

TC300

Protection valve for deep pumping

APPLICATION

Protection valves of this type for deep well pumping is used to permit pressure shock free starting and stopping of deep well pumps.

APPROVALS

- DVGW
- WRAS (up to 23 °C)

SPECIAL FEATURES

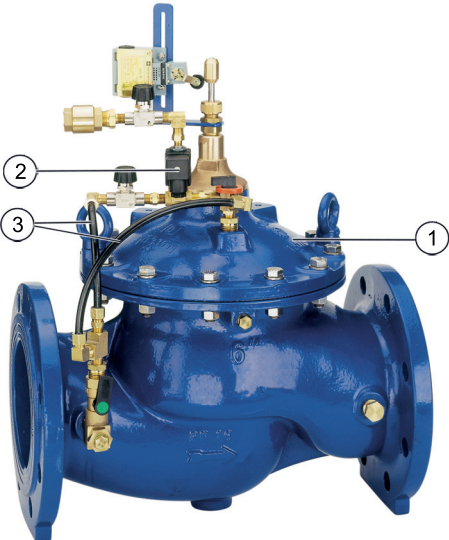
- High flow capacity
- Powder-coated inside and outside - Powder used is physiologically and toxicologically safe
- Integral control circuit and ball valves
- Integral fine filter
- No external energy required for operation
- Compact construction
- Light weight



TECHNICAL DATA

Media	
Medium:	Drinking water
Connections/Sizes	
Connection size:	DN50 - DN450
Pressure values	
Max. operating pressure:	16 bar
Nominal pressure:	PN16
Minimum pressure:	0.5 bar
Operating temperatures	
Max. operating temperature medium:	80 °C
Specifications	
Magnetic solenoid pilot valve:	24 V AC, IP 65

CONSTRUCTION

Overview		Components	Materials
	1	Housing with flanges acc. to ISO 7005-2 / EN 1092-2	Ductile iron (ISO 1083), powder-coated
	2	Two magnetic solenoid valves	Brass
	3	Control circuit with integral rinsable filter insert and ball valves on inlet and outlet	High-quality synthetic material
	Not depicted components		
		Cover plate	Ductile iron (ISO 1083), powder-coated
		Diaphragm plate	Ductile iron (ISO 1083), powder-coated
		Diaphragm	EPDM
		Spring	Stainless steel
		Regulating cone	Stainless steel
		Valve seat	Stainless steel
		Compression fittings	Brass
		Pilot valve housing	Brass
		Filter insert	Stainless steel
		Seals	EPDM

METHOD OF OPERATION

Protection valves of this type for deep well pumping are controlled by two adjustable magnetic solenoid valves. One magnetic solenoid valve is normally open when there is no electrical supply and the other is normally closed. In both magnetic solenoid valves the upper or lower diaphragm chambers are subjected to the outlet pressure to the pumping system. The operation of the pump is controlled by the end switch on the main valve.

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

Parameter	Value
Environment:	clean, dry and dust free
Min. ambient temperature:	5 °C
Max. ambient temperature:	55 °C
Min. ambient relative humidity:	25 % *
Max. ambient relative humidity:	85 % *

*non condensing

INSTALLATION GUIDELINES

Setup requirements

- Install shut-off valves
- Install downstream of the strainer
 - Protects against damage from coarse particles
 - Note flow direction (indicated by arrow)
- The installation location should be protected against frost and be easily accessible
 - Pressure gauge can be read off easily
 - Simplified maintenance and cleaning
- The opening period is dependent on the length of the supply pipework and should be increased if this pipework is extremely long
- The valve of this type cannot prevent excess pressure such as may be caused by a sudden electrical power failure
 - For this purpose a PC300 surge anticipating valve should be fitted as well
- Requires regular maintenance in accordance with EN 806-5

