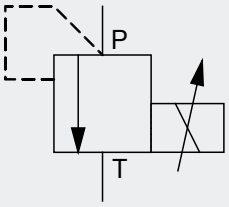
Proportional pressure relief valve EPDBD 05

direct operated, solenoid operated
operating pressure max. 315 bar
volume flow max. 12 l/min
cavity EPDBD 05 or
cavity T-10A or C-10-2



020140_EPDBD_05_e
07.2016

Table of contents

Characteristics

- proportional pressure relief valve in spool design
- slip-in valve for cavity EEPDBD 05
- or screw-in valve for cavity T-10A
- or screw-in valve for cavity C-10-2
- suitable as pilot valve
- low vibration
- maintenance-free
- degressive versions available
- versions according to the ATEX-directive for the use in potentially explosive atmospheres available (see datasheet 020141_EPDBD_05_EX_e)

Technical Data

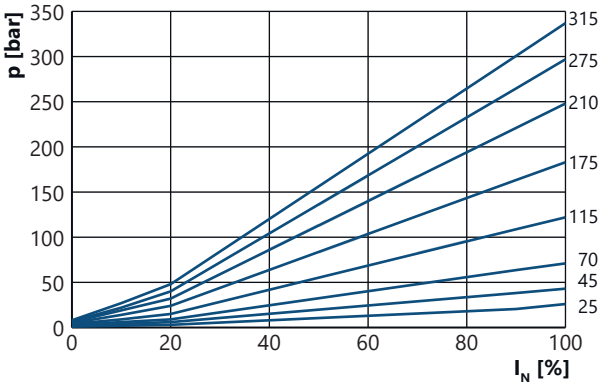
Hydraulic	Operating pressure max.:	315 bar (with free return flow in port T), for aluminium manifolds: 210 bar max. pressure at port T: 35 bar
	Flow rate:	pressure range 25-115 bar: 12 l/min pressure range 175-315 bar: 8 l/min at Δp = 10 bar
	Pressure setting range:	see type code
	Flow direction:	P to T (T to P not allowed)
	Hydraulic fluid:	mineral oil according to DIN 51524, other hydraulic fluids upon request
	Viscosity range:	10 - 350 cSt
	Filtration:	oil cleanliness according to ISO 4406 (1999) 18/16/13, filter with β 5(c) > 200
	Repeatability:	< 3 % with optimized PMW-signal*
	Hysteresis:	< 5 % with optimized PMW-signal*
	* at 20 % to 100 % of the nominal valve current.	
NOTE	The pressure at port T adds directly to set pressure.	

Mechanic	Design:	EEPDBD slip-in valve, EPDBDR in in-line body, ZEPDBD in sandwich body NG 6, EPDBDA in mounting plate NG 6 EEPBDBS screw-in valve T-10A EEPDBDM screw-in valve C-10-2, direct operated
	Size:	05
	Fluid temperature:	-25 °C to +70 °C
	Ambient temperature:	-25 °C to +50 °C
	Storage temperature:	-30 °C to +60 °C (non-condensing)
	Installation position:	any
	Weight:	EEPDBD 05: 0,7 kg, EPDBDR 05: 1,13 kg, ZEPDBD(05/06): 1,05 kg, EPDBDA (05/06): 0,99 kg EEPDBDS 05: 0,74 kg, EEPDBDM: 0,73 kg
	Material:	valve parts and in-line body: steel, sandwich body and mounting plate: aluminium; seals: NBR, optional Viton
	Surface protection:	exterior parts and in-line body: zinc coated steel, partially burnished, sandwich body and mounting plate: anodized aluminium

