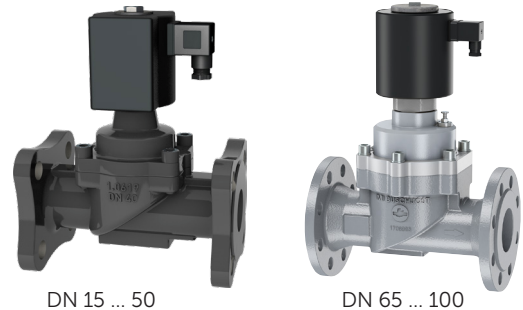


86500 2/2-way piston valves

- 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



Technical features

Medium:
Neutral gases and liquids

Switching function:
Normally closed

Operation:
Solenoid actuated, with forced lifting

Mounting position:
Optional, preferably solenoid vertical on top
from 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)

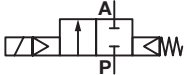
Fluid temperature:
–20 ... +90°C (–4 ... +194°F)

Ambient temperature:
–20 ... +50°C (–4 ... +122°F)

Material:
DN 15 ... 50
Body: Cast steel, brass
Seat seal: NBR
Internal parts: Stainless steel, PTFE/Carbon, brass
DN 65 ... 100
Body: Spheroidal graphite iron,
Seat seal: NBR
Cover: Stainless steel
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	4,4	0 ... 25	0 ... 362	3,8	8650200.8301.xxxxx	8650200.8304.xxxxx
	20	6,5	0 ... 25	0 ... 362	4,2	8650300.8301.xxxxx	8650300.8304.xxxxx
	25	10	0 ... 25	0 ... 362	4,8	8650400.8301.xxxxx	8650400.8304.xxxxx
	32	24	0 ... 25	0 ... 362	9,6	8650500.8401.xxxxx	8650500.8404.xxxxx
	40	25	0 ... 25	0 ... 362	10	8650600.8401.xxxxx	8650600.8404.xxxxx
	50	41	0 ... 25	0 ... 362	11,5	8650700.8401.xxxxx	8650700.8404.xxxxx
	65	72	0 ... 25	0 ... 362	30	8650800.9501.xxxxx	8650800.9504.xxxxx
	80	110	0 ... 25	0 ... 362	49	8650900.9501.xxxxx	8650900.9504.xxxxx
	100	125	0 ... 25	0 ... 362	60	8651000.9501.xxxxx	8651000.9504.xxxxx

xxxxx Please insert voltage and frequency codes

*1) Cv-value (US) ≈ kv-Wert x 1,2

*2) For gases and liquid fluids up to 40 mm²/s (cSt)

Option selector

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, with solenoid 84xx and 95xx	02
Seat seal FPM, Fluidtem- perature -10 ... +110°C *4) (+14 ... +230°F)	03
Sitzdichtung PTFE, Fluid- temperatur -20 ... +110°C *4) (-4 ... +230°F), G1/4 ... 1 mit Magnet 83xx Betriebsdruck 25 bar (363 psi)	06
Seat seal EPDM, Fluid temperature -20 ... +110°C *4) (-4 ... +230°F)	14
Normally open (NO), Seat seal FPM, Fluid temp- erature -10 ... +110°C *4) (+14 ... +230°F), Mounting position: Solenoid vertical on top	17
Max. operating pressure 40 bar (580 psi), with solenoid 84xx up to DN 50	22
Position indicator, with solenoid 84xx and 95xx	23

8650 ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

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 ² /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

Standard solenoid systems

Voltage and Frequency Solenoid 8301 / 8304					
Code Voltage	Code Frequen- cy	Voltage	Frequency	Power consumption 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					
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					
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

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°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 protetion 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 db IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db	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 tb 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	Ex eb mb IIC T3/T4 Gb Ex tb IIIC T140°C/T130°C Db	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.