Installation Example

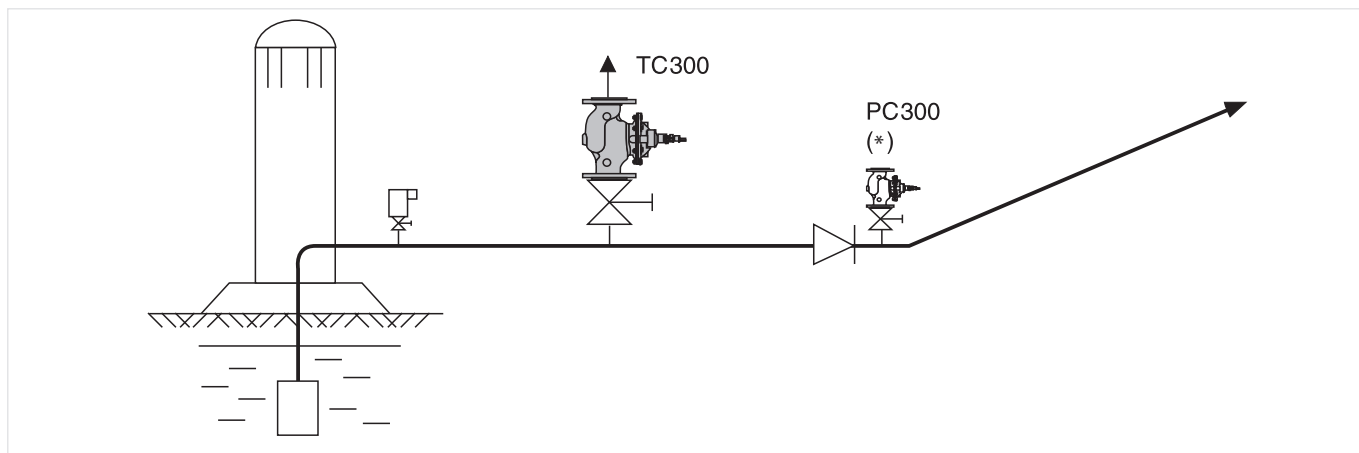


Fig. 1 Standard installation example for the protection valve for deep pumping

* optional

Connection sizes:	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
Distance in mm (W*):	100	110	120	130	160	190	220	250	270	310	330

* Required installation distances between the centerline of the pipework and the surrounding in dependency of the connection size.

TECHNICAL CHARACTERISTICS

kvs-Values

Connection sizes:	50	65	80	100	150	200	250	300	350	400	450
k_{VS} -value (m^3/h):	43	43	103	167	407	676	1160	1600	2000	3000	3150
Flow rate (Q_{max}) in m^3/h - $V=5.5 m/s$:	40	40	100	160	350	620	970	1400	1900	2500	3100

