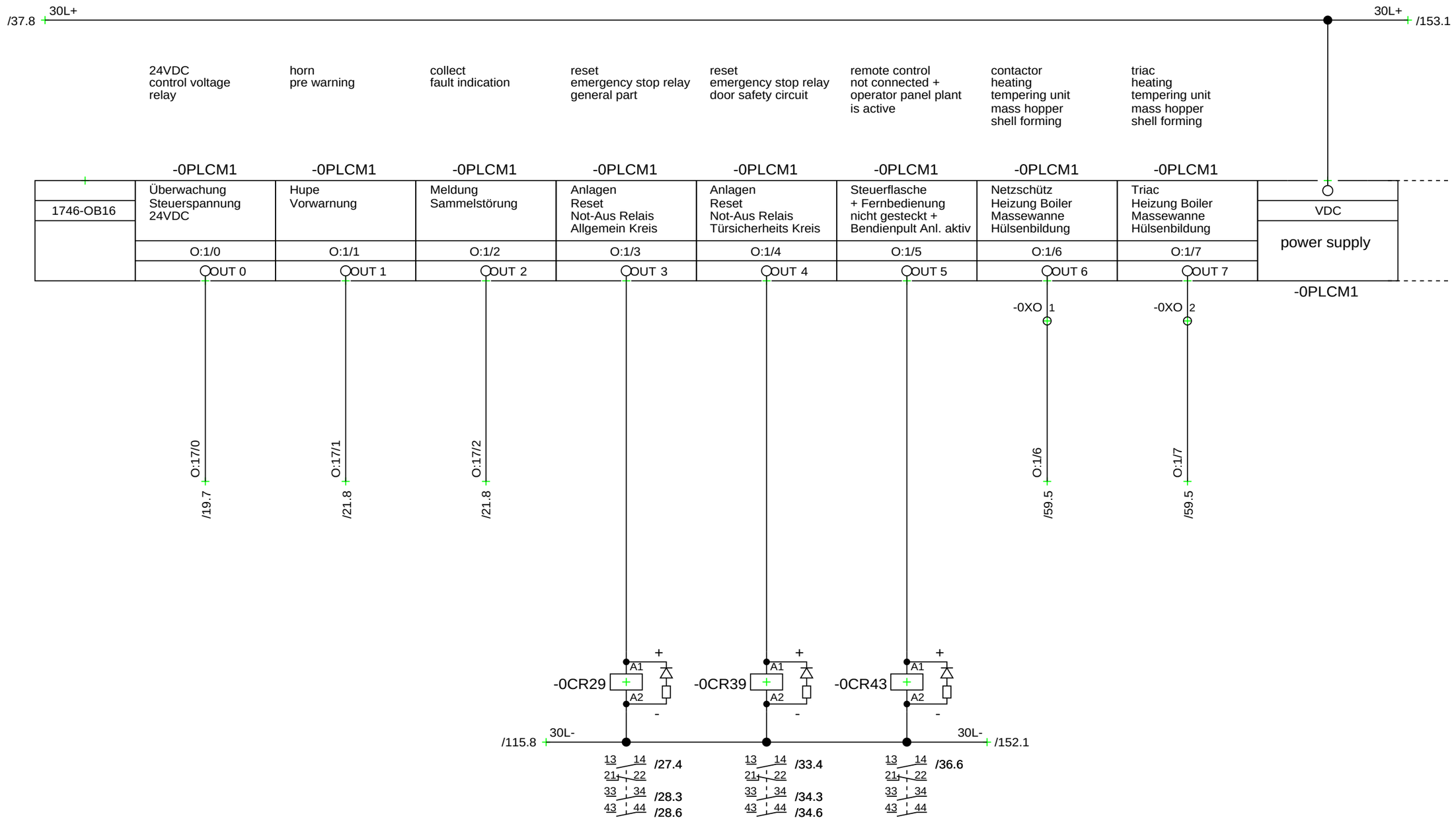
I:23.14/8 /117.6 — I:23.14/9 /117.7 — .F3/9.6 F3-6X11/23 -6X11 23 — .F3/9.7 F3-6X11/26 -6X11 26 — .F5/9.6 F5-12X11/23 -12X11 23 — .F5/9.7 F5-12X11/26 -12X11 26

-0XI 24 — -0XI 25 — -0XI 26 — -0XI 27 — -0XI 28 — -0XI 29

BÜHLER

customer 474 :P_NR2		+HSS	page **150**
		=A1.F1	of 271
comm. nr. :P_NR1	digital inputs I:23.14/8 - I:23.14/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **151**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:1/0 - O:1/7	drawing nr. A474	

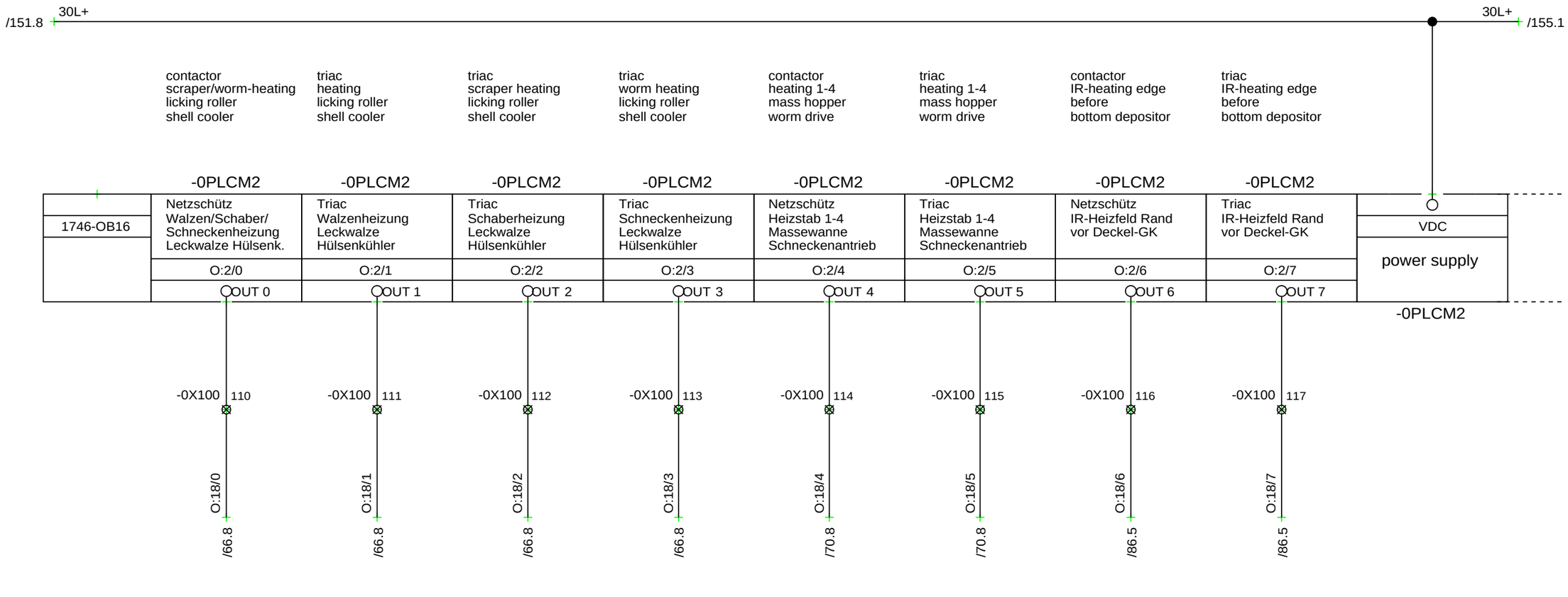
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/151.6 30L-

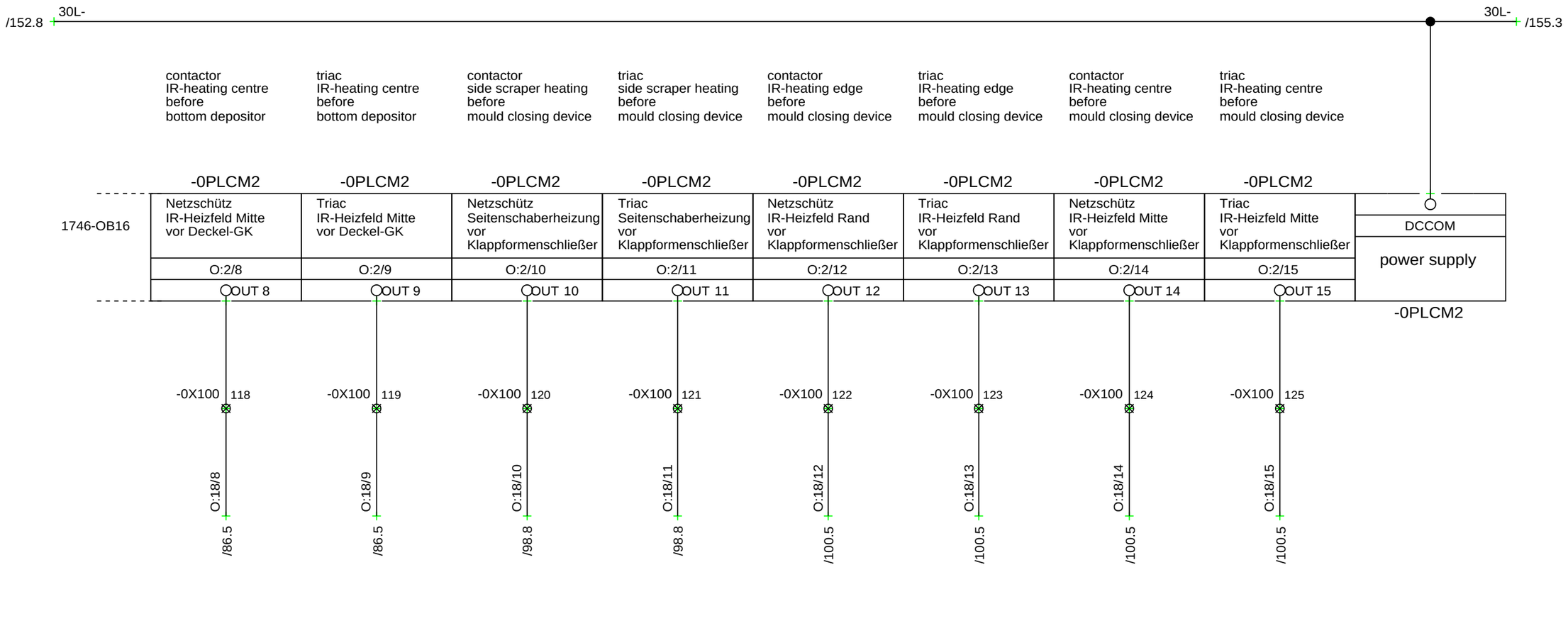
30L- /154.1

	contactor belt heating shell forming	triac belt heating shell forming	contactor heating licking roller 1-3 before shell cooler	triac heating licking roller 1-3 before shell cooler	contactor scraper heating licking roller 1-3 before shell cooler	triac scraper heating licking roller 1-3 before shell cooler	contactor side scraper heating before shell cooler	triac side scraper heating before shell cooler	
	-0PLCM1	-0PLCM1	-0PLCM1	-0PLCM1	-0PLCM1	-0PLCM1	-0PLCM1	-0PLCM1	
1746-OB16	Netzschütz Stahlbandheizung Hülsenbildung	Triac Stahlbandheizung Hülsenbildung	Netzschütz Walzenheizung Leckwalze 1-3 vor Hülsenkühler	Triac Walzenheizung Leckwalze 1-3 vor Hülsenkühler	Netzschütz Schaberheizung Leckwalze 1-3 vor Hülsenkühler	Triac Schaberheizung Leckwalze 1-3 vor Hülsenkühler	Netzschütz Seitenschaberheizung vor Hülsenkühler	Triac Seitenschaberheizung vor Hülsenkühler	DCCOM power supply
	O:1/8	O:1/9	O:1/10	O:1/11	O:1/12	O:1/13	O:1/14	O:1/15	
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	-0PLCM1
	-0X100 102	-0X100 103	-0X100 104	-0X100 105	-0X100 106	-0X100 107	-0X100 108	-0X100 109	
	O:17/8	O:17/9	O:17/10	O:17/11	O:17/12	O:17/13	O:17/14	O:17/15	
	/53.8	/53.8	/57.8	/57.8	/57.8	/57.8	/58.8	/58.8	

BÜHLER	customer 474 :P_NR2		+HSS	page **152**			
			=A1.F1	of 271			
comm. nr. :P_NR1	digital outputs O:1/8 - O:1/15		drawing nr. A474				
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2		+HSS	page **153**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:2/0 - O:2/7		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **154**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:2/8 - O:2/15	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/153.8 30L+ — 30L+ .6

	relay solid production on to wrapping line	relay shell production on to wrapping line	relay filling level mass hopper shell forming	relay filling level mass hopper worm drive	relay magnetic clutch 2.filling cooler engage	contactor water pump tempering unit mass hopper shell forming	triac solenoid valve water fill tempering unit mass hopper shell forming	triac solenoid valve cooling tempering unit mass hopper shell forming
	-0PLCM3	-0PLCM3	-0PLCM3	-0PLCM3	-0PLCM3	-0PLCM3	-0PLCM3	-0PLCM3
1746-OB16	Koppelrelais Massiv-Produktion Ein an Verpackung	Koppelrelais Hülsen-Produktion Ein an Verpackung	Koppelrelais Füllstand Massewanne Hülsenbildung	Koppelrelais Füllstand Wanne Schneckenantrieb	Koppelrelais Magnetzahnkupplung 2.Füllungskühler eingekuppelt	Netzschütz Wasserpumpe Boiler Massewanne Hülsenbildung	Triac MV Nachspeisung Boiler Massewanne Hülsenbildung	Triac MV Kühlung Boiler Massewanne Hülsenbildung
	O:3/0	O:3/1	O:3/2	O:3/3	O:3/4	O:3/5	O:3/6	O:3/7
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7

VDC — power supply — -0PLCM3

O:19/0 — /115.8

O:19/1 — /115.8

-0XO 3 — O:3/5 — /59.5

-0XO 4 — 3 — -4SSR15 — 4 — 30L- .5

-0XO 5 — 3 — -4SSR16 — 4 — 30L- /156.1

1 2 .6

1 2 .7

35L+ /103.6 — 35L+ .F7/2.6

-16CR2 .5 — 11 14

-16X1 15

+HKK-16X1 15

+P16

-16MC100 — 1 — 2

+HKK-16X1 4-

16X1/4- /18.4 — 16X1/4- /162.5

Magnetzahnkupplung
2.Füllungskühler
eingekuppelt

magnetic clutch
2.filling cooler
engage

-4CR15 — A1 — A2 — 30L- /154.8 — 11 14 12 .3

-5CR15 — A1 — A2 — 11 14 12 .4

-16CR2 — A1 — A2 — 30L- .6 — 11 14 12 .2

-0X8 17 — 11 — -4CR15 .3 — 12 14 — -0X8 18 19

-0X8 20 — 11 — -5CR15 .4 — 12 14 — -0X8 21 22

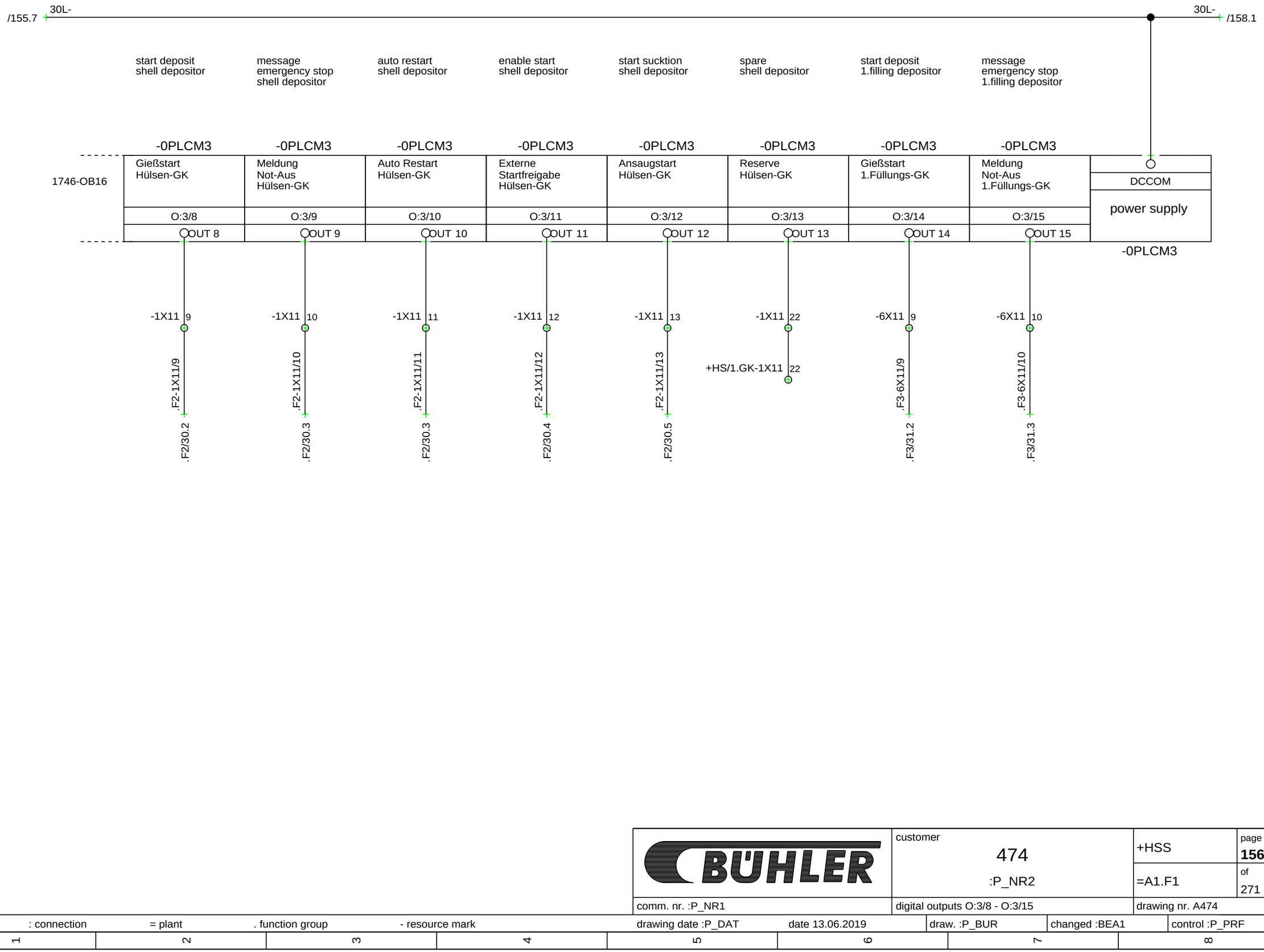
30L+ .8 — 30L+ /157.1

-4SSR15 .6 — 1 2 — -4X1 43 — +HKK-4X1 43 — +ST-4XDX1/X2 7 — +UKK-4DX1 43 — +P4 — 1 — -4SV102 — 2 — +UKK-4DX1 2- — 4DX1/2- /59.6

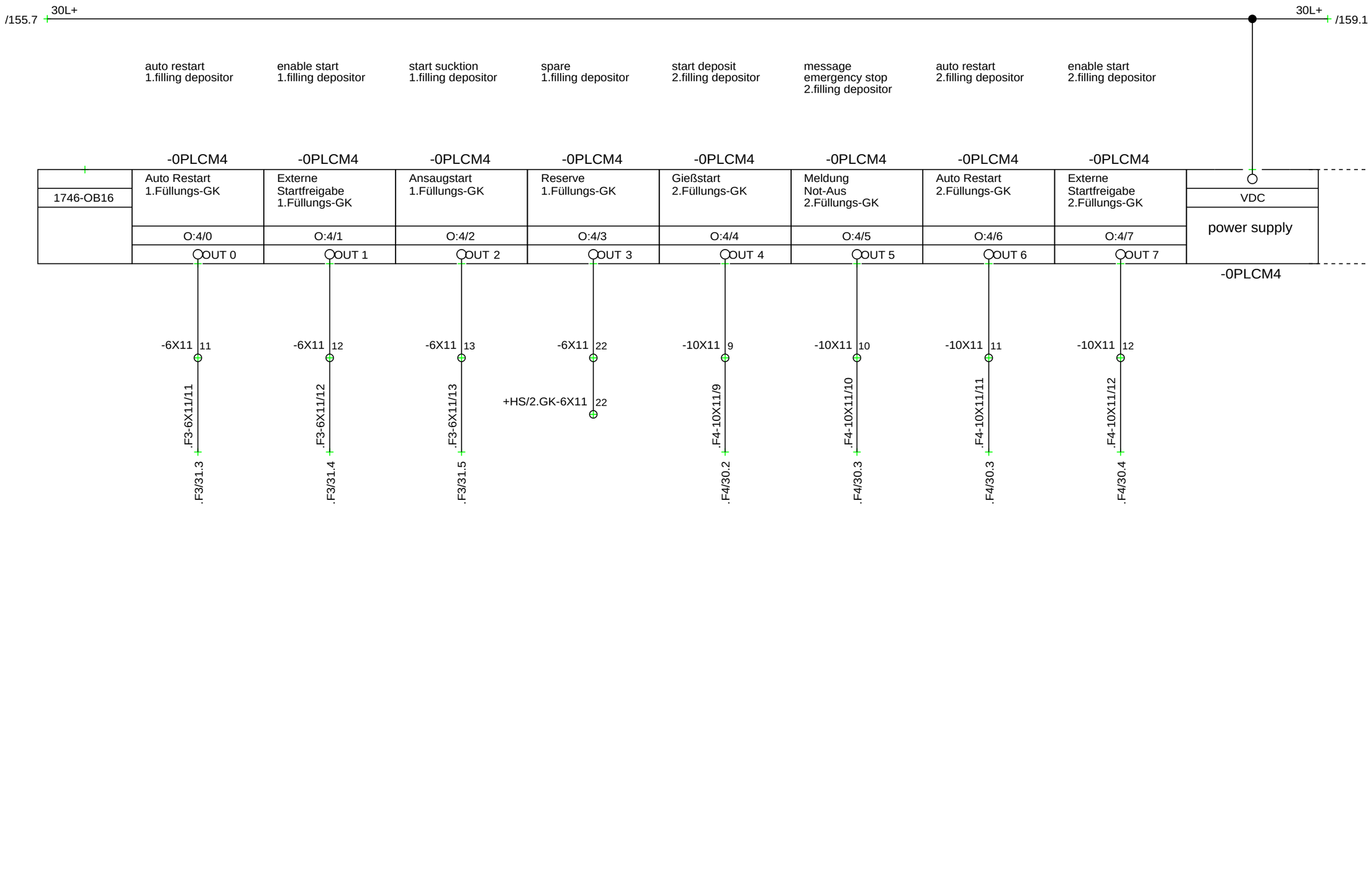
-4SSR16 .7 — 1 2 — -4X1 44 — +HKK-4X1 44 — +ST-4XDX1/X2 8 — +UKK-4DX1 44 — +P4 — 1 — -4SV103 — 2 — +UKK-4DX1 2- — 4DX1/2- /159.7

BÜHLER	customer 474 :P_NR2	+HSS	page 155
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:3/0 - O:3/7		drawing nr. A474

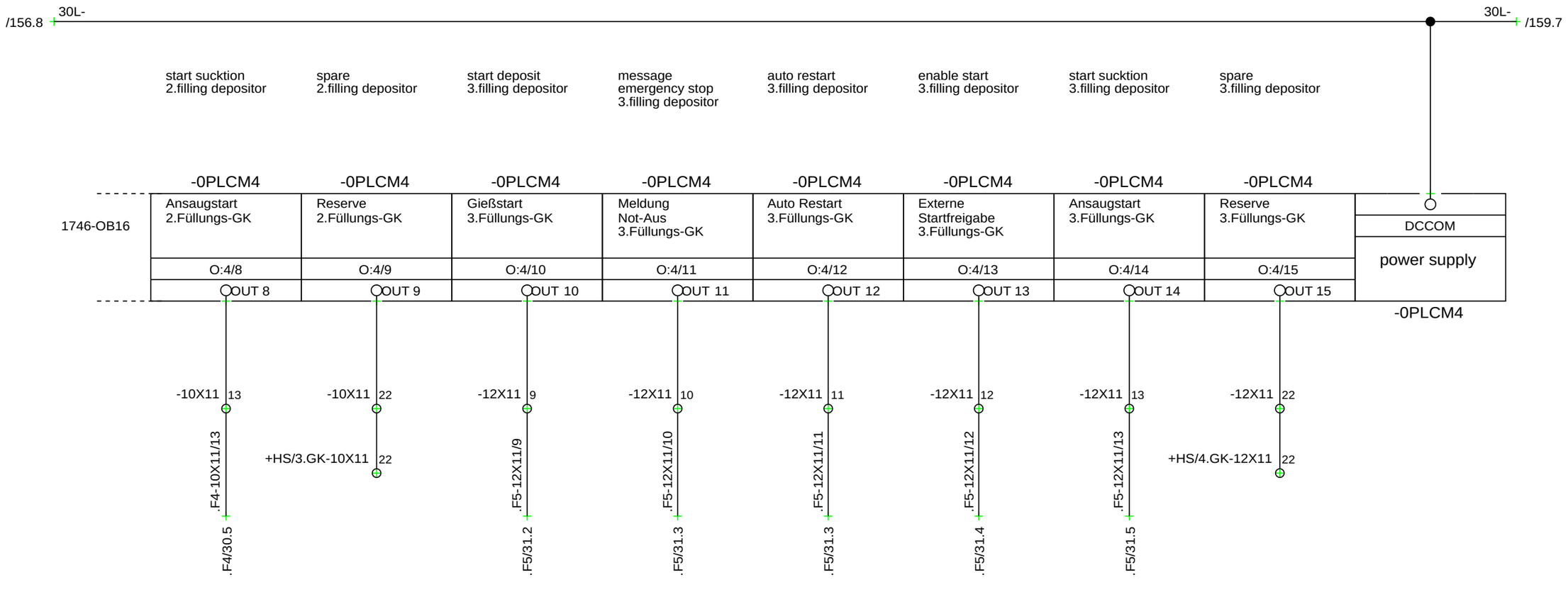
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2		+HSS	page **156**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:3/8 - O:3/15		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

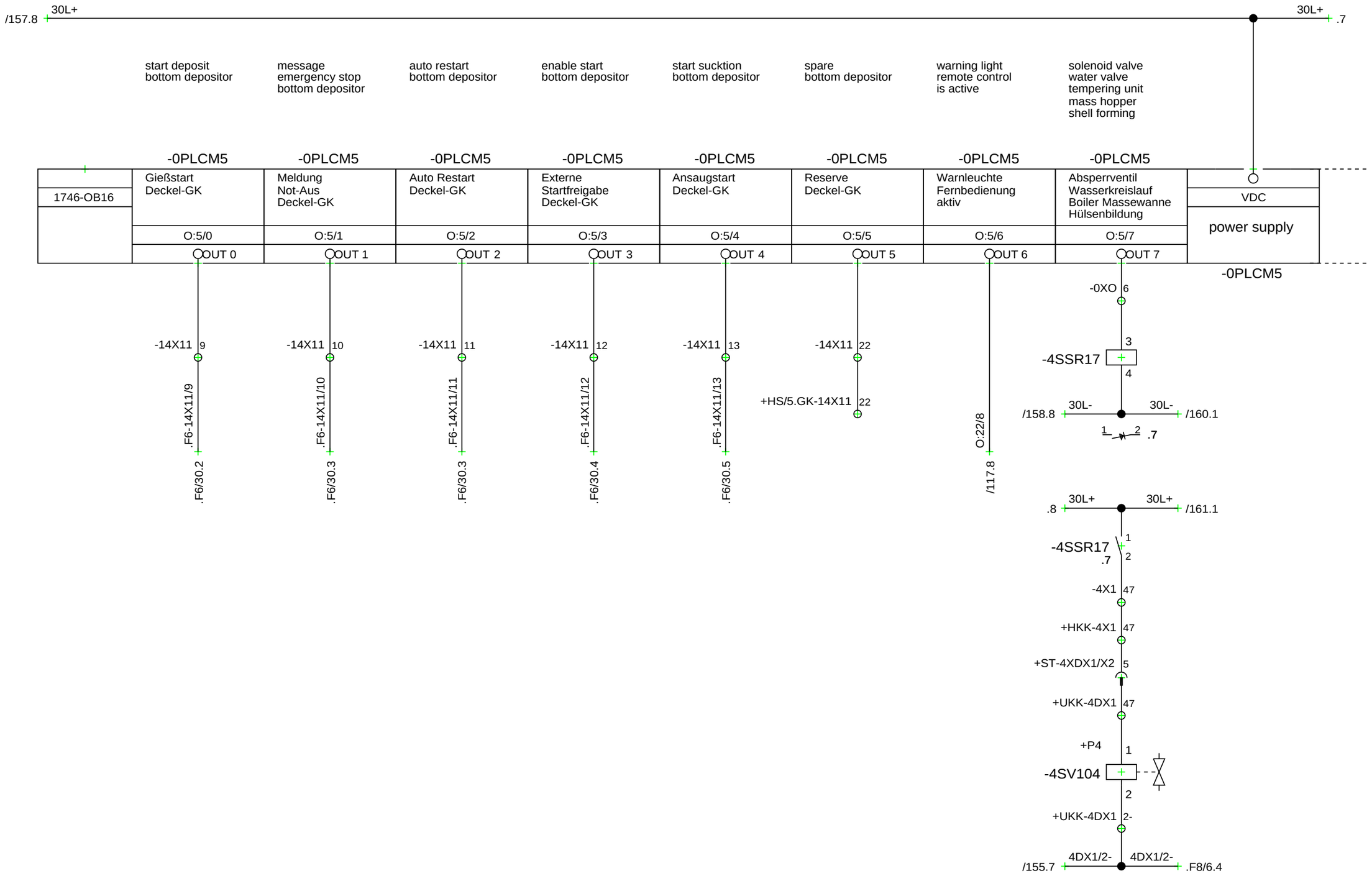


BÜHLER	customer 474 :P_NR2		+HSS	page **157**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:4/0 - O:4/7		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



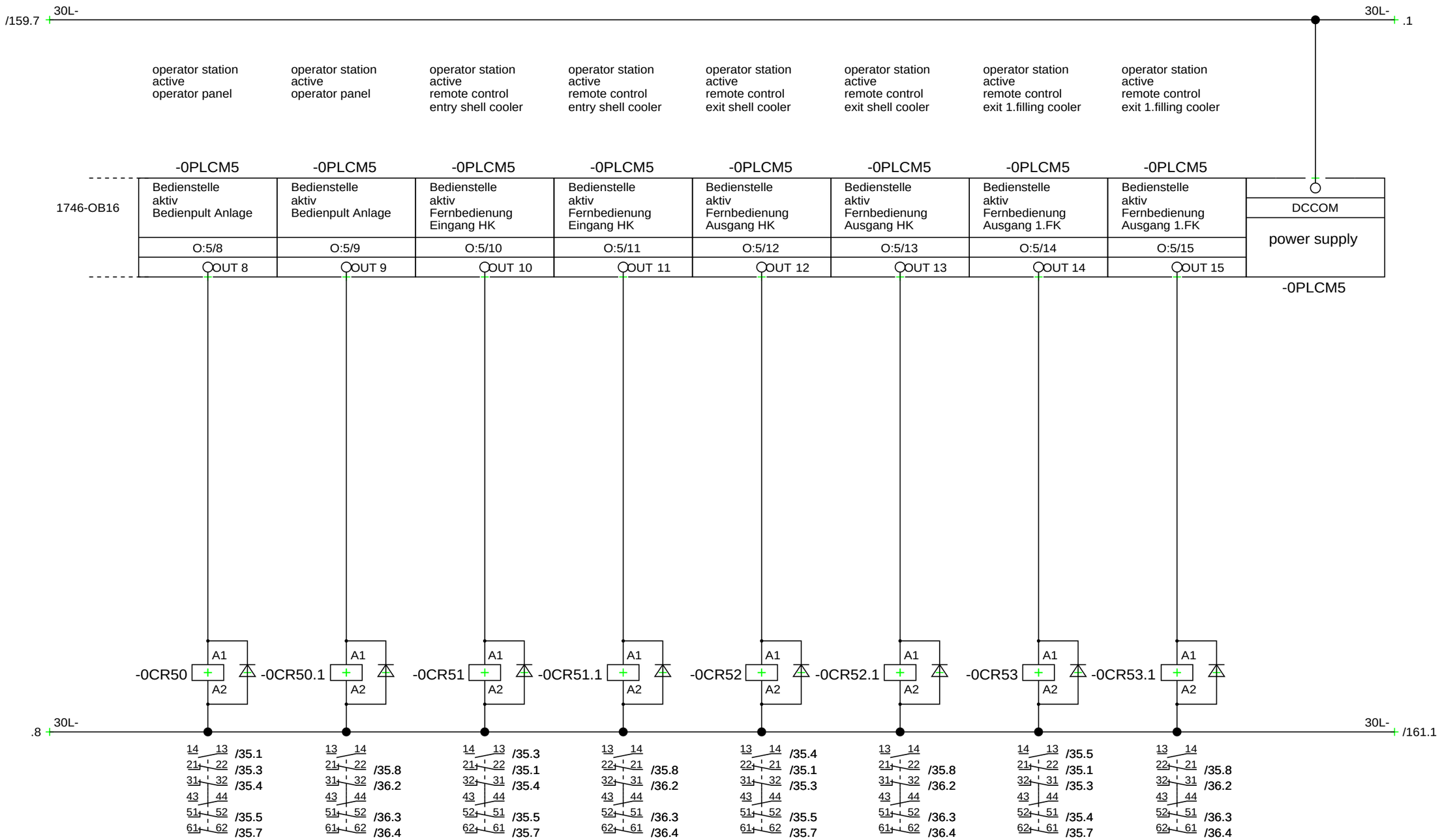
BÜHLER	customer 474 :P_NR2	+HSS	page **158**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:4/8 - O:4/15	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



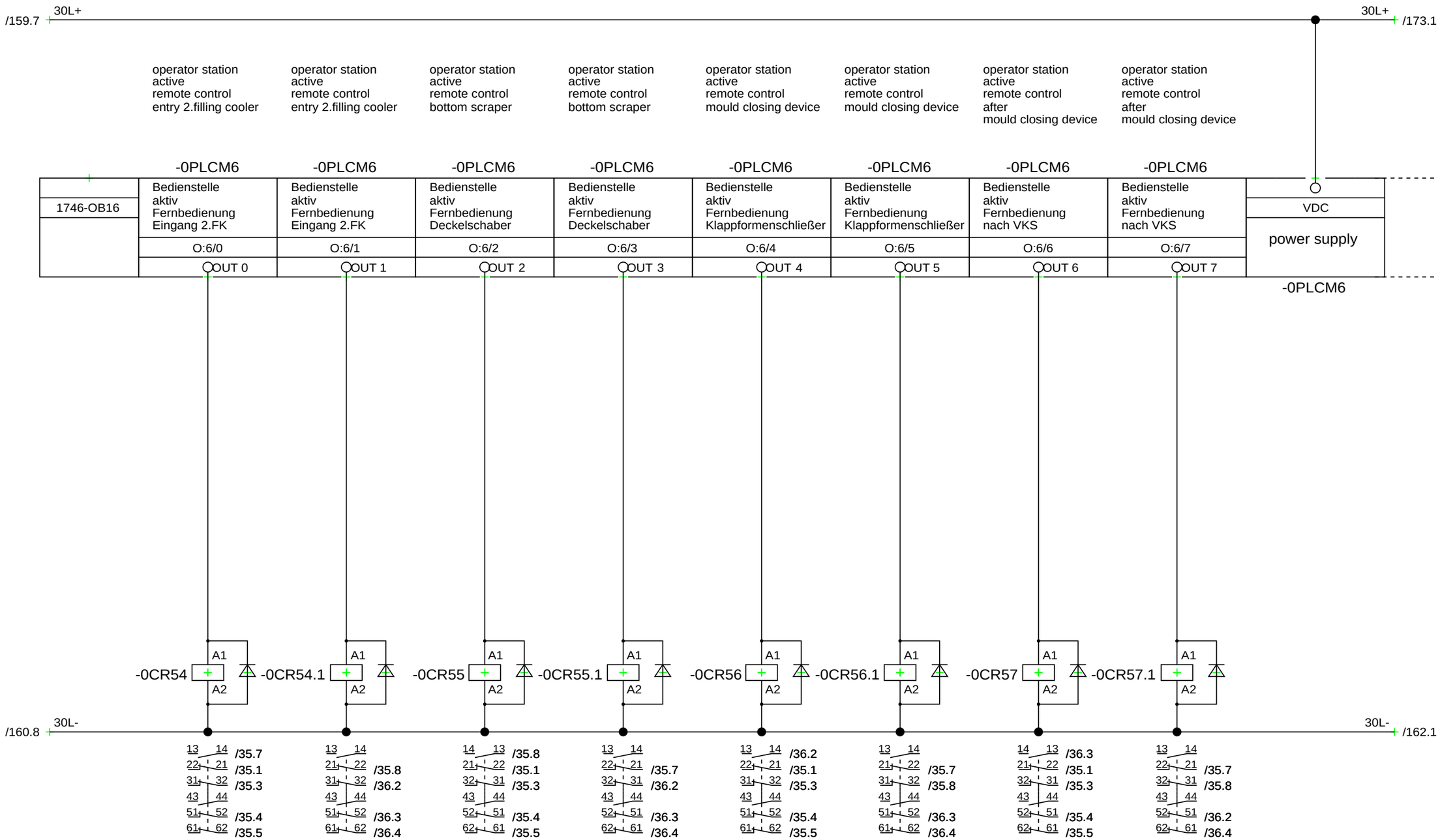
BÜHLER	customer 474 :P_NR2	+HSS	page 159	
		=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:5/0 - O:5/7	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 160
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:5/8 - O:5/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 161
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:6/0 - O:6/7	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/161.8 30L- 30L- .2

operator station active remote control exit demoulder	operator station active remote control exit demoulder	relay solenoid valve chain lubrication shell cooler	relay solenoid valve chain lubrication 1.filling cooler	relay solenoid valve chain lubrication 2.filling cooler	relay solenoid valve chain lubrication final cooler	contactor drive 2.mould turn over device shell forming	triac drive 2.mould turn over device shell forming
-0PLCM6	-0PLCM6	-0PLCM6	-0PLCM6	-0PLCM6	-0PLCM6	-0PLCM6	-0PLCM6

1746-OB16

Bedienstelle aktiv Fernbedienung Ausgang AW-Bereich	Bedienstelle aktiv Fernbedienung Ausgang AW-Bereich	Koppelrelais MV Kettenschmierung Hülsenkühler	Koppelrelais MV Kettenschmierung 1.Füllungskühler	Koppelrelais MV Kettenschmierung 2.Füllungskühler	Koppelrelais MV Kettenschmierung Endkühler	Netzschütz Antrieb 2.Wender Hülsenbildung	Triac Antrieb 2.Wender Hülsenbildung	DCCOM power supply
O:6/8	O:6/9	O:6/10	O:6/11	O:6/12	O:6/13	O:6/14	O:6/15	
OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	

-0PLCM6

-0XO 7 -0XO 8

-0CR58 -0CR58.1 -5CR16 -11CR16 -16CR16 -19CR16 -4CR1 -4CR1.1

A1 A2

.8 30L- 30L- /174.1

13 14 /36.4
21 22 /35.1
31 32 /35.3
43 44
51 52 /35.4
61 62 /35.5

13 14 /35.7
21 22 /35.8
31 32
43 44
51 52 /36.2
61 62 /36.3

11 14 12 .3 21 24 22 .F8/25.6

11 14 12 .4 21 24 22 .F8/26.6

11 14 12 .5 21 24 22 .F8/27.6

11 14 12 .6 21 24 22 .F8/28.6

11 14 12 /48.6

11 14 12 /48.7

/48.8 34L+ 34L+ /165.6

-5CR16.3 -11CR16.4 -16CR16.5 -19CR16.6

11 14

-5X1 46 -11X1 26 -16X1 17 -19X1 10

+HKK-5X1 46 +HKK-11X1 26 +HKK-16X1 17 +HKK-19X1 10

+UKK-5AX1 46

+P5 1 +P11 1 +P16 1 +P19 1

-5SV116 -11SV116 -16SV116 -19SV116

2

+UKK-5AX1 4- +HKK-11X1 4- +HKK-16X1 4- +HKK-19X1 4-

5AX1/4- /206.2

/155.2 16X1/4- 16X1/4-

/18.2 11X1/4- 11X1/4-

/18.7 19X1/4- 19X1/4- /255.7

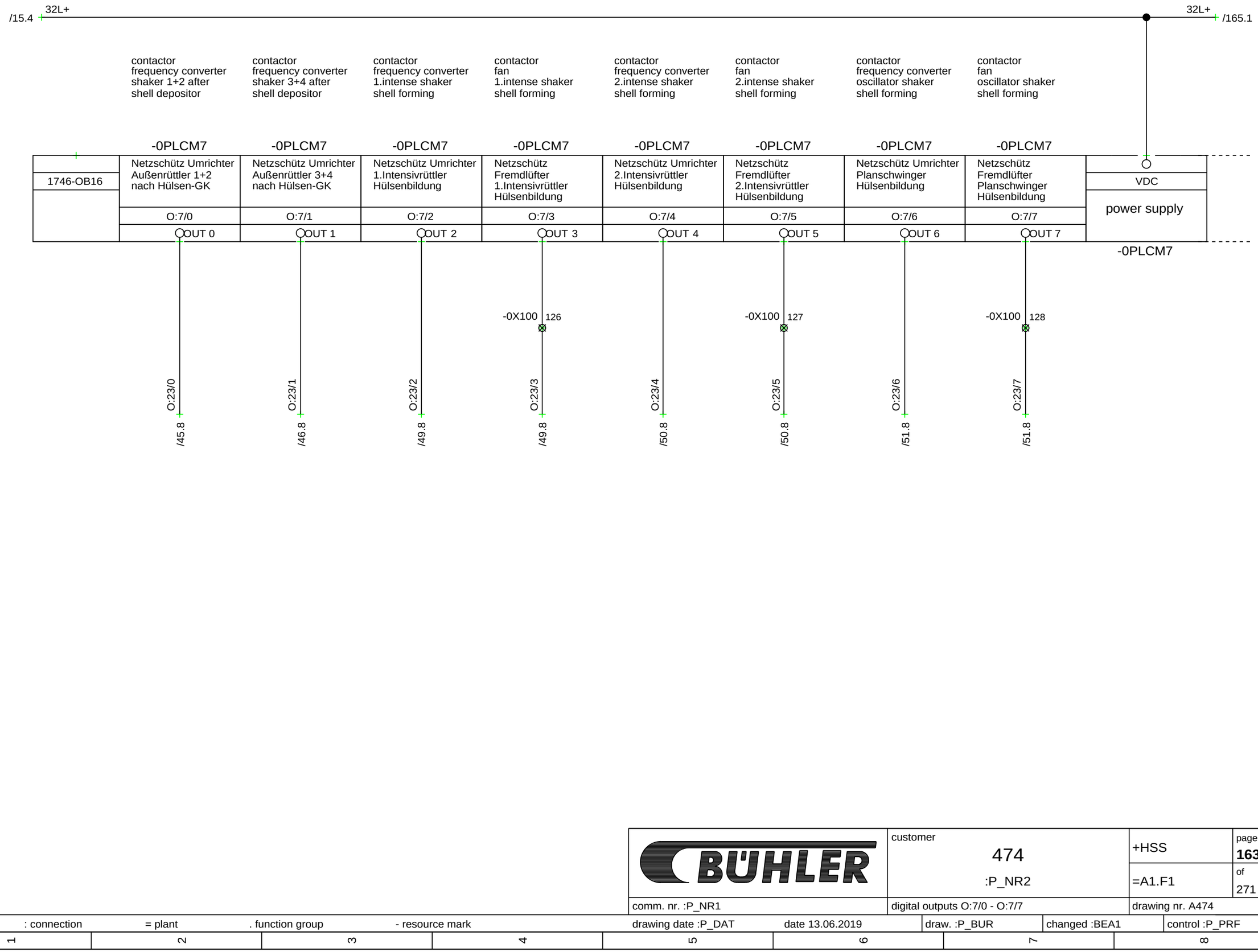
+HKK-5X1 4-

/18.4 5X1/4- 5X1/4- /206.1

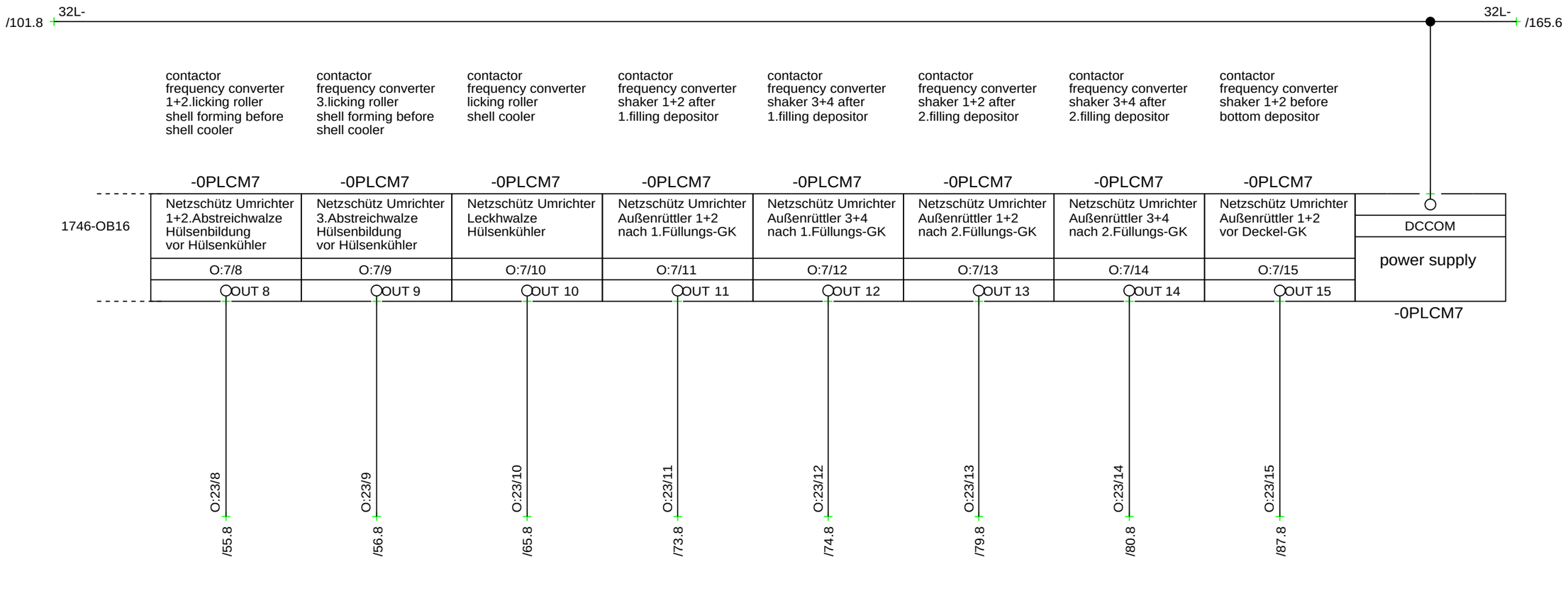
BÜHLER

customer	474	+HSS	page 162
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:6/8 - O:6/15	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

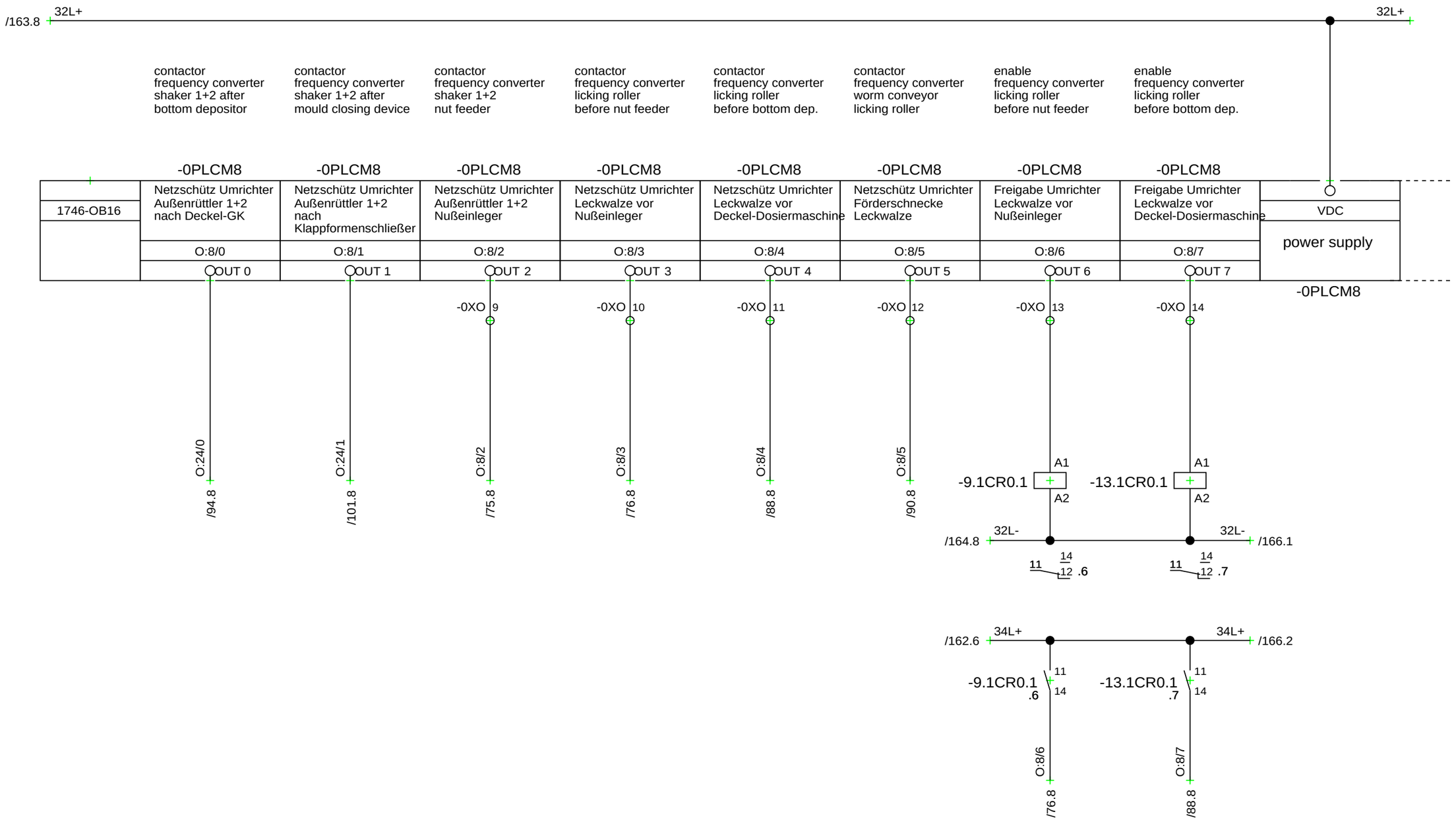


BÜHLER	customer 474 :P_NR2		+HSS	page **163**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:7/0 - O:7/7		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



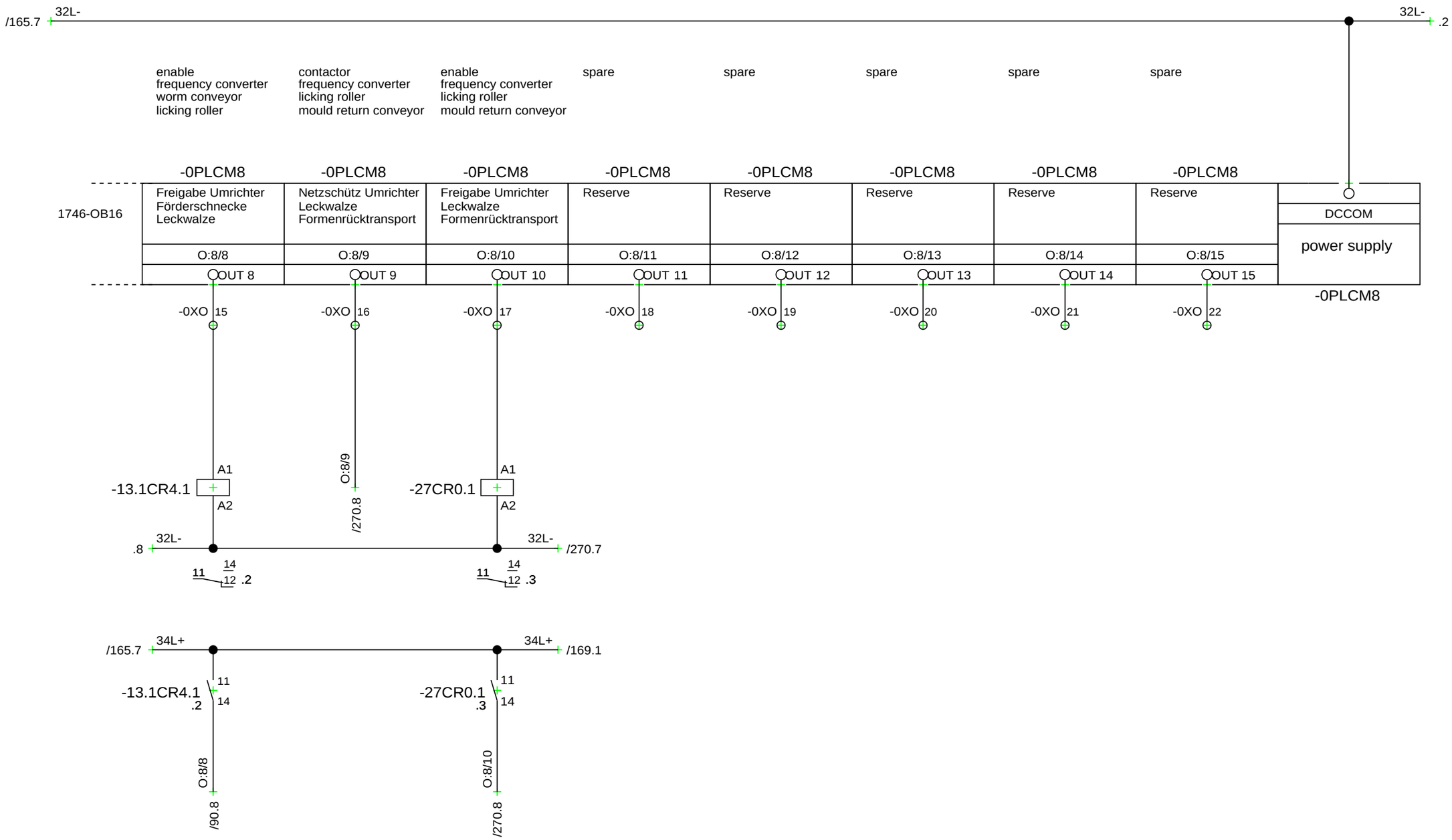
BÜHLER	customer 474 :P_NR2	+HSS	page **164**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:7/8 - O:7/15	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



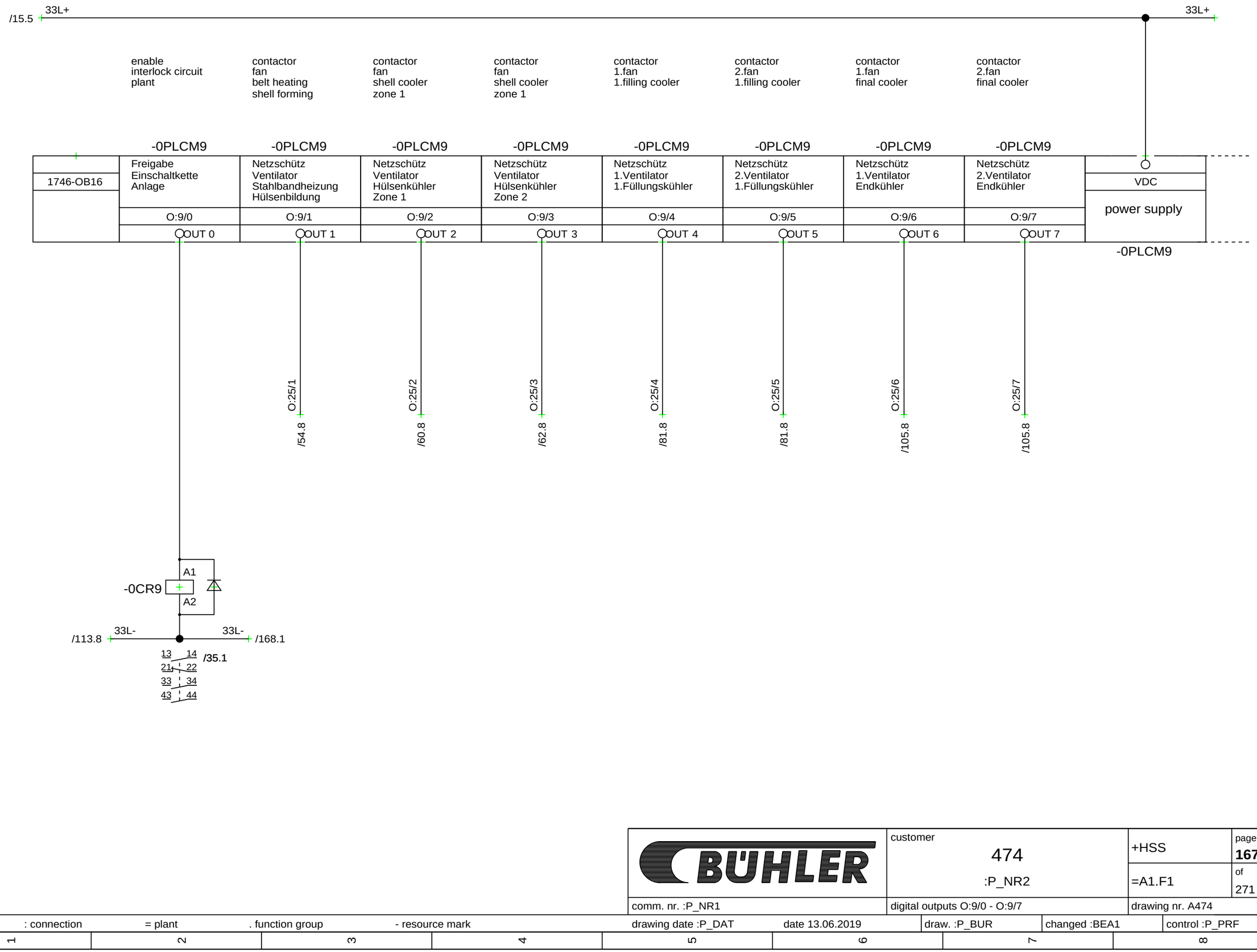
BÜHLER	customer 474 :P_NR2	+HSS	page 165
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:8/0 - O:8/7	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



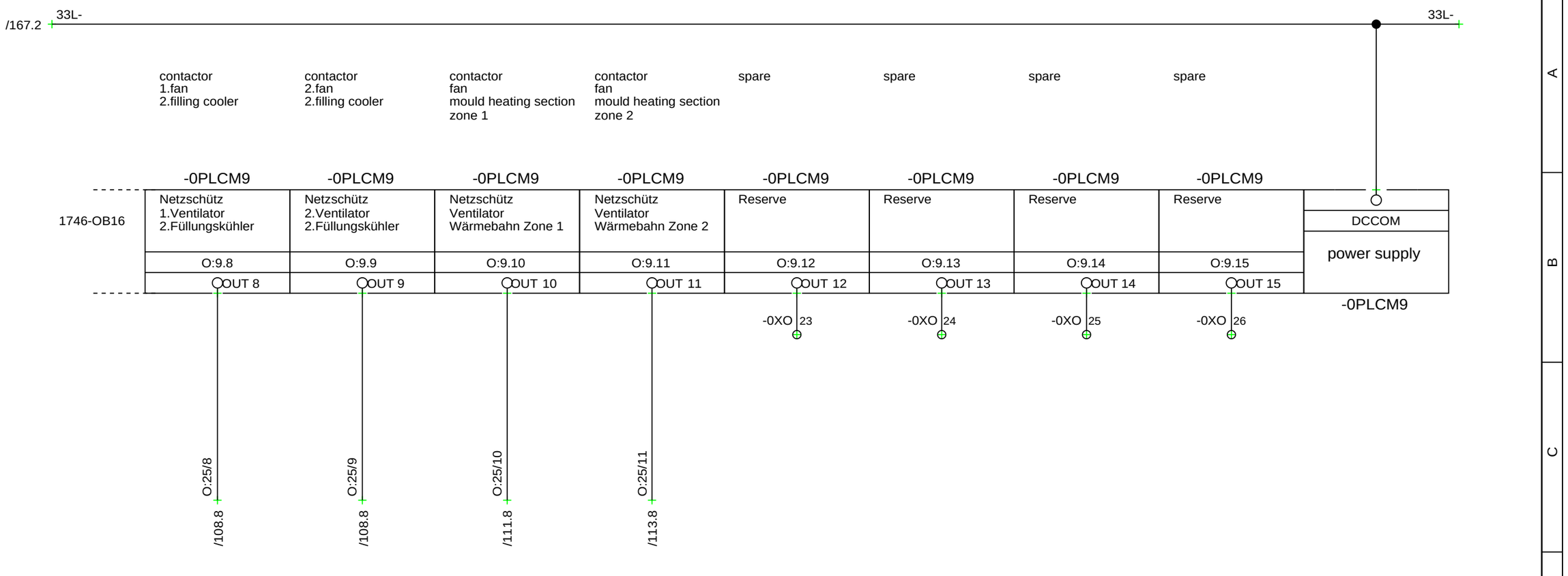
BÜHLER	customer 474 :P_NR2	+HSS	page 166
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:8/8 - O:8/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



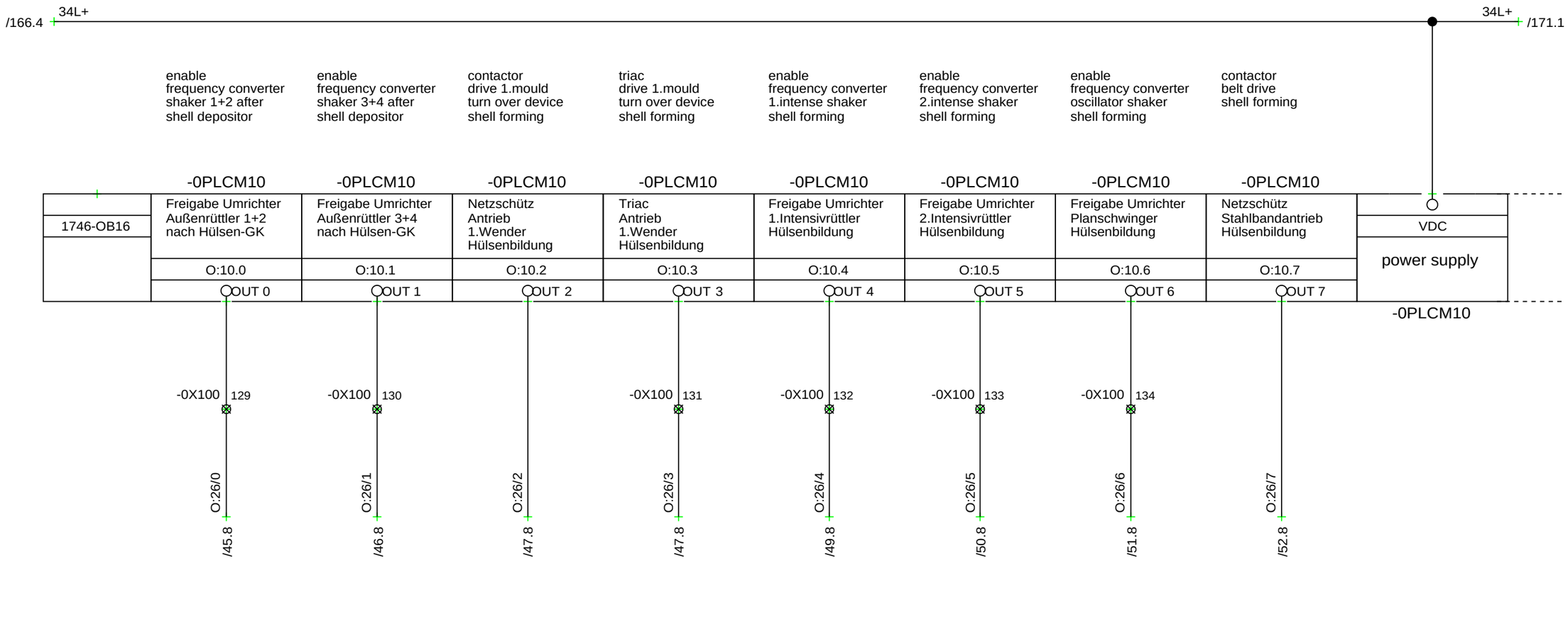
BÜHLER	customer 474 :P_NR2	+HSS	page 167
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:9/0 - O:9/7	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

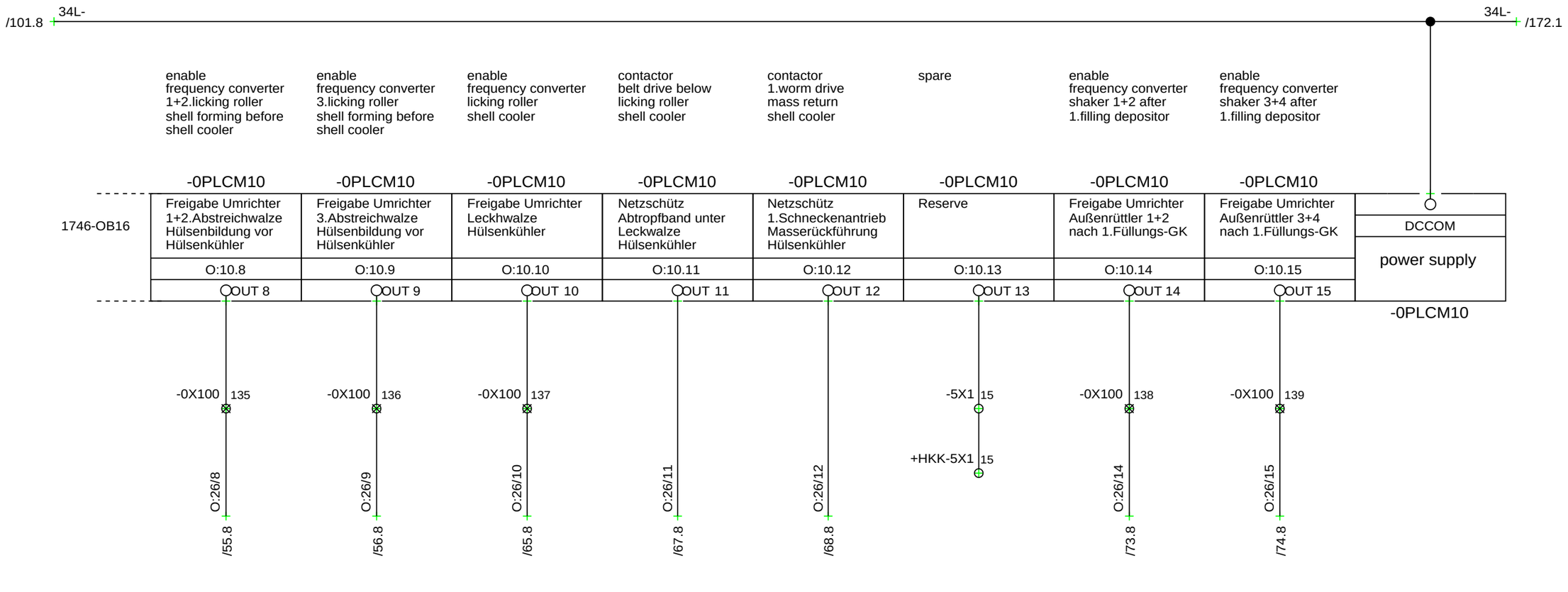


BÜHLER	customer 474 :P_NR2	+HSS	page **168**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:9/8 - O:9/15	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

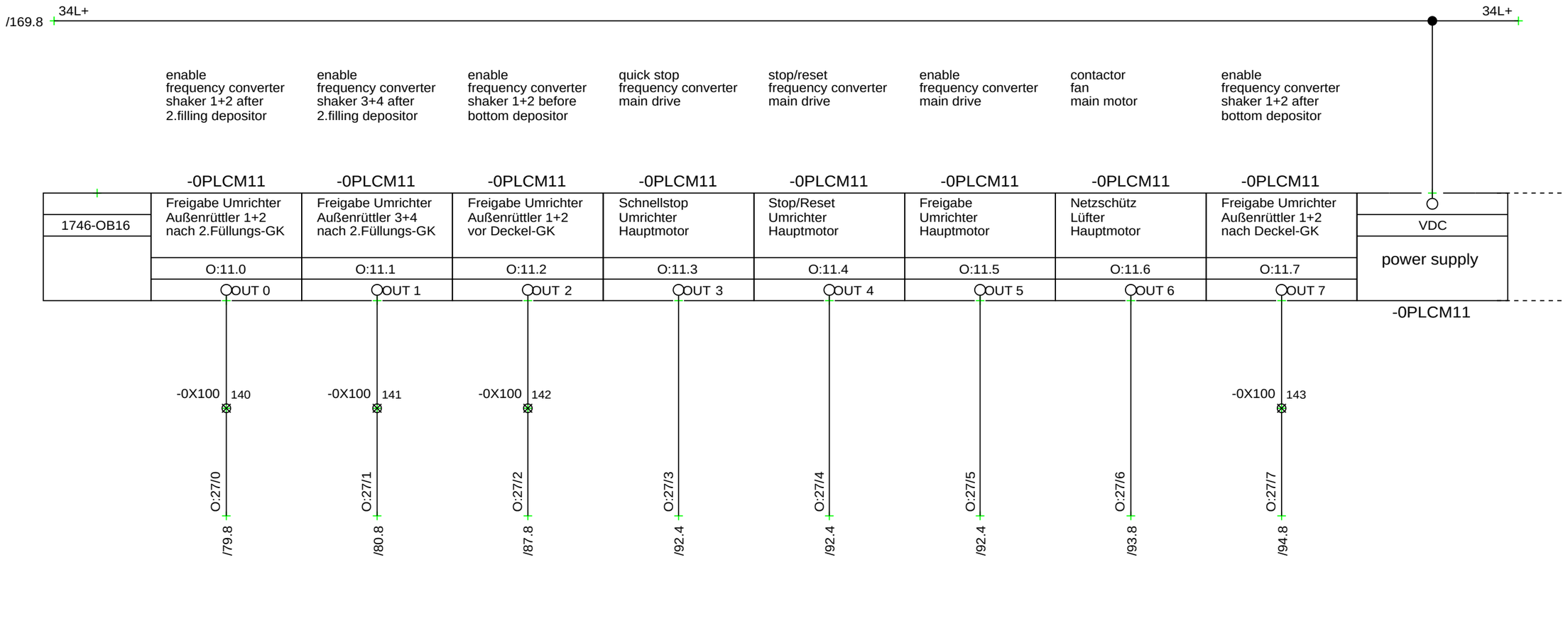


BÜHLER	customer 474 :P_NR2		+HSS	page **169**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:10/0 - O:10/7		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **170**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:10/8 - O:10/15	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2		+HSS	page **171**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:11/0 - O:11/7		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/170.8 34L- 34L- /270.7

enable frequency converter shaker 1+2 after mould closing device	solenoid valve belt control product conveyor operator side	solenoid valve belt control product conveyor drive side	solenoid valve lifting table weighing cell taring weight	solenoid valve lifting table weighing cell shell weight before 1.filling depositor	solenoid valve lifting table weighing cell filling weight before 3.filling depositor	solenoid valve lifting table weighing cell final weight after bottom depositor	enable frequency converter shaker 1+2 nut feeder	
-0PLCM11	-0PLCM11	-0PLCM11	-0PLCM11	-0PLCM11	-0PLCM11	-0PLCM11	-0PLCM11	
1746-OB16	Freigabe Umrichter Außenrüttler 1+2 nach Klappformenschließer	MV Bandsteuerung Produkttransport Bedienseite	MV Bandsteuerung Produkttransport Antriebsseite	MV Hubtisch Wägezelle Taragewicht	MV Hubtisch Wägezelle Hülsengewicht vor 1.Füllungs-GK	MV Hubtisch Wägezelle Füllgwicht vor 3.Füllungs-GK	MV Hubtisch Wägezelle Endgewicht nach Deckel-GK	Freigabe Umrichter Außenrüttler 1+2 Nußeinleger	DCCOM power supply
	O:11.8	O:11.9	O:11.10	O:11.11	O:11.12	O:11.13	O:11.14	O:11.15	
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	-0PLCM11

-0XO 27 /75.8 O:11/15

-0X100 144 /101.8 O:27/8

-21X1 27 +HKK-21X1 27

-21X1 28 +HKK-21X1 28

-2X1 14 +HKK-2X1 14

-7X1 6 +HKK-7X1 6

-13X1 16 +HKK-13X1 16

-13X1 17 +HKK-13X1 17

+P21 1 -21SV100 2 +HKK-21X1 4- /18.3 21X1/4-

+P21 1 -21SV101 2 +HKK-21X1 4- 21X1/4- /266.1

+P2 1 -2SV100 2 +HKK-2X1 4- /18.2 2X1/4- 2X1/4-

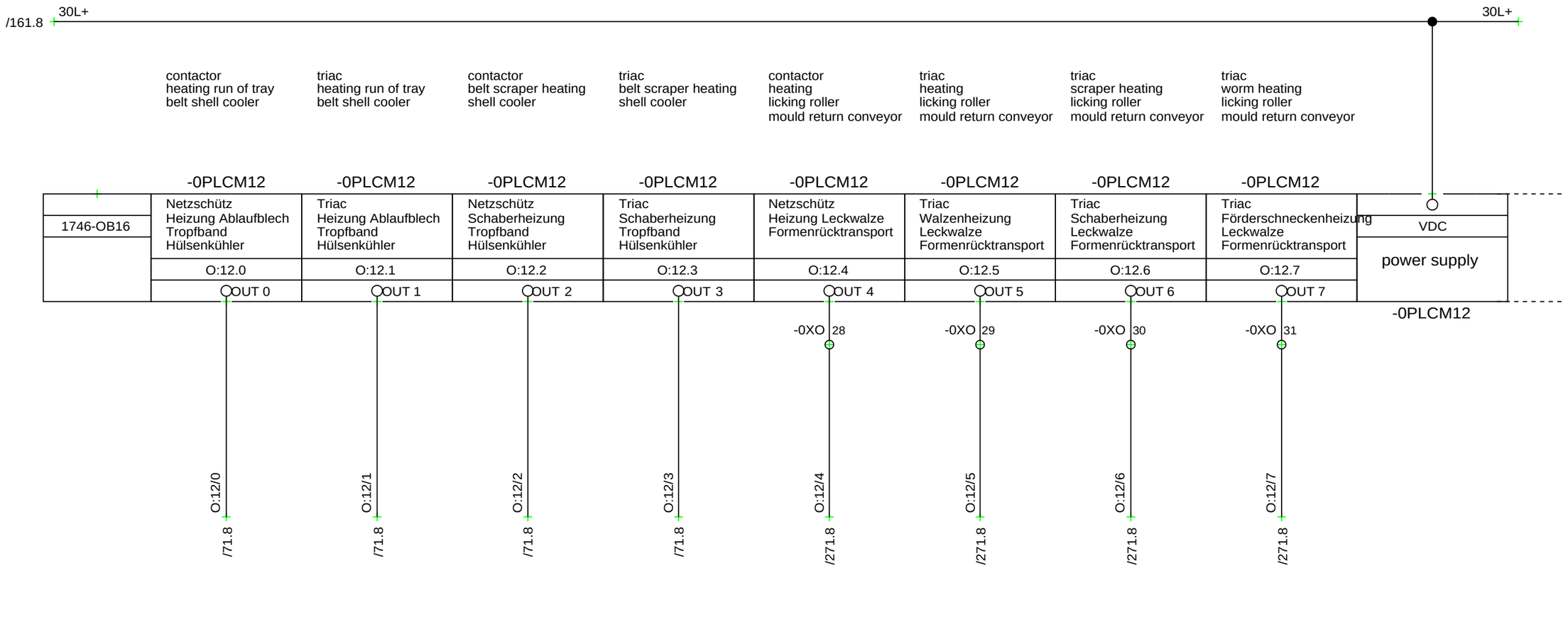
+P7 1 -7SV100 2 +HKK-7X1 4- /18.5 7X1/4- 7X1/4-

+P13 1 -13SV102 2 +HKK-13X1 4- /18.3 13X1/4- 13X1/4-

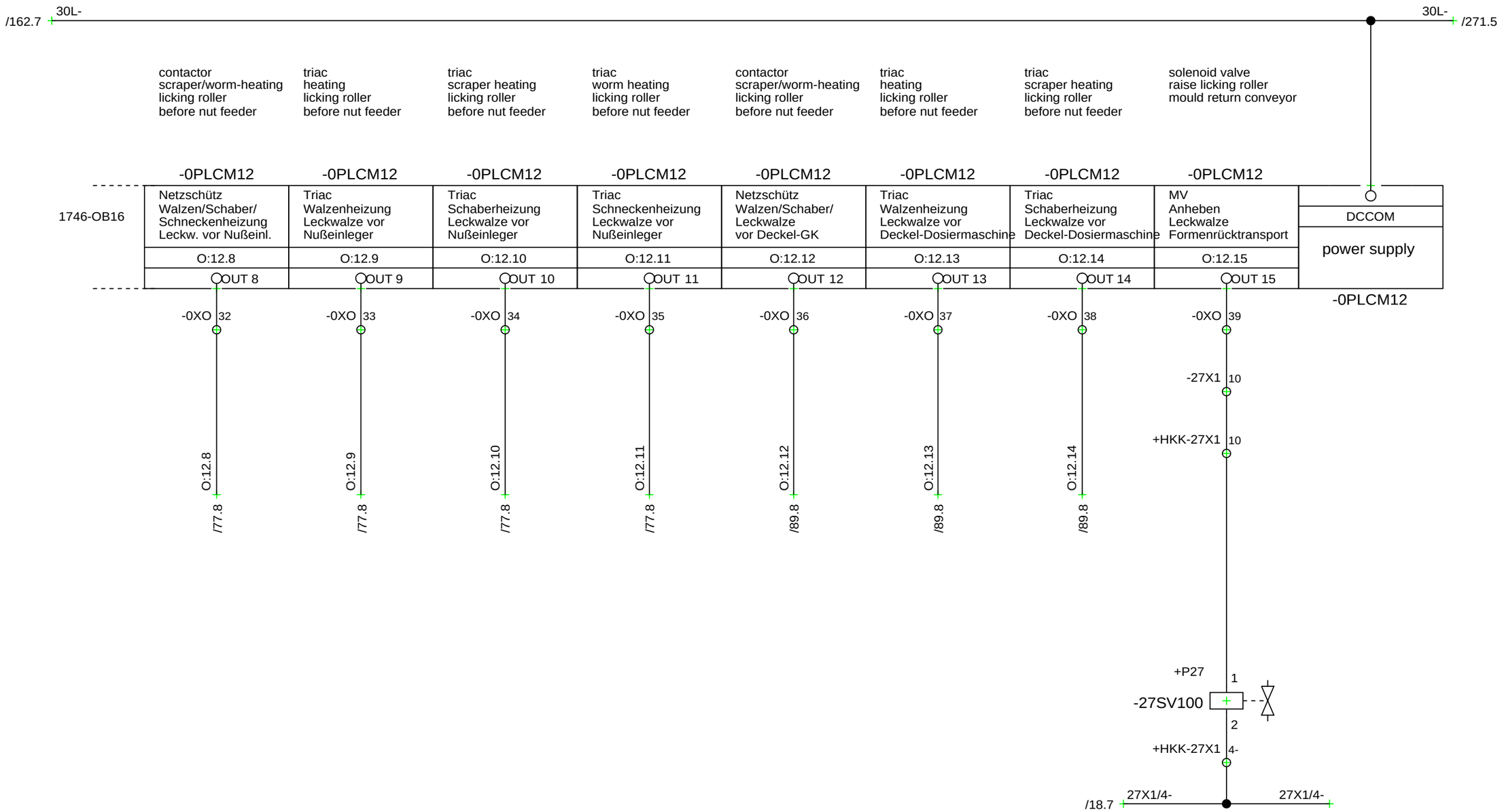
+P13 1 -13SV103 2 +HKK-13X1 4- /228.1

BÜHLER	customer 474 :P_NR2	+HSS	page 172	
		=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:11/8 - O:11/15	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

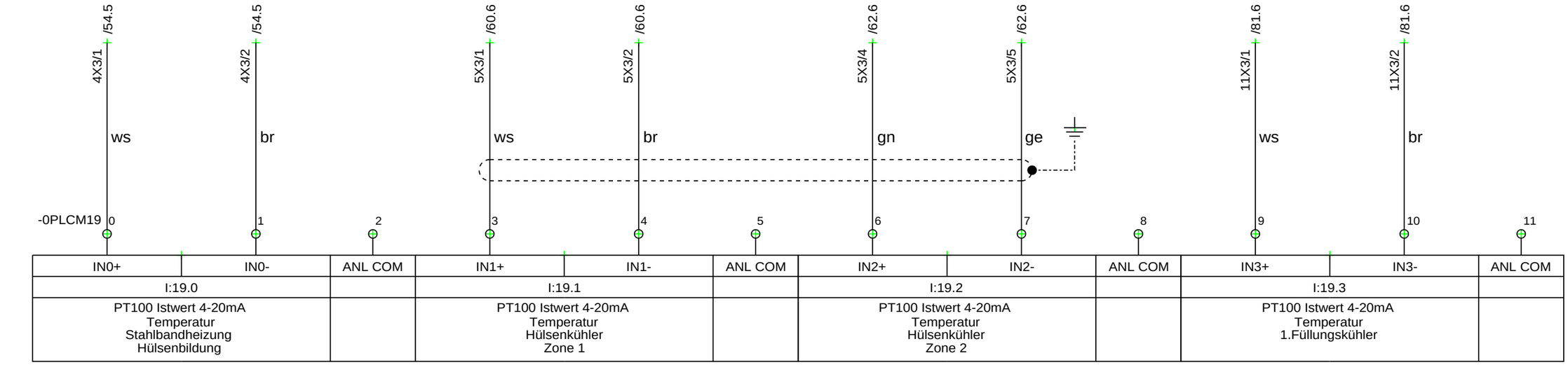


BÜHLER	customer 474 :P_NR2		+HSS	page **173**	
			=A1.F1	of 271	
comm. nr. :P_NR1	digital outputs O:12/0 - O:12/7		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **174**
		=A1.F1	of 271
comm. nr. :P_NR1	digital outputs O:12/8 - O:12/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



PT100 actual value 4-20mA
temperature
belt heating shell forming

PT100 actual value 4-20mA
temperature
shell cooler zone 1

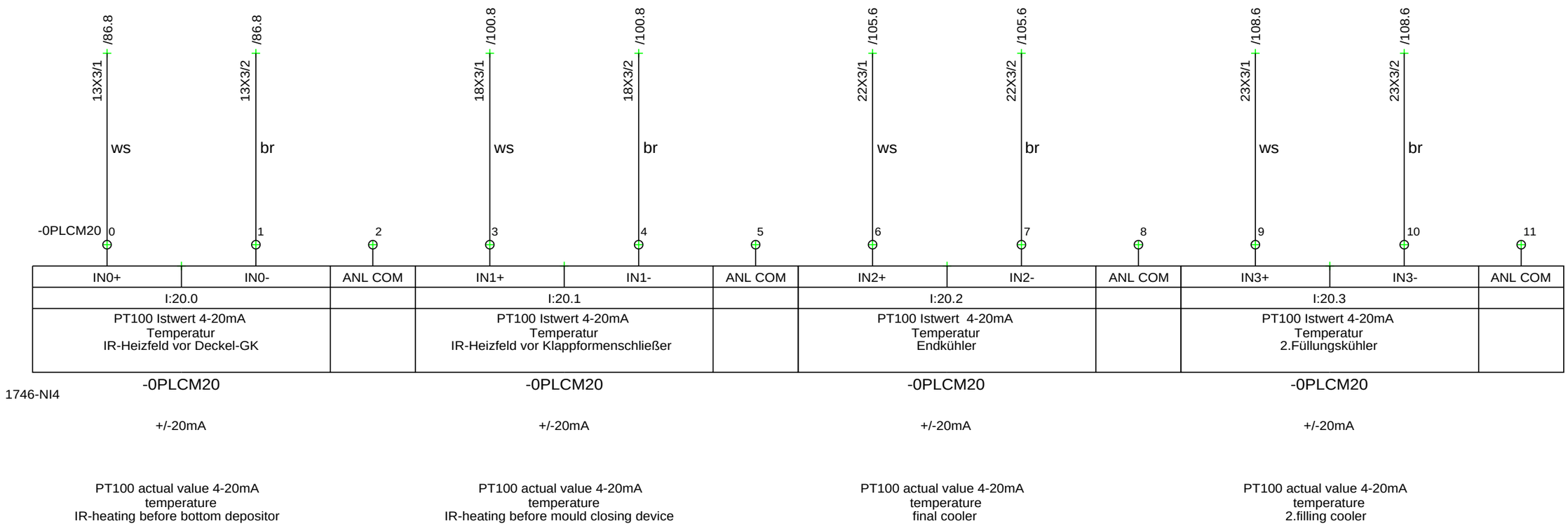
PT100 actual value 4-20mA
temperature
shell cooler zone 2

PT100 actual value 4-20mA
temperature
1.filling cooler

BÜHLER

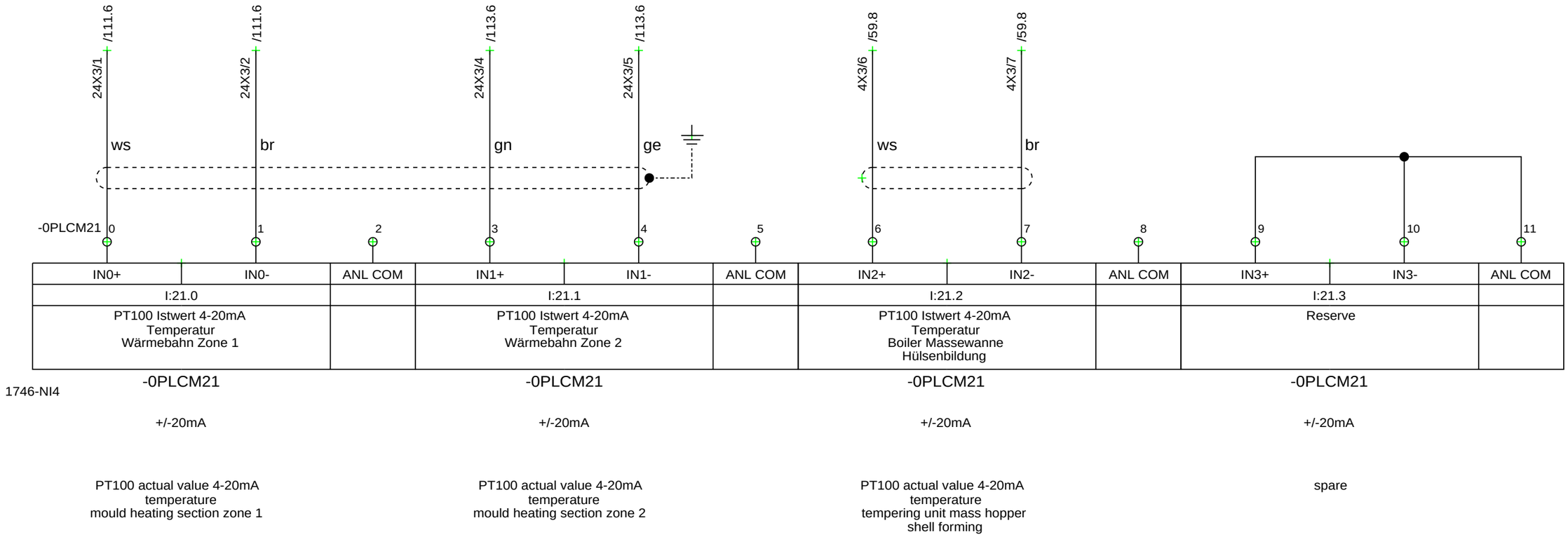
	customer 474 :P_NR2	+HSS	page **175**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue inputs I:19.0 - I:19.3	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **176**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue inputs I:20.0 - I:20.3	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page **177**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue inputs I:21.0 - I:21.3	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

setpoint frequency converter
shaker 1+2 after shell depositor

0-20mA

setpoint frequency converter
shaker 3+4 after shell depositor

0-20mA

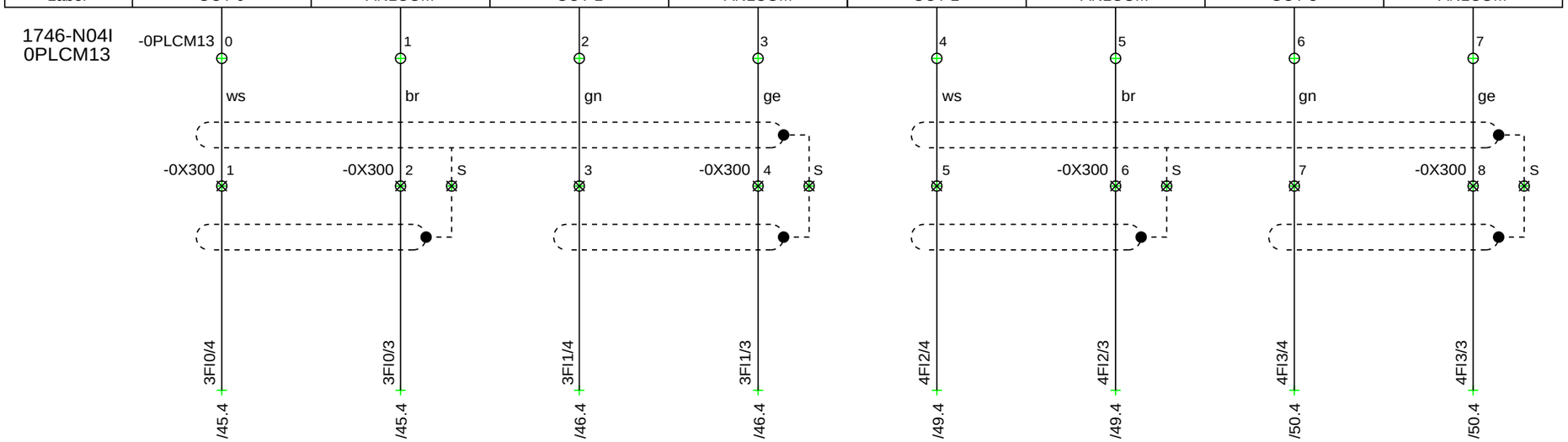
setpoint frequency converter
1.intense shaker shell forming

0-20mA

setpoint frequency converter
2.intense shaker shell forming

0-20mA

Function	Sollwert Umrichter Außenrüttler 1+2 nach Hülsen-GK		Sollwert Umrichter Außenrüttler 3+4 nach Hülsen-GK		Sollwert Umrichter 1.Intensivrüttler Hülsenbildung		Sollwert Umrichter 2.Intensivrüttler Hülsenbildung	
Adress	O:13.0		O:13.1		O:13.2		O:13.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM



BÜHLER	customer 474 :P_NR2	+HSS	page **178**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue outputs O:13.0 - O:13.3		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

setpoint frequency converter
oscillator shaker shell forming

0-20mA

setpoint frequency converter
1+2.licking roller shell forming
before shell cooler

0-20mA

setpoint frequency converter
3.licking roller shell forming
before shell cooler

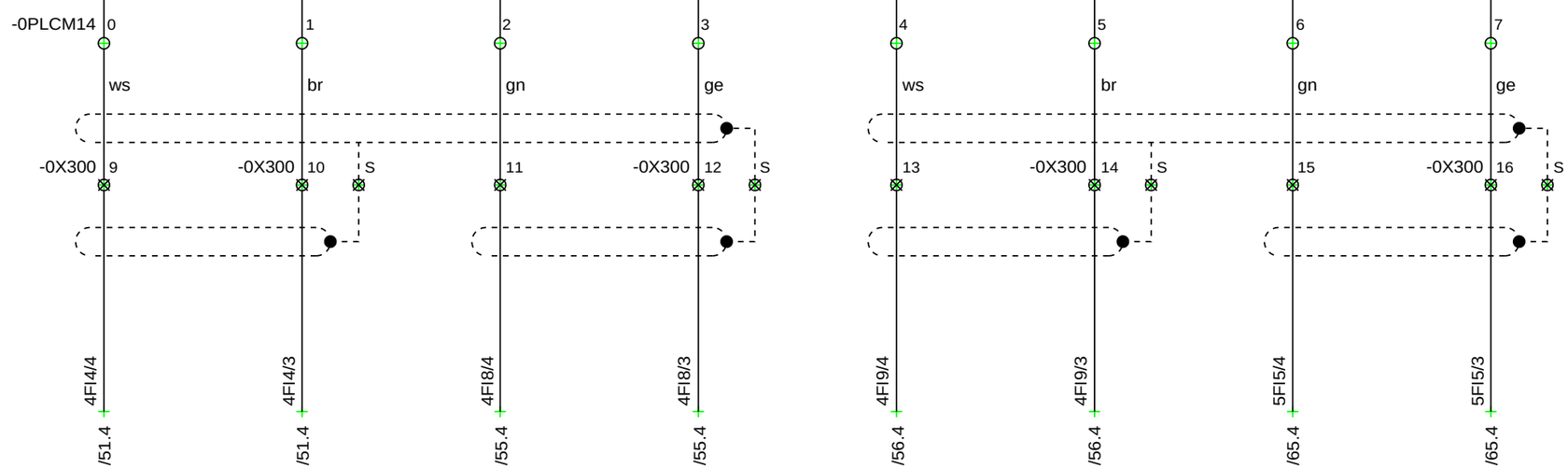
0-20mA

setpoint frequency converter
licking roller shell cooler

0-20mA

Function	Sollwert Umrichter Planschwinger Hülsenbildung		Sollwert Umrichter 1+2.Abstreichwalze HB vor Hülsenkühler		Sollwert Umrichter 3.Abstreichwalze HB vor Hülsenkühler		Sollwert Umrichter Abstreichwalze Hülsenkühler	
Adress	O:14.0		O:14.1		O:14.2		O:14.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM

1746-N04I
0PLCM14



BÜHLER	customer 474 :P_NR2	+HSS	page **179**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue outputs O:14.0 - O:14.3		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

setpoint frequency converter
shaker 1+2 after 1.filling depositor

0-20mA

setpoint frequency converter
shaker 3+4 after 1.filling depositor

0-20mA

setpoint frequency converter
shaker 1+2 after 2.filling depositor

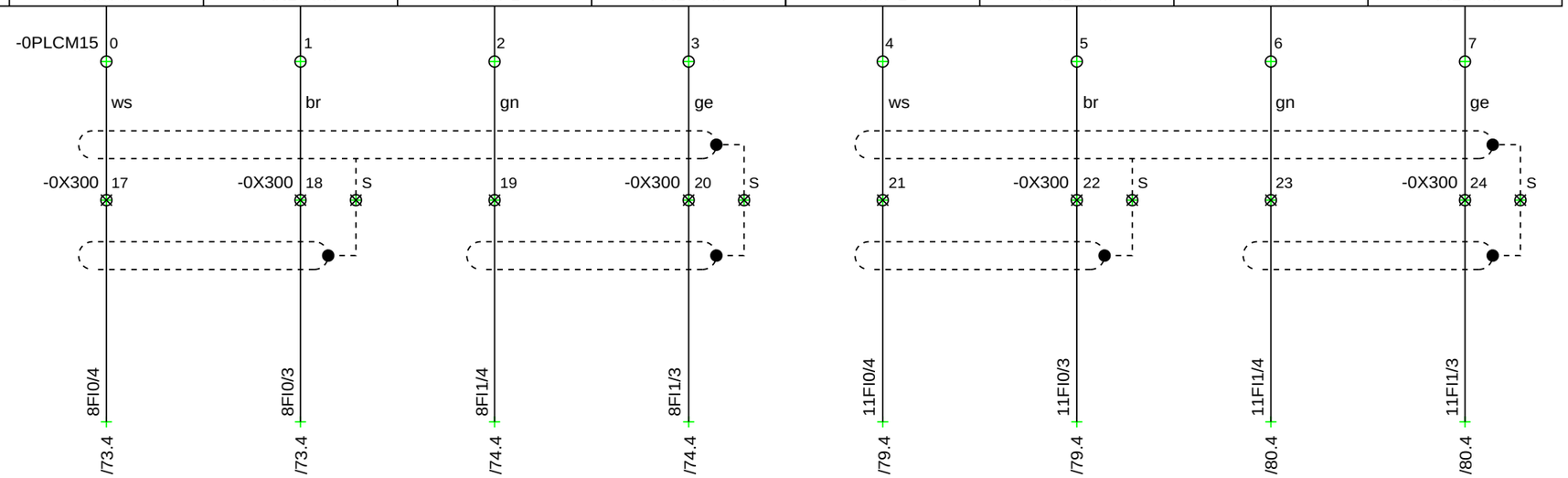
0-20mA

setpoint frequency converter
shaker 3+4 after 2.filling depositor

0-20mA

Function	Sollwert Umrichter Außenrüttler 1+2 nach 1.Füllungs-GK		Sollwert Umrichter Außenrüttler 3+4 nach 1.Füllungs-GK		Sollwert Umrichter Außenrüttler 1+2 nach 2.Füllungs-GK		Sollwert Umrichter Außenrüttler 3+4 nach 2.Füllungs-GK	
Adress	O:15.0		O:15.1		O:15.2		O:15.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM

1746-N04I
0PLCM15



BÜHLER	customer 474 :P_NR2	+HSS	page **180**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue outputs O:15.0 - O:15.3		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

setpoint frequency converter
shaker 1+2 before bottom depositor

0-20mA

setpoint frequency converter
main motor

0-20mA

setpoint frequency converter
shaker 1+2 after bottom depositor

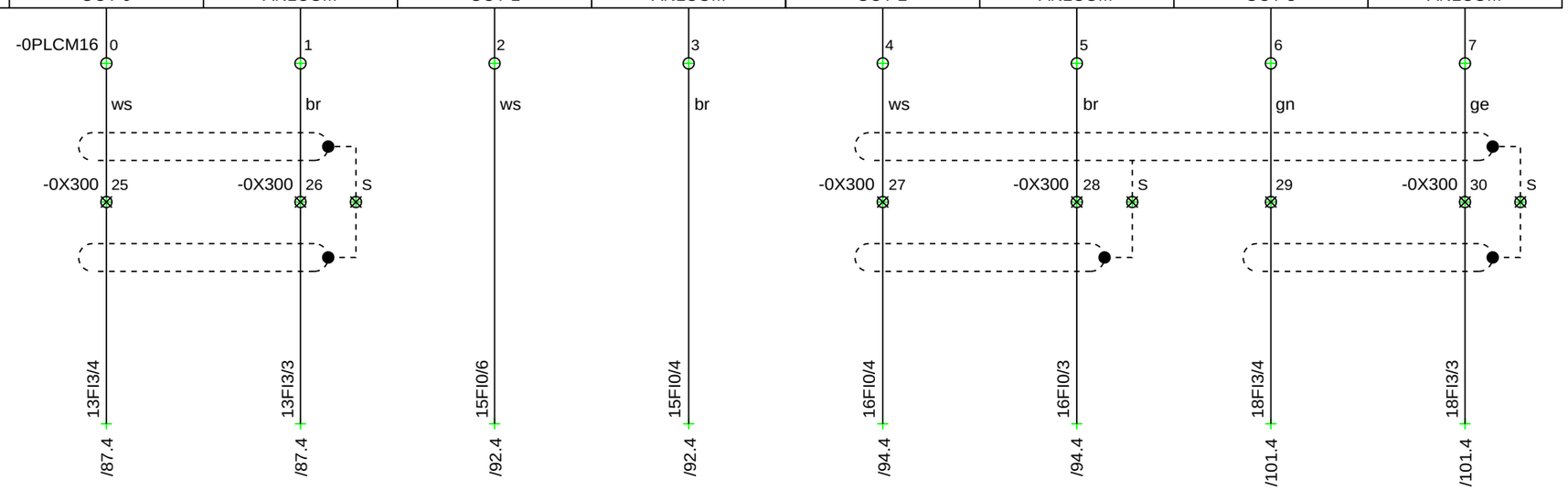
0-20mA

setpoint frequency converter
shaker 1+2 after mould closing device

0-20mA

Function	Sollwert Umrichter Außenrüttler 1+2 vor Deckel-GK		Sollwert Umrichter Hauptmotor		Sollwert Umrichter Außenrüttler 1+2 nach Deckel-GK		Sollwert Umrichter Außenrüttler 1+2 nach Klappformenschließer	
Adress	O:16.0		O:16.1		O:16.2		O:16.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM

1746-N04I
0PLCM16



BÜHLER			customer 474 :P_NR2		+HSS	page **181**	
					=A1.F1	of 271	
comm. nr. :P_NR1			analogue outputs O:16.0 - O:16.3			drawing nr. A474	
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

setpoint regulation of the temperature of the shell cooler zone 1

setpoint regulation of the temperature of the shell cooler zone 2

setpoint regulation of the temperature of the 1.filling cooler

setpoint regulation of the temperature of the final cooler

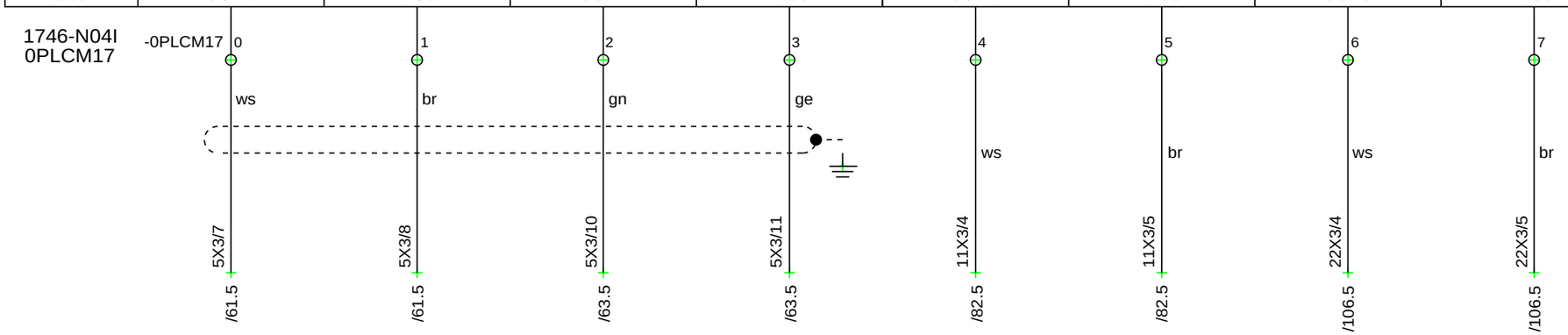
0-20mA

0-20mA

0-20mA

0-20mA

Function	Sollwert Temperaturreglung Hülsenkühler Zone 1		Sollwert Temperaturreglung Hülsenkühler Zone 2		Sollwert Temperaturreglung 1.Füllungskühler		Sollwert Temperaturreglung Endkühler	
Adress	O:17.0		O:17.1		O:17.2		O:17.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM



BÜHLER	customer 474 :P_NR2	+HSS	page **182**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue outputs O:17.0 - O:17.3	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1 control :P_PRF

setpoint regulation of the temperature of the 2.filling cooler

setpoint regulation of the temperature of the mould heating section zone 1

setpoint regulation of the temperature of the mould heating section zone 2

setpoint frequency converter shaker 1+2 nut feeder

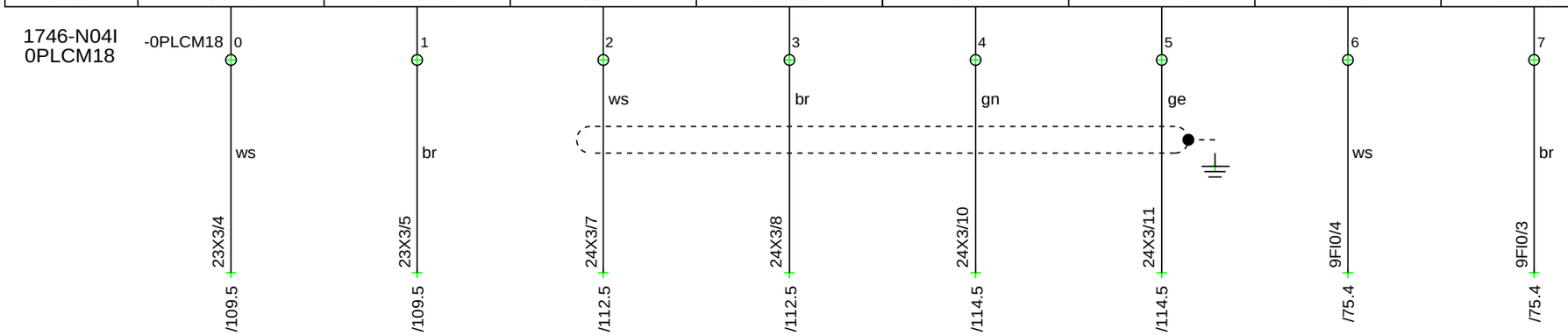
0-20mA

0-20mA

0-20mA

0-20mA

Function	Sollwert Temperaturreglung 2.Füllungskühler		Sollwert Temperaturreglung Wärmebahn Zone 1		Sollwert Temperaturreglung Wärmebahn Zone 2		Sollwert Umrichter Außenrüttler 1+2 Nußeinleger	
Adress	O:18.0		O:18.1		O:18.2		O:18.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM



BÜHLER	customer 474 :P_NR2	+HSS	page **183**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue outputs O:18.0 - O:18.3		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

setpoint frequency converter
licking roller before
nut feeder

0-20mA

setpoint frequency converter
licking roller before
bottom depositor

0-20mA

setpoint frequency converter
worm conveyor licking roller

0-20mA

setpoint frequency converter
licking roller
mould return conveyor

0-20mA

Function	Sollwert Umrichter Leckwalze vor Nußeinleger		Sollwert Umrichter Leckwalze vor Deckel-Dosiermaschine		Sollwert Umrichter Förderschnecke Leckwalze		Sollwert Umrichter Leckwalze Formenrücktransport	
Adress	O:15.0		O:15.1		O:15.2		O:15.3	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM	OUT 2	ANLCOM	OUT 3	ANLCOM

1746-N04I
0PLCM42

-0PLCM42

0	1	2	3	4	5	6	7
ws	br	ws	br	ws	br	ws	br
9.1FI0/4	9.1FI0/3	13.1FI0/4	13.1FI0/3	13.1FI4/4	13.1FI4/3	27FI0/4	27FI0/3
/76.4	/76.4	/88.4	/88.4	/90.4	/90.4	/270.4	/270.4

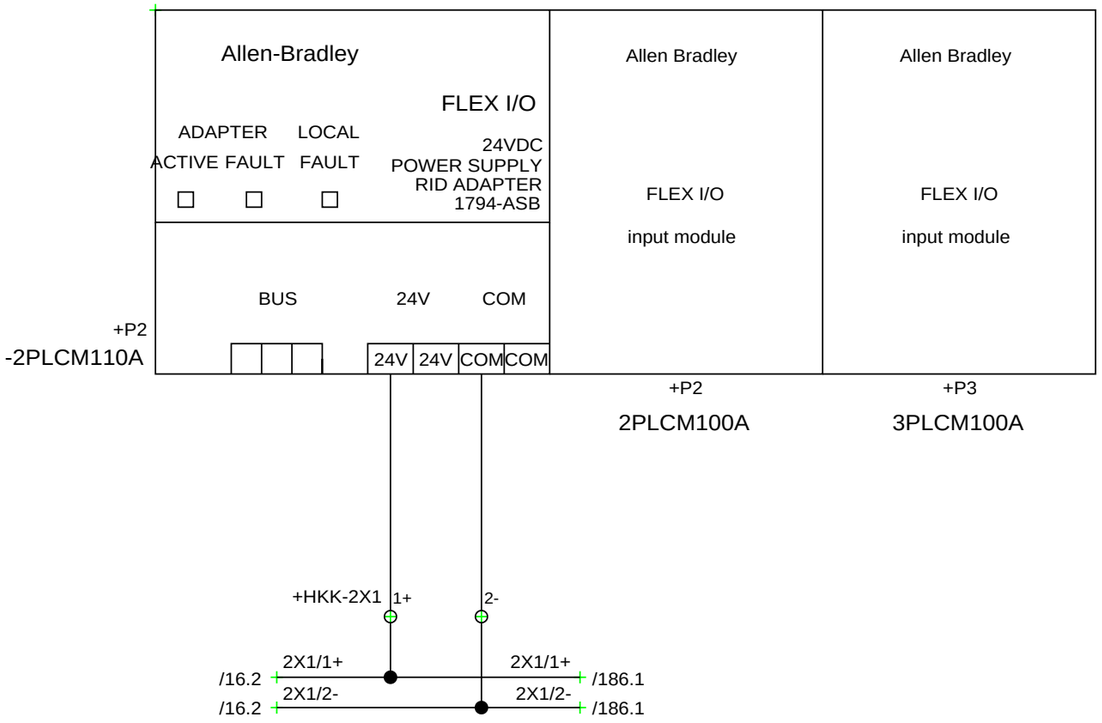
BÜHLER

customer 474 :P_NR2		+HSS	page **184**
		=A1.F1	of 271
comm. nr. :P_NR1	analogue outputs		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 2,3 ;Ebene A

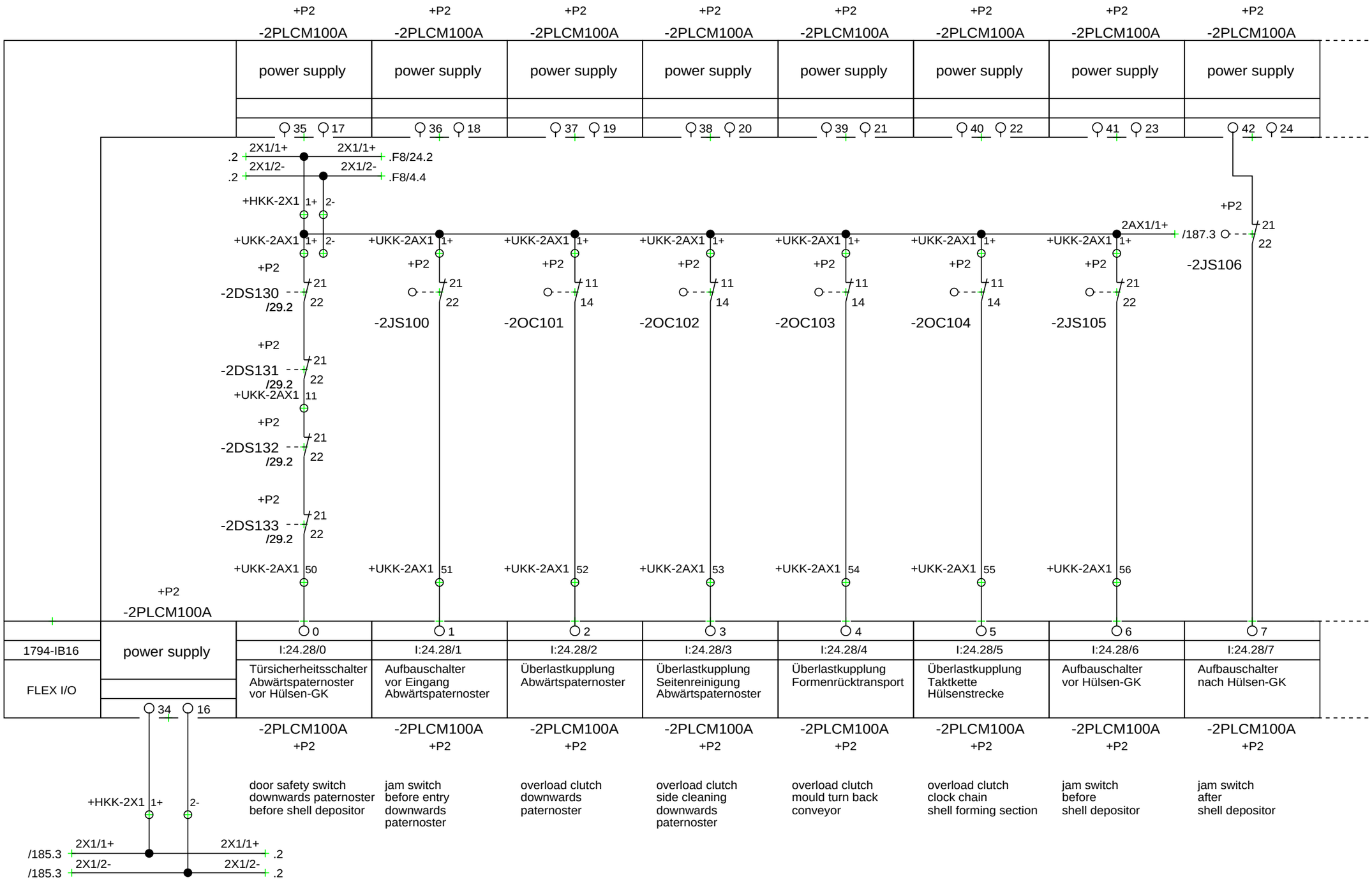
overview FLEX I/O modules position 2,3 ;level A



Rio Rack 3
starting group 4

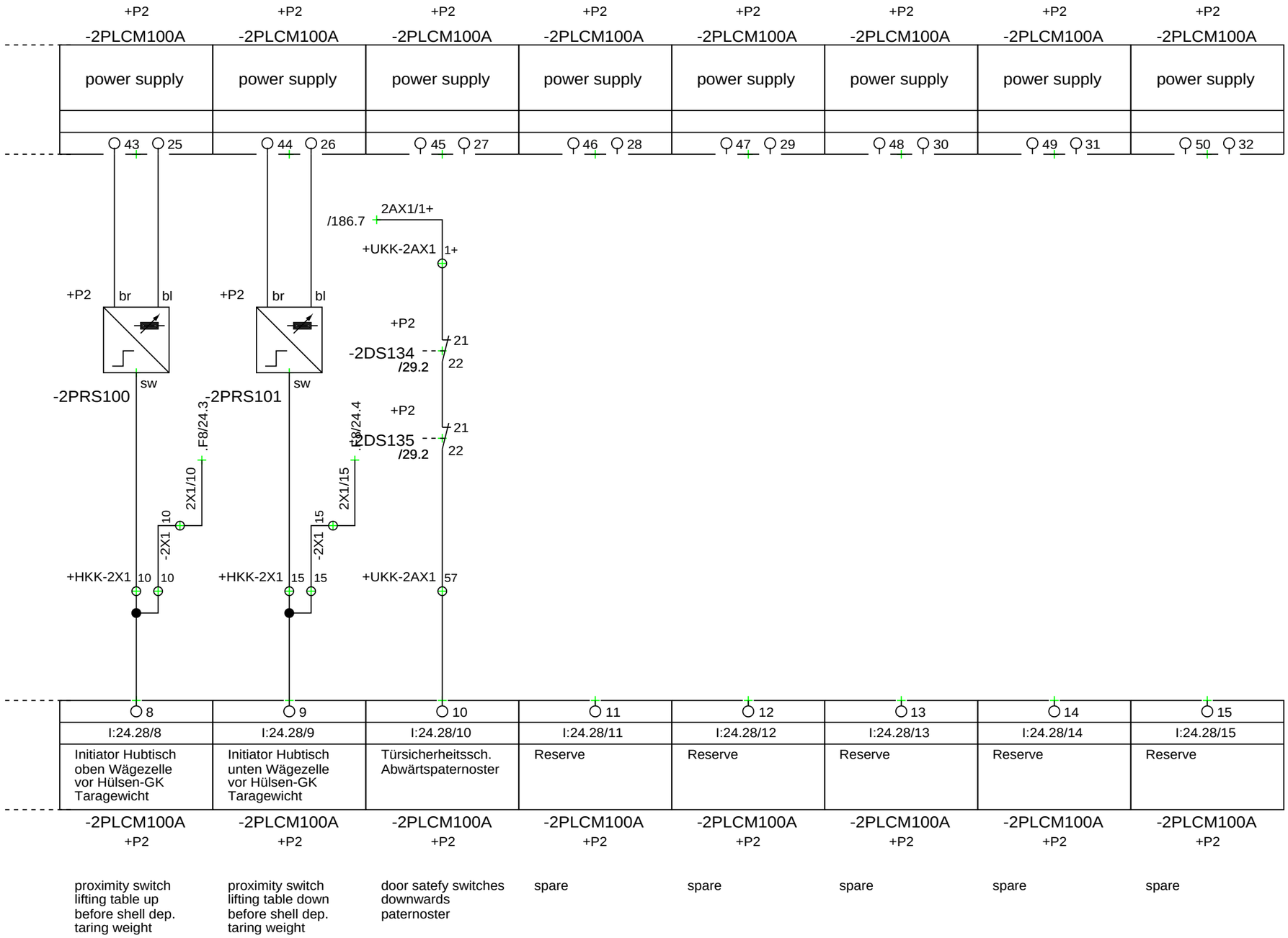
customer	474	:P_NR2	+HSS	page	**185**
			=A1.F1	of	271
comm. nr. :P_NR1	overview FLEX I/O module position 2,3		drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 186
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 2	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **187**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 2	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P3	+P3	+P3	+P3	+P3	+P3	+P3	+P3	
-3PLCM100A	-3PLCM100A	-3PLCM100A	-3PLCM100A	-3PLCM100A	-3PLCM100A	-3PLCM100A	-3PLCM100A	
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	
35 17	36 18	37 19	38 20	39 21	40 22	41 23	42 24	

3XX100/1 /22.4

3X1/1+ .2 3X1/2- .2

3X1/1+ 3X1/2-

3TMPR100/A1 /45.6

3TMPR100/A2 /45.6

+HKK-3X1 1+ 2-

+UKK-3AX1 1+ 2-

+P3

-3MSW100 /45.2 15 16

3TMPR100/14 /45.6

+UKK-3AX1 50

+UKK-3AX1 51

3XX100/11 /22.4

3XX100/2 /38.8

3XX100/5 /38.8

3XX100/6 /38.8

3XX100/7 /38.8

3XX100/8 /38.8

+P3

-3PLCM100A

		0	1	2	3	4	5	6	7
1794-IB16	power supply	I:24.29/0	I:24.29/1	I:24.29/2	I:24.29/3	I:24.29/4	I:24.29/5	I:24.29/6	I:24.29/7
FLEX I/O		Not-Aus Steuerflasche vor Hülsenbildung	Hauptmotor Ein Steuerflasche vor Hülsenbildung	Störung quittieren Steuerflasche vor Hülsenbildung	Hauptmotor schneller Steuerflasche vor Hülsenbildung	Hauptmotor langsam Steuerflasche vor Hülsenbildung	Steuerflasche gesteckt vor Hülsenbildung	Rep. Schalter Außenrüttler 1+2 nach Hülsen-GK	Thermistor Relais Außenrüttler 1+2 nach Hülsen-GK
	34 16	-3PLCM100A +P3	-3PLCM100A +P3	-3PLCM100A +P3	-3PLCM100A +P3	-3PLCM100A +P3	-3PLCM100A +P3	-3PLCM100A +P3	-3PLCM100A +P3
		emergency stop remote control before shell forming	main drive on remote control before shell forming	reset faults remote control before shell forming	main drive faster remote control before shell forming	main drive slower remote control before shell forming	remote control pluged before shell forming	isolator switch shaker 1+2 after shell depositor	thermistor relay shaker 1+2 after shell depositor

+HKK-3X1 1+ 2-

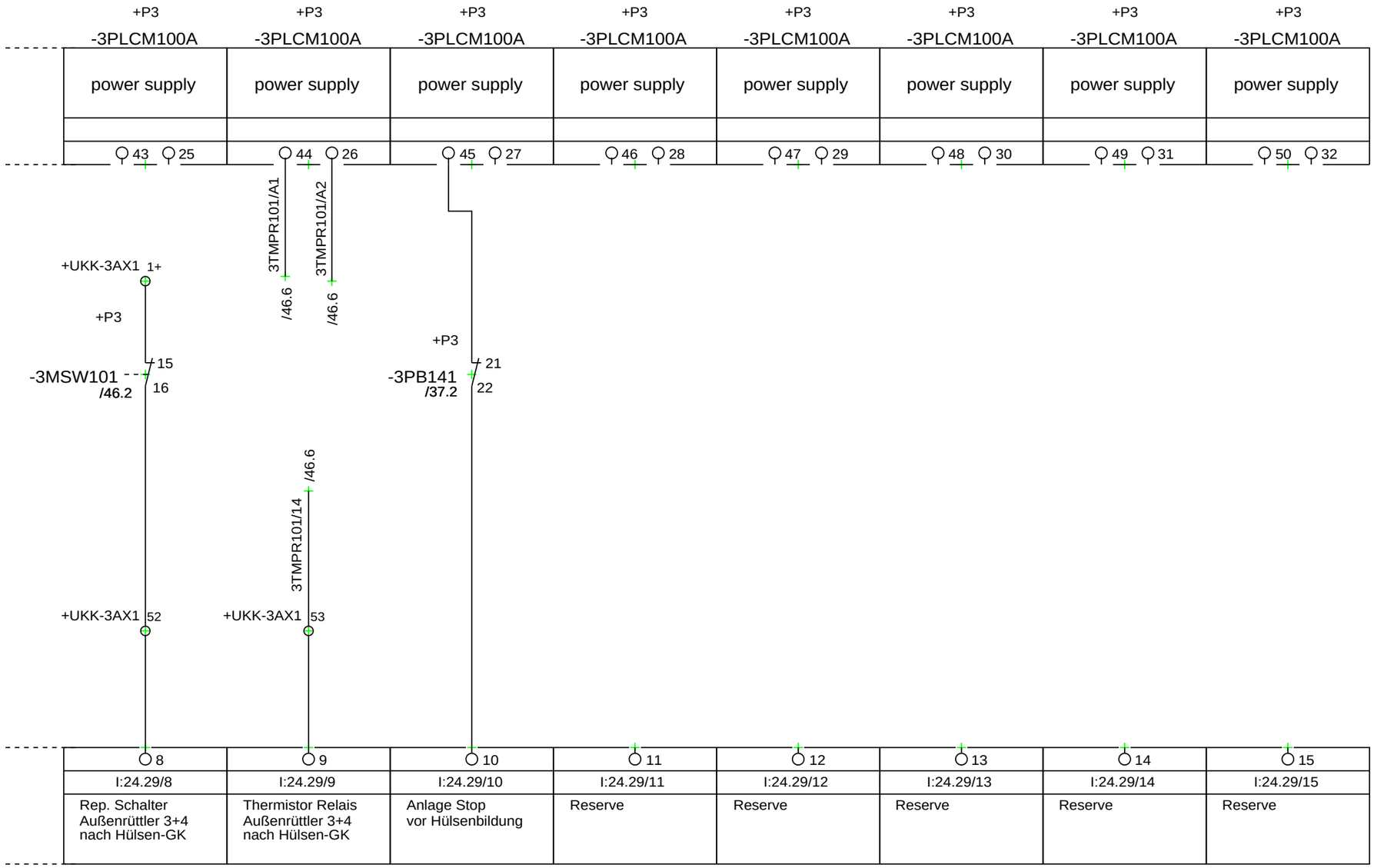
3X1/1+ /16.3 3X1/1+ .6

3X1/2- /16.3 3X1/2- .6

BÜHLER

customer	474 :P_NR2	+HSS	page 188
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 3	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **189**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 3	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 4 ;Ebene B

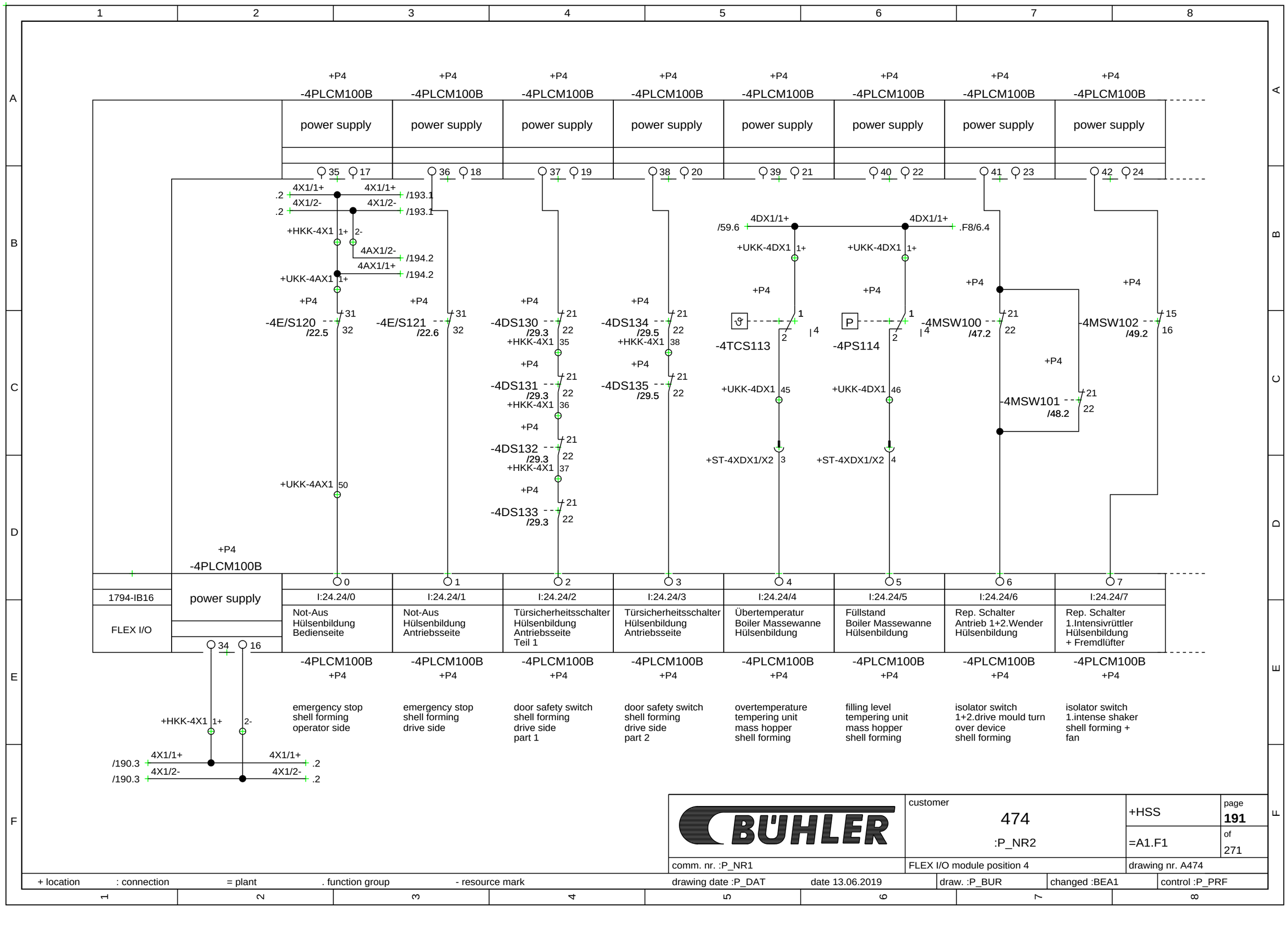
overview FLEX I/O modules position 4 ;level B



Rio Rack 3
starting group 0

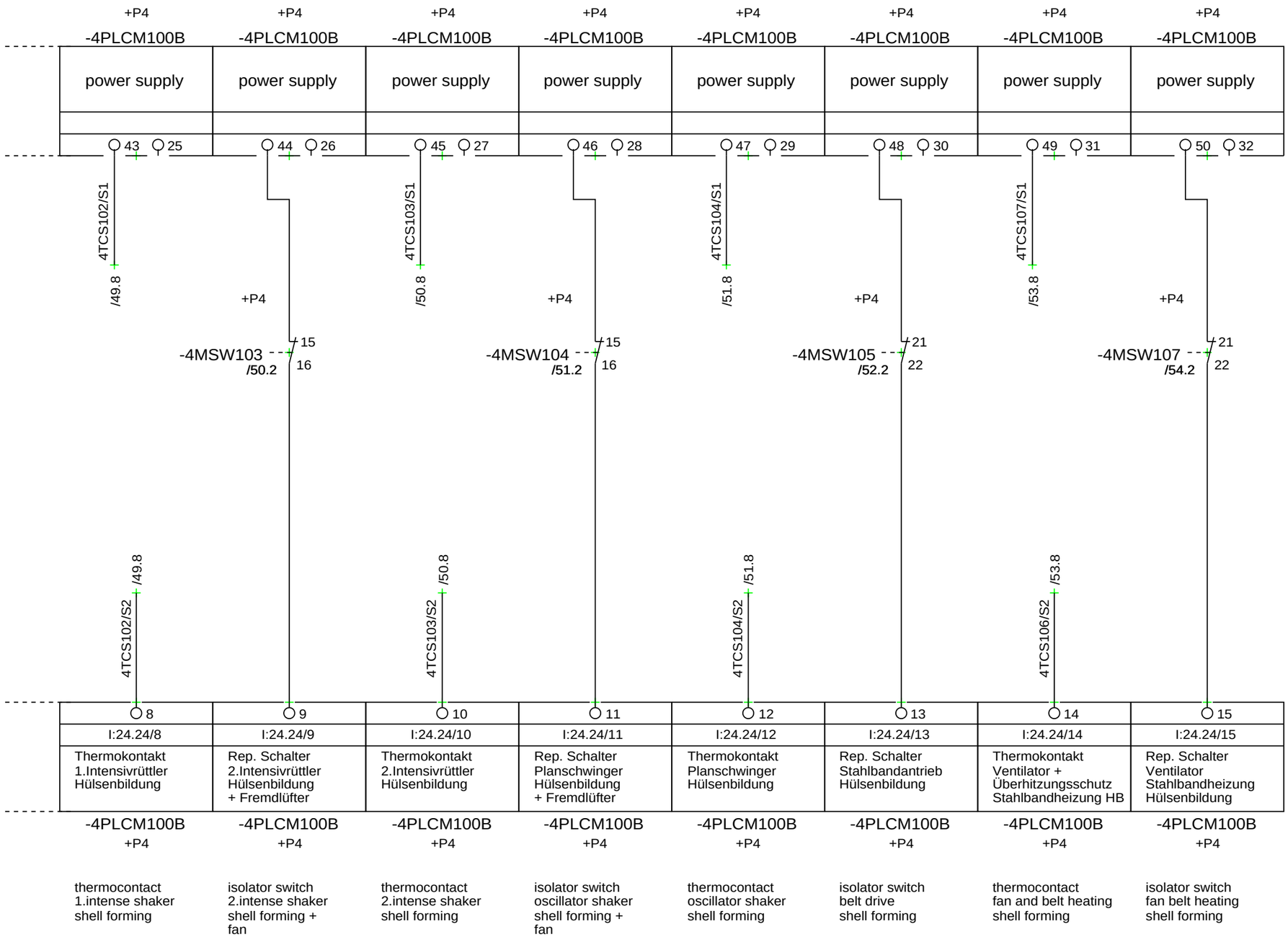
BÜHLER	customer 474 :P_NR2	+HSS	page **190**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 4	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 191
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 4	drawing nr. A474	

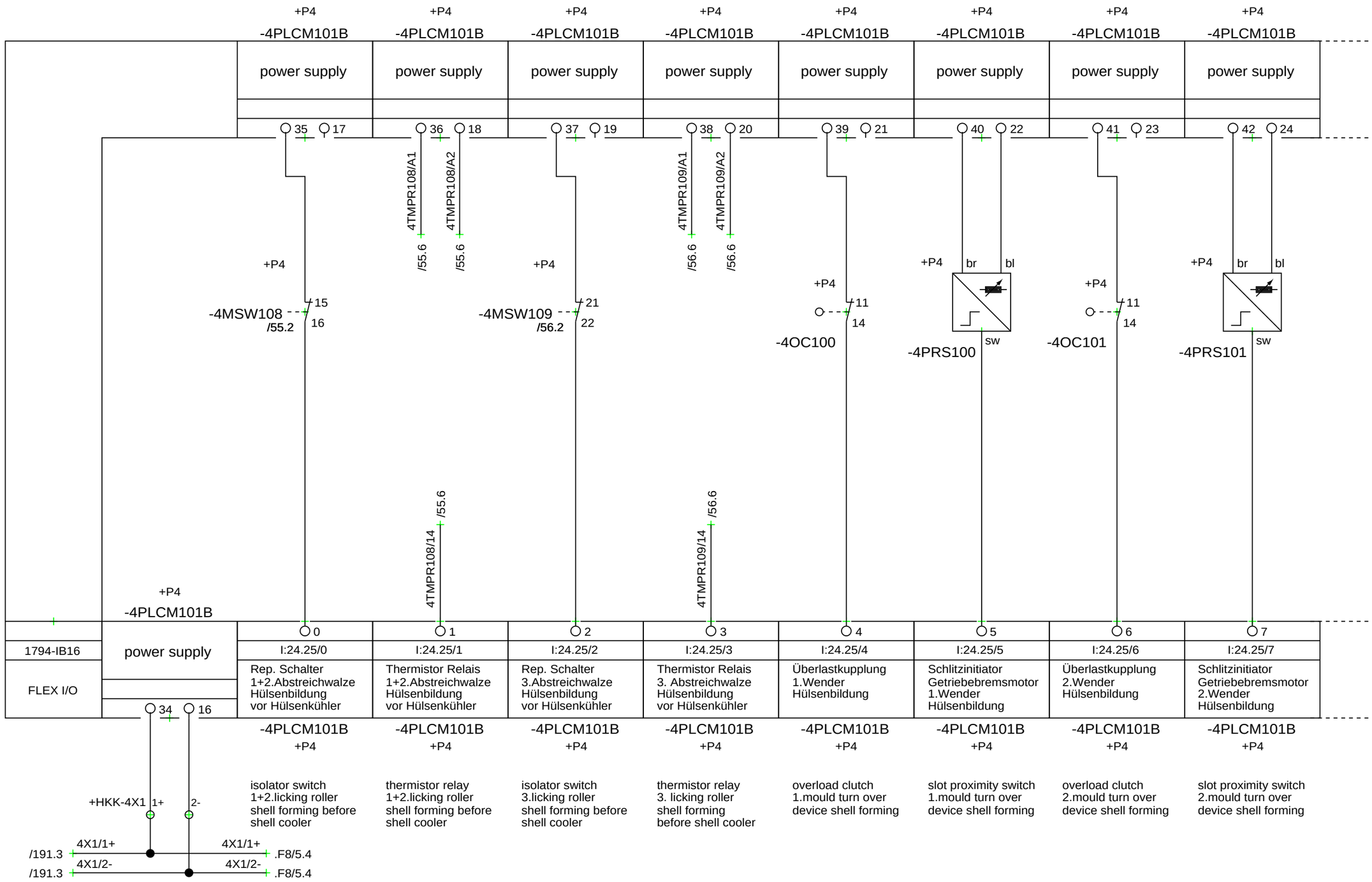
+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER

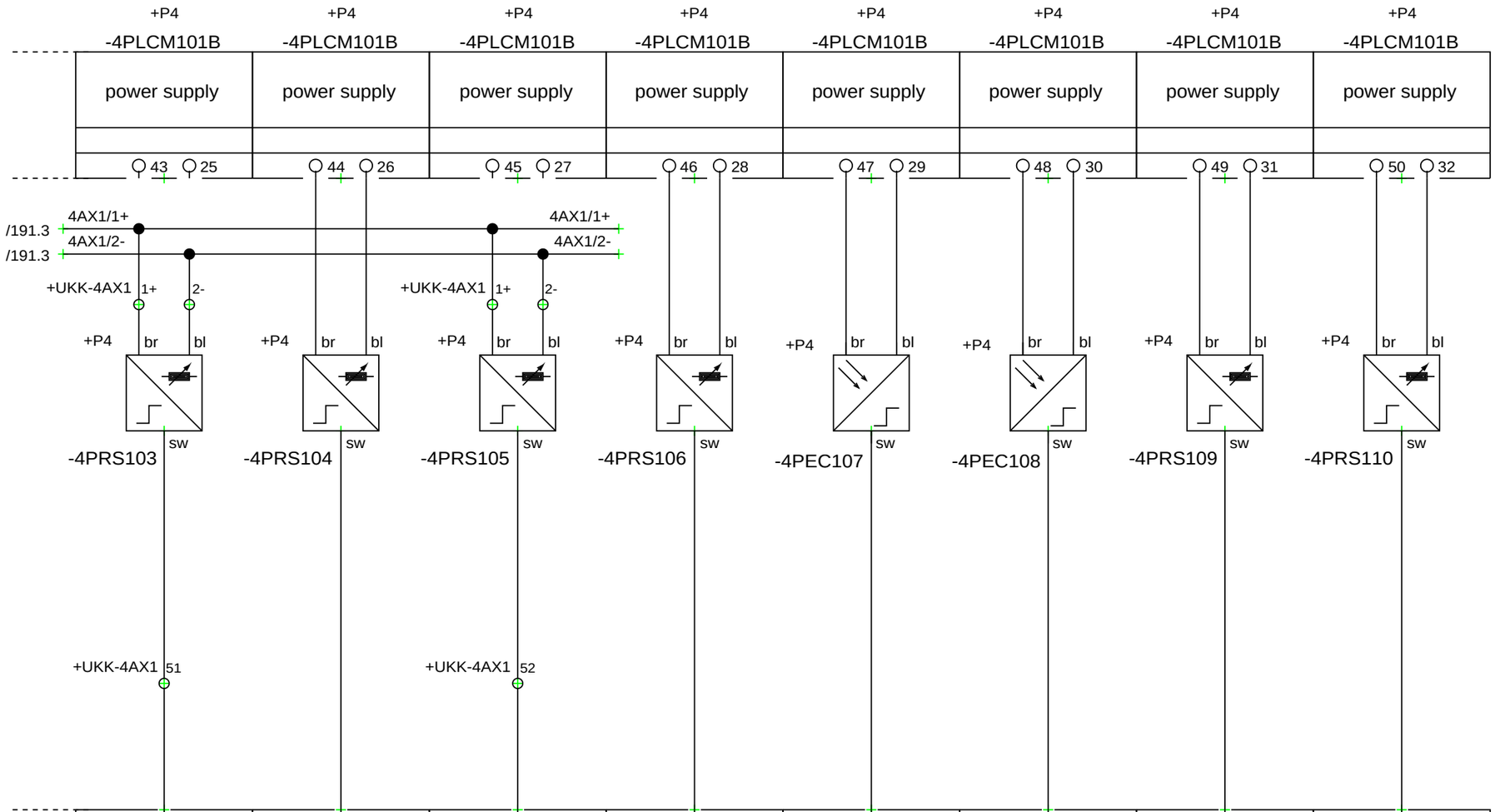
	customer 474 :P_NR2	+HSS	page **192**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 4	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 193
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 4	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **194**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 4	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

solenoid valve cramp zylinder for intense shaker shell forming	pressure rail raise licking roller shell forming	spare	spare	spare	spare	spare	spare
+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B
MV Klemmzylinder für Intensiv-Querrüttler Hülsenbildung	MV Druckschiene Abstreichwalzen anheben HB	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:24.26/0	O:24.26/1	O:24.26/2	O:24.26/3	O:24.26/4	O:24.26/5	O:24.26/6	O:24.26/7
0	1	2	3	4	5	6	7

+P4 -4SV100 1 2

+P4 -4SV101 1 2

		17 35	18 36	19 37	20 38	21 39	22 40	23 41	24 42
1794-OB16	power supply								
FLEX I/O		power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
	16 34								
		-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4

+P4 -4PLCM102B

+HKK-4X1 4- 3+

/18.3 4X1/3+ 4X1/3+

/18.4 4X1/4- 4X1/4-

BÜHLER

customer 474 :P_NR2

+HSS

page **195**

=A1.F1

of 271

comm. nr. :P_NR1

FLEX I/O module position 4

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

spare	spare	spare	spare	spare	spare	spare	spare
+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B	+P4 -4PLCM102B
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:24.26/8	O:24.26/9	O:24.26/10	O:24.26/11	O:24.26/12	O:24.26/13	O:24.26/14	O:24.26/15
8	9	10	11	12	13	14	15

25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4	-4PLCM102B +P4

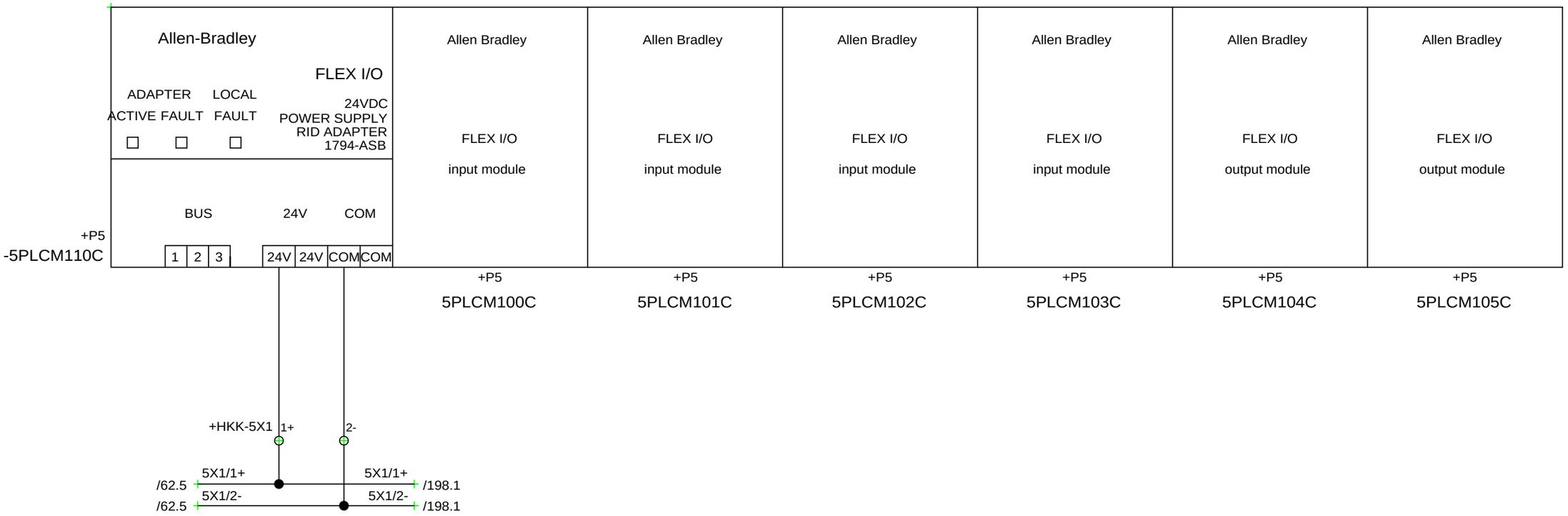
BÜHLER

customer 474 :P_NR2		+HSS	page **196**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 4	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 5 ;Ebene C

