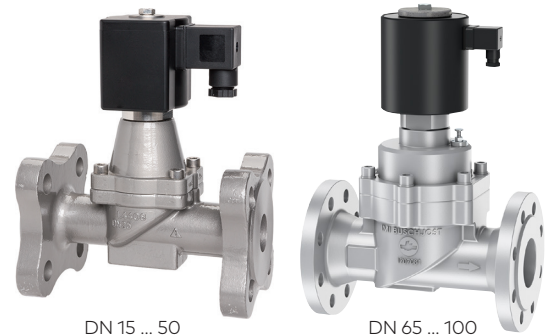


# 86540

## 2/2-way piston valves

- > **Port size: DN 15 ... 100**  
Flange connection,  
Pressure rating PN 40
- > **Valve operates without differential pressure (Zero delta P)**
- > **Valve piston with PTFE guide-ring**
- > **Suitable for vacuum**
- > **Adjustable: Damped operation (DN 65 ... 100)**
- > **International approvals**



DN 15 ... 50

DN 65 ... 100



### Technical features

**Medium:**

Slightly aggressive gases and liquid fluids

**Switching function:**

Normally closed

**Operation:**

Solenoid actuated, with forced lifting

**Mounting position:**

Optional, preferably solenoid vertical on top

up to DN 65:

solenoid vertical on top

**Flow direction:**

Determined

**Port size:**

DN 15, DN 20, DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100

**Operating pressure:**

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

**Fluid temperature:**

-20 ... +90°C (-4 ... +194°F)

**Ambient temperature:**

-20 ... +50°C (-4 ... +122°F)

**Material:**

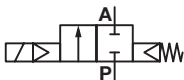
Body: Stainless steel (1.4408)

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)		Weight (kg)	Model	
			(bar)	(psi)		Solenoid in V d.c.	Solenoid in V a.c.
	15	4,4	0 ... 25	0 ... 362	3,0	8654200.8301.xxxxx	8654200.8304.xxxxx
	20	6,5	0 ... 25	0 ... 362	3,5	8654300.8301.xxxxx	8654300.8304.xxxxx
	25	10	0 ... 25	0 ... 362	4,1	8654400.8301.xxxxx	8654400.8304.xxxxx
	32	24	0 ... 25	0 ... 362	9,6	8654500.8401.xxxxx	8654500.8404.xxxxx
	40	25	0 ... 25	0 ... 362	10	8654600.8401.xxxxx	8654600.8404.xxxxx
	50	41	0 ... 25	0 ... 362	11,5	8654700.8401.xxxxx	8654700.8404.xxxxx
	65	72	0 ... 25	0 ... 362	30	8654800.9501.xxxxx	8654800.9504.xxxxx
	80	90	0 ... 25	0 ... 362	49	8654900.9501.xxxxx	8654900.9504.xxxxx
	100	125	0 ... 25	0 ... 362	60	8655000.9501.xxxxx	8655000.9504.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 40 mm²/s (cSt)

**Option selector**
**8654\*\*\*\*.\*\*\*\*\*.\*\*\*\*\***

Port size	Substitute
DN 15	2
DN 20	3
DN 25	4
DN 32	5
DN 40	6
DN 50	7
DN 65	8
DN 80	9
DN 100	10
Valve options	Substitute
Normally open (NO), Mounting position: Solenoid vertical on top	01
Manual override, only with solenoid 84xx and 95xx	02
Seat seal FPM, Fluid temperature -10 ... +110°C *4) (+14 ... +230°F)	03
Seat seal PTFE, Fluid temperature -20 ... +110°C *4) (-4 ... +230°F), Leakage rate E acc. to DIN EN 12266-1	06
Seat seal EPDM, for hot water, Fluid temperature -20 ... +110°C (-4 ... +230°F)	14
Normally open (NO), Seat seal FPM, Fluid temperature -10 ... +110°C *4) (+14 ... +230°F) Mounting position: Solenoid vertical on top	17
Max. operating pressure 40 bar, only with solenoid 84xx up to DN 50	22
Electrical position indicator with 2 limit switches, only with solenoid 84xx	23

