

up to 60 l/min  
up to 350 bar

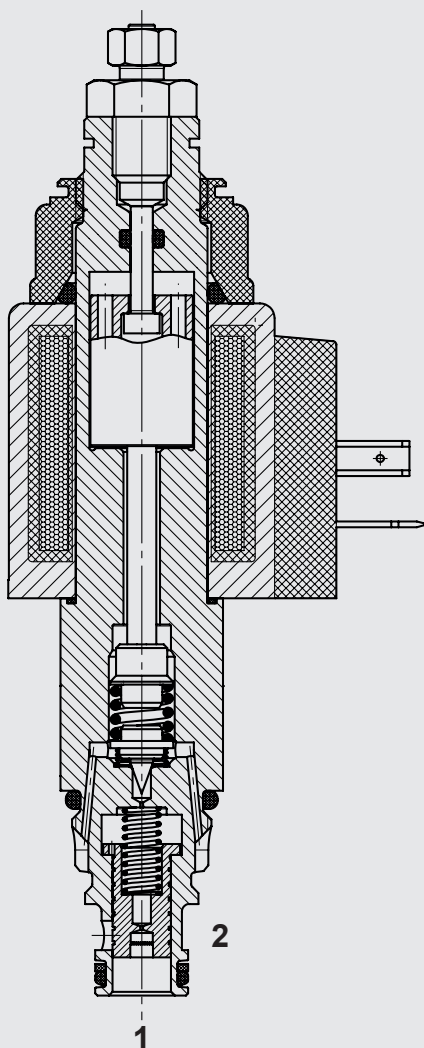
## Pressure relief valve

### DB08PY-01

Spool type, pilot-operated

Screw-In Cartridge Valve, UNF – 350 bar

#### FUNCTION



#### PRODUCT ADVANTAGE

- With mechanical adjustment of the relief pressure
- Excellent stability over the entire flow range
- Electrical control of the relief function - Simple activation via switching output of the control unit is sufficient
- Various pressure ranges up to 350 bar
- External surfaces with advanced corrosion protection thanks to ZnNi coating (1,000 h salt spray test)

#### DESCRIPTION OF FUNCTIONS

The DB08PY-01 is a pilot-operated spool valve, solenoid activated, de-energised the system pressure is relieved to tank side.

When the solenoid is energised, it is responsible for limiting the pressure in the system. When the inlet pressure at port 1 exceeds the pressure that has been preset via the adjustment, the pilot valve opens and the oil will flow from the rear of the main spool to tank port 2. The pressure difference created as a result of this action will cause the main spool to press against its return spring and allow the oil to flow from port 1 to port 2. This will continue until the system pressure at port 1 corresponds to the preset value of the compression spring, at which point the pilot valve will close again. The main spool will be moved back into the closing position by the return spring.

When the solenoid is de-energised, the valve's pressure relief function is not active and there is an open connection between port 1 and 2. The pressure differential  $\Delta p$  is a minimum of 5 bar.

