ENGINEERING
TOMORROW

Fluid control, pressure and temperature monitoring and control

Core Industrial Products
for Distributors and Wholesalers

Easy

selection of future proof products.

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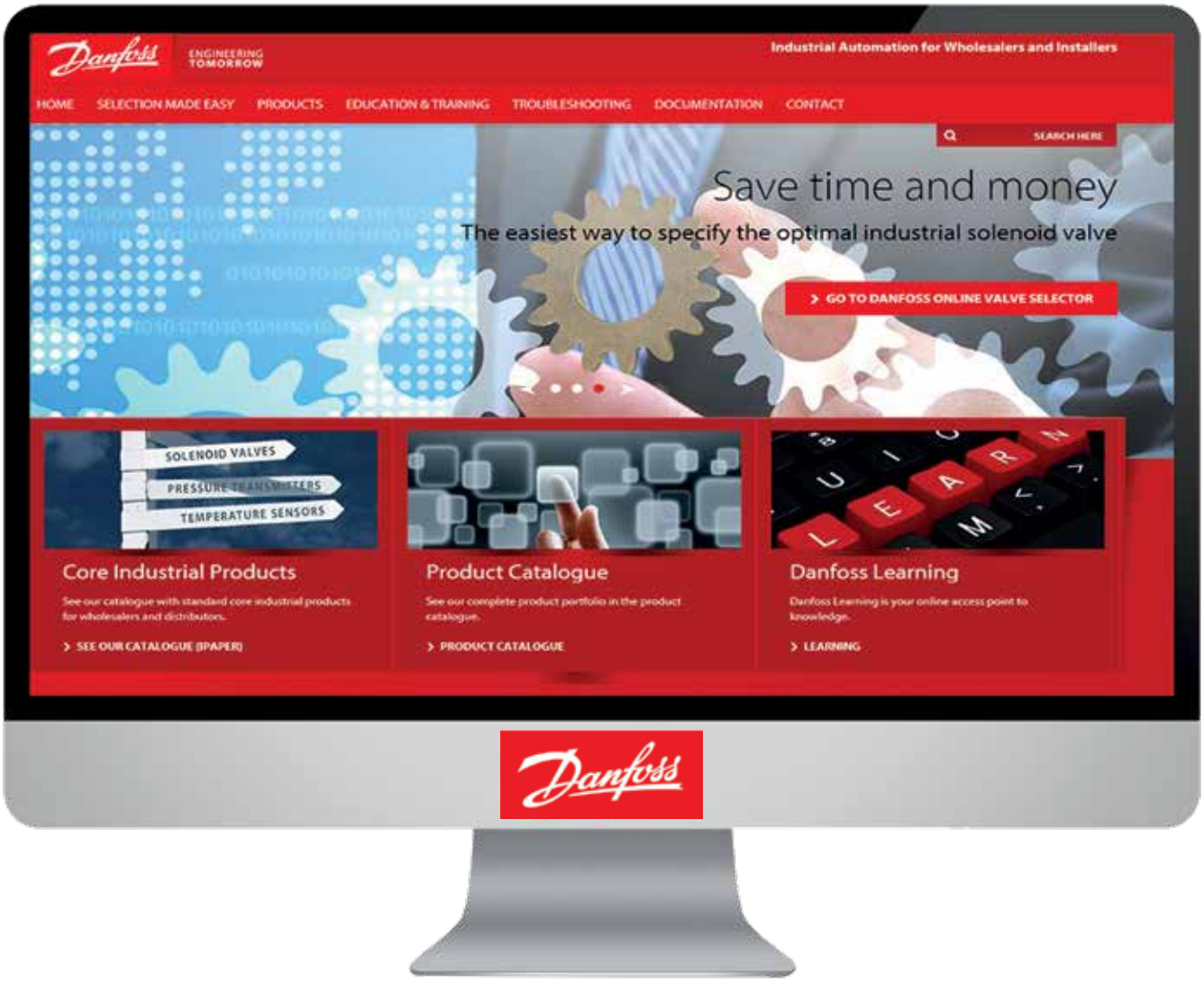

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Troubleshooting

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Core Industrial Products

See our catalogue with standard core industrial products for wholesalers and distributors.

