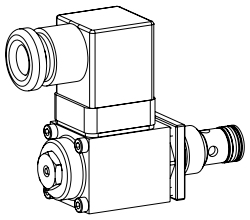
Proportional pressure relief cartridge

- direct operated
- Q_{max} = 8 l/min
- p_{max} = 350 bar
- $p_{N\,max}$ = 315 bar

M18 x 1,5
ISO 7789



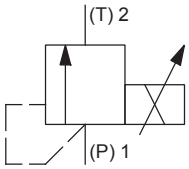
DESCRIPTION

Direct operated proportional pressure relief valve in screw-in cartridge construction for cavity according to ISO 7789. Good flow capacity due to the differencial area principle, very sensitively adjustable. When the operating pressure adjusted by means of the proportional solenoid is reached, the valve opens and connects the protected line with the drain to the tank. The back pressure in T (2) affects the pressure in P (1). For the control, Wandfluh proportional amplifiers are available (see register 1.13).

APPLICATION

The electrical remote control in conjunction with process controls allows economical solutions with repeatable processes. The screw-in cartridge is perfectly suitable for installation in control blocks and is installed in sandwich- (vertical stacked systems) and in flange plates (corresponding data sheets in this register). For machining the cartridge cavity in steel and aluminum blocks, cavity tools are available (hire or purchase). Please refer to the data sheets in register 2.13.

SYMBOL



ACTUATION

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

TYPE CODE

B D P PM18 - ☐ - ☐ - ☐ # ☐

Pressure relief valve				
Direct operated				
Proportional				
Screw-in cartridge M18 x 1,5				
Nominal pressure range p_N	20 bar	20	200 bar	200
	100 bar	100	315 bar	315
Nominal voltage U_N	12 VDC	G12		
	24 VDC	G24		
Sealing material	NBR			
	FKM (Viton)	D1		
Design index (subject to change)				

2.3-520

GENERAL SPECIFICATIONS

Designation	Proportional pressure relief valve
Construction	Direct operated
Mounting	Screw-in cartridge construction
Nominal size	M18 x 1,5 according to ISO 7789
Actuation	Proportional solenoid
Ambient temperature	-25…+70 °C
Weight	0,25 kg
MTTFd	150 years

HYDRAULIC SPECIFICATIONS

Working pressure	p_{max} = 350 bar
Nominal pressure range	P_N = 20 bar, 100 bar, 200 bar, 315 bar
Maximum volume flow	Q_{max} = 8 l/min (p_N = 20 / 100 bar) Q_{max} = 6 l/min (p_N = 200 bar) Q_{max} = 3 l/min (p_N = 315 bar)
Minimum volume flow	Q_{min} = 0,1 l/min
Leakage oil	See characteristics
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

ELECTRICAL SPECIFICATIONS

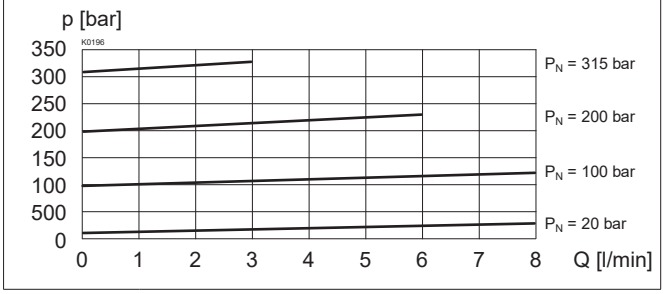
Protection class	IP65
Relative duty factor	100 % DF
Standard nominal voltage	12 VDC, 24 VDC
Limiting current at 50 °C	I_G = 1080 mA (12 VDC) I_G = 540 mA (24 VDC)