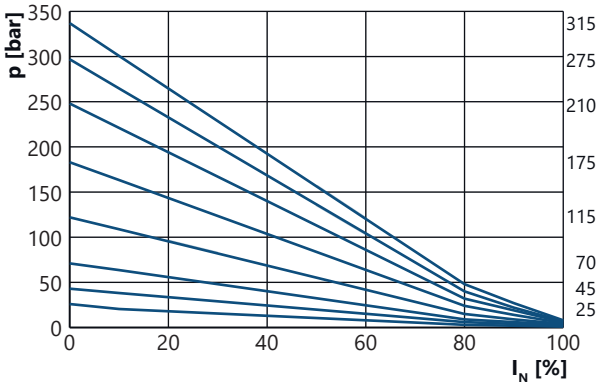
Electric	Nominal voltage:	12 V DC, 24 V DC
	Nominal valve current:	1,7 A (12 V), 0,7 A (24 V)
	Nominal resistance (R20):	4 Ω (12 V), 25 Ω (24 V)
	Power consumption:	16 W at nominal valve current
	Shifting time:	100 % ED
	Control command:	PWM-signal
	PWM-frequency:	typically 140 Hz (depending on application)
	Protection class:	IP65 with correctly mounted and locked mating connector
	Electric termination:	Electric plug according to DIN EN 175301-803 shape A, AMP Junior Timer, unterminated wire
	Electronic controllers:	see chapter 6 “electronics and sensor technology” as well as our online catalogue at ***www.weber-hydraulik.com***

Performance

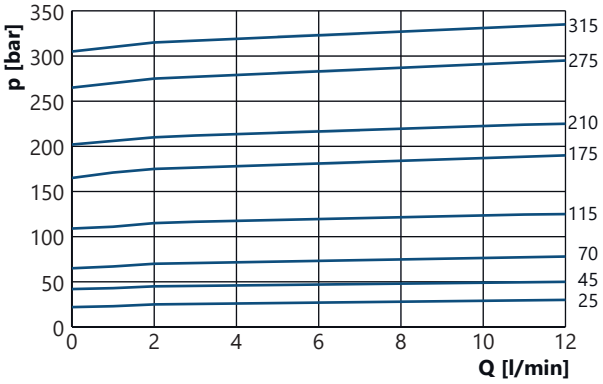
Pressure drop diagram (p/I) EPDBD 05 at Q = 0,8 l/min



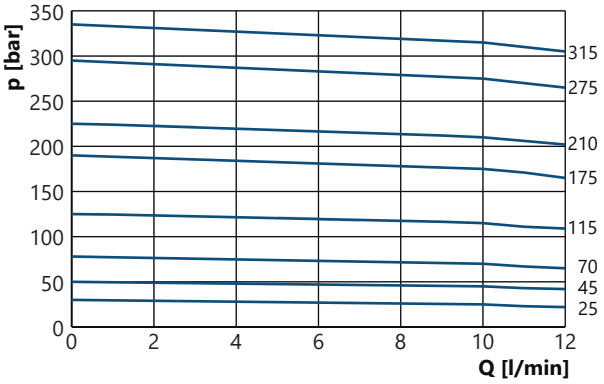
Pressure drop diagram (p/I) EPDBD 05 degressive version at Q = 0,8 l/min



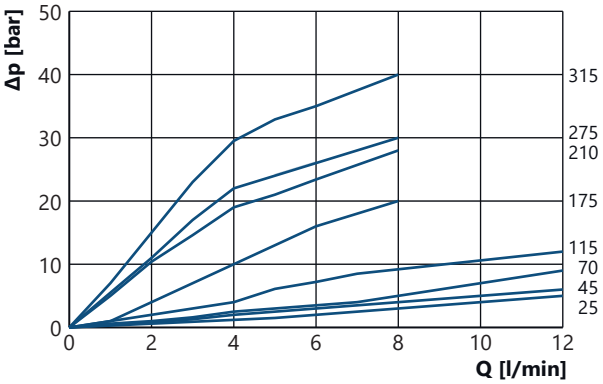
Pressure drop diagram (p/Q) EPDBD 05 at I_N



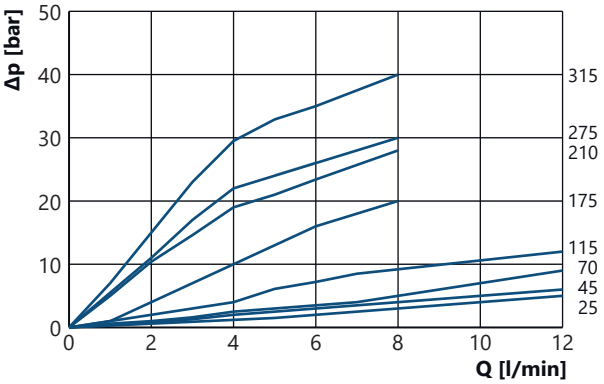
Pressure drop diagram (p/Q) EPDBD 05 degressive version at I_N



