

Pilot Operated Proportional Relief Valve

Model: (Z)DBE/(Z)DBEE...1X



ГИДРООТВЕТ
доступная гидравлика

- ◆ Size 6
- ◆ Maximum working pressure 315bar
- ◆ Maximum working flow 30 L/min

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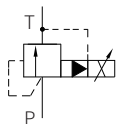
Features

- For limiting system pressure
- Operation by proportional solenoids
- Subplate mounting or sandwich plate connection
- Both valves and proportional amplifiers from the same supplier
- Model DBEE and ZDBEE with integrated amplifier:
- Low manufacturing tolerance of the command value-pressure characteristic curve
- The ramp signal generation time can be adjusted separately when the pressure increases or decreases

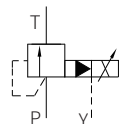
Functional symbols

Symbols for sandwich type valve: (①= Valve side, ②= Subplate side)

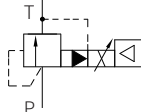
Model DBE6...



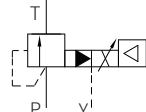
Model DBE6...Y...



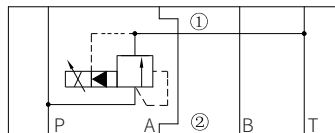
Model DBE6...



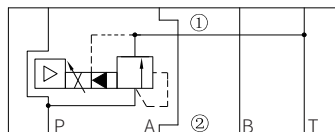
Model DBE6...Y...



Model ZDBE6VP...



Model ZDBE6VP...



Technical parameters

Electrical			
Voltage type	V	24VDC	
Minimum control current	mA	100	
Maximum control current	mA	800 or 1600	
Coil resistance	- Cold value at 20°C	Ω	19.5 (800mA), 5.4 (1600mA)
	- Maximum warm value	Ω	31 (800mA), 7.8 (1600mA)
Duty	%	100	
Electrical connections	DBE and ZDBE	With component plug to DINEN 175301-803 With cable plug to DINEN 175301-803 ²⁾	
	DBEE and ZDBEE	With component plug to DINEN 175201-804 With cable plug to DINEN 175201-804 ²⁾	
Valve protection to EN60529		IP65, plug installed and locked	

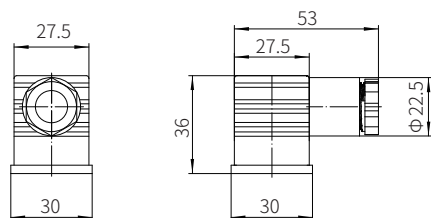
Technical parameters

Overview			
Weight	DBE and ZDBE	kg	2.4
	DBEE and ZDBEE	kg	2.5
Installation position			Optional
Storage temperature range		°C	-20 to +80
Environment temperature range	DBE and ZDBE	°C	-20 to +70
	DBEE and ZDBEE	°C	-20 to +50
Hydraulic (Measured when using HLP46, $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)			
Maximum working pressure	Port P; P1-P2 A1- A2; B1-B2	bar	315
	Port T	bar	50
Maximum adjustable pressure	Pressure stage 50	bar	50
	Pressure stage 100	bar	100
	Pressure stage 200	bar	200
	Pressure stage 315	bar	315
Minimum setting pressure at command value zero bar			See characteristic curve on page 8
Return oil pressure at port A; external control oil return (Y)			Separate and at zero pressure to tank
Control oil flow rate		L/min	0.6 to 1.2
Maximum flow		L/min	30
Pressure medium			Mineral oil (HL, HLP) ¹⁾ in accordance with DIN 51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil) ¹⁾ ; HEPG(Polyethyleneglycol) ²⁾ ; HEES (Synthetic Fats) ²⁾
Oil temperature range		°C	-20 to +80
Viscosity range		mm²/s	15 to 380
The maximum allowable pollution degree of oil to ISO4406(c)			Class 20 / 18 / 15
Hysteresis		%	± 1.5 of the maximum setting pressure
Repeatability		%	< ± 2 of the maximum setting pressure
Linearity		%	± 3.5 of the maximum setting pressure
Manufacturing tolerance of command value pressure characteristic curve, according to the hysteresis characteristic curve when pressure increasing.	DBE and ZDBE	%	± 2.5 of the maximum setting pressure
	DBEE and ZDBEE	%	± 1.5 of the maximum setting pressure
Step response Tu+ Tg	10 %→ 90 %	ms	about 80
	90 %→ 10 %	ms	about 50
] Dependent on equipment			

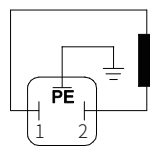
The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components

Electrical connections

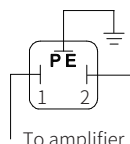
Model (Z) DBE...1XJ/...K4
Plug to DINEN 175301-803



