The D1FB*EE series with explosion proof solenoids is based on the standard D1FB series. The specific solenoid design allows the usage in hazardous environments. The explosion proof class is

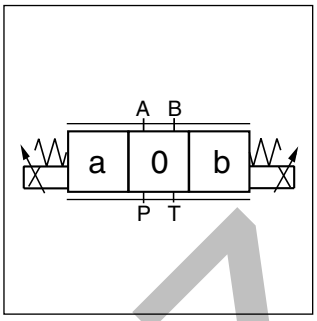
CE Ex II 2 G

Ex e mb IIC T4 Gb

for use in zone 1 and 2 (conform to ATEX).

Additionally the solenoids have IECEx conformity.

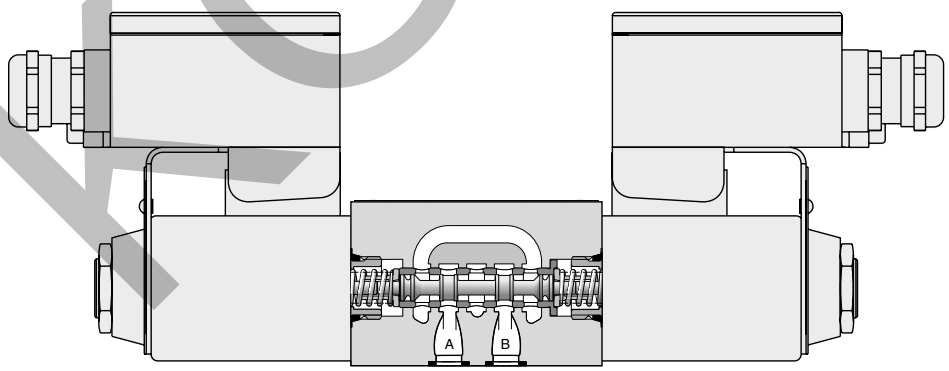
The parameters can be saved, changed and duplicated in combination with the digital power amplifier PWD00A-400 (to be used in an explosion proof cabinet or outside of the hazardous area).
The valve parameters can be edited with the common ProPxD software.
The D1FB valves can be ordered with spool/sleeve design (D1FB*0) for maximum precision as well as spool/body design (D1FB*3) for high nominal flow - see functional limit curves for maximum flow capability.



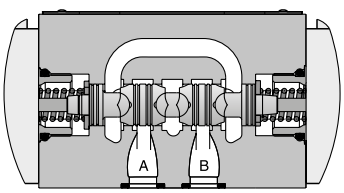
Features

- Spool/sleeve and spool/body
- High repeatability from valve to valve
- Low hysteresis
- Manual override
- Optional: coil to permit ambient temperature up to +60 °C, modification XG371

D1FB*0*EE
Spool/sleeve design

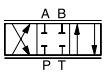
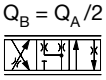


D1FB*3*EE
Spool/body design

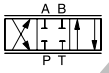
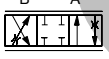


D	1	F	B			0	N		E			EE	
Directional control valve	**Size DIN NG06 CETOP 03 NFPA D03**	**Proportional control**	**Standard dynamics standard repeat-ability**	**Spool**	**Spool position**		**Seals NBR** (other seal compounds on request)	**Solenoid**	**Explosion proof**	**Design**	**Design series** (not required for ordering)	**Connection** Explosion proof with cable glands Ex e mb IIC T4 Gb + IECEx conformity	**Modification**

D1FB*0*EE: Spool/sleeve design

Code	Spool type	Flow [l/min] at Δp 5 bar per metering edge
E01C E01F E01H		6 12 20
E02C E02F E02H		6 12 20
E03C E03F E03H		6 12 20
B31F B31H	$Q_B = Q_A/2$ 	12 / 6 20 / 10
B32F B32H	$Q_B = Q_A/2$ 	12 / 6 20 / 10

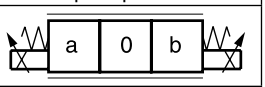
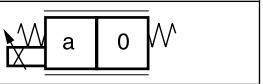
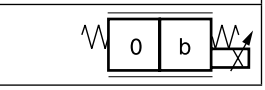
D1FB*3*EE: Spool/body design