Pressure drop diagram (Δp/Q) EPDBD 05 at I = 0 mA (currentless)



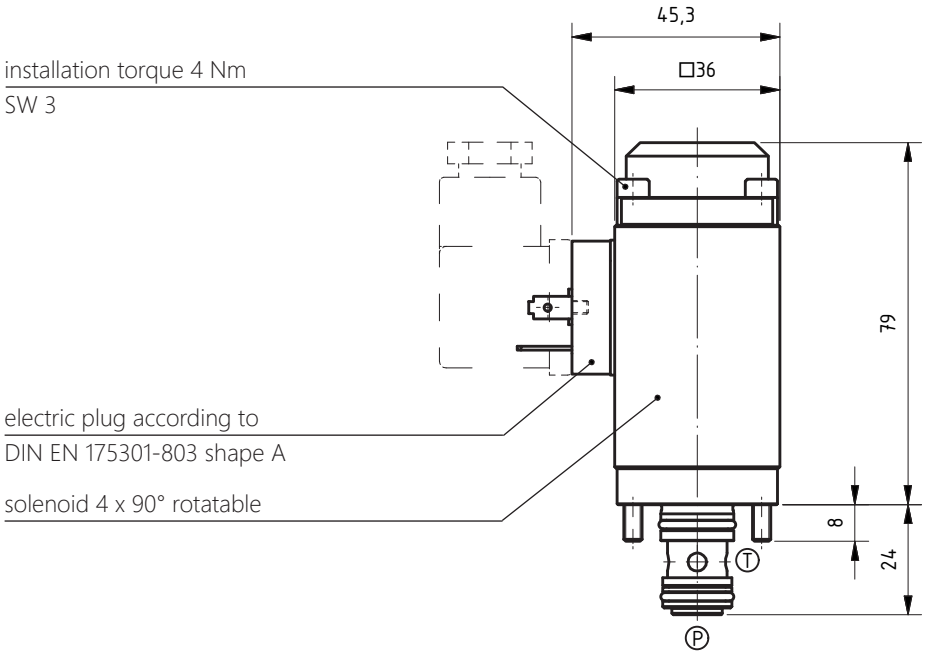
Pressure drop diagram (Δp/Q) EPDBD 05 degressive version at I = 100 % (full current)



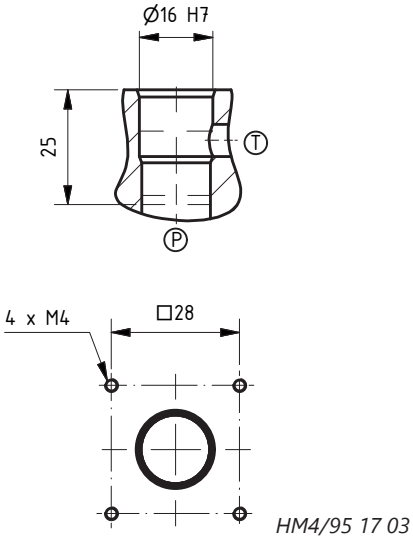
Test conditions Oil: HLP 32, temperature: 40 °C (~32 cSt)
Higher volume flow and viscosity lead to higher pressure at port P. The higher the pressure setting range, the stronger this effect will be.

