



**Proportional pressure reducing valve
of 3-way design, Type 3DREP**

RE 24750/06.2004

Size 6

up to 10 MPa

up to 15 L/min

Replaces :

Features:

- Directly controlled proportional valves for the control of the pressure and direction of a flow
- Actuated via proportional solenoids with central thread and removable coil
- Spring centred control spool



Function, section

The 3-way pressure reducing valve type 3DREP 6.. is directly actuated by proportional solenoids. They convert an electrical input signal into a proportional pressure output signal.

The proportional solenoids are controllable wet pin DC solenoids with central thread and removable coil. The solenoids are controlled optionally via external control electronics .

Design:

The valve mainly comprises of:

- Housing (3) with mounting surface
- Control spool (5) and(6) and (4)
- Solenoids (1 and 2) with control thread

Function:

With the solenoids (1 and 2) de-energised the control spool (5) is held in its centre position by compression springs

The control spool (2) is directly actuated when one of the solenoids is energised

E.g. by energising solenoid "a" (1)

→ The pressure measuring spool (5) and control spool (4) move to the right in proportion to the electrical input signal

→ The connection from P to B and A to T is via orifice form cross-sections with progressive flow characteristics

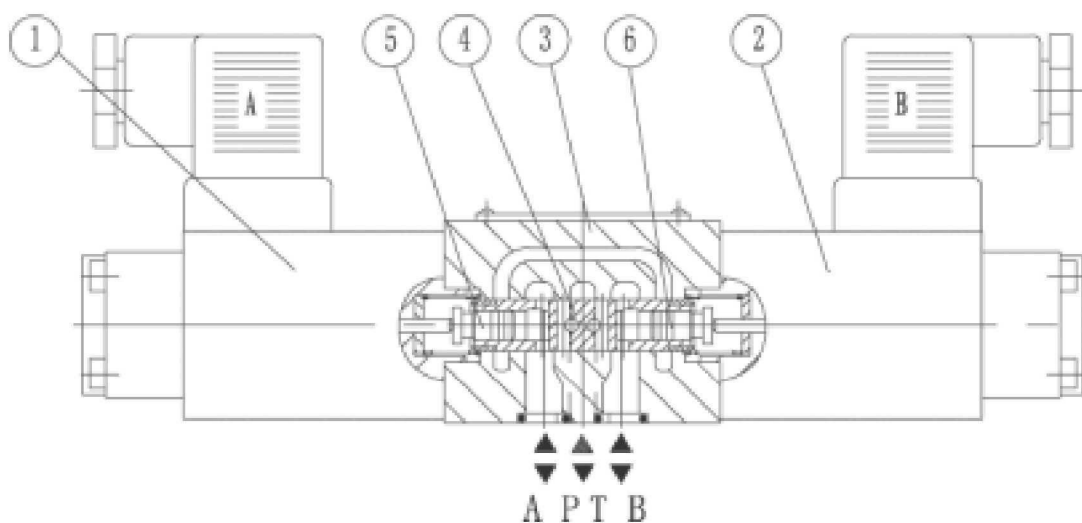
-De-energisation of the solenoid (1)

→ The control spool (4) is returned to its centre position by the compression springs

In the middle position the connections A and B to T are open, therefore, the pressure fluid can freely flow to tank. An optional hand overrides makes it possible to move the control spool (4) without energising the solenoid.

Attention!

Unintended use of the hand override can cause uncontrolled machine movement!



Type 3DREP6...