Code	Spool type	Flow [l/min] at Δp 5 bar per metering edge
E01F E01H E01K		10 20 30
E02F E02H E02K		10 20 30
B31F B31H B31K	$Q_B = Q_A/2$ 	10 / 15 20 / 10 30 / 15
B32F B32H B32K	$Q_B = Q_A/2$ 	10 / 15 20 / 10 30 / 15

Code	Modification
omit	Standard
XG371	Coil to permit ambient temperature up to +60 °C

Code	Design
0	Spool/sleeve design
3	Spool/body design

Code	Solenoid
K	12 V / 2.3 A
J	24 V / 1.15 A
J*XG371	24 V / 1.0 A

Code	Spool position
C	
E	
K	

General				
Design		Direct operated proportional DC valve		
Actuation		Proportional solenoid		
Size		NG06/CETOP 03/NFPA D03		
Mounting interface		DIN 24340 / ISO 4401 / CETOP RP121 / NFPA		
Mounting position		unrestricted		
Ambient temperature	[°C]	-20...+40; XG371: -20...+60		
$MTTF_D$ value	[years]	150		
Weight	[kg]	3.5 (2 solenoids), 2.5 (1 solenoid)		
Hydraulic				
Max. operating pressure	[bar]	Ports P, A, B 350; Port T 210		
Max. pressure drop PABT / PBAT	[bar]	350		
Fluid		Hydraulic oil as per DIN 51524 ...51535, other on request		
Fluid temperature	[°C]	-20...+40; XG371: -20...+60		
Viscosity permitted recommended	[cSt] / [mm²/s] [cSt] / [mm²/s]	20...400 30...80		
Filtration		ISO 4406; 18/16/13		
		D1FB*0*EE (Spool/sleeve)	**D1FB*3*EE (Spool/body)**	
Nominal flow at Δp = 5 bar per control edge *	[l/min]	6 / 12 / 20	10 / 20 / 30	
Leakage at 100 bar	[ml/min]	<50	<60	
Overlap	[%]	25, electrically normalized at 10 (see flow characteristics)		
Static / Dynamic				
Step response at 100 % step	[ms]	30	30	
Hysteresis	[%]	<4	<6	
Temperature drift solenoid current	[%/K]	<0.02		
Electrical characteristics				
Duty ratio	[%]	100		
Protection class		CE ⟨Ex⟩ II 2 G, Ex e mb IIC T4 Gb, IP66 (plugged and mounted correctly)		
Solenoid	Code	**J**	**J*XG371**	**K**
Supply voltage	[V]	24	24	12
Current consumption	[A]	1.15	1.0	2.3
Resistance	[Ohm]	12.0	12.0	3.0
Solenoid connection		Box with M20x1.5 entry for cableglands. Solenoid identifications per ISO 9461.		
Wiring min.	[mm²]	3 x 1.5 recommended		
Wiring length max.	[m]	50 recommended		

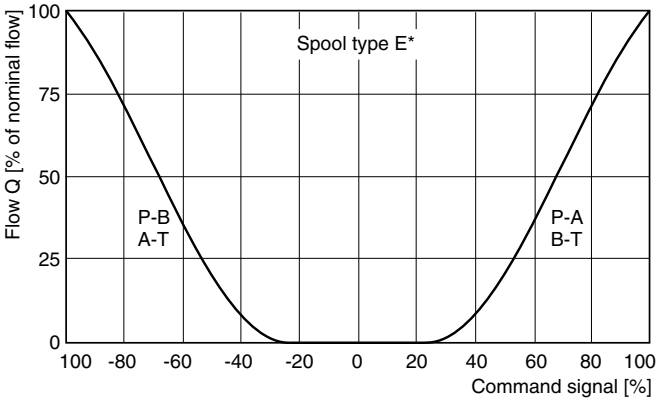
With electrical connections the protective conductor (PE ⏚) must be connected according to the relevant regulations.

