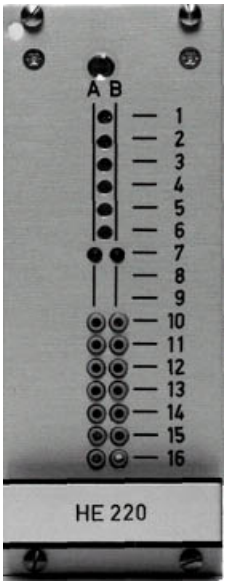
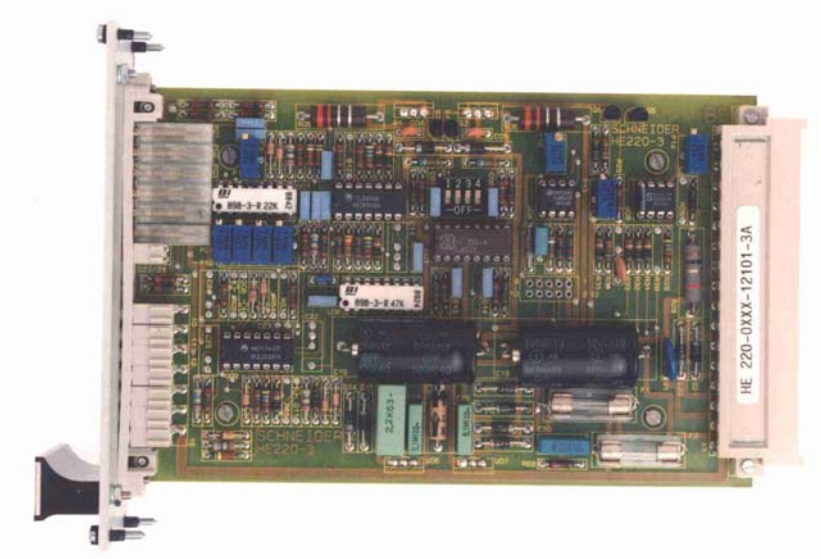
SCHNEIDER SERVOHYDRAULIC

analogue PID-controller for electro hydraulic closed loops

Type : HE 220 - ...





description :

classical designed PID controller based on analogues OP's. Useful for a closed loop applications all fields controls. Special developed for electro hydraulic closed loops with Schneider Servo hydraulic servo valves. The right choice for static or dynamic pressure, force or position controls.
Easy and in depended adjustment pot's for all PID parameters on front side. Test point for all relevant signals with 2mm jacks on front side. With the integrated current loop for all Schneider servo valves it is very easy to build a complete hydraulic closed loop.

Technical data :

supply

Power supply:	2 x 18 ... 24 Volt AC against common GND (internal supplies ±24V and ± 15V DC)

Inputs:

PID and matching-amplifier

Analogue inputs:	0... ± 10V (±5V, ±10V)
some are fit with a low pass filtering	100 Hz
Input resistance	44 kohm
As option current input	0/4 mA ... 20 mA with solder able Shunt resistance

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Controller release

P, I or D	15 or 24 Volt for release
Fee useable Analogue switch	15 or 24 Volt for open the analogue switch

Current booster

Analogue input:	0... ± 10V (±5V, ±10V)
Input resistance	100 kohm

outputs:

PID and matching amplifier:

Output voltage:	0 ... ±10 Volt
Maximal output current	0 ... ± 5mA
P-gain	0,5 ... 20 V/V
Integrator time Ti	0,1 ... 5 sec
Differential time Td	2 ... 100 msec
P-gain of matching ampl.	0,5 ... 20 V/V

Current booster:

Output current (controlled)	0 ... ± 200 mA ±300 mA ±400 mA ±650mA or ±1000mA

Rated current for 10V input adjustable with internal pot

Output voltage	ca. 0 ... ± 24Volt
External load resistance	4 ... 150 ohm
External load inductivity	0 ... 160 mH

Not short circuit proof, useful for resistance and inductive loads (valve coils)

power	0 ... 15 W

Dither generator

Amplitude	0 ... 20% from rated current
Frequency	30 ... 450 Hz

Internal power supply:

Output voltage non regulated:	+24 V DC max ca. 300mA
	-24V DC max ca. 300mA
output voltage regulated:	+15 V DC (± 0,4V) max ca. 100mA
	-15 V DC (± 0,4V) max ca. 100mA