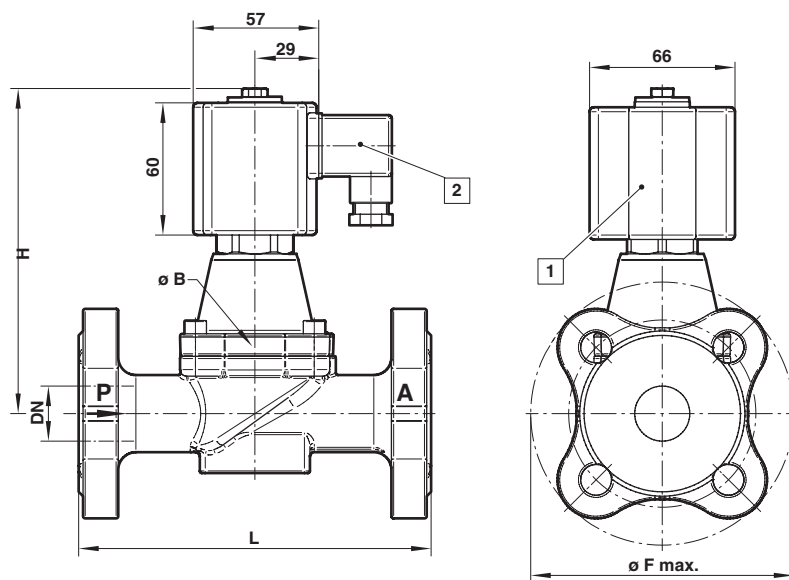
*4) Only d.c., for a.c. solenoids with design inspection certificate acc. to category 2, e.g. 8920 / 6240 / 9540

Dimensions

DN 15 ... 25

Dimensions in mm

Projection/first angle



1 Solenoid rotatable 360°

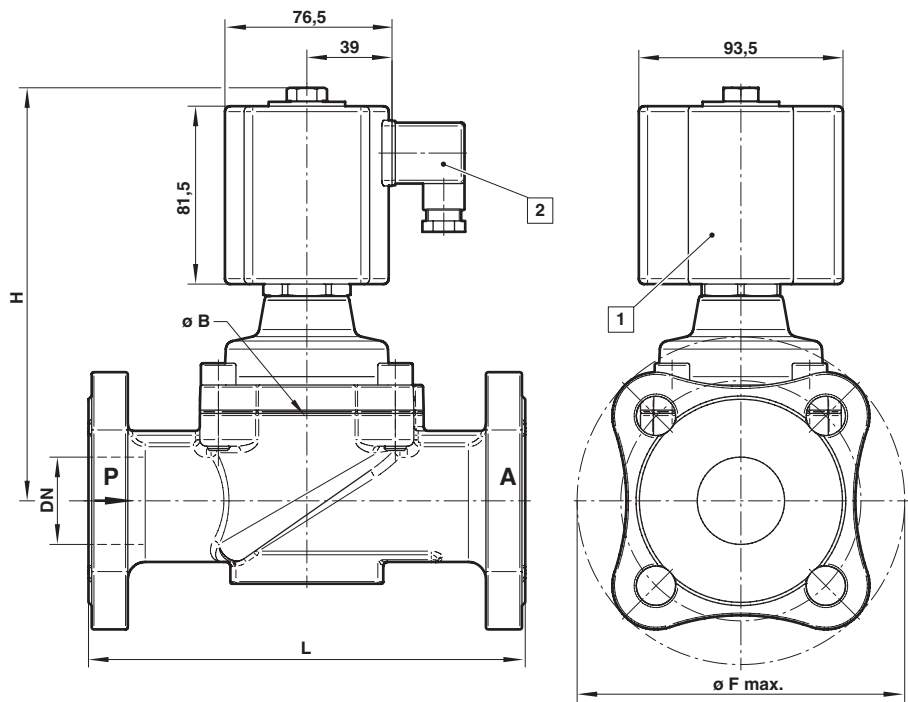
2 Socket turnable 4 x 90°
(Socket included)

Orifice (mm)	ϕB	$\phi F \text{ max.}$	H	L	Model
15	44	96	134	130	8650200.830x.xxxxx
20	50	110	142	150	8650300.830x.xxxxx
25	62	115	148	160	8650400.830x.xxxxx

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)

