

2/2-way control valve C3 proportionally actuated

PN 500
DN25 – 100

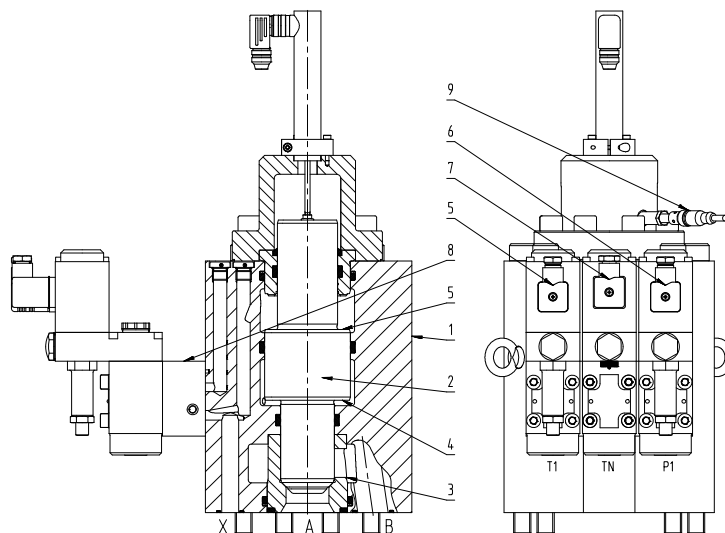
Features

- Hydraulically actuated directional seat valve for liquid media
- Actively controllable 2-way control valve with a position controlled piston position
- The controlled piston position specifies the variably adjustable flow cross-section
- The valve is actuated via proportional 2-way pilot valves
- The pilot valves are activated via the digital Controller RE4
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco connection diagram
- Optionally, the valve position can be monitored by a proximity switch

Function

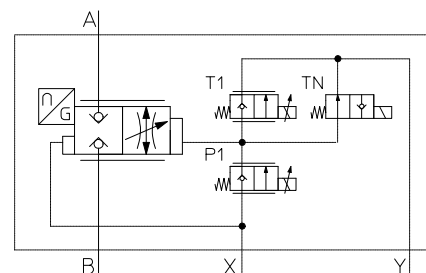
The pilot valves (5, 6) and the control pcb (8) form the pilot control group of the 2-way control valve. The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power generated by the control pressure (X) on the closing area (5), provided the opening area (4) is depressurised by the activated pilot valve (5). Thus, the lines (A, B) are separated. Activated by the pilot valve (6), the opening area (4) is pressurised and the valve piston (2) lifts off the valve seat (3). The pilot valves (5, 6) are activated according to the controller specification, thus, the valve piston (2) moves into the requested position. The flow cross-section is set analogue to the valve's piston position. Both proportional pilot valves are 2-way seat valves NC. As soon as the control is switched off, the 2-way control valve remains in the position reached last. If an S/W pilot valve NO (7) is added to the proportional pilot control group, the 2-way control valve is moved into the safe basic position with the control switched off. Pilot valves (5, 6, 7) are fastened to the valve body (1) via the control pcb (8). The basic valve position can also be monitored by a limit switch (9).

Example: 2-way control valve C3



Control surfaces, hydraulic forces

A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (6): A3, open valve actively
Control surface (5): A4, close valve actively



2/2-way control valve C3, DN25 – DN100 | PN500

Technical data

measured with HFA medium 97/3%, at 20°C

general

Weight	see Valve data
Installation position	any
Ambient temperature	-10 to 50°C (hydraulic fluids, heed standard requirements)
Material of the valve parts	Stainless steel, bronze
Sealing material	NBR, PTFE, PUR

hydraulic

hydraulic pressure connector A, B	≤ 500 bar
hydraulic pressure connector X	≤ 500 bar
hydraulic pressure connector Y	≤ 10 bar
hydraulic pressure connector X	≥ 50 bar; ≥ Operating pressure at connector A, B
Direction of flow	any, preferred direction of flow B→A
Area ratios	A3 > A4, A4 > A1 + A2
Pressure fluid	Water, HFA
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min filter fineness connector A, B	Filter fineness 100µm
- min filter fineness connector X	Filter fineness 25µm
Pressure fluid	Mineral oil HLP
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Medium - Temperature range	5 – 50°C
- Viscosity	0.6 to 100 mm ² /s