Dimensions

Slip-in valve
EEPDBD 05



Cavity
EEPDBD 05



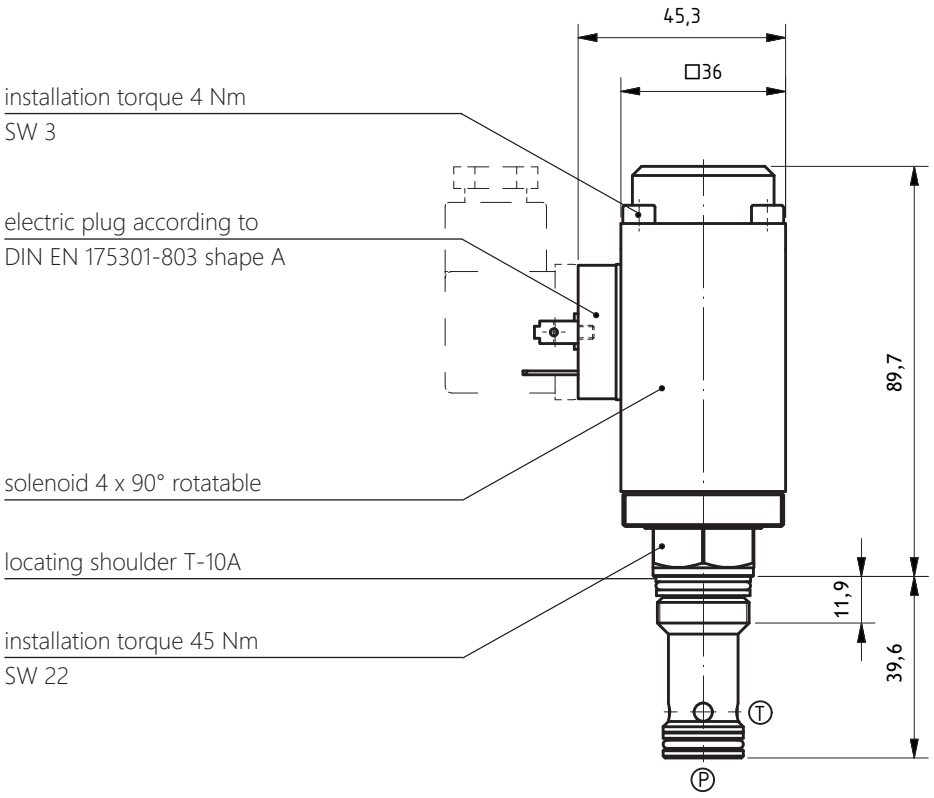
HM4/95 17 03

NOTE For a detailled drawing of the cavity please see chapter 12 „general information" under the category *„valve cavities and port patterns"* or our online catalogue at *www.weber-hydraulik.com.*

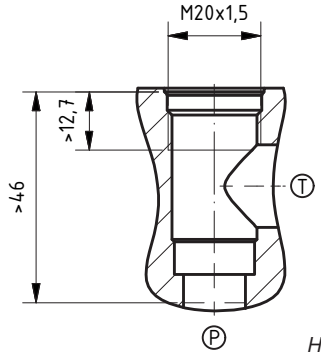
NOTE The valve is also available as EPDBDR 05 in in-line body, as ZEPDBD (05/06) in a sandwich body NG 6 and as EPDBDA (05/06) in a mounting plate NG 6. Dimension sheets are available upon request.

Dimensions

Screw-in valve EEPDBDS 05



Cavity T-10A



HM4/91 42 01

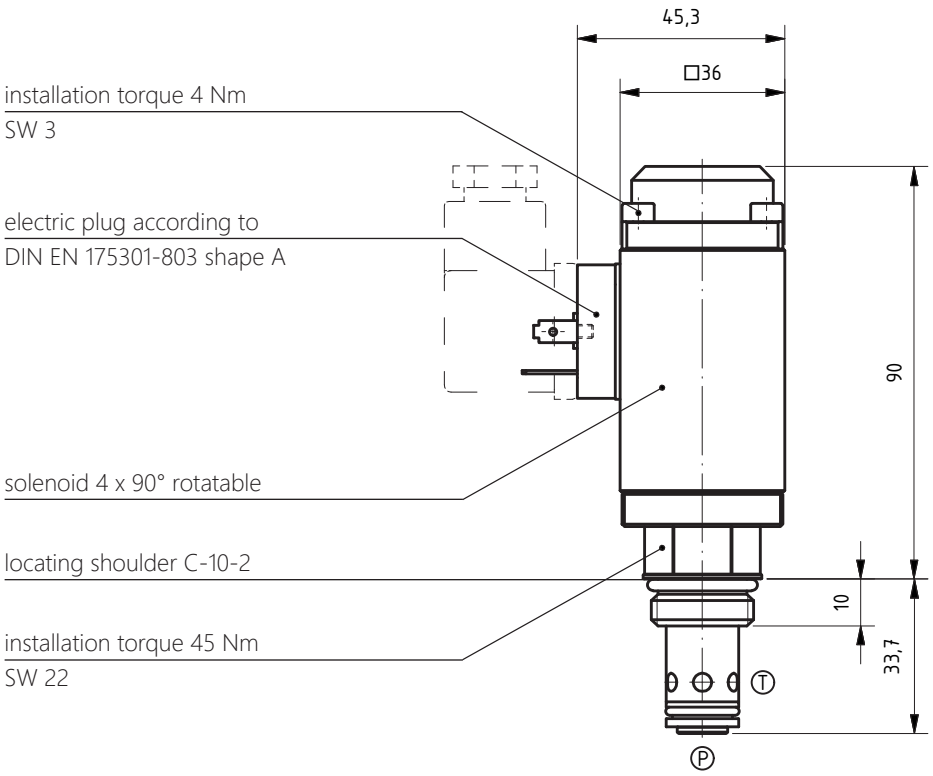
NOTE For a detailled drawing of the cavity please see chapter 12 „general information" under the category *„valve cavities and port patterns"* or our online catalogue at *www.weber-hydraulik.com.*