Mechanical data's

dimensions:	European size card 100 x 160 mm
	Front plate 50 mm (10 TE) 3 HE
	Circuit board moved 4 TE to the right
Male connector:	DIN41612 F 48 polig
Potentiometer	19-turn spindle trimmer
weight	500 g

environment

Permissible ambient temperature	–20 ... +60 °C
max storage temperature	–40 ... +85 °C
Permissible humidity	30 ... 75 % not condensed
Shock resistance	< 2g sinus form 10 ... 100Hz
EMC level	3 according to EN 50082-2

(only if the board is mount in a EMC protected rack)

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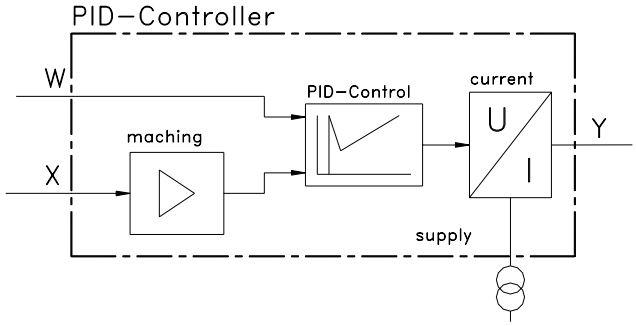
Bloc diagram



Model Type and order codes

39985 HE 220- XXXX – 1 2 1 0 1 – 3 A

order no

Type
220

current
0xxx
0200
0300
0650
1000

Dither
0 = without
1 = with

connector type
0 = spare
1 = Spare
2 = F48 polig

PID-part type
0 = without PID
1 = Standard
2 = Ramp generator
3 = PID-10G-Poti
4 = PD-controller
5 = PID front switch
6 = ramp with 2 levels
7 = I-Offset on the front side
8 = PID and carrier-amplifier
9 = Spare

power supply options
0 = 2 x 18...14V AC
1 = 2 x 18...14V AC und ±15V DC
2 = only ±15V DC

Front plate
0 = without
1 = Vero
2 = Teleperm C
3 = Schroff

construction level
3A =3/1999

Standard stock type: 39985 HE220-0xxx-12101-3A

Additional parts

For power supply	HE 236 power unit with transformer Torodial transformer 50VA 2x 18V
For to mount	card holder DIN41612-F48pin
For to mount in 19zoll racks	female connector DIN41612-F48pin for soldering or WW connection

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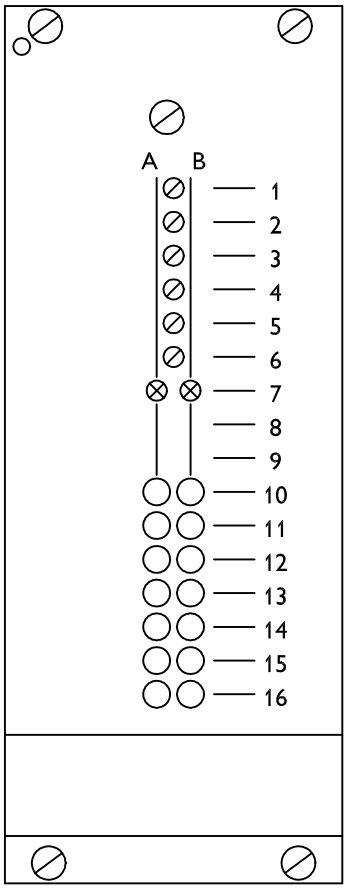
Einstellpotis

P1: Reserve
P2: Verstärkung Anpassverstärker
P3: Differenzierzeit - D-regler: links herum länger
P4: Verstärkung - P-Regler: rechts herum größer
P5: Integrationszeit - I-Regler: links herum länger
P6: Ditheramplitude
A7: LED +15V B7: LED -15V

Testpunkte

A10:-15V	B10: Reserve (Istwert)
A11:Ausgang D-Regler	B11: Reserve (Sollwert)
A12:Ausgang Anpassverstärker	B12: Ausgang P-Regler
A13:Reglerausgang	B13: +15V
A14:Xd-Regeldifferenz	B14: Ausgang I-Regler
A15:Ditheramplitude	B15: Ventilstrom (über 1 Ohm) 100mV=100mA
A16:Masse 0V	B16: Masse 0V