#### Notice:

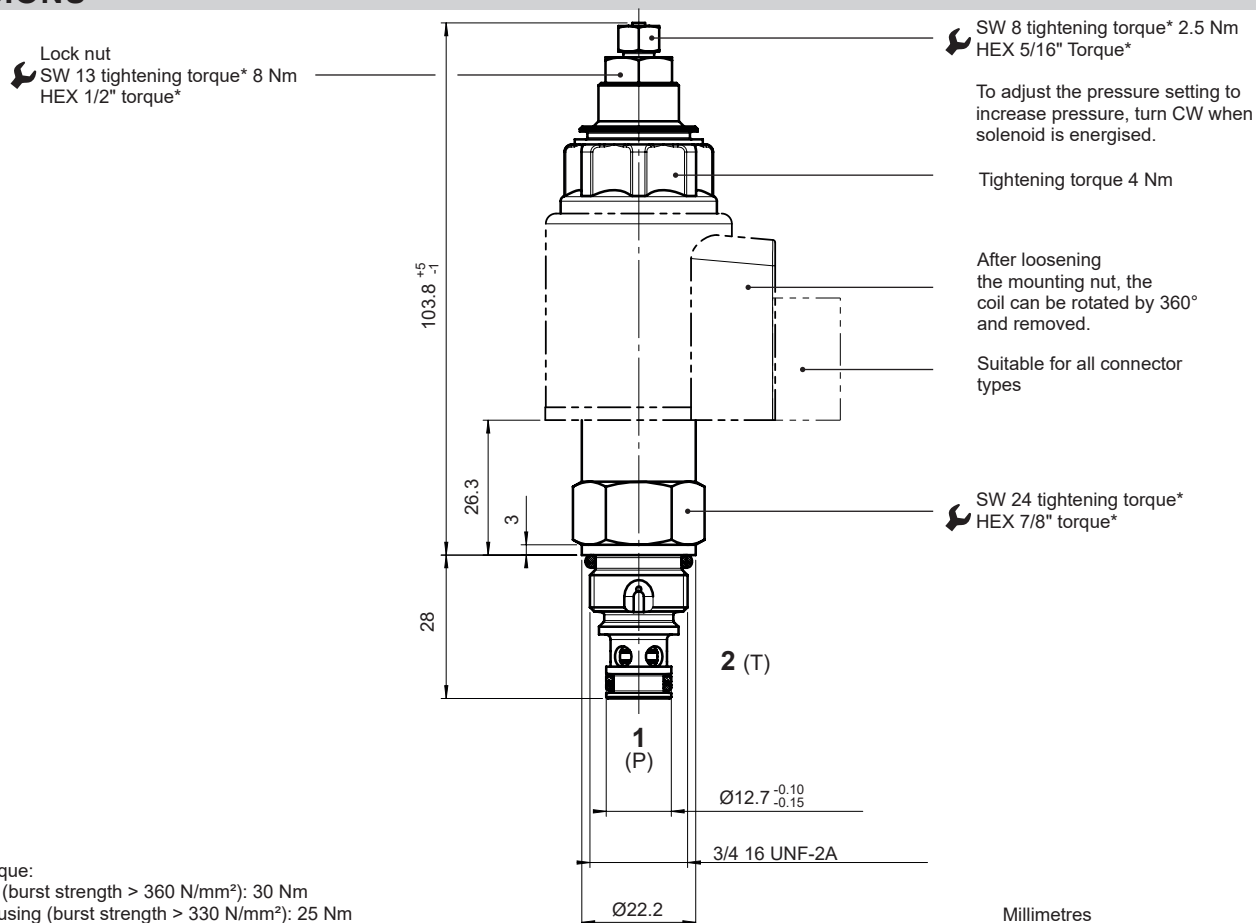
Pressure at port 2 increases the opening pressure.

## TECHNICAL CHARACTERISTICS<sup>1)</sup>

Operating pressure	max. 350 bar	
Flow rate	max. 60 l/min	
Pressure ranges	5 up to 60 bar 5 up to 100 bar 5 up to 230 bar 5 up to 350 bar	
Internal leakage	0.5 l/min at 80 % of $p_{nom}$ , $v = 34 \text{ mm}^2/\text{s}$	
Pressure fluid	Hydraulic oil to DIN 51524 Part 1, 2 and 3	
Ambient temperature range	NBR: min. -30 °C up to max. +60 °C FKM: min. -20 °C up to max. +60 °C	
Temperature range of operating fluid	NBR: min. -30 °C up to max. +100 °C FKM: min. -20 °C up to max. +120 °C	
Viscosity range	Min. 7.4 mm <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s	
Filtration	Permitted contamination level of the operating fluid as defined by ISO 4406 ≤ 210 bar: Class 20/18/15 > 210 bar: Class 19/17/14	
MTTF <sub>D</sub>	150 - 1200 years, assessment according to DIN EN ISO 13849-1:2016, Table C.1, Confirmation of ISO 13849-2:2013; Tables C.1 and C.2	
Installation position	Any, preferably horizontal	
Material	Valve body: Steel Spool: Steel, hardened and ground Seals: NBR (standard) FKM (optional) Support rings: PTFE Solenoid coil: Steel / Polyamide	
Cavity	FC08-2	
Weight	0.39 kg with coil	0.20 kg without coil
<b>Electric system</b>		
Type of voltage	DC: DC solenoid AC: AC solenoid with rectifier integrated in the coil	
Nominal current at 20 °C	1.5 A   8 Ω (12 V DC) 0.8 A   30 Ω (24 V DC)	
Voltage tolerance	±15 % at nominal voltage	
Duty cycle	100 % duty cycle (continuous operation) up to max. 115 % of the nominal voltage at 60 °C ambient temperature	
Solenoid coil design	40-1836	