Product Catalogue

See our complete product portfolio in the product catalogue.

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Documentation

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contents

Content page

Danfoss Industrial Automation
core products

Fluid controls

Solenoid valves: Direct, servo, assisted lift and proportional operated valves for water, air, oil and steam application. Differential pressure from 0 to 40 bar and connections from G 1/8 to G 2" flange. Thermostatic valves for cooling applications and solar systems. Regulation ranges from 0 to 90 °C and connections from G 3/8 to G 1" flange.
Externally operated valves for demanding industrial applications. Differential pressure from 0 to 16 bar and connections from G 3/8 to G 2".

Direct operated valve for closed and drain systems

Assisted lift operated valve for closed and drain systems

Servo operated valve for open systems

Valve for steam applications

Thermostatic valve

Externally operated valve for demanding applications

Pressure transmitters

Pressure transmitters for industrial and marine applications. Design in cartridge, block and box with measuring range up to 600 bar. Output signal 4 – 20 mA, 0 – 10 V, ratiometric etc. with an accuracy from 0,1% FS. Versions with marine and ATEX approvals.

Pressure transmitter in cartridge design for industrial applications

Pressure transmitter with flush diaphragm for demanding industrial applications

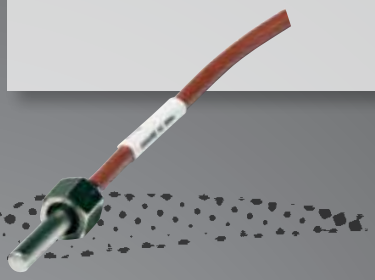
Pressure transmitter in block design for industrial and marine applications

Pressure transmitter in box design for marine applications

Temperature sensors

Temperature transmitters for industrial and marine applications with measuring range from -50 to 800 °C. Sensor type Pt100, Pt1000, PTC, NTC, integrated transmitter etc in different designs for example DIN 43650, DIN B, cabel etc. Versions with marine and ATEX approvals.

Temperature transmitter in a cable version



Flexible temperature transmitter with different sensing elements and electrical connections

Temperature transmitter equipped with a DIN 43650 for industrial applications

Temperature transmitter equipped with a DIN B (B-head) for industrial and marine applications

Switches

Pressure and temperature switches (on-off) for industrial and marine applications from -60 to 300 °C or -1 to 400 bar.
Degree of enclosure: IP30 – IP67 in different designs, versions with marine, TÜV and ATEX approvals.

Pressure switch for industrial applications (enclosure degree from IP30 to IP55)

Pressure switch for boiler control

Temperature switch for industrial applications (enclosure degree from IP54 to IP66)

Pressure switch for industrial and marine applications in block design

Temperature switch for marine applications (enclosure degree IP67)

The main industries for these products are

Marine · Mobile hydraulics · Air compressors · Wind turbines · Industrial hydraulics · Heating equipment · Industrial water

Fluid control

With Danfoss valves you gain high quality, balanced with cost efficiency, making them the first choice in a many industrial applications.
Our valves are virtually maintenance free and designed to provide reliable service, year after year.

Three ways of efficiently controlling fluids:

Solenoid valves are an easy way to control and regulate fluids and gasses. Our programme consists of direct-operated, servo-operated and assisted lift versions. Solenoid valves are the right choice when you have media with limited dirt content and small to high flow volume.
Our solenoid valve programme consists of two ranges:

- The compact A range
  – offering small physical dimensions for control of flow where space is limited.
- The high performance B range
  – a sturdy and universal broad programme for control of flow in industrial applications and within heating and sanitary systems.