Ordering details

3DREP6 10 / A

Control form:

chamber A = A
 chamber B = B
 chambers A and B = C
 See symbols (detailed)

Series 10 = 10
 (10 to 19: unchanged installation and connection dimensions)

Pressure stage 1.6 MPa = 16
 Pressure stage 2.5 MPa = 25
 Pressure stage 4.5 MPa = 45

Further details in clear text

M = NBR seals
 V = FPM seals

Z4 = Small quadrate plug-in connector

No code = Without special protection
 J = Sea water resistant

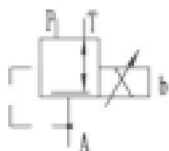
No code = Without hand override
 N9 = With protected hand override

24 = DC supply voltage for the control electronics G24

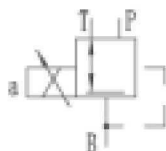
Symbols

Simplified

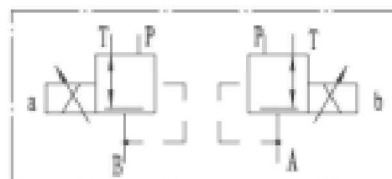
Type 3DREP6A-10B/...A...



Type 3DREP6B-10B/...A...

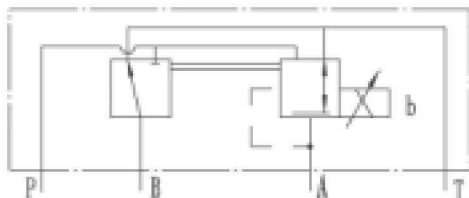


Type 3DREP6C-10B/...A...

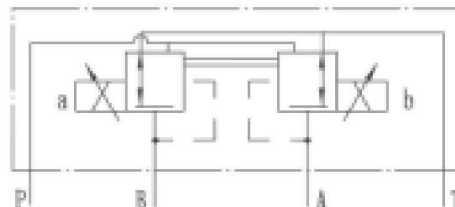


Detailed

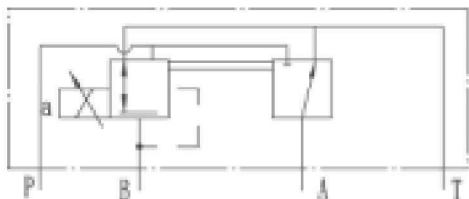
Type 3DREP6A-10B/...A...



Type 3DREP6C-10B/...A...



Type 3DREP6B-10B/...A...



Technical data

Hydraulic

Operating pressure (MPa)	Port P	10, if excess 10, then installate the valve, type ZDR6DP...-30B/...in input port
	Port T	3
Max. flow (L/min)		15 ($\Delta P=5\text{MPa}$)
Degree of contamination (μm)		Filter recommendation with a minimum retention rate of $\beta_{10} \geq 75$
Hysteresis (%)		≤ 3
Repeatability accuracy (%)		≤ 1
Response sensitivity (%)		≤ 1
Reversal span (%)		≤ 1
Pressure fluid		Mineral oil (for NBR seal), Phosphate ester (for FPM seal)
Viscosity range (mm^2/s)		2.8 to 380
Pressure fluid temperature range ($^{\circ}\text{C}$)		-20 to +70
Installation		optional, preferably horizontal
Weight (kg)		Type C: 2.6; type A,B: 1.5

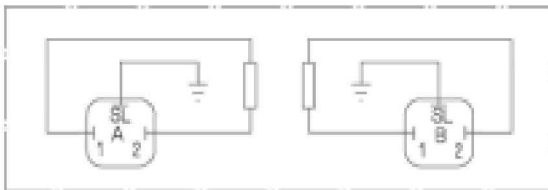
Electrical, solenoid

Supply voltage		DC24V
Nominal current per solenoid (A)		0.8
Max. current per solenoid (A)		≤ 0.02
Solenoid coil resistance (Ω)	Cold value at 20 $^{\circ}\text{C}$	19.5
	Max. warm value .	28.8
Working state		continuous
Condition temperature ($^{\circ}\text{C}$)		$\sim +50$
Coil temperature ($^{\circ}\text{C}$)		$\sim +150$
Protection to DIN 40 050		IP65
Electrical connections	3DREP	with component plug to DIN 43 650-AM2 plug-in connector to DIN 43 650-AF2/Pg11 1)
	3DREPE	with component plug to E DIN 43 563-AM6-3 plug-in connector E DIN 43 563-BF6-3/Pg11 1)