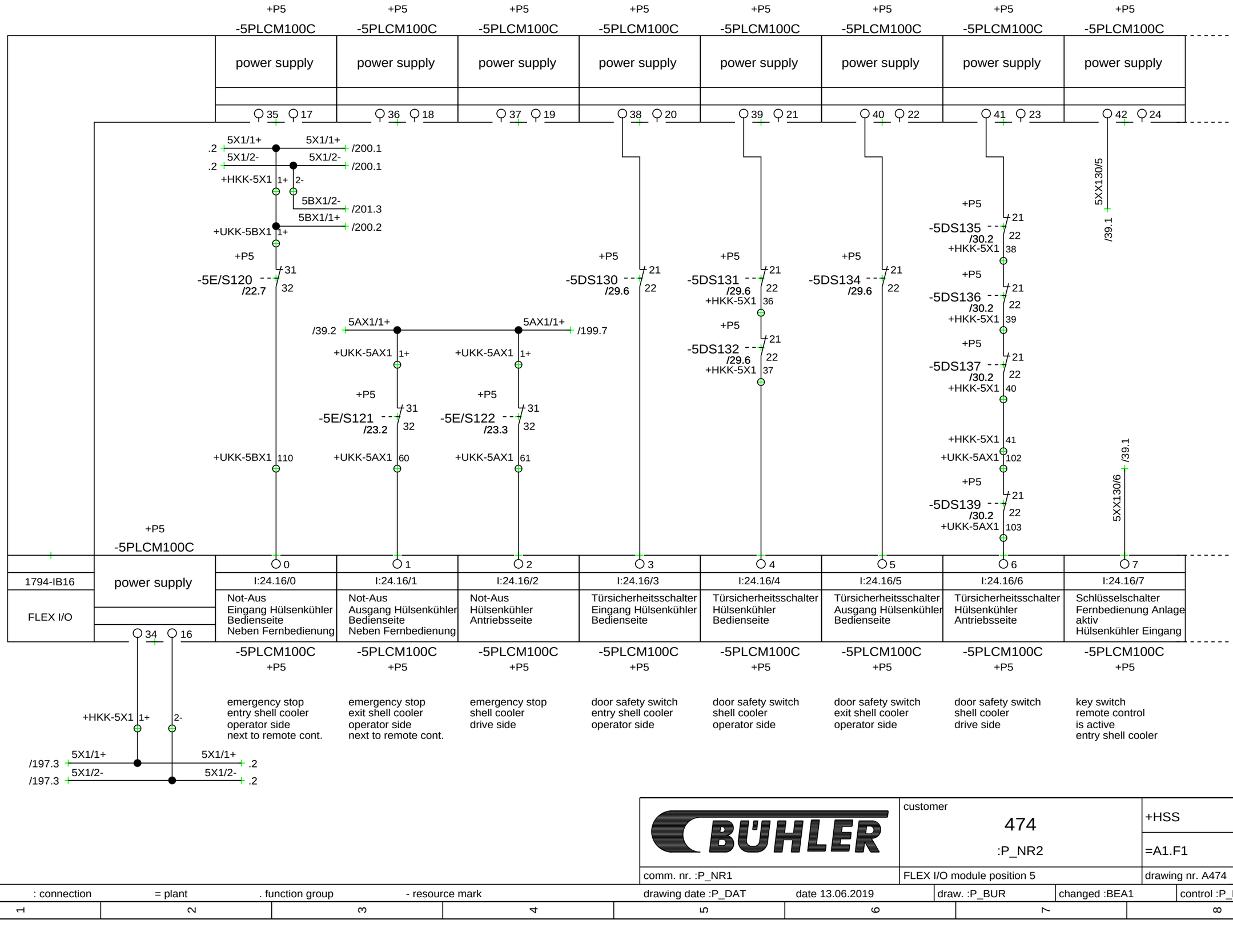
overview FLEX I/O modules position 5 ;level C

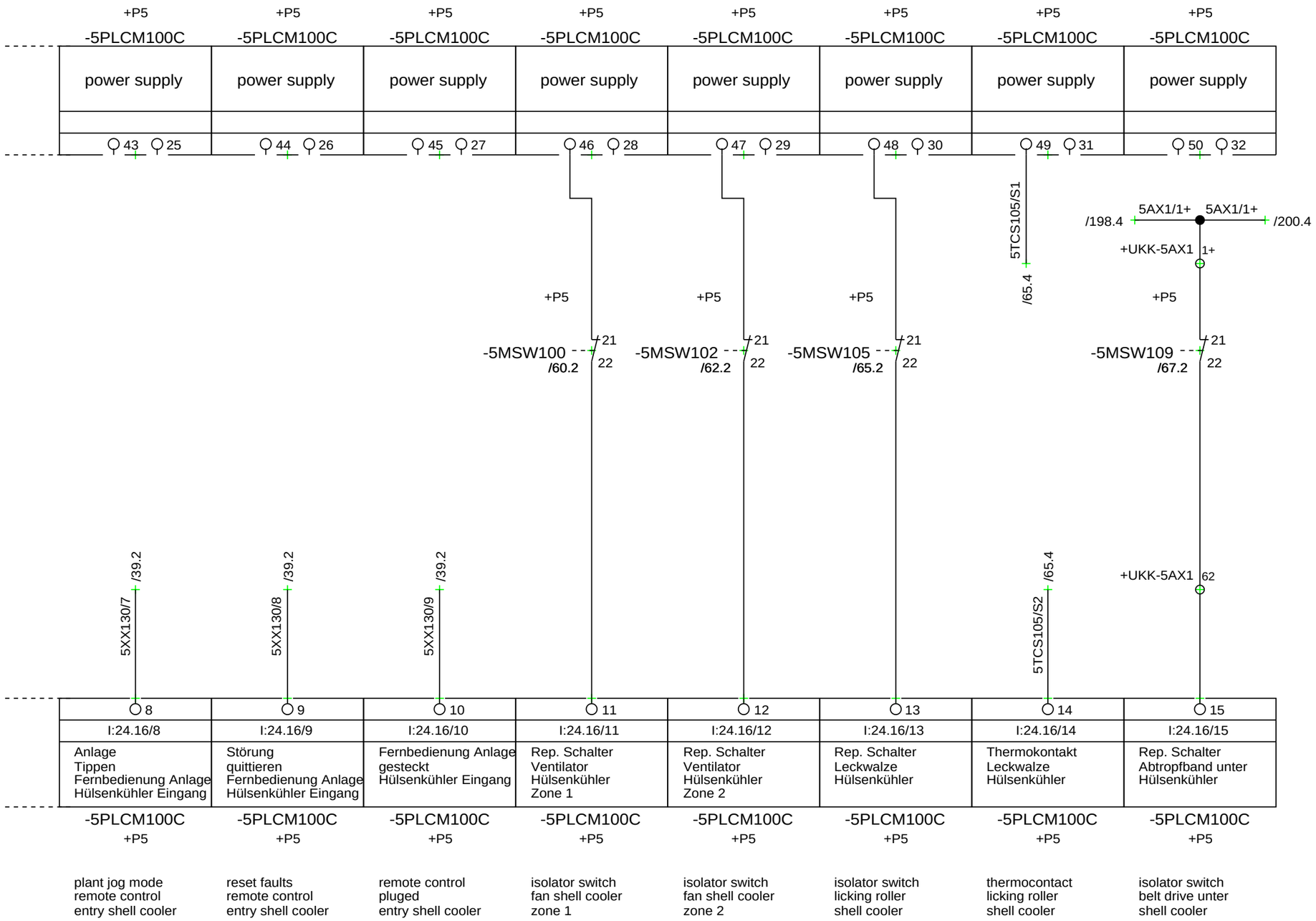


Rio Rack 2
starting group 0

BÜHLER	customer 474 :P_NR2	+HSS	page **197**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 5	drawing nr. A474	

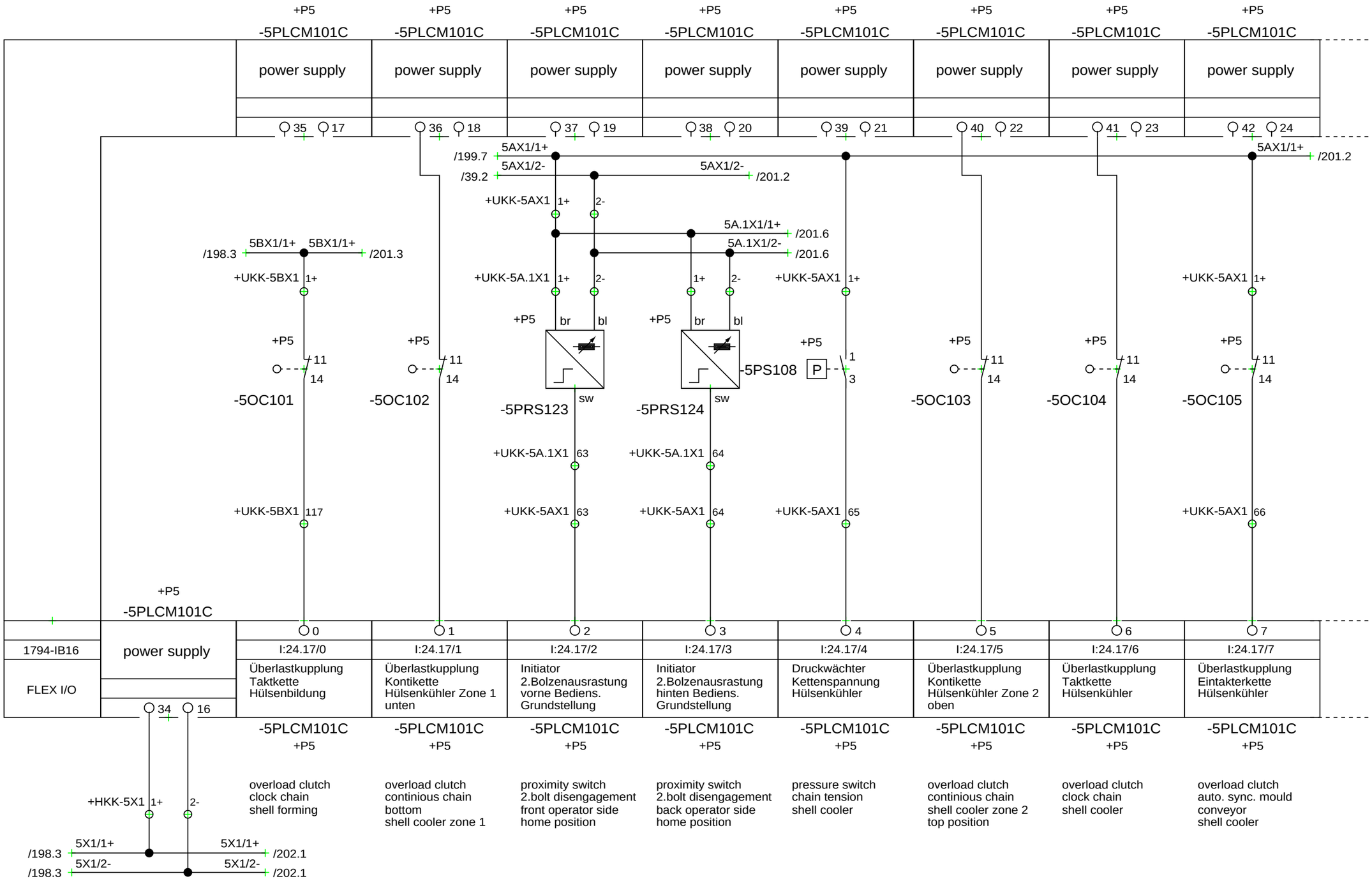
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF


+P5 -5PLCM100C power supply 35 17
+P5 -5PLCM100C power supply 36 18
+P5 -5PLCM100C power supply 37 19
+P5 -5PLCM100C power supply 38 20
+P5 -5PLCM100C power supply 39 21
+P5 -5PLCM100C power supply 40 22
+P5 -5PLCM100C power supply 41 23
+P5 -5PLCM100C power supply 42 24
5X1/1+ 5X1/1+ /200.1
.2 5X1/2- 5X1/2- /200.1
+HKK-5X1 1+ 2-
5BX1/2- /201.3
5BX1/1+ /200.2
+UKK-5BX1 1+
+P5 -5E/S120 /22.7 31 32
+UKK-5BX1 110
5AX1/1+ /39.2
5AX1/1+ /199.7
+UKK-5AX1 1+
+P5 -5E/S121 /23.2 31 32
+UKK-5AX1 60
+UKK-5AX1 1+
+P5 -5E/S122 /23.3 31 32
+UKK-5AX1 61
+P5 -5DS130 /29.6 21 22
+P5 -5DS131 /29.6 21 22
+HKK-5X1 36
+P5 -5DS132 /29.6 21 22
+HKK-5X1 37
+P5 -5DS134 /29.6 21 22
5XX130/5 /39.1
+P5 -5DS135 /30.2 21 22
+HKK-5X1 38
+P5 -5DS136 /30.2 21 22
+HKK-5X1 39
+P5 -5DS137 /30.2 21 22
+HKK-5X1 40
+HKK-5X1 41
+UKK-5AX1 102
+P5 -5DS139 /30.2 21 22
+UKK-5AX1 103
5XX130/6 /39.1
+P5 -5PLCM100C
1794-IB16 FLEX I/O
power supply
34 16
+HKK-5X1 1+ 2-
5X1/1+ 5X1/1+ .2 /197.3
5X1/2- 5X1/2- .2 /197.3
0 1 2 3 4 5 6 7
I:24.16/0 Not-Aus Eingang Hülsenkühler Bedienseite Neben Fernbedienung
I:24.16/1 Not-Aus Ausgang Hülsenkühler Bedienseite Neben Fernbedienung
I:24.16/2 Not-Aus Hülsenkühler Antriebsseite
I:24.16/3 Türsicherheitsschalter Eingang Hülsenkühler Bedienseite
I:24.16/4 Türsicherheitsschalter Hülsenkühler Bedienseite
I:24.16/5 Türsicherheitsschalter Ausgang Hülsenkühler Bedienseite
I:24.16/6 Türsicherheitsschalter Hülsenkühler Antriebsseite
I:24.16/7 Schlüsselschalter Fernbedienung Anlage aktiv Hülsenkühler Eingang
-5PLCM100C +P5
emergency stop entry shell cooler operator side next to remote cont.
emergency stop exit shell cooler operator side next to remote cont.
emergency stop shell cooler drive side
door safety switch entry shell cooler operator side
door safety switch shell cooler operator side
door safety switch exit shell cooler operator side
door safety switch shell cooler drive side
key switch remote control is active entry shell cooler
BÜHLER
customer 474 :P_NR2
+HSS
page 198
=A1.F1
of 271
comm. nr. :P_NR1
FLEX I/O module position 5
drawing nr. A474
+ location : connection = plant . function group - resource mark
drawing date :P_DAT
date 13.06.2019
draw. :P_BUR
changed :BEA1
control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **199**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

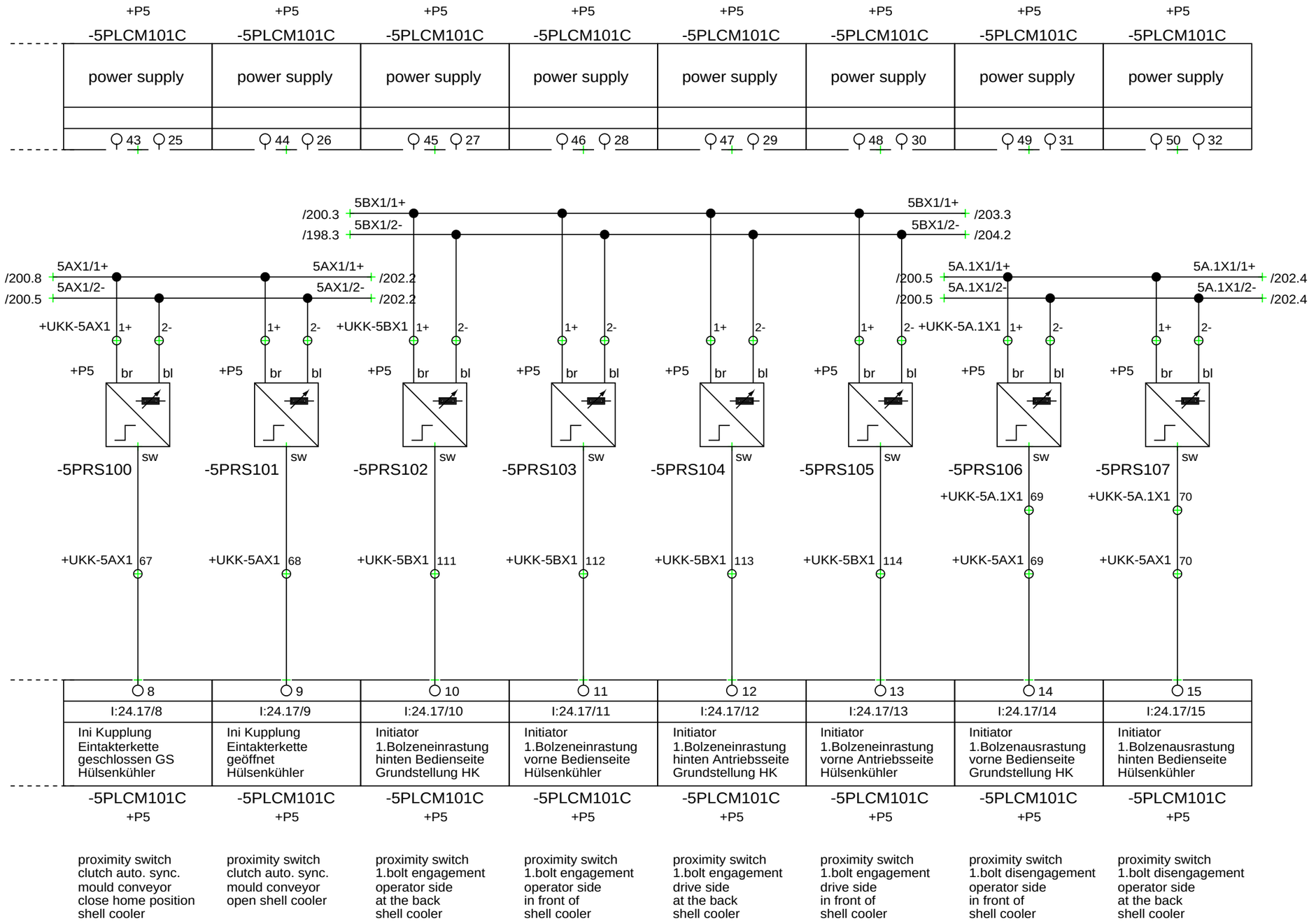
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

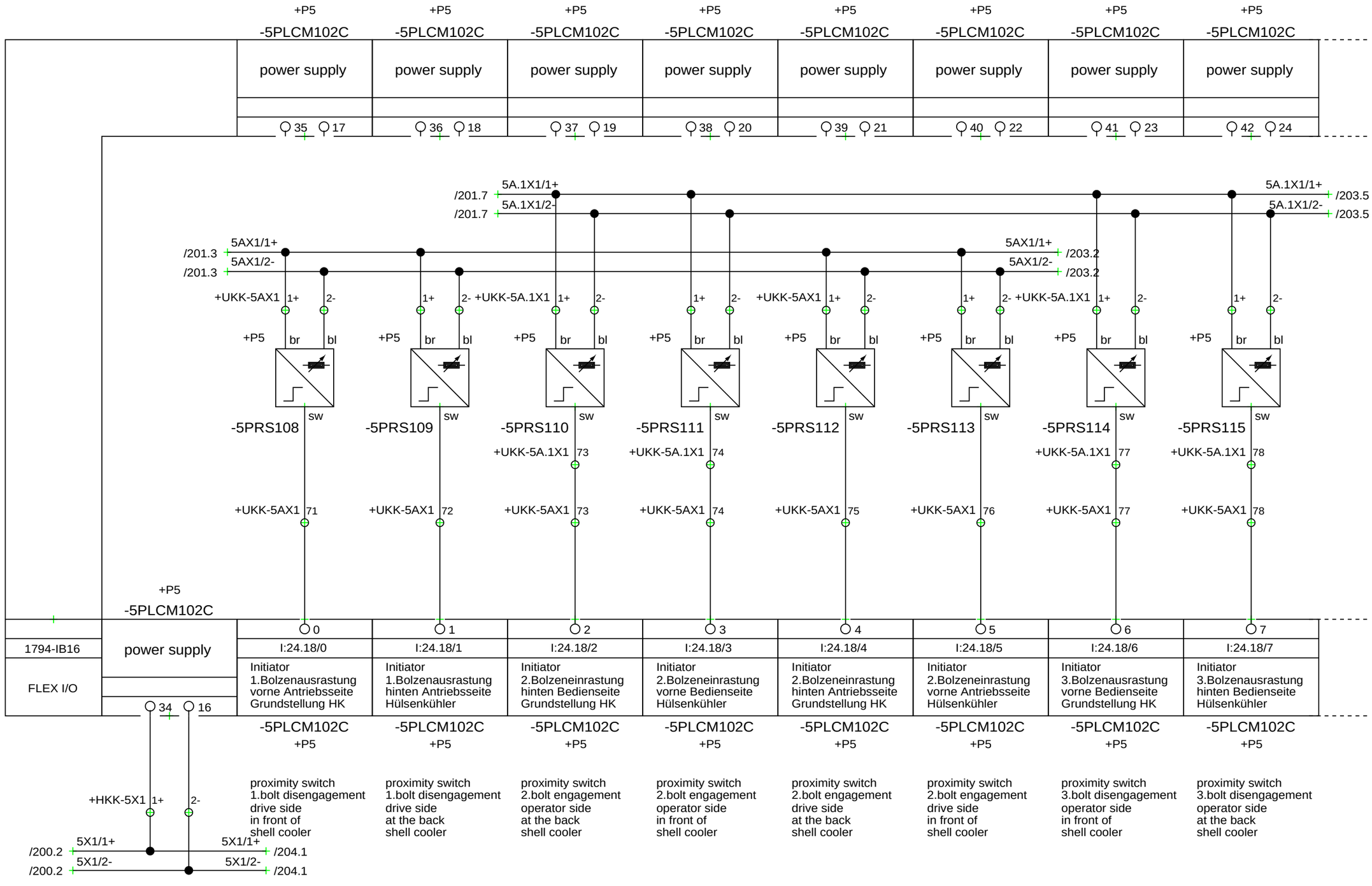
	customer 474 :P_NR2	+HSS	page 200
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



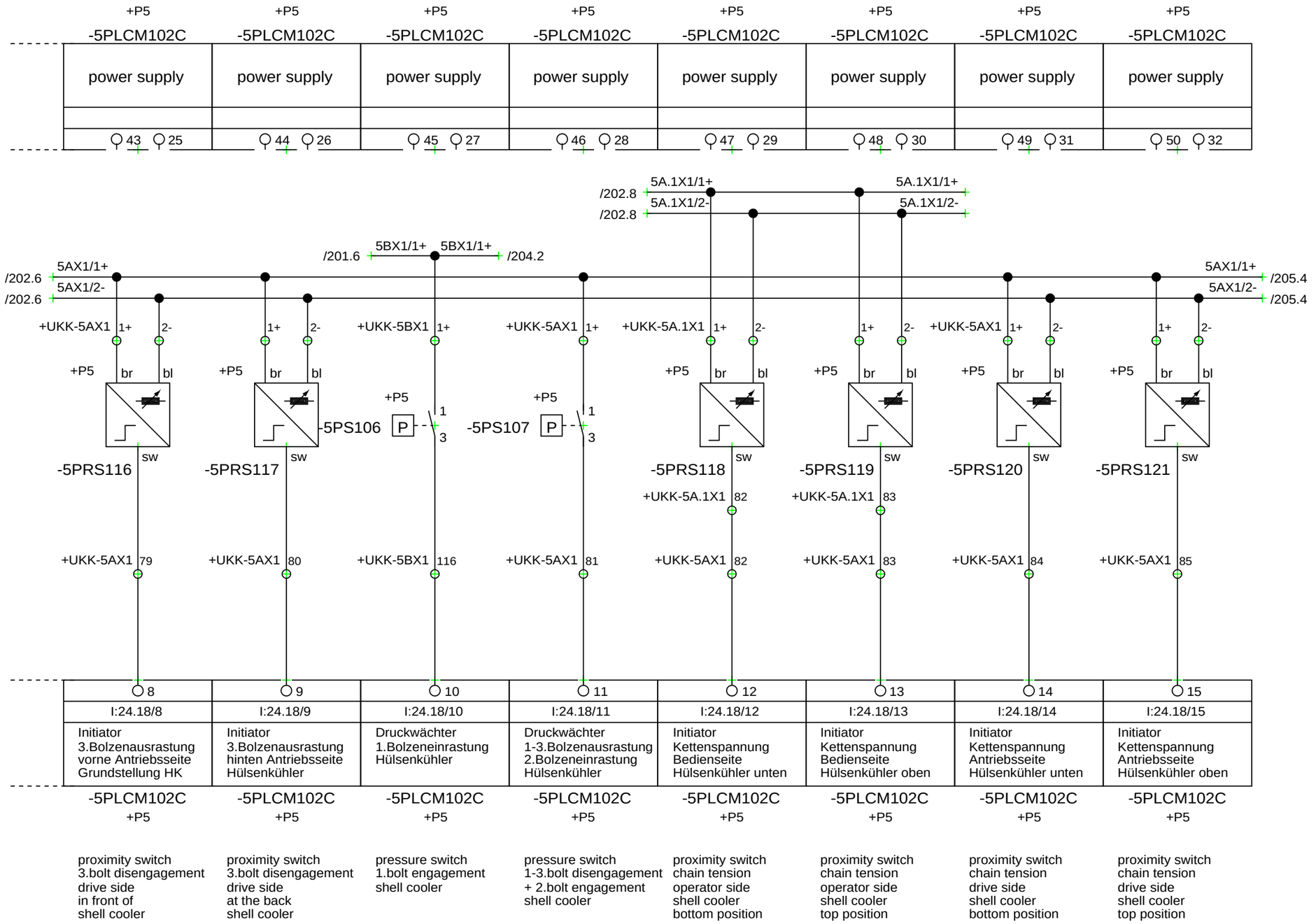
BÜHLER	customer 474 :P_NR2	+HSS	page 201
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



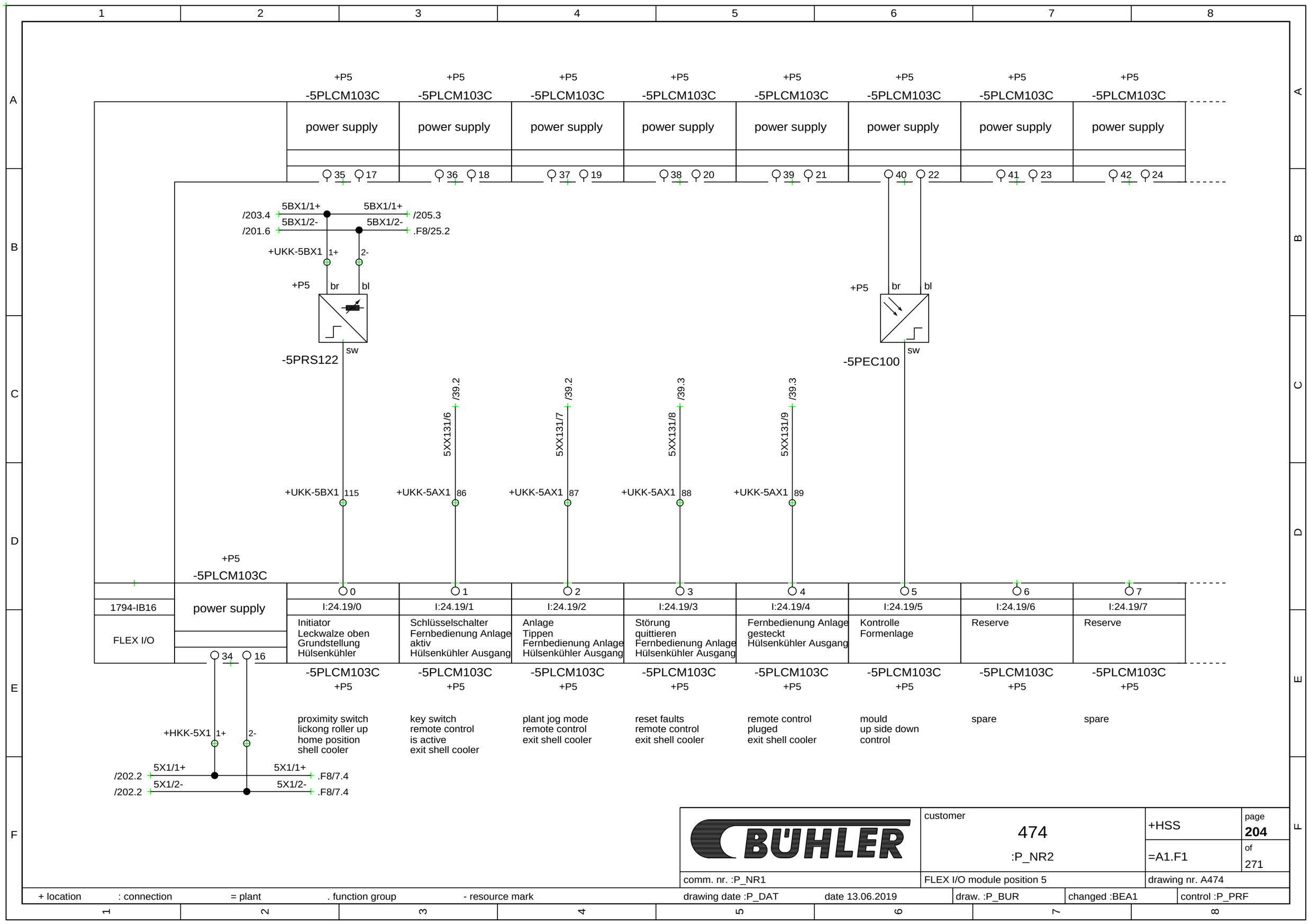
BÜHLER	customer 474 :P_NR2	+HSS	page 202
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 203
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

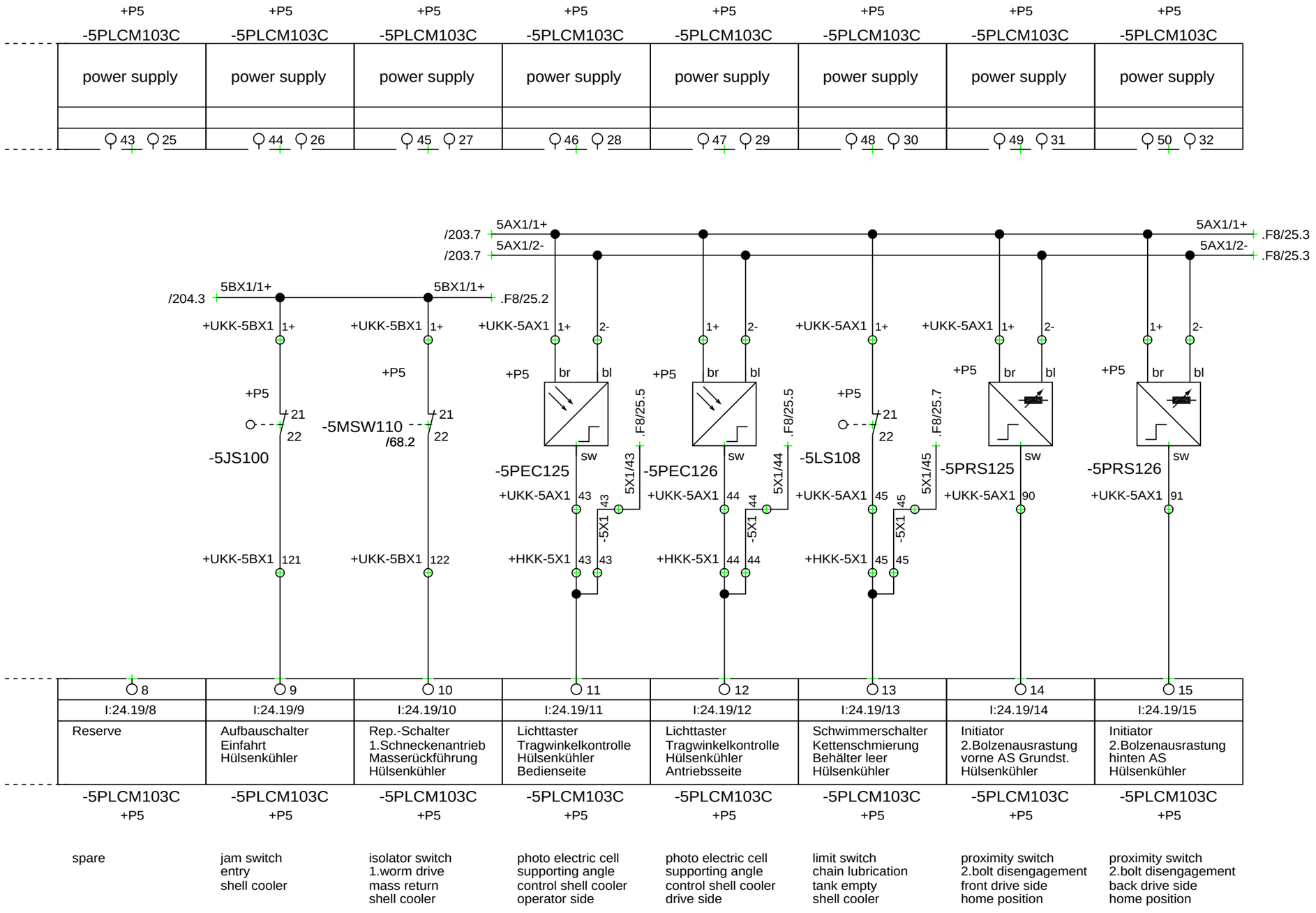
+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page **204**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

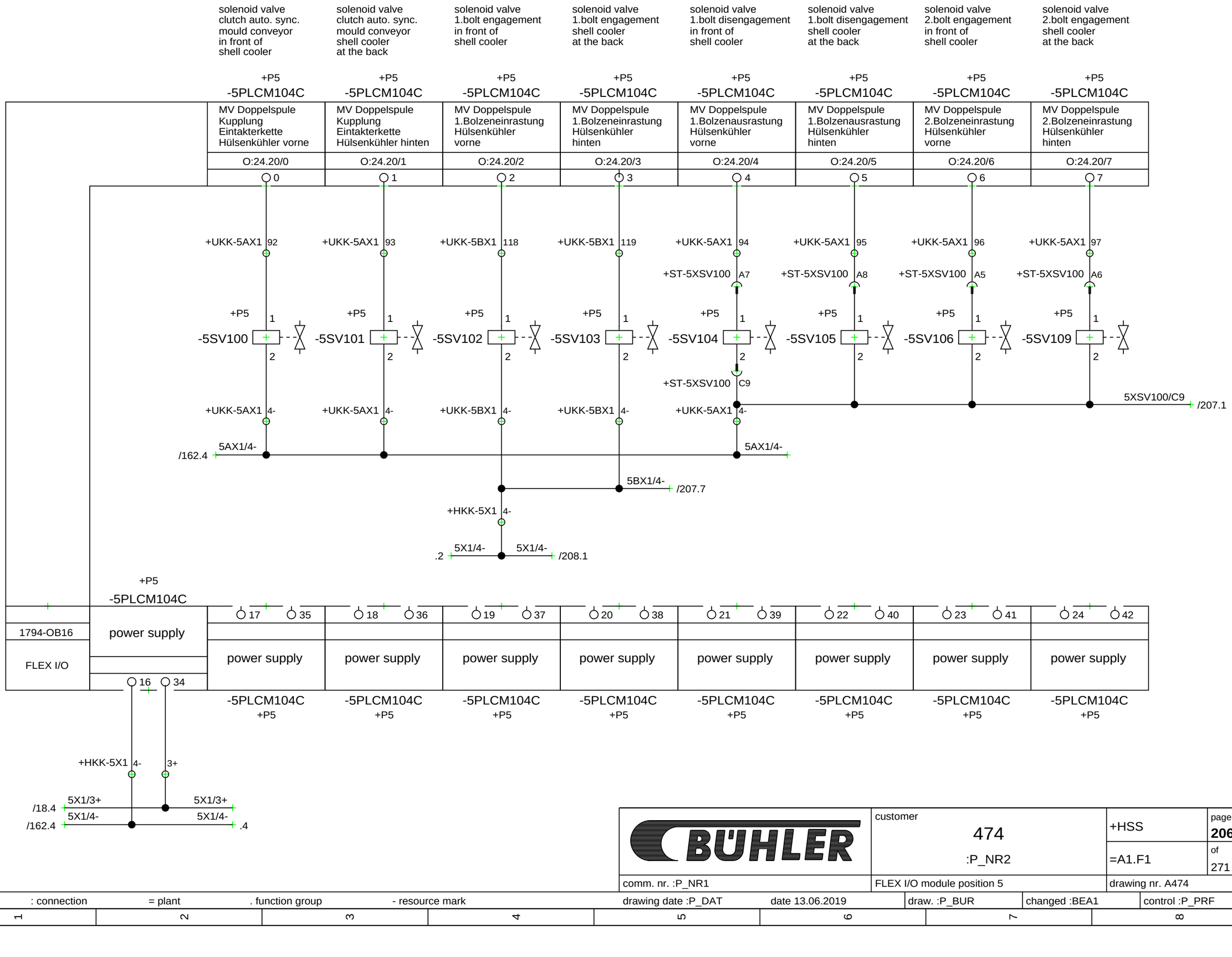


BÜHLER

customer 474 :P_NR2		+HSS	page **205**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

1	2	3	4	5	6	7	8



BÜHLER	customer 474 :P_NR2	+HSS	page 206
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

1	2	3	4	5	6	7	8

solenoid valve 3.bolt disengagement in front of shell cooler	solenoid valve 3.bolt disengagement shell cooler at the back	solenoid valve 2.bolt disengagement in front of shell cooler	solenoid valve 2.bolt disengagement shell cooler at the back	spare	spare	spare	solenoid valve raise licking roller shell cooler
+P5 -5PLCM104C	+P5 -5PLCM104C	+P5 -5PLCM104C	+P5 -5PLCM104C	+P5 -5PLCM104C	+P5 -5PLCM104C	+P5 -5PLCM104C	+P5 -5PLCM104C
MV Doppelspule 3.Bolzenausrastung Hülsenkühler vorne	MV Doppelspule 3.Bolzenausrastung Hülsenkühler hinten	MV Doppelspule 2.Bolzenausrastung Hülsenkühler vorne	MV Doppelspule 2.Bolzenausrastung Hülsenkühler hinten	Reserve	Reserve	Reserve	MV Anheben Leckwalze Hülsenkühler
O:24.20/8	O:24.20/9	O:24.20/10	O:24.20/11	O:24.20/12	O:24.20/13	O:24.20/14	O:24.20/15
8	9	10	11	12	13	14	15

+UKK-5AX1 98 — +ST-5XSV100 A1 — +P5 1 — -5SV110 — 2

+UKK-5AX1 99 — +ST-5XSV100 A2 — +P5 1 — -5SV111 — 2

+UKK-5AX1 100 — +ST-5XSV100 A3 — +P5 1 — -5SV113 — 2

+UKK-5AX1 101 — +ST-5XSV100 A4 — +P5 1 — -5SV114 — 2

/206.8 5XSV100/C9

+UKK-5BX1 120 — +P5 1 — -5SV112 — 2

+UKK-5BX1 4-

/206.5 5BX1/4- 5BX1/4-

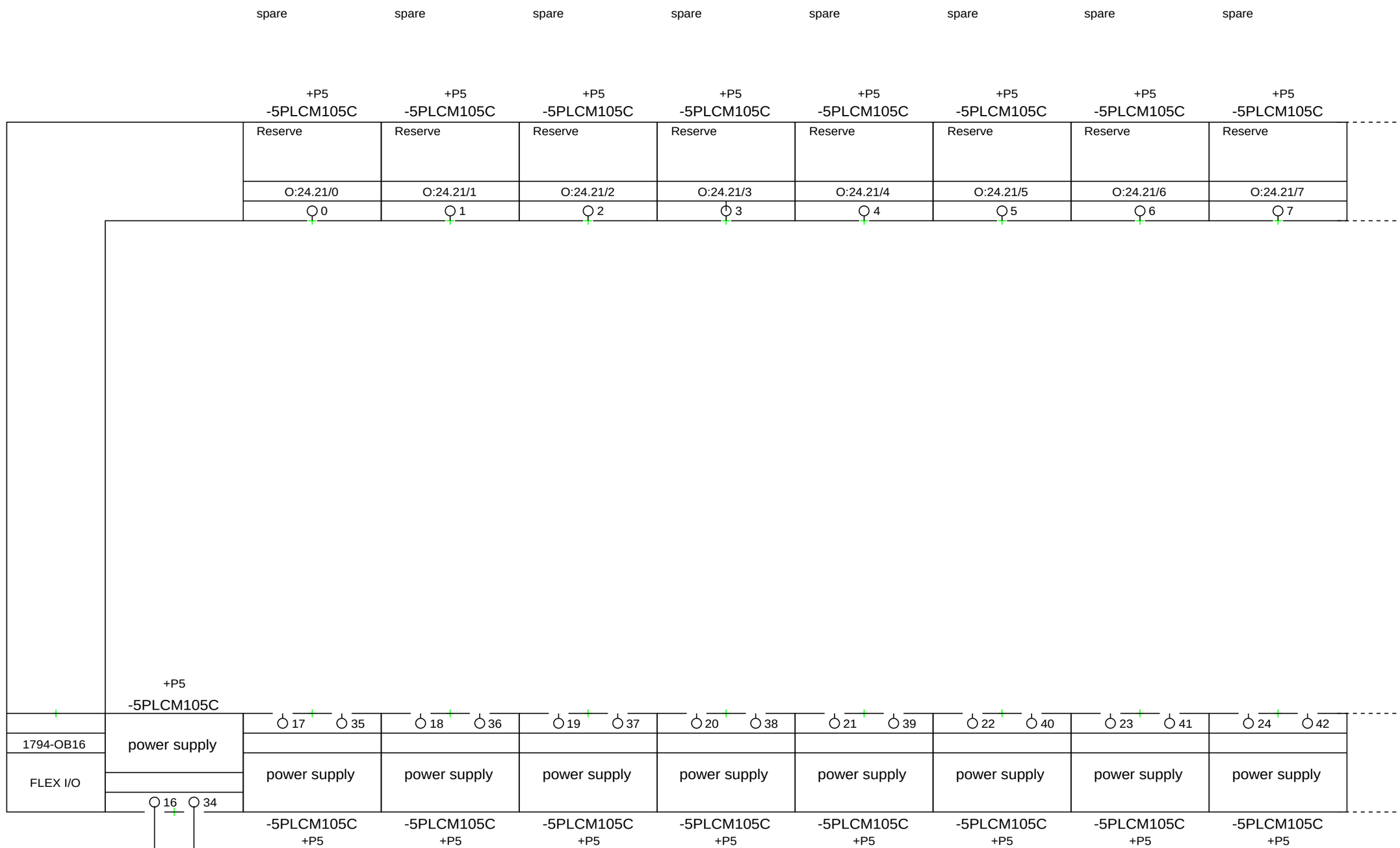
25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-5PLCM104C +P5	-5PLCM104C +P5	-5PLCM104C +P5	-5PLCM104C +P5	-5PLCM104C +P5	-5PLCM104C +P5	-5PLCM104C +P5	-5PLCM104C +P5

BÜHLER

customer 474 :P_NR2 | +HSS | page 207 | =A1.F1 | of 271

comm. nr. :P_NR1 | FLEX I/O module position 5 | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 208
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

spare	spare	spare	spare	spare	spare	spare	spare
+P5 -5PLCM105C	+P5 -5PLCM105C	+P5 -5PLCM105C	+P5 -5PLCM105C	+P5 -5PLCM105C	+P5 -5PLCM105C	+P5 -5PLCM105C	+P5 -5PLCM105C
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:24.21/8	O:24.21/9	O:24.21/10	O:24.21/11	O:24.21/12	O:24.21/13	O:24.21/14	O:24.21/15
8	9	10	11	12	13	14	15

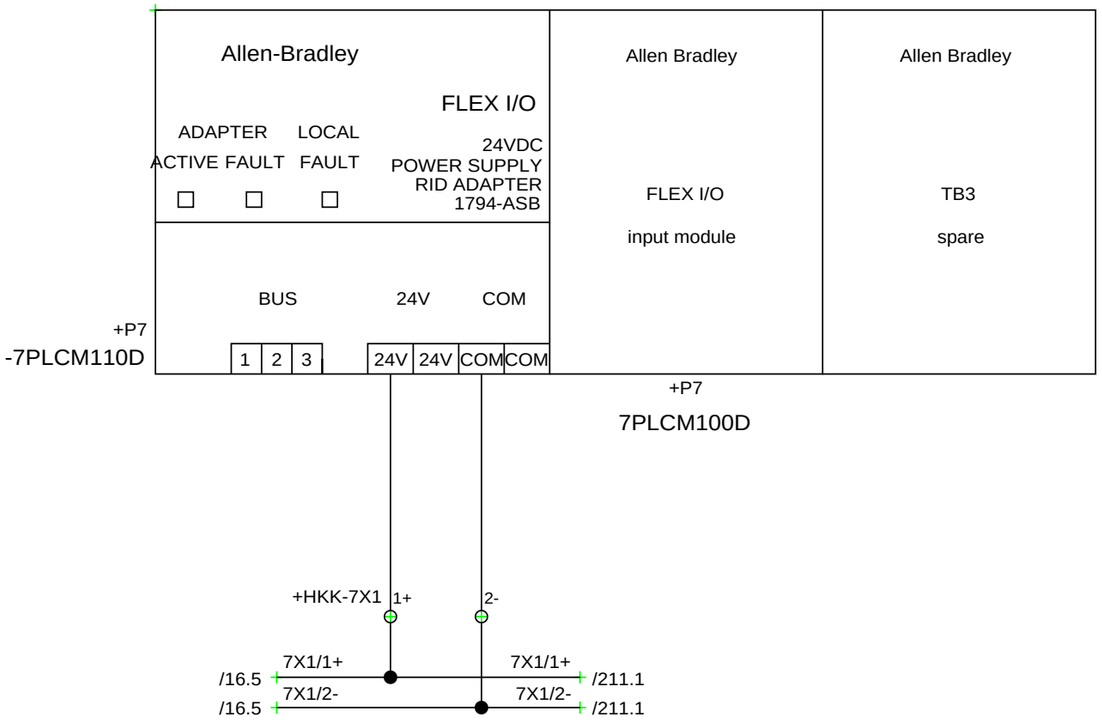
25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-5PLCM105C +P5	-5PLCM105C +P5	-5PLCM105C +P5	-5PLCM105C +P5	-5PLCM105C +P5	-5PLCM105C +P5	-5PLCM105C +P5	-5PLCM105C +P5

BÜHLER	customer 474 :P_NR2	+HSS	page **209**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 5	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 7/8 ;Ebene D

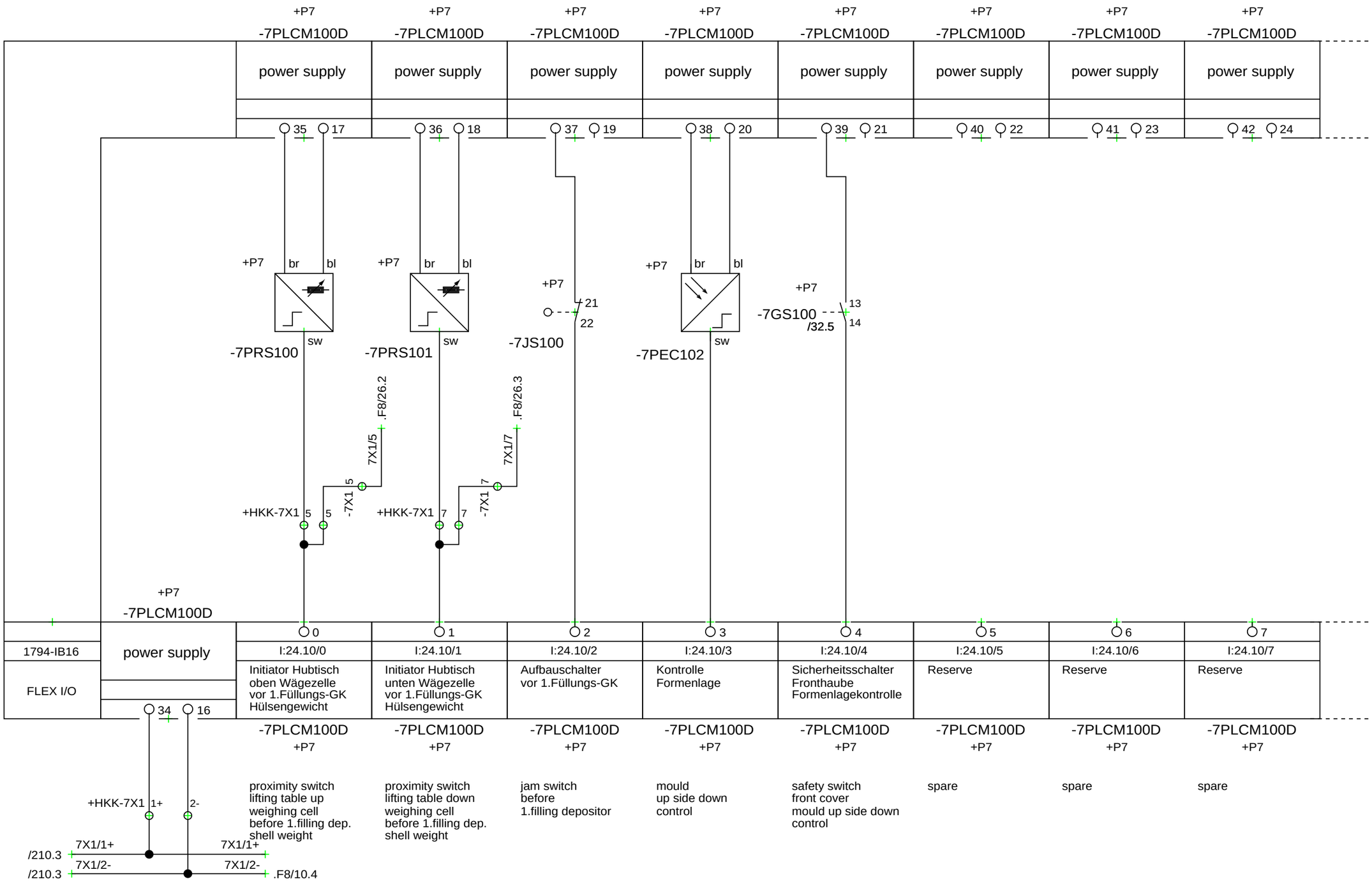
overview FLEX I/O modules position 7/8 ;level D



Rio Rack 1
starting group 6

BÜHLER	customer 474 :P_NR2	+HSS	page **210**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 7,8	drawing nr. A474	

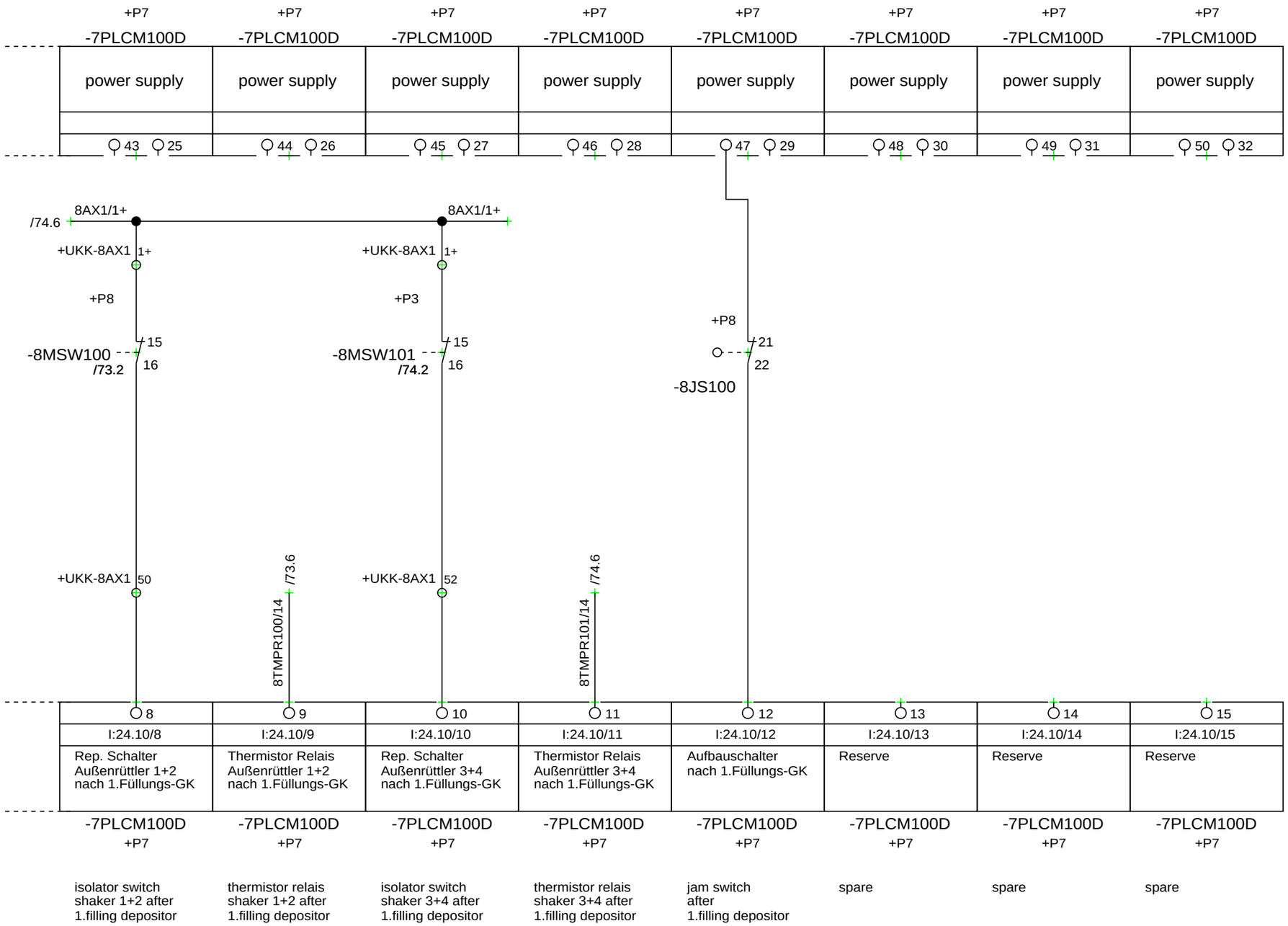
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page 211
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

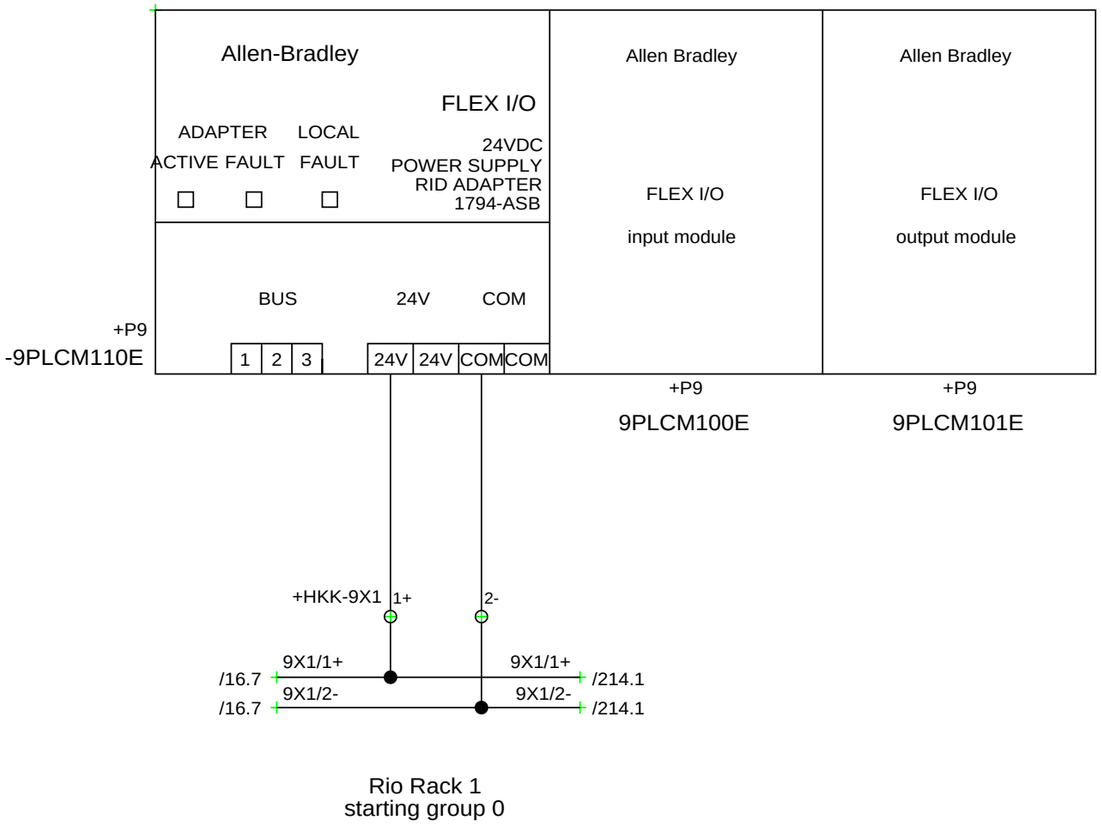


BÜHLER	customer 474 :P_NR2	+HSS	page **212**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 8	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 9 ;Ebene E

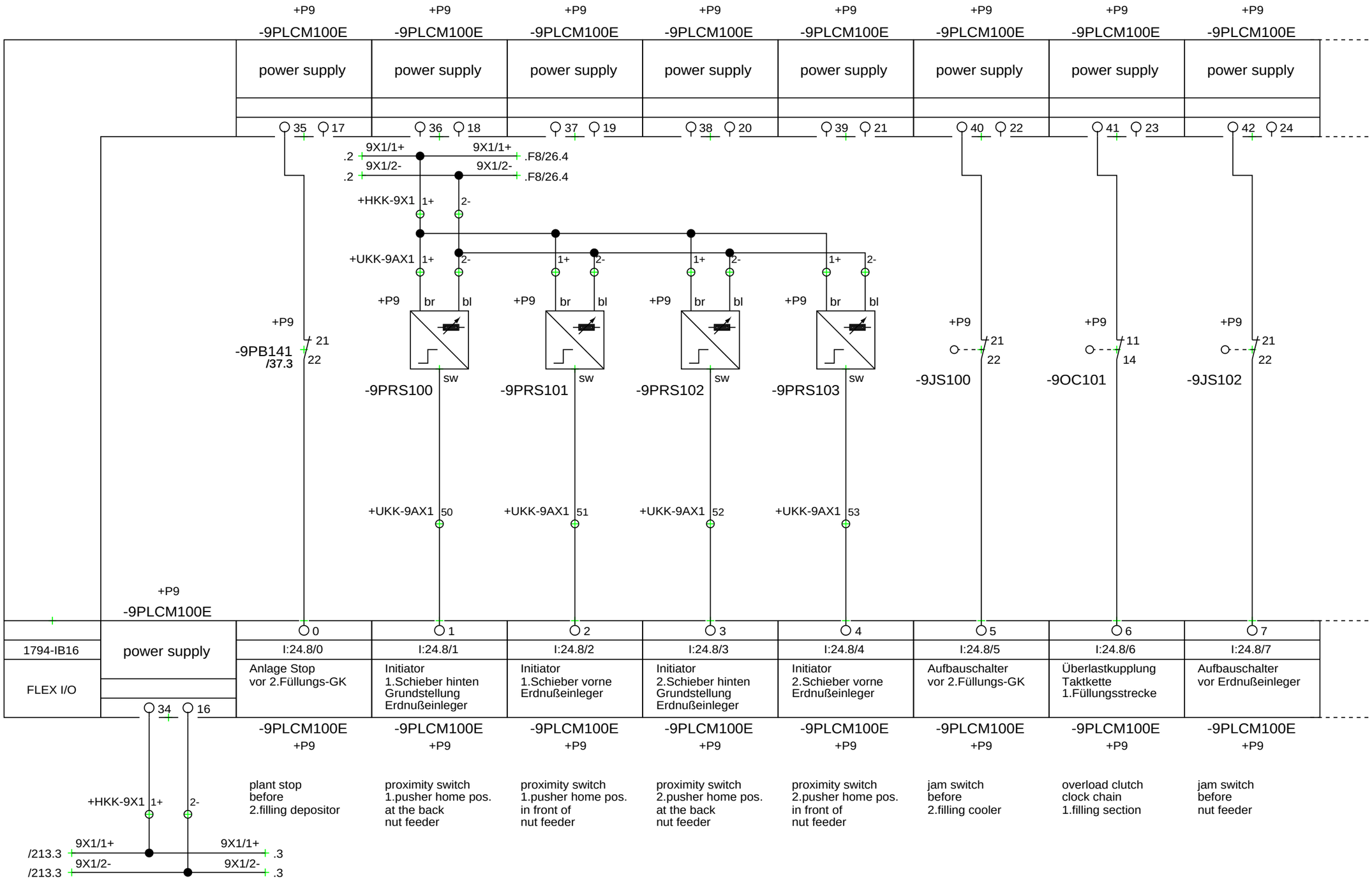
overview FLEX I/O modules position 9 ;level E



Rio Rack 1
starting group 0

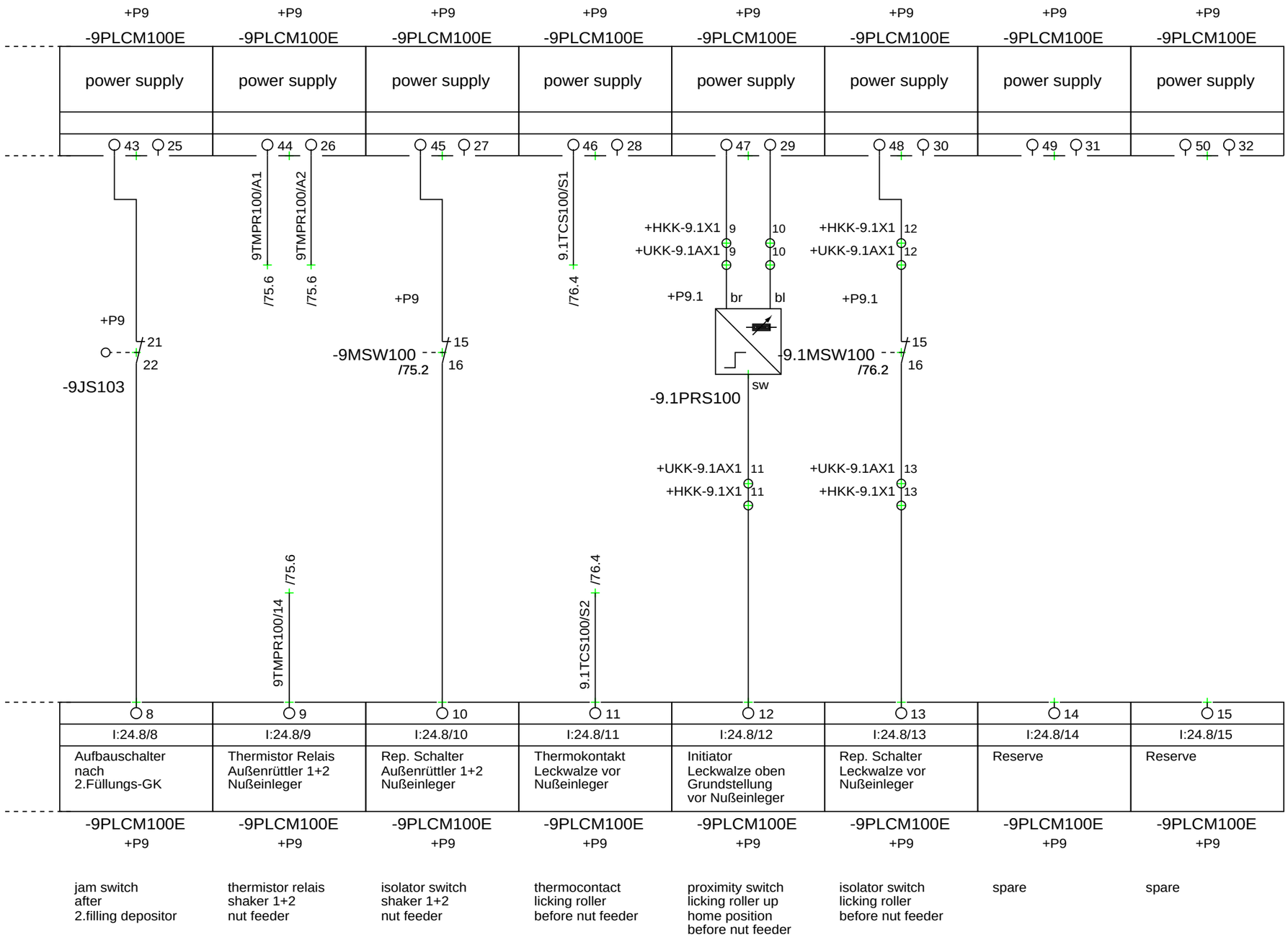
BÜHLER	customer 474 :P_NR2	+HSS	page **213**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 9	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 214
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 9	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page **215**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 9	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

solenoid valve 1.pusher in front of nut feeder	solenoid valve 1.pusher at the back nut feeder	solenoid valve 2.pusher in front of nut feeder	solenoid valve 2.pusher at the back nut feeder	solenoid valve raise licking roller before nut feeder	spare	spare	spare
+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E
MV Doppelspule 1.Schieber Erdnußeinleger vorne	MV Doppelspule 1.Schieber Erdnußeinleger hinten	MV Doppelspule 2.Schieber Erdnußeinleger vorne	MV Doppelspule 2.Schieber Erdnußeinleger hinten	MV Anheben Leckwalze vor Nußeinleger	Reserve	Reserve	Reserve
O:24.9/0	O:24.9/1	O:24.9/2	O:24.9/3	O:24.9/4	O:24.9/5	O:24.9/6	O:24.9/7
0	1	2	3	4	5	6	7

+UKK-9AX1 55 — +P9 -9SV100 1 / 2 — +UKK-9AX1 4-

+UKK-9AX1 56 — +P9 -9SV101 1 / 2 — +UKK-9AX1 4-

+UKK-9AX1 57 — +P9 -9SV102 1 / 2 — +UKK-9AX1 4-

+UKK-9AX1 58 — +P9 -9SV103 1 / 2 — +UKK-9AX1 4-

+HKK-9.1X1 14 — +UKK-9.1AX1 14 — +P9.1 -9.1SV100 1 / 2 — +UKK-9.1AX1 15 — +HKK-9.1X1 15

+UKK-9AX1 4- — +HKK-9X1 4- — 9X1/4- — .2 — 9X1/4-

+P9 -9PLCM101E

1794-OB16	power supply	17 35	18 36	19 37	20 38	21 39	22 40	23 41	24 42
FLEX I/O		power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
	16 34	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9

+HKK-9X1 4- 3+ — /18.7 9X1/3+ 9X1/3+ — /18.7 9X1/4- 9X1/4- .2

BÜHLER

customer 474 :P_NR2		+HSS	page 216
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 9	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

spare	spare	spare	spare	spare	spare	spare	spare
+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E	+P9 -9PLCM101E
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:24.9/8	O:24.9/9	O:24.9/10	O:24.9/11	O:24.9/12	O:24.9/13	O:24.9/14	O:24.9/15
8	9	10	11	12	13	14	15

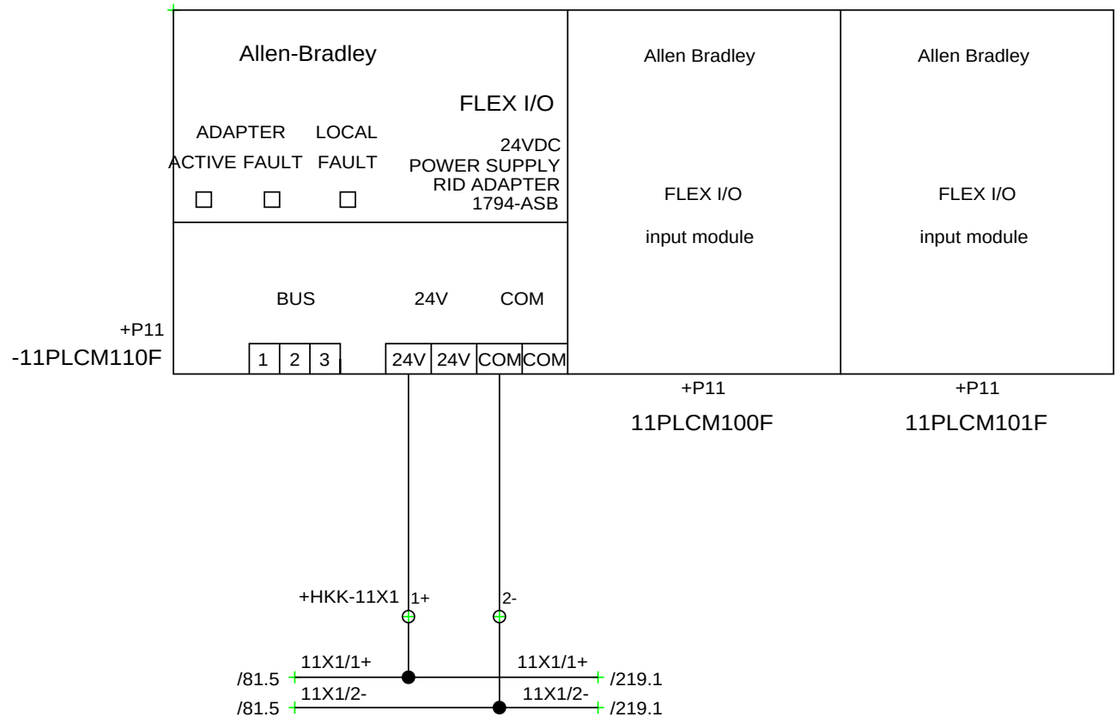
25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9	-9PLCM101E +P9

BÜHLER	customer 474 :P_NR2	+HSS	page **217**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 9	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 11 ;Ebene F

overview FLEX I/O modules position 11 ;level F



Rio Rack 0
starting group 0

BÜHLER	customer 474 :P_NR2	+HSS	page **218**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 11	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P11	+P11	+P11	+P11	+P11	+P11	+P11	+P11
-11PLCM100F	-11PLCM100F	-11PLCM100F	-11PLCM100F	-11PLCM100F	-11PLCM100F	-11PLCM100F	-11PLCM100F
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
35 17	36 18	37 19	38 20	39 21	40 22	41 23	42 24

+P11 -11E/S120 31 32 /23.6

+P11 -11E/S121 31 32 /23.7

+P11 -11DS130 21 22 /30.4

+P11 -11DS131 21 22 /30.4

+HKK-11X1 25

+P11 -11DS132 21 22 /30.4

+P11 -11DS133 21 22 /30.4

11XX130/5 /39.3

11XX130/6 /39.3

11XX130/7 /39.3

11XX130/8 /39.3

+P11
-11PLCM100F

		0	1	2	3	4	5	6	7
1794-IB16	power supply	I:25.0/0	I:25.0/1	I:25.0/2	I:25.0/3	I:25.0/4	I:25.0/5	I:25.0/6	I:25.0/7
FLEX I/O		Not-Aus Ausgang 1.Füllungskühler Bedienseite neben Fernbedienung	Not-Aus 1.Füllungskühler Antriebsseite	Türsicherheitsschalter 1.Füllungskühler Antriebsseite	Türsicherheitsschalter 1.Füllungskühler Bedienseite	Türsicherheitsschalter 1.Füllungskühler Ausgang Bedienseite	Schlüsselschalter Fernbedienung aktiv 1.Füllungskühler	Anlage Tippen Fernbedienung 1.Füllungskühler	Störung quittieren Fernbedienung 1.Füllungskühler
		-11PLCM100F +P11	-11PLCM100F +P11	-11PLCM100F +P11	-11PLCM100F +P11	-11PLCM100F +P11	-11PLCM100F +P11	-11PLCM100F +P11	-11PLCM100F +P11
		emergency stop exit 1.filling cooler operator side next to remote control	emergency stop 1.filling cooler drive side	door safety switch 1.filling cooler drive side	door safety switch 1.filling cooler operator side	door safety switch exit 1.filling cooler operator side	key switch remote control is active 1.filling cooler	plant jog mode remote control 1.filling cooler	reset faults remote control 1.filling cooler

34 16

+HKK-11X1 1+ 2-

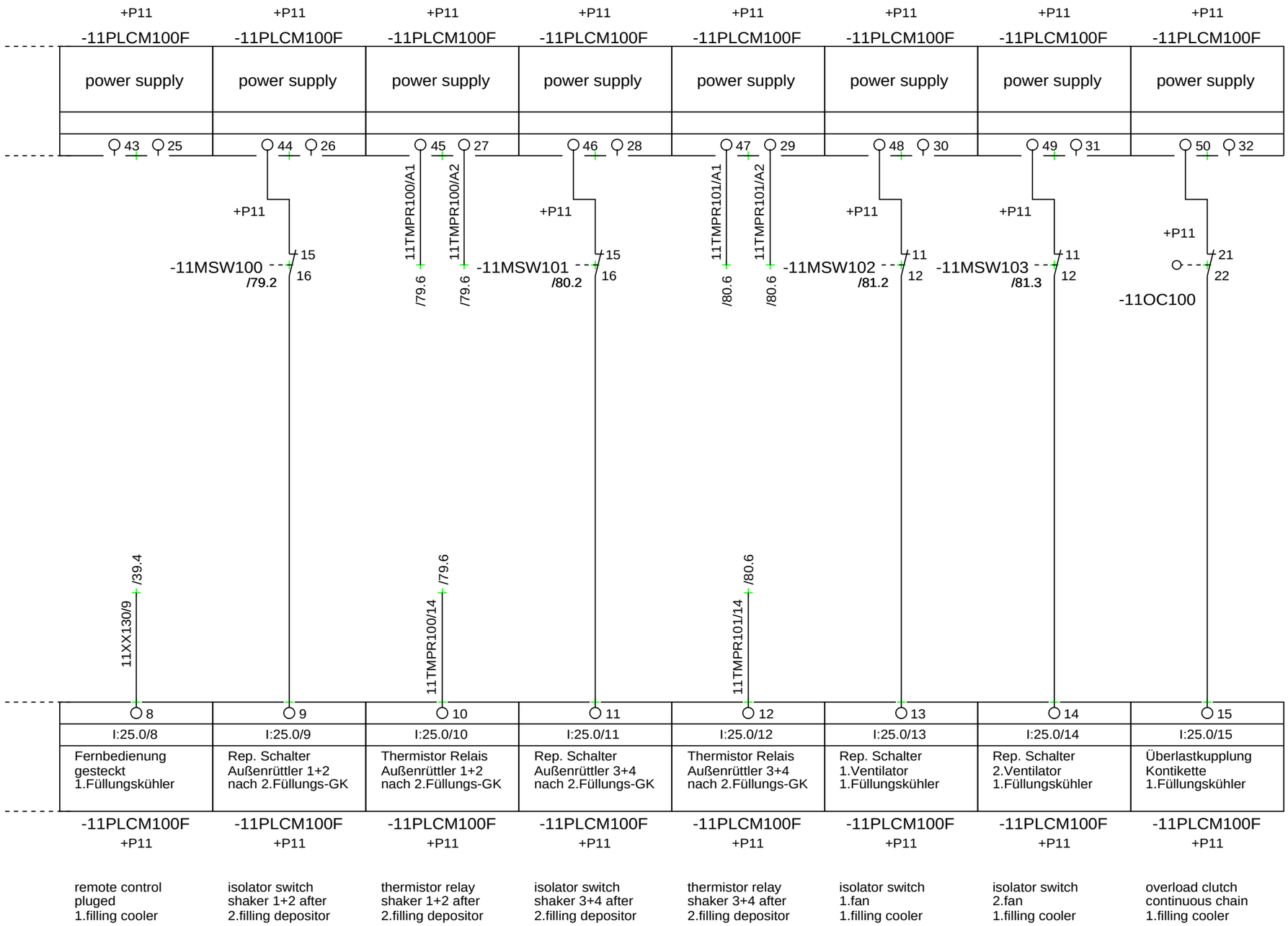
/218.3 11X1/1+ 11X1/1+ /221.1

/218.3 11X1/2- 11X1/2- /221.1

BÜHLER

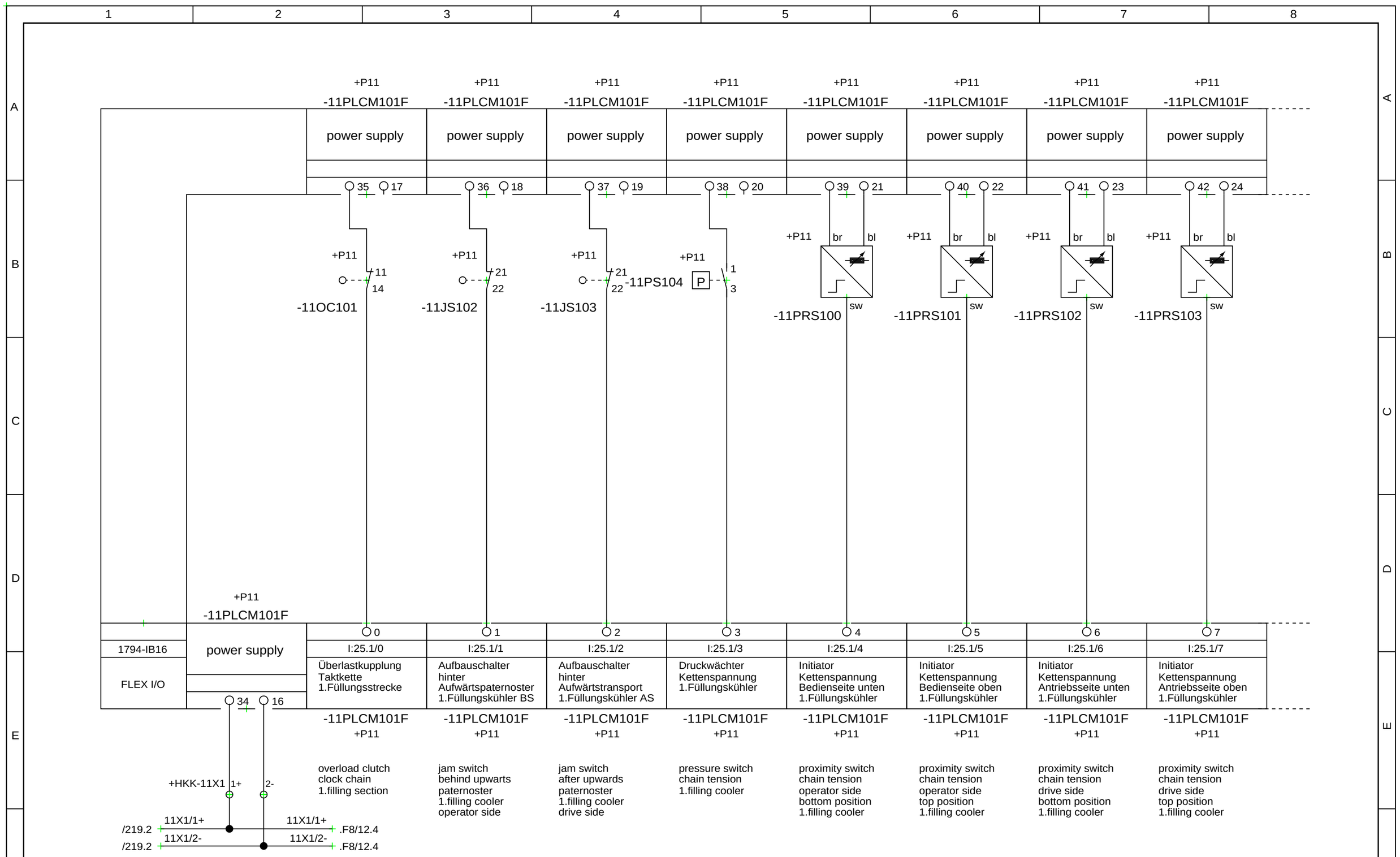
customer	474 :P_NR2	+HSS	page 219
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 11	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page 220
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 11	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page 221
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 11	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P11	+P11	+P11	+P11	+P11	+P11	+P11	+P11
-11PLCM101F	-11PLCM101F	-11PLCM101F	-11PLCM101F	-11PLCM101F	-11PLCM101F	-11PLCM101F	-11PLCM101F
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

11RV100/A /82.2

11RV100/C /82.3

+P11 21 22 -11LS105

11RV100/B /82.3

11RV100/D /82.3

+HKK-11X1 27 27 -11X1 27 11X1/27 .F8/26.7

8	9	10	11	12	13	14	15
I:25.1/8	I:25.1/9	I:25.1/10	I:25.1/11	I:25.1/12	I:25.1/13	I:25.1/14	I:25.1/15
Endstellung auf Temperaturreglung 1.Füllungskühler	Endstellung zu Temperaturreglung 1.Füllungskühler	Schwimmerschalter Kettenschmierung Behälter leer 1.Füllungskühler	Reserve	Reserve	Reserve	Reserve	Reserve
-11PLCM101F +P11	-11PLCM101F +P11	-11PLCM101F +P11	-11PLCM101F +P11	-11PLCM101F +P11	-11PLCM101F +P11	-11PLCM101F +P11	-11PLCM101F +P11
prop. valve open regulation of the temperature of the 1.filling cooler	prop. valve zu regulation of the temperature of the 1.filling cooler	limit switch chain lubrication tank empty 1.filling cooler	spare	spare	spare	spare	spare

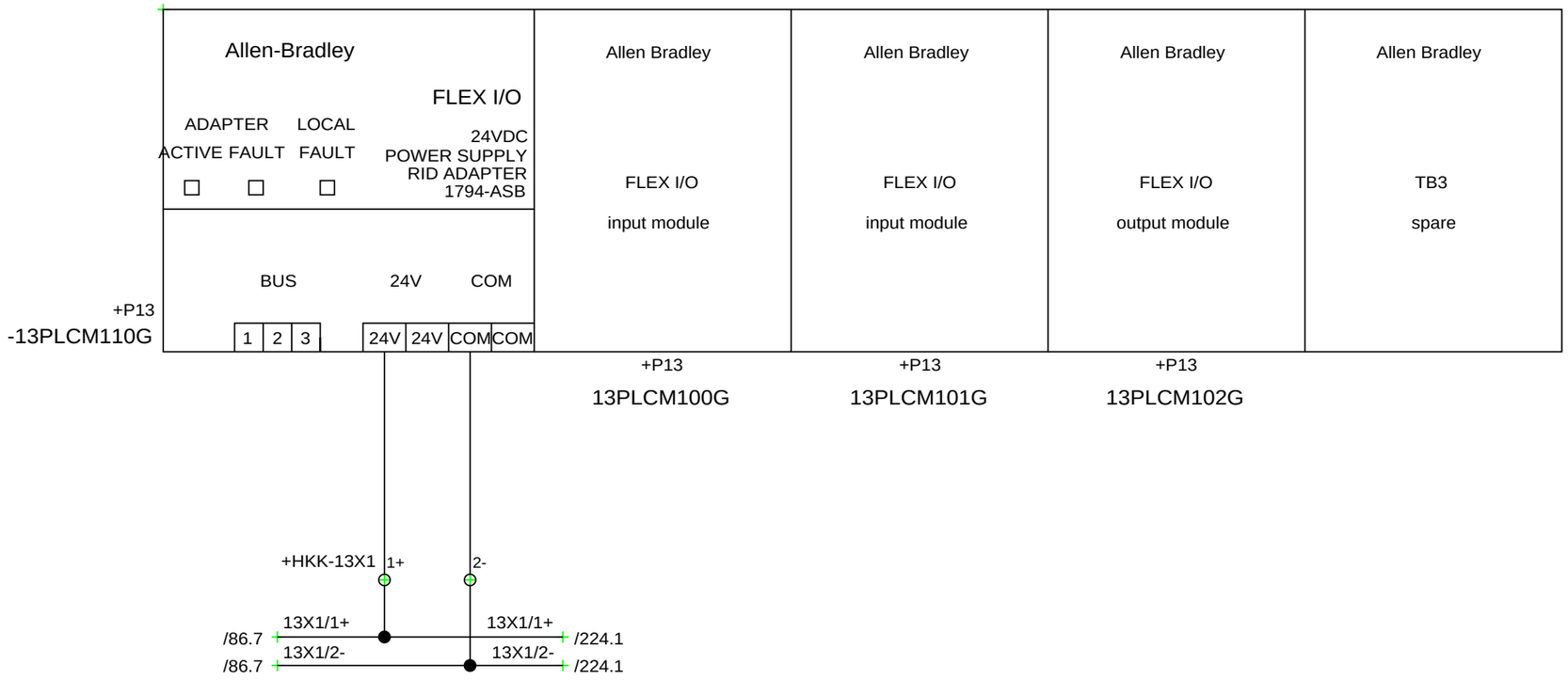
BÜHLER

customer 474 :P_NR2		+HSS	page 222
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 11		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF

Übersicht FLEX I/O Module Position 13 ;Ebene G

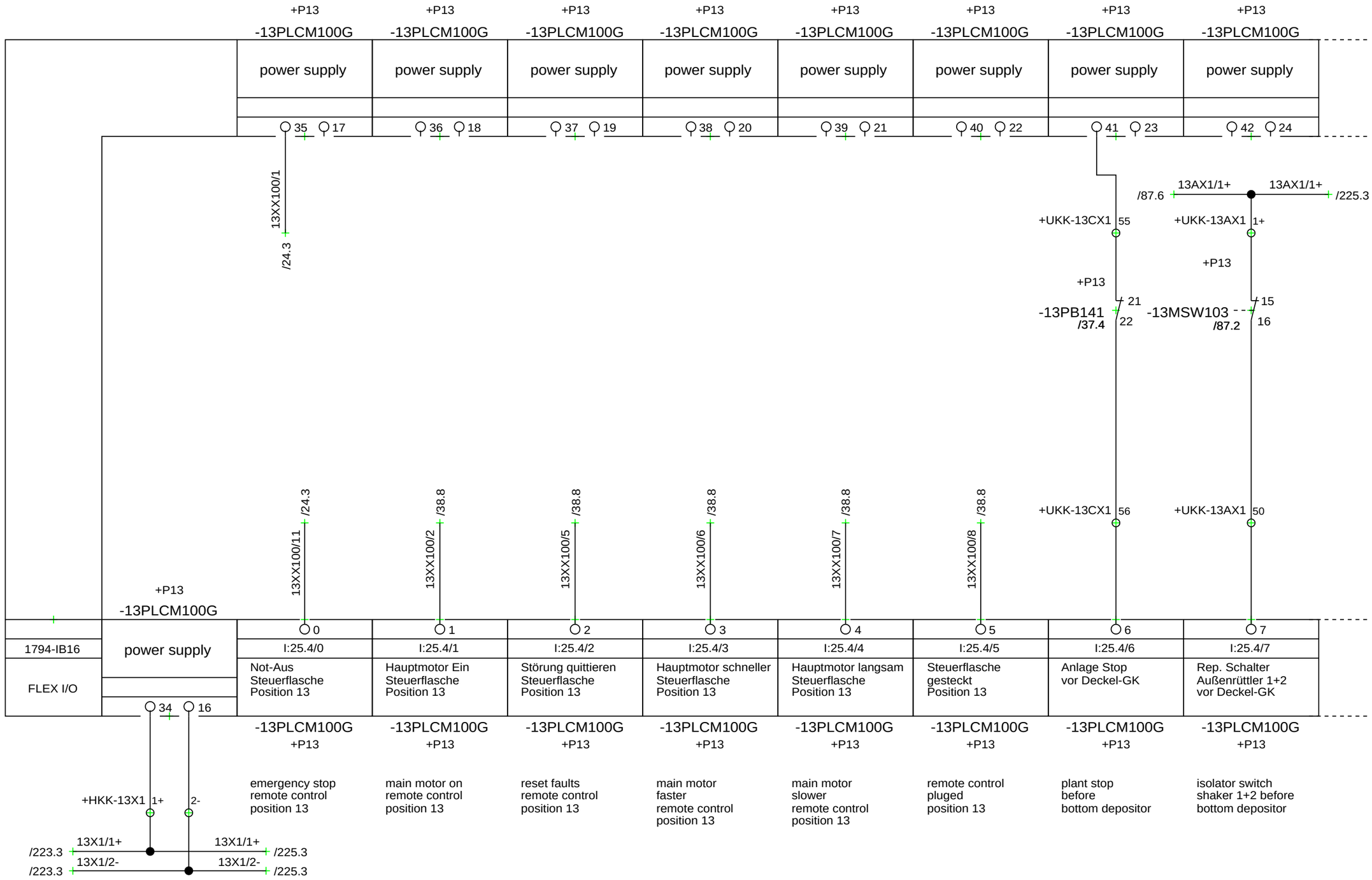
overview FLEX I/O modules position 13 ;level G



Rio Rack 0
starting group 4

BÜHLER	customer 474 :P_NR2	+HSS	page **223**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 13	drawing nr. A474	

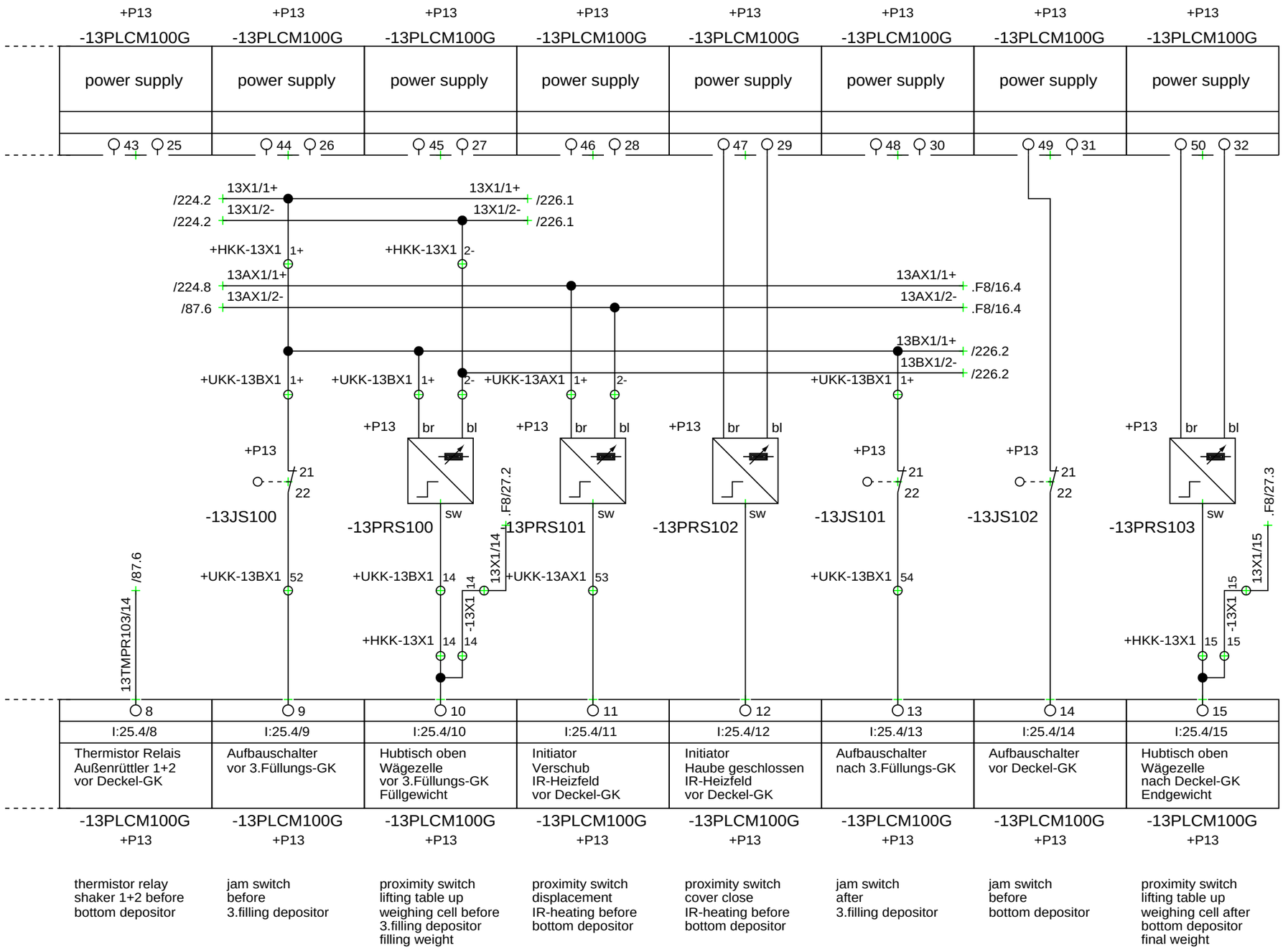
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF	



BÜHLER

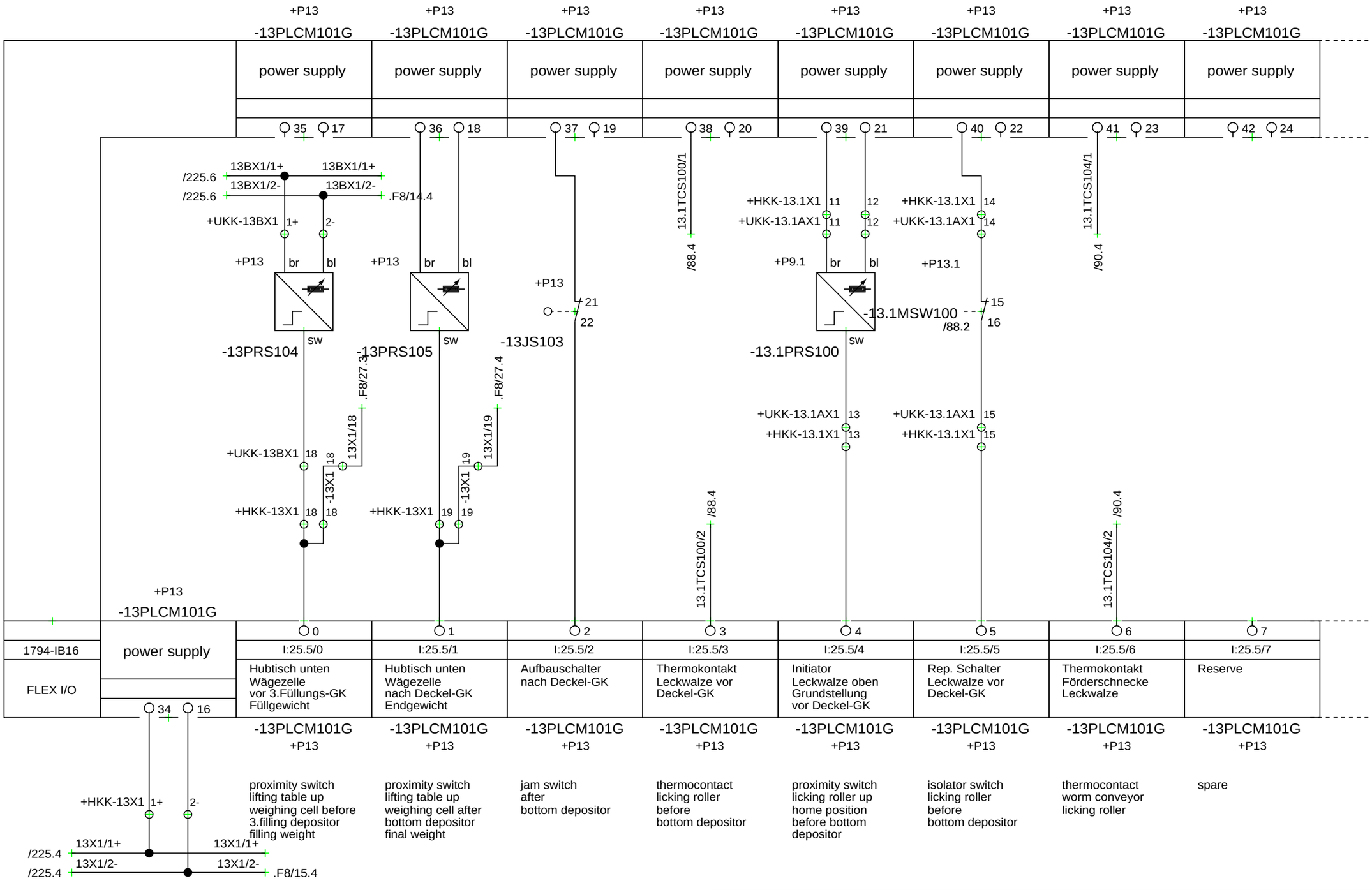
	customer 474 :P_NR2	+HSS	page **224**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 13	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 225
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 13	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER

customer 474 :P_NR2		+HSS	page 226
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 13		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P13	+P13	+P13	+P13	+P13	+P13	+P13	+P13
-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

8	9	10	11	12	13	14	15
I:25.5/8	I:25.5/9	I:25.5/10	I:25.5/11	I:25.5/12	I:25.5/13	I:25.5/14	I:25.5/15
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G	-13PLCM101G
+P13	+P13	+P13	+P13	+P13	+P13	+P13	+P13
spare	spare	spare	spare	spare	spare	spare	spare

BÜHLER

customer	474	+HSS	page 227
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 13	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

solenoid valve displacement IR-heating before bottom depositor	solenoid valve cover displacement IR-heating before bottom depositor	solenoid valve raise licking roller before bottom depositor	spare	spare	spare	spare	spare
+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G
MV IR-Heizfeld verfahren vor Deckel-GK	MV Haube verfahren IR-Heizfeld vor Deckel-GK	MV Anheben Leckwalze vor Deckel-GK	Reserve	Reserve	Reserve	Reserve	Reserve
O:25.6/0	O:25.6/1	O:25.6/2	O:25.6/3	O:25.6/4	O:25.6/5	O:25.6/6	O:25.6/7
0	1	2	3	4	5	6	7

+HKK-13.1X1 18
+UKK-13.1AX1 18

+P13 -13SV100 1 2
+P13 -13SV101 1 2
+P13.1 -13.1SV100 1 2

+UKK-13.1AX1 19
+HKK-13.1X1 19

+P13
-13PLCM102G

17 35	18 36	19 37	20 38	21 39	22 40	23 41	24 42
1794-OB16 power supply							
FLEX I/O	power supply	power supply	power supply	power supply	power supply	power supply	power supply
16 34	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13

+HKK-13X1 4- 3+

/18.3 13X1/3+ 13X1/3+
/172.7 13X1/4- 13X1/4-

BÜHLER

customer 474 :P_NR2 | +HSS | page 228 | =A1.F1 | of 271

comm. nr. :P_NR1 | FLEX I/O module position 13 | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

spare	spare	spare	spare	spare	spare	spare	spare
+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G	+P13 -13PLCM102G
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:25.6/8	O:25.6/9	O:25.6/10	O:25.6/11	O:25.6/12	O:25.6/13	O:25.6/14	O:25.6/15
8	9	10	11	12	13	14	15

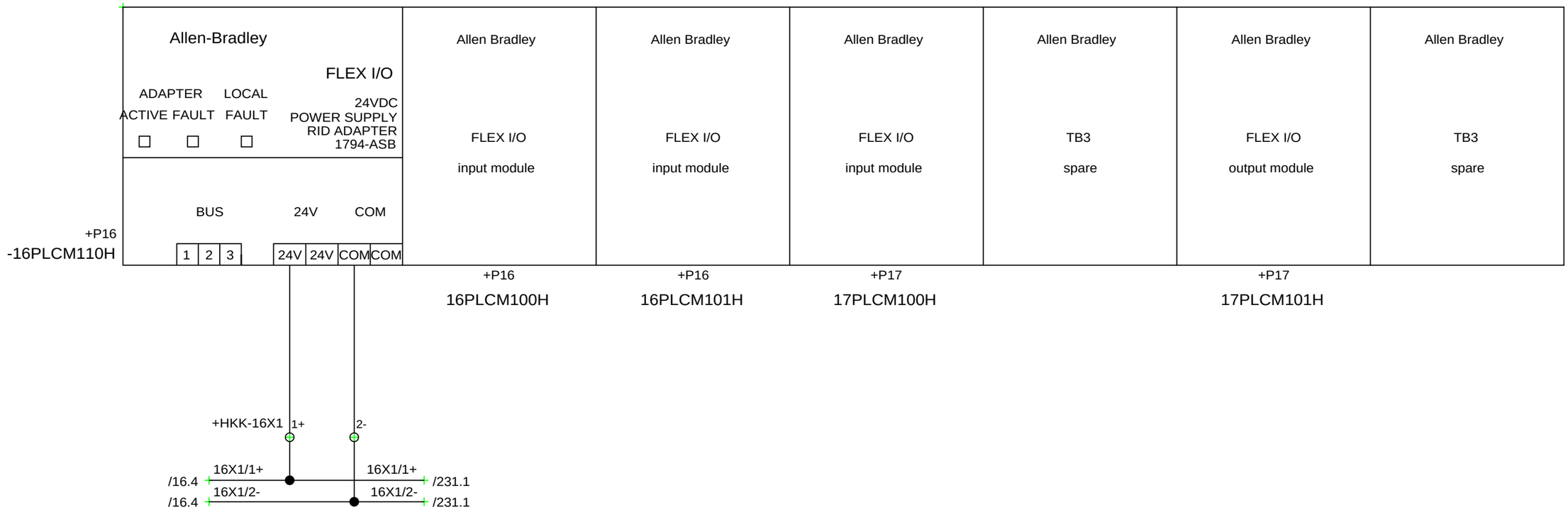
25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13	-13PLCM102G +P13

BÜHLER	customer 474 :P_NR2	+HSS	page **229**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 13	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 16-17 ;Ebene H

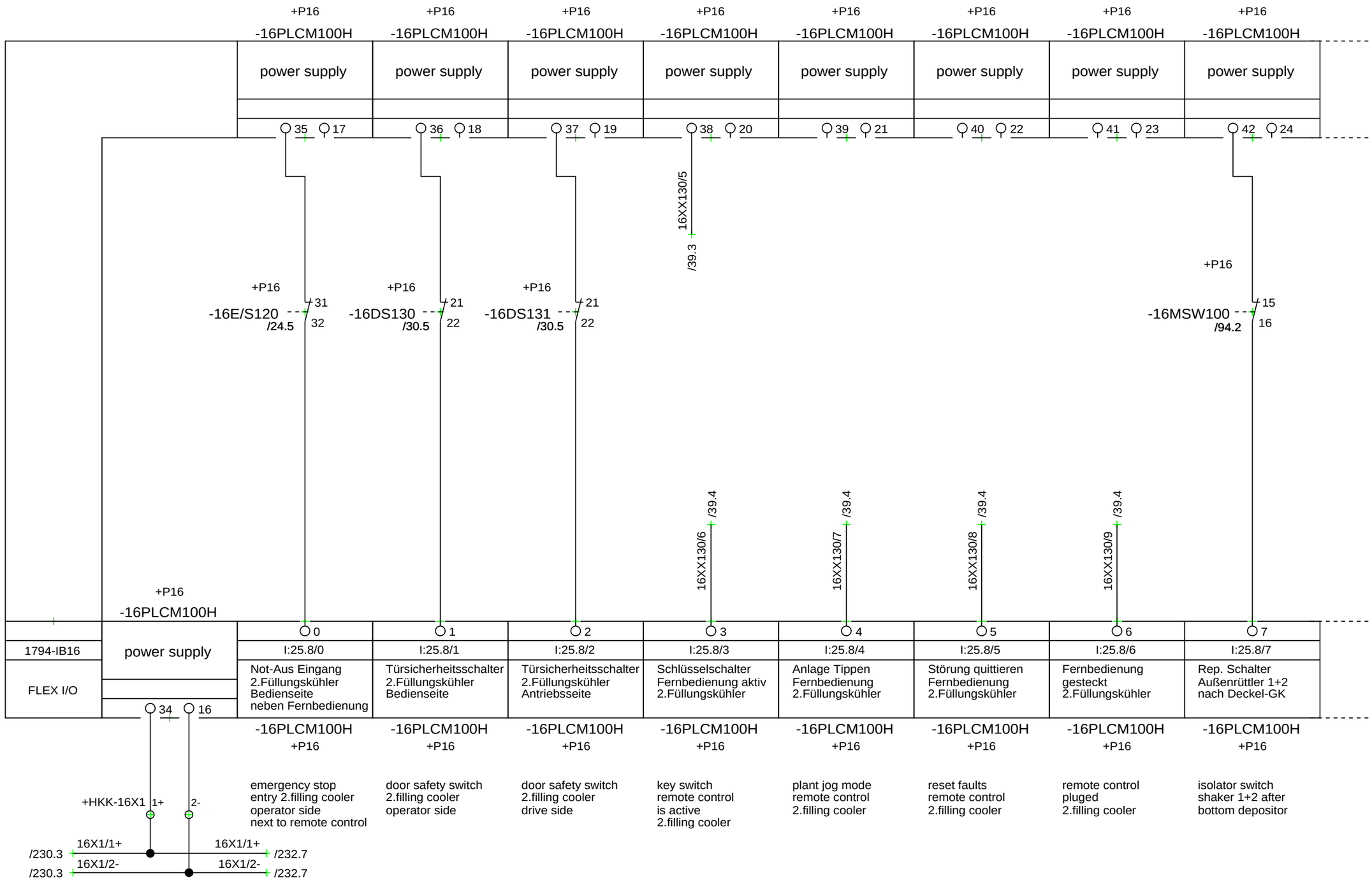
overview FLEX I/O modules position 16-17 ;level H



Rio Rack 1
starting group 0

BÜHLER	customer 474 :P_NR2	+HSS	page **230**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 16,17	drawing nr. A474	

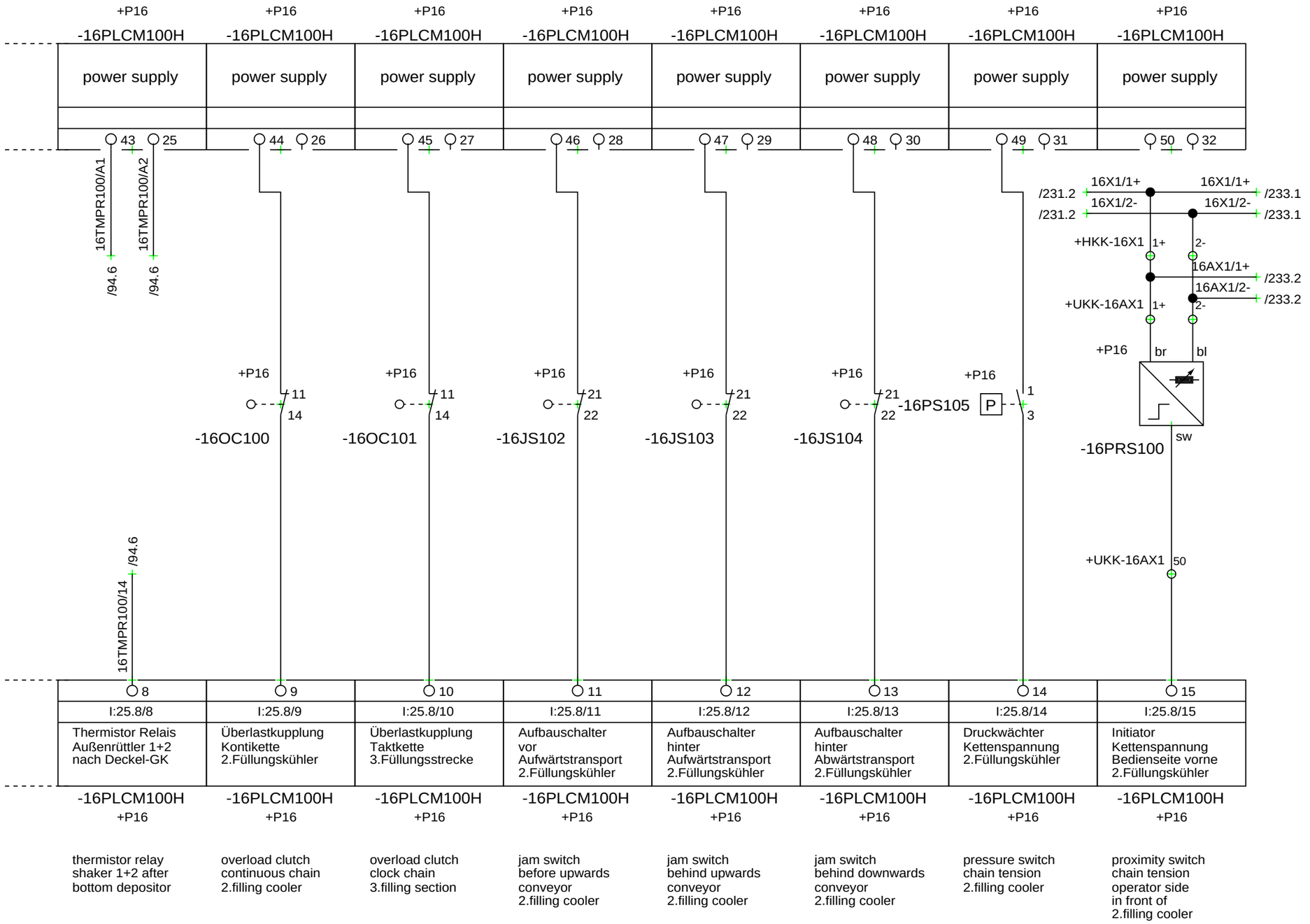
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

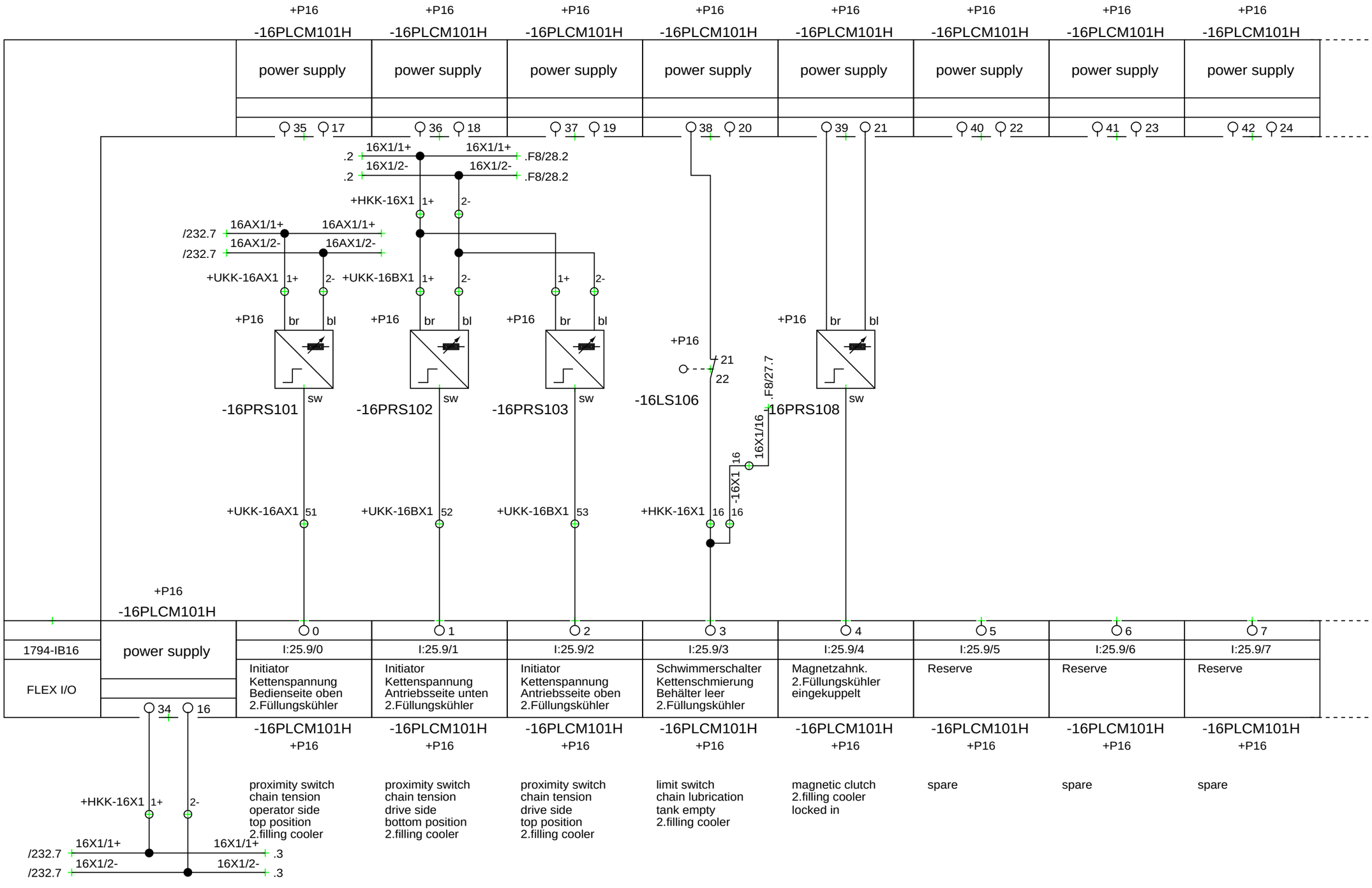
	customer 474 :P_NR2	+HSS	page **231**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 16	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 232
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 16	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 233
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 16	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

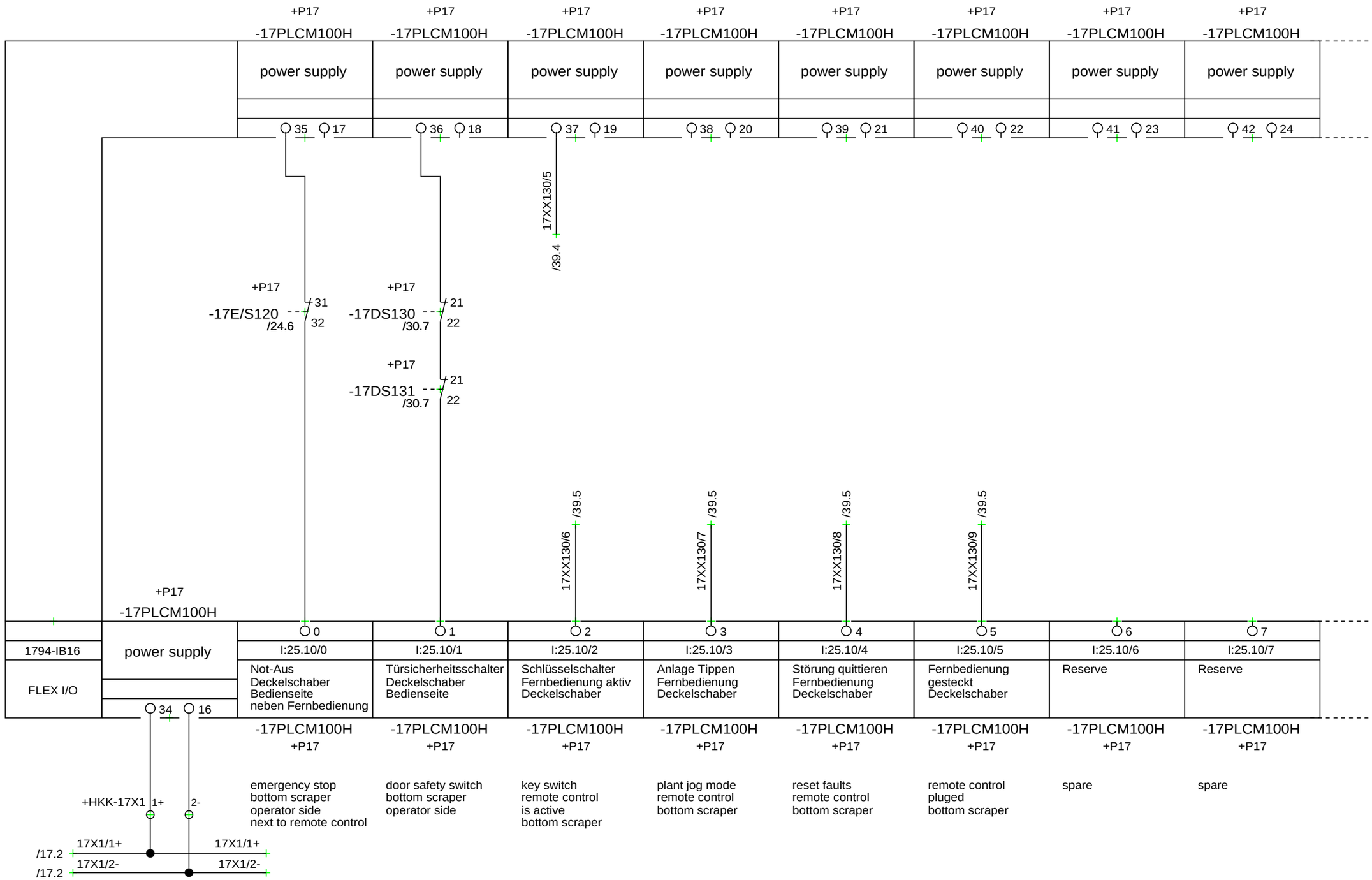
+P16	+P16	+P16	+P16	+P16	+P16	+P16	+P16
-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

8	9	10	11	12	13	14	15
I:25.9/8	I:25.9/9	I:25.9/10	I:25.9/11	I:25.9/12	I:25.9/13	I:25.9/14	I:25.9/15
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H	-16PLCM101H
+P16	+P16	+P16	+P16	+P16	+P16	+P16	+P16
spare	spare	spare	spare	spare	spare	spare	spare

BÜHLER

customer	474	+HSS	page 234
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 16	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page 235
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 17	drawing nr. A474	

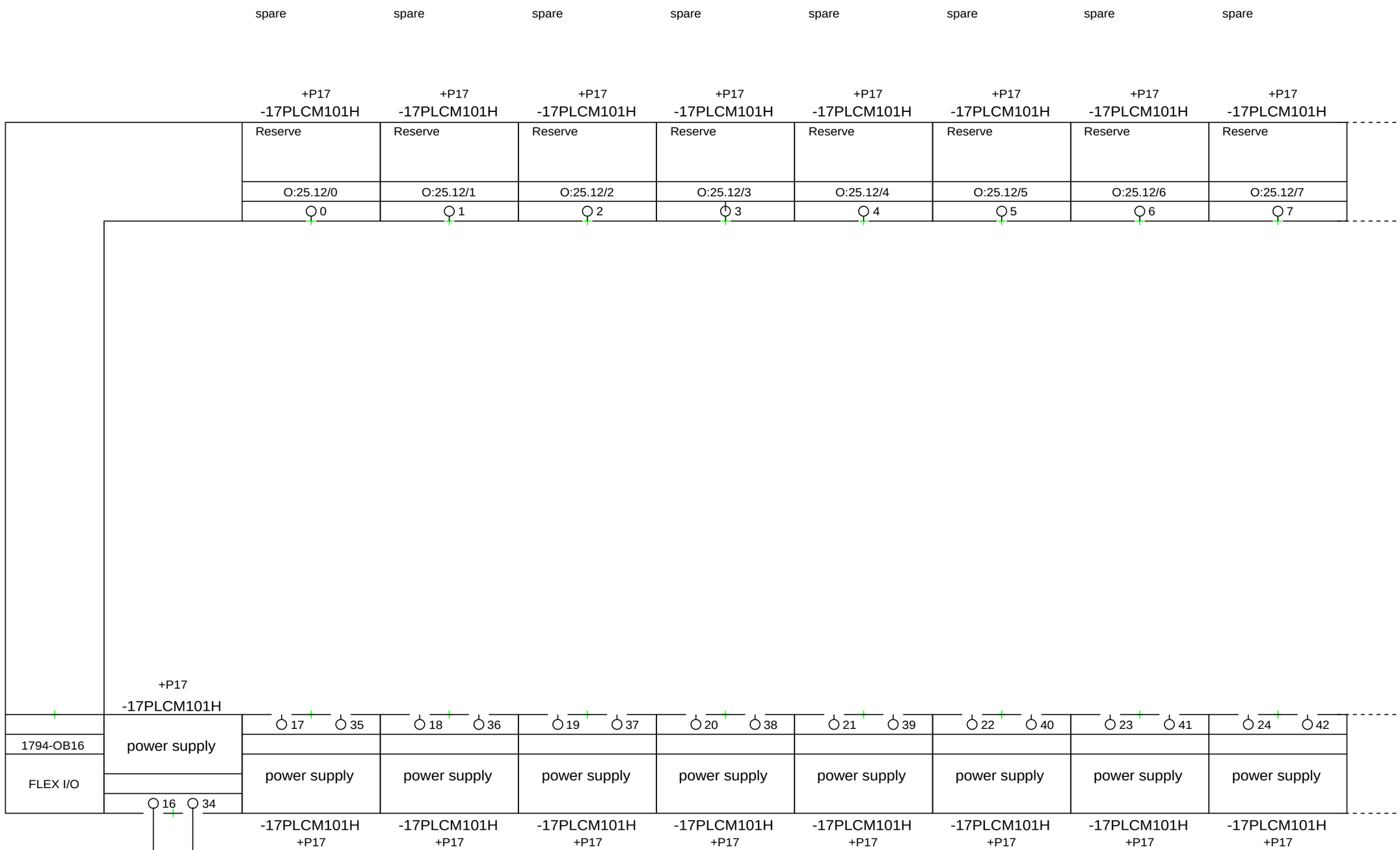
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P17	+P17	+P17	+P17	+P17	+P17	+P17	+P17
-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

8	9	10	11	12	13	14	15
I:25.10/8	I:25.10/9	I:25.10/10	I:25.10/11	I:25.10/12	I:25.10/13	I:25.10/14	I:25.10/15
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H	-17PLCM100H
+P17	+P17	+P17	+P17	+P17	+P17	+P17	+P17
spare	spare	spare	spare	spare	spare	spare	spare

BÜHLER	customer 474 :P_NR2	+HSS	page **236**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 17	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 237
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 17	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

spare	spare	spare	spare	spare	spare	spare	spare
+P17 -17PLCM101H	+P17 -17PLCM101H	+P17 -17PLCM101H	+P17 -17PLCM101H	+P17 -17PLCM101H	+P17 -17PLCM101H	+P17 -17PLCM101H	+P17 -17PLCM101H
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:25.12/8	O:25.12/9	O:25.12/10	O:25.12/11	O:25.12/12	O:25.12/13	O:25.12/14	O:25.12/15
8	9	10	11	12	13	14	15

25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-17PLCM101H +P17	-17PLCM101H +P17	-17PLCM101H +P17	-17PLCM101H +P17	-17PLCM101H +P17	-17PLCM101H +P17	-17PLCM101H +P17	-17PLCM101H +P17

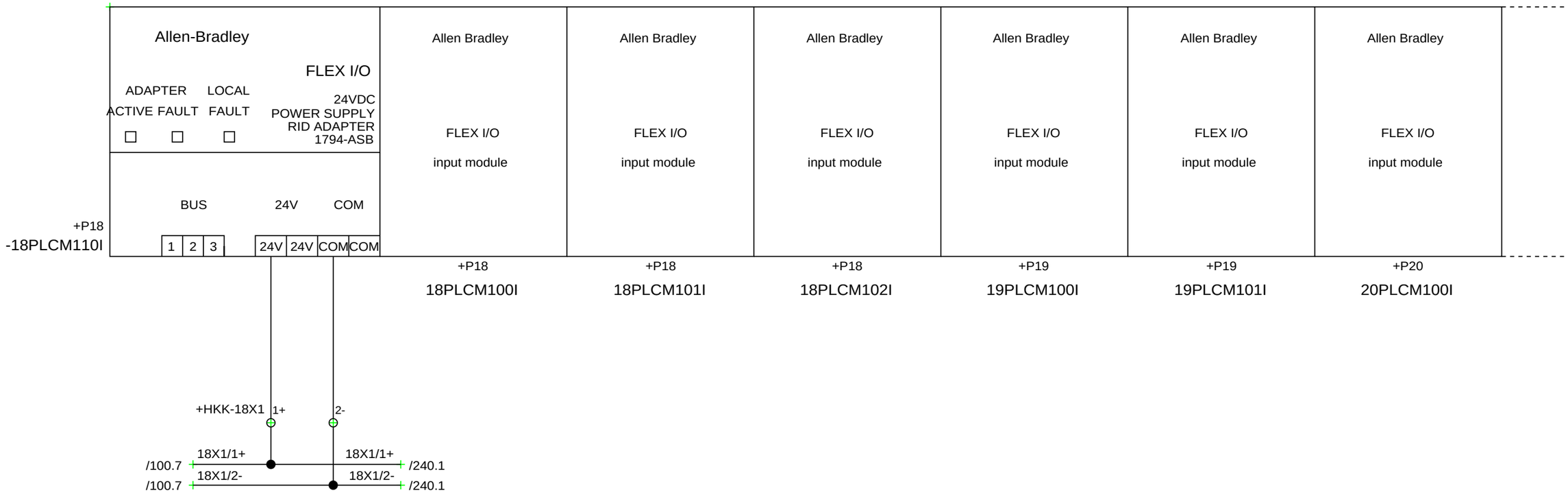
BÜHLER

customer 474 :P_NR2		+HSS	page **238**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 17	drawing nr. A474	

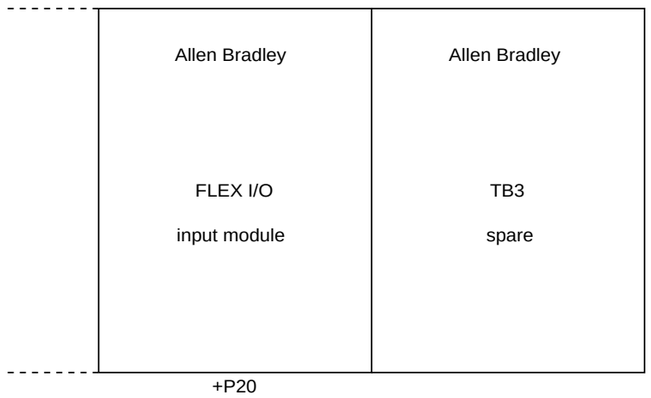
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 18-20 ;Ebene I

overview FLEX I/O modules position 18-20 ;level I

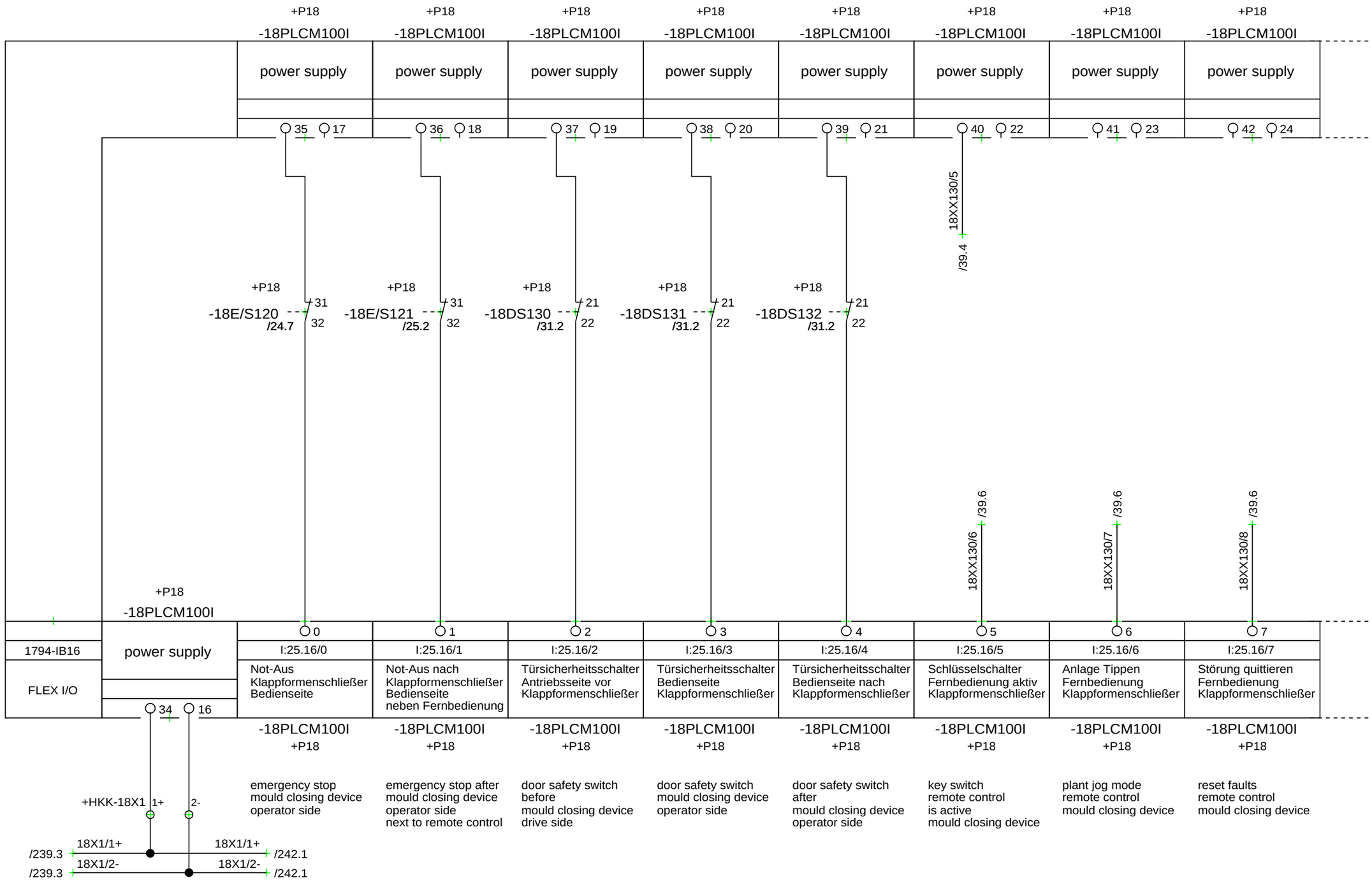


Rio Rack 2
starting group 0



BÜHLER	customer 474 :P_NR2	+HSS	page 239
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 18-20	drawing nr. A474	

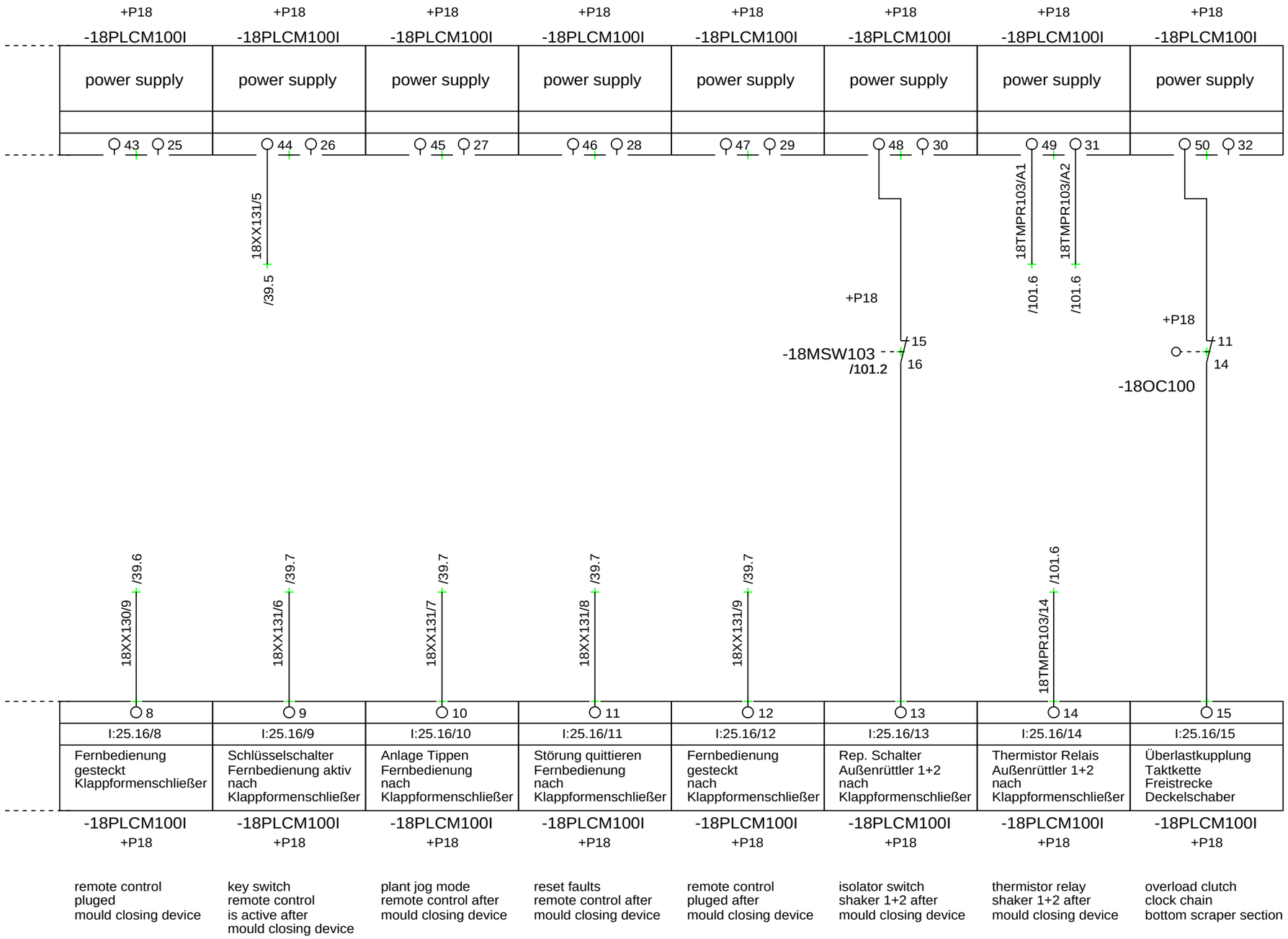
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page 240
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

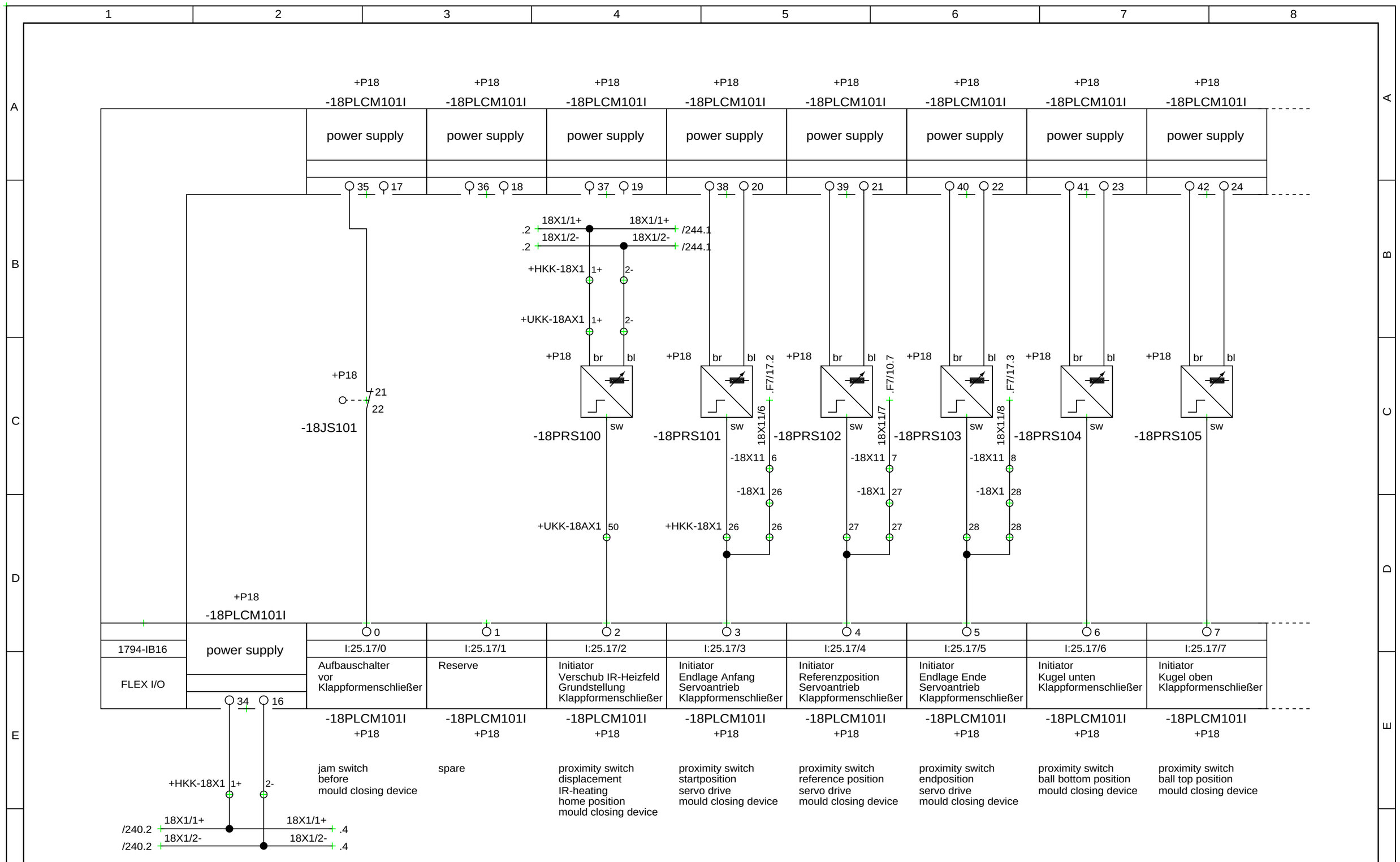
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

customer 474 :P_NR2		+HSS	page 241
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18		drawing nr. A474

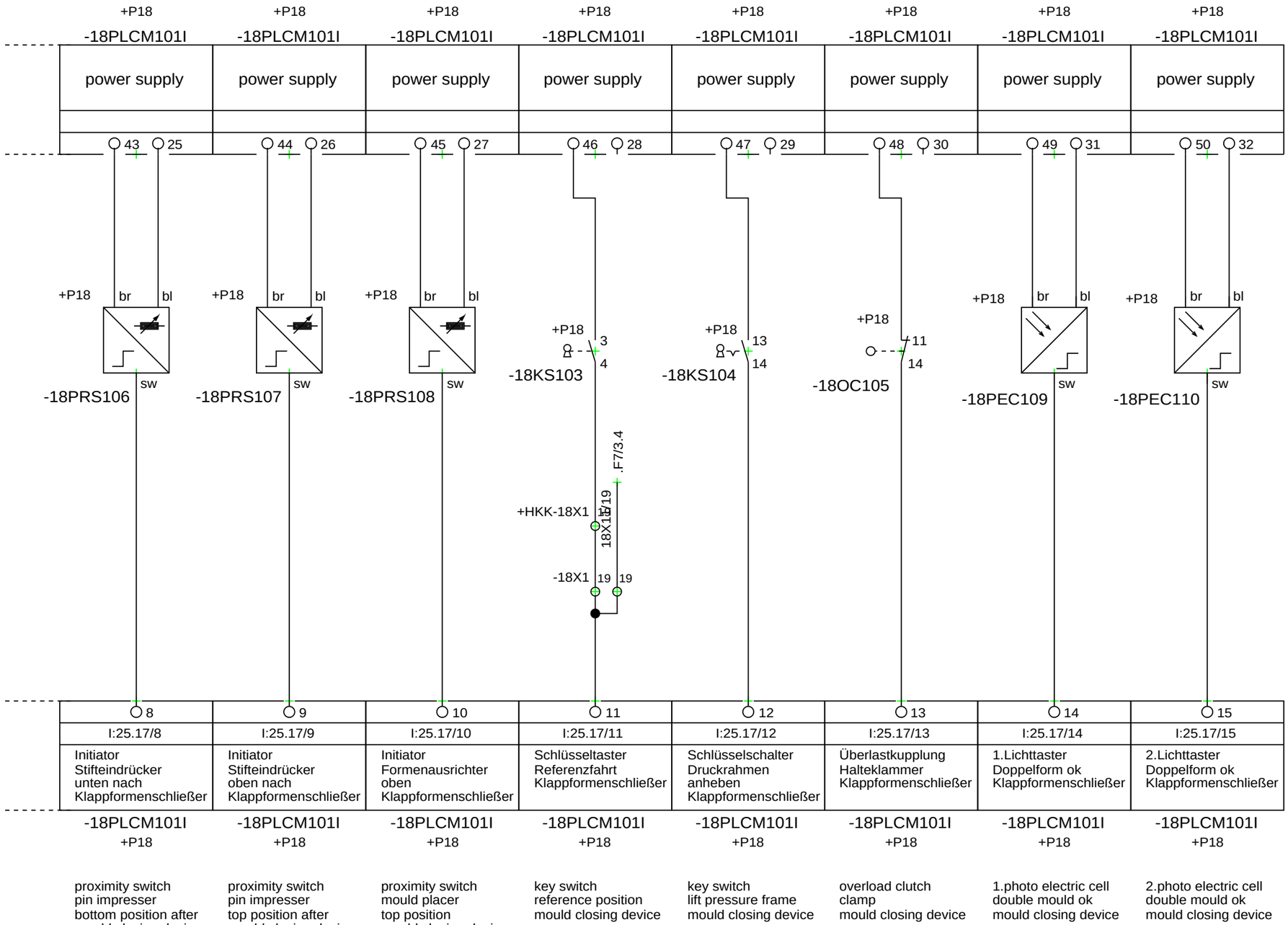
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page **242**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

