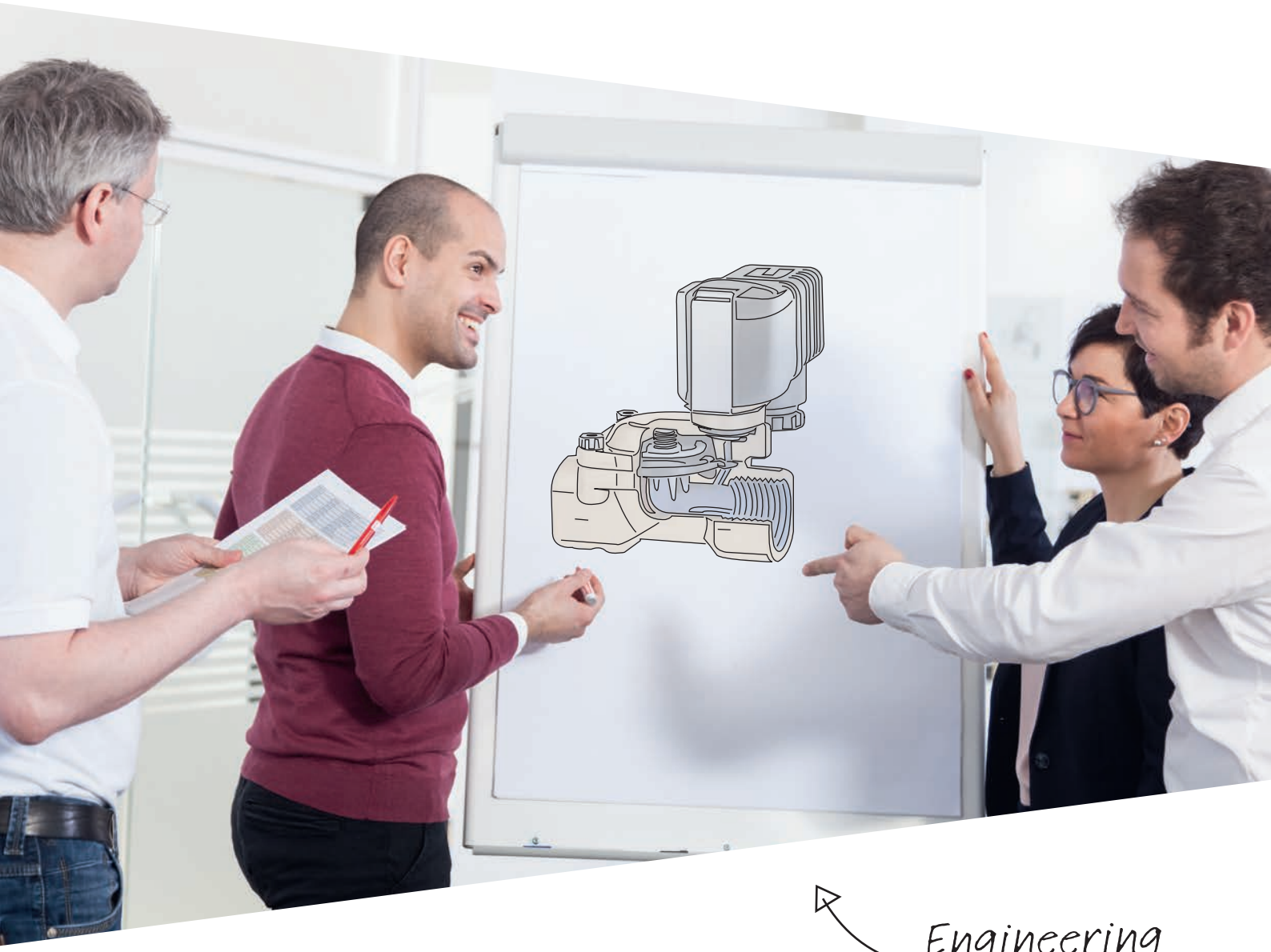
IMI BUSCHJOST®



Engineering
GREAT
Solutions

Product
overview

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www.imi-precision.com

IMI Precision Engineering

Contents

Our dedicated team of experts is on hand with technical advice, support and recommendations to help you get the most effective products, in the shortest timescales, and with the best possible service.

The IMI Buschjost product brand

Successful in the market for over 85 years, the IMI Buschjost product brand is a market leading range of process and multimedia valve technology and system solutions for liquid and gaseous media.

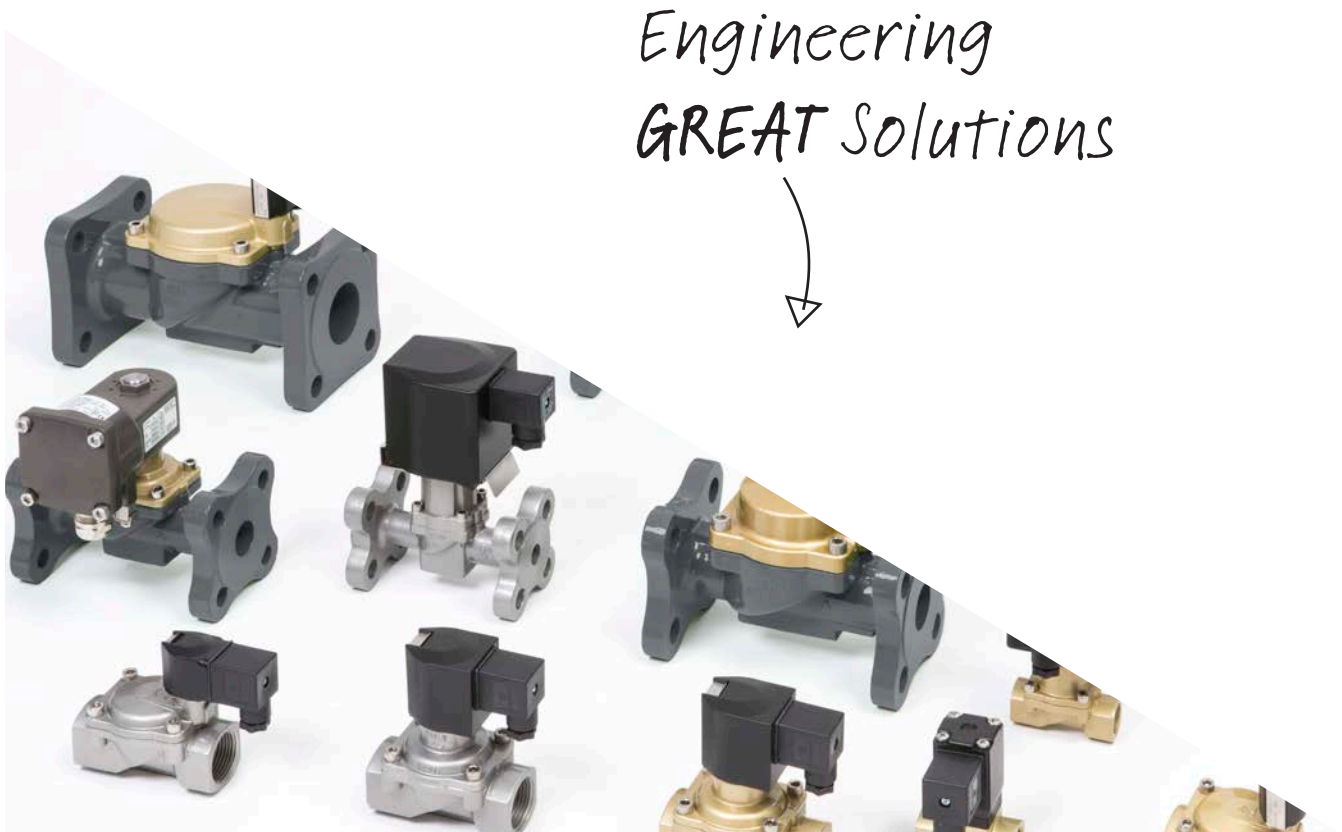
IMI Buschjost

Products range from solenoid and control valves to pressure-actuated angle-seat valves to specialised customer-specific solutions.

- Solenoid valves without differential pressure
- Solenoid valves with differential pressure
- Pressure actuated valves by external fluid
- Pulse valves and controls for dust collector systems
- Proportional valves

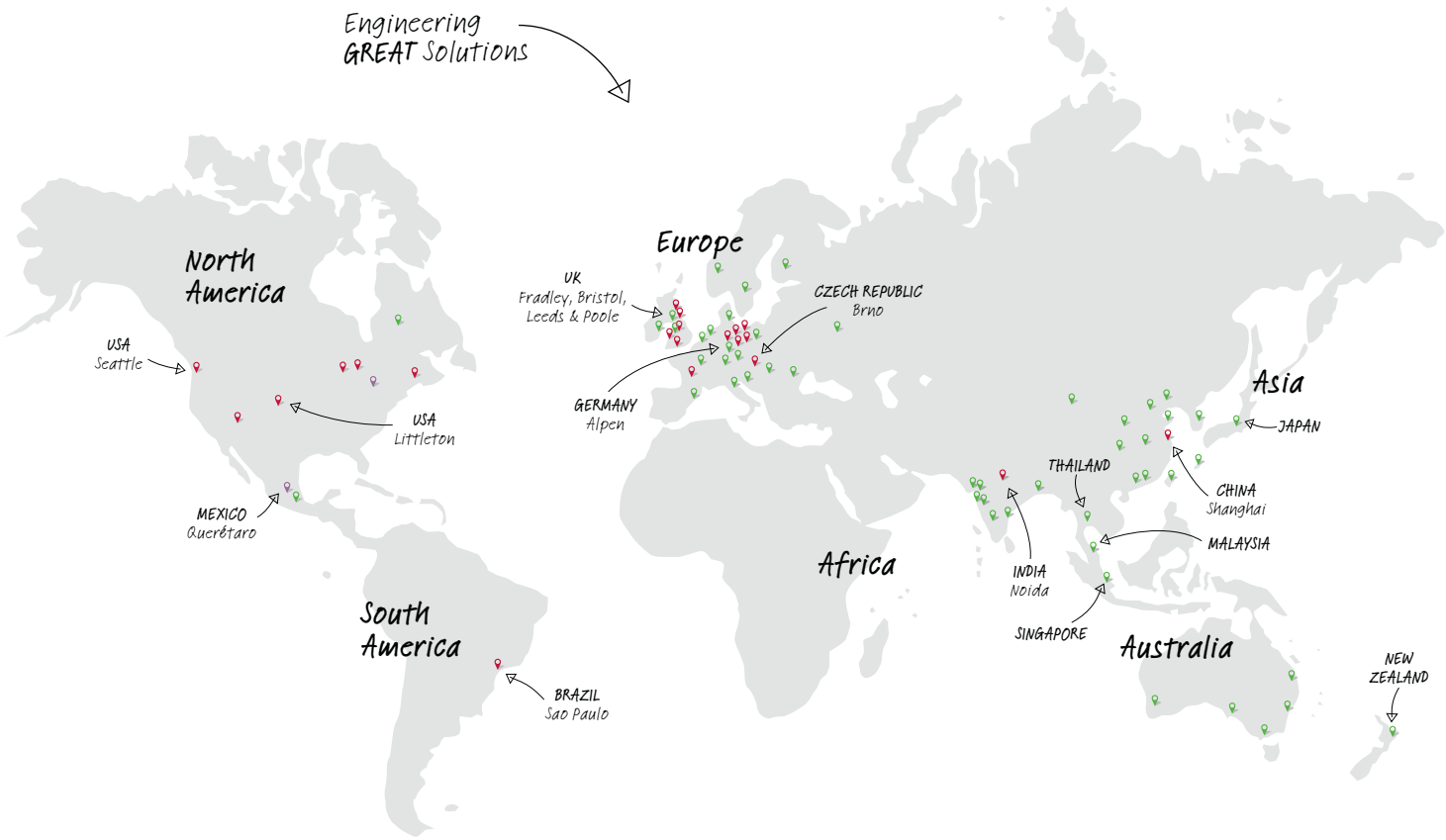
With comprehensive knowledge of relevant industry standards and certifications, IMI Buschjost valves can be found in various applications, including mechanical and plant engineering, the automotive industry and in the field of power generation and environmental protection.

Engineering
GREAT Solutions



Our global reach

With established manufacturing facilities globally, we have the capability to cope with the most demanding of international projects. With a sales and service network in 50 countries, we have the reach and capability to ensure continuity of supply and local support where it is needed.



Sales & Service in 50 countries

- IMI Precision Engineering sales, manufacturing and technical centres
- IMI Precision Engineering sales locations
- IMI Precision Engineering manufacturing locations

Engineering GREAT solutions

*We deliver **GREAT** solutions for our customers tackling the world's most demanding engineering challenges*

IMI Precision Engineering is a world leader in motion and fluid control technologies. Wherever precision, speed and engineering reliability are essential, we deliver exceptional solutions which improve the productivity and efficiency of our customers' equipment.

Part of IMI plc, we have a sales and service network in 50 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland, Czech Republic, Mexico and Brazil. We support this with our global centres of technical excellence, and facilities for CFD design and R&D testing. We employ a dedicated team of field engineers, sector specialists and key account managers – all committed to providing excellent service to our customers.

As a business, we aim to **UNDERSTAND** our customers' challenges. We then **CONNECT** our products, people and expertise in order to **DELIVER** exceptional service and solutions. These **IMPROVE** the performance of our customers' machinery.

We call this Engineering GREAT, and we deliver it to customers through a world-class portfolio of high performance products, through close partnerships and problem-solving, and through a global network of support which ensures reliable local delivery, all over the world.

How we deliver value to our customers

We get closer to our customers to understand their exact challenges

Partnerships & problem solving

We have a global team of key account managers and over 400 highly experienced engineers – many with in-depth expertise of key industry sectors.

We recruit and develop the industry's top talent, offering the best training and exposure to world-class products and technologies with some of the world's leading businesses. The deep and combined experience this gives us means we have the skills, confidence and know-how to get closer to our customers, enabling us to understand their exact challenges and resolve them **precisely**.

Because of this our problem-solving is more effective, our solutions more targeted, our partnerships more productive.

High performance products

Our world-class products improve performance and productivity.

We have global manufacturing capability and technical centres of excellence, each dedicated to developing and rigorously testing new high performance products to meet **precise** industry and application needs. Helping improve performance and reduce downtime and energy consumption on production lines across the world, our world-class portfolio includes IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. Having proven their value over years, they stand amongst the most trusted names in fluid and motion control. We are continuously adding to this portfolio through a programme of innovation and new product development.

Because of this, we're able help our customers solve the world's greatest engineering challenges – reliably, safely and efficiently.

Reliability

We deliver and support our high quality products through our global service network.

We have world-class manufacturing and sales and service operations in 50 countries, supported by investment in robust project management systems and lean localised production. Together, with our integrated supply chain, and the speed of our Express service we have the systems, processes and support to deliver quality products and aftersales service **precisely**, reliably, in full and on time, anywhere.

Pressure Equipment Directive (PED)

The Pressure Equipment Directive (PED) is generally applicable to equipment with a working pressure greater than 0.5 bar. Valves as components of this equipment come under the scope of the directive. However, only valves above a certain nominal size are required to bear CE markings.

Valves suitable for different (e.g. neutral, toxic or flammable) fluids only require CED markings above a nominal size of DN 25. Smaller valves must not bear a CE mark in accordance with the Pressure Equipment Directive. This equipment must be designed in line with standard engineering practice so that it meets the requirements of the directive.

Almost all of the valves over DN 25 in size requiring marking should be assigned to Categories I and II. This means their design and testing is in the responsibility of the manufacturer, i.e. Norgren Buschjost in the case. Module A1 has been chosen as the related method of evaluating conformity and certified by the „nominated body“ (TÜV Nord).

The products are also subject to other EU Directives such as EMC, Low Voltage, etc. The products bear a CE mark as a declaration of conformity with all of these. Where applicable (sizes > DN 25) this mark also serves as a declaration of conformity with the Pressure Equipment Directive. Category II valves are also marked with the identification number of the nominated body; CE 0045 for TÜV Nord.

PED 1 Applies to the following series: 82080, 82510, 82530, 82560, 82610, 82880, 82960, 83150, 83320, 83670, 83920, 84070, 84660, 84680

Note to Pressure Equipment Directive (PED):

The valves of this series 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.

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.

PED 2 Applies to the following series: 82710, 82870, 82900, 83300, 83640, 83930, 84180, 84190

Note to Pressure Equipment Directive (PED):

The valves of this series 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 well-known in the member countries.

A certificate of conformity is not designated.

Note to EAC marking:

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

PED 3 Applies to the following series: 82170, 82180, 82280, 82380, 82400, 82470, 82480, 82540, 82590, 82730, 83030, 83040, 83250, 83350, 83380, 83390, 84360, 84500, 84520, 84580, 84720, 84740, 85340, 85360, 85380, 85540, 85580, 85660, 85740, 85780, 86500, 86520, 86540, 86700, 86720

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.

PED 4 Applies to the following series: 82090, 82580

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 available CE labelling relates to the (Gas appliances) Regulation (EU) 2016/426 and applies to all nominal diameters. A copy of the prototype test certificate is provided with the product. For valves > DN 25 (G1), the available CE labelling includes the PED.

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.

PED 5 Applies to the following series: 85840, 85780

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.

Functional safty 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.

PED 6 Applies to the following series: 82160

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. A certificate of conformity is not designated.

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 refers to the PED. A certificate of conformity of this directive will be available on request.

Note to EAC marking:

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

PED 7 Applies to the following series: 86480

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.

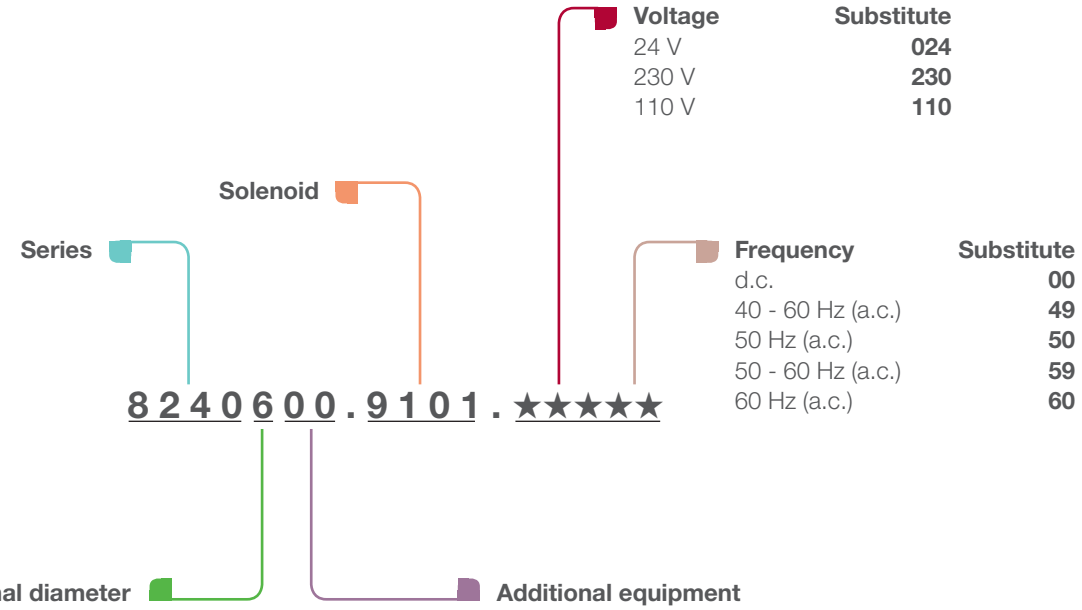
Note to Electromagnetic Compatibility Guideline (EEC):

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.

Order-No.



Thread size / Nominal diameter

Thread	DIN	Flange	Substitute
G1/4	8		**0**
G3/8	10		**1**
G1/2	12	15	**2**
G3/4	20	20	**3**
G1	25	25	**4**
G1 1/4	32	32	**5**
G1 1/2	40	40	**6**
G2	50	50	**7**
		65	**8**
		80	**9**
		100	**10**

Additional equipment

Standard	**00**
Normally open (NO)	**01**
Manual override	**02**
FPM seals	**03**
PTFE seals	**06**
EPDM seals	**14**
Higher Operating pressure	**22**
FPM seals for higher viscosity	**25**
and other...	
Additional equipment, applicable for all series, **but not available in every series.**	**01 ... 49**
Additional equipment, only applicable for one series.	**50 ... 99**

Catalogue numbers of the special valves Beginning with 849★ ★ ★ ★ ★ .XXXX.XXXXX and 859★ ★ ★ ★ ★ .XXXX.XXXXX the ★ ★ ★ ★ ★ -block is numbered consecutively.