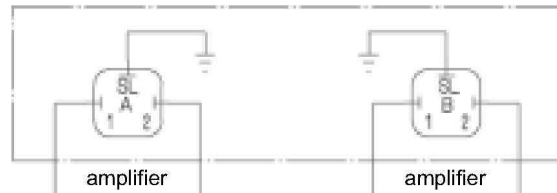
Electrical connections

(Dimensions in mm)

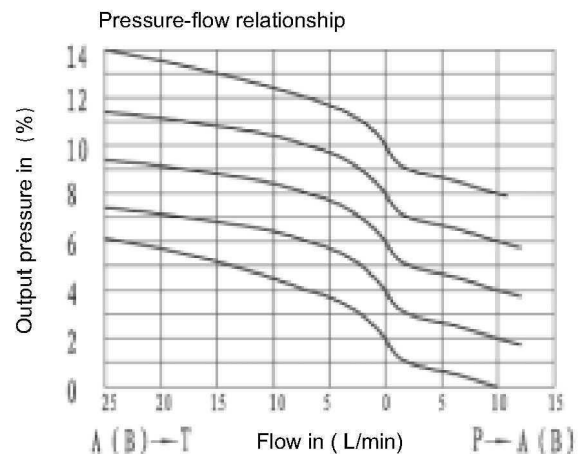
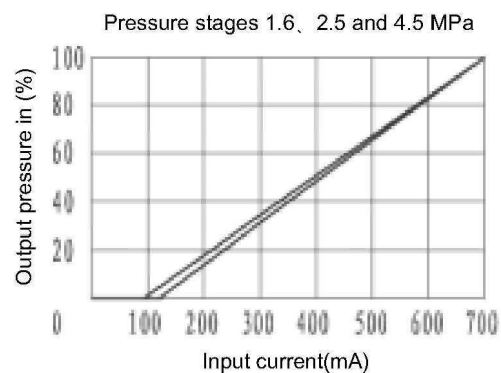
Connections at component plug



