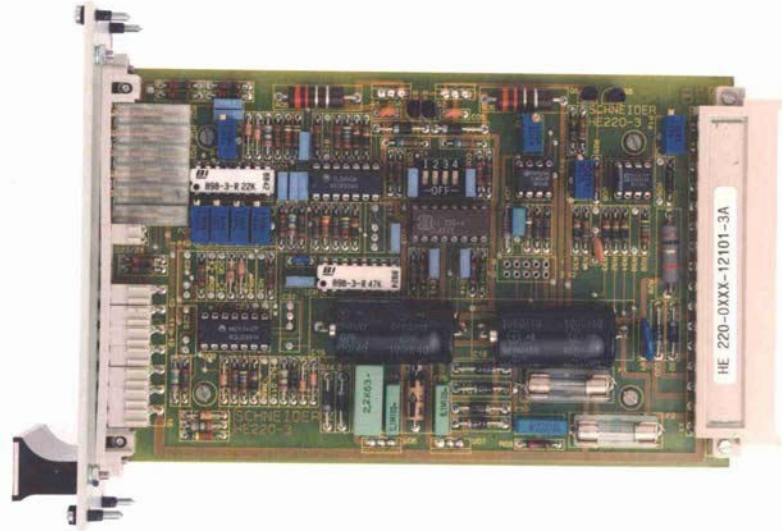
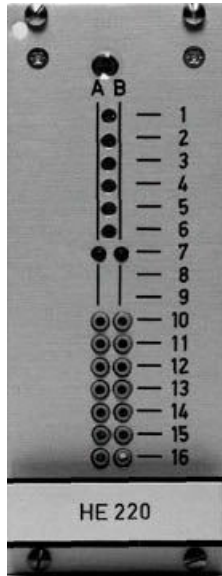


SCHNEIDER SERVOHYDRAULICS

Analog PID controller for electrohydraulic control

loopsType : HE 220 - ...



Description :

Analog controller with operational amplifiers and classic PID behavior. Suitable for general control purposes. Especially wired for tasks in servohydraulics for static and dynamic pressure, force and position control.

Setting options for all controller components with spindle potentiometers on the front. Measuring options for all controller components with 2 mm measuring sockets on the front. In conjunction with the integrated current output stage for Schneider servo valves, it is possible to set up a complete hydraulic control circuit.

Technical data :

Supply

Supply voltage: 2 x 18 ... 24 Volt AC against common GND
(internal auxiliary voltages $\pm 24V$, $\pm 15V$ DC)

Inputs:

PID and matching amplifier

Analog inputs: 0... $\pm 10V$ ($\pm 5V$,
 $\pm 10V$) Partly with low-pass behavior 100Hz Input
resistance 44 kohm

As option 0/4 mA ... 20 mA via shunt to be soldered in

Controller releases
 P, I or D 15 or 24 volts for releases
 Freely selectable analog switch 15 or 24 volts
 for control input

Current output stage

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

Outputs:

PID and matching amplifier:

Output voltage: 0 ... ±10 Volt
 Maximum output current 0 ... ± 5mA
 P-amplification 0,5 ... 20 V/V
 Integration time T_i 0,1 ... 5 sec
 Differentiation time T_d 2 ... 100 msec
 P-amplification Matching amplifier 0,5 ... 20 V/V

Current amplifier:

Output current (regulated) ... ± 200 mA ±300 mA ±400 mA ±650mA or ±1000mA
 Nominal current for 10V input adjustable with internal potentiometer
 Output voltage approx. 0 ... ±
 24V at external load resistors ..150 ohm
 At external load inductances ... 160 mH
 Not short-circuit proof, suitable for resistive and inductive loads (valve coils)
 Power 0 ... 15 W
 Dither generator
 Amplitude 0 ... 20% of the rated current
 Frequency 30 ... 450 Hz

Internal power supply units:

Output voltage unregulated: +24 V DC max approx. 300mA
 -24V DC max approx. 300mA
 Output voltage regulated: V DC (± 0.4V) max approx.
 100mA
 -15 V DC (± 0.4V) max approx. 100mA