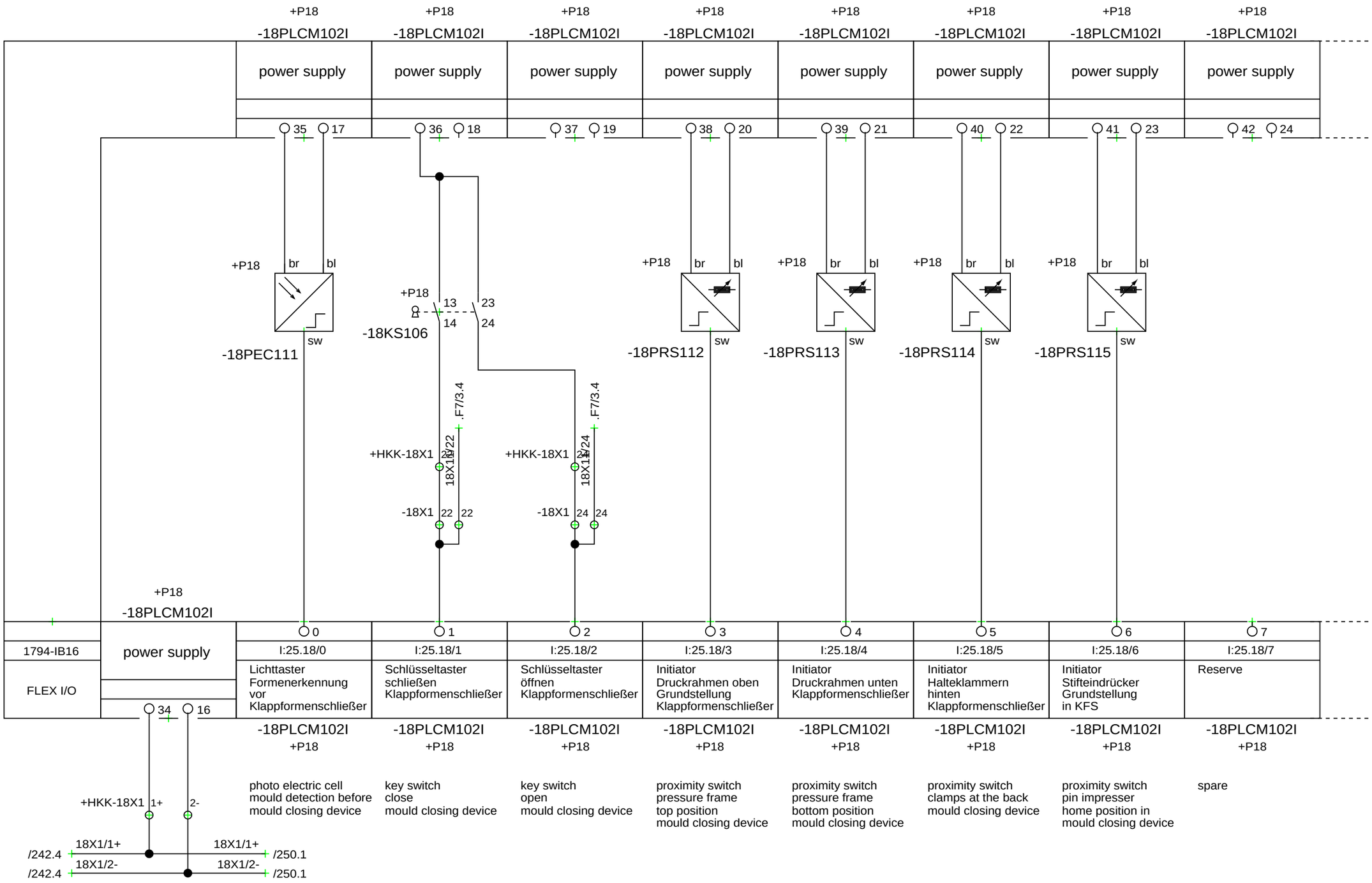
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HSS	page **243**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 244
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

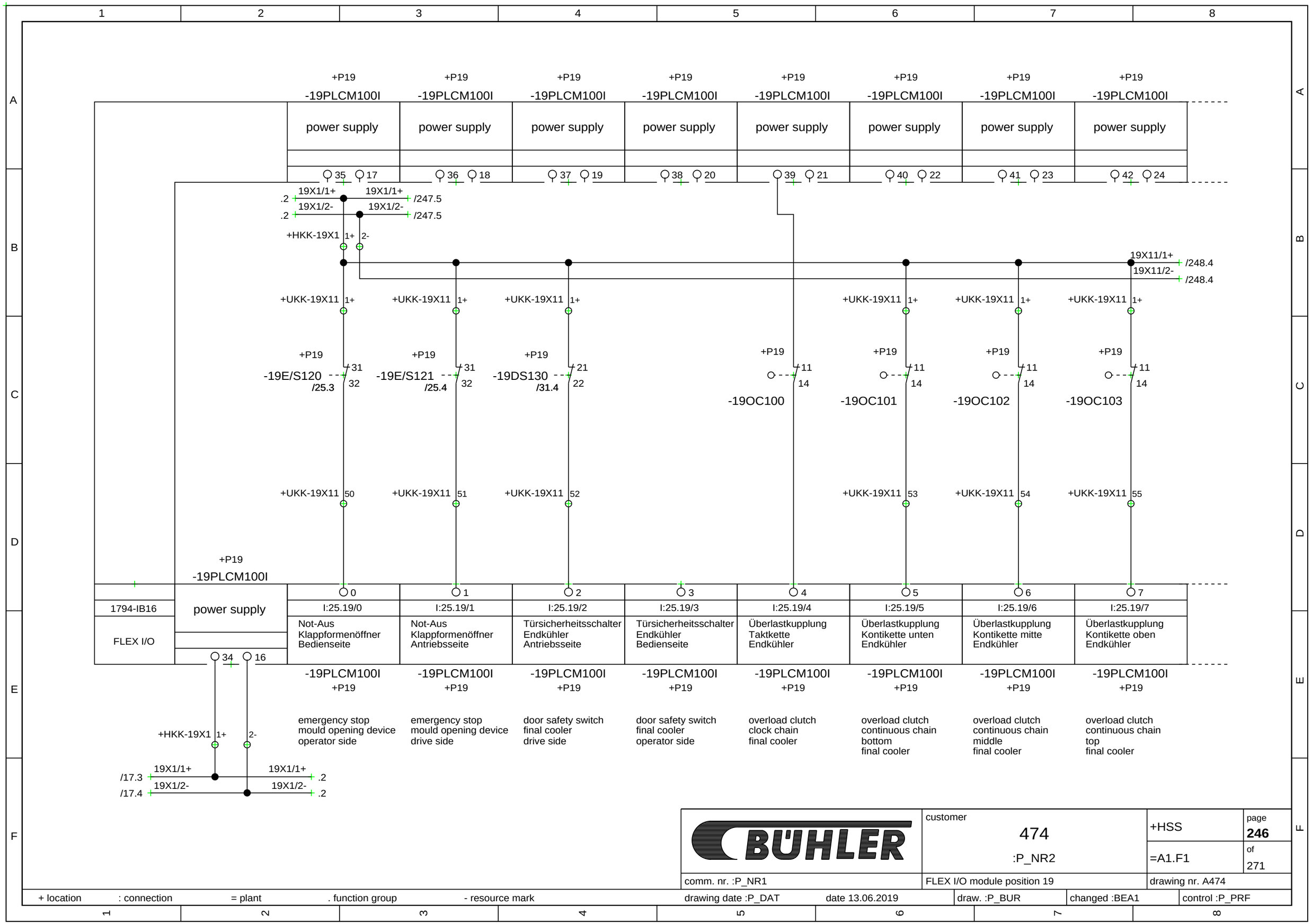
+P18	+P18	+P18	+P18	+P18	+P18	+P18	+P18
-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

8	9	10	11	12	13	14	15
I:25.18/8	I:25.18/9	I:25.18/10	I:25.18/11	I:25.18/12	I:25.18/13	I:25.18/14	I:25.18/15
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I	-18PLCM102I
+P18	+P18	+P18	+P18	+P18	+P18	+P18	+P18
spare	spare	spare	spare	spare	spare	spare	spare

BÜHLER

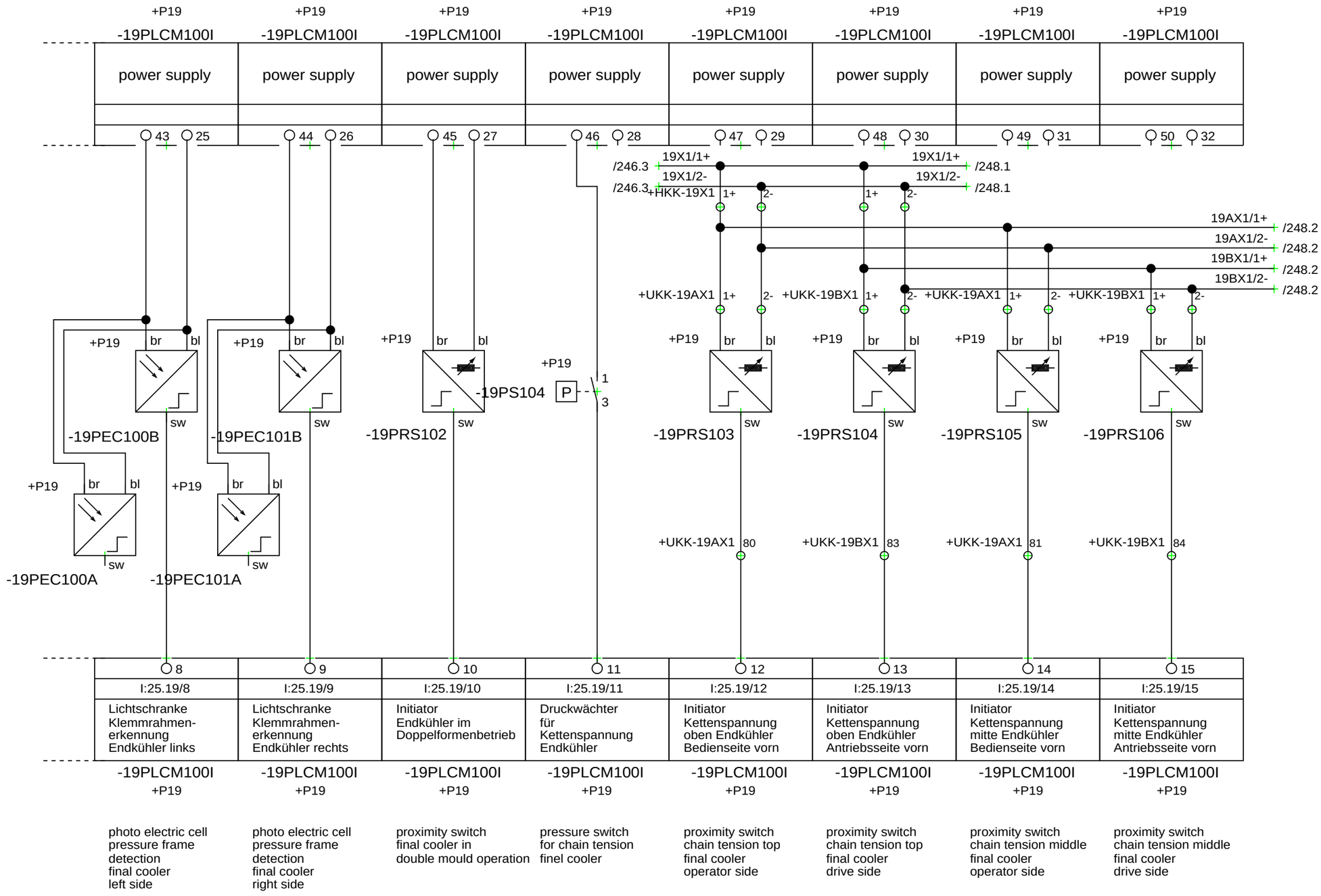
customer	474	+HSS	page 245
	:P_NR2	=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



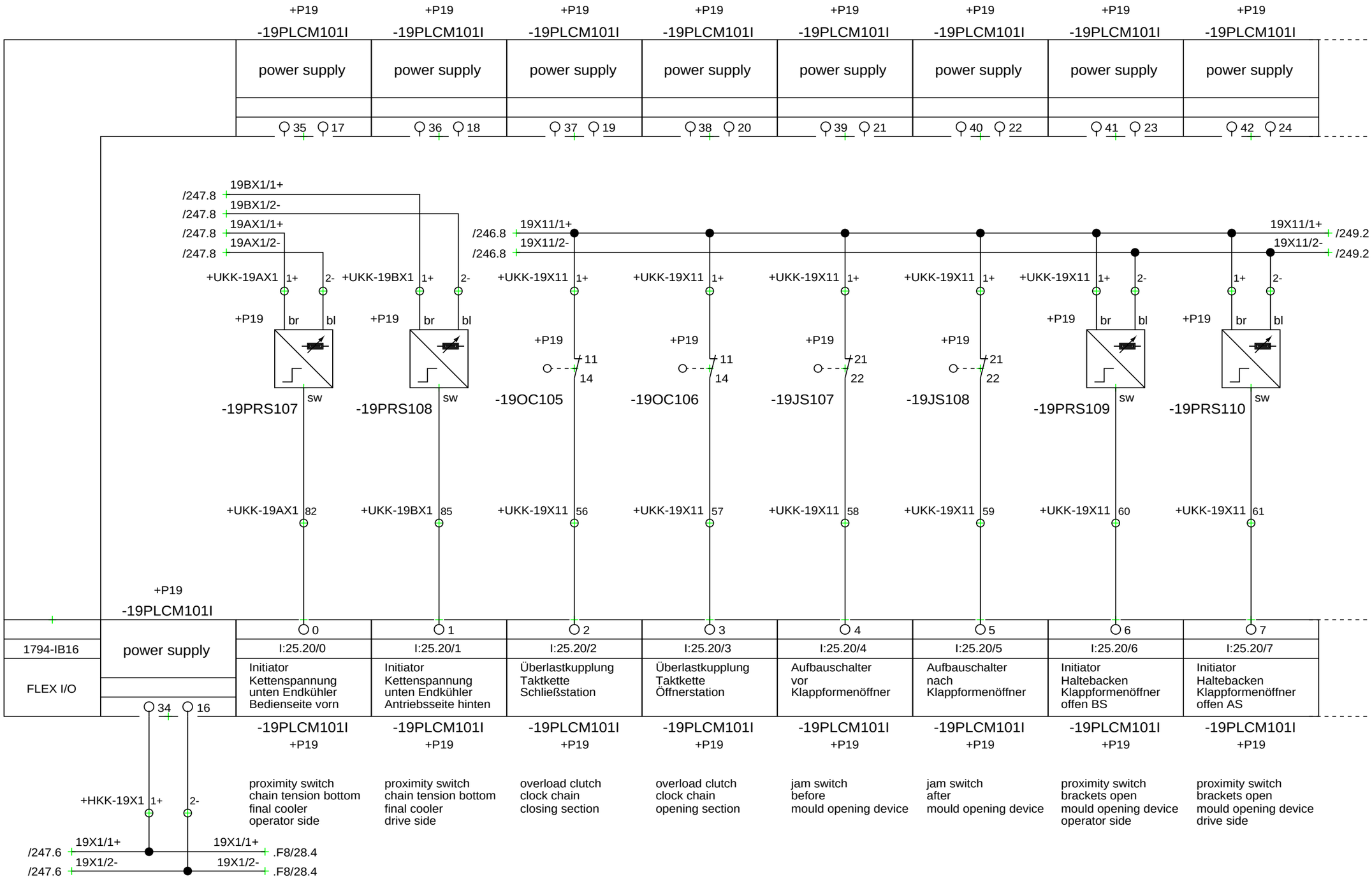
BÜHLER	customer 474 :P_NR2	+HSS	page 246
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 19	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page **247**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 19	drawing nr. A474	

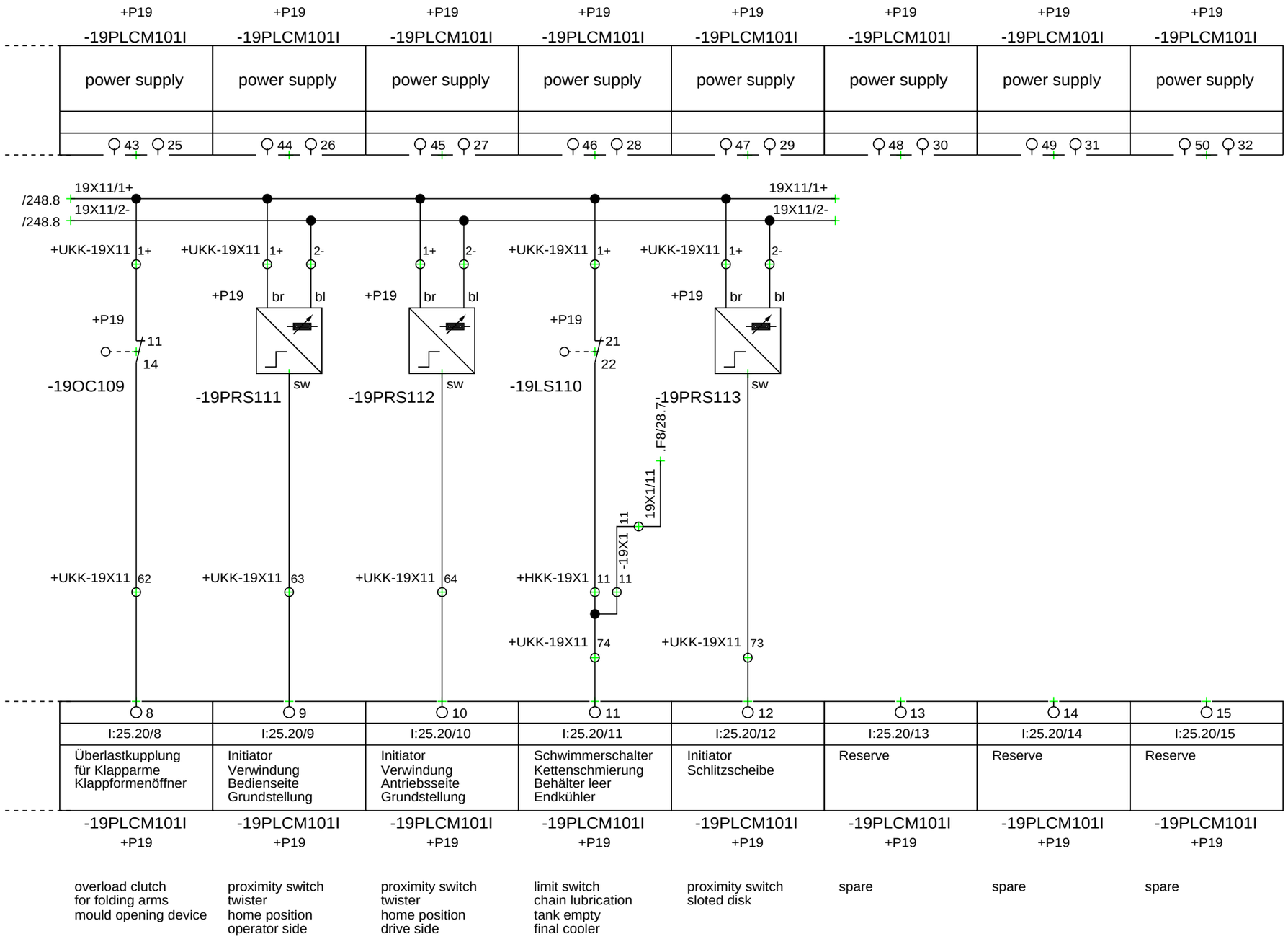
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

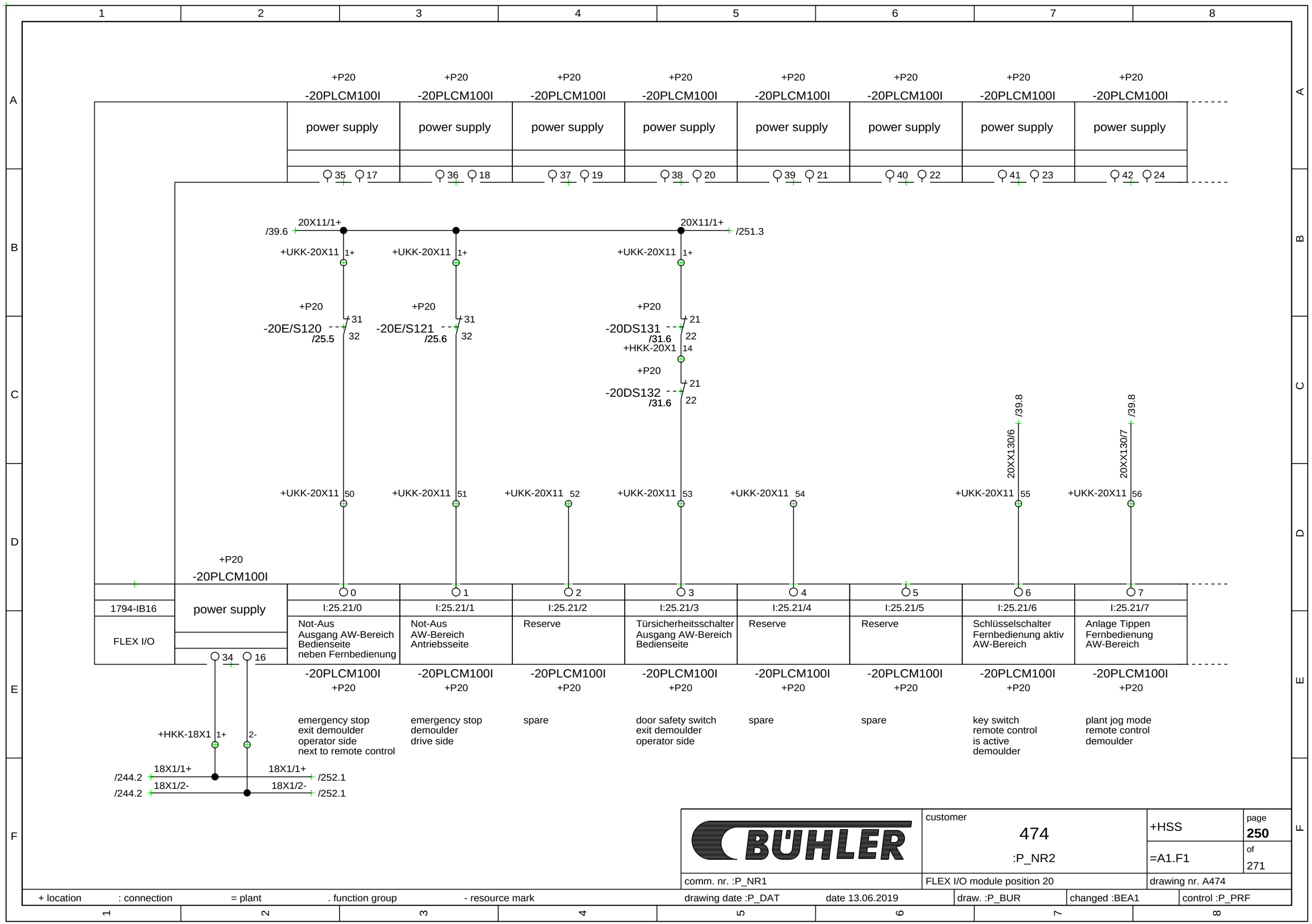
customer 474 :P_NR2		+HSS	page 248
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 19		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



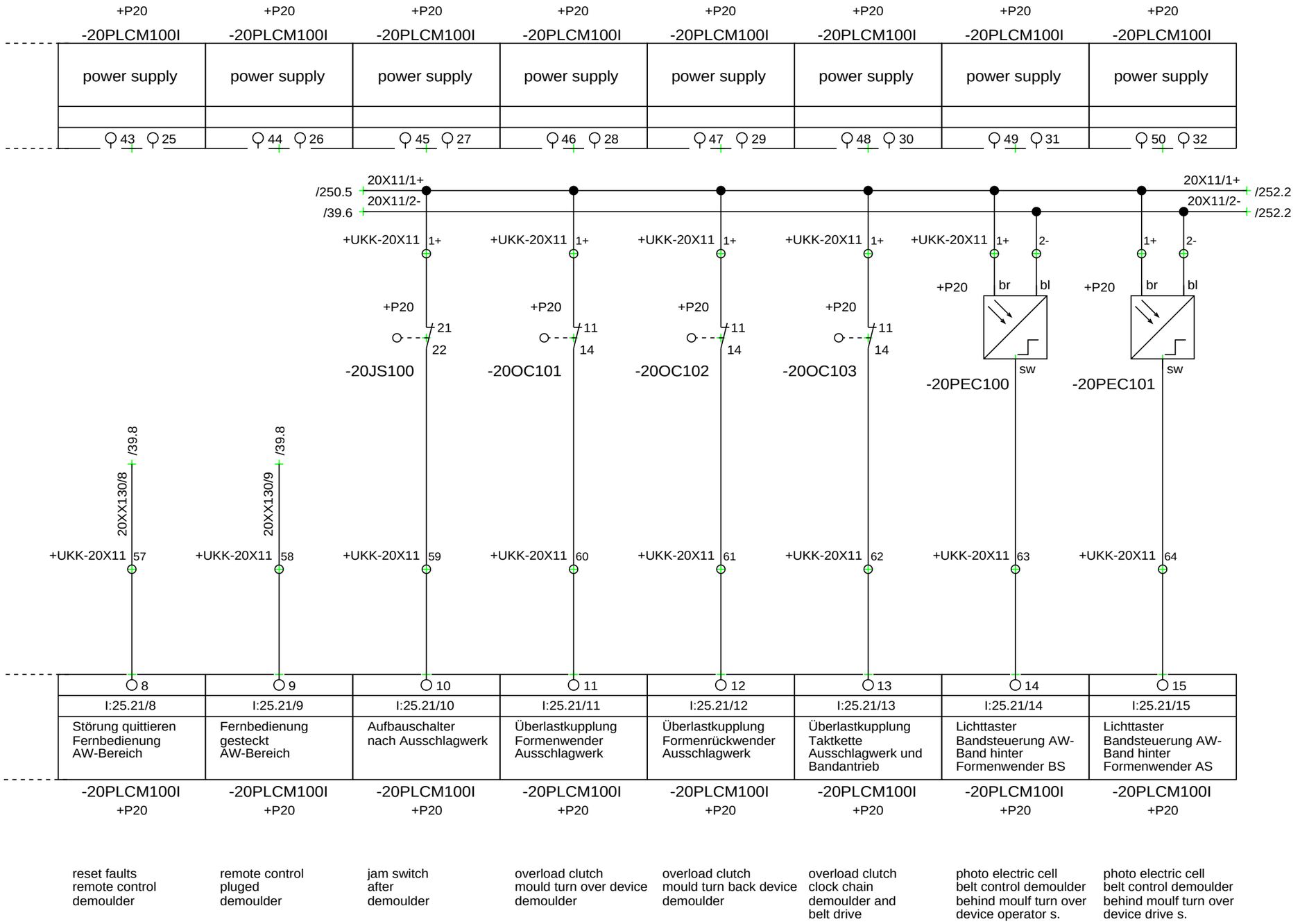
BÜHLER	customer 474 :P_NR2	+HSS	page 249
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 19	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



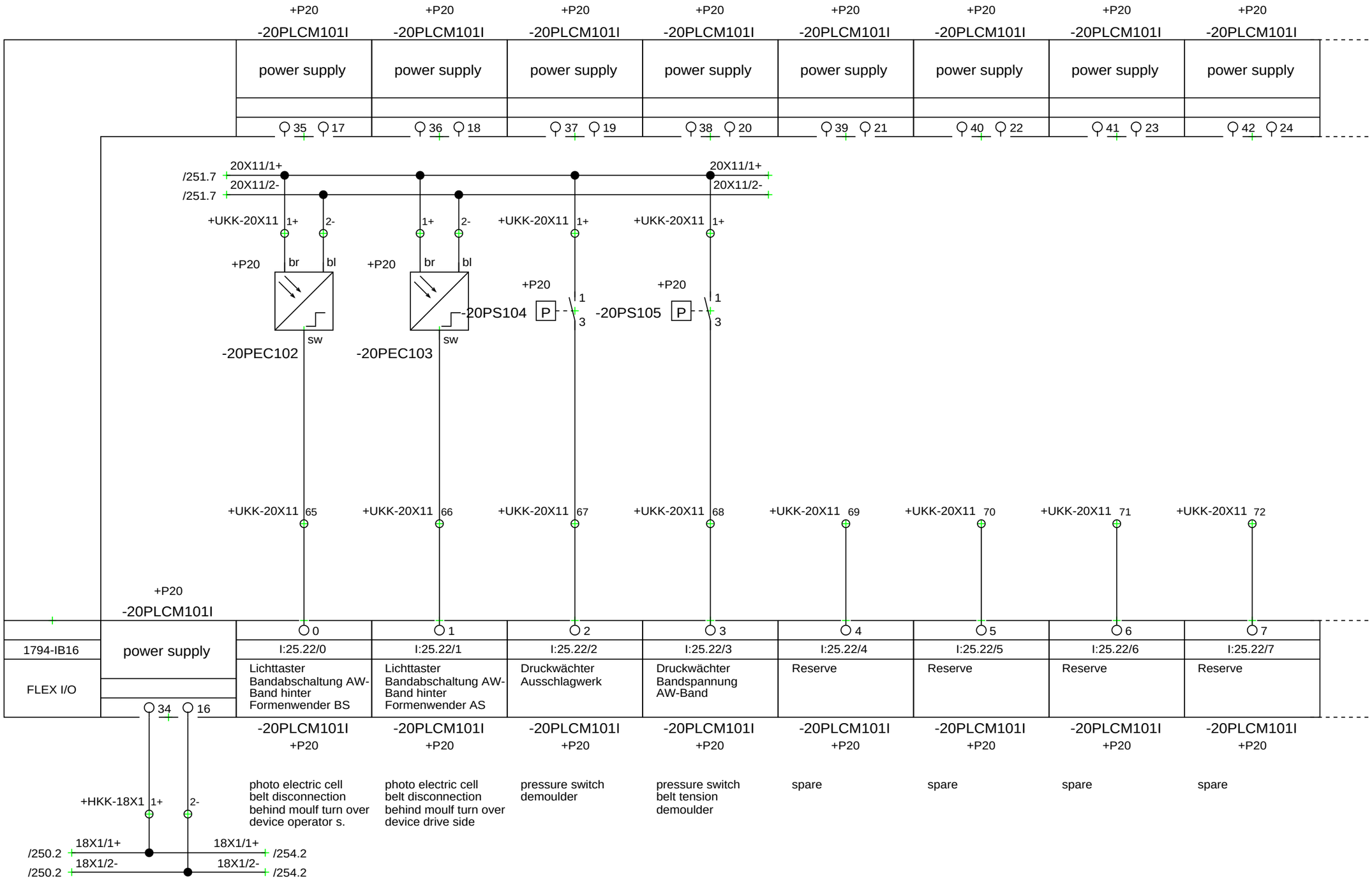
BÜHLER	customer 474 :P_NR2	+HSS	page 250
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 20	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 251
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 20	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 252
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 20	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P20	+P20	+P20	+P20	+P20	+P20	+P20	+P20
-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

8	9	10	11	12	13	14	15
I:25.22/8	I:25.22/9	I:25.22/10	I:25.22/11	I:25.22/12	I:25.22/13	I:25.22/14	I:25.22/15
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I	-20PLCM101I
+P20	+P20	+P20	+P20	+P20	+P20	+P20	+P20
spare	spare	spare	spare	spare	spare	spare	spare

BÜHLER

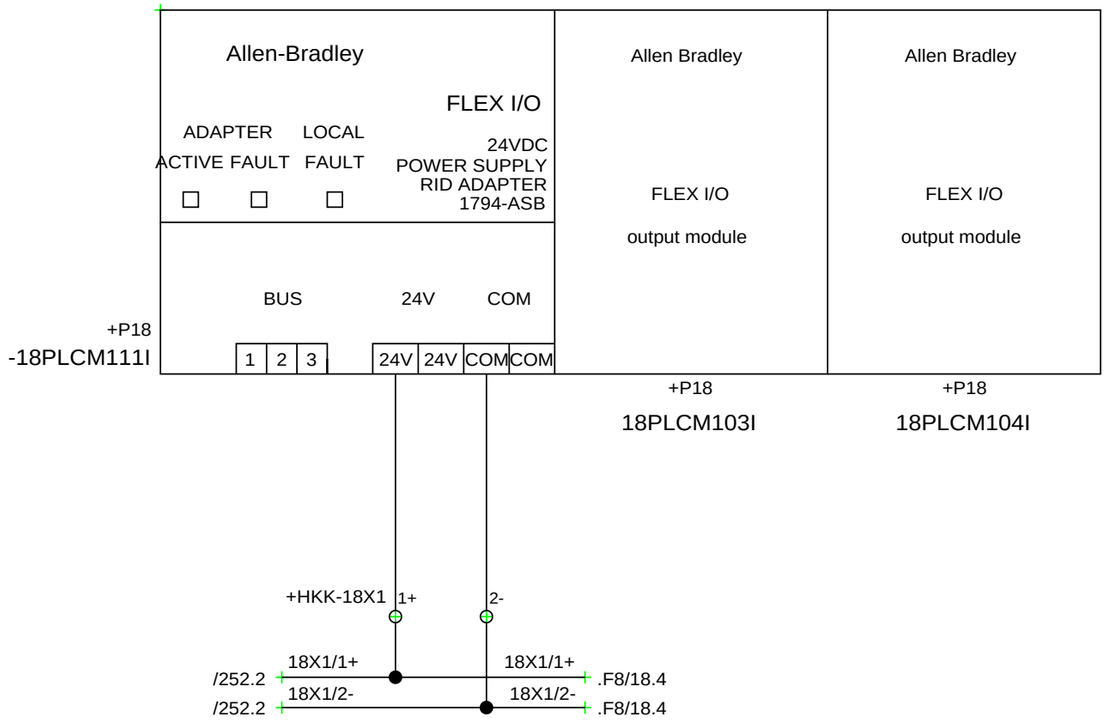
customer 474 :P_NR2 | +HSS | page 253 | =A1.F1 | of 271

comm. nr. :P_NR1 | FLEX I/O module position 20 | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

Übersicht FLEX I/O Module Position 18-20 ;Ebene I

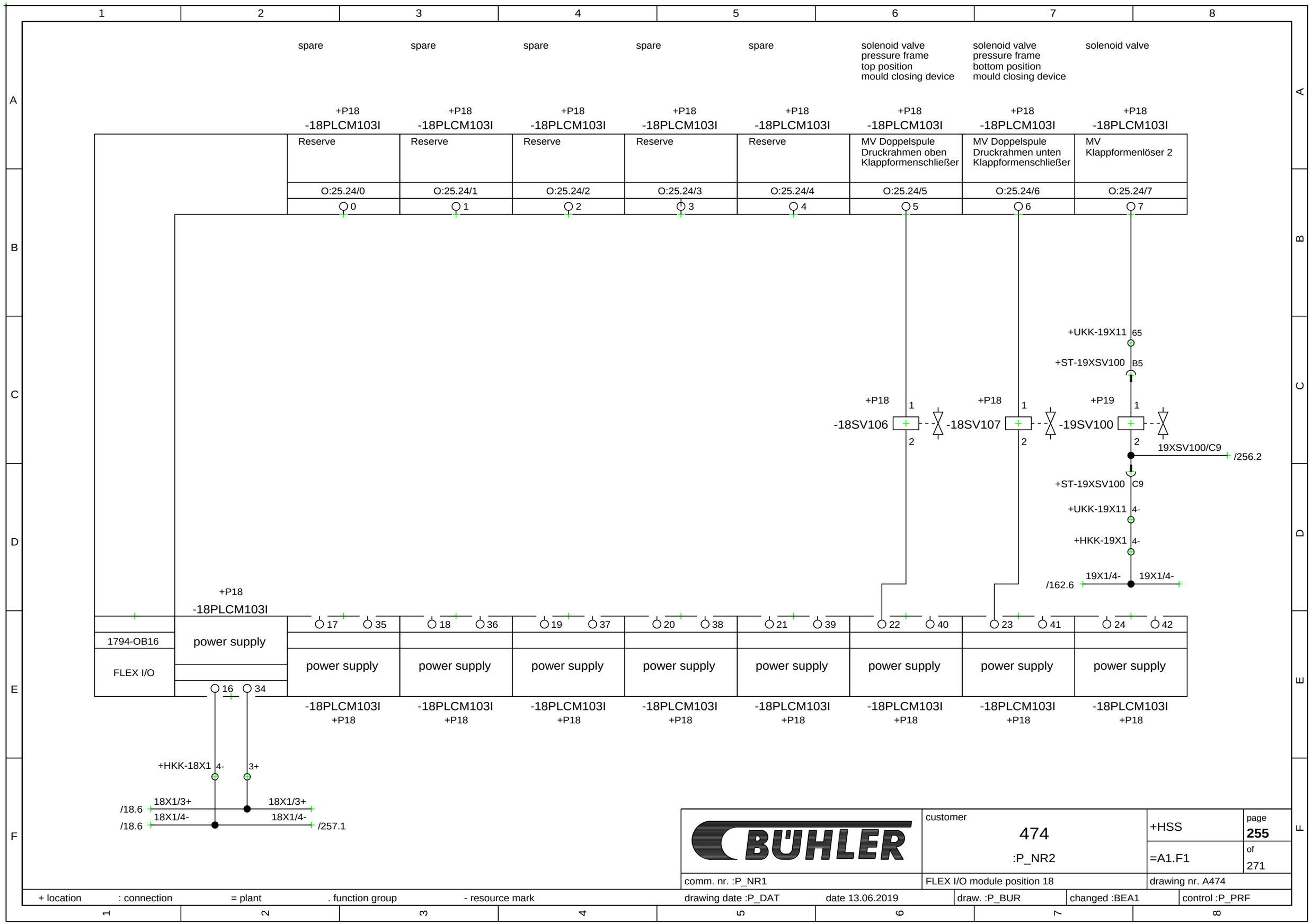
overview FLEX I/O modules position 18-20 ;level I



Rio Rack 3
starting group 0

BÜHLER	customer 474 :P_NR2	+HSS	page **254**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 18-20	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 255
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

solenoid valve	solenoid valve brackets 1 mould opening device	solenoid valve brackets 2 mould opening device	spare	solenoid valve belt control demoulder behind mould turn over device operator s.	solenoid valve belt control demoulder behind mould turn over device drive side	solenoid valve demoulder 1	solenoid valve demoulder 2
+P18 -18PLCM103I	+P18 -18PLCM103I	+P18 -18PLCM103I	+P18 -18PLCM103I	+P18 -18PLCM103I	+P18 -18PLCM103I	+P18 -18PLCM103I	+P18 -18PLCM103I
MV Klappformenlöser 1	MV Haltebacken 1 Klappformenöffner	MV Haltebacken 2 Klappformenöffner	Reserve	MV Bandsteuerung AW-Band hinter Formenwender BS	MV Bandsteuerung AW-Band hinter Formenwender AS	MV Ausschlagwerk 1	MV Ausschlagwerk 2
O:25.24/8	O:25.24/9	O:25.24/10	O:25.24/11	O:25.24/12	O:25.24/13	O:25.24/14	O:25.24/15
8	9	10	11	12	13	14	15
+UKK-19X11 66	+UKK-19X11 67	+UKK-19X11 68		+UKK-20X11 73	+UKK-20X11 74	+UKK-20X11 75	+UKK-20X11 76
+ST-19XSV100 B7	+ST-19XSV100 A5	+ST-19XSV100 A7		+ST-20XSV100 A3	+ST-20XSV100 A1	+ST-20XSV100 A7	+ST-20XSV100 A5
+P19 1	+P19 1	+P19 1		+P20 1	+P20 1	+P20 1	+P20 1
-19SV101	-19SV102	-19SV103		-20SV100	-20SV101	-20SV102	-20SV103
2	2	2		2	2	2	2
/255.8 19XSV100/C9		19XSV100/C9 /257.2					20XSV100/C9

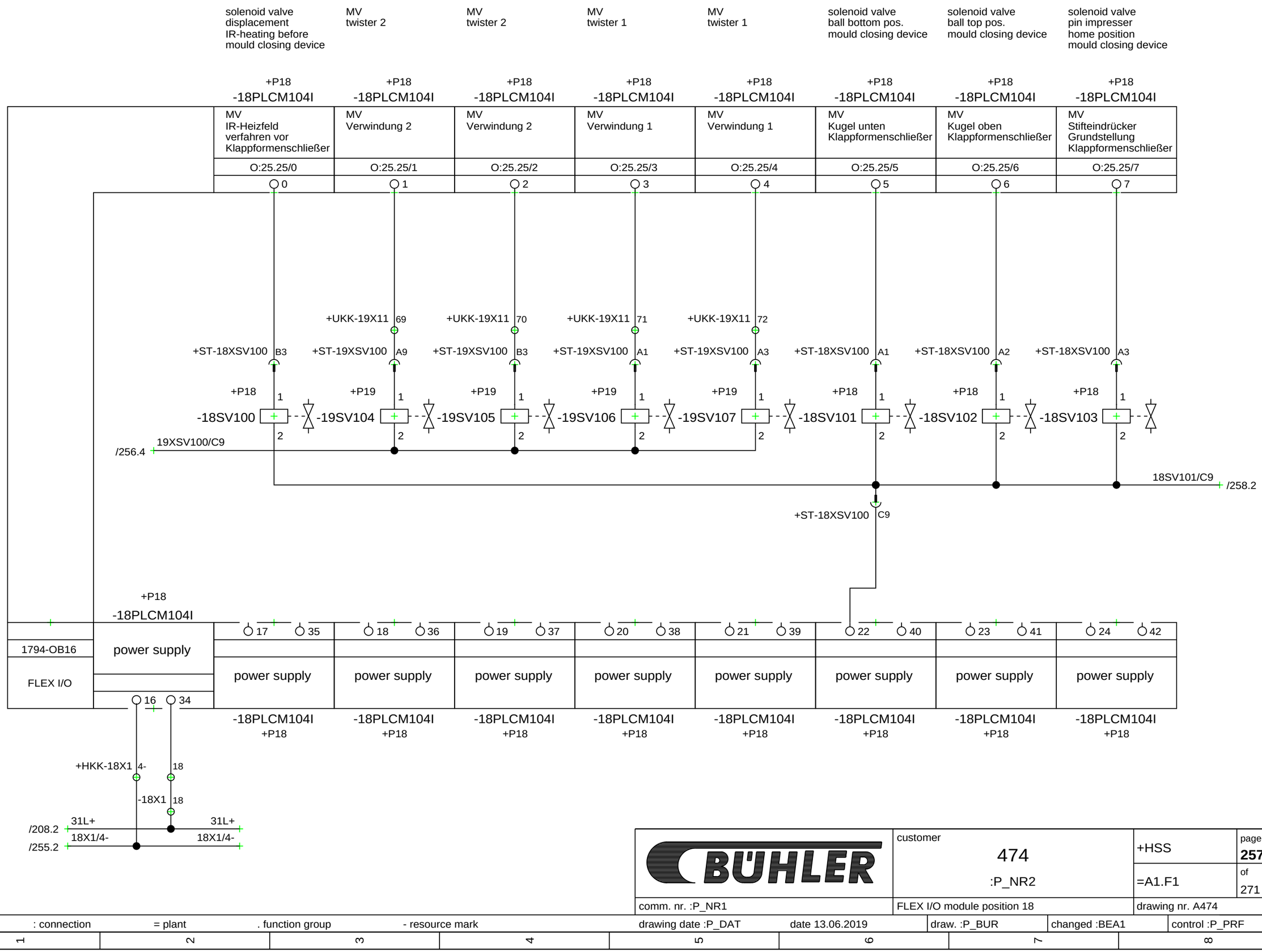
+ST-20XSV100 C9
+UKK-20X11 4-
+HKK-20X1 4-
20X1/4- 20X1/4-
/18.2

25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-18PLCM103I +P18	-18PLCM103I +P18	-18PLCM103I +P18	-18PLCM103I +P18	-18PLCM103I +P18	-18PLCM103I +P18	-18PLCM103I +P18	-18PLCM103I +P18

BÜHLER

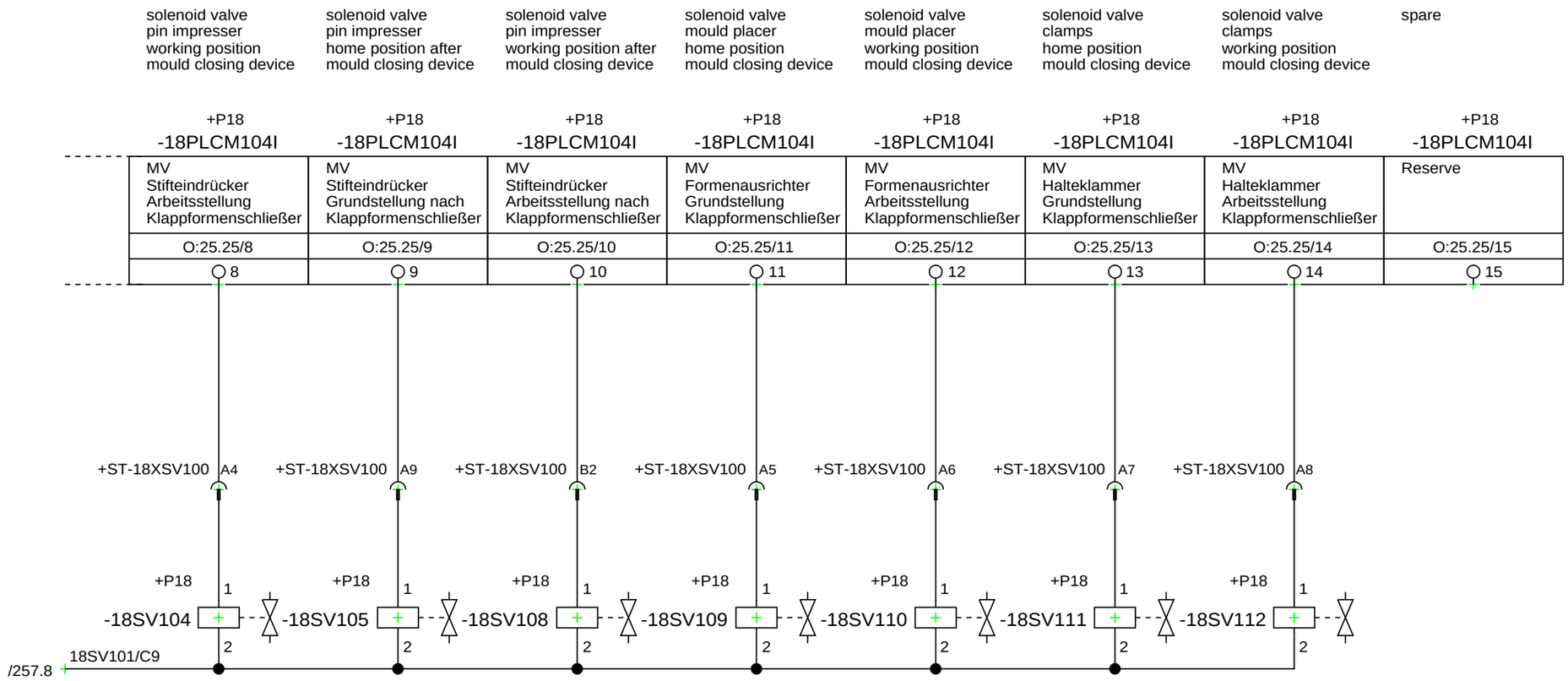
customer	474 :P_NR2	+HSS	page 256
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



customer 474 :P_NR2		+HSS	page 257
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 18		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

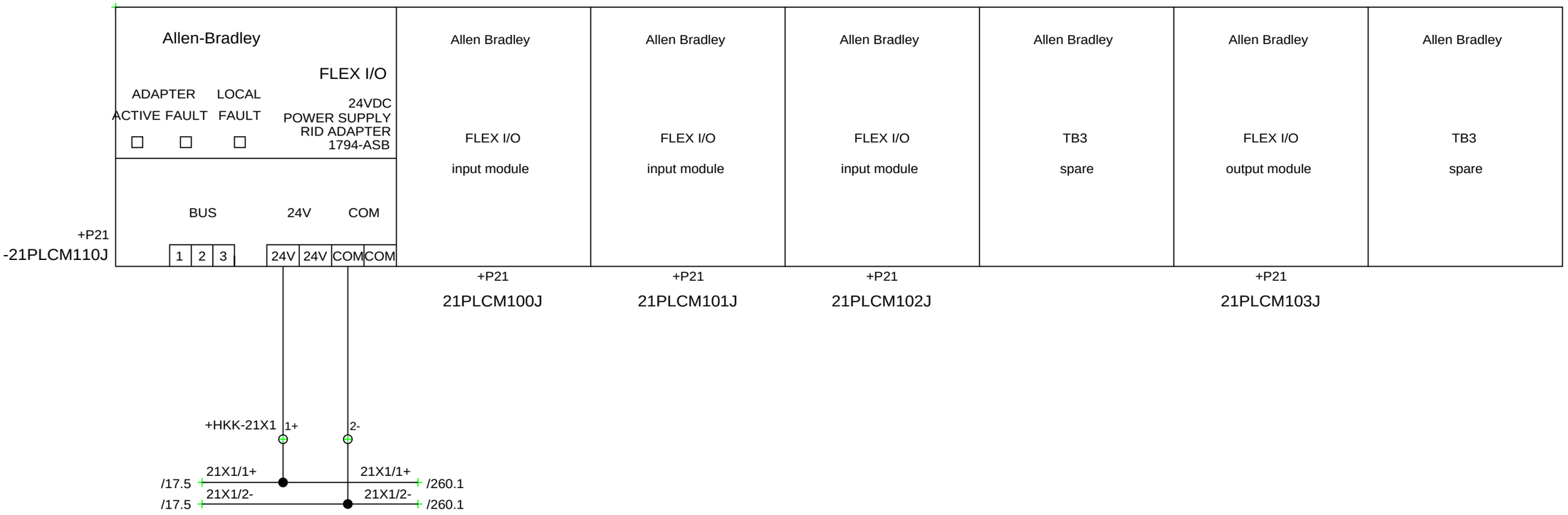


BÜHLER	customer 474 :P_NR2	+HSS page 258
		=A1.F1 of 271
comm. nr. :P_NR1	FLEX I/O module position 18	drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Übersicht FLEX I/O Module Position 21 ;Ebene J

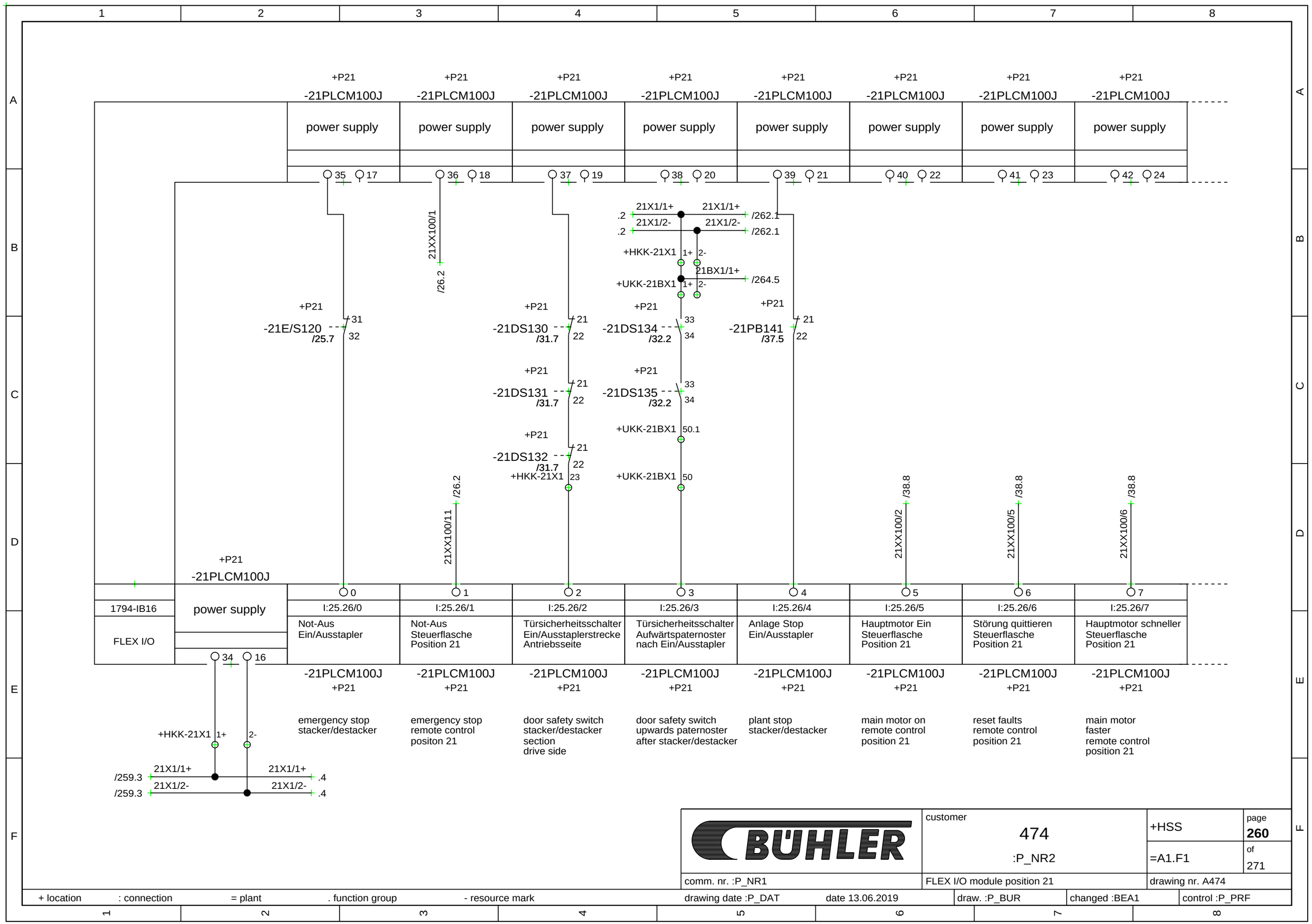
overview FLEX I/O modules position 21 ;level J



Rio Rack 3
starting group 2

BÜHLER	customer 474 :P_NR2	+HSS	page **259**
		=A1.F1	of 271
comm. nr. :P_NR1	overview FLEX I/O module position 21	drawing nr. A474	

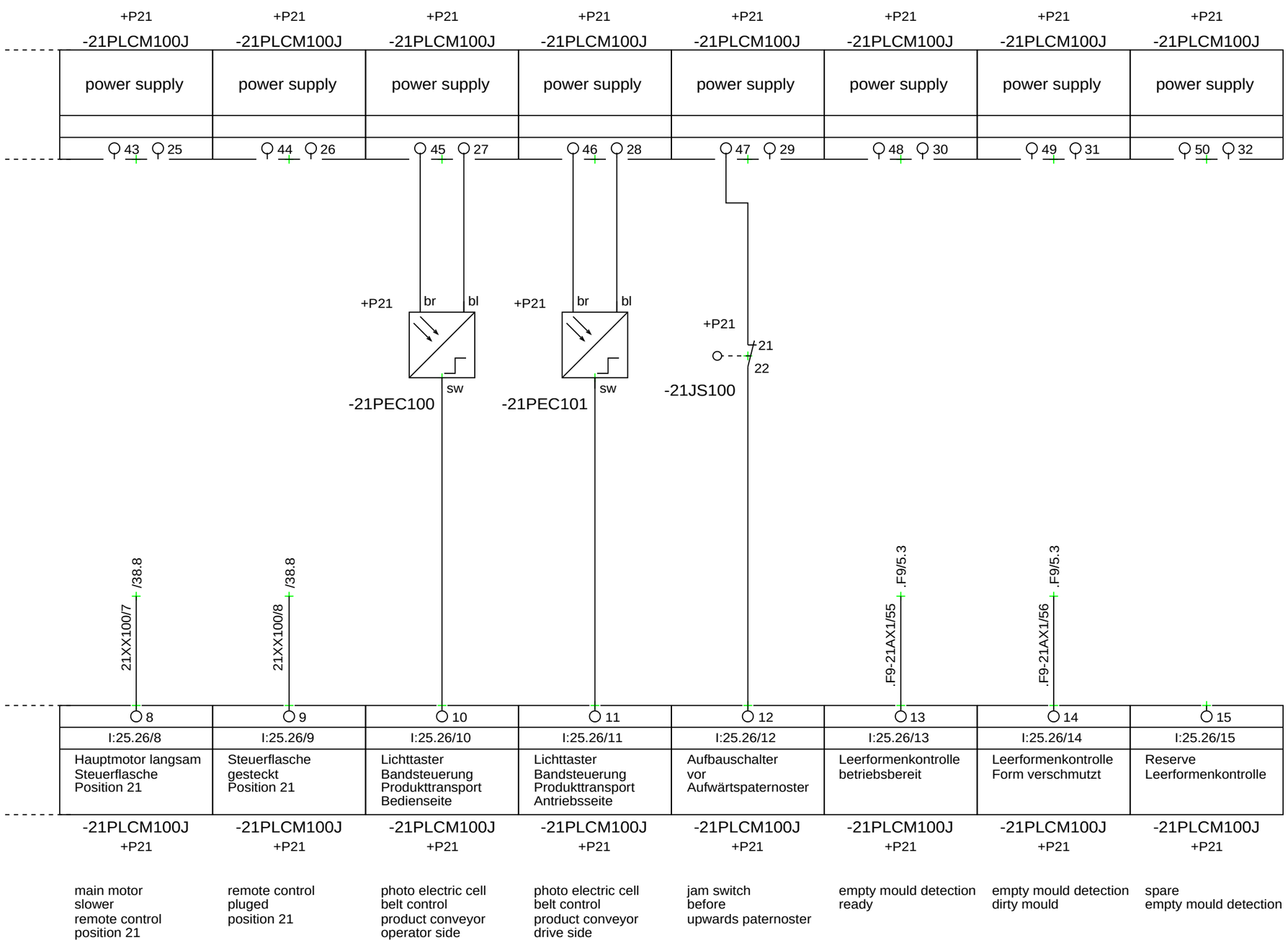
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF	



BÜHLER

customer 474 :P_NR2		+HSS	page 260
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 21		drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

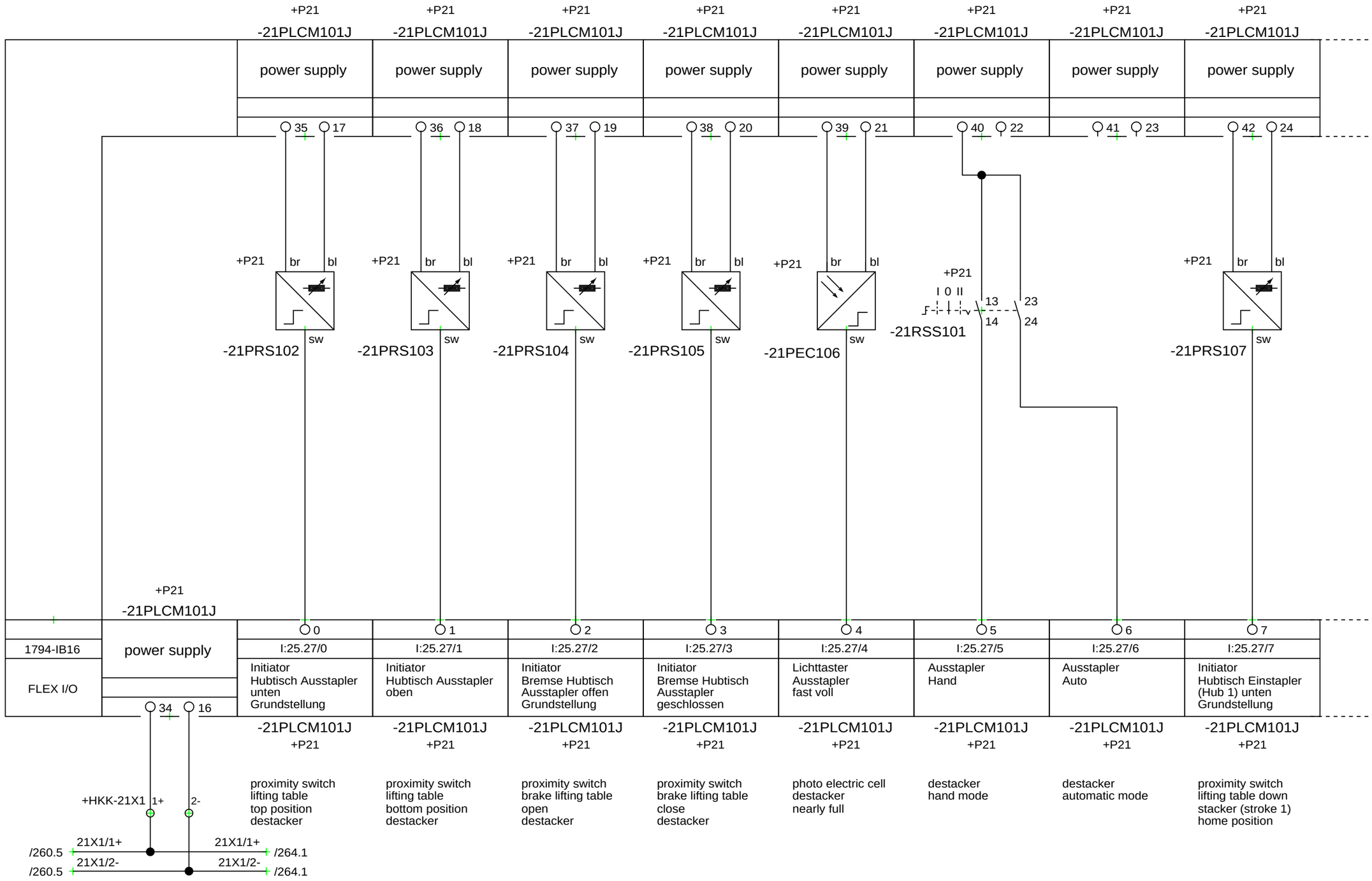


BÜHLER

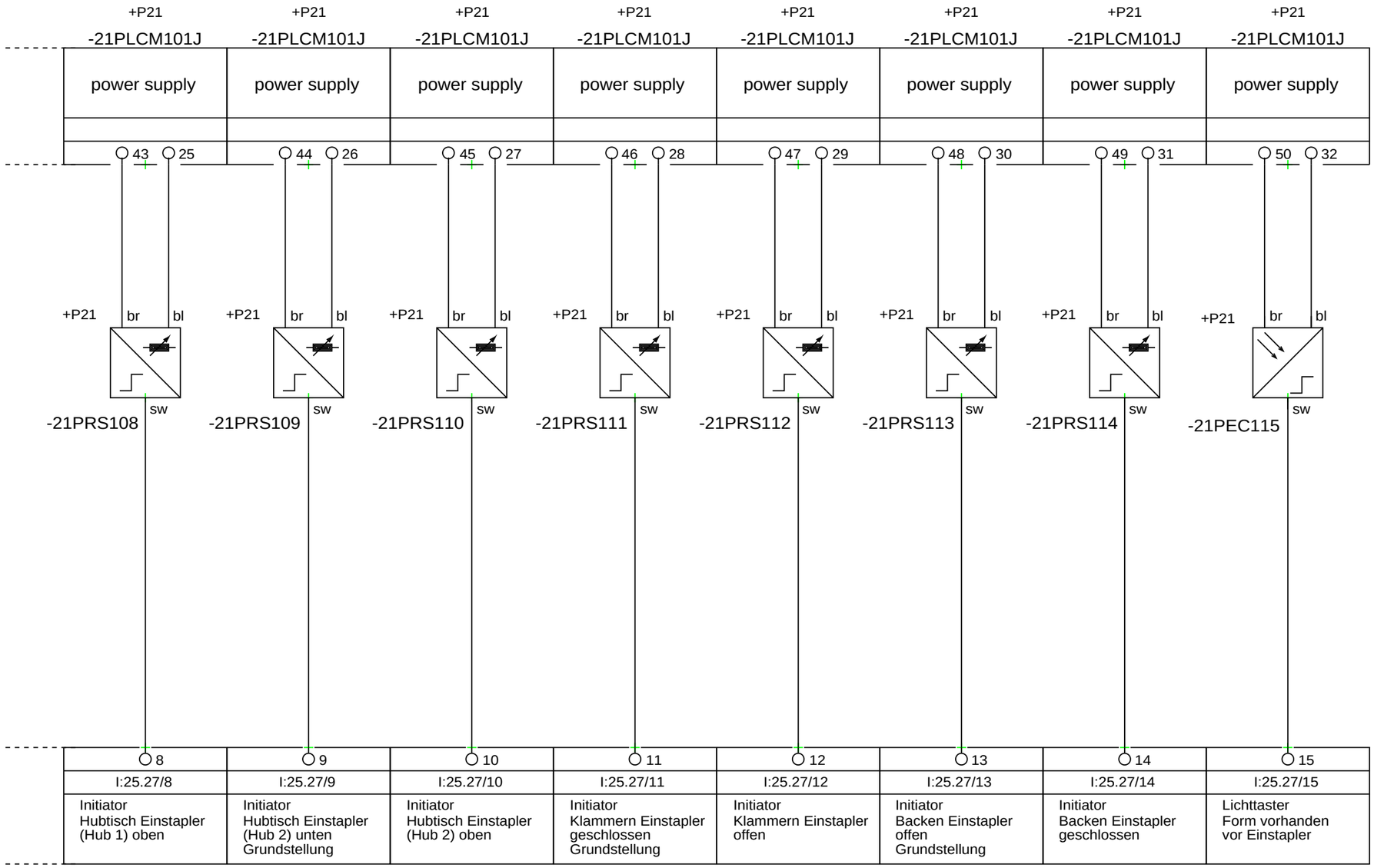
customer 474 :P_NR2 | +HSS | =A1.F1 | page 261 | of 271

comm. nr. :P_NR1 | FLEX I/O module position 21 | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

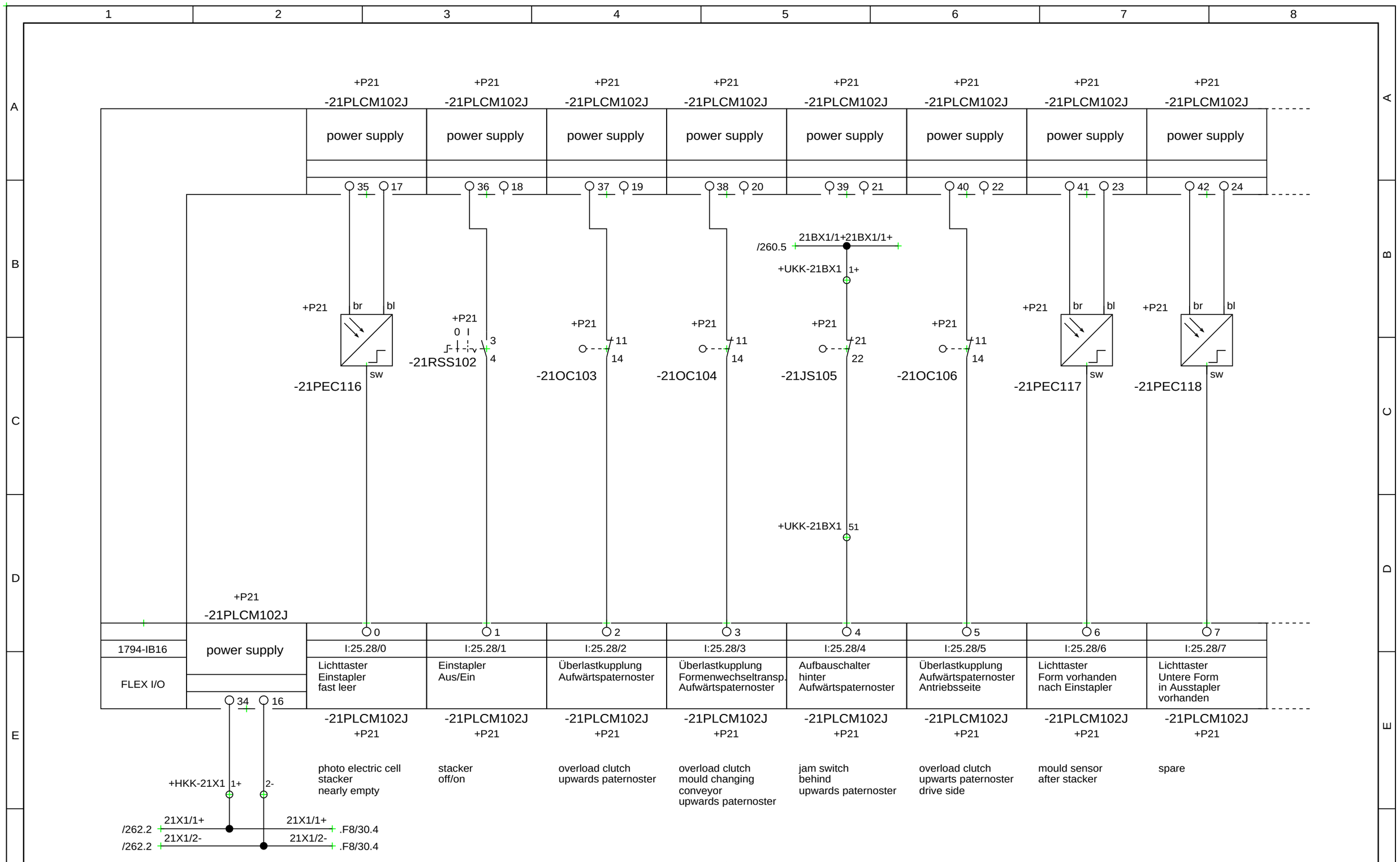


BÜHLER	customer 474 :P_NR2		+HSS	page 262	
			=A1.F1	of 271	
comm. nr. :P_NR1	FLEX I/O module position 21		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 263
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 21	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 264
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 21	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+P21	+P21	+P21	+P21	+P21	+P21	+P21	+P21
-21PLCM102J	-21PLCM102J	-21PLCM102J	-21PLCM102J	-21PLCM102J	-21PLCM102J	-21PLCM102J	-21PLCM102J
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
43 25	44 26	45 27	46 28	47 29	48 30	49 31	50 32

+P21
-21DS133
/31.7
21
22

8	9	10	11	12	13	14	15
I:25.28/8	I:25.28/9	I:25.28/10	I:25.28/11	I:25.28/12	I:25.28/13	I:25.28/14	I:25.28/15
Sicherheitsschalter Haube Ausstapler	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-21PLCM102J +P21	-21PLCM102J +P21	-21PLCM102J +P21	-21PLCM102J +P21	-21PLCM102J +P21	-21PLCM102J +P21	-21PLCM102J +P21	-21PLCM102J +P21
safety switch cover destacker	spare	spare	spare	spare	spare	spare	spare

BÜHLER

customer 474 :P_NR2		+HSS	page 265
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 21		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

0	1	2	3	4	5	6	7
start empty mould detection	spare empty mould detection	solenoid valve lifting table top position destacker	solenoid valve lifting table bottom position destacker	solenoid valve brake lifting table close destacker	solenoid valve brake lifting table open destacker	alarm lamp destacker full / stacker empty	solenoid valve lifting table up stacker (stroke 1)
-21PLCM103J	-21PLCM103J	-21PLCM103J	-21PLCM103J	-21PLCM103J	-21PLCM103J	-21PLCM103J	-21PLCM103J
Start Leerformenkontrolle	Reserve Leerformenkontrolle	MV Doppelspule Hubtisch Ausstapler oben	MV Doppelspule Hubtisch Ausstapler unten	MV Doppelspule Bremse Hubtisch Ausstapler geschlossen	MV Doppelspule Bremse Hubtisch Ausstapler geöffnet	Warnleuchte VFA voll/VFE leer	MV Doppelspule Hubtisch Einstapler (Hub 1) oben
O:25.30/0	O:25.30/1	O:25.30/2	O:25.30/3	O:25.30/4	O:25.30/5	O:25.30/6	O:25.30/7
0	1	2	3	4	5	6	7

F9-21AX1/57

.F9/5.5

+P21 1 -21SV102 2

+P21 1 -21SV103 2

+ST-21XSV100 B3

+P21 1 -21SV104 2

+ST-21XSV100 B4

+P21 1 -21SV105 2

+P21 1 -21LT100 2

+ST-21XSV100 A3

+P21 1 -21SV106 2

21XSV100/C9 /267.1

+ST-21XSV100 C9

-21PLCM103J

17	35	18	36	19	37	20	38	21	39	22	40	23	41	24	42
1794-OB16	power supply														
FLEX I/O		power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
16	34														

-21PLCM103J -21PLCM103J -21PLCM103J -21PLCM103J -21PLCM103J -21PLCM103J -21PLCM103J -21PLCM103J

+HKK-21X1 4- 3+

/18.3 21X1/3+ 21X1/3+

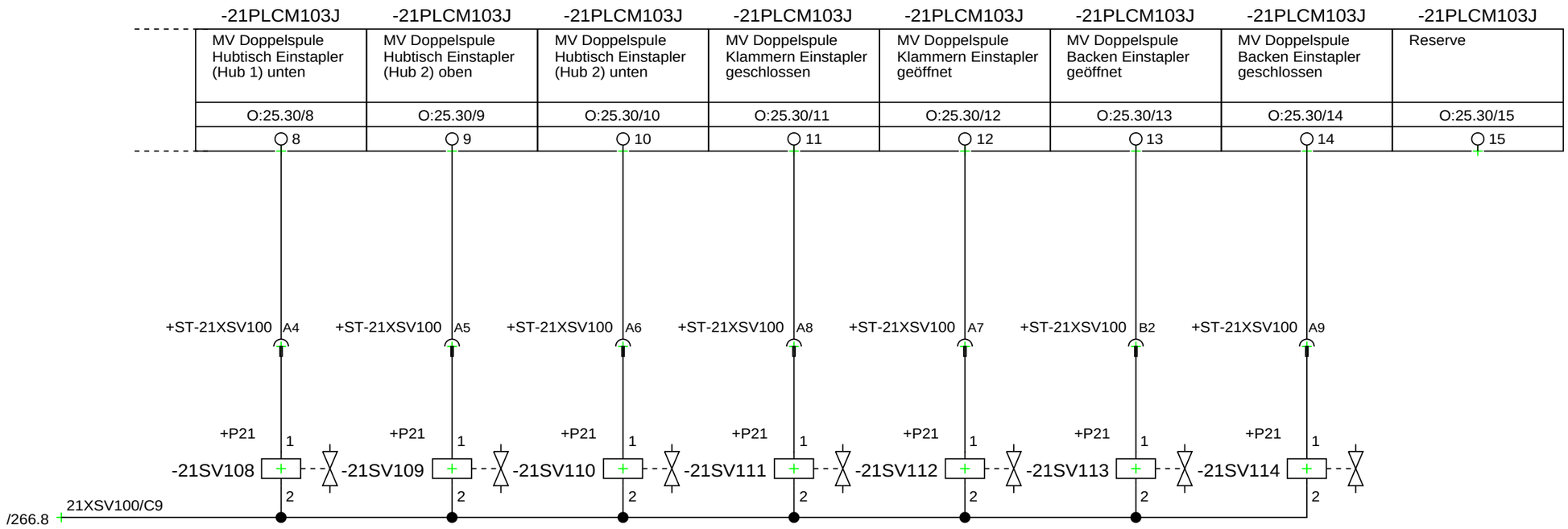
/172.4 21X1/4- 21X1/4-

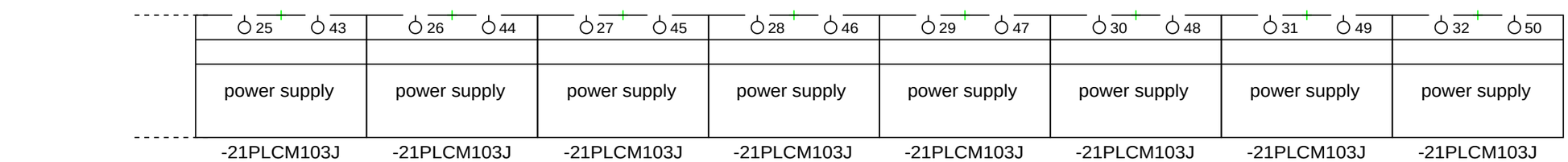
BÜHLER

customer	474 :P_NR2	+HSS	page **266**
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 21	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

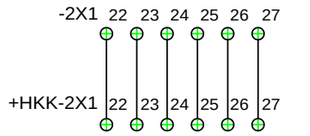
2	3	4	5	6	7	8
solenoid valve lifting table down stacker (stroke 1)	solenoid valve lifting table up stacker (stroke 2)	solenoid valve lifting table down stacker (stroke 2)	solenoid valve clamps stacker close	solenoid valve clamps stacker open	solenoid valve brackets stacker open	solenoid valve brackets stacker close	spare

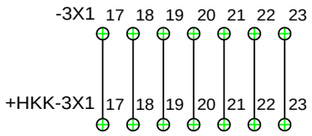


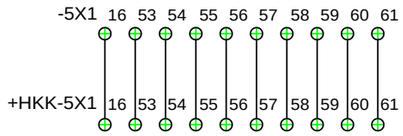


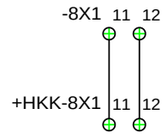
BÜHLER	customer 474 :P_NR2	+HSS	page 267
		=A1.F1	of 271
comm. nr. :P_NR1	FLEX I/O module position 21	drawing nr. A474	

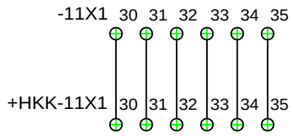
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

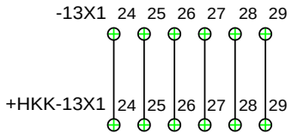


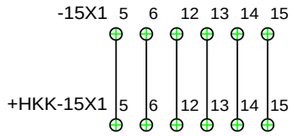


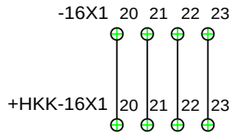


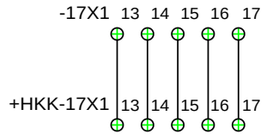


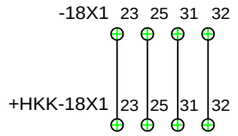


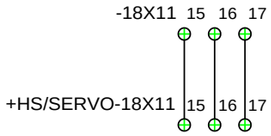


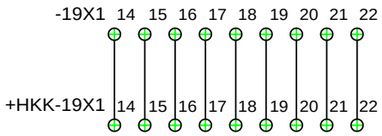


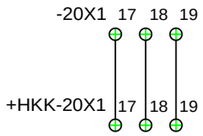


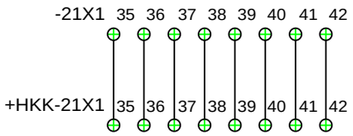


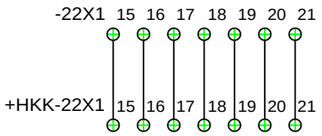


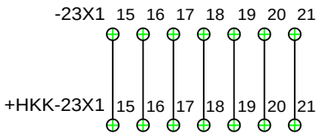


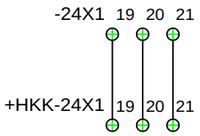


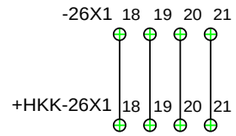








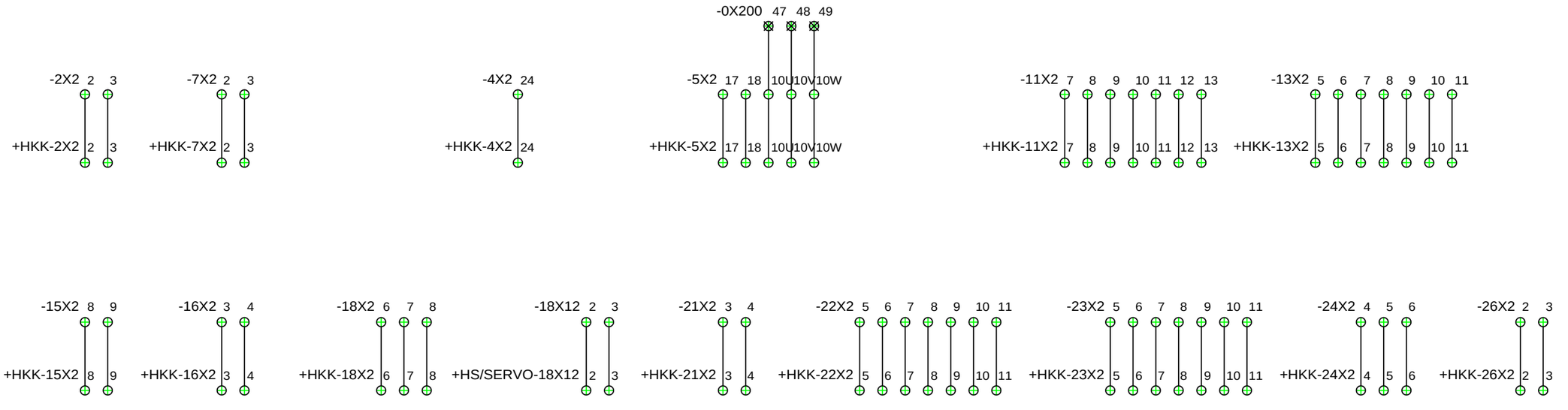




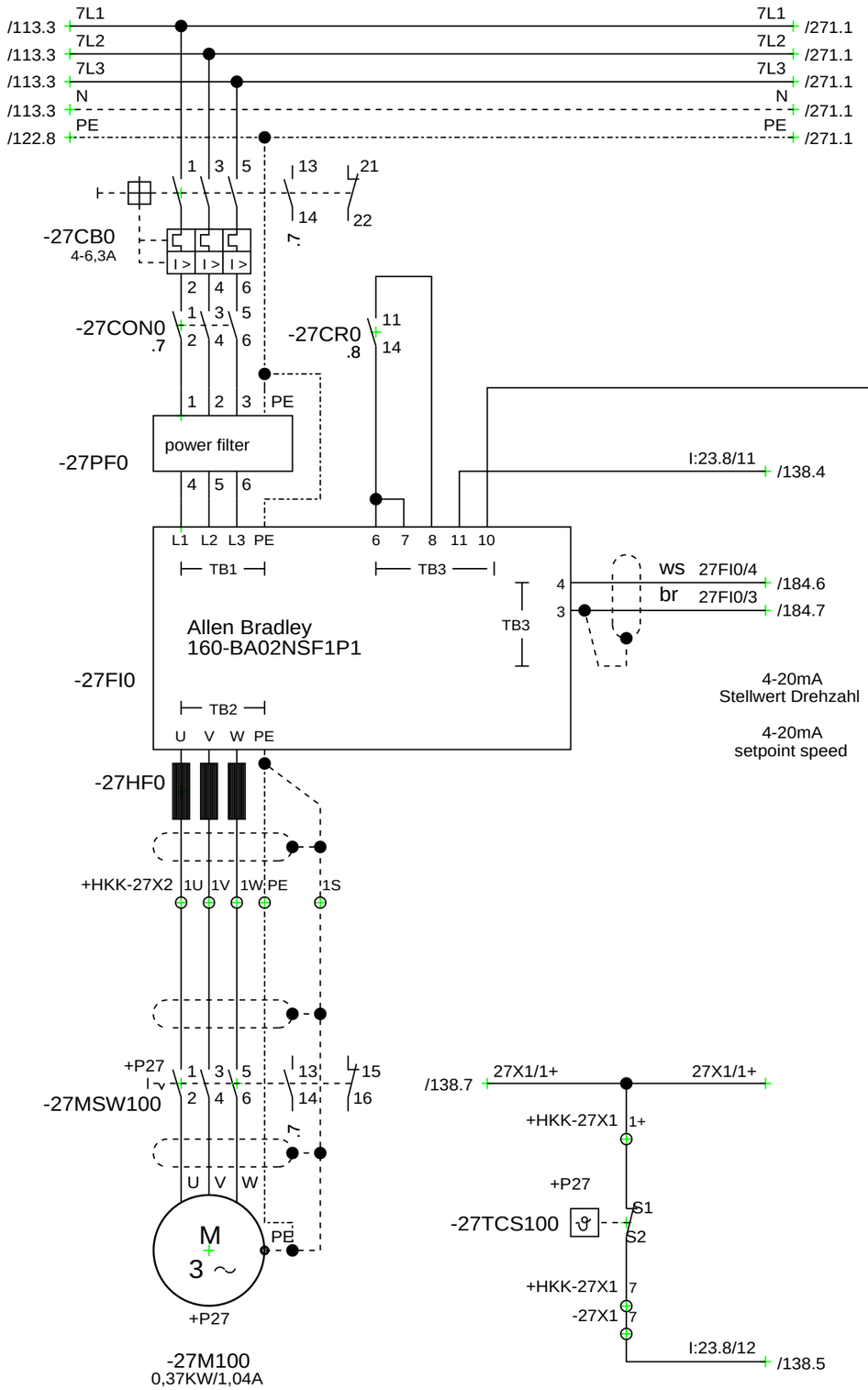
BÜHLER

customer 474 :P_NR2		+HSS	page **268**
		=A1.F1	of 271
comm. nr. :P_NR1	spare terminals X1		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

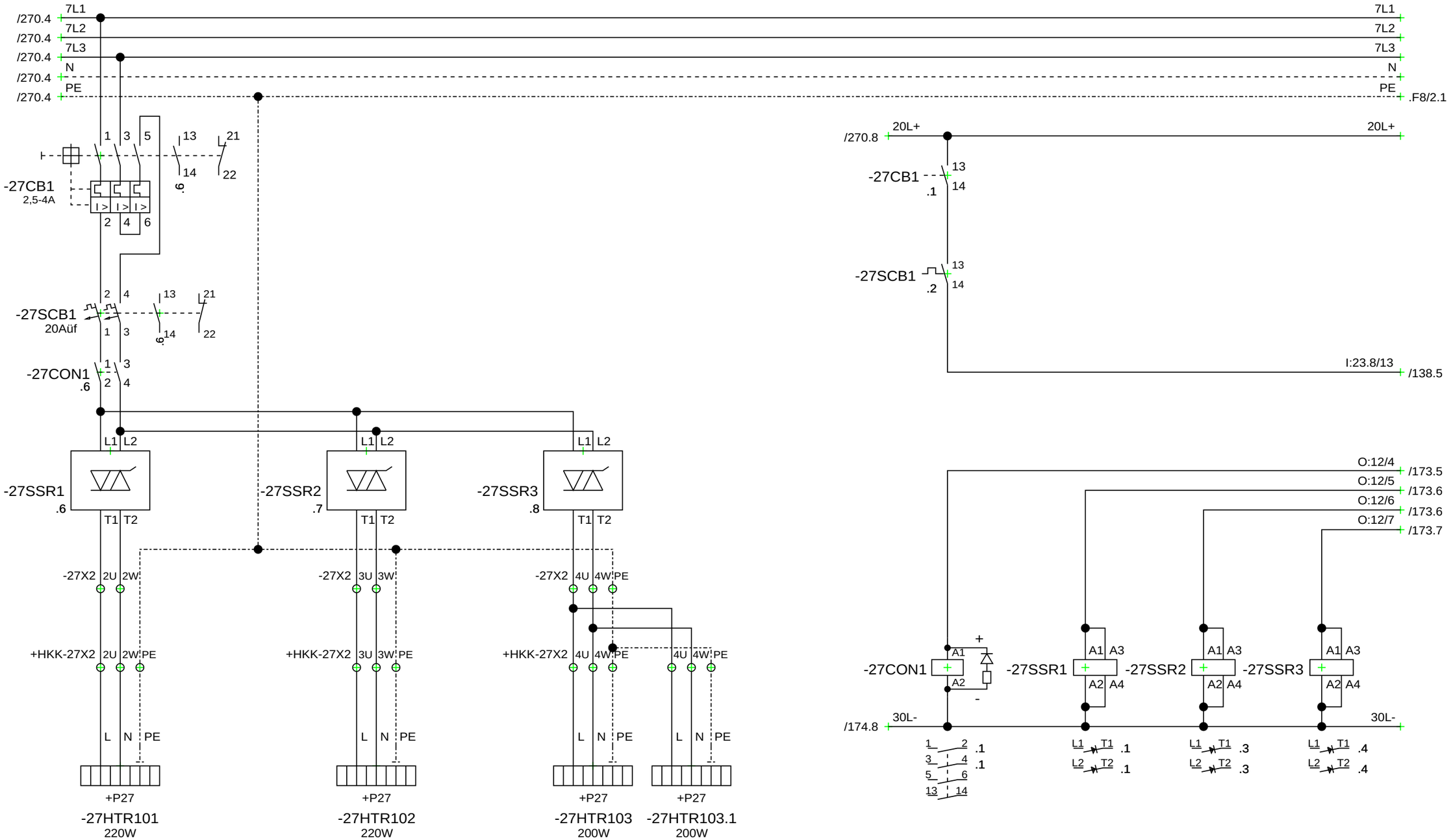


BÜHLER	customer 474 :P_NR2		+HSS	page **269**	
			=A1.F1	of 271	
comm. nr. :P_NR1	spare terminals X2		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 270
		=A1.F1	of 271
comm. nr. :P_NR1	licking roller mould return conveyor		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HSS	page 271
		=A1.F1	of 271
comm. nr. :P_NR1	heating licking roller mould return con.	drawing nr. A474	

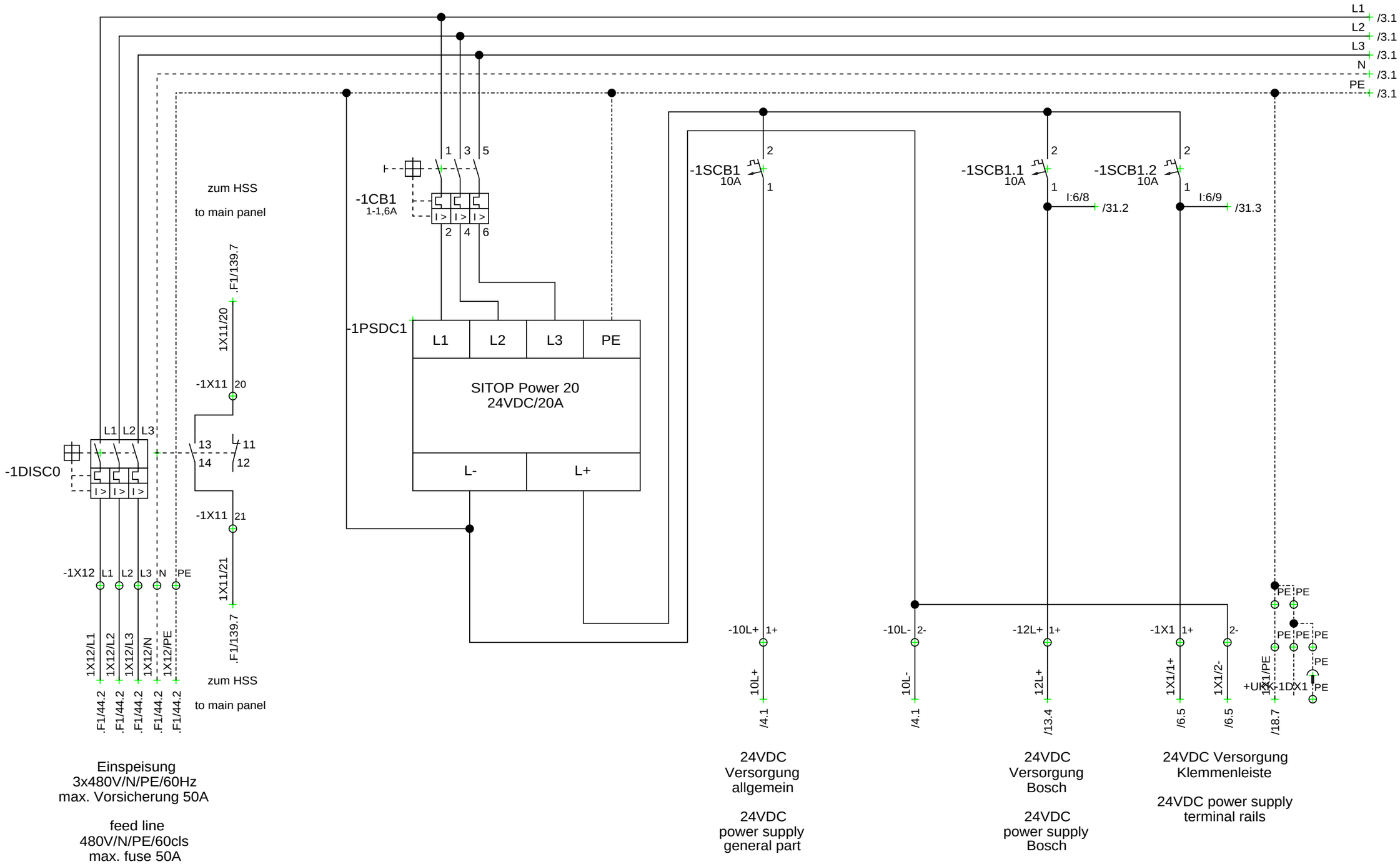
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Schaltplan
Hülsen Dosiermaschine
GRZ

wiring diagram
shell depositor

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 1	
		=A1.F2	of 42	
comm. nr. :P_NR1	cover sheet	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 2
		=A1.F2	of 42
comm. nr. :P_NR1	main power feed / power supply 24V/230V	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

/2.8 L1 — L1 /6.1
/2.8 L2 — L2 /6.1
/2.8 L3 — L3 /6.1
/2.8 N — N /6.1
/2.8 PE — PE /4.1

Versorgung vom HSS

power supply from main panel

-1CB3
2,5-4A
1 3 5 13 21
2 4 6 14 22
I > I > I >
/29.2

.F1/8.2 1X12/1U
.F1/8.2 1X12/1N
.F1/9.4 1X12/PE.

-1X12 1U PE 1N

-1X12 1U PE 1N

-1X2 1U 1V PE

-1CL2
X1
PE
X2

-1CL2.1
X1
PE
X2

-1SOC2
L PE N

2-Fach Steckdose

twin socket

-1AC3
1 2 PE
KLIMAGERÄT

Beleuchtung Schaltschrank

lamp depositor panel

120VAC Steckdose Schaltschrank

120VAC socket depositor panel

Klimagerät Schaltschrank

climatisation unit

BÜHLER

customer 474 :P_NR2		+HS/1.GK	page 3
		=A1.F2	of 42
comm. nr. :P_NR1	power supply climatisation		drawing nr. A474

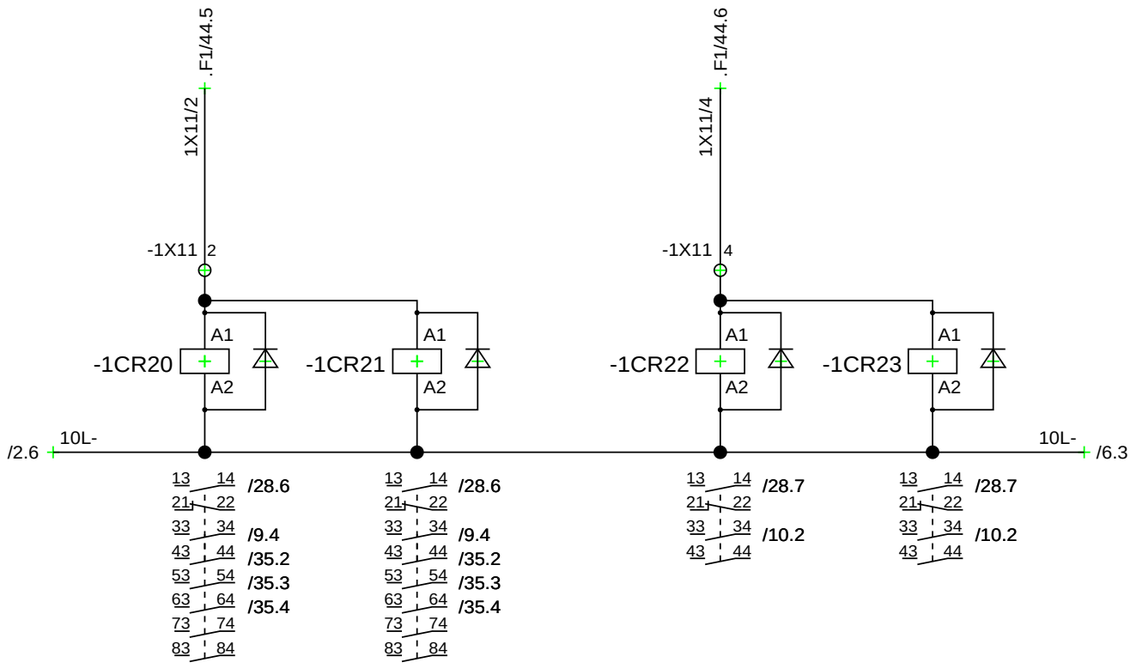
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

vom HSS

from main panel

vom HSS

from main panel

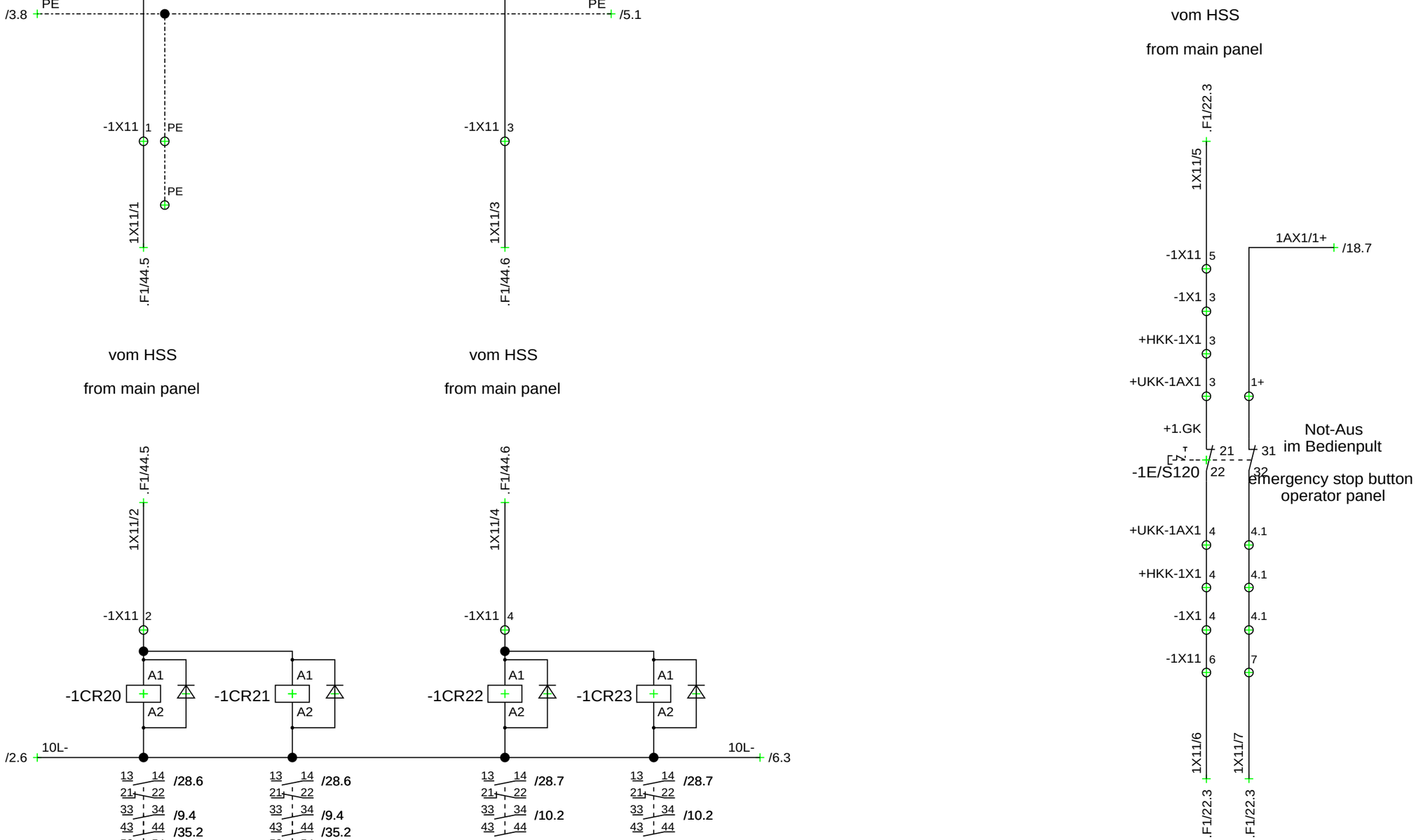


Not-Aus Schütz direkt

emergency stop contactor direct

Not-Aus Schütz verzögert

emergency stop contactor delayed

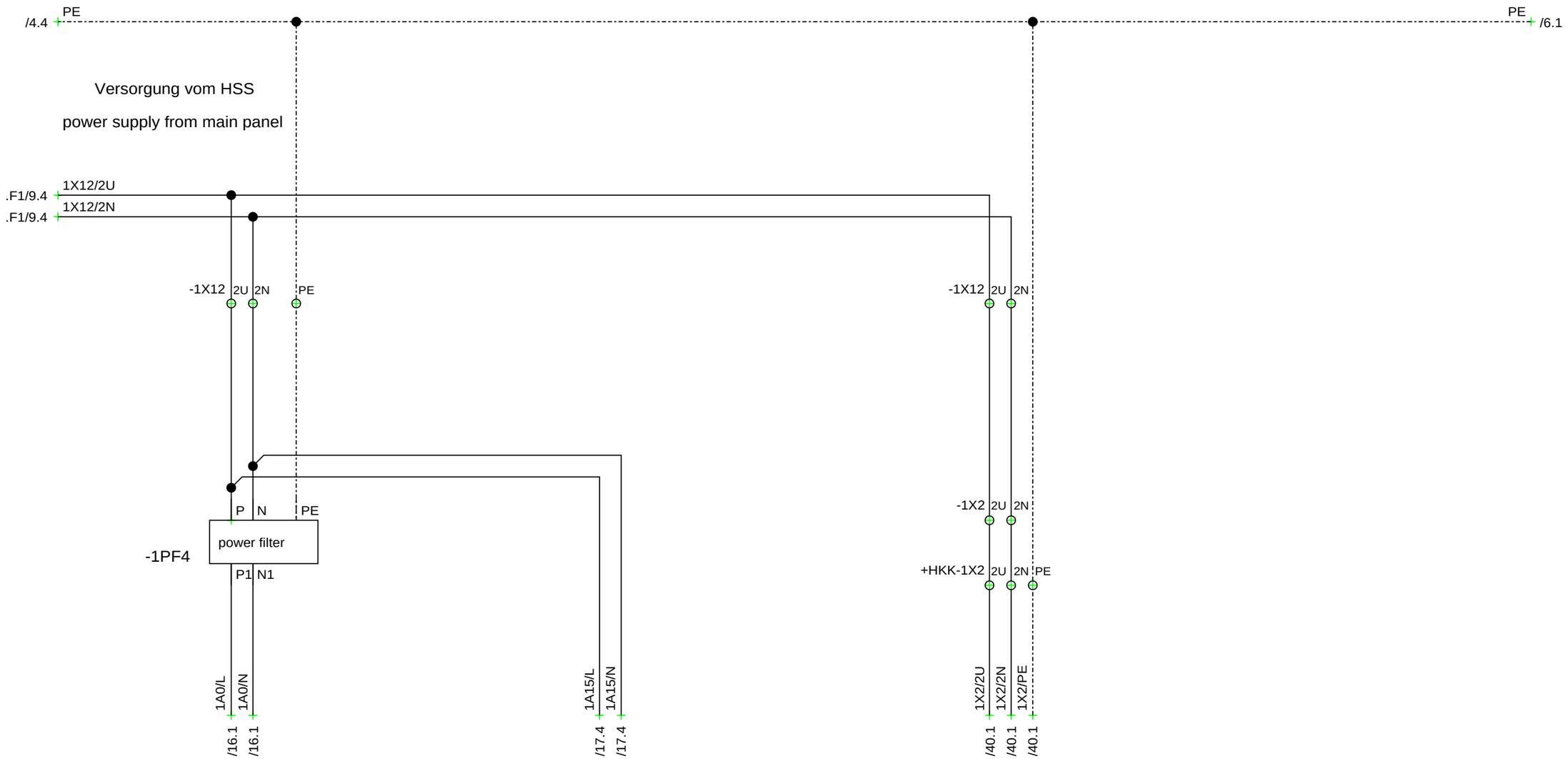


vom HSS

from main panel

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 4
		=A1.F2	of 42
comm. nr. :P_NR1	emergency stop relay	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



120VAC/60Hz Versorgung
Steuerung Allen Bradley

120VAC/60cls power supply
PLC system Allen Bradley

120VAC/60Hz Versorgung
IMC S

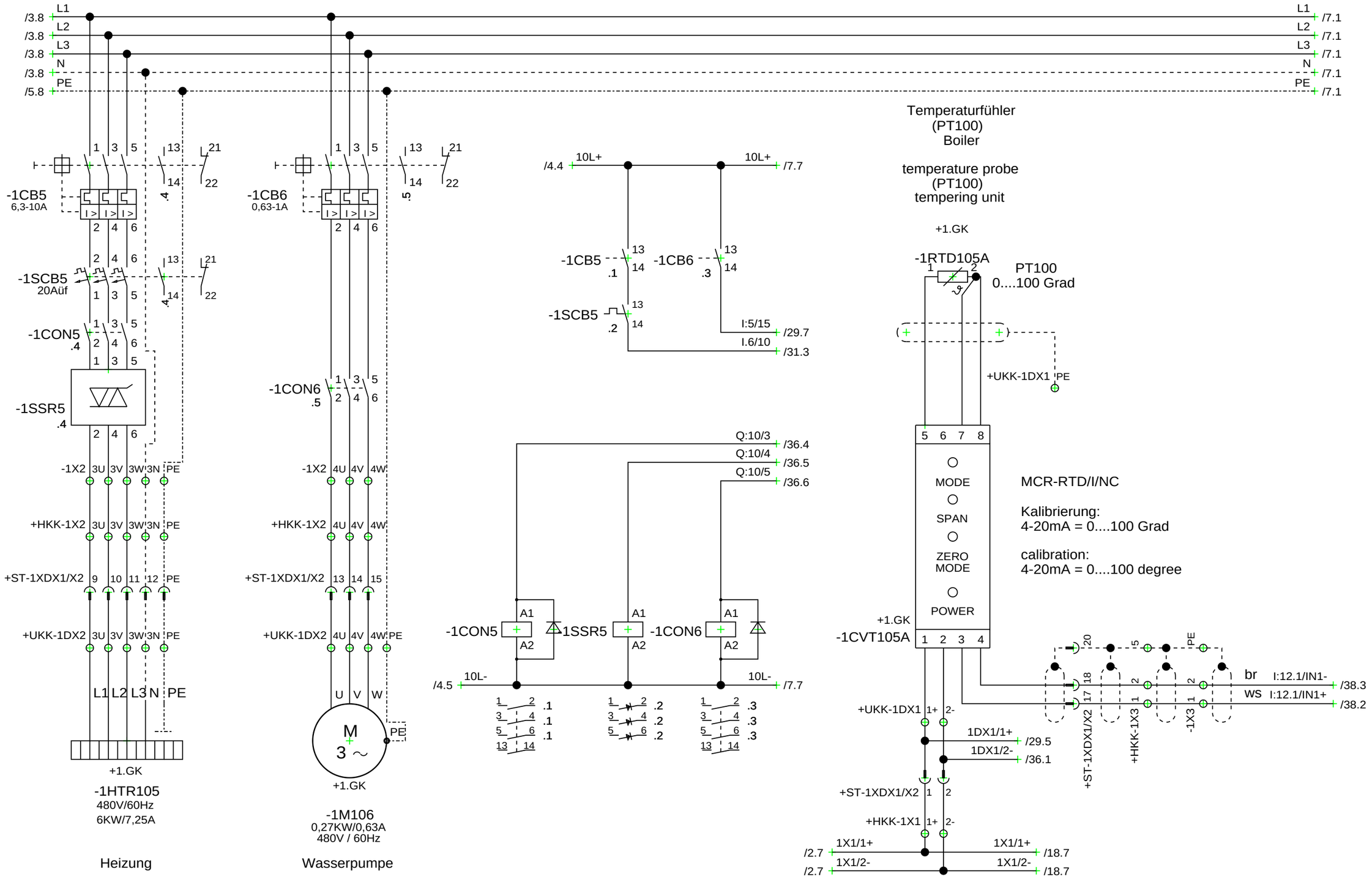
120VAC/60cls power supply
IMC S

120VAC/60Hz Versorgung
Bedienpult

120VAC/60cls power supply
operator panel

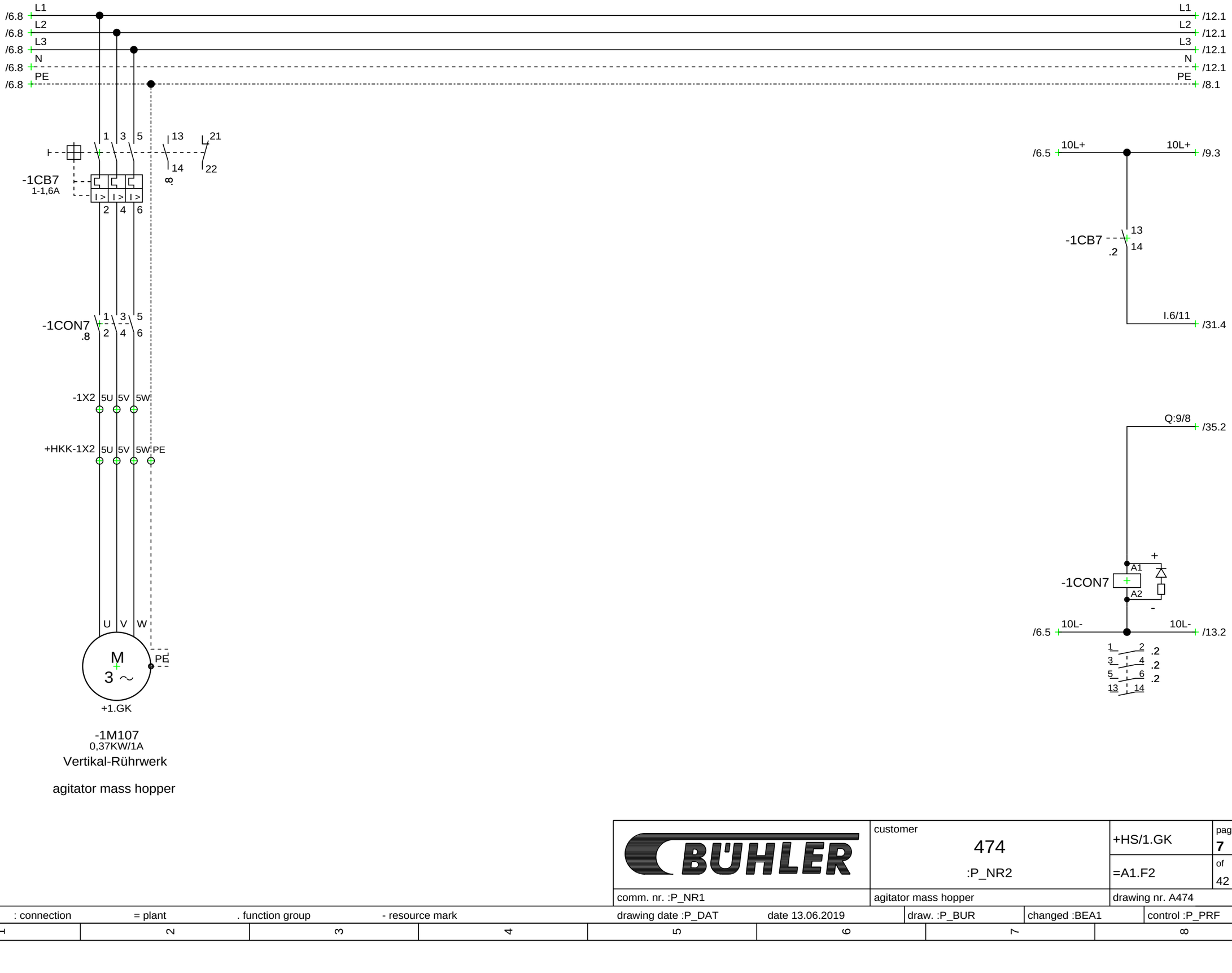
BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 5
		=A1.F2	of 42
comm. nr. :P_NR1	power supply PLC System / panelview	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 6
		=A1.F2	of 42
comm. nr. :P_NR1	water heater mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 7
		=A1.F2	of 42
comm. nr. :P_NR1	agitator mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

PE /7.8

PE /12.1

Versorgung vom HSS

power supply from main panel

.F1/11.5 1X12/3U

.F1/11.5 1X12/3N

-1X12 3U

3N

-1X2 6U

6N

PE

+HKK-1X2 6U

6N

PE

+1.GK
-1PSDC110

L

N

Weidmüller
AC120V
DC 24V / 200mA

24V

0V

3

2

1

br

ws

+ST-1XT/C110

1 ⏚
2 AL
3 +
4 -

Raytec Sensor

+1.GK
-1T/C110

+HKK-1X3 6

7

8

-1X3 6

7

PE

br I:12.0/IN0- /38.5

ws I:12.0/IN0+ /38.4

Temperatur Formenoberfläche
Infrarotsensor vor Gießmaschine

temperature mould surface
infrared sensor before depositor

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **8**
		=A1.F2	of 42
comm. nr. :P_NR1	infrared sensor temp. mould surface	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Freigabe Servo - Module
enable servo modules

10L+ /7.8

10L+ /10.2

-1CR20 /4.2 33 34

-1CR21 /4.2 33 34

-1X1 5

+HKK-1X1 5

Reserve
spare

+HKK-1X1 6

Reserve
spare

+HKK-1X1 7

Reserve
spare

+HKK-1X1 8

+HKK-1X1 8

-1X1 8 I:4/6 /26.6

Reserve
spare

+HKK-1X1 9

-1X1 9

Freigabe Tippen
enable jog mode
-1CR31 /34.2 13 14

-1CR36 /34.6 13 14

Freigabe VM
enable power module
-1CR30 /13.6 13 14

Freigabe IP Lageregler
enable pos. controller
-1CR35 /34.5 13 14

Freigabe Bosch
enable Bosch
-1CR32 /34.3 13 14

-1X10 1

FG2 /21.2

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 9
		=A1.F2	of 42
comm. nr. :P_NR1	enable servo module	drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1	control :P_PRF

Endlagen Sicherheitsschalter

safety switches

/9.8 10L+

-1CR22 /4.3 33 34

-1CR23 /4.4 33 34

-1X1 10

+HKK-1X1 10

Reserve

spare

+HKK-1X1 11

-1X1 11 I:4/9 /27.3

+HKK-1X1 11

Reserve

spare

+HKK-1X1 12

-1X1 12 12 I:4/10 /27.3

Freigabe Achsen-Lageregler

enable position controller

10L+ /13.5

-1SM30 /13.1 43 44

Freigabe IP Lageregler

enable pos. controller

-1CR35 /34.5 33 34

-1X10 2

DRFAULT2

/21.3

1A31:X312/2 /13.5

Antriebe Aus

drives off

-1CR33 /34.3 13 14

Antriebe Ein

drives on

-1CR34 /34.4 13 14

-1CR30 /13.6 33 34

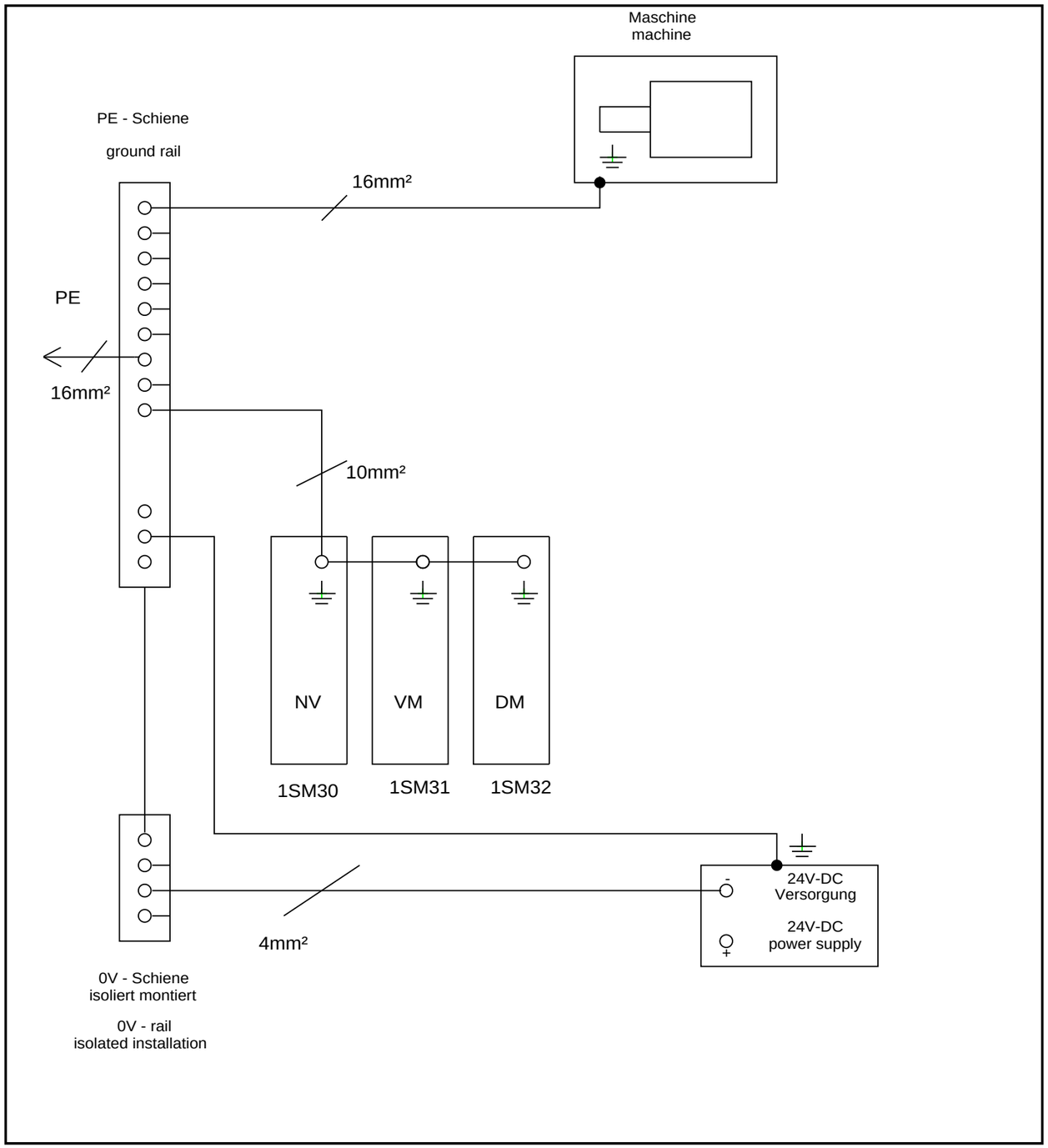
-1SM30 /13.1 13 14

1A30/A1 /13.3

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **10**
		=A1.F2	of 42
comm. nr. :P_NR1	safety switches	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

ERDUNG für BOSCH System

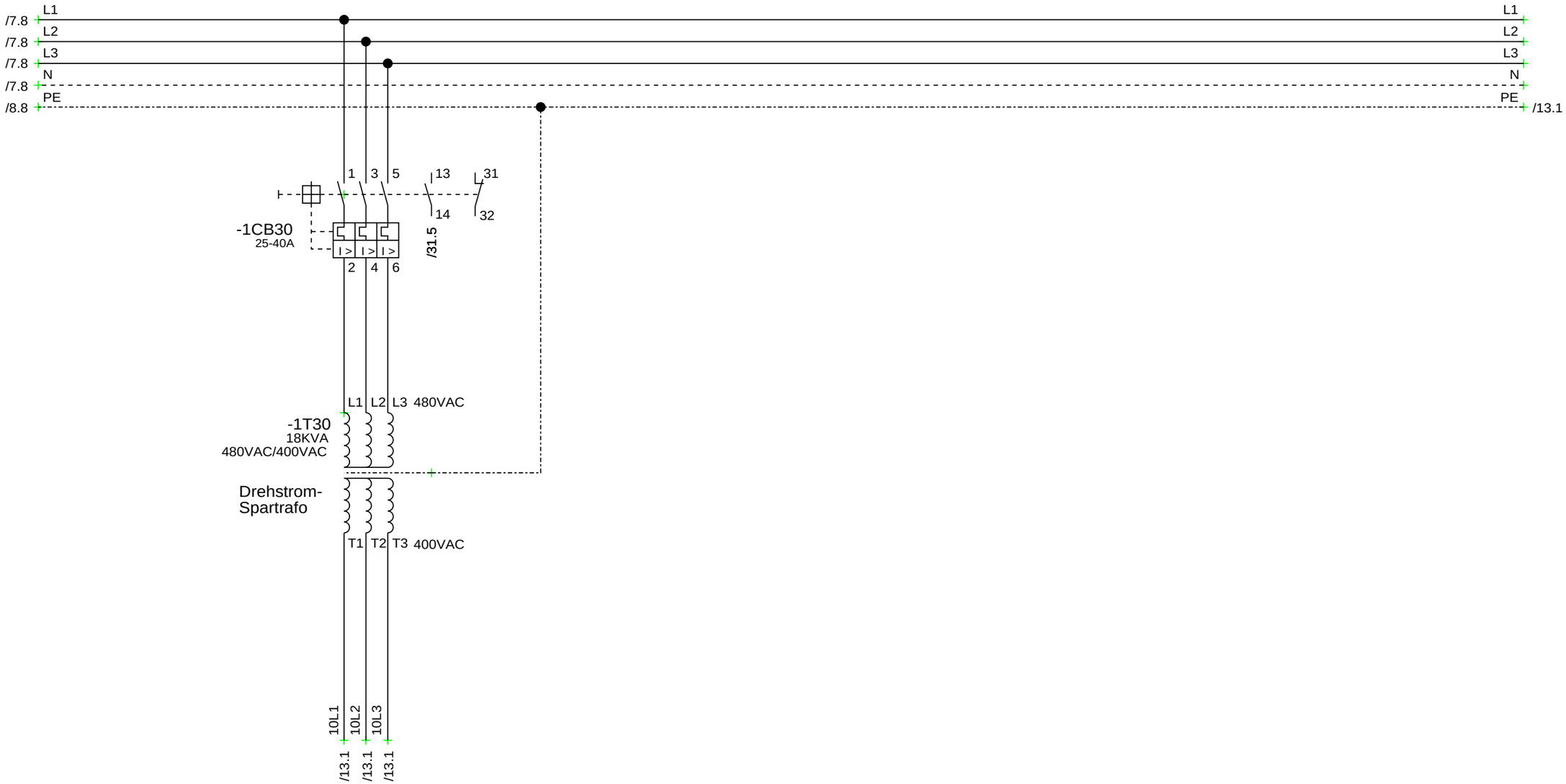


ERDUNG für BOSCH System

earthing system BOSCH rack

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **11**
		=A1.F2	of 42
comm. nr. :P_NR1	earthing servo system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

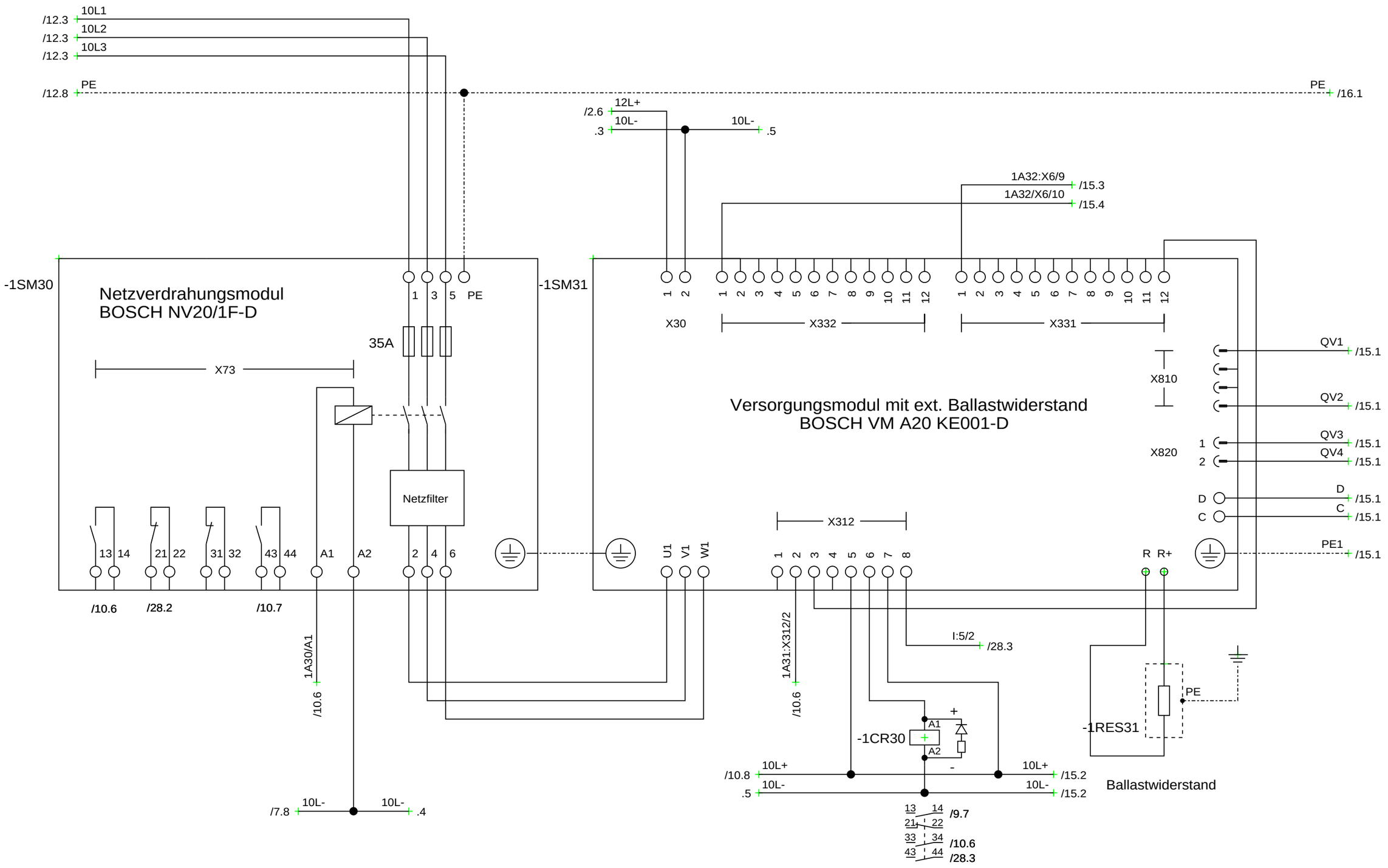


Einspeisung Bosch Servo-System

power supply Bosch serco system

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **12**
		=A1.F2	of 42
comm. nr. :P_NR1	power supply Bosch system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 13
		=A1.F2	of 42
comm. nr. :P_NR1	supply module BOSCH	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
	474	+HS/1.GK	page **14**
	:P_NR2	=A1.F2	of 42
comm. nr. :P_NR1	spare	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

+1.GK
-1M132

Motor Typ SR-A5.0460.020-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

1A6/Ua1 /21.2
1A6/Ua1/ /21.2
1A6/Ua2 /21.2
1A6/Ua2/ /21.3
1A6/Ua0 /21.3
1A6/Ua0/ /21.3
1A6/5V /21.4
1A6/0V /21.4
Schirm2 /21.4

-1SM32

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/13.8 QV1
/13.8 QV2

24V
Querverbindung

/13.8 QV3
/13.8 QV4

Zwischenkreis-
Spannung

/13.8 D
/13.8 C

/13.8 PE1

X810

X820

Servodul BOSCH DMA85B3301-D
Dosierantrieb

X810
QV1 .1
QV2 .1

X820
1 QV3 .1
2 QV4 .1

D .1
C .1

PE1 .1

X6

1 2 3 4 5 6 7 8 9 10

STA-Relais
STA-Relais
I:5/10
1A32:X6/3
IN1
IN2
IN3
IN4
1A32:X6/9 24V in
1A32/X6/10 0V in

/29.3
/21.2
/13.7
/13.7

X12

1 2 3 4 5 6 7 8

OUT5
OUT6
OUT7
OUT8
OUT9
Relais
Relais
Relais

I:5/12
/29.5

X21

1 2 3 4 5 6

rt
sw

SW2+
SW2-
/21.6
/21.6

X34

1 2 3 4 5 6

OUT4
OUT3
OUT2
OUT1
Relais
Relais

I:5/11
/29.4

10L+ /13.7
10L- /13.7
10L+ /17.4
10L- /16.1

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 15
		=A1.F2	of 42
comm. nr. :P_NR1	servo module deposit drive	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

/5.2 1A0/L
/5.2 1A0/N
/13.8 PE
/15.3 10L-
10L- /17.4
PE /17.4

SLC 500 - System Übersicht

SLC 500 - system overview

main rack Allen Bradley

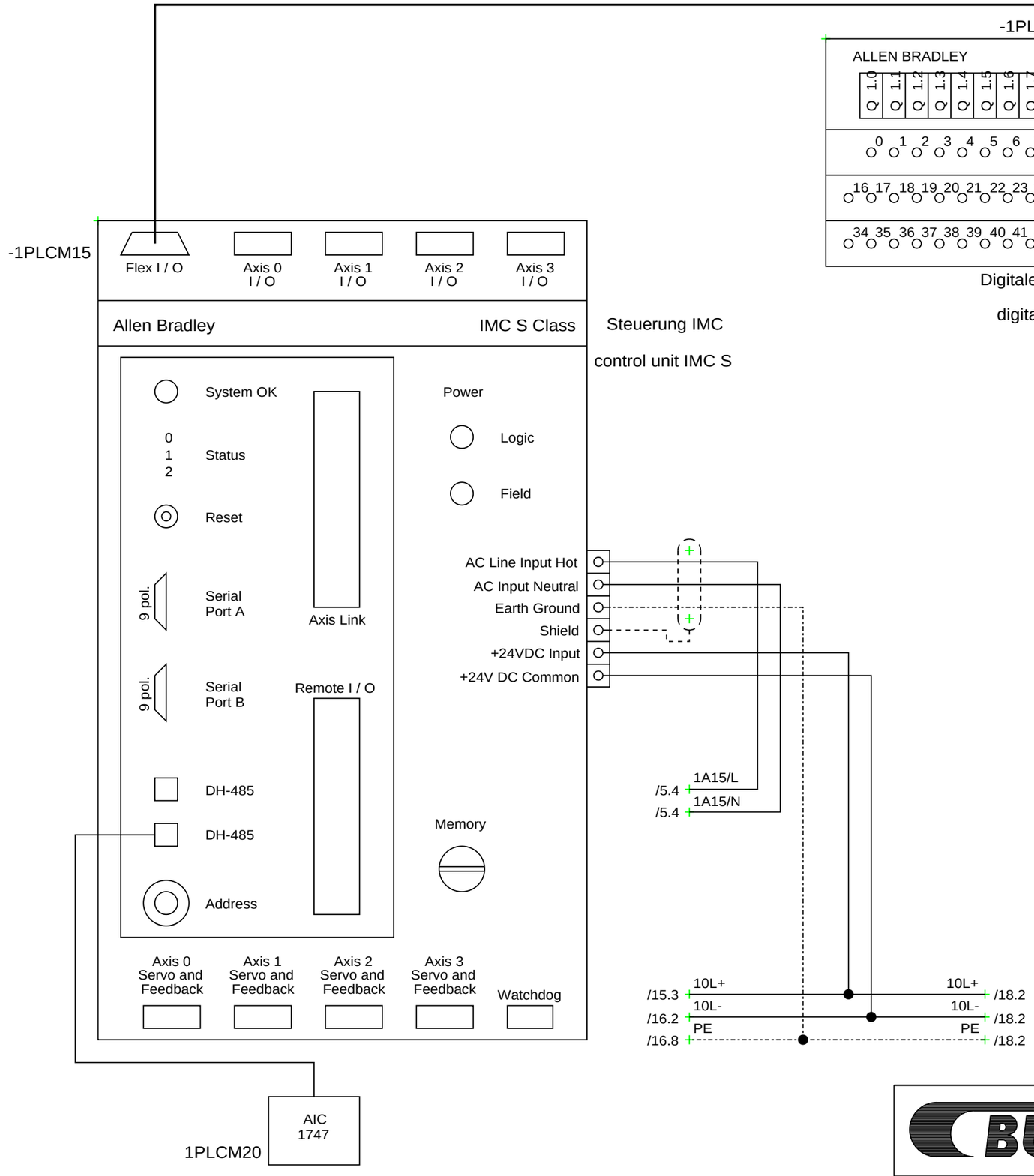
	1PLCM1	1PLCM2	1PLCM3	1PLCM4	1PLCM5	1PLCM6	1PLCM7	1PLCM8	1PLCM9	1PLCM10	1PLCM11	1PLCM12	1PLCM13
PWR OUT +24VOLTS DC	CPU SLC/04	spare	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	spare	digital outputs 1746-OB16	digital outputs 1746-OB16	digital outputs 1746-OB16	spare	anal. in/out 1746-NIO4I
PWR OUT COM	DH+												
120/240 VOLTS			I:2/0-I:2/15	I:3/0-I:3/15	I:4/0-I:4/15	I:5/0-I:5/15	I:6/0-I:6/15		I:8/0-I:8/15	I:8/0-I:8/15	I:8/0-I:8/15		12.0-12.1
VAC NEUT	RS232												
CHASSIS GROUND													

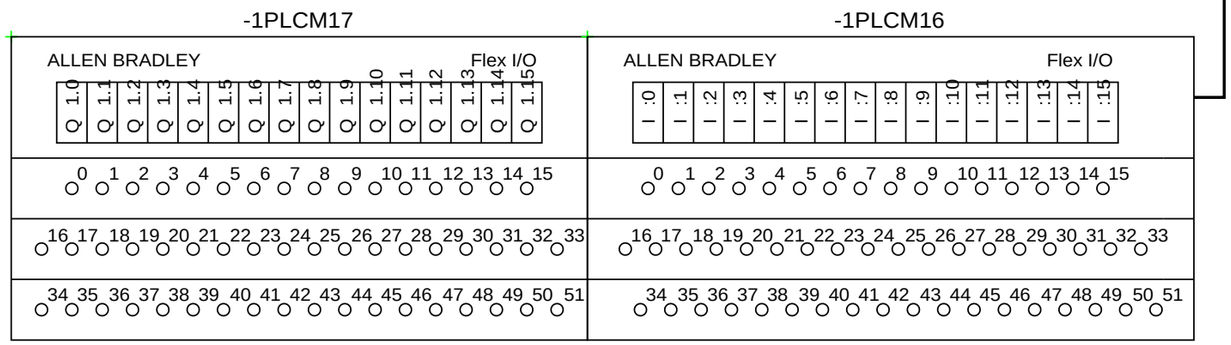
-1PLC0

6mm²

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **16**
		=A1.F2	of 42
comm. nr. :P_NR1	PLC system ALLEN BRADLEY	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF	





BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **17**
		=A1.F2	of 42
comm. nr. :P_NR1	PLC System Allen Bradley IMC S	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

System Übersicht / system overview

AIC-NET
im Gießmaschinenschaltschrank

AIC-NET
in depositor panel

DH485
cable 1747-CD

AIC
im Gießmaschinenschaltschrank

AIC
in depositor panel

AIC
im Bedienpult

AIC
in operator panel

orange with white stripes
white with orange stripes
blue with white stripes
drain wire

-1PLCM21

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

TX

1761-CBL-AP00
(0,5mtr)

-1PLCM20

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

+1.GK
-1PLCM100

DH-485
INTFC
1747 AIC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-FC

1747-C10

1747-C10

/17.5 10L+ — 10L+ /22.1
/17.5 10L- — 10L- /21.4
/17.5 PE — PE /37.7

+UKK-1AX1 1+ 2- PE
/4.7 1AX1/1+ — 1AX1/1+ /24.6
+HKK-1X1 1+ 2-

RS232

1PLCM1
CPU
SLC5/04
CPU
depositor panel

DH485

1PLCM15
IMC S
position
controller

DH485

1CP100
panel
view
operator panel

1X1/1+ /21.6
1X1/2- /21.6
1X1/PE /2.8

BÜHLER

comm. nr. :P_NR1	system overview AIC	drawing nr. A474	
customer 474 :P_NR2		+HS/1.GK	page **18**
		=A1.F2	of 42

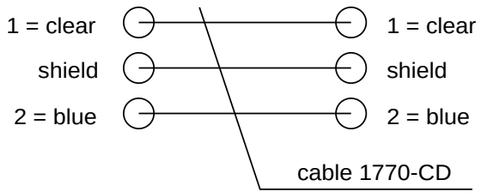
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

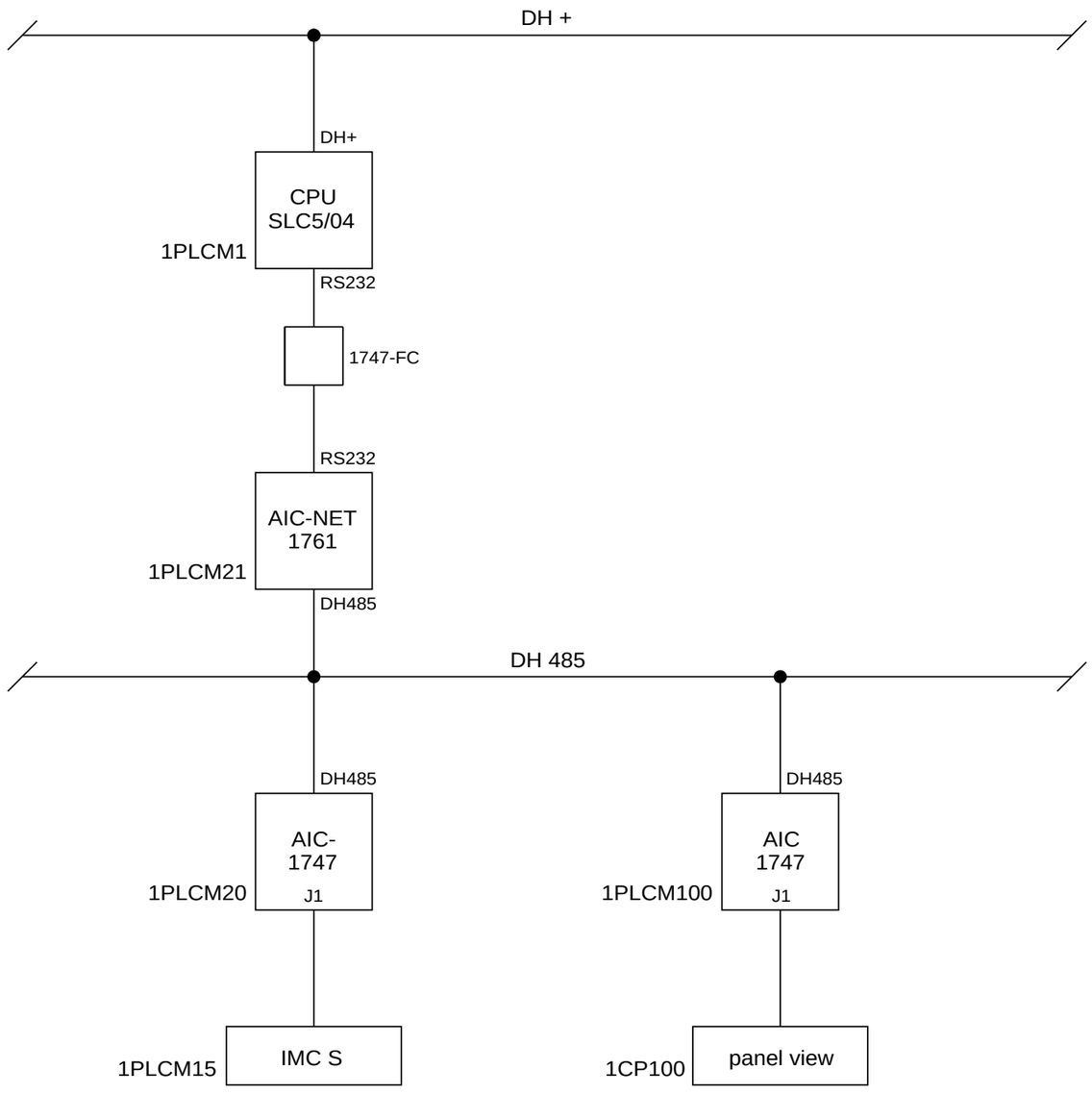
System Übersicht

system overview

Anschlußbelegung DH +
von SLC5/04 zu SLC5/04

conection DH+
from SLC5/04 to SLC5/04



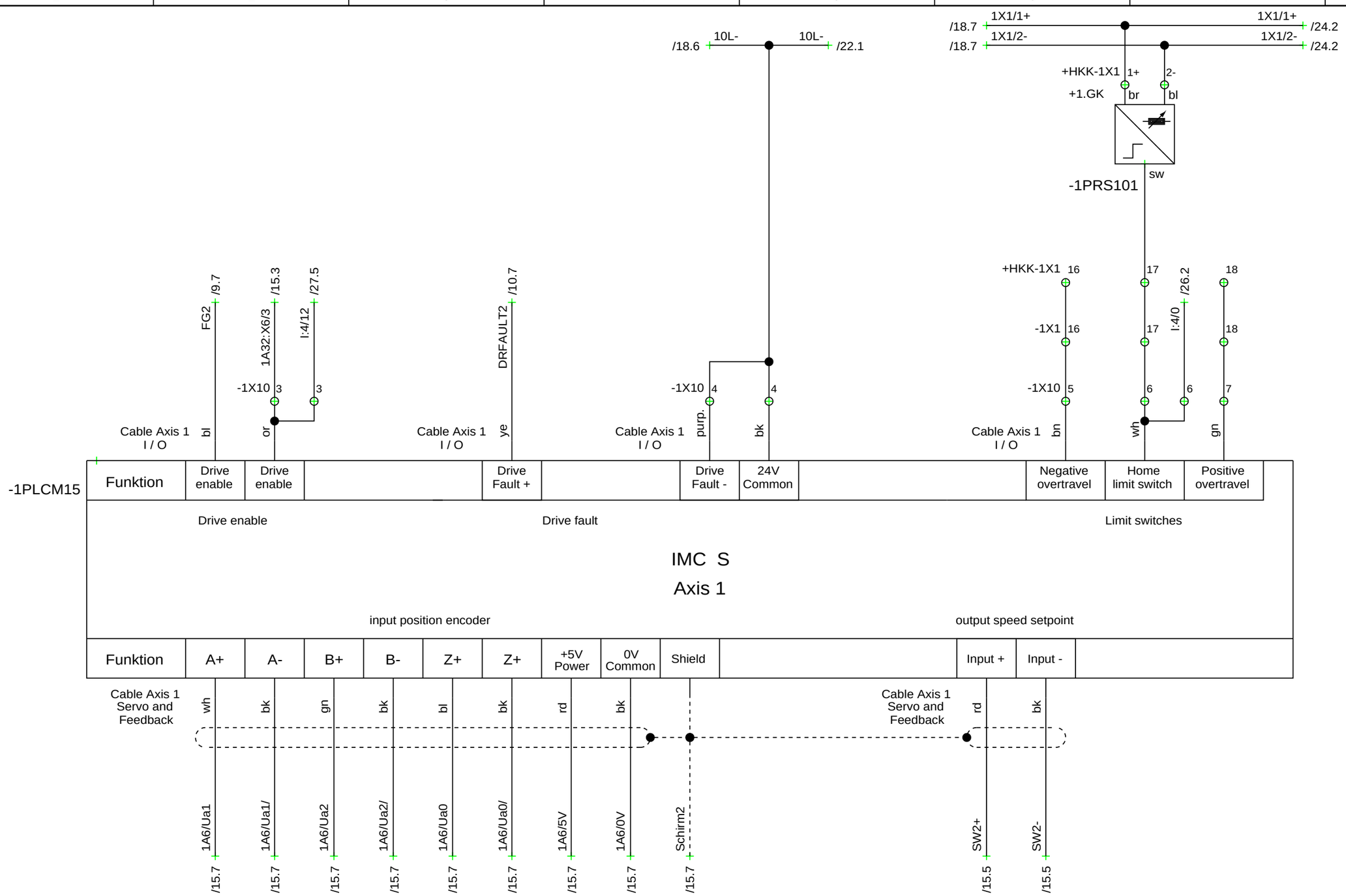


BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **19**
		=A1.F2	of 42
comm. nr. :P_NR1	system overview datahighway	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
BÜHLER	474 :P_NR2	+HS/1.GK =A1.F2	page **20** of 42
comm. nr. :P_NR1	spare	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