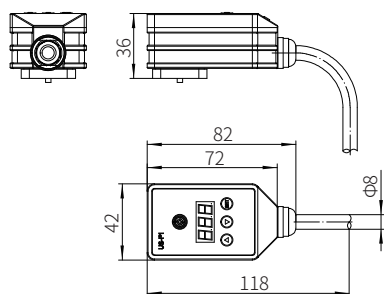
Connection at component plug



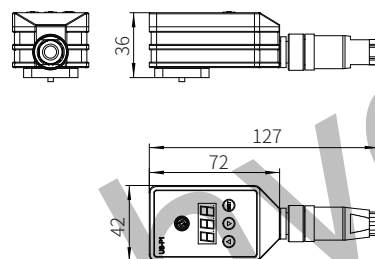
Connection at plug-in connector



Model (Z)DBEE...1XJ/...K31S



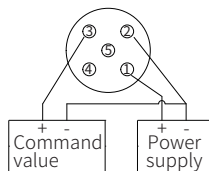
Model (Z)DBEE...1XJ/...K31C



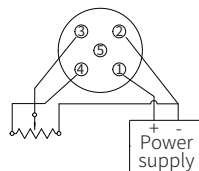
Terminal identification

M12 plug terminal number (K31C type)	Cable color (K31S type)	Terminal identification
1	Red	Power supply+
2	Black	Power supply -/ command value -
3	Yellow	Command value+
4	Blue	Reference voltage 5V
5	Green	-

Connection example:
PLC example input command



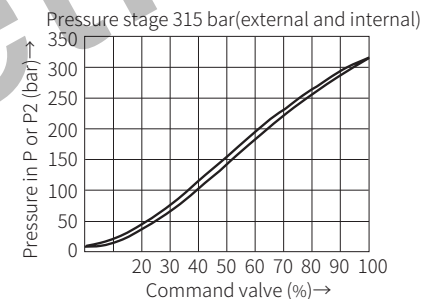
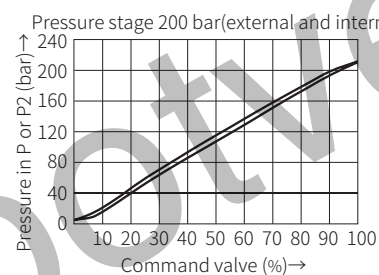
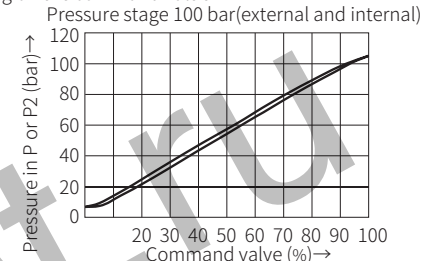
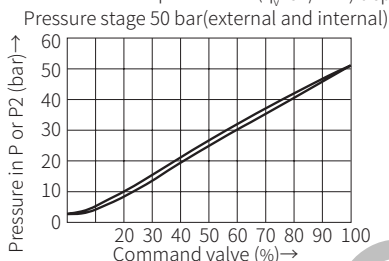
Connection example:
Potentiometer input command



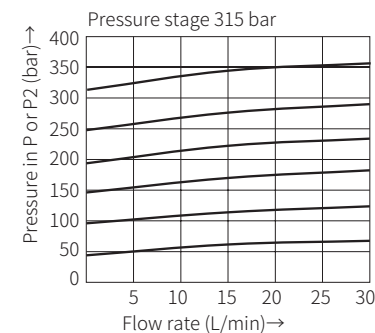
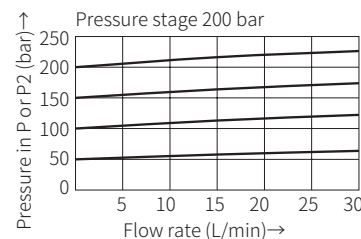
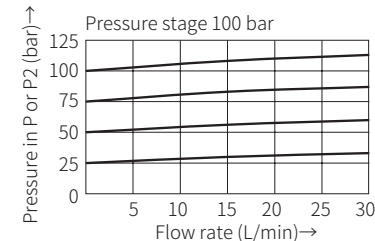
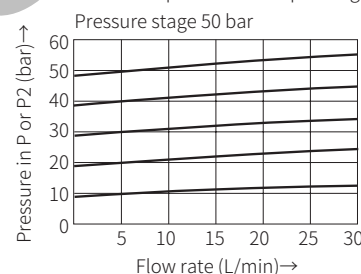
Characteristic curve

(Measured when using HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$)

Pressure in port P or P2 ($q_v = 5\text{L/min}$) depending on the command value



Pressure in port P or P2 depending on the flow q_v

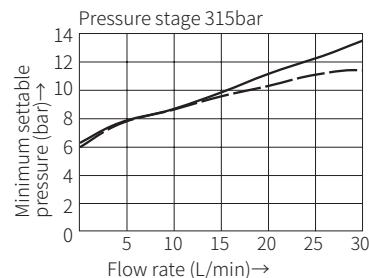
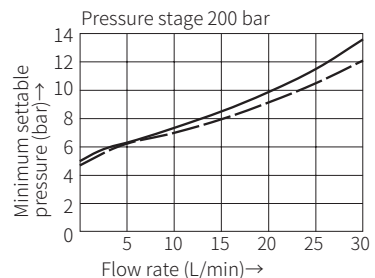
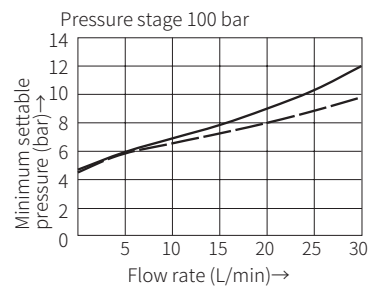
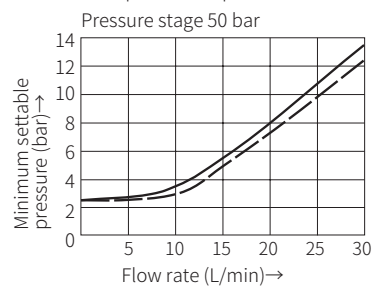