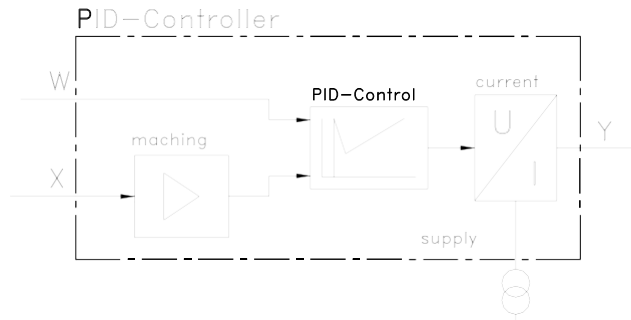
Mechanical data

Dimensions: Map of Europe 100 x 160 mm
 Front panel 50 mm (10 HP) 3 U PCB
 offset by 4 HP to the right
 Plug connector: DIN41612 F 48-pin
 Potentiometer 19-speed spindle trimmer
 Weight 500 g

Ambient conditions

Permissible ambient temperature -20 ... +60 °C
 Permissible storage temperature -40 ... +85 °C
 Permissible humidity 30 ... 75 % non-condensing
 Vibration < 2g sinusoidal 10 ...
 100Hz Electromagnetic compatibility Criticality level 3 according
 to EN 50082-2 (only if the circuit board is installed in an EMC-protected
 card magazine)

Block diagram



Type code and ordering information

Order no.	39985HE	220-XXXX	-	1	2	1	0	1	-3 A
	Type	Current					Front panel		Construction status
	220	0xxx					0 = without		3A =3/1999
		0200					1 = Vero		
		0300					2 = Teleperm		
		0650					C 3 = Rugged		
		1000					Power supply		
			Dither				0 = 2 x 18...14V AC		
			0 = without				1 = 2 x 18...14V AC and ±15V DC		
			1 = with				2 = exclusively ±15V DC		
				Plug type					
				0 = Res					
				1 = Res					
				2 = F48 pole					
					PID controller section				
					0 = without PID				
					1 = Standard				
					2 = Ramp generator				
					3 = PID-10G potentiometer				
					4 = PD controller				
					5 = PID toggle switch				
					6 = Ramp with kink				
					7 = I-offset on the front side				
					8 = PID and TF amplifier				
					9 = Res				

Standard type: 39985

HE220-0xxx-12101-3A

Available accessories

for power supply

Mains unit HE236Ring
transformer 50VA, 2x18V

for mounting in the switch cabinet

Plug-in frame DIN41612-F48pole

for mounting in 19" rack

Female connector DIN41612-F48pin for solder or WW connection

office@schneider-servo hydraulics.com

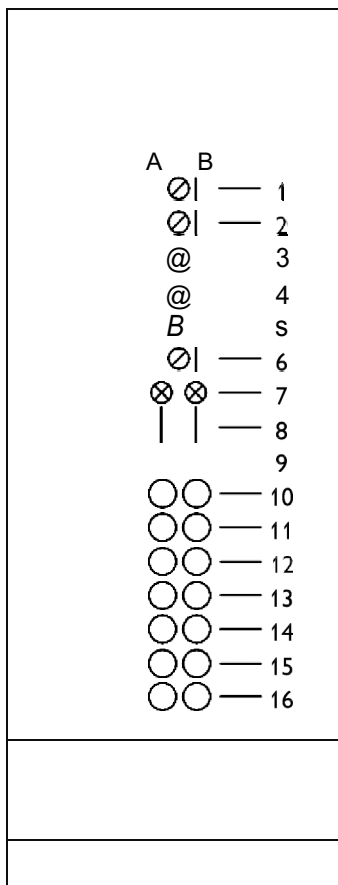
www.schneider-servo hydraulics.com

An el po is

P1: Reserve
 P2: Strengthening adjustment
 P3: Difference time - D-regulator. left around
 longer P4: amplification - P-regulator . right
 around bigger PS: Integration time - I-regulator . left
 around longer P6: Dither amplitude
 A7: LED +1SV B7: LED -1SV