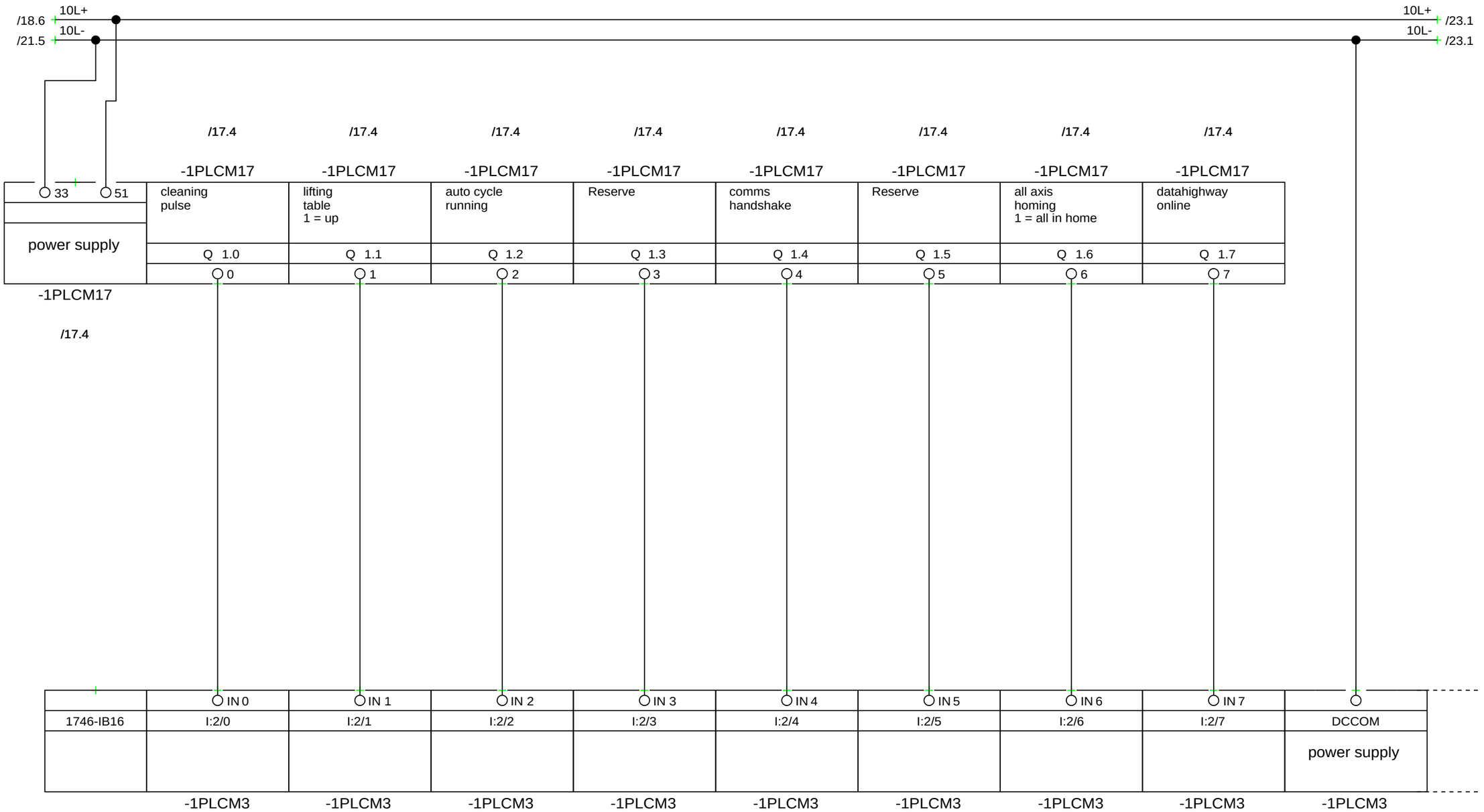


BÜHLER

	customer 474 :P_NR2	+HS/1.GK	page **21**
		=A1.F2	of 42
comm. nr. :P_NR1	position controller deposit axis	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT

date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



connection to IMC S

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 22
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/22.8 10L+
/22.8 10L-

10L+ /24.1
10L- /24.1

	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4
	-1PLCM17	-1PLCM17	-1PLCM17	-1PLCM17	-1PLCM17	-1PLCM17	-1PLCM17	-1PLCM17
	Statusbyte Bit 0	Statusbyte Bit 1	Statusbyte Bit 2	Statusbyte Bit 3	Statusbyte Bit 4	Statusbyte Bit 5	Statusbyte Bit 6	Statusbyte Bit 7
	Q 1.8	Q 1.9	Q 1.10	Q 1.11	Q 1.12	Q 1.13	Q 1.14	Q 1.15
	8	9	10	11	12	13	14	15

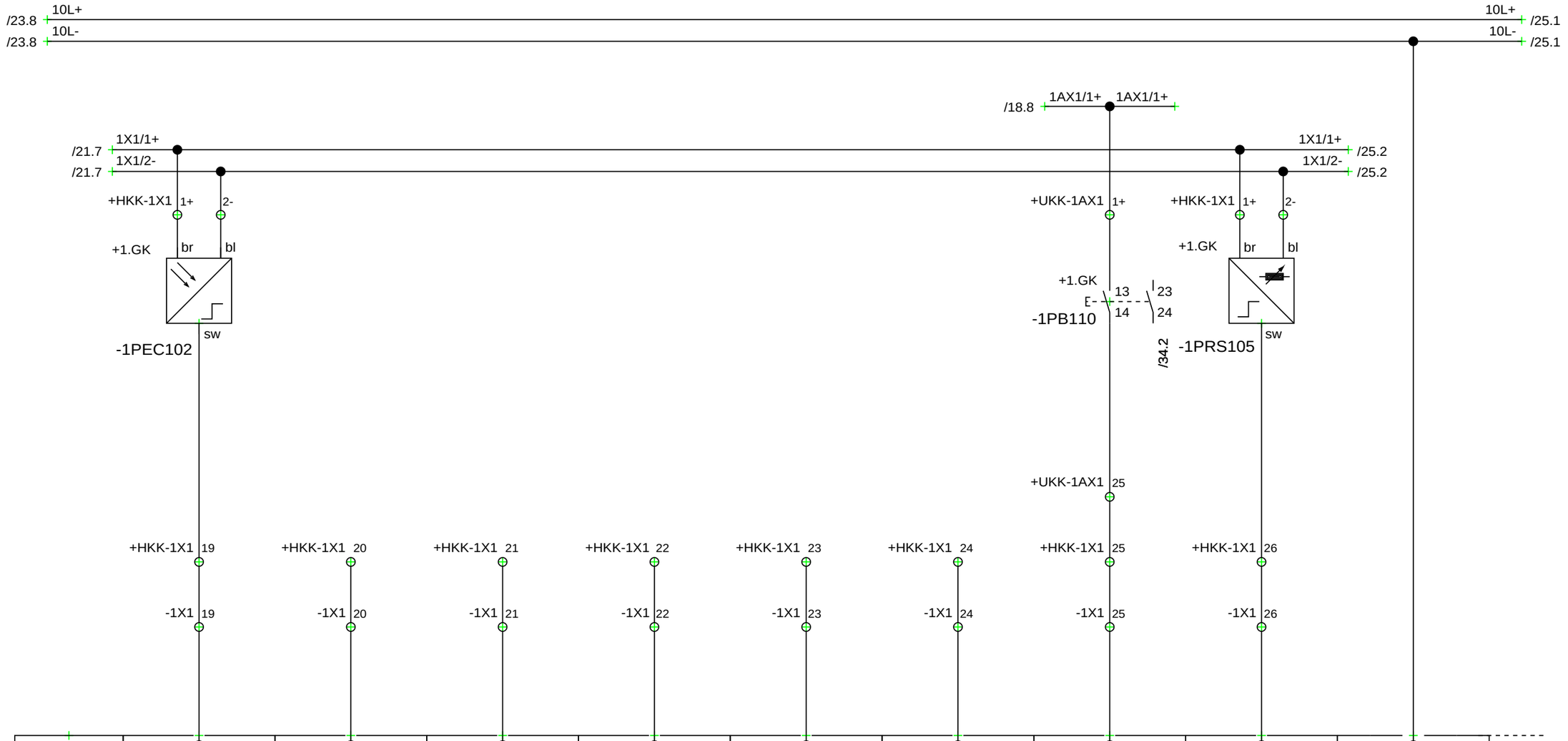
	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
1746-IB16	I:2/8	I:2/9	I:2/10	I:2/11	I:2/12	I:2/13	I:2/14	I:2/15	DCCOM
									power supply
	-1PLCM3	-1PLCM3	-1PLCM3	-1PLCM3	-1PLCM3	-1PLCM3	-1PLCM3	-1PLCM3	-1PLCM3

connection to IMC S

BÜHLER

customer 474 :P_NR2		+HS/1.GK	page 23
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

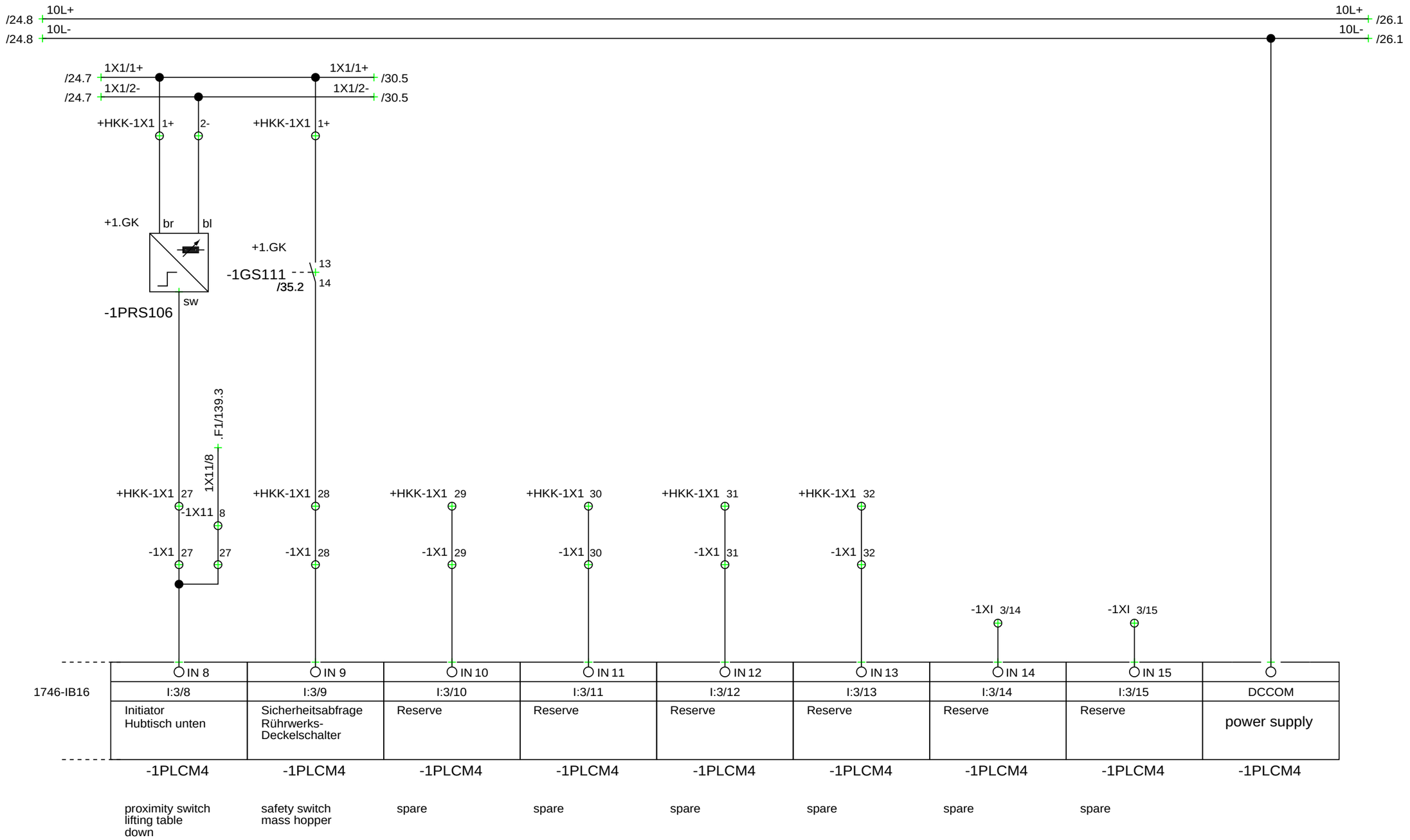


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:3/0	I:3/1	I:3/2	I:3/3	I:3/4	I:3/5	I:3/6	I:3/7	DCCOM
	Formentaster Hülsen-GK	Reserve	Reserve	Reserve	Reserve	Reserve	Tippen	Initiator Hubtisch oben	power supply
	-1PLCM4	-1PLCM4	-1PLCM4	-1PLCM4	-1PLCM4	-1PLCM4	-1PLCM4	-1PLCM4	-1PLCM4
	mould sensor shell depositor	spare	spare	spare	spare	spare	jog mode	proximity switch lifting table up	

BÜHLER

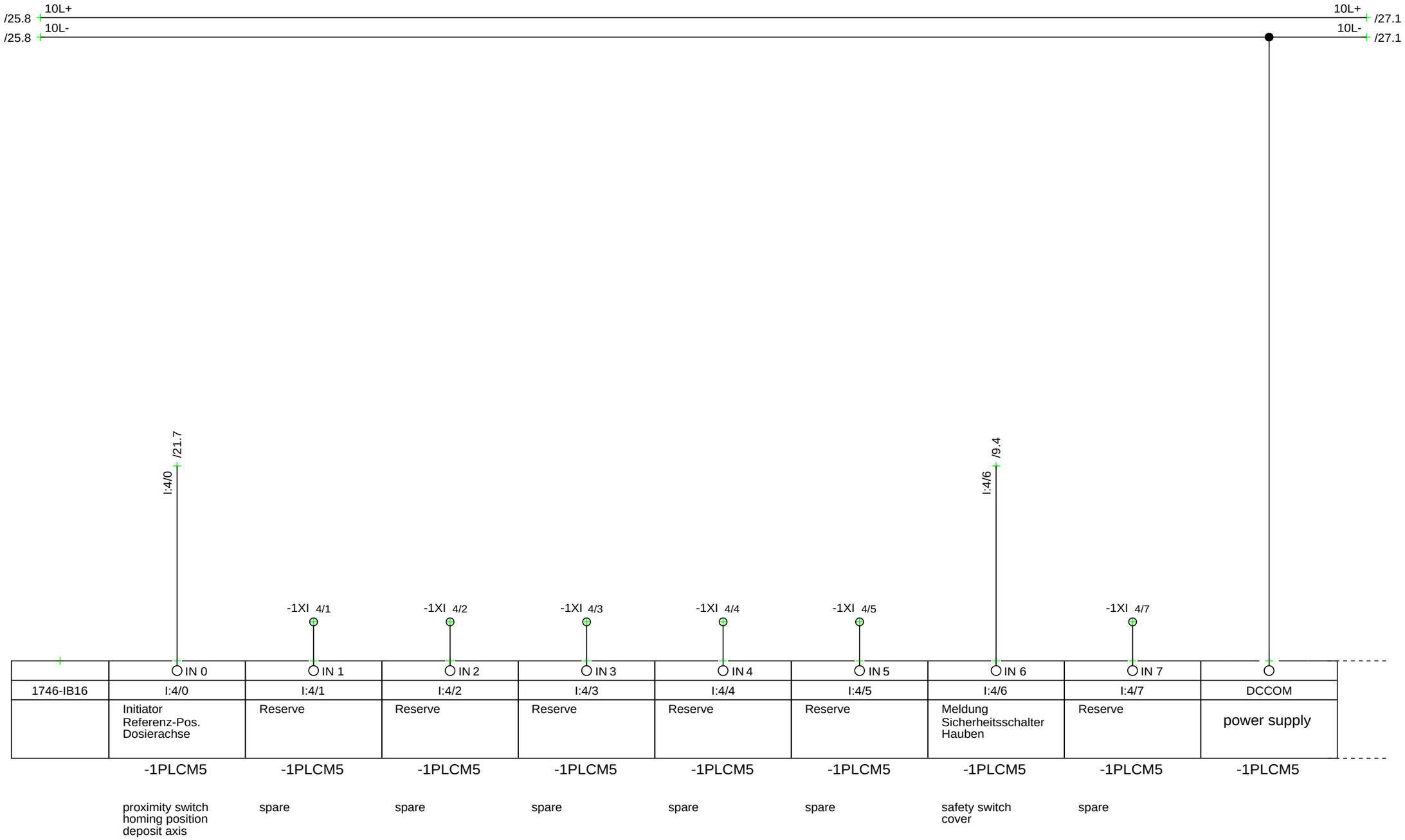
customer 474 :P_NR2		+HS/1.GK	page **24**
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



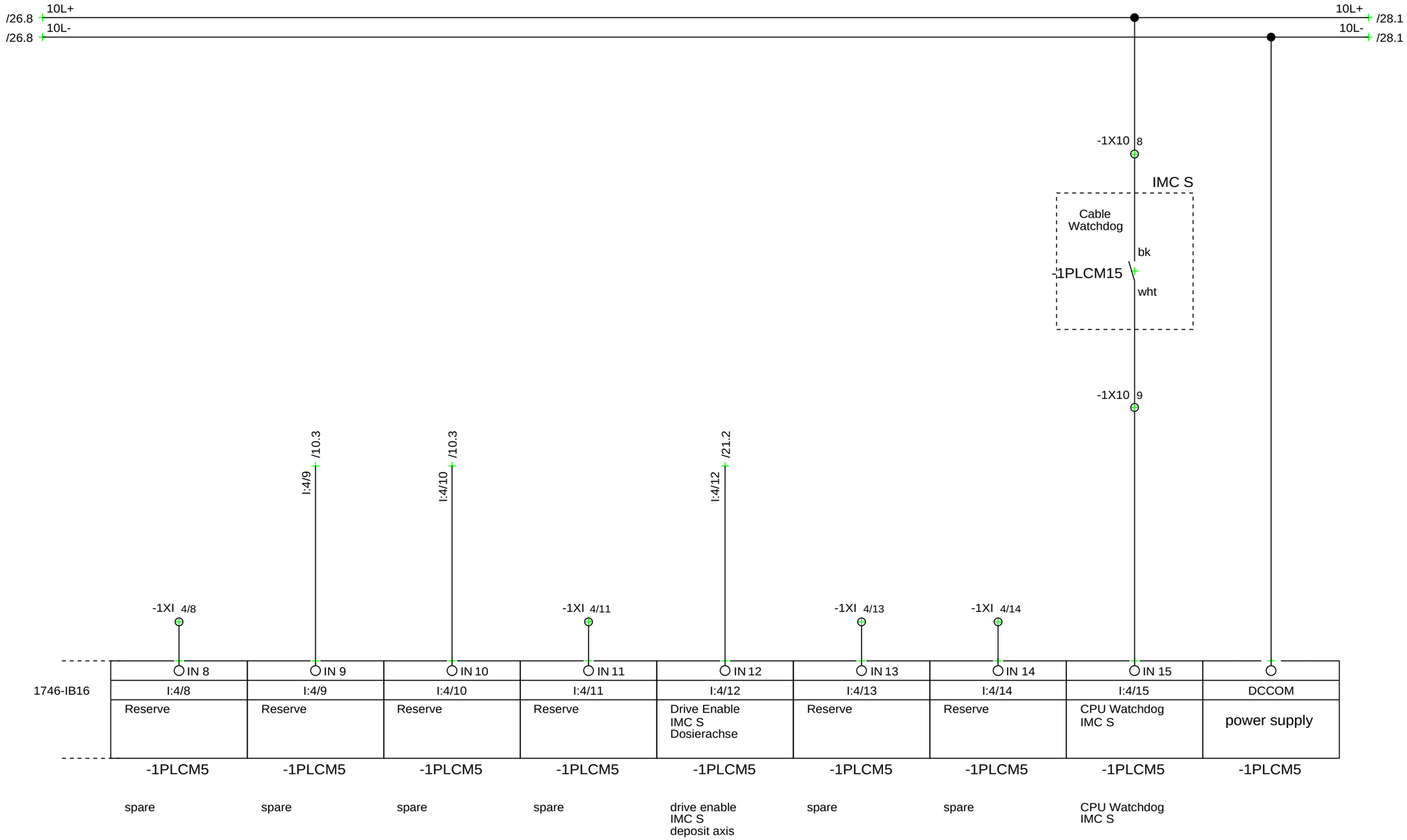
BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **25**	
		=A1.F2	of 42	
comm. nr. :P_NR1	digital inputs	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



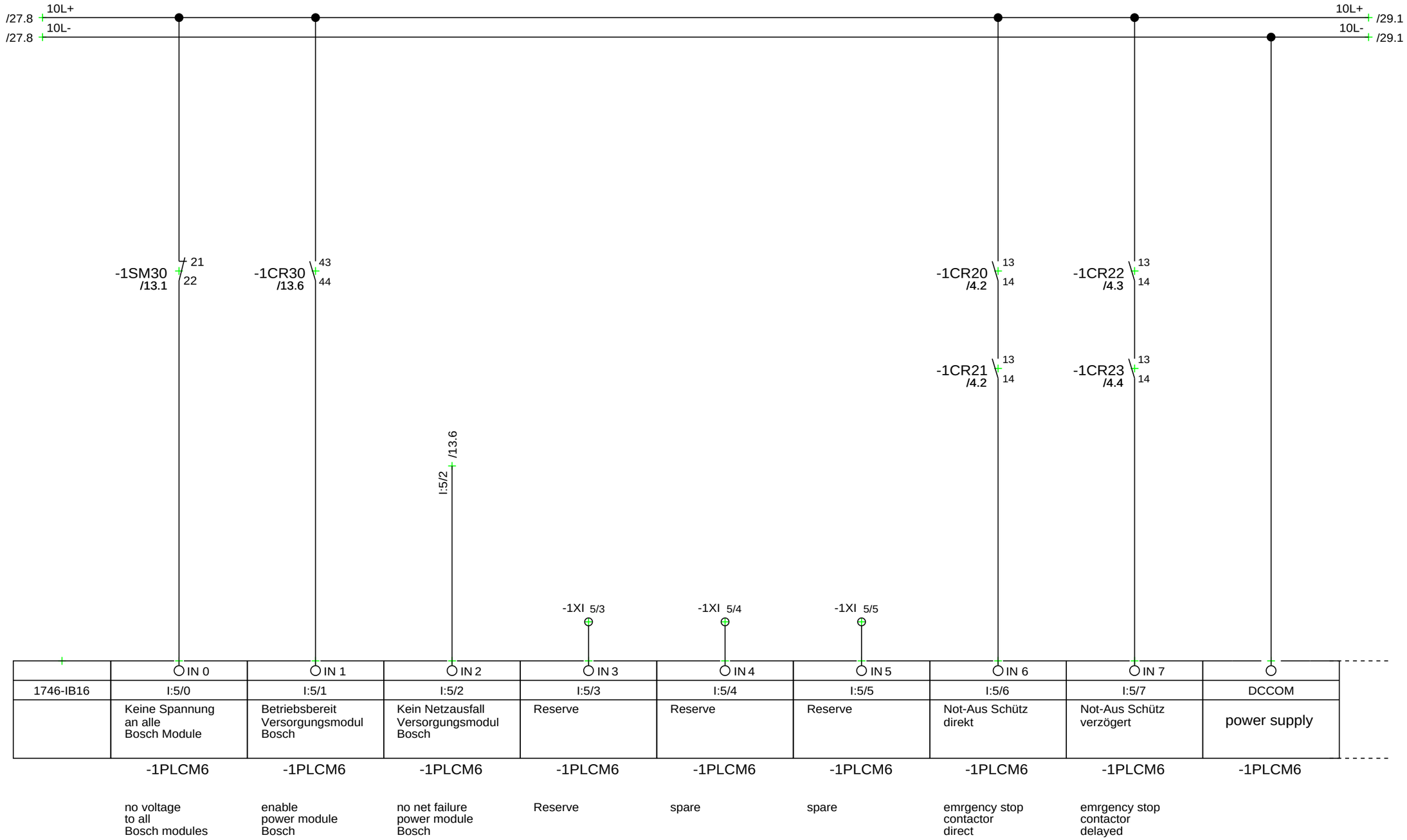
BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 26
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 27
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR / changed :BEA1 / control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:5/0	I:5/1	I:5/2	I:5/3	I:5/4	I:5/5	I:5/6	I:5/7	DCCOM
	Keine Spannung an alle Bosch Module	Betriebsbereit Versorgungsmodul Bosch	Kein Netzausfall Versorgungsmodul Bosch	Reserve	Reserve	Reserve	Not-Aus Schütz direkt	Not-Aus Schütz verzögert	power supply
	-1PLCM6	-1PLCM6	-1PLCM6	-1PLCM6	-1PLCM6	-1PLCM6	-1PLCM6	-1PLCM6	-1PLCM6
	no voltage to all Bosch modules	enable power module Bosch	no net failure power module Bosch	Reserve	spare	spare	emrgency stop contactor direct	emrgency stop contactor delayed	

BÜHLER

customer 474 :P_NR2

+HS/1.GK

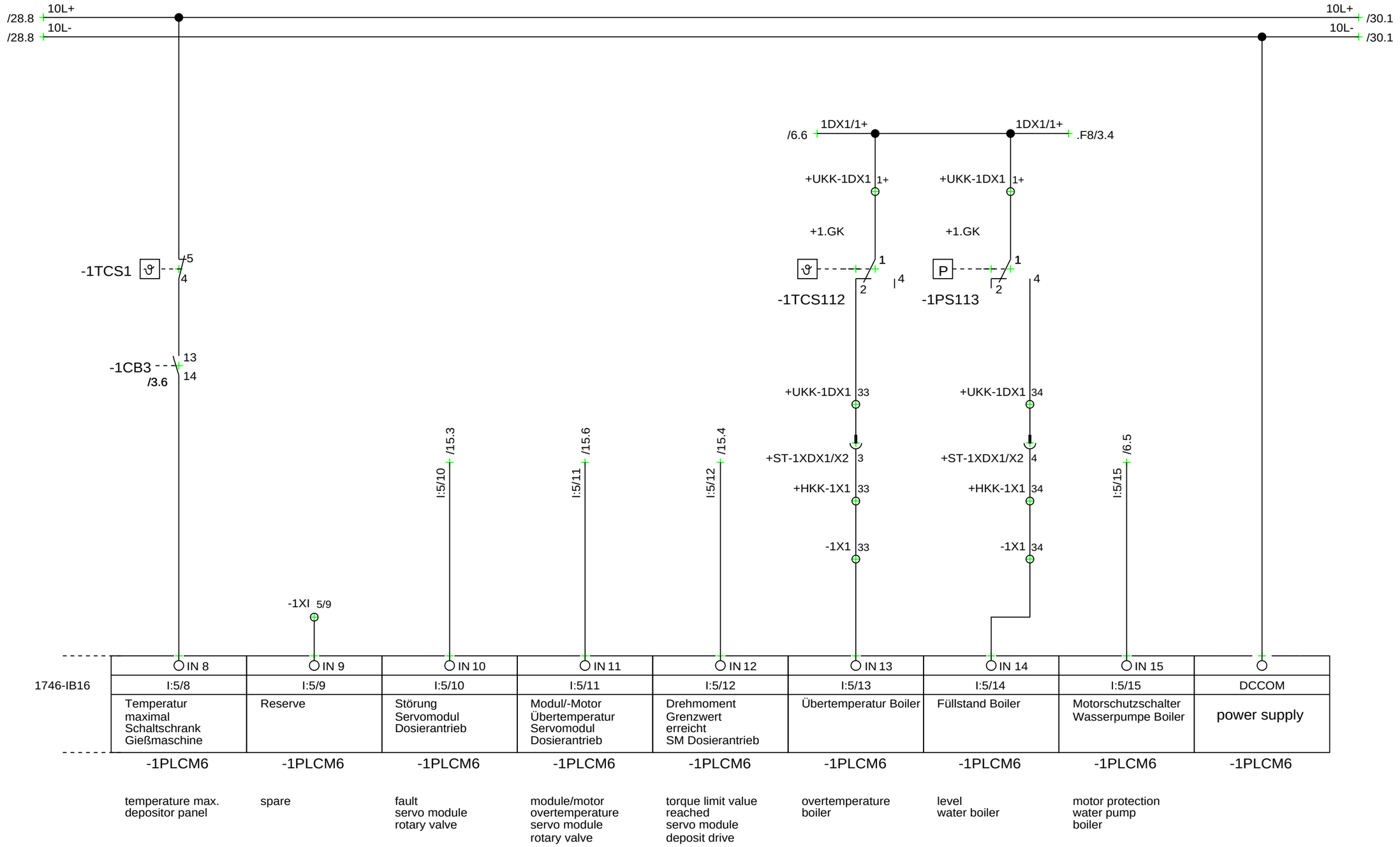
page **28**

=A1.F2

of 42

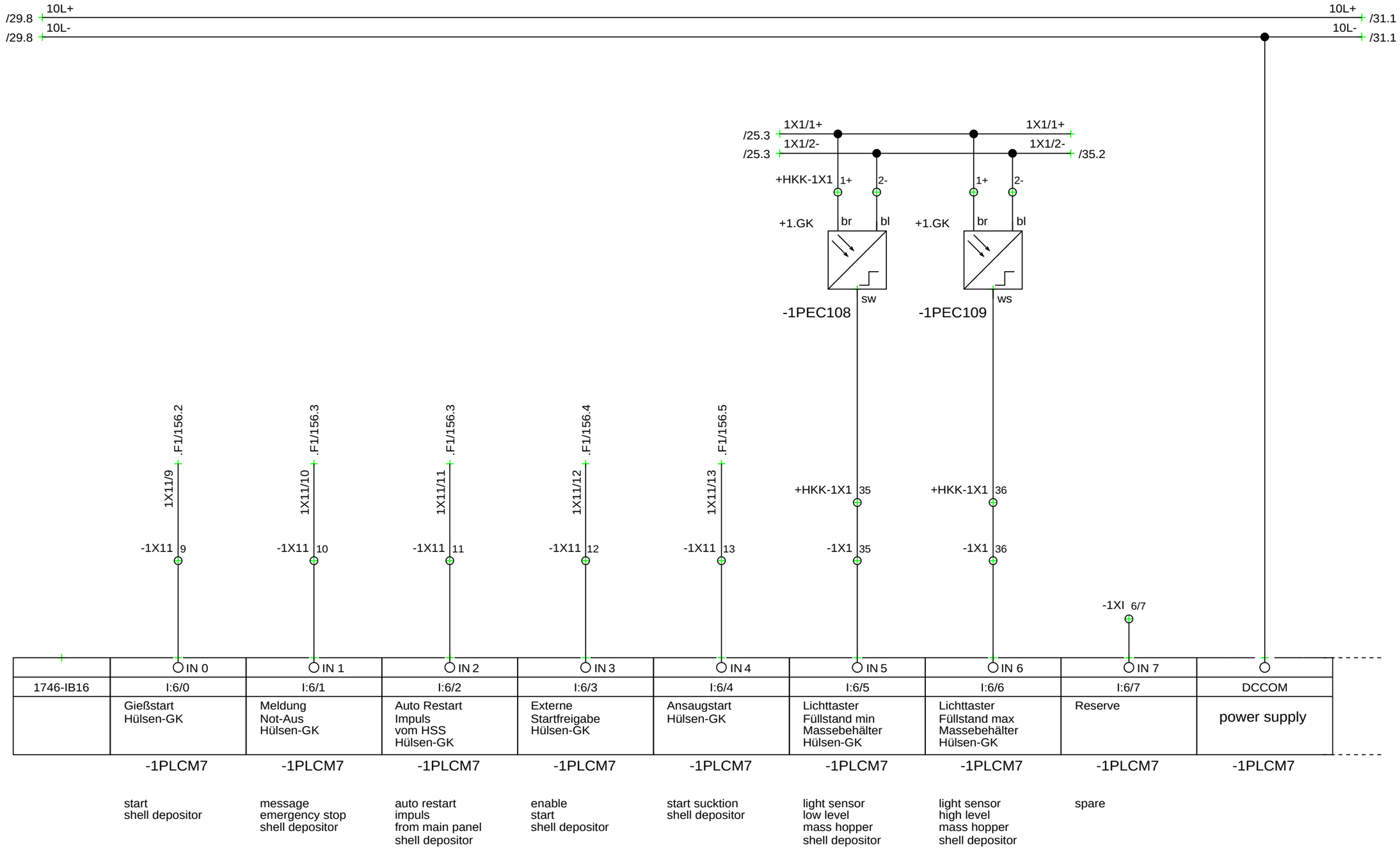
comm. nr. :P_NR1 | digital inputs | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

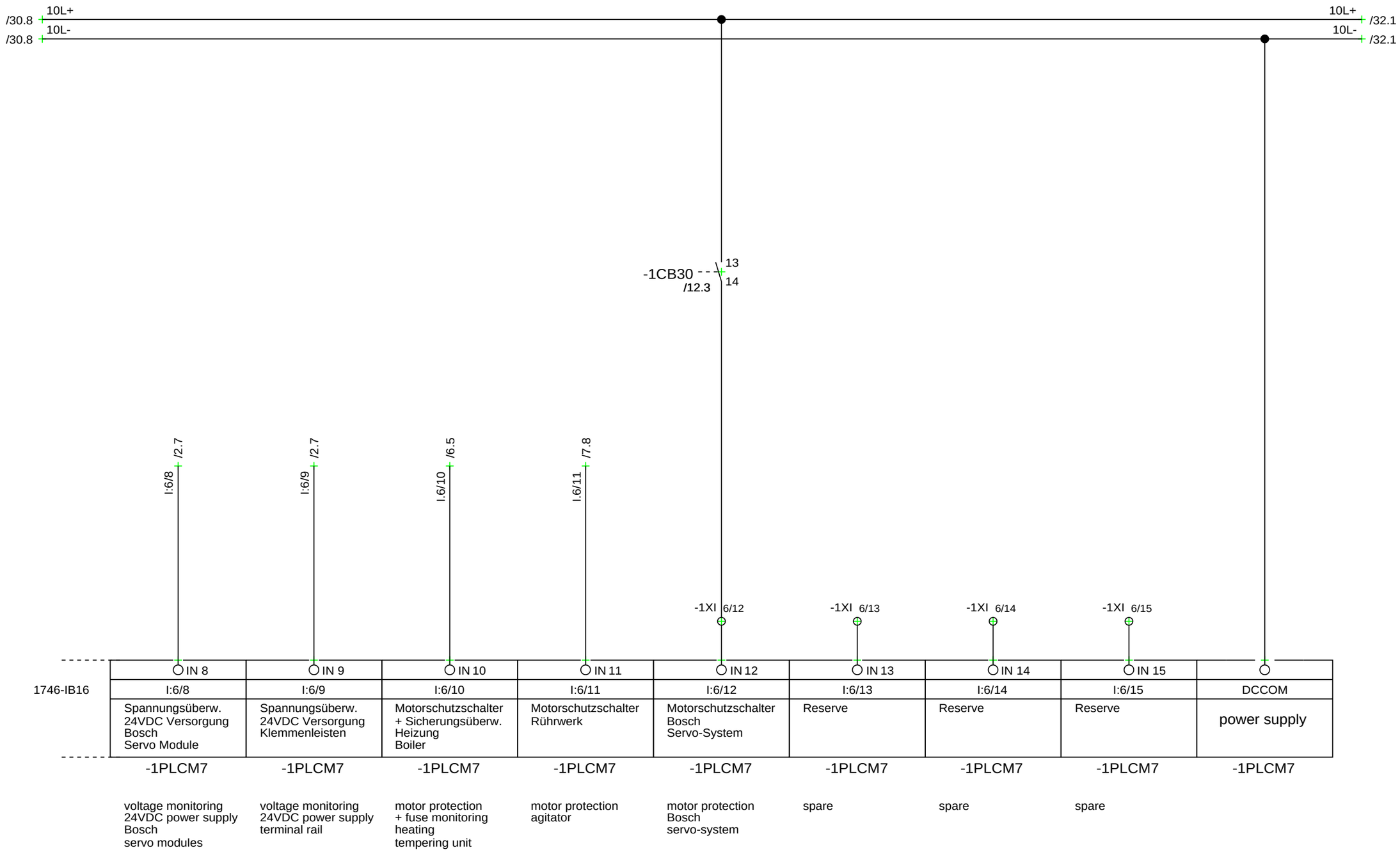


BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **29**
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR / changed :BEA1 / control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 30	
		=A1.F2	of 42	
comm. nr. :P_NR1	digital inputs	drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 31
		=A1.F2	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/31.8 10L+
/31.8 10L-

connection to IMC S

10L+ .1
10L- .1

	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	
	home axis	proximity switch RV suck position	proximity switch RV deposit position	start deposit pulse	enable manual mode	spare	auto mode	reset fault	VDC
1746-OB16									power supply
	Q:8/0	Q:8/1	Q:8/2	Q:8/3	Q:8/4	Q:8/5	Q:8/6	Q:8/7	
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	

-1PLCM9

.8 10L+
.8 10L-

10L+ /33.1
10L- /33.1

33	51	0	1	2	3	4	5	6	7
		I :0	I :1	I :2	I :3	I :4	I :5	I :6	I :7
power supply									
-1PLCM16		-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16
/17.6		/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER

customer 474 :P_NR2		+HS/1.GK	page 32
		=A1.F2	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

/32.2 10L+
/32.2 10L-

10L+ /34.1
10L- /34.1

connection to IMC S

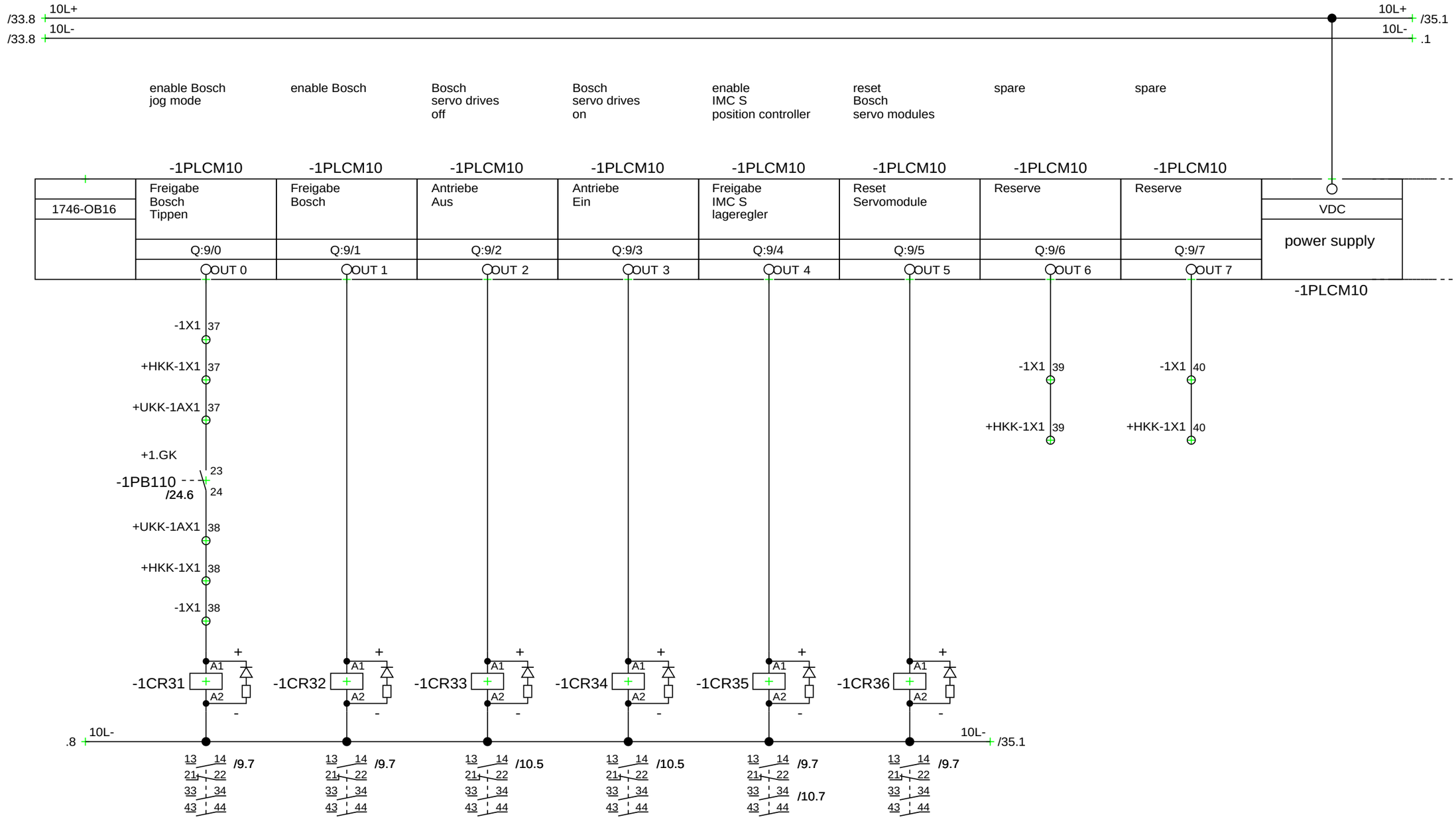
	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	-1PLCM9	
1746-OB16	emergency stop 0 = emergency stop	trigger receive data	trigger send data	manual RV axis	manual deposit axis	spare	manual forward right	manual backward left	DCCOM power supply
	Q:8/8	Q:8/9	Q:8/10	Q:8/11	Q:8/12	Q:8/13	Q:8/14	Q:8/15	
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	

-1PLCM9

8	9	10	11	12	13	14	15	
I :8	I :9	I :10	I :11	I :12	I :13	I :14	I :15	
-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	-1PLCM16	
/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	

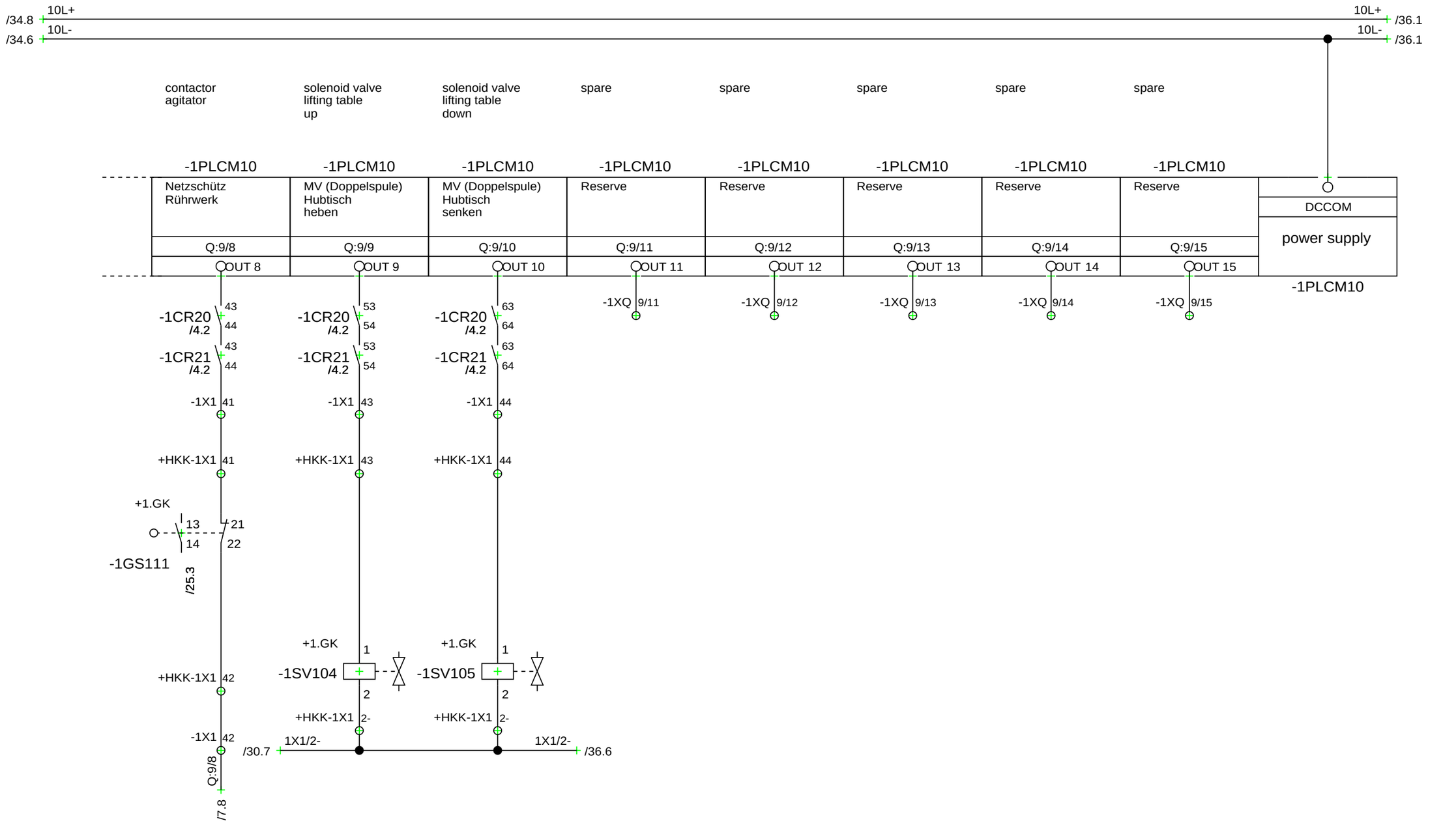
BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 33
		=A1.F2	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



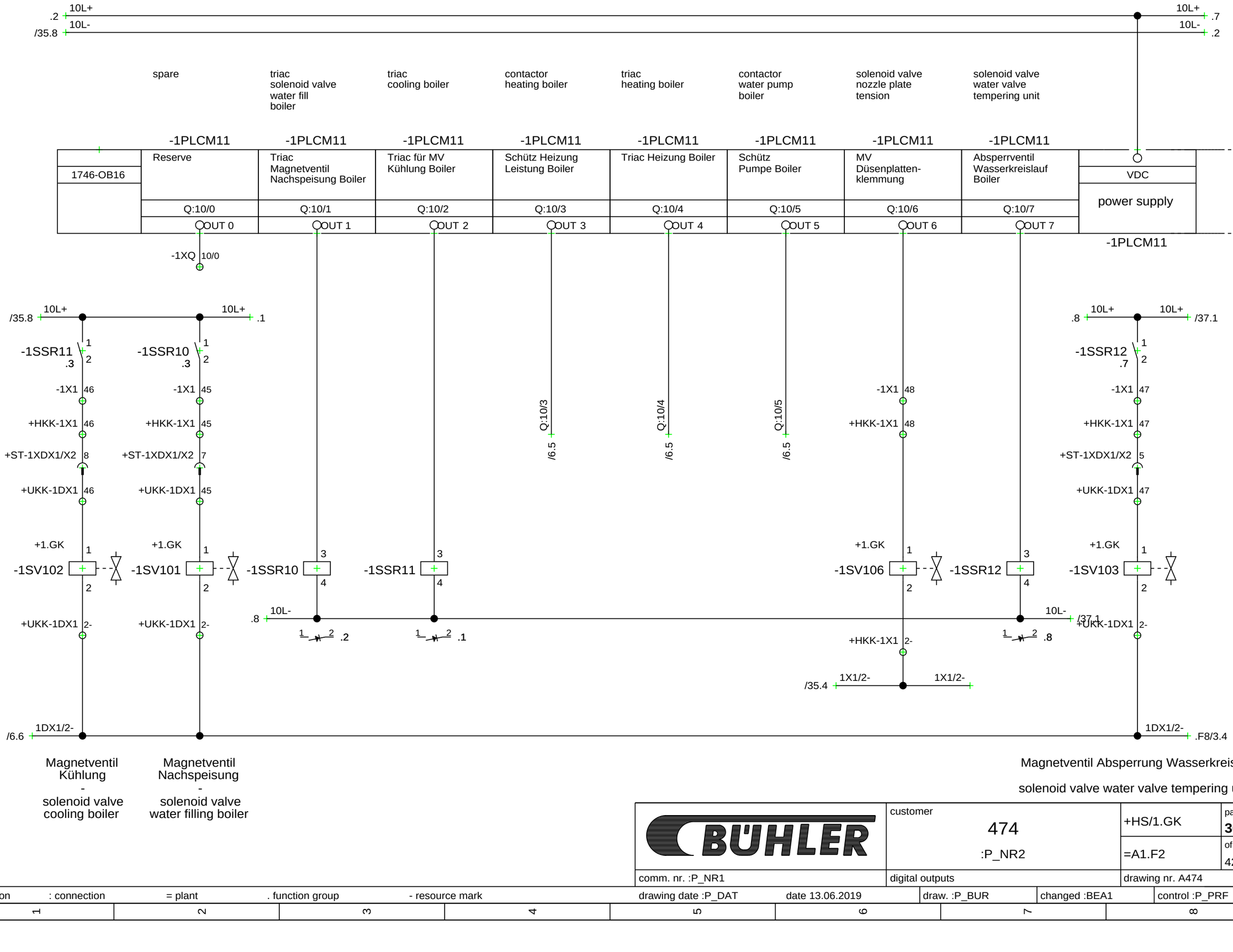
BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 34
		=A1.F2	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

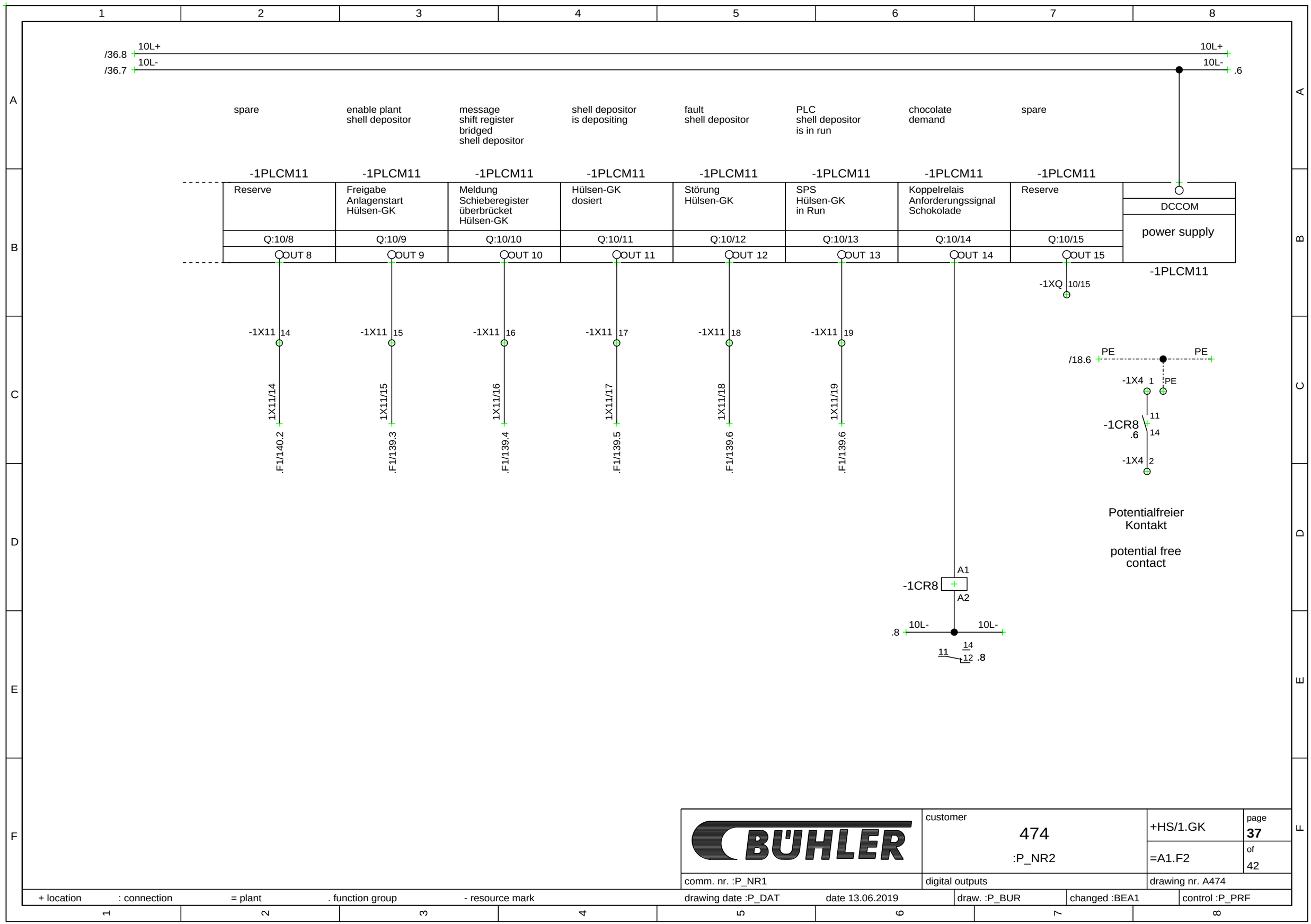
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



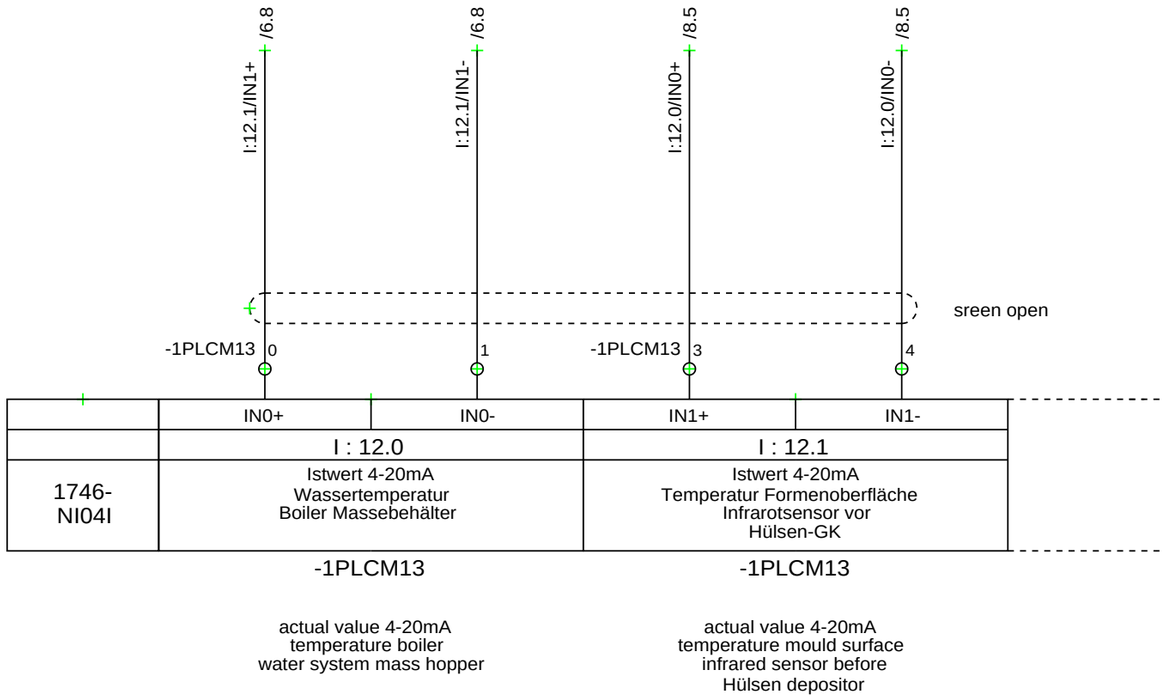
BÜHLER	customer 474 :P_NR2	+HS/1.GK =A1.F2	page 35 of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF


10L+
.2
10L-
/35.8
10L+
.7
10L-
.2
spare
triac
solenoid valve
water fill
boiler
triac
cooling boiler
contactor
heating boiler
triac
heating boiler
contactor
water pump
boiler
solenoid valve
nozzle plate
tension
solenoid valve
water valve
tempering unit
-1PLCM11
-1PLCM11
-1PLCM11
-1PLCM11
-1PLCM11
-1PLCM11
-1PLCM11
-1PLCM11
1746-OB16
Reserve
Triac
Magnetventil
Nachspeisung Boiler
Triac für MV
Kühlung Boiler
Schütz Heizung
Leistung Boiler
Triac Heizung Boiler
Schütz
Pumpe Boiler
MV
Düsenplatten-
klemmung
Absperrventil
Wasserkreislauf
Boiler
VDC
power supply
-1PLCM11
Q:10/0
Q:10/1
Q:10/2
Q:10/3
Q:10/4
Q:10/5
Q:10/6
Q:10/7
OUT 0
OUT 1
OUT 2
OUT 3
OUT 4
OUT 5
OUT 6
OUT 7
-1XQ 10/0
10L+
/35.8
10L+
.1
-1SSR11
.3
-1SSR10
.3
-1X1 46
+HKK-1X1 46
+ST-1XDX1/X2 8
+UKK-1DX1 46
-1X1 45
+HKK-1X1 45
+ST-1XDX1/X2 7
+UKK-1DX1 45
Q:10/3
/6.5
Q:10/4
/6.5
Q:10/5
/6.5
-1X1 48
+HKK-1X1 48
10L+
.8
10L+
/37.1
-1SSR12
.7
-1X1 47
+HKK-1X1 47
+ST-1XDX1/X2 5
+UKK-1DX1 47
+1.GK
-1SV102
+1.GK
-1SV101
-1SSR10
-1SSR11
+1.GK
-1SV106
-1SSR12
+1.GK
-1SV103
+UKK-1DX1 2-
+UKK-1DX1 2-
10L-
.8
.2
.1
+HKK-1X1 2-
10L-
/37.1
+UKK-1DX1 2-
/35.4
1X1/2-
1X1/2-
1DX1/2-
/6.6
1DX1/2-
.F8/3.4
Magnetventil
Kühlung
-
solenoid valve
cooling boiler
Magnetventil
Nachspeisung
-
solenoid valve
water filling boiler
Magnetventil Absperrung Wasserkreisl.
solenoid valve water valve tempering unit
BÜHLER
customer
474
:P_NR2
+HS/1.GK
page
36
=A1.F2
of
42
comm. nr. :P_NR1
digital outputs
drawing nr. A474
+ location
: connection
= plant
. function group
- resource mark
drawing date :P_DAT
date 13.06.2019
draw. :P_BUR
changed :BEA1
control :P_PRF



BÜHLER	customer 474 :P_NR2		+HS/1.GK	page 37	
			=A1.F2	of 42	
comm. nr. :P_NR1	digital outputs		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **38**
		=A1.F2	of 42
comm. nr. :P_NR1	analogue inputs		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

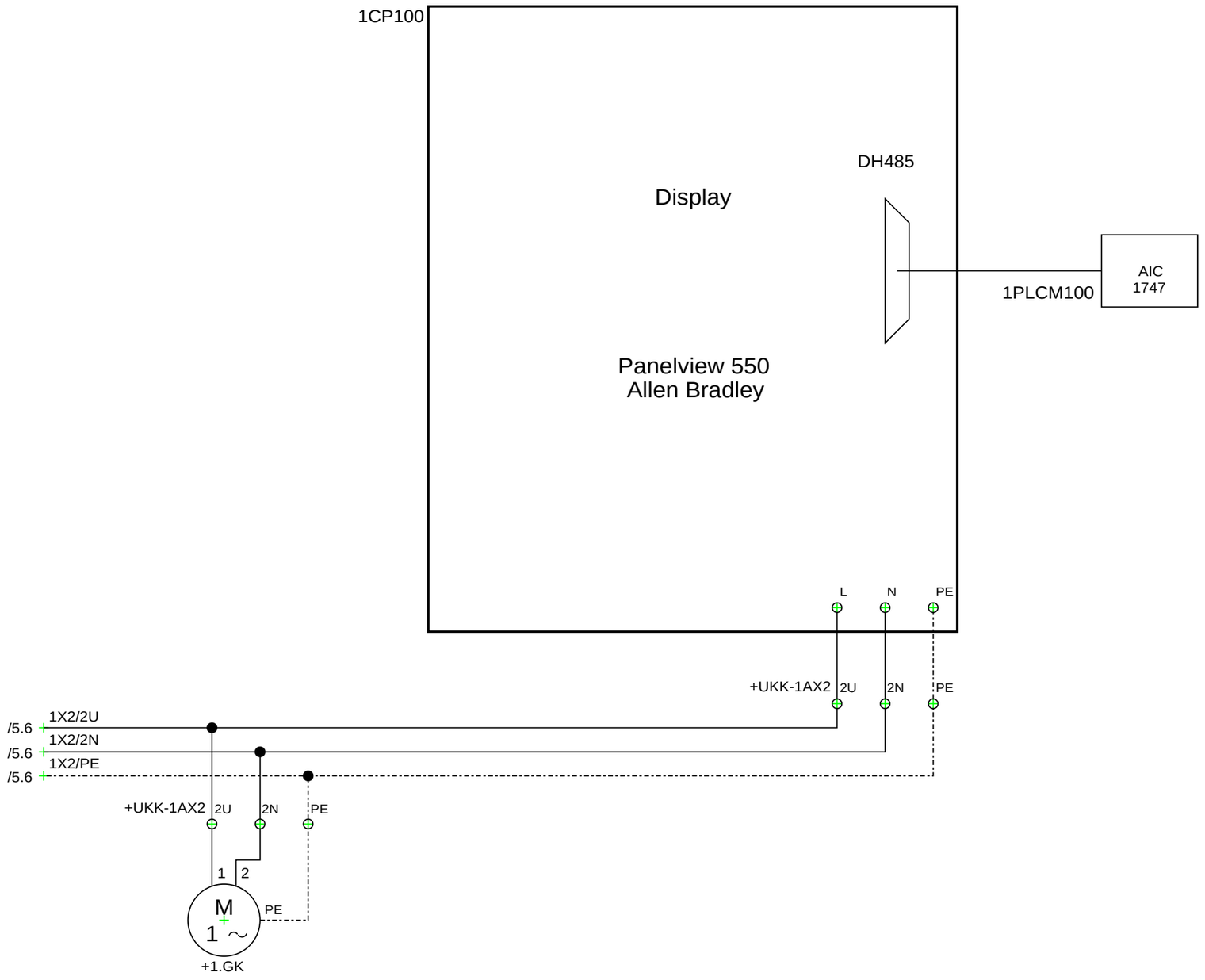
	spare	Analogue ground channel 0	spare	Analogue ground channel 1
Function	Reserve	Masse Kanal 0	Reserve	Masse Kanal 1
Adress	0 : 12.0		O : 12.1	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM

NI04I
1PLCM13

-1PLCM13 7 8 10 11

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **39**
		=A1.F2	of 42
comm. nr. :P_NR1	analogue outputs		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1 control :P_PRF



-1M104

Lüfter Bedienpult

fan operator panel

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **40**	
		=A1.F2	of 42	
comm. nr. :P_NR1	panelview 550 ALLEN BRADLEY	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Einspeisung
3x480+N/60Hz

power feed

Hauptschaltschrank
Gießmaschine VIT22

main depositor
panel

1X1
1X2
1X3
1X4
1X10
1X11
1X12
1XI
1XQ

1BX1

Klemmenkasten an Gießmaschine

depositor marshalling box

1X1
1X2
1X3

operator panel

BINDLER

1AX2

6XDX1/2

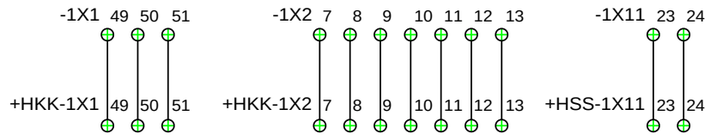
Temperiergerät

1DX1
1DX2

water heater
mass hoper

BÜHLER	customer 474 :P_NR2	+HS/1.GK	page 41
		=A1.F2	of 42
comm. nr. :P_NR1	wiring scheme	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



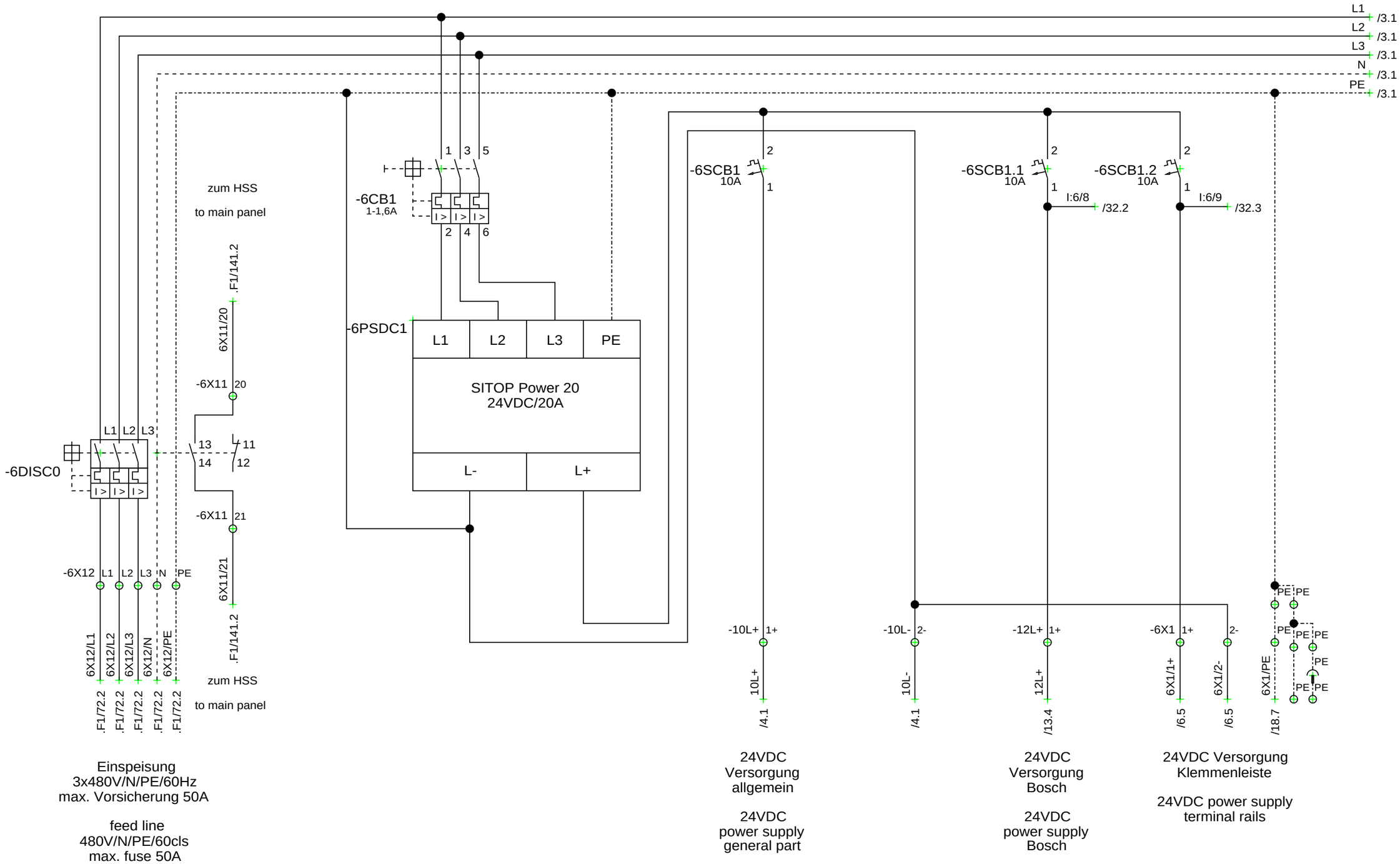
BÜHLER	customer 474 :P_NR2	+HS/1.GK	page **42**
		=A1.F2	of 42
comm. nr. :P_NR1	spare terminals	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Schaltplan
1.Füllungs Dosiermaschine
GKH/ed

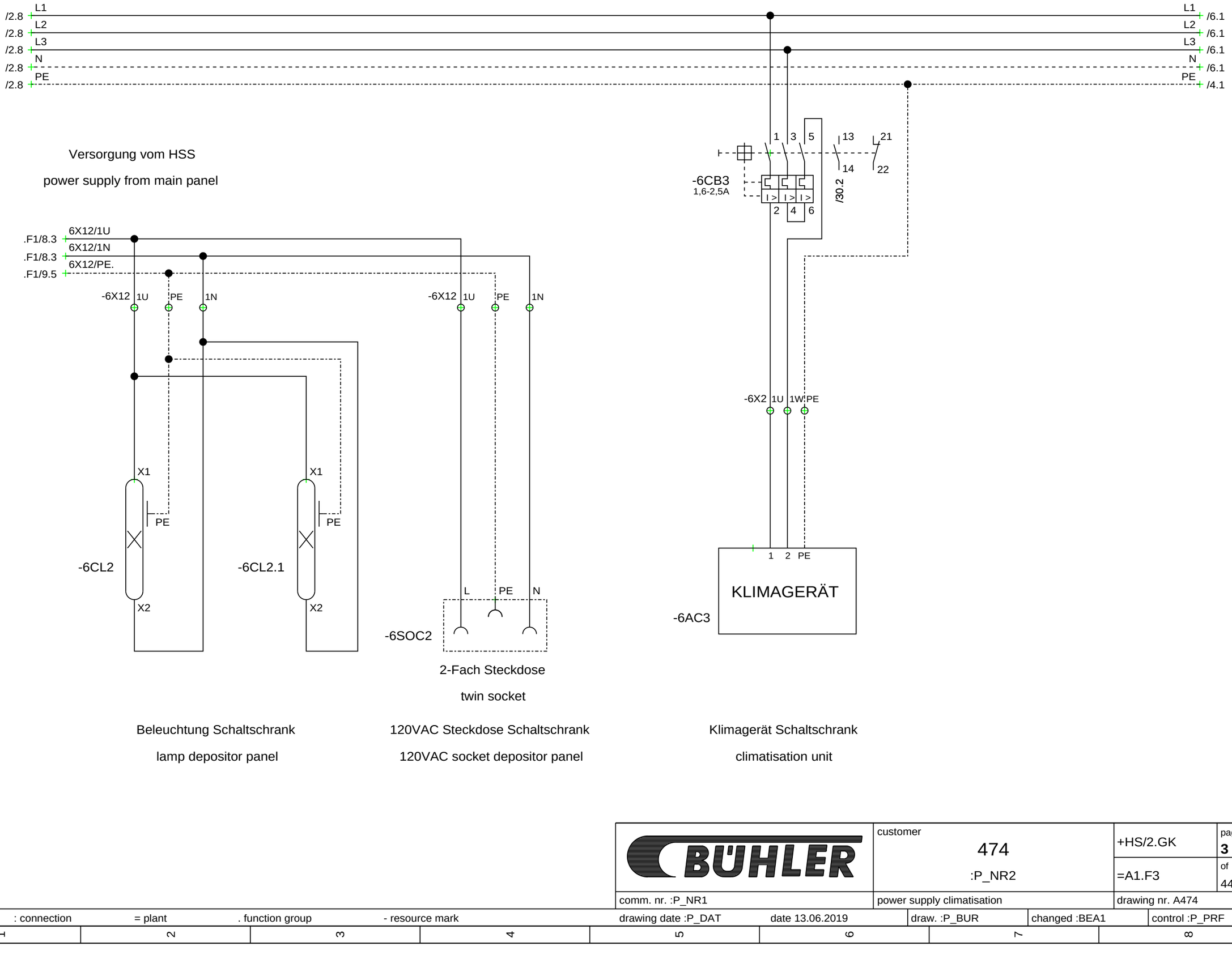
wiring diagram
1.filling depositor

BÜHLER	customer 474 :P_NR2		+HS/2.GK	page 1	
			=A1.F3	of 44	
comm. nr. :P_NR1	cover sheet		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



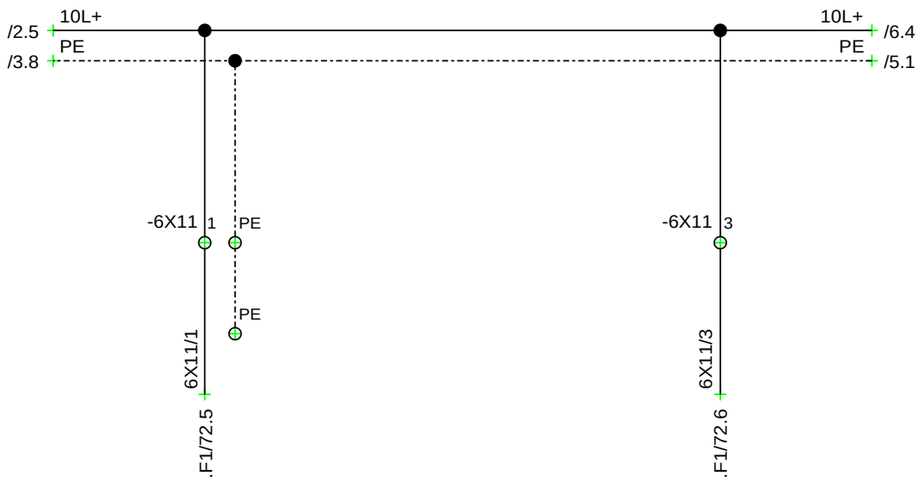
BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 2
		=A1.F3	of 44
comm. nr. :P_NR1	main power feed / power supply 24V/230V	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 3
		=A1.F3	of 44
comm. nr. :P_NR1	power supply climatisation		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

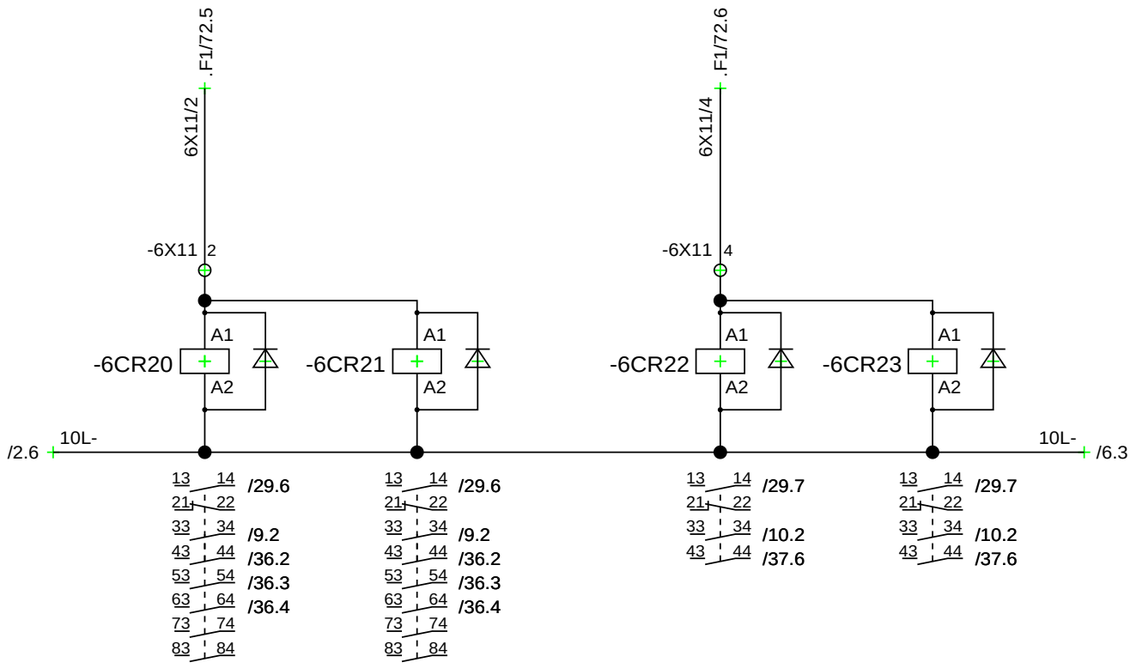


vom HSS

from main panel

vom HSS

from main panel

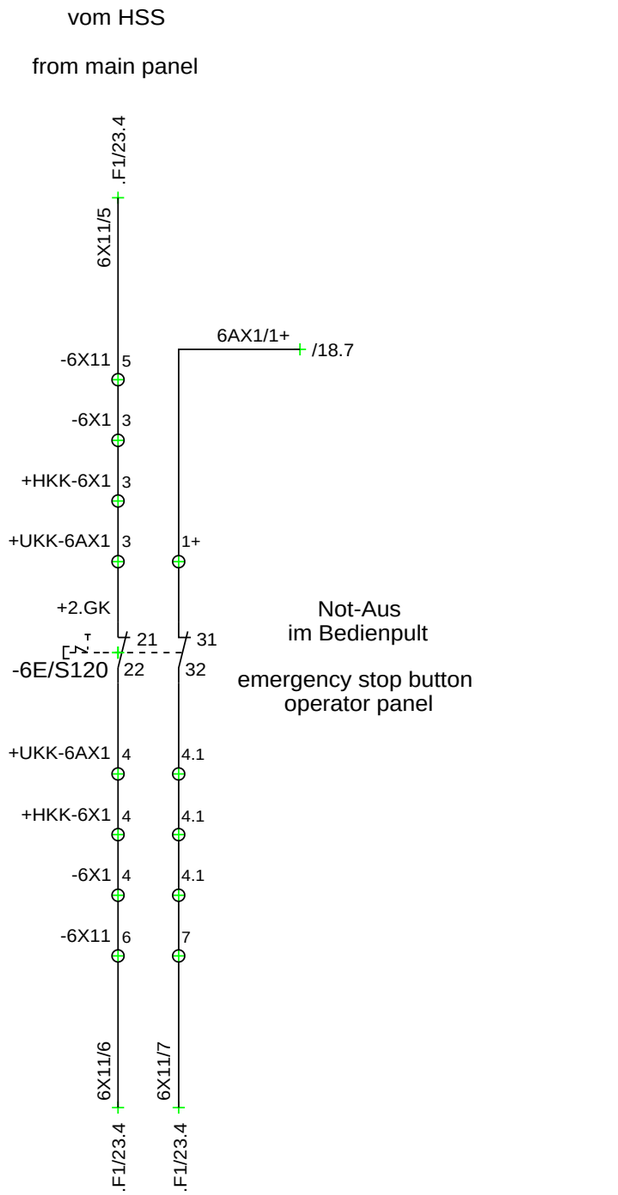


Not-Aus Schütz direkt

emergency stop contactor direct

Not-Aus Schütz verzögert

emergency stop contactor delayed

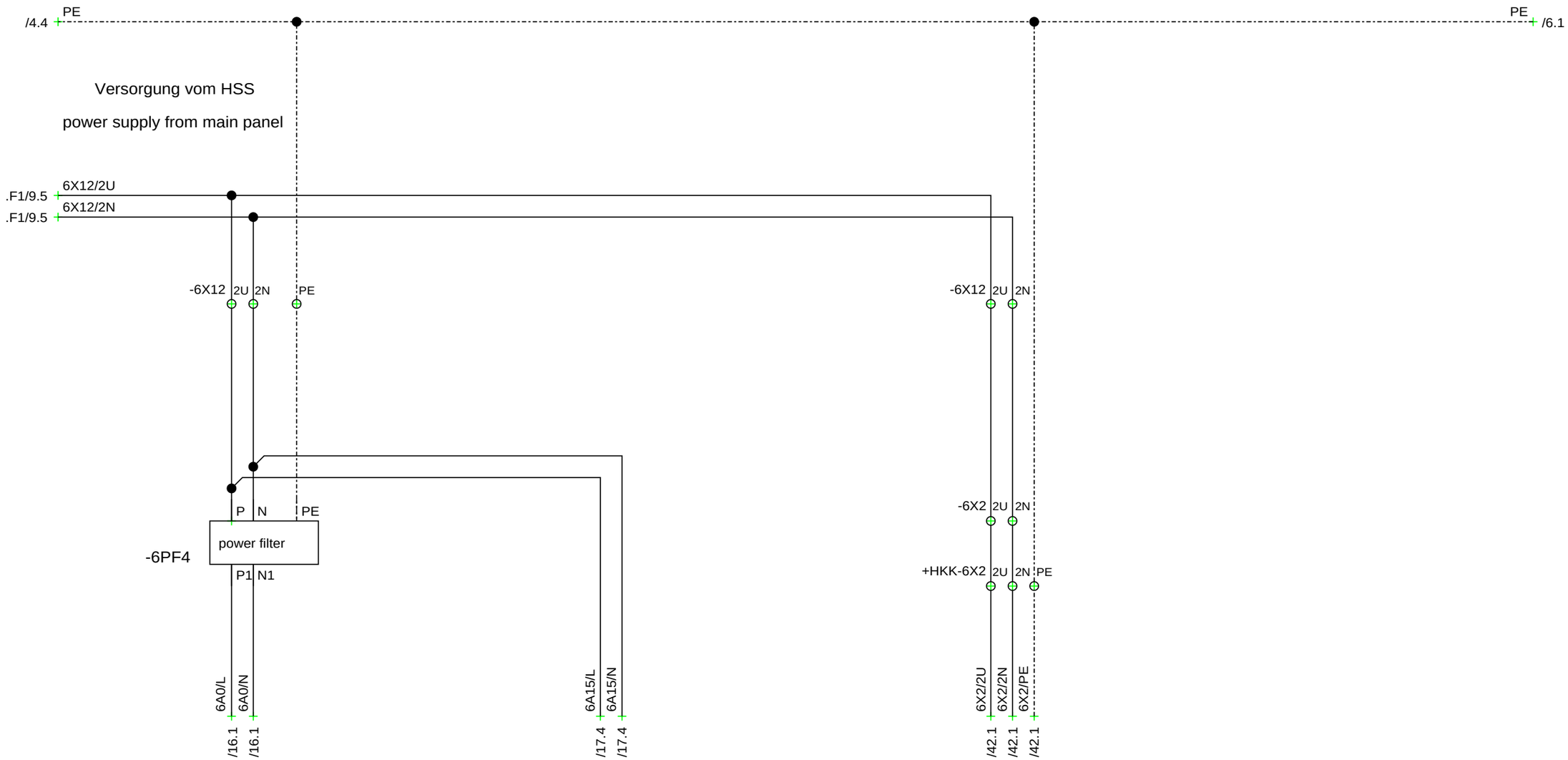


vom HSS

from main panel

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 4
		=A1.F3	of 44
comm. nr. :P_NR1	emergency stop relay	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



120VAC/60Hz Versorgung
Steuerung Allen Bradley

120VAC/60cls power supply
PLC system Allen Bradley

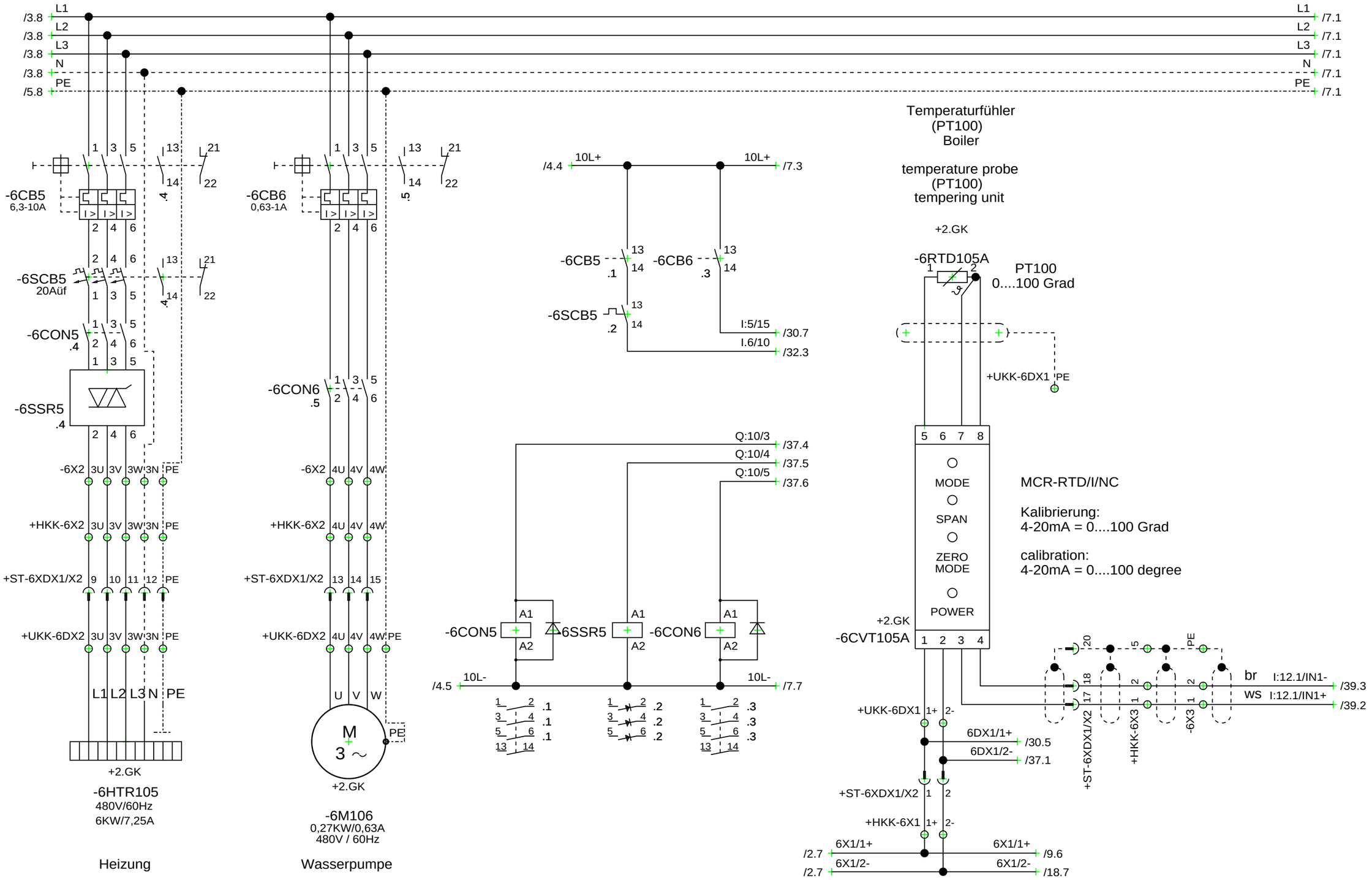
120VAC/60Hz Versorgung
IMC S

120VAC/60cls power supply
IMC S

120VAC/60Hz Versorgung
Bedienpult

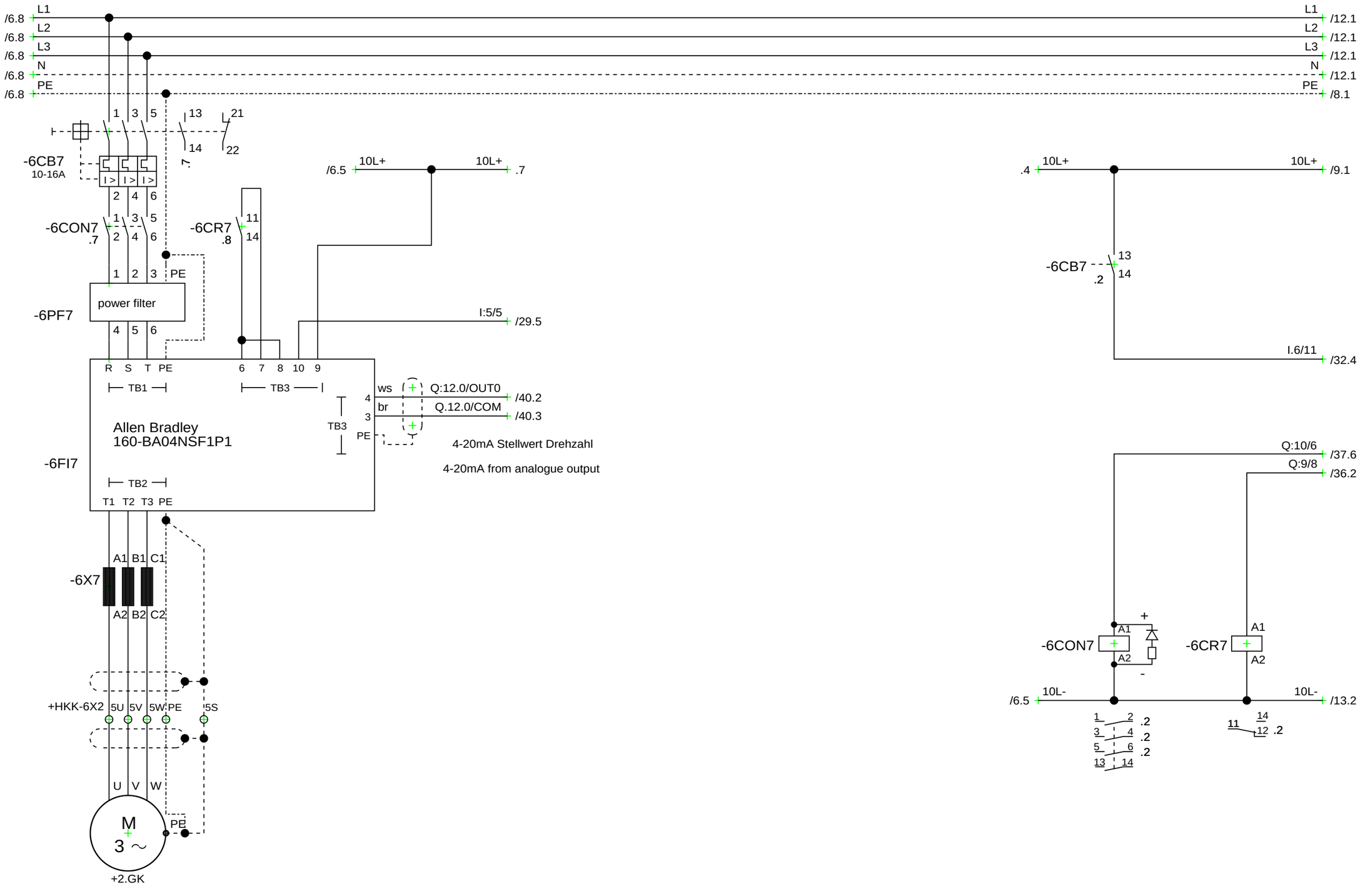
120VAC/60cls power supply
operator panel

BÜHLER	customer 474 :P_NR2		+HS/2.GK	page 5	
			=A1.F3	of 44	
comm. nr. :P_NR1	power supply PLC System / panelview		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 6
		=A1.F3	of 44
comm. nr. :P_NR1	water heater mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 7
		=A1.F3	of 44
comm. nr. :P_NR1	agitator mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/7.8 PE

PE /12.1

Versorgung vom HSS

power supply from main panel

.F1/11.6 6X12/3U

.F1/11.6 6X12/3N

-6X12 3U 3N

-6X2 6U 6N PE

+HKK-6X2 6U 6N PE

+2.GK
-6PSDC110

L | N

Weidmüller
AC120V
DC 24V / 200mA

24V 0V

3
2 ws
1 br
+ST-6XT/C110

1 ⏚
2 AL
3 +
4 -
Raytec Sensor

+2.GK

-6T/C110

+HKK-6X3 6 7 8

-6X3 6 7 PE

I:12.0/IN0- /39.5

I:12.0/IN0+ /39.4

Temperatur Formenoberfläche
Infrarotsensor vor Gießmaschine

temperature mould surface
infrared sensor before depositor

+HKK-6X2 6U 6N PE

1 2

M
1 ~
PE

+2.GK

-6M108
38W/0,53A

Lüfter Servoantriebe

fan servo drives

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 8
		=A1.F3	of 44
comm. nr. :P_NR1	infrared sensor / fan servo drives	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Freigabe Servo - Module
enable servo modules

10L+ /7.8

10L+ /10.2

-6CR20 /4.2 33 34

-6CR21 /4.2 33 34

-6X1 5

+HKK-6X1 5

+HKK-6X1 6

Reserve
spare

+HKK-6X1 7

Reserve
spare

+HKK-6X1 8

+HKK-6X1 8 -6X1 8 I:4/6 /27.6

+2.GK

Reinigungsposition
cleaning position

-6GS103 13 14 21 22

/26.6

+HKK-6X1 9

-6X1 9 9 I:4/7 /27.7

Freigabe Tippen
enable jog mode

-6CR31 /35.2 13 14

-6CR36 /35.6 13 14

-6X1 49

+HKK-6X1 49

+ST-6XX100 5

+ST-6XX100 6

+HKK-6X1 50

-6X1 50

Freigabe VM
enable power module

-6CR30 /13.6 13 14

Freigabe IP Lageregler
enable pos. controller

-6CR35 /35.5 13 14

Freigabe Bosch
enable Bosch

-6CR32 /35.3 13 14

-6X10 1 1

FG1 /21.2

FG2 /22.2

.F1/32.3

6X11/24

6X1/1+ /6.7

6X1/1+ /18.7

-6X11 24

-6X1 52

+HKK-6X1 1+ 52

+HKK-6X1 52 1+

+2.GK

+2.GK

Fronthaube
front cover

-6GS100 13 14 21 22

-6GS104 11 12 21 22

Reinigungsendposition
cleaning end position

+HKK-6X1 51 53

+HKK-6X1 53 54

-6X1 51

-6X1 54

-6X11 23 25 26 26

6X11/23 .F1/150.3

6X11/25 .F1/32.3

6X11/26 .F1/150.4

I:3/15 /26.7

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 9
		=A1.F3	of 44
comm. nr. :P_NR1	enable servo module		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Endlagen Sicherheitsschalter

safety switches

/9.6 10L+

-6CR22 /4.3 33 34

-6CR23 /4.4 33 34

-6X1 10

+HKK-6X1 10

Not-Aus
Balluf-Schalter
Dosierachse

emergency stop
Balluf-switch
deposit axis

+2.GK

-6CS104 21 22

+HKK-6X1 11

-6X1 11 I:4/9 /28.3

+HKK-6X1 11

Reserve

spare

+HKK-6X1 12

-6X1 12 12 I:4/10 /28.3

Freigabe Achsen-Lageregler

enable position controller

10L+ /13.5

-6SM30 /13.1 43 44

Freigabe IP Lageregler

enable pos. controller

-6CR35 /35.5 33 34

-6X10 2 2

DRFAULT1 /21.3

DRFAULT2 /22.3

6A31:X312/2 /13.5

Antriebe Aus

drives off

-6CR33 /35.3 13 14

Antriebe Ein

drives on

-6CR34 /35.4 13 14

-6CR30 /13.6 33 34

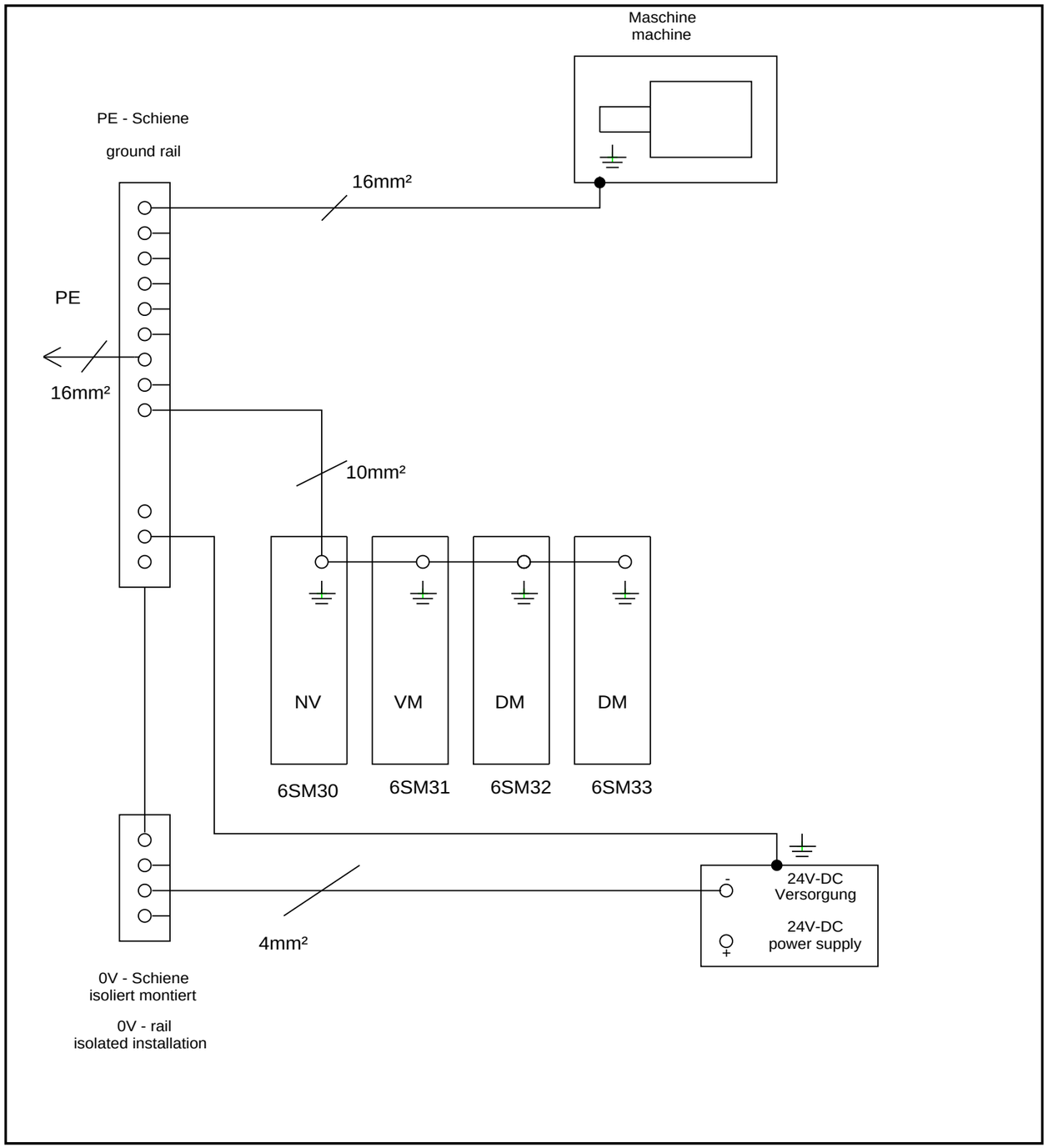
-6SM30 /13.1 13 14

6A30/A1 /13.3

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 10
		=A1.F3	of 44
comm. nr. :P_NR1	safety switches		drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

ERDUNG für BOSCH System

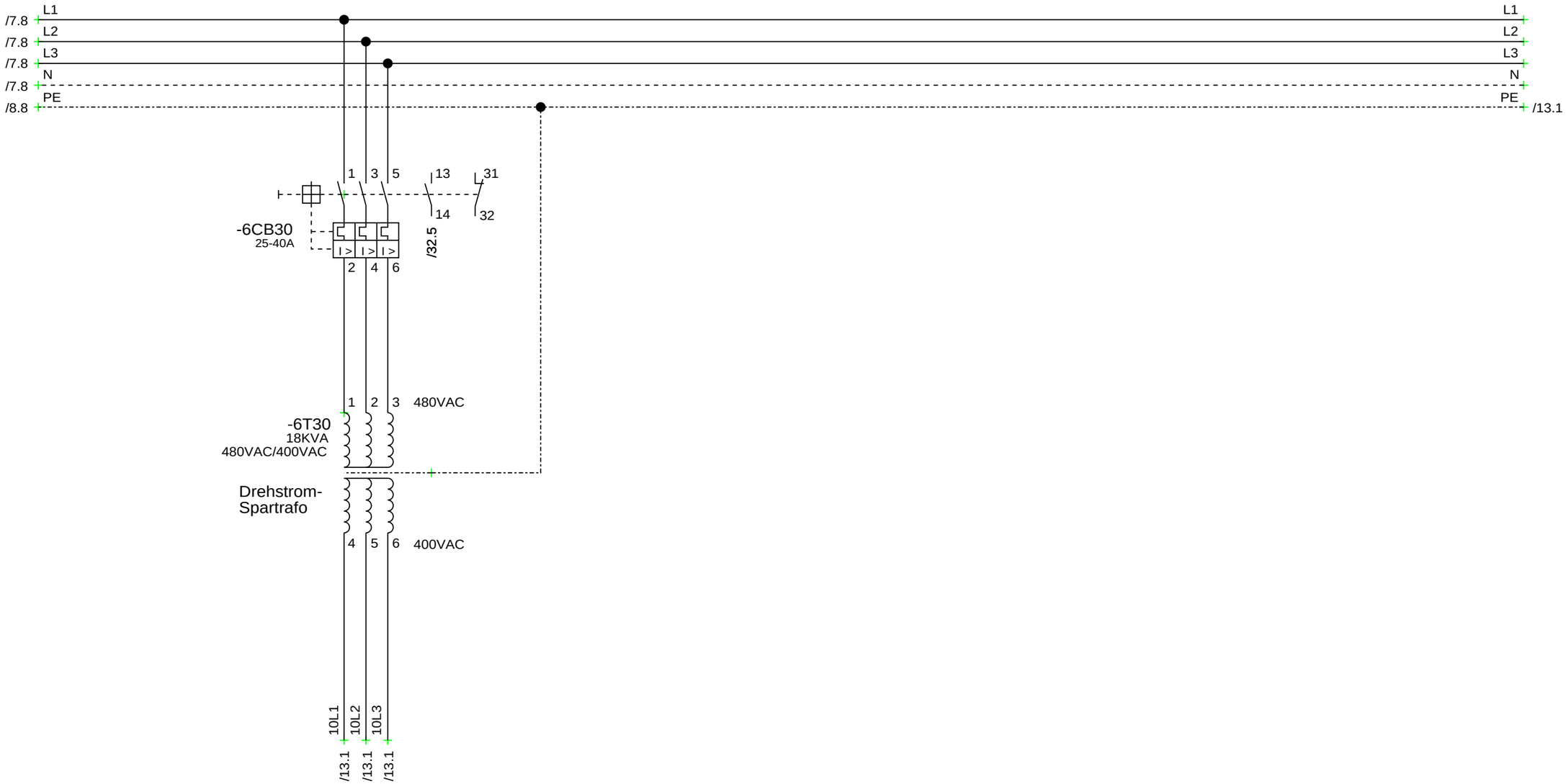


ERDUNG für BOSCH System

earthing system BOSCH rack

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **11**
		=A1.F3	of 44
comm. nr. :P_NR1	earthing servo system		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

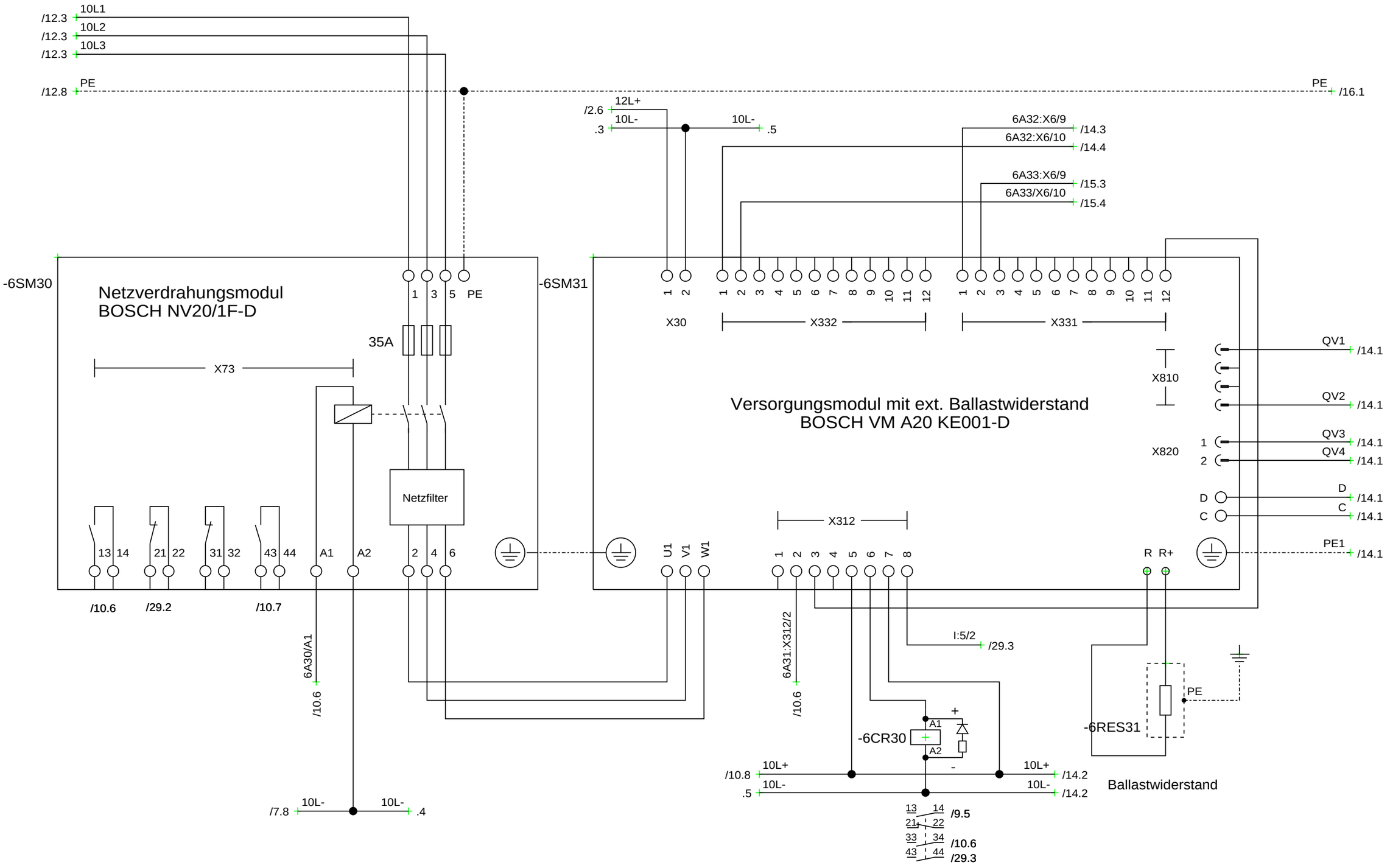


Einspeisung Bosch Servo-System

power supply Bosch serco system

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **12**
		=A1.F3	of 44
comm. nr. :P_NR1	power supply Bosch system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 13
		=A1.F3	of 44
comm. nr. :P_NR1	supply module BOSCH		drawing nr. A474

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+2.GK
-6M132

Motor Typ SR-A4.0230.030-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

6A5/Ua1 /21.2
6A5/Ua1/ /21.2
6A5/Ua2 /21.2
6A5/Ua2/ /21.3
6A5/Ua0 /21.3
6A5/Ua0/ /21.3
6A5/5V /21.4
6A5/0V /21.4
Schirm1 /21.4

-6SM32

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12 Gehäuse

X81

Encoder Simulation

Signal
Querverbindung

/13.8 QV1
/13.8 QV2

24V
Querverbindung

/13.8 QV3
/13.8 QV4

Zwischenkreis-
Spannung

/13.8 D
/13.8 C

/13.8 PE1

X810

X820

1
2
D
C

Servodul BOSCH DMA45A3301-D
Ventilrohr

X810

QV1 /15.1
QV2 /15.1

X820

QV3 /15.1
QV4 /15.1
D /15.1
C /15.1
PE1 /15.1

X6

1 STA-Relais I:5/3 /29.4
2 STA-Relais 6A32:X6/3 /21.2
3
4 IN1
5 IN2
6 IN3
7 IN4
8 24V in 6A32:X6/9 /13.7
9 0V in 6A32:X6/10 /13.7
10

10L+ /13.7
10L- /13.7
10L+ /15.2
10L- /15.2

X12

1 OUT5
2 OUT6
3 OUT7 I:5/9 /30.3
4 OUT8
5 OUT9
6 Relais
7 Relais
8 Relais

Gehäuse

X21

1 SW1+ /21.6
2 SW1- /21.6
3 ws
4
5 br
6

X34

1 OUT4
2 OUT3
3 OUT2 I:5/4 /29.5
4 OUT1
5 Relais
6 Relais

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 14
		=A1.F3	of 44
comm. nr. :P_NR1	servo module rotary valve		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+2.GK
-6M133

Motor Typ SR-A4.0230.030-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

6A6/Ua1 /22.2
6A6/Ua1/ /22.2
6A6/Ua2 /22.2
6A6/Ua2/ /22.3
6A6/Ua0 /22.3
6A6/Ua0/ /22.3
6A6/5V /22.4
6A6/0V /22.4
Schirm2 /22.4

-6SM33

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/14.8 QV1
/14.8 QV2

24V
Querverbindung

/14.8 QV3
/14.8 QV4

Zwischenkreis-
Spannung

/14.8 D
/14.8 C

/14.8 PE1

X810

X820

1
2
D
C

Servodul BOSCH DMA30A3301-D
Dosierantrieb

X810

QV1 .1
QV2 .1

X820

1 QV3 .1
2 QV4 .1

D .1
C .1

PE1 .1

X6

1 2 3 4 5 6 7 8 9 10

STA-Relais
STA-Relais
I:5/10
6A33:X6/3
IN1
IN2
IN3
IN4
6A33:X6/9 24V in
6A33/X6/10 0V in

/30.3
/22.2
/13.7
/13.7

X12

1 2 3 4 5 6 7 8

OUT5
OUT6
OUT7
OUT8
OUT9
Relais
Relais
Relais

I:5/12

/30.5

Gehäuse

X21

1 2 3 4 5 6

ws br

SW2+
SW2-

/22.6
/22.6

X34

1 2 3 4 5 6

OUT4
OUT3
OUT2
OUT1
Relais
Relais

I:5/11

/30.4

/14.3 10L+
/14.3 10L-

10L+ /17.4
10L- /16.1

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **15**
		=A1.F3	of 44
comm. nr. :P_NR1	servo module deposit drive		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

6A0/L /5.2
6A0/N /5.2
PE /13.8
10L- /15.3
10L- /17.4
PE /17.4

SLC 500 - System Übersicht

SLC 500 - system overview

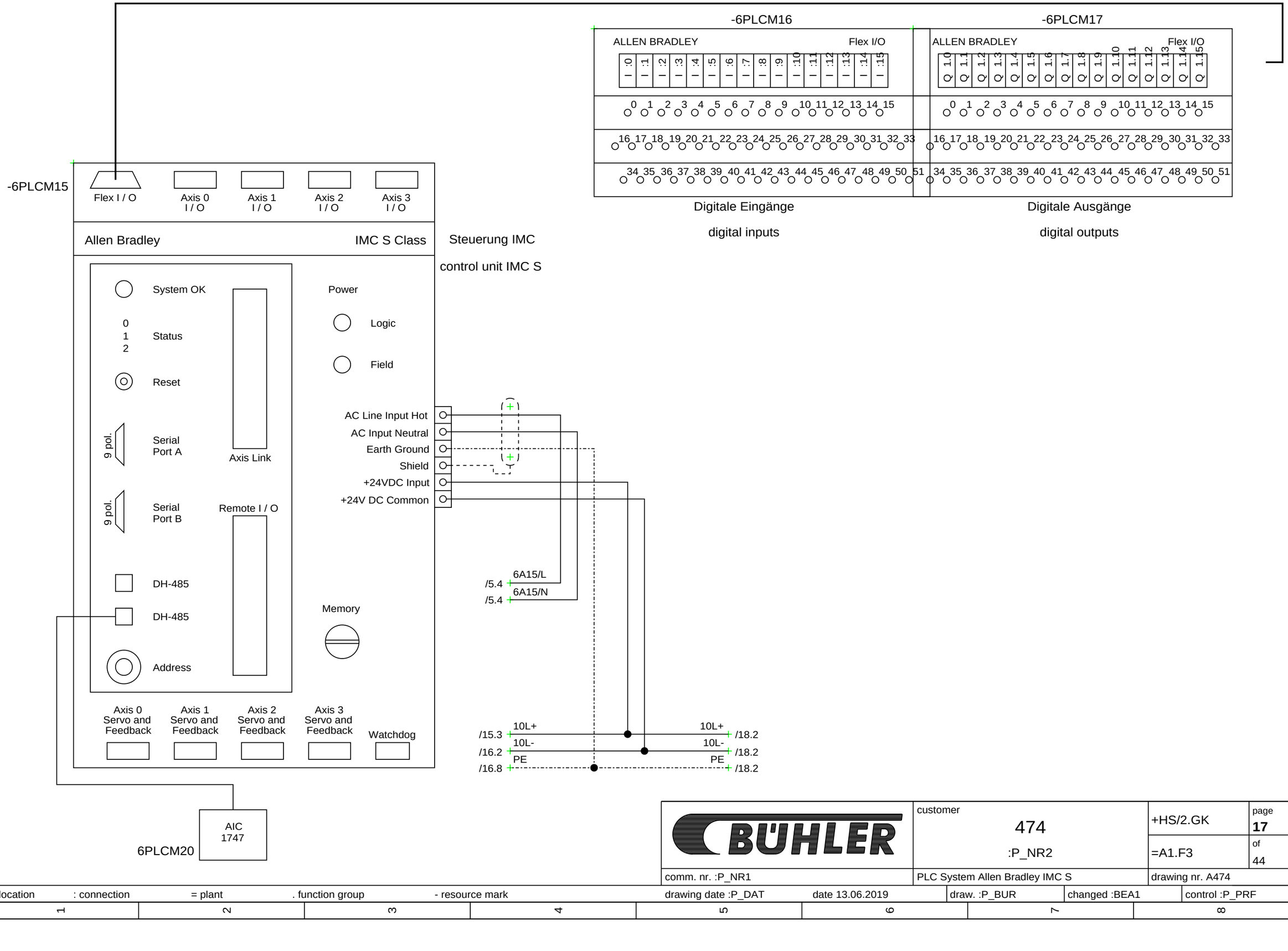
main rack Allen Bradley

	6PLCM1	6PLCM2	6PLCM3	6PLCM4	6PLCM5	6PLCM6	6PLCM7	6PLCM8	6PLCM9	6PLCM10	6PLCM11	6PLCM12	6PLCM13
PWR OUT +24VOLTS DC	CPU SLC/04	spare	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	spare	digital outputs 1746-OB16	digital outputs 1746-OB16	digital outputs 1746-OB16	spare	anal. in/out 1746-NIO4I
PWR OUT COM	DH+												
120/240 VOLTS			I:2/0-I:2/15	I:3/0-I:3/15	I:4/0-I:4/15	I:5/0-I:5/15	I:6/0-I:6/15		I:8/0-I:8/15	I:8/0-I:8/15	I:8/0-I:8/15		12.0-12.1
VAC NEUT	RS232												
CHASSIS GROUND													

-6PLC0

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **16**
		=A1.F3	of 44
comm. nr. :P_NR1	PLC system ALLEN BRADLEY	drawing nr. A474	

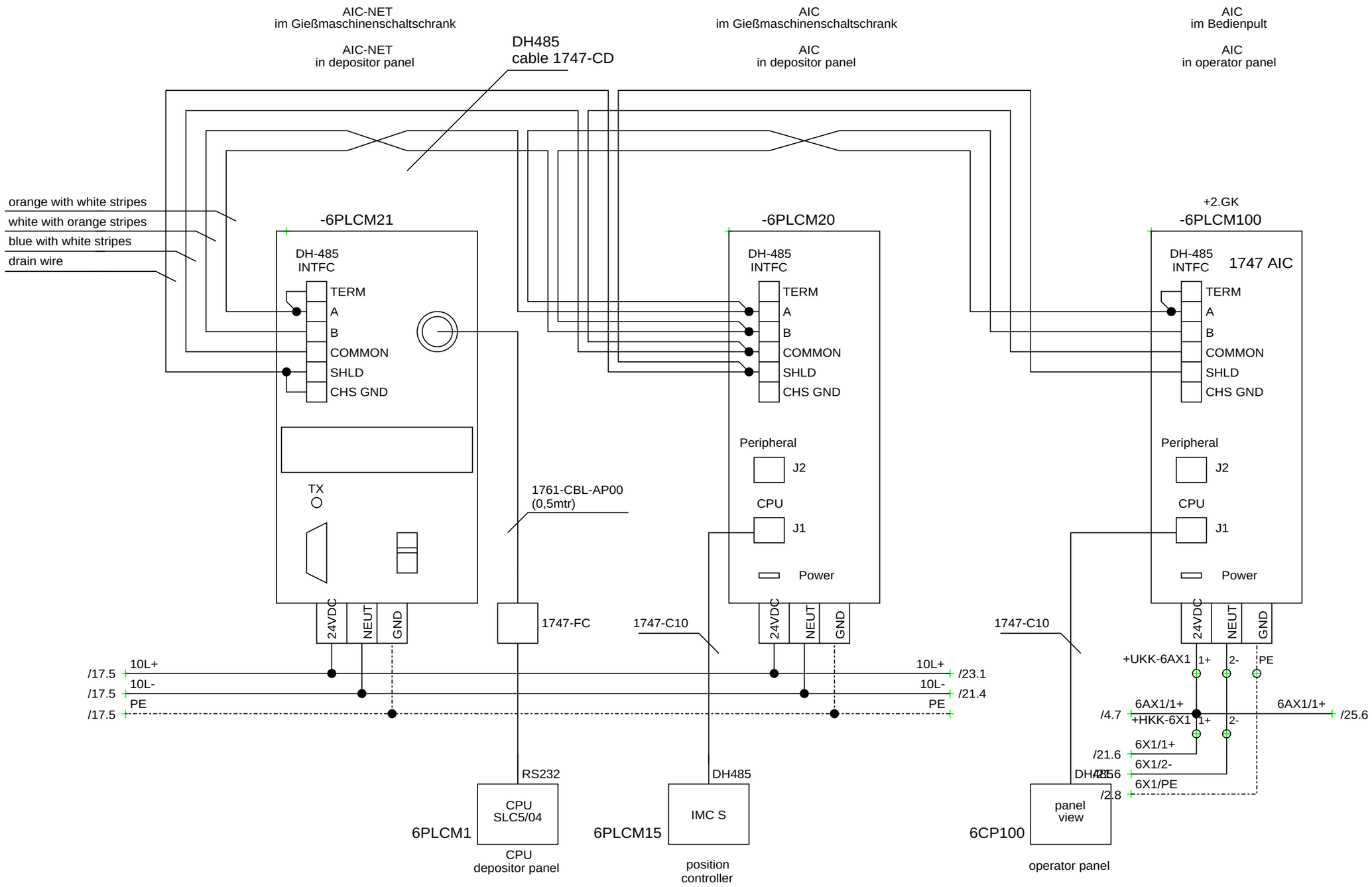
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF	



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 17
		=A1.F3	of 44
comm. nr. :P_NR1	PLC System Allen Bradley IMC S	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

System Übersicht / system overview

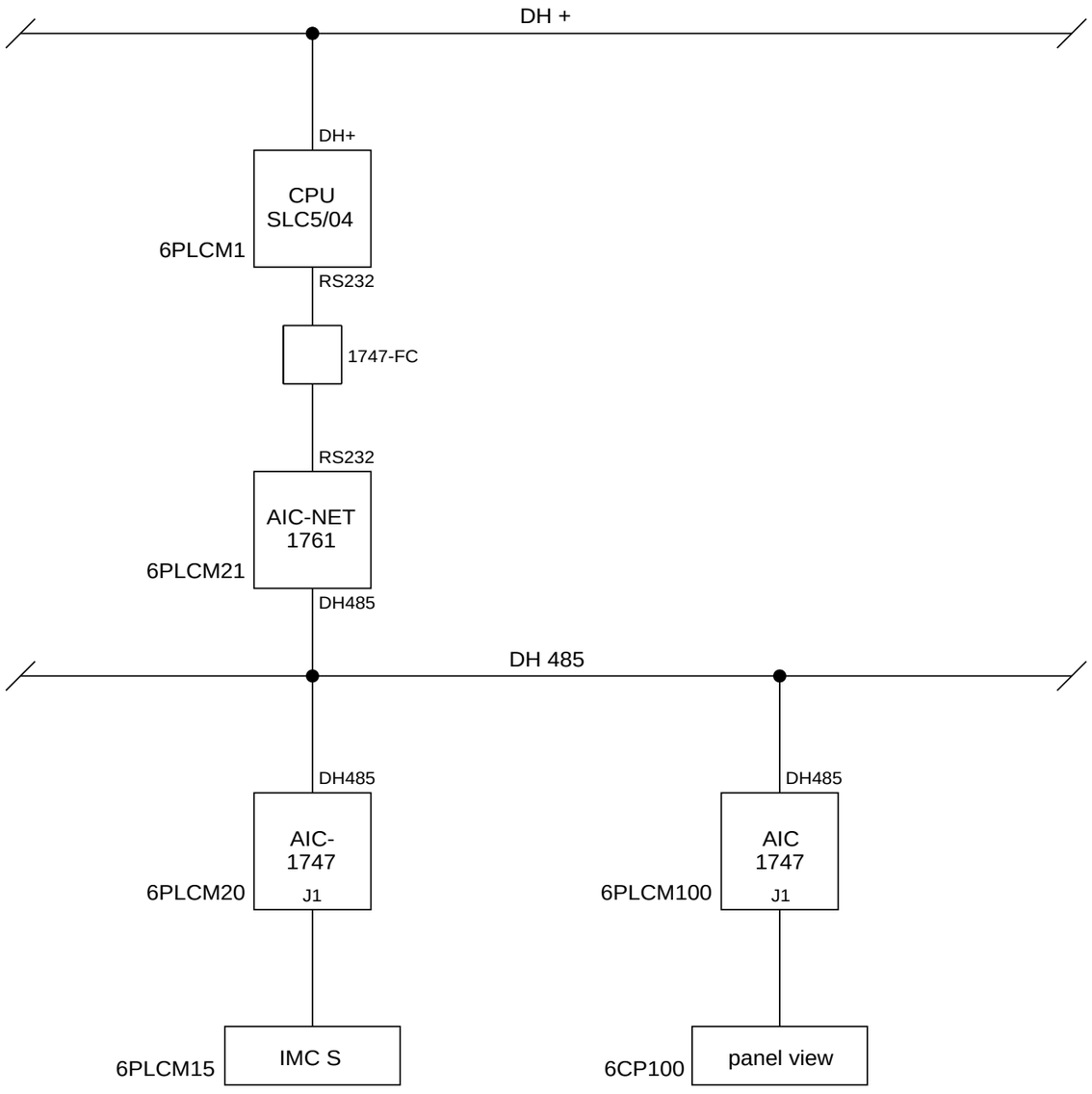


BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **18**
		=A1.F3	of 44
comm. nr. :P_NR1	system overview AIC		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

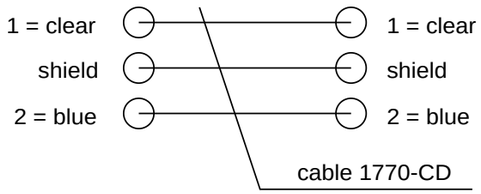
System Übersicht

system overview



Anschlußbelegung DH +
von SLC5/04 zu SLC5/04

conection DH+
from SLC5/04 to SLC5/04

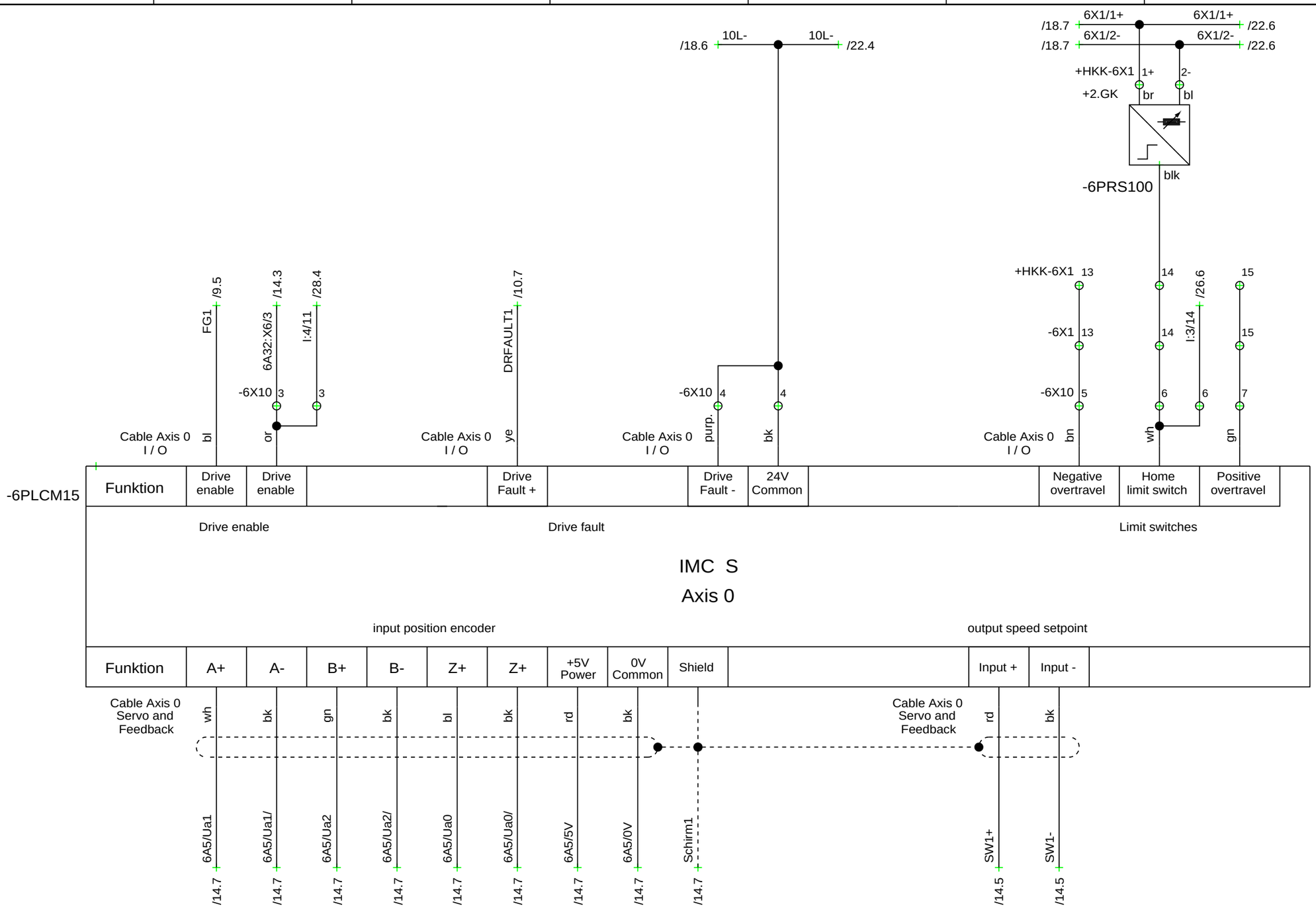


BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **19**
		=A1.F3	of 44
comm. nr. :P_NR1	system overview datahighway	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

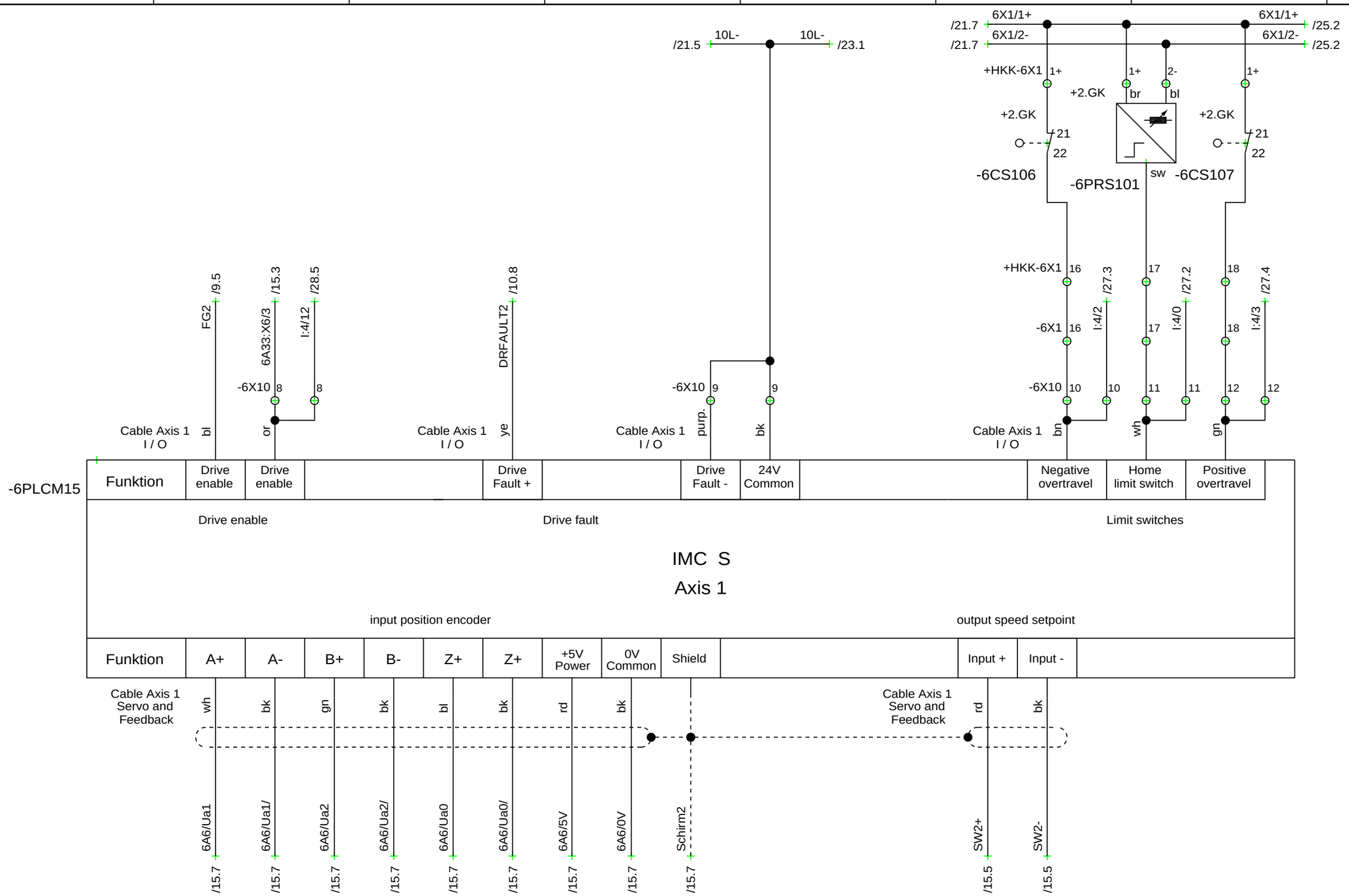
customer			
BÜHLER	474 :P_NR2	+HS/2.GK	page **20**
		=A1.F3	of 44
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



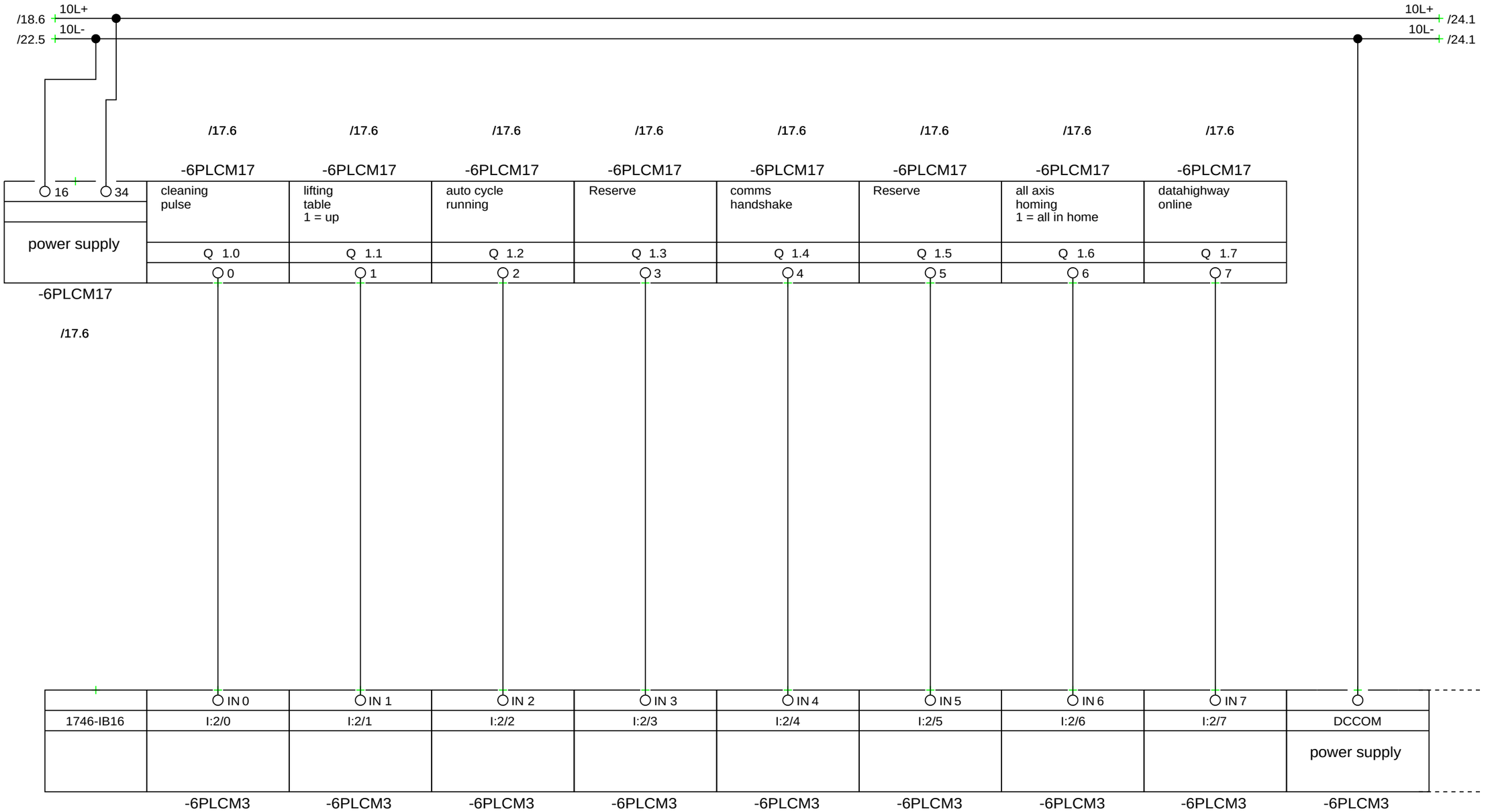
BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 21
		=A1.F3	of 44
comm. nr. :P_NR1	position controller rotary vale	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 22
		=A1.F3	of 44
comm. nr. :P_NR1	position controller deposit axis	drawing nr. A474	

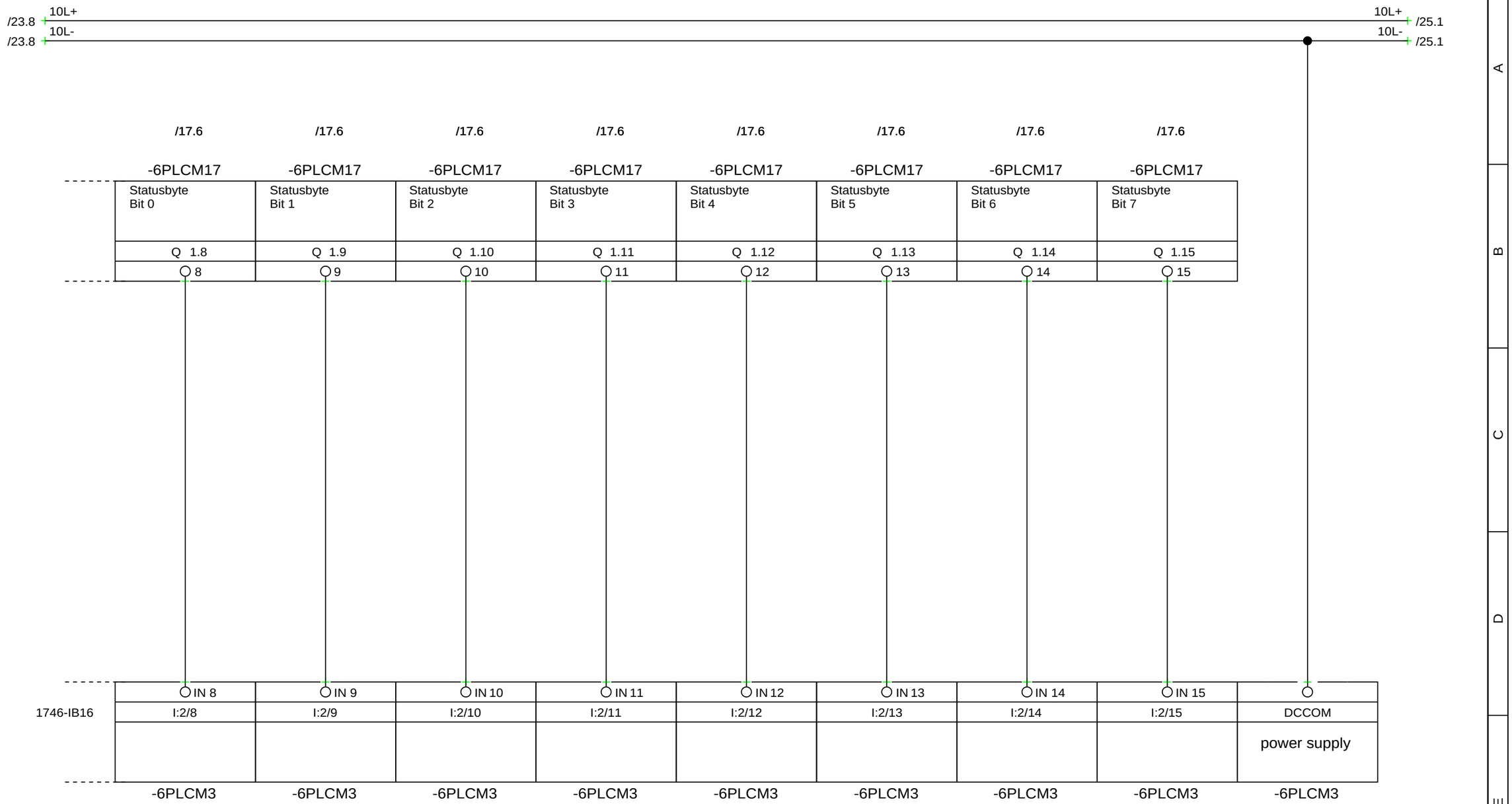
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



connection to IMC S

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 23
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

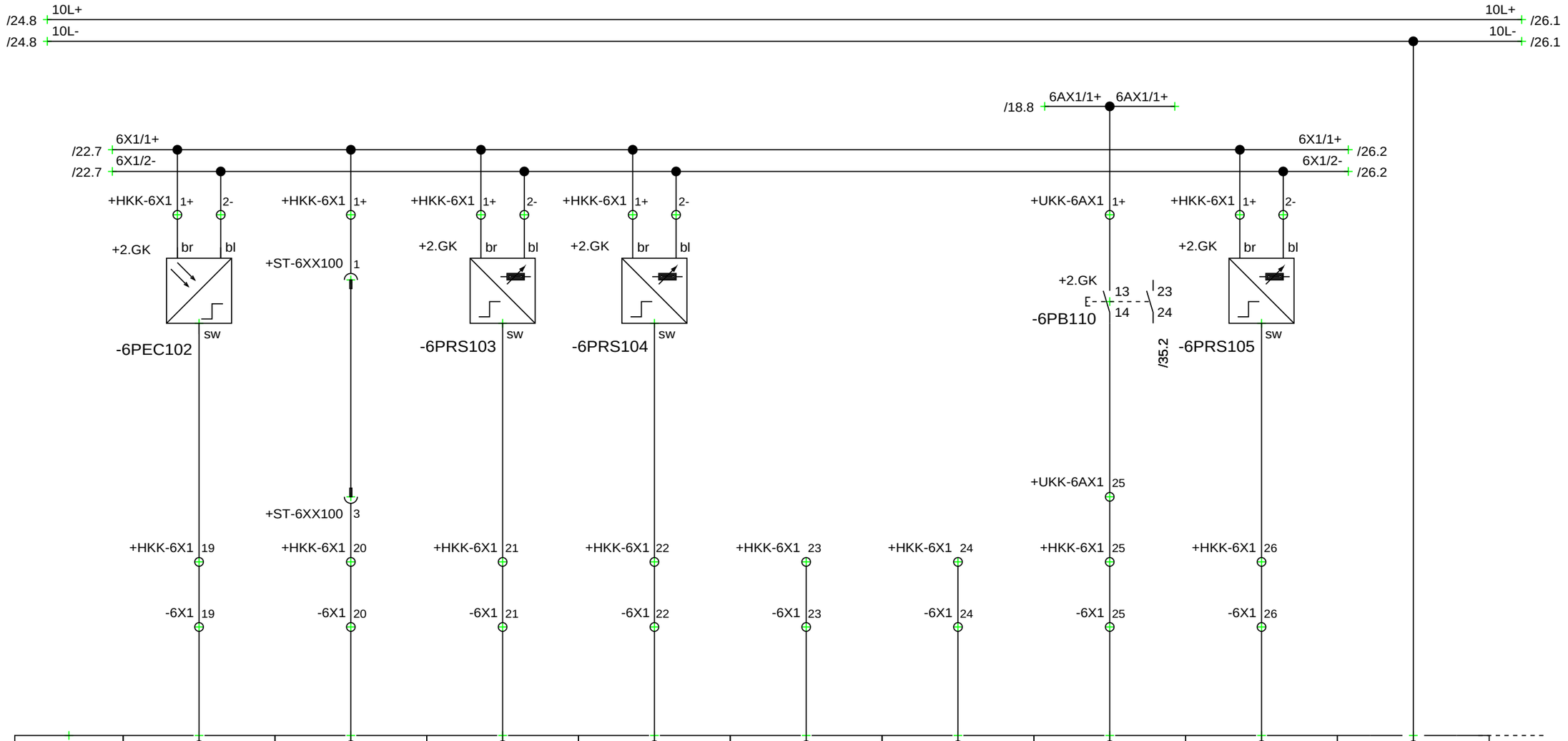
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connection to IMC S