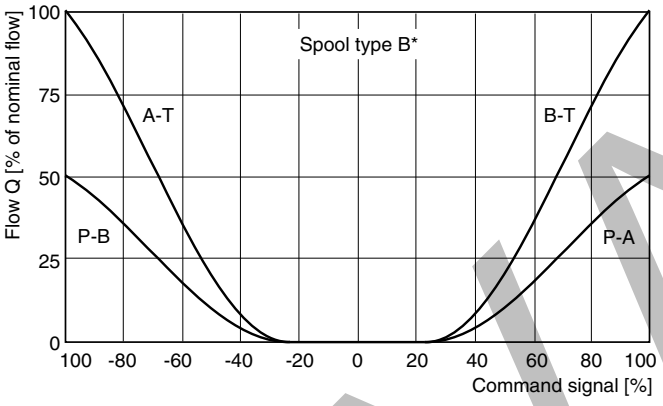
* Flow rate for different Δp per control edge: $Q_x = Q_{Nom.} \cdot \sqrt{\frac{\Delta p_x}{\Delta p_{Nom.}}}$

Flow characteristics

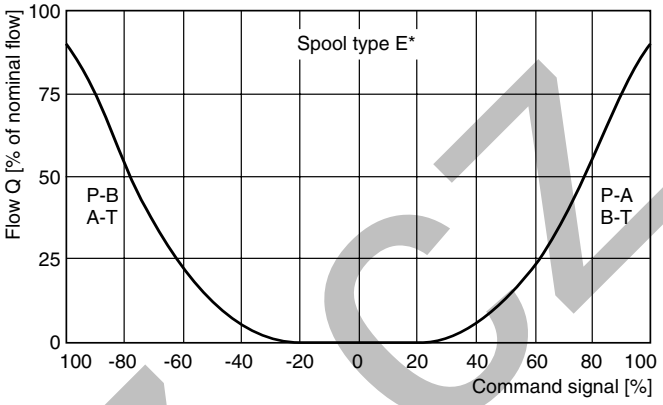
at Δp = 5 bar per metering edge

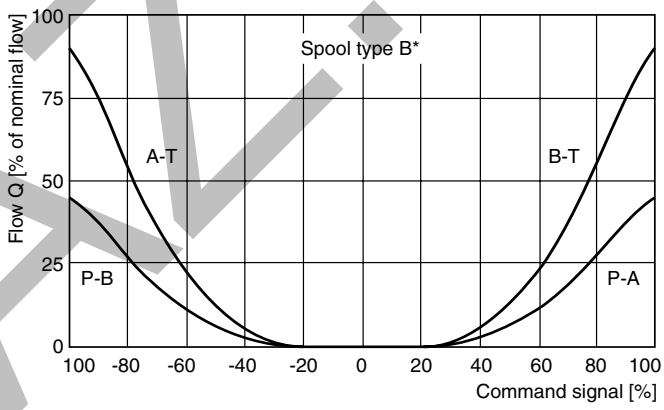
D1FB*0*EE





D1FB*0*EEXG371



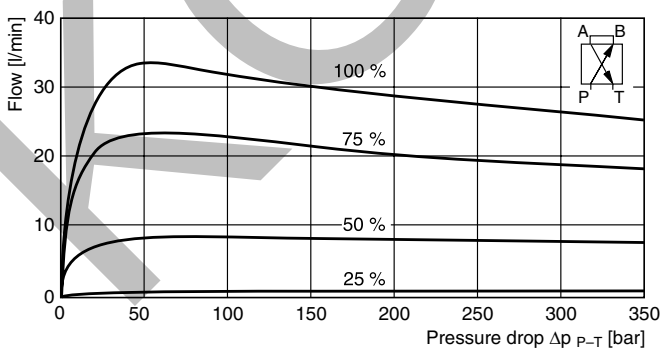


Functional limits

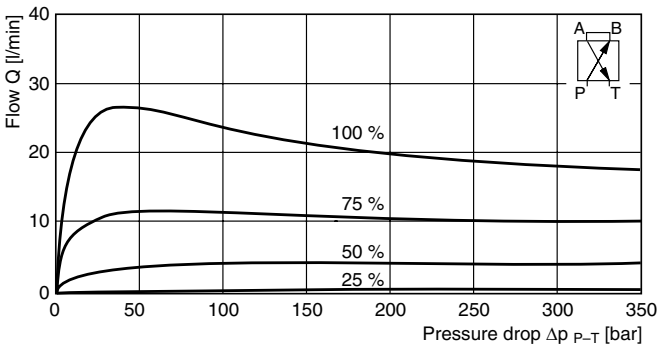
at 25 %, 50 %, 75 % and 100 % command signal (symmetric flow)

At asymmetric flow a reduced flow limit has to be considered – typically approx. 10 % lower.