Use of other pressure fluids on request.

electric

Magnet

Voltage	24 VDC
Power consumption	see Valve data
Operating time	100% OT
Degree of protection acc. to EN60529	IP65

Position feedback encoder (displacement transducer)

Output	4 – 20 mA
Voltage	21.5 – 30 VDC
Current	max. 0.060 A
Electrical connection	Three wire, plug connection

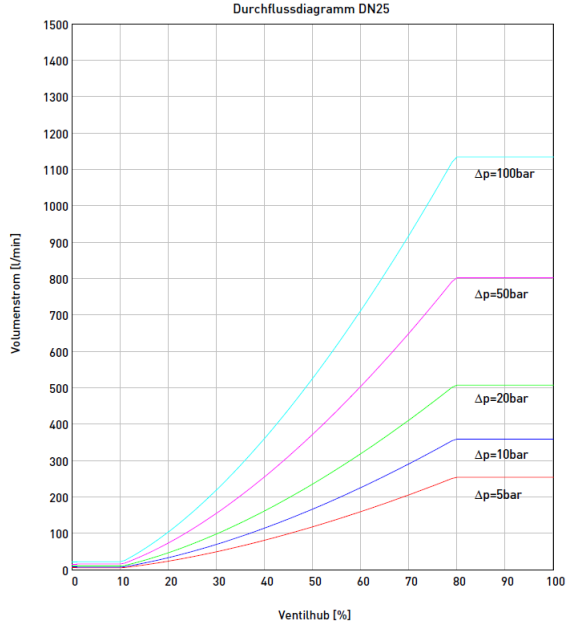
Inductive proximity switch

Output	NO contact, PNP
Voltage	10 – 30 VDC
Current	0.150 A
Switching distance	2 mm
Electrical connection	Three wire, plug connection M12x1

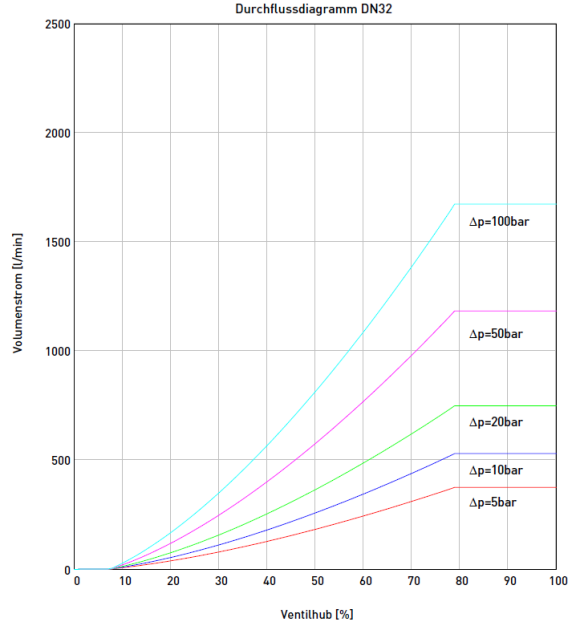
2/2-way control valve C3, DN25 – DN100 | PN500

Valve characteristics

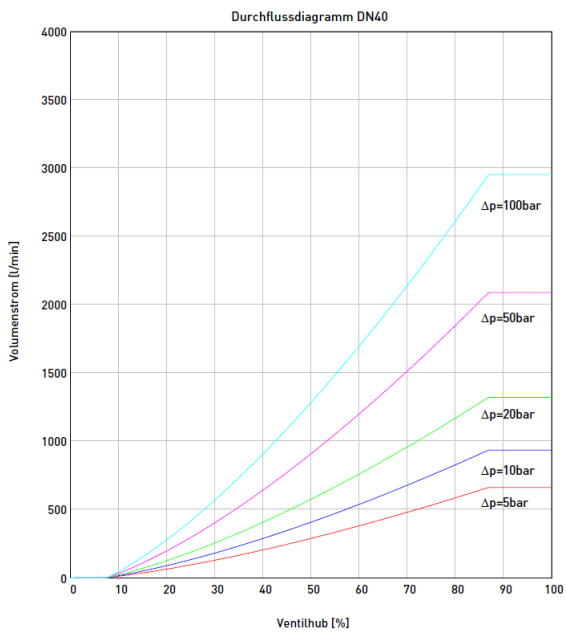
$\Delta p - q_v$ characteristic curves DN 25