Te punk e

A10:-1SV B10: lterseve (actual value)
 All :Output D-Regler B11: Reserve (Solöwen)
 AB 2:Output adjustment veü-stüi-kei B12: Output
 P-controller AJ 3:Controller output B13. +1BV
 A14:Xd control difference B14: Output I-Regler
 A1:Dither amplitude BU: Valve sci-om(over-
 ohm)
 100mV=100mA
 A16:Ground 0V B16' Mzsse 0V



sAdvju en

P1: spai-e
 P2: matching amplifler gain
 P3: dífTei-enCíal-cime
 P4: propotionzl gain
 P5: íntegi-al time
 P6: díther-amplitude
 A7: powei -supply LED +1IV B7': powet -supply LED -15V

Tes poin s

A10:-15V B10: spare (external
 connection) B11: spare
 (external connection)
 A11:diff.-controller B12: P-controllei
 B13: +15V
 A12:matching amplifiei B14: Integral-conti-oller
 A13:outp. PID-conti-oller B15: servo-valve curi ent
 A14:controller B15: servo-valve curi ent
 difierence A15:dírhei-- (1-Ohm shunt, 100mV=100mA)
 amplitude
 A16:ground 0V B16: ground 0V

ni"- HEzzorP Layer: Description

g-

For this Y0ffizg6 f#chfl. M
baholfan sir us oJle PacMe

" Kreuznoch

Description Erontplatce
discription front plate

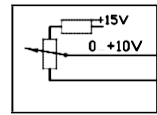
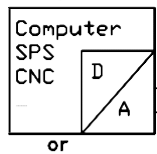
HE220-
Item no:

Blotf
BL

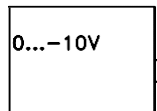
Condi-
tion

					Datum, Name				Zeichnungsnummer	
				gepr.		vor (vgl. DIN 34)	Feinwerktechnik			
	Aenderung	Datum, Name	F-gepr							

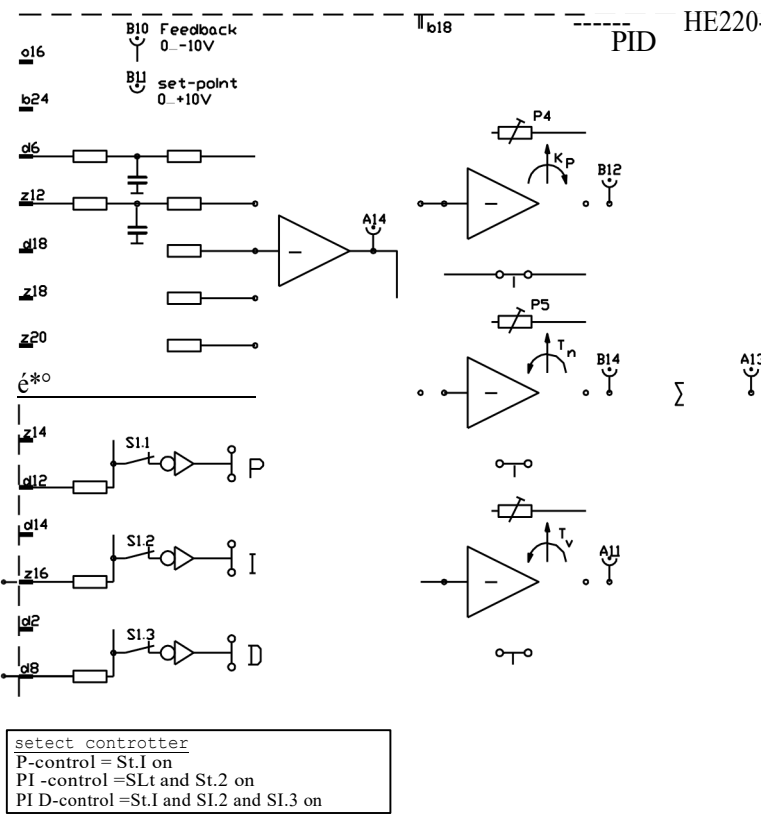
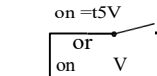
connect your set-point device