Adjustments

P1: spare
P2: matching amplifier gain
P3: differential-time
P4: proportional gain
P5: integral time
P6: dither-amplitude
A7: power-supply LED +15V B7: power-supply LED -15V

Testpoints

A10:-15V	B10: spare (extern connection)
A11:diff.-controller	B11: spare (extern connection)
A12:matching amplifier	B12: P-controller
A13:outp. PID-controller	B13: +15V
A14:controller differenz	B14: integral-controller
A15:dither-amplitude	B15: servo-valve current (1-Ohm shunt, 100mV=100mA)
A16:ground 0V	B16: ground 0V

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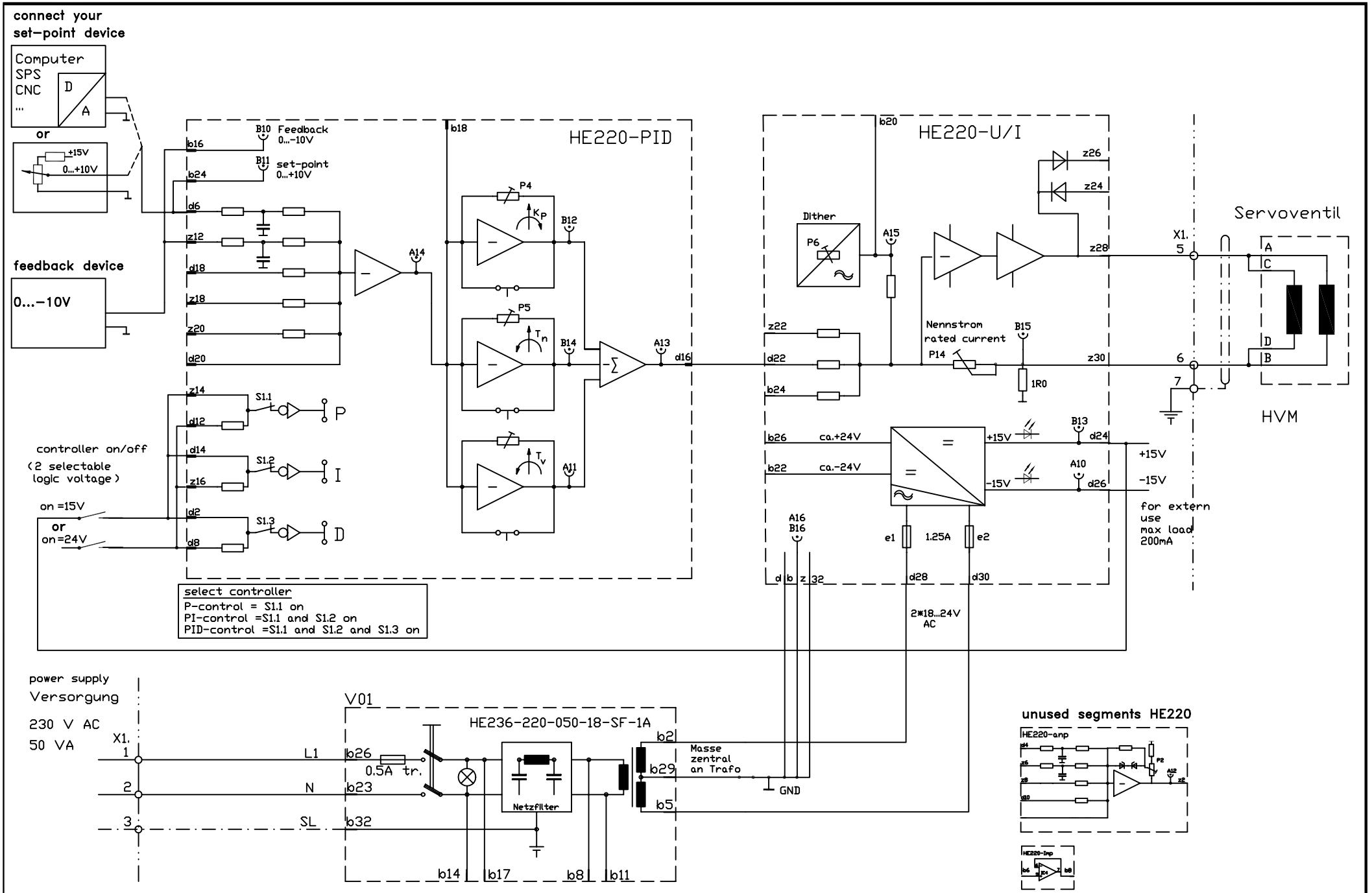
				gez.					Zeichnungsnummer: HE220–
				gepr.					Art.Nr.:
Zust.	Aenderung	Datum	Name	F.gepr.			Ers.f.	Ers.d	Blatt BL.