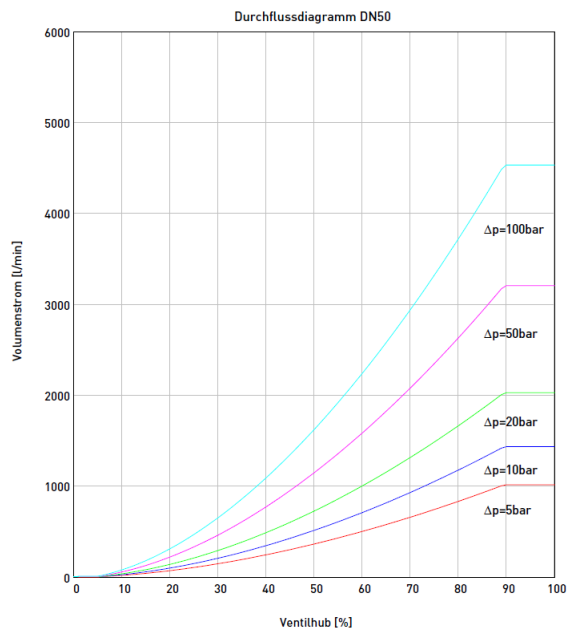
$\Delta p - q_v$ characteristic curves DN 32



$\Delta p - q_v$ characteristic curves DN 40



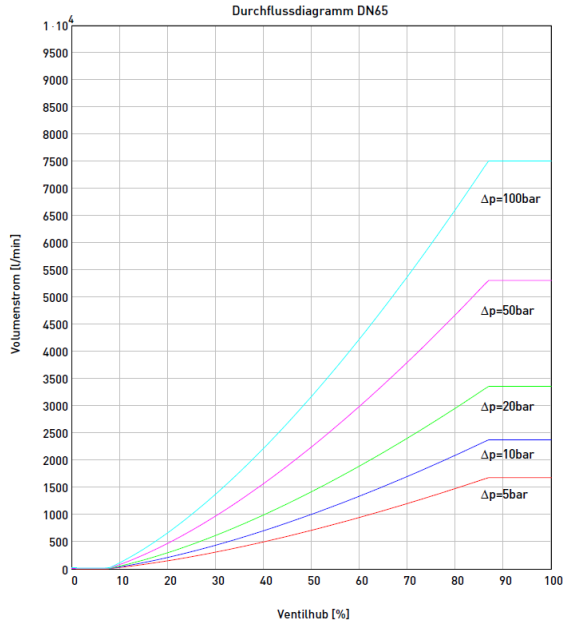
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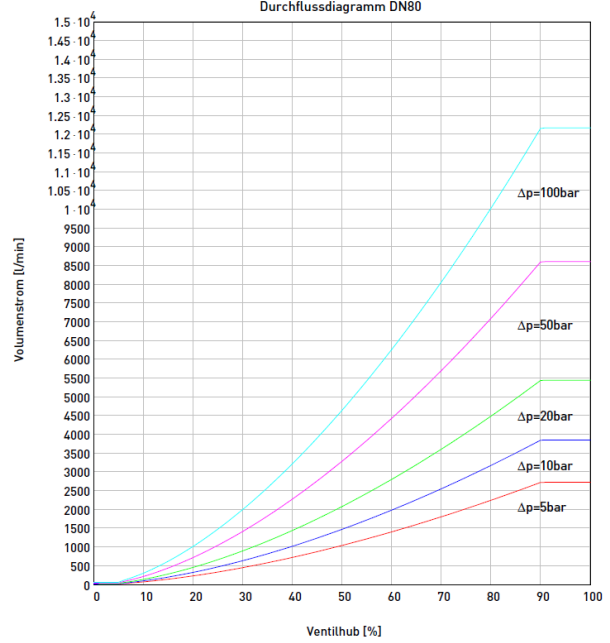
2/2-way control valve C3, DN25 – DN100 | PN500