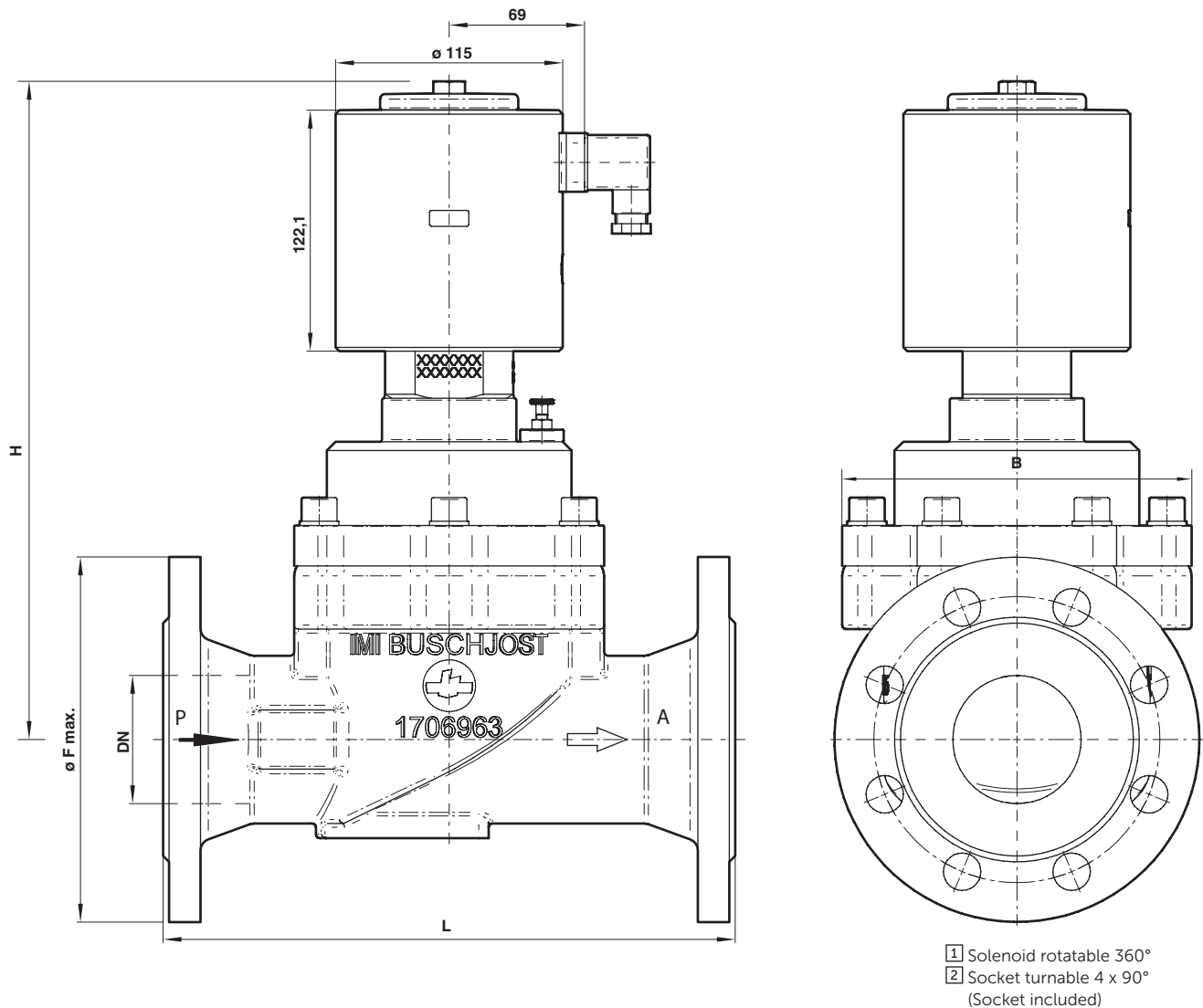
Orifice (mm)	ø B	ø F max.	H	L	Model
32	92	140	184	180	8650500.840x.xxxxx
40	92	150	189	200	8650600.840x.xxxxx
50	109	165	197	230	8650700.840x.xxxxx

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

Dimensions

DN 65 ... 100

Dimensions in mm
Projection/first angle



Orifice (mm)	ϕB	$\phi F \text{ max.}$	H	L	Model
65	177	185	334	290	8650800.950x.xxxxx
80	235	200	352	310	8650900.950x.xxxxx
100	235	235	363	350	8651000.950x.xxxxx

Contact face acc. to DIN EN 1092-2/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.