- Series
- Solenoid
- Voltage
- Frequency
- Thread size / Nominal diameter
- Additional equipment

Direct acting solenoid valves

PRODUCTS

Fast Find Guide
2/2-way valves

82080
DN 3 ... 8
Directly solenoid actuated, with sealed core tube / medium separated

Page 13

82090
DN 8 ... 25
Solenoid actuated, with forced lifting, with DVGW-approval, EN 161

Page 14

82510
DN 1,5 ... 5
Directly solenoid actuated, small, compact, up to 40 bar (520 psi), brass

Page 15

82530
DN 10
Solenoid actuated, with forced lifting, G1/4 ... 1/2, brass

Page 17

82540
DN 8 ... 50
Solenoid actuated, with forced lifting, diaphragm valve, brass

Page 18

82560
DN 10
Solenoid actuated, with forced lifting, G1/4 ... 1/2, stainless steel

Page 20

82590
DN 8 ... 50
Solenoid actuated, with forced lifting, diaphragm valve, stainless steel

Page 21

82610
DN 1,5 ... 5
Directly solenoid actuated, small, compact, up to 40 bar (520 psi), stainless steel

Page 23

83040
DN 15 ... 50
Solenoid actuated, with forced lifting, diaphragm valve, flange

Page 25

83150
DN 2,5 ... 4,5
Directly solenoid actuated, with compression fitting

Page 27

84360
DN 8 ... 50
Solenoid actuated, with forced lifting, diaphragm valve up to +150°C (+302°F)

Page 28

85340
DN 15 ... 50
Solenoid actuated, with forced lifting, piston valve, backpressure tight

Page 29

85780
DN 15 ... 100
Solenoid actuated, with forced lifting, piston valve, with inspection certificate DIN EN 10204 - 3.1, Flange

Page 31

85840
DN 12 ... 50
Solenoid actuated, with forced lifting, piston valve, with SIL-certificate, female thread

Page 33

86480
DN 65 ... 100
Solenoid actuated, with forced lifting, piston valve, ductile graphite iron

Page 35

86500
DN 8 ... 50
Solenoid actuated, with forced lifting, piston valve, female thread

Page 36

86520
DN 15 ... 50
Solenoid actuated, with forced lifting, piston valve up to +200°C (+392°F)

Page 38

86540
DN 15 ... 50
Solenoid actuated, with forced lifting, piston valve, stainless steel

Page 39

86580
DN 15 ... 50
Solenoid actuated, with forced lifting, piston valve, stainless steel, with SIL-certificate

Page 41

86700
DN 8 ... 50
Solenoid actuated, with forced lifting, brass

Page 43

86720
DN 8 ... 50
Solenoid actuated, with forced lifting, up to +200°C (+392°F), brass

Page 45

86740
DN 8 ... 50
Solenoid actuated, with forced lifting, up to +200°C (+392°F), brass

Page 46

82080

2/2-way valves with sealed core tube / medium separated – Direct solenoid actuated

Port size: G1/4 ... 3/8

Orifice: DN 3 ... 8

Core tube protected with PTFE-bellow

Suitable for aggressive fluids

Compact solenoid with integrated core tube

Unsusceptible to calcification and solenoidization of foreign particles

Technical data

Medium:
Aggressive gases and fluids
Switching function:
Normally closed
Operation:
Direct solenoid actuated
Model:
Seat valve operating without differential pressure

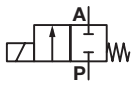
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8

Operating pressure:
0 ... 7 bar (0 ... 101 psi)
Fluid temperature:
–10 ... +110°C (+14 ... +230°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: PVDF
Seat seal: EPDM
Internal parts: PTFE-bellows

For contaminated fluids (particle › 1 mm) insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	3	0,23	0 ... 7	0 ... 101	0,3	8208000.8050.xxxxx	8208000.8051.xxxxx
	G3/8	3	0,23	0 ... 7	0 ... 101	0,3	8208100.8050.xxxxx	8208100.8051.xxxxx
	G1/4	4.5	0,42	0 ... 5	0 ... 72	0,3	8208060.8050.xxxxx	8208060.8051.xxxxx
	G3/8	4.5	0,42	0 ... 5	0 ... 72	0,3	8208160.8050.xxxxx	8208160.8051.xxxxx
	G1/4	6	0,62	0 ... 2	0 ... 29	0,3	8208070.8050.xxxxx	8208070.8051.xxxxx
	G3/8	6	0,62	0 ... 2	0 ... 29	0,3	8208170.8050.xxxxx	8208170.8051.xxxxx
	G1/4	8	0,83	0 ... 1	0 ... 14	0,3	8208080.8050.xxxxx	8208080.8051.xxxxx
	G3/8	8	0,83	0 ... 1	0 ... 14	0,3	8208180.8050.xxxxx	8208180.8051.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 80 mm^2/s (cSt)

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 8050					
024	00	24 V d.c.	-	12 W	12 W
Voltage and Frequency Solenoid 8051					
110	49	110 V a.c. *3)	40 ... 60 Hz	13 VA	13 VA
120	49	120 V a.c. *3)	40 ... 60 Hz	13 VA	13 VA
230	49	230 V a.c. *3	40 ... 60 Hz	13 VA	13 VA

*3) a.c. only with rectifier plug

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.
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 eb mb IIC T3 Gb Ex mb tb IIIB T150°C Db	IP66	6202	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.

82090

2/2-way valves with DVGW-approval – Solenoid actuated, with forced lifting

Port size: G1/4 ... 1

Orifice: DN 8 ... 25 (DIN ISO 228/1)

Qualification approval EN 161:2011 and EN ISO 23553-1

Short response time < 1 s

Valve operates without differential pressure

Technical data

Medium:
Neutral gases and liquid fuels
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

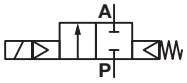
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1

Operating pressure:
0 ... 8 bar (0 ... 116 psi)
Fluid temperature:
0 ... +60°C (+32 ... +140°F)
Ambient temperature:
0 ... +60°C (+32 ... +140°F)
EC-Type Examination:
Certificate product ID-No.: CE-0085CN0205
valve class A: G1/4 ... 3/4;
valve class B: G1; valve group 2

Material:
Body: Brass (CW617N)
Seat seal: NBR-G
Internal parts: Stainless steel, brass

Strainer (with maximum mesh size of 0.25 mm) is necessary upstream of the valve.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	1,1	0 ... 8	0 ... 116	0,8	8209000.9178.xxxxx	8209000.9179.xxxxx
	G3/8	10	2,3	0 ... 8	0 ... 116	0,8	8209100.9178.xxxxx	8209100.9179.xxxxx
	G1/2	12	2,6	0 ... 8	0 ... 116	0,9	8209200.9178.xxxxx	8209200.9179.xxxxx
	G3/4	20	5,4	0 ... 8	0 ... 116	1	8209300.9178.xxxxx	8209300.9179.xxxxx
	G1	25	5,8	0 ... 8	0 ... 116	1,3	8209400.9178.xxxxx	8209400.9179.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 25 mm^2/s (cSt)

Solenoid 917x

Frequency

Solenoid 9178: 24 ... 120 V

Solenoid 9179: 121 ... 250 V

Electrical details for all solenoid systems

Operation	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.

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9178 *3)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
Voltage and Frequency Solenoid 9179 *3)					
230	49	230 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA

*3) c SA us coil only
*4) A.c. only with rectifier plug

Further versions on request!

Additional solenoid systems for hazardous areas

ATEX-category	ATEX protection class	IP protection class	Solenoid	Standard voltages
II 2G II 2D	Ex eb mb IIC T3 Gb Ex mb tb IIIB T140°C Db	IP66	6120	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.

82510

2/2-way valves – Direct solenoid actuated

Port size: G1/8 ... 3/8

Orifice: DN 1,5 ... 5

Body with M5 fastening thread as standard

Functional compact design

Suitable for vacuum

Solenoid interchangeable without tools (*Click-on*®)

Valve operates without pressure differential

NPT-connection available: change 82510 to 82520

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Direct solenoid actuated

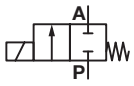
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/8, G1/4, G3/8

Operating pressure:
See table
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Brass (CW617N)
Seat seal: NBR,
(70 bar Version - PTFE)
Internal parts: Stainless steel, brass

For contaminated fluids insertion of a strainer is recommended.

Standard models – Normally closed valves

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./AC
	G1/8	1,5	0,07	0 ... 25	0 ... 362	0,33	8251800.9101.xxxxx
	G1/4	1,5	0,07	0 ... 25	0 ... 362	0,33	8251000.9101.xxxxx
	G3/8	1,5	0,07	0 ... 25	0 ... 362	0,33	8251100.9101.xxxxx
	G1/8	1,5	0,07	0 ... 70	0 ... 1015	0,57	8251807.9151.xxxxx
	G1/4	1,5	0,07	0 ... 70	0 ... 1015	0,57	8251007.9151.xxxxx
	G3/8	1,5	0,07	0 ... 70	0 ... 1015	0,57	8251107.9151.xxxxx
	G1/8	2,5	0,15	0 ... 10	0 ... 145	0,33	8251820.9101.xxxxx
	G1/4	2,5	0,15	0 ... 10	0 ... 145	0,33	8251020.9101.xxxxx
	G3/8	2,5	0,15	0 ... 10	0 ... 145	0,33	8251120.9101.xxxxx
	G1/8	2,5	0,15	0 ... 40	0 ... 580	0,57	8251820.9151.xxxxx
	G1/4	2,5	0,15	0 ... 40	0 ... 580	0,57	8251020.9151.xxxxx
	G3/8	2,5	0,15	0 ... 40	0 ... 580	0,57	8251120.9151.xxxxx
	G1/8	3	0,21	0 ... 4	0 ... 58	0,33	8251840.9101.xxxxx
	G1/4	3	0,21	0 ... 4	0 ... 58	0,33	8251040.9101.xxxxx
	G3/8	3	0,21	0 ... 4	0 ... 58	0,33	8251140.9101.xxxxx
	G1/8	3	0,21	0 ... 20	0 ... 290	0,57	8251840.9151.xxxxx
	G1/4	3	0,21	0 ... 20	0 ... 290	0,57	8251040.9151.xxxxx
	G3/8	3	0,21	0 ... 20	0 ... 290	0,57	8251140.9151.xxxxx
	G1/8	4	0,35	0 ... 12	0 ... 174	0,57	8251860.9151.xxxxx
	G1/4	4	0,35	0 ... 12	0 ... 174	0,57	8251060.9151.xxxxx
	G3/8	4	0,35	0 ... 12	0 ... 174	0,57	8251160.9151.xxxxx
	G1/8	5	0,5	0 ... 6	0 ... 87	0,57	8251880.9151.xxxxx
	G1/4	5	0,5	0 ... 6	0 ... 87	0,57	8251080.9151.xxxxx
	G3/8	5	0,5	0 ... 6	0 ... 87	0,57	8251080.9151.xxxxx

xxxxx Please insert voltage and frequency codes

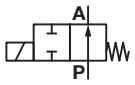
*1) Cv-value (US) ≈ kv value x 1,2

*2) For gases and liquid fluids up to 25 mm^2/s (cSt)

82510

2/2-way valves – Direct solenoid actuated

Standard models – Normally opened valves

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	1,5	0,07	0 ... 16	0 ... 232	0,33	8251001.9101.xxxxx
	G1/4	2,5	0,15	0 ... 6	0 ... 87	0,33	8251021.9101.xxxxx
	G1/4	2,5	0,15	0 ... 25	0 ... 362	0,57	8251021.9151.xxxxx
	G1/4	3	0,21	0 ... 3	0 ... 43	0,33	8251041.9101.xxxxx
	G1/4	3	0,21	0 ... 16	0 ... 232	0,57	8251041.9151.xxxxx
	G1/4	4	0,35	0 ... 8	0 ... 116	0,57	8251061.9151.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 25 mm^2/s (cSt)

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9101 *3)					
024	00	24 V d.c.	-	8 W	8 W
024	50	24 V a.c.	50 Hz	15 VA	12 VA
110	50	110 V a.c.	50 Hz	15 VA	12 VA
120	60	120 V a.c.	60 Hz	15 VA	12 VA
230	50	230 V a.c.	50 Hz	15 VA	12 VA
Voltage and Frequency Solenoid 9151 *3)					
024	00	24 V d.c.	-	18 W	18 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

Additional solenoid systems for hazardous areas

ATEX category	ATEX protection class	IP protection class	Solenoid	Standard voltages
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6106	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6126 *4)	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	9116	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	9176	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) from G1 1/4 / 1 1/4 NPT (16 bar)

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.
At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

Further versions on request!

*3) c SP us coil only

82530

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 1/2

Orifice: DN 10

Functional design

Operating pressure 0 ... 20 bar with alternating current and NBR sealing

Compact solenoid with integrated core tube

Valve operates without differential pressure

NPT-connection available: change 82530 to 82630

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

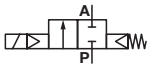
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2

Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Brass (CW617N), PA66
Seat seal: NBR
Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	Operating pressure *2) (psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	10	44	1,5	0 ... 10	0 ... 145	0,5	8253000.8001.xxxxx
	G3/8	10	44	1,7	0 ... 10	0 ... 145	0,5	8253100.8001.xxxxx
	G1/2	10	60	1,7	0 ... 10	0 ... 145	0,6	8253200.8001.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 25 mm2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 8001					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
024	00	24 V d.c.	-	12 W	12 W
024	50	24 V a.c.	50 Hz	20 VA	16 VA
110	50	110 V a.c.	50 Hz	20 VA	16 VA
120	60	120 V a.c.	60 Hz	20 VA	16 VA
230	50	230 V a.c.	50 Hz	20 VA	16 VA

Further versions on request!

Additional solenoid systems

Option	Solenoid	Standard voltages
Solenoid with rectifier	8004	110 V a.c., 230 V a.c.

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.
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 eb mb IIC T3 Gb Ex mb tb IIIB T150°C Db	IP66	6200	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.

82540

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

For systems with low or fluctuating pressure

Suitable for vacuum

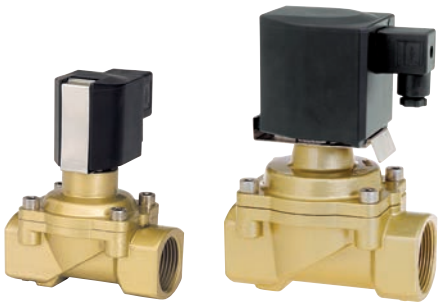
Solenoid interchangeable without tools (*Click-on*®) only solenoid 915x and 940x

Damped operation

Valve operates without differential pressure

NPT-connection available: change 82540 to 82640

***Click-on*®**



Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

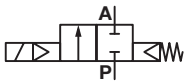
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
See table
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Brass (CW617N)
Seat seal: NBR-K
Internal parts: Stainless steel, PVDF, brass

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	1,9	0 ... 10	0 ... 145	0,8	8254000.9151.xxxxx	8254000.9154.xxxxx
	G1/4	8	1,9	0 ... 16 3*)	0 ... 232 *3)	0,8	8254000.9301.xxxxx	8254000.9304.xxxxx
	G3/8	10	3	0 ... 10	0 ... 145	0,8	8254100.9151.xxxxx	8254100.9154.xxxxx
	G3/8	10	3	0 ... 16 3*)	0 ... 232 *3)	0,8	8254100.9301.xxxxx	8254100.9304.xxxxx
	G1/2	12	3,4	0 ... 10	0 ... 145	0,9	8254200.9151.xxxxx	8254200.9154.xxxxx
	G1/2	12	3,4	0 ... 16 3*)	0 ... 232 *3)	0,9	8254200.9301.xxxxx	8254200.9304.xxxxx
	G3/4	20	5,8	0 ... 10	0 ... 145	1	8254300.9151.xxxxx	8254300.9154.xxxxx
	G3/4	20	5,8	0 ... 16 3*)	0 ... 232 *3)	1	8254300.9301.xxxxx	8254300.9304.xxxxx
	G1	25	8	0 ... 10	0 ... 145	1,3	8254400.9151.xxxxx	8254400.9154.xxxxx
	G1	25	8	0 ... 16 3*)	0 ... 232 *3)	1,3	8254400.9301.xxxxx	8254400.9304.xxxxx
	G1 1/4	32	23	0 ... 16	0 ... 232	4,3	8254500.9401.xxxxx	8254500.9404.xxxxx
	G1 1/2	40	25	0 ... 16	0 ... 232	4,3	8254600.9401.xxxxx	8254600.9404.xxxxx
	G2	50	41	0 ... 16	0 ... 232	5,4	8254700.9401.xxxxx	8254700.9404.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 25 mm2/s (cSt)
*3) For liquid mediums and an operating pressure > 10 bar is the maximum allowed differential pressure limited to 2 bar.

82540

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
Voltage and Frequency Solenoid 9151/9154 *4)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
110	49	110 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
120	49	120 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
230	49	230 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
Voltage and Frequency Solenoid 9301/9304 *4)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
110	49	110 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
120	49	120 V a.c. *5)	40 ... 60 Hz	20 VA	20 VA
230	49	230 V a.c. *5)	40 ... 60 Hz	20 VA	20VA
Voltage and Frequency Solenoid 9401/9404 *4)					
024	00	24 V d.c.	-	38 W	38 W
024	49	24 V a.c. *5)	40 ... 60 Hz	42 VA	42 VA
110	49	110 V a.c. *5)	40 ... 60 Hz	42 VA	42 VA
120	49	120 V a.c. *5)	40 ... 60 Hz	42 VA	42 VA
230	49	230 V a.c. *5)	40 ... 60 Hz	42 VA	42 VA
Voltage and Frequency Solenoid 8401/8404					
024	00	24 V d.c.	-	40 W	40 W
024	49	24 V a.c. *5)	40 ... 60 Hz	45 VA	45 VA
110	49	110 V a.c. *5)	40 ... 60 Hz	45 VA	45 VA
120	49	120 V a.c. *5)	40 ... 60 Hz	45 VA	45 VA
230	49	230 V a.c. *5)	40 ... 60 Hz	45 VA	45 VA

*4) c SP us coil only

*5) a.c. only with rectifier plug

*6) d.c. only, for a.c. solenoids with design inspection certificate acc. to category 2, e. g. 6120/ 6140/ 6240

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.
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	9326 *6)	24 V d.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *6)	24 V d.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	9176 *6)	24 V d.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	9426 *6)	24 V d.c.
II 2G II 2D	Ex eb mb IIC T3 Gb Ex mb tb IIIB T140°C Db	IP66	6120	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	6140	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.

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

82560

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 1/2

Orifice: DN 10

Suitable for vacuum

Compact solenoid with integrated core tube

Valve operates without differential pressure

Stainless Steel

Technical data

Medium:
Slightly aggressive gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

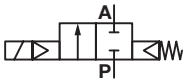
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2

Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Stainless steel (1.4408), PA66
Seat seal: NBR
Internal parts: Stainless steel, PVDF, Sandvik 1802

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	10	44	1,5	0 ... 10	0 ... 145	0,5	8256000.8001.xxxxx	8256000.8004.xxxxx
	G3/8	10	44	1,7	0 ... 10	0 ... 145	0,5	8256100.8001.xxxxx	8256100.8004.xxxxx
	G1/2	10	60	1,7	0 ... 10	0 ... 145	0,6	8256200.8001.xxxxx	8256200.8004.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 25 mm^2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 8001/8004					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
024	00	24 V d.c.	-	12 W	12 W
024	49	24 V a.c. *3)	40 … 60 Hz	13 VA	13 VA
110	49	110 V a.c. *3)	40 … 60 Hz	13 VA	13 VA
120	49	120 V a.c. *3)	40 … 60 Hz	13 VA	13 VA
230	49	230 V a.c. *3)	40 … 60 Hz	13 VA	13 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.
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 eb mb IIC T3 Gb Ex mb tb IIIB T150°C Db	IP66	6200	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.

82590

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

For systems with low or fluctuating pressure

Suitable for vacuum

Solenoid interchangeable without tools (*Click-on*®) only solenoid 915x and 940x

Damped operation

Valve operates without differential pressure

***Click-on*®**

Stainless Steel

Technical data

Medium:
Slightly aggressive gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

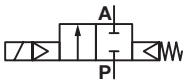
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
See table
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Stainless steel (1.4408)
Seat seal: NBR-K
Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	1,9	0 ... 10	0 ... 145	0,7	8259000.9151.xxxxx	8259000.9154.xxxxx
	G3/8	10	3	0 ... 10	0 ... 145	0,7	8259100.9151.xxxxx	8259100.9154.xxxxx
	G1/2	12	3,4	0 ... 10	0 ... 145	0,8	8259200.9151.xxxxx	8259200.9154.xxxxx
	G3/4	20	5,8	0 ... 10	0 ... 145	0,9	8259300.9151.xxxxx	8259300.9154.xxxxx
	G1	25	8	0 ... 10	0 ... 145	1,3	8259400.9151.xxxxx	8259400.9154.xxxxx
	G1 1/4	32	23	0 ... 16	0 ... 232	4,3	8259500.9401.xxxxx	8259500.9404.xxxxx
	G1 1/2	40	25	0 ... 16	0 ... 232	4,1	8259600.9401.xxxxx	8259600.9404.xxxxx
	G2	50	41	0 ... 16	0 ... 232	5,1	8259700.9401.xxxxx	8259700.9404.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 25 mm^2/s (cSt)
G1/4 ... G 1 max. 16 bar on request

82590

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
Voltage and Frequency Solenoid 9151/9154 *3)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
Voltage and Frequency Solenoid 9301/9304 *3)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
Voltage and Frequency Solenoid 9401/9404 *3)					
024	00	24 V d.c.	-	38 W	38 W
024	49	24 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
Voltage and Frequency Solenoid 8401/8404					
024	00	24 V d.c.	-	40 W	40 W
024	49	24 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA

*3) c SA us only (with the exeption of solenoid 94xx up to 41 V a.c.)

*4) a.c. only with rectifier plug

*5) d.c. only, for a.c. solenoids with design inspection certificate acc. to category 2, e. g. 6120 or 6240

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.
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
II3G II3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *5)	24 V d.c.
II3G II3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	9176 *5)	24 V d.c.
II3G II3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	9426 *5)	24 V d.c.
II 2G II 2D	Ex eb mb IIC T3 Gb Ex mb tb IIIB T140°C Db	IP66	6120	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.

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

82610

2/2-way valves – Direct solenoid actuated

Port size: G1/8 ... 3/8

Orifice: DN 1,5 ... 5

Body with M5 fastening thread as standard

Functional compact design

Suitable for vacuum

Solenoid interchangeable without tools (*Click-on*®)

Valve operates without differential pressure

NPT-connection available: change 82610 to 84620

***Click-on*®**

Stainless Steel

Technical data

Medium:
Neutral and slightly aggressive gases and liquid fluids
Switching function:
Normally closed
Operation:
Direct solenoid actuated

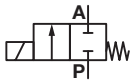
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/8, G1/4, G3/8

Operating pressure:
0 ... 40 bar (0 ... 580 psi)
Fluid temperature:
–10 ... +110°C (+14 ... +230°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Stainless steel (1.4408)
Seat seal: FPM
Internal parts: Stainless steel

For contaminated fluids insertion of a strainer is recommended.