Externally operated valves are designed for specialised and demanding applications. These robust valves are the right choice for media with high dirt content, high viscosity, high ambient and media temperatures and large flow volumes. They are also suitable for humid environments, explosion hazard environments and for applications with low or unknown pressure conditions.

Thermostatic self-acting valves are a simple and reliable way to control the temperature of cooling equipment. They do not require electricity and they are insensitive to dirt and media pressure, making them a highly robust choice.

Example:
Heating systems

An EV250B solenoid valve, a great all-round valve, is the preferred choice for many manufacturers in applications with low differential pressures, such as heating systems. Its design not only allows for a wide pressure range, it also reduces noise and increases the lifetime of the system though water hammer dampening.

Other applications

- Water booster pumps
- Membrane filtration units
- Fire-fighting pumping stations and equipment
- Biomass boilers
- Irrigation system
- Ultra and high purity water
- Catering water
- Desalination of saline water
- Water leak protection
- Car wash
- Dentist equipment
- Wind turbines
- Steam boilers
- Steam generators
- Laundry system
- Burners
- Cleaning units
- Dishwashing
- Degassing system
- Sterilizers and autoclaves
- Lubricated screw compressors
- Oil free compressors
- Drainage
- Pool control
- Solar
- Showers
- Saunas
- Sprinklers
- Petrol dispensers
- Heavy duty application

Fluid controls

in this catalogue

	Type	EV250B 2/2-way	EV251B 2/2 way	EV220B 6-22 2/2-way	EV220B 15-50 2/2-way	EV220B 65-100 2/2-way	EV220A 2/2-way	EV224B 2/2-way
Media	Water	✓	✓	✓	✓	✓	✓	
	Air and neutral gasses	✓	✓	✓	✓	✓	✓	✓
	Oil	✓	✓	✓	✓	✓	✓	
	Steam	✓			✓			
Characteristics	Dirty media	✓	✓	✓	✓	✓		✓
	Long lifetime	✓	✓	✓	✓	✓		✓
	Soft closing (Low waterhammer)	✓	✓	✓	✓	✓	✓	✓
	System suitability	Closed and drain	Closed, drain and open	Open	Open	Open	Open	Open
	Connection	G ³/₈ – G 1	G ³/₈ – G 1	G ¼ – G 1	G ½ – G 2	Flange connections: 2.5, 3 and 4"	G ¼ – G 2	G ½ – G 1
	Function	NC or NO	NC	NC or NO	NC or NO	NC	NC or NO	NC or NO
	Orifice size [mm]	10 – 22	10 – 22	6 – 22	15 – 50	65 – 100	6 – 50	15 – 25
	Pressure range [bar]	0 – 10	0 – 10	0.1 – 30	0.3 – 16	0.25 – 10	0.2 – 16	0.3 – 40
	Medium temperature max.	140 °C	90 °C	100 °C	140 °C	90 °C	100 °C	60 °C
	K_v value [m³/h]	2.5 – 7	1.5 – 5	0.7 – 6	4 – 40	50 – 130	1 – 32	4 – 11
	Special features							High pressure
Material	Approvals*	WRAS		WRAS and DNV	GL, WRAS and DNV		WRAS	GL
	Valve body	DZR Brass	Brass	Brass or DZR brass	Brass, DZR Brass or stainless steel	Cast iron	Brass	Brass
	Internal	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
	Seal material	EPDM or FKM	NBR	EPDM or FKM	EPDM, FKM or NBR	EPDM or NBR	EPDM, NBR or FKM	NBR