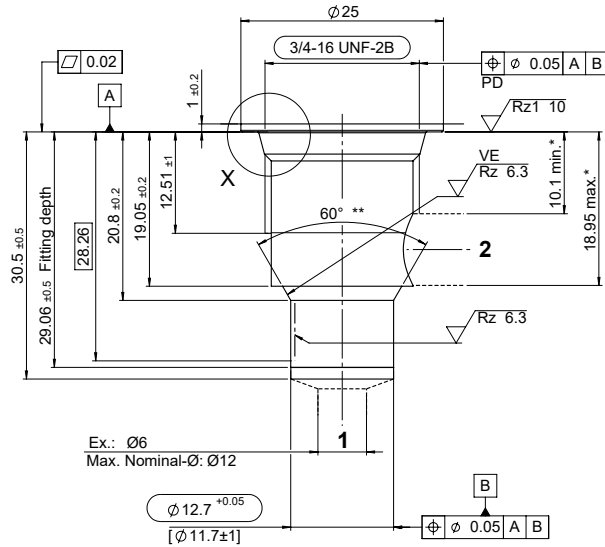
<sup>1)</sup> See "Conditions and Instructions for Valves" in brochure 53.000

## DIMENSIONS

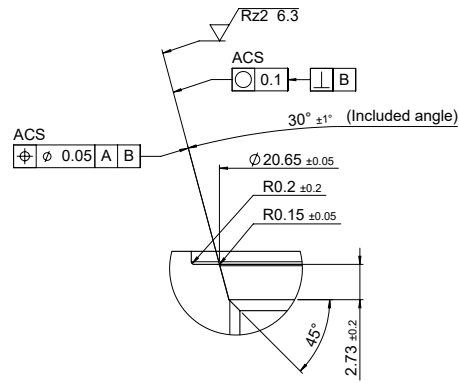


# CAVITY

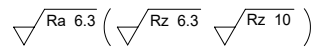
## FC08-2



X 4 : 1



VE = Visual Examination



- \* Permitted boring zone (for block design).
- \*\* Sharp edges should be avoided by using a radius of 0.1 mm to 0.2 mm.
- \*\*\* Largest pilot hole diameter (nominal tool diameter).

Millimetres  
Subject to technical modifications.

## MODEL CODE

**DB08PY - 01 - C - N - 330 V 250 - 24 DG**

### Designation

Pressure relief valve, UNF

### Design

01 = Standard

### Body and ports

C = Screw-in cartridge valve

### Sealing material

N = NBR (standard)

V = FKM

### Adjustable pressure range (in PSI/10)

87 = 870 psi | 60 bar

140 = 1400 psi | 100 bar

330 = 3300 psi | 230 bar

500 = 5000 psi | 350 bar

### Adjustment type

V = adjustable using tool

### Opening pressure

o. A. = Not set, spring unloaded

270 = Customer-specific relief pressure (spec. in PSI/10)

### Nominal voltage\*

DC voltage:

12 = 12 V DC

24 = 24 V DC

AC voltage (rectifier integrated into the coil):