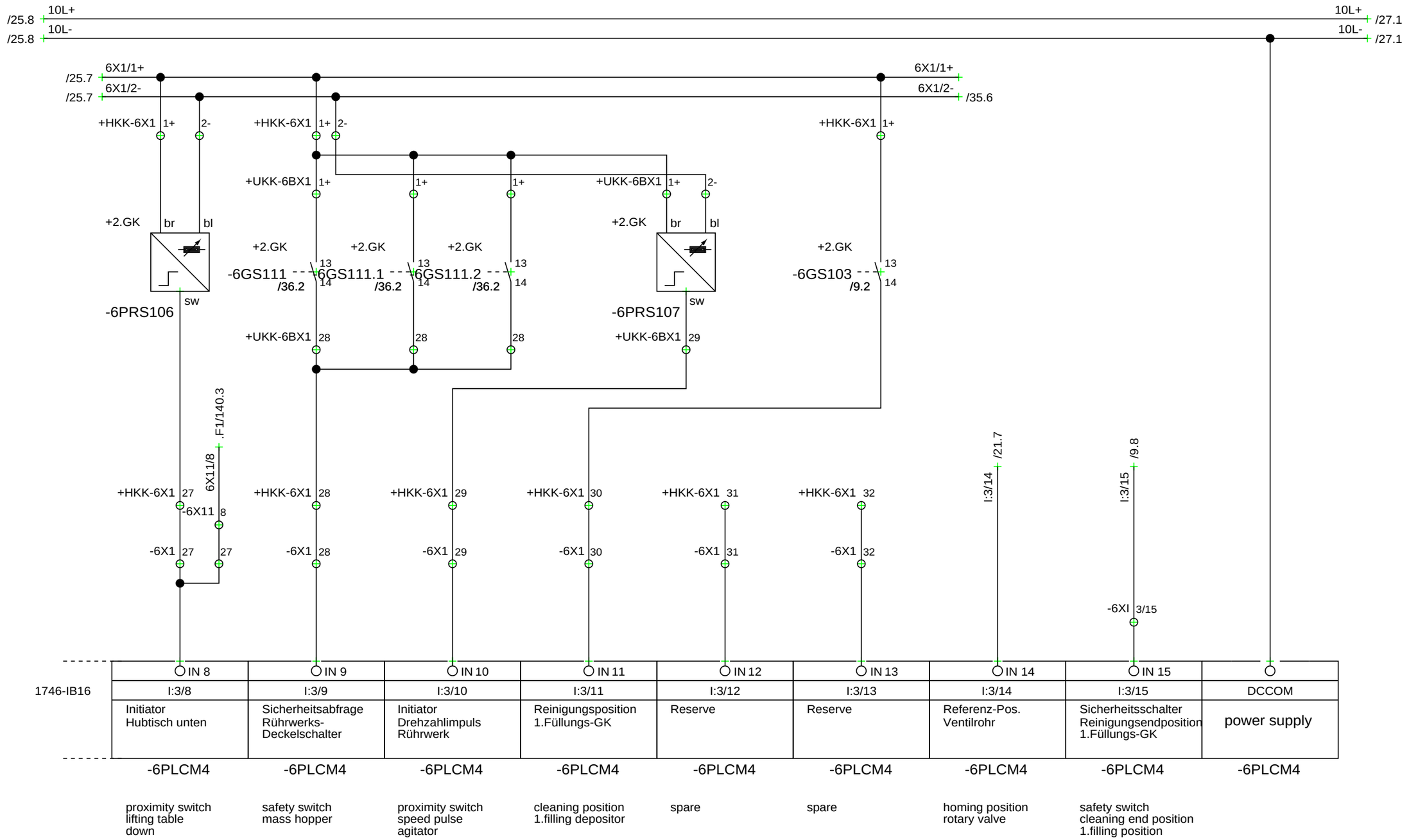
BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **24**
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



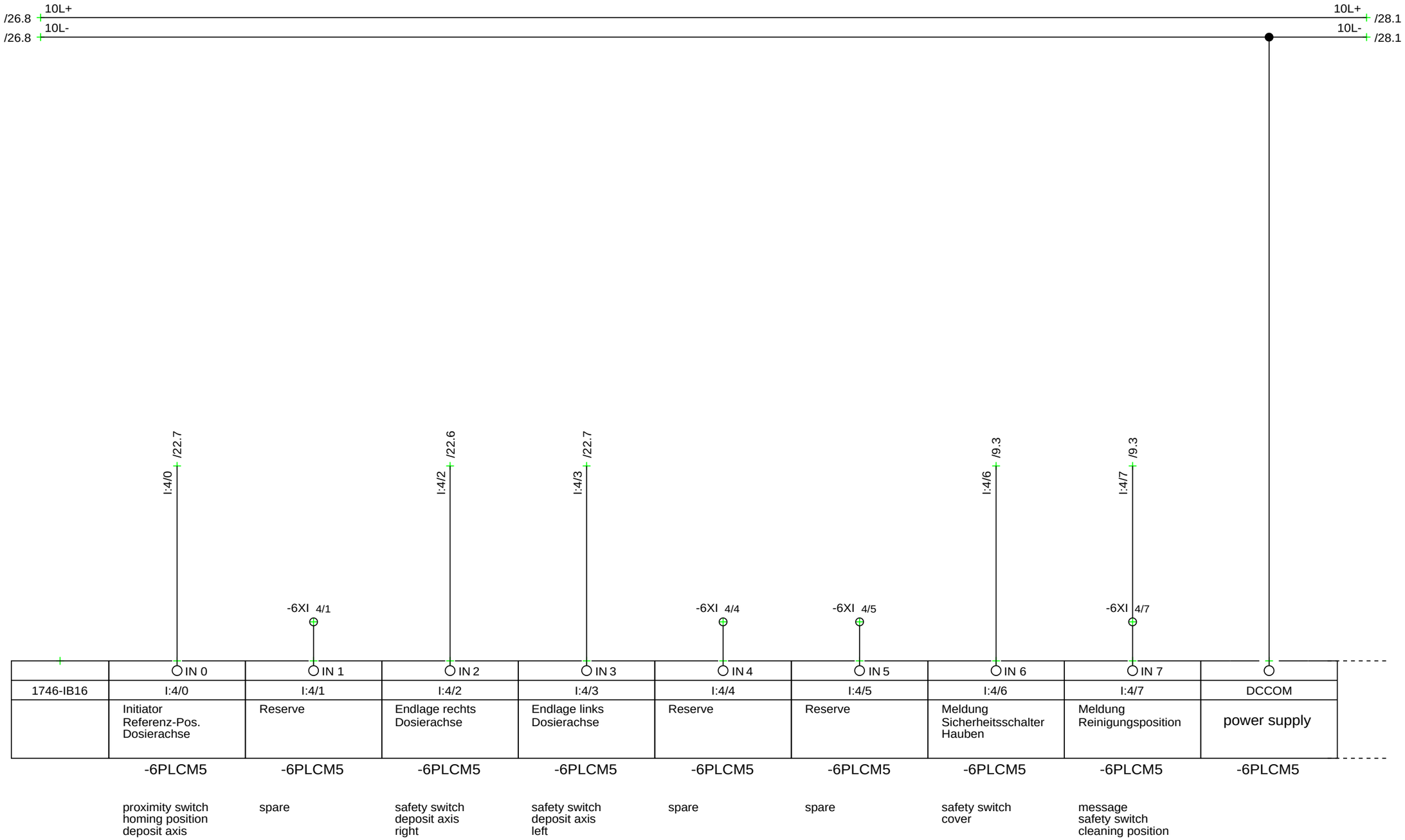
BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 25
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 26
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 27
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/27.8 10L+
/27.8 10L-

10L+ /29.1
10L- /29.1

-6X10 13

IMC S
Cable Watchdog
bk
-6PLCM15
wht

-6X10 14

-6XI 4/8
-6XI 4/13
-6XI 4/14

	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
1746-IB16	I:4/8	I:4/9	I:4/10	I:4/11	I:4/12	I:4/13	I:4/14	I:4/15	DCCOM
	Reserve	Meldung Achsen-Endlage Dosierantrieb	Reserve	Drive Enable IMC S Ventilrohr	Drive Enable IMC S Dosierachse	Reserve	Reserve	CPU Watchdog IMC S	power supply
	-6PLCM5	-6PLCM5	-6PLCM5	-6PLCM5	-6PLCM5	-6PLCM5	-6PLCM5	-6PLCM5	-6PLCM5
	spare	emergency switch deposit axis	spare	drive enable IMC S rotary valve	drive enable IMC S deposit axis	spare	spare	CPU Watchdog IMC S	

I:4/9 /10.3
I:4/10 /10.3
I:4/11 /21.2
I:4/12 /22.2

BÜHLER

customer 474 :P_NR2

+HS/2.GK

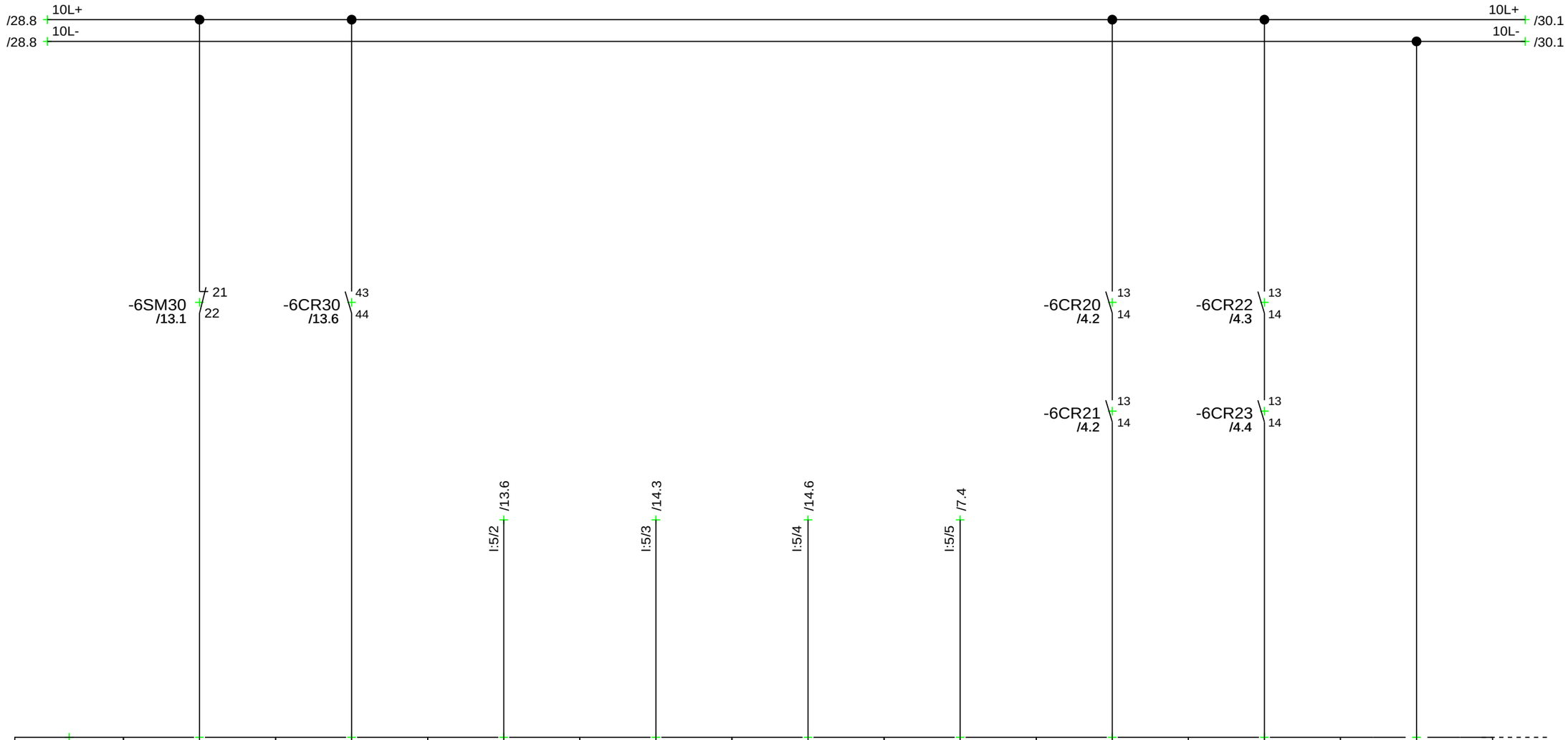
page **28**

=A1.F3

of 44

comm. nr. :P_NR1 | digital inputs | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

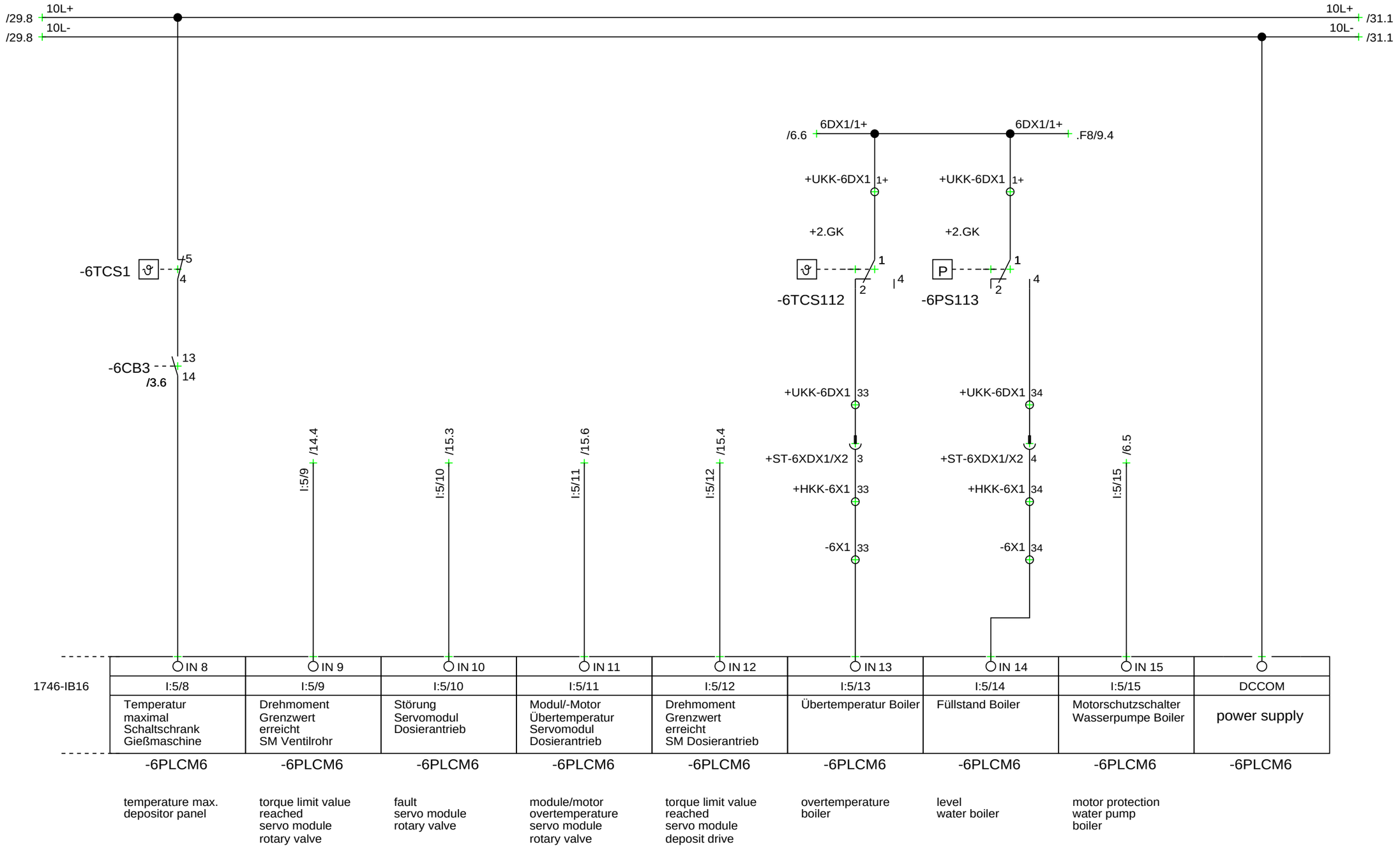


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:5/0	I:5/1	I:5/2	I:5/3	I:5/4	I:5/5	I:5/6	I:5/7	DCCOM
	Keine Spannung an alle Bosch Module	Betriebsbereit Versorgungsmodul Bosch	Kein Netzausfall Versorgungsmodul Bosch	Störung Servomodul Ventilrohr	Modul/-Motor Übertemperatur Servomodul Ventilrohr	Störung Umrichter Rührwerk	Not-Aus Schütz direkt	Not-Aus Schütz verzögert	power supply
	-6PLCM6	-6PLCM6	-6PLCM6	-6PLCM6	-6PLCM6	-6PLCM6	-6PLCM6	-6PLCM6	-6PLCM6
	no voltage to all Bosch modules	enable power module Bosch	no net failure power module Bosch	fault servo module rotary valve	module/motor overtemperature servo module rotary valve	fault agitator frequency converter	emrgency stop contactor direct	emrgency stop contactor delayed	

BÜHLER

customer 474 :P_NR2		+HS/2.GK	page 29
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

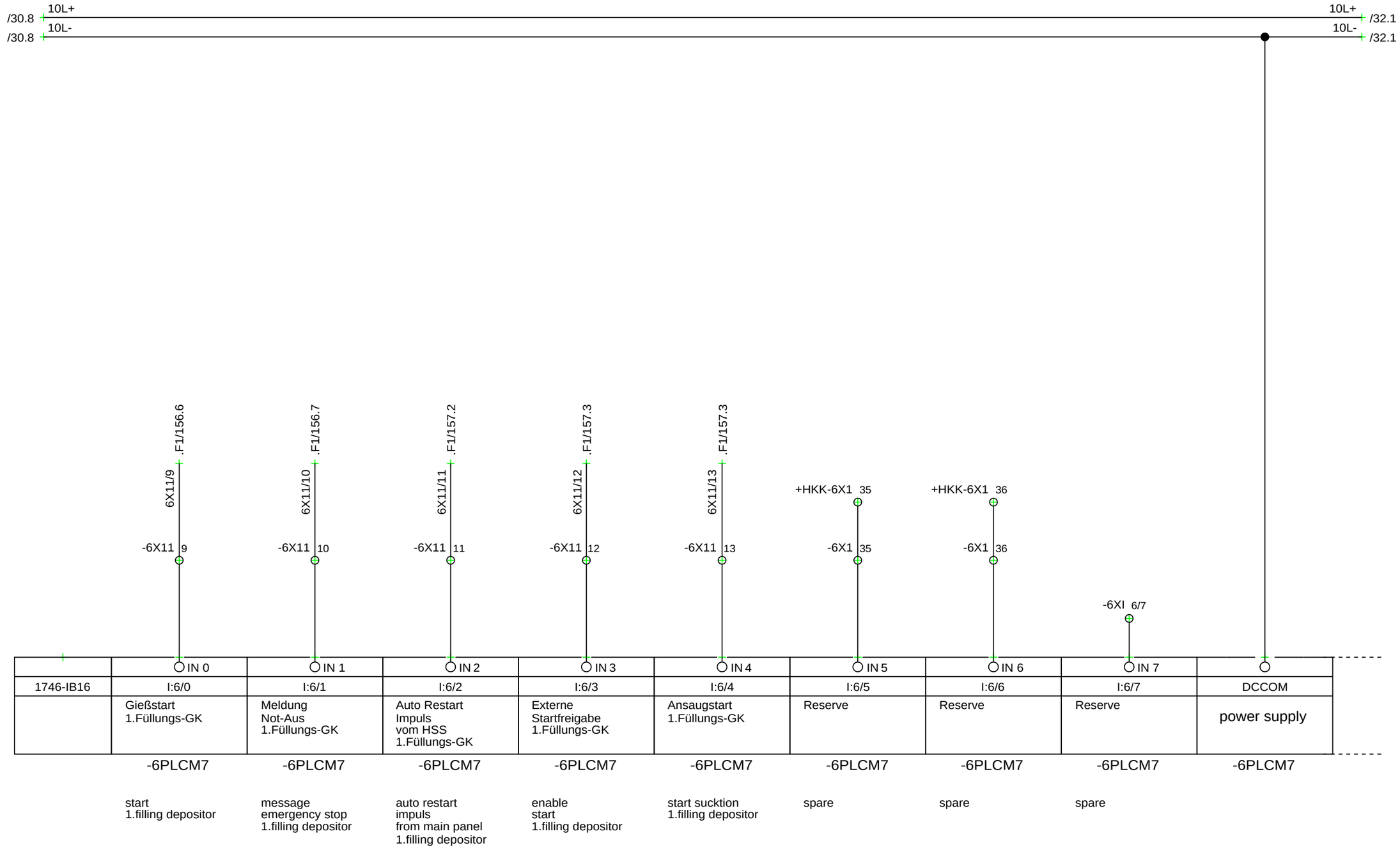
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HS/2.GK	page 30
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

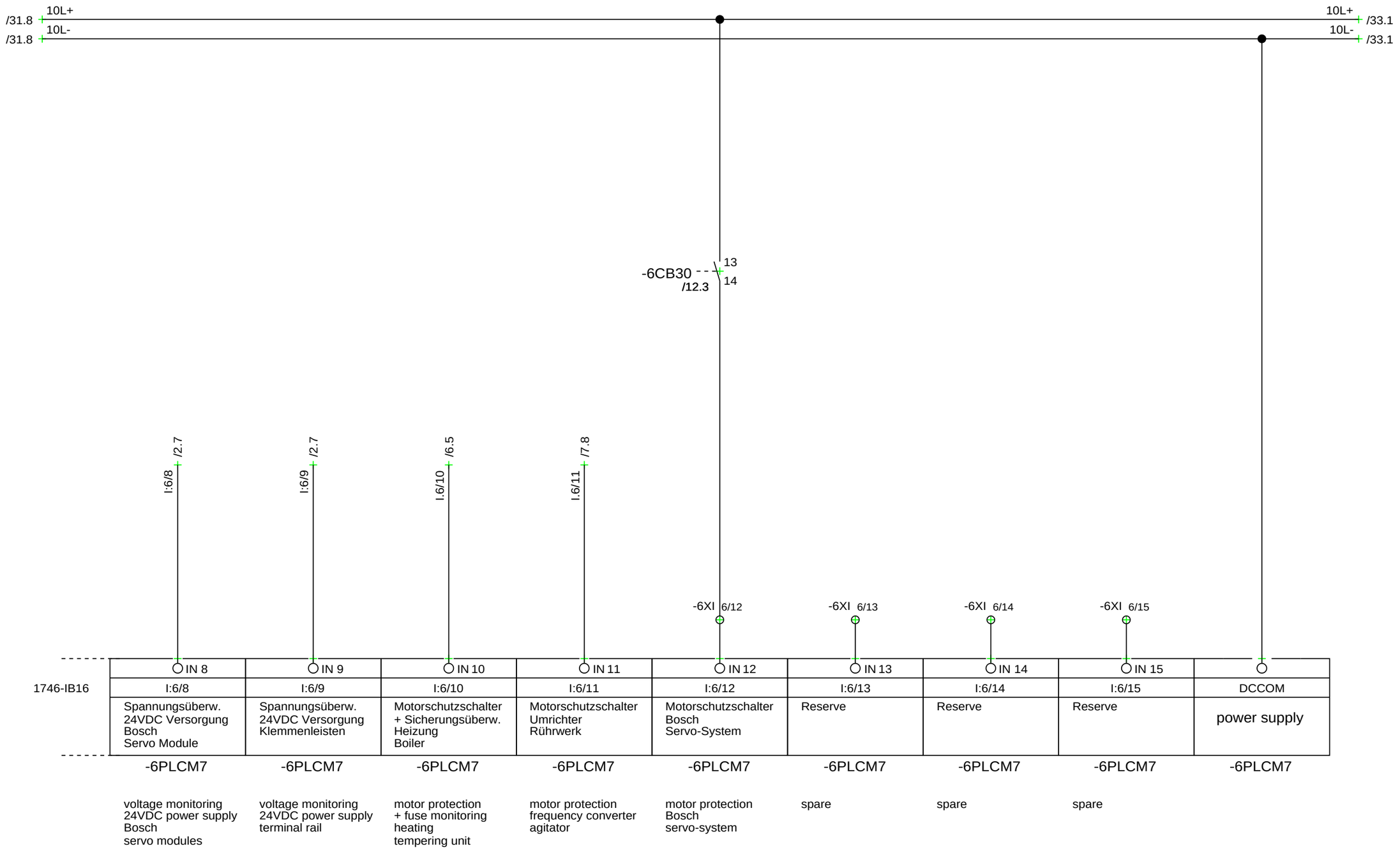
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:6/0	I:6/1	I:6/2	I:6/3	I:6/4	I:6/5	I:6/6	I:6/7	DCCOM
	Gießstart 1.Füllungs-GK	Meldung Not-Aus 1.Füllungs-GK	Auto Restart Impuls vom HSS 1.Füllungs-GK	Externe Startfreigabe 1.Füllungs-GK	Ansaugstart 1.Füllungs-GK	Reserve	Reserve	Reserve	power supply
	-6PLCM7	-6PLCM7	-6PLCM7	-6PLCM7	-6PLCM7	-6PLCM7	-6PLCM7	-6PLCM7	-6PLCM7
	start 1.filling depositor	message emergency stop 1.filling depositor	auto restart impuls from main panel 1.filling depositor	enable start 1.filling depositor	start sucktion 1.filling depositor	spare	spare	spare	

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **31**
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 32
		=A1.F3	of 44
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF

/32.8 10L+
/32.8 10L-

10L+ .1
10L- .1

connection to IMC S

	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	
	home axis	proximity switch RV suck position	proximity switch RV deposit position	start deposit pulse	enable manual mode	spare	auto mode	reset fault	VDC
1746-OB16	Q:8/0	Q:8/1	Q:8/2	Q:8/3	Q:8/4	Q:8/5	Q:8/6	Q:8/7	power supply
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	-6PLCM9

.8 10L+ 10L+ /34.1
.8 10L- 10L- /34.1

	16	34	0	1	2	3	4	5	6	7
			I :0	I :1	I :2	I :3	I :4	I :5	I :6	I :7
power supply										
-6PLCM16			-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16
/17.4			/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4

BÜHLER

customer 474 :P_NR2

+HS/2.GK

page **33**

=A1.F3

of 44

comm. nr. :P_NR1

digital outputs

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

/33.2 10L+

/33.2 10L-

10L+ /35.1

10L- /35.1

connection to IMC S

1746-OB16

-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9	-6PLCM9
emergency stop 0 = emergency stop	trigger receive data	trigger send data	manual RV axis	manual deposit axis	spare	manual forward right	manual backward left
Q:8/8	Q:8/9	Q:8/10	Q:8/11	Q:8/12	Q:8/13	Q:8/14	Q:8/15
OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15

DCCOM

power supply

-6PLCM9

8	9	10	11	12	13	14	15
I :8	I :9	I :10	I :11	I :12	I :13	I :14	I :15
-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16	-6PLCM16
/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4

BÜHLER

customer 474 :P_NR2

+HS/2.GK

page **34**

=A1.F3

of 44

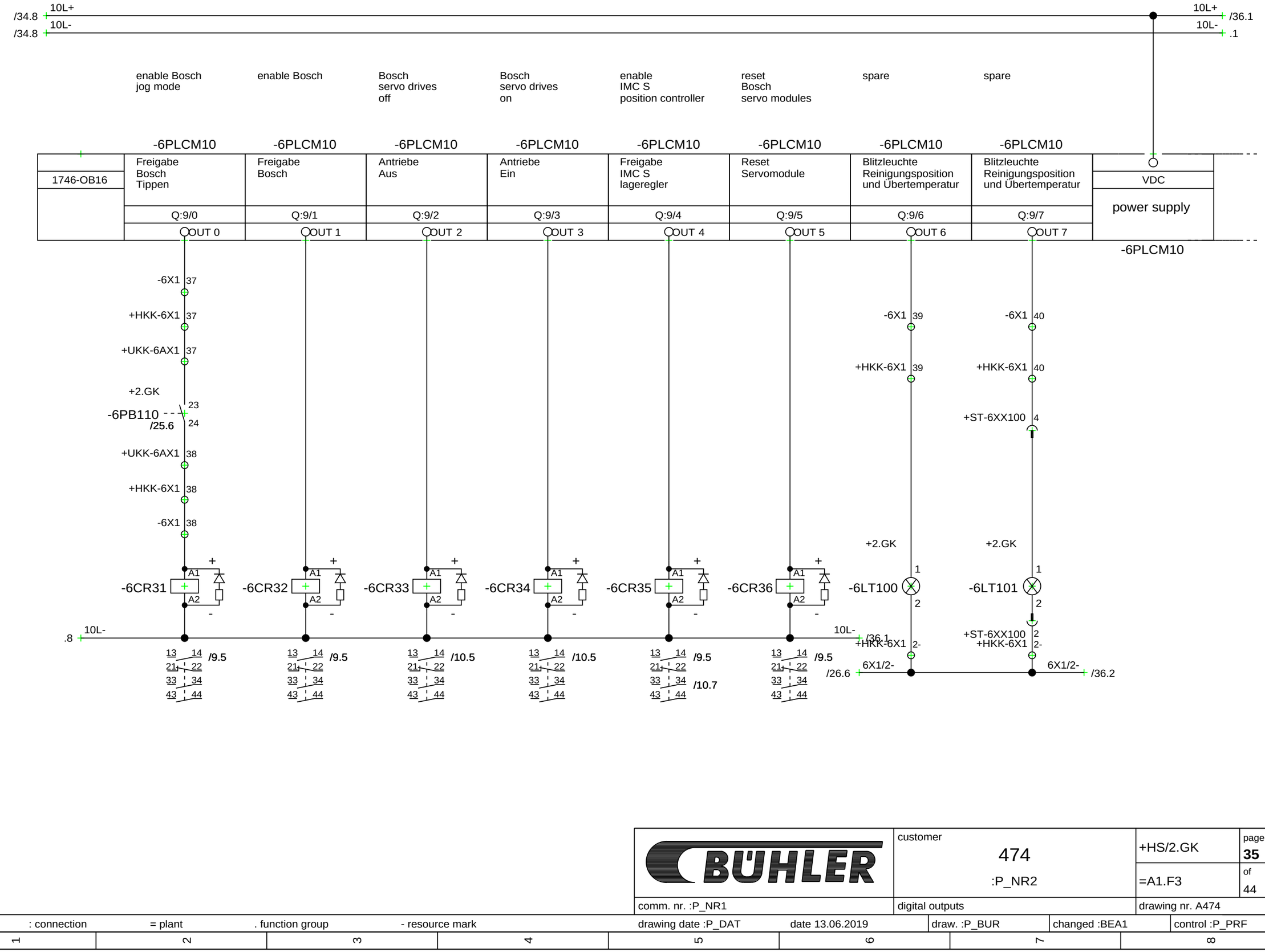
comm. nr. :P_NR1

digital outputs

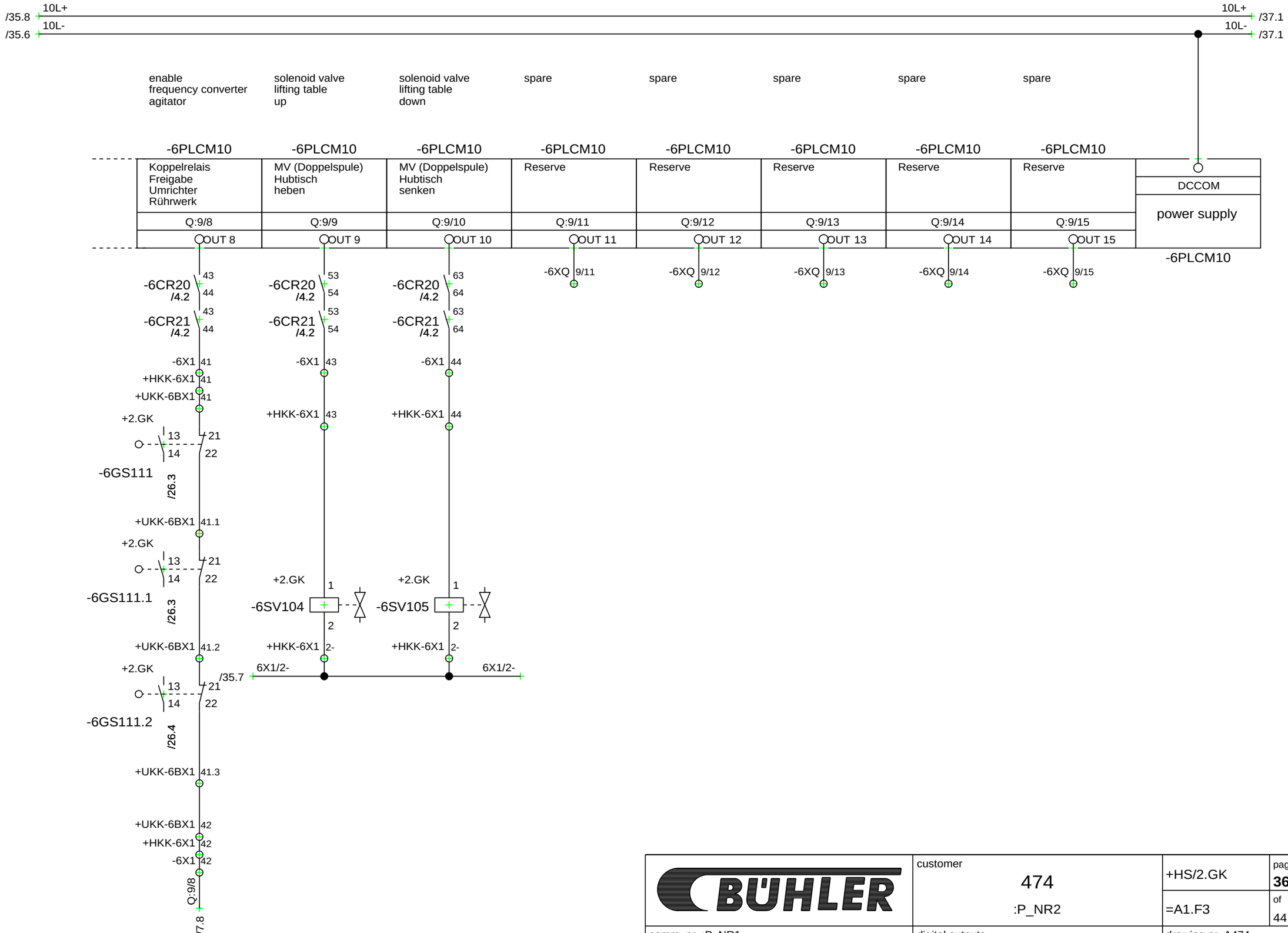
drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

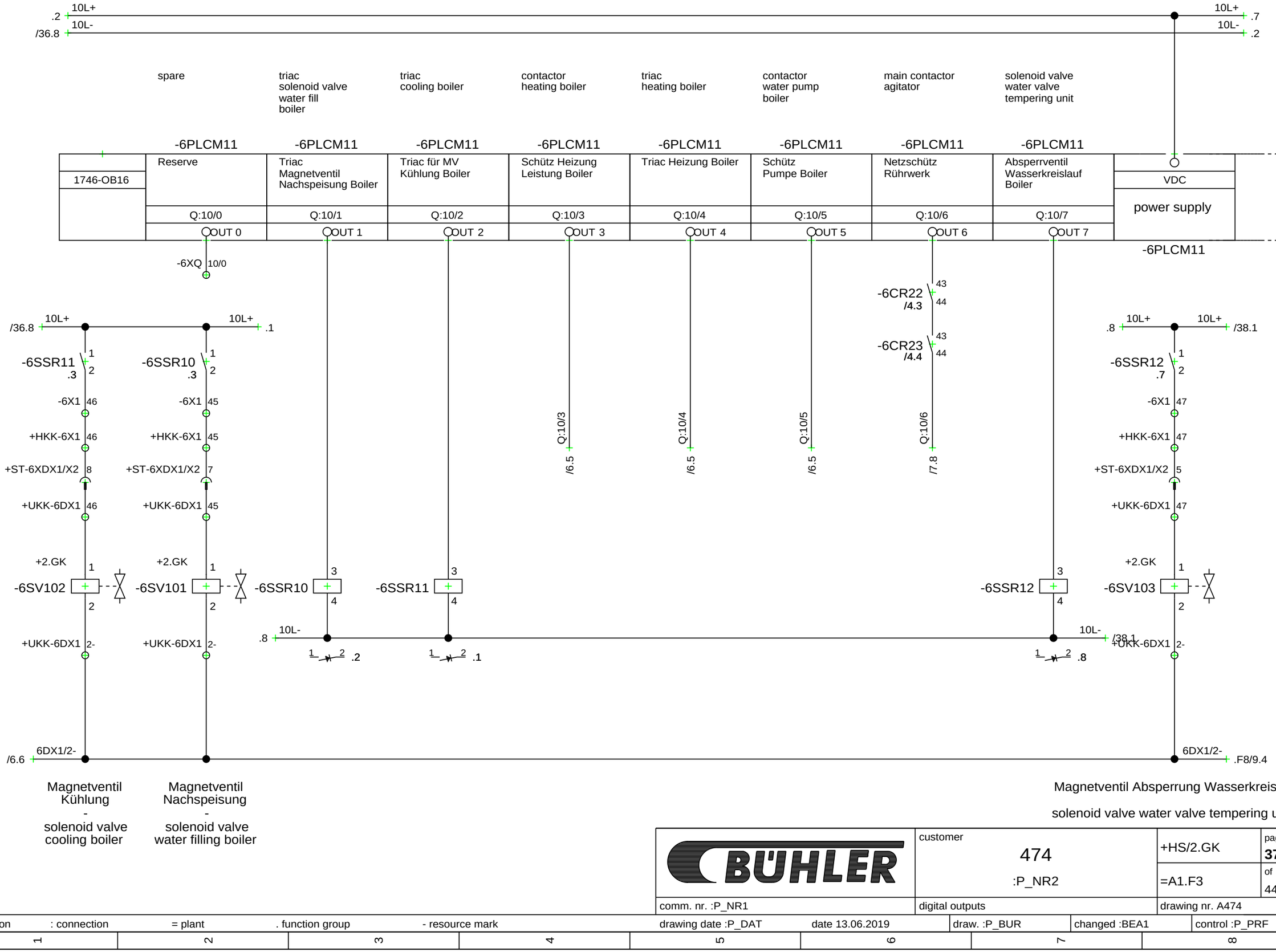


BÜHLER	customer 474 :P_NR2		+HS/2.GK	page 35	
			=A1.F3	of 44	
comm. nr. :P_NR1	digital outputs		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page 36
		=A1.F3	of 44
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

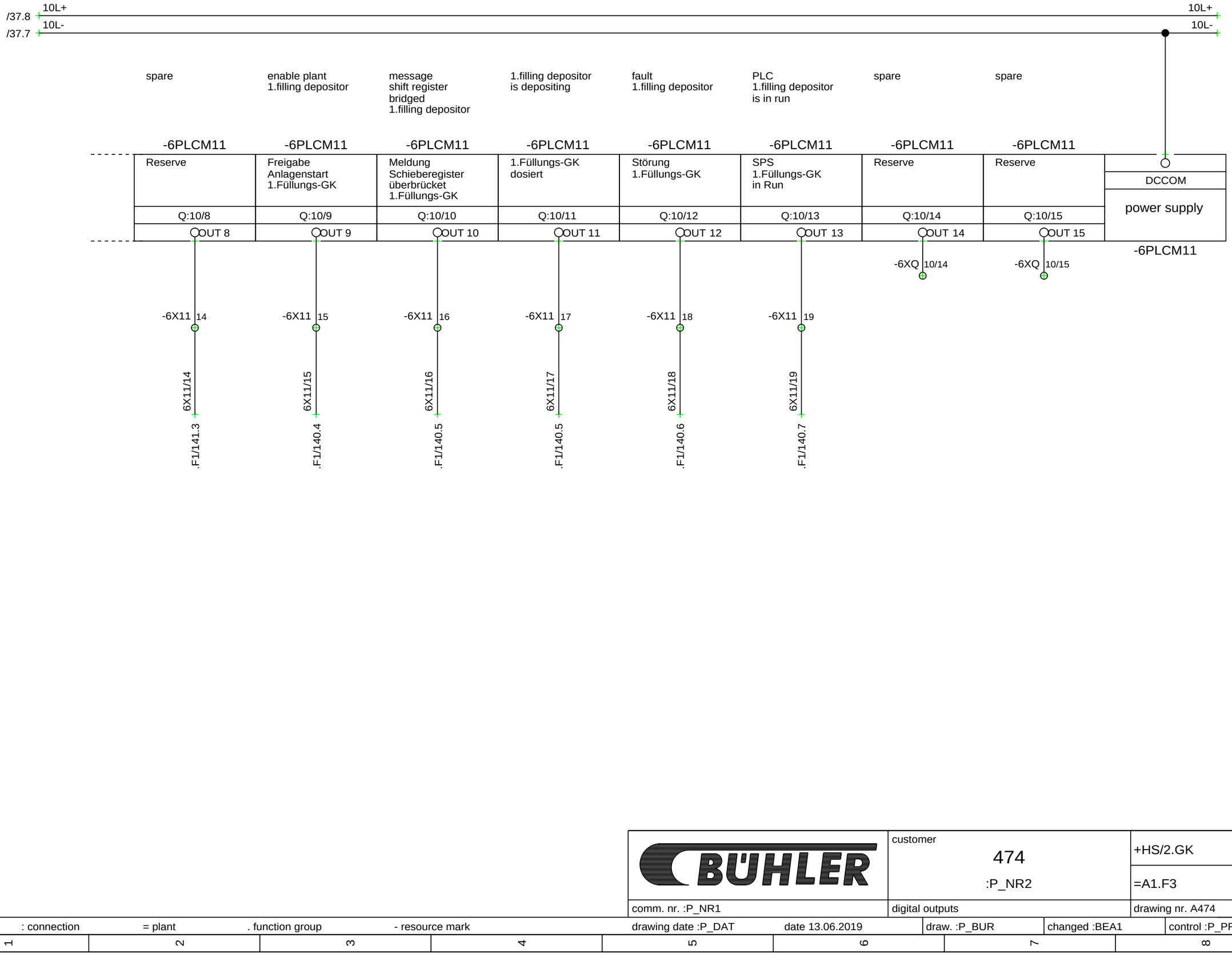
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER

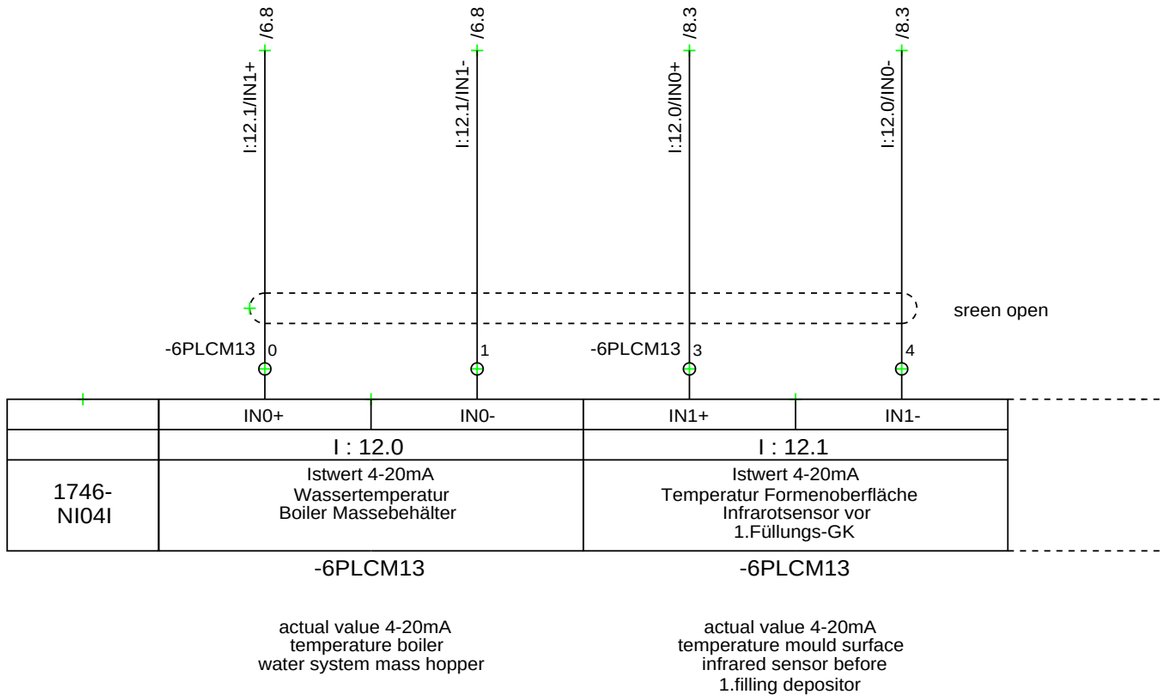
customer 474 :P_NR2		+HS/2.GK	page 37
		=A1.F3	of 44
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **38**
		=A1.F3	of 44
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **39**
		=A1.F3	of 44
comm. nr. :P_NR1	analogue inputs		drawing nr. A474

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

	Set value frequency converter agitator	Analogue ground channel 0	spare	Analogue ground channel 1
Function	Sollwert Umrichter Rührwerk	Masse Kanal 0	Reserve	Masse Kanal 1
Adress	0 : 12.0		O : 12.1	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM

NI04I
6PLCM13

-6PLCM13 7 — Q:12.0/OUT0 — /7.4

8 — Q.12.0/COM — /7.4

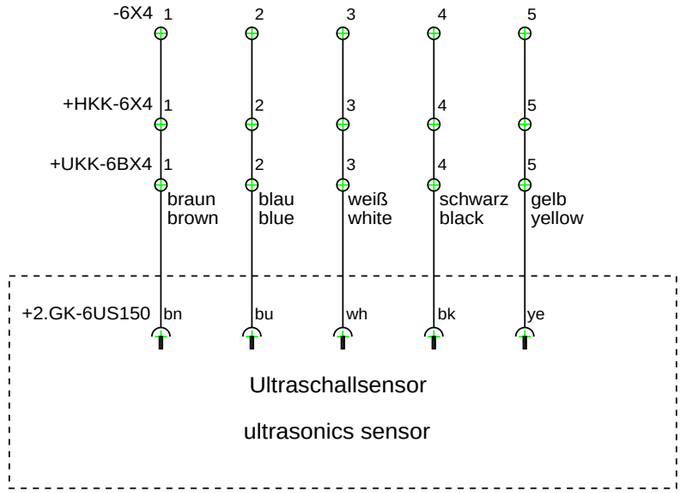
10

11

BÜHLER	customer 474 :P_NR2		+HS/2.GK	page **40**
			=A1.F3	of 44
comm. nr. :P_NR1	analogue outputs		drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

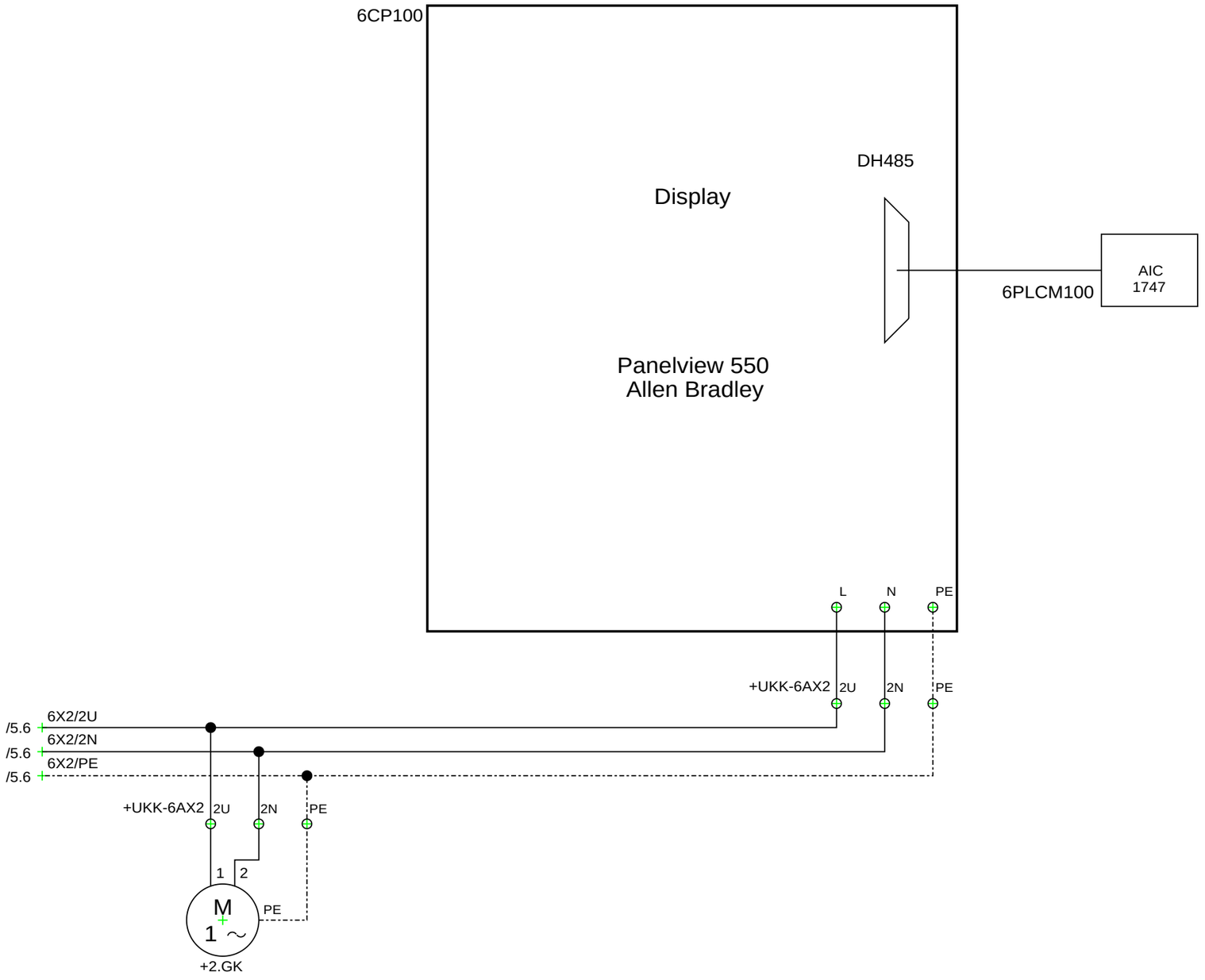
Ultraschallsensor Füllstand Massebehälter 1.Füllungs-Dosiermaschine

ultrasonics sensor filling level mass hopper 1.filling depositor



BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **41**
		=A1.F3	of 44
comm. nr. :P_NR1	filling level mass hopper depositor	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



-6M104

Lüfter Bedienpult

fan operator panel

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **42**	
		=A1.F3	of 44	
comm. nr. :P_NR1	panelview 550 ALLEN BRADLEY	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Einspeisung
3x480+N/60Hz

power feed

Hauptschaltschrank
Gießmaschine VIT22

main depositor
panel

6X1
6X2
6X3
6X4
6X10
6X11
6X12
6XI
6XQ

6BX1

Klemmenkasten an Gießmaschine

depositor marshalling box

6X1
6X2
6X3

operator panel

BINDLER

6AX2

6XDX1/2

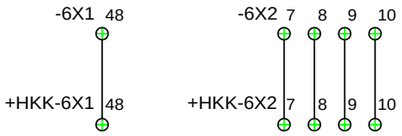
Temperiergerät

6DX1
6DX2

water heater
mass hoper

BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **43**
		=A1.F3	of 44
comm. nr. :P_NR1	wiring scheme	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF



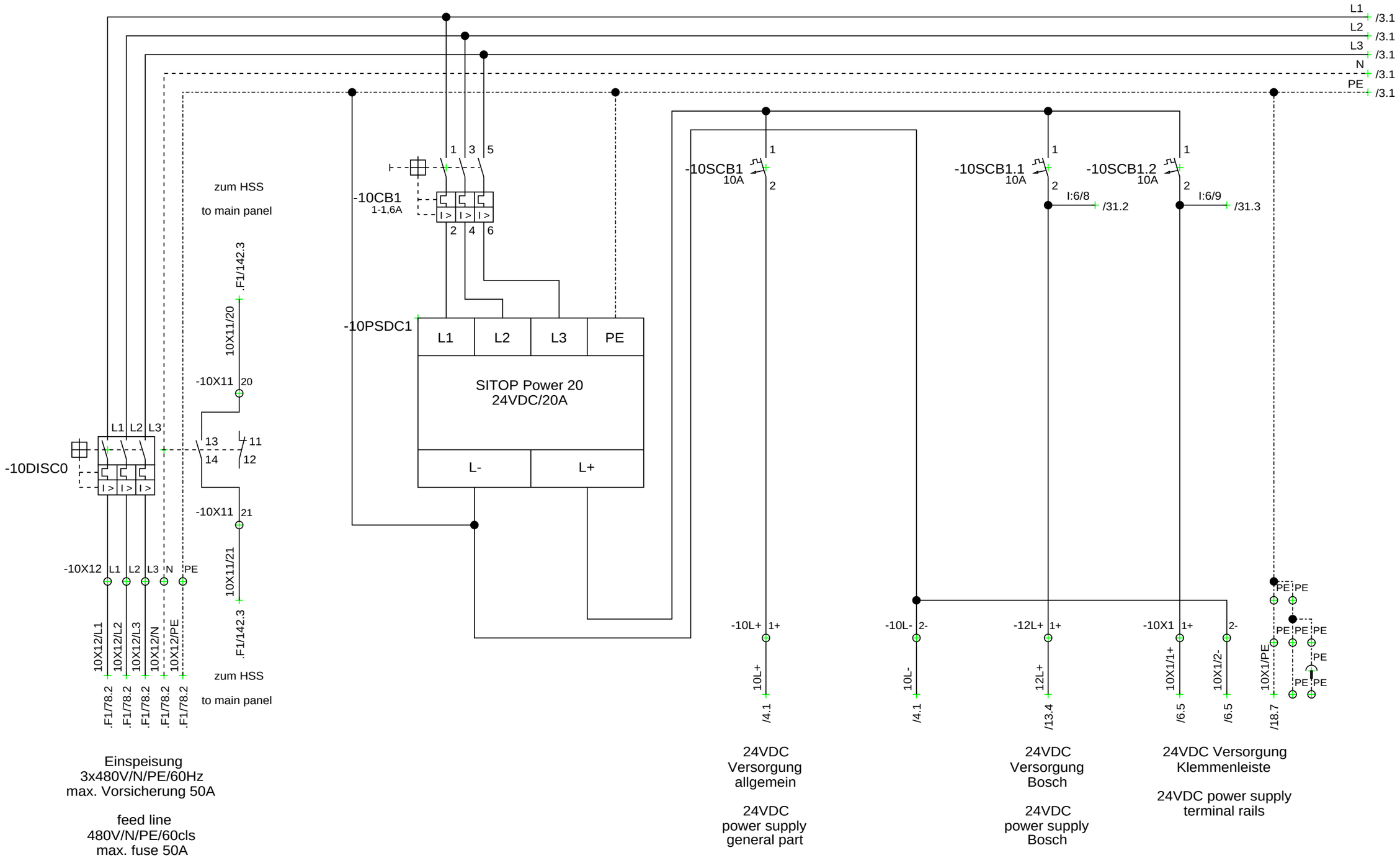
BÜHLER	customer 474 :P_NR2	+HS/2.GK	page **44**
		=A1.F3	of 44
comm. nr. :P_NR1	spare terminals	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Schaltplan
2.Füllungs Dosiermaschine
GKV

wiring diagram
2.filling depositor

BÜHLER	customer 474 :P_NR2		+HS/3.GK	page 1	
			=A1.F4	of 42	
comm. nr. :P_NR1	cover sheet		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Einspeisung
3x480V/N/PE/60Hz
max. Vorsicherung 50A

feed line
480V/N/PE/60cls
max. fuse 50A

24VDC
Versorgung
allgemein

24VDC
power supply
general part

24VDC
Versorgung
Bosch

24VDC
power supply
Bosch

24VDC Versorgung
Klemmenleiste

24VDC power supply
terminal rails

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 2
		=A1.F4	of 42
comm. nr. :P_NR1	main power feed / power supply 24V/230V	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

L1 /2.8
L2 /2.8
L3 /2.8
N /2.8
PE /2.8

L1 /6.1
L2 /6.1
L3 /6.1
N /6.1
PE /4.1

Versorgung vom HSS

power supply from main panel

-10CB3
1,6-2,5A
1 3 5 13 21
2 4 6 14 22
I > I > I >
/29.2

.F1/8.5 10X12/1U
.F1/8.5 10X12/1N
.F1/9.6 10X12/PE.

-10X12 1U PE 1N

-10X12 1U PE 1N

-10X2 1V 1W PE

-10CL2
X1
PE
X2

-10CL2.1
X1
PE
X2

-10SOC2
L PE N

2-Fach Steckdose

twin socket

1 2 PE
KLIMAGERÄT
-10AC3

Beleuchtung Schaltschrank

lamp depositor panel

120VAC Steckdose Schaltschrank

120VAC socket depositor panel

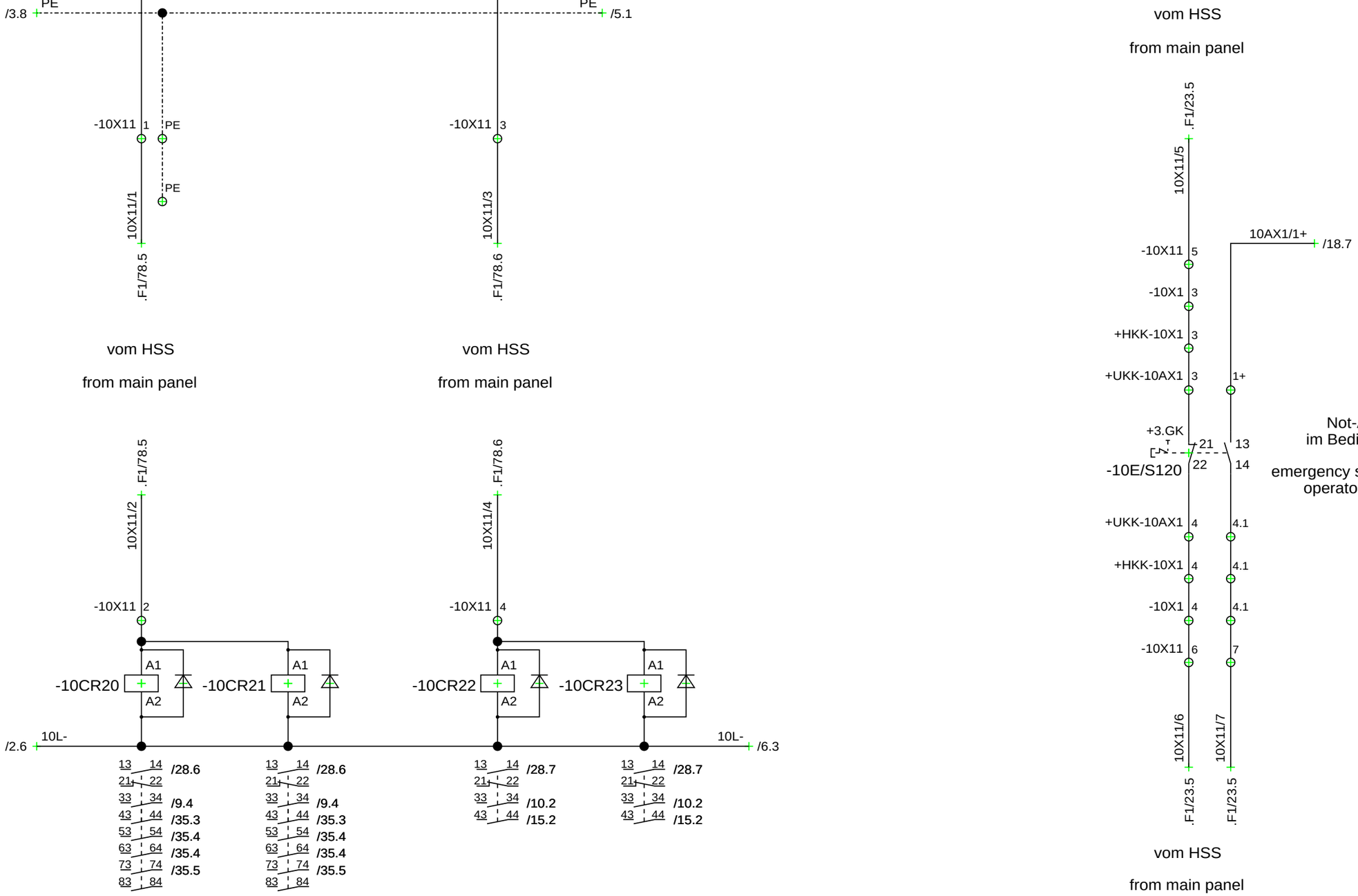
Klimagerät Schaltschrank

climatisation unit

BÜHLER

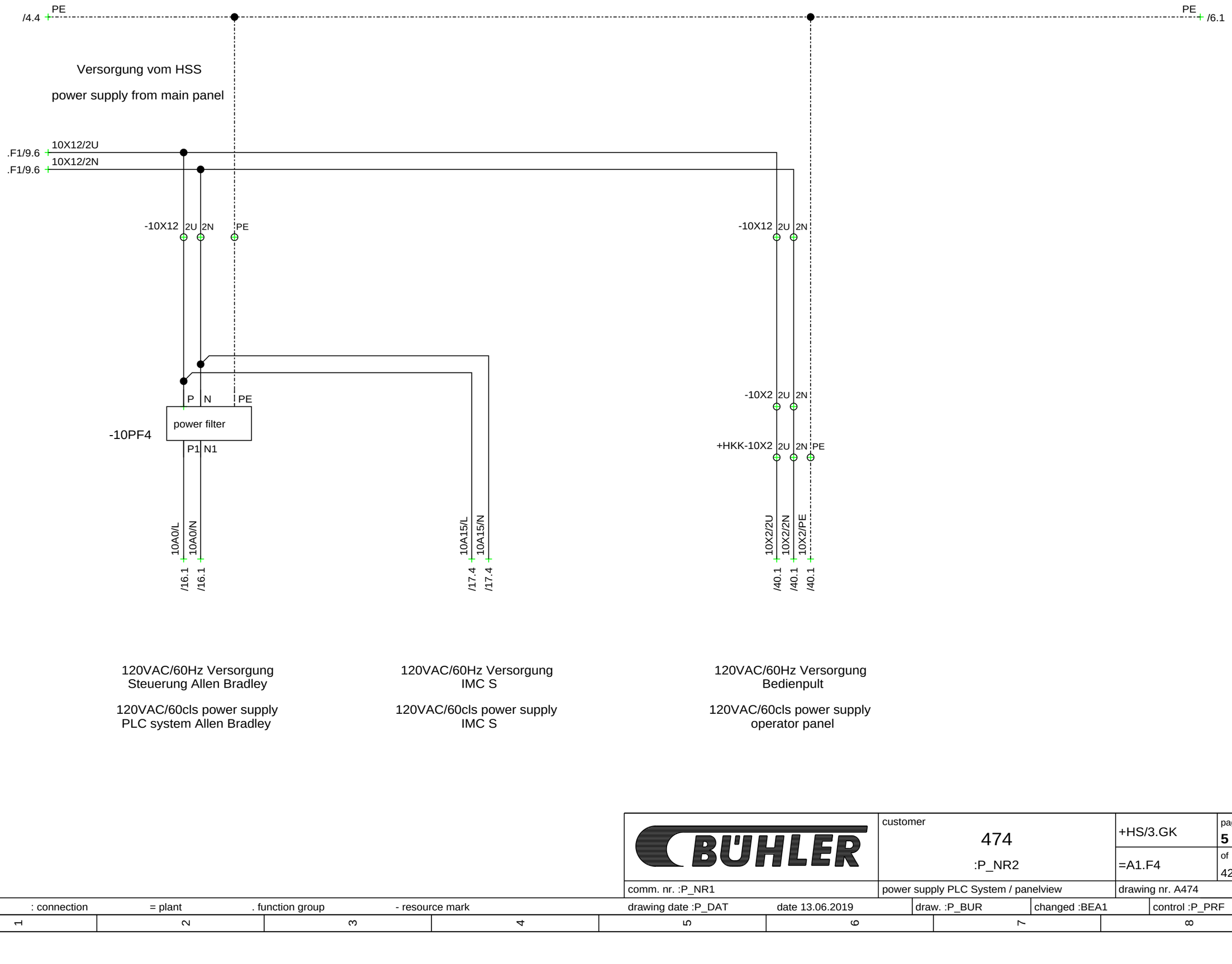
customer 474 :P_NR2		+HS/3.GK	page 3
		=A1.F4	of 42
comm. nr. :P_NR1	power supply climatisation		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1 control :P_PRF



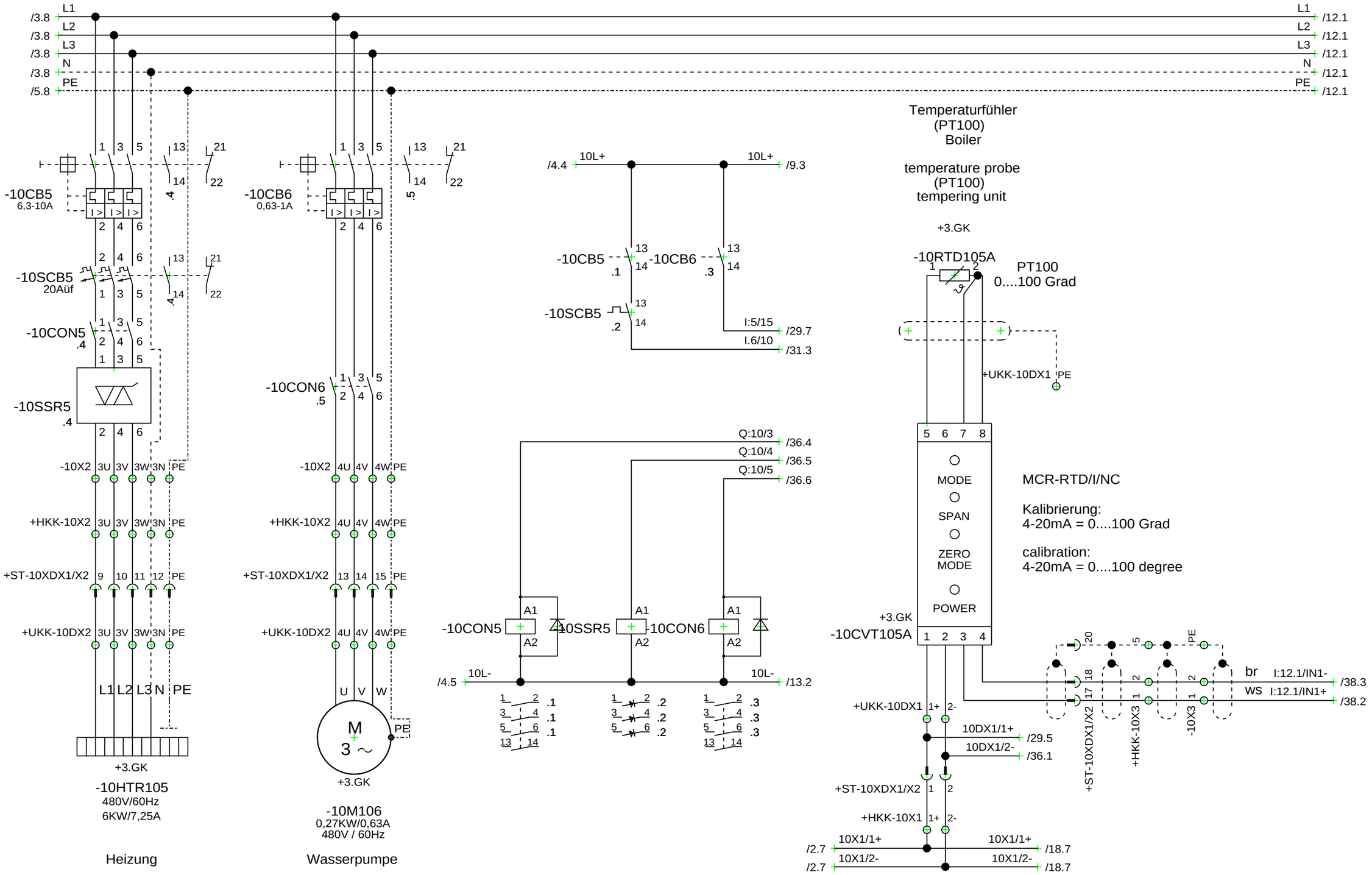
BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 4
		=A1.F4	of 42
comm. nr. :P_NR1	emergency stop relay	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 5
		=A1.F4	of 42
comm. nr. :P_NR1	power supply PLC System / panelview	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 6
		=A1.F4	of 42
comm. nr. :P_NR1	water heater mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
	474	+HS/3.GK	page 7
	:P_NR2	=A1.F4	of 42
comm. nr. :P_NR1	spare	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

customer			
BÜHLER	474 :P_NR2	+HS/3.GK =A1.F4	page **8** of 42
comm. nr. :P_NR1	spare	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Freigabe Servo - Module
enable servo modules

/6.5 10L+

-10CR20 /4.2 33 34

-10CR21 /4.2 33 34

-10X1 5

+HKK-10X1 5

Reserve

spare

+HKK-10X1 6

1.Türschalter Einfahrt GK

1.door switch entry depositor

-10DS101 13 14 21 22

+HKK-10X1 7

2.Türschalter Ausfahrt GK

2.door switch exit depositor

-10DS102 13 14 21 22

+HKK-10X1 8

+HKK-10X1 8 -10X1 8 I:4/6 /26.6

+3.GK

Reinigungsposition

cleaning position

-10GS103 13 14 21 22

/25.4

+HKK-10X1 9

-10X1 9 9 I:4/7 /26.7

Freigabe Tippen

enable jog mode

-10CR31 /34.2 13 14

-10X1 49

+HKK-10X1 49

+ST-10XX100 5

+ST-10XX100 6

+HKK-10X1 50

-10X1 50

Freigabe VM

enable power module

-10CR30 /13.6 13 14

Freigabe IP Lageregler

enable pos. controller

-10CR35 /34.5 13 14

Freigabe Bosch

enable Bosch

-10CR32 /34.3 13 14

-10X10 1

FG2

/21.2

10L+ /10.2

-10CR36 /34.6 13 14

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 9
		=A1.F4	of 42
comm. nr. :P_NR1	enable servo module	drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1	control :P_PRF

Endlagen Sicherheitsschalter

safety switches

10L+ /9.8

-10CR22 /4.3 — 33 / 34

-10CR23 /4.4 — 33 / 34

-10X1 10

+HKK-10X1 10

Neff-Schalter Not-Aus Anfang Dosierachse

+UKK-10BX1 10

+3.GK

21 / 22

Neff-switch emergency stop startposition deposit drive

-10CS104

+UKK-10BX1 11

+HKK-10X1 11 — -10X1 11 — I:4/9 /27.3

+UKK-10BX1 11

Neff-Schalter Not-Aus Anfang Dosierachse

+3.GK

21 / 22

Neff-switch emergency stop endposition deposit drive

-10CS106

+UKK-10BX1 12

+HKK-10X1 12

-10X1 12 12 — I:4/10 /27.3

Haltebremse Dosierachse lüften

-10CON38 /37.7 — 21 / 22

Freigabe Achsen-Lageregler

enable position controller

10L+ /13.5

-10SM30 /13.1 — 43 / 44

Freigabe IP Lageregler

enable pos. controller

-10CR35 /34.5 — 33 / 34

-10X10 2

DRFAULT2

/21.3

10A31:X312/2 /13.5

Antriebe Aus

drives off

-10CR33 /34.3 — 13 / 14

Antriebe Ein

drives on

-10CR34 /34.4 — 13 / 14

-10CR30 /13.6 — 33 / 34

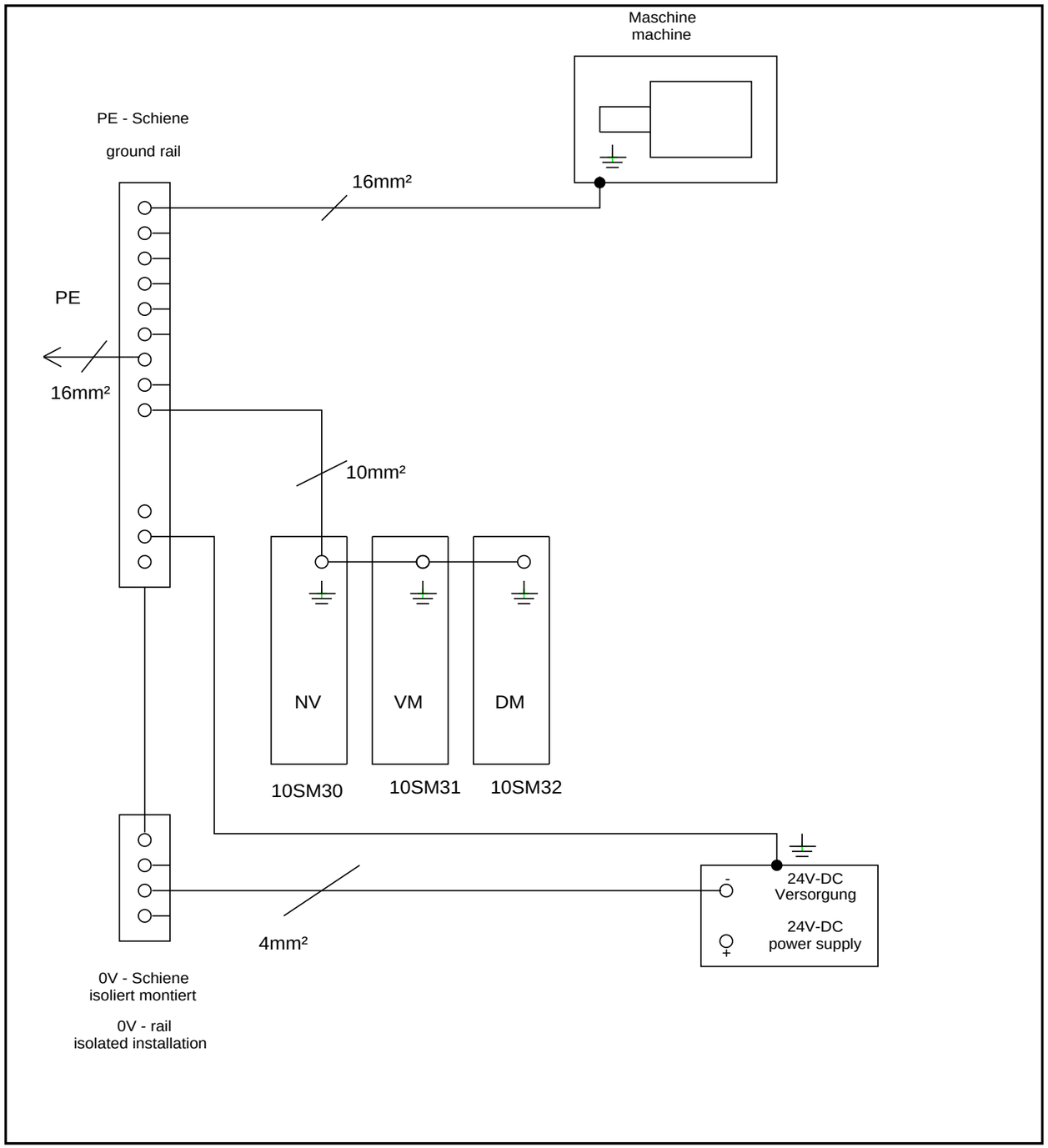
-10SM30 /13.1 — 13 / 14

10A30/A1 /13.3

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 10
		=A1.F4	of 42
comm. nr. :P_NR1	safety switches	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

ERDUNG für BOSCH System

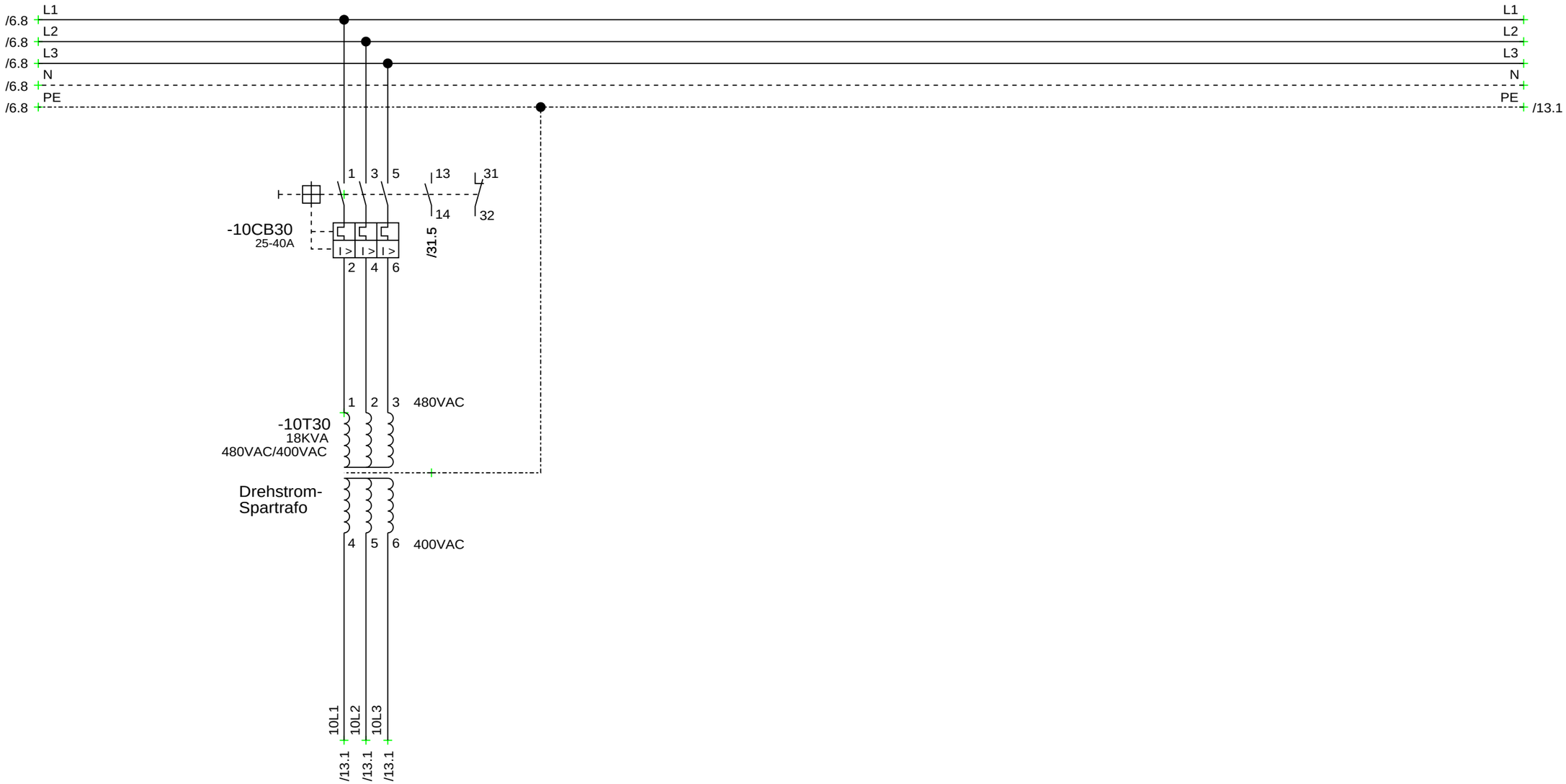


ERDUNG für BOSCH System

earthing system BOSCH rack

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **11**
		=A1.F4	of 42
comm. nr. :P_NR1	earthing servo system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

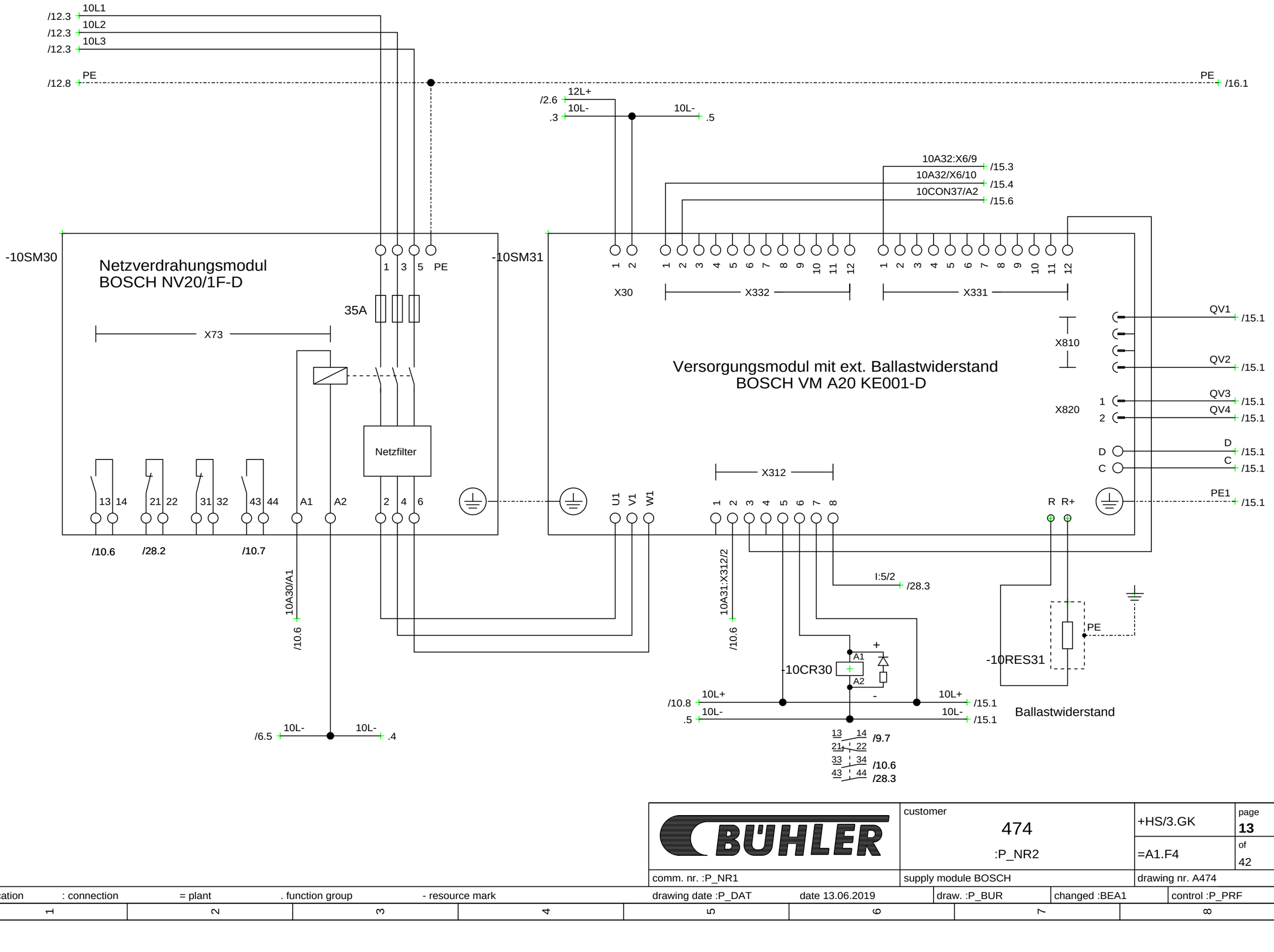


Einspeisung Bosch Servo-System

power supply Bosch serco system

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **12**
		=A1.F4	of 42
comm. nr. :P_NR1	power supply Bosch system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **13**
		=A1.F4	of 42
comm. nr. :P_NR1	supply module BOSCH	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
	474	+HS/3.GK	page **14**
	:P_NR2	=A1.F4	of 42
comm. nr. :P_NR1	spare	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

+3.GK
-10M132

Motor Typ SR-A5.0460.020-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

zum Achsen Lageregler

/13.7 10L+ 10L+ .2
/13.7 10L- 10L- .2

-10CR22 /4.3 43 44
-10CR23 /4.4 43 44
-10CON38 /37.7 1 2
-10CON37 .6 1 2

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

10A6/Ua1 /21.2
10A6/Ua1/ /21.2
10A6/Ua2 /21.2
10A6/Ua2/ /21.3
10A6/Ua0 /21.3
10A6/Ua0/ /21.3
10A6/5V /21.4
10A6/0V /21.4
Schirm2 /21.4

-10SM32

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/13.8 QV1
/13.8 QV2

24V
Querverbindung

/13.8 QV3 1
/13.8 QV4 2

Zwischenkreis-
Spannung

/13.8 D D
/13.8 C C

/13.8 PE1

X810

X820

X810

QV1 .1
QV2 .1
QV3 .1
QV4 .1
D .1
C .1
PE1 .1

X820

Servodul BOSCH DMA85B3301-D
Dosierantrieb

X6 1 2 3 4 5 6 7 8 9 10
STA-Relais STA-Relais IN1 IN2 IN3 IN4 10A32:X6/9 24V in 10A32/X6/10 0V in
I:5/10 10A32:X6/3
/29.3 /21.2 /13.7 /13.7

X12 1 2 3 4 5 6 7 8
OUT5 OUT6 OUT7 OUT8 OUT9 Relais Relais Relais
I:5/12
/29.5

Gehäuse X21 1 2 3 4 5 6
rt sw
SW2+ SW2-
/21.6 /21.6

X34 1 2 3 4 5 6
OUT4 OUT3 OUT2 OUT1 Relais Relais
I:5/11 /29.4

-10CON37 A1 A2
10CON37/A2 /13.7

1 2 .2
3 4
5 6
13 14 /29.3

10L+ .2 10L+ /17.4
10L- .2 10L- /16.1

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 15
		=A1.F4	of 42
comm. nr. :P_NR1	servo module deposit drive	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/5.2 10A0/L
/5.2 10A0/N
/13.8 PE
/15.3 10L-
10L- /17.4
PE /17.4

SLC 500 - System Übersicht

SLC 500 - system overview

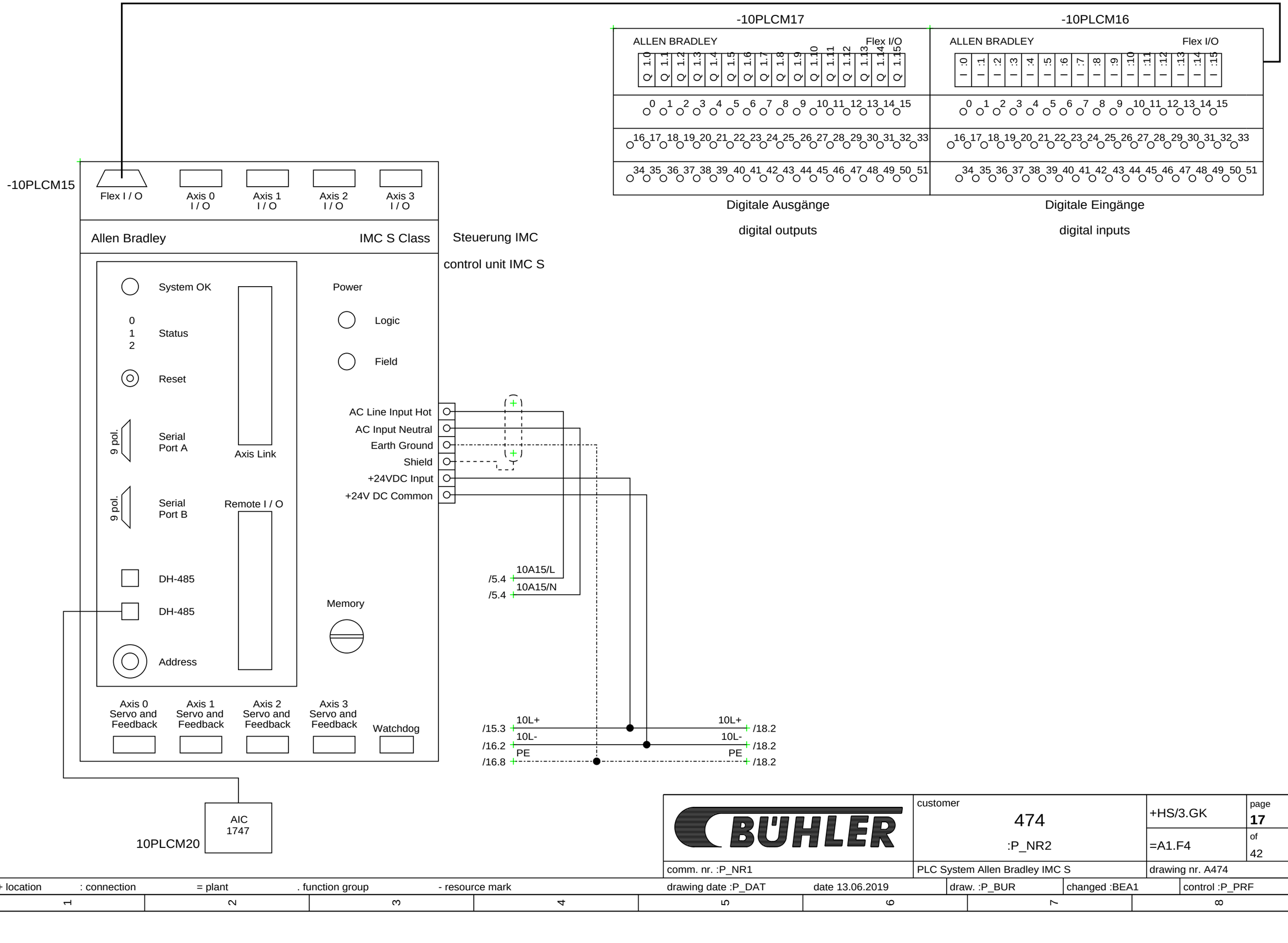
main rack Allen Bradley

	10PLCM1	10PLCM2	10PLCM3	10PLCM4	10PLCM5	10PLCM6	10PLCM7	10PLCM8	10PLCM9	10PLCM10	10PLCM11	10PLCM12	10PLCM13
PWR OUT +24VOLTS DC	CPU SLC/04	spare	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	spare	digital outputs 1746-OB16	digital outputs 1746-OB16	digital outputs 1746-OB16	spare	anal. in/out 1746-NIO4I
PWR OUT COM	DH+												
120/240 VOLTS			I:2/0-I:2/15	I:3/0-I:3/15	I:4/0-I:4/15	I:5/0-I:5/15	I:6/0-I:6/15		I:8/0-I:8/15	I:8/0-I:8/15	I:8/0-I:8/15		12.0-12.1
VAC NEUT	RS232												
CHASSIS GROUND													

-10PLC0

6mm²

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **16**	
		=A1.F4	of 42	
comm. nr. :P_NR1	PLC system ALLEN BRADLEY	drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **17**
		=A1.F4	of 42
comm. nr. :P_NR1	PLC System Allen Bradley IMC S	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

System Übersicht / system overview

AIC-NET
im Gießmaschinenschaltschrank

AIC-NET
in depositor panel

DH485
cable 1747-CD

AIC
im Gießmaschinenschaltschrank

AIC
in depositor panel

AIC
im Bedienpult

AIC
in operator panel

orange with white stripes
white with orange stripes
blue with white stripes
drain wire

-10PLCM21

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

TX

24VDC
NEUT
GND

1761-CBL-AP00
(0,5mtr)

1747-FC

RS232

10PLCM1

CPU
SLC5/04

CPU
depositor panel

-10PLCM20

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-C10

DH485

10PLCM15

IMC S

position
controller

+3.GK
-10PLCM100

DH-485
INTFC
1747 AIC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-C10

+UKK-10AX1 1+ 2- PE

10AX1/1+ /4.7
+HKK-10X1 1+ 2-
10AX1/1+ /24.6

10X1/1+ /21.6
10X1/2- /21.5
10X1/PE /2.8

DH485

10CP100

panel
view

operator panel

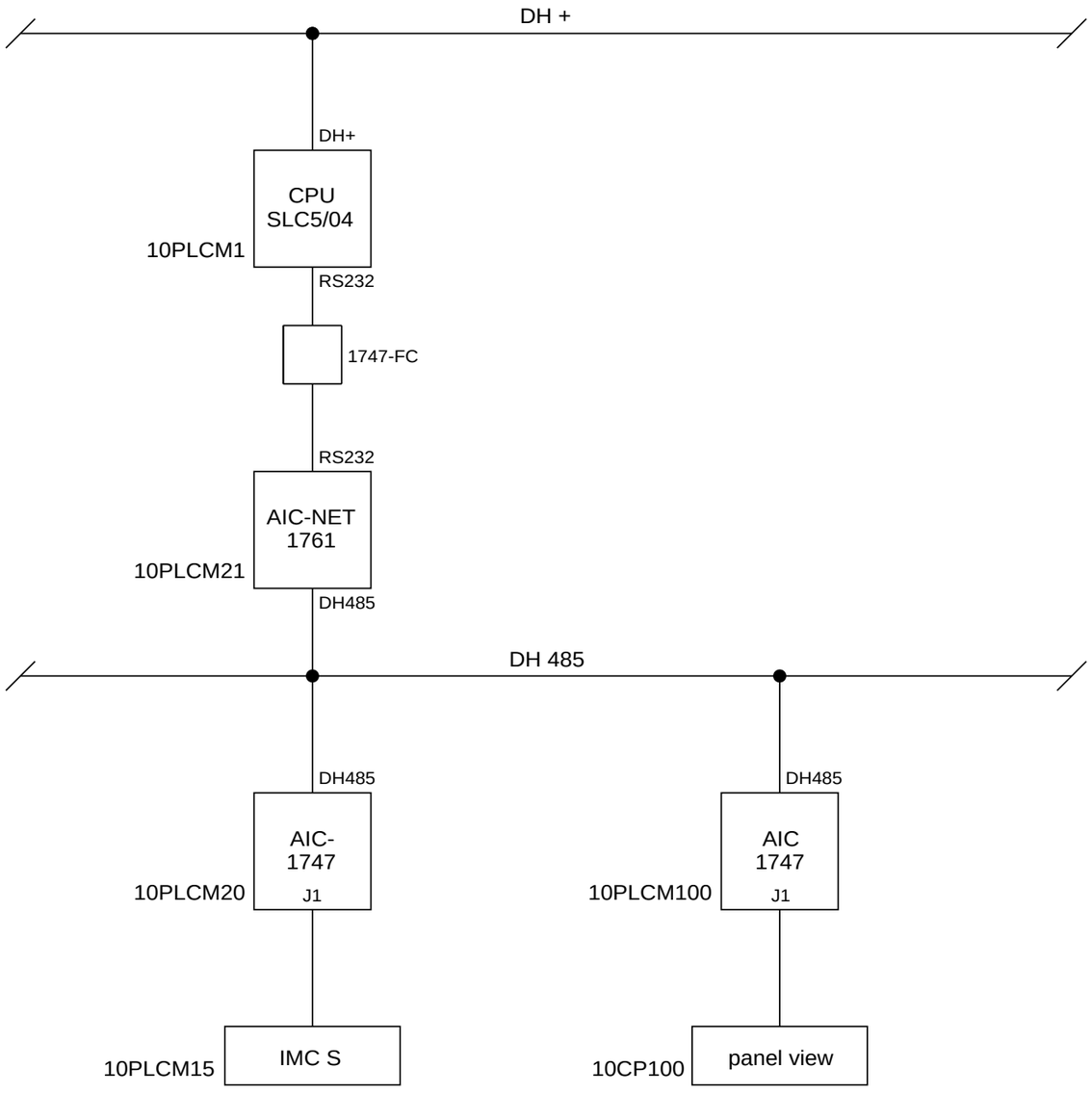
/17.5 10L+ 10L+ /22.1
/17.5 10L- 10L- /21.4
/17.5 PE PE /37.7

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **18**
		=A1.F4	of 42
comm. nr. :P_NR1	system overview AIC	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

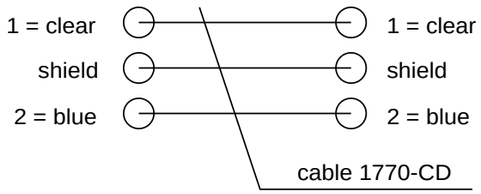
System Übersicht

system overview



Anschlußbelegung DH +
von SLC5/04 zu SLC5/04

conection DH+
from SLC5/04 to SLC5/04

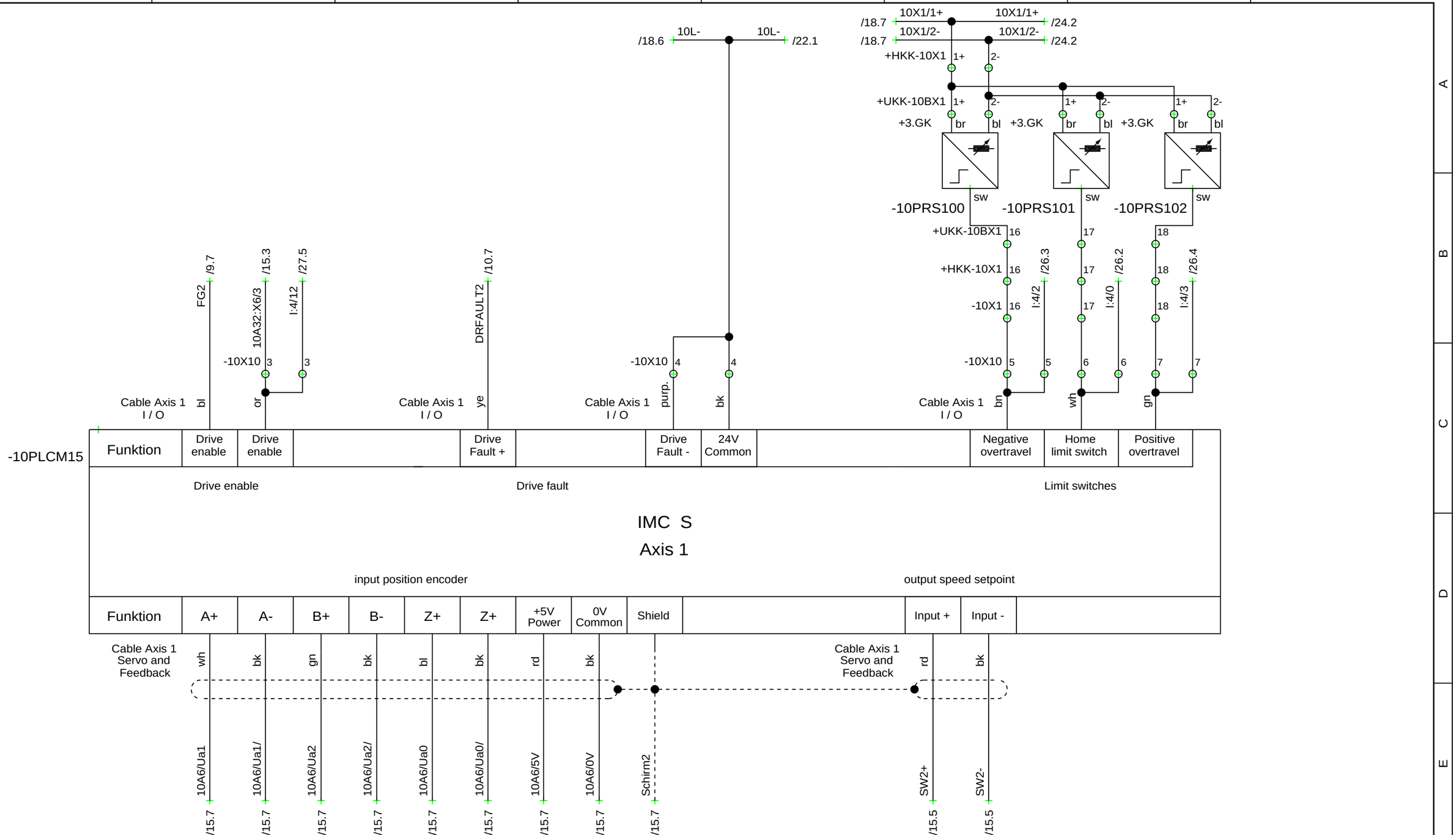


BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **19**
		=A1.F4	of 42
comm. nr. :P_NR1	system overview datahighway	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

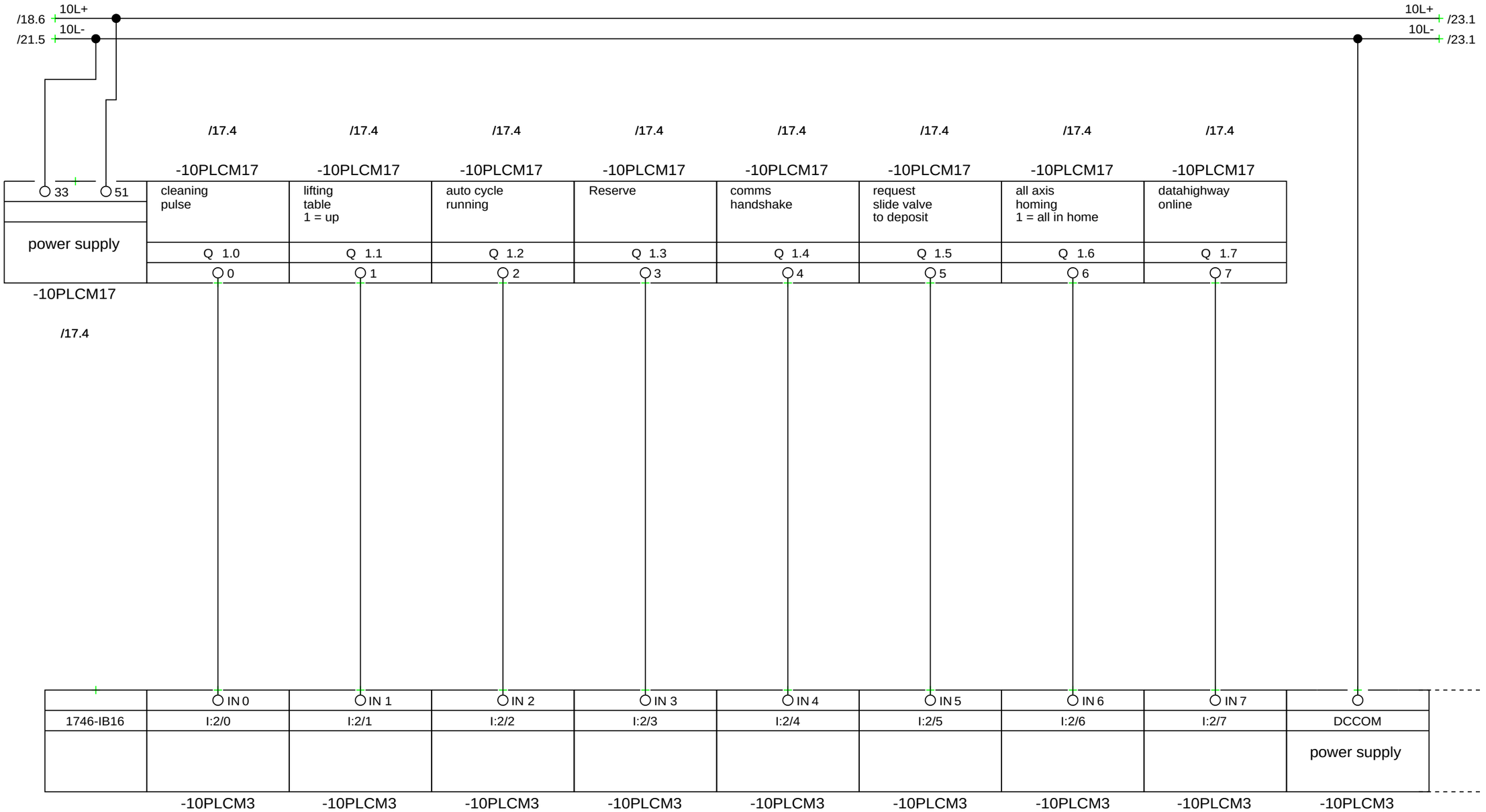
customer			
BÜHLER	474 :P_NR2	+HS/3.GK	page **20**
		=A1.F4	of 42
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **21**	
		=A1.F4	of 42	
comm. nr. :P_NR1	position controller deposit axis	drawing nr. A474		

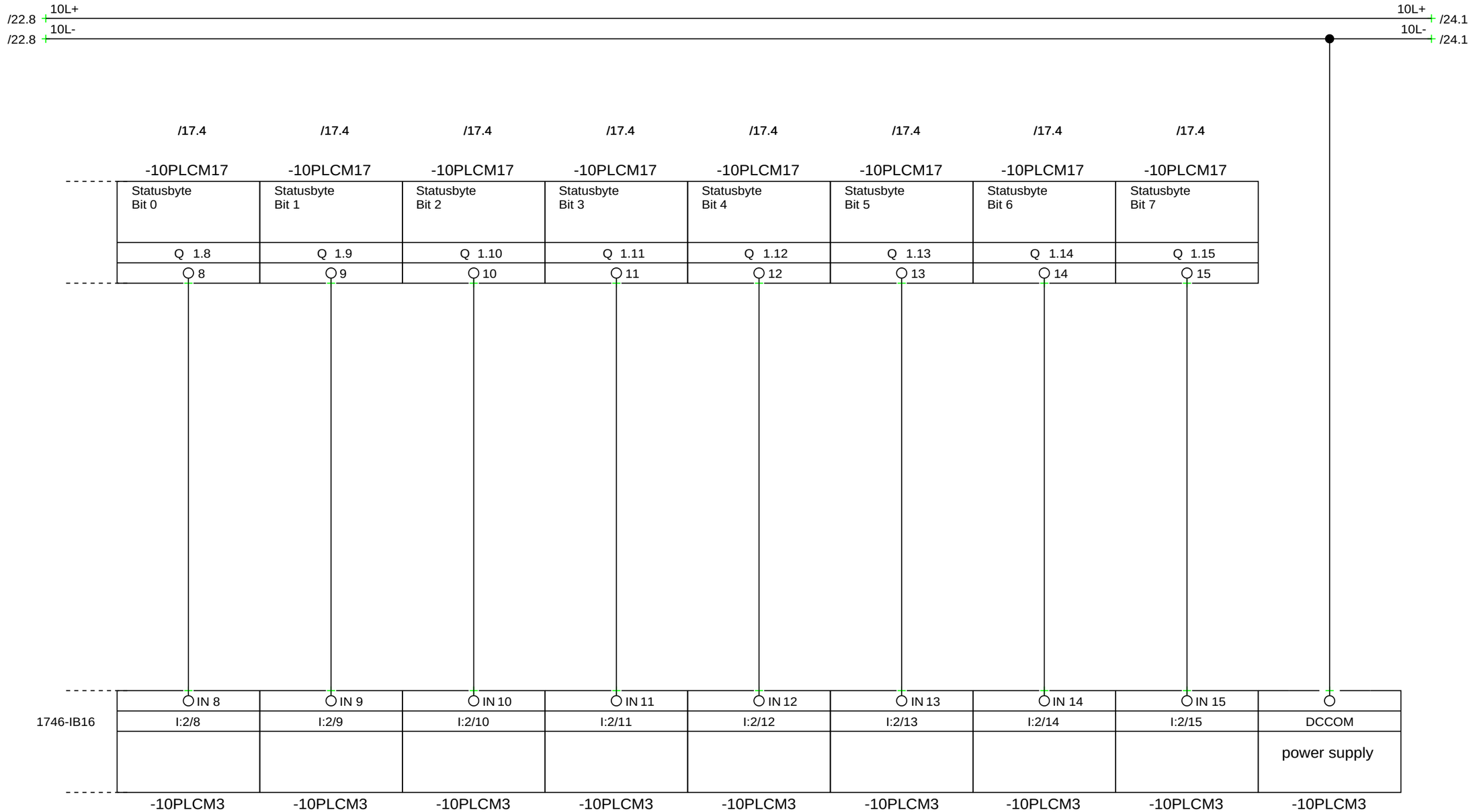
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



connection to IMC S

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 22
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

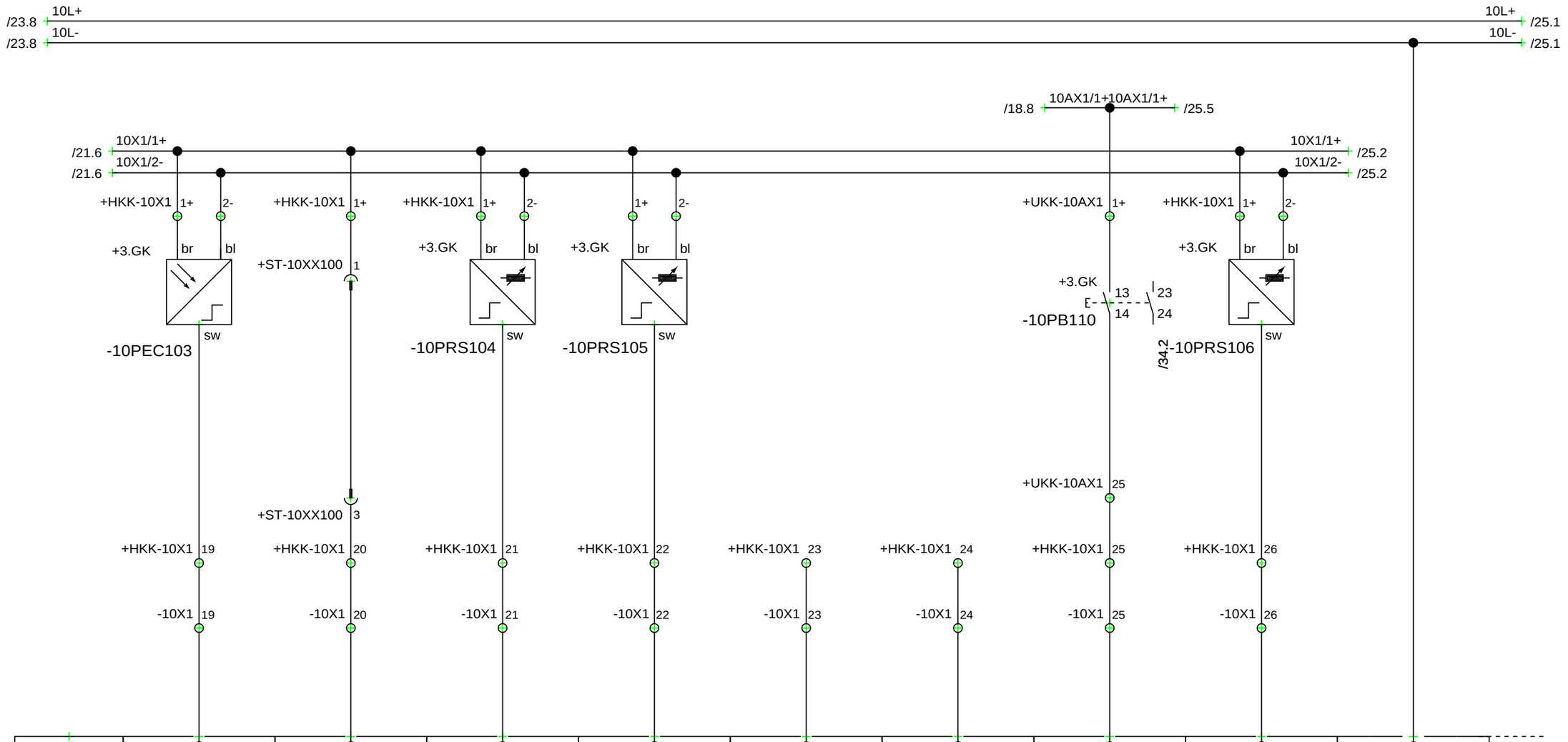
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



connection to IMC S

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 23
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

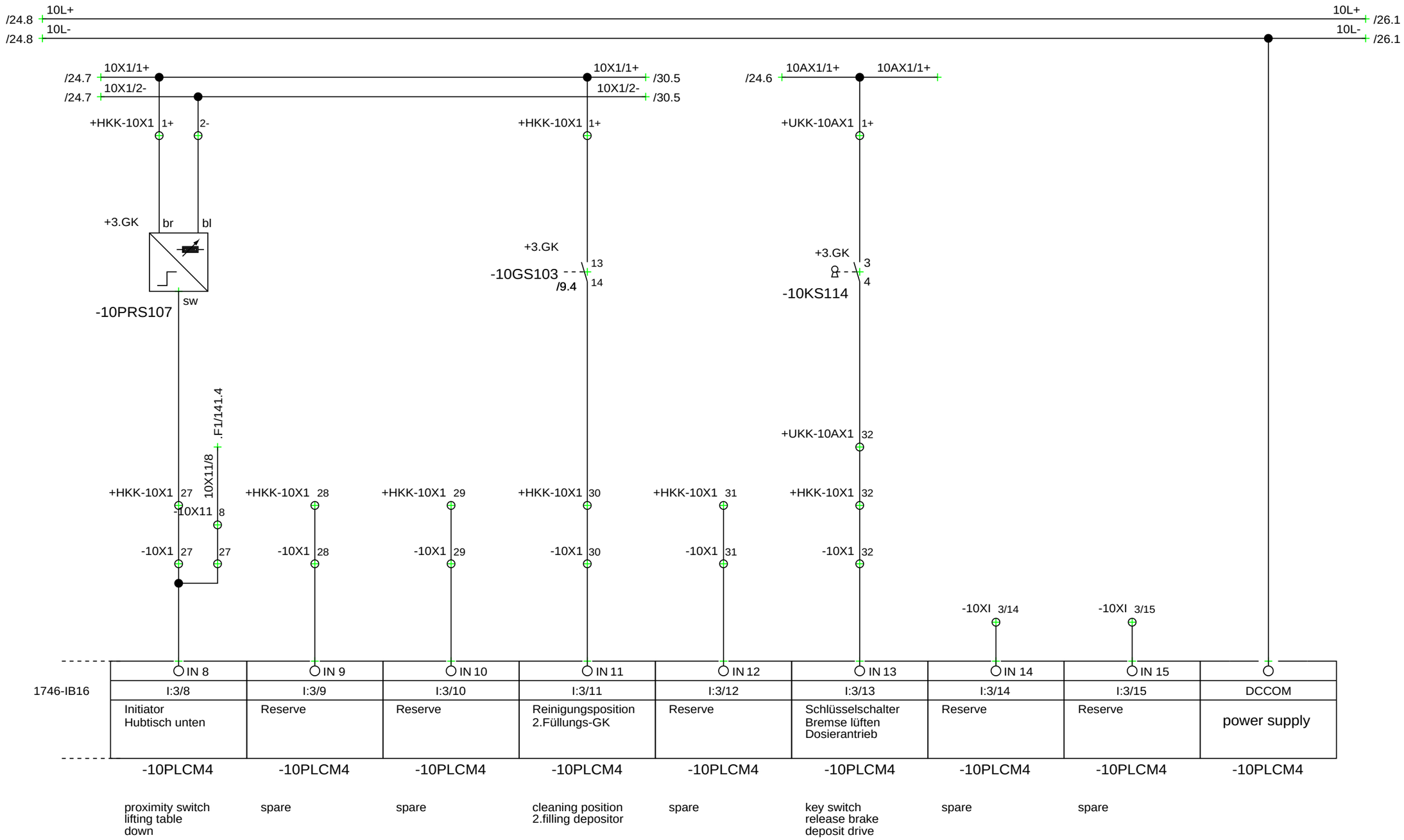


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:3/0	I:3/1	I:3/2	I:3/3	I:3/4	I:3/5	I:3/6	I:3/7	DCCOM
	Formentaster 2.Füllungs-GK	Reinigungswagen gesteckt	Initiator Schieberantrieb Ansaugstellung	Initiator Schieberantrieb Dosierstellung	Reserve	Reserve	Tippen	Initiator Hubtisch oben	power supply
	-10PLCM4	-10PLCM4	-10PLCM4	-10PLCM4	-10PLCM4	-10PLCM4	-10PLCM4	-10PLCM4	-10PLCM4
	mould sensor 2.filling depositor	spare	proximity switch pusher in suck position	proximity switch pusher in deposit position	spare	spare	jog mode	proximity switch lifting table up	

BÜHLER

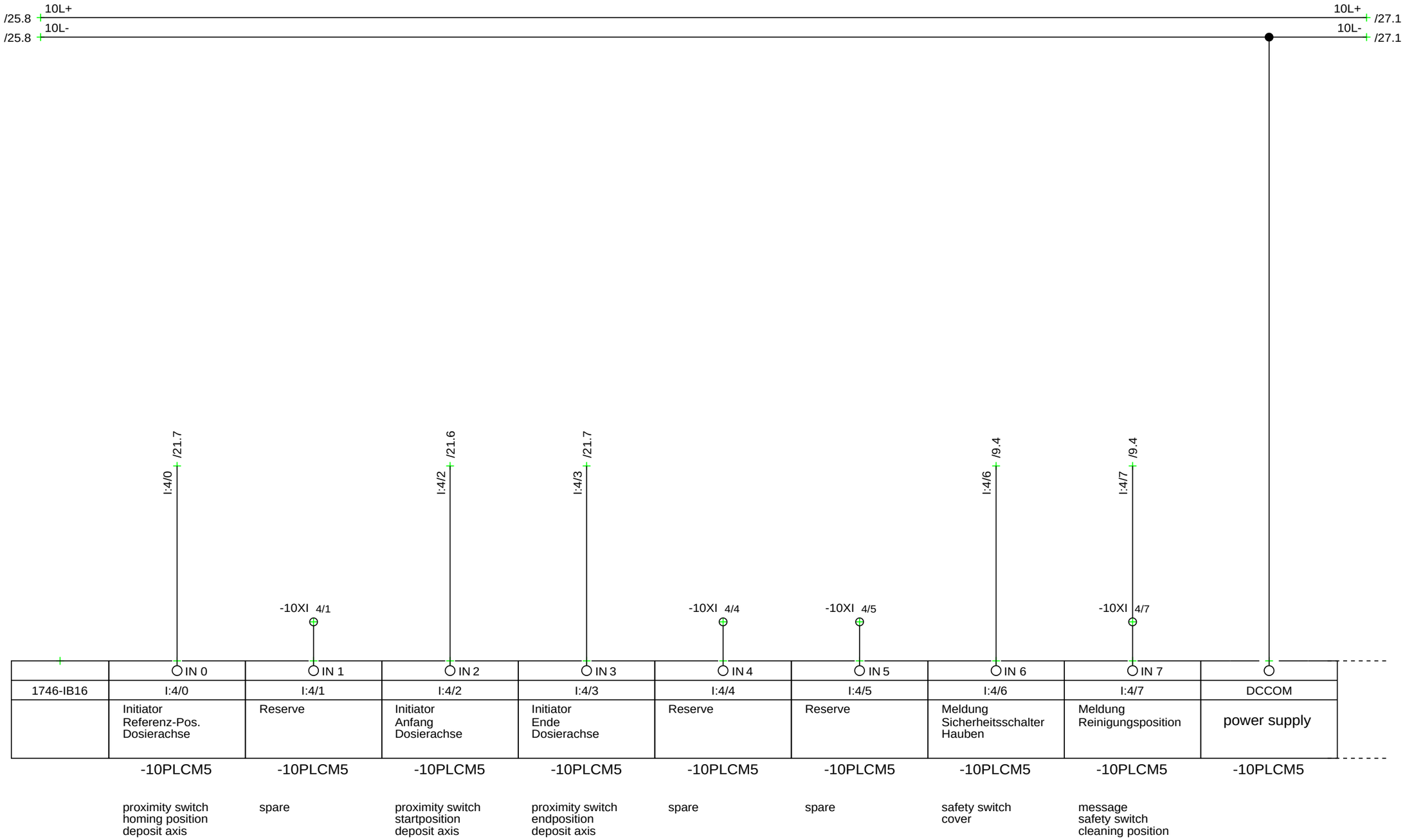
customer 474 :P_NR2		+HS/3.GK	page **24**
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 25
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 26
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/26.8 10L+
/26.8 10L-

10L+ /28.1
10L- /28.1

-10X10 8

IMC S
Cable Watchdog
bk
-10PLCM15
wht

-10X10 9

I:4/9 /10.3
I:4/10 /10.3
I:4/12 /21.2

-10XI 4/8
-10XI 4/11
-10XI 4/13
-10XI 4/14

	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
1746-IB16	I:4/8	I:4/9	I:4/10	I:4/11	I:4/12	I:4/13	I:4/14	I:4/15	DCCOM
	Reserve	Neff-Schalter Not-Aus Anfang Dosierachse	Neff-Schalter Not-Aus Ende Dosierachse	Reserve	Drive Enable IMC S Dosierachse	Reserve	Reserve	CPU Watchdog IMC S	power supply
	-10PLCM5	-10PLCM5	-10PLCM5	-10PLCM5	-10PLCM5	-10PLCM5	-10PLCM5	-10PLCM5	-10PLCM5
	spare	Neff-switch emergency stop startposition deposit axis	Neff-switch emergency stop endposition deposit axis	spare	drive enable IMC S deposit axis	spare	spare	CPU Watchdog IMC S	

BÜHLER

customer 474 :P_NR2

+HS/3.GK

page 27

=A1.F4

of 42

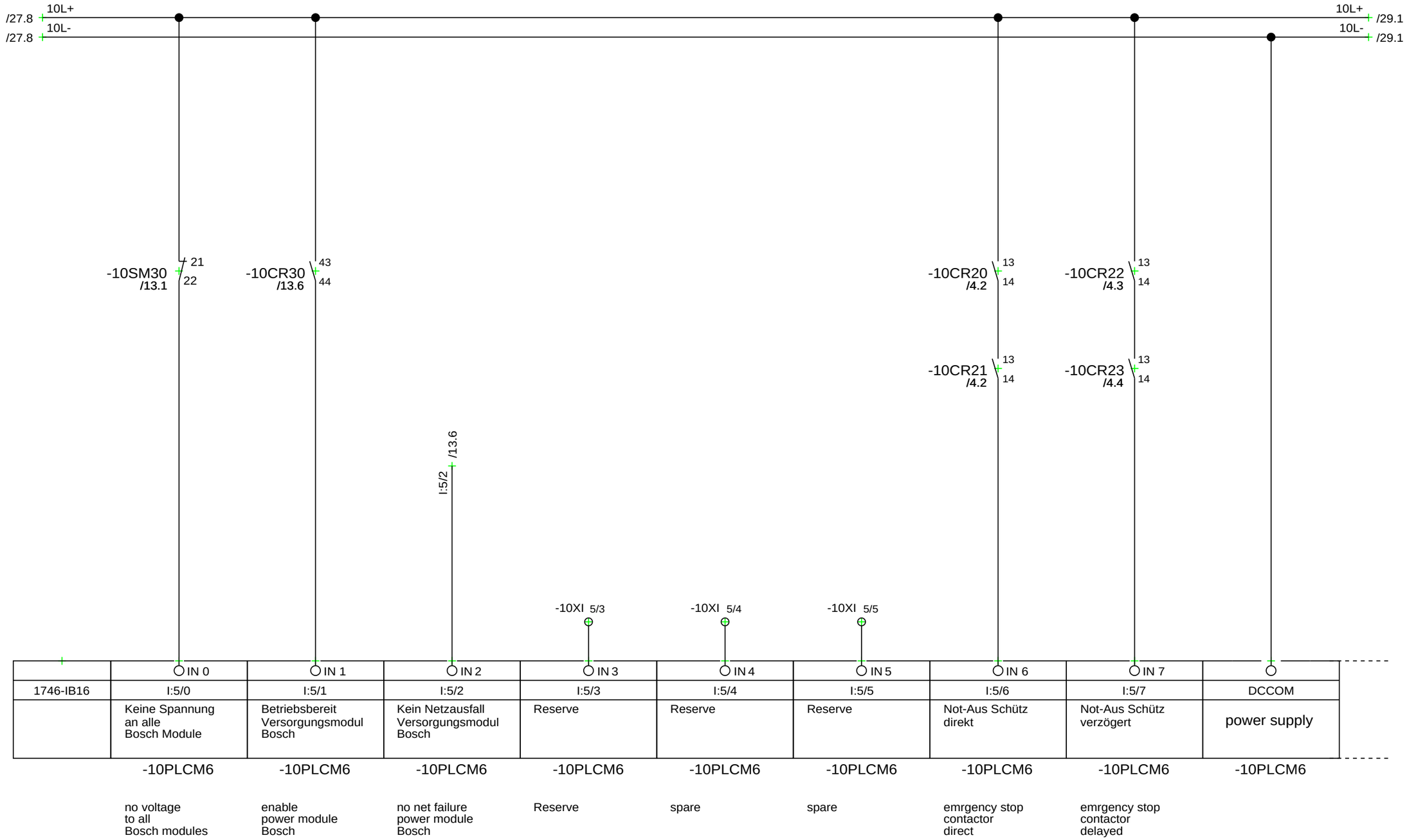
comm. nr. :P_NR1

digital inputs

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:5/0	I:5/1	I:5/2	I:5/3	I:5/4	I:5/5	I:5/6	I:5/7	DCCOM
	Keine Spannung an alle Bosch Module	Betriebsbereit Versorgungsmodul Bosch	Kein Netzausfall Versorgungsmodul Bosch	Reserve	Reserve	Reserve	Not-Aus Schütz direkt	Not-Aus Schütz verzögert	power supply
	-10PLCM6	-10PLCM6	-10PLCM6	-10PLCM6	-10PLCM6	-10PLCM6	-10PLCM6	-10PLCM6	-10PLCM6
	no voltage to all Bosch modules	enable power module Bosch	no net failure power module Bosch	Reserve	spare	spare	emrgency stop contactor direct	emrgency stop contactor delayed	

BÜHLER

customer 474 :P_NR2

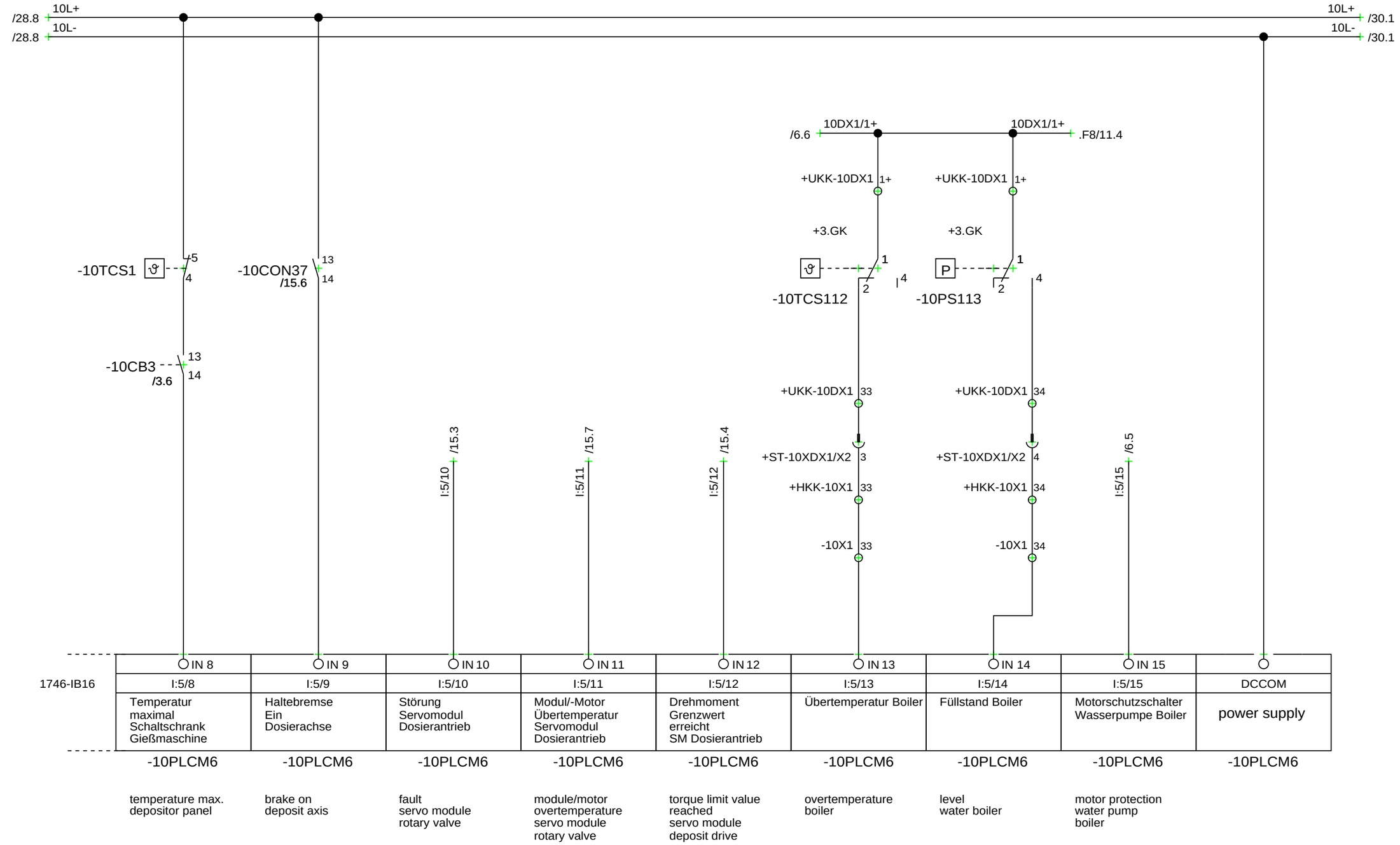
+HS/3.GK

page **28** of 42

=A1.F4

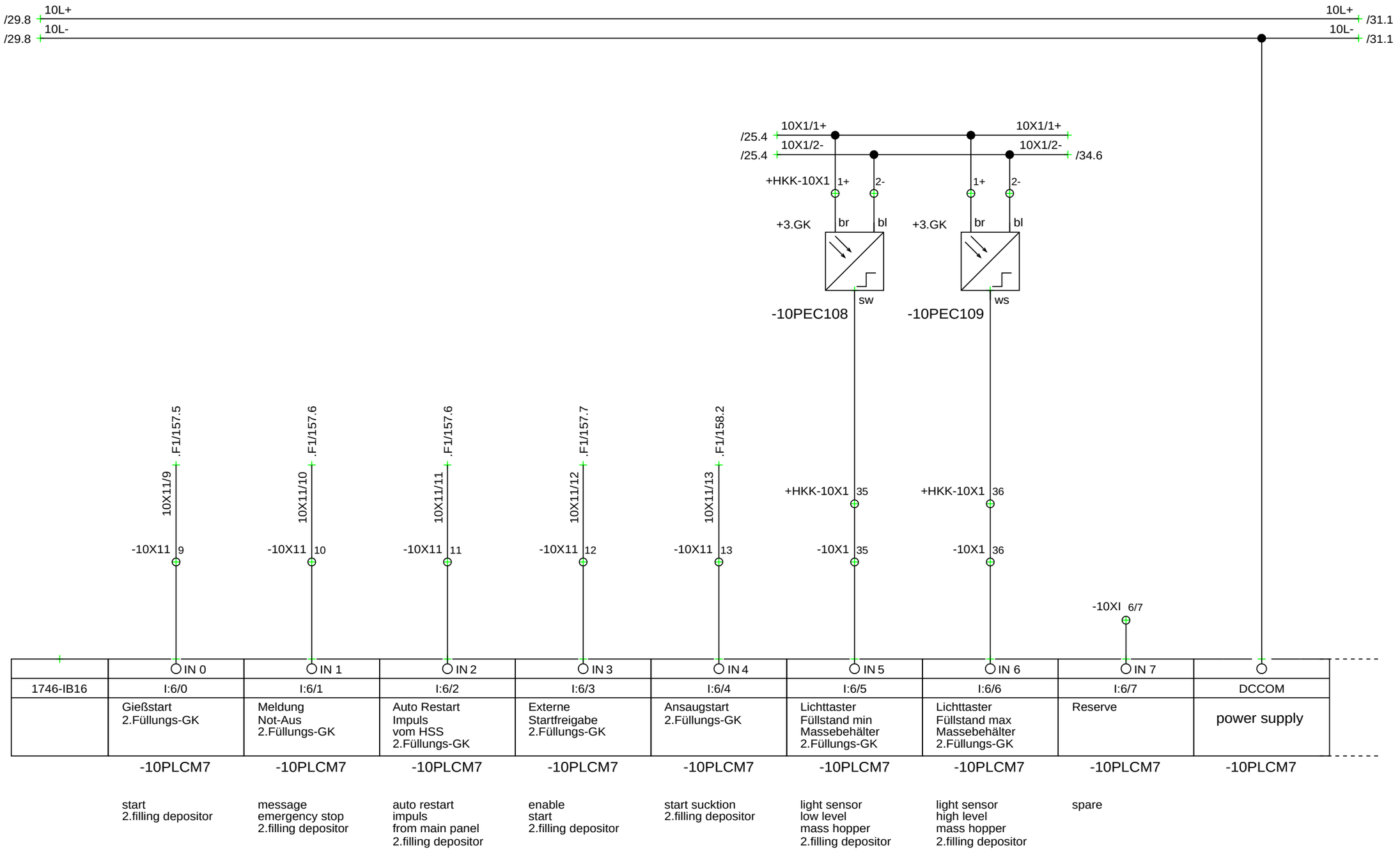
comm. nr. :P_NR1 | digital inputs | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

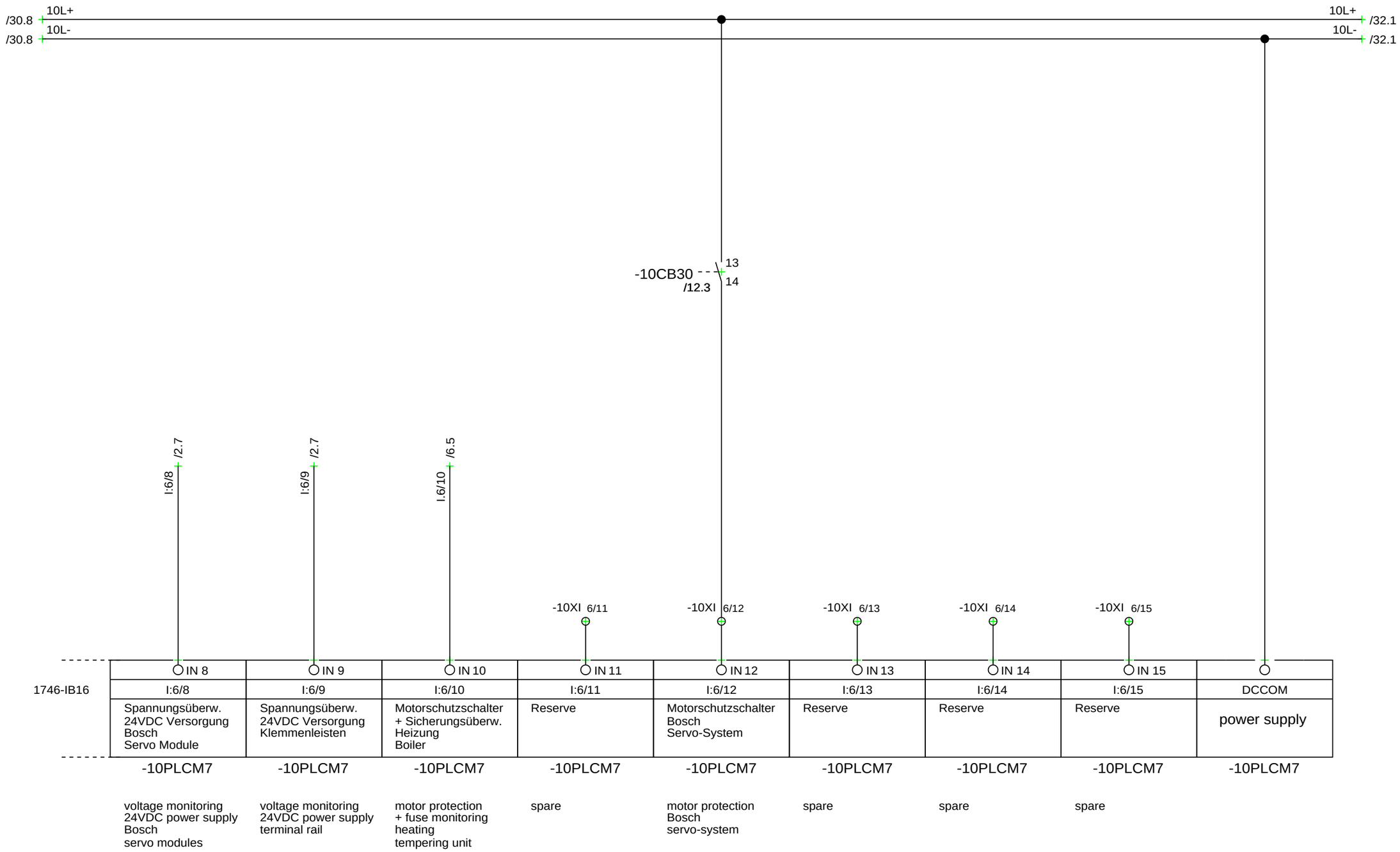


BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 29
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR / changed :BEA1 / control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 30	
		=A1.F4	of 42	
comm. nr. :P_NR1	digital inputs	drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HS/3.GK	page 31
		=A1.F4	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

/31.8 10L+
/31.8 10L-

10L+ .1
10L- .1

connection to IMC S

	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	
	home axis	proximity switch RV suck position	proximity switch RV deposit position	start deposit pulse	enable manual mode	spare	auto mode	reset fault	VDC
1746-OB16									power supply
	Q:8/0	Q:8/1	Q:8/2	Q:8/3	Q:8/4	Q:8/5	Q:8/6	Q:8/7	
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	

-10PLCM9

.8 10L+
.8 10L-

10L+ /33.1
10L- /33.1

33	51	0	1	2	3	4	5	6	7
		I :0	I :1	I :2	I :3	I :4	I :5	I :6	I :7
power supply									
-10PLCM16		-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16
/17.6		/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER

customer 474 :P_NR2

+HS/3.GK

=A1.F4

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of 42

comm. nr. :P_NR1

digital outputs

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

/32.2 10L+
/32.2 10L-

10L+ /34.1
10L- /34.1

connection to IMC S

	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	-10PLCM9	
1746-OB16	emergency stop 0 = emergency stop	trigger receive data	trigger send data	manual RV axis	manual deposit axis	spare	manual forward right	manual backward left	DCCOM power supply
	Q:8/8	Q:8/9	Q:8/10	Q:8/11	Q:8/12	Q:8/13	Q:8/14	Q:8/15	
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	

-10PLCM9

	8	9	10	11	12	13	14	15
	I :8	I :9	I :10	I :11	I :12	I :13	I :14	I :15
	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16	-10PLCM16
	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **33**
		=A1.F4	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/33.8 10L+
/33.8 10L-

10L+ /35.1
10L- .1

enable Bosch jog mode	enable Bosch	Bosch servo drives off	Bosch servo drives on	enable IMC S position controller	reset Bosch servo modules	spare	spare
-10PLCM10	-10PLCM10	-10PLCM10	-10PLCM10	-10PLCM10	-10PLCM10	-10PLCM10	-10PLCM10
1746-OB16	Freigabe Bosch Tippen	Freigabe Bosch	Antriebe Aus	Antriebe Ein	Freigabe IMC S lageregler	Reset Servomodule	Blitzleuchte Reinigungsposition und Übertemperatur	Blitzleuchte Reinigungsposition und Übertemperatur	VDC
	Q:9/0	Q:9/1	Q:9/2	Q:9/3	Q:9/4	Q:9/5	Q:9/6	Q:9/7	power supply
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	-10PLCM10

-10X1 37
+HKK-10X1 37
+UKK-10AX1 37
+3.GK
-10PB110 23 24
/24.6
+UKK-10AX1 38
+HKK-10X1 38
-10X1 38

-10X1 39
+HKK-10X1 39

-10X1 40
+HKK-10X1 40
+ST-10XX100 4

-10CR31 A1 A2 + -
-10CR32 A1 A2 + -
-10CR33 A1 A2 + -
-10CR34 A1 A2 + -
-10CR35 A1 A2 + -
-10CR36 A1 A2 + -

.8 10L-

13 14 /9.7
21 22
33 34
43 44

13 14 /9.7
21 22
33 34
43 44

13 14 /10.5
21 22
33 34
43 44

13 14 /10.5
21 22
33 34
43 44

13 14 /9.7
21 22
33 34
43 44
/10.7

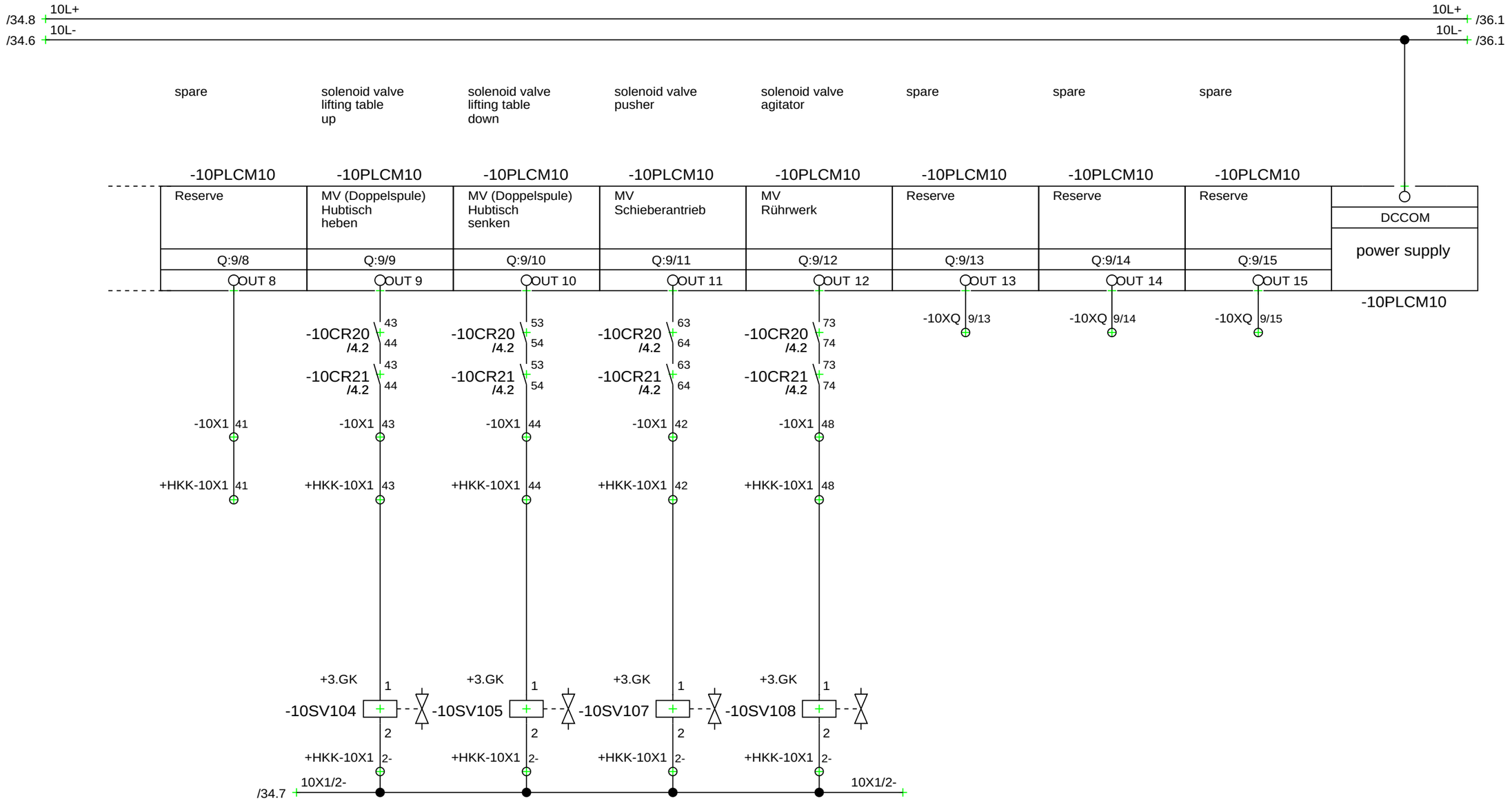
13 14 /9.7
21 22
33 34
43 44

+3.GK
-10LT100 1 2
10L- /35.1
+HKK-10X1 2-
/30.7 10X1/2-

+3.GK
-10LT101 1 2
+ST-10XX100 2
+HKK-10X1 2-
10X1/2- /35.2

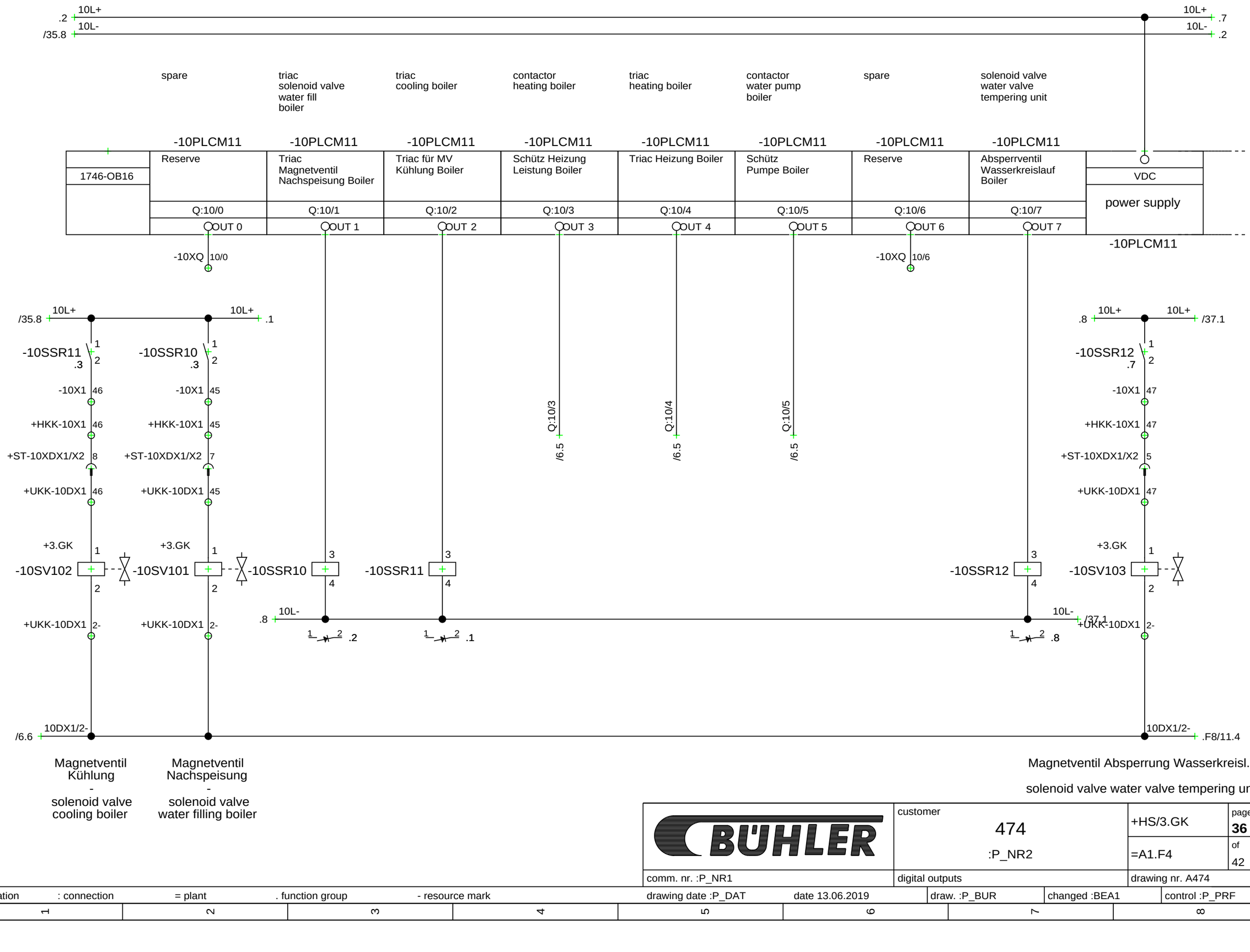
BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 34
		=A1.F4	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **35**
		=A1.F4	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page 36
		=A1.F4	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/36.8 10L+
/36.7 10L-

10L+
10L- .6

spare	enable plant 2.filling depositor	message shift register bridged 2.filling depositor	2.filling depositor is depositing	fault 2.filling depositor	PLC 2.filling depositor is in run	chocolate demand	release brake deposit drive	
-10PLCM11	-10PLCM11	-10PLCM11	-10PLCM11	-10PLCM11	-10PLCM11	-10PLCM11	-10PLCM11	
Reserve	Freigabe Anlagenstart 2.Füllungs-GK	Meldung Schieberegister überbrücket 2.Füllungs-GK	2.Füllungs-GK dosiert	Störung 2.Füllungs-GK	SPS 2.Füllungs-GK in Run	Koppelrelais Anforderungssignal Schokolade	Haltebremse Dosierachse lüften	DCCOM
Q:10/8	Q:10/9	Q:10/10	Q:10/11	Q:10/12	Q:10/13	Q:10/14	Q:10/15	power supply
OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	

-10PLCM11

-10X11 14 — 10X11/14 — .F1/142.3
-10X11 15 — 10X11/15 — .F1/141.5
-10X11 16 — 10X11/16 — .F1/141.6
-10X11 17 — 10X11/17 — .F1/141.6
-10X11 18 — 10X11/18 — .F1/141.7
-10X11 19 — 10X11/19 — .F1/142.2

/18.6 PE — PE
-10X4 1 — PE
11
-10CR8 .6
14
-10X4 2

Potentialfreier Kontakt

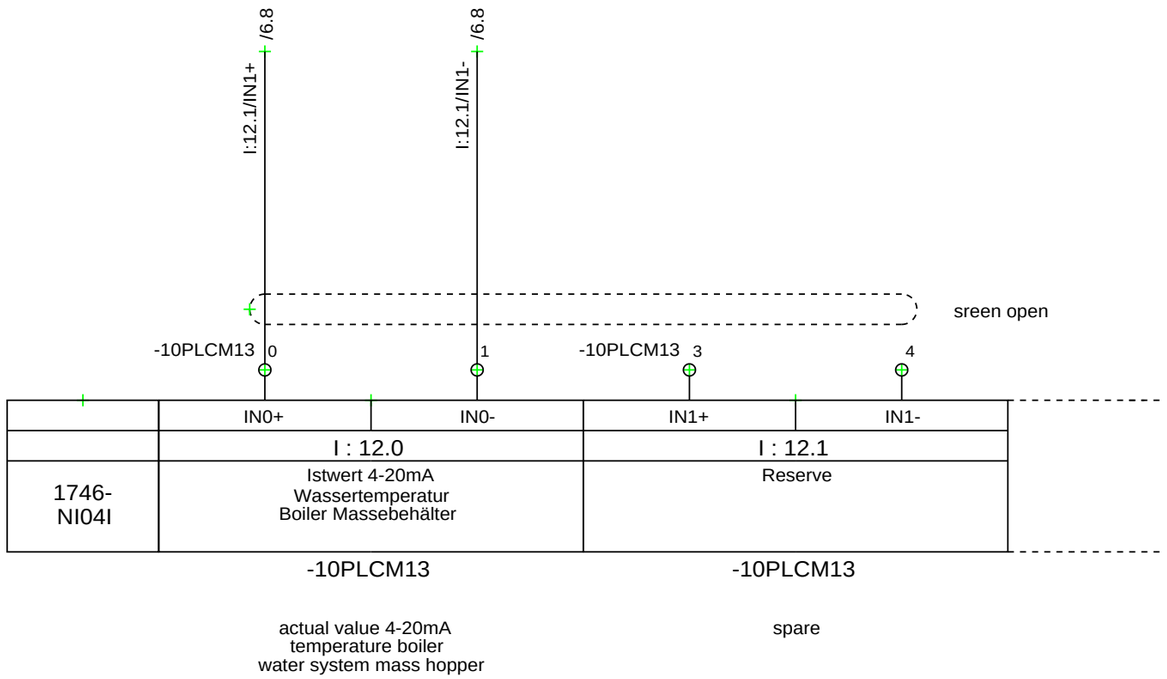
potential free contact

-10CR8: A1, A2 — .8 10L-
-10CON38: A1, A2 — 10L-

11 14 12 .8

1 2 3 4 5 6 21 22 /15.1 /10.4

BÜHLER	customer 474 :P_NR2		+HS/3.GK	page 37
			=A1.F4	of 42
comm. nr. :P_NR1	digital outputs		drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **38**
		=A1.F4	of 42
comm. nr. :P_NR1	analogue inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

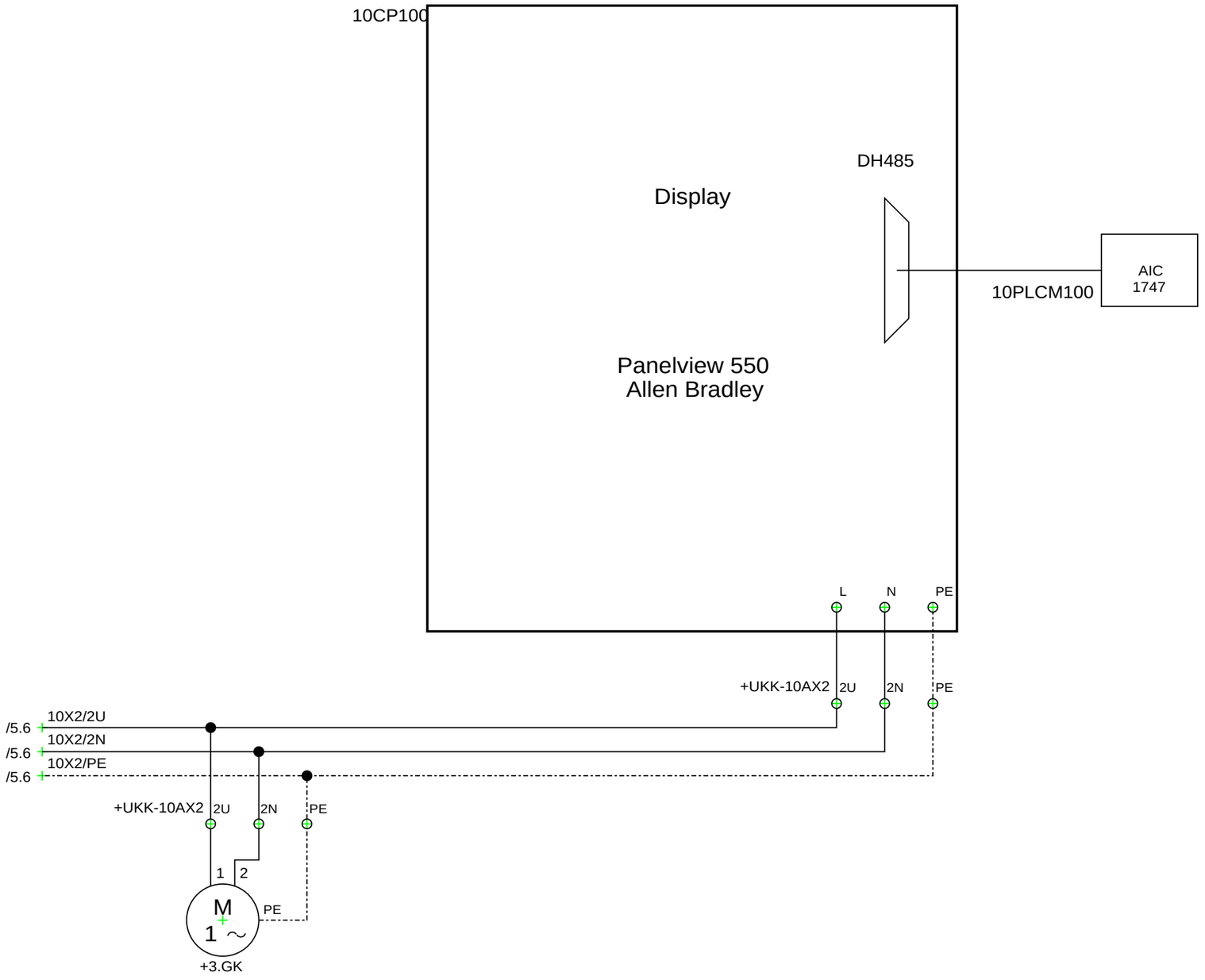
	spare	Analogue ground channel 0	spare	Analogue ground channel 1
Function	Reserve	Masse Kanal 0	Reserve	Masse Kanal 1
Adress	0 : 12.0		O : 12.1	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM

NI04I
10PLCM13

-10PLCM13 7 8 10 11

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **39**
		=A1.F4	of 42
comm. nr. :P_NR1	analogue outputs		drawing nr. A474

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



-10M104

Lüfter Bedienpult

fan operator panel

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **40**
		=A1.F4	of 42
comm. nr. :P_NR1	panelview 550 ALLEN BRADLEY	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Einspeisung
3x480+N/60Hz

power feed

Hauptschaltschrank
Gießmaschine VIT22

main depositor
panel

10X1
10X2
10X3
10X4
10X10
10X11
10X12
10XI
10XQ

10BX1

Klemmenkasten an Gießmaschine

depositor marshalling box

10X1
10X2
10X3

operator panel

BINDLER

10AX2

10XDX1/2

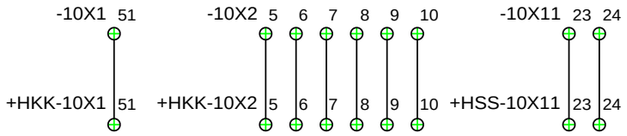
Temperiergerät

10DX1
10DX2

water heater
mass hoper

BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **41**
		=A1.F4	of 42
comm. nr. :P_NR1	wiring scheme	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



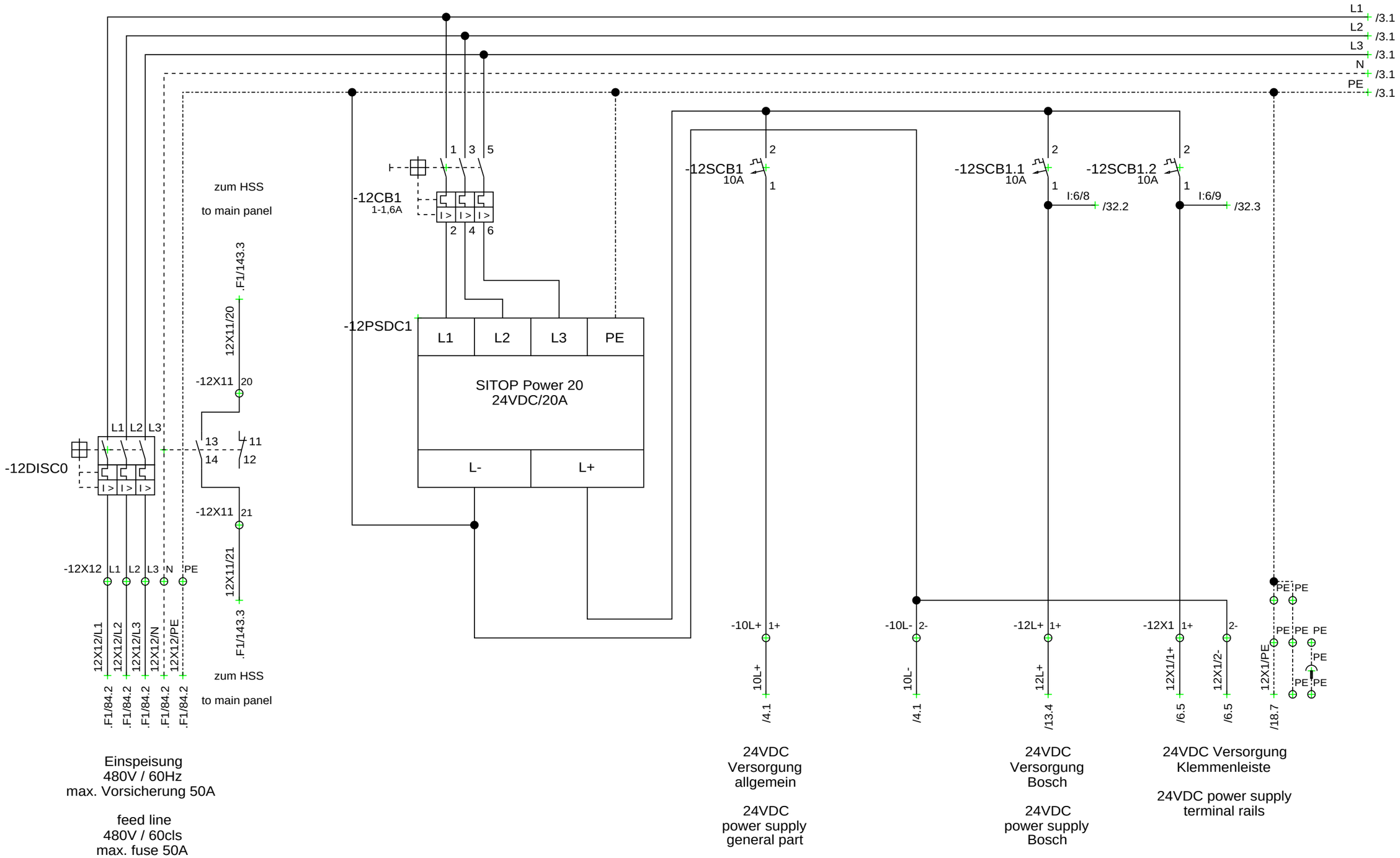
BÜHLER	customer 474 :P_NR2	+HS/3.GK	page **42**
		=A1.F4	of 42
comm. nr. :P_NR1	spare terminals	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Schaltplan
3.Füllungs Dosiermaschine
GKH/ed

wiring diagram
3.filling depositor

BÜHLER	customer 474 :P_NR2		+HS/4.GK	page 1	
			=A1.F5	of 43	
comm. nr. :P_NR1	cover sheet		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 2
		=A1.F5	of 43
comm. nr. :P_NR1	main power feed / power supply 24V/230V	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

/2.8 L1 — L1 /6.1
/2.8 L2 — L2 /6.1
/2.8 L3 — L3 /6.1
/2.8 N — N /6.1
/2.8 PE — PE /4.1

Versorgung vom HSS

power supply from main panel

-12CB3
1,6-2,5A
/30.2

.F1/8.6 12X12/1U
.F1/8.6 12X12/1N
.F1/10.2 12X12/PE.