EV225B 2/2-way	EV260B 2-way proportional	EV210B 2/2-way	EV310B 3/2-way	EV210A 2/2-way	EV310A 3/2-way	AVTA 2-way proportional	AV210
	✓	✓	✓	✓	✓	✓	✓
		✓	✓	✓	✓	✓	✓
		✓	✓	✓	✓	✓	✓
✓		✓					✓
	✓	✓	✓			✓	✓
✓	✓	✓	✓			✓	✓
	✓						
→ Open	Closed and open	Closed, drain and open	Closed and drain	Closed, drain and open	Closed and drain	Closed	Closed, drain and open
G ¼ – G 1	G ¼ – G ¾	G ⅛ – G1	G ⅛ – G ⅜, flange 32 mm	G ⅛ – G ¼, flange 32 mm	G ⅛ – G ¼, flange 32 mm	G ⅜ – G 1	G ⅜ – G 2
NC	NC	NC or NO	NC or NO	NC or NO	NC or NO	Thermostatic	NC or NO
6 – 25	6 – 20	1.5 – 25	1.5 – 3.5	1.2 – 3.5	1.2 – 2	10 – 25	15 – 50
0.2 – 10	0.5 – 10	0 – 30	0 – 20	0 – 30	0 – 20	0 –10	0 – 16
185 °C	80 °C	140 °C	100 °C	120 °C	100 °C	130 °C	180 °C
0.3 – 6	0.8 – 5	0.08 – 8	0.08 – 0.4	0.04 – 0.26	0.04 – 0.08	1.4 – 5.5	4.5 – 74
		Isolating diaphragm	Manual override option		Manual override option		Options: Manual override position indicator
		GL, WRAS and DNV	GL		WRAS		
DZR Brass	Brass	Brass or stainless steel	Brass or stainless steel	Brass	Brass or stainless steel	Brass or stainless steel	Gun metal or stainless steel
Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Brass or stainless steel	Stainless steel
PTFE and AFLAS	FKM and PTFE	EPDM or FKM	FKM	EPDM or FKM	FKM	EPDM or NBR	PTFE

Media list for Danfoss

Medium	Temperature/ Concentration			
	[°C]	[%]	Brass	DZR-brass Bronze RG5
Ammonia			-	-
Brine (Potassium formate; without oxygen, closed systems)	-20		✓	✓✓
Butane	20		✓✓	✓✓
Chloric acid HCl			-	-
Citric acid			-	-
CO2			✓✓	✓✓
Compressed air			✓✓	✓✓
De-ionized water	80		-	✓✓
Fresh Water	100		✓✓	✓✓
Glycol	80	100	✓	✓✓
Methane	20		✓✓	✓✓
NaOH	50	40	-	✓
Natural Gas (dry)	40		✓✓	✓✓
Nitrogen (Air)			✓✓	✓✓
Oil; Animal			✓✓	✓✓
Oil; Mineral			✓✓	✓✓
Oil; Vegetable			✓✓	✓✓
Oxygen (all materials should be degreased before use)			✓	✓✓
Ozone			✓	✓✓
Propane	20		✓✓	✓✓
Salt water (sea water)	20	2	-	✓
Steam	185		-	✓✓
Sulphuric acid H2SO4			-	-
Water electrical conduction < 20 µ-siemens	60		-	✓
Water electrical conduction > 500 µ-siemens	60		✓✓	✓✓
Water electrical conduction between 20 and 500 µ-siemens	60		✓	✓✓

	✓✓	=	Suitable
	✓	=	Suitable in most cases
	-	=	Not recommendable

Industrial Valves

Body material			Seal material			
Stainless Steel AISI 316 / EN 1.44xx	Stainless Steel AISI 430 / EN 1.41xx armature/spring	Cast Iron	EPDM	NBR	FKM	PTFE
✓✓	✓✓	-	✓✓	✓	-	✓✓
✓✓	✓✓	✓	✓✓	✓	-	✓✓
✓✓	✓✓	✓✓	-	✓✓	✓✓	✓✓
-	-	-	-	-	✓	✓✓
✓	-	-	✓✓	✓✓	✓✓	✓✓
✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓
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✓✓	✓✓	✓✓	-	✓✓	✓✓	✓✓
✓✓	✓✓	-	✓✓	-	-	✓✓
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✓✓	✓✓	-	✓✓	✓✓	✓	✓✓

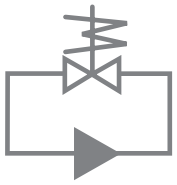
Use the icons to find the right valve

Use the icons to help select the right solenoid valve for your application. Displayed on the top right corner of the following pages, the icons symbolize values and applications for each solenoid valve type.