Frequency	Substitute
See table frequency codes	xx
Voltage	Substitute
See table voltage codes	xxx
Solenoid options	Substitute
DN 15 ... 25 Solenoid in V d.c.	8301
DN 32 ... 50 Solenoid in V d.c.	8401
DN 65 ... 100 Solenoid in V d.c.	9501
DN 15 ... 25 Solenoid in V a.c.	8304
DN 32 ... 50 Solenoid in V a.c.	8404
DN 65 ... 100 Solenoid in V a.c.	9504
Valve options	Substitute
Seat seal FPM, with larger bleed orifices in the piston, for fluids such as fuel and oil, viscosity max. 80 mm <sup>2</sup> /s (cSt), Fluid temperature -10 ... +110°C *4) (+14 ... +230°F), with solenoid 84xx up to DN 50	25
Flanges acc. to ASME B 16.5 150 lb/sq. In.	47
Flanges acc. to ASME B 16.5 300 lb/sq. In.	48
Version for drinking water on request	

**Standard solenoid systems**

Voltage and Frequency Solenoid 8301/8304 *3)					
Code	Code	Voltage	Frequency	Power consumption	
Voltage	Frequency			Inrush	Holding
024	00	24 V d.c.	-	22 W	22 W
024	49	24 V a.c. *3)	40 ... 60 Hz	25 VA	25 VA
110	49	110 V a.c. *3)	40 ... 60 Hz	25 VA	25 VA
120	49	120 V a.c. *3)	40 ... 60 Hz	25 VA	25 VA
230	49	230 V a.c. *3)	40 ... 60 Hz	25 VA	25 VA
Voltage and Frequency Solenoid 8401/8404 *3)					
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
Voltage and Frequency Solenoid 9501/9504 *3)					
024	00	24 V d.c.	-	80 W	80 W
024	49	24 V a.c. *3)	40 ... 60 Hz	89 VA	89 VA
110	49	110 V a.c. *3)	40 ... 60 Hz	89 VA	89 VA
120	49	120 V a.c. *3)	40 ... 60 Hz	89 VA	89 VA
230	49	230 V a.c. *3)	40 ... 60 Hz	89 VA	89 VA

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

**Further versions on request!**
**Electrical details for all solenoid systems**

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

According to DIN VDE 0580 at a solenoid temperature of +20°C (+68°F).  
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**

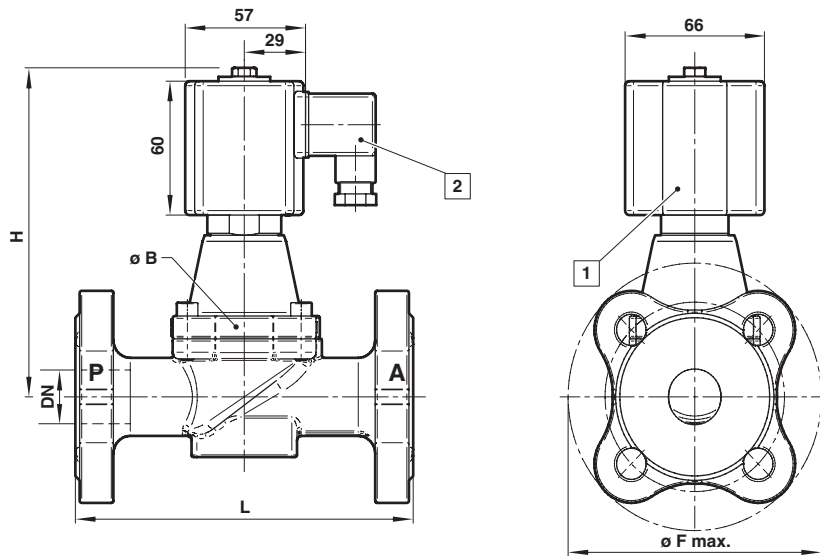
ATEX category	ATEX protection class	IP protection class	Solenoid	Standard voltages
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8326 *4)	24 V d.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *4)	24 V d.c.
II 2G II 2D	Ex d IIC T4/T5 Ex tD A21 T130°C/95°C	IP65	8920	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T3 Gb Ex mb IIIB T135°C Db	IP66	6220	24 V d.c., 110 V a.c., 230 V a.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.
II 2G II 2D	II 2G Ex e mb II T3/T4 II 2D Ex tD A21 IP65 T140°C	IP65	9540	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. 6240 oder 8920