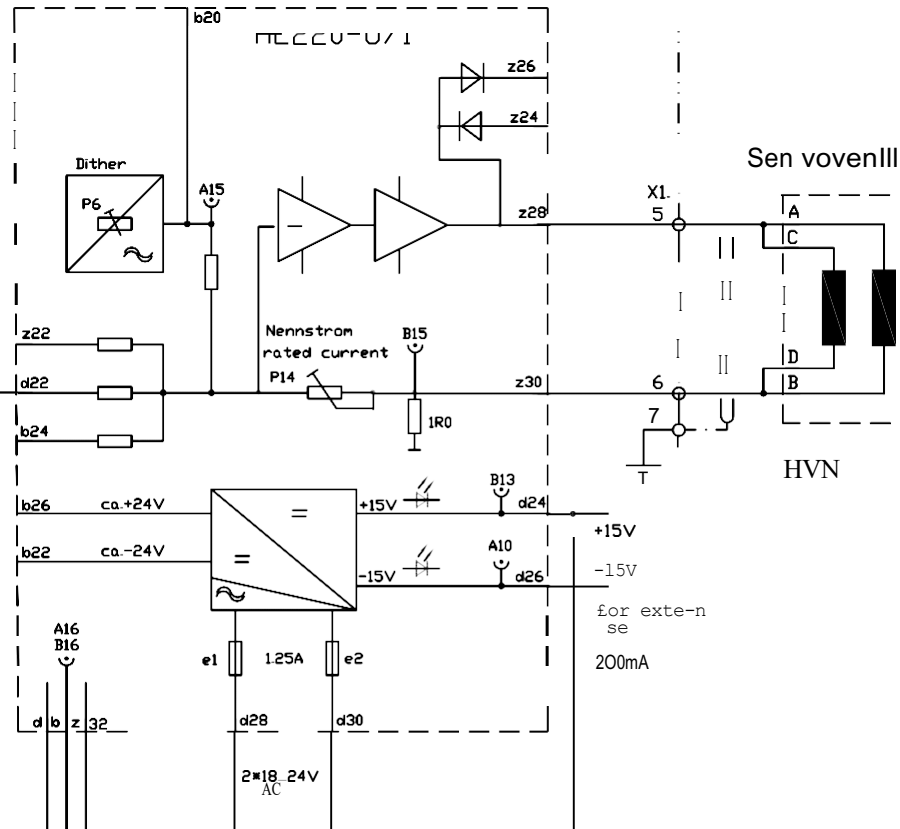
feedback device



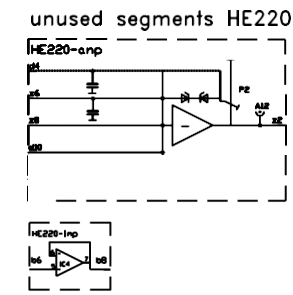
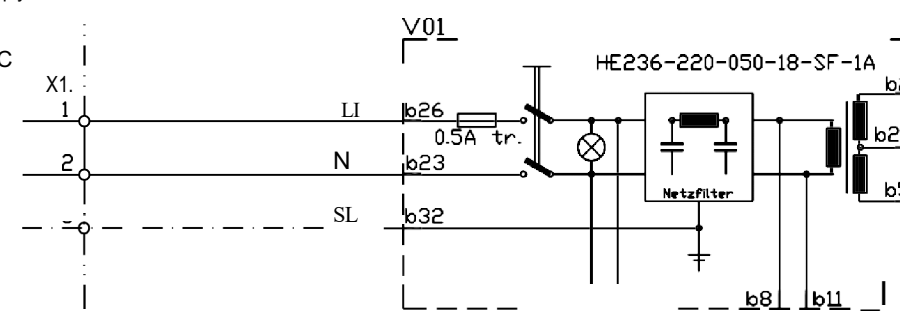
controller on SofI
 φ 2 sefec table
 fogic voltage



select controller
 P-control = St.1 on
 PI-control = SL1 and St.2 on
 PID-control = St.1 and SL2 and SL3 on