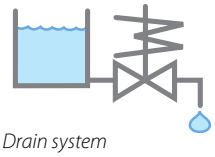
Application: Select the right valve based on the differential pressure of the system.

Closed or drain systems

In a closed-circuit system, there is not significant pressure difference between the inlet and outlet. For example, central heating systems are closed-circuit systems – as are tank systems where the drain is located at a low level in the tank.



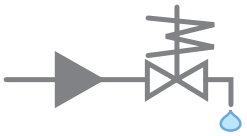
Closed system



Drain system

Open systems

In an open-circuit system, the inlet side of the valve will have a relatively high pressure compared to the outlet side. Tap water and sprinkler systems are examples of applications with open systems.

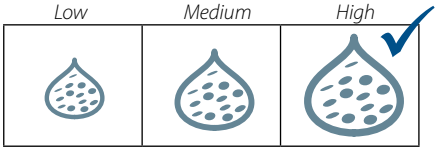


Open system

Value: the following icons indicate values for the different solenoid valves – select according to your needs.

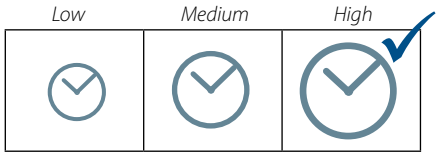
Insensitive to dirt

A dirt-resistant valve is fitted with a coaxial, self-cleaning filter which protects the vale pilot. Valves controlled by a B-series coil have a square armature which allows dirt particles to pass through easily.



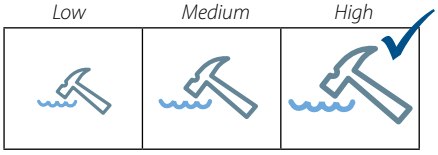
Long lifetime and high performance

A specially shaped and strengthened diaphragm reduces stress on the rubber, and prolongs valve lifetime. Coil lifetime is also extended, depending on the shape and IP class.



Effective water hammer damping / soft closing

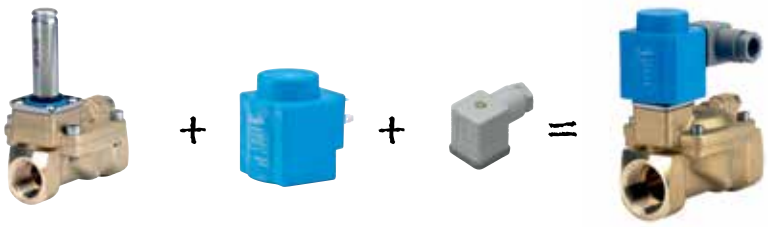
The valve design protects system damage from water hammer through soft closing. To minimize water hammer, some valves have an optimized diaphragm assembly and equalizing orifice. By changing the equalizing orifice on the EV220B 15 - EV220B 50, you can also increase the closing time.



Results are based on comparisons between Danfoss valves only.

Complete valve or valve and coil separately

A complete solenoid valve consists of: Valve + coil + plug.
The valves can be delivered as separate parts – valve housing, coil and plug or as complete valves.



Valve housing *Coil* *Plug* *Complete valve*

Selection Made Easy

Need help selecting the right component for your application? With only a few clicks, Danfoss product selectors can help you find the right product for, standard applications.