Standard models – Normally closed valves

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/8	1,5	0,07	0 ... 25	0 ... 362	0,33	8261803.9101.xxxxx
	G1/4	1,5	0,07	0 ... 25	0 ... 362	0,33	8261003.9101.xxxxx
	G3/8	1,5	0,07	0 ... 25	0 ... 362	0,33	8261103.9101.xxxxx
	G1/8	1,5	0,07	0 ... 70	0 ... 1015	0,57	8261807.9151.xxxxx
	G1/4	1,5	0,07	0 ... 70	0 ... 1015	0,57	8261007.9151.xxxxx
	G3/8	1,5	0,07	0 ... 70	0 ... 1015	0,57	8261107.9151.xxxxx
	G1/8	2,5	0,15	0 ... 10	0 ... 145	0,33	8261823.9101.xxxxx
	G1/4	2,5	0,15	0 ... 10	0 ... 145	0,33	8261023.9101.xxxxx
	G3/8	2,5	0,15	0 ... 10	0 ... 145	0,33	8261123.9101.xxxxx
	G1/8	2,5	0,15	0 ... 40	0 ... 580	0,57	8261823.9151.xxxxx
	G1/4	2,5	0,15	0 ... 40	0 ... 580	0,57	8261023.9151.xxxxx
	G3/8	2,5	0,15	0 ... 40	0 ... 580	0,57	8261123.9151.xxxxx
	G1/8	3	0,21	0 ... 4	0 ... 58	0,33	8261843.9101.xxxxx
	G1/4	3	0,21	0 ... 4	0 ... 58	0,33	8261043.9101.xxxxx
	G3/8	3	0,21	0 ... 4	0 ... 58	0,33	8261143.9101.xxxxx
	G1/8	3	0,21	0 ... 20	0 ... 290	0,57	8261843.9151.xxxxx
	G1/4	3	0,21	0 ... 20	0 ... 290	0,57	8261043.9151.xxxxx
	G3/8	3	0,21	0 ... 20	0 ... 290	0,57	8261143.9151.xxxxx
	G1/8	4	0,35	0 ... 12	0 ... 174	0,57	8261863.9151.xxxxx
	G1/4	4	0,35	0 ... 12	0 ... 174	0,57	8261063.9151.xxxxx
	G3/8	4	0,35	0 ... 12	0 ... 174	0,57	8261163.9151.xxxxx
	G1/8	5	0,5	0 ... 6	0 ... 87	0,57	8261883.9151.xxxxx
	G1/4	5	0,5	0 ... 6	0 ... 87	0,57	8261083.9151.xxxxx
	G3/8	5	0,5	0 ... 6	0 ... 87	0,de57	8261183.9151.xxxxx

xxxxx Please insert voltage and frequency codes

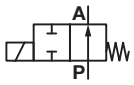
*1) Cv-value (US) ≈ kv value x 1,2

*2) For gases and liquid fluids up to 25 mm^2/s (cSt)
G1/4 ... 1 max. 16 bar on request

82610

2/2-way valves – Direct solenoid actuated

Standard models – Normally opened valves

Symbol	Port size	Orifice (mm)	Flow kv value *3) (m^3/h)	Operating pressure *4) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	1,5	0,07	0 ... 16	0 ... 232	0,33	8261001.9101.xxxxx
	G1/4	2,5	0,15	0 ... 6	0 ... 87	0,33	8261021.9101.xxxxx
	G1/4	2,5	0,15	0 ... 25	0 ... 362	0,57	8261021.9151.xxxxx
	G1/4	3	0,21	0 ... 3	0 ... 43	0,33	8261041.9101.xxxxx
	G1/4	3	0,21	0 ... 16	0 ... 232	0,57	8261041.9151.xxxxx
	G1/4	4	0,35	0 ... 8	0 ... 116	0,57	8261061.9151.xxxxx

xxxxx Please insert voltage and frequency codes

*3) Cv-value (US) ≈ kv value x 1,2

*4) For gases and liquid fluids up to 25 mm^2/s (cSt)
G1/4 ... 1 max. 16 bar on request

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9101/9104 *5)					
024	00	24 V d.c.	-	8 W	8 W
024	49	24 V a.c. *6)	40 … 60 Hz	9 VA	9 VA
110	49	110 V a.c. *6)	40 … 60 Hz	9 VA	9 VA
120	49	120 V a.c. *6)	40 … 60 Hz	9 VA	9 VA
230	49	230 V a.c. *6)	40 … 60 Hz	9 VA	9 VA
Voltage and Frequency Solenoid 9151/9154 *5)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *6)	40 … 60 Hz	20 VA	20 VA
110	49	110 V a.c. *6)	40 … 60 Hz	20 VA	20 VA
120	49	120 V a.c. *6)	40 … 60 Hz	20 VA	20 VA
230	49	230 V a.c. *6)	40 … 60 Hz	20 VA	20 VA

*5) c SP us coil only

*6) 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.
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 eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6106	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6126 *7)	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	9116	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	9176	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.

*7) from G1 1/4 / 1 1/4 NPT (16 bar)

83040

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 16

Orifice: DN 15 ... 50

Suitable for vacuum

Solenoid interchangeable without tools (*Click-on*®)

Damped operation

Valve operates without differential pressure

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated,
with forced lifting

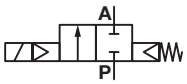
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 16,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50

Operating pressure:
0 ... 10/16 bar (0 ... 145/232 psi)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Cast steel, brass
Seat seal: NBR
Internal parts: Stainless steel, PVDF, brass

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	15	3,4	0 ... 10	0 ... 145	1,9	8304200.9151.xxxxx	8304200.9154.xxxxx
	15	3,4	0 ... 16	0 ... 232	2,4	8304200.9301.xxxxx	8304200.9304.xxxxx
	20	5,8	0 ... 10	0 ... 145	2,5	8304300.9151.xxxxx	8304300.9154.xxxxx
	20	5,8	0 ... 16	0 ... 232	3	8304300.9301.xxxxx	8304300.9304.xxxxx
	25	8	0 ... 10	0 ... 145	3	8304400.9151.xxxxx	8304400.9154.xxxxx
	25	8	0 ... 16	0 ... 232	3,5	8304400.9301.xxxxx	8304400.9304.xxxxx
	32	23	0 ... 16	0 ... 232	6,7	8304500.9401.xxxxx	8304500.9404.xxxxx
	40	25	0 ... 16	0 ... 232	7,4	8304600.9401.xxxxx	8304600.9404.xxxxx
	50	41	0 ... 16	0 ... 232	10	8304700.9401.xxxxx	8304700.9404.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 25 mm^2/s (cSt)

83040

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9151/9154 *3)					
024	00	24 V d.c.	-	18 W	18 W
024	49	24 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
110	49	110 V a.c.*4)	40 ... 60 Hz	20 VA	20 VA
120	49	120 V a.c.*4)	40 ... 60 Hz	20 VA	20 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	20 VA	20 VA
Voltage and Frequency Solenoid 9401/9404 *3)					
024	00	24 V d.c.	-	38 W	38 W
024	49	24 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	42 VA	42 VA
Voltage and Frequency Solenoid 8301/8304					
024	00	24 V d.c.	-	22 W	22 W
024	49	24 V a.c. *4)	40 ... 60 Hz	25 VA	25 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	25 VA	25 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	25 VA	25 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	25 VA	25 VA
Voltage and Frequency Solenoid 8401/8404					
024	49	24 V d.c.	-	40 W	40 W
024	49	24 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA
110	49	110 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA
120	49	120 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA
230	49	230 V a.c. *4)	40 ... 60 Hz	45 VA	45 VA

*3) c SA us coil only (with the exeption of solenoid 94xx up to 41 V a.c.)

*4) 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.
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 protec-tion class	Solenoid	Standard voltages
II 2G II 2D	Ex eb mb IIC T3 Gb Ex mb tb IIIB T140°C Db	IP66	6120	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 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	9176 *5)	24 V d.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	9426 *5)	24 V d.c.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *5)	24 V d.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.

*5) d.c. only, for a.c. solenoids with design inspection certificate acc. to category 2, e. g. 6120 or 6240

83150

2/2-way valves – Direct solenoid actuated

Orifice: DN 2,5 ... 4,5

Functional compact design

High flow rate

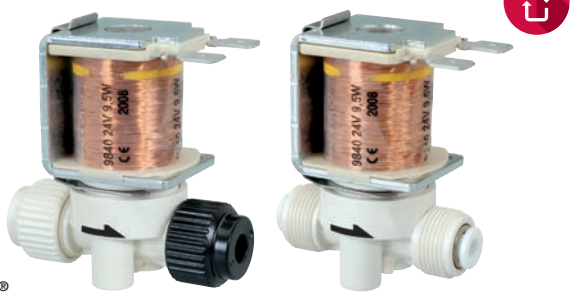
Increased service life > low maintenance

Good corrosion resistance

Solenoid interchangeable without tools (*Click-on*®)

Valve operates without pressure differential

Approvals: wetted materials FDA and WRAS



Compression fitting | Push-in fitting

Technical data

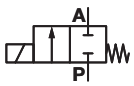
Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Direct solenoid actuated
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined

Port size:
- Standard
  ø 6 mm (O/D 6 mm, I/D 4 mm)
- Optional (Compression fitting)
  ø mit 8 mm PIF
  (O/D 8 mm, I/D 6 mm)
- Optional (Tube push-in fitting)
  ø with 4 mm PIF
  (O/D 4 mm, I/D 2 mm)
  OD tube tolerance ± 0.1 mm

Operating pressure:
0 ... 12 bar (0 ... 174 psi)
Fluid temperature:
0 ... +125°C (+32 ... +257°F)
Ambient temperature:
0 ... +50°C (+32 ... +122°F)

Material:
Body: PPSU
(Polyphenylsulfon)
Seat seal: EPDM
Internal parts: Stainless steel

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2 Solenoid (bar) 9846	(psi) 9846	(bar) 9830	(psi) 9830	(bar) 9837	(psi) 9837	(bar) 9897	(psi) 9897	Weight (kg) *3)	Model
	6/4	2,5	0,15	12	174	12	174	4	58	4	58	0,17	8315000.98xx.xxxxx
	6/4	3,5	0,18	4	58	4	58	–	–	–	–	0,17	8315001.98xx.xxxxx
	8/6	4,5	0,45	3	43	3	43	–	–	–	–	0,17	8315002.98xx.xxxxx
	6/4	2,5	0,15	4	58	4	58	–	–	–	–	0,17	8315003.98xx.xxxxx
	4 PIF 4*)	2,5	0,15	12	174	12	174	4	58	4	58	0,17	8315020.98xx.xxxxx
	4 PIF 4*)	3,5	0,15	4	58	4	58	–	–	–	–	0,17	8315021.98xx.xxxxx
	4 PIF 4*)	2,5	0,15	4	58	4	58	–	–	–	–	0,17	8315023.98xx.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 25 mm^2/s (cSt)
*3) Valve only (without coil)
*4) PIF = Push-in fitting
Valve design 00, 01, 03 compression fitting ø 6 mm
Valve design 02 compression fitting ø 8 mm
Valve design 20 ... 23 push-in fitting ø 4 mm

Electrical details for all solenoid systems

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.

84360

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

Valve operates without differential pressure

High flow rate

Easily interchangeable solenoid

NPT-connection available: change 84360 to 84370

Technical data

Medium:
Hot water, steam
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

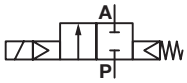
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Fluid temperature:
0 ... +150°C (+14 ... +302°F)
Ambient temperature:
0 ... +60°C (+14 ... +140°F)

Material:
Body: Brass
Seat seal: HNBR
Internal parts: Brass, stainless steel

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	Operating pressure (psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	1,9	0 ... 10	0 ... 145	1,3	8436000.8302.xxxxx	8436000.8306.xxxxx
	G3/8	10	3	0 ... 10	0 ... 145	1,3	8436100.8302.xxxxx	8436100.8306.xxxxx
	G1/2	12	3,8	0 ... 10	0 ... 145	1,3	8436200.8302.xxxxx	8436200.8306.xxxxx
	G3/4	20	6,1	0 ... 10	0 ... 145	1,9	8436300.8302.xxxxx	8436300.8306.xxxxx
	G1	25	9,5	0 ... 10	0 ... 145	1,9	8436400.8302.xxxxx	8436400.8306.xxxxx
	G1 1/4	32	23	0 ... 10	0 ... 145	5,1	8436500.8402.xxxxx	8436500.8406.xxxxx
	G1 1/2	40	25	0 ... 10	0 ... 145	4,8	8436600.8402.xxxxx	8436600.8406.xxxxx
	G2	50	41	0 ... 10	0 ... 145	6,1	8436700.8402.xxxxx	8436700.8406.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
Voltage and Frequency Solenoid 8302/8306					
024	00	24 V d.c.	-	14 W	14 W
024	49	24 V a.c. *2)	40 ... 60 Hz	16 VA	16 VA
110	49	110 V a.c. *2)	40 ... 60 Hz	16 VA	16 VA
120	49	120 V a.c. *2)	40 ... 60 Hz	16 VA	16 VA
230	49	230 V a.c. *2)	40 ... 60 Hz	16 VA	16 VA
Voltage and Frequency Solenoid 8402/8406					
024	00	24 V d.c.	-	29 W	29 W
024	49	24 V a.c. *2)	40 ... 60 Hz	33 VA	33 VA
110	49	110 V a.c. *2)	40 ... 60 Hz	33 VA	33 VA
120	49	120 V a.c. *2)	40 ... 60 Hz	33 VA	33 VA
230	49	230 V a.c. *2)	40 ... 60 Hz	33 VA	33 VA

*2) 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.

85340

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 40

Orifice: DN 15 ... 50

Up to 16 bar backpressure tight with leakage rate E according to DIN EN 12266-1

Valve operates without differential pressure

Stainless Steel

Technical data

Medium:
Slightly aggressive fluids
Switching function:
Normally closed;
no switching function at back pressure
Operation:
Solenoid actuated,
with forced lifting

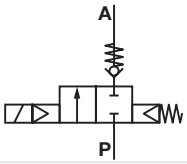
Mounting position:
Solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 40,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50

Operating pressure:
P > A: 0 ... 25 bar (0 ... 362 psi)
A > P: 0 ... 16 bar (0 ... 232 psi),
backpressure tight
Fluid temperature:
0 ... +90°C (+32 ... +194°F)
Ambient temperature:
0 ... +50°C (+32 ... +122°F)

Material:
Body: Stainless steel (1.4408)
Seat seal: NBR
Internal parts: Stainless steel

For contaminated fluids insertion of a strainer is recommended.

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	8534200.8401.xxxxx	8534200.8404.xxxxx
	20	7	0 ... 25	0 ... 362	4,2	8534300.8401.xxxxx	8534300.8404.xxxxx
	25	10,5	0 ... 25	0 ... 362	4,8	8534400.8401.xxxxx	8534400.8404.xxxxx
	32	25	0 ... 25	0 ... 362	9,6	8534500.9501.xxxxx	8534500.9504.xxxxx
	40	27	0 ... 25	0 ... 362	10	8534600.9501.xxxxx	8534600.9504.xxxxx
	50	43	0 ... 25	0 ... 362	11,5	8534700.9501.xxxxx	8534700.9504.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 25 mm²/s (cSt)
Up to 80 mm²/s (cSt) on request

85340

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
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
220	49	220 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
220	49	220 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.
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	8426 *4)	24 V d.c.
II 2G	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.
II2GD	Ex e mb II T3/T4 Ex tD A21 IP65 T140°C	IP65	9540	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.

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/ 9540/ 6240

85780

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 40

Orifice: DN 15 ... 100

Suitable for use in single-channel safety-related systems in accordance with DIN EN 61508/61511 up to and including SIL 2 and up to and including SIL 3 in multi-channel systems

Damped operation

Valve operates without differential pressure

DN 15 ... 50

DN 65 ... 100

Stainless Steel

Technical data

Medium:
Neutral gases and liquid fluids (air, water, gases according to DVGW datasheet G 260 with seat seal FPM – oils and other fluids on request)
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

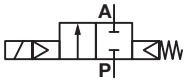
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 40,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50,
DN 65, DN 80, DN 100

Operating pressure:
0 ... 25 bar (0 ... 362 psi)
Fluid temperature:
–10 ... +60°C (+14 ... +140°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body:
up to DN 50 stainless steel (1.4408)
from DN 65 stainless steel (1.4581)
Seat seal: NBR
Internal parts: Stainless steel, PTFE / carbon

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/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
	65	67	0 ... 25	0 ... 362	36,5	8578800.9501.xxxxx	8578800.9504.xxxxx
	80	94	0 ... 25	0 ... 362	46,5	8578900.9501.xxxxx	8578900.9504.xxxxx
	100	144	0 ... 25	0 ... 362	70	8579000.9501.xxxxx	8579000.9504.xxxxx

xxxxx Spannung und Frequenz angeben
*1) Cv-Wert (US) ≈ kv-Wert x 1,2
*2) For gases and liquid fluids up to 60 mm^2/s (cSt)

85780

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
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

*1) 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.
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.
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *4)	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex e mb II T3/T4 Ex tD A21 IP65 T140°C	IP65	9540	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.

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. 8900/ /8920/ 9540/ 6240

85840

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

Suitable for use in single-channel safety-related systems in accordance with DIN EN 61508/61511 up to and including SIL 2 and up to and including SIL 3 in multi-channel systems

Damped operation

Valve operates without pressure differential

NPT-connection available: change 85840 to 85850

Stainless Steel

Technical data

Medium:
Air, water, gases according to DVGW datasheet G 260 with seat seal FPM, oils and other fluids on request
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

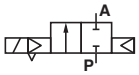
Mounting position:
Solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

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: Stainless steel (1.4408)
Seat seal: NBR
Internal parts: Stainless steel, PTFE / carbon

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	2	0 ... 25	0 ... 362	2,7	8584000.8401.xxxxx	8584000.8404.xxxxx
	G3/8	10	3,2	0 ... 25	0 ... 362	2,7	8584100.8401.xxxxx	8584100.8404.xxxxx
	G1/2	12	3,6	0 ... 25	0 ... 362	2,8	8584200.8401.xxxxx	8584200.8404.xxxxx
	G3/4	20	6	0 ... 25	0 ... 362	3	8584300.8401.xxxxx	8584300.8404.xxxxx
	G1	25	8,9	0 ... 25	0 ... 362	3,4	8584400.8401.xxxxx	8584400.8404.xxxxx
	G1 1/4	32	22	0 ... 25	0 ... 362	5,6	8584500.8401.xxxxx	8584500.8404.xxxxx
	G1 1/2	40	22,3	0 ... 25	0 ... 362	5,4	8584600.8401.xxxxx	8584600.8404.xxxxx
	G2	50	35	0 ... 25	0 ... 362	6,8	8584700.8401.xxxxx	8584700.8404.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 25 mm^2/s (cSt)

85840

2/2-way valves – Solenoid actuated, with forced lifting

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. 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.
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) only DC, for AC solenoids with design inspection certificate acc. to category 2, e.g. 8900/ 8920/ 6240

86480

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 16

Orifice: DN 65 ... 100

Valve operates without differential pressure (Zero delta P)

Valve piston with PTFE guide-ring

Suitable for vacuum

Adjustable: Damped operation

Technical data

Medium:
Neutral gases and fluids
Switching function:
Normally closed
Operation:
Solenoid actuated,
with forced lifting

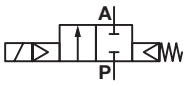
Mounting position:
Solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 16,
DN 65, DN 80, DN 100

Operating pressure:
0 ... 16 bar (0 ... 232 psi)
Fluid temperature:
–20 ... +90°C (–4 ... +194°F)
Ambient temperature:
–20 ... +50°C (–4 ... +122°F)

Material:
Body: Ductile graphite iron, brass
Seat seal: NBR
Cover: Brass
Internal parts: Stainless steel,
PTFE/coal

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) *3) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	65	72	0 ... 16	0 ... 232	30	8648800.9501.xxxxx	8648800.9504.xxxxx
	80	110	0 ... 16	0 ... 232	49	8648900.9501.xxxxx	8648900.9504.xxxxx
	100	125	0 ... 16	0 ... 232	60	8649000.9501.xxxxx	8649000.9504.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)

Standard solenoid systems

Voltage and Frequency Solenoid 9501/9504					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	80 W	80 W
024	49	24 V a.c. *3)	40 … 60 Hz	89 VA	89 VA
042	49	42 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
230	49	230 V a.c. *3)	40 … 60 Hz	89 VA	89 VA

*3) AC 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 IP 65
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°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	Protection class	Solenoid	Standard voltages
II2GD	II 2 G Ex e mb II T3...T4 II 2 D Ex tD A21 IP 65 T140°C	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.

86500

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 40

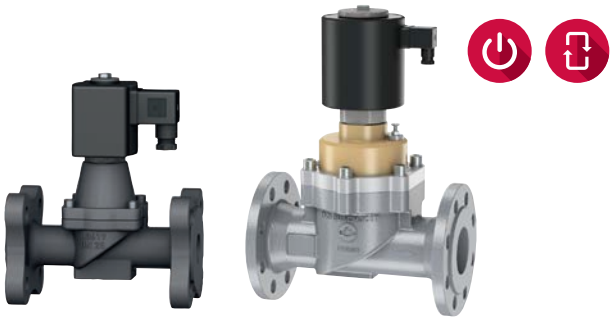
Orifice: DN 15 ... 100

Valve operates without differential pressure (Zero delta P)

Valve piston with PTFE guide-ring

Suitable for vacuum

Adjustable: Damped operation (DN 65 ... 100)



DN 15 ... 50 DN 65 ... 100

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated,
with forced lifting

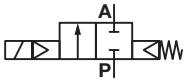
Mounting position:
Optional, preferably solenoid vertical on top
up to DN 65:
solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 40,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50,
DN 65, DN 80, DN 100

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: Ductile graphite iron, Brass
Seat seal: NBR
Internal parts: Stainless steel, PTFE/Carbon

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/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	7	0 ... 25	0 ... 362	4,2	8650300.8301.xxxxx	8650300.8304.xxxxx
	25	10,5	0 ... 25	0 ... 362	4,8	8650400.8301.xxxxx	8650400.8304.xxxxx
	32	25	0 ... 25	0 ... 362	9,6	8650500.8401.xxxxx	8650500.8404.xxxxx
	40	27	0 ... 25	0 ... 362	10	8650600.8401.xxxxx	8650600.8404.xxxxx
	50	43	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 value x 1,2

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

86500

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
Voltage and Frequency Solenoid 8301/8304					
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 IP 65
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°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 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.
II2GD	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 tb IIIB T135°C Db	IP66	6220	24 V DC, 110 V AC, 230 V AC
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.
II2GD	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) Only d.c., for a.c. solenoids with design inspection certificate acc. to category 2, e.g. 6240/ 8920/ 9540

86520

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 40

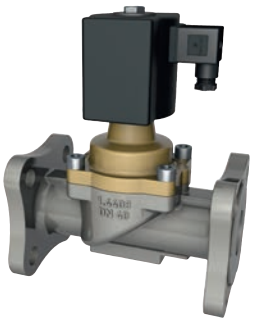
Orifice: DN 15 ... 50

For steam and hot water

Damped operation

Valve operates without differential pressure

Valve piston with PTFE guide-ring



Technical data

Medium:
Neutral steam and liquid fluids
Switching function:
Normally closed
Mounting position:
Solenoid vertical on top;
optional up to G1 / 1 NPT:
solenoid underneath

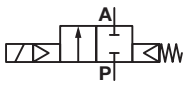
Flow direction:
Determined
Port size:
Flange PN 40
DN 15, DN 20, DN 25, DN 32, DN 40, DN 50
Operating pressure:
0 ... 16 bar (0 ... 232 psi)
0 ... 25 bar (0 ... 362 psi)

Fluid temperature:
0 ... +200°C (+32 ... +392°F)
Ambient temperature:
0 ... +60°C (+32 ... +140°F)

Materials:
Body: Stainless steel (1.4408), Brass
Seat seal: PTFE
Internal parts: Stainless steel, PTFE-Carbon / FPM