NOTE For appropriate manifolds see chapter 10 *„manifolds"* as well as our online catalogue at *www.weber-hydraulik.com.*

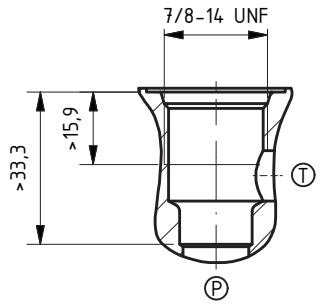
NOTE The valve is also available as degressive version.

Dimensions

Screw-in valve EEPDBDM 05



Cavity C-10-2



H4/94 47 01

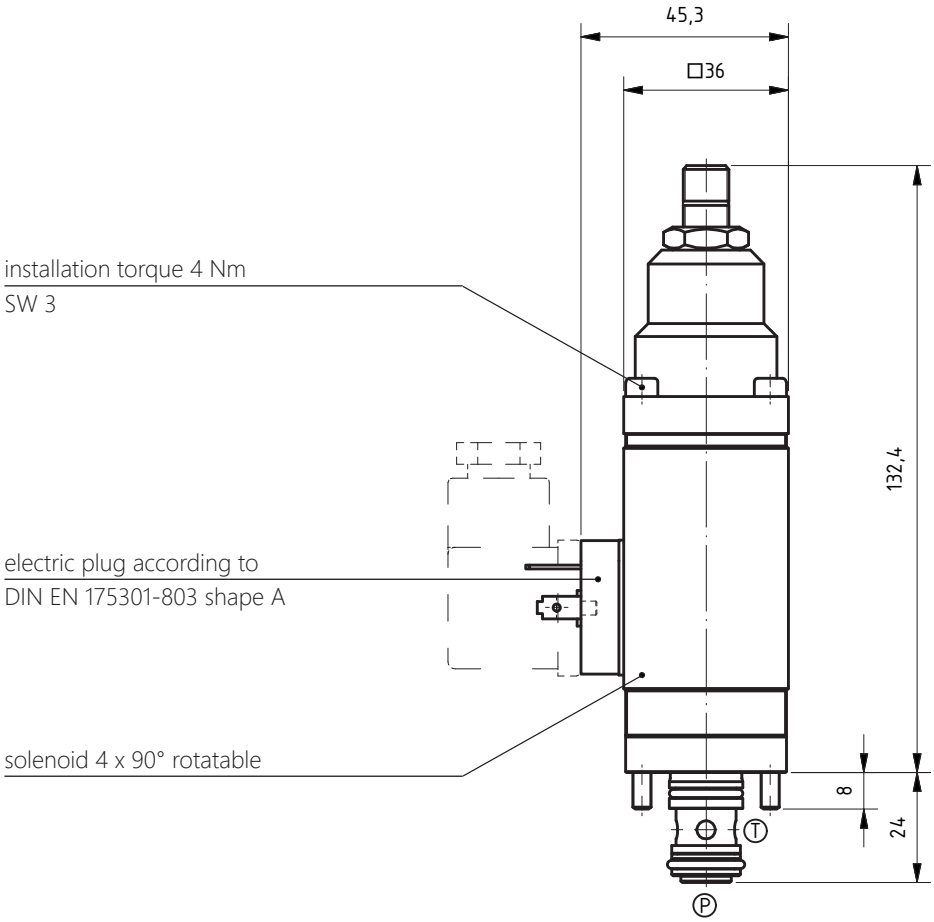
NOTE For a detailled drawing of the cavity please see chapter 12 „general information" under the category *„valve cavities and port patterns"* or our online catalogue at *www.weber-hydraulik.com.*

NOTE We also provide a variety of suitable manifolds for C-10-2. Please contact us for further assistance.