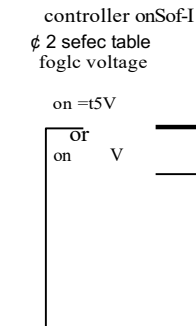
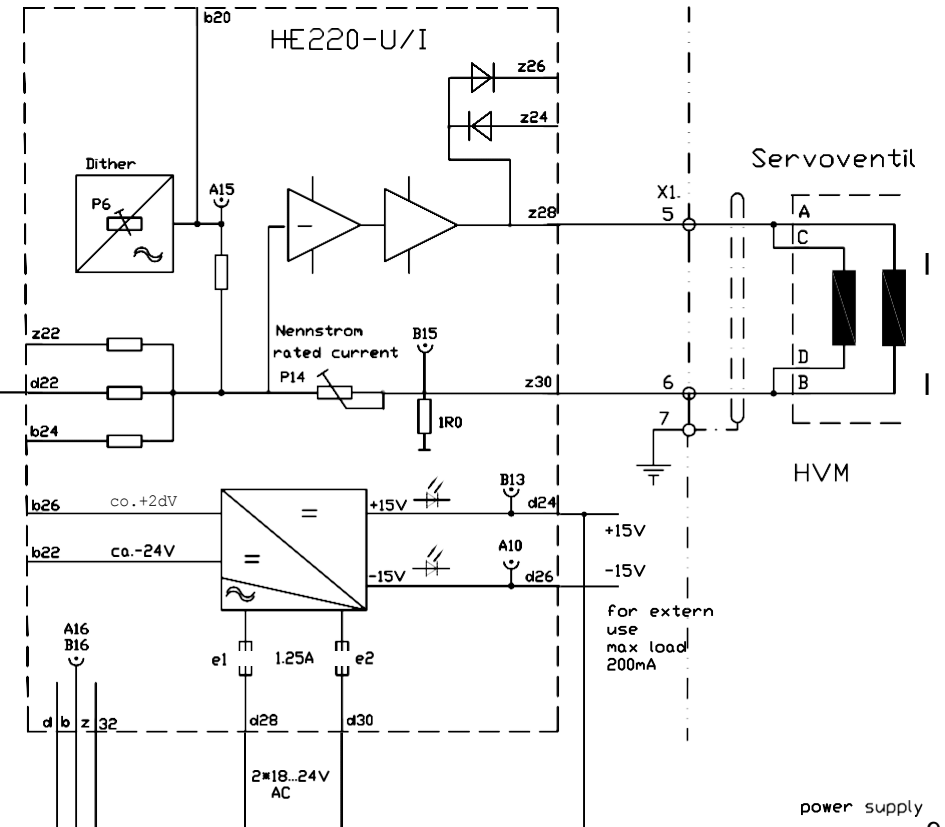
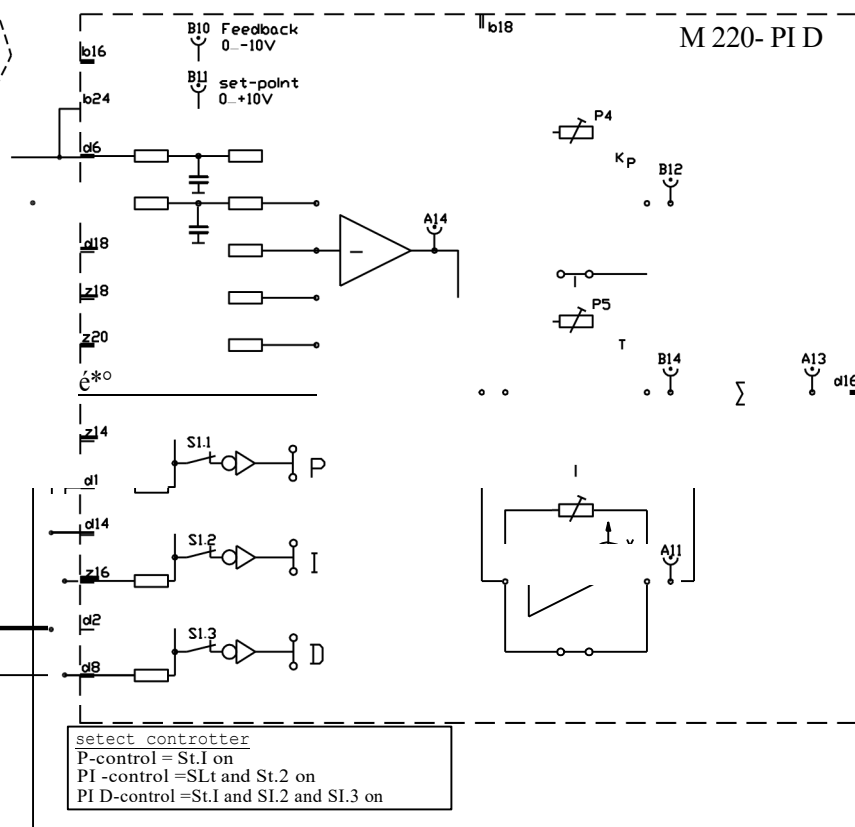
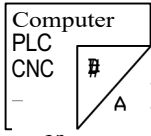