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice	Operating pressure *2) *3)		Flow kv value *1)	Weight	Model	
	(mm)	(bar)	(psi)	(m^3/h)	(kg)	Solenoid in V d.c.	Solenoid in V a.c.
	15	0 ... 16	0 ... 232	4.4	3,8	8652200.8402.xxxxx	8652200.8406.xxxxx
	20	0 ... 16	0 ... 232	6.5	4,2	8652300.8402.xxxxx	8652300.8406.xxxxx
	25	0 ... 16	0 ... 232	10	4,8	8652400.8402.xxxxx	8652400.8406.xxxxx
	32	0 ... 16	0 ... 232	22	9,6	8652500.8402.xxxxx	8652500.8406.xxxxx
	40	0 ... 16	0 ... 232	23	10	8652600.8402.xxxxx	8652600.8406.xxxxx
	50	0 ... 16	0 ... 232	37	11,5	8652700.8402.xxxxx	8652700.8406.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 mm^2/s (cSt)
*3) Lekrate E acc. to DIN EN 12266-1

Standard solenoid systems

Voltage and Frequency Solenoid 8402/8406					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
024	00	24 V d.c.	-	29 W	29 W
024	49	24 V a.c. *4)	40 … 60 Hz	33 VA	33 VA
110	49	110 V a.c. *4)	40 … 60 Hz	33 VA	33 VA
120	49	120 V a.c. *4)	40 … 60 Hz	33 VA	33 VA
230	49	230 V a.c. *4)	40 … 60 Hz	33 VA	33 VA

*4) 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.
At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

86540

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 40

Orifice: DN 15 ... 100

Valve operates without differential pressure (Zero delta P)

Valve piston with PTFE guide-ring

Suitable for vacuum

Adjustable: Damped operation (DN 65 ... 100)

DN 15 ... 50

DN 65 ... 100

Stainless Steel

Technical data

Medium:
Slightly aggressive gases and liquid fluids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

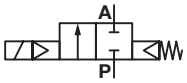
Mounting position:
Optional, preferably solenoid vertical on top
up to DN 65:
solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 40,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50,
DN 65, DN 80, DN 100

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.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) *3) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	15	4,4	0 ... 25	0 ... 362	3	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 mm^2/s (cSt)

86540

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
Voltage and Frequency Solenoid 8301/8304 *3)					
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

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.
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 tb IIIB T135°C Db	IP66	6220	24 V DC, 110 V AC, 230 V AC
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) Only d.c., for a.c. solenoids with design inspection certificate acc. to category 2, e.g. 6240

86580

2/2-way valves – Solenoid actuated, with forced lifting

Port size: Flange PN 40

Orifice: DN 15 ... 50

Valve with PTFE piston guide rings

With inspection certificate DIN EN 10204 - 3.1 Requirements AD 2000 A4

Damped operation

Valve operates without differential pressure

Stainless Steel

Technical data

Medium:
Slightly aggressive gases and liquid fluids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

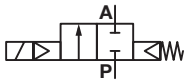
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 40,
DN 15, DN 20, DN 25, DN 32, DN 40, DN 50

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

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/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	4,2	8658200.8401.xxxxx	8658200.8404.xxxxx
	20	7	0 ... 25	0 ... 362	4,6	8658300.8401.xxxxx	8658300.8404.xxxxx
	25	10,5	0 ... 25	0 ... 362	5,1	8658400.8401.xxxxx	8658400.8404.xxxxx
	32	25	0 ... 25	0 ... 362	9,6	8658500.8401.xxxxx	8658500.8404.xxxxx
	40	27	0 ... 25	0 ... 362	10	8658600.8401.xxxxx	8658600.8404.xxxxx
	50	43	0 ... 25	0 ... 362	11,5	8658700.8401.xxxxx	8658700.8404.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 mm^2/s (cSt)

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

*4) d.c. only, for a.c. solenoids with design inspection certificate acc. to category 2, e. g. xxxxxxx.8441

Further versions on request!

Electrical details for all solenoid systems

Operation	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.
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	Protection class	Sole-noid	Standard voltages
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 3G II 3D	Ex nA IIB T4 Gc Ex tc IIIB T130°C Dc IP65	8426 *4)	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/T95°C	8920	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.

86580

2/2-way valves – Solenoid actuated, with forced lifting

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.
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	8426 *4)	24 V d.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 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. 6240 or 8920

86700

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

Suitable for vacuum

Valve operates without differential pressure

Valve with PTFE piston guide rings

Damped closing

NPT-connection available:
change 86700 to 86710

Technical data

Medium:
Air, water and oil
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

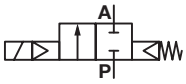
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
0 ... 25 bar (0 ... 362 psi)
(0 ... 40 bar (0 ... 580 psi))
Fluid temperature:
–20 ... +90°C (–4 ... +194°F)
Ambient temperature:
–20 ... +50°C (–4 ... +122°F)

Material:
Body: Brass (CW617N)
Seat seal: NBR
Internal parts: Stainless steel, PTFE / carbon

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	2,2	0 ... 25	0 ... 362	1,5	8670000.8301.xxxxx	8670000.8304.xxxxx
	G3/8	10	3,4	0 ... 25	0 ... 362	1,5	8670100.8301.xxxxx	8670100.8304.xxxxx
	G1/2	12	4,4	0 ... 25	0 ... 362	1,6	8670200.8301.xxxxx	8670200.8304.xxxxx
	G3/4	20	6,5	0 ... 25	0 ... 362	1,8	8670300.8301.xxxxx	8670300.8304.xxxxx
	G1	25	10	0 ... 25	0 ... 362	2,2	8670400.8301.xxxxx	8670400.8304.xxxxx
	G1 1/4	32	24	0 ... 25	0 ... 362	5,6	8670500.8401.xxxxx	8670500.8404.xxxxx
	G1 1/2	40	25	0 ... 25	0 ... 362	5,4	8670600.8401.xxxxx	8670600.8404.xxxxx
	G2	50	41	0 ... 25	0 ... 362	6,8	8670700.8401.xxxxx	8670700.8404.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 40 mm^2/s (cSt)

86700

2/2-way valves – Solenoid actuated, with forced lifting

Standard solenoid systems

Voltage and Frequency Solenoid 8301/8304					
Code Voltage	**Code Frequency**	**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

*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.
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 DC
II 3G II 3D	Ex ec IIC T4 Gc Ex tc IIIC T130°C DC	IP65	8426 *4)	24 V DC
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) Only d.c., for a.c. solenoids with design inspection certificate acc. to category 2, e.g. xxxxxxx.6240

86720

2/2-way valves – Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

For steam and hot water

Valve operates without differential pressure

Valve with PTFE piston guide rings

NPT-connection available: change 86720 to 86730

Technical data

Medium:
Neutral steam and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

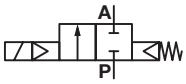
Mounting position:
Solenoid vertical on top; optional up to G1 solenoid underneath
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
0 ... 16 bar (0 ... 232 psi)
(0 ... 25 bar (0 ... 362 psi))
Fluid temperature:
0 ... +200°C (+32 ... +392°F)
Ambient temperature:
0 ... +60°C (+32 ... +140°F)

Material:
Body: Brass (CW617N)
Seat seal: PTFE
Internal parts: Stainless steel, PTFE / carbon

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
	G1/4	8	2,2	0 ... 16	0 ... 232	2,4	8672000.8402.xxxxx	8672000.8406.xxxxx
	G3/8	10	3,4	0 ... 16	0 ... 232	2,4	8672100.8402.xxxxx	8672100.8406.xxxxx
	G1/2	12	4,4	0 ... 16	0 ... 232	2,5	8672200.8402.xxxxx	8672200.8406.xxxxx
	G3/4	20	6,5	0 ... 16	0 ... 232	2,7	8672300.8402.xxxxx	8672300.8406.xxxxx
	G1	25	10	0 ... 16	0 ... 232	3,1	8672400.8402.xxxxx	8672400.8406.xxxxx
	G1 1/4	32	22	0 ... 16	0 ... 232	5,6	8672500.8402.xxxxx	8672500.8406.xxxxx
	G1 1/2	40	23	0 ... 16	0 ... 232	5,4	8672600.8402.xxxxx	8672600.8406.xxxxx
	G2	50	37	0 ... 16	0 ... 232	6,8	8672700.8402.xxxxx	8672700.8406.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 mm^2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 8402/8406					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	29 W	29 W
024	49	24 V a.c. *3)	40 ... 60 Hz	33 VA	33 VA
110	49	110 V a.c. *3)	40 ... 60 Hz	33 VA	33 VA
120	49	120 V a.c. *3)	40 ... 60 Hz	33 VA	33 VA
230	49	230 V a.c. *3)	40 ... 60 Hz	33 VA	33 VA

*3) A.c. only with rectifier plug
Further versions on request!

Electrical details for all solenoid systems

Operation	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.

85740

2/2-way valves –Solenoid actuated, with forced lifting

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

For systems with low or fluctuating pressure

Suitable for vacuum

Damped operation

Valve operates without pressure differential

NPT-connection available:
change 85740 to 85750

Stainless Steel

Technical data

Medium:
Slightly aggressive gases and liquids
Switching function:
Normally closed
Operation:
Solenoid actuated, with forced lifting

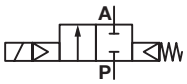
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

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.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in d.c.	Model Solenoid in a.c.
	G1/4	8	2,2	0 ... 25	0 ... 362 psi	2,4	8574000.9401.xxxxx	8574000.9404.xxxxx
	G3/8	10	3,4	0 ... 25	0 ... 362 psi	2,4	8574100.9401.xxxxx	8574100.9404.xxxxx
	G1/2	12	4,4	0 ... 25	0 ... 362 psi	2,5	8574200.9401.xxxxx	8574200.9404.xxxxx
	G3/4	20	7	0 ... 25	0 ... 362 psi	2,7	8574300.9401.xxxxx	8574300.9404.xxxxx
	G1	25	10,5	0 ... 25	0 ... 362 psi	3,1	8574400.9401.xxxxx	8574400.9404.xxxxx
	G1 1/4	32	25	0 ... 25	0 ... 362 psi	5,6	8574500.8401.xxxxx	8574500.8404.xxxxx
	G1 1/2	40	27	0 ... 25	0 ... 362 psi	5,4	8574600.8401.xxxxx	8574600.8404.xxxxx
	G2	50	43	0 ... 25	0 ... 362 psi	6,8	8574700.8401.xxxxx	8574700.8404.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 25 mm^2/s (cSt)

85740

2/2-way valves –Solenoid actuated, with forced lifting

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
Voltage and Frequency Solenoid 8301/8304					
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

*3) a.c. 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.
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 eb mb IIC T3 Gb Ex mb tb IIIB T135°C Db	IP66	6220	24 V DC, 110 V AC, 230 V AC
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. 6240 or 6240

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IMI BUSCHJOST

2

Indirect acting solenoid valves

PRODUCTS

Fast Find Guide
2/2-way valves

82400
DN 8 ... 50
Indirectly solenoid actuated, diaphragm valve, brass

Page 51

82470
DN 8 ... 25
Indirectly solenoid actuated, diaphragm valve up to +150°C (+302°F)

Page 52

82730
DN 8 ... 50
Indirectly solenoid actuated, diaphragm valve, stainless steel

Page 53

83030
DN 15 ... 50
Indirectly solenoid actuated, diaphragm valve, flange

Page 55

83770
DN 8
Indirectly solenoid actuated, high pressure, 320 bar (4641 psi)

Page 57

83790
DN 15
Indirectly solenoid actuated, high pressure, 250 bar (3626 psi)

Page 59

84070
DN 12 ... 20
Indirectly solenoid actuated, polymer version

Seite 61

85360
DN 8 ... 50
Indirectly solenoid actuated, piston valve, max. 40 bar (580 psi)

Page 62

85380
DN 8 ... 25
Indirectly solenoid actuated, piston valve up to +200°C (+392°F)

Page 63

85660
DN 15 ... 50
Indirectly solenoid actuated, max. 40 bar (580 psi), flange

Page 64

82400

2/2-way valves – Indirect solenoid actuated

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

Functional compact design

High flow rate

Solenoid interchangeable without tools (*Click-on*®)

Damped operation

NPT connection available: change 82400 to 82410

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

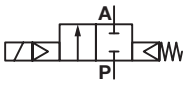
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
See table
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Brass (CW617N)
Seat seal: NBR
Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	8	60	1,9	0,1 ... 16	1,4 ... 232	0,47	8240000.9101.xxxxx
	G3/8	10	60	3	0,1 ... 16	1,4 ... 232	0,45	8240100.9101.xxxxx
	G1/2	12	67	3,8	0,1 ... 16	1,4 ... 232	0,5	8240200.9101.xxxxx
	G3/4	20	80	6,1	0,1 ... 16	1,4 ... 232	0,65	8240300.9101.xxxxx
	G1	25	95	9,5	0,1 ... 16	1,4 ... 232	0,95	8240400.9101.xxxxx
	G1 1/4	32	132	23	0,1 ... 10 (16) *3)	1,4 ... 145 (232) *3)	2,73	8240500.9101.xxxxx
	G1 1/2	40	132	25	0,1 ... 10 (16) *3)	1,4 ... 145 (232) *3)	2,53	8240600.9101.xxxxx
	G2	50	160	41	0,1 ... 10 (16) *3)	1,4 ... 145 (232) *3)	3,85	8240700.9101.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 25 mm2/s (cSt)
*3) With solenoid 9151

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9101 *4)					
024	00	24 V d.c.	-	8 W	8 W
024	50	24 V a.c.	50 Hz	15 VA	12 VA
110	50	110 V a.c.	50 Hz	15 VA	12 VA
120	60	120 V a.c.	60 Hz	15 VA	12 VA
230	50	230 V a.c.	50 Hz	15 VA	12 VA
Voltage and Frequency Solenoid 9151 *4)					
024	00	24 V d.c.	-	18 W	18 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

*4) c SP us coil only
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. 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 eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6106	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6126 *5)	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	9116	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	9176	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.
*5) from G1 1/4 / 1 1/4 NPT (16 bar)

82470

2/2-way valves – Indirect solenoid actuated

Port size: G1/4 ... 1

Orifice: DN 8 ... 25

Functional compact design

High flow rate

Solenoid interchangeable without tools (*Click-on*®)

Damped operation

NPT connection available: change 82470 to 82680

Click-on®

Technical data

Medium:
Hot water, steam
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

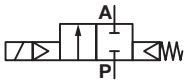
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1

Operating pressure:
0.1 ... 10 bar (1.4 ... 145 psi)
Differential pressure:
0.1 bar required (1.4 psi)
Fluid temperature:
0 ... +150°C (+32 ... +302°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)

Material:
Body: Brass (CW617N)
Seat seal: HNBR
Internal parts: Stainless steel, brass

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	8	60	1,7	0,1 ... 10	1,45 ... 145	0,47	8247000.9101.xxxxx
	G3/8	10	60	2,7	0,1 ... 10	1,45 ... 145	0,45	8247100.9101.xxxxx
	G1/2	12	67	3,4	0,1 ... 10	1,45 ... 145	0,5	8247200.9101.xxxxx
	G3/4	20	80	5,5	0,1 ... 10	1,45 ... 145	0,65	8247300.9101.xxxxx
	G1	25	95	8,5	0,1 ... 10	1,45 ... 145	0,95	8247400.9101.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 25 mm^2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 9101 *3)					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	8 W	8 W
024	50	24 V a.c.	50 Hz	15 VA	12 VA
110	50	110 V a.c.	50 Hz	15 VA	12 VA
120	60	120 V a.c.	60 Hz	15 VA	12 VA
230	50	230 V a.c.	50 Hz	15 VA	12 VA

*3) c SP us coil only

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.

82730

2/2-way valves – Indirect solenoid actuated

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

Functional compact design

High flow rate

Solenoid interchangeable without tools (*Click-on*®)

Damped operation

NPT connection available: change 82730 to 82740

***Click-on*®**

Stainless Steel

Technical data

Medium:
Slightly aggressive gases and liquid fluids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

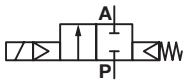
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
See table
Differential pressure:
0.1 bar required (1.45 psi)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Body: Stainless steel (1.4408)
Seat seal: NBR
Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	8	60	1,9	0,1 ... 16	1,45 ... 232	0,47	8273000.9101.xxxxx
	G3/8	10	60	3	0,1 ... 16	1,45 ... 232	0,45	8273100.9101.xxxxx
	G1/2	12	67	3,8	0,1 ... 16	1,45 ... 232	0,5	8273200.9101.xxxxx
	G3/4	20	80	6,1	0,1 ... 16	1,45 ... 232	0,65	8273300.9101.xxxxx
	G1	25	95	9,5	0,1 ... 16	1,45 ... 232	0,95	8273400.9101.xxxxx
	G1 1/4	32	132	23	0,1 ... 10	1,45 ... 145	2,6	8273500.9101.xxxxx
	G1 1/4	32	132	23	0,1 ... 16	1,45 ... 232	2,6	8273500.9151.xxxxx
	G1 1/2	40	132	25	0,1 ... 10	1,45 ... 145	2,84	8273600.9101.xxxxx
	G1 1/2	40	132	25	0,1 ... 16	1,45 ... 232	2,84	8273600.9151.xxxxx
	G2	50	160	41	0,1 ... 10	1,45 ... 145	3,85	8273700.9101.xxxxx
	G2	50	160	41	0,1 ... 16	1,45 ... 232	3,85	8273700.9151.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 25 mm2/s (cSt)

82730

2/2-way valves – Indirect solenoid actuated

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
Voltage and Frequency Solenoid 9101 *3) *4)					
024	00	24 V d.c.	-	8 W	8 W
024	50	24 V a.c.	50 Hz	15 VA	12 VA
110	50	110 V a.c.	50 Hz	15 VA	12 VA
120	60	120 V a.c.	60 Hz	15 VA	12 VA
230	50	230 V a.c.	50 Hz	15 VA	12 VA
Voltage and Frequency Solenoid 9151 *3) *4)					
024	00	24 V d.c.	-	18 W	18 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

*3) c SP us Coil only

*4) Attention! Standard core tube with copper shading coil.
Look for fluid resistant further options

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 coil temperature of +20°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 eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6106	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6126 *5)	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.
*5) from G1 1/4 / 1 1/4 NPT (16 bar)

83030

2/2-way valves – Indirect solenoid actuated

Port size: PN 16

Orifice: DN 15 ... 50

Functional compact design

High flow rate

Solenoid interchangeable without tools (*Click-on*®)

Damped operation

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

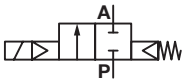
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 16,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50

Operating pressure:
0,1 … 10/16 bar
(1,45 ... 145/232 psi)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +194°F)

Material:
Body: Cast steel, brass
Seat seal: NBR
Internal parts: Stainless steel, PVDF resp. brass from DN 32

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	15	3,8	0,1 ... 16	1,45 ... 232	2,6	8303200.9101.xxxxx
	20	6,1	0,1 ... 16	1,45 ... 232	2,8	8303300.9101.xxxxx
	25	9,5	0,1 ... 16	1,45 ... 232	3,2	8303400.9101.xxxxx
	32	23	0,1 ... 10	1,45 ... 145	5,8	8303500.9101.xxxxx
	32	23	0,1 ... 16	1,45 ... 232	5,9	8303500.9151.xxxxx
	40	25	0,1 ... 10	1,45 ... 145	6,1	8303600.9101.xxxxx
	40	25	0,1 ... 16	1,45 ... 232	6,2	8303600.9151.xxxxx
	50	41	0,1 ... 10	1,45 ... 145	8,4	8303700.9101.xxxxx
	50	41	0,1 ... 16	1,45 ... 232	8,5	8303700.9151.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 25 mm^2/s (cSt)

83030

2/2-way valves – Indirect solenoid actuated

Acc. to ATEX 2014/34/EU!

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9841					
024	00	24 V d.c.	-	10,1 W	10,1 W
230	59	230 V a.c.	50 … 60 Hz	9,2 VA	9,2 VA
Voltage and Frequency Solenoid 6126					
024	00	24 V d.c.	-	14 W	14 W
230	49	230 V a.c.	40 … 60 Hz	16 VA	16 VA
Voltage and Frequency Solenoid 428x					
024	00	24 V d.c.	-	11,4 W	11,4 W
230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA
Voltage and Frequency Solenoid 468x					
024	00	24 V d.c.	-	11,4 W	11,4 W
230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA
Voltage and Frequency Solenoid 382x					
024	00	24 V d.c.	-	14 W	14 W
230	49	230 V a.c.	40 … 60 Hz	16 VA	16 VA

Electrical details for all solenoid systems

Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65

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

Solenoid	ATEX category	Ex-protection class
428x	II 2G II 2D	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T 130 °C D IP66
468x	II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db
984x	II 2G II 2D	Ex mb IIC T4 Gb Ex mb tb IIIC T130°C Db
6126	II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db IP66

Solenoid systems with FM approval (USA)

Solenoid		FM approval
382x	1,3,4,4X,6,6P,7 und 9	FM approved (File Nr. 2Z2A6.AE)

Admissible Ex areas (USA)

Solenoid 382x	Class	Divison	Groups
Gases + fumes	I	1 and 2	A ... D
Dusts	II	1 and 2	E ... G
Fibres + fluffs	III	1 and 2	–

83770

2/2-way valves – Indirect solenoid actuated

Port size: G1/4 ... 1/2

Orifice: DN 8

High pressure solenoid valves

Acc. to PED 2014/68 EU

Solenoid interchangeable without tools (*Click-on*®)

Further customized solutions on request for example:
- with integrated check valve
- Block solutions
- Stainless steel housing

***Click-on*®**

8590178.6126 8590178.428x 8590185.9841

Technical data

Medium:
For compressed natural gas (CNG)
Switching function:
Normally closed
Operation:
Indirect solenoid actuated
Mounting position:
Optional, preferably solenoid vertical on top

Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2
Operating pressure:
10 … 320 bar (145 ... 4641 psi)
Leakage rate:
Internal Leakage acc. to DIN EN 12266-1 Leakage “C”
External Leakage acc. to DIN EN 12266-1 Leakage “A”

Fluid temperature:
Solenoid 984x: –20 ... +60°C (-4 ... +140°F)
Solenoid 612x: –20 ... +60°C (-4 ... +140°F)
Solenoid 428x: –40 ... +50°C (-40 ... +122°F)
Solenoid 468x: –40 ... +50°C (-40 ... +122°F)
Solenoid 382x: –20 ... +60°C (-4 ... +140°F)
Ambient temperature:
Solenoid 984x: –20 ... +50°C (-4 ... +122°F)
Solenoid 612x: –20 ... +40°C (-4 ... +104°F)
Solenoid 428x: -40 … +50°C (-40 ... +122°F) T4; T5 siehe S.2
Solenoid 468x: -40 … +50°C (-40 ... +122°F) T4; T5 siehe S.2
Solenoid 382x: -20 … +60°C (-4 ... +140°F)

Material:
Body: Brass
Seat seal: Polymer
Internal parts: Brass, stainless steel, polymer

Installation of a 40 µm filter in front of the valve is required!