-12X12 1U PE 1N

-12X12 1U PE 1N

-12X2 1U 1V PE

-12CL2 X1 PE X2

-12CL2.1 X1 PE X2

-12SOC2 L PE N

2-Fach Steckdose

twin socket

-12AC3 1 2 PE KLIMAGERÄT

Beleuchtung Schaltschrank

lamp depositor panel

120VAC Steckdose Schaltschrank

120VAC socket depositor panel

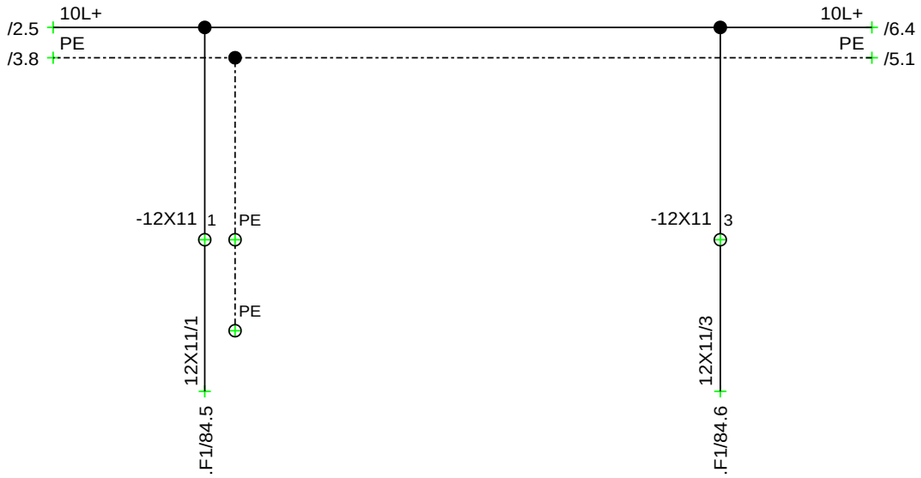
Klimagerät Schaltschrank

climatisation unit

BÜHLER

customer 474 :P_NR2		+HS/4.GK	page 3
		=A1.F5	of 43
comm. nr. :P_NR1	power supply climatisation		drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

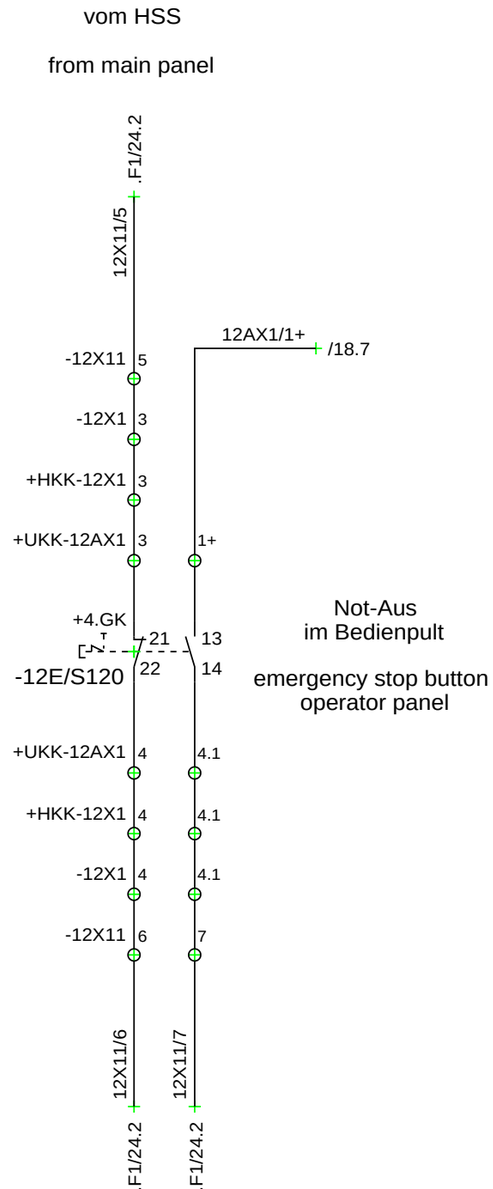


vom HSS

from main panel

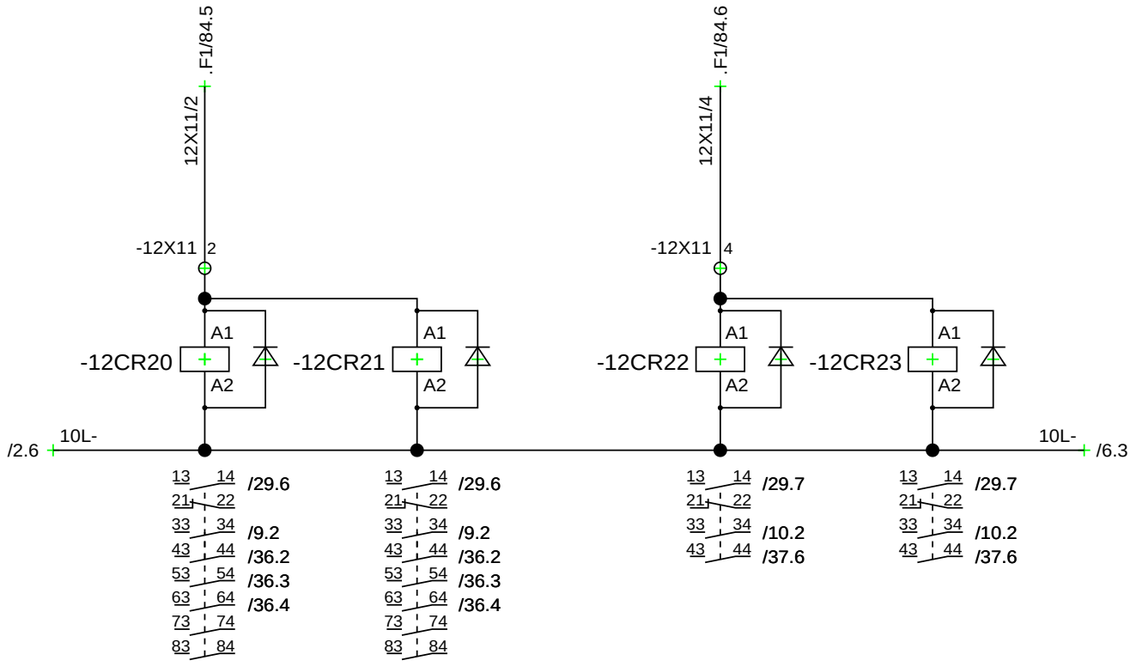
vom HSS

from main panel



vom HSS

from main panel



Not-Aus Schütz direkt

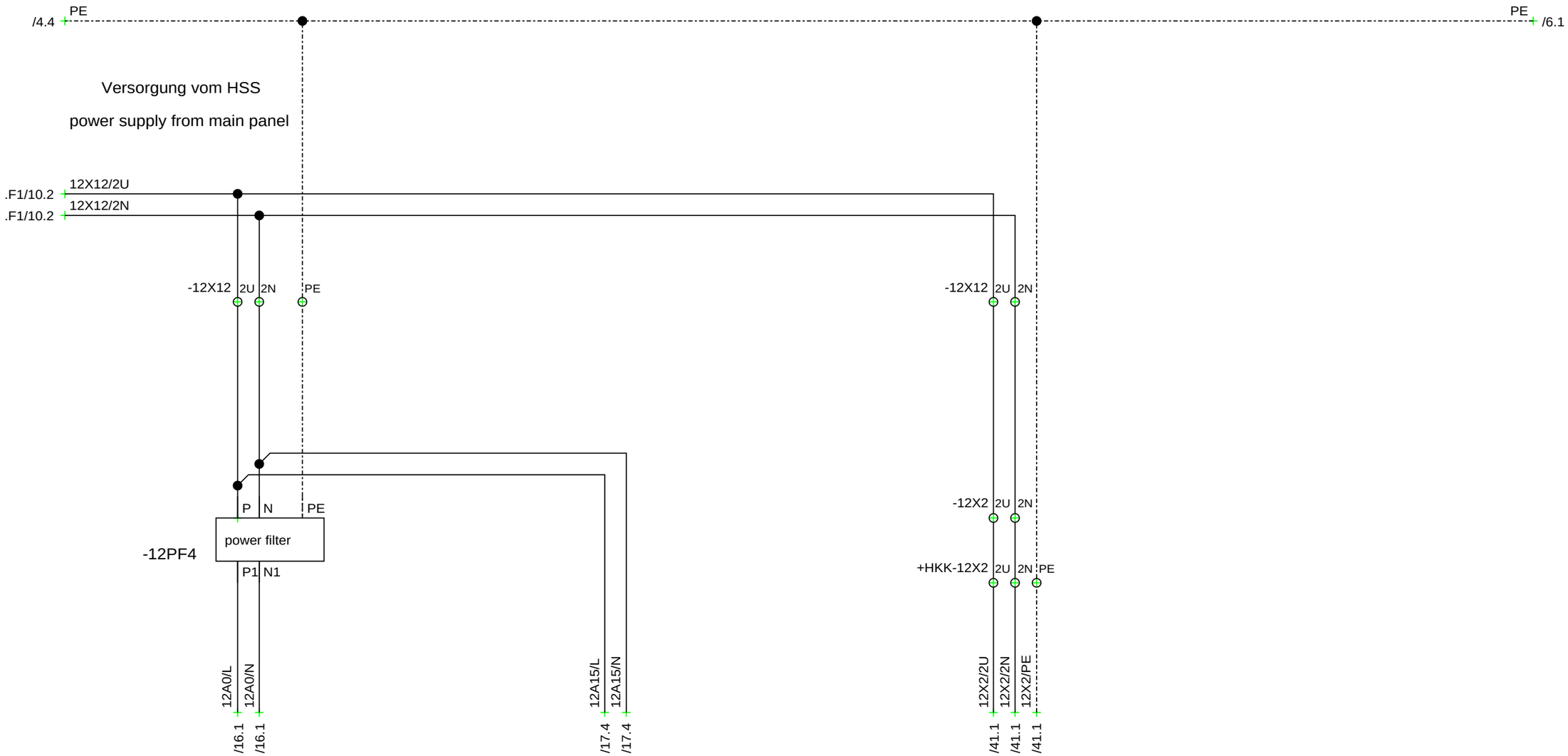
emergency stop contactor direct

Not-Aus Schütz verzögert

emergency stop contactor delayed

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 4
		=A1.F5	of 43
comm. nr. :P_NR1	emergency stop relay	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



120VAC/60Hz Versorgung
Steuerung Allen Bradley

120VAC/60cls power supply
PLC system Allen Bradley

120VAC/60Hz Versorgung
IMC S

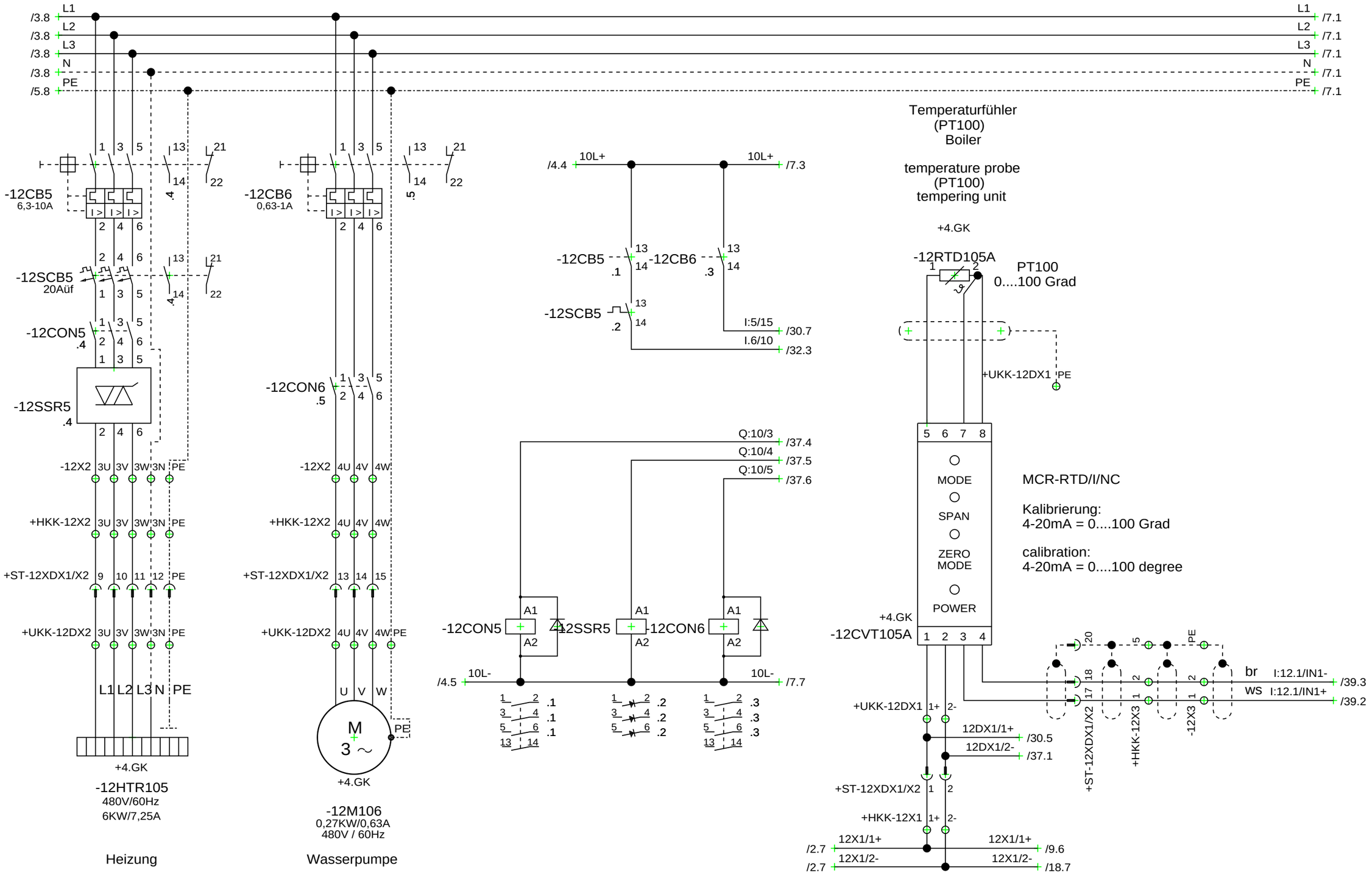
120VAC/60cls power supply
IMC S

120VAC/60Hz Versorgung
Bedienpult

120VAC/60cls power supply
operator panel

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 5
		=A1.F5	of 43
comm. nr. :P_NR1	power supply PLC System / panelview	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

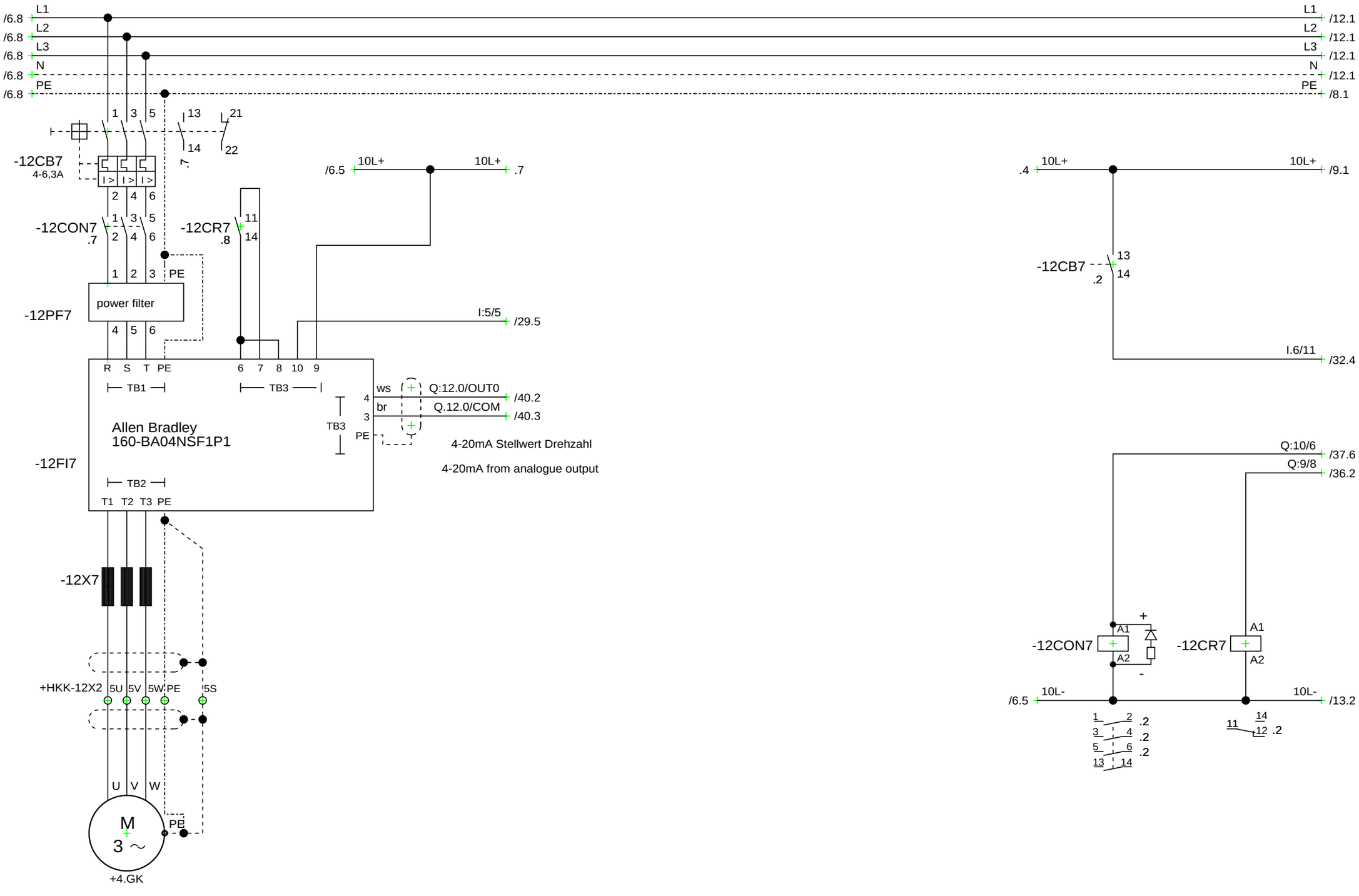


System Massebehälter

water heater mass hopper

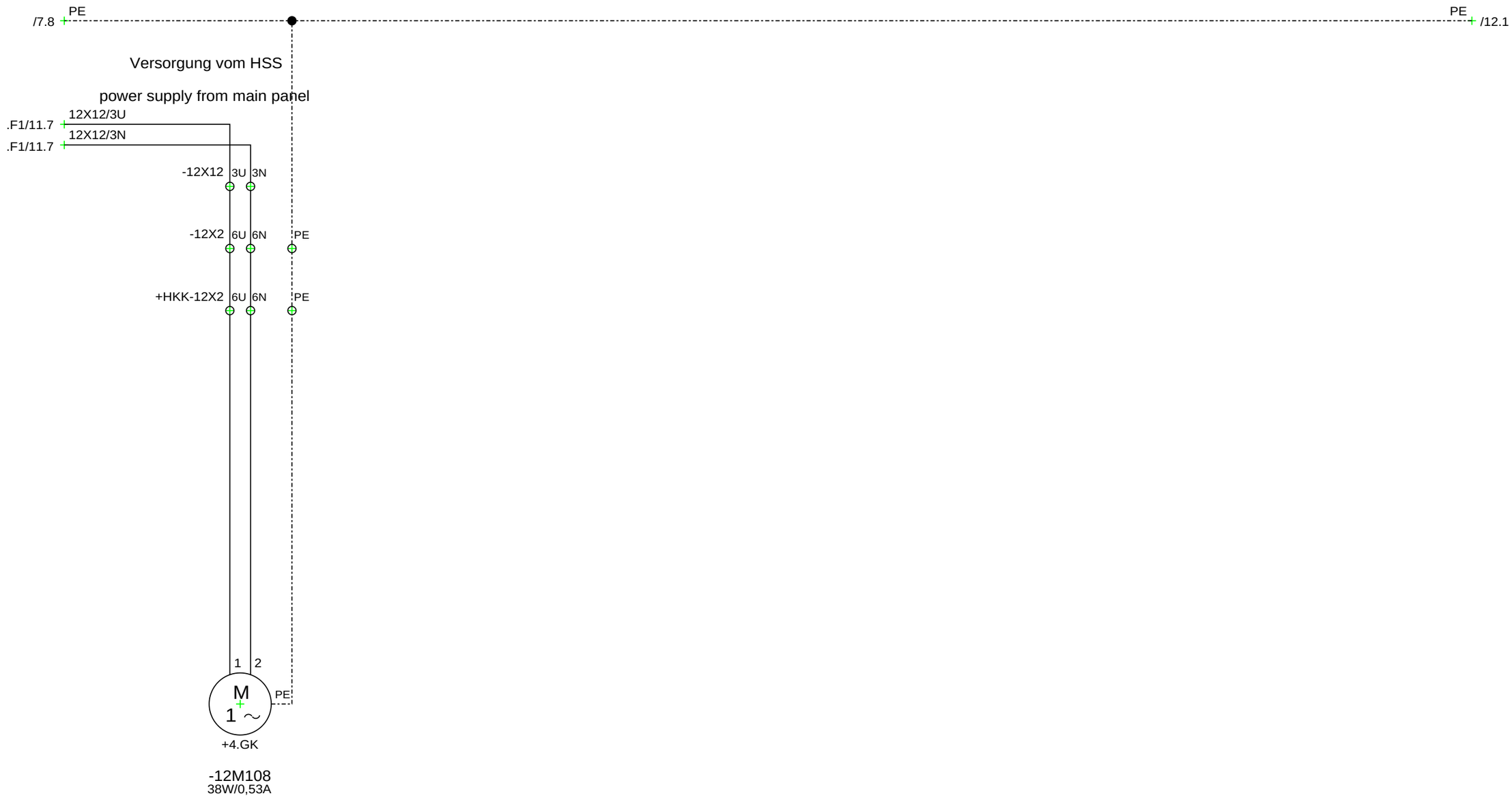
BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 6
		=A1.F5	of 43
comm. nr. :P_NR1	water heater mass hopper		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 7
		=A1.F5	of 43
comm. nr. :P_NR1	agitator mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Lüfter Servoantriebe

fan servo drives

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **8**	
		=A1.F5	of 43	
comm. nr. :P_NR1	fan servo drives		drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Freigabe Servo - Module
enable servo modules

10L+ /7.8

10L+ /10.2

-12CR20 /4.2 33 34

-12CR21 /4.2 33 34

-12X1 5

+HKK-12X1 5

+HKK-12X1 6

Reserve
spare

+HKK-12X1 7

Reserve
spare

+HKK-12X1 8

+HKK-12X1 8 I:4/6 /27.6

-12X1 8

+4.GK

Reinigungsposition
cleaning position

-12GS103

13 21 14 22

/26.5

+HKK-12X1 9

-12X1 9 9

I:4/7 /27.7

Freigabe Tippen
enable jog mode

-12CR31 /35.2 13 14

-12CR36 /35.6 13 14

-12X1 49

+HKK-12X1 49

+ST-12XX100 5

+ST-12XX100 6

+HKK-12X1 50

-12X1 50

Freigabe VM
enable power module

-12CR30 /13.6 13 14

Freigabe IP Lageregler
enable pos. controller

-12CR35 /35.5 13 14

Freigabe Bosch
enable Bosch

-12CR32 /35.3 13 14

-12X10 1 1 1

FG1 /21.2

FG2 /22.2

.F1/32.7

12X11/24

12X1/1+ /6.7

12X1/1+ /18.7

-12X11 24

-12X1 52

+HKK-12X1 1+ 52

+HKK-12X1 52 1+

+4.GK

Fronthaube
front cover

-12GS100

13 21 14 22

+4.GK

Reinigungsendposition
cleaning end position

-12GS104

11 21 12 22

+HKK-12X1 51 53

+HKK-12X1 53 54

-12X1 51 53

-12X1 54

-12X11 23 25

-12X11 26 26

12X11/23

12X11/25

12X11/26

.F1/150.5

.F1/32.7

I:3/15

.F1/150.5 /26.7

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 9
		=A1.F5	of 43
comm. nr. :P_NR1	enable servo module	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Endlagen Sicherheitsschalter

safety switches

10L+ /9.6

-12CR22 /4.3 33 34

-12CR23 /4.4 33 34

-12X1 10

+HKK-12X1 10

Not-Aus Balluf-Schalter Dosierachse

emergency stop Balluf-switch deposit axis

+4.GK

-12CS104 21 22

+HKK-12X1 11

-12X1 11 I:4/9 /28.3

+HKK-12X1 11

Reserve

spare

+HKK-12X1 12

-12X1 12 12 I:4/10 /28.3

Freigabe Achsen-Lageregler

enable position controller

10L+ /13.5

-12SM30 /13.1 43 44

Freigabe IP Lageregler

enable pos. controller

-12CR35 /35.5 33 34

-12X10 2 2

DRFAULT1 /21.3

DRFAULT2 /22.3

12A31:X312/2 /13.5

Antriebe Aus

drives off

-12CR33 /35.3 13 14

Antriebe Ein

drives on

-12CR34 /35.4 13 14

-12CR30 /13.6 33 34

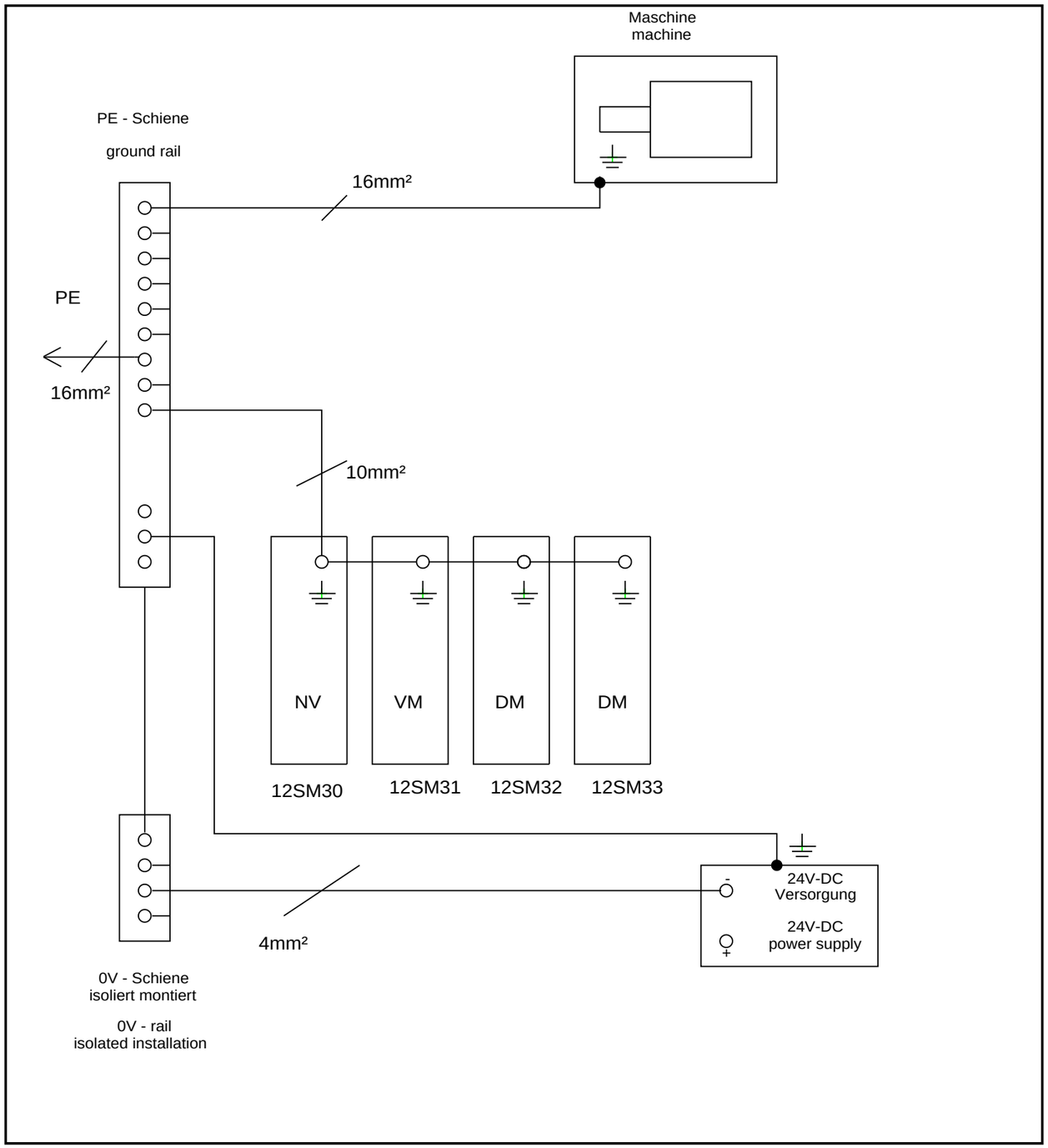
-12SM30 /13.1 13 14

12A30/A1 /13.3

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 10
		=A1.F5	of 43
comm. nr. :P_NR1	safety switches		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

ERDUNG für BOSCH System

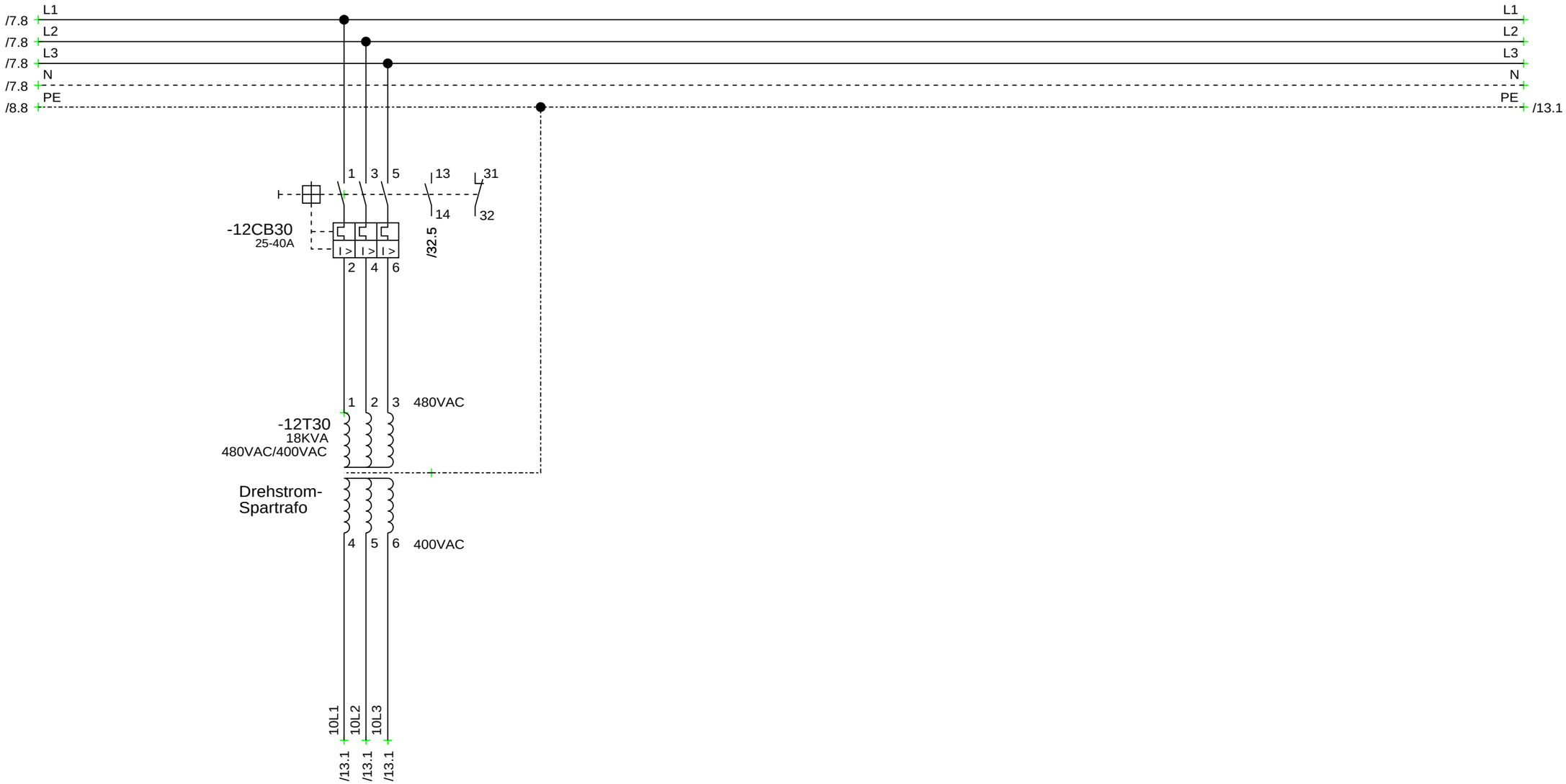


ERDUNG für BOSCH System

earthing system BOSCH rack

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **11**
		=A1.F5	of 43
comm. nr. :P_NR1	earthing servo system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



Einspeisung Bosch Servo-System

power supply Bosch serco system

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **12**
		=A1.F5	of 43
comm. nr. :P_NR1	power supply Bosch system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

/12.3 10L1
/12.3 10L2
/12.3 10L3
/12.8 PE

PE /16.1

/2.6 12L+
.3 10L-

10L- .5

12A32:X6/9 /14.3
12A32:X6/10 /14.4
12A33:X6/9 /15.3
12A33/X6/10 /15.4

-12SM30

Netzverdrahungsmodul
BOSCH NV20/1F-D

1 3 5 PE

35A

X73

Netzfilter

13 14 21 22 31 32 43 44 A1 A2 2 4 6

/10.6 /29.2 /10.7

12A30/A1
/10.6

/7.8 10L- 10L- .4

-12SM31

1 2 | 1 2 3 4 5 6 7 8 9 10 11 12 | 1 2 3 4 5 6 7 8 9 10 11 12

X30 X332 X331

Versorgungsmodul mit ext. Ballastwiderstand
BOSCH VM A20 KE001-D

X810

X820

QV1 /14.1
QV2 /14.1
1 QV3 /14.1
2 QV4 /14.1
D /14.1
C /14.1
PE1 /14.1

U1 V1 W1

X312

1 2 3 4 5 6 7 8

R R+

12A31:X312/2
/10.6

I:5/2 /29.3

-12CR30
A1 A2 + -

-12RES31
PE

/10.8 10L+ 10L+ /14.2
.5 10L- 10L- /14.2

Ballastwiderstand

13 14 /9.4
21 22
33 34 /10.6
43 44 /29.3

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 13
		=A1.F5	of 43
comm. nr. :P_NR1	supply module BOSCH	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+4.GK
-12M132

Motor Typ SR-A4.0230.030-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

12A5/Ua1 /21.2
12A5/Ua1/ /21.2
12A5/Ua2 /21.2
12A5/Ua2/ /21.3
12A5/Ua0 /21.3
12A5/Ua0/ /21.3
12A5/5V /21.4
12A5/0V /21.4
Schirm1 /21.4

-12SM32

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/13.8 QV1
/13.8 QV2

24V
Querverbindung

/13.8 QV3
/13.8 QV4

Zwischenkreis-
Spannung

/13.8 D
/13.8 C

/13.8 PE1

X810

X820

1
2
D
C

Servodul BOSCH DMA45A3301-D
Ventilrohr

X810

QV1 /15.1
QV2 /15.1

X820

QV3 /15.1
QV4 /15.1

D /15.1
C /15.1

PE1 /15.1

X6

1 2 3 4 5 6 7 8 9 10

STA-Relais
STA-Relais
IN1
IN2
IN3
IN4
12A32:X6/9 24V in
12A32:X6/10 0V in

I:5/3
12A32:X6/3

/29.4
/21.2
/13.7
/13.7

X12

1 2 3 4 5 6 7 8

OUT5
OUT6
OUT7
OUT8
OUT9
Relais
Relais
Relais

I:5/9

/30.3

Gehäuse

X21

1 2 3 4 5 6

ws br

SW1+
SW1-

/21.6
/21.6

X34

1 2 3 4 5 6

OUT4
OUT3
OUT2
OUT1
Relais
Relais

I:5/4

/29.5

10L+ /13.7
10L- /13.7

10L+ /15.2
10L- /15.2

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 14
		=A1.F5	of 43
comm. nr. :P_NR1	servo module rotary valve		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

+4.GK
-12M133

Motor Typ SR-A4.0230.030-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

12A6/Ua1 /22.2
12A6/Ua1/ /22.2
12A6/Ua2 /22.2
12A6/Ua2/ /22.3
12A6/Ua0 /22.3
12A6/Ua0/ /22.3
12A6/5V /22.4
12A6/0V /22.4
Schirm2 /22.4

-12SM33

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/14.8 QV1
/14.8 QV2

24V
Querverbindung

/14.8 QV3 1
/14.8 QV4 2

Zwischenkreis-
Spannung

/14.8 D D
/14.8 C C

/14.8 PE1

X810

X820

Servodul BOSCH DMA30A3301-D
Dosierantrieb

X810
QV1 .1
QV2 .1

X820
1 QV3 .1
2 QV4 .1

D .1
C .1

PE1 .1

X6

1	2	3	4	5	6	7	8	9	10
STA-Relais	STA-Relais		IN1	IN2	IN3	IN4	12A33:X6/9 24V in	12A33/X6/10 0V in	
	I:5/10	12A33:X6/3							
	/30.3	/22.2					/13.7	/13.7	

X12

1	2	3	4	5	6	7	8
OUT5	OUT6	OUT7	OUT8	OUT9	Relais	Relais	Relais
		I:5/12					
		/30.5					

Gehäuse X21

1	2	3	4	5	6
	ws	br			
SW2+	SW2-				
/22.6	/22.6				

X34

1	2	3	4	5	6
OUT4	OUT3	OUT2	OUT1	Relais	Relais
		I:5/11			
		/30.4			

/14.3 10L+ 10L+ /17.4
/14.3 10L- 10L- /16.1

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 15
		=A1.F5	of 43
comm. nr. :P_NR1	servo module deposit drive		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1 control :P_PRF

/5.2 12A0/L
/5.2 12A0/N
/13.8 PE
/15.3 10L-
10L- /17.4
PE /17.4

SLC 500 - System Übersicht

SLC 500 - system overview

main rack Allen Bradley

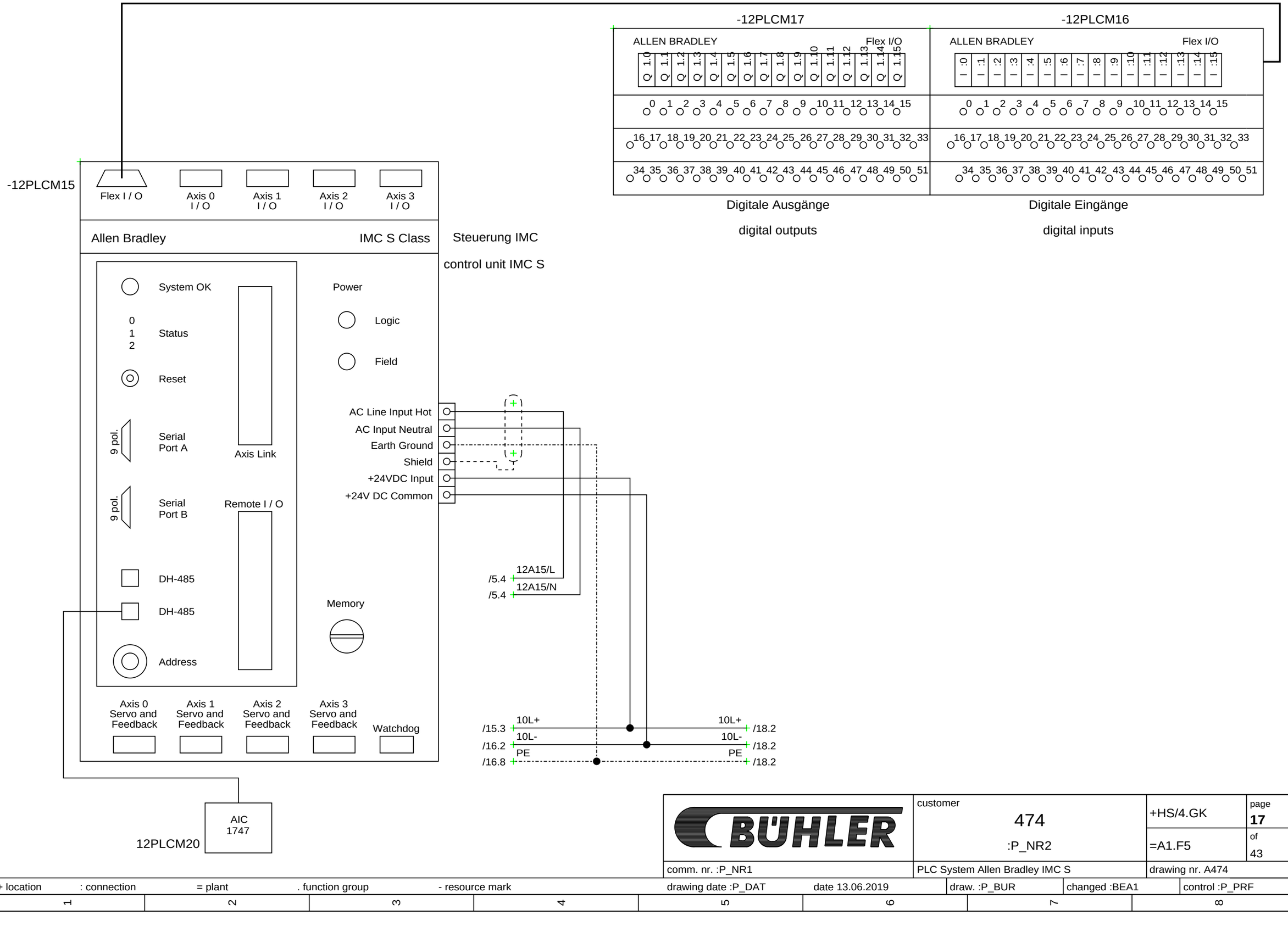
	12PLCM1	12PLCM2	12PLCM3	12PLCM4	12PLCM5	12PLCM6	12PLCM7	12PLCM8	12PLCM9	12PLCM10	12PLCM11	12PLCM12	12PLCM13
PWR OUT +24VOLTS DC	CPU SLC/04	spare	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	spare	digital outputs 1746-OB16	digital outputs 1746-OB16	digital outputs 1746-OB16	spare	anal. in/out 1746-NIO4I
PWR OUT COM	DH+												
120/240 VOLTS			I:2/0-I:2/15	I:3/0-I:3/15	I:4/0-I:4/15	I:5/0-I:5/15	I:6/0-I:6/15		I:8/0-I:8/15	I:8/0-I:8/15	I:8/0-I:8/15		12.0-12.1
VAC NEUT	RS232												
CHASSIS GROUND													

-12PLC0

6mm²

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **16**
		=A1.F5	of 43
comm. nr. :P_NR1	PLC system ALLEN BRADLEY	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **17**
		=A1.F5	of 43
comm. nr. :P_NR1	PLC System Allen Bradley IMC S	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

System Übersicht / system overview

AIC-NET
im Gießmaschinenschaltschrank

AIC-NET
in depositor panel

DH485
cable 1747-CD

AIC
im Gießmaschinenschaltschrank

AIC
in depositor panel

AIC
im Bedienpult

AIC
in operator panel

orange with white stripes
white with orange stripes
blue with white stripes
drain wire

-12PLCM21

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

TX

24VDC
NEUT
GND

1761-CBL-AP00
(0,5mtr)

1747-FC

RS232

12PLCM1

CPU
SLC5/04

CPU
depositor panel

-12PLCM20

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-C10

DH485

12PLCM15

IMC S

position
controller

+4.GK
-12PLCM100

DH-485
INTFC
1747 AIC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-C10

+UKK-12AX1 1+ 2- PE

12AX1/1+ /4.7
+HKK-12X1 1+ 2-
12AX1/1+ /25.6

12X1/1+ /21.6
12X1/2- /25.6
12X1/PE /2.8

DH485

12CP100

panel
view

operator panel

/17.5 10L+ — 10L+ /23.1
/17.5 10L- — 10L- /21.4
/17.5 PE — PE /38.7

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **18**
		=A1.F5	of 43
comm. nr. :P_NR1	system overview AIC	drawing nr. A474	

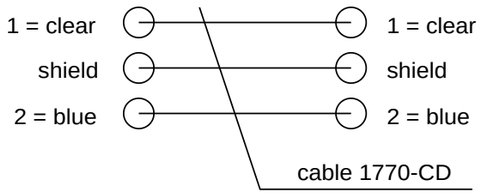
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

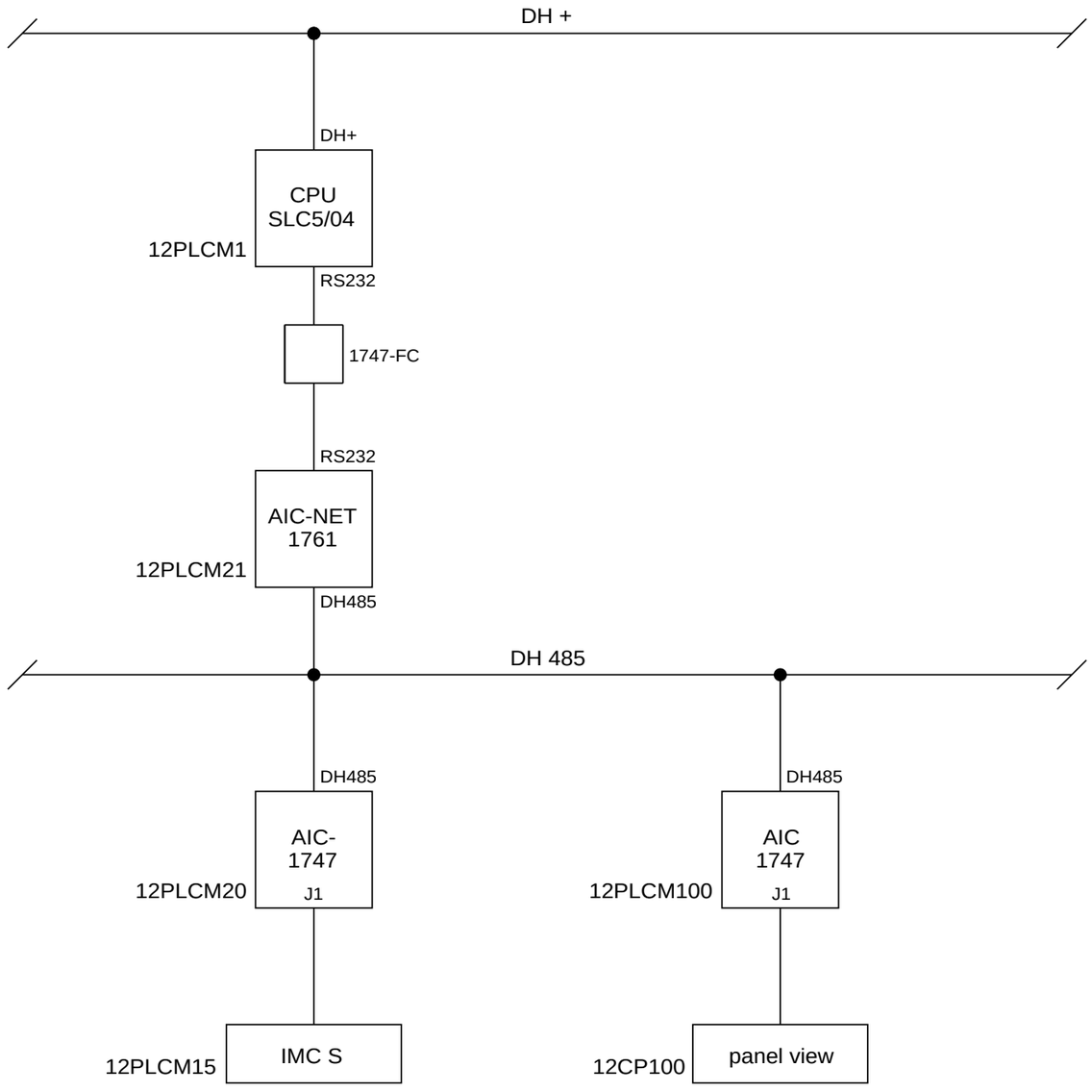
System Übersicht

system overview

Anschlußbelegung DH +
von SLC5/04 zu SLC5/04

conection DH+
from SLC5/04 to SLC5/04



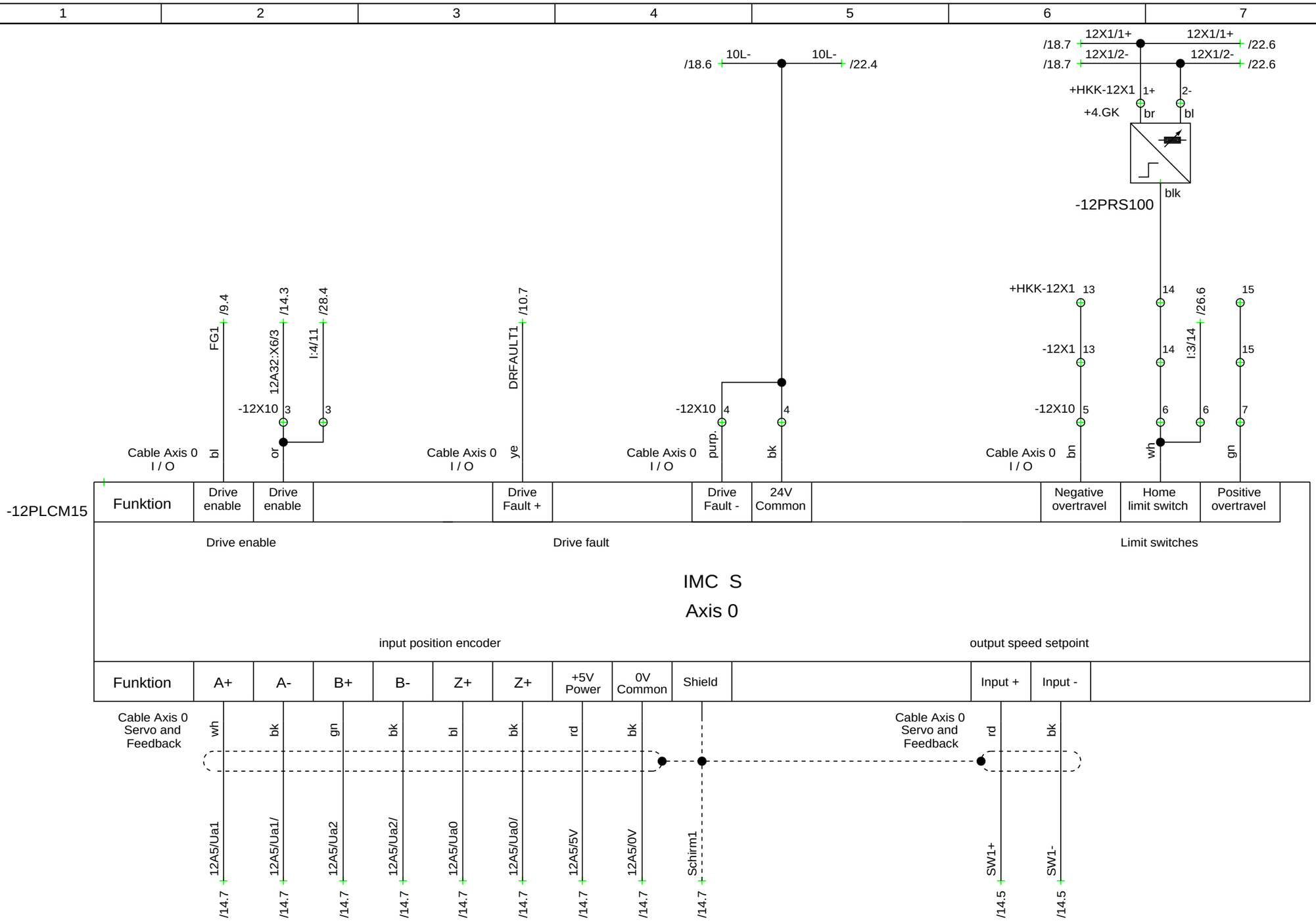


BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **19**
		=A1.F5	of 43
comm. nr. :P_NR1	system overview datahighway	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
	474	+HS/4.GK	page **20**
	:P_NR2	=A1.F5	of 43
comm. nr. :P_NR1	spare	drawing nr. A474	

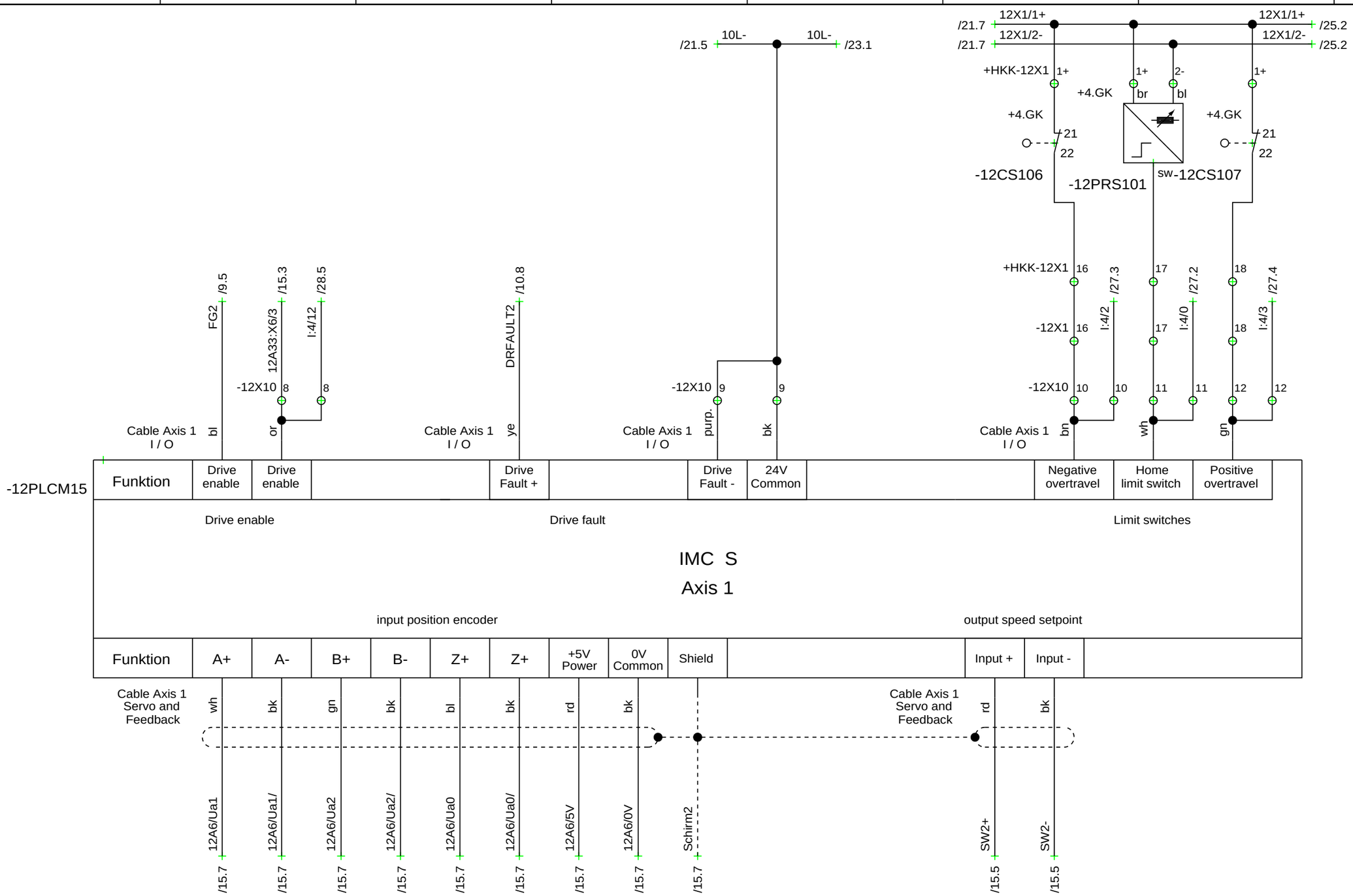
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

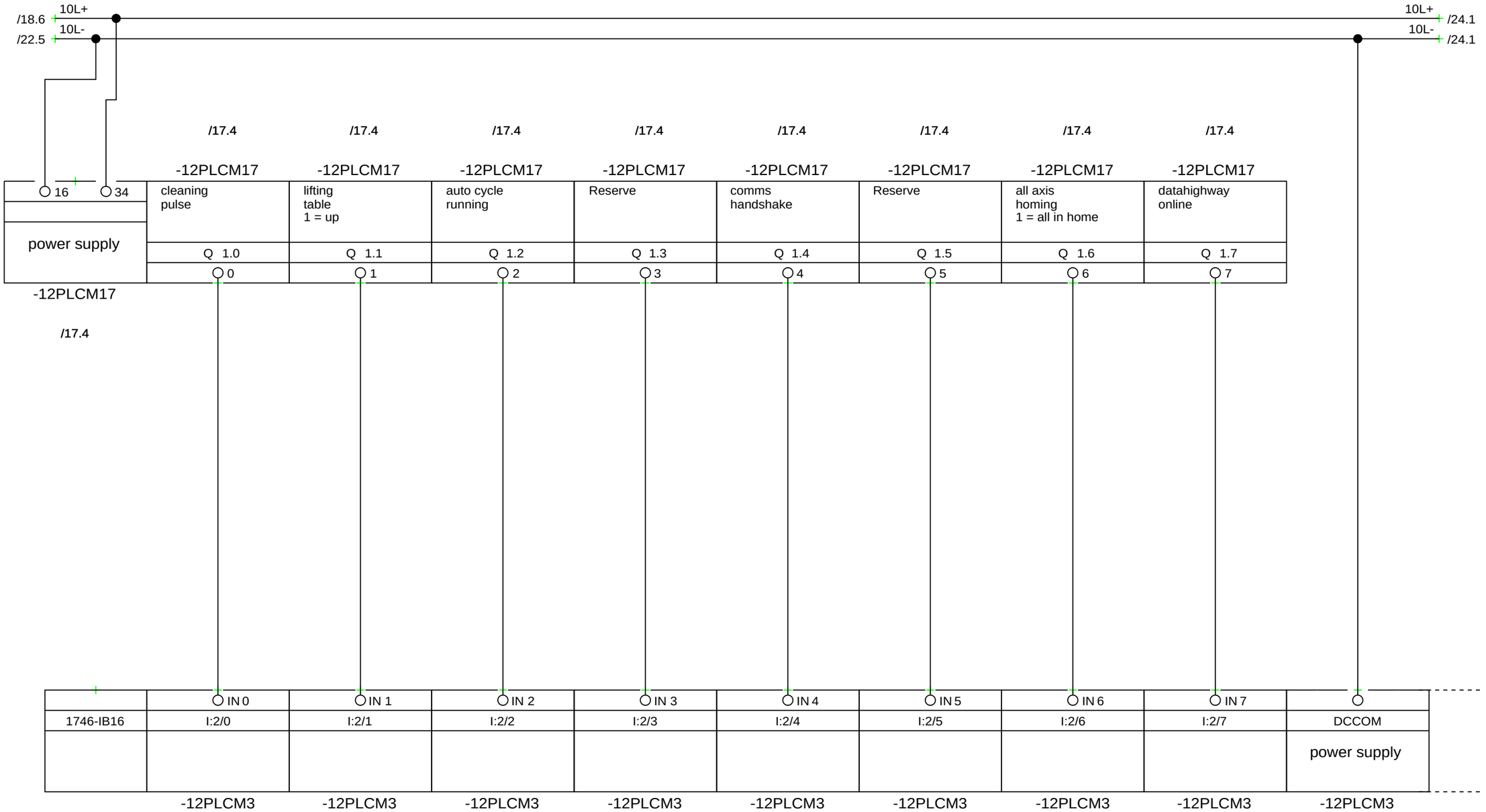
	customer 474 :P_NR2	+HS/4.GK	page 21
		=A1.F5	of 43
comm. nr. :P_NR1	position controller rotary vale	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 22
		=A1.F5	of 43
comm. nr. :P_NR1	position controller deposit axis	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



connection to IMC S

BÜHLER	customer 474 :P_NR2		+HS/4.GK	page 23	
			=A1.F5	of 43	
comm. nr. :P_NR1	digital inputs		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/23.8 10L+
/23.8 10L-

10L+ /25.1
10L- /25.1

	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4	/17.4
	-12PLCM17	-12PLCM17	-12PLCM17	-12PLCM17	-12PLCM17	-12PLCM17	-12PLCM17	-12PLCM17
	Statusbyte Bit 0	Statusbyte Bit 1	Statusbyte Bit 2	Statusbyte Bit 3	Statusbyte Bit 4	Statusbyte Bit 5	Statusbyte Bit 6	Statusbyte Bit 7
	Q 1.8	Q 1.9	Q 1.10	Q 1.11	Q 1.12	Q 1.13	Q 1.14	Q 1.15
	8	9	10	11	12	13	14	15

	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
1746-IB16	I:2/8	I:2/9	I:2/10	I:2/11	I:2/12	I:2/13	I:2/14	I:2/15	DCCOM
									power supply
	-12PLCM3	-12PLCM3	-12PLCM3	-12PLCM3	-12PLCM3	-12PLCM3	-12PLCM3	-12PLCM3	-12PLCM3

connection to IMC S

BÜHLER

customer 474 :P_NR2

+HS/4.GK

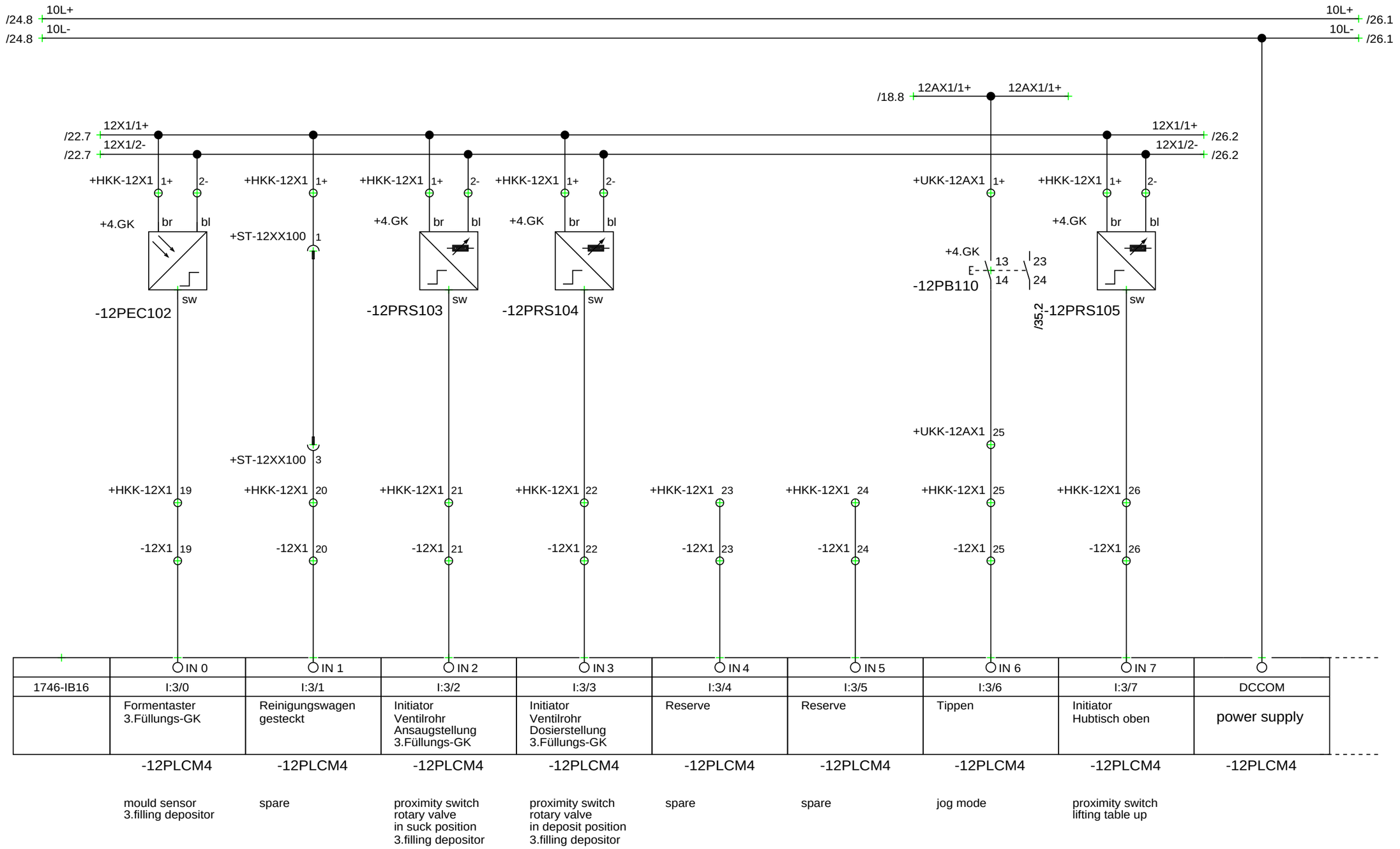
page **24**

=A1.F5

of 43

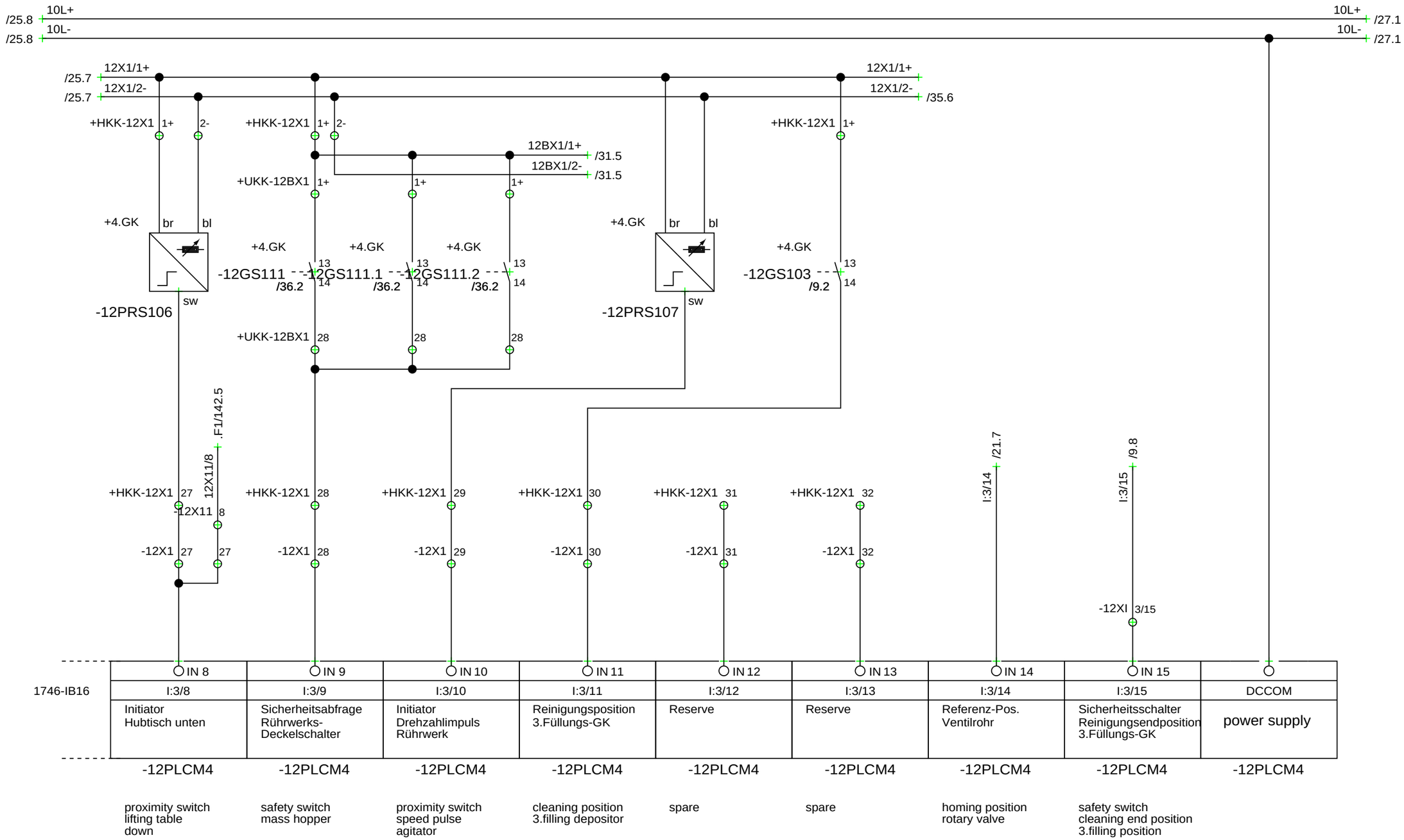
comm. nr. :P_NR1 | digital inputs | drawing nr. A474

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



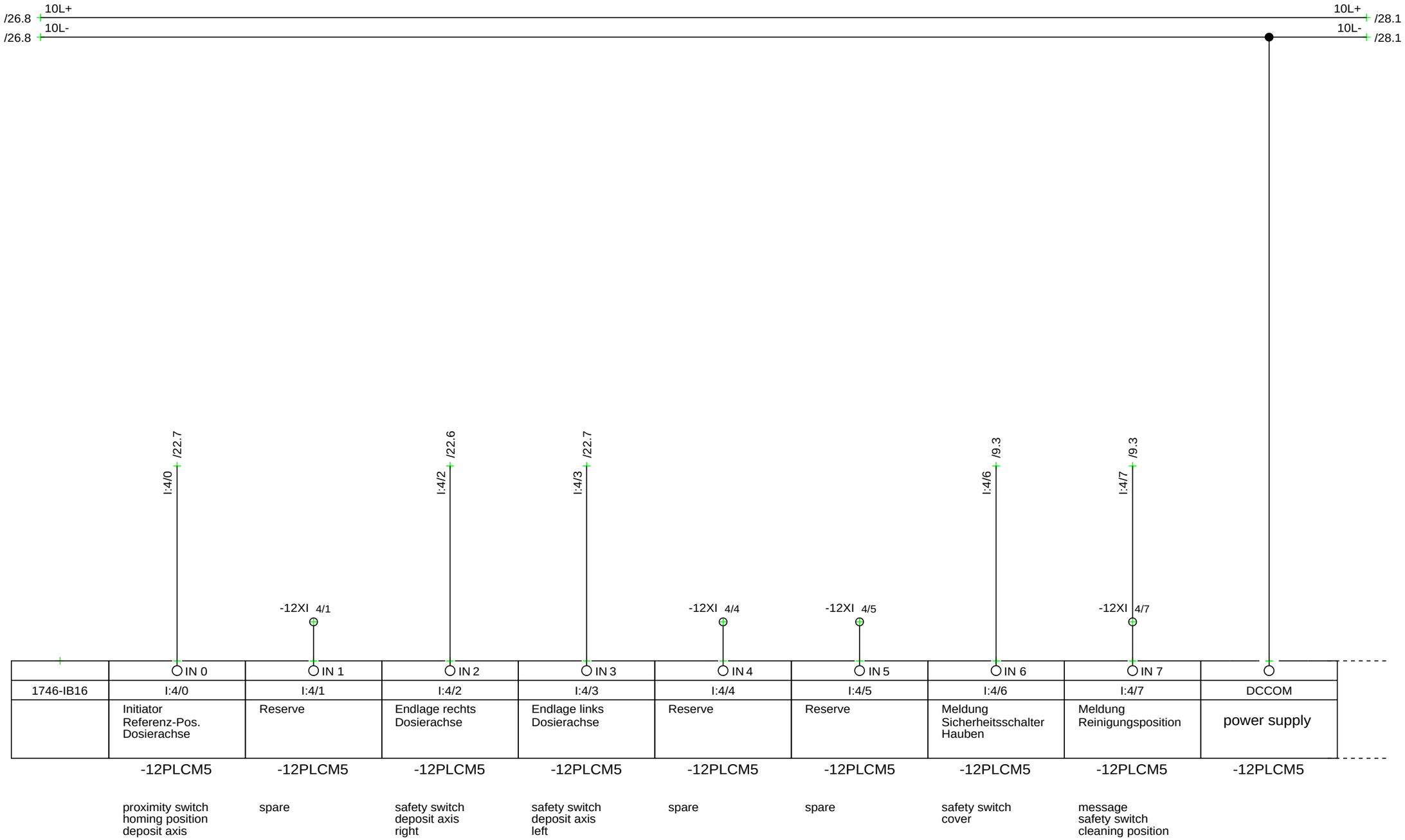
BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 25
		=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 26
		=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

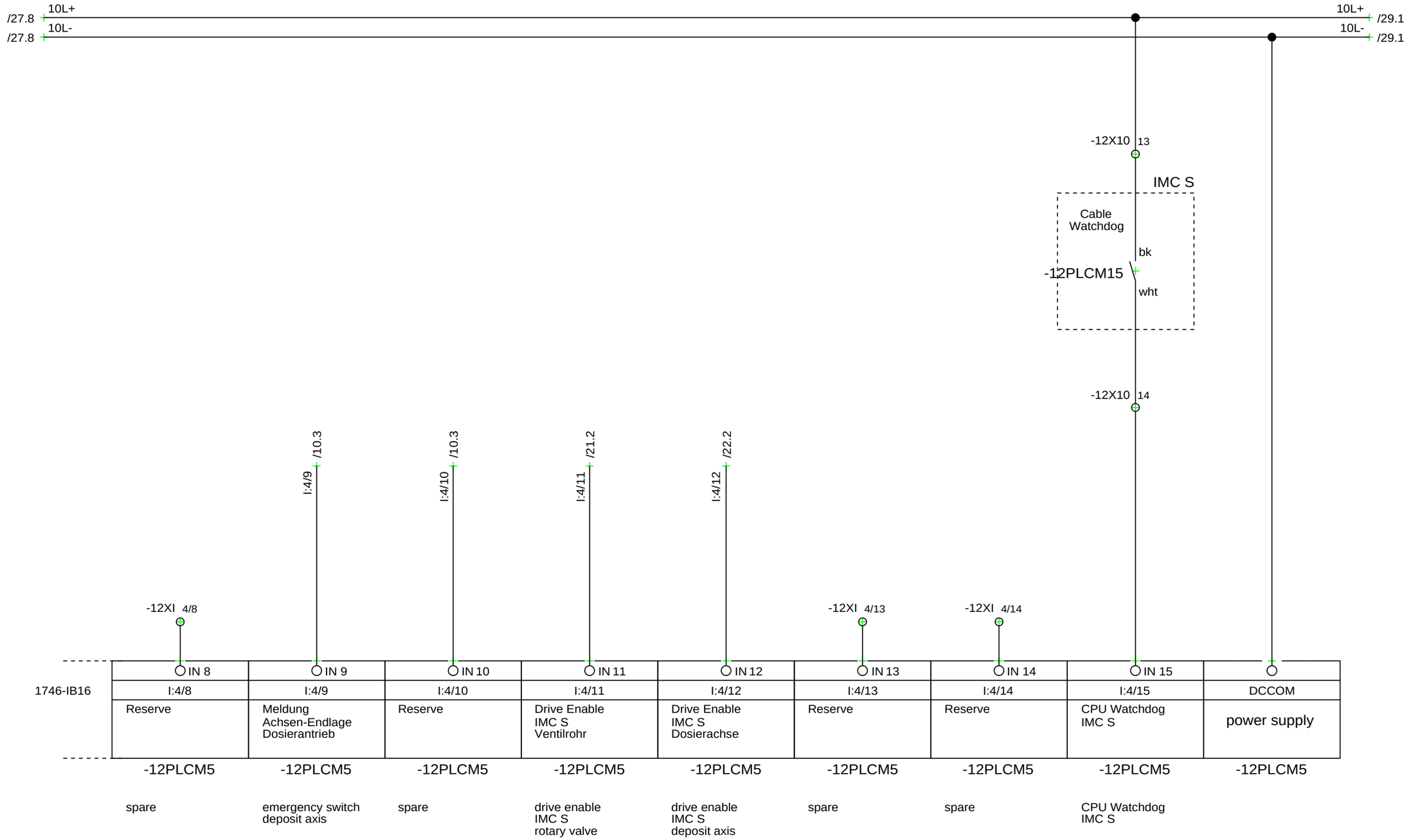


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:4/0	I:4/1	I:4/2	I:4/3	I:4/4	I:4/5	I:4/6	I:4/7	DCCOM
	Initiator Referenz-Pos. Dosierachse	Reserve	Endlage rechts Dosierachse	Endlage links Dosierachse	Reserve	Reserve	Meldung Sicherheitsschalter Hauben	Meldung Reinigungsposition	power supply
	-12PLCM5	-12PLCM5	-12PLCM5	-12PLCM5	-12PLCM5	-12PLCM5	-12PLCM5	-12PLCM5	-12PLCM5
	proximity switch homing position deposit axis	spare	safety switch deposit axis right	safety switch deposit axis left	spare	spare	safety switch cover	message safety switch cleaning position	

BÜHLER

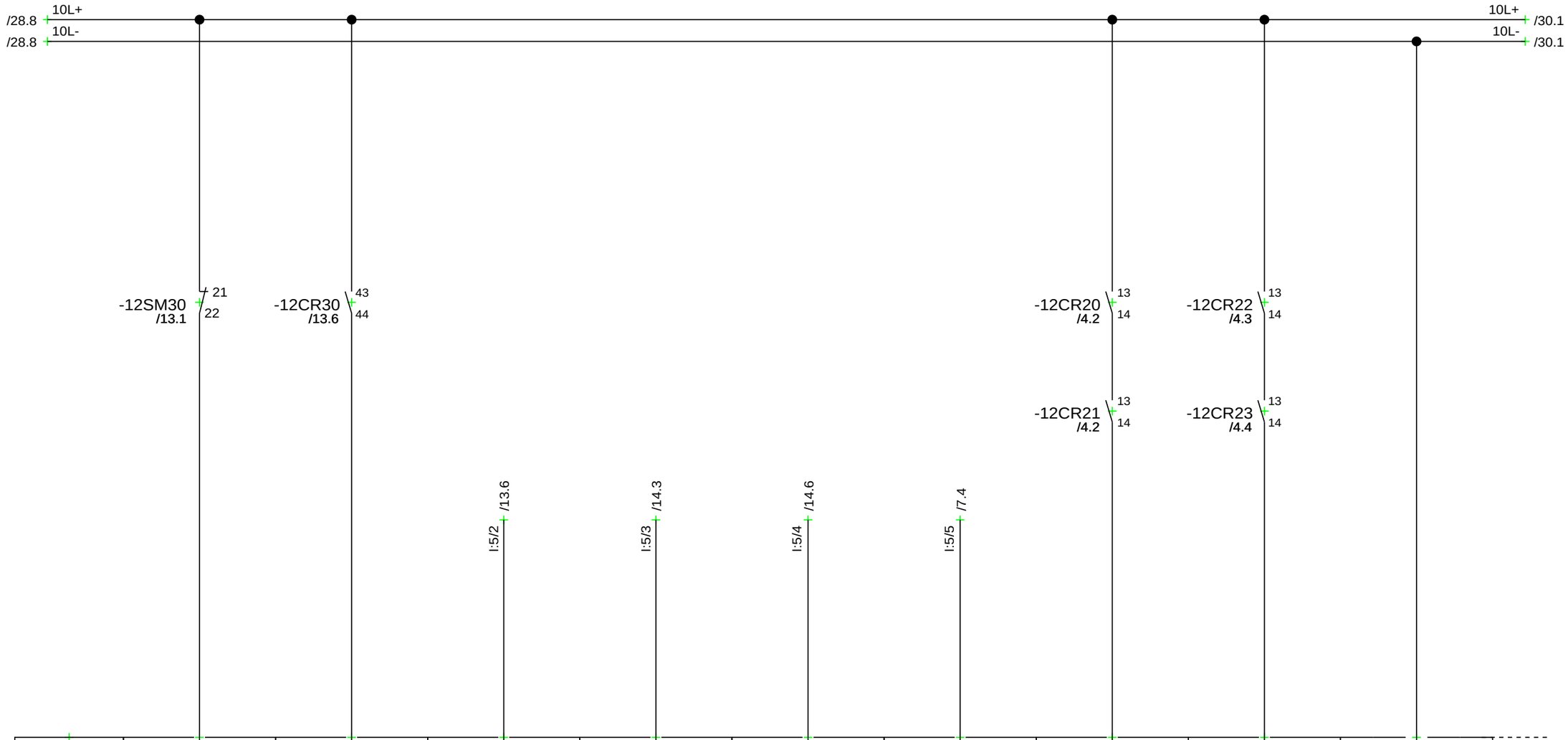
customer	474	+HS/4.GK	page 27
	:P_NR2	=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **28**
		=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

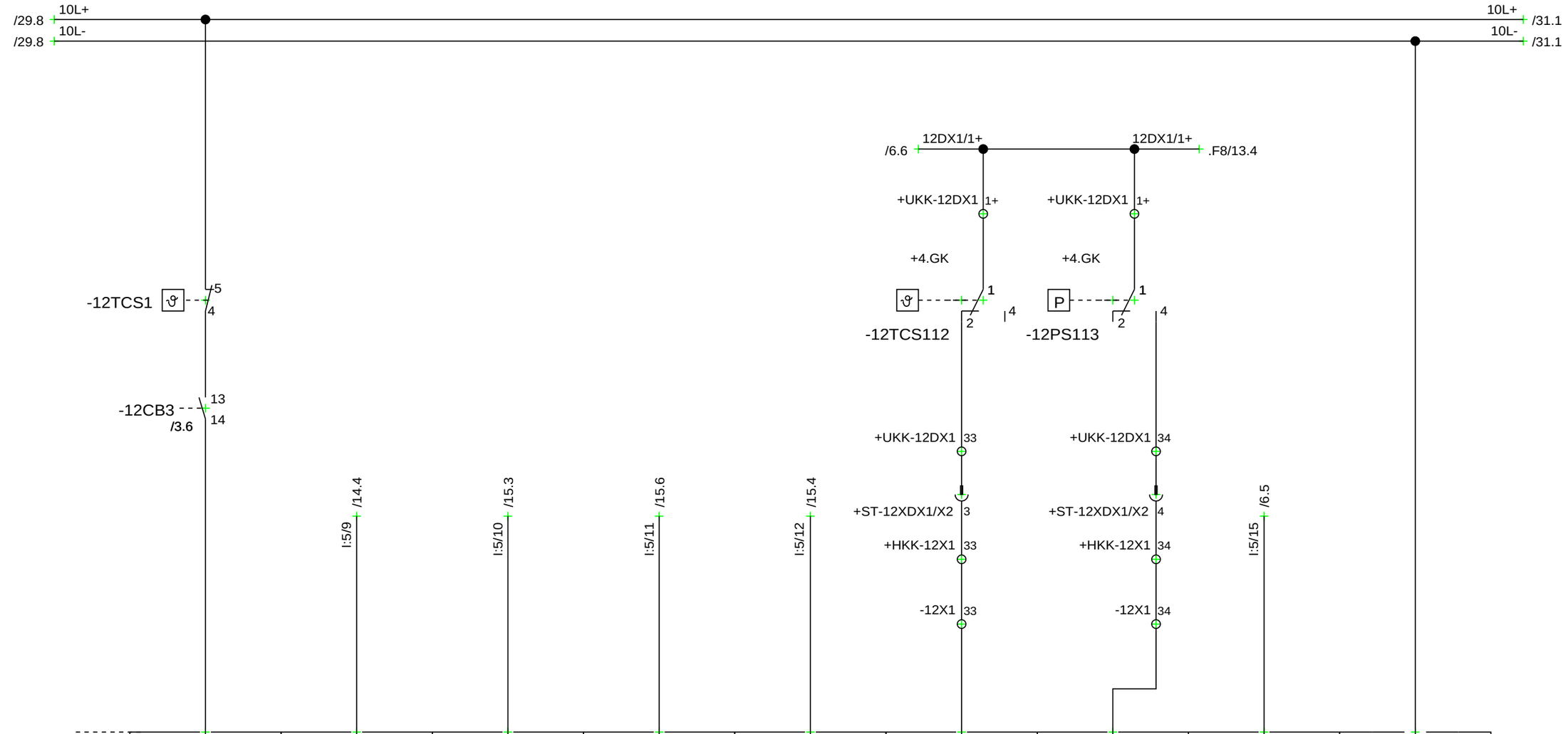


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:5/0	I:5/1	I:5/2	I:5/3	I:5/4	I:5/5	I:5/6	I:5/7	DCCOM
	Keine Spannung an alle Bosch Module	Betriebsbereit Versorgungsmodul Bosch	Kein Netzausfall Versorgungsmodul Bosch	Störung Servomodul Ventilrohr	Modul/-Motor Übertemperatur Servomodul Ventilrohr	Störung Umrichter Rührwerk	Not-Aus Schütz direkt	Not-Aus Schütz verzögert	power supply
	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6
	no voltage to all Bosch modules	enable power module Bosch	no net failure power module Bosch	fault servo module rotary valve	module/motor overtemperature servo module rotary valve	fault agitator frequency converter	emrgency stop contactor direct	emrgency stop contactor delayed	

BÜHLER

customer	474	+HS/4.GK	page 29
	:P_NR2	=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

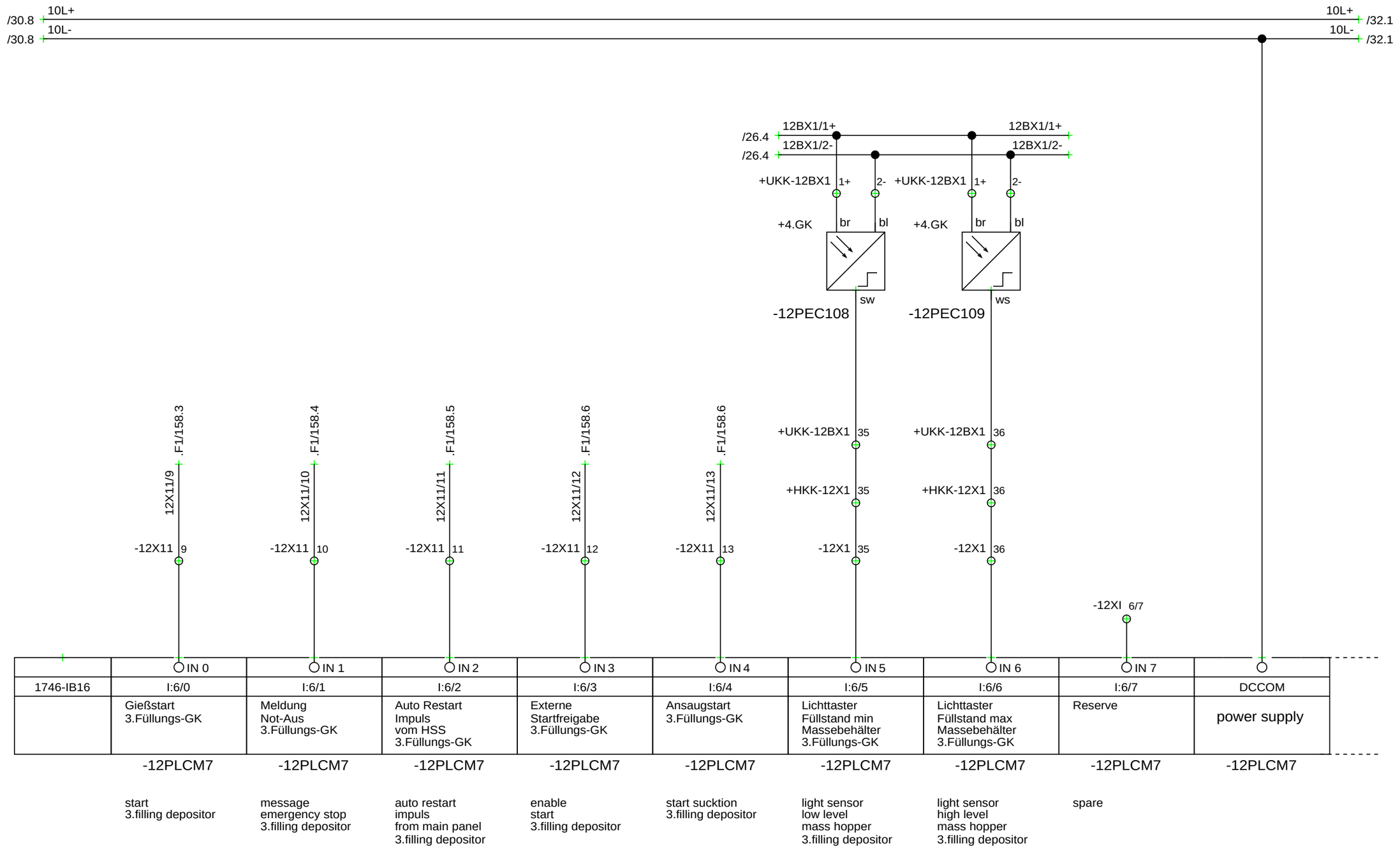


1746-IB16	IN 8	IN 9	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	
	I:5/8	I:5/9	I:5/10	I:5/11	I:5/12	I:5/13	I:5/14	I:5/15	DCCOM
	Temperatur maximal Schaltschrank Gießmaschine	Drehmoment Grenzwert erreicht SM Ventilrohr	Störung Servomodul Dosierantrieb	Modul/-Motor Übertemperatur Servomodul Dosierantrieb	Drehmoment Grenzwert erreicht SM Dosierantrieb	Übertemperatur Boiler	Füllstand Boiler	Motorschutzschalter Wasserpumpe Boiler	power supply
	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6	-12PLCM6
	temperature max. depositor panel	torque limit value reached servo module rotary valve	fault servo module rotary valve	module/motor overtemperature servo module rotary valve	torque limit value reached servo module deposit drive	overtemperature boiler	level water boiler	motor protection water pump boiler	

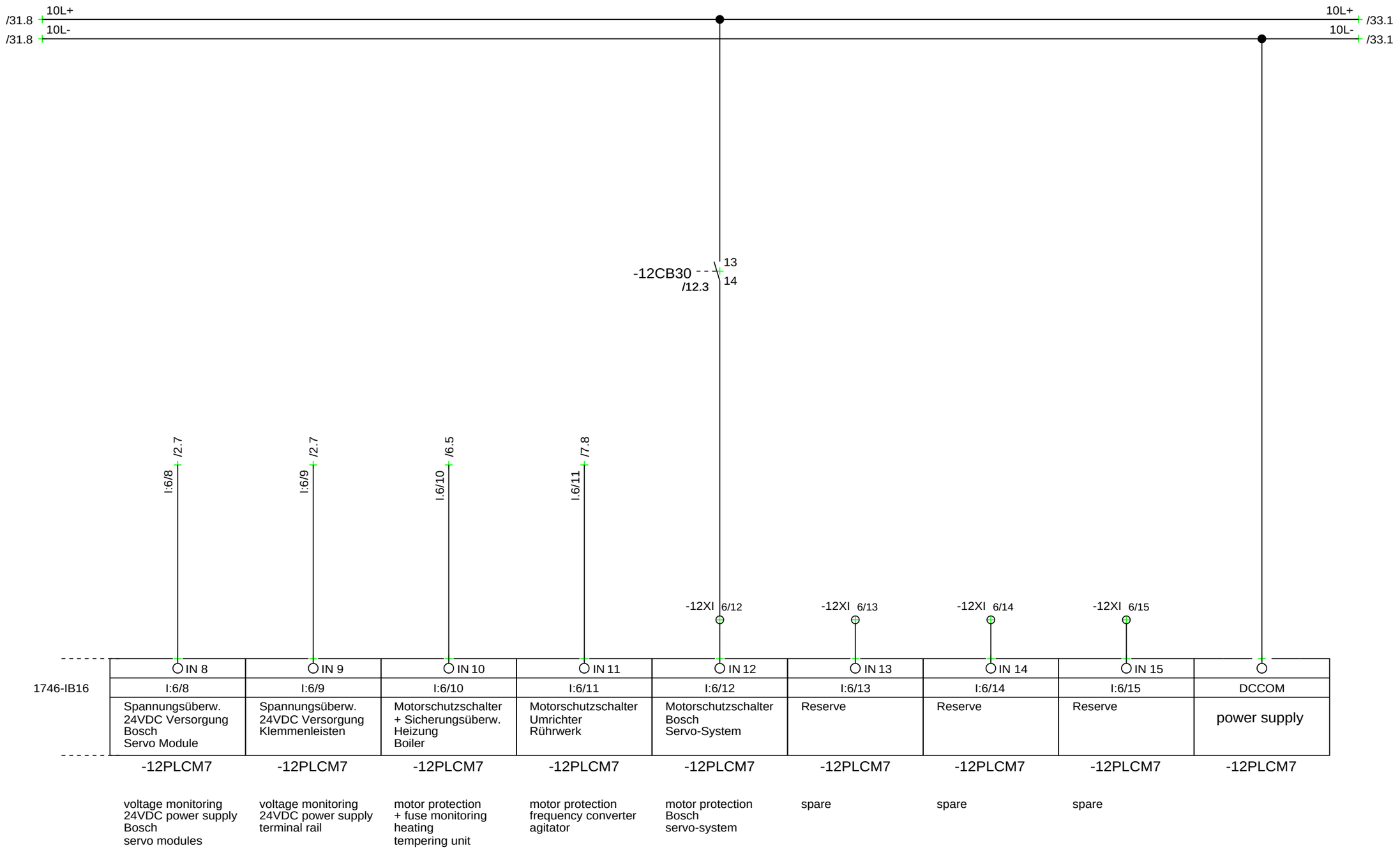
BÜHLER

customer 474 :P_NR2		+HS/4.GK	page 30
		=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1 control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 31	
		=A1.F5	of 43	
comm. nr. :P_NR1	digital inputs	drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 32
		=A1.F5	of 43
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF

/32.8 10L+
/32.8 10L-

10L+ .1
10L- .1

connection to IMC S

	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	
	home axis	proximity switch RV suck position	proximity switch RV deposit position	start deposit pulse	enable manual mode	spare	auto mode	reset fault	VDC
1746-OB16									power supply
	Q:8/0	Q:8/1	Q:8/2	Q:8/3	Q:8/4	Q:8/5	Q:8/6	Q:8/7	
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	

-12PLCM9

.8 10L+
.8 10L-

10L+ /34.1
10L- /34.1

16	34	0	1	2	3	4	5	6	7
		I :0	I :1	I :2	I :3	I :4	I :5	I :6	I :7
power supply									
-12PLCM16		-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16
/17.6		/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER

comm. nr. :P_NR1	customer 474 :P_NR2	+HS/4.GK	page 33
	digital outputs	=A1.F5	of 43
		drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/33.2 10L+
/33.2 10L-

10L+ /35.1
10L- /35.1

connection to IMC S

	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	-12PLCM9	
1746-OB16	emergency stop 0 = emergency stop	trigger receive data	trigger send data	manual RV axis	manual deposit axis	spare	manual forward right	manual backward left	DCCOM power supply
	Q:8/8	Q:8/9	Q:8/10	Q:8/11	Q:8/12	Q:8/13	Q:8/14	Q:8/15	
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	

-12PLCM9

	8	9	10	11	12	13	14	15
	I :8	I :9	I :10	I :11	I :12	I :13	I :14	I :15
	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16	-12PLCM16
	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER

customer	474 :P_NR2	+HS/4.GK	page **34**
		=A1.F5	of 43
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

/34.8 10L+
/34.8 10L-

10L+ /36.1
10L- .1

	enable Bosch jog mode	enable Bosch	Bosch servo drives off	Bosch servo drives on	enable IMC S position controller	reset Bosch servo modules	spare	spare
	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10
1746-OB16	Freigabe Bosch Tippen	Freigabe Bosch	Antriebe Aus	Antriebe Ein	Freigabe IMC S lageregler	Reset Servomodule	Blitzleuchte Reinigungsposition und Übertemperatur	Blitzleuchte Reinigungsposition und Übertemperatur
	Q:9/0	Q:9/1	Q:9/2	Q:9/3	Q:9/4	Q:9/5	Q:9/6	Q:9/7
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7

VDC
power supply
-12PLCM10

-12X1 37
+HKK-12X1 37
+UKK-12AX1 37
+4.GK
-12PB110 23
/25.6 24
+UKK-12AX1 38
+HKK-12X1 38
-12X1 38

-12X1 39
+HKK-12X1 39

-12X1 40
+HKK-12X1 40
+ST-12XX100 4

-12CR31 -12CR32 -12CR33 -12CR34 -12CR35 -12CR36
A1 A2 + -
.8 10L-

13 14 21 22 33 34 43 44
/9.4 /9.4 /10.5 /10.5 /9.4 /10.7 /9.5

+4.GK
-12LT100 1 2
10L- /36.1
+HKK-12X1 2-
/26.6 12X1/2- /36.2

+4.GK
-12LT101 1 2
+ST-12XX100 2
+HKK-12X1 2-
12X1/2-

BÜHLER		customer 474 :P_NR2		+HS/4.GK	page 35			
				=A1.F5	of 43			
comm. nr. :P_NR1		digital outputs		drawing nr. A474				
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/35.8 10L+
/35.6 10L-

10L+ /37.1
10L- /37.1

	enable frequency converter agitator	solenoid valve lifting table up	solenoid valve lifting table down	spare	spare	spare	spare	spare
	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10	-12PLCM10
	Koppelrelais Freigabe Umrichter Rührwerk	MV (Doppelspule) Hubtisch heben	MV (Doppelspule) Hubtisch senken	Reserve	Reserve	Reserve	Reserve	Reserve
	Q:9/8	Q:9/9	Q:9/10	Q:9/11	Q:9/12	Q:9/13	Q:9/14	Q:9/15
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15

DCCOM
power supply
-12PLCM10

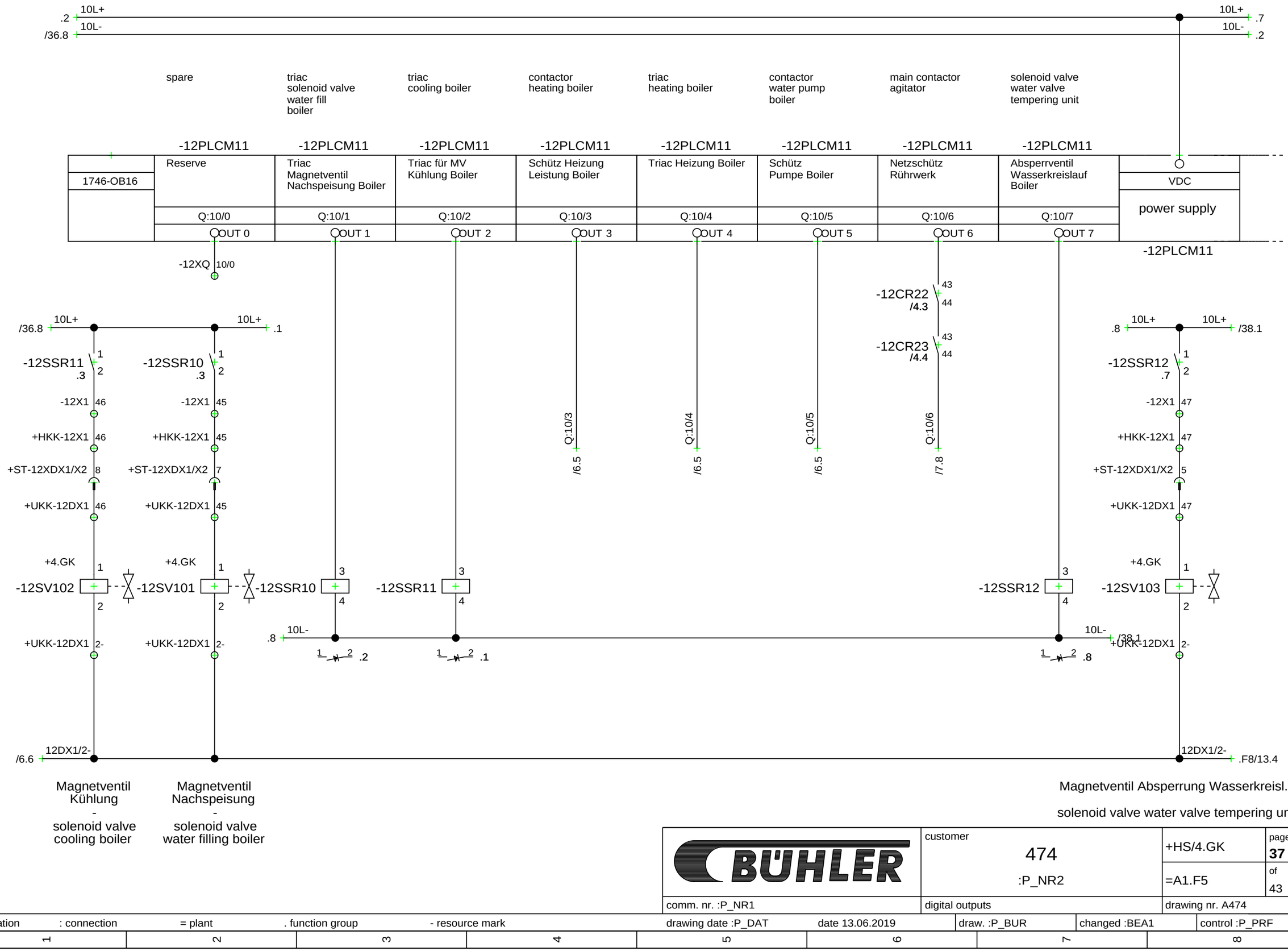
-12XQ 9/11
-12XQ 9/12
-12XQ 9/13
-12XQ 9/14
-12XQ 9/15

-12CR20 /4.2 43 44
-12CR21 /4.2 43 44
-12X1 41
+HKK-12X1 41
+UKK-12BX1 41
+4.GK 13 14 21 22
-12GS111 /26.3
+UKK-12BX1 41.1
+4.GK 13 14 21 22
-12GS111.1 /26.3
+UKK-12BX1 41.2
+4.GK 13 14 21 22
-12GS111.2 /26.4
+UKK-12BX1 41.3
+UKK-12BX1 42
+HKK-12X1 42
-12X1 42
Q:9/8
/7.8

-12CR20 /4.2 53 54
-12CR21 /4.2 53 54
-12X1 43
+HKK-12X1 43
+4.GK 1 2
-12SV104
+HKK-12X1 2-
12X1/2-
/35.7

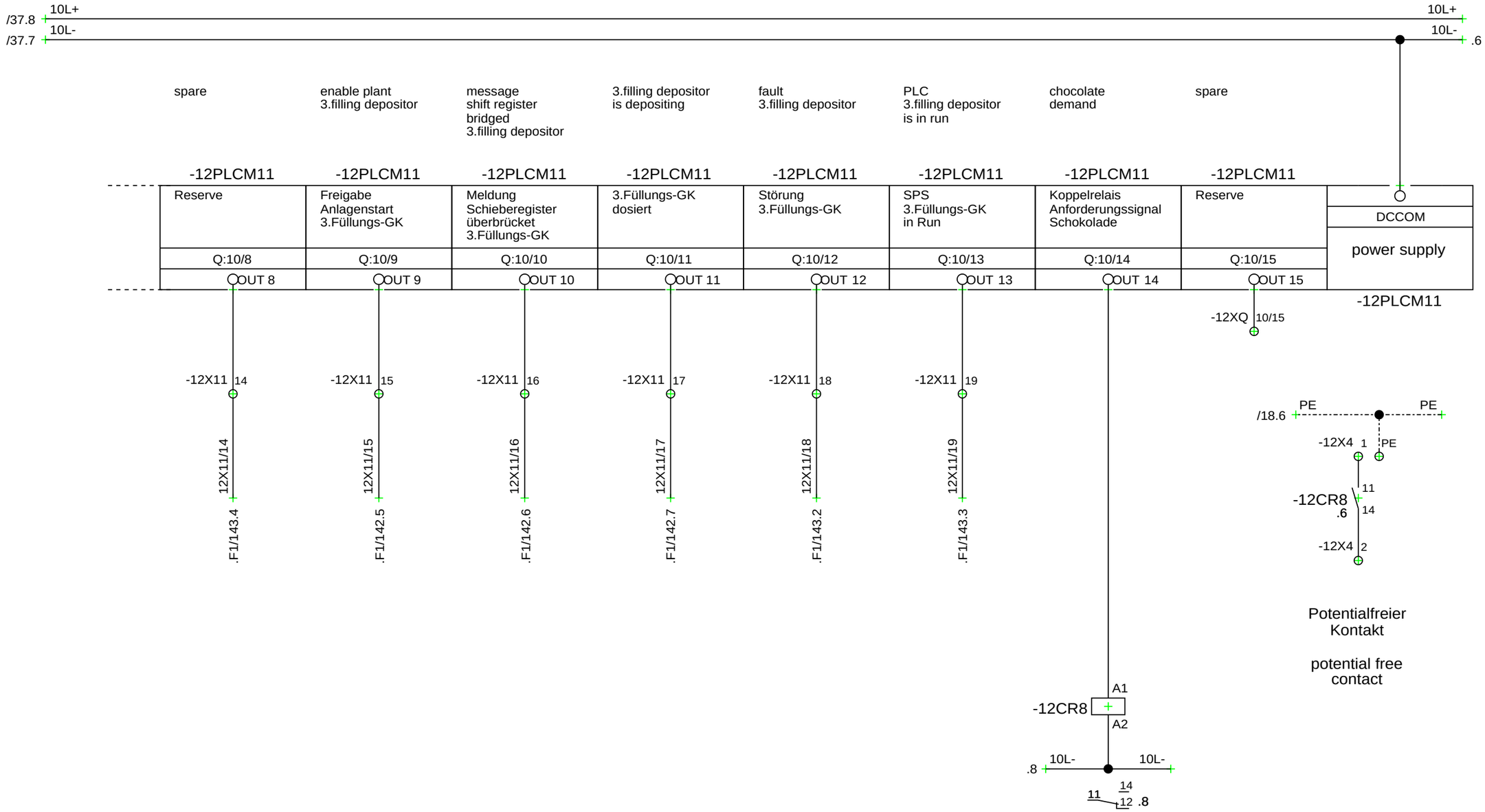
-12CR20 /4.2 63 64
-12CR21 /4.2 63 64
-12X1 44
+HKK-12X1 44
+4.GK 1 2
-12SV105
+HKK-12X1 2-
12X1/2-

BÜHLER	customer 474 :P_NR2		+HS/4.GK	page 36	
			=A1.F5	of 43	
comm. nr. :P_NR1	digital outputs		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



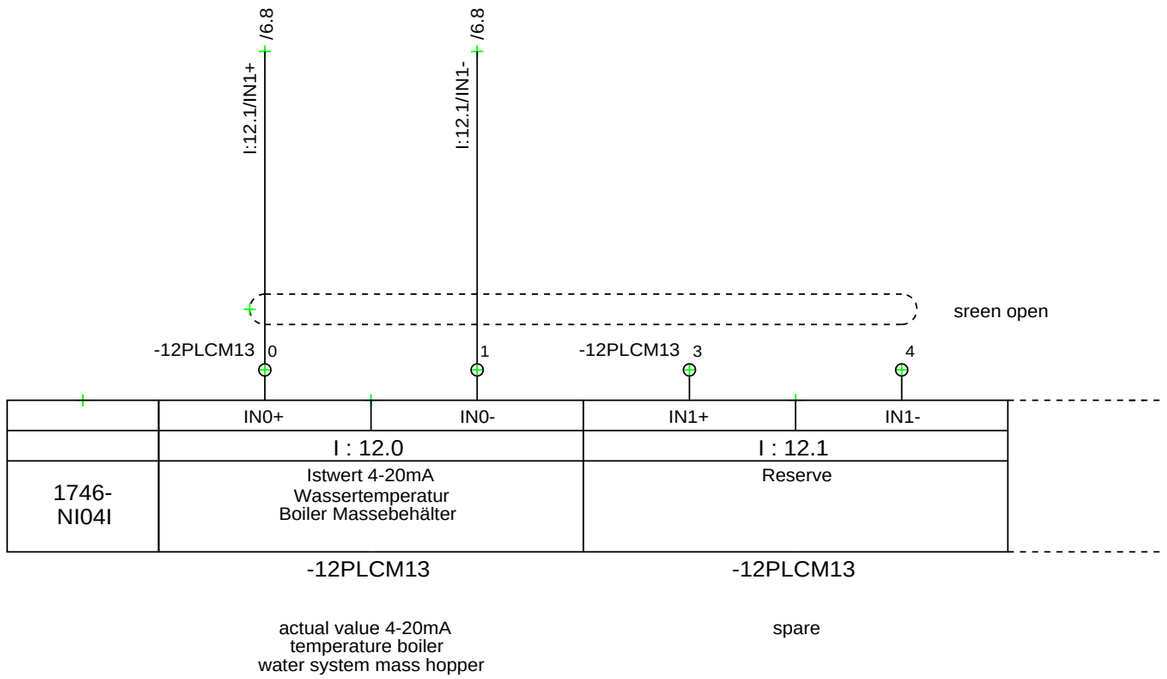
BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 37
		=A1.F5	of 43
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page 38
		=A1.F5	of 43
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **39**
		=A1.F5	of 43
comm. nr. :P_NR1	analogue inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Set value frequency converter agitator	Analogue ground channel 0	spare	Analogue ground channel 1

Function	Sollwert Umrichter Rührwerk	Masse Kanal 0	Reserve	Masse Kanal 1
Adress	0 : 12.0		O : 12.1	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM

NI04I
12PLCM13

-12PLCM13 7 — Q:12.0/OUT0 — /7.4

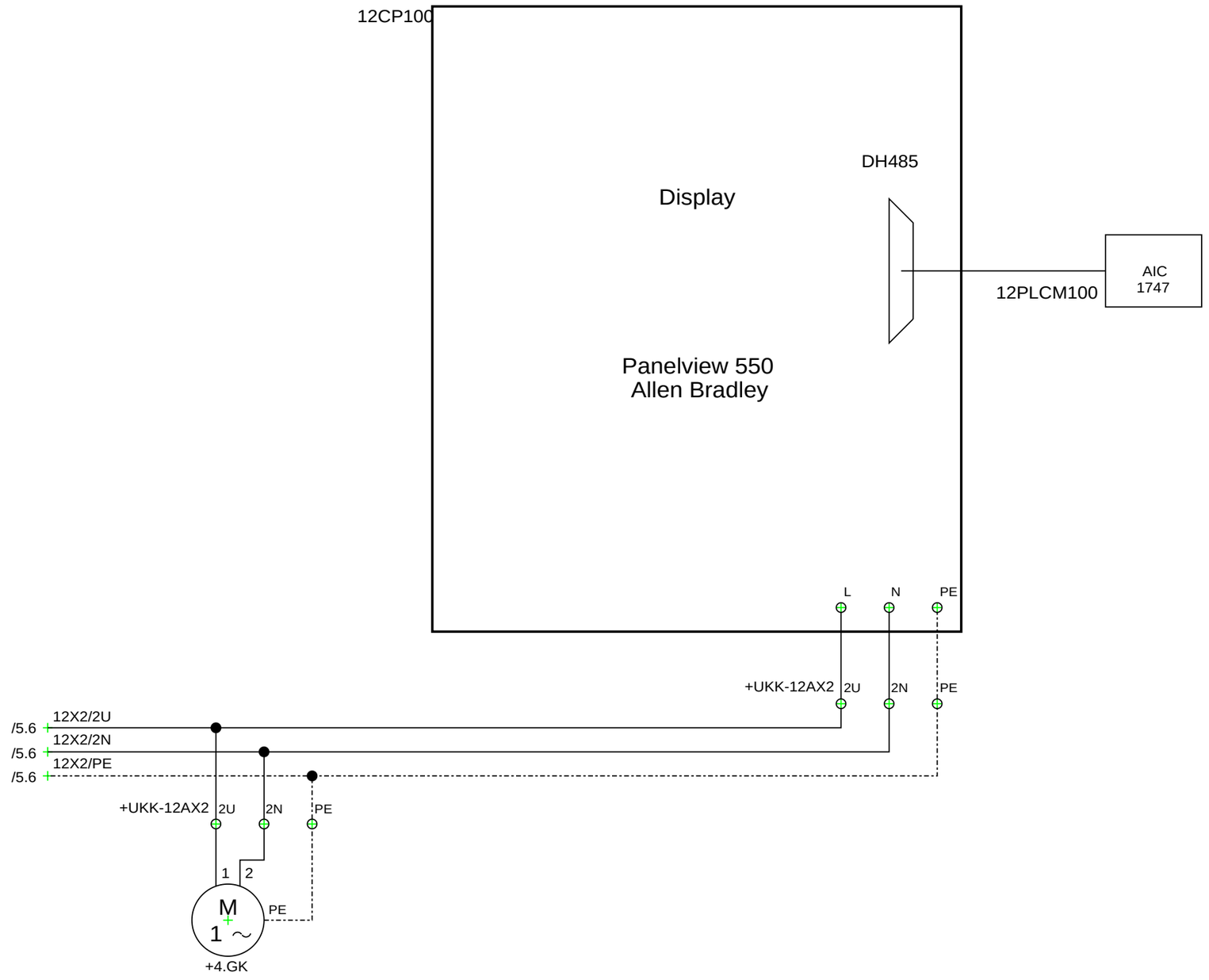
8 — Q.12.0/COM — /7.4

10

11

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **40**
		=A1.F5	of 43
comm. nr. :P_NR1	analogue outputs		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



-12M104

Lüfter Bedienpult

fan operator panel

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **41**
		=A1.F5	of 43
comm. nr. :P_NR1	panelview 550 ALLEN BRADLEY	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Einspeisung
3x480+N/60Hz

power feed

Hauptschaltschrank
Gießmaschine VIT22

main depositor
panel

12X1
12X2
12X3
12X4
12X10
12X11
12X12
12XI
12XQ

12BX1

Klemmenkasten an Gießmaschine

depositor marshalling box

12X1
12X2
12X3

operator panel

BINDLER

12AX2

12XDX1/2

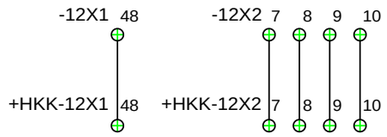
Temperiergerät

12DX1
12DX2

water heater
mass hoper

BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **42**
		=A1.F5	of 43
comm. nr. :P_NR1	wiring scheme	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



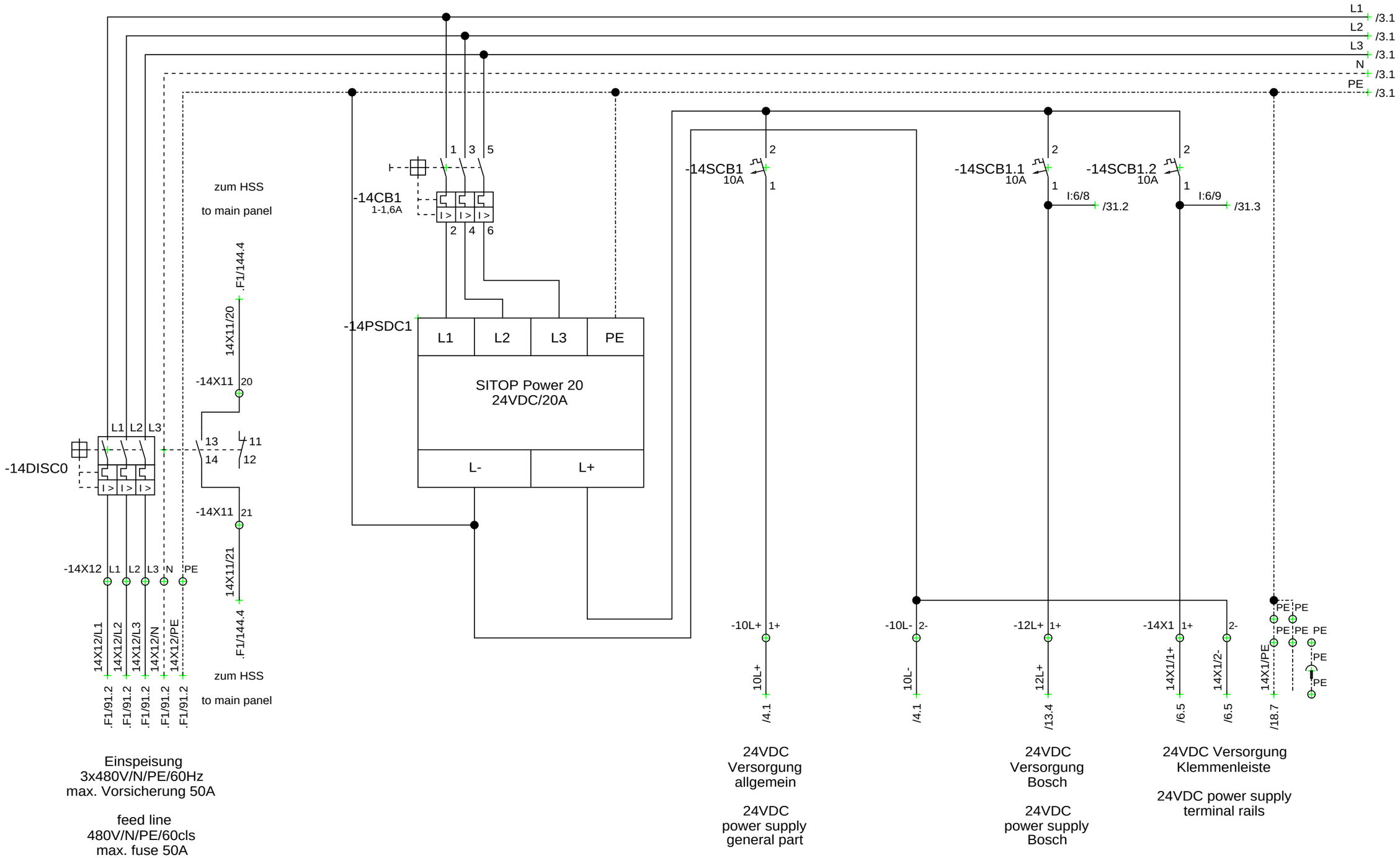
BÜHLER	customer 474 :P_NR2	+HS/4.GK	page **43**
		=A1.F5	of 43
comm. nr. :P_NR1	spare terminals	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Schaltplan
Deckel Dosiermaschine
GRZ

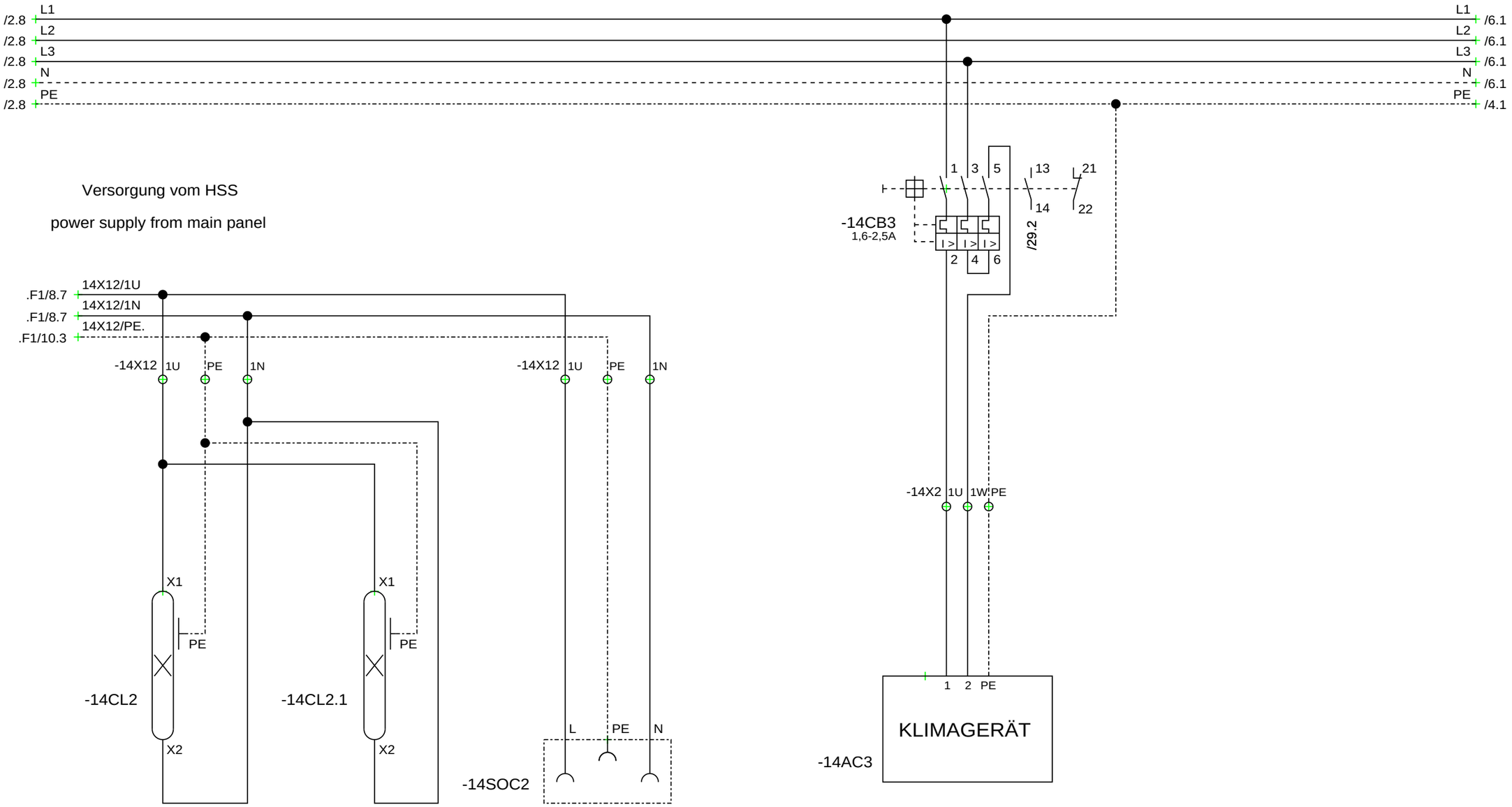
wiring diagram
bottom depositor

BÜHLER	customer 474 :P_NR2		+HS/5.GK	page 1	
			=A1.F6	of 42	
comm. nr. :P_NR1	cover sheet		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



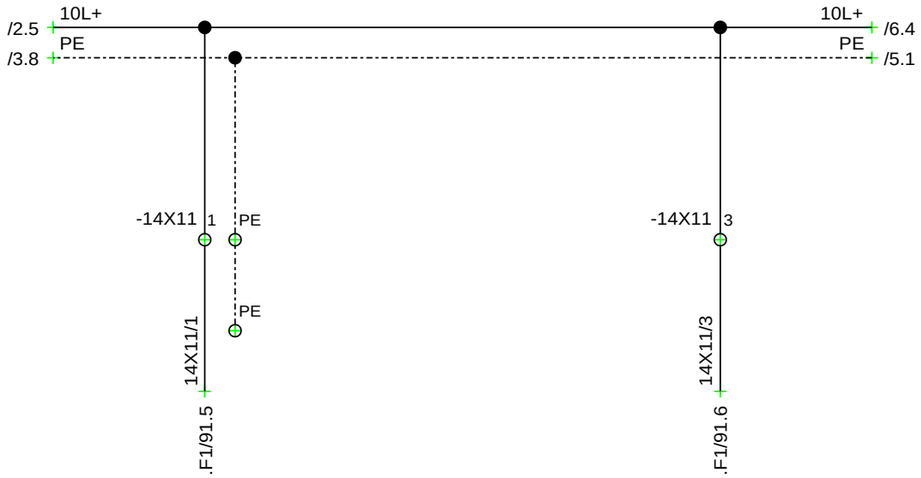
BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 2
		=A1.F6	of 42
comm. nr. :P_NR1	main power feed / power supply 24V/230V	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 3
		=A1.F6	of 42
comm. nr. :P_NR1	power supply climatisation		drawing nr. A474