Connections at plug-in connector

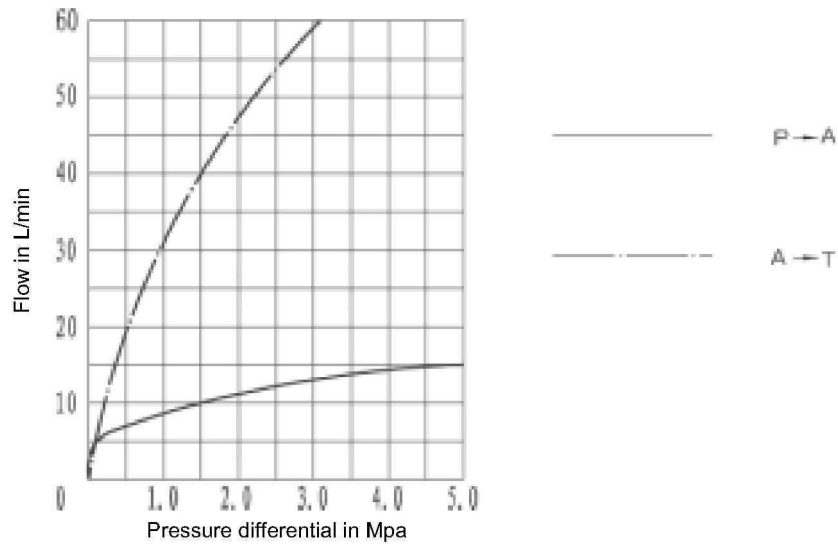


Char



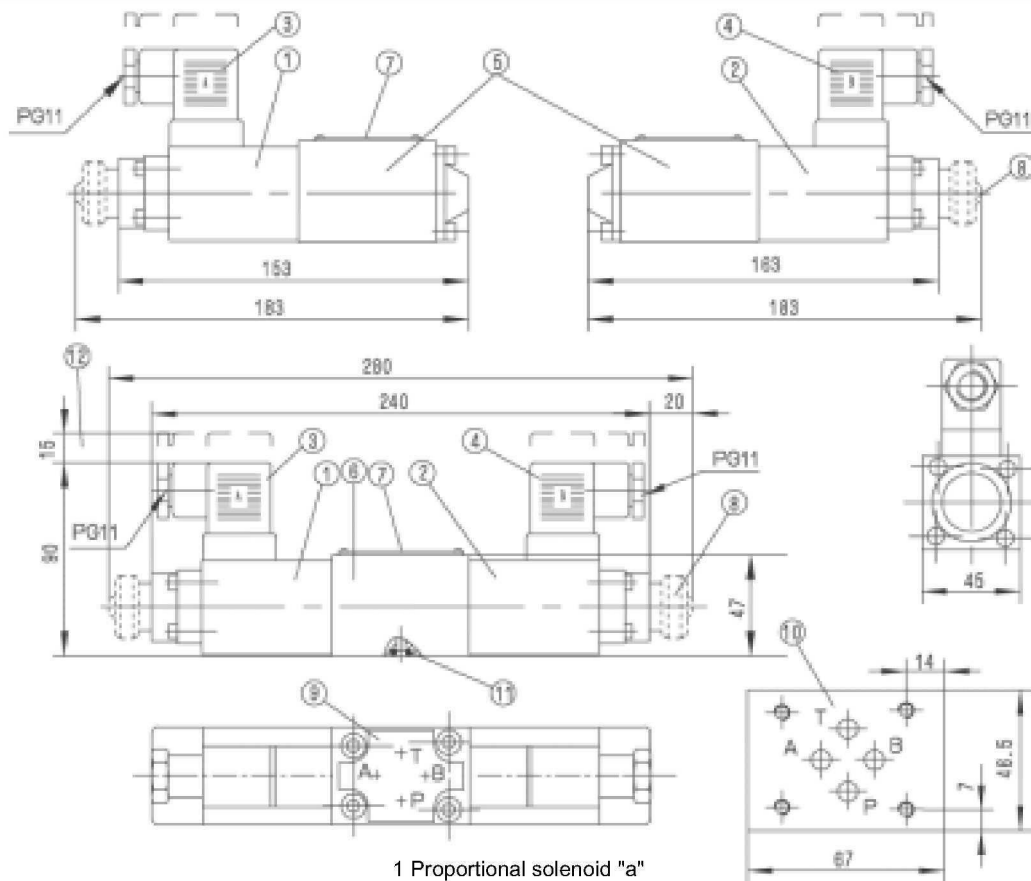
Characteristic curves

Pressure stages 1.6, 2.5 and 4.5Mpa



Unit dimensions: type 3DREP

(Dimensions in mm)



- 1 Proportional solenoid "a"
 - 2 Proportional solenoid "b"
 - 3 Plug-in connector coloured grey
 - 4 Plug-in connector coloured black
 - 5 2-Position valve
 - 6 3-Position valve
 - 7 Nameplate
 - 8 Protected hand override "N"
 - 9 Ports position
 - 10 Machined valve mounting face and position of the ports
 - 11 O-ring, 9.25 x 1.78 (for ports A, B, P, T)
 - 12 Space required to remove the plug-in connector
- Subplates G 340/01 (G 1/4) G 341/01 (G 3/8) G 502/01 (G 1/2)
 Valve fixing screws
 M5 x 50 DIN 912-10.9; M_A = 8.9 Nm see page 80

When used with a proportional directional valve type 4WRZ then the following throttle inserts are to be used for ports A and B:

NS	10	16	25	37
H _{de} (mm)	1.5	1.8	2.3	2.8
material no.	156476	158510	157511	157948

Notice

1. The fluid must be filtered. Minimum filter fineness is 20 μm .
2. The tank must be sealing up and an air filter must be installed on air entrance.
3. Products without subplate when leaving factory, if need them, please ordering specially.
4. Valve fixing screws must be high intensity level (class 10.9). Please select and use them according to the parameter listed in the sample book.
5. Roughness of surface linked with the valve is required to $\frac{0.8}{\sqrt{\text{ }}$.
6. Surface finish of mating piece is required to 0.01/100mm.