Pressure drop characteristics

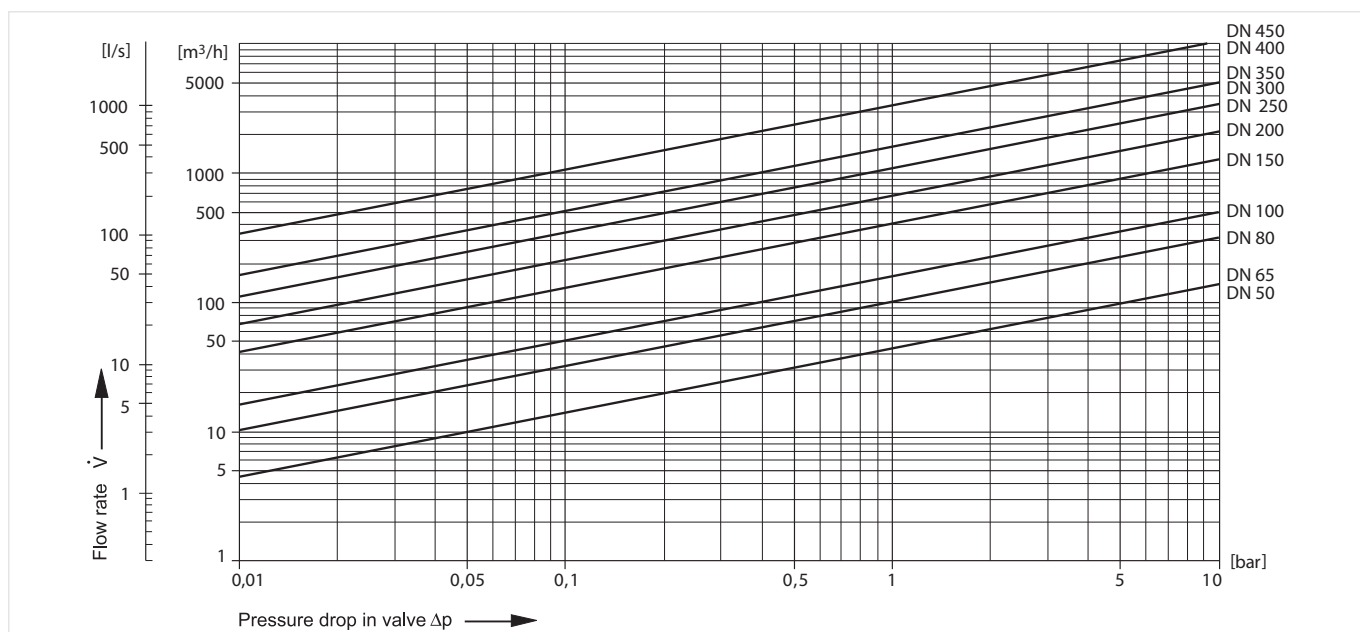
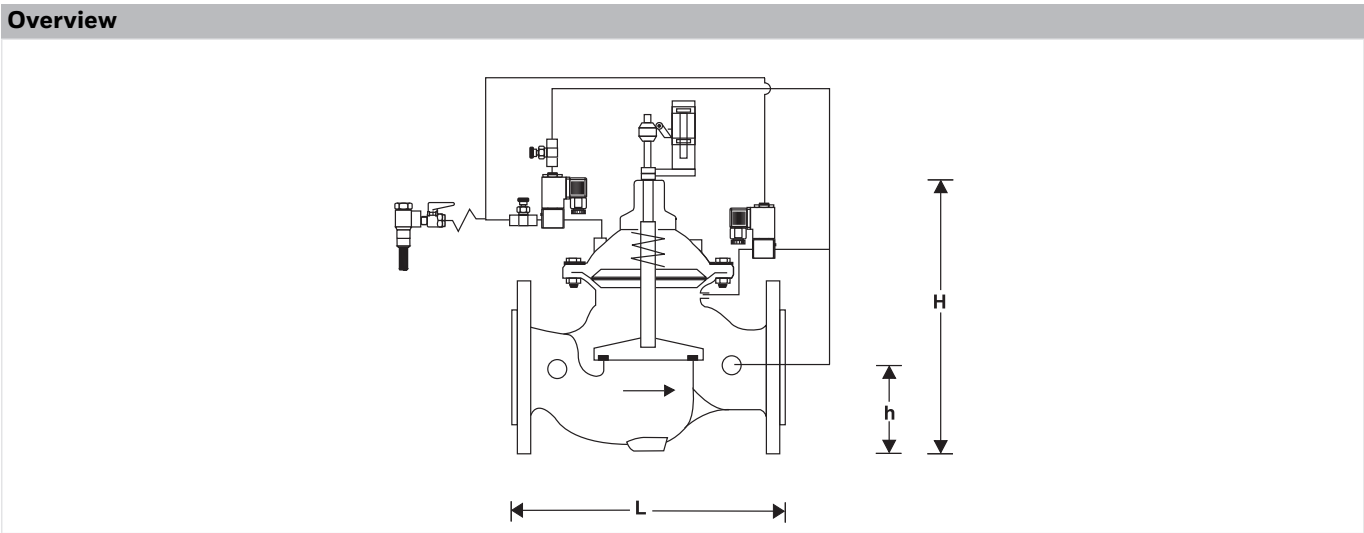


Fig. 2 Pressure drop within the valve in dependency of the flow rate and the used connection size

DIMENSIONS



Parameter		Values											
Connection sizes:	DN	50	65	80	100	150	200	250	300	350	400	450	
Weight with pilot valve:	kg	14.0	15.0	24.0	39.0	82.0	159.0	247.0	407.0	512.0	824.0	947.0	
Weight without pilot valve:	kg	12.0	13.0	22.0	37.0	80.0	157.0	245.0	405.0	510.0	822.0	945.0	
Dimensions:	L	230	292	310	350	480	600	730	850	980	1100	1200	
	H	270	280	330	350	480	570	730	870	910	1150	1170	
	h	83	93	100	110	143	173	205	230	260	290	310	

Note: All dimensions in mm unless stated otherwise.