Valve characteristics

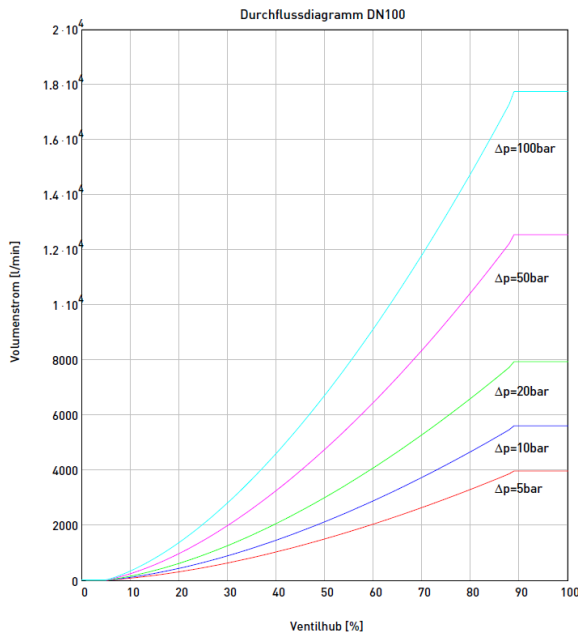
$\Delta p - q_V$ characteristic curves DN 65



$\Delta p - q_V$ characteristic curves DN 80



$\Delta p - q_V$ characteristic curves DN 100



Deutsch	Englisch
Durchflussdiagramm	Flow rate diagram
Volumenstrom	Volume flow
Ventilhub	Valve lift

2/2-way control valve C3, DN25 – DN100 | PN500

Valve data

Pilot control with a pair of valves

Nominal value		DN25	DN32	DN40	DN50	DN65			
Weight		24 kg	38 kg	54 kg	98 kg	157 kg			
2-way control valve	Art. No.	6600303	6166784	6068359	6600299	6153909			
	a	147	163	182	235	245			
	b	349	372	401	467	487			
	c	191	191	213	239	290			
	d	216	235	273	296	366			
	e	140	176	196	240	294			
	f	96	96	122	122	172			
	g	108	90	93	97	102			
	h	62	90	93	97	102			
Connection diagram	Art. No.	6573312	6560504	6570127	6561233	6561306			
Control pcb	Art. No.	6383394	6383394	6384277	6384277	6380409			
Pilot valve	DN	3	3	6	6	10			
	Art. No.	6547273	6547273	6546943	6546943	6553508			
	Quantity	2	2	2	2	2			
	Actuation	Electromagnet, voltage 24V DC							
		1.0 A	1.0 A	1.5 A	1.5 A	2.3 A			
Position monitoring	Art. No.	Inductive proximity switch, Art. No.: 5127726							
	electric	Output PNP, NO contact, voltage 10 – 30 VDC							

Pilot control with a pair of valves and basic position valve

Nominal value		DN25	DN32	DN40	DN50	DN65			
14 kg		26.5 kg	40 kg	58 kg	102 kg	167 kg			
2-way control valve	Art. No.	6600303	6166784	6068359	6600299	6153909			
	a	147	163	182	235	245			
	b	349	372	401	467	487			
	c	191	191	213	239	290			
	d	216	235	273	296	366			
	e	140	176	196	240	294			
	f	130	130	155	155	217			
	g	108	90	93	97	102			
	h	62	90	93	97	102			
Connection diagram	Art. No.	6573312	6560504	6570127	6561233	6561306			
Control pcb	Art. No.	6382959	6382959	6383173	6383173	6384285			
Pilot valve	DN	3	3	6	6	10			
	Art. No.	6547273	6547273	6546943	6546943	6553508			
	Quantity	2	2	2	2	2			
	Actuation	Electromagnet, voltage 24V DC							
		1.0 A	1.0 A	1.5 A	1.5 A	2.3 A			
Basic position valve	Art. No.	6545750	6545750	6546854	6546854	6553494			
	Actuation	Electromagnet, voltage 24V DC							
		1.0 A	1.0 A	1.5 A	1.5 A	2.3 A			
Position monitoring	Art. No.	Inductive proximity switch, Art. No.: 5127726							
	electric	Output PNP, NO contact, voltage 10 – 30 VDC							

