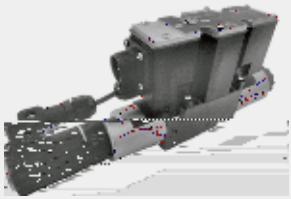
6.11

Proportional directional valves

Type 4WREE

NG 6 and 10
Up to 315 bar
Up to 180 L/min

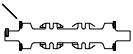


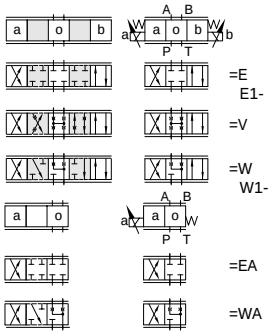
Contents

Function and con fguration	02
Symbols	03
Ordering code	03
Technical data	04
Electrical connections, plug-in connectors	05
Integrated electronics	06-07
Characteristic curves	07-10
Unit dimensions	11-14

Features

- Direct operated proportional directional valve with electrical position feedback
- Closed loop control of the direction and size of a f ow
- Operation is by proportional solenoids with a central thread and removable coil
- For subplate mounting: Porting pattern conforms to ISO 4401
- Spring centred control spool
- Integrated electronics (OBE) with voltage input or current input (A1 resp. F1)
- 4WRE separate order: analogue module ampli fer





Transitional symbols

Technical data

1. Hydraulic				
Installation			Optional, preferably horizontal	
Nominal size			6	10
Weight	4WREE...L2X	kg	2.4	6.5
Nominal fow q_{nom} at Δp = 10 bar		L/min	8, 16, 32	25, 50, 75
Hysteresis		%	≤ 0.1	
Reversal span		%	≤ 0.05	
Response sensitivity		%	≤ 0.05	
Max.operating pressure	Ports A, B, P	bar	315	
	Port T	bar	210	
Pressure fuid			Mineral oil (HL, HLP) to DIN 51524	
			Other pressure fuids on request!	
Ambient air temperature range	4WREE...L2X		-20 to 50 (-4° F to 122° F)	
Viscosity range		mm²/s	20 to 380 (preferably 30 to 46)	
Fluid Cleanliness Class			NAS1638 class9 or ISO 4406 class 20/18/15	

2. Electrical				
1) Solenoid data				
Nominal size			6	10
Voltage type			DC	
Command value signal for 4WREE			± 10V or 4~20mA	
Max.current per solenoid		A	2.5	
Solenoid coil resistance	Cold value	Ω	2.7	3.7
	Max.warm value		4.05	5.55
Duty		%	ED100%	
Max.coil temperature			150	
Valve protection to EN 60529			IP 65	
2) Control electronics				
Amplifer	4WREE...L2X		integrated in the valve(OBE)	
Supply voltage	Nominal voltage	VDC	24	
	Lower limiting value	V	19.4	
	Upper limiting value	V	35	
Amplifer power consumption	Imax	A	< 2	
	Impulse current	A	3	

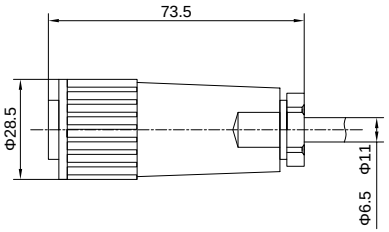
Electrical connections, plug-in connectors

nominal dimensions in mm

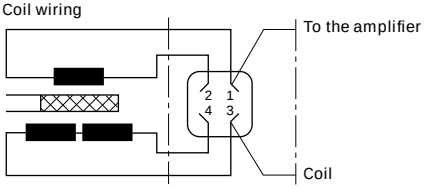
· For type 4WREE...L2X (with integrated electronics (OBE))

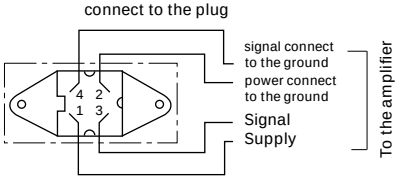
For pin allocation also
see block circuit diagram.

Plug-in connector to
DIN EN 175201-804

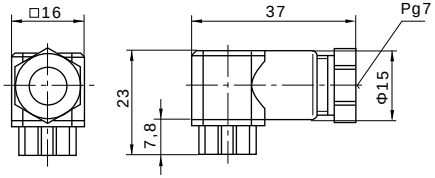


· Inductive position sensor





Plug connector 4 pin Pg7-G4W1F
Connecting cables:
Recommend: For cables up to 50 m in length,
Please use a cable of type LiYCY 4 × 0.25 mm²
Connect the shield to the PE only on the supply side.



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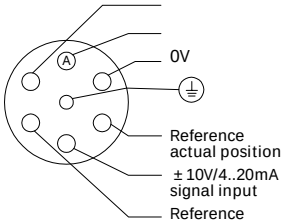
Integrated control electronics for type 4WREE

(e.g. actual value) must not be used for switching o f

and the valve housing!

the same applies for T_{up} and T_{down}.



