

## 85780/85790 2/2-way piston valves

- > Port size: DN 15 ... 50, flange connection, PN 40 (PN 25)
- > Suitable for use in single-channel safety-related systems in 85780 accordance with DIN EN 61508/61511 up to and including SIL 2 and up to and including SIL 3 in multi-channel systems
- > High flow rate
- > For robust industry applications
- > Damped operation
- > For systems with low or fluctuating pressure
- > Valve operates without differential pressure
- > International approvals



### Technical features

#### Medium:

Neutral gases and liquid fluids (air, water, gases according to DVGW data sheet G 260 with seat seal FPM – Oils and other fluids on request)

#### Switching function:

Normally closed

#### Operation:

Solenoid actuated, with forced lifting

#### Mounting:

Optional, preferably solenoid vertical on top

#### Flow direction:

Determined

#### Port size:

DN 15, DN 20, DN 25, DN 32, DN 40, DN 50

#### Operating pressure:

0 ... 25 bar (0 ... 362 psi)

#### Fluid temperature:

–10 ... +60°C (+14 ... +140°F)

#### Ambient temperature:

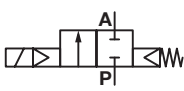
–10 ... +50°C (+14 ... +122°F)

#### Material:

Body:  
up to DN 50: Stainless steel (1.4408)  
Seat seal: NBR  
Internal parts: Stainless steel, PTFE/Carbon

For contaminated fluids insertion of a strainer is recommended.

### Technical data – standard models

Symbol	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	15	3,7	0 ... 25	0 ... 362	4,2	8578200.8401.xxxxx	8578200.8404.xxxxx
	20	5,6	0 ... 25	0 ... 362	4,6	8578300.8401.xxxxx	8578300.8404.xxxxx
	25	7,8	0 ... 25	0 ... 362	5,1	8578400.8401.xxxxx	8578400.8404.xxxxx
	32	18	0 ... 25	0 ... 362	9,6	8578500.8401.xxxxx	8578500.8404.xxxxx
	40	24,4	0 ... 25	0 ... 362	10	8578600.8401.xxxxx	8578600.8404.xxxxx
	50	31,8	0 ... 25	0 ... 362	11,5	8578700.8401.xxxxx	8578700.8404.xxxxx

xxxxx Please insert voltage and frequency codes

\*1) Cv-value (US) = kv value x 1,2

\*2) For gases and liquid fluids up to 60 mm²/s (cSt)

### Inspection certificate DIN EN 10204 - 3.1 (DN 15 ... 50)

Requirements AD 2000 A4 (W2 / W5 / W10)

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Material quality proof for:

- valve body, cover, body screws acc. to DIN EN 10204 - 3.1
- material quality proof for fluid contacted parts acc. to DIN EN 10204 - 2.2
- function and leak test acc. to DIN EN 10204 - 3.1, leakage A acc. to DIN EN 12266-1

## Option selector

Port size	Substitute
15	<b>82</b>
20	<b>83</b>
25	<b>84</b>
32	<b>85</b>
40	<b>86</b>
50	<b>87</b>
Valve options	Substitute
Normally open (NO)	<b>01</b>
Seat seal FPM, Fluid temperature -10 ... +60°C (+14 ... +140°F)	<b>03</b>
Normally open (NO), Seat seal FPM, Fluid temperature -10 ... +60°C (+14 ... +140°F)	<b>17</b>
Double position indicator with safety barge and HAN® 7D-connector (metal design)	<b>50</b>

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Frequency	Substitute
See table frequency codes	<b>xx</b>
Voltage	Substitute
See voltage codes	<b>xxx</b>
Solenoid options	Substitute
DN 15 ... 50 Solenoid in V d.c.	<b>8401</b>
DN 15 ... 50 Solenoid in V a.c.	<b>8404</b>

## Standard solenoid systems

Voltage and Frequency Solenoid 8401/8404					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
024	00	24 V d.c.	-	40 W	40 W
024	49	24 V a.c. *3)	40 ... 60 Hz	45 VA	45 VA
110	49	110 V a.c. *3)	40 ... 60 Hz	45 VA	45 VA
120	49	120 V a.c. *3)	40 ... 60 Hz	45 VA	45 VA
230	49	230 V a.c. *3)	40 ... 60 Hz	45 VA	45 VA

\*3) a.c. only with rectifier plug

Further versions on request!

## Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°C (+68°C).  
At operating state temperature the input power of a coil decreases by up to  
ca. 30% due to physical reasons.

## Additional solenoid systems for hazardous areas

ATEX- category	ATEX- protection class	IP-protection class	Solenoid	Standard voltages
II 2G II 2D	Ex de IIC T4/T5 Ex tD A21 IP65 T130°C resp. T95°C	IP65	8900	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex d IIC T4/T5 Ex tD A21 IP65 T130°C resp. T95°C	IP65	8920	24 V d.c., 110 V a.c., 230 V a.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *4)	24 V d.c.
II 2G II 2D	Ex eb mb IIC T3 Gb Ex mb tb IIIB T140°C Db	IP66	6240	24 V d.c., 110 V a.c., 230 V a.c.

