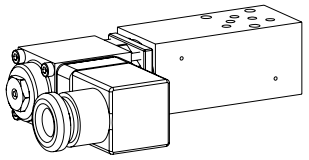
Proportional throttle valve

Flange- or Sandwich construction

- direct operated
- Q_{max} = 12 l/min
- $Q_{N\,max}$ = 6,3 bar
- p_{max} = 250 bar

NG3-Mini
Wandfluh standard



DESCRIPTION

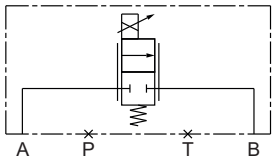
Direct operated proportional throttle valve in flange or sandwich construction. With the solenoid deenergised, the control spool is held in the closed position (DN) or open position (DO) by a spring. The change of the electric current is followed by a proportional volume flow change. For the control, Wandfluh proportional amplifiers are available (see register 1.13).

APPLICATION

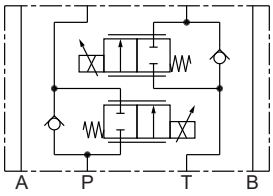
Proportional flow control valves are suitable for precise speed control, where the load current has to be maintained constant independent of the input and output pressure. Very sensitive opening and closing characteristics allow smooth control of movements in stationary or mobile installations. Miniature values are used where both, reduced dimensions and weight are important.

SYMBOL

D.PFA03-A/B



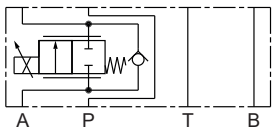
D.PSA03-AB



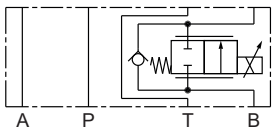
Note!

- Normally closed execution drawn
- All variants are also available as normally open

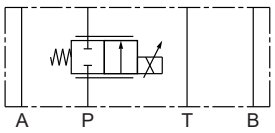
D.PSA03-A



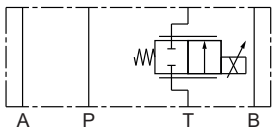
D.PSA03-B



D.PSA03-P



D.PSA03-T



ELECTRICAL SPECIFICATIONS

Protection class	IP65
Relative duty factor	100 % DF
Service life time	10^7 (number of switching cycles, theoretically)
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal voltage	12 VDC, 24 VDC
Limiting current at 50 °C	I_G = 1080 mA (12 VDC) I_G = 540 mA (24 VDC)

Note! Other electrical specifications see data sheet 1.1-90

ACTUATION

Actuation	Proportional solenoid, wet pin push type, pressure tight
Execution	PI29V (Data sheet 1.1-90)
Connection	Connector socket EN 175301 – 803

Note! Other specifications, see data sheet of the screw-in cartridges

TYPE CODE

D [ ] P [ ] A03 - [ ] - [ ] - [ ] - [ ] # [ ]

Throttle valve

Normally closed [N]
Normally open [O]

Proportional

Flange construction [F]
Sandwich construction [S]

Mounting interface according to Wandfluh standard, NG3-Mini

Type list / Function

flange construction		sandwich construction			
A → B	[A/B]	in P	[P]	in A	[A]
		in T	[T]	in B	[B]
				in A and B	[AB]

Nominal volume flow range Q_N
4 l/min [4]
6,3 l/min [6,3]

Nominal voltage U_N
12 VDC [G12]
24 VDC [G24]

Sealing material
NBR [ ]
FKM (Viton) [D1]

Design index (subject to change)

2.6-700

GENERAL SPECIFICATIONS

Designation	Proportional throttle valve
Construction	Direct operated
Mounting	Flange- or Sandwich construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Proportional solenoid
Ambient temperature	-25…+50 °C
Weight	Without screw-in cartridge 0,40 kg (Flange construction) 0,70 kg (Sandwich construction AB)
MTTFd	150 years

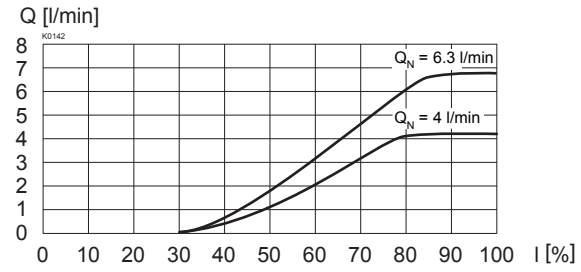
HYDRAULIC SPECIFICATIONS

Working pressure	p_{max} = 250 bar
Maximum volume flow	Q_{max} = 8 l/min
Nominal volume flow range	Q_N = 4; 6,3 l/min
Hysteresis	≤ 2 % at optimal dither signal
Repeatability	≤ 1 % at optimal dither signal
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm²/s…320 mm²/s
Temperature range fluid	-25…+70 °C (NBR) -20…+70 °C (FKM)
Contamination efficiency	Class 18 / 16 / 13
Filtration	Required filtration grade ß 6…10 ≥ 75, see data sheet 1.0-50