Note! Other electrical specifications see data sheet 1.1-90

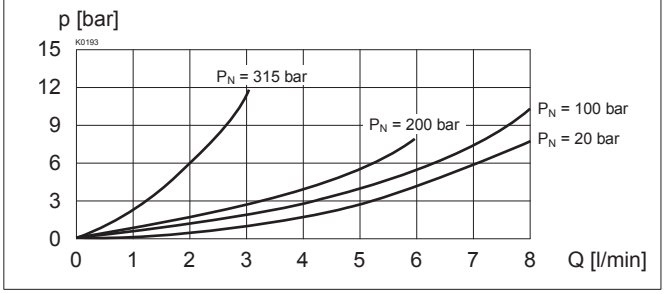
PERFORMANCE SPECIFICATIONS

Oil viscosity υ = 30 mm²/s

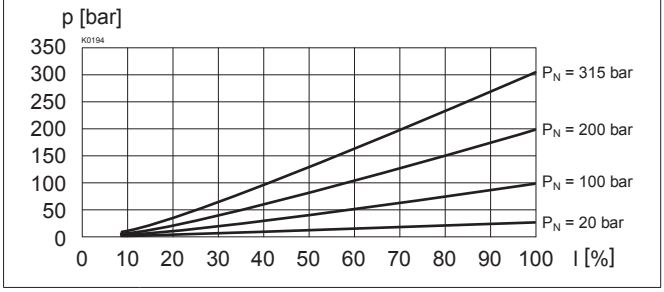
p_{red} = f (Q) **Pressure volume flow characteristics**
Maximal adjustable pressure



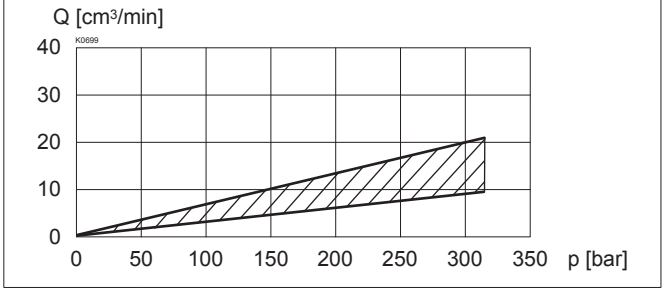
p_{red} = f (Q) **Pressure volume flow characteristics**
Minimal adjustable pressure



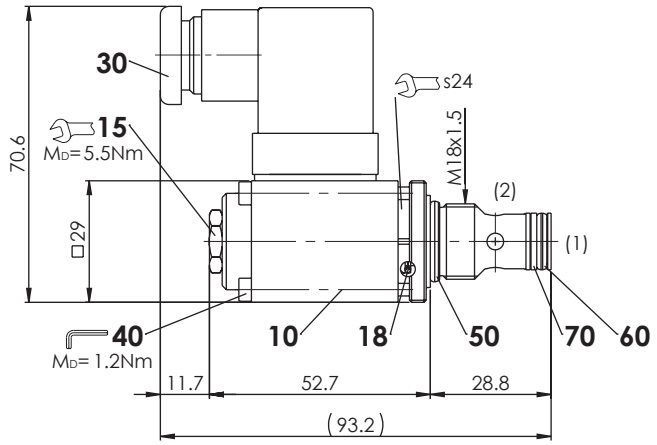
p_{red} = f (n) **Pressure adjustment characteristics**
Measured at Q = 1 l/min



Q_L = f (p) **Leakage volume flow characteristic**

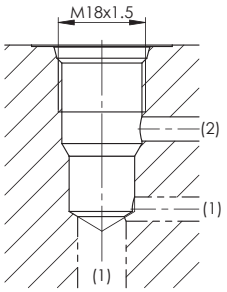


DIMENSIONS



HYDRAULIC CONNECTION

Cavity drawing according to ISO 7789–18–02–0–98



Note! For detailed cavity drawing and cavity tools see data sheet 2.13-1001

PARTS LIST

Position	Article	Description
10	256.2418	Proportional solenoid PI29V-G12
	256.2453	Proportional solenoid PI29V-G24
15	253.8000	Manual override HB4,5
30	219.2002	Electric plug B (black)
40	249.0006	Socket head screw M3 x 42
	251.1005	Seal kit B.PPM18
	251.1007	Seal kit B.PPM18.D1

Seal kit consisting of:

18	O-ring	ID 12,42 x 1,78
50	O-ring	ID 15,60 x 1,78
60	O-ring	ID 9,25 x 1,78
70	Back. ring	PTFE rd 10,6 x 13,5 x 1,4

ACCESSORIES

Proportional amplifier	Register 1.13
Flange body / sandwich plate NG3-Mini	Data sheet 2.3-700
Threaded body	Data sheet 2.9-200
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50

MANUAL OVERRIDE

HB4,5 as standard

SURFACE TREATMENT

- All external parts of the cartridge as well the solenoid coil are zinc-nickel coated

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

STANDARDS

Cartridge cavity	ISO 7789
Solenoids	DIN VDE 0580
Connection execution D	EN 175301 – 803
Protection class	EN 60 529
Contamination efficiency	ISO 4406

INSTALLATION NOTES

Mounting type	Screw-in cartridge M18 x 1,5
Mounting position	Any, preferably horizontal
Tightening torque	M_D = 40 Nm Screw-in cartridge M_D = 1,2 Nm solenoid screws