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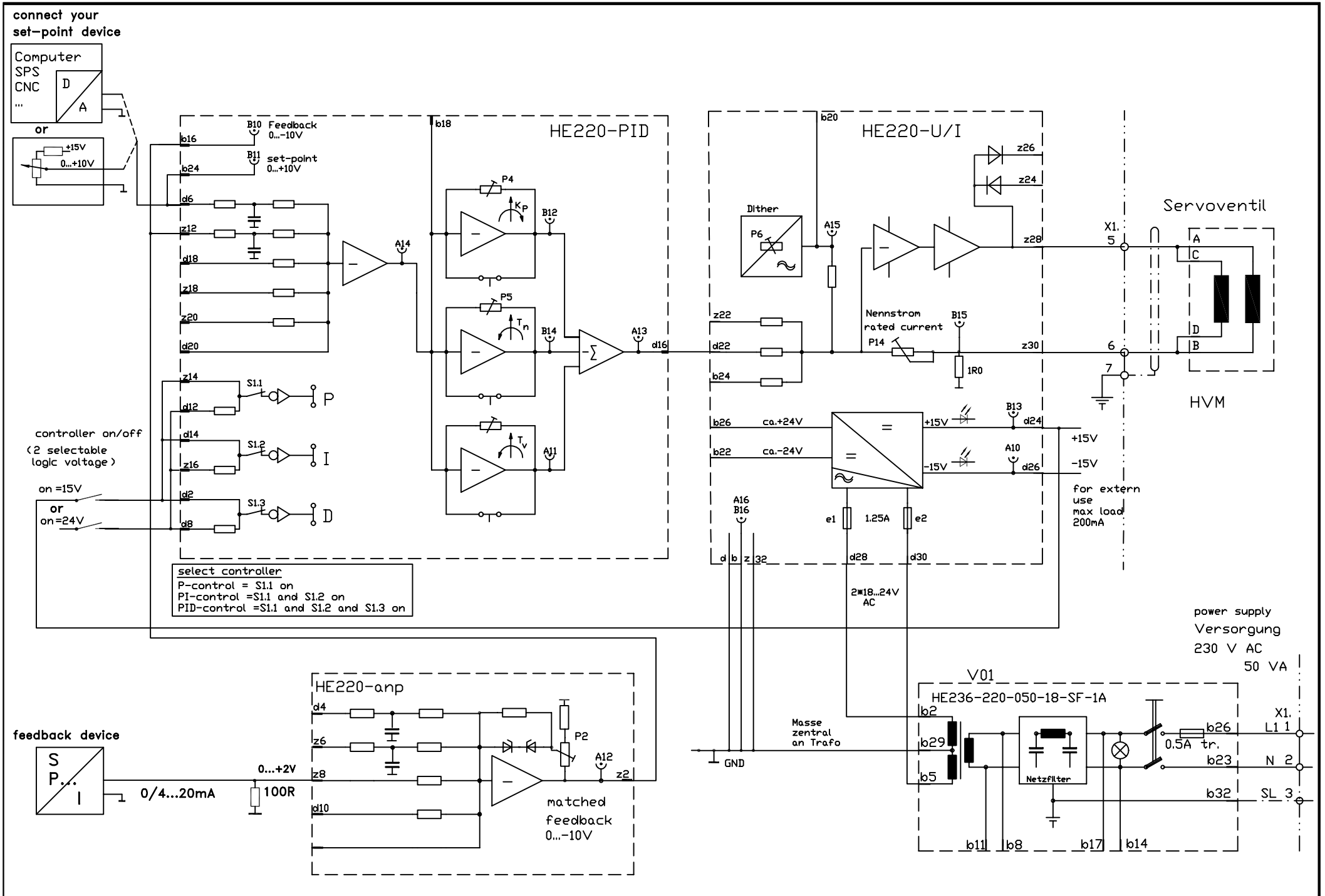