Spool type E01H



Spool type E01H*XG371

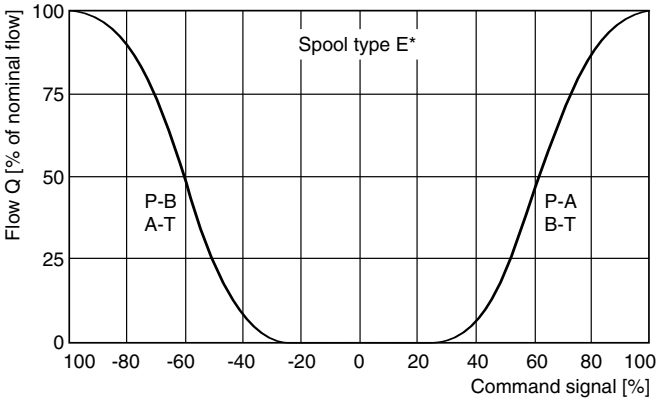


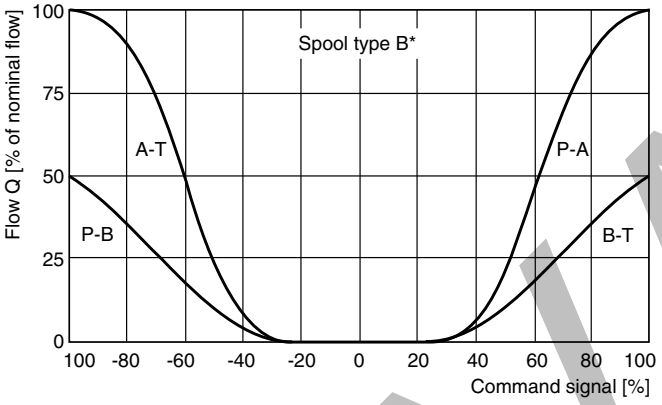
All characteristic curves measured with HLP46 at 50 °C.