2/2-way control valve C3, DN25 – DN100 | PN500

Valve data

Pilot control with two pairs of valves and basic position valve

Nominal value		DN80	DN100							
Weight		315 kg	523 kg							
2-way control valve	Art.No.	6153895	6077277							
	a	295	342							
	b	605	678							
	c	331	356							
	d	416	468							
	e	370	466							
	f	306	306							
	g	109	82							
	h	109	142							
Connection diagram	Art.No.	6570577	6577229							
Control pcb	Art.No.	6380395	6380395							
Pilot valve	DN	10	10							
	Art.No.	6553508	6553508							
	Quantity	4	4							
	Actuation	Electromagnet, voltage 24V DC								
Basic position valve	Art. No.	6553494	6553494							
	Actuation	Electromagnet, voltage 24V DC								
		2.3 A	2.3 A							
Position monitoring	Art. No.	Inductive proximity switch, Art. No.: 5127726								
	electric	Output PNP, NO contact, voltage 10 – 30 VDC								

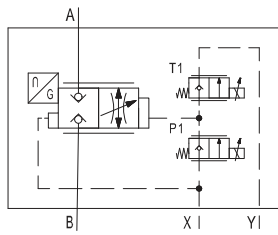
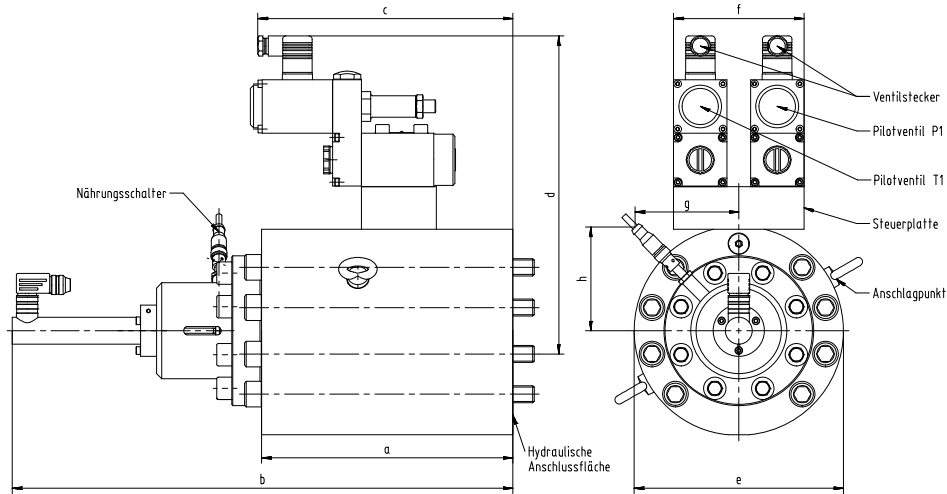
Pilot control with three pairs of valves and basic position valve

Nominal value		DN80	DN100							
Weight		341 kg	550 kg							
2-way control valve	Art.No.	6153895	6077277							
	a	295	342							
	b	605	678							
	c	331	356							
	d	416	468							
	e	370	466							
	f	452	452							
	g	109	82							
	h	109	142							
Connection diagram	Art. No.	6570577	6577229							
Control pcb	Art.No.	6600165	6600165							
Pilot valves	DN	10	10							
2-way proportional valve	Art. No.	6553508	6553508							
	Quantity	6	6							
	Actuation	Electromagnet, voltage 24V DC								
Basic position valve	Art. No.	6553494	6553494							
	Actuation	Electromagnet, voltage 24V DC								
		2.3 A	2.3 A							
Position monitoring	Art. No.	Inductive proximity switch, Art. No.: 5127726								
	electric	Output PNP, NO contact, voltage 10 – 30 VDC								