**Dimensions**  
**DN 15 ... 25**

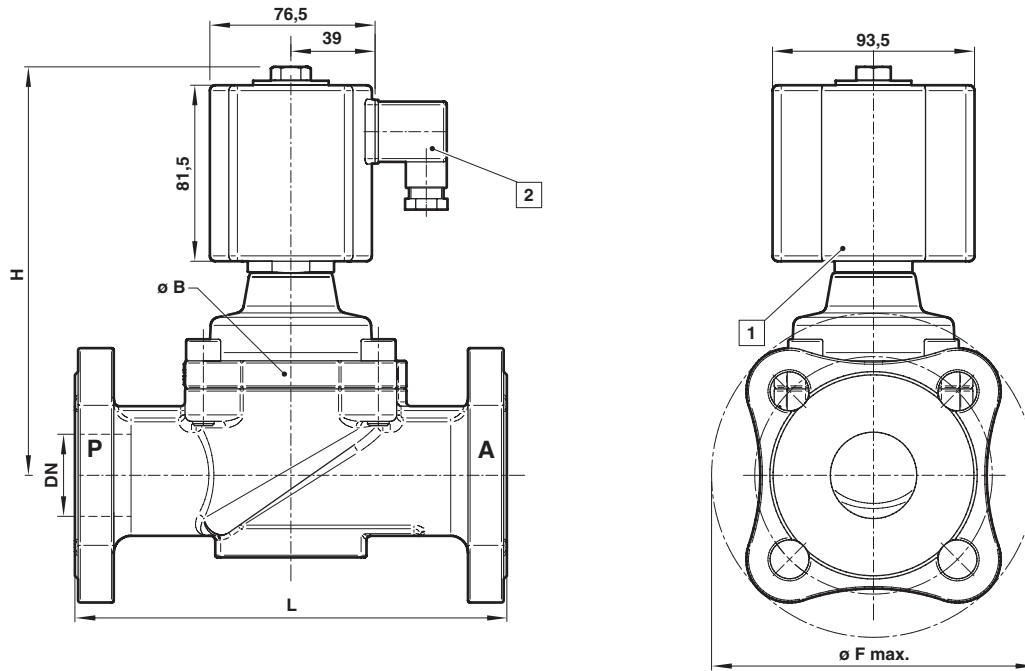
 Dimensions in mm  
 Projection/First angle


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

Orifice (mm)	$\varnothing B$	$\varnothing F \text{ max.}$	H	L	Model
15	44	96	142	130	8654200.830x.xxxx
20	50	110	150	150	8654300.830x.xxxx
25	62	115	155	160	8654400.830x.xxxx