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF	

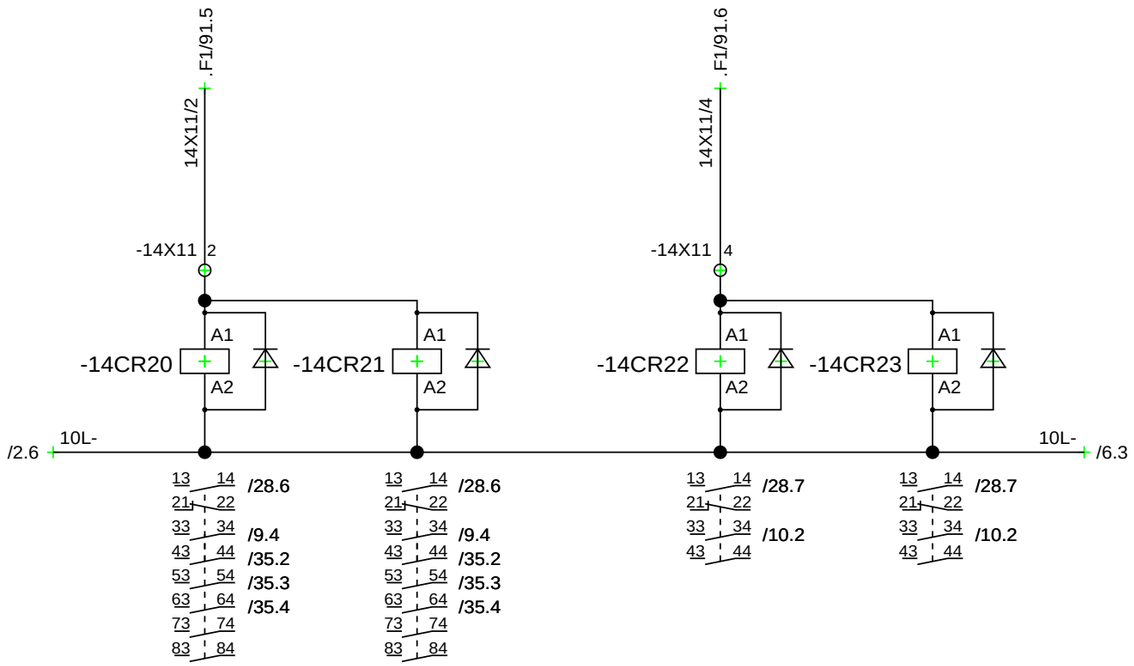


vom HSS

from main panel

vom HSS

from main panel



Not-Aus Schütz direkt

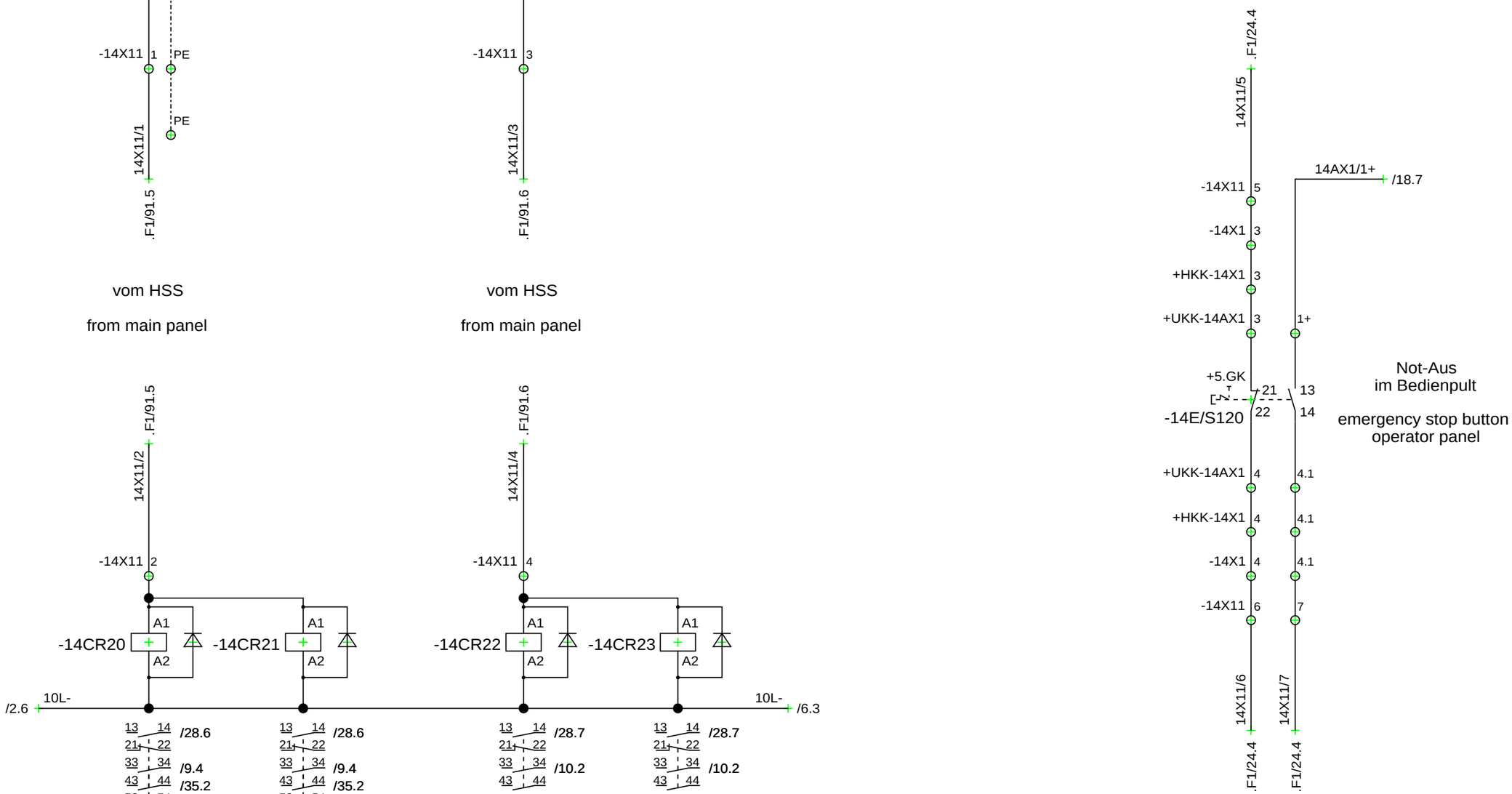
emergency stop contactor direct

Not-Aus Schütz verzögert

emergency stop contactor delayed

vom HSS

from main panel



Not-Aus
im Bedienpult

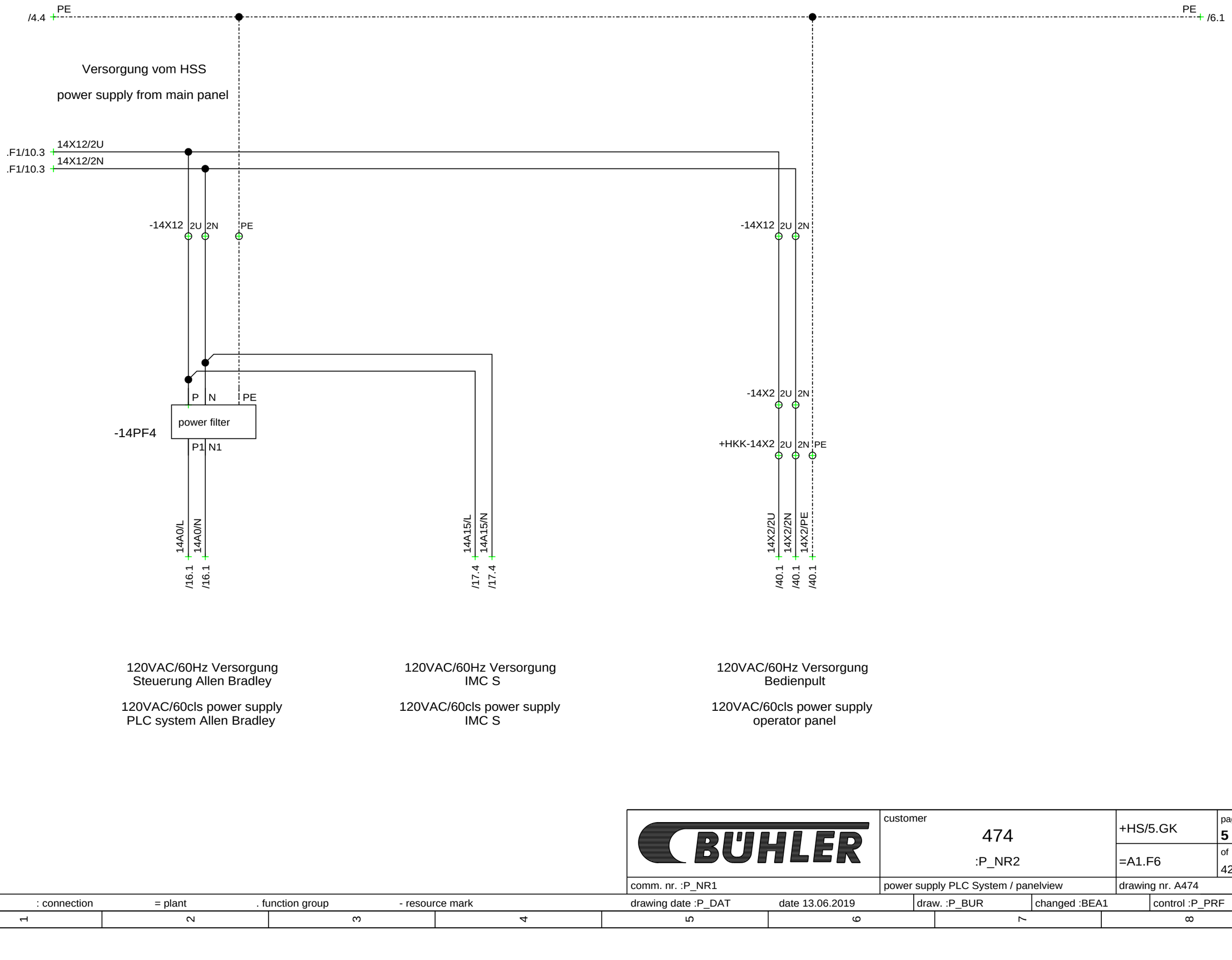
emergency stop button
operator panel

vom HSS

from main panel

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 4
		=A1.F6	of 42
comm. nr. :P_NR1	emergency stop relay	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



120VAC/60Hz Versorgung
Steuerung Allen Bradley

120VAC/60cls power supply
PLC system Allen Bradley

120VAC/60Hz Versorgung
IMC S

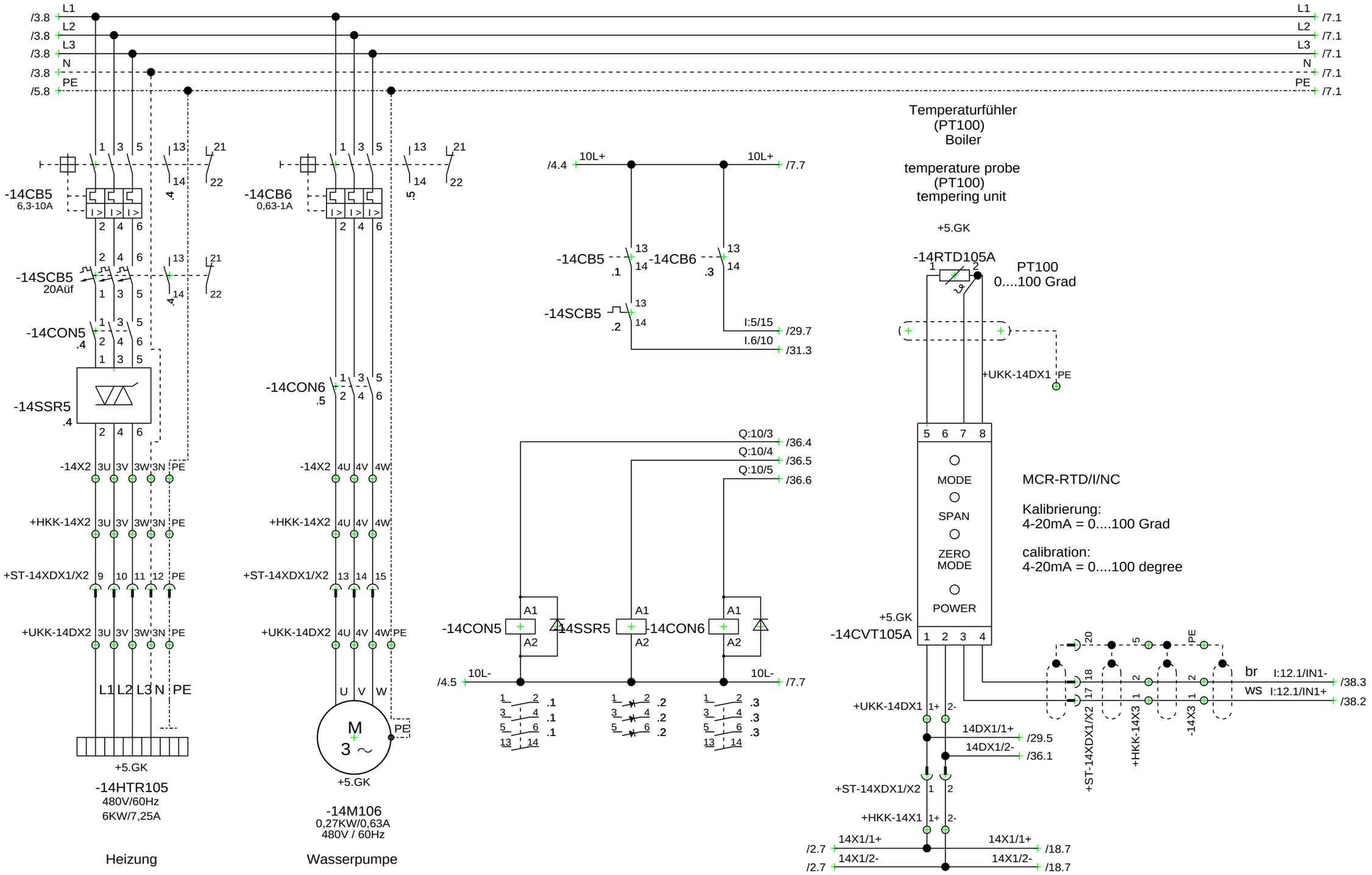
120VAC/60cls power supply
IMC S

120VAC/60Hz Versorgung
Bedienpult

120VAC/60cls power supply
operator panel

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 5
		=A1.F6	of 42
comm. nr. :P_NR1	power supply PLC System / panelview	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

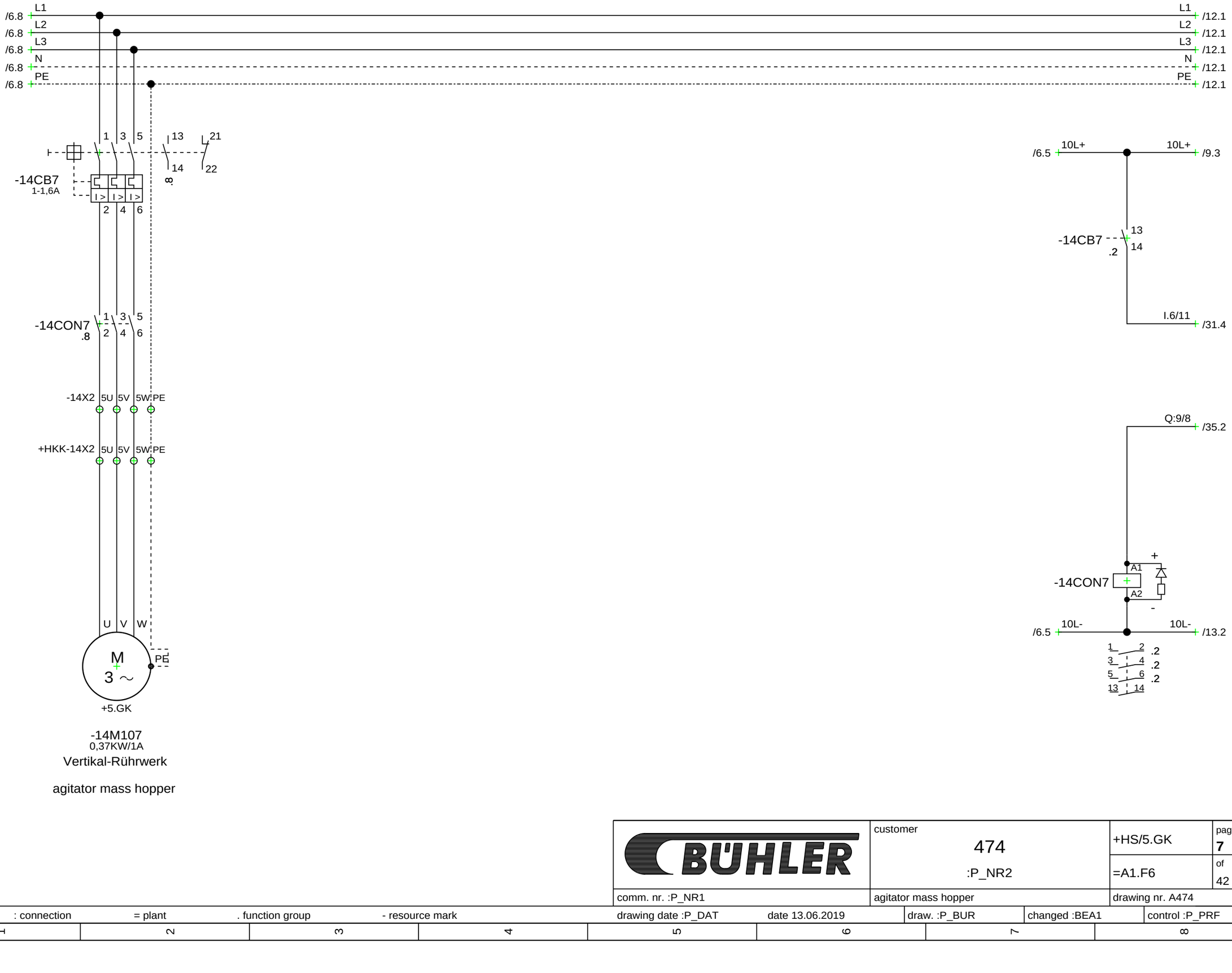


System Massebehälter

water heater mass hopper

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 6
		=A1.F6	of 42
comm. nr. :P_NR1	water heater mass hopper		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 7
		=A1.F6	of 42
comm. nr. :P_NR1	agitator mass hopper	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
BÜHLER	474 :P_NR2	+HS/5.GK	page **8**
		=A1.F6	of 42
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Freigabe Servo - Module
enable servo modules

10L+ /7.8

10L+ /10.2

-14CR20 /4.2 33 34

-14CR21 /4.2 33 34

-14X1 5

+HKK-14X1 5

Reserve
spare

+HKK-14X1 6

Reserve
spare

+HKK-14X1 7

Reserve
spare

+HKK-14X1 8

+HKK-14X1 8

-14X1 8 I:4/6 /26.6

Reserve
spare

+HKK-14X1 9

-14X1 9

Freigabe Tippen
enable jog mode
-14CR31 /34.2 13 14

-14CR36 /34.6 13 14

Freigabe VM
enable power module
-14CR30 /13.6 13 14

Freigabe IP Lageregler
enable pos. controller
-14CR35 /34.5 13 14

Freigabe Bosch
enable Bosch
-14CR32 /34.3 13 14

-14X10 1

FG2 /21.2

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 9
		=A1.F6	of 42
comm. nr. :P_NR1	enable servo module	drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR changed :BEA1	control :P_PRF

Endlagen Sicherheitsschalter

safety switches

/9.8 10L+

-14CR22 /4.3 33 34

-14CR23 /4.4 33 34

-14X1 10

+HKK-14X1 10

Reserve

spare

+HKK-14X1 11

-14X1 11 I:4/9 /27.3

+HKK-14X1 11

Reserve

spare

+HKK-14X1 12

-14X1 12 12 I:4/10 /27.3

Freigabe Achsen-Lageregler

enable position controller

10L+ /13.5

-14SM30 /13.1 43 44

Freigabe IP Lageregler

enable pos. controller

-14CR35 /34.5 33 34

-14X10 2

DRFAULT2

/21.3

14A31:X312/2 /13.5

Antriebe Aus

drives off

-14CR33 /34.3 13 14

Antriebe Ein

drives on

-14CR34 /34.4 13 14

-14CR30 /13.6 33 34

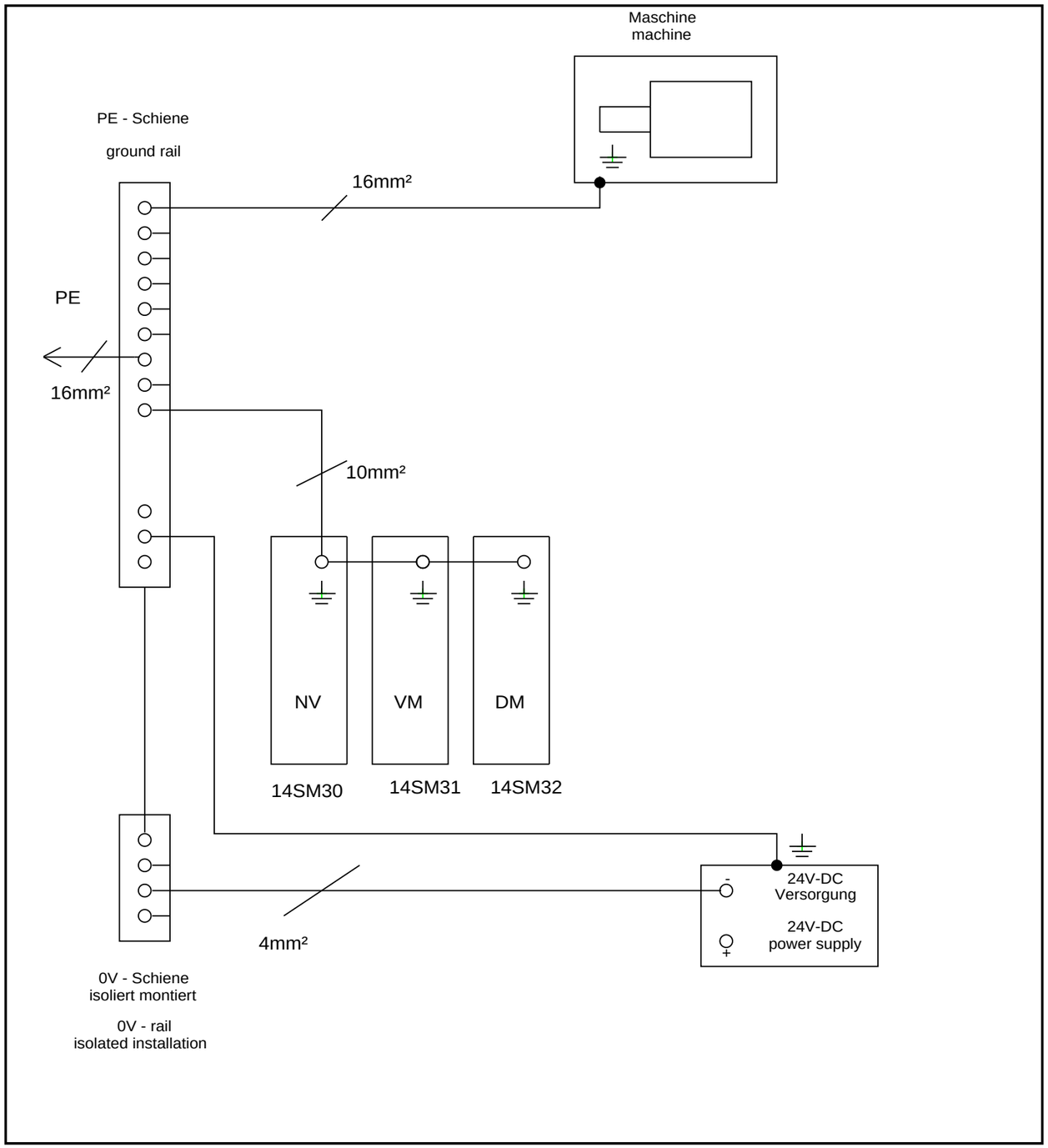
-14SM30 /13.1 13 14

14A30/A1 /13.3

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **10**
		=A1.F6	of 42
comm. nr. :P_NR1	safety switches		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

ERDUNG für BOSCH System

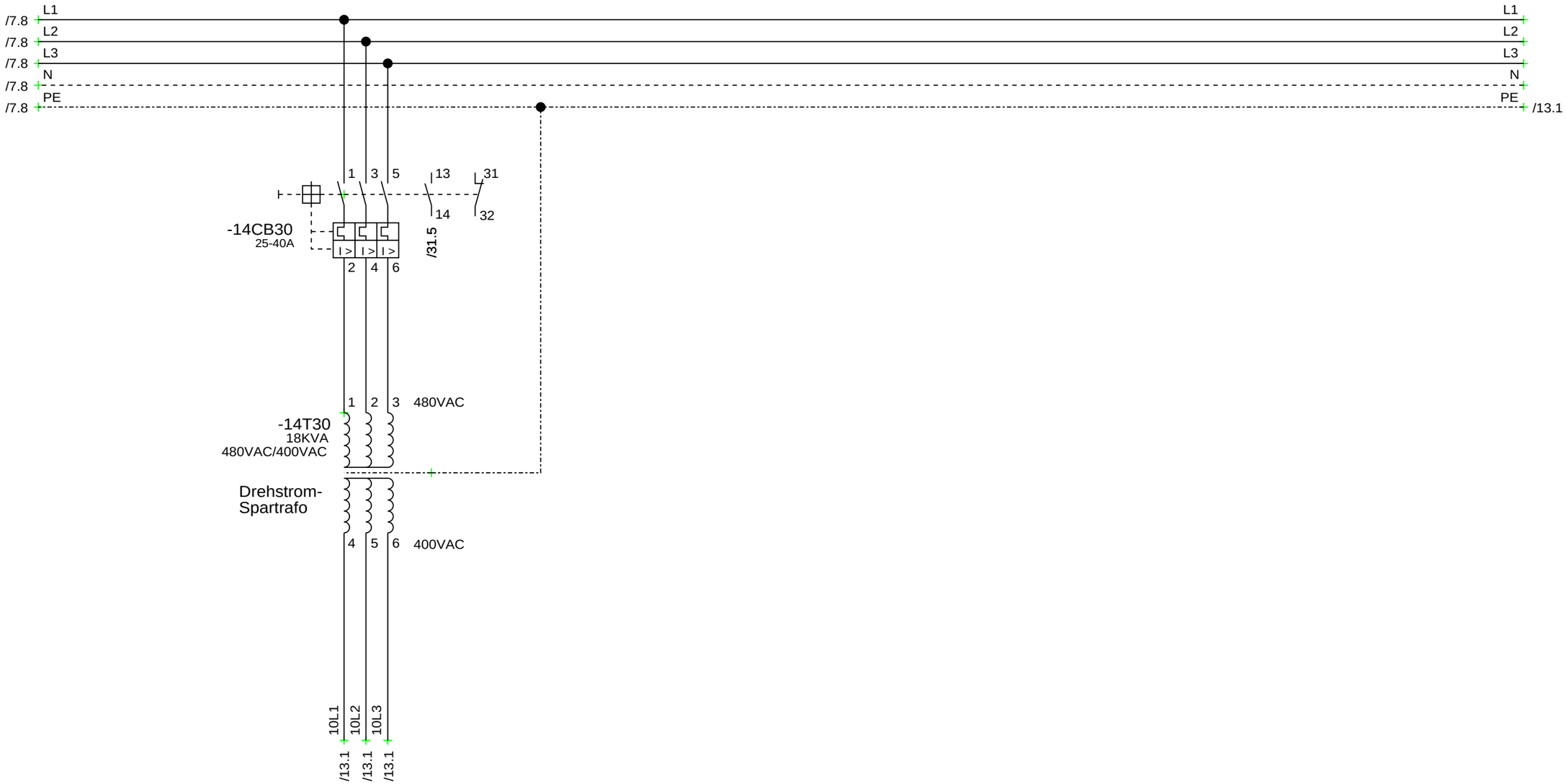


ERDUNG für BOSCH System

earthing system BOSCH rack

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **11**
		=A1.F6	of 42
comm. nr. :P_NR1	earthing servo system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

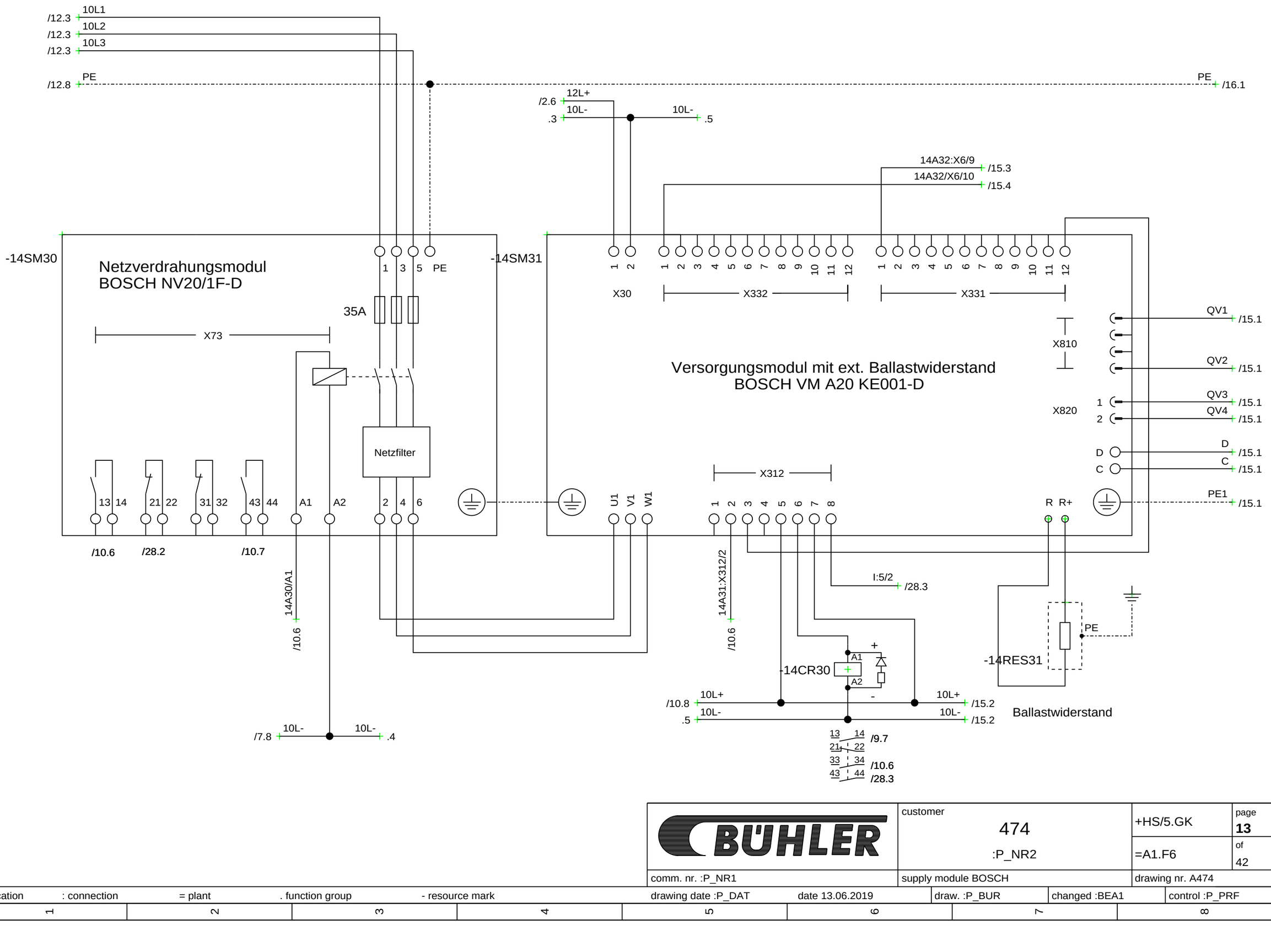


Einspeisung Bosch Servo-System

power supply Bosch serco system

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **12**
		=A1.F6	of 42
comm. nr. :P_NR1	power supply Bosch system	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 13
		=A1.F6	of 42
comm. nr. :P_NR1	supply module BOSCH	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

customer			
	474	+HS/5.GK	page **14**
	:P_NR2	=A1.F6	of 42
comm. nr. :P_NR1	spare	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

+5.GK
-14M132

Motor Typ SR-A5.0460.020-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

14A6/Ua1 /21.2
14A6/Ua1/ /21.2
14A6/Ua2 /21.2
14A6/Ua2/ /21.3
14A6/Ua0 /21.3
14A6/Ua0/ /21.3
14A6/5V /21.4
14A6/0V /21.4
Schirm2 /21.4

-14SM32

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/13.8 QV1
/13.8 QV2

24V
Querverbindung

/13.8 QV3
/13.8 QV4

Zwischenkreis-
Spannung

/13.8 D
/13.8 C

/13.8 PE1

X810

X820

Servodul BOSCH DMA85B3301-D
Dosierantrieb

X810
QV1 .1
QV2 .1

X820
1 QV3 .1
2 QV4 .1

D .1
C .1

PE1 .1

X6

1 STA-Relais /29.3
2 STA-Relais I:5/10 14A32:X6/3 /21.2
3
4 IN1
5 IN2
6 IN3
7 IN4
8 14A32:X6/9 24V in /13.7
9 14A32/X6/10 0V in /13.7
10

X12

1 OUT5
2 OUT6
3 OUT7 I:5/12 /29.5
4 OUT8
5 OUT9
6 Relais
7 Relais
8 Relais

X21

Gehäuse
1 SW2+ /21.6
2 SW2- /21.6
3 ws
4 br
5
6

X34

1 OUT4
2 OUT3
3 OUT2 I:5/11 /29.4
4 OUT1
5 Relais
6 Relais

10L+ /13.7 — 10L+ /17.4
10L- /13.7 — 10L- /16.1

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 15
		=A1.F6	of 42
comm. nr. :P_NR1	servo module deposit drive		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT

date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/5.2 14A0/L
/5.2 14A0/N
/13.8 PE
/15.3 10L-
10L- /17.4

14A0/L /17.4
14A0/N
PE

SLC 500 - System Übersicht

SLC 500 - system overview

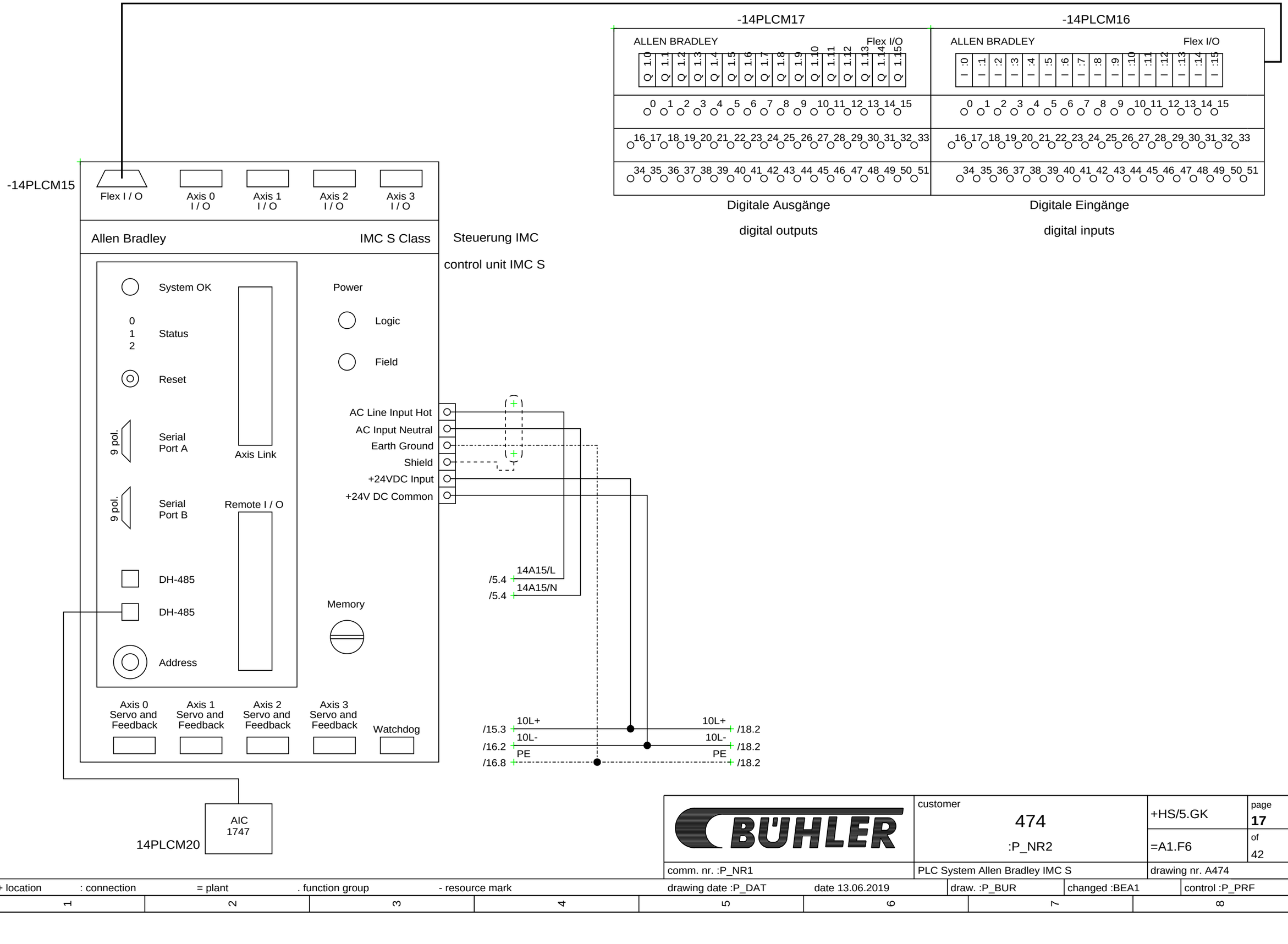
main rack Allen Bradley

	14PLCM1	14PLCM2	14PLCM3	14PLCM4	14PLCM5	14PLCM6	14PLCM7	14PLCM8	14PLCM9	14PLCM10	14PLCM11	14PLCM12	14PLCM13
PWR OUT +24VOLTS DC	CPU SLC/04	spare	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	digital inputs 1746-IB16	spare	digital outputs 1746-OB16	digital outputs 1746-OB16	digital outputs 1746-OB16	spare	anal. in/out 1746-NIO4I
PWR OUT COM	DH+												
120/240 VOLTS			I:2/0-I:2/15	I:3/0-I:3/15	I:4/0-I:4/15	I:5/0-I:5/15	I:6/0-I:6/15		I:8/0-I:8/15	I:8/0-I:8/15	I:8/0-I:8/15		12.0-12.1
VAC NEUT	RS232												
CHASSIS GROUND													

-14PLC0

6mm²

BÜHLER		customer 474 :P_NR2		+HS/5.GK	page **16**		
				=A1.F6	of 42		
comm. nr. :P_NR1		PLC system ALLEN BRADLEY		drawing nr. A474			
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **17**
		=A1.F6	of 42
comm. nr. :P_NR1	PLC System Allen Bradley IMC S	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

System Übersicht / system overview

AIC-NET
im Gießmaschinenschaltschrank

AIC-NET
in depositor panel

DH485
cable 1747-CD

AIC
im Gießmaschinenschaltschrank

AIC
in depositor panel

AIC
im Bedienpult

AIC
in operator panel

orange with white stripes
white with orange stripes
blue with white stripes
drain wire

-14PLCM21

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

TX

24VDC
NEUT
GND

1761-CBL-AP00
(0,5mtr)

1747-FC

RS232

14PLCM1

CPU
SLC5/04

CPU
depositor panel

-14PLCM20

DH-485
INTFC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-C10

DH485

14PLCM15

IMC S

position
controller

+5.GK
-14PLCM100

DH-485
INTFC
1747 AIC

TERM
A
B
COMMON
SHLD
CHS GND

Peripheral
J2

CPU
J1

Power

24VDC
NEUT
GND

1747-C10

DH485

14CP100

panel
view

operator panel

/17.5 10L+ — 10L+ /22.1
/17.5 10L- — 10L- /21.4
/17.5 PE — PE /37.7

+UKK-14AX1 1+ 2- PE

/4.7 14AX1/1+ — 14AX1/1+ /24.6
+HKK-14X1 1+ 2-

/21.6 14X1/1+
/21.6 14X1/2-
/2.8 14X1/PE

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **18**
		=A1.F6	of 42
comm. nr. :P_NR1	system overview AIC		drawing nr. A474

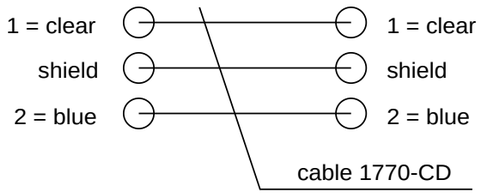
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

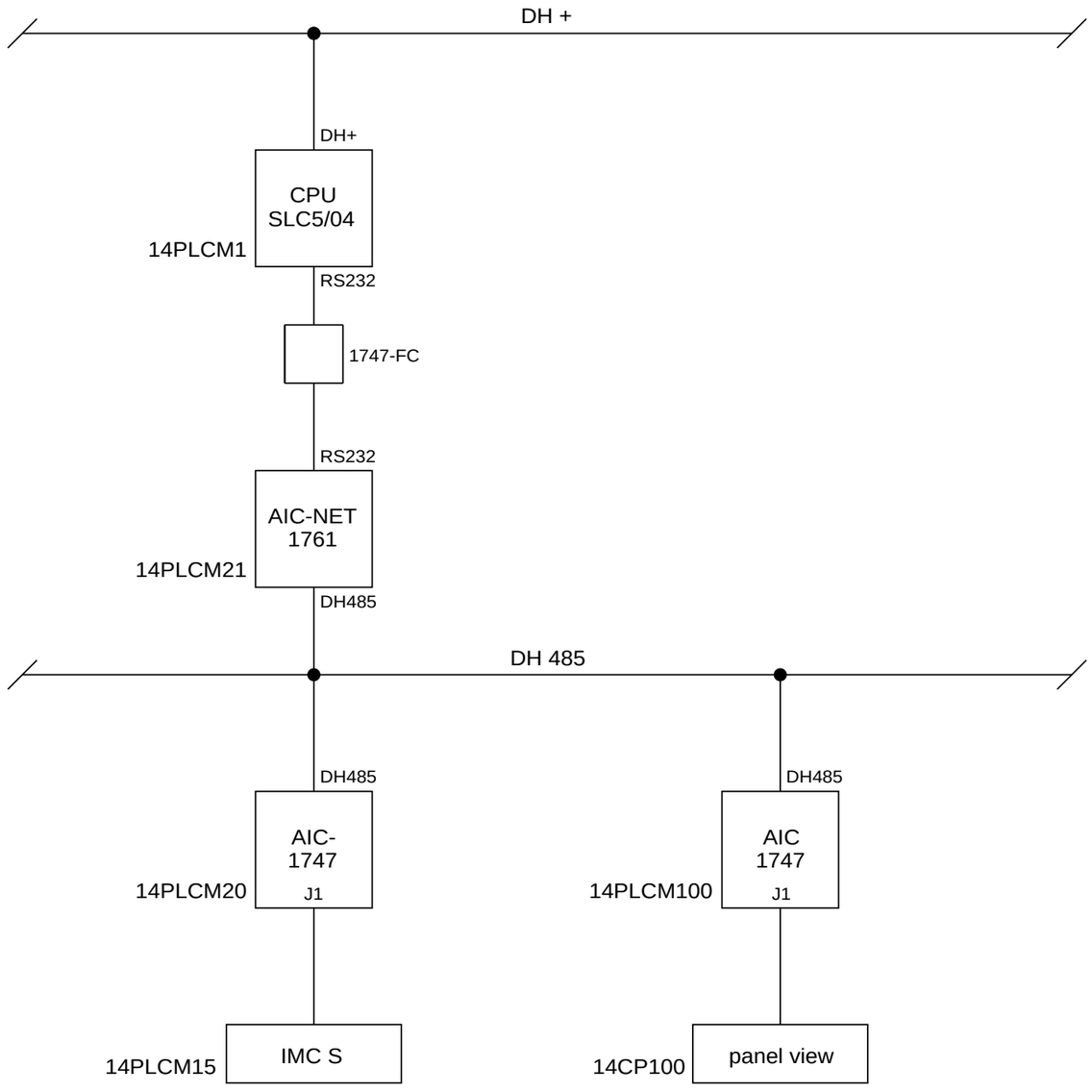
System Übersicht

system overview

Anschlußbelegung DH +
von SLC5/04 zu SLC5/04

conection DH+
from SLC5/04 to SLC5/04



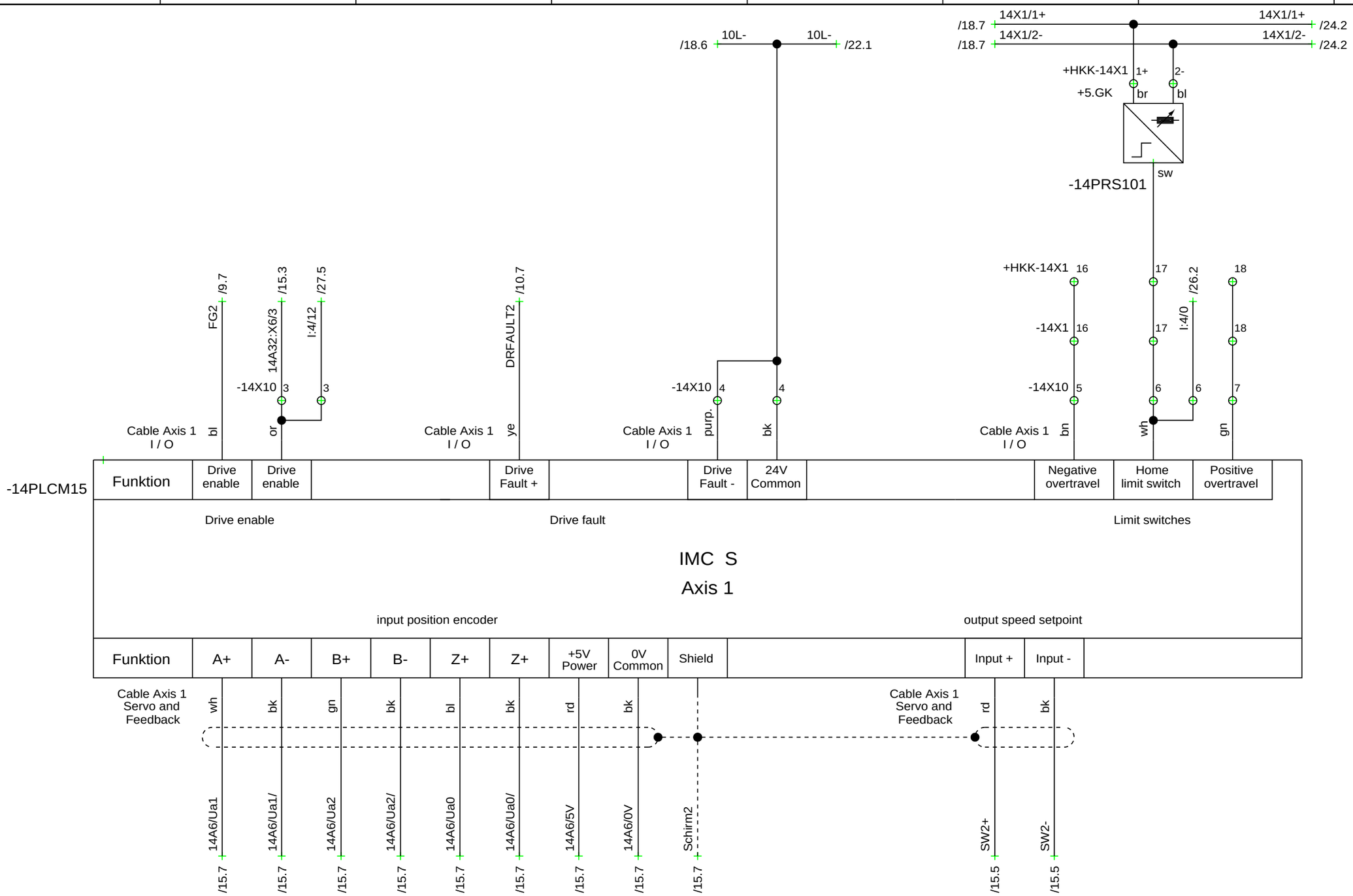


BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **19**
		=A1.F6	of 42
comm. nr. :P_NR1	system overview datahighway	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

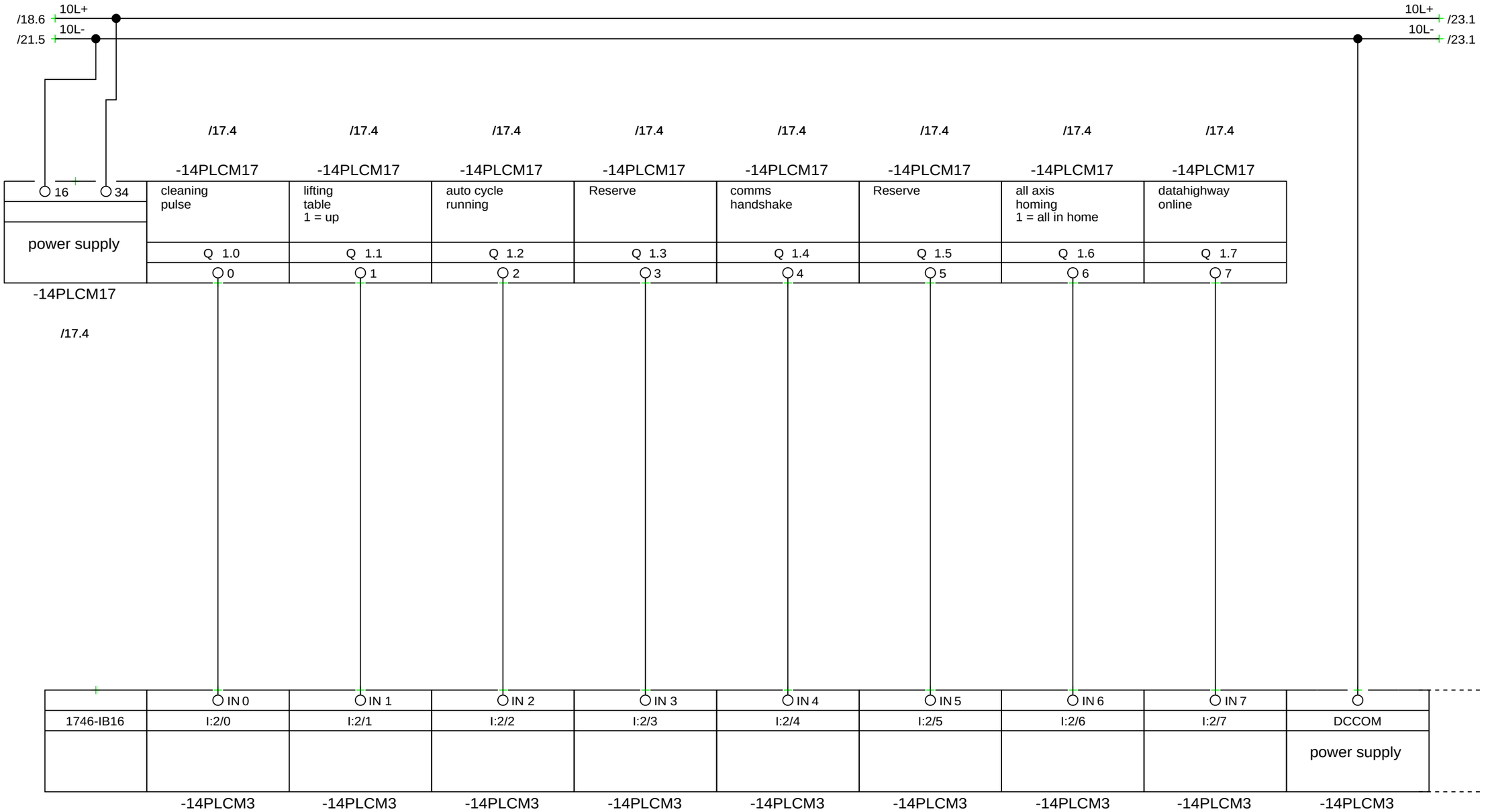
customer			
BÜHLER	474 :P_NR2	+HS/5.GK	page **20**
		=A1.F6	of 42
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



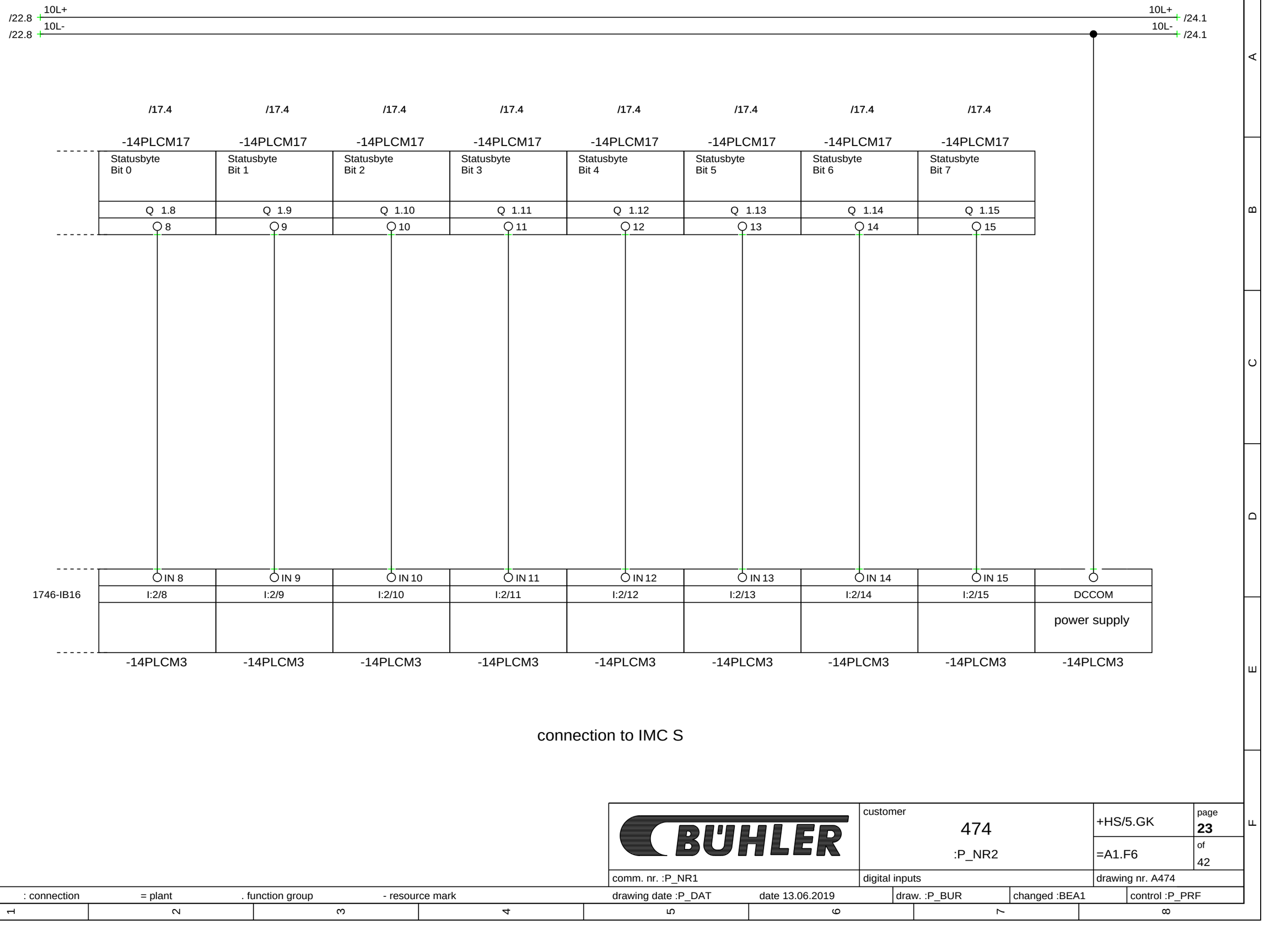
BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **21**
		=A1.F6	of 42
comm. nr. :P_NR1	position controller deposit axis	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



connection to IMC S

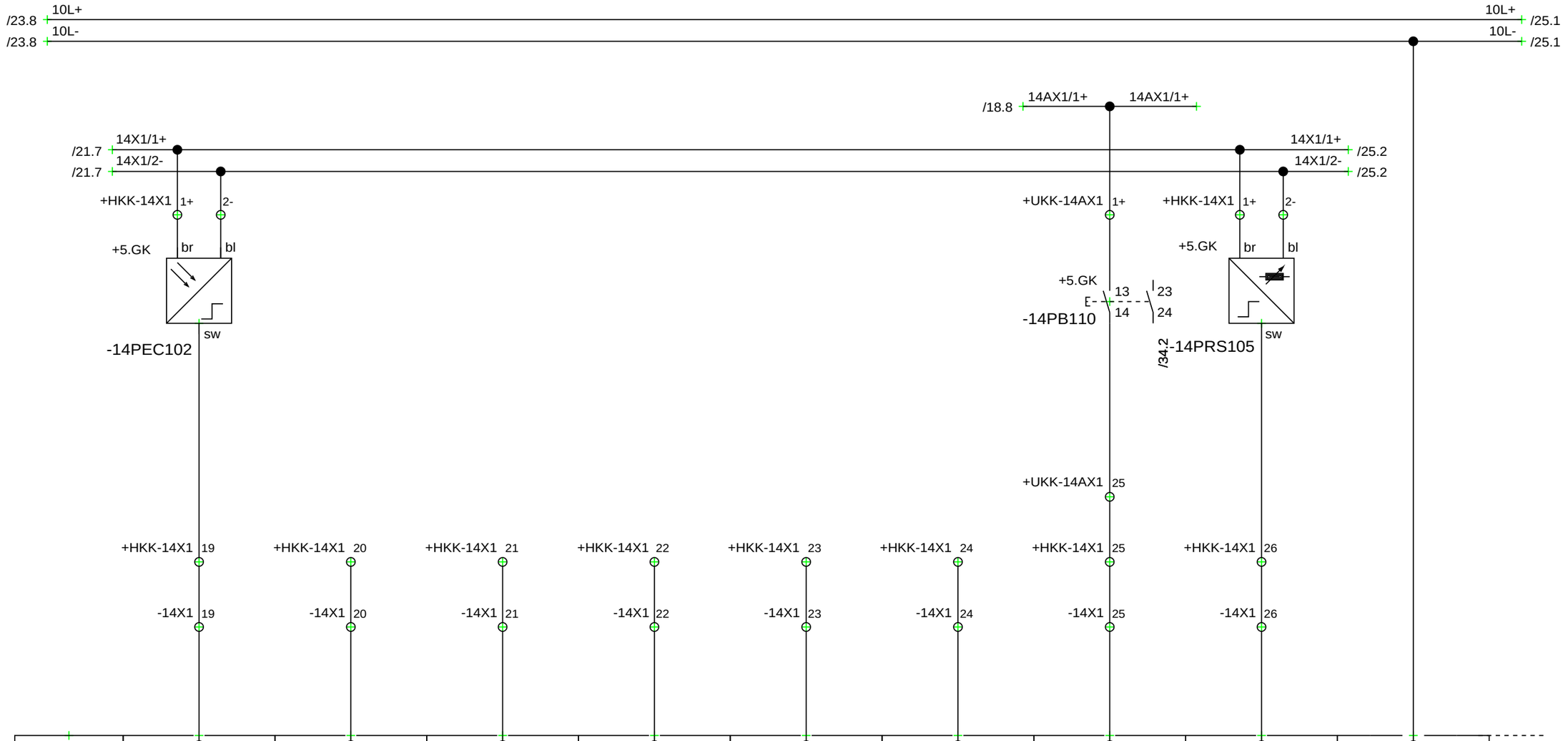
BÜHLER	customer 474 :P_NR2		+HS/5.GK	page 22	
			=A1.F6	of 42	
comm. nr. :P_NR1	digital inputs		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



connection to IMC S

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 23
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

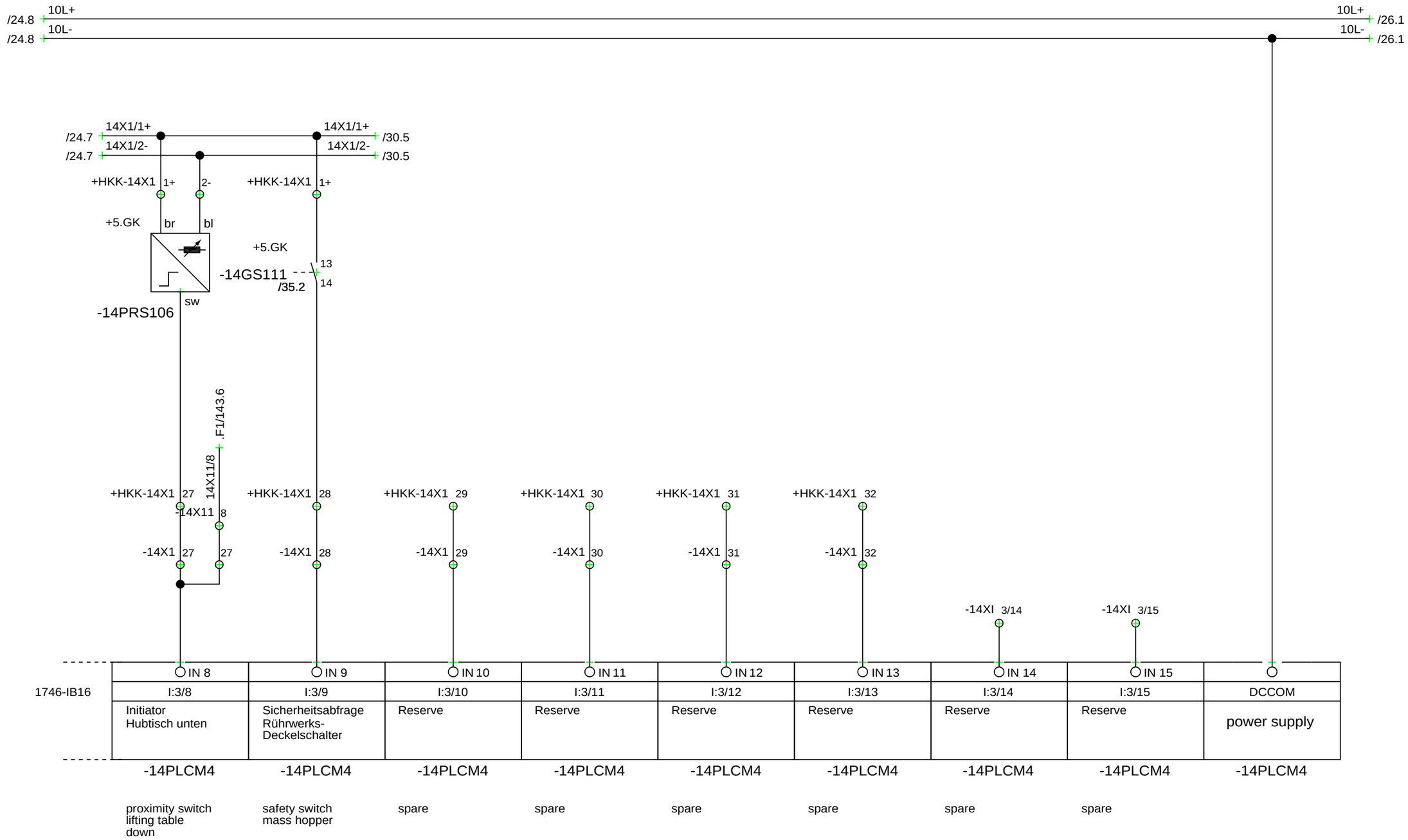
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF



	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:3/0	I:3/1	I:3/2	I:3/3	I:3/4	I:3/5	I:3/6	I:3/7	DCCOM
	Formentaster Deckel-GK	Reserve	Reserve	Reserve	Reserve	Reserve	Tippen	Initiator Hubtisch oben	power supply
	-14PLCM4	-14PLCM4	-14PLCM4	-14PLCM4	-14PLCM4	-14PLCM4	-14PLCM4	-14PLCM4	-14PLCM4
	mould sensor bottom depositor	spare	spare	spare	spare	spare	jog mode	proximity switch lifting table up	

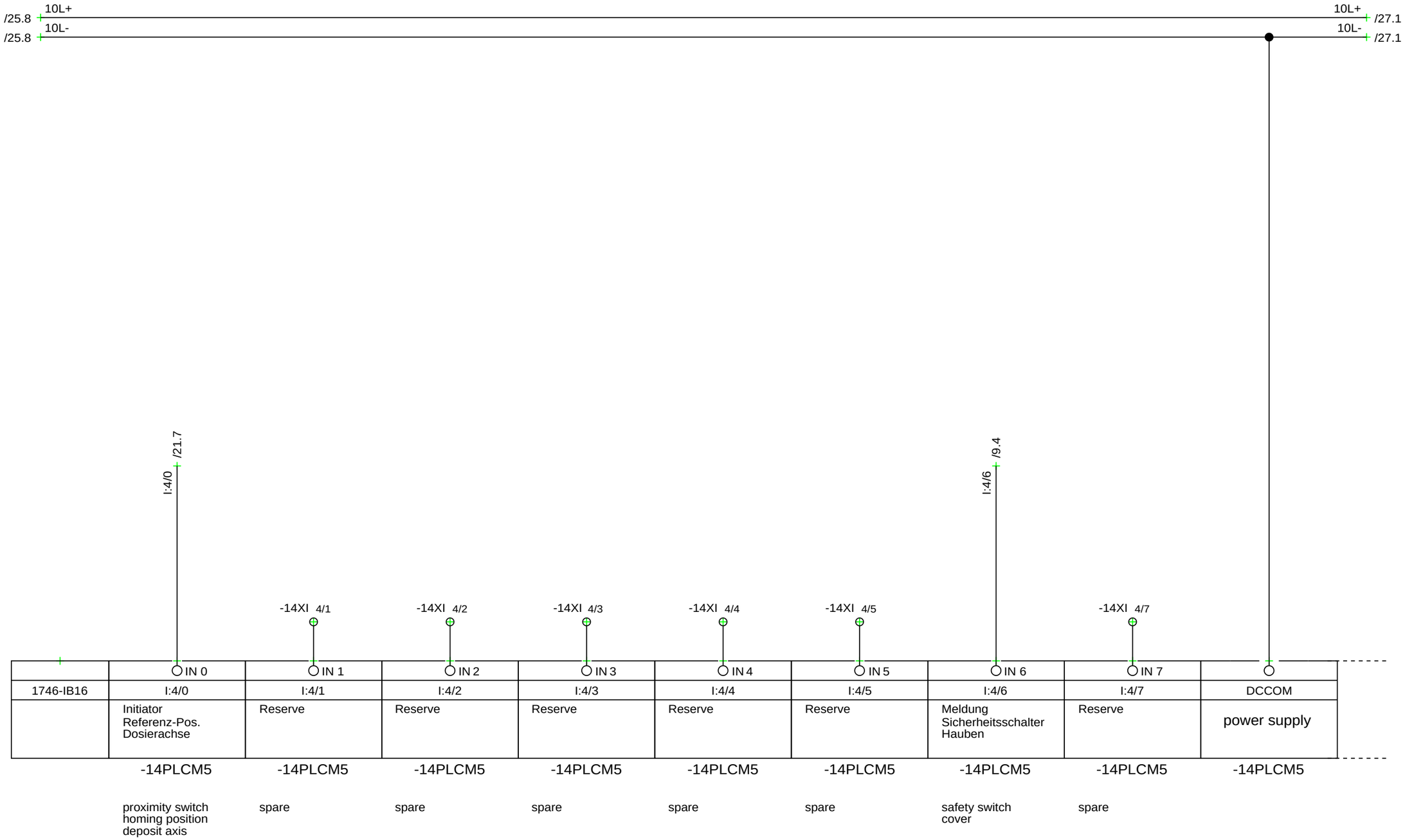
BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **24**
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



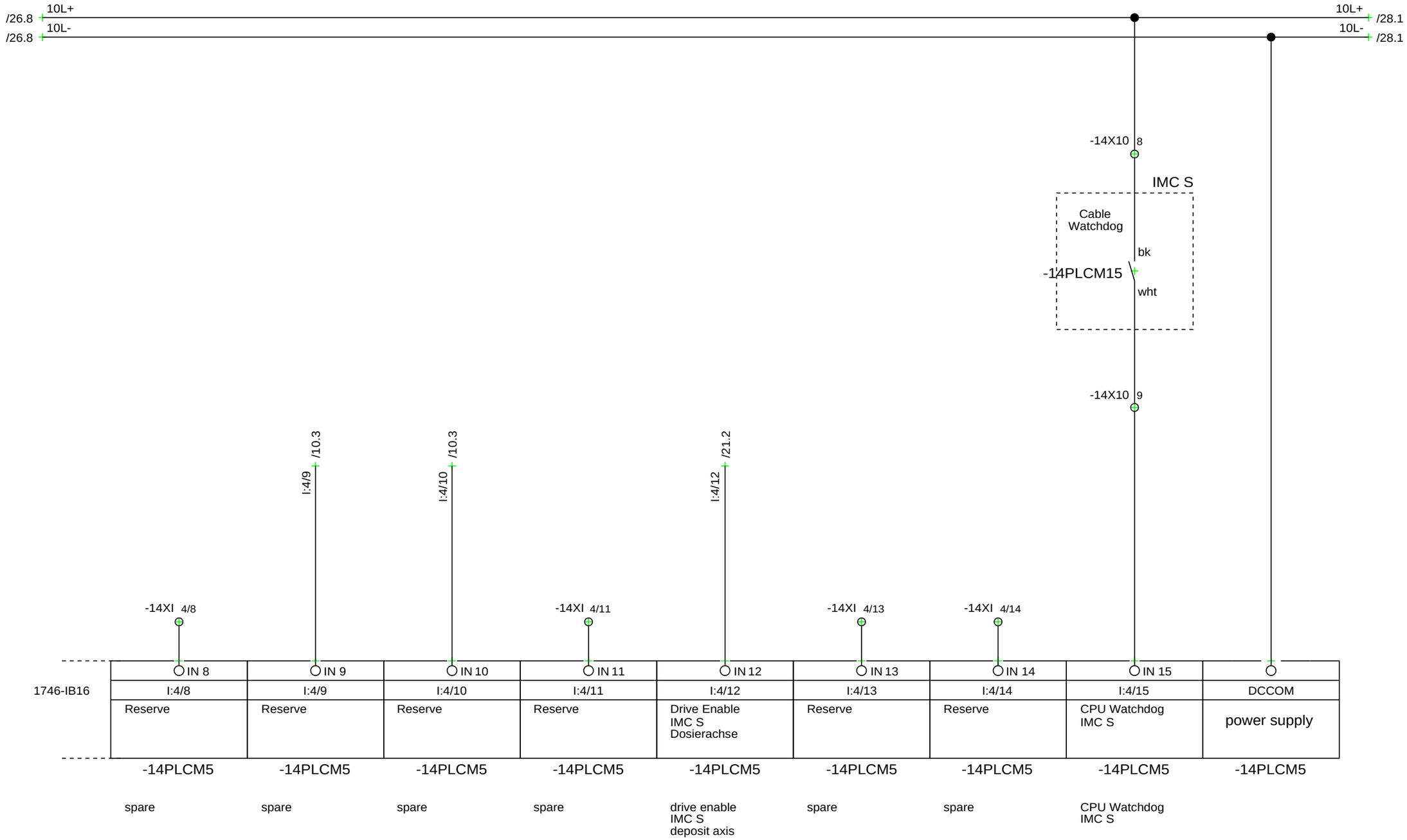
BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **25**
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



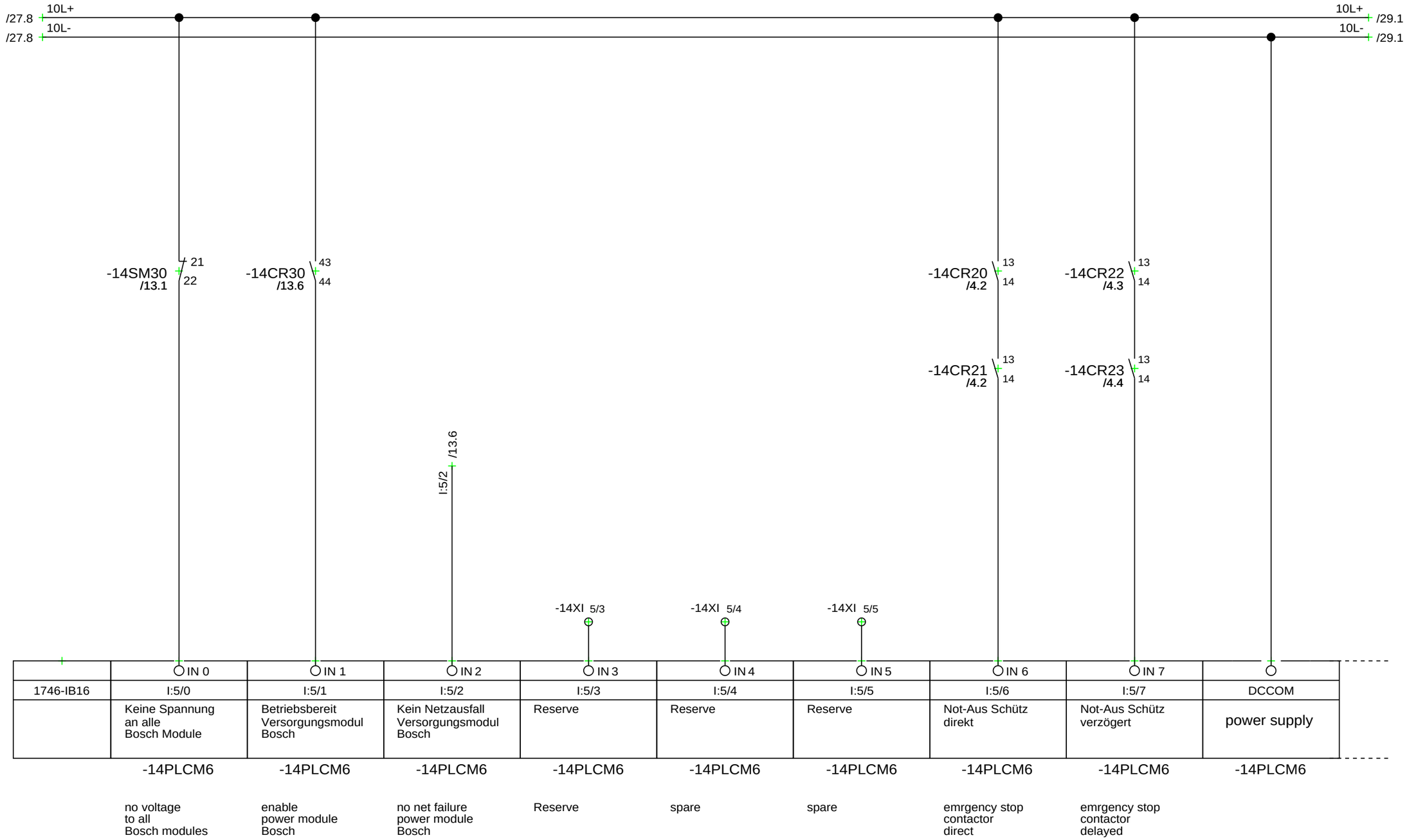
BÜHLER	customer 474 :P_NR2		+HS/5.GK	page 26
			=A1.F6	of 42
comm. nr. :P_NR1	digital inputs		drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 27
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

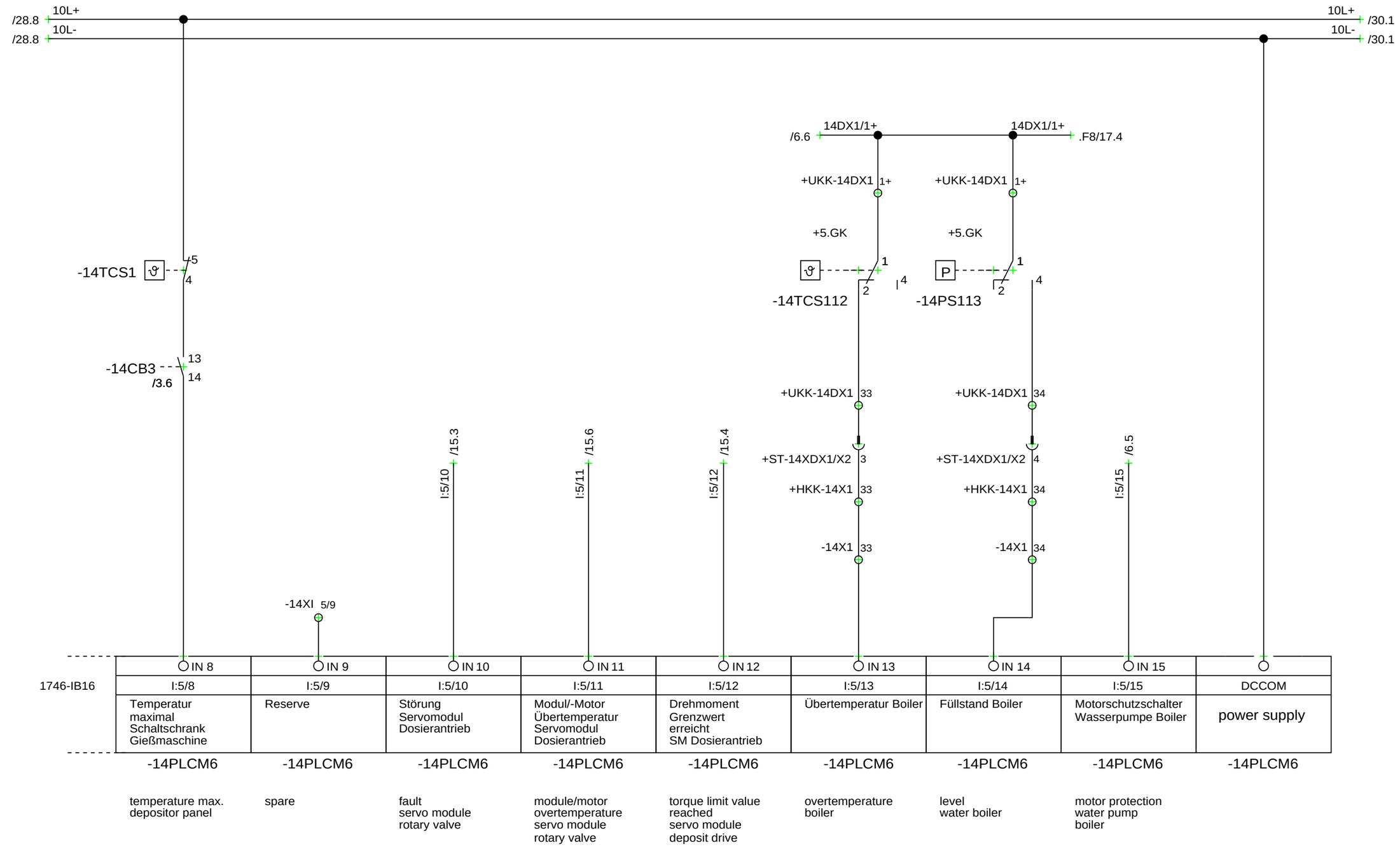


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16	I:5/0	I:5/1	I:5/2	I:5/3	I:5/4	I:5/5	I:5/6	I:5/7	DCCOM
	Keine Spannung an alle Bosch Module	Betriebsbereit Versorgungsmodul Bosch	Kein Netzausfall Versorgungsmodul Bosch	Reserve	Reserve	Reserve	Not-Aus Schütz direkt	Not-Aus Schütz verzögert	power supply
	-14PLCM6	-14PLCM6	-14PLCM6	-14PLCM6	-14PLCM6	-14PLCM6	-14PLCM6	-14PLCM6	-14PLCM6
	no voltage to all Bosch modules	enable power module Bosch	no net failure power module Bosch	Reserve	spare	spare	emrgency stop contactor direct	emrgency stop contactor delayed	

BÜHLER

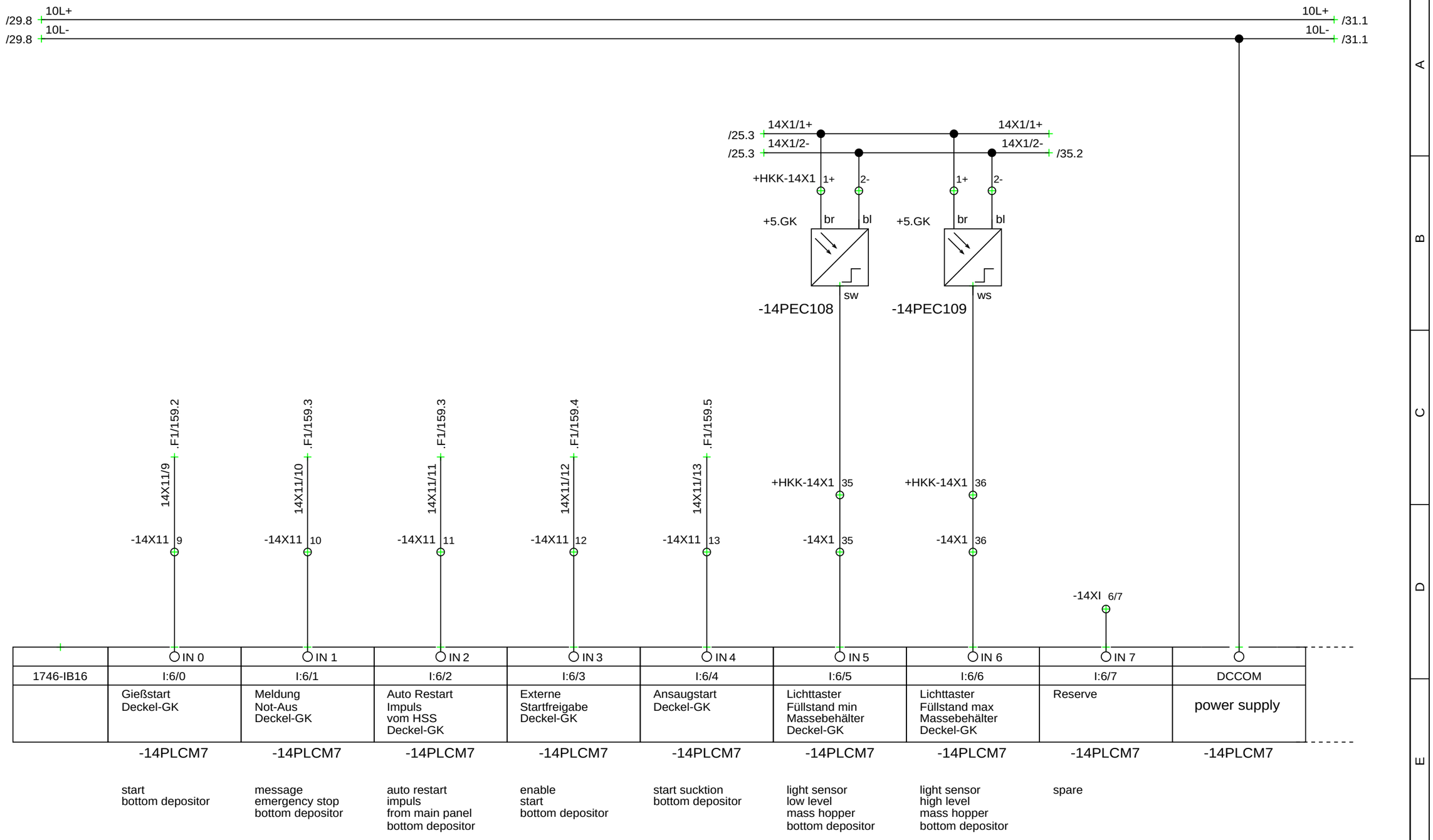
customer	474	+HS/5.GK	page 28
	:P_NR2	=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 29
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

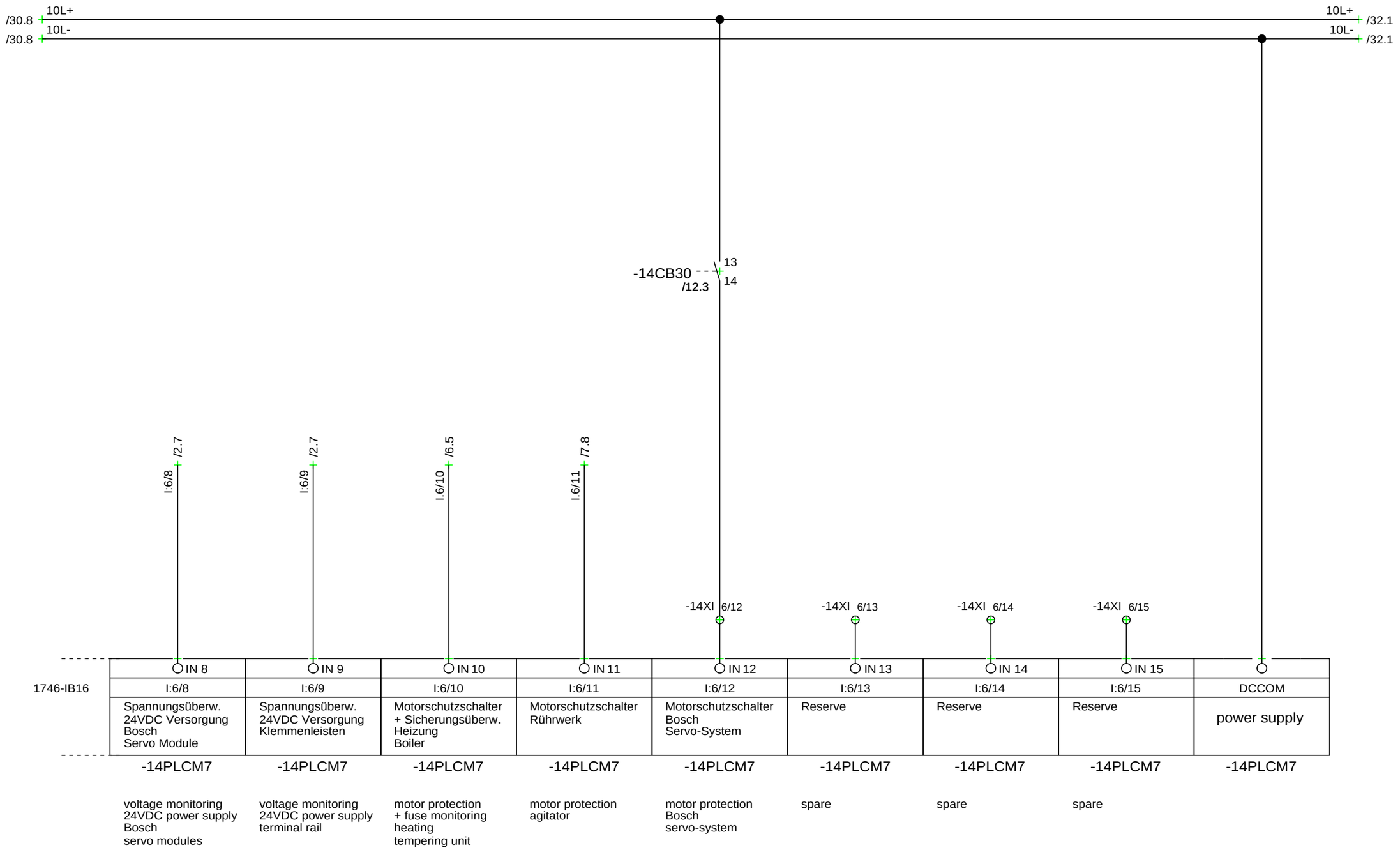
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER

	customer 474 :P_NR2	+HS/5.GK	page 30
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 31
		=A1.F6	of 42
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/31.8 10L+
/31.8 10L-

10L+ .1
10L- .1

connection to IMC S

	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	
	home axis	proximity switch RV suck position	proximity switch RV deposit position	start deposit pulse	enable manual mode	spare	auto mode	reset fault	VDC
1746-OB16	Q:8/0	Q:8/1	Q:8/2	Q:8/3	Q:8/4	Q:8/5	Q:8/6	Q:8/7	power supply
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	

-14PLCM9

.8 10L+
.8 10L-

10L+ /33.1
10L- /33.1

	16	34	0	1	2	3	4	5	6	7
			I :0	I :1	I :2	I :3	I :4	I :5	I :6	I :7
power supply										
-14PLCM16			-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16
/17.6			/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER

customer 474 :P_NR2

+HS/5.GK

=A1.F6

page **32**

of 42

comm. nr. :P_NR1

digital outputs

drawing nr. A474

+ location : connection = plant . function group - resource mark

drawing date :P_DAT date 13.06.2019 draw. :P_BUR changed :BEA1 control :P_PRF

/32.2 10L+
/32.2 10L-

10L+ /34.1
10L- /34.1

connection to IMC S

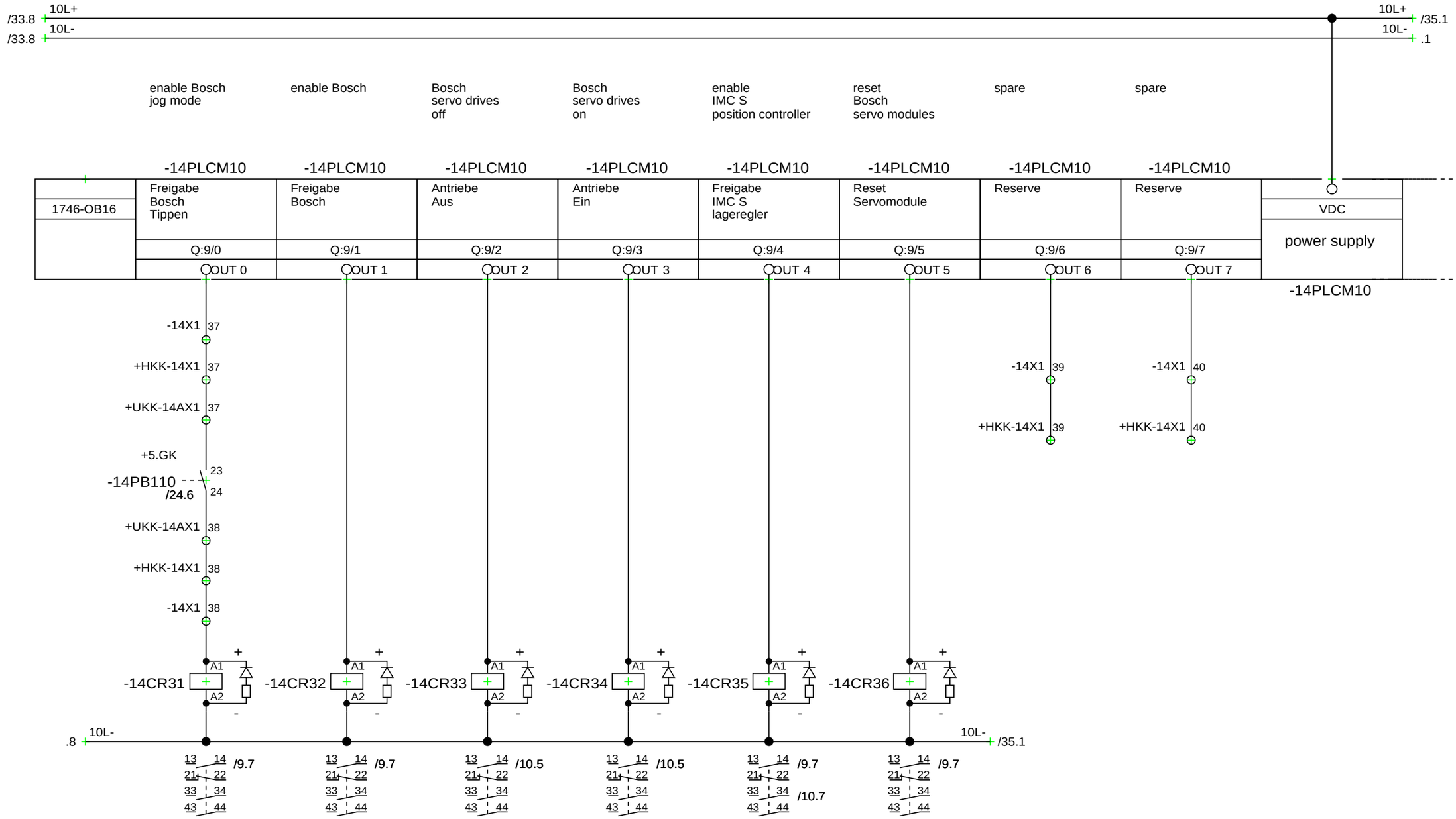
	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	-14PLCM9	
1746-OB16	emergency stop 0 = emergency stop	trigger receive data	trigger send data	manual RV axis	manual deposit axis	spare	manual forward right	manual backward left	DCCOM power supply
	Q:8/8	Q:8/9	Q:8/10	Q:8/11	Q:8/12	Q:8/13	Q:8/14	Q:8/15	
	OUT 8	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	-14PLCM9

	8	9	10	11	12	13	14	15
	I :8	I :9	I :10	I :11	I :12	I :13	I :14	I :15
	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16	-14PLCM16
	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6	/17.6

BÜHLER

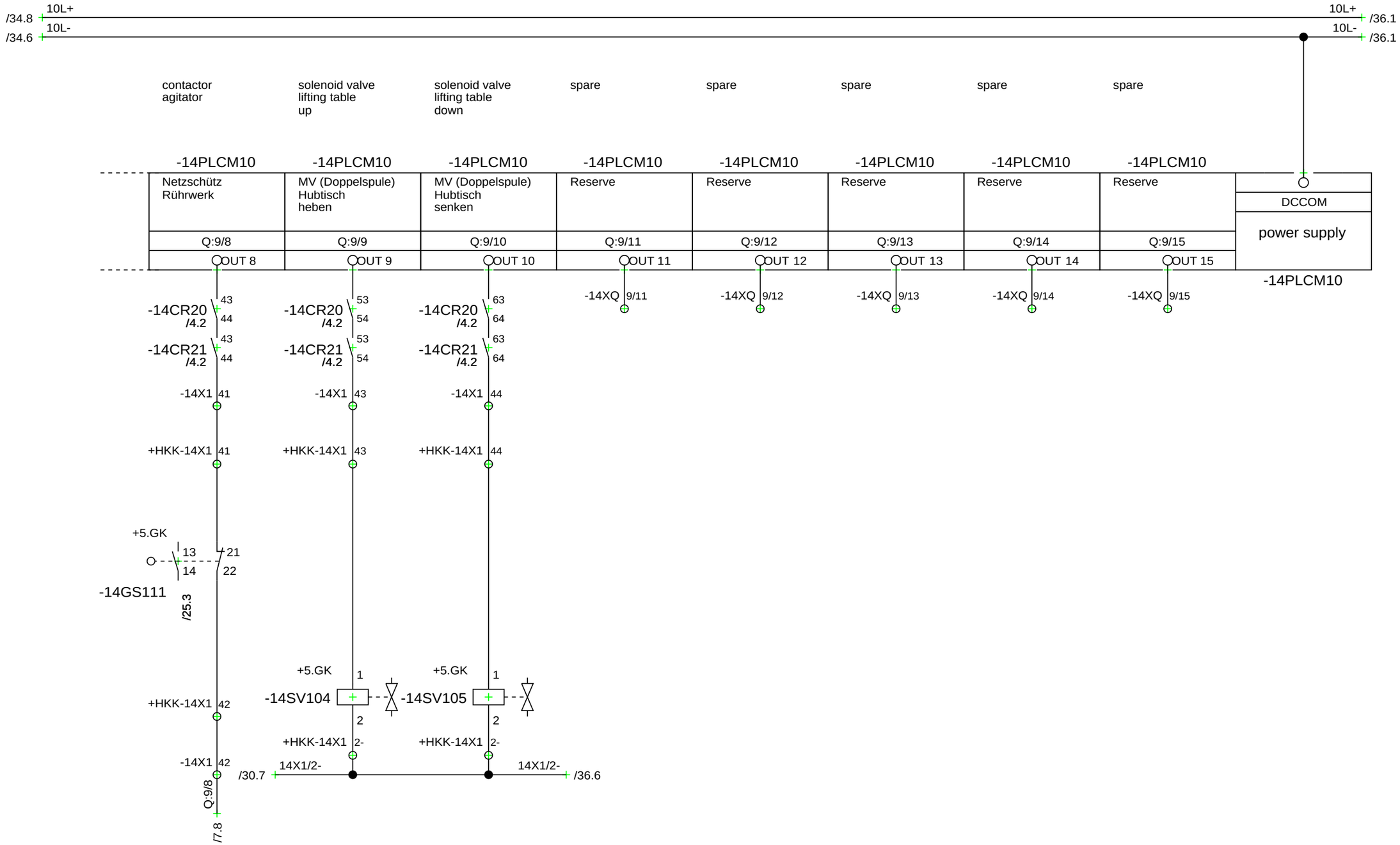
customer	474 :P_NR2	+HS/5.GK	page **33**
		=A1.F6	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 34
		=A1.F6	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 35
		=A1.F6	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF	

spare	triac solenoid valve water fill boiler	triac cooling boiler	contactor heating boiler	triac heating boiler	contactor water pump boiler	solenoid valve nozzle plate tension	solenoid valve water valve tempering unit	
-14PLCM11	-14PLCM11	-14PLCM11	-14PLCM11	-14PLCM11	-14PLCM11	-14PLCM11	-14PLCM11	
1746-OB16	Reserve	Triac Magnetventil Nachspeisung Boiler	Triac für MV Kühlung Boiler	Schütz Heizung Leistung Boiler	Triac Heizung Boiler	Schütz Pumpe Boiler	MV Düsenplatten-klemmung	Absperrventil Wasserkreislauf Boiler	VDC
	Q:10/0	Q:10/1	Q:10/2	Q:10/3	Q:10/4	Q:10/5	Q:10/6	Q:10/7	power supply
	OUT 0	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	

-14PLCM11

10L+ .2 /35.8 10L- .7 10L+ 10L- .2

-14XQ 10/0

10L+ /35.8 10L+ .1

-14SSR11 .3 -14SSR10 .3

-14X1 46 -14X1 45 -14X1 48 -14X1 47

+HKK-14X1 46 +HKK-14X1 45 +HKK-14X1 48 +HKK-14X1 47

+ST-14XDX1/X2 8 +ST-14XDX1/X2 7 +ST-14XDX1/X2 5

+UKK-14DX1 46 +UKK-14DX1 45 +UKK-14DX1 47

+5.GK 1 -14SV102 2 +UKK-14DX1 2- /6.6 14DX1/2-

+5.GK 1 -14SV101 2 +UKK-14DX1 2- 14DX1/2-

Magnetventil Kühlung - solenoid valve cooling boiler

Magnetventil Nachspeisung - solenoid valve water filling boiler

-14SSR10 3 4 .8 10L- 1 2 .2

-14SSR11 3 4 1 2 .1

Q:10/3 /6.5

Q:10/4 /6.5

Q:10/5 /6.5

+5.GK 1 -14SV106 2 +HKK-14X1 2- /35.4 14X1/2- 14X1/2-

-14SSR12 3 4 10L- /37.1 1 2 .8

10L+ .8 10L+ /37.1

-14SSR12 .7

+5.GK 1 -14SV103 2 +UKK-14DX1 2- 14DX1/2- .F8/17.4

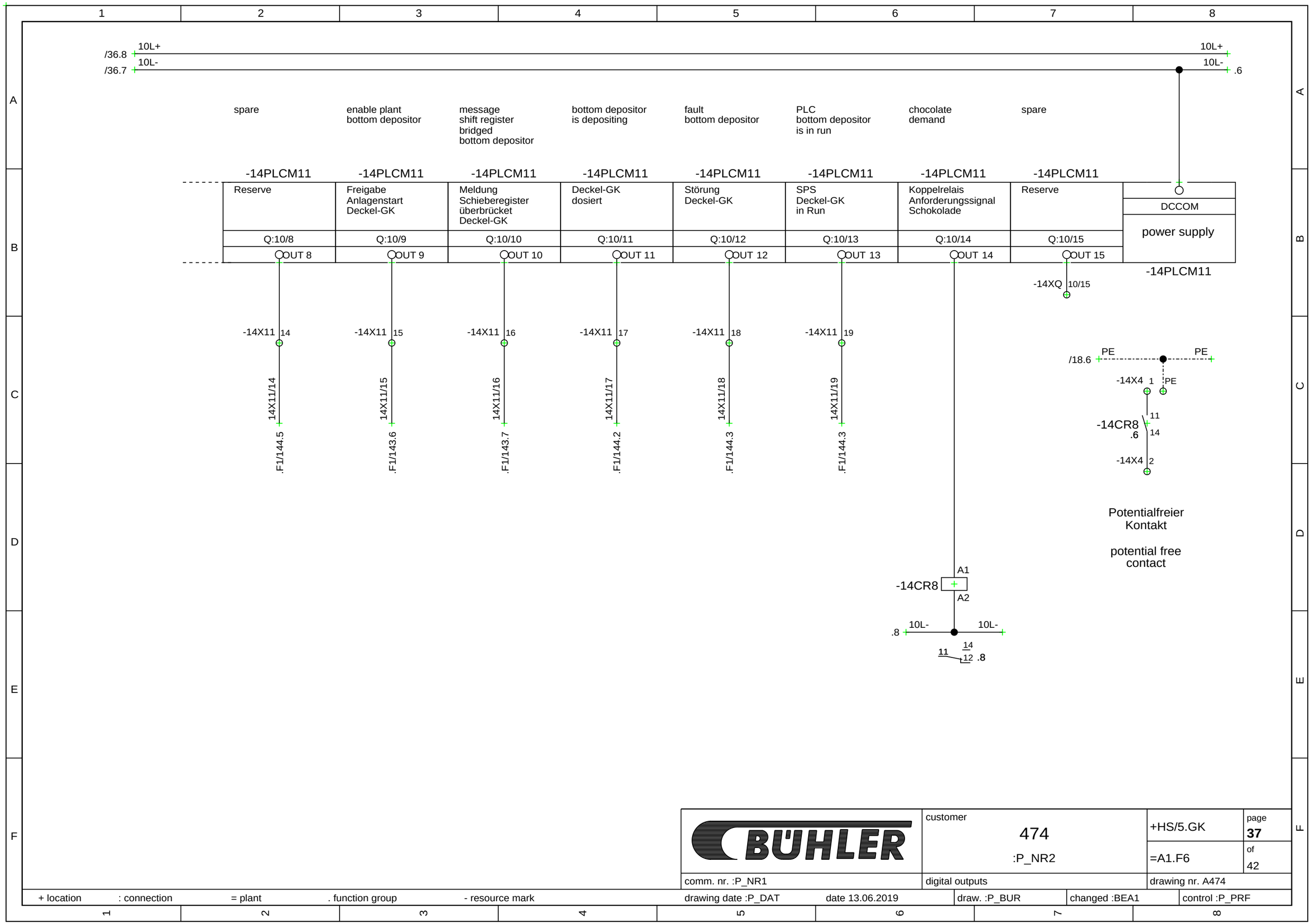
Magnetventil Absperrung Wasserkreisl.

solenoid valve water valve tempering unit

BÜHLER

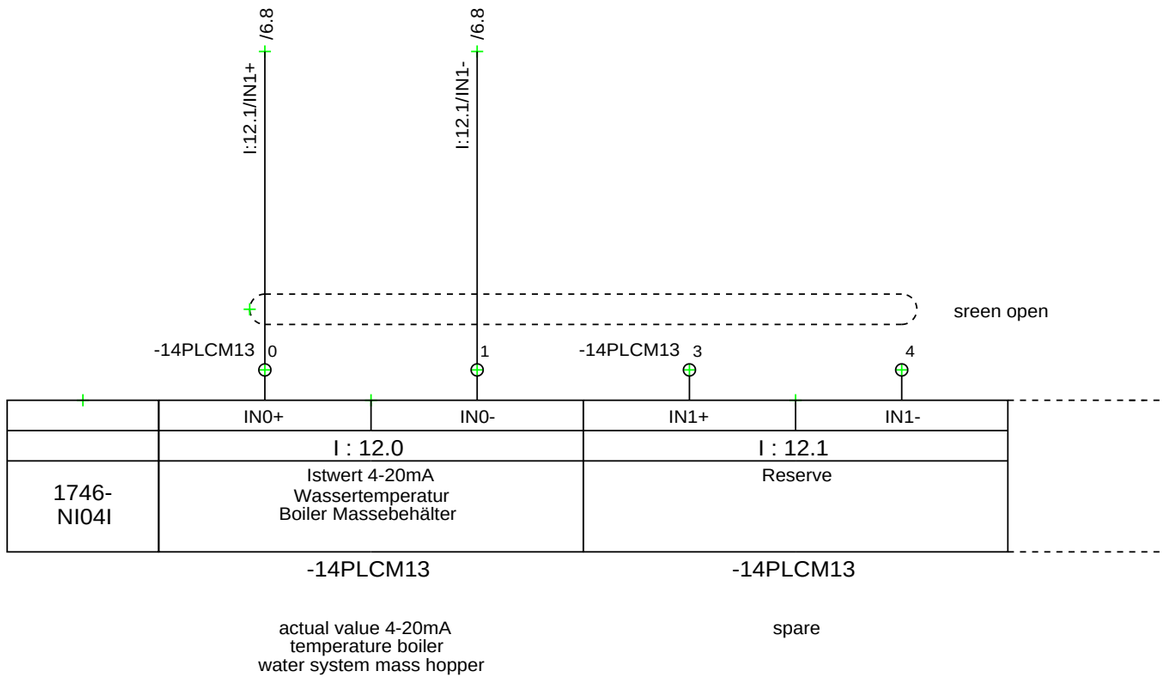
customer 474 :P_NR2		+HS/5.GK	page 36
		=A1.F6	of 42
comm. nr. :P_NR1	digital outputs		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page 37
		=A1.F6	of 42
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **38**	
		=A1.F6	of 42	
comm. nr. :P_NR1	analogue inputs		drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF

	spare	Analogue ground channel 0	spare	Analogue ground channel 1
Function	Reserve	Masse Kanal 0	Reserve	Masse Kanal 1
Adress	0 : 12.0		O : 12.1	
Label	OUT 0	ANLCOM	OUT 1	ANLCOM

NI04I
14PLCM13

-14PLCM13 7 8 10 11

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **39**
		=A1.F6	of 42
comm. nr. :P_NR1	analogue outputs		drawing nr. A474

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

14CP100

DH485

Display

AIC
1747

14PLCM100

Panelview 550
Allen Bradley

L N PE

+UKK-14AX2 2U 2N PE

/5.6 14X2/2U
/5.6 14X2/2N
/5.6 14X2/PE

+UKK-14AX2 2U 2N PE

1 2

M
1 ~
PE

+5.GK

-14M104

Lüfter Bedienpult

fan operator panel

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **40**
		=A1.F6	of 42
comm. nr. :P_NR1	panelview 550 ALLEN BRADLEY	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Einspeisung
3x480+N/60Hz

power feed

Hauptschaltschrank
Gießmaschine VIT22

main depositor
panel

14X1
14X2
14X3
14X4
14X10
14X11
14X12
14XI
14XQ

14BX1

Klemmenkasten an Gießmaschine

depositor marshalling box

14X1
14X2
14X3

operator panel

BINDLER

14AX2

14XDX1/2

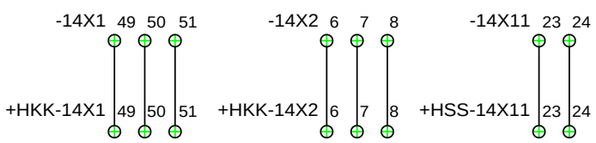
Temperiergerät

14DX1
14DX2

water heater
mass hoper

BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **41**
		=A1.F6	of 42
comm. nr. :P_NR1	wiring scheme	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/5.GK	page **42**
		=A1.F6	of 42
comm. nr. :P_NR1	spare terminals	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

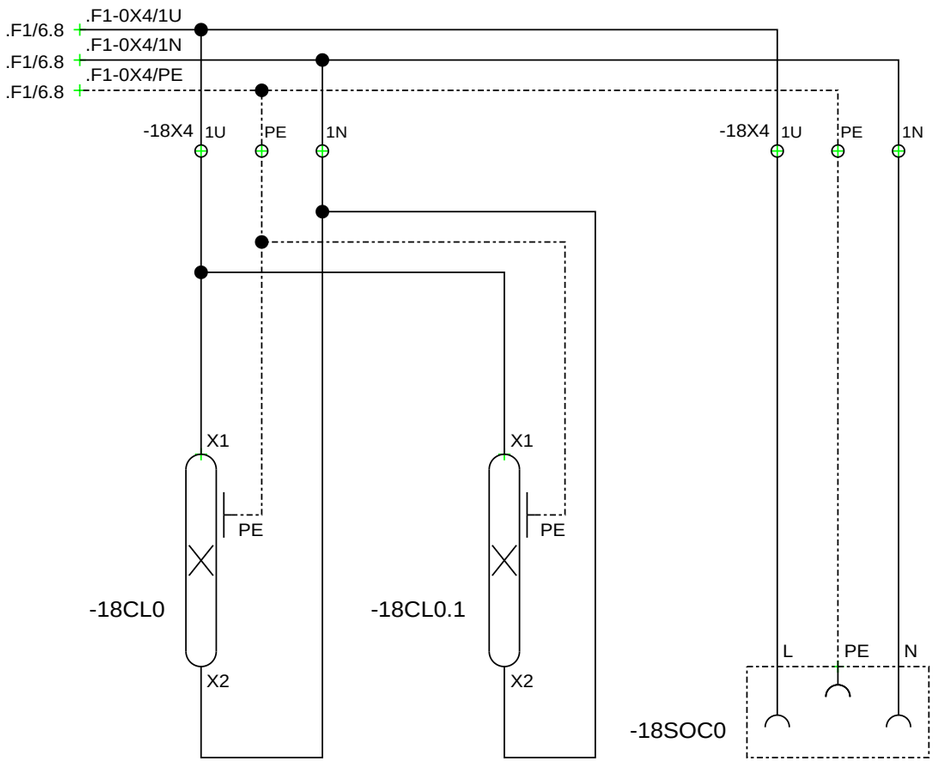
Servosystem für Klappformenschließer

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 1
		=A1.F7	of 19
comm. nr. :P_NR1	cover sheet	drawing nr. A474	

+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Versorgung vom HSS

power supply from main panel

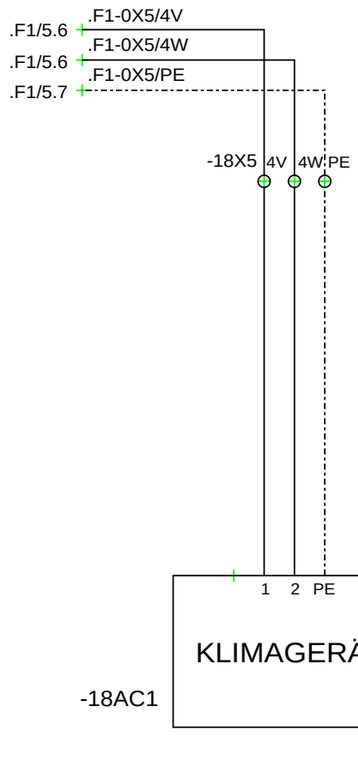


Beleuchtung Schaltschrank

lamp panel servo system

Versorgung vom HSS

power supply from main panel

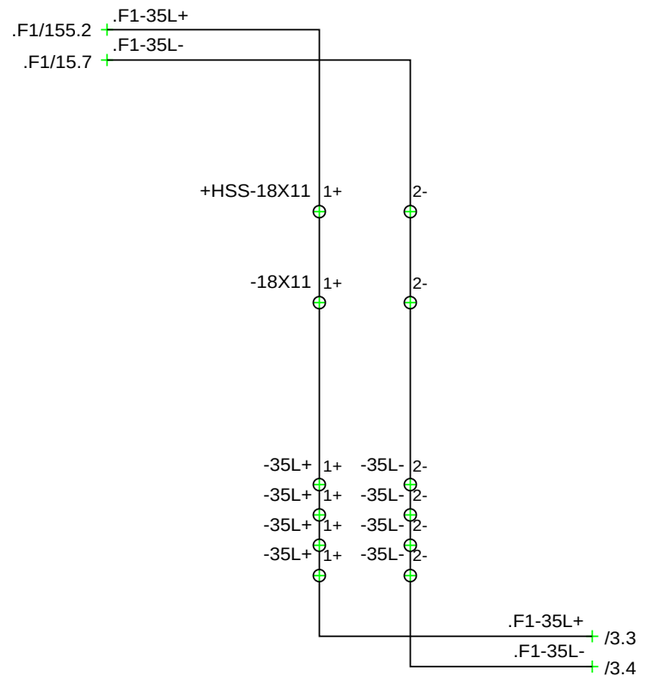


Klimagerät Schaltschrank

climatisation unit

Versorgung vom HSS

power supply from main panel



2-Fach Steckdose

twin socket

120VAC Steckdose Schaltschrank

120VAC socket panel servo system

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 2
		=A1.F7	of 19
comm. nr. :P_NR1	power supply climatisation		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Freigabe Servo - Module
enable servo modules

.F1/103.5 .F1-18X1/19

+HSS-18X11 4

-18X11 4

Freigabe VM
enable power module
-18CR30 /7.6 13 14

Freigabe IMC Lageregler
enable pos. controller
-18CR35 /18.5 13 14

Freigabe Bosch
enable Bosch
-18CR32 /18.3 13 14

-18X10 1

FG1

/10.2

/2.8 .F1-35L+

-18CR36 /18.6 13 14

.F1/244.4 .F1-18X11/24

.F1/244.3 .F1-18X11/22

.F1/243.4 .F1-18X11/19

+HSS-18X11 3

+HSS-18X11 12

+HSS-18X11 13

-18X11 3

-18X11 12

-18X11 13

-18CR103 A1 A2

-18CR106 A1 A2

-18CR106.1 A1 A2

/2.8 .F1-35L-

11 14 12 .6

11 14 12 .7

11 14 12 .8

.F1-35L+ /4.7

-18CR103 .5 11 14

-18CR106 .5 11 14

-18CR106.1 .6 11 14

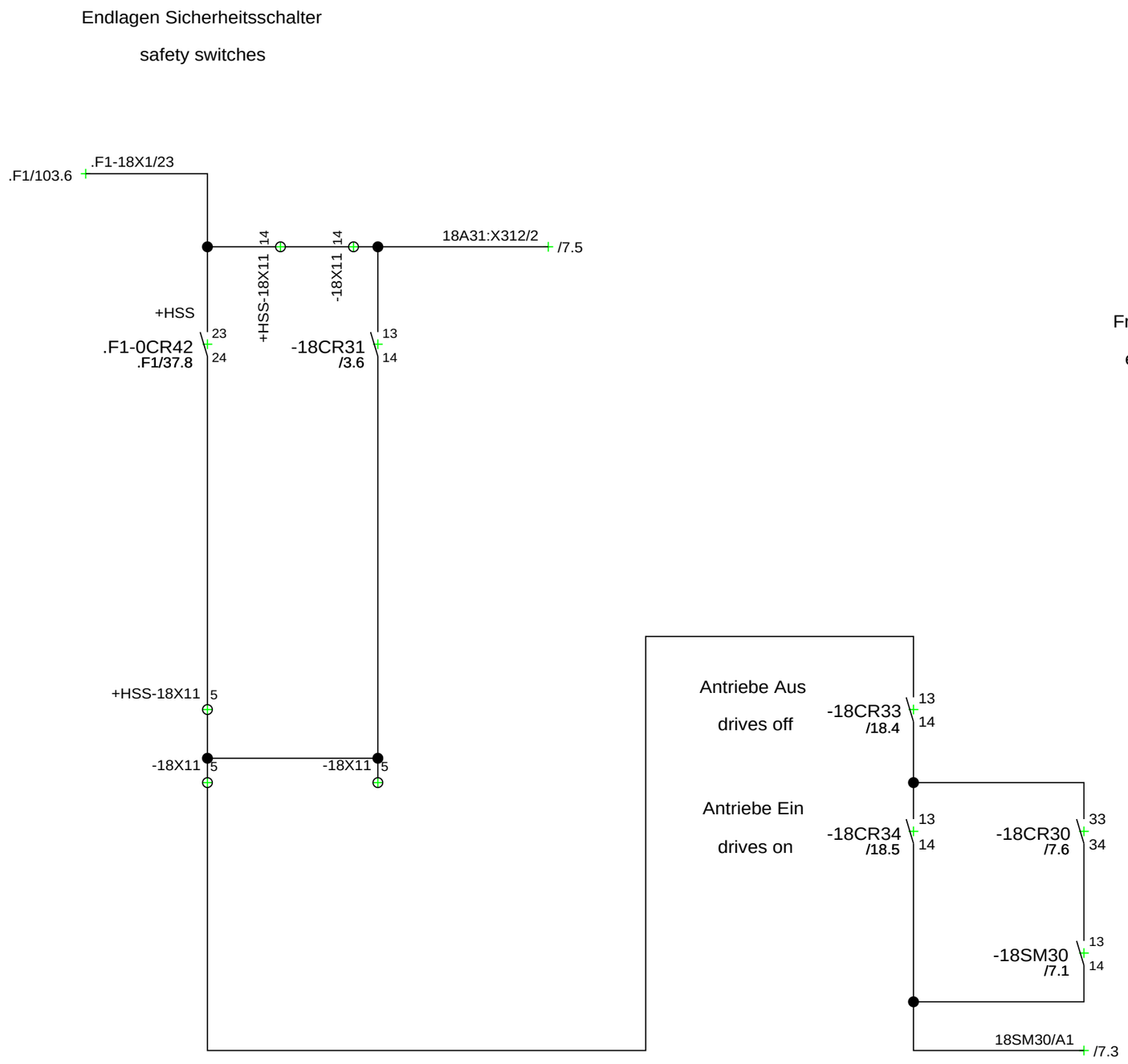
-18CR31 + A1 A2 -

.F1-35L- /7.2

13 14 /4.3
21 22
33 34
43 44

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 3
		=A1.F7	of 19
comm. nr. :P_NR1	enable servo module	drawing nr. A474	

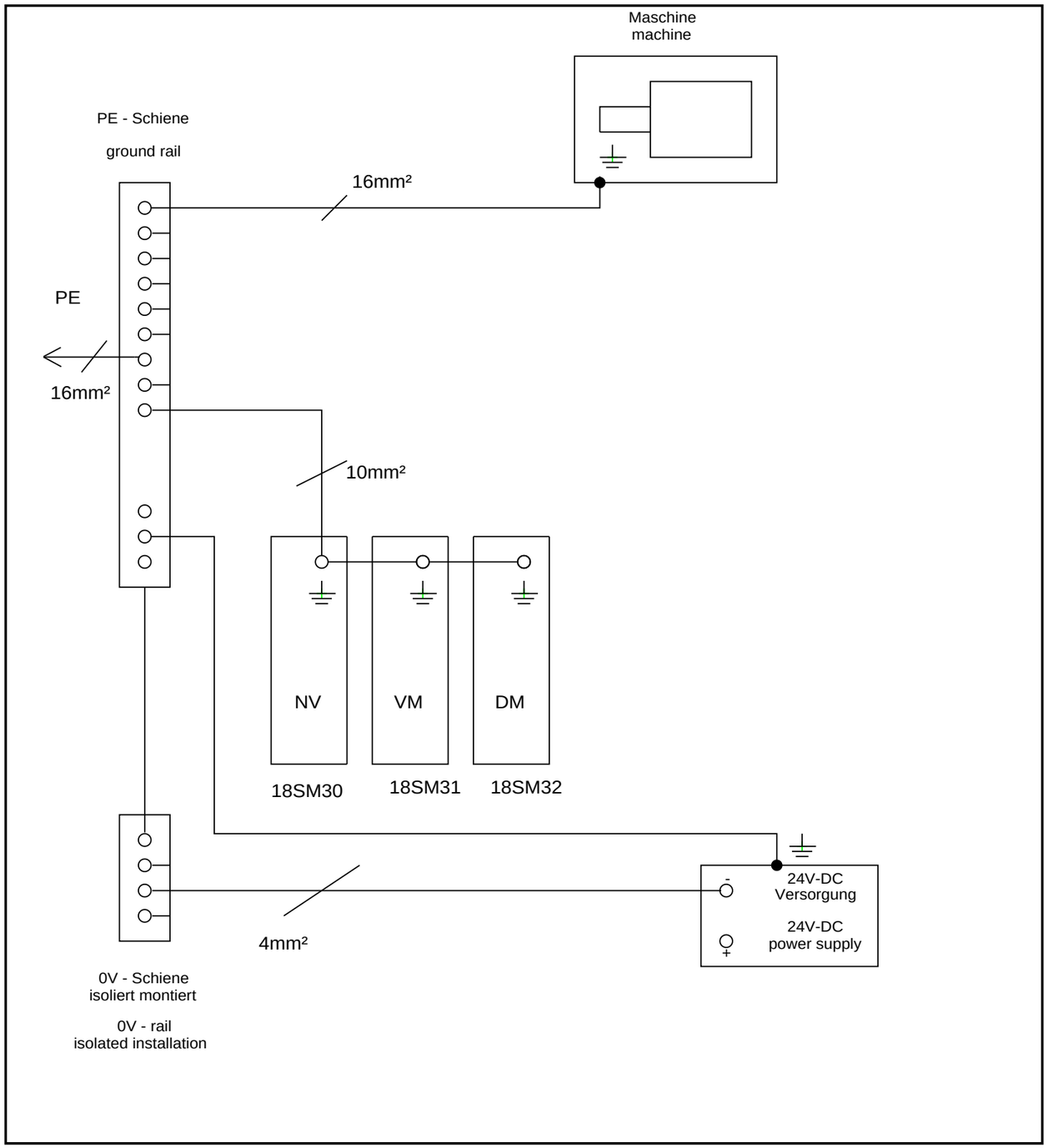
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/SERVO	page **4**
		=A1.F7	of 19
comm. nr. :P_NR1	safety switches	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

ERDUNG für BOSCH System

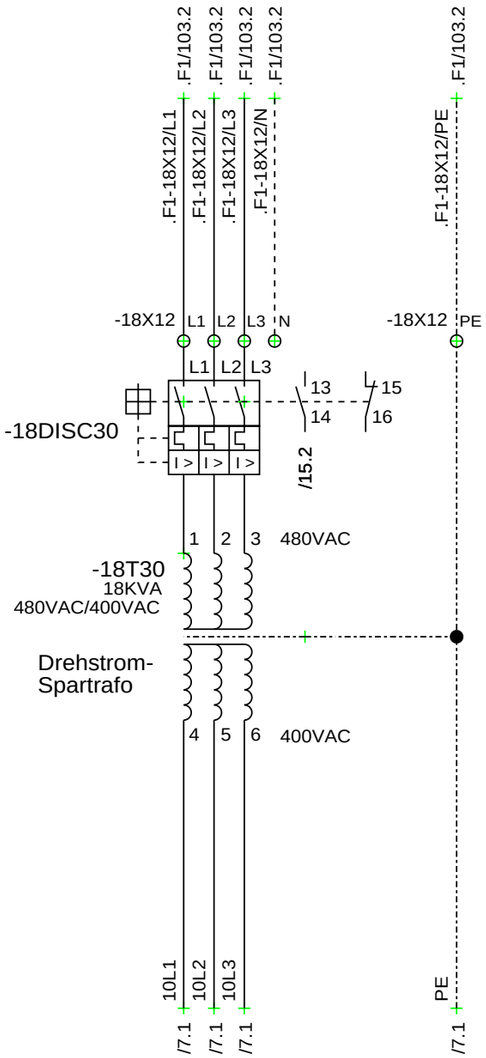


ERDUNG für BOSCH System

earthing system BOSCH rack

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 5	
		=A1.F7	of 19	
comm. nr. :P_NR1	earthing servo system	drawing nr. A474		

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

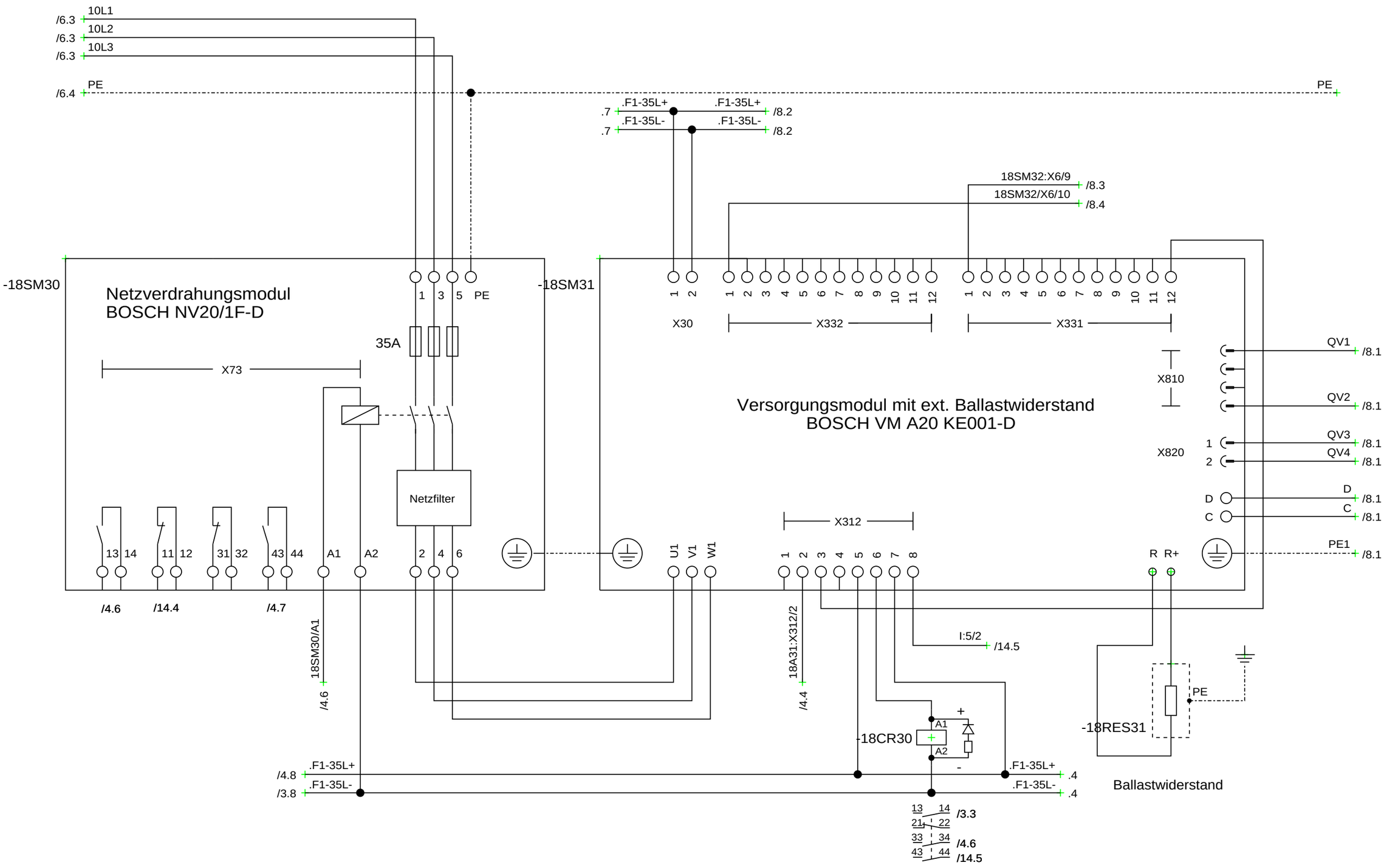


Einspeisung Bosch Servo-System

power supply Bosch serco system

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 6
		=A1.F7	of 19
comm. nr. :P_NR1	power supply Bosch system		drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1 control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 7
		=A1.F7	of 19
comm. nr. :P_NR1	supply module BOSCH	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

+P18
-18M132

Motor Typ SR-A4.0230.030-10

M
3 ~

1 5 6 PE 2 4

Anschluß
Resolverleitung

Flanschdose
17 polig

Bosch Motorleitung
6-adrig

Bosch Geberleitung
18-adrig

zum Achsen Lageregler

Ua1 /10.2
Ua1/ /10.2
Ua2 /10.2
Ua2/ /10.3
Ua0 /10.3
Ua0/ /10.3
5V /10.4
0V /10.4
Schirm1 /10.4

-18SM32

U2 V2 W2 PE

Schutz-
beschaltung

Stützpunktklemme

X5

Motorgeber 26 polig

1 2 3 4 6 7 9 12

X81

Encoder Simulation

Gehäuse

Signal
Querverbindung

/7.8 QV1
/7.8 QV2

24V
Querverbindung

/7.8 QV3 1
/7.8 QV4 2

Zwischenkreis-
Spannung

/7.8 D D
/7.8 C C

/7.8 PE1

X810

X820

Servodul BOSCH DMA45A3301-D
Dosierantrieb

X810
QV1 .1
QV2 .1

X820
1 QV3 .1
2 QV4 .1

D .1
C .1
PE1 .1

X6

1	2	3	4	5	6	7	8	9	10
STA-Relais	STA-Relais			IN1	IN2	IN3	IN4	18SM32:X6/9 24V in	18SM32/X6/10 0V in
I:5/10	18SM32:X6/3							/7.7	/7.7
/14.6	/10.2								

X12

1	2	3	4	5	6	7	8
OUT5	OUT6	OUT7	OUT8	OUT9	Relais	Relais	Relais
		I:5/12					
		/14.7					

Gehäuse

X21

1	2	3	4	5	6
	ws	br			
SW2+	SW2-				
/10.6	/10.6				

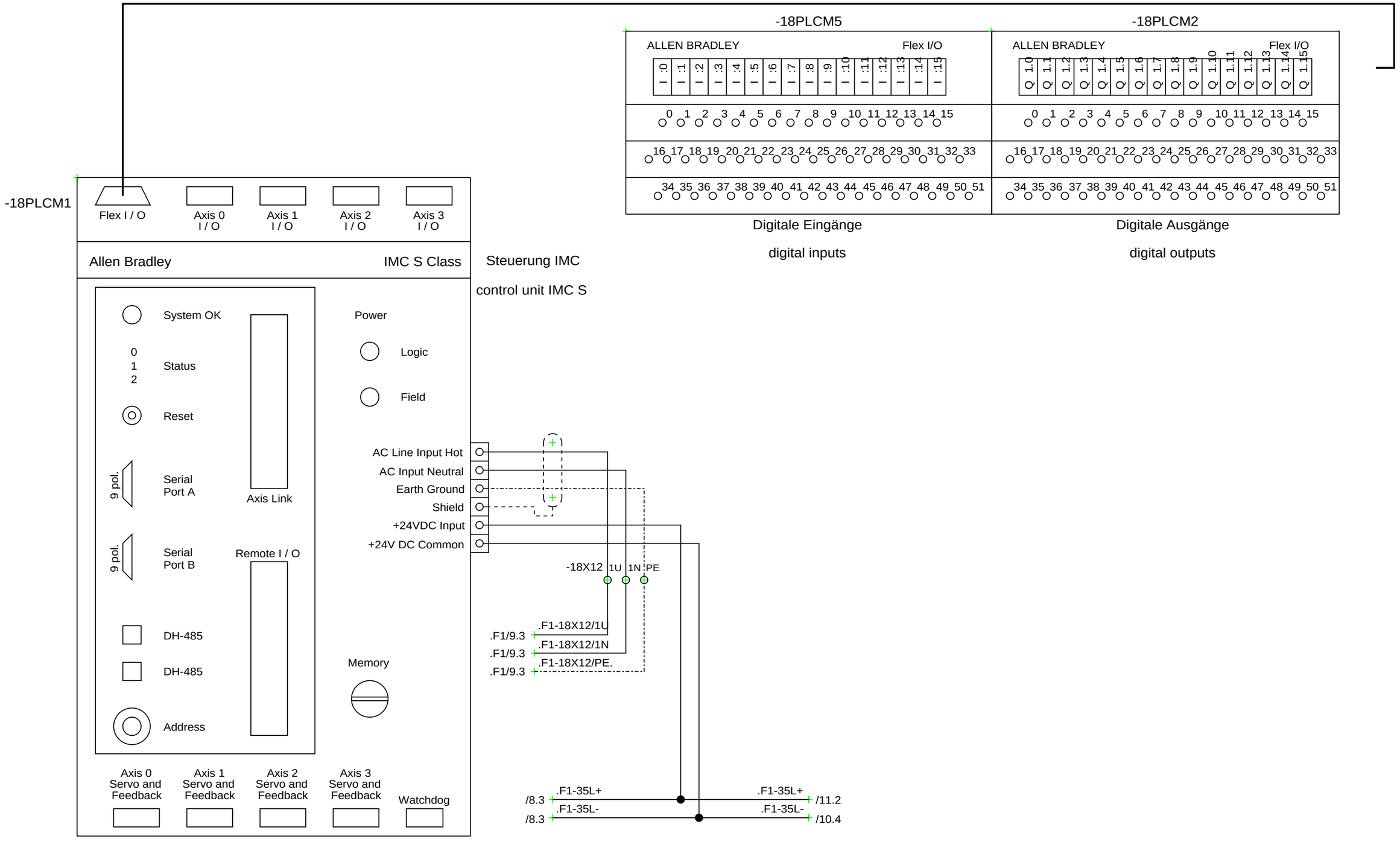
X34

1	2	3	4	5	6
OUT4	OUT3	OUT2	OUT1	Relais	Relais
			I:5/11		
			/14.7		

.F1-35L+ /7.5 .F1-35L+ /9.4
.F1-35L- /7.5 .F1-35L- /9.4

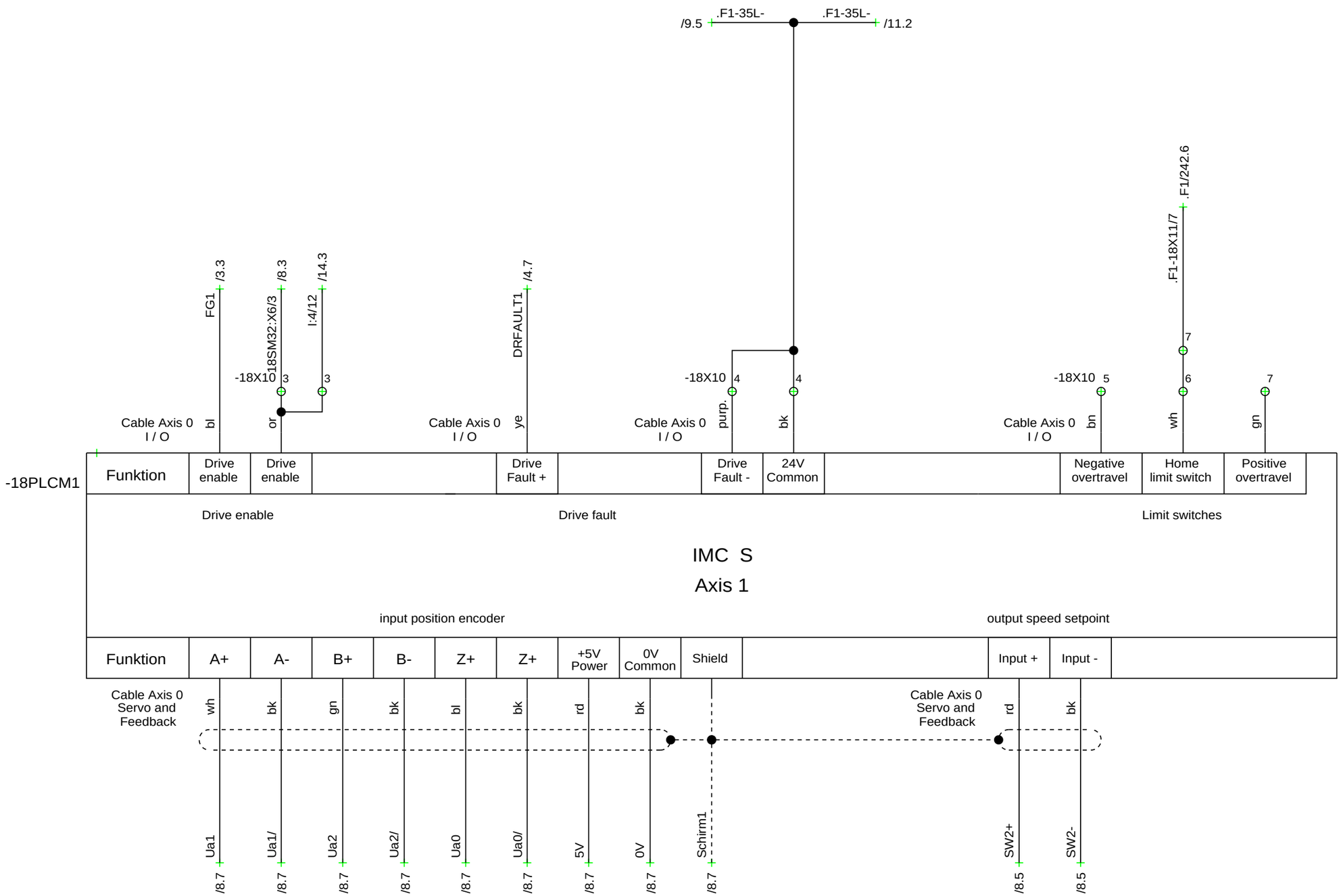
BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 8
		=A1.F7	of 19
comm. nr. :P_NR1	servo module deposit drive		drawing nr. A474

+ location : connection	= plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 9
		=A1.F7	of 19
comm. nr. :P_NR1	PLC System Allen Bradley IMC S	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

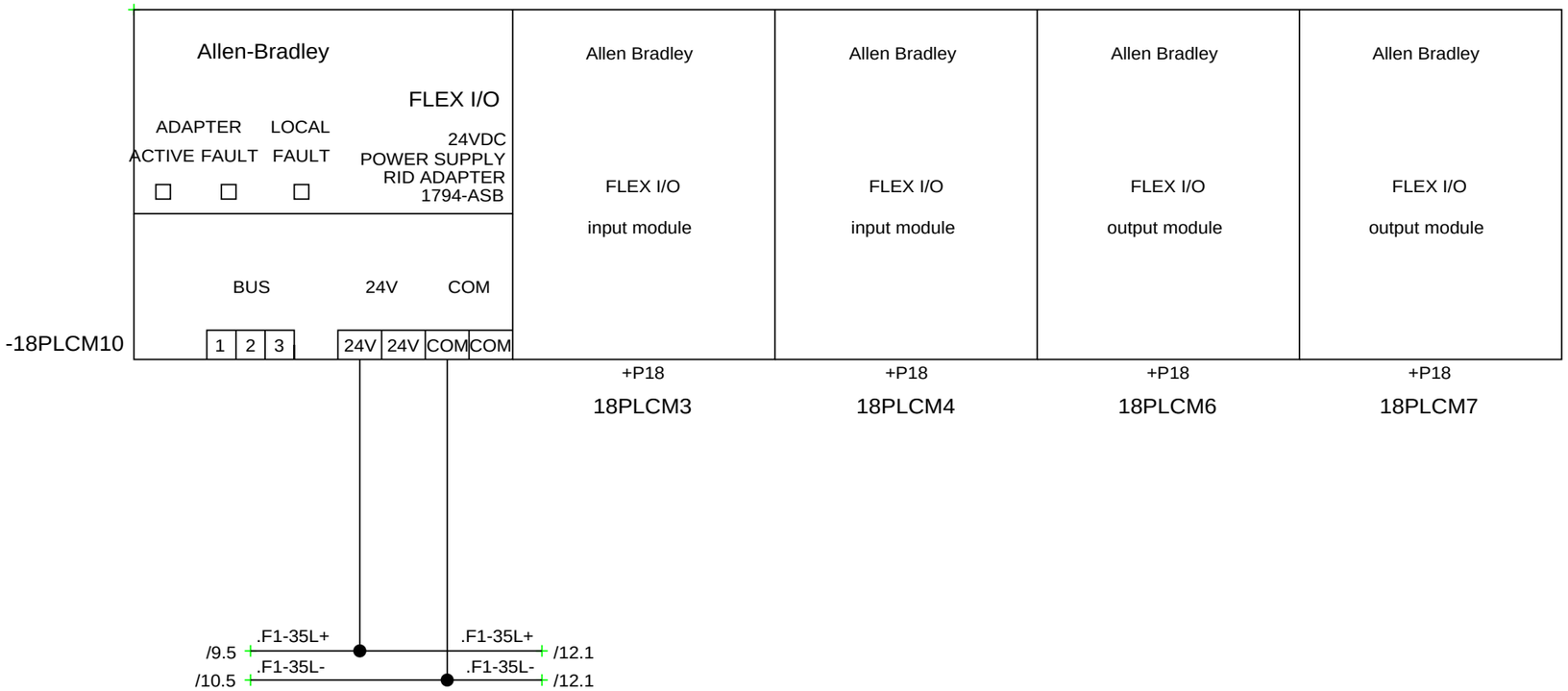


BÜHLER	customer 474 :P_NR2	+HS/SERVO	page **10**
		=A1.F7	of 19
comm. nr. :P_NR1	position controller deposit axis	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Übersicht FLEX I/O Module Position 18

overview FLEX I/O modules position 18



Rio Rack 0
starting group 0

BÜHLER	customer 474 :P_NR2		+HS/SERVO	page **11**	
			=A1.F7	of 19	
comm. nr. :P_NR1	overview FLEX I/O module position 18		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

FLEX I/O von IMC

/11.3 .F1-35L+ — .F1-35L+ .1
/11.3 .F1-35L- — .F1-35L- .1

	/9.6	/9.6	/9.6	/9.6	/9.6	/9.6	/9.6	/9.6
	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2
16 / 34	Klappformenschließer geschlossen	Klappformenschließer geöffnet	Alle Achsen in Referenz	Reserve	Reserve	Reserve	Reserve	Reserve
power supply	Q 1.0	Q 1.1	Q 1.2	Q 1.3	Q 1.4	Q 1.5	Q 1.6	Q 1.7
-18PLCM2	0	1	2	3	4	5	6	7