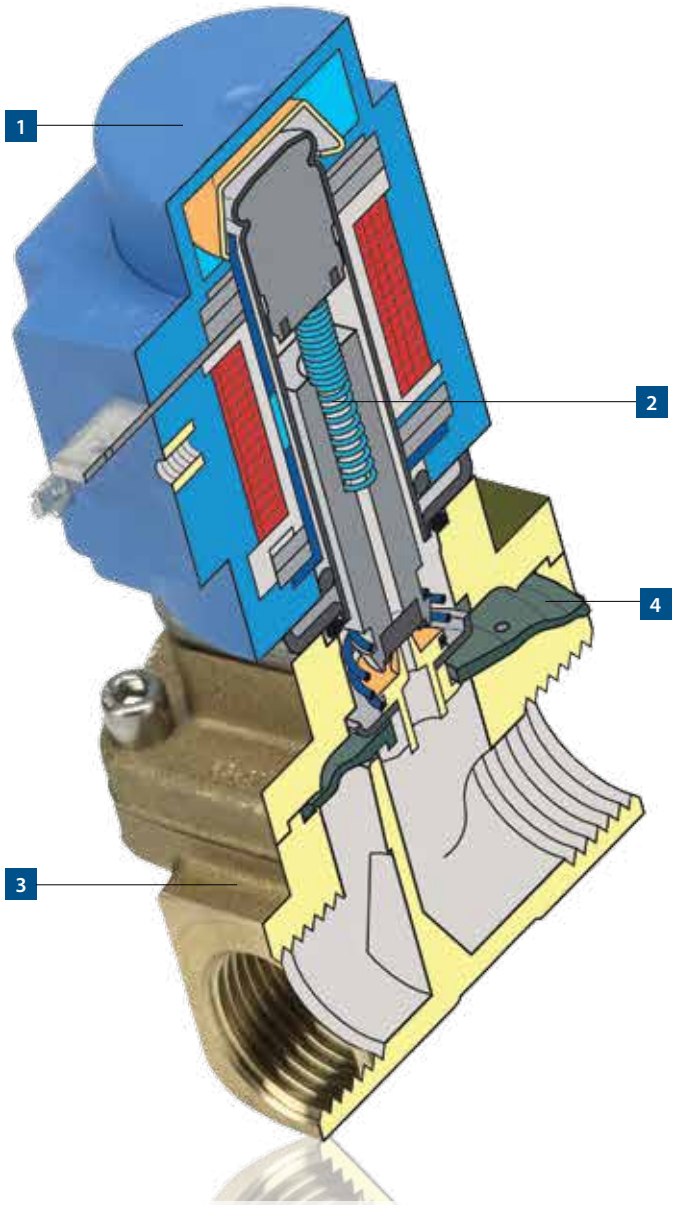
Developed to help wholesalers, retailers, installers and endusers pinpoint their solenoid valve needs, the web-based tool makes product selection quick and easy.

All it takes is an internet connection to access the solenoid valve selector tool from your desk or laptop, tablet or smartphone.

To discover just how easy the product selectors are to use, please visit:

http://valveselector.danfoss.com

To visit by mobile, scan the QR code:



The EV250B for low and unspecified pressure conditions

Designed for closed circuits, the EV250B 2/2-way assisted-lift solenoid valve range damps water hammer at low differential pressure and moderate flow rates.

1 Clip-on coil systems
Suitable for clip-on coil systems, the EV250B ensures faultless mounting so that both assembly and dismantling is simple and safe. And when needed, a hermetic seal against moisture penetration gives a tighter seal and a safer and more stable fastening.

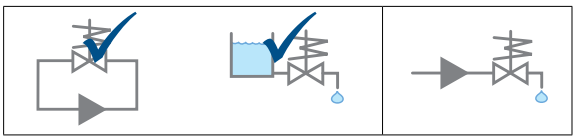
2 High lift at zero or low differential pressures
High armature lift secures a high opening degree from zero differential pressure.