ORDERING INFORMATION

The following tables contain all the information you need to make an order of an item of your choice. When ordering, please always state the type, the ordering or the part number.

Options

The valve is available in the following sizes: DN50, DN65, DN80, DN100, DN150, DN200, DN250, DN300, DN350, DN400 and DN450.


- standard

		TC300-...A
Connection type:	Flange PN16, ISO 7005-2, EN 1092-2	•

Note: ... = space holder for connection size

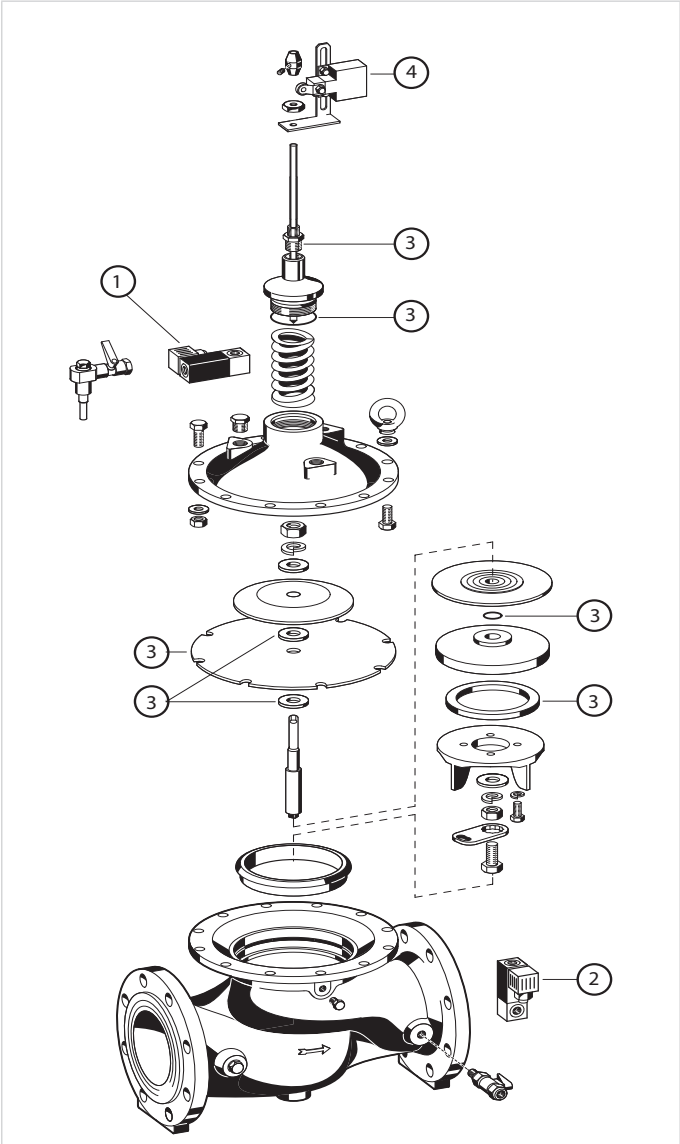
Note: Ordering number example for DN50 and type A valve: TC300-50A

Accessories

	Description	Dimension	Part No.
	EXF125-A Extension flange DN125		
	Adapter flanges DN100 to DN125 Ductile iron, PN16 acc. ISO 7005-2 and EN 1092-2. Overall length with adapter flanges (without bolts) DN125 L=416mm, DVGW approved, including bolts, nuts and the seal disc.		
			EXF125-A

Spare Parts

Altitude control valve TC300, from 2002 onwards

Overview	Description	Dimension	Part No.
	1 Replacement magnetic solenoid valve		
	Normally closed with electrical supply off 24 V	DN50 - DN450	30-NC 0903765
	2 Replacement magnetic solenoid valve		
	Normally open with electrical supply off 24 V	DN50 - DN450	30-NO 0903766
	3 Set of seals		
		DN50	0903750
		DN65	0903751
		DN80	0903752
		DN100	0903753
		DN150	0903754
		DN200	0903755
		DN250	0903756
		DN300	0903757
		DN350	0903758
		DN400	0903759
		DN450	0903760
	4 End switch		
		DN50 - DN450	0903764

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