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					gepr.				
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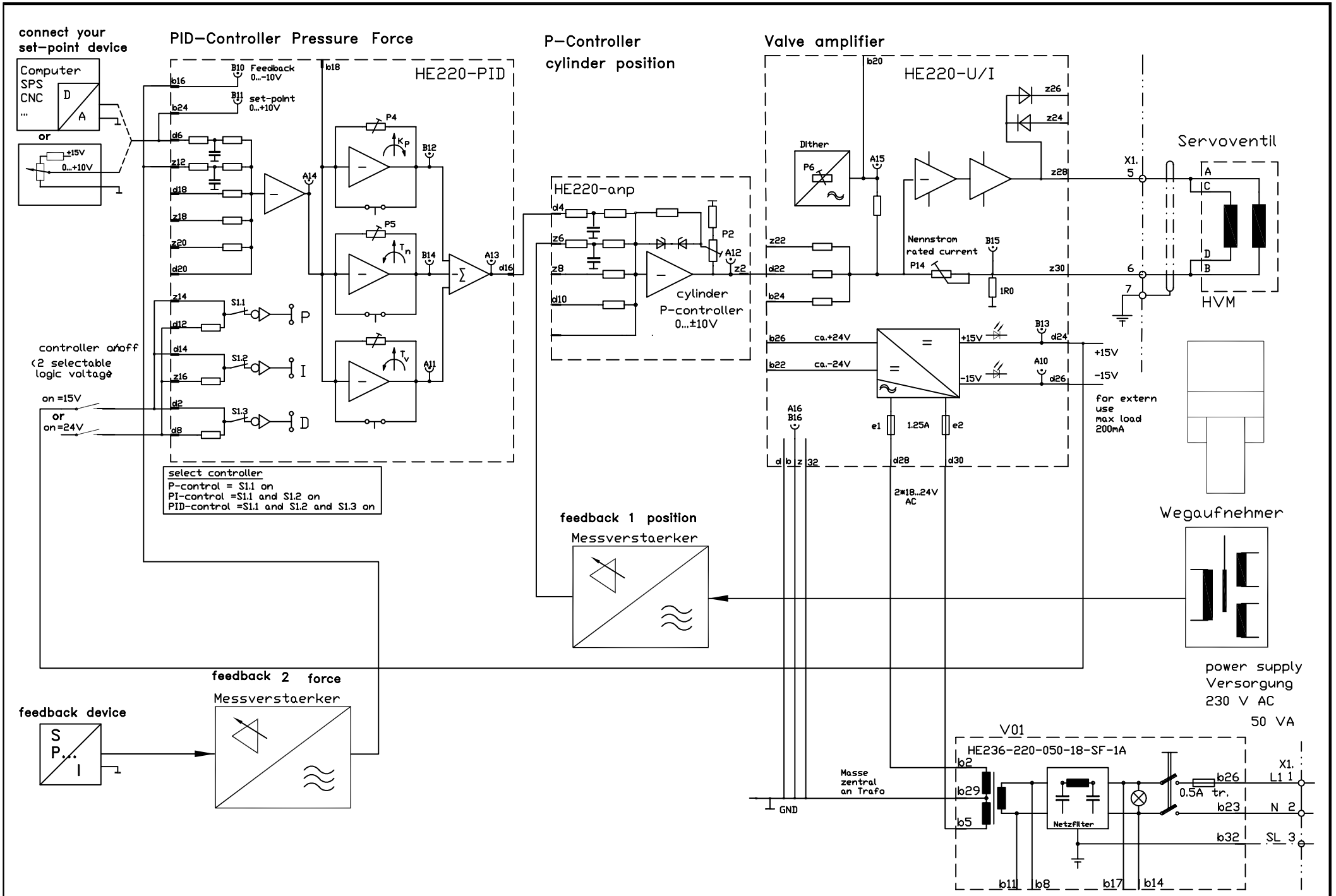
Benennung
PID controller
Application info 2

Zeichnungsnummer
HE220

Blatt
BL.