/9.6

.8 .F1-35L+ — .F1-35L+ /14.1
.8 .F1-35L- — F1-35L- /14.1

34 / 16	0	1	2	3	4	5	6	7
	I:24.0/0	I:24.0/1	I:24.0/2	I:24.0/3	I:24.0/4	I:24.0/5	I:24.0/6	I:24.0/7
power supply	Klappformenschließer geschlossen	Klappformenschließer geöffnet	Alle Achsen in Referenz	Reserve	Reserve	Reserve	Reserve	Reserve
-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3
	mould closing device arrived in closed position	mould closing device reached open position	mould closing device reference position found	spare	spare	spare	spare	spare

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 12
		=A1.F7	of 19
comm. nr. :P_NR1	digital inputs I:24.0/0 - I:24.0/7	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

FLEX I/O von IMC

	/9.6	/9.6	/9.6	/9.6	/9.6	/9.6	/9.6	/9.6
	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2	-18PLCM2
	Statusbyte Bit 0	Statusbyte Bit 1	Statusbyte Bit 2	Statusbyte Bit 3	Statusbyte Bit 4	Statusbyte Bit 5	Statusbyte Bit 6	Statusbyte Bit 7
	Q 1.8	Q 1.9	Q 1.10	Q 1.11	Q 1.12	Q 1.13	Q 1.14	Q 1.15
	8	9	10	11	12	13	14	15
	8	9	10	11	12	13	14	15
	I:24.0/8	I:24.0/9	I:24.0/10	I:24.0/11	I:24.0/12	I:24.0/13	I:24.0/14	I:24.0/15
	Statusbyte Bit 0	Statusbyte Bit 1	Statusbyte Bit 2	Statusbyte Bit 3	Statusbyte Bit 4	Statusbyte Bit 5	Statusbyte Bit 6	Statusbyte Bit 7
	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3	-18PLCM3
	mould closing device statusbyte bit 0	mould closing device statusbyte bit 1	mould closing device statusbyte bit 2	mould closing device statusbyte bit 3	mould closing device statusbyte bit 4	mould closing device statusbyte bit 5	mould closing device statusbyte bit 6	mould closing device statusbyte bit 7

BÜHLER

customer 474 :P_NR2		+HS/SERVO	page **13**
		=A1.F7	of 19
comm. nr. :P_NR1	digital inputs I:24.0/8 - I:24.0/15	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

-18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4

power supply | power supply | power supply | power supply | power supply | power supply | power supply | power supply

35 17 | 36 18 | 37 19 | 38 20 | 39 21 | 40 22 | 41 23 | 42 24

-18X10 8

Cable
Watchdog

-18PLCM1

-18SM30 /7.1 11 12

-18CR30 /7.6 43 44

-18X10 9

I:4/12 /10.2

I:5/2 /7.6

I:5/10 /8.3

I:5/11 /8.7

I:5/12 /8.4

-18PLCM4

	power supply	0	1	2	3	4	5	6	7
1794-IB16		I:24.1/0	I:24.1/1	I:24.1/2	I:24.1/3	I:24.1/4	I:24.1/5	I:24.1/6	I:24.1/7
FLEX I/O		Drive enable IMC	CPU watchdog IMC	Keine Spannung an alle Bosch Modul	Betriebsbereit Versorgungsmodul Bosch	Kein Netzausfall Versorgungsmodul Bosch	Störung Servomodul Klappformenschließer	Modul/Motor Übertemperatur Servomodul Klappformenschließer	Drehmoment Grenzwert erreicht SM Klappformenschließer
	34 16								

-18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4 | -18PLCM4

drive enable IMC	CPU watchdog IMC	no voltage to all Bosch modules	ok power module Bosch	mains ok power module Bosch	fault servo module mould closing device	module/motor overtemperature servo module mould closing device	torque limit value reached servo module mould closing device

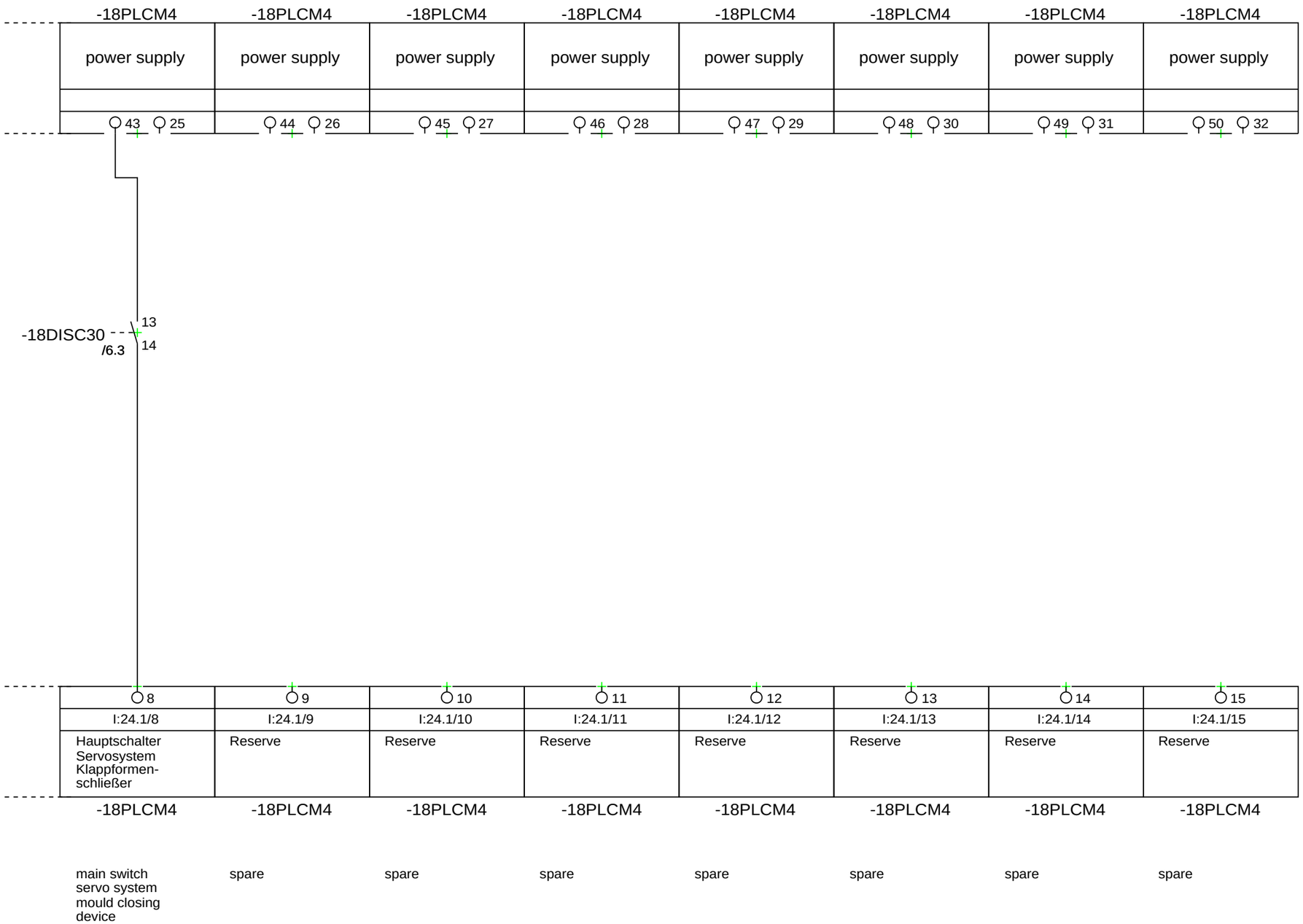
.F1-35L+ /12.2 — .F1-35L+ /16.1

.F1-35L- /12.2 — .F1-35L- /16.1

BÜHLER

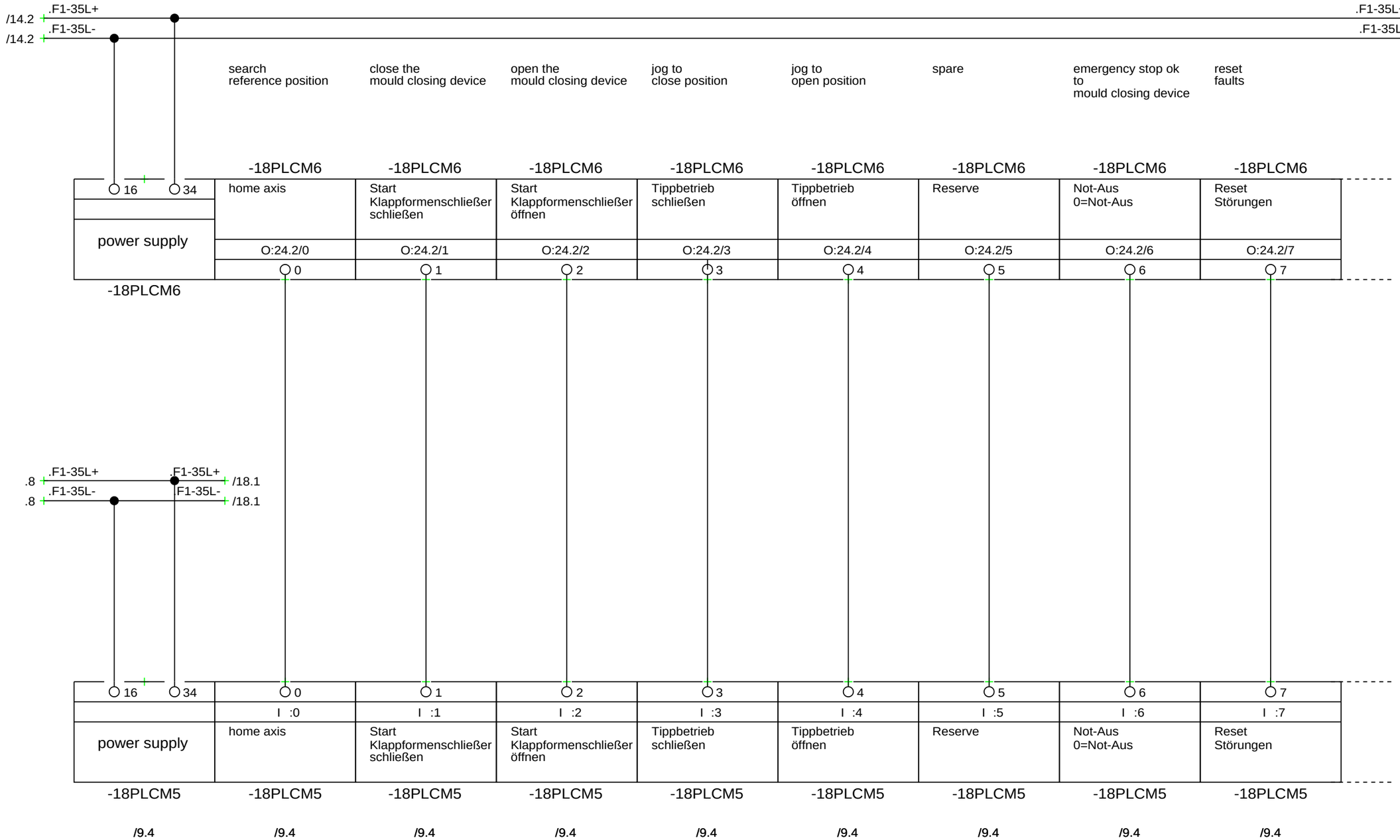
customer	474 :P_NR2	+HS/SERVO	page 14
		=A1.F7	of 19
comm. nr. :P_NR1	digital inputs I:24.1/0 - I:24.1/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HS/SERVO	page **15**
		=A1.F7	of 19
comm. nr. :P_NR1	digital inputs I:24.1/8 - I:24.1/15	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



FLEX I/O von IMC

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 16
		=A1.F7	of 19
comm. nr. :P_NR1	digital outputs O:24.2/0 - O:24.2/7	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

spare	spare	spare	spare	spare	spare	spare	spare
-18PLCM6	-18PLCM6	-18PLCM6	-18PLCM6	-18PLCM6	-18PLCM6	-18PLCM6	-18PLCM6
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:24.2/8	O:24.2/9	O:24.2/10	O:24.2/11	O:24.2/12	O:24.2/13	O:24.2/14	O:24.2/15
8	9	10	11	12	13	14	15

.F1/242.5 .F1-18X11/6 -18X11 6

.F1/242.6 .F1-18X11/8 8

8	9	10	11	12	13	14	15
I :8	I :9	I :10	I :11	I :12	I :13	I :14	I :15
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
-18PLCM5	-18PLCM5	-18PLCM5	-18PLCM5	-18PLCM5	-18PLCM5	-18PLCM5	-18PLCM5
/9.4	/9.4	/9.4	/9.4	/9.4	/9.4	/9.4	/9.4

FLEX I/O von IMC

BÜHLER	customer 474 :P_NR2	+HS/SERVO	page 17
		=A1.F7	of 19
comm. nr. :P_NR1	digital outputs O:24.2/8 - O:24.2/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

	spare	enable Bosch	drives off	drives on	enable position controller IMC	reset servo modules	spare	spare
	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7
	Reserve	Freigabe Bosch	Antriebe Aus	Antrieb Ein	Freigabe IMC Lageregler	Reset Servomodule	Reserve	Reserve
	O:24.3/0	O:24.3/1	O:24.3/2	O:24.3/3	O:24.3/4	O:24.3/5	O:24.3/6	O:24.3/7
	0	1	2	3	4	5	6	7

-18CR32 -18CR33 -18CR34 -18CR35 -18CR36

A1 A2 + -

-18CR32: 13 14 /3.3; 21 22; 33 34; 43 44

-18CR33: 13 14 /4.5; 21 22; 33 34; 43 44

-18CR34: 13 14 /4.5; 21 22; 33 34; 43 44

-18CR35: 13 14 /3.3; 21 22; 33 34; /4.7; 43 44

-18CR36: 13 14 /3.4; 21 22; 33 34; 43 44

-18PLCM7

	17 35	18 36	19 37	20 38	21 39	22 40	23 41	24 42
1794-IB16	power supply							
FLEX I/O		power supply	power supply	power supply	power supply	power supply	power supply	power supply
	16 34							
	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7

/16.2 .F1-35L+ .F1-35L+

/16.2 .F1-35L- .F1-35L-

BÜHLER

customer	474 :P_NR2	+HS/SERVO	page **18**
		=A1.F7	of 19
comm. nr. :P_NR1	digital outputs O:24.3/0 - O:24.3/7	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

spare	spare	spare	spare	spare	spare	spare	spare
-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7
Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve	Reserve
O:24.3/8	O:24.3/9	O:24.3/10	O:24.3/11	O:24.3/12	O:24.3/13	O:24.3/14	O:24.3/15
8	9	10	11	12	13	14	15

25 43	26 44	27 45	28 46	29 47	30 48	31 49	32 50
power supply	power supply	power supply	power supply	power supply	power supply	power supply	power supply
-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7	-18PLCM7

BÜHLER

customer 474 :P_NR2		+HS/SERVO	page **19**
		=A1.F7	of 19
comm. nr. :P_NR1	digital outputs O:24.3/8 - O:24.3/15	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

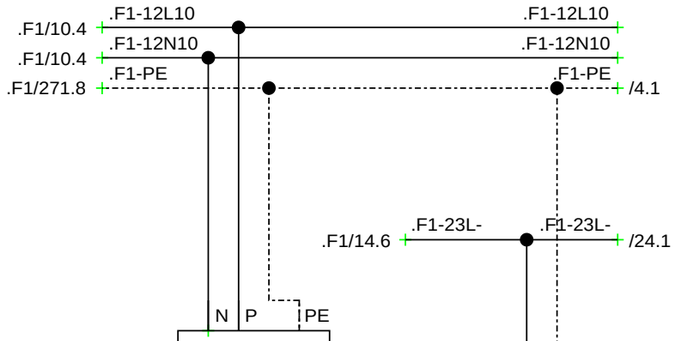
Stromlaufpläne
Telematik

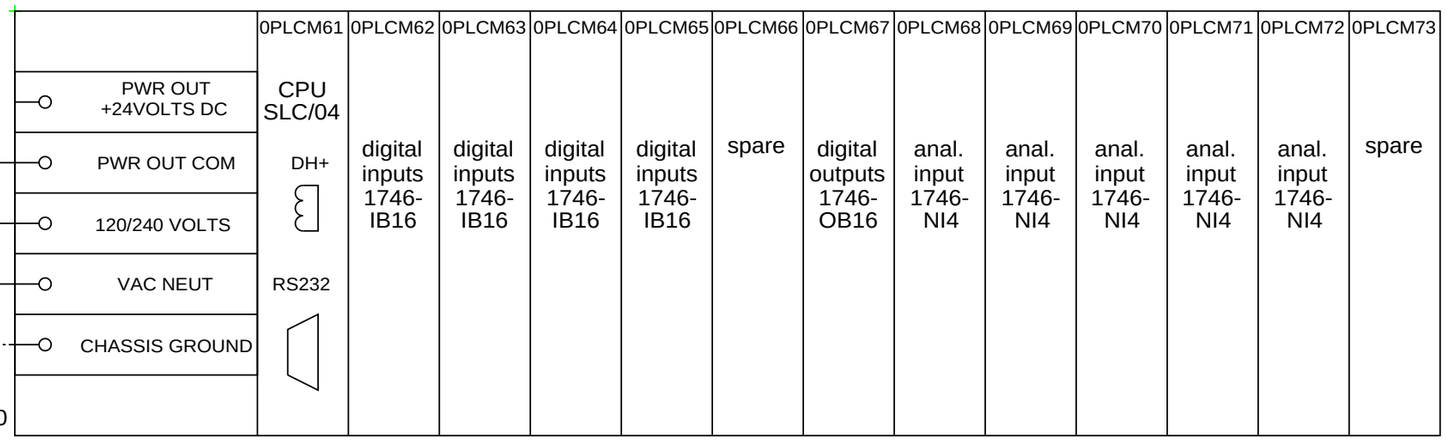
wiring diagram
automatic fault detecting system

BÜHLER	customer 474 :P_NR2		+HSS	page 1	
			=A1.F8	of 38	
comm. nr. :P_NR1	cover sheet		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

PLC System Allen Bradley Telematik

PLC system Allen Bradley





BÜHLER	customer 474 :P_NR2	+HSS	page **2**
		=A1.F8	of 38
comm. nr. :P_NR1	power supply PLC system	drawing nr. A474	

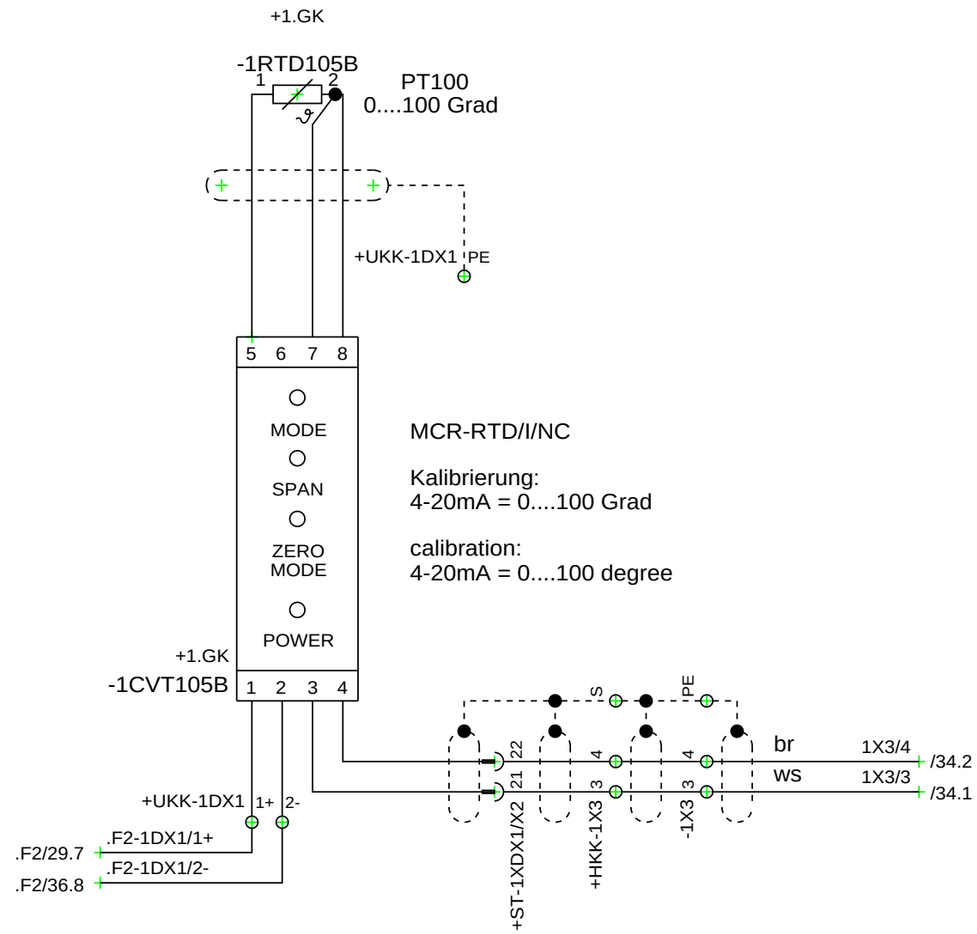
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Temperatur Boiler Hülsen-GK

temperature control unit shell depositor

Temperaturfühler
(Doppel-PT100)
Boiler

temperature probe
(PT100)
tempering unit



BÜHLER	customer 474 :P_NR2	+HSS	page 3
		=A1.F8	of 38
comm. nr. :P_NR1	temperature control unit shell depositor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Wägezelle vor Hülsen-Dosiermaschine (Taragewicht)

weighing cell before shell depositor

.F1/112.8 .F1-13L10 .F1-13L10 /10.1
.F1/112.8 .F1-13N10 .F1-13N10 /10.1
/2.3 .F1-PE .F1-PE /10.1

-2X2 1U 1N PE

+HKK-2X2 1U 1N PE

gn bl sw br rt ws

1	2	3	4	5	6	7	8	9	10
L1	N	PE	+EX	+S	-EX	-S	+IN	-IN	SH

Wägeterminal Soemer
PENKO SAI

.F1/186.3 .F1-2X1/2- .F1-2X1/2- /24.2
+HKK-2X1 2-

COM	5
IN1	6
IN2	7

21 21 2X1/21 /32.2
20 20 2X1/20 /32.3
+HKK-2X1 -2X1

-2WC100
DMS Wiegezelle

DMS weighing cell

+P2
-2WT100

+Iout	COM
1	2

ws br

+HKK-2X3 1 2 3
-2X3 1 2 PE

2X3/2 /34.4
2X3/1 /34.3

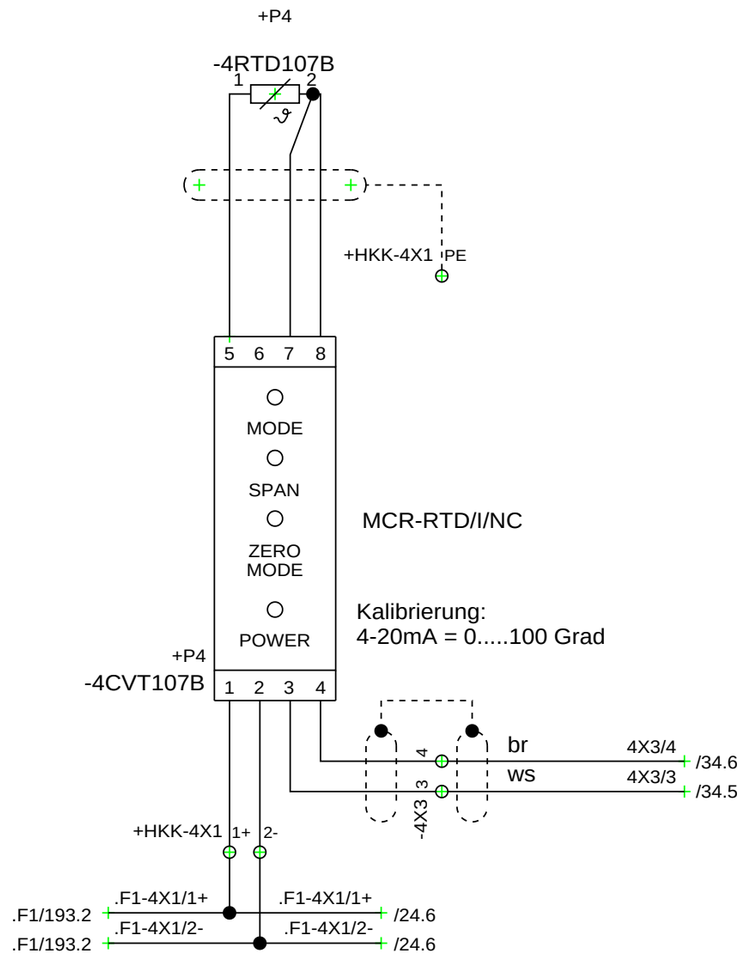
BÜHLER	customer 474 :P_NR2	+HSS	page 4
		=A1.F8	of 38
	comm. nr. :P_NR1	weighing cell before shell depositor	drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur Stahlbandheizung Hülsenbildung

temperature control unit belt heating shell forming

Temperaturfühler
temperature probe
(Doppel-PT100)



BÜHLER	customer 474 :P_NR2	+HSS	page 5
		=A1.F8	of 38
comm. nr. :P_NR1	temperature belt heating shell forming	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur Boiler Massewanne Hülsenbildung

temperature control unit mass hopper shell forming

Temperaturfühler
(Doppel-PT100)
Boiler

temperature probe
(PT100)
tempering unit

+1.GK

-4RTD113B

PT100
0....100 Grad

+UKK-4DX1 PE

5 6 7 8

MODE

SPAN

ZERO MODE

POWER

+P4

-4CVT113B 1 2 3 4

MCR-RTD/I/NC

Kalibrierung:
4-20mA = 0....100 Grad

calibration:
4-20mA = 0....100 degree

+UKK-4DX1 1+ 2-

.F1-4DX1/1+

.F1/191.6

.F1-4DX1/2-

.F1/159.7

+ST-4XDX1/X2 22 21

+HKK-4X3 9 8

-4X3 9 8

br 4X3/9 /38.8

ws 4X3/8 /38.7

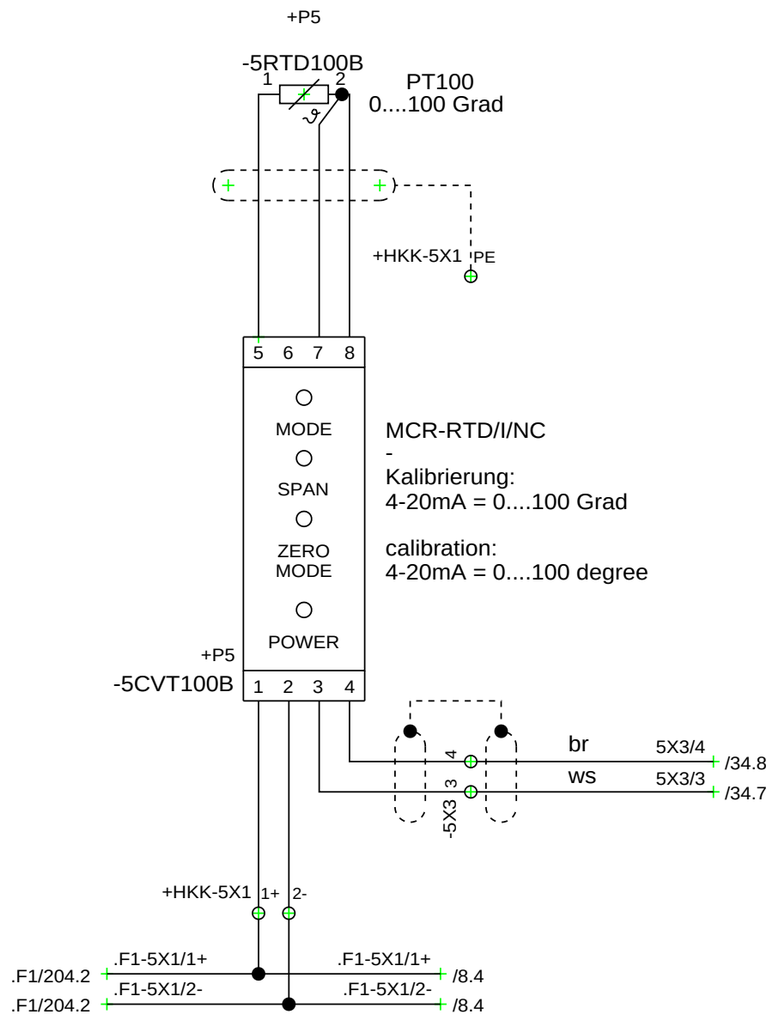
BÜHLER	customer 474 :P_NR2	+HSS	page 6
		=A1.F8	of 38
comm. nr. :P_NR1	temperature mass hopper shell forming	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur Hülsenkühler Zone 1

temperature control unit shell cooler zone 1

Temperaturfühler
temperature probe
(Doppel-PT100)



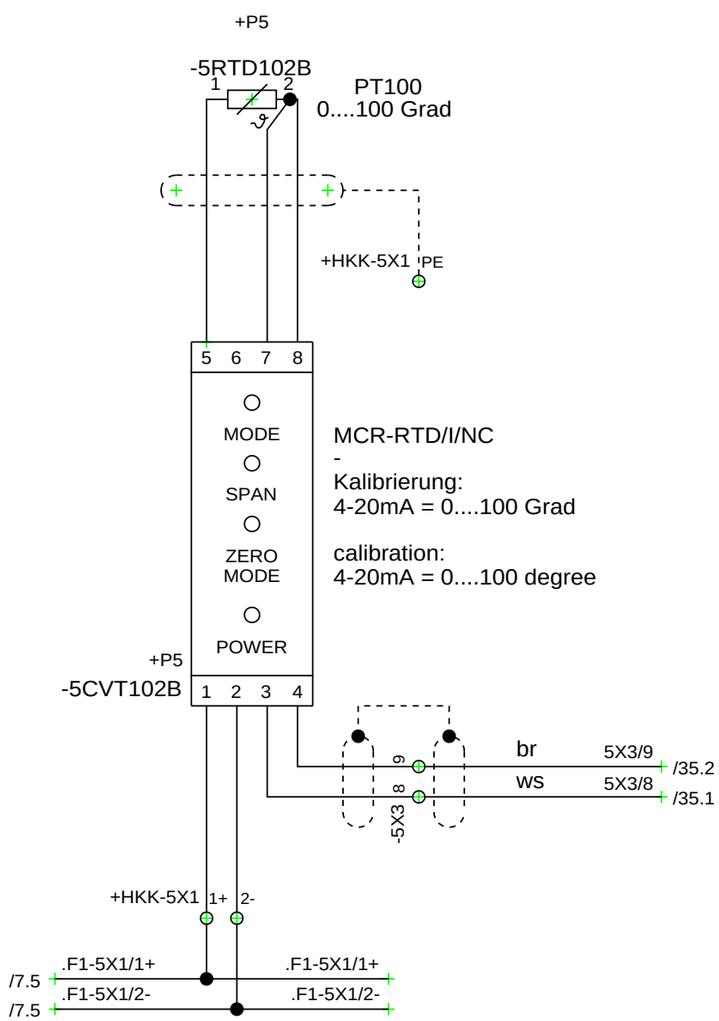
BÜHLER	customer 474 :P_NR2	+HSS	page 7
		=A1.F8	of 38
comm. nr. :P_NR1	temperature shell cooler zone 1	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Temperatur Hülsenkühler Zone 2

temperature control unit shell cooler zone 2

Temperaturfühler
temperature probe
(Doppel-PT100)



BÜHLER	customer 474 :P_NR2	+HSS	page 8
		=A1.F8	of 38
comm. nr. :P_NR1	temperature shell cooler zone 2	drawing nr. A474	

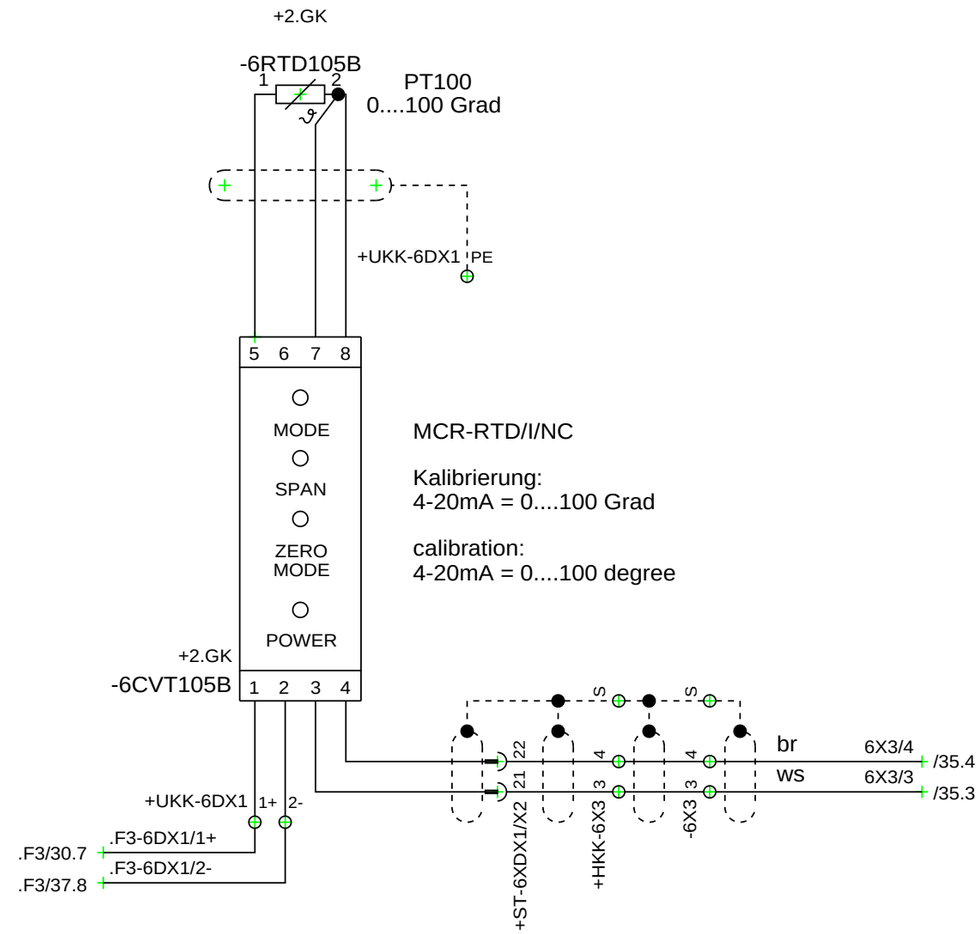
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur Boiler 1.Füllungs-GK

temperature control unit 1.filling depositor

Temperaturfühler
(Doppel-PT100)
Boiler

temperature probe
(PT100)
tempering unit

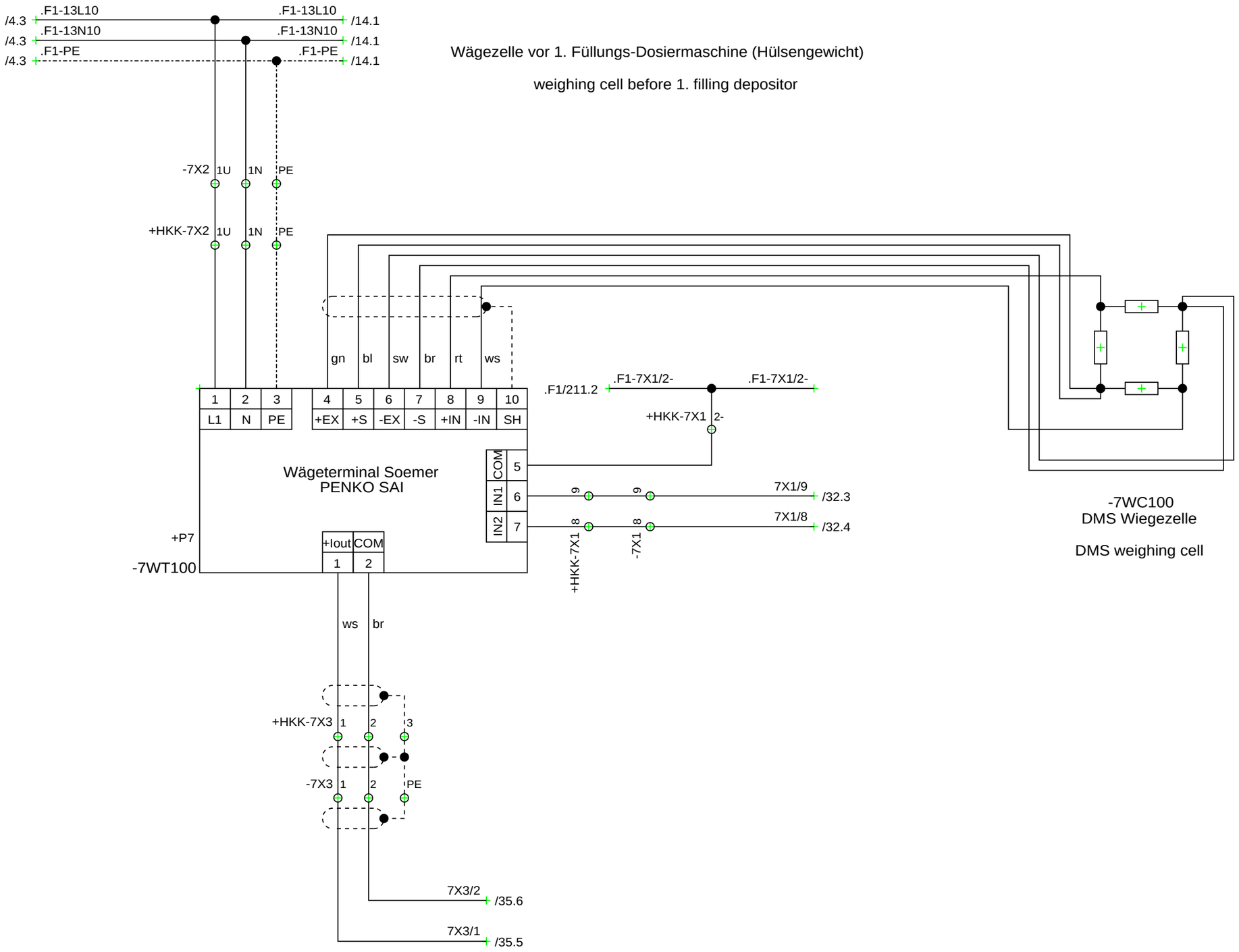


BÜHLER	customer 474 :P_NR2	+HSS	page 9
		=A1.F8	of 38
comm. nr. :P_NR1	temperature control unit 1.filling dep.	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Wägezelle vor 1. Füllungs-Dosiermaschine (Hülsengewicht)

weighing cell before 1. filling depositor



BÜHLER	customer 474 :P_NR2	+HSS	page **10**
		=A1.F8	of 38
comm. nr. :P_NR1	weighing cell before 1.filling depositor	drawing nr. A474	

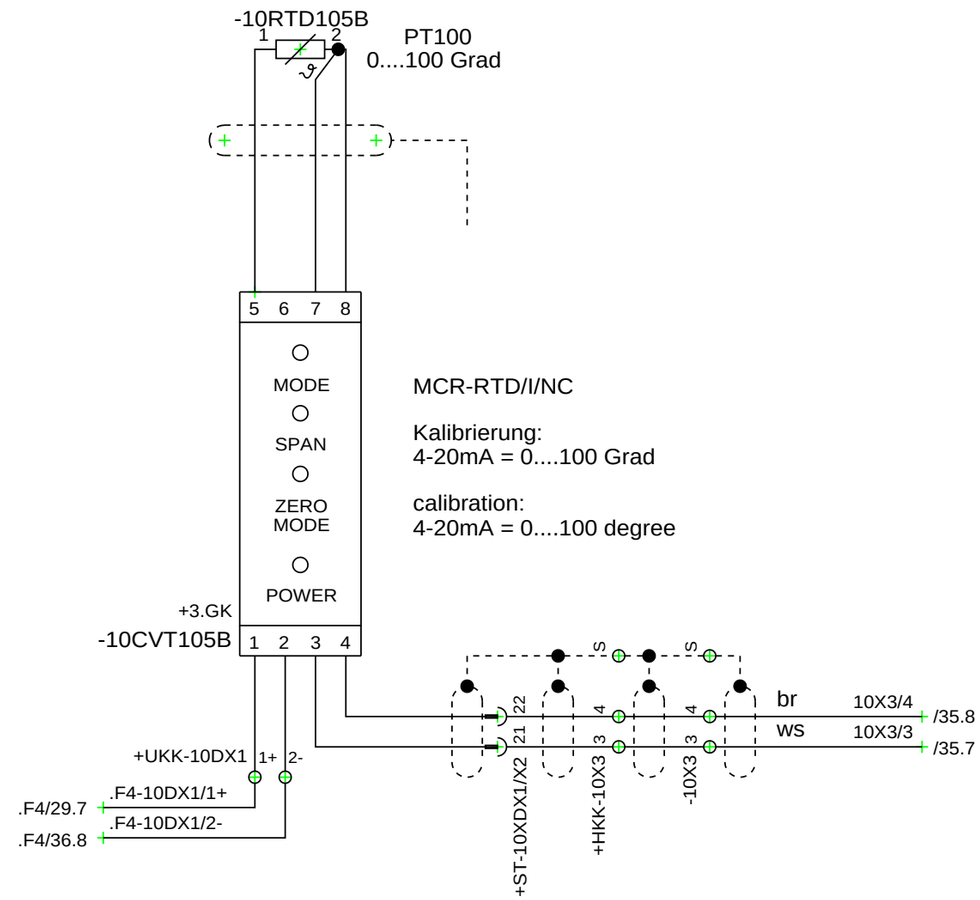
+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Temperatur Boiler 2.Füllungs-GK

temperature control unit 2.filling depositor

Temperaturfühler
(Doppel-PT100)
Boiler

temperature probe
(PT100)
tempering unit



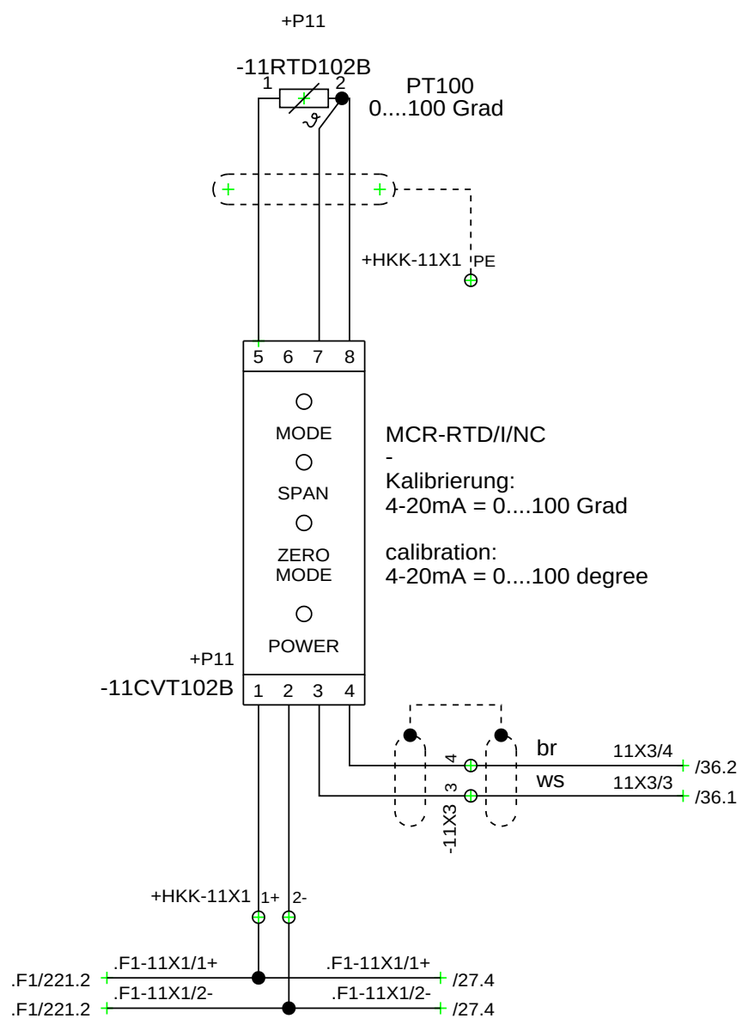
BÜHLER	customer 474 :P_NR2	+HSS	page 11
		=A1.F8	of 38
comm. nr. :P_NR1	temperature control unit 2.filling dep.	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur 1.Füllungskühler

temperature control unit 1.filling cooler

Temperaturfühler
temperature probe
(Doppel-PT100)



BÜHLER	customer 474 :P_NR2	+HSS	page 12
		=A1.F8	of 38
comm. nr. :P_NR1	temperature 1.filling cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

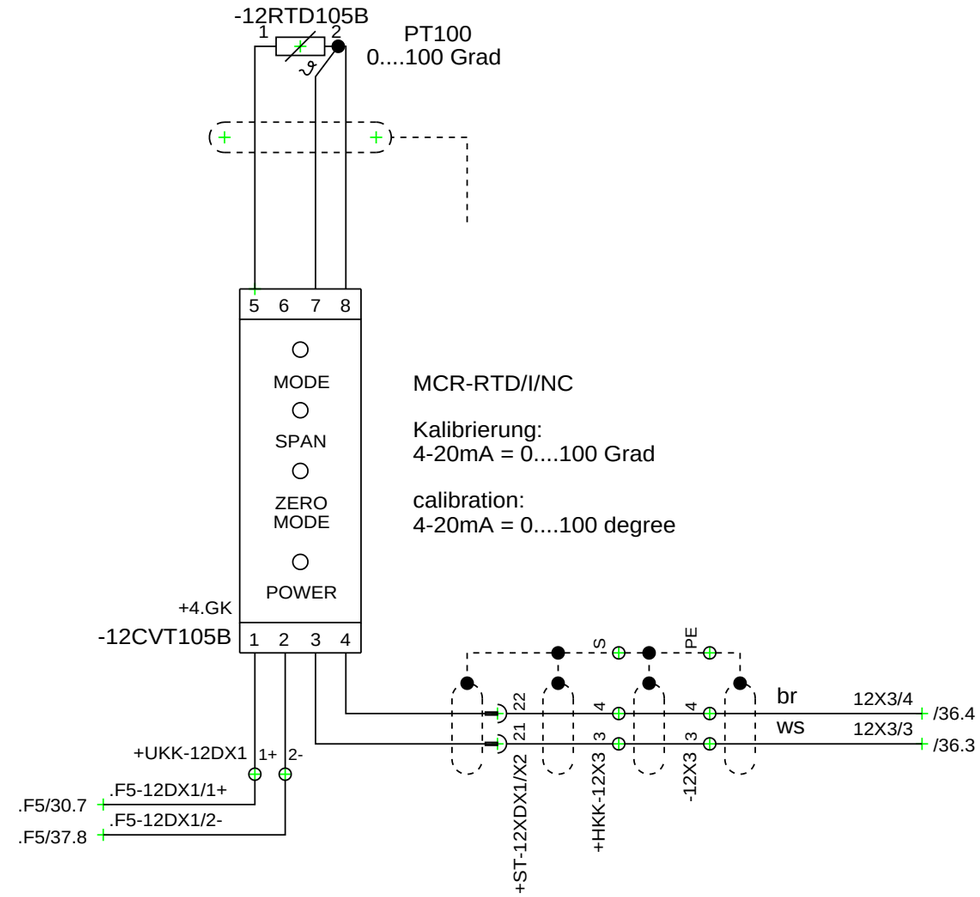
Temperatur Boiler 3.Füllungs-GK

temperature control unit 3.filling depositor

Temperaturfühler
(Doppel-PT100)
Boiler

temperature probe
(PT100)
tempering unit

+4.GK



BÜHLER	customer 474 :P_NR2	+HSS	page 13
		=A1.F8	of 38
comm. nr. :P_NR1	temperature control unit 3.filling dep.	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Wägezelle vor 3. Füllungs-Dosiermaschine (Füllungsgewicht)

weighing cell before 3. filling depositor

/10.3 .F1-13L10 — .F1-13L10
/10.3 .F1-13N10 — .F1-13N10
/10.3 .F1-PE — .F1-PE — /15.1

-13X2 3U 3N
.F1-13X2/3U — /15.1
.F1-13X2/3N — /15.1

+HKK-13X2 3U 3N PE

+UKK-13BX2 3U 3N PE

gn bl sw br rt ws

1	2	3	4	5	6	7	8	9	10
L1	N	PE	+EX	+S	-EX	-S	+IN	-IN	SH

Wägeterminal Soemer
PENKO SAI

.F1/226.3 — .F1-13BX1/2- — .F1-13BX1/2-

COM	5
IN1	6
IN2	7

2-
21 — 21 — 21 — 13X1/21 — /32.5
20 — 20 — 20 — 13X1/20 — /32.6

+UKK-13BX1 — +HKK-13X1 — -13X1

+P13
-13WT100

+Iout	COM
1	2

ws br

+UKK-13BX3 6 7 10
+HKK-13X3 6 7 10
-13X3 6 7 PE

13X3/7 — /36.6
13X3/6 — /36.5

-13WC100
DMS Wiegezelle

DMS weighing cell

BÜHLER	customer 474 :P_NR2	+HSS	page **14**
		=A1.F8	of 38
comm. nr. :P_NR1	weighing cell before 3.filling depositor	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Wägezelle nach Deckel-Dosiermaschine (Endgewicht)

weighing cell after bottom depositor

/14.3 .F1-PE — .F1-PE

/14.3 .F1-13X2/3U

/14.3 .F1-13X2/3N

+HKK-13X2 3U 3N PE

gn bl sw br rt ws

1	2	3	4	5	6	7	8	9	10
L1	N	PE	+EX	+S	-EX	-S	+IN	-IN	SH

.F1/226.2 .F1-13X1/2- — .F1-13X1/2-

+HKK-13X1 2-

Wägeterminal Soemer
PENKO SAI

COM	5
IN1	6
IN2	7

23 — 23 — 13X1/23 /32.6

22 — 22 — 13X1/22 /32.7

+HKK-13X1 — -13X1

-13WC104
DMS Wiegezelle

DMS weighing cell

+P13

-13WT101

+Iout	COM
1	2

ws br

+HKK-13X3 8 9 11

-13X3 8 9 PE

13X3/9 /36.8

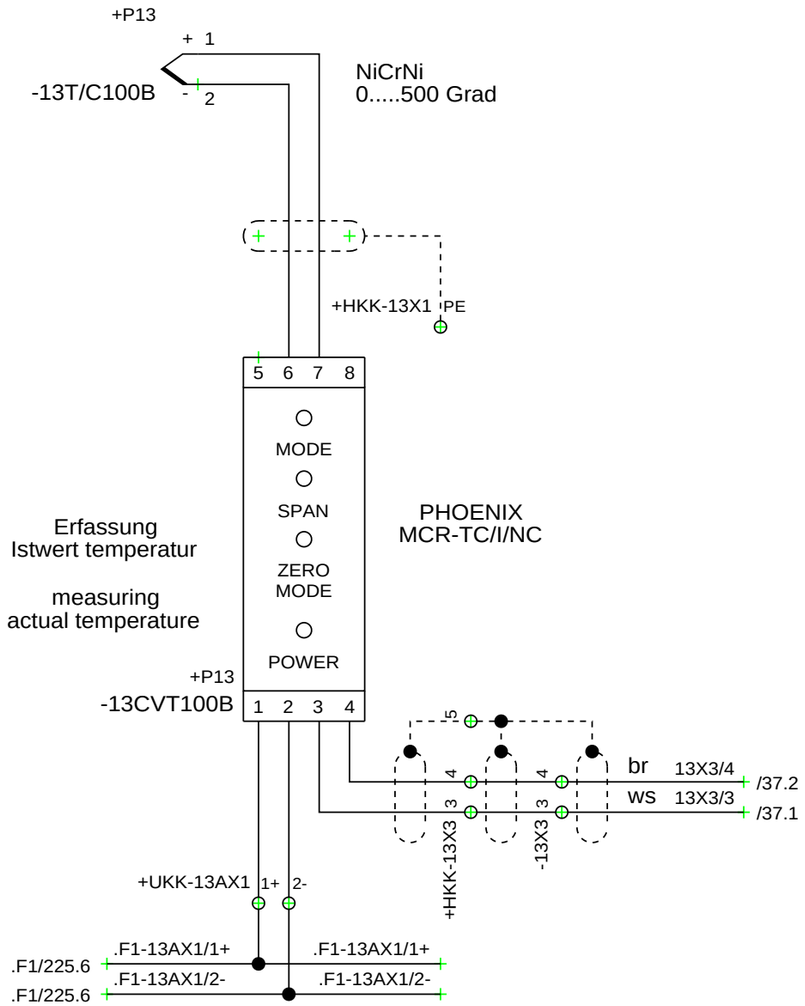
13X3/8 /36.7

BÜHLER	customer 474 :P_NR2	+HSS	page **15**
		=A1.F8	of 38
	comm. nr. :P_NR1	weighing cell before bottom depositor	drawing nr. A474

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Temperatur IR-Heizfeld vor Deckel-GK

temperature control unit IR-heating before bottom depositor



BÜHLER	customer 474 :P_NR2	+HSS	page **16**
		=A1.F8	of 38
comm. nr. :P_NR1	temperature IR-heating before bottom dep	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

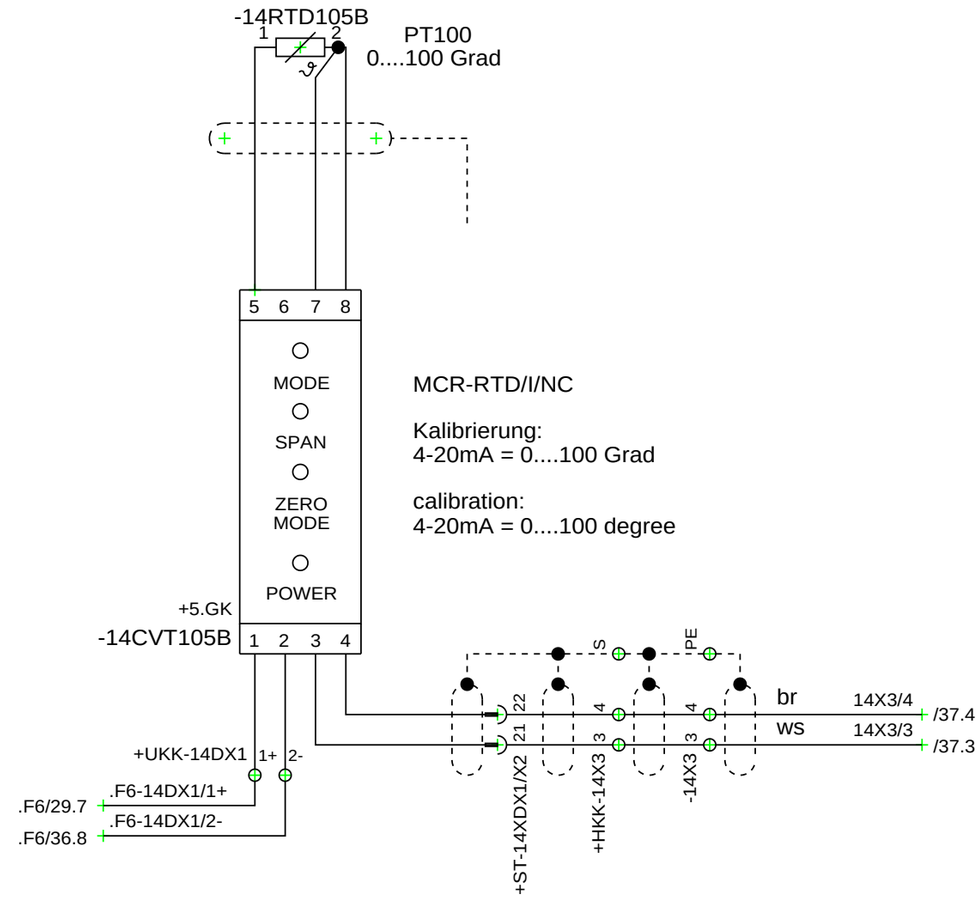
Temperatur Boiler Deckel-GK

temperature control unit bottom depositor

Temperaturfühler
(Doppel-PT100)
Boiler

temperature probe
(PT100)
tempering unit

+5.GK

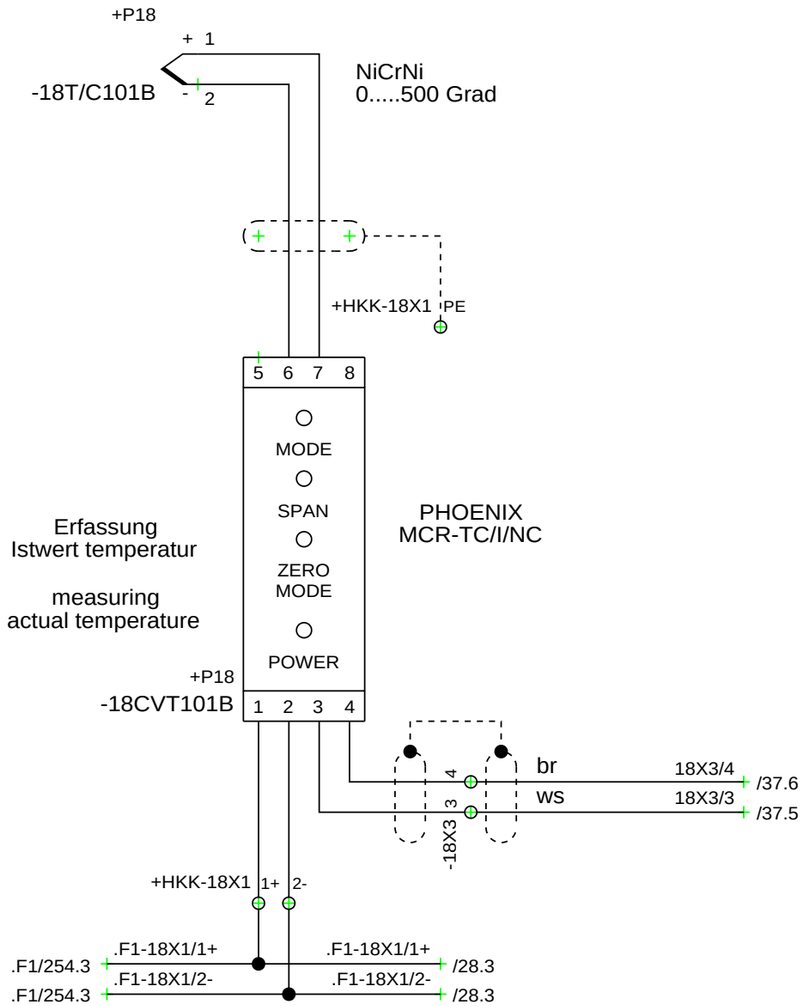


BÜHLER	customer 474 :P_NR2	+HSS	page 17
		=A1.F8	of 38
comm. nr. :P_NR1	temperature control unit bottom dep.	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur IR-Heizfeld vor Klappformenschließer

temperature control unit IR-heating before mould closing device



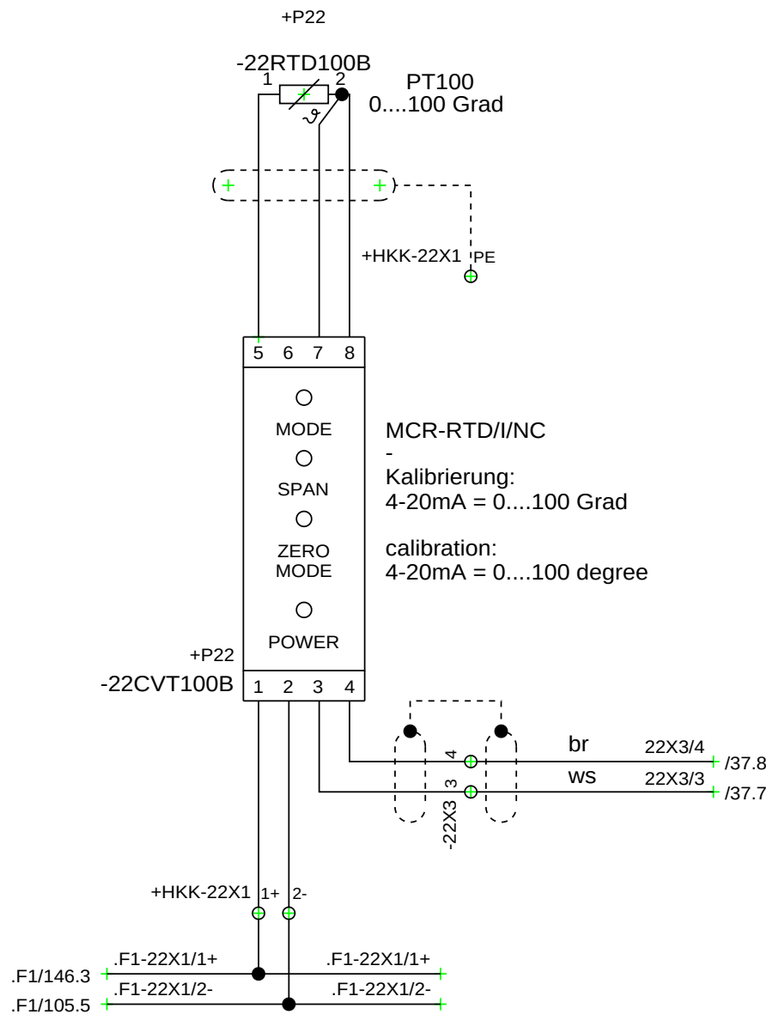
BÜHLER	customer 474 :P_NR2	+HSS	page **18**
		=A1.F8	of 38
comm. nr. :P_NR1	temperature IR-heating before VKS	drawing nr. A474	

+ location : connection = plant . function group - resource mark | drawing date :P_DAT | date 13.06.2019 | draw. :P_BUR | changed :BEA1 | control :P_PRF

Temperatur Endkühler

temperature control unit final cooler

Temperaturfühler
temperature probe
(Doppel-PT100)



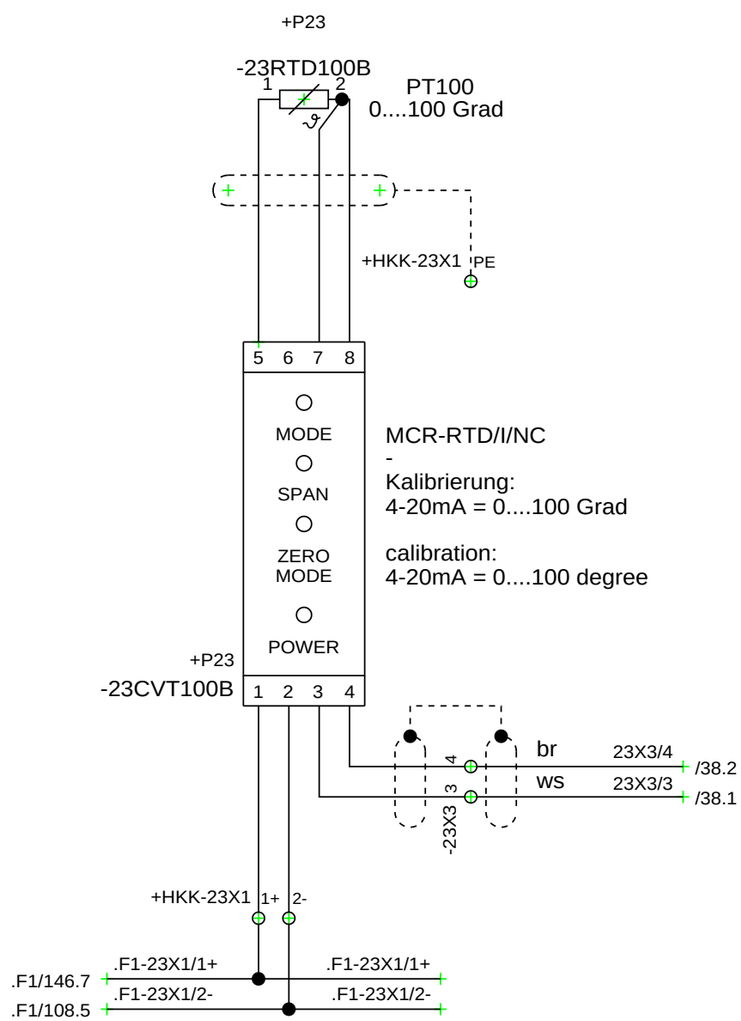
BÜHLER	customer 474 :P_NR2	+HSS	page **19**
		=A1.F8	of 38
comm. nr. :P_NR1	temperature final cooler	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Temperatur 2.Füllungskühler

temperature control unit 2.filling cooler

Temperaturfühler
temperature probe
(Doppel-PT100)



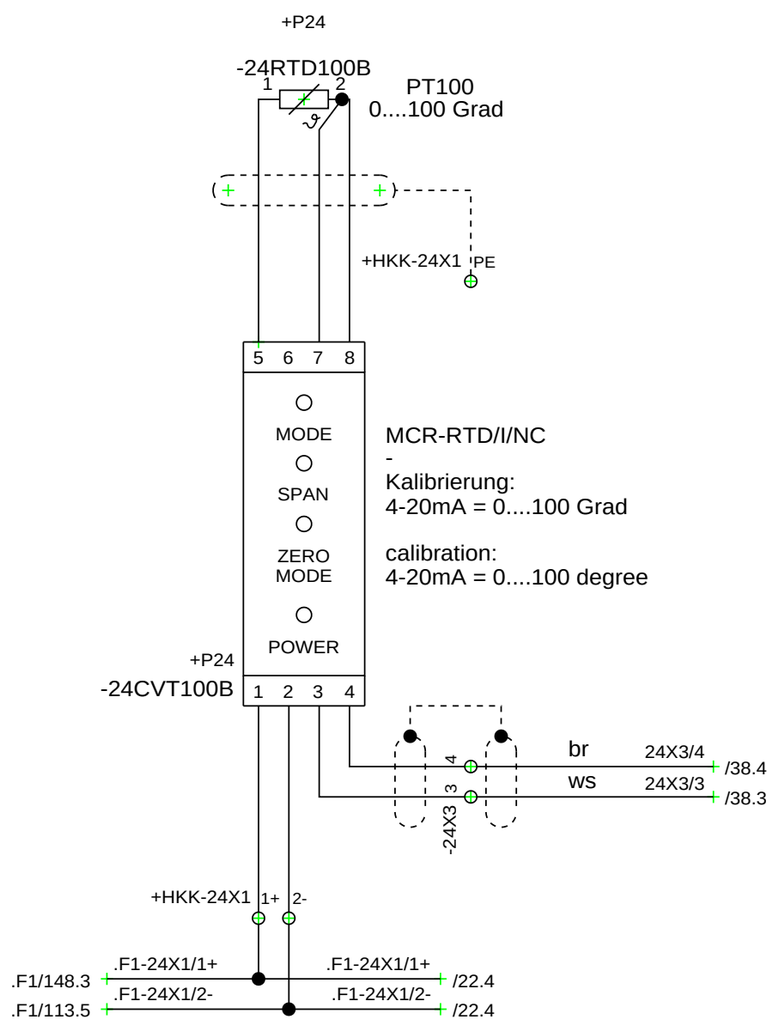
BÜHLER	customer 474 :P_NR2	+HSS	page 20
		=A1.F8	of 38
comm. nr. :P_NR1	temperature 2.filling cooler	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur Wärmebahn Zone 1

temperature control unit mould heating section zone 1

Temperaturfühler
temperature probe
(Doppel-PT100)



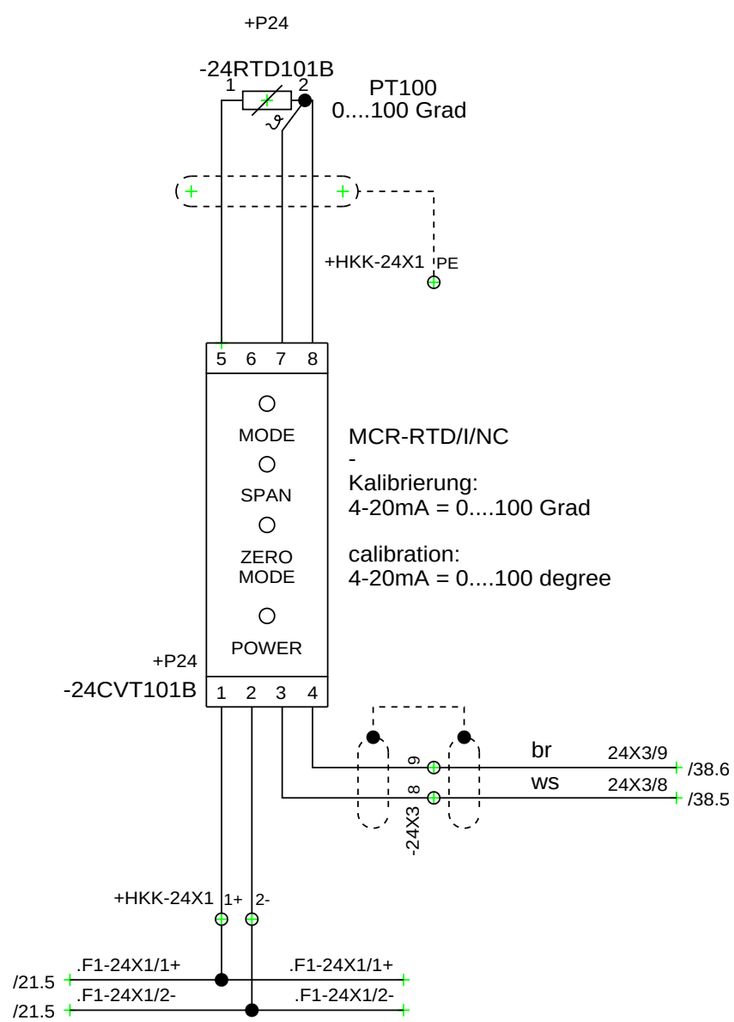
BÜHLER	customer 474 :P_NR2	+HSS	page 21
		=A1.F8	of 38
comm. nr. :P_NR1	temperature mould heating section zone 1	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Temperatur Wärmebahn Zone 2

temperature control unit mould heating section zone 2

Temperaturfühler
temperature probe
(Doppel-PT100)

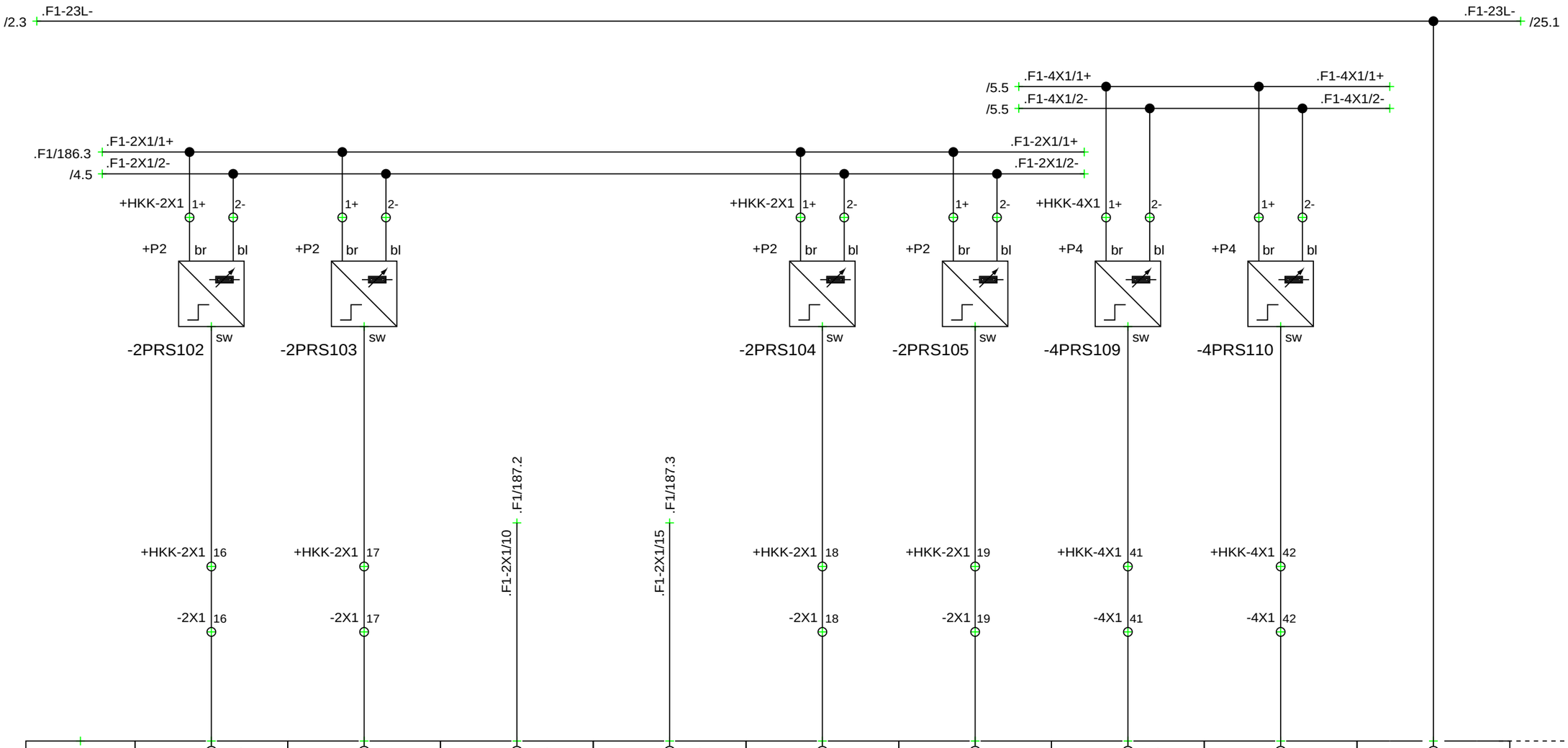


BÜHLER	customer 474 :P_NR2	+HSS	page 22
		=A1.F8	of 38
comm. nr. :P_NR1	temperature mould heating section zone 2	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

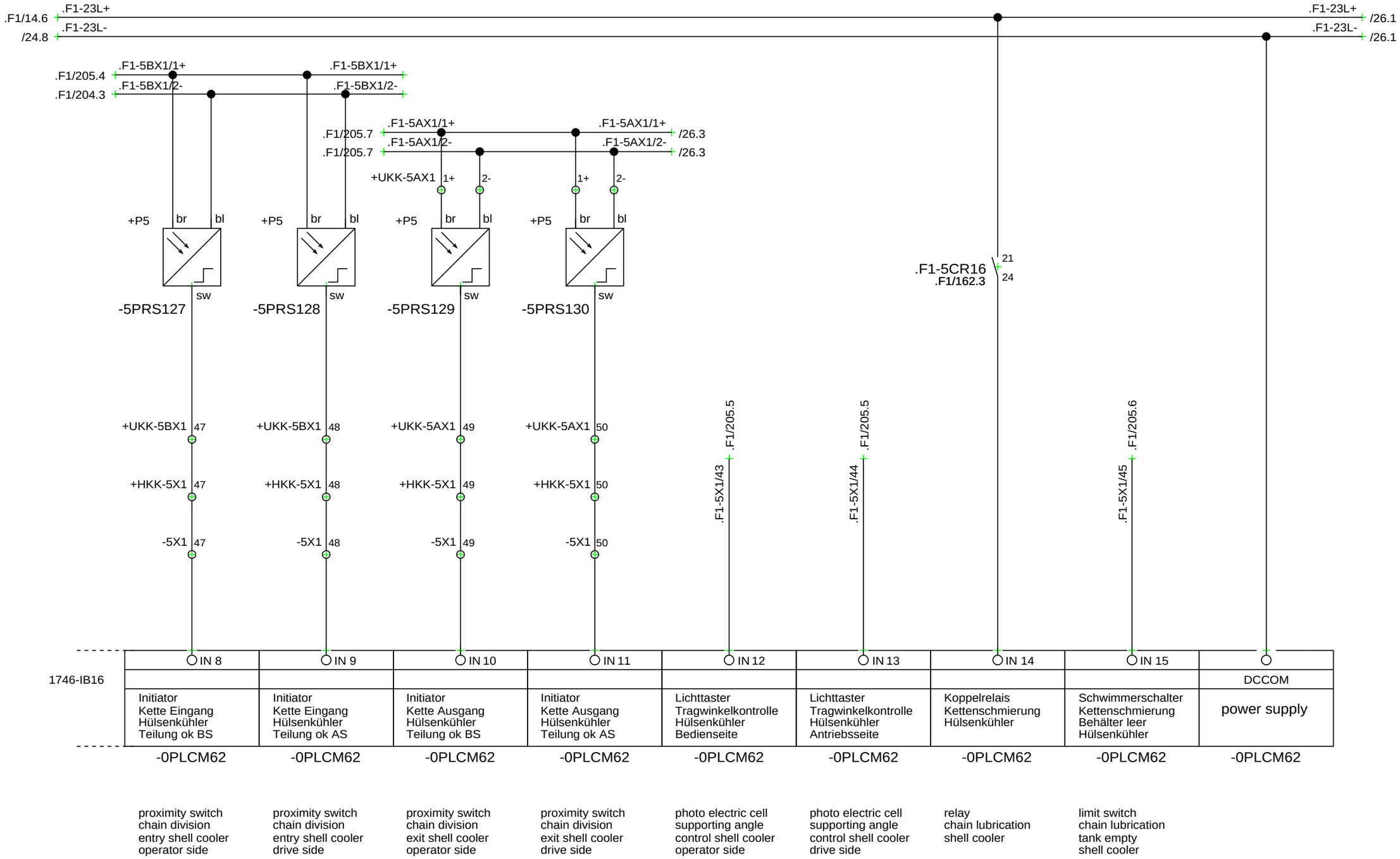
customer			
	474	+HSS	page **23**
	:P_NR2	=A1.F8	of 38
comm. nr. :P_NR1	spare		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



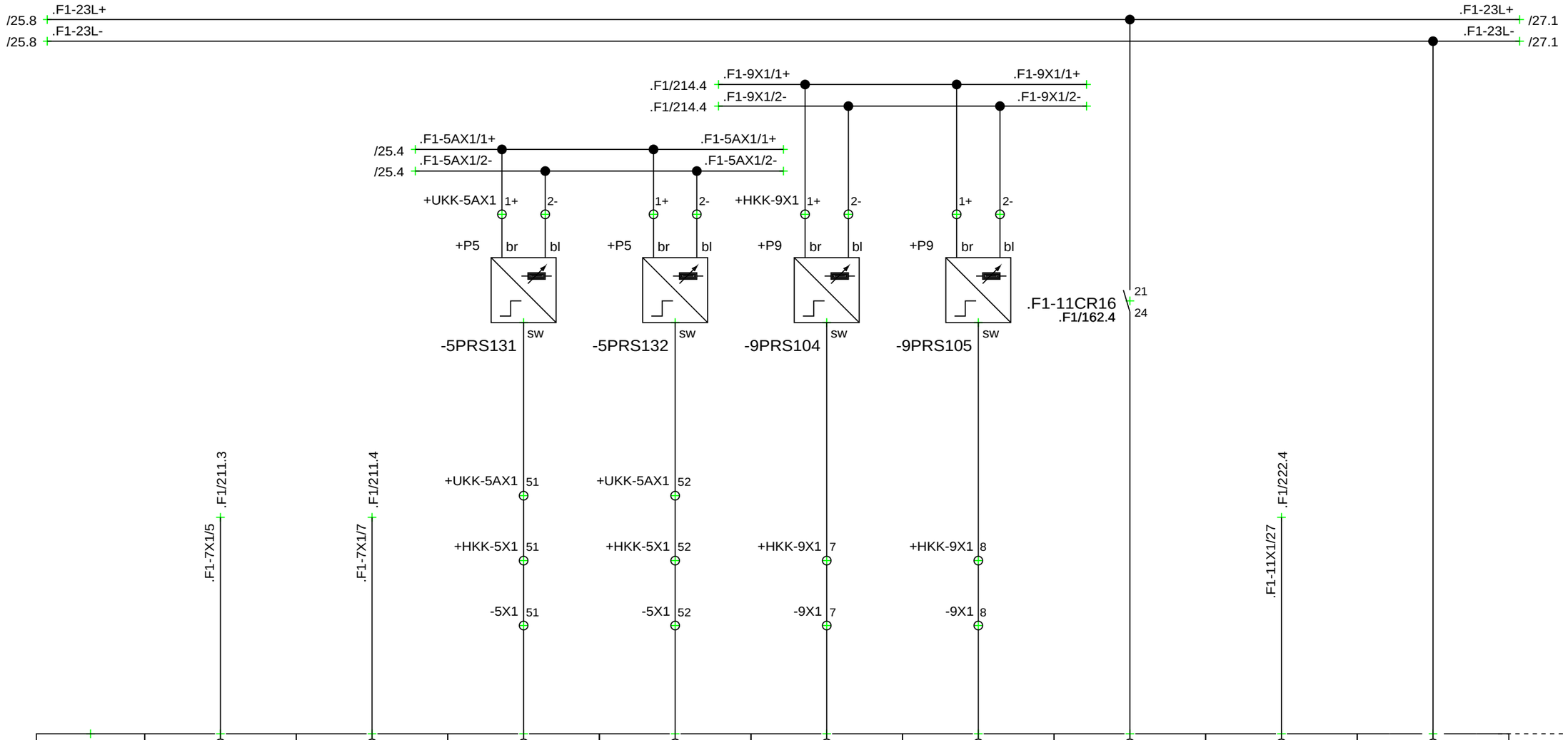
BÜHLER	customer 474 :P_NR2	+HSS	page 24
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 25
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

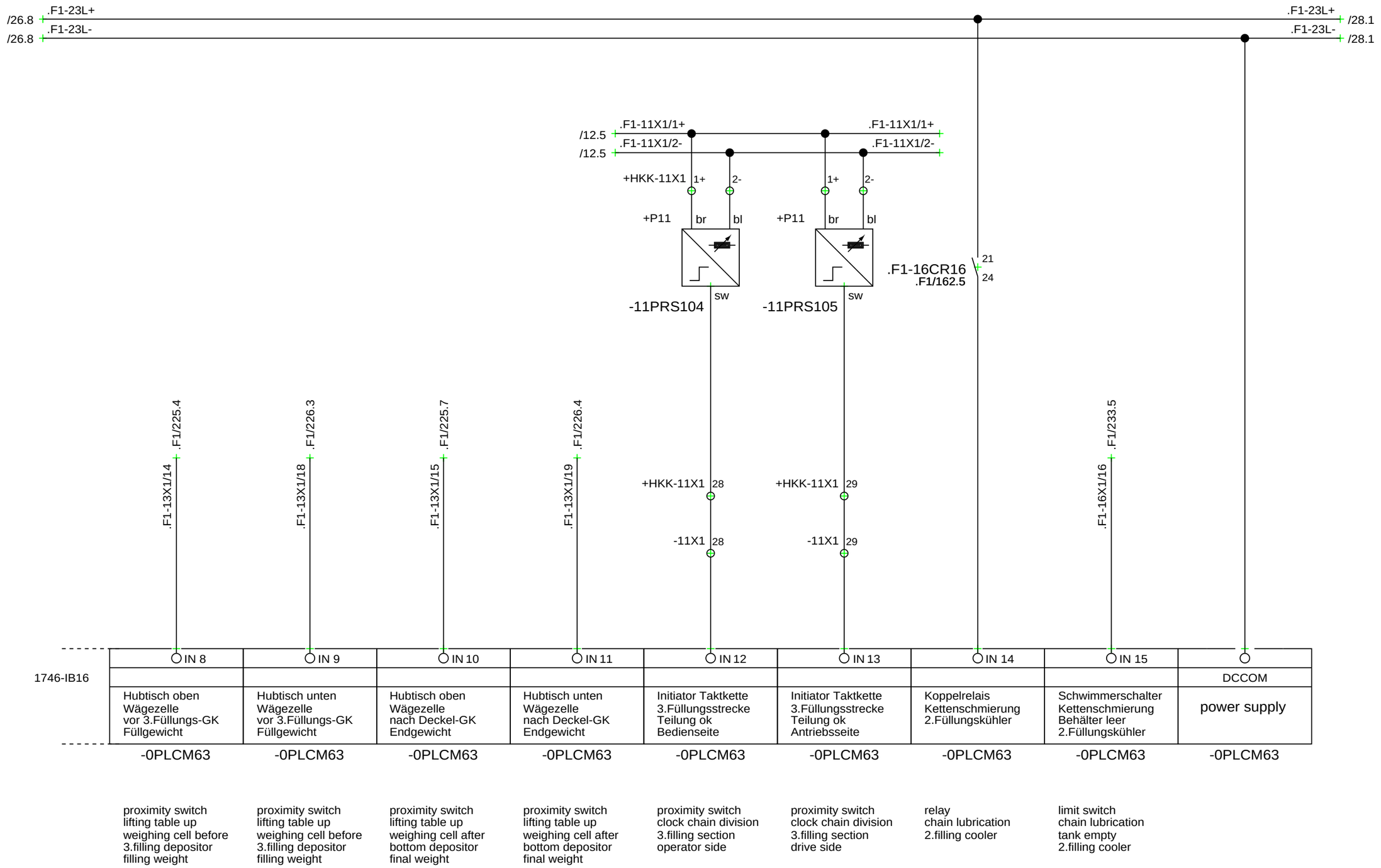


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16									DCCOM
	Initiator Hubtisch oben Wägezelle vor 1.Füllungs-GK Hülsengewicht	Initiator Hubtisch unten Wägezelle vor 1.Füllungs-GK Hülsengewicht	Initiator Taktkette 1.Füllungsstrecke Teilung ok Bedienseite	Initiator Taktkette 1.Füllungsstrecke Teilung ok Antriebsseite	Initiator Taktkette 2.Füllungsstrecke Teilung ok Bedienseite	Initiator Taktkette 2.Füllungsstrecke Teilung ok Antriebsseite	Koppelrelais Kettenschmierung 1.Füllungskühler	Schwimmerschalter Kettenschmierung Behälter leer 1.Füllungskühler	power supply
	-0PLCM63	-0PLCM63	-0PLCM63	-0PLCM63	-0PLCM63	-0PLCM63	-0PLCM63	-0PLCM63	-0PLCM63
	proximity switch lifting table up weighing cell before 1.filling dep. shell weight	proximity switch lifting table down weighing cell before 1.filling dep. shell weight	proximity switch clock chain division 1.filling section operator side	proximity switch clock chain division 1.filling section drive side	proximity switch clock chain division 2.filling section operator side	proximity switch clock chain division 2.filling section drive side	relay chain lubrication 1.filling cooler	limit switch chain lubrication tank empty 1.filling cooler	

BÜHLER

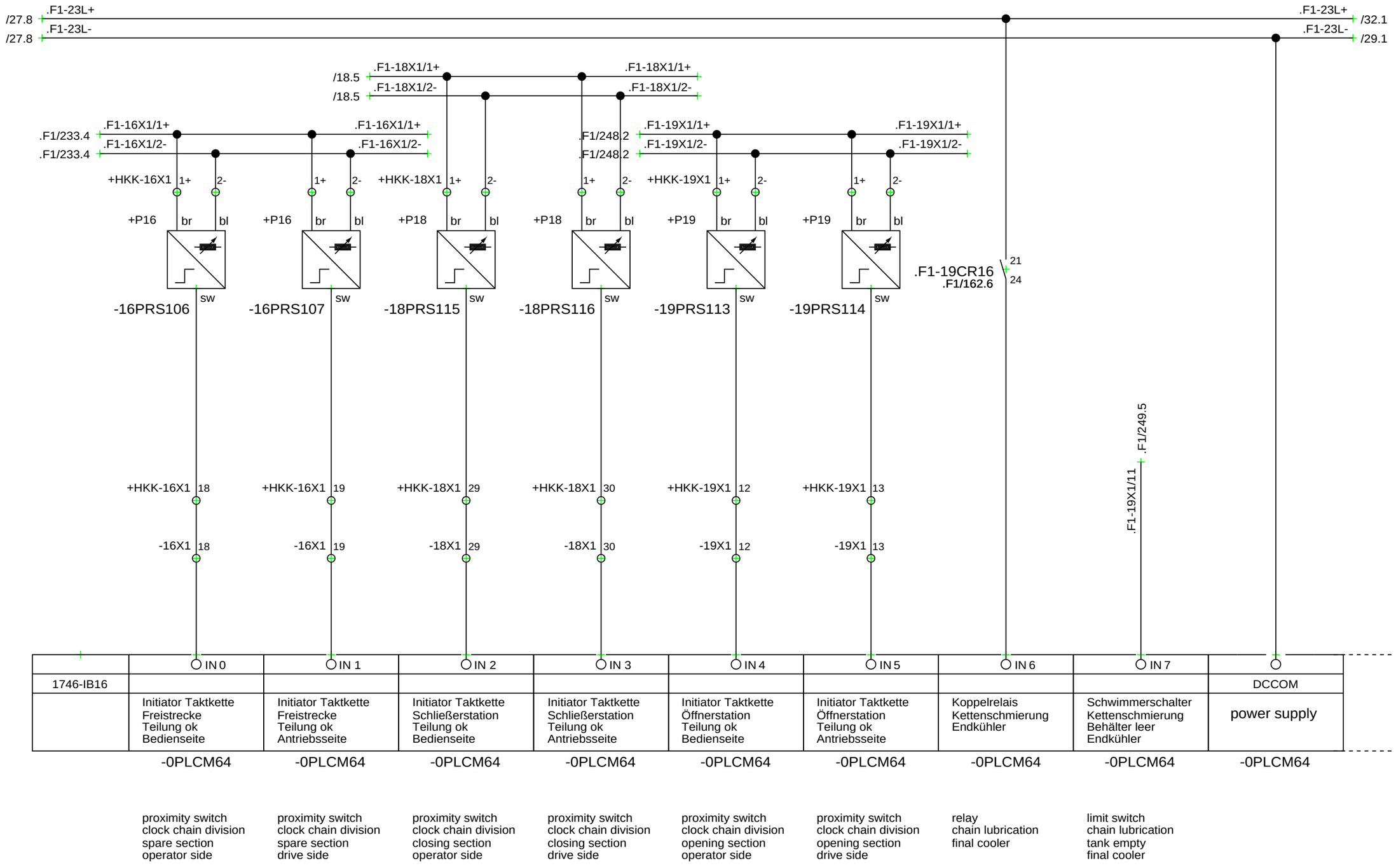
customer 474 :P_NR2		+HSS	page **26**
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



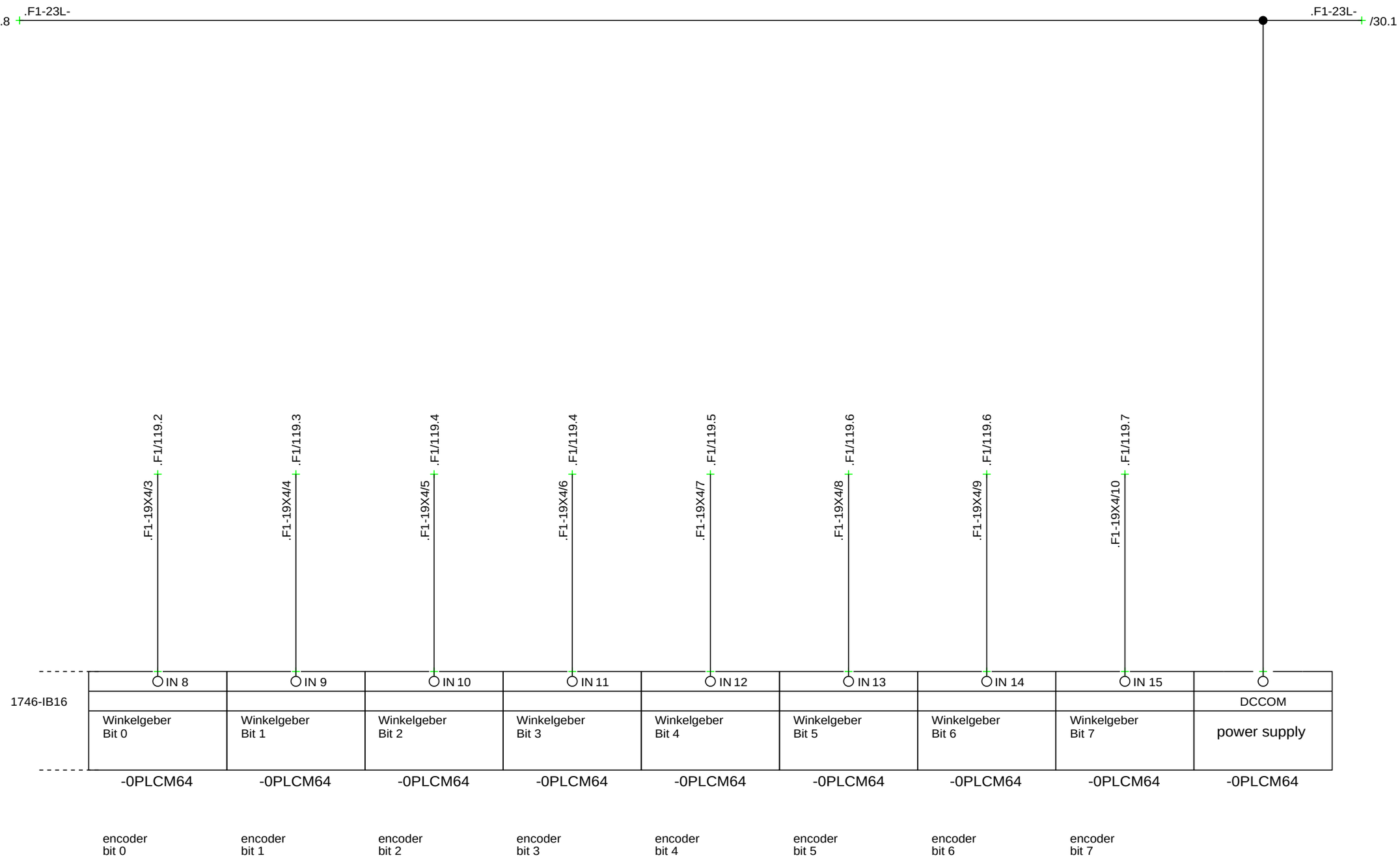
BÜHLER	customer 474 :P_NR2	+HSS	page 27
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



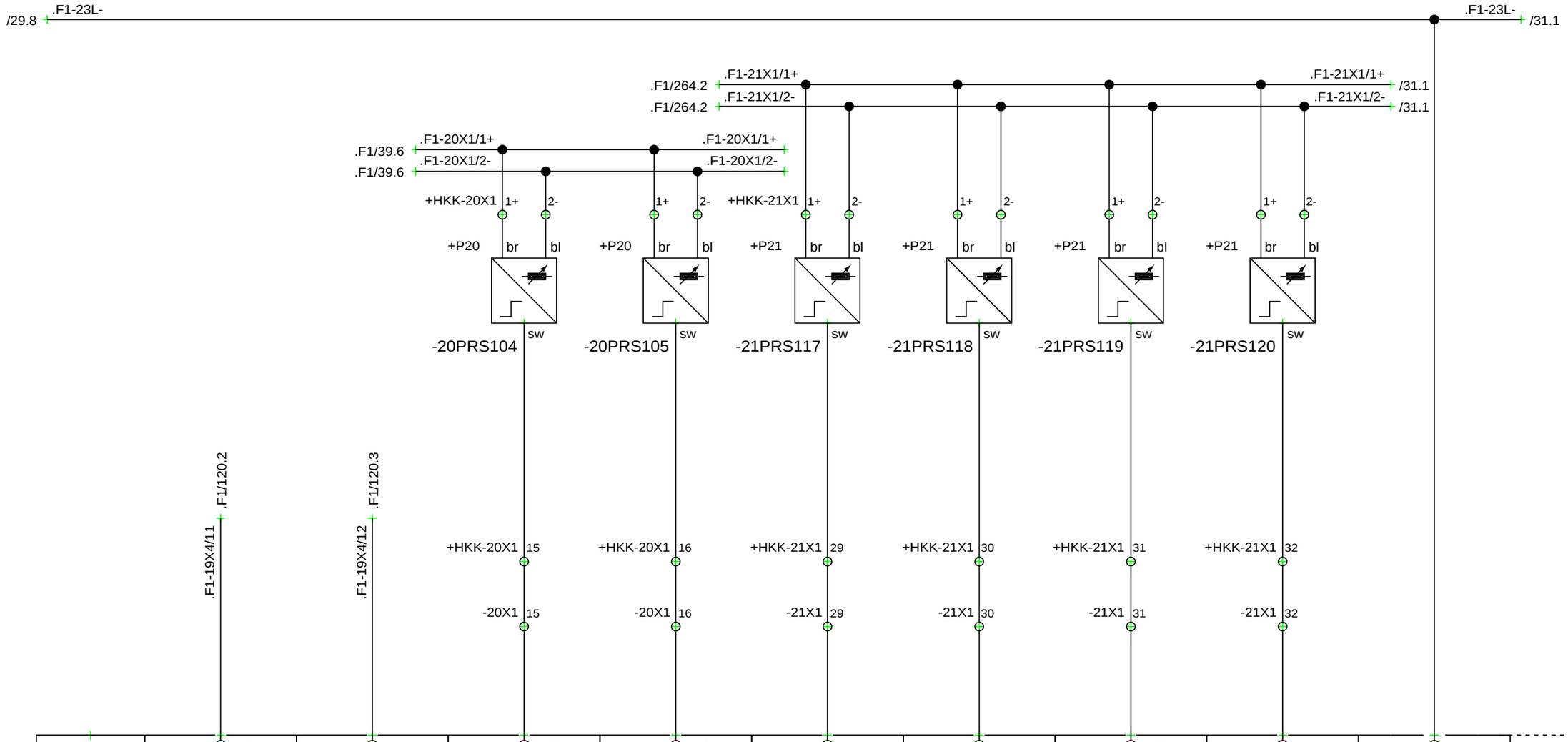
BÜHLER	customer 474 :P_NR2	+HSS	page **28**
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



BÜHLER	customer 474 :P_NR2	+HSS	page 29
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

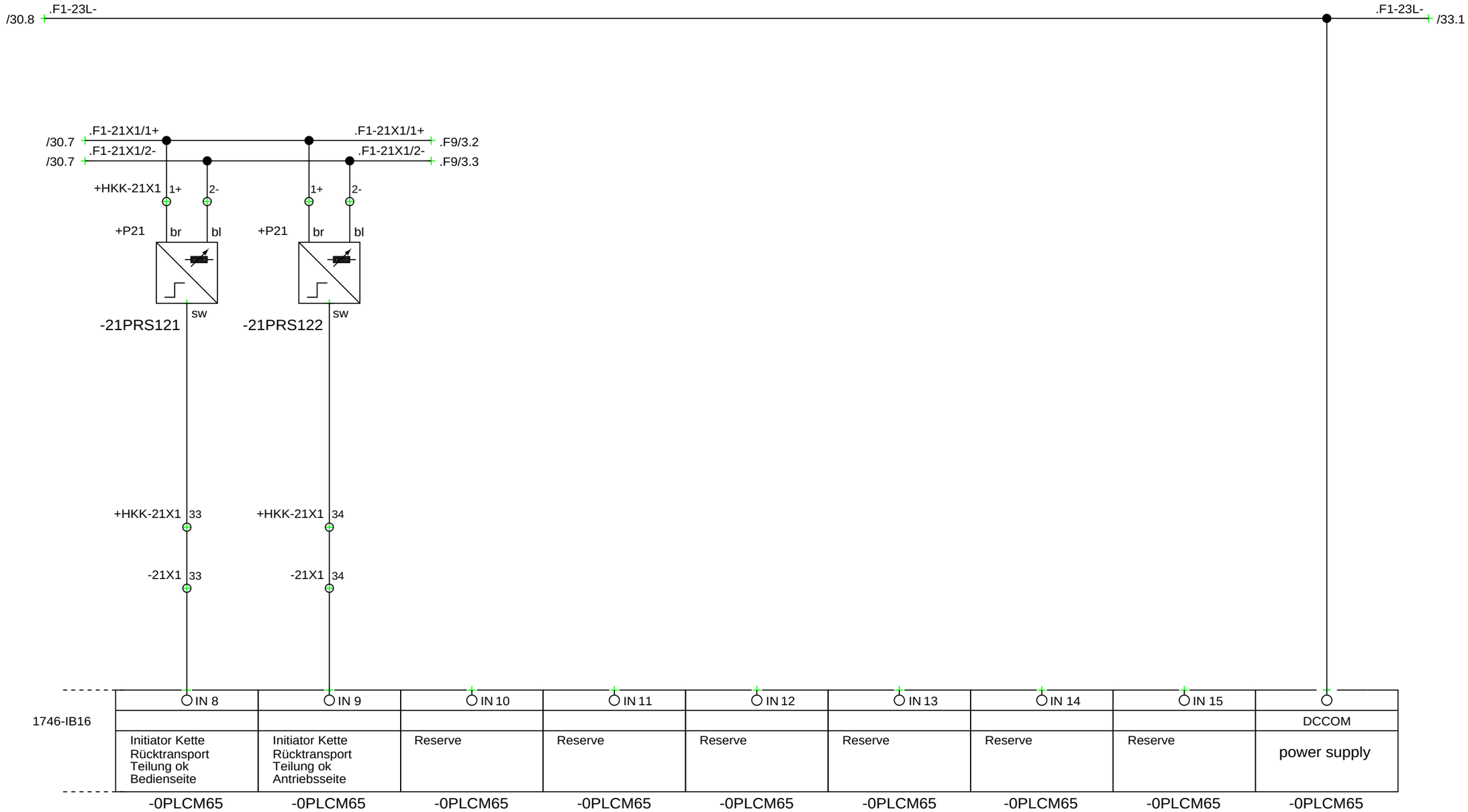


	IN 0	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	
1746-IB16									DCCOM
	Winkelgeber Bit 8	Winkelgeber Bit 9	Initiator Taktkette Ausschlagwerk Teilung ok Bedienseite	Initiator Taktkette Ausschlagwerk Teilung ok Antriebsseite	Initiator Taktkette Formentransport nach AW Teilung ok Bedienseite	Initiator Taktkette Formentransport nach AW Teilung ok Antriebsseite	Initiator Kette Aufwärtspaternoster Teilung ok Bedienseite	Initiator Kette Aufwärtspaternoster Teilung ok Antriebsseite	power supply
	-0PLCM65	-0PLCM65	-0PLCM65	-0PLCM65	-0PLCM65	-0PLCM65	-0PLCM65	-0PLCM65	-0PLCM65
	encoder bit 8	encoder bit 9	proximity switch clock chain division demoulder operator side	proximity switch clock chain division demoulder drive side	proximity switch clock chain division mould conveyor after demoulder operator side	proximity switch clock chain division mould conveyor after demoulder drive side	proximity switch chain division upwards paternoster operator side	proximity switch chain division upwards paternoster drive side	

BÜHLER

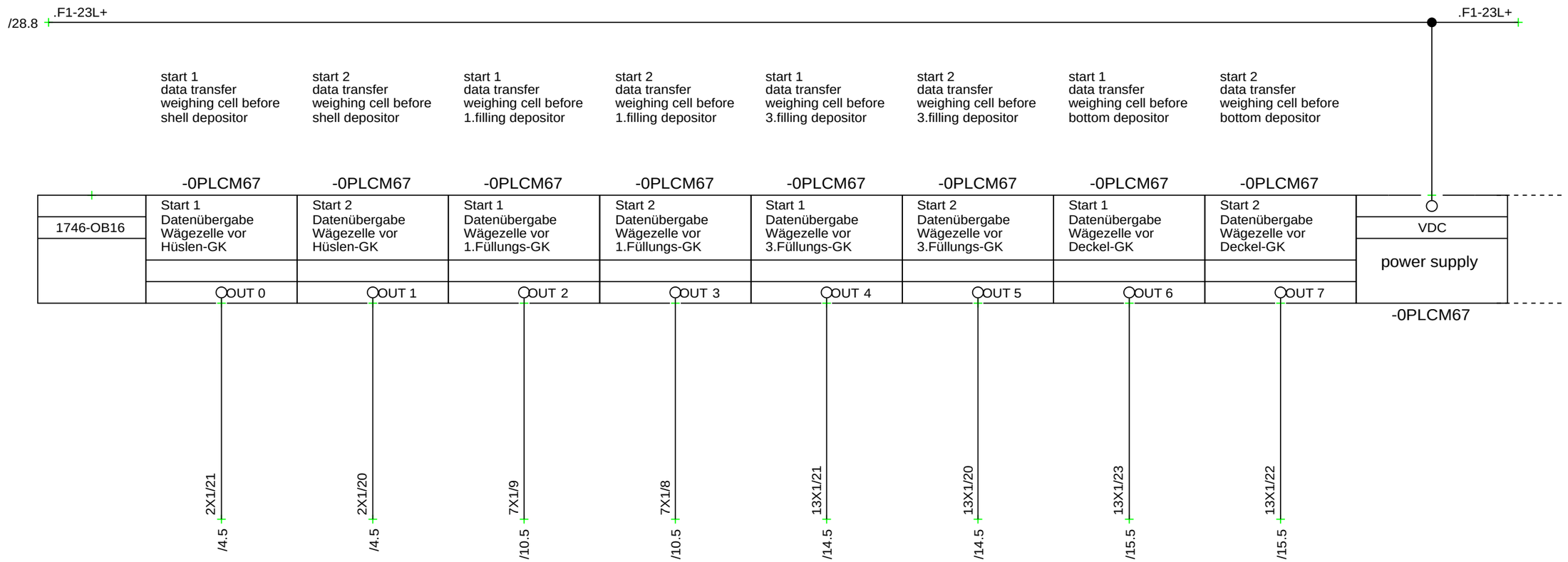
customer 474 :P_NR2		+HSS	page 30
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



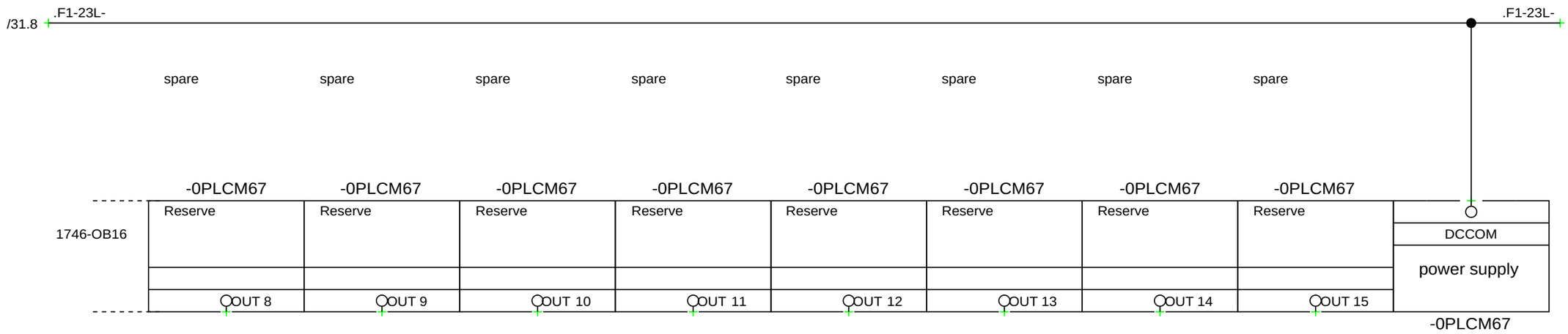
BÜHLER	customer 474 :P_NR2	+HSS	page 31
		=A1.F8	of 38
comm. nr. :P_NR1	digital inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

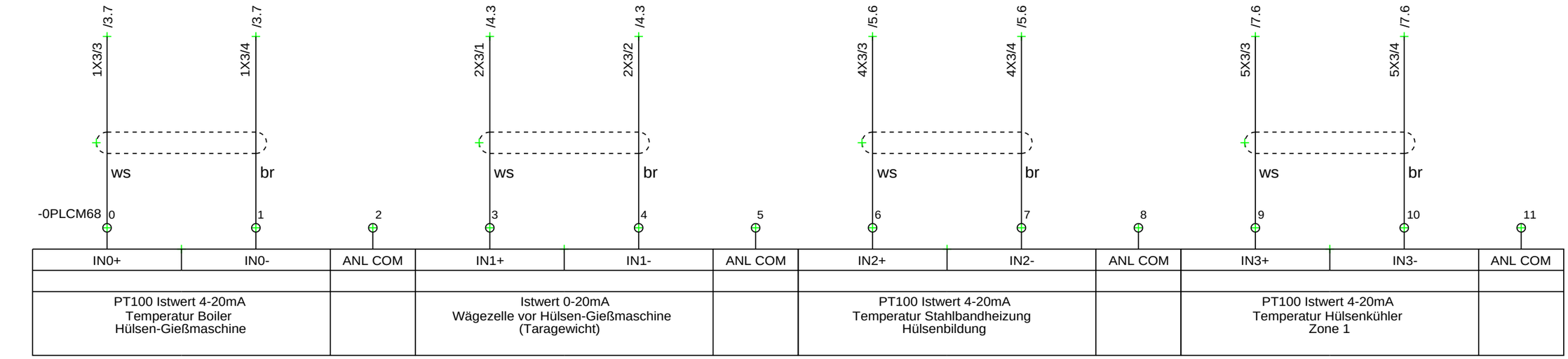


BÜHLER	customer 474 :P_NR2	+HSS	page **32**
		=A1.F8	of 38
comm. nr. :P_NR1	digital outputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



BÜHLER	customer 474 :P_NR2		+HSS	page **33**	
			=A1.F8	of 38	
comm. nr. :P_NR1	digital outputs		drawing nr. A474		
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



1746-NI4

-0PLCM68 -0PLCM68 -0PLCM68 -0PLCM68

+/-20mA +/-20mA +/-20mA +/-20mA

PT100 actual value 4-20mA
temperature boiler
shell depositor

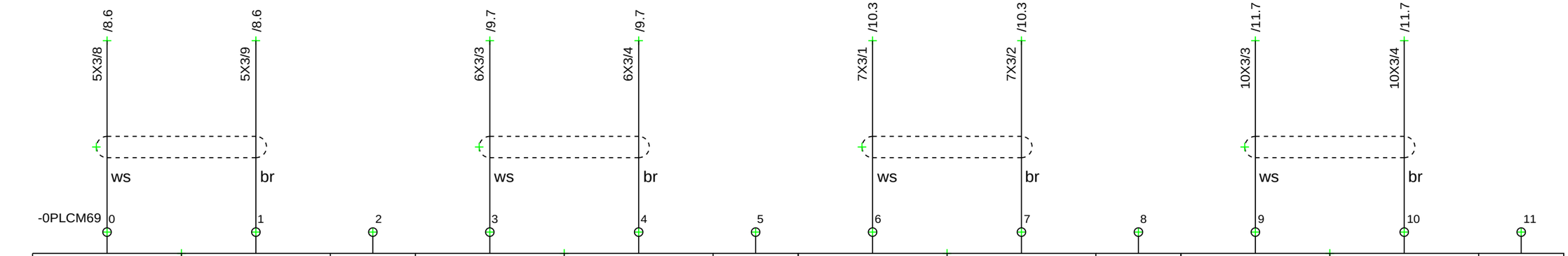
actual value 0-20mA
weighing cell before
shell depositor
(taring weight)

PT100 actual value 4-20mA
temperature belt heating
shell forming

PT100 actual value 4-20mA
temperature shell cooler
zone 1

BÜHLER	customer 474 :P_NR2	+HSS	page 34
		=A1.F8	of 38
comm. nr. :P_NR1	analogue inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



1746-NI4

-0PLCM69 -0PLCM69 -0PLCM69 -0PLCM69

+/-20mA +/-20mA +/-20mA +/-20mA

PT100 actual value 4-20mA
temperature shell cooler
zone 2

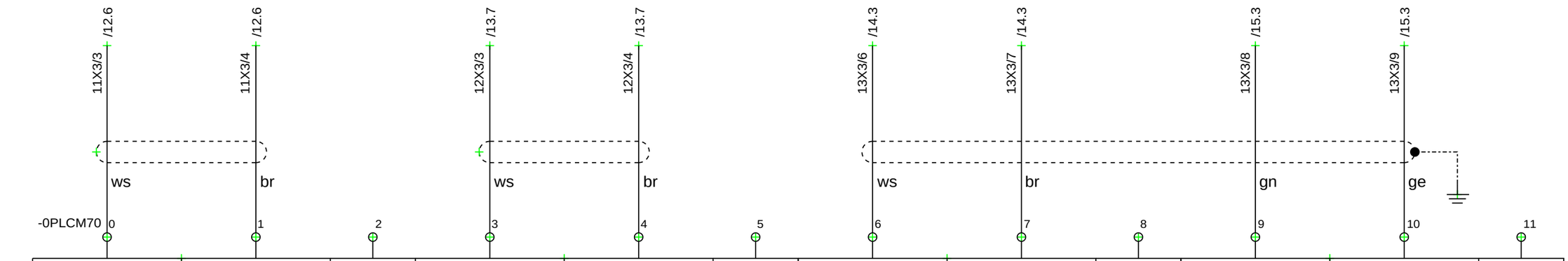
PT100 actual value 4-20mA
temperature boiler
1.filling depositor

actual value 0-20mA
weighing cell before
1.filling depositor
(shell weight)

PT100 actual value 4-20mA
temperature boiler
2.filling depositor

BÜHLER	customer 474 :P_NR2	+HSS	page 35
		=A1.F8	of 38
comm. nr. :P_NR1	analogue inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



IN0+	IN0-	ANL COM	IN1+	IN1-	ANL COM	IN2+	IN2-	ANL COM	IN3+	IN3-	ANL COM
PT100 Istwert 4-20mA Temperatur 1.Füllungskühler			PT100 Istwert 4-20mA Temperatur Boiler 3.Füllungs-Gießmaschine			Istwert 0-20mA Wägezelle vor 3.Füllungs-Gießmaschine (Füllungsgewicht)			Istwert 0-20mA Wägezelle nach Deckel-Gießmaschine (Endgewicht)		
-0PLCM70			-0PLCM70			-0PLCM70			-0PLCM70		

1746-NI4

+/-20mA

PT100 actual value 4-20mA
temperature 1.filling cooler

+/-20mA

PT100 actual value 4-20mA
temperature boiler
3.filling depositor

+/-20mA

actual value 0-20mA
weighing cell before
3.filling depositor
(filling weight)

+/-20mA

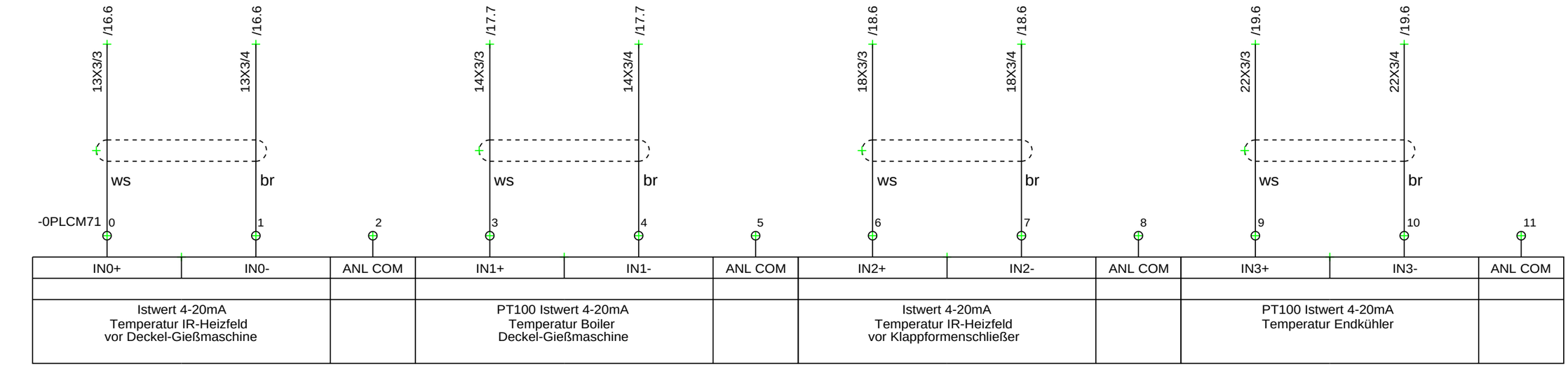
actual value 0-20mA
weighing cell after
bottom depositor
(final weight)

BÜHLER

customer 474 :P_NR2		+HSS	page 36
		=A1.F8	of 38
comm. nr. :P_NR1	analogue inputs		drawing nr. A474

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT

date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



1746-NI4

-0PLCM71 -0PLCM71 -0PLCM71 -0PLCM71

+/-20mA +/-20mA +/-20mA +/-20mA

PT100 actual value 4-20mA
temperature IR-heating
before bottom depositor

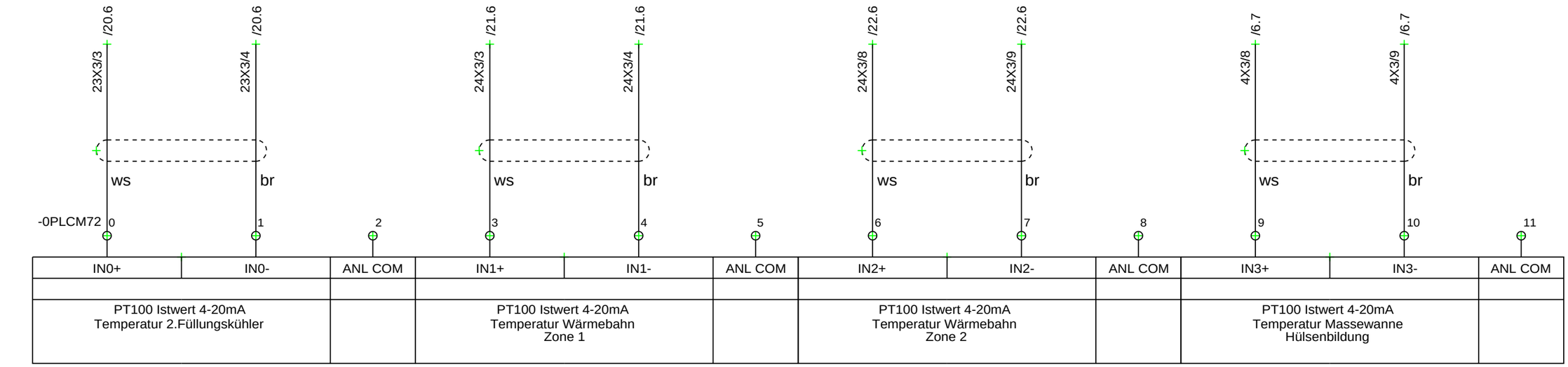
PT100 actual value 4-20mA
temperature boiler
bottom depositor

PT100 actual value 4-20mA
temperature IR-heating
before mould closing device

PT100 actual value 4-20mA
temperature final cooler

BÜHLER	customer 474 :P_NR2	+HSS	page 37
		=A1.F8	of 38
comm. nr. :P_NR1	analogue inputs	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		



1746-NI4

-0PLCM72 -0PLCM72 -0PLCM72 -0PLCM72

+/-20mA +/-20mA +/-20mA +/-20mA

PT100 actual value 4-20mA
temperature 2.filling cooler

PT100 actual value 4-20mA
temperature mould heating section
zone 1

PT100 actual value 4-20mA
temperature mould heating section
zone 2

PT100 actual value 4-20mA
temperature mass hopper
shell forming

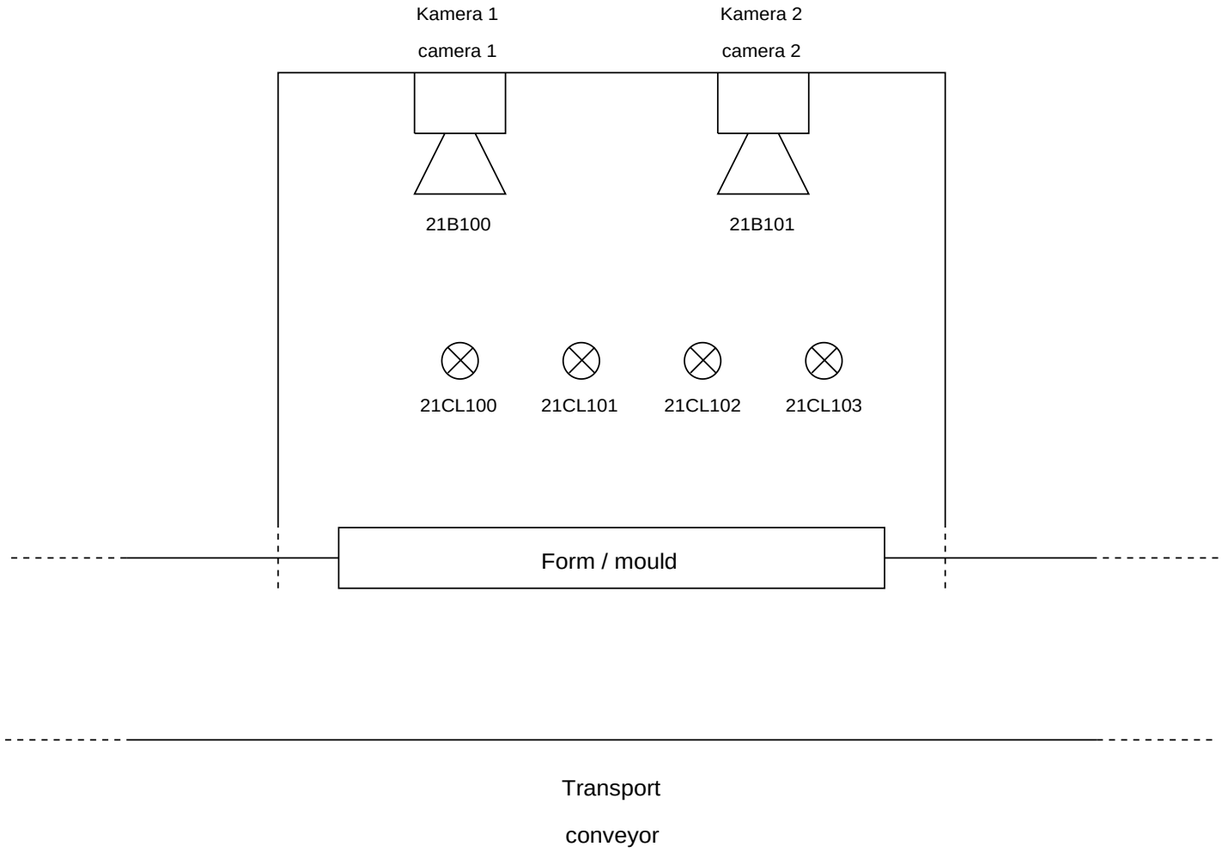
BÜHLER	customer 474 :P_NR2	+HSS	page 38
		=A1.F8	of 38
comm. nr. :P_NR1	analogue inputs		drawing nr. A474

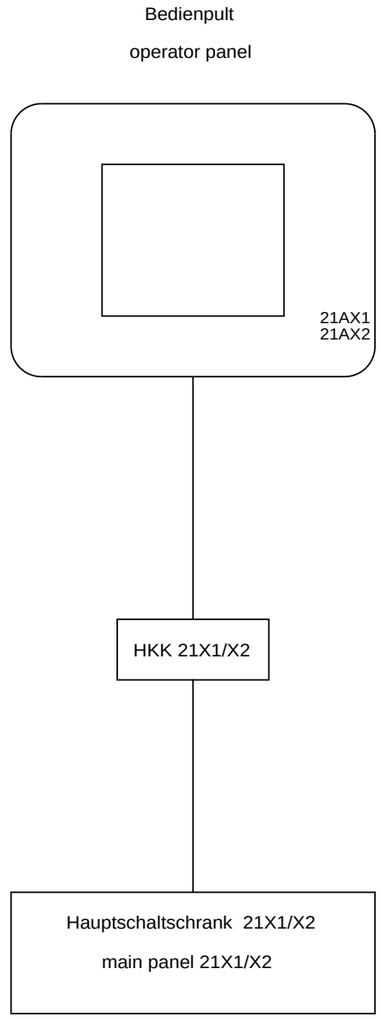
+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Leerformenkontrolle

empty mould detection

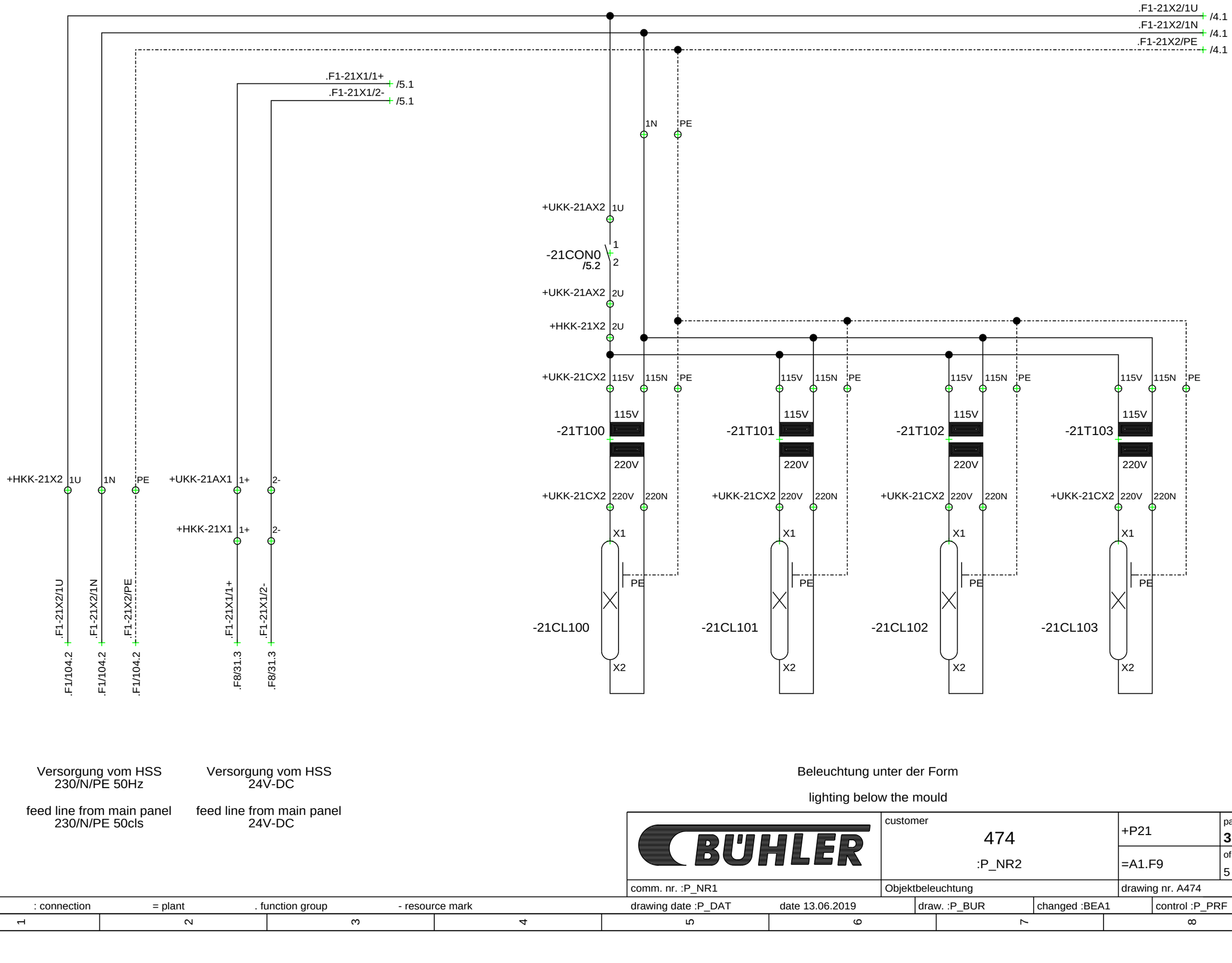
BÜHLER	customer 474 :P_NR2		+P21	page **1**	
			=A1.F9	of 5	
comm. nr. :P_NR1	Deckblatt			drawing nr. A474	
+ location : connection = plant . function group - resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF





BÜHLER	customer 474 :P_NR2	+P21	page **2**
		=A1.F9	of 5
comm. nr. :P_NR1	Übersicht	drawing nr. A474	

+ location : connection	= plant	. function group	- resource mark	drawing date :P_DAT date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF



Versorgung vom HSS
230/N/PE 50Hz

feed line from main panel
230/N/PE 50cls

Versorgung vom HSS
24V-DC

feed line from main panel
24V-DC

Beleuchtung unter der Form

lighting below the mould

BÜHLER	customer 474 :P_NR2	+P21	page 3
		=A1.F9	of 5
comm. nr. :P_NR1	Objektbeleuchtung		drawing nr. A474

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

/3.8 .F1-21X2/1U
/3.8 .F1-21X2/1N
/3.8 .F1-21X2/PE

.F1-21X2/1U
.F1-21X2/1N
.F1-21X2/PE

+UKK-21AX2 1U 1N PE

+UKK-21AX2 1U 1N PE

+UKK-21AX2 1U PE 1N

L N PE
power filter
-21PF100
L1 N1

L N PE

1 2
M
1 ~
PE
-21M100

L PE N
-21XX101

Monitor Bedienpult

monitor operator panel

Lüfter Bedienpult

fan operator panel

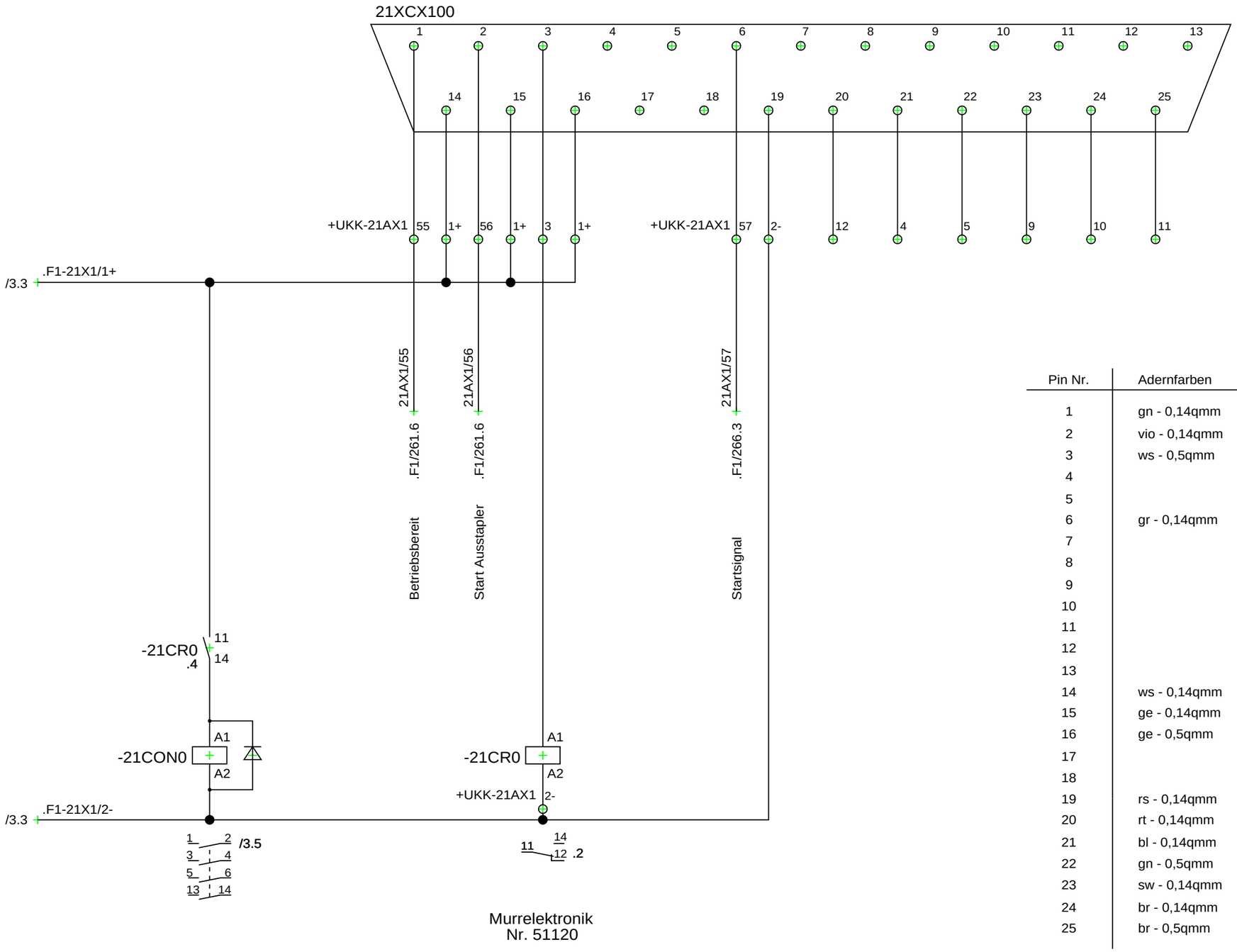
2-Fach Schuko-Steckdose
für Kamera-Netzteil 1+2

socket for camera net pack

BÜHLER	customer 474 :P_NR2	+P21	page 4
		=A1.F9	of 5
comm. nr. :P_NR1	Spannungsversorgungen	drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

25 polige D-SUB Buchse zum PC
25 pol. plug to PC



Pin Nr.	Adernfarben	Bezeichnung
1	gn - 0,14qmm	PC - Betriebsbereit / PC - ok
2	vio - 0,14qmm	Start Ausstapler / start destacker
3	ws - 0,5qmm	Beleuchtung / illumination
4		
5		
6	gr - 0,14qmm	Startsignal / startsignal
7		
8		
9		
10		
11		
12		
13		
14	ws - 0,14qmm	PC - Betriebsbereit / PC - ok
15	ge - 0,14qmm	Start Ausstapler / start destacker
16	ge - 0,5qmm	Beleuchtung / illumination
17		
18		
19	rs - 0,14qmm	0V Startsignal / 0V startsignal
20	rt - 0,14qmm	
21	bl - 0,14qmm	
22	gn - 0,5qmm	
23	sw - 0,14qmm	
24	br - 0,14qmm	
25	br - 0,5qmm	

Murrelektronik
Nr. 51120

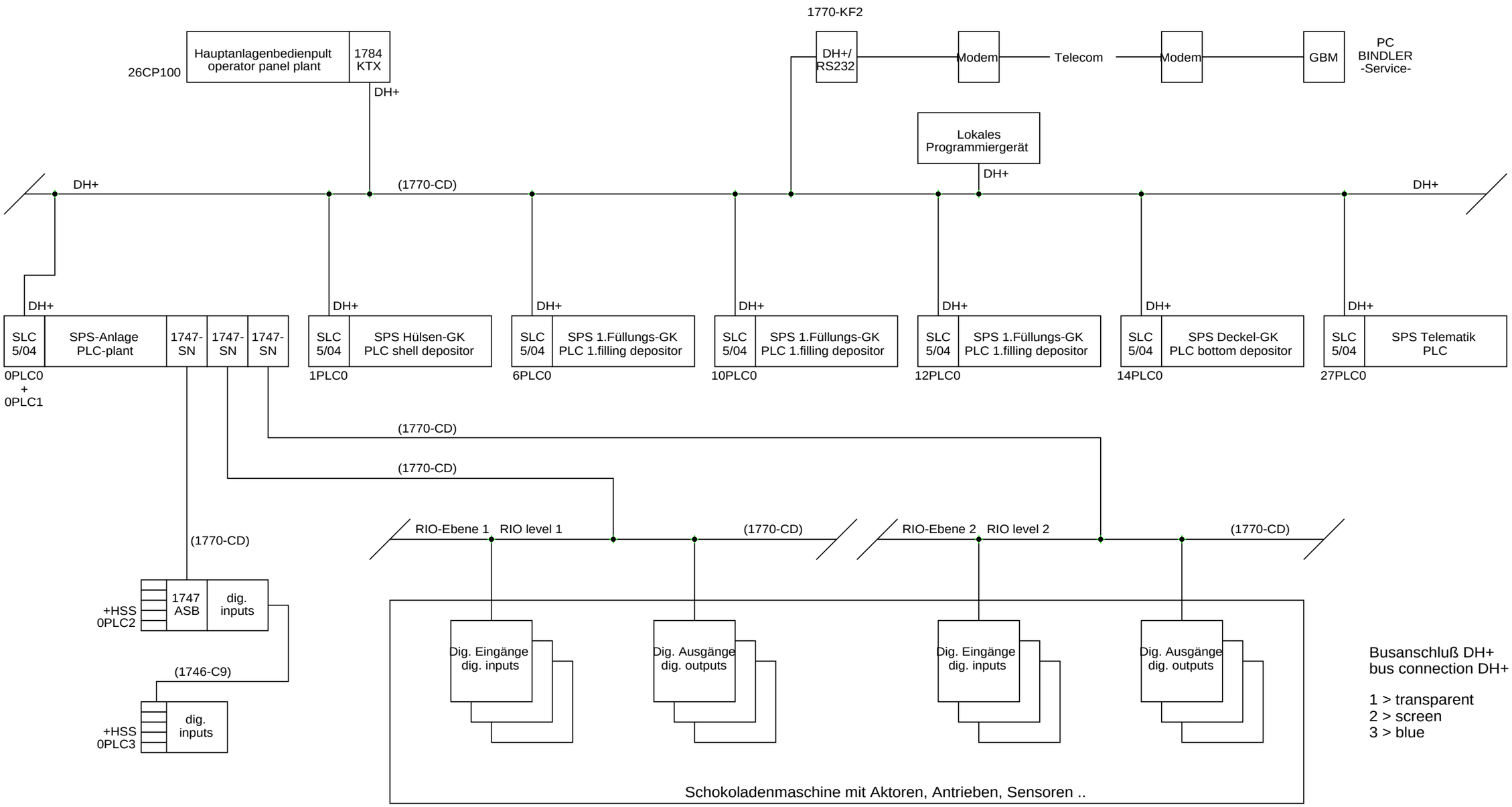
BÜHLER

comm. nr. :P_NR1	customer 474 :P_NR2	+P21	page 5
		=A1.F9	of 5
25 polige D-SUB Buchse vom PC		drawing nr. A474	

+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF

Steuerungsstruktur Allen Bradley - Anlagensteuerung

system overview Allen Bradley - plant PLC



Busanschluß DH+
bus connection DH+

1 > transparent
2 > screen
3 > blue

BÜHLER	customer 474 :P_NR2	+HSS	page 1
		=A1.F10	of 2
comm. nr. :P_NR1	system overview Allen Bradley	drawing nr. A474	

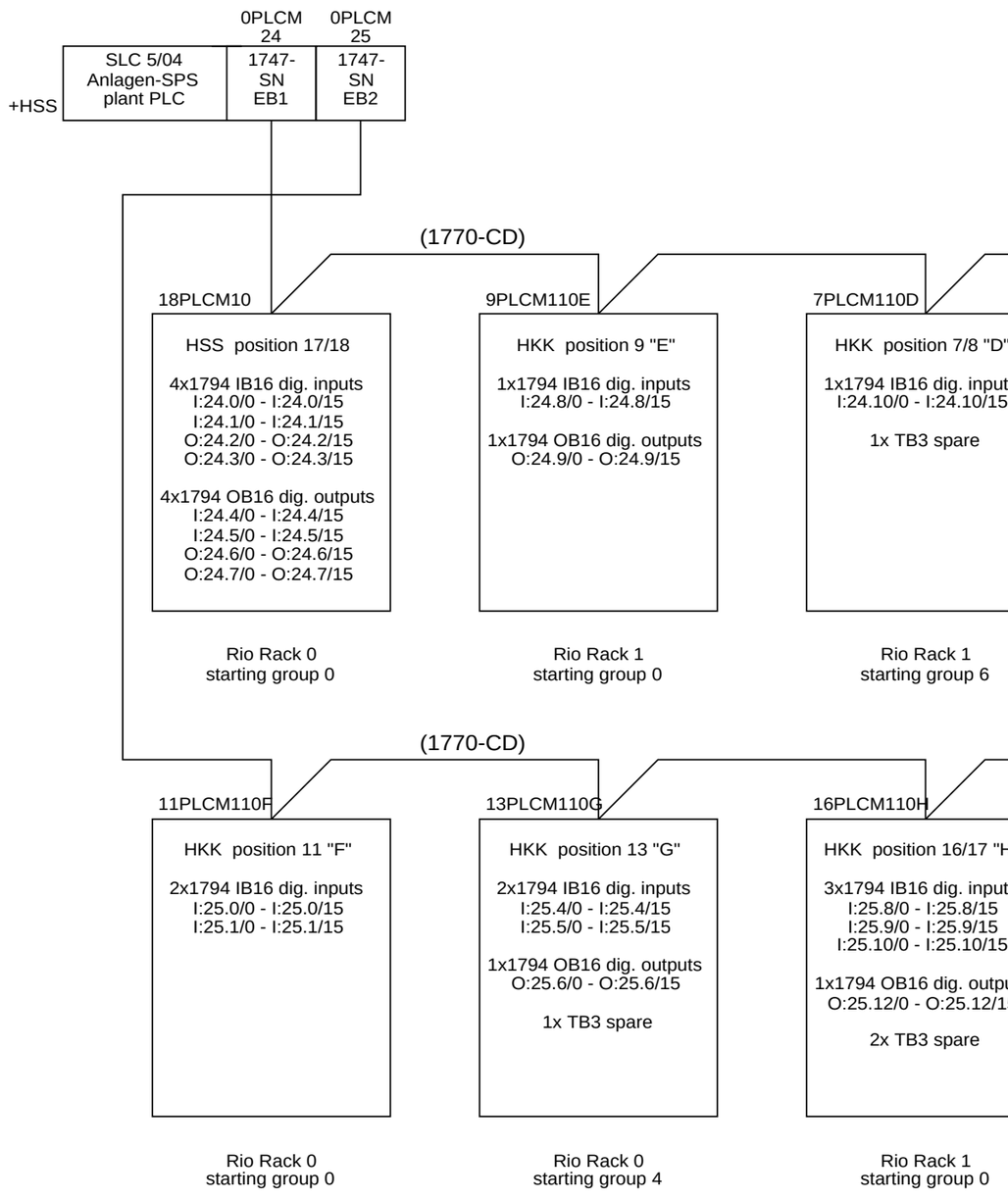
+ location	: connection	= plant	. function group	- resource mark	drawing date :P_DAT
date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF		

Übersicht Remote I/O-Ebene 1+2

overview remote I/O-level 1+2

Busanschluß Remote I/O
bus connection remote I/O

1 > blue
2 > screen
3 > transparent



Ebene 1

level 1

Ebene 2

level 2

BÜHLER	customer 474 :P_NR2	+HSS	page 2
		=A1.F10	of 2
comm. nr. :P_NR1	overview remote I/O - level 1+2	drawing nr. A474	

+ location : connection	= plant . function group	- resource mark	drawing date :P_DAT	date 13.06.2019	draw. :P_BUR	changed :BEA1	control :P_PRF