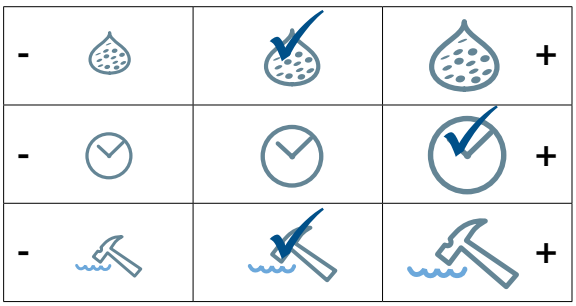
3 For aggressive low-pressure steam
Made from dezincification resistant brass (DZR), the EV250B valve body is suitable for aggressive technical water and steam.

4 Good external tightness even at high differential pressures
The thick valve cover and moulded diaphragm with built-in o-ring secures an excellent seal between valve cover and body even at high pressure.

Extra features
The EV250B is available with a range of water approvals, including the British WRAS approval. It is also available with hum-free coils, American NPT threads and UL approval, IP67 protection, EEx coils, and DNV ship approval.

EV250B assisted lift 2/2-way solenoid valves

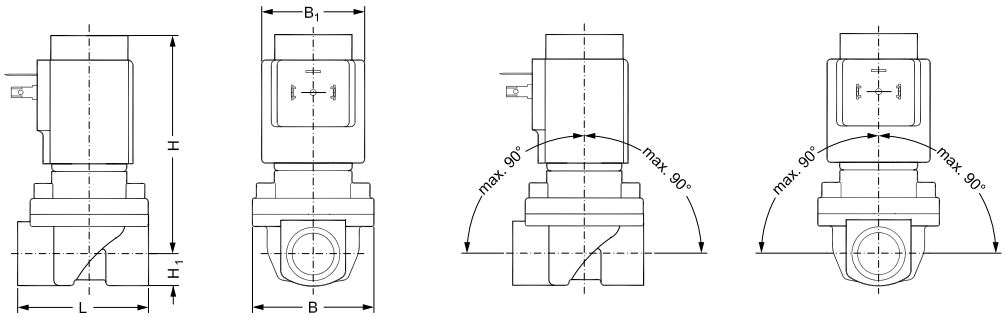




EV250B with assisted lift can operate from zero and up to 10 bar differential pressure.
This 2/2-way valve program is especially to use in closed circuits with low differential pressure, but demanding moderate flow rates. Valve body in dezincification resistant brass for ensuring a long life even in connection with aggressive steam media.
EV250B is compatible with the broad Danfoss coil program with enclosures from IP00 up to IP67. Medium temperatures up to 140 °C (low pressure steam).

- 2/2-way
- Assisted lift
- DN 10 - DN 22
- DZR brass valve body
- NC (normally closed) or NO (normally open)
- From zero differential pressure
- Especially suitable for closed circuits and for emptying tanks
- Available with WRAS, VA and UL approvals
- ISO or NPT thread connections
- Nominal pressure PN 10
- Wetted parts: brass, stainless steel, copper, EPDM or FKM rubber

Dimensions, weight and mounting angle:



Connection	L [mm]	B [mm]	B_1 [mm] Coil type BB/BE	H_1 [mm]	H [mm]	Weight with BB coil [kg]
G 3/8	58	52.3	46	12.5	91	0.84
G ½	58	52.3	46	12.5	91	0.84
G ¾	90.5	58	46	18	92	1.04
G 1	90	58	46	22.3	96.3	1.34