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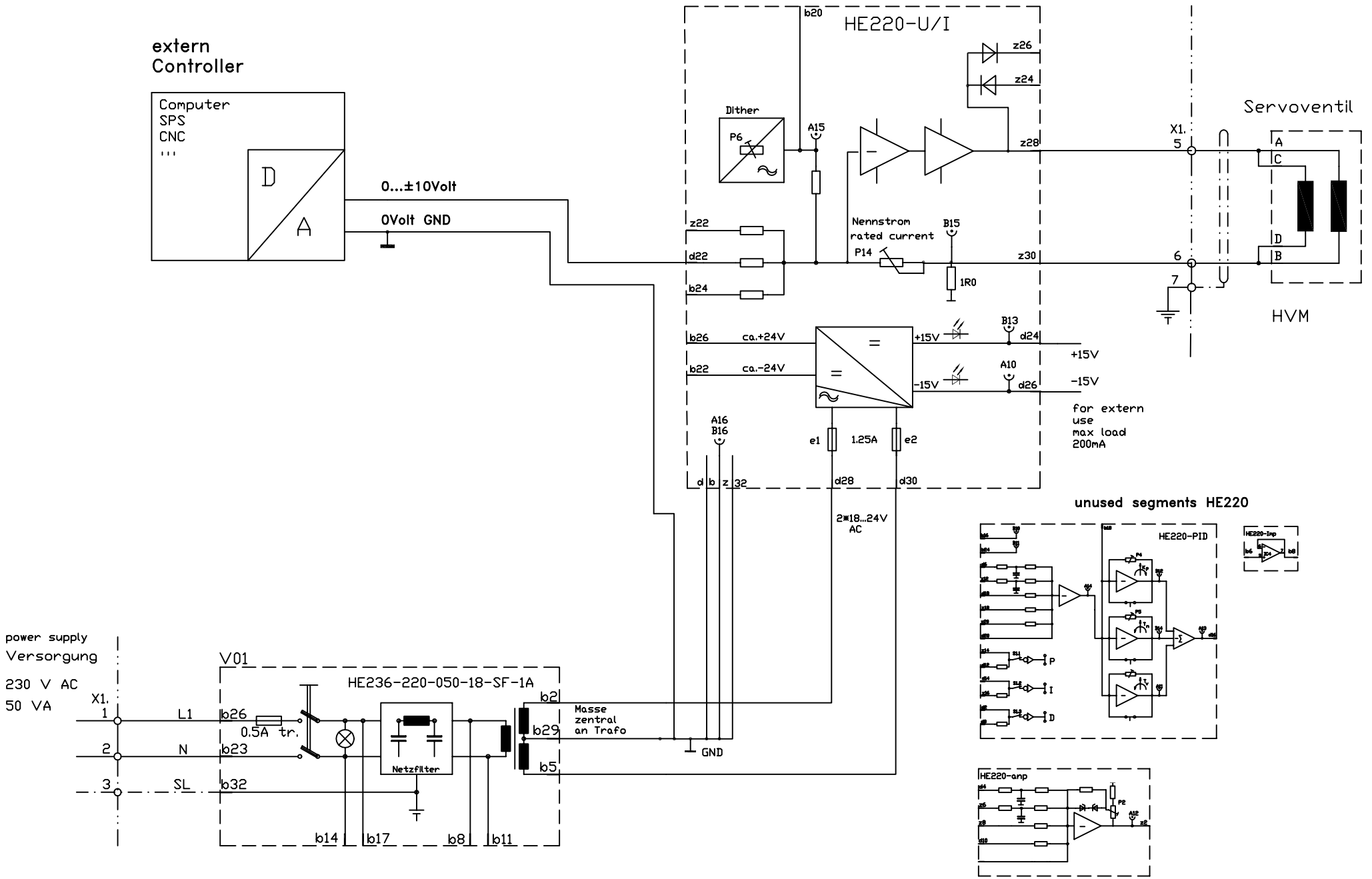
				gepr.						Blatt BL.
Zust.	Aenderung	Datum	Name	F.gepr			Ers.f.	Ers.d		



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				gez.							Blatt BL.
				gepr.							
Zust.	Aenderung	Datum	Name	F.gepr			Ers.f.	Ers.d			