115 = 115 V AC

230 = 230 V AC

### Solenoid coil design (40-1836)\*

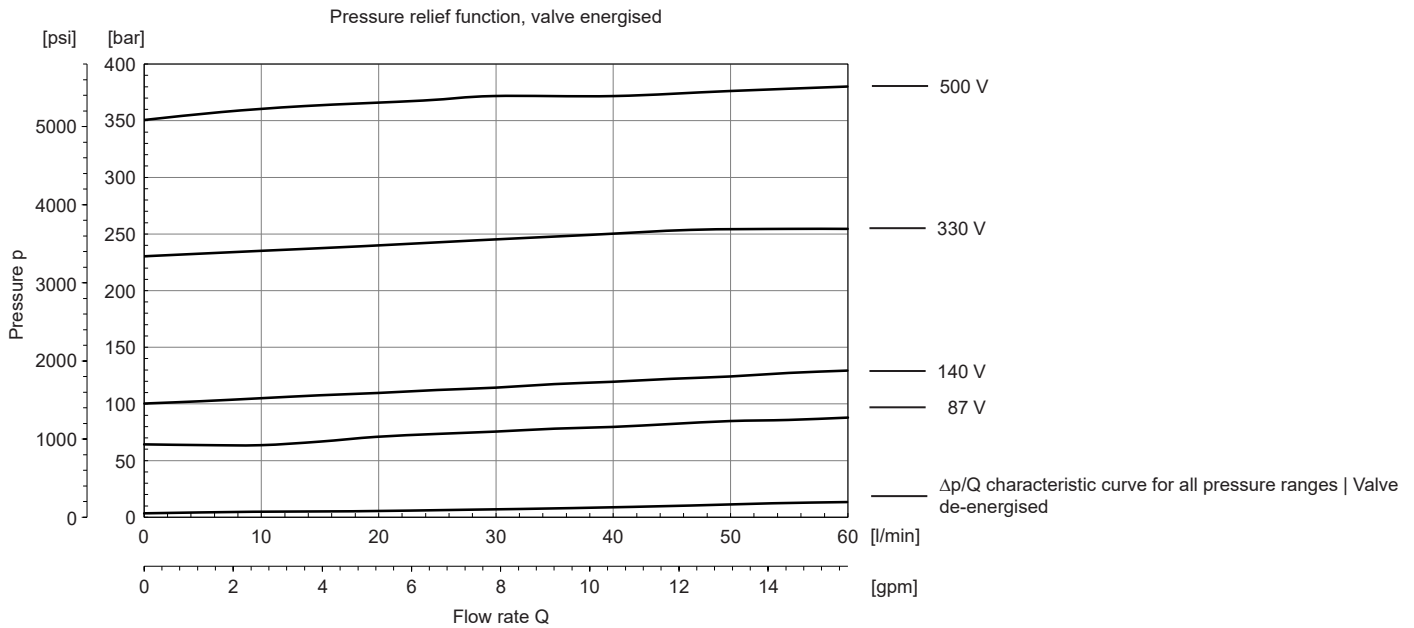
DC:	Number of pins	Connection	Protection class
DG = design A acc. to DIN EN 175301-803	3-pole	radial	IP65
DK = KOSTAL plug connector M27x1	2-pole	radial	IP65/IP67
DL = two flying leads 0.75 mm <sup>2</sup> x 457 mm (18")	2-pole	radial	IP65/IP67
DN = DEUTSCH plug connector DT04-2P	2-pole	axial	IP67/IP69
DO = M12 plug connector	4-pole	radial	IP65
DT = AMP Junior Timer	2-pole	radial	IP65/IP67
DU = AMP Junior Timer	2-pole	axial	IP65/IP67
AC:			
AG = design A acc. to DIN EN 175301-803	3-pole	radial	IP65

Detailed information is available in brochure 5.207.6 – Solenoid coils for directional valves.

\* Further versions on request.

## TYPICAL PERFORMANCE CURVES

$\Delta p/Q$  characteristics measured at  $v = 34 \text{ mm}^2/\text{s}$ ,  $T_{\text{Oil}} = 46 \text{ }^\circ\text{C}$



## MATERIAL OVERVIEW

### Standard models

Designation	Part no.
DB08PY-01-C-N-087V-0	3983091
DB08PY-01-C-N-330V-0 19-0	3983092
DB08PY-01-C-N-500V-0	3983093
DB08PY-01-C-N-330V-24DT	4054006
DB08PY-01-C-N-500V-0	3983119

Further versions on request.

### Spare parts

Designation	Material	Code	Part no.
Seal kit	NBR	FS UNF 08/N	3651385
Seal kit	FKM	FS UNF 08/V	3651356

### Housing

Designation	Material	Code	Pressure	Connections	Weight	Part no.
Inline connection housing	Steel, zinc-plated	H-R082-SB3	350 bar	G3/8"	0.42 kg	560919
Inline connection housing	Aluminium, anodised	H-R082-AB3	210 bar	G3/8"	0.15 kg	3011423

### Cavity tools

Designation	Part no.
Countersink	176379
Reamer	165706

## NOTE

The information in this brochure relates to the operating conditions and fields of application described. For applications and operating conditions not described, please contact the relevant technical departments.

Subject to technical modifications.

Documents are only valid if they have been obtained via the website and are up-to-date.

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