Standard models

Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) *3) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
G1/4	8	1,2	10 ... 320	145 ... 4641	2,2	8590371.984x.xxxxx
G1/4	8	1,2	10 ... 320	145 ... 4641	2,3	8590371.612x.xxxxx
G1/4	8	1,2	10 ... 320	145 ... 4641	-	8590371.428x.xxxxx
G1/4	8	1,2	10 ... 320	145 ... 4641	-	8590371.468x.xxxxx
G1/4	8	1,2	10 ... 320	145 ... 4641	-	8590371.382x.xxxxx
G3/8	8	1,2	10 ... 320	145 ... 4641	2,2	8590185.984x.xxxxx
G3/8	8	1,2	10 ... 320	145 ... 4641	2,3	8590178.6126.xxxxx
G3/8	8	1,2	10 ... 320	145 ... 4641	2,3	8590178.428x.xxxxx
G3/8	8	1,2	10 ... 320	145 ... 4641	2,5	8590178.468x.xxxxx
G3/8	8	1,2	10 ... 320	145 ... 4641	2,2	8590178.382x.xxxxx
G1/2	8	1,2	10 ... 320	145 ... 4641	2,2	8590337.984x.xxxxx
G1/2	8	1,2	10 ... 320	145 ... 4641	2,3	8590337.612x.xxxxx
G1/2	8	1,2	10 ... 320	145 ... 4641	2,5	8590337.428x.xxxxx
G1/2	8	1,2	10 ... 320	145 ... 4641	-	8590337.468x.xxxxx
G1/2	8	1,2	10 ... 320	145 ... 4641	-	8590337.382x.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2
*2) Static test pressure PT = 480 bar (6961 psi)
*3) Max. Operating pressure = 320 bar (4641 psi)

83770

2/2-way valves – Indirect solenoid actuated

Acc. to ATEX 2014/34/EU!

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
Voltage and Frequency Solenoid 9841					
024	00	24 V d.c.	-	10,1 W	10,1 W
230	59	230 V a.c.	50 … 60 Hz	9,2 VA	9,2 VA
Voltage and Frequency Solenoid 6126					
024	00	24 V d.c.	-	14 W	14 W
230	49	230 V a.c.	40 … 60 Hz	16 VA	16 VA
Voltage and Frequency Solenoid 428x					
024	00	24 V d.c.	-	11,4 W	11,4 W
230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA
Voltage and Frequency Solenoid 468x					
024	00	24 V d.c.	-	11,4 W	11,4 W
230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA
Voltage and Frequency Solenoid 382x					
024	00	24 V d.c.	-	14 W	14 W
230	49	230 V a.c.	40 … 60 Hz	16 VA	16 VA

Electrical details for all solenoid systems

Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65

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

Solenoid	ATEX category	Ex-protection class
428x	II 2G II 2D	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T 130 °C D IP66
468x	II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db
984x	II 2G II 2D	Ex mb IIC T4 Gb Ex mb tb IIIC T130°C Db
6126	II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db IP66

Solenoid systems with FM approval (USA)

Solenoid		FM approval
382x	1,3,4,4X,6,6P,7 und 9	FM approved (File Nr. 2Z2A6.AE)

Admissible Ex areas (USA)

Solenoid 382x	Class	Divison	Groups
Gases + fumes	I	1 and 2	A ... D
Dusts	II	1 and 2	E ... G
Fibres + fluffs	III	1 and 2	–

83790

2/2-way valves – Indirect solenoid actuated

Port size: G3/4 ...1

Orifice: DN 15

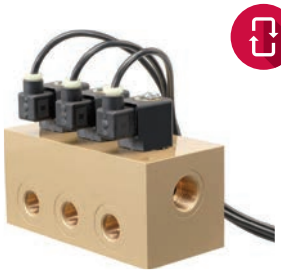
High pressure solenoid valves

Acc. to PED 2014/68 EU

Further customized solutions available upon request:
- 350 bar version
- Pressure sensor connections
- with integrated check valve
- Pressure sensor connections
- Stainless steel version

8590649.9841

8590556.9841



8590365.9841

Technical data

Medium:
For compressed natural gas (CNG)
Switching function:
Normally closed
Operation:
Indirect solenoid actuated
Mounting position:
Optional, preferably solenoid vertical on top

Flow direction:
Determined
Port size:
G1/4, G3/4, G1
Operating pressure:
10 … 250 bar (14,5 ... 3620 psi)
Leakage:
Internal Leakage acc. to DIN EN 12266-1 Leakage “E”
External Leakage acc. to DIN EN 12266-1 Leakage “A”

Fluid temperature:
Solenoid 984x: –20° ... +60°C (-4° ... +140°F)
Solenoid 6126: –20° ... +60°C (-4° ... +140°F)
Solenoid 428x: –40° ... +50°C (-40° ... +122°F)
Solenoid 468x: –40° ... +50°C (-40° ... +122°F)
Solenoid 382x: –20° ... +60°C (-4° ... +140°F)
Ambient temperature:
Solenoid 984x: –20° ... +50°C (-4° ... +122°F)
Solenoid 6126: –20° ... +40°C (-4° ... +104°F)
Solenoid 428x: -40° … +50°C (-40° ... +122°F) T4; T5 see page 2
Solenoid 468x: -40° … +50°C (-40° ... +122°F) T4; T5 see page 2
Solenoid 382x: -20° … +60°C (-4° ... +140°F)

Material:
Body: Brass
Seat seal: Polymer
Internal parts: Brass, Stainless steel, Polymer

Installation of a 40 µm filter in front of the valve is required!

Standard models

Execution	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
Single valve	G3/4	13	3,0	10 ... 250	145 ... 3626	4,8	8590649.984x.xxxxx
Single valve	G3/4	15	4,5	10 ... 250	145 ... 3626	5,0 5,1 4,7	8590649.382x.xxxxx 8590649.428x.xxxxx 8590649.468x.xxxxx 8590649.6126.xxxxx
2-station manifold with integrated non return pressure valves for the 2-bank control	1 x G1 Inlet 2 x G3/4 Outlet 2 x G1/4 for Pressure transmitter *3)	13		10 ... 250	145 ... 3626	12,5	8590556.984x.xxxxx
2-station manifold with integrated non return pressure valves for the 2-bank control	1 x G1 Inlet 2 x G3/4 Outlet 2 x G1/4 for Pressure transmitter *3)	15		10 ... 250	145 ... 3626		8590556.382x.xxxxx 8590556.428x.xxxxx 8590556.468x.xxxxx 8590556.6126.xxxxx
3-station manifold with integrated no return pressure valves for the 3-bank control	1 x G1 Inlet 3 x G3/4 Outlet 3 x G1/4 for Pressure transmitter *3)	13		10 ... 250	145 ... 3626	17,3	8590365.984x.xxxxx
2-station manifold with integrated non return pressure valves for the 2-bank control	1 x G1 Inlet 2 x G3/4 Outlet 2 x G1/4 for Pressure transmitter *3)	15		10 ... 250	145 ... 3626		8590365.382x.xxxxx 8590365.428x.xxxxx 8590365.468x.xxxxx 8590365.6126.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2
*2) Static test pressure PT = 375 bar
*3) Not included

More multi station variants (with or without integrated non return pressure valves, integrated filter, ...) on request.
Orifices and solenoid types may be combined in one block if necessary.

According to PED 2014/68/EU and ATEX 2014/34/EU!

83790

2/2-way valves – Indirect solenoid actuated

Actuation solenoids – Technical data and connection type

Solenoid	Code Voltage	Code Frequency	Voltage	Frequency	Power consumption		Connection
					Inrush	Holding	
3826	024	00	24 V d.c.	-	13,6 VA	13,6 VA	1/2" Conduit 3 connection strands, length 460 mm cable gland 1/2-14 NPT
3827	230	49	230 V a.c.	40 … 60 Hz	15,4 VA	15,4 VA	1/2" Conduit 3 connection strands, length 460 mm cable gland 1/2-14 NPT
4280	024	00	24 V d.c.	-	11,4 W	11,4 W	cable gland M20 x 1,5 Note: A cable gland made from plastic must be chosen during order.
4281	230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA	cable gland M20 x 1,5 Note: A cable gland made from plastic must be chosen during order.
4680	024	00	24 V d.c.	-	11,4 W	11,4 W	connection housing for cables 7,5-11,9 mm cable gland 1/2-14 NPT
4681	230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA	connection housing for cables 7,5-11,9 mm cable gland 1/2-14 NPT
4682	024	00	24 V d.c.	-	11,4 W	11,4 W	connection housing for cables 10-14 mm cable gland M20 x 1,5
4683	230	49	230 V a.c.	40 … 60 Hz	15,2 VA	15,2 VA	connection housing for cables 10-14 mm cable gland M20 x 1,5
6126	024	00	24 V d.c.	-	14 W	14 W	connection housing for cables 7-9 mm cable gland M16 x 1,5
6126	230	49	230 V a.c.	40 … 60 Hz	16 VA	16 VA	connection housing for cables 7-9 mm cable gland M16 x 1,5
9841	024	00	24 V d.c.	-	10,1 W	10,1 W	with 3 m connection cable
9844	024	00	24 V d.c.	-	10,1 W	10,1 W	with 5 m connection cable
9845	024	00	24 V d.c.	-	10,1 W	10,1 W	with 10 m connection cable
9845	230	59	230 V a.c.	50 … 60 Hz	9,2 VA	9,2 VA	with 10 m connection cable

Electrical details for all solenoid systems

Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 (exception 428x: IP66)

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

ATEX-Identification for solenoid systems

Solenoid	ATEX category	Ex-protection class
428x	II 2G II 2D	Ex eb mb IIC T4/T5 Gb Ex tb IIIC T 130 °C D IP66
468x	II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db
984x	II 2G II 2D	Ex mb IIC T4 Gb Ex mb tb IIIC T130°C Db
6126	II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db IP66

Solenoid systems with FM approval (USA)

Solenoid		FM approval
382x	1,3,4,4X,6,6P,7 und 9	FM approved (File Nr. 2Z2A6.AE)

Admissible Ex areas (USA)

Solenoid 382x	Class	Divison	Groups
Gases + fumes	I	1 and 2	A ... D
Dusts	II	1 and 2	E ... G
Fibres + fluffs	III	1 and 2	–

84070

2/2-way valves – Indirect solenoid actuated

Port size: G1/2 ... 3/4

Orifice: DN 12 ... 20

Functional compact design

High flow rate

International approvals

Solenoid interchangeable without tools (*Click-on*®)

Damped operation

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

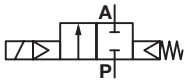
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/2, G3/4

Operating pressure:
0.3 ... 10.5 bar (4.35 ... 152 psi)
Fluid temperature:
+5 ... +50°C (+41 ... +122°F)
Ambient temperature:
0 ... +50°C (+32 ... +122°F)

Material:
Body: Polymer (PA12-GF50)
Seat seal: EPDM
Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/2	12	3	0,3 ... 10,5	4,35 ... 152	0,28	8407214.9101.xxxxx
	G3/4	20	5	0,3 ... 10,5	4,35 ... 152	0,3	8407314.9101.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 25 mm^2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 9101 *3)					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	8 W	8 W
024	50	24 V a.c.	50 Hz	15 VA	12 VA
110	50	110 V a.c.	50 Hz	15 VA	12 VA
120	60	120 V a.c.	60 Hz	15 VA	12 VA
230	50	230 V a.c.	50 Hz	15 VA	12 VA

*3) c US coil only
Further versions on request!
Specific NSF listed voltages for this valve can be found on: www.nsf.org.

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.

85360

2/2-way valves – Indirect solenoid actuated

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

High flow rate

Long lifetime

Compact build piston valve

Solenoid interchangeable without tools (*Click-on*®)

Piston guided in PTFE rings

NPT connection available: change 85360 to 85370

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

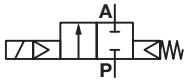
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

Operating pressure:
0.5 ... 40 bar (7.25 ... 580 psi)
Fluid temperature:
–20 ... +90°C (–4 ... +194°F)
Ambient temperature:
–20 ... +50°C (–4 ... +122°F)

Material:
Body: Brass (CW617N)
Seat seal: NBR
Internal parts: Stainless steel, brass, PTFE / carbon

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	8	2,2	0,5 ... 40	7,25 ... 580	0,83	8536000.9151.xxxxx
	G3/8	10	3,4	0,5 ... 40	7,25 ... 580	0,82	8536100.9151.xxxxx
	G1/2	12	4,4	0,5 ... 40	7,25 ... 580	0,85	8536200.9151.xxxxx
	G3/4	20	7	0,5 ... 40	7,25 ... 580	1,25	8536300.9151.xxxxx
	G1	25	10,5	0,5 ... 40	7,25 ... 580	1,7	8536400.9151.xxxxx
	G1 1/4	32	25	0,5 ... 40	7,25 ... 580	4,1	8536500.9151.xxxxx
	G1 1/2	40	27	0,5 ... 40	7,25 ... 580	3,85	8536600.9151.xxxxx
	G2	50	43	0,5 ... 40	7,25 ... 580	5,6	8536700.9151.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 25 mm^2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 9151 *1)					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	18 W	18 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

*1) c SP us coil only

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.
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	9176	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db up to DN 25: Operating pressure 0,5 ... 16 bar from DN 32: Operating pressure 0,5 ... 10 bar	IP65	468x	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6126	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.

85380

2/2-way valves – Indirect solenoid actuated

Port size: G1/4 ... 1

Orifice: DN 8 ... 25

High flow rate

Long lifetime

Compact build piston valve

Solenoid interchangeable without tools (*Click-on*®)

Piston guided in PTFE rings

NPT connection available: change 85380 to 85390

***Click-on*®**

Technical data

Medium:
Neutral steam and liquids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

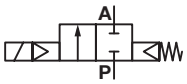
Mounting position:
Optional, solenoid preferably vertical on top
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1

Operating pressure:
1 ... 25 bar (14,5 ... 363 psi)
Fluid temperature:
0 ... +200°C (+32 ... +392°F) *1)
Ambient temperature:
0 ... +50°C (+32 ... +122°F) *1)
with solenoid mounted vertical underneath max. +60°C (+140°F) *2)

Material:
Body: Brass (CW617N)
Seat seal: PTFE
Internal parts: Stainless steel, FPM, PTFE

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *3) (m³/h)	Operating pressure *4) (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G1/4	8	2,2	1 ... 25	14,5 ... 363	0,83	8538000.9152.xxxxx
	G3/8	10	3,4	1 ... 25	14,5 ... 363	0,82	8538100.9152.xxxxx
	G1/2	12	4,4	1 ... 25	14,5 ... 363	0,85	8538200.9152.xxxxx
	G3/4	20	7	1 ... 25	14,5 ... 363	1,25	8538300.9152.xxxxx
	G1	25	10,5	1 ... 25	14,5 ... 363	1,7	8538400.9152.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Temperature < 0°C (+14°F) on request
*2) Temperature max. +55°C (+131°F) within the scope of c SP us
*3) Cv-value (US) ≈ kv value x 1,2
*4) For gases and liquid fluids up to 40 mm²/s (cSt)

Leakage rate E acc. to DIN EN 12266-1

Standard solenoid systems

Voltage and Frequency Solenoid 9152 *5)

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	10 W	10 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

*5) c SP us coil only up to +55°C ambient temperature
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.

85660

2/2-way valves – Indirect solenoid actuated

Port size: Flange PN 40

Orifice: DN 15 ... 50

High flow rate

Long lifetime

Compact build piston valve

Solenoid interchangeable without tools (*Click-on*®)

Piston guided in PTFE rings

Click-on®

Technical data

Medium:
Neutral gases and liquids
Switching function:
Normally closed
Operation:
Indirect solenoid actuated

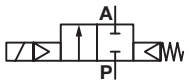
Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
Flange PN 40,
DN 15, DN 20, DN 25,
DN 32, DN 40, DN 50

Operating pressure:
0.5 … 40 bar (7.25 ... 580 psi)
Fluid temperature:
–20 ... +90°C (–4 ... +194°F)
Ambient temperature:
–20 ... +50°C (–4 ... +122°F)

Material:
Body: Cast steel (1.0619), brass (CW617N)
Seat seal: NBR
Internal parts: Stainless steel, brass, PTFE

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model Solenoid in d.c./a.c.
	15	4,4	0,5 ... 40	7,25 ... 580	3,2	8566200.9151.xxxxx
	20	7	0,5 ... 40	7,25 ... 580	3,6	8566300.9151.xxxxx
	25	10,5	0,5 ... 40	7,25 ... 580	4,2	8566400.9151.xxxxx
	32	25	0,5 ... 40	7,25 ... 580	7,2	8566500.9151.xxxxx
	40	27	0,5 ... 40	7,25 ... 580	7,6	8566600.9151.xxxxx
	50	43	0,5 ... 40	7,25 ... 580	8,8	8566700.9151.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 mm^2/s (cSt)

85660

2/2-way valves – Indirect solenoid actuated

Standard solenoid systems

Voltage and Frequency Solenoid 9151 *1)					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
024	00	24 V d.c.	-	17 W	17 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

*1) c SP us coil only

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. 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	9176	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db up to DN 25: Operating pressure 0,5 ... 16 bar (7,25 ... 232 psi) from DN 32: Operating pressure 0,5 ... 10 bar (7,25 ... 145 psi)	IP66	468x	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6126	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.

Engineering
GREAT Solutions

Pressure operated valves by external fluid

PRODUCTS

Fast Find Guide
2/2- & 3/2-way valves

82160
DN 8 ... 50
Pressure actuated by external fluid, brass, insensitive to dirt

Page 69

82170
DN 8 ... 50
Pressure actuated by external fluid, brass, insensitive to dirt

Page 70

82180
DN 15 ... 50
Pressure actuated by external fluid, angle seat valve, actuator ø 70 mm, brass

Page 71

82280
DN 15 ... 50
Pressure actuated by external fluid, angle seat valve, actuator ø 125 mm, brass

Page 71

82210
DN 15 ... 100
Pressure actuated by external, seat valve, actuator ø 70 mm, 120 mm, ductile cast iron

Page 72

82380
DN 15 ... 50
Pressure actuated by external fluid, angle seat valve, actuator ø 70 mm, stainless steel

Page 73

82480
DN 8 ... 50
Pressure actuated by external fluid, angle seat valve, actuator ø 125 mm, stainless steel

Page 73

82580
DN 15 ... 50
Pressure actuated by external fluid, angle seat valve with DVGW-approval

Page 74

82710
DN 8 ... 12
Pressure actuated by external fluid, brass, compact

Page 75

83250
3/2-way valves
DN 15 ... 50
Pressure actuated by external fluid, seat valve, gun metal, PTFE

Page 76

83350
DN 15 ... 50
Pressure actuated by external fluid, diaphragm valve, insensitive to dirt

Page 77

83380/83390
DN 15 ... 150
Pressure actuated by external fluid, diaphragm valve, flange, insensitive to dirt

Page 78

84180
DN 2 ... 10
Pressure actuated by external fluid, brass, compact

Page 79

84190
DN 2 ... 10
Pressure actuated by external fluid, stainless steel, compact

Page 80

84500
DN 15 ... 50
Pressure actuated by external fluid, angle seat valve, brass, polymer actuator

Page 81

84520
DN 15 ... 50
Pressure actuated by external fluid, angle seat valve, stainless steel, polymer actuator

Page 83

84720
DN 15 ... 25
Pressure actuated by external fluid, angle seat valve, brass, actuator ø 50 mm

Page 85

84740
DN 15 ... 25
Pressure actuated by external fluid, angle seat valve, stainless steel, actuator ø 50 mm

Page 86

84660/84680
3/2-way valves
DN 1,6 ... 3
Pressure actuated by external fluid, control valve

Page 87

82160

2/2-way valves – Pressure operated by external fluid

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

For fluids with high particle contamination

Optimised dimensions and weight

Fluid isolated from valve actuator

Vacuum version as an option

Technical data

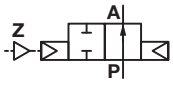
Medium:
Neutral fluids
with high particle contamination
Pilot fluid:
Air max. +60°C (+140°F)
Switching function:
Normally closed
with pilot pressure
Operation:
Pressure actuated
by external fluid
Modele:
Pressure actuated seat valve with diaphragm actuator

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4
Operating pressure:
0,2 … 16 bar (2,9 ... 232 psi)
Differential pressure:
0,2 bar required (2,9 psi)

Pilot pressure:
G1/4 ... 1/2
max. 6 bar (87 psi)
higher than operating pressure
G3/4 ... 2
max. 1 bar (14 psi)
higher than operating pressure
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)
Viscosity:
Max. 80 mm²/s

Material:
Body: Brass (CW617N)
Cover: Brass (2.0402)
Seat seals: NBR
Internal parts: Brass, stainless steel
Main sealing element: Fabric reinforced NBR diaphragm with valve plate
Valve seat: Brass

Standard models

Symbol	Port size	Orifice (mm)	Pilot connection	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model
	G1/4	8	G1/4	1,7	0,2 ... 16	2,9 ... 232	0,5	8216000.0000.00000
	G3/8	10	G1/4	3,4	0,2 ... 16	2,9 ... 232	0,45	8216100.0000.00000
	G1/2	12	G1/4	4	0,2 ... 16	2,9 ... 232	0,4	8216200.0000.00000
	G3/4	20	G1/4	11	0,2 ... 16	2,9 ... 232	1,15	8216300.0000.00000
	G1	25	G1/4	13	0,2 ... 16	2,9 ... 232	1	8216400.0000.00000
	G1 1/4	32	G1/4	28	0,2 ... 16	2,9 ... 232	2,35	8216500.0000.00000
	G1 1/2	40	G1/4	31	0,2 ... 16	2,9 ... 232	2,1	8216600.0000.00000
	G2	50	G1/4	46	0,2 ... 16	2,9 ... 232	3,35	8216700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2

*2) For gases and liquid fluids up to 80 mm²/s (cSt)

82170

2/2-way valves – Pressure operated by external fluid

Port size: G1/4 ... 2

Orifice: DN 8 ... 50

For fluids with high particle contamination

Optimised dimensions and weight

Fluid isolated from valve actuator

NPT-connection available: change 82170 to 82270

Technical data

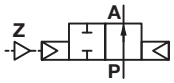
Medium:
Neutral gases and liquid fuels
Pilot fluid:
Air max. +60°C (+140°F)
Switching function:
Normally closed
with pilot pressure
Operation:
Pressure actuated
by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/4, G3/8, G1/2, G3/4, G1,
G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
0,2 … 16 bar (2,9 ... 232 psi)
Differential pressure:
0,2 bar (2,9 psi) required
Pilot pressure:
G1/4 ... 1/2
1 ... 16 bar (14 ... 232 psi)
max. 6 bar (87 psi)
higher than operating pressure;
G3/4 ... 2
1 ... 16 bar (14 ... 232 psi)
max. 1 bar (14 psi)
higher than operating pressure

Fluid temperature:
–10 ... +60°C (+14 ... +140°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)
Material:
Body: Brass
Seat seals: NBR
Internal parts: Brass,
stainless steel
Main sealing element:
Fabric reinforced NBR diaphragm
with valve plate

Standard models

Symbol	Port size	Orifice	Flow kv value *1)	Operating pressure *2)		Weight Standard	Weight Pulse Solenoid	Model Standard	Model Pulse Solenoid
		(mm)	(m^3/h)	(bar)	(psi)	(kg)	(kg)		
	G1/4	8	1,7	0,2 ... 16	2,9 ... 232	1,32	1,45	8217000.9301.xxxxx	8217000.8821.xxxxx
	G3/8	10	3,4	0,2 ... 16	2,9 ... 232	1,27	1,4	8217100.9301.xxxxx	8217100.8821.xxxxx
	G1/2	12	4	0,2 ... 16	2,9 ... 232	1,22	1,35	8217200.9301.xxxxx	8217200.8821.xxxxx
	G3/4	20	11	0,2 ... 16	2,9 ... 232	1,97	2,1	8217300.9301.xxxxx	8217300.8821.xxxxx
	G1	25	13	0,2 ... 16	2,9 ... 232	1,82	1,95	8217400.9301.xxxxx	8217400.8821.xxxxx
	G1 1/4	32	28	0,2 ... 16	2,9 ... 232	3,17	3,2	8217500.9301.xxxxx	8217500.8821.xxxxx
	G1 1/2	40	31	0,2 ... 16	2,9 ... 232	2,92	3	8217600.9301.xxxxx	8217600.8821.xxxxx
	G2	50	46	0,2 ... 16	2,9 ... 232	4,17	4,3	8217700.9301.xxxxx	8217700.8821.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 80 mm^2/s (cSt)

Standard solenoid systems

Voltage and Frequency Solenoid 9301 *3)

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	18 W	18 W
024	50	24 V a.c.	50 Hz	106 VA	35 VA
110	50	110 V a.c.	50 Hz	106 VA	35 VA
120	60	120 V a.c.	60 Hz	106 VA	35 VA
230	50	230 V a.c.	50 Hz	106 VA	35 VA

*3) c US coil only
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.