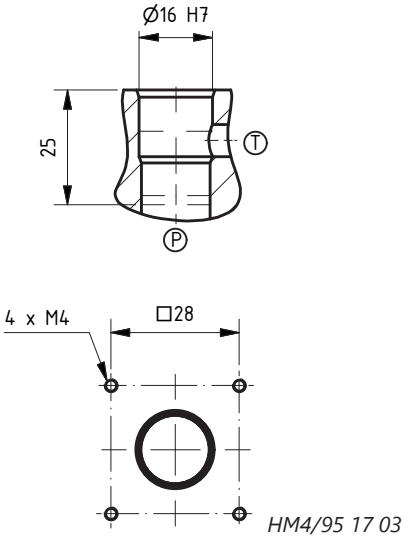
NOTE The valve is also available as degressive version.

Dimensions

Slip-in valve EEPDBD 05 degressive



Cavity EEPDBD 05



NOTE For a detailled drawing of the cavity please see chapter 12 „general information" under the category *„valve cavities and port patterns"* or our online catalogue at *www.weber-hydraulik.com.*

NOTE The degressive version of the valve is also available as EEPDBDS 05 (with cavity T-10A) or as EEPDBDM 05 (with cavity C-10-2).

Type code

Design	
EEPDBD 05	Slip-in valve
EPDBDR 05	Slip-in valve in in-line body
ZEPDBD (05/06)	Slip-in valve in sandwich body NG 6**
EPDBDA (05/06)	Slip-in valve in mounting plate NG 6**
EEPDBDS 05	Screw-in valve T-10A
EEPDBDM 05	Screw-in valve C-10-2

Revision

Nominal voltage	
12V	12V DC
24V	24V DC

Pressure setting range	
25	25 bar
45	45 bar
70	70 bar
115	115 bar
175	175 bar
210	210 bar
275	275 bar
315	315 bar

Manual override*	
	without
FNH (see note)	lockable manual override with hexagon socket and lock nut
DNH	manual override with push knob

Special design	
without	
degressive*	**DEG**

Seals	
NBR	
Viton	**V**

Electric termination	
	DIN
AMP	AMP Junior Timer (only 24 V version)
K	unterminated wire 500 mm (only 24 V version)

* for degressive versions no additional manual override selectable
** aluminium manifolds are approved for max. operating pressure of 210 bar

NOTE FOR FNH

The lockable manual override with hexagon socket and lock nut (FNH) could be used to override the pressure relief function of the valve. Be aware that the valve can not fulfil its pressure relief function if the FNH is screwed in and locked. This can lead to excessive pressure and cause breakage or failure of the components if no parallel pressure relief protection is present.
The FNH should never be screwed in and locked when used in conjunction with a running system! The application as a pressure relief valve with extended throttle function is dangerous and not suggested. All liability for doing so lies with the operator!

Appendix

Accessories/ spare parts

Article:	Article number:
Socket connector DIN EN 175301-803, shape A, black	149.0007
Seal kit EEPDBD 05 (NBR)	405.0050
Seal kit EEPDBD 05 (Viton)	405.0051
Seal kit T-10A (NBR)	405.0013
Seal kit T-10A (Viton)	405.0037
Seal kit C-10-2 (NBR)	405.0079
Seal kit C-10-2 (Viton)	405.0080

NOTE For appropriate electronic controllers, see chapter 6 *„electronics and sensor technology"* as well as our online catalogue at *www.weber-hydraulik.com*.

Manual Information regarding installation, set-up and maintenance can be found in our catalogue in chapter 12 under the category *„general operating manual"* or will be provided upon request.

WEBER-HYDRAULIK ValveTech GmbH
Felix-Wankel-Str. 4, 78467 Konstanz
Phone: +49 7531 9748-0
Fax: +49 7531 9748-44
www.weber-hydraulik.com
info.de-k@weber-hydraulik.com