power supply
 Supply
 230 V AC
 50 VA



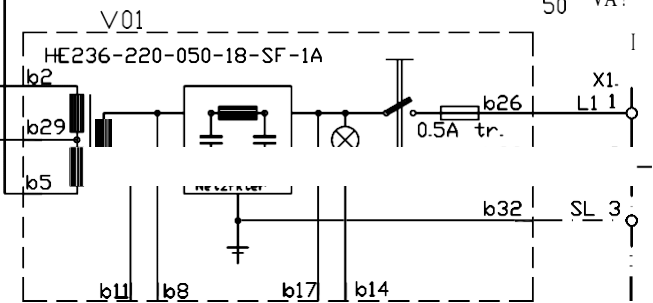
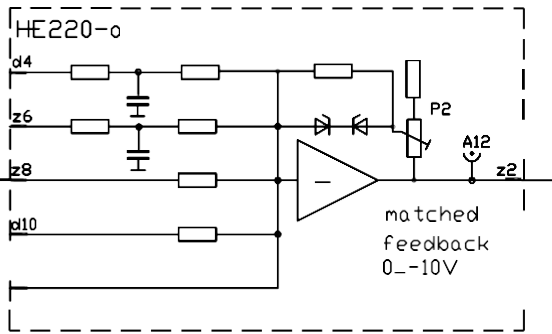
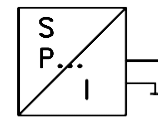
nr.t. K 220opk Lay APP10	9/95 E-	Dotvm home	Fuer diese Vorlage techn. Art. behalten wir uns alle Rechte vor (vgl. DIN 34)	Schneider Kreuznach Feinwerktechnik	Naming PID controller Application info 1	Zeichnungsnummer HE220	BL
State	Change	Dotvm None	Ers.f.	Ers.d			