82180/82280

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

High flow rate

Suitable for vacuum up to max. 90%

Suitable for contaminated process fluid

Damped closing
(Valve closes against flow direction)

NPT-connection available:
change 82180 to 82190
change 82280 to 82290

Technical data

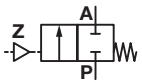
Medium:
Neutral gases and liquids
Pilot fluid:
Neutral gases max. +80°C (+176°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
3,5 ... 8 bar (50,7 ... 116 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)

Material:
Process fluid characteristics:
Body: Brass (CW617N)
Seat seal: PTFE
Internal parts: Brass, stainless steel
Spindle sealing: PTFE / FPM, self-adjustable
Pilot fluid characteristics:
Body: Stainless steel, aluminium
Bottom: WEMA-Kor, coated
Seat seals: NBR
Internal parts: Coated steel

Standard models

Symbol	Port size	Orifice (mm)	Actuator ø (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	70	4.8	0 ... 16	0 ... 232	1,4	8218200.0000.00000
	G3/4	20	70	10	0 ... 10	0 ... 145	1,5	8218300.0000.00000
	G1	25	70	14	0 ... 10	0 ... 145	1,8	8218400.0000.00000
	G1 1/4	32	70	23	0 ... 7	0 ... 101	2,4	8218500.0000.00000
	G1 1/2	40	70	30	0 ... 4,5	0 ... 65	2,7	8218600.0000.00000
	G2	50	70	37	0 ... 3	0 ... 43	3,9	8218700.0000.00000
	G1 1/4	32	125	27	0 ... 16	0 ... 232	5,3	8228500.0000.00000
	G1 1/2	40	125	37	0 ... 10	0 ... 145	5,5	8228600.0000.00000
	G2	50	125	53	0 ... 10	0 ... 145	7,7	8228700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)
*3) Without pilot valve

Notes
for 3/2-way pilot valve 84660/84680

Material	Body Aluminium
Pilot fluid temperature	max. +60°C
Pilot pressure	1 ... 10 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 84660/84680

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

82210

2/2-way valves – Pressure operated by external fluid

Port size: Flange PN 16

Orifice: DN 15 ... 100

High flow rate

Damped closing
(Valve closes against flow direction)

Suitable for contaminated process fluids

Technical data

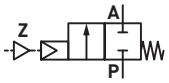
Medium:
For neutral gaseous and liquid fluids
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid
Mounting position:
Optional, preferably actuator vertical on top
Flow direction:
Determined

Port size:
DN 15, DN 20, DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100
Pilot connection:
G1/4
Operating pressure:
See table
Pilot pressure:
See table

Fluid temperature:
–10° ... +180°C (+14° ... +356°F)
Ambient temperature:
–10° ... +60°C (+14° ... +140°F)

Material:
Body: Ductile cast iron (EN-GJS-400-18-LT)
Seat seal: PTFE
Internal parts: 1.4571, 1.4568, 1.4305, brass

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Pilot pressure (bar)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model
	15	4,6	5,5 ... 10	0 ... 16	0 ... 232	3,2	8221200.0000.00000
	20	8	5,5 ... 10	0 ... 16	0 ... 232	4,1	8221300.0000.00000
	25	13	5,5 ... 10	0 ... 10	0 ... 145	4,8	8221400.0000.00000
	32	22	4 ... 8	0 ... 16	0 ... 232	10,7	8221500.0000.00000
	40	35	4 ... 8	0 ... 12	0 ... 174	11,1	8221600.0000.00000
	50	50	5,5 ... 8	0 ... 10	0 ... 145	14,6	8221700.0000.00000
	65	90	5,5 ... 8	0 ... 7	0 ... 101	20	8221800.0000.00000
	80	127	5,5 ... 8	0 ... 5	0 ... 72	24,4	8221900.0000.00000
	100	200	5,5 ... 8	0 ... 2,5	0 ... 36	31	8222000.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)

Notes
for 3/2-way pilot valve 84660/84680

Material	Body Aluminium
Pilot fluid temperature	max. +60°C
Pilot pressure	1 ... 10 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 84660/84680

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

82380/82480

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

For robust industry applications

Suitable for contaminated process fluids

Suitable for vacuum up to max. 90%

High flow rate

Damped closing
(Valve closes against flow direction)

NPT-connection available:
change 82380 to 82390
change 82480 to 82490

Stainless Steel

Technical data

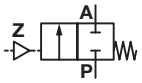
Medium:
Aggressive gases and liquids
Pilot fluid:
Neutral gases max. +80°C (+176°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
3,5 ... 8 bar (51 ... 116 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)

Material:
Process fluid characteristics:
Body: Stainless steel (1.4408)
Seat seal: PTFE
Internal parts: Stainless steel
Spindle sealing: PTFE / FPM, self-adjustable
Pilot fluid characteristics:
Body: Stainless steel, aluminium
Bottom: WEMA-Kor, coated
Seat seals: NBR
Internal parts: Steel, coated

Standard models

Symbol	Port size	Orifice (mm)	Actuator ø (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	70	4,8	0 ... 16	0 ... 232	1,3	8238200.0000.00000
	G3/4	20	70	10	0 ... 10	0 ... 145	1,4	8238300.0000.00000
	G1	25	70	14	0 ... 10	0 ... 145	1,7	8238400.0000.00000
	G1 1/4	32	70	23	0 ... 7	0 ... 101	2,4	8238500.0000.00000
	G1 1/2	40	70	30	0 ... 4,5	0 ... 65	2,6	8238600.0000.00000
	G2	50	70	37	0 ... 3	0 ... 43	3,8	8238700.0000.00000
	G1 1/4	32	125	27	0 ... 16	0 ... 232	5,1	8248500.0000.00000
	G1 1/2	40	125	37	0 ... 10	0 ... 145	5,5	8248600.0000.00000
	G2	50	125	53	0 ... 10	0 ... 145	7	8248700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)
*3) Without pilot valve

Notes
for 3/2-way pilot valve 84660/84680

Material	Body Aluminium
Pilot fluid temperature	max. +60°C
Pilot pressure	1 ... 10 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 84660/84680

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

82580

2/2-way valves with DVGW-approval – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

EU type examination certificate Product ID-No.: CE-0085AT0091
Valve class A, valve group 2

High function reliability

Short response time < 1 s

For robust industry applications

Qualification approval acc. to EN 161/EN 16678

Technical data

Medium:
Neutral burnable gases and other neutral gases
Pilot fluid:
Neutral gases max. +80°C (+176°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

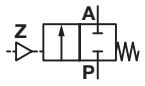
Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4
Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Pilot pressure:
5 ... 8 bar (72 ... 116 psi)

Fluid temperature:
–10 ... +60°C (+14 ... +140°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)
Material:
Process fluid characteristics:
Body: Brass (CW617N)
Seat seal: FPM
Body seal: FPM
Internal parts: Brass, stainless steel
Spindle sealing: PTFE / FPM, self-adjustable

Material:
Pilot fluid characteristics:
Body: Stainless steel (1.4408)
Bottom: Alu WEMA-Kor, coated
Seat seals: NBR
Internal parts: Steel, coated

For contaminated fluids insertion of a strainer is recommended.

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	4,8	0 ... 10	0 ... 145	1,4	8258200.0000.xxxxx
	G3/4	20	10	0 ... 10	0 ... 145	1,5	8258300.0000.xxxxx
	G1	25	14	0 ... 10	0 ... 145	1,8	8258400.0000.xxxxx
	G1 1/4	32	23	0 ... 10	0 ... 145	2,4	8258500.0000.xxxxx
	G1 1/2	40	30	0 ... 10	0 ... 145	2,7	8258600.0000.xxxxx
	G2	50	37	0 ... 7	0 ... 145	3,9	8258700.0000.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 400 mm^2/s (cSt)
*3) 0000 = without pilot valve
0247 = with pilot valve for V d.c.
0247 = with pilot valve for V a.c.

Notes for 3/2-way pilot vale

Material	Body Brass
Pilot fluid temperature	–10 ... +80°C (+14 ... 176°F)
Pilot pressure	5 ... 8 bar (72,5 ... 116 psi)
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data for 3/2-way pilot valve

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	Please contact a member of our sales team, to check the model number. (Fon +49 5731/791-0)

Further versions on request!

82710

2/2-way valves – Pressure operated by external fluid

Port size: G1/4 ... 1/2

Orifice: DN 8 ... 12

Suitable for contaminated process fluids

Optical position indicator is standard

Spindle seal with diaphragm

NPT-connection available: change 82710 to 82750

Technical data

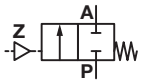
Medium:
Neutral gases and liquids
Pilot fluid:
Air, water, hydraulic oil
max. +90°C (+194°F)
Switching function:
Normally closed
Operation:
Pressure actuated
by external fluid

Mounting position:
Optional
Flow direction:
Optional
Port size:
G1/4, G3/8, G1/2
Pilot connection:
G1/8

Operating pressure:
–0,9 … 6 bar (–13 ... 87 bar)
Pilot pressure:
3 ... 8 bar (44 ... 116 bar)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +50°C (+14 ... +122°F)

Material:
Process fluid characteristics:
Body: Brass
Seat seal: Fabric reinforced NBR diaphragm
Pilot fluid characteristics:
Body: Brass, PPO (cover)
Seat seal: Fabric reinforced NBR diaphragm

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Pilot pressure *3)	Weight (kg)	Model
	G1/4	8	1,9	–0,9 ... 6	–13 ... 87	3 ... 8	0,75	8271000.0000.00000
	G3/8	10	2,4	–0,9 ... 6	–13 ... 87	3 ... 8	0,72	8271100.0000.00000
	G1/2	12	2,9	–0,9 ... 6	–13 ... 87	3 ... 8	0,7	8271200.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 80 mm^2/s (cSt)
*3) For vacuum inset min. pilot pressure 4 bar
Note: Stainless steel design for number 51, 51, 52

Note:

A 3/2 way solenoid pilot valve can be fitted at the pilot connection Z. These pilot valves are only for air, look at documentation N/en 5.8.640.

Required parts	Model
3/2-way solenoid valve DN 1,6	8466053.910x.xxxxx

83250

3/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

Can be used as Y-pattern/selector valve (pressure connected to A)

Suitable for steam

High flow rate

Technical data

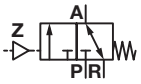
Medium:
Neutral gases and liquids
Pilot fluid:
Neutral gases max. +60°C (+140°F)
Switching function:
Normally closed from P to A, opened from P to A by pilot pressure
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
0 ... 10/16 bar (0 ... 145/232 psi)
Pilot pressure:
5.5 ... 7 bar (80 ... 102 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +80°C (+14 ... +176°F)

Material:
Process fluid characteristics:
Body: Gun metal
Seat seal: PTFE
Internal parts: Stainless steel, brass
Spindle sealing: PTFE / EPDM
Pilot fluid characteristics:
Body: Aluminium
Seat seals: NBR
Internal parts: Brass, stainless steel

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h) Way P>A	Way A>R	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model
	G1/2	15	5,8	3	0 ... 16	0 ... 232	1,6	8325200.0000.00000
	G3/4	20	11,5	7	0 ... 16	0 ... 232	1,8	8325300.0000.00000
	G1	25	18	12,5	0 ... 10	0 ... 145	2,1	8325400.0000.00000
	G1 1/4	32	25	15	0 ... 16	0 ... 232	6,6	8325500.0000.00000
	G1 1/2	40	39	27	0 ... 14	0 ... 203	6,8	8325600.0000.00000
	G2	50	64	43	0 ... 10	0 ... 145	7,9	8325700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 400 mm^2/s (cSt)

3/2-way pilot valve

An electrical solenoid valve can be attached at the pilot connection Z.

Required parts	Model
3/2-way solenoid valve	8466000.9101.xxxxx (d.c.)
	8466000.9101.xxxxx (a.c.)

Further versions on request!

83350

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

Any flow direction and mounting position

Special seal materials are required for use with oil and oleiferous media

Technical data

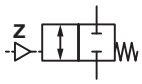
Medium:
Neutral gases and liquid fluids
Pilot fluid:
Air max. +40°C (+104°F)
Switching function:
Normally closed;
closed by spring force,
opened by pilot pressure
Operation:
Pressure actuated
by external fluid

Mounting position:
Optional
Flow direction:
Optional
Port size:
G1/2, G3/4, G1,
G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
0 ... 10 bar (0 ... 145 psi)
Pilot pressure:
5.5 ... 7 bar (80 ... 101 psi)
Fluid temperature:
–10 ... +80°C (+14 ... +176°F)
Ambient temperature:
–10 ... +55°C (+14 ... +131°F)

Material:
Process fluid characteristics:
Body: Grey cast iron
Seat seal: EPDM
Pilot fluid characteristics:
Body: Polymer material
Seat seals: NBR
Internal parts: Steel, coated

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight *3) (kg)	Model *3)
	G1/2	15	7	0 ... 10	0 ... 145	1,9	8335200.0000.00000
	G3/4	20	15	0 ... 10	0 ... 145	2	8335300.0000.00000
	G1	25	20	0 ... 10	0 ... 145	2,3	8335400.0000.00000
	G1 1/4	32	37	0 ... 10	0 ... 145	4,5	8335500.0000.00000
	G1 1/2	40	41	0 ... 10	0 ... 145	4,9	8335600.0000.00000
	G2	50	82	0 ... 10	0 ... 145	8,6	8335700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 400 mm^2/s (cSt)
*3) Without pilot valve

Notes for 3/2-way pilot valve 84660/84680

Material	Body aluminium
Pilot fluid temperature	max. +60°C (+140°F)
Pilot pressure	1 ... 10 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical data for 3/2-way pilot valve 84660/84680

Design	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

83380/83390

2/2-way valves – Pressure operated by external fluid

Port size: Flange PN 10

Orifice: DN 15 ... 150

Any flow direction and mounting position

Special seal materials are required for use with oil and oleiferous media

Technical data

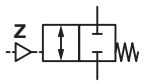
Medium:
Neutral gases and liquid fluids
Pilot fluid:
Air max. +40°C (+104°F)
Switching function:
Normally closed;
closed by spring force,
opened by pilot pressure
Operation:
Pressure actuated
by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
DN 15, DN 20, DN 25, DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN 150
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
5,5 ... 7 bar (80 ... 101 psi)
Fluid temperature:
–10 ... +80°C (+14 ... +176°F)
Ambient temperature:
–10 ... +55°C (+14 ... +131°F)

Material:
Process fluid characteristics:
Body: Grey cast iron
Seat seal: EPDM
Pilot fluid characteristics:
Body: Polymer material
Seat seals: NBR
Internal parts: Steel, coated

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight *3) (kg)	Model *3)
	15	7	0 ... 10	0 ... 145	3,1	8338200.0000.00000
	20	14	0 ... 10	0 ... 145	3,7	8338300.0000.00000
	25	20	0 ... 10	0 ... 145	4,2	8338400.0000.00000
	32	37	0 ... 10	0 ... 145	7,7	8338500.0000.00000
	40	40	0 ... 10	0 ... 145	8,2	8338600.0000.00000
	50	82	0 ... 10	0 ... 145	13,7	8338700.0000.00000
	65	102	0 ... 6	0 ... 87	26	8338800.0000.00000
	80	165	0 ... 8	0 ... 116	30	8338900.0000.00000
	100	241	0 ... 6	0 ... 87	48	8339000.0000.00000
	125	378	0 ... 8	0 ... 116	91	8339100.0000.00000
	150	496	0 ... 6	0 ... 87	104	8339200.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 400 mm^2/s (cSt)
*3) Without pilot valve

Notes for 3/2-way pilot valve 84660/84680

Material	Body Aluminium
Pilot fluid temperature	max. +60°C (+140°F)
Pilot pressure	1 ... 10 bar (14,5 ... 145 psi)
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data for 3/2-way pilot valve 84660/84680

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP 65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication en 5.8.640

An electrical solenoid valve can be attach at the pilot connection Z.

Required Parts DN 15 ... 50	Model
1 pcs. 3/2-way solenoid valve	8466000.9101.xxxxx Please insert voltage and frequency codes

Required Parts DN 65 ... 100	Model
1 pcs. 3/2-way solenoid valve for gases fluids	8020750.0246.xxxxx Please insert voltage and frequency codes
1 pcs. 3/2-way solenoid valve for liquid fluids	2401103.0801.xxxxx Please insert voltage and frequency codes

Further versions on request!

84180

2/2-way valves – Pressure operated by external fluid

Port size: G1/8 ... 1/2

Orifice: DN 2 ... 10

Actuator may be rotated 360°

Suitable for vacuum up to max. 90%

Suitable for contaminated process fluid

Compact miniature actuator ø 30 mm

Reversed flow direction optional

NPT-connection available: change 84180 to 84380

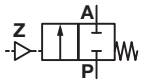
Technical data

Medium:
Neutral aggressive gases and liquids up to 600 mm²/s
Pilot fluid:
Neutral gases max. +60°C (+140°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/8, G1/4, G3/8, G1/2
Pilot connection:
M5

Operating pressure:
0 … 25 bar (0 ... 362 psi)
Pilot pressure:
4 … 10 bar (58 ... 145 psi)
Fluid temperature:
–10 ... +90°C (–14 ... +194°F)
Ambient temperature:
–10 ... +60°C (–14 ... +140°F)
Material:
Process fluid characteristics:
Body: Brass (CW617N)
Seat seals: NBR
Seat seal: PTFE
Internal parts: Stainless steel, Brass
Seal packing: PTFE / NBR self-adjustable
Material:
Pilot fluid characteristics:
Body: Brass
Seat seals: NBR
Seat seal: PTFE
Internal parts: Stainless steel / brass

Standard models

Symbol	Port size	Orifice (mm)	Pilot pressure (bar)	(psi)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model
	G1/8	2	4 ... 10	58 ... 145	0,12	0 ... 25	0 ... 362	0,35	8418800.0000.00000
	G1/4	4	4 ... 10	58 ... 145	0,35	0 ... 25	0 ... 362	0,33	8418020.0000.00000
	G3/8	6	4 ... 10	58 ... 145	0,6	0 ... 20	0 ... 290	0,32	8418140.0000.00000
	G1/2	10	4 ... 10	58 ... 145	1,8	0 ... 8	0 ... 116	0,47	8418260.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm²/s (cSt)

Clip angle M5 standard

84190

2/2-way valves – Pressure operated by external fluid

Port size: G1/8 ... 1/2

Orifice: DN 2 ... 10

Actuator may be rotated 360°

Suitable for vacuum up to max. 90%

Suitable for contaminated process fluid

Compact miniature actuator ø 30 mm

Reversed flow direction optional

NPT-connection available: change 84190 to 84390

Stainless Steel

Technical data

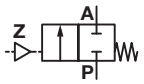
Medium:
Neutral aggressive gases and liquids up to 600 mm²/s
Pilot fluid:
Neutral gases max. +60°C (+140°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/8, G1/4, G3/8, G1/2
Pilot connection:
M5

Operating pressure:
0 … 25 bar (0 ... 362 psi)
Pilot pressure:
4 … 10 bar (58 ... 145 psi)
Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)
Material:
Process fluid characteristics:
Body: Stainless steel (1.4408)
Seat seals: NBR

Seat seal: PTFE
Internal parts: Stainless steel
Seal packing: PTFE / NBR self-adjustable
Material:
Pilot fluid characteristics:
Body: Stainless steel (1.4404)
Seat seals: NBR
Internal parts: Stainless steel / brass

Standard models

Symbol	Port size	Orifice (mm)	Pilot pressure (bar)	(psi)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	(psi)	Weight (kg)	Model
	G1/8	2	4 ... 10	58 ... 145	0,12	0 ... 25	0 ... 362	0,34	8419800.0000.00000
	G1/4	4	4 ... 10	58 ... 145	0,35	0 ... 25	0 ... 362	0,32	8419020.0000.00000
	G3/8	6	4 ... 10	58 ... 145	0,6	0 ... 20	0 ... 290	0,31	8419140.0000.00000
	G1/2	10	4 ... 10	58 ... 145	1,8	0 ... 8	0 ... 116	0,45	8419260.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm²/s (cSt)

Clip angle M5 standard

84500

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

Easy rebuilding into »normally open« or »double-acting« without tools

Optical position indicator is standard

Suitable for vacuum up to max. 90%

Suitable for contaminated flow fluid

Damped closing (Valve closes against flow direction)

Reversed flow direction optional

NPT-connection available: change 84500 to 84510

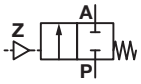
Technical data

Medium:
Neutral gases and liquids
Pilot fluid:
Neutral gases max. +60°C (+14°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
3,5 ... 10 bar (51 ... 145 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)
Material:
Process fluid characteristics:
Body: Brass (CW617N)
Seat seal: PTFE
Internal parts: Brass, stainless steel
Spindle sealing: PTFE / FPM, self-adjustable
Material:
Pilot fluid characteristics:
Body: Polyamid 66 with glass fibre 30%
Seat seals: NBR
Internal parts: Brass, stainless steel

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	4,8	0 ... 16 (25)	0 ... 232 (362)	1,4	8450200.0000.00000
	G3/4	20	10	0 ... 10 (16)	0 ... 145 (232)	1,5	8450300.0000.00000
	G1	25	14	0 ... 10	0 ... 145	1,8	8450400.0000.00000
	G1 1/4	32	23	0 ... 7	0 ... 101	2,4	8450500.0000.00000
	G1 1/2	40	30	0 ... 4.5	0 ... 65	2,7	8450600.0000.00000
	G2	50	37	0 ... 3	0 ... 43	3,9	8450700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)
*3) Without pilot valve

Ex-Note:
For hazardous areas, e. g. Zone 1/2 or 21/22, the kit 1264287 is required.
It contains an additional sign, a silencer as dust shield and a conformity explanation.
The maximum fluid temperature is reduced to +85°C (+185°F).