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

**Dimensions**  
**DN 32 ... 50**

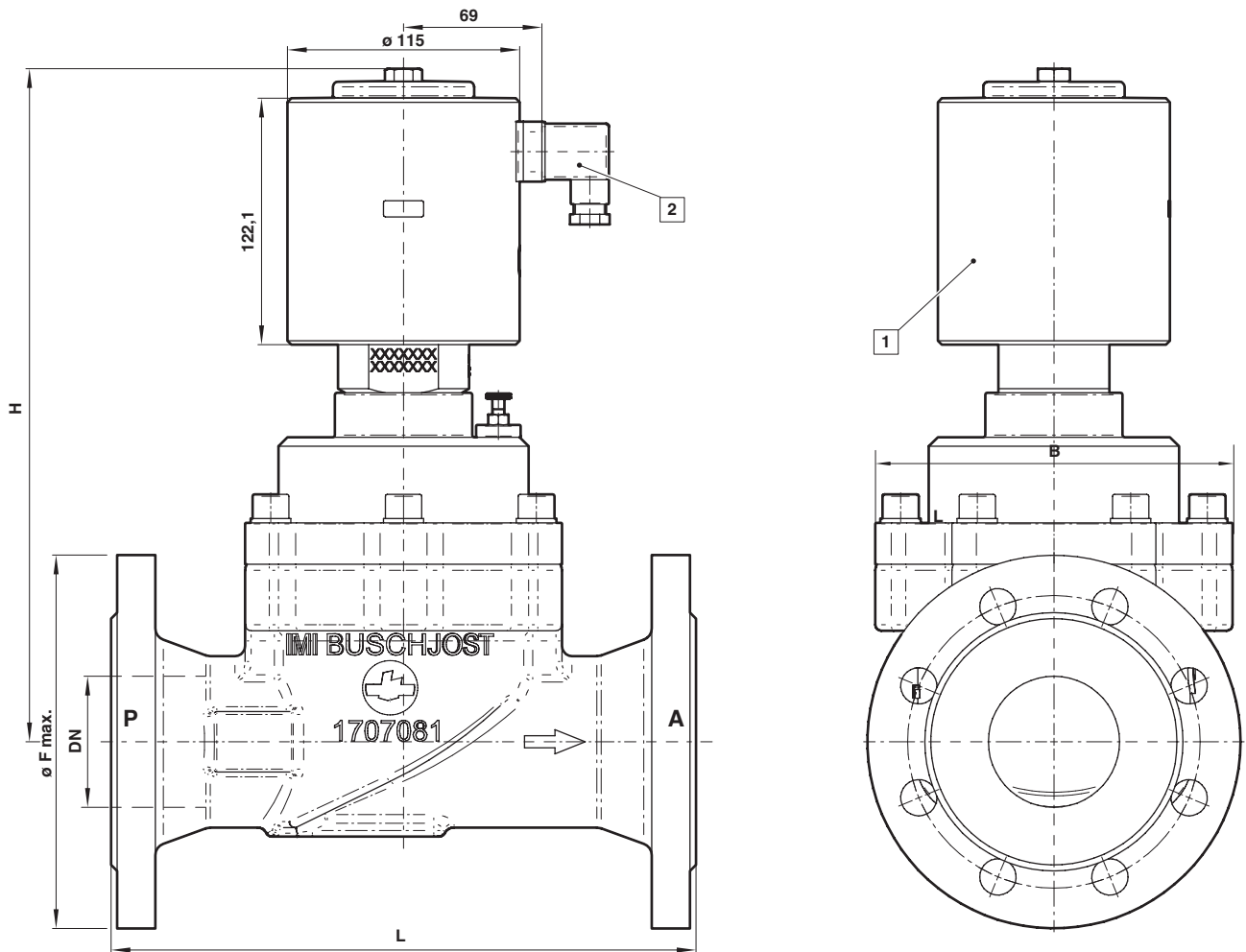
 Dimensions in mm  
 Projection/First angle


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

Orifice (mm)	ø A	ø F max.	H	L	Model
32	92	140	184	180	8654500.840x.xxxxx
40	92	150	189	200	8654600.840x.xxxxx
50	109	165	197	230	8654700.840x.xxxxx

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

**Dimensions**  
**DN 65 ... 100**

 Dimensions in mm  
 Projection/First angle


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

Nennweite (mm)	B	$\phi F \text{ max.}$	H	L	Model
65	177	185	334	290	8654800.950x.xxxxx
80	209	200	347	310	8654900.950x.xxxxx
100	235	235	363	350	8655000.950x.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) satisfield.

**Note to EAC marking:**

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