connect your set-point device



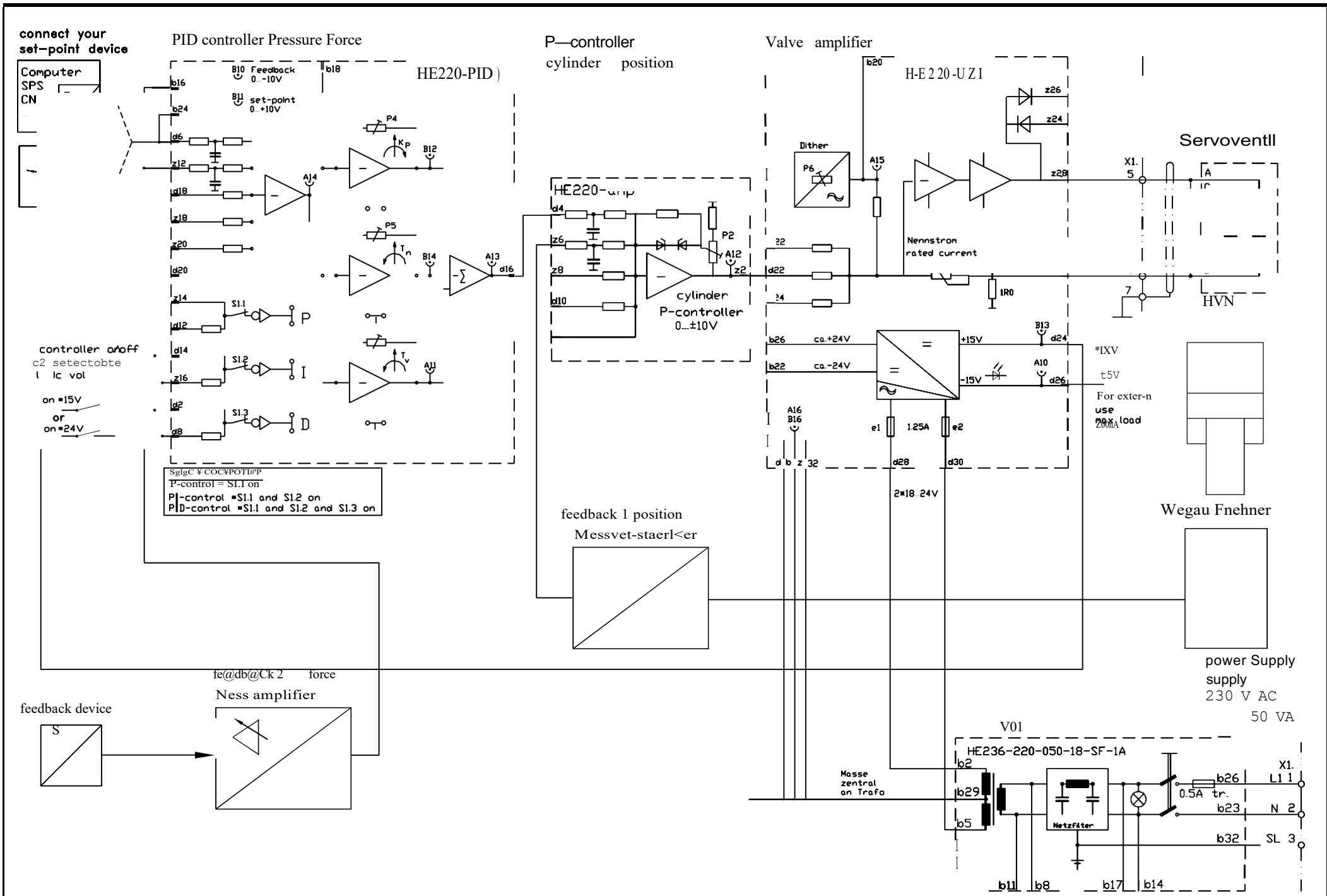
select controller
 P-control = St.1 on
 PI-control = SLt and St.2 on
 PI D-control = St.1 and SL.2 and SL.3 on

feedback device



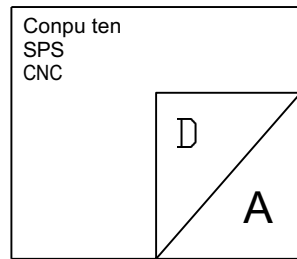
power supply
 Versorgun 9
 230 V AC
 50 VA!

Art. K 220opl Lay APP20	9/98 E	Dotum home	Fuer diese Vorlage techn. Art. behalten wir uns alle Rechte vor (vgl. DIN 34)	Schneider Kreuznach Feinwerktechnik	Naming PID controller info	Zeichnungsnummer HE220	Organic t'ht BL
Stat	Change	Dotum Nome	Ers.f.	Ers.d	2		