84500

2/2-way valves – Pressure operated by external fluid

Notes
for 3/2-way pilot valve 84660/84680

Material	Body Aluminium
Pilot fluid temperature	max. +60°C
Pilot pressure	1 ... 10 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 84660/84680

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

Notes
for 3/2-way pilot vale 97100 hole pattern NAMUR

Material	Body Aluminium elox
Pilot fluid temperature	–10 ... +50°C (+14 ... +122°F)
Pilot pressure	2 ... 8 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 97100 hole pattern NAMUR

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.4.372

Mounting accessories (NAMUR)

Interface plate NAMUR hole pattern for retrofit
(Part-Number 1256566) consist of:
1x NAMUR-interface plate
2x Adapter screw
2x O-ring

84520

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 2

Orifice: DN 15 ... 50

Easy rebuilding into »normally open« or »double-acting« without tools

Optical position indicator is standard

Damped closing (Valve closes against flow direction)

Suitable for contaminated flow fluid

Suitable for vacuum up to max. 90%

NPT-connection available: change 84520 to 84530

Stainless Steel

Technical data

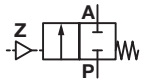
Medium:
Aggressive gases and liquids
Pilot fluid:
Neutral gases max. +60°C (+140°C)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1, G1 1/4, G1 1/2, G2
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
3,5 ... 10 bar (51 ...145 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)
Material:
Process fluid characteristics:
Body: Stainless steel (1.4581)
Seat seal: PTFE
Internal parts: Stainless steel

Spindle sealing: PTFE / FPM, self-adjustable
Material:
Pilot fluid characteristics:
Body: Polyamid 66 with glass fibre 30%
Seat seals: NBR
Internal parts: Brass, stainless steel, 1.8159, 1.1200

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	4,8	0 ... 16 (25)	0 ... 232 (362)	1,4	8452200.0000.00000
	G3/4	20	10	0 ... 10 (16)	0 ... 145 (232)	1,5	8452300.0000.00000
	G1	25	14	0 ... 10	0 ... 145	1,8	8452400.0000.00000
	G1 1/4	32	23	0 ... 7	0 ... 101	2,4	8452500.0000.00000
	G1 1/2	40	30	0 ... 4,5	0 ... 65	2,7	8452600.0000.00000
	G2	50	37	0 ... 3	0 ... 43	3,9	8452700.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)
*3) Without pilot valve

84520

2/2-way valves – Pressure operated by external fluid

Notes
for 3/2-way pilot valve 84660/84680

Material	Body Aluminium
Pilot fluid temperature	max. +60°C
Pilot pressure	1 ... 10 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 84660/84680

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

Notes
for 3/2-way pilot vale 97100 hole pattern NAMUR

Material	Body Aluminium elox
Pilot fluid temperature	–10 ... +50°C (+14 ... +122°F)
Pilot pressure	2 ... 8 bar
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical Data
for 3/2-way pilot valve 97100 hole pattern NAMUR

Design acc. to	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.4.372

Mounting accessories (NAMUR)

Interface plate NAMUR hole pattern for retrofit
(Part-Number 1256566) consist of:
1x NAMUR-interface plate
2x Adapter screw, 2x O-ring

84720

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 1

Orifice: DN 15 ... 25

Suitable for vacuum up to max. 90%

Suitable for contaminated flow fluid

Optical position indicator is standard

Damped closing
(Valve closes against flow direction)

Reversed flow direction optional

NPT-connection available:
change 84720 to 84730

Technical data

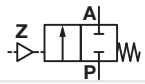
Medium:
Neutral gases and liquids
Pilot fluid:
Neutral gases max. +60°C (+140°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
3.5 ... 10 bar (50 ... 145 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +60°C (+32 ... +140°F)

Material:
Process fluid characteristics:
Body: Brass (CW617N)
Seat seal: PTFE
Internal parts: Brass, stainless steel
Spindle sealing: PTFE / FPM, self-adjustable
Pilot fluid characteristics:
Body: Polyamid 66 with glass fibre 30%
Seat seals: NBR
Internal parts: Brass, stainless steel

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	4,8	0 ... 16	0 ... 232	1,3	8472200.0000.00000
	G3/4	20	10	0 ... 8	0 ... 116	1,4	8472300.0000.00000
	G1	25	14	0 ... 5	0 ... 72	1,7	8472400.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)
*3) Without pilot valve

Notes for 3/2-way pilot valve 84660/84680

Material	Body aluminium
Pilot fluid temperature	max. +60°C (+140°F)
Pilot pressure	1 ... 10 bar (14.5 ... 145 psi)
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Notes for 3/2-way pilot vale 97100 hole pattern NAMUR

Material	Body aluminium elox
Pilot fluid temperature	–10 ... +50°C (+14 ... +122°F)
Pilot pressure	2 ... 8 bar (29 ... 116 psi)
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical data for 3/2-way pilot valve 84660/84680

Design	acc. to DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

Electrical data for 3/2-way pilot valve 97100 hole pattern NAMUR

Design	acc. to DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.4.372

Mounting accessories (NAMUR)

Interface plate NAMUR hole pattern for retrofit (Part-Number 1256566) consist of:
1x NAMUR-interface plate
2x Adapter screw, 2x O-ring

84740

2/2-way valves – Pressure operated by external fluid

Port size: G1/2 ... 1

Orifice: DN 15 ... 25

Suitable for vacuum up to max. 90%

Suitable for contaminated flow fluid

Optical position indicator is standard

Damped closing
(Valve closes against flow direction)

Reversed flow direction optional

NPT-connection available:
change 84740 to 84750

Stainless Steel

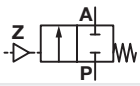
Technical data

Medium:
Aggressive gases and liquids
Pilot fluid:
Neutral gases max. +60°C (+140°F)
Switching function:
Normally closed
Operation:
Pressure actuated by external fluid

Mounting position:
Optional
Flow direction:
Determined
Port size:
G1/2, G3/4, G1
Pilot connection:
G1/4

Operating pressure:
See table
Pilot pressure:
3,5 ... 10 bar (50 ... 145 psi)
Fluid temperature:
–10 ... +180°C (+14 ... +356°F)
Ambient temperature:
–10 ... +60°C (+32 ... +140°F)
Material:
Process fluid characteristics:
Body: Stainless steel
Seat seal: PTFE
Internal parts: Stainless steel
Spindle sealing: PTFE / FPM, self-adjustable
Material:
Pilot fluid characteristics:
Body: Polyamid 66 with glass fibre 30%
Seat seals: NBR
Internal parts: Brass, stainless steel

Standard models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure *2) (bar)	(psi)	Weight (kg) *3)	Model *3)
	G1/2	15	4,8	0 ... 16	0 ... 232	1,3	8474200.0000.00000
	G3/4	20	10	0 ... 8	0 ... 116	1,4	8474300.0000.00000
	G1	25	14	0 ... 5	0 ... 72	1,7	8474400.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2
*2) For gases and liquid fluids up to 600 mm^2/s (cSt)
*3) Without pilot valve

Notes for 3/2-way pilot valve 84660/84680

Material	Body aluminium
Pilot fluid temperature	max. +60°C (+140°F)
Pilot pressure	1 ... 10 bar (14.5 ... 145 psi)
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Notes for 3/2-way pilot vale 97100 hole pattern NAMUR

Material	Body aluminium elox
Pilot fluid temperature	–10 ... +50°C (+14 ... +122°F)
Pilot pressure	2 ... 8 bar (29 ... 116 psi)
Standard voltages	24 V d.c., 24 V a.c., 230 V a.c.

Electrical data for 3/2-way pilot valve 84660/84680

Design	acc. to DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.8.640

Further versions on request!

Electrical data for 3/2-way pilot valve 97100 hole pattern NAMUR

Design	acc. to DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)
Technical data	See publication N/en 5.4.372

Mounting accessories (NAMUR)

Interface plate NAMUR hole pattern for retrofit (Part-Number 1256566) consist of:
1x NAMUR-interface plate
2x Adapter screw, 2x O-ring

84660/84680

3/2-way valves – Indirectly solenoid operated

Orifice: DN 1.6 and 3

Noiseless exhaust

Low power consumption

Complete with connector and gasket

Solenoid interchangeable without tools (*Click-on*®)

Control valve for angle seat valves

NPT-connection available:
change 84660 to 84670
change 84680 to 84690

Click-on®

Technical data

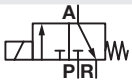
Medium:
Filtered, lubricated resp. non-lubricated air or neutral liquid fluids
Switching function:
Normally closed
Operation:
Indirectly solenoid actuated

Mounting position:
Optional, preferably solenoid vertical on top
Flow direction:
Determined
Port size:
DN 1.6, DN 3

Operating pressure:
1 … 10 bar (14 ... 145 psi)
Fluid temperature:
–10 ... +60°C (+14 ... +140°F)
Ambient temperature:
–10 ... +60°C (+14 ... +140°F)

Material:
Body: Aluminium
Seat seal: TPU
Internal parts: Stainless steel, PPS

Standard models

Symbol	Orifice (mm)	Port size			Flow *2) (l/min)	Operating pressure (bar)	Switching time (ms) *3)		Weight (kg)	Model Solenoid in V d.c.	Model Solenoid in V a.c.
		Inter-nal P	Exter-nal R	A			On	Off			
	1.6	G1/4	*1)	G1/4	1,2	1 ... 10	8,5	30,4	0,47	8466000.9101.xxxxx	8466000.9101.xxxxx
	3	G1/4	*1)	G1/4	3,3	1 ... 10	15	81,9	0,45	8468000.9151.xxxxx	8468000.9151.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Noiseless exhaust
*2) Cv-value (US) ≈ kv value x 1,2
*3) At 6 bar acc. to DIN VDI 3290 with solenoid in d.c.

Standard solenoid systems

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
Voltage and Frequency Solenoid 9101 *1)					
024	00	24 V d.c.	-	8 W	8 W
024	50	24 V a.c.	50 Hz	15 VA	12 VA
110	50	110 V a.c.	50 Hz	15 VA	12 VA
120	60	120 V a.c.	60 Hz	15 VA	12 VA
230	50	230 V a.c.	50 Hz	15 VA	12 VA
Voltage and Frequency Solenoid 9151 *1)					
024	00	24 V d.c.	-	18 W	18 W
024	50	24 V a.c.	50 Hz	45 VA	35 VA
110	50	110 V a.c.	50 Hz	45 VA	35 VA
120	60	120 V a.c.	60 Hz	45 VA	35 VA
230	50	230 V a.c.	50 Hz	45 VA	35 VA

*4) c SA us coil only; ambient temperature max. +50°C
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 protection class	Solenoid	Standard voltages
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T125°C Db	IP66	6106	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	6120	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	9116	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	9176	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.

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IMI Precision Engineering

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IMI BUSCHJOST

4

Pulse valves and controls for dust collector systems

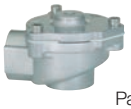
PRODUCTS

Fast Find Guide
2/2-way valves

82870
G1/4
remote pilot operated,
pneumatic controllers

Page 91

82900
DN 20 ... 80
remote pilot operated,
aluminium



Page 92

82960
DN 20 ... 80
solenoid pilot operated,
aluminium

Page 93

83300
DN 40 ... 80
remote pilot operated
(single stage), stainless steel

Page 95

83320
DN 40 ... 80
solenoid pilot operated (single
stage), stainless steel

Page 96

83640
DN 20 ... 80
remote pilot operated,
compression fitting

Page 98

83670
DN 20 ... 80
solenoid pilot operated,
compression fitting

Page 99

83920
DN 20 ... 80
solenoid pilot operated,
with blow tube

Page 100

83930
DN 40 ... 80
remote pilot operated
(single stage), with blow tube

Page 101

82870

Pneumatic controllers – Pneumatically operated

Port size: Internal thread

P = G1⁄8, Z = G1⁄4

Compact design

Ideal for use in hazardous zones

Fully pneumatic controller, suitable for robust operation

Switching time and interval adjustable

Technical data

Fluid (control section):
Filtered air – compressed air supply via conditioning unit with a 5 ... 10 µm filter, without oiler (for unpurified compressed air we recommend an additional 50 ... 75 µm primary filter)
Reproducibility:
±5%

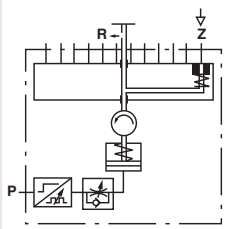
Mounting position:
Optional
Interval:
Adjustable 2 ... 200 s, set on about 10 s in factory
Pulse time:
Adjustable 30 ... 1.000 ms, approx ca. 200 ms

Temperature range:
0 ... +70°C (+32 ... +158°F).
–25 ... +70°C (–13 ... +158°F) for dry air
Ambient temperature:
–20 ... +40°C (–4 ... +104°F)
Protection class:
II 2GD c IIB T85°C
I M2c

Material:
Body: Grey cast iron

Standard models

Wiper arm (valve venting) operated by spring return in the cylinder

Symbol	Number of control ports *1)	Control section pressure port P	Operating pressure control section (bar)	Operating pressure control section (psi)	Operating section control port Z	Operating pressure operating section (bar)	Operating pressure operating section (psi)	Weight (kg)	Model
	10	G1/8	2 ... 8	29 ... 116	G1/4	0,5 ... 8	7,25 ... 116	7,8	8287054.0000.00000
	12	G1/8	2 ... 8	29 ... 116	G1/4	0,5 ... 8	7,25 ... 116	7,8	8287154.0000.00000
	14	G1/8	2 ... 8	29 ... 116	G1/4	0,5 ... 8	7,25 ... 116	7,8	8287254.0000.00000
	16	G1/8	2 ... 8	29 ... 116	G1/4	0,5 ... 8	7,25 ... 116	10,9	8287354.0000.00000
	20	G1/8	2 ... 8	29 ... 116	G1/4	0,5 ... 8	7,25 ... 116	10,9	8287554.0000.00000

*1) Control ports not required have to be sealed with a plug.

ATEX category	Protection class
II2GD	Ⓔx II 2 GD c IIB T85°C Ⓔx I M2c

82900

2/2-way valves – Remote pilot operated

Port size: G3/4 ... 3

Orifice: DN 20 ... 80

Clear, compact design

One-piece diaphragm

High flow rate

Easy to maintain

NPT-connection available: change 82900 to 82910

Technical data

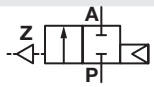
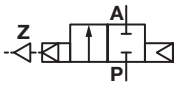
Medium:
Air
Switching function:
Normally closed
Operation:
Remote pilot operated
Flow direction:
Determined

Mounting position:
Optional
Port size:
G3/4, G1, G1 1/2,
G2, G2 1/2, G3
Operating pressure:
0,4 ... 7/8 bar
(5,8 ... 101/116 psi)

Pilot connection:
G1/8
Dusty gas temperature:
–20 ... +85°C (–4 ... +185°F)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°F)
Ambient temperature:
–20 ... +85°C (–4 ... +185°F)

Material:
Body: Aluminium
Seat seal: TPE

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	Operating pressure (psi)	Weight (kg)	Model
	G3/4	20	95	18	0,4 ... 8	5,8 ... 101	0,32	8290300.0000.00000
	G1	25	95	22	0,4 ... 8	5,8 ... 101	0,29	8290400.0000.00000
	G1 1/2	40	135	59	0,4 ... 8	5,8 ... 101	0,97	8290600.0000.00000
	G2	50	170	80	0,4 ... 8	5,8 ... 101	1,79	8290700.0000.00000
	G2 1/2	65	170	93	0,4 ... 8	5,8 ... 101	2,07	8290800.0000.00000
	G3	80	239,5	144	0,4 ... 7	5,8 ... 101	3,7	8290900.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2

82960

2/2-way valves – Solenoid pilot operated

Port size: G3/4 ... 3

Orifice: DN 20 ... 80

Clear, compact design

One-piece diaphragm

High flow rate

All internal components captive

Solenoid interchangeable without tools (*Twist-on*®)

Integrated silencer

Twist-on®

NPT connection avialable:
change 82960 to 82970

Also available for solenoid version low temperature up to –40°C (–40°F)!

Technical data

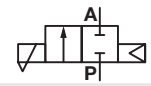
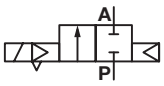
Medium:
Air
Switching function:
Normally closed
Operation:
Solenoid pilot operated
Flow direction:
Determined

Mounting position:
Optional, preferably solenoid vertical on top
Port size:
G3/4, G1, G1 1/2, G2, G2 1/2, G3
Operating pressure:
0,4 ... 7/8 bar (5,8 ... 101/116 psi)

Dusty gas temperature:
–20 ... +85°C (–4 ... +185°F)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°F)
Ambient temperature:
–20 ... +85°C (–4 ... +185°F)

Material:
Body: Aluminium
Seat seal: TPE
Internal parts: TPU

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G3/4	20	95	18	0,4 ... 8	5,8 ... 101	0,5	8296300.8171.xxxxx
	G1	25	95	22	0,4 ... 8	5,8 ... 101	0,47	8296400.8171.xxxxx
	G1 1/2	40	135	59	0,4 ... 8	5,8 ... 101	1,18	8296600.8171.xxxxx
	G2	50	169	80	0,4 ... 8	5,8 ... 101	2,02	8296700.8171.xxxxx
	G2 1/2	65	169	93	0,4 ... 8	5,8 ... 101	2,3	8296800.8171.xxxxx
	G3	80	239,5	172	0,4 ... 7	5,8 ... 101	2,93	8296900.8171.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2

82960

2/2-way valves – Solenoid pilot operated

Standard solenoid systems

Voltage and Frequency Solenoid 8171 *2)

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Holding
024	00	24 V d.c.	-	12 W	12 W
024	50	24 V a.c.	50 Hz	23 VA	16 VA
110	50	110 V a.c.	50 Hz	23 VA	16 VA
120	60	120 V a.c.	60 Hz	23 VA	16 VA
230	50	230 V a.c.	50 Hz	23 VA	16 VA

*2) c SA us coil only

Additional solenoid systems

Option	Solenoid	Standard voltages
Solenoid version for low temperature –40°C (–40°F)	9151	24 V d.c., 110 V a.c., 230 V a.c.
Pulse Solenoid	8821	24 V d.c., 110 V a.c., 230 V a.c.
Solenoid version for low temperature –40°C (–40°F)	8001	24 V d.c., 110 V a.c., 230 V a.c.

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 protection class	Solenoid	Standard voltages
II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db up to DN 25: Operating pressure 0,5 ... 16 bar (7,25 ... 232 psi) from DN 32: Operating pressure 0,5 ... 10 bar (7,25 ... 145 psi)	IP66	468x	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	8176	24 V d.c., 110 V a.c., 230 V a.c
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T135°C Db	IP66	6176	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.

83300

2/2-way valves – Remote pilot operated

Port size: G3/4 ... 1 1/2

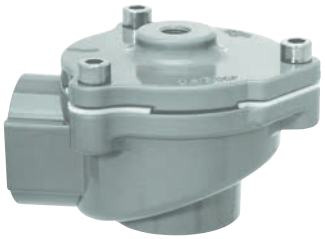
Orifice: DN 20 ... 40

Clear, compact design

One-piece diaphragm

High flow rate

NPT-connection avialable: change 83300 to 83310



Stainless Steel

Technical data

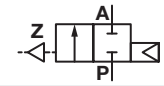
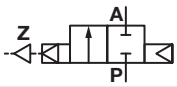
Medium:
Air
Switching function:
Normally closed
Operation:
Remote pilot operated
Flow direction:
Determined

Mounting position:
Optional
Port size:
G3/4. G1. G1 1/2
Operating pressure:
0,4 ... 8 bar (5,8 ... 116 psi)
Pilot connection:
G1/8

Dusty gas temperature:
–40 ... +85°C (–40 ... +185°F)
Coil gas temperature:
–20 ... +85°C (–4 ... +185°F)
Ambient temperature:
–40 ... +85°C (–4 ... +185°F)

Material:
Body: Stainless steel (1.4408)
Seat seal: TPE

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model
	G3/4	20	95	18	0,4 ... 8	5,8 .. 116	0,7	8330300.0000.00000
	G1	25	95	22	0,4 ... 8	5,8 .. 116	0,8	8330400.0000.00000
	G1 1/2	40	135	59	0,4 ... 8	5,8 .. 116	2,9	8330600.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2

83320

2/2-way valves – Solenoid pilot operated

Port size: G3/4 ... 1 1/2

Orifice: DN 20 ... 40

Clear, compact design

One-piece diaphragm

High flow rate

All internal components captive

Solenoid interchangeable without tools (*Twist-on*®)

Integrated silencer

***Twist-on*®**

Stainless Steel

Technical data

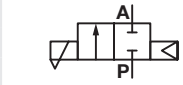
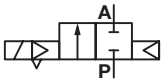
Medium:
Air
Switching function:
Normally closed
Operation:
Solenoid pilot operated
Flow direction:
Determined

Mounting position:
Optional, preferably solenoid vertical on top
Port size:
G3/4, G1, G1 1/2
Operating pressure:
0,4 ... 8 bar (5,8 ... 116 psi)

Dusty gas temperature:
–20 ... +85°C (–4 ... +185°F)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°F)
Ambient temperature:
–20 ... +85°C (–4 ... +185°F)

Material:
Body: Stainless steel 1.4408
Seat seal: TPE
Internal parts: TPU

Standard models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	G3/4	20	95	18	0,4 ... 8	5,8 ... 116	0,92	8332300.8171.xxxxx
	G1	25	95	22	0,4 ... 8	5,8 ... 116	1,01	8332400.8171.xxxxx
	G1 1/2	40	135	59	0,4 ... 8	5,8 ... 116	3,11	8332600.8171.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2

83320

2/2-way valves – Solenoid pilot operated

Standard solenoid systems

Voltage and Frequency Solenoid 8171 *2)

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	12 W	12 W
024	50	24 V a.c.	50 Hz	23 VA	16 VA
110	50	110 V a.c.	50 Hz	23 VA	16 VA
120	60	120 V a.c.	60 Hz	23 VA	16 VA
230	50	230 V a.c.	50 Hz	23 VA	16 VA

*2) c US coil only

Additional solenoid systems

Option	Solenoid	Standard voltages
Solenoid version for low temperature –40°C (–40°F)	9151	24 V d.c., 110 V a.c., 230 V a.c.