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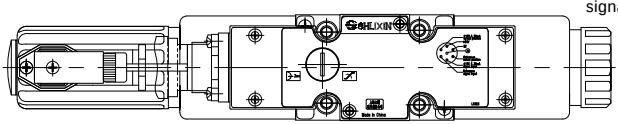

C tic curves (measured with HLP46, $_{oil}$=40 ± 5)

· Type 4WREE (NG 6 and 10)

Pressure-signal-characteristic curves (V spool, Ps = 100 bar)

80
60
40
20

-5 -3 -1

← U ← U

Leakage flow with the spool in the central position

2 ————

1

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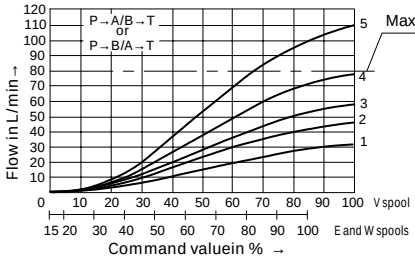
Characteristic curves (measured with HLP46, $_{oil}$=40 ± 5 , P=100bar)

Flow in L/min →

32L/min nominal flow at a 10 bar valve pressure differential



1 Δp=10bar constant
2 Δp=20bar constant
3 Δp=30bar constant
4 Δp=50bar constant
5 Δp=100bar constant

Δp=Valve pressure di erential
(inlet pressure p_p minus load pressure p_L minus return pressure p_T)

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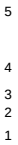

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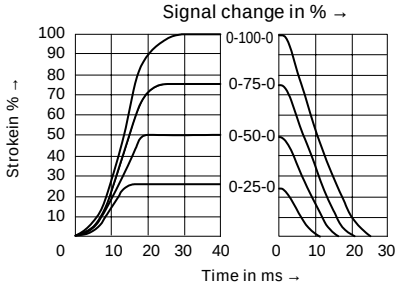
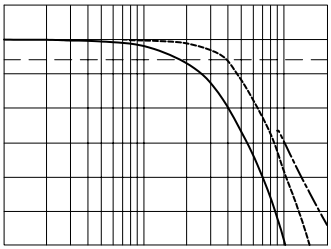
(inlet pressure p_p minus load pressure p_L minus return pressure p_T)

Characteristic curves (measured with HLP46, $_{oil}$=40 ± 5 , P=100bar)



Transient function with a stepped form of electrical input signal

4/3 valve version,
Spool symbol“ E ”



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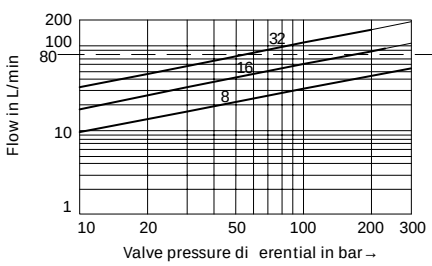
Flow-pressure differential curve

Load function with maximum valve opening.
Nominal flows 8, 16 and 32 L/min.
Spool symbol“ V ”



Max.permissible flow

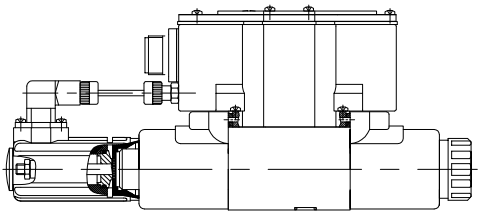
P→A/B→T
or
P→B/A→T

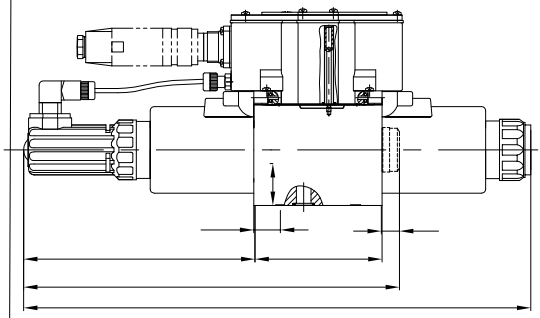
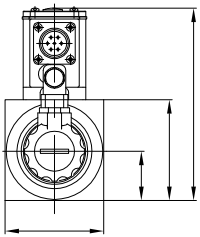
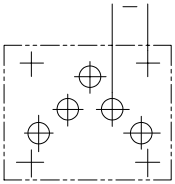
Take the maximum permissible flow of 80 L/min into account!

Characteristic curves (measured with HLP46, $_{oil}$=40 ± 5 , P=100bar)

· Type 4WREE (NG 10)

4/3 valve version,
Spool symbol“ E ” t א ע א כ



Unit dimensions

(nominal dimensions in mm)