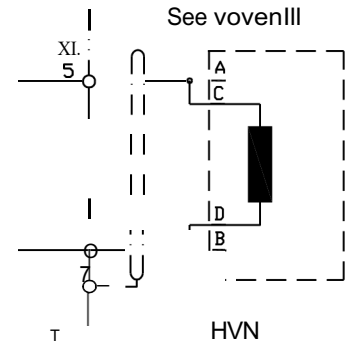
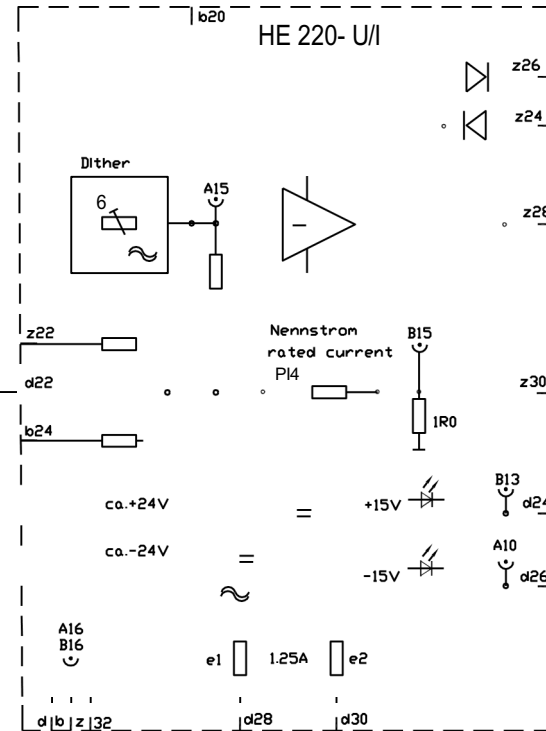
/r,p, K 220opk Lay APP30	9Z94	Egg		Dotum	Mome	Fuer diese Vorlage techn. Art. behalten wir uns alle Rechte vor (vgl. DIN 34)	Schneider Kreuznach Feinwerktechnik	Benennung PID controller	3	Zeichnungsnummer HE220	
State	Change	Do	None	"-@P"		Ers f	Ers g	Info			Bio H BL

external controller

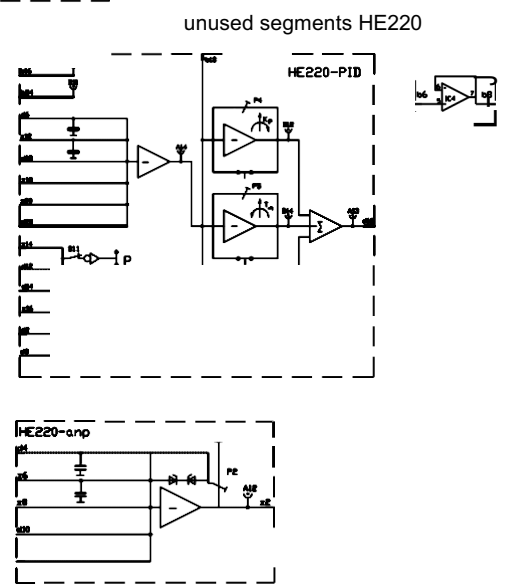
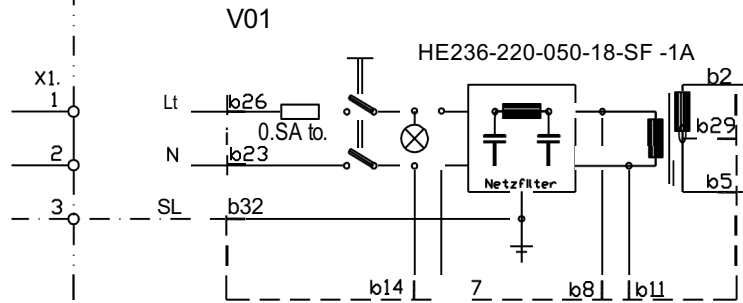


0...k 10Volf

0V0lt GND



power supply
Supply
230 V AC
50 VA



/r,t ₆	K 220opk Lay APP40	9x94 Bl	Dotvm	home	Fuer diese Vorlage techn. Art. behalten wir uns alle Rechte vor (vgl. DIN 34)	Schneider Kreuznach Feinwerktechnik	Naming	PID controller Application info 4	Zeichnungsnummer	HE220	
State	Change	Do do	Nome	'g'P^	Ers.f.	Ers.d					BL