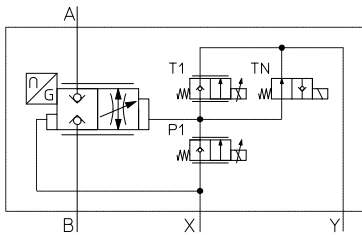
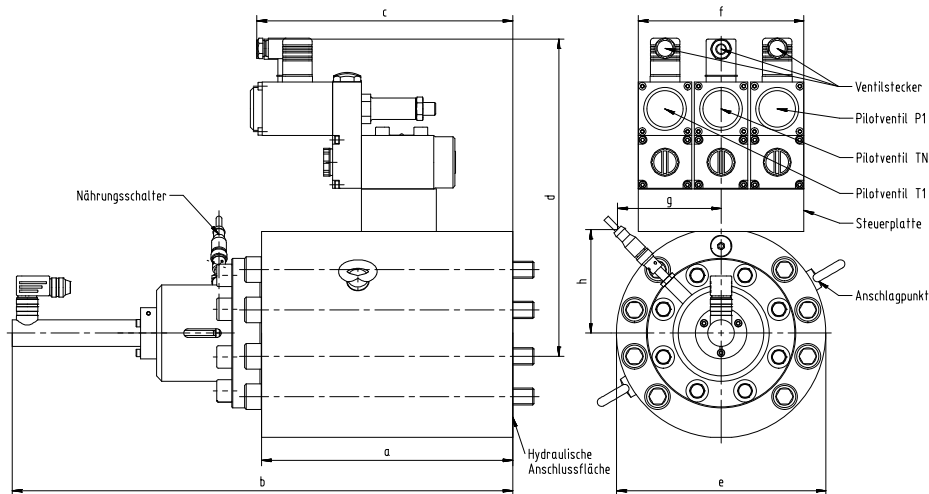
2/2-way control valve C3, DN25 – DN100 | PN500

Dimension sheet

Pilot control with a pair of valves, valve DN12 – DN65



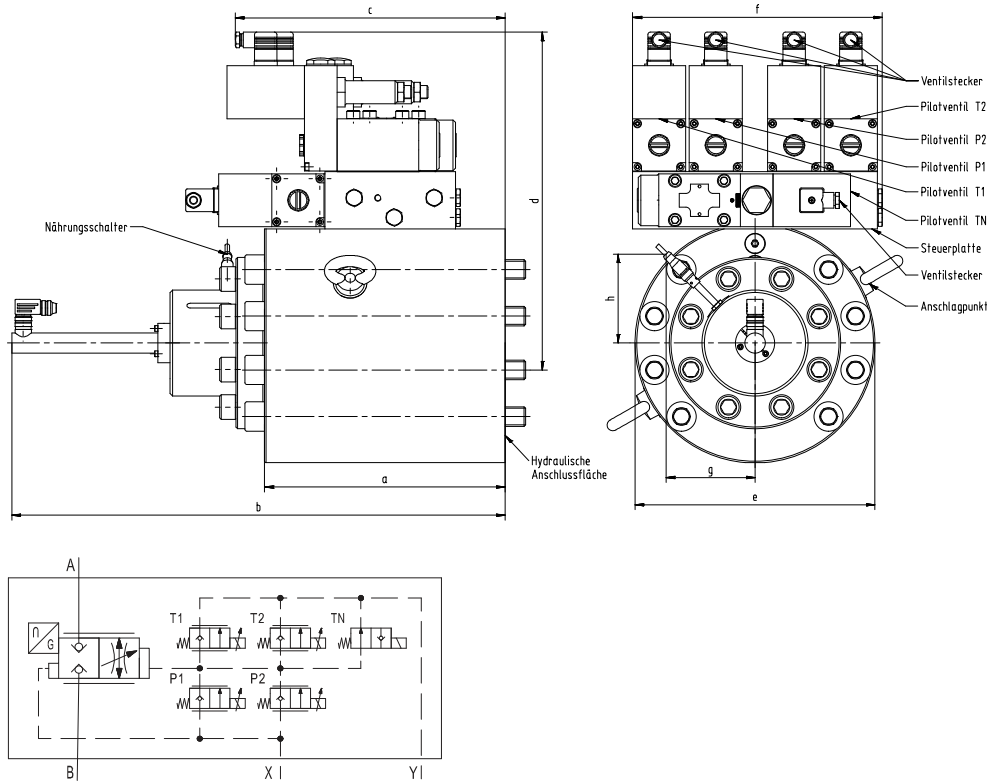
Pilot control with a pair of valves and basic position valve, valve DN12 – DN65