### Attention!

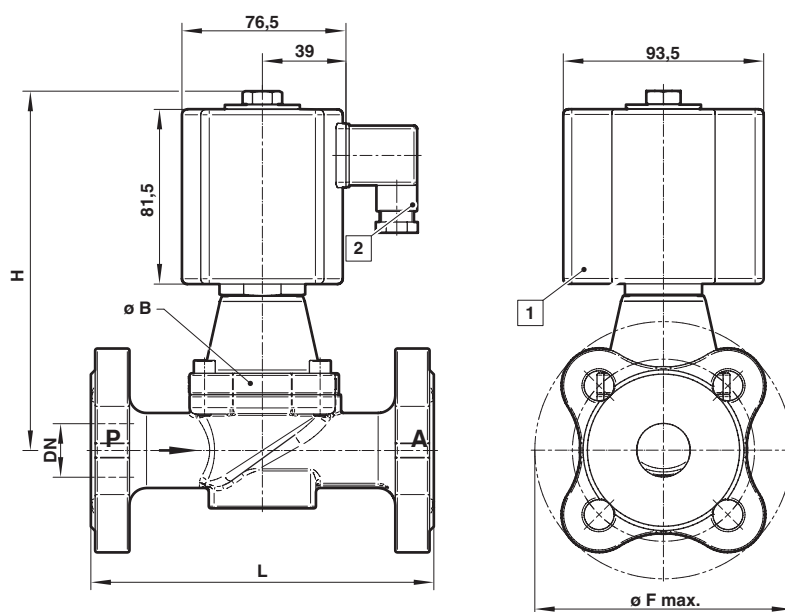
The conditions imposed on the Ex approvals lead to reduction of the permissible  
standard temperature ranges in the cases of explosion protected solenoids.

\*4) D.c. only, for a.c. solenoids with design inspection certificate acc. to  
category 2, e.g. 8900 / 8920 / 9540 / 6240

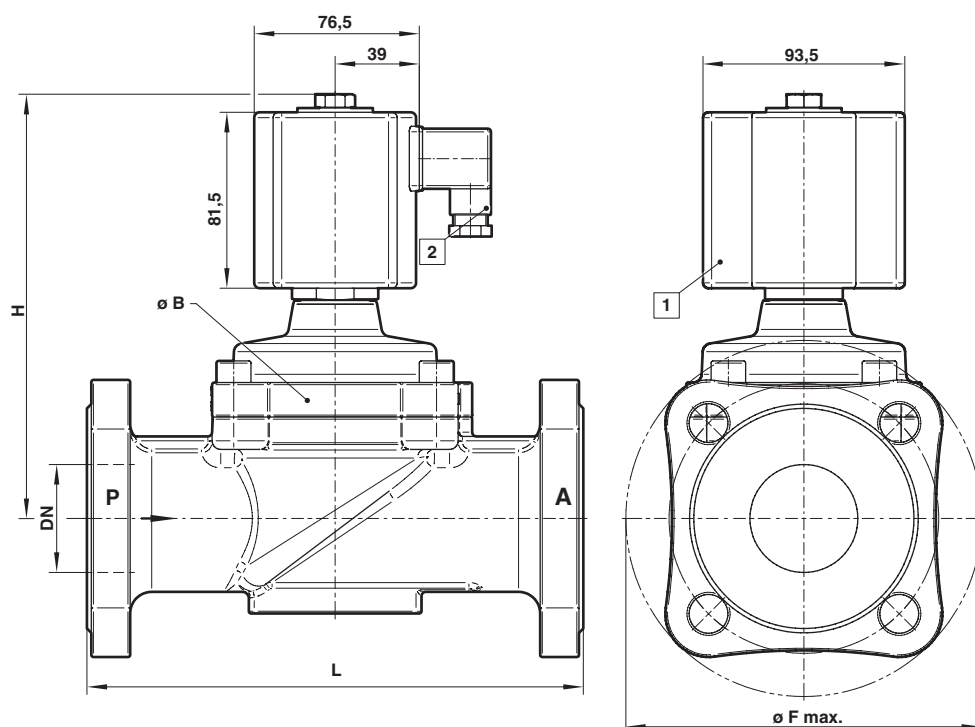
## Dimensions

### DN 15 ... 25

Dimensions in mm  
Projection/First angle



### DN 32 ... 50



- 1 Solenoid rotatable 360°
- 2 Socket turnable 4 x 90°  
(Socket included)

Orifice (mm)	Ø B	Ø F max.	H	L	Model
15	44	96	154	130	8558200.940x.xxxxx
20	50	110	163	150	8558300.940x.xxxxx
25	62	115	168	160	8558400.940x.xxxxx
32	92	140	184	180	8558500.840x.xxxxx
40	92	150	190	200	8558600.840x.xxxxx
50	109	165	197	230	8558700.840x.xxxxx

Contact face acc. to DIN EN 1092-1/B

**Note to Pressure Equipment Directive (PED):**

The valves of this series up to and including DN 25 (G1) are according to Art. 4 § 3 of the Pressure Equipment Directive (PED) 2014/68/EU. This means interpretation and production are in accordance to engineers practice wellknown in the member countries. The CE-sign at the valve does not refer to the PED. Thus the declaration of conformity is not longer applicable for this directive.

**For valves > DN 25 (G1) Art. 4 § (1) Letter d) applies:**

The basic requirements of the Enclosure I of the PED must be fulfilled. The CE-sign at the valve includes the PED. A certificate of conformity of this directive will be available on request.

**Note to Electromagnetic Compatibility Guideline (EEC):**

The valves shall be provided with an electrical circuit which ensures the limits of the harmonised standards EN 61000-6-3 and EN 61000-6-1 are observed, and hence the requirements of the Electromagnetic Compatibility Guideline (2014/30/EU) satisfied.

**Functional safety according to DIN EN 61508 (VDE0803) SIL:**

Suitable for certain applications can only be evaluated through examination of each safety-related overall system with regard to the requirements of IEC 61508 / 61511.

**Note to EAC marking:**

The EAC-marked products comply with the applicable requirements stated in the technical regulations of the Eurasian Economic Union.