Flow characteristics

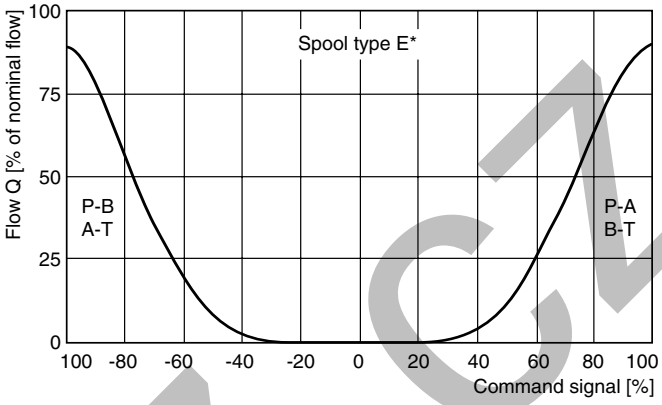
at Δp = 5 bar per metering edge

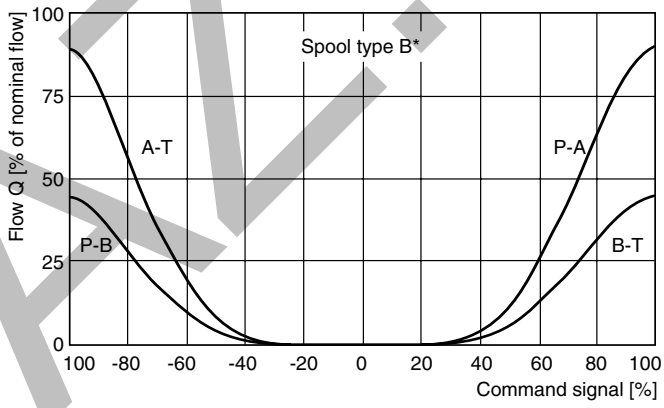
D1FB*3*EE





D1FB*3*EEXG371



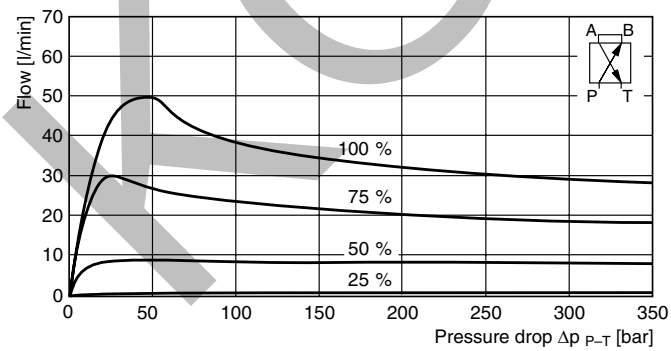


Functional limits

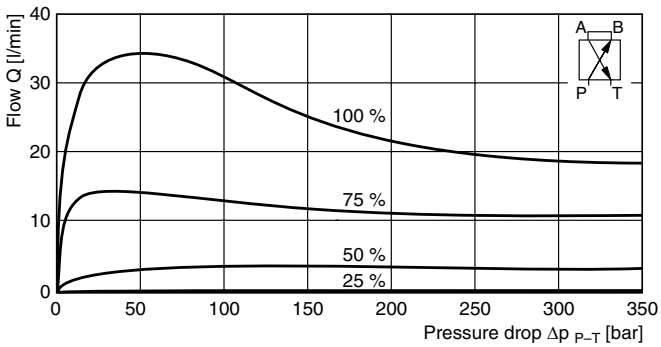
at 25 %, 50 %, 75 % and 100 % command signal (symmetric flow)

At asymmetric flow a reduced flow limit has to be considered – typically approx. 10 % lower.

Spool type E01K

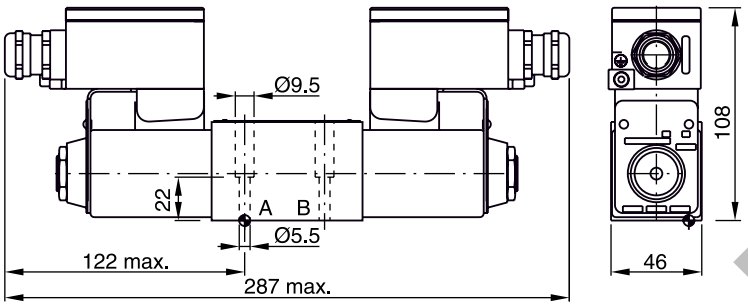


Spool type E01K*XG371

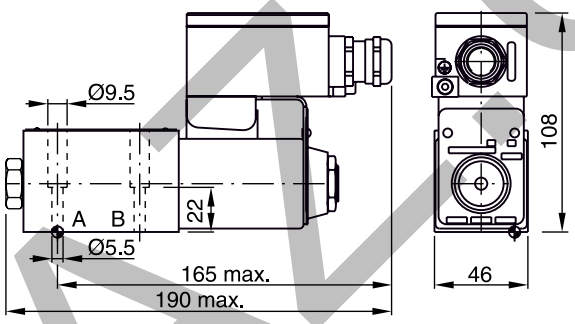


All characteristic curves measured with HLP46 at 50 °C.

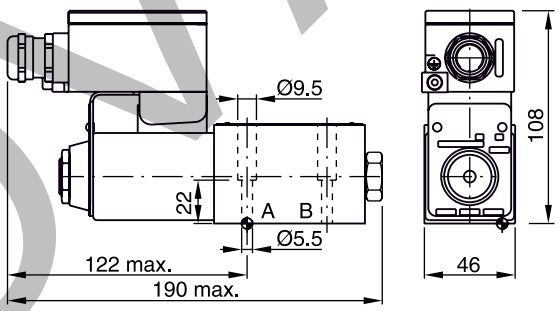
D1FB*C*EE



D1FB*K*EE



D1FB*E*EE



Surface finish	Kit			Kit NBR
$\sqrt{R_{max}6.3}$ 0.01/100	BK375	4x M5x30 ISO 4762-12.9	7.6 Nm ±15 %	SK-D1FB