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 protection class	Solenoid	Standard voltages
II 2G II 2D	Ex d mb IIC T4/T5 Gb Ex tb IIIC T130°C/T95°C Db up to DN 25: Operating pressure 0,5 ... 16 bar (7,25 ... 232 psi) from DN 32: Operating pressure 0,5 ... 10 bar (7,25 ... 145 psi)	IP66	468x	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	8176	24 V d.c., 110 V a.c., 230 V a.c
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T135°C Db	IP66	6176	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.

83640

2/2-way valves – Remote pilot operated

Port size: Compression Fitting

Orifice: DN 25 ... 40

Simple mounting

Clear, compact design

One-piece diaphragm

High flow rate

Technical data

Medium:
Air
Switching function:
Normally closed
Operation:
Remote pilot operated
Flow direction:
Determined

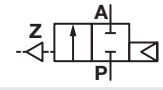
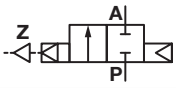
Mounting position:
Optional
Port size:
DN 25, DN 40
Pilot connection:
G1/8

Operating pressure:
0,4 ... 8 bar (5,8 ... 116 psi)
Dusty gas temperature:
–20 ... +85°C (–4 ... +185°C)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°C)
Ambient temperature:
–20 ... +85°C (–4 ... +185°C)

Material:
Body: Aluminium
Seat seal: TPE

Note:
Control via separate pilot valve or pilot controller.

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model
	25	22	0,4 ... 8	5,8 ... 116	0,7	8364400.0000.00000
	40	59	0,4 ... 8	5,8 ... 116	1,85	8364600.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2

83670

2/2-way valves – Solenoid pilot operated

Port size: Compression Fitting

Orifice: DN 25 ... 40

High flow rate

Clear, compact design

One-piece diaphragm

Simple mounting

Solenoid interchangeable without tools (*Twist-on*®)

Twist-on®

Technical data

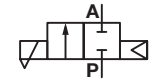
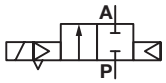
Medium:
Air
Switching function:
Normally closed
Operation:
Solenoid pilot operated
Flow direction:
Determined

Mounting position:
Optional,
preferably solenoid vertical on top
Port size:
DN 25, DN 40
Operating pressure:
0,4 ... 8 bar (5,8 ... 116 psi)

Dusty gas temperature:
–20 ... +85°C (–4 ... +185°F)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°F)
Ambient temperature:
–20 ... +85°C (–4 ... +185°F)

Material:
Body: Aluminium
Seat seal: TPE
Internal parts: TPU

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	25	22	0,4 ... 8	5,8 ... 116	0,9	8367400.8171.xxxxx
	40	59	0,4 ... 8	5,8 ... 116	2,1	8367600.8171.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2

Standard solenoid systems

Voltage and Frequency Solenoid 8171 *2)					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	12 W	12 W
024	50	24 V a.c.	50 Hz	23 VA	16 VA
110	50	110 V a.c.	50 Hz	23 VA	16 VA
120	60	120 V a.c.	60 Hz	23 VA	16 VA
230	50	230 V a.c.	50 Hz	23 VA	16 VA

*2) c SP us coil only

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.
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 eb mb IIC T6...T4 Gb Ex tb IIIC T130°C Db	IP66	42xx	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2G II 2D	Ex d mb IIC T6/T5/T4 Gb Ex e mb IIC T6/T5/T4 Gb Ex tb IIIC T130°C/T95°C/T80°C Db	IP66	46xx	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	8176	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T135°C Db	IP66	6176	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.

83920

2/2-way valves – Solenoid pilot operated

Port size: For tank mounting with blow-tube

Orifice: DN 25 ... 65

Clear, compact design

One-pice diaphragm

High flow rate

All internal components captive

Solenoid interchangeable without tools (*Twist-on*®)

Integrated silencer

Twist-on®

Technical data

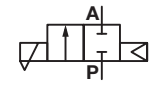
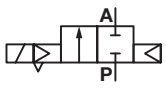
Medium:
Neutral gases
Type:
Diaphragm valve requiring differential pressure
Switching function:
Normally closed
Operation:
Solenoid pilot operated valve for cleaning dust filters

Flow direction:
Determined
Mounting position:
Optional, preferably solenoid vertical on top
Port size:
DN 25, DN 40, DN 50, DN 65
Operating pressure:
0,4 ... 8 bar (5,8 ... 116 psi)
Differential pressure:
0,4 bar (5,8 psi) required

Dusty gas temperature:
–20 ... +85°C (–4 ... +185°F)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°F)
Ambient temperature:
–20 ... +85°C (–4 ... +185°F)

Material:
Body: Aluminium
Seat seal: TPE
Internal parts: TPU
Blow-tube: Aluminium
Adapter: Aluminium

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model Solenoid in V d.c./a.c.
	25	28	0,4 ... 8	5,8 ... 116	0,47	8392400.8171.xxxxx
	40	74	0,4 ... 8	5,8 ... 116	1,1	8392600.8171.xxxxx
	50	104	0,4 ... 8	5,8 ... 116	1,6	8392700.8171.xxxxx
	65	121	0,4 ... 8	5,8 ... 116	2	8392800.8171.xxxxx

xxxxx Please insert voltage and frequency codes
*1) Cv-value (US) ≈ kv value x 1,2

Standard solenoid systems

Voltage and Frequency Solenoid 8171 *1)					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	12 W	12 W
024	50	24 V a.c.	50 Hz	23 VA	16 VA
110	50	110 V a.c.	50 Hz	23 VA	16 VA
120	60	120 V a.c.	60 Hz	23 VA	16 VA
230	50	230 V a.c.	50 Hz	23 VA	16 VA

*1) c SP us coil only

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 protection class	Solenoid	Standard voltages
II 2G II 2D	Ex eb mb IIC T6...T4 Gb Ex tb IIIC T130°C Db	IP66	42xx	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2G II 2D	Ex d mb IIC T6/T5/T4 Gb Ex e mb IIC T6/T5/T4 Gb Ex tb IIIC T130°C/T95°C/T80°C Db	IP66	46xx	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	8176	24 V d.c., 110 V a.c., 230 V a.c.
II 2G II 2D	Ex eb mb IIC T4 Gb Ex mb tb IIIB T135°C Db	IP66	6176	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.

83930

2/2-way valves – Remote pilot operated

Port size: For tank mounting with blow tube

Orifice: DN 25 ... 65

One-pice diaphragm

Clear, compact design

High flow rate

Technical data

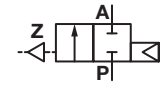
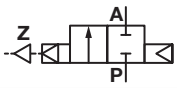
Medium:
Neutral gases
Switching function:
Normally closed
Operation:
Remote pilot operated valve for cleaning dust filters
Flow direction:
Determined

Mounting position:
Optional
Port size:
DN 25, DN 40, DN 50, DN 65
Pilot connection:
G1/8
Operating pressure:
0,4 ... 8 bar (5,8 ... 116 psi)

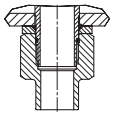
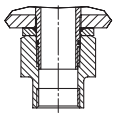
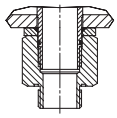
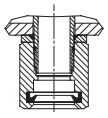
Differential pressure:
0,4 bar required
Dusty gas temperature:
–20 ... +85°C (–4 ... +185°C)
Coil gas temperature:
–40 ... +85°C (–40 ... +185°C)
Ambient temperature:
–20 ... +85°C (–4 ... +185°C)

Material:
Body: Aluminium
Seat seal: TPE
Blow tube: Aluminium
Adapter: Aluminium

Standard models

Symbol	Orifice (mm)	Flow kv value *1) (m^3/h)	Operating pressure (bar)	(psi)	Weight (kg)	Model
	25	28	0,4 ... 8	5,8 ... 116	0,26	8393400.0000.00000
	40	74	0,4 ... 8	5,8 ... 116	0,9	8393600.0000.00000
	50	104	0,4 ... 8	5,8 ... 116	1,6	8393700.0000.00000
	65	121	0,4 ... 8	5,8 ... 116	2	8393800.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2

Outside dim. of tank/profile (mm)	Model		plus	Connection kit			
	DN 25 	DN 40 		Hose connector 	Female thread 	Male thread 	Push-in sleeve 
70	8393400. 0000. 00000	—	+	1263648	1263641	1263634	1263628
100				1263649	1263642	1263635	1263629
120				1263652	1263643	1263636	1263630
140				1263653	1263644	1263637	1263609
160				1263655	1263645	1263638	1263631
180				1263656	1263646	1263639	1263632
200				1263657	1263647	1263640	1263633
70	—	8393600. 0000. 00000	+	1263682	1263674	1263666	1263658
100				1263683	1263675	1263667	1263659
120				1263684	1263676	1263668	1263660
140				1263685	1263677	1263669	1263661
160				1263686	1263678	1263670	1263662
180				1263687	1263679	1263671	1263663
200				1263688	1263680	1263672	1263664

Kit not required for use without connection pipe. Please then just give Order-No. for DN 25 or 40 connection
DN 50 and DN 65 – tube and connection on request

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IMI BUSCHJOST

5

Proportional valves

PRODUCTS

Fast Find Guide
2/2-way valves

82880
DN 15 ... 20
Motor operated

Page 05-03

82880

2/2-way valves – Motor operated

Port size: G1/2 ... 1

Low power consumption

Wear-resistant ceramic rotary disc seal

Valve remains in set position when deenergized

Suitable for contaminated fluids

Technical data

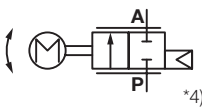
Medium:
Neutral gases and liquids
Operation:
Electric motor operated
Mounting position:
Preferably with drive vertical on top ± 60°
Flow direction:
Determined

Port size:
DN 15, DN 20
Operating pressure:
See table

Fluid temperature:
–10 ... +90°C (+14 ... +194°F)
Ambient temperature:
–10 ... +40°C (+14 ... +104°F)

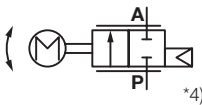
Material:
Body: Brass (CW617N)
Seat seal: NBR
Internal parts: Oxyd-ceramic

Standard models

Symbol	Port size	Nominal Diameter	Operating pressure		Flow kv value *2)	Weight	Drawing *1)	Typ *3)
		(mm)	(bar)	(psi)	(m^3/h)	(kg)	No.	
 *4)	G1/2	15	–0,9 ... 10	–13 ... 145	1,1	0,9	8/11	8288200.96xx.xxxxx
	G3/4	20	–0,9 ... 6	–13 ... 87	4,4	1,6	9/12	8288300.96xx.xxxxx
	G1	20	–0,9 ... 6	–13 ... 87	4,4	1,6	9/12	8288400.96xx.xxxxx

*1) Technical data and ordering information see following pages
*2) Cv-value (US) ≈ kv value x 1,2
*3) See motor drives for motor Cat no and power supply
*4) Throttle setting with overlap - Not gastight

Stepping motor 9668/9678

Symbol	Port size	Nominal Diameter	Operating pressure *5)		Flow kv value *2)	Weight	Drawing *1)	Typ *3)
		(mm)	(bar)	(psi)	(m^3/h)	(kg)	No.	Motor in V d.c.
 *4)	G1/2	15	–0,9 ... 16	–13 ... 232	1,1	0,9	8/10/11	8288200.9668.02400
	G3/4	20	–0,9 ... 16	–13 ... 232	4,4	1,6	9/10/12	8288300.9678.02400
	G1	20	–0,9 ... 16	–13 ... 232	4,4	1,6	9/10/12	8288400.9678.02400

* 5) If operating pressure> 10 bar longer duration possible, avoid long downtimes.

Motor

Motor type	Standard voltage Tolerance ± 10%	Frequency	Power consumption	Protection class	Torque	Operating time through *6) 90° ◁	Wiring diagram	Typ *3)
	(V)	(Hz)	(VA/W)		(Ncm)	(s)	No.	Model-Motor-No.
D.c. motor	24	-	1.5	IP54	120	10 ... 14	1	9615.02400
Synchronous motor	24	50	3	IP54	120	10	3	9636.02450
Stepping motor	24	*7)	5	IP54	120	10	4	9638.02400
Stepping motor	24	-	3,3 max. 9.	IP54	220 *8)	10 ... 11	2	9678.02400
Stepping motor	24	0	3,3 max. 9,1	IP54	120 *9)	5	2	9668.02400

*6) Operating time depends on operating pressure
*7) Nominal stepping frequency 200 Hz
*8) Short duration max. 500 Ncm
*9) Short duration max. 300 Ncm

82880

2/2-way valves – Motor operated

Further technical data for DC motors

Model 9615, 9624
Motor with feedback potentiometer for servo-amplifier

Feedback potentiometer	
Resistor	1 kΩ
Resistor tolerance	± 20 %
Max wiper current	1 mA
Power rating	0,1 W

Only part of the potentiometer's range is used.

Further technical data for DC motors

Model 9638
Operation of the drive is possible via a stepper motor control electronics only.

Motor	bipolar
Power/phase	0.4 A constant current
Stride frequency	200 Hz
Resistance per phase	9 Ω
Inductance per phase	12 mH
Steps for opening angle of 90°	2028

Further technical data for the stepper motor drive with integrated position regulator

Model 9668, 9678
Drive with positioner electronics and analogue interface

Power supply residual ripple	Max. 1.2 Vss
Set point input	0 ... 10 V S1, S2: OFF-OFF Input resistance: approx. 200 kOhm 0 ... 20 mA S1, S2: ON-OFF Input resistance: approx. 500 Ohm 4 ... 20 mA S1, S2: ON-ON Input resistance: approx. 500 Ohm
Position feedback output	0 ... 20 mA S2: OFF Maximum load resistance 500 Ohm 4 ... 20 mA S2: ON Maximum load resistance 500 Ohm
Ripple of the input signal	Max. 40 m Vss with voltage signal Max. 0,08 m Ass with current signal
Material	Enclosure: polybutylene terephthalate (PBT) Enclosure cover: polycarbonate Output shaft: 1.4104 Output shaft seal: NBR Cover seal: CR
Required by the customer Plug connection	Cable socket, M12, A-coding 5-pin

If the load torque exceeds a peak value of 300 Ncm for 9668 or 500 Ncm for 9678 even for a short period, the electronics will switch off the drive and thus protect it from overloading. This error status is signalled by the illumination of a red ALARM LED on the circuit board. A brief interruption to the supply voltage confirms the error.

Notes on choice of motor

Buschjost offers various valve designs and a choice of DC, synchronous and stepper motors catering for the wide range of applications of the motorised valve and the customer's needs.

The mechanical contacts of DC motors make them unsuitable for control functions involving a large number of small adjustments. The AC synchronous motors last longer thanks to their absence of contacts. A stepper motor has to be used where frequent and/or fine adjustment is required. The following table shows the characteristics of the components used.

Motor design		**Motor life (running life) (Count 90° cycle)**	**Recommended pulse duration**	**Recommended interval without current during reversal in direction of rotation**
		up to	**(ms)**	**(ms)**
d.c. motor	9615	90.000	> 100	600
Synchronous motor	9636	180.000	> 100	40
Stepping motor	9638	180.000	Stepping frequency 200 Hz	-
Stepping motor	9668	250.000	-	-
Stepping motor	9678	90.000	-	-

Further drive models and electronic controllers available on request
Flow regulation kit available on request

82880

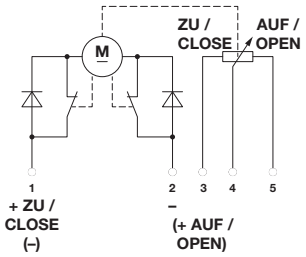
2/2-way valves – Motor operated

Wiring diagrams

d.c. motor	9615
Wiring	
+ to 1 – to 2	Direction of operation CLOSE
+ to 2 – to 1	Direction of operation OPEN

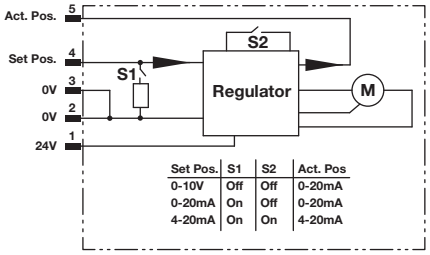
Cutoff at limits provided by microswitches
Resistance between 3 and 4:
minimum value – valve closed
maximum value – valve opened

1



Stepping motor	9668, 9678
Pin 1	Power supply 24 Volt
Pin 2	Power supply 0 Volt
Pin 3	Reference potential for the nominal value input and the position feedback output
Pin 4	Nominal value input 0 – 10 V / 0 (4) – 20 mA
Pin 5	Position feedback output 0 (4) – 20 mA

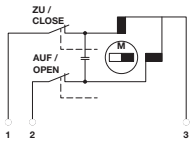
2



Synchronous motor	9636
Wiring	
2 to 1 and 3 2 unused	Direction of operation CLOSE
2 to 2 and 3 1 unused	Direction of operation OPEN

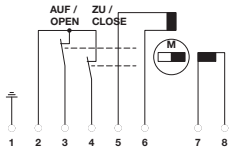
Cutoff at limits provided by microswitches

3



Stepping motor	9638
Wiring	
1	Motor frame (possibly for screening)
2	Reference potential for contacts
3	Limit feedback signal (OPEN) contact opened at limit
4	Limit feedback signal (CLOSED) contact opened at limit
5 and 6	Connections for phase 1
7 and 8	Connections for phase 2

4

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6

High pressure control

PRODUCTS

Fast Find Guide
Pressure regulator

C31
DN 25
Dome loaded pressure regulator

Page 111

RS5
DN 20 ... 25
Spring loaded pressure reducer

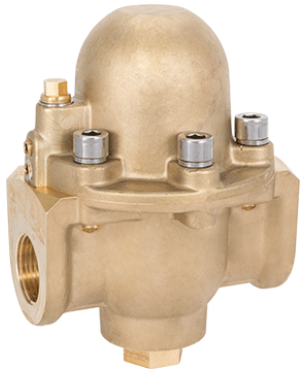
Page 112

C31

Dome loaded pressure regulator

Port size: G1

Orifice: DN 25



Technical data

The C31 is a balanced valve dome loaded pressure regulator and provides a flow of process fluid at controlled pressure. It is a heavy duty construction, ideally suited for arduous conditions and environments. The outlet pressure is set by adjusting the pressure in the dome. A flexible diaphragm separates the gas in the dome from the process fluid. The valve in the regulator is balanced type. It is a fail safe to closed position. The dome must be charged with air or an inert gas such as nitrogen. The dome can be charged from an external source - this is known as „Mono Loading“. The outlet pressure is substantially unaffected by fl ow rate or changes in the inlet pressure.

Applications:
This pressure regulator for medium pressure range can be used on a wide outlet pressure range without changing components. For very low pressures a special low pressure version is available offering high accuracy also for this range.
Features:
Balanced valve
Valve size: 12,7 mm
Kv-value: 2,9 (m^3/h)
Gauge ports at inlet and outlet
Medium:
For all gases and liquids suitable with brass, especially for O2 and CO2
Inlet Pressures:
Max. 100 bar (1450 psi)
Low pressure version max. 25 bar (max. 362 psi)

Leakage:
Standard:
>10-3 mbar/l/sec.
On request up to 10-6 mbar/l/sec. is available with special test
Weight:
4,8 kg
Ambient/Media temperature:
–30 ... +130°C (–34 ... +54°F)
Note:
If used with CO2 or O2 only suitable lubricants may be used (e.g. Oxigeno Ex).

Materials:
Body: Brass
Valve pad: NBR / FPM / EPDM
Diapgrahm: NBR / FPM / EPDM
O-ring: NBR / FPM / EPDM
Options:
Additional thread in dome center,
Version with screwed-in flanges PN 40 or PN 63/PN 100

RS5

Spring loaded pressure reducer

Port size:
3/4" ISO G/NPT
1" NPT, DN 20 ... 25 flanged

Option for non-relieving or relieving

Technical data

The RS5 series spring loaded pressure regulator with diaphragm assembly offer good accuracy and repeatability and safe shut-off at zero flow due to soft seated valve.

Applications:
- Gas mixing
- Gas distribution
- Chemical processing
- Manufacturing processes
- Purging & charging systems
- Air compressors

Medium:
For gaseous and liquid fluids
Maximum inlet pressure:
Max. 100 bar (1450 psi)
Leakage:
Bubble tight (standard, typically 10^{-3} atm.cm^3/sec^{-1})
Helium leak tested to 10^{-6} atm.cm^3/sec^{-1} (on request)
Weight:
4,5 kg

Ambient/
Media temperature:
NBR:
–10 ... +80°C (+14 ... +202°F)
FPM:
–20 ... +150°C (–4 ... +302°F)
EPDM:
–30 ... +130°C (–22 ... +239°F)

Material:
Body: Stainless steel
Valve pad: PCTFE
Diaphragm: NBR
O-ring: NBR
Options:
- Differential pressure version
- Differential pressure version with external sensing
- Gauge ports

Note

For further information, scan this QR code or visit
www.imi-precision.com

1 DIRECT ACTING SOLENOID VALVES

2 INDIRECT ACTING SOLENOID VALVES

3 PRESSURE OPERATED VALVES BY EXTERNAL FLUID

4 PULSE VALVES AND CONTROLS FOR DUST COLLECTOR SYSTEMS

5 PROPORTIONAL VALVES

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