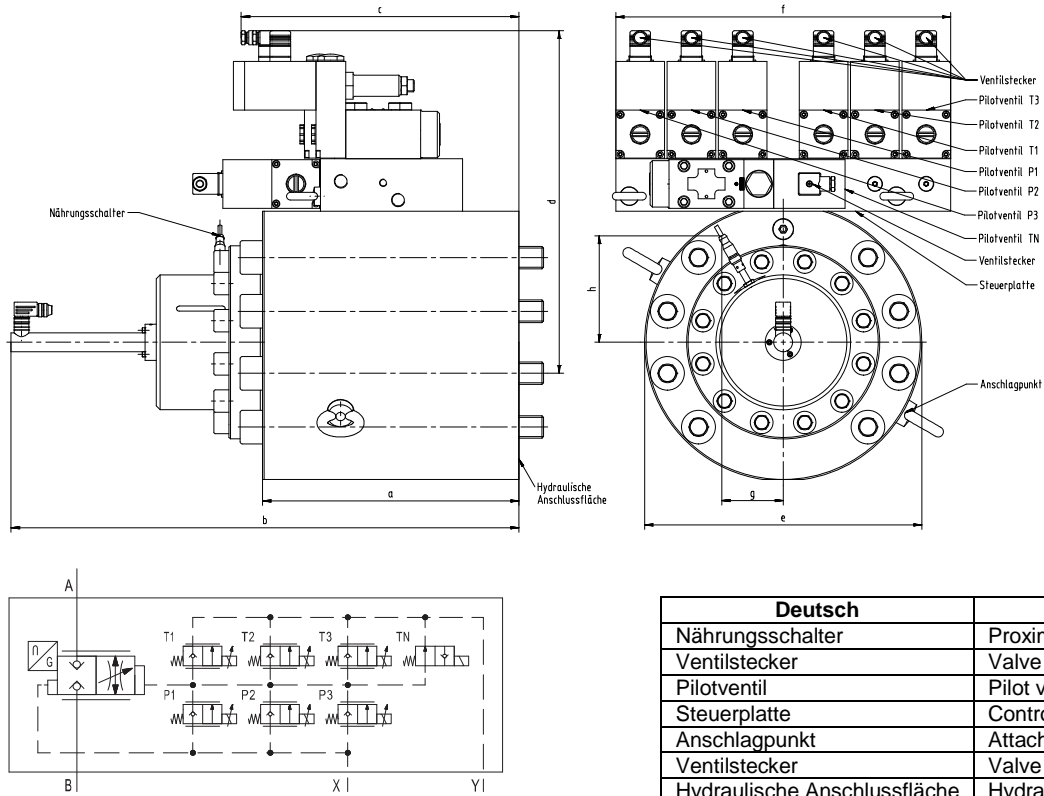
2/2-way control valve C3, DN25 – DN100 | PN500

Dimension sheet

Pilot control with two pairs of valves and basic position valve, valve DN80 – DN100



Pilot control with three pairs of valves and basic position valve, valve DN80 – DN100



Deutsch	Englisch
Nährungsschalter	Proximity switch
Ventilstecker	Valve connector
Pilotventil	Pilot valve
Steuerplatte	Control pcb
Anschlagpunkt	Attachment point
Ventilstecker	Valve connector
Hydraulische Anschlussfläche	Hydraulic terminal surface