The characteristic curve is measured without back pressure in ports A (external control oil return) and T (internal control oil return). When the internal control oil returns, the pressure in port P or P2 will increase by the outlet pressure value in port T.

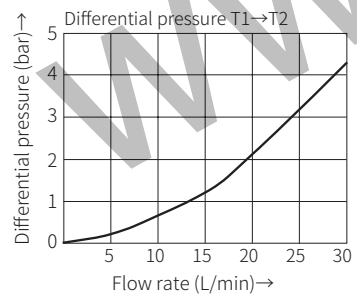
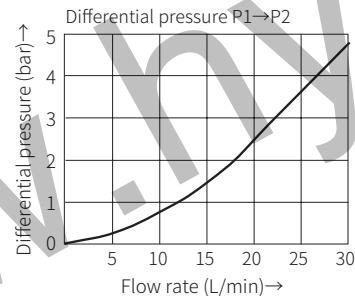
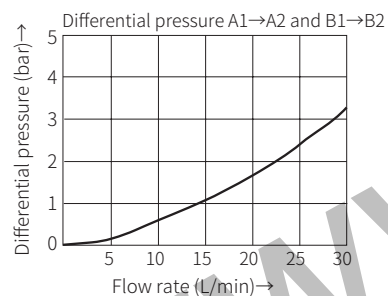
Characteristic curve

(Measured when using HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$)

Minimum settable pressure in port P or P2 with command value 0 Control oil return—internal ---external



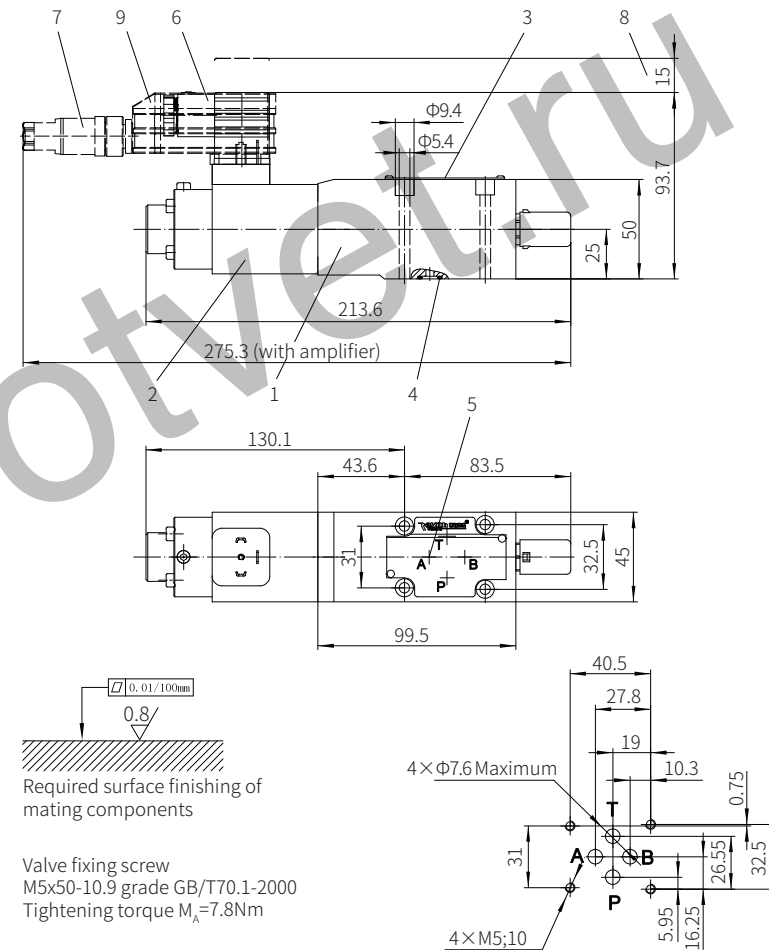
The characteristic curve is measured without back pressure in ports A (external control oil return) and T (internal control oil return). When the internal control oil returns, the pressure in port P or P2 will increase by the outlet pressure value in port T.



Component size

Size unit: mm

Model DBE, DBEE



- 1 Valve body
- 2 Proportional solenoid
- 3 Name plate
- 4 Sealing rings for A, B, P, T
- 5 With version Y, pilot oil return external through port A (Y)
- 6 Socket for DBE
- 7 Connector for DBEE
- 8 Space required to remove the plug
- 9 Plug integrated amplifier (OBE)

Model ZDBE, ZDBEE