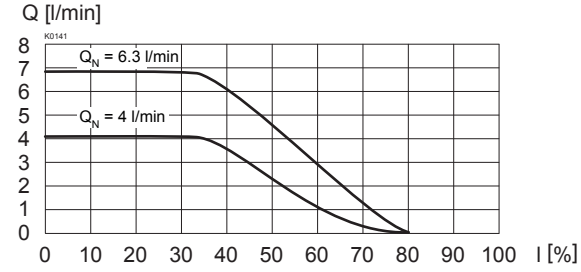
PERFORMANCE SPECIFICATIONS

Oil viscosity υ = 30 mm²/s

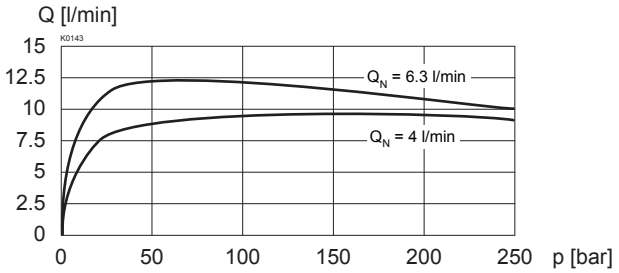
Q = f (I) **Volume flow adjustment characteristics DN**



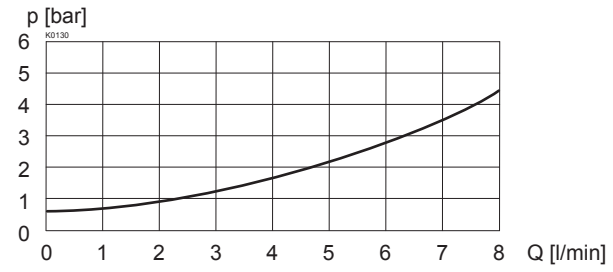
Q = f (I) **Volume flow adjustment characteristics DO**



Q = f (p) **Volume flow pressure characteristics**



Δp = f (Q) **Pressure drop volume flow characteristic DN**
via the non-return valve



INSTALLATION NOTES

Mounting type	Flange or sandwich mounting 3 fixing holes for socket head screws or studs M4
Mounting position	Any, preferably horizontal
Tightening torque	Fixing screws M_D = 2,6 Nm (quality 8.8, zinc coated) Screw-in cartridge M_D = 30 Nm

STANDARDS

Mounting interface	Wandfluh standard
Contamination efficiency	ISO 4406

ACCESSORIES

Proportional amplifier	Register 1.13
Threaded subplates	Data sheet 2.9-05
Multi-station subplates	Data sheet 2.9-45
Module type manifold blocks	Data sheet 2.9-85
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50
Relative duty factor	Data sheet 1.1-430

SURFACE TREATMENT

◆ The sandwich bodies are made of aluminium, anodised natural

SEALING MATERIAL

NBR as standard

VALVES INSTALLED

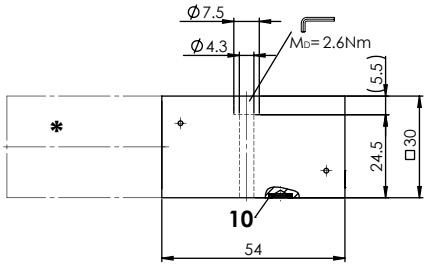
The following screw-in cartridges are used in the sandwich body.

Article	Description	Data sheet no.	
D.PPM18	Proportional throttle cartridge	2.6-510	12*

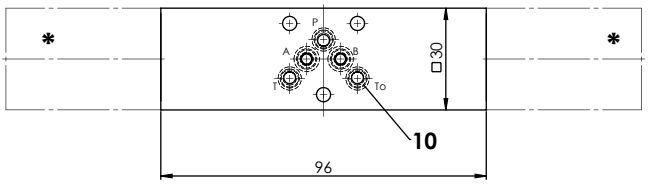
Attention! * Can be different from the value on the data sheet of the screw-in cartridge.

DIMENSIONS

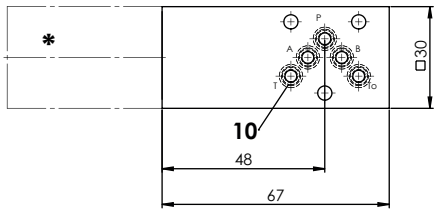
Flange execution
D.PFA03-A/B



Sandwich execution
D.PSA03-AB

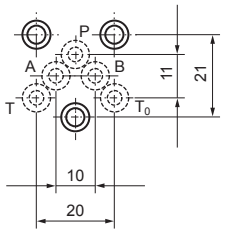


Sandwich execution
D.PSA03-A, P, T
D.PSA03-B (cartridge on B-side)



Note! * The exterior dimensions or the cartridges can be obtained from the corresponding data sheets.

HYDRAULIC CONNECTION



PARTS LIST

Position	Article	Description
10	160.2045	O-ring ID 4,50 x 1,50 (NBR)
	160.6045	O-ring ID 4,50 x 1,50 (FKM)

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