2/2-way control valve C3, DN25 – DN100 | PN500

Controller RE4

Order data: Controller RE4, Art. No. 2336596

Features

- Digital amplifier module for top-hat rails – assembly
- The electrical installation is carried out via power strips with screw terminals
- The communication is performed via the integrated USB interface
- Control loop coordinated with Hauhinco proportional control valves
- Automatic control unit for the activation of one or two proportional valves (proportional solenoids).
- The parameterisation is performed by means of a menu-driven parameterisation and diagnosis software
- Among other things, definable parameters are inclining and declining ramps, analogue or digital setpoints, analogue actual value, valve parameters of the proportional valves and control parameters "P, I, D"
- Displays LED green operational readiness controller; LED yellow programming status controller; LED red fault display controller

Function

The controller together with the valve form an automatic control unit. This automatic control unit is not self-sufficient and must be installed into a system control as a secondary unit, e.g. in the control cabinet of the electrical control system. The required control variables (setpoints) are transmitted via the system control to the controller.

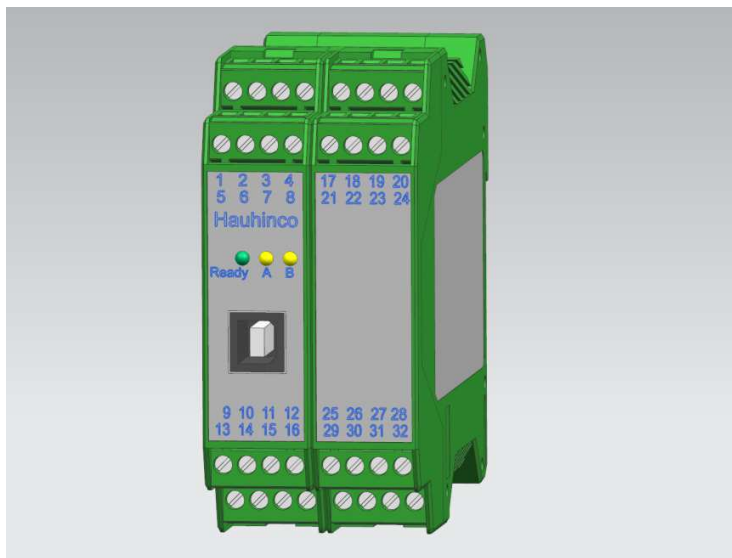
Based on the set-value signals, the controller guides the valve, i.e. the valve pistons of the 2-way control valve in the position control loop. The setpoint specification and the controller setting parameters form the system-specific setting values for the automatic control unit.

For larger control valves, the number of pilot valves is increased to increase the reaction speed of the control valve. This operating mode is called master/slave mode. This means that each pair of pilot valves (inlet and outlet valve) is activated by an own controller, with a controller being defined as master and the subordinate controller as slave.

By means of this automatic control unit, volume flow controls, velocity profiles and positioning can be performed at hydraulic axes.

The technical detail information regarding the controller is included in the separate operating instructions of the controller.

Controller RE4



2/2-way control valve C3, DN25 – DN100 | PN500

Ordering example 1: **2-way control valve DN32-PN500**
 Pilot control with a pair of valves and basic position valve
1 item, 2-way control valve DN32 PN500, Art. No. 6166784
1 item control pcb, Art. No. 6383394
2 items, 2-way proportional valve DN3 PN500, Art. No. 6547273
1 item, 2/2-way seat valve DN3 PN700, Art. No. 6545750
1 item Controller RE4, Art. No. 2336596

Ordering example 2: **2-way control valve DN100-PN500**
 Pilot control with two pairs of valves and basic position valve
1 item, 2-way control valve DN100 PN500, Art. No. 6077277
1 item control pcb, Art. No. 6600165
4 items, 2-way proportional valve DN10 PN500, Art. No. 6553508
2 items Controller RE4, Art. No. 2336596

Included in the scope of supply:

- Mounting screws for the 2-way control valve
- Mounting screws for the pilot valves and the control pcb
- Cable sockets for the magnets