EV250B assisted lift valve with coil and plug IP65, DZR brass, NC

Type	Connection	K_v [m^3/h]	Media Water 120 °C	Seal material	Differential pressure [bar]	Coil BB [V] AC 50 Hz	Coil BB [V] DC	Code number
EV250B 10	G ⅜	2.5	✓	EPDM	0 – 6*		24	**032U157102**
EV250B 10	G ⅜	2.5	✓	EPDM	0 – 10	24		**032U157116**
EV250B 10	G ⅜	2.5	✓	EPDM	0 –10	230		**032U157131**
EV250B 12	G ½	4	✓	EPDM	0 – 6*		24	**032U158002**
EV250B 12	G ½	4	✓	EPDM	0 – 10	24		**032U158016**
EV250B 12	G ½	4	✓	EPDM	0 – 10	230		**032U158031**
EV250B 18	G ¾	6	✓	EPDM	0 – 6*		24	**032U161402**
EV250B 18	G ¾	6	✓	EPDM	0 – 10	24		**032U161416**
EV250B 18	G ¾	6	✓	EPDM	0 – 10	230		**032U161431**
EV250B 22	G 1	7	✓	EPDM	0 – 6*		24	**032U162402**
EV250B 22	G 1	7	✓	EPDM	0 – 10	24		**032U162416**
EV250B 22	G 1	7	✓	EPDM	0 – 10	230		**032U162431**

** 6 bar max opening differential pressure is measured at 6% under voltage (22.6 volt DC hot coil), 50 °C ambient, 90 °C media temperature and nominal pressure PN 6*

EV250B assisted lift valve with coil and plug IP65, DZR brass, NO

Type	Connection	K_v [m^3/h]	Media Water 120 °C	Seal material	Differential pressure [bar]	Coil BB [V] AC 50 Hz	Coil BB [V] DC	Code number
EV250B 18	G ¾	4.9	✓	EPDM	0 – 10	230		**032U537431**
EV250B 22	G 1	5.2	✓	EPDM	0 – 10	230		**032U537631**

EV250B assisted lift valve, DZR brass, NC

Type	Connection	K_v [m^3/h]	Media Water 120 °C	Media Oil / Air	Seal material	Differential pressure [bar]	Code number
EV250B 10	G ⅜	2.5	✓		EPDM	0 – 10	**032U5250**
EV250B 10	G ⅜	2.5		✓	FKM	0 – 10	**032U5251**
EV250B 12	G ½	4	✓		EPDM	0 – 10	**032U5252**
EV250B 12	G ½	4		✓	FKM	0 – 10	**032U5253**
EV250B 18	G ¾	6	✓		EPDM	0 – 10	**032U5254**
EV250B 18	G ¾	6		✓	FKM	0 – 10	**032U5255**
EV250B 22	G 1	7	✓		EPDM	0 – 10	**032U5256**
EV250B 22	G 1	7		✓	FKM	0 – 10	**032U5257**

EV250B assisted lift valve, DZR brass, NO

Type	Connection	K_v [m^3/h]	Media Water 120 °C	Seal material	Differential pressure [bar]	Code number
EV250B 10	G ⅜	2.5	✓	EPDM	0 – 10	**032U5350**
EV250B 12	G ½	4	✓	EPDM	0 – 10	**032U5352**
EV250B 18	G ¾	4.9	✓	EPDM	0 – 10	**032U5354**
EV250B 22	G 1	5.2	✓	EPDM	0 – 10	**032U5356**

Coils for EV250B



Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] BB	BY	BE	BB coil IP00 clip-on	BY coil IP65 clip-on	BE coil IP67 clip-on
24		50	11	14	12	**018F7358**	**018F7655**	**018F6707**
24		60		12			**018F7655**	
48		50			11			**018F6709**
110		50	15	14		**018F7360**	**018F7663**	
110		60	13			**018F7360**		
110 - 120		60		14			**018F7663**	
115		50	11		11	**018F7361**		**018F6711**
220 - 230		50	11		12	**018F7351**		**018F6701**
230		50		16			**018F7658**	
208 - 240		60		14			**018F7658**	
240		50	11		11	**018F7352**		**018F6702**
380 - 400		50	14		14	**018F7353**		**018F6703**
440		60			15	**018F7353**		**018F6703**
	12		13		15	**018F7396**		**018F6756**
	24		16		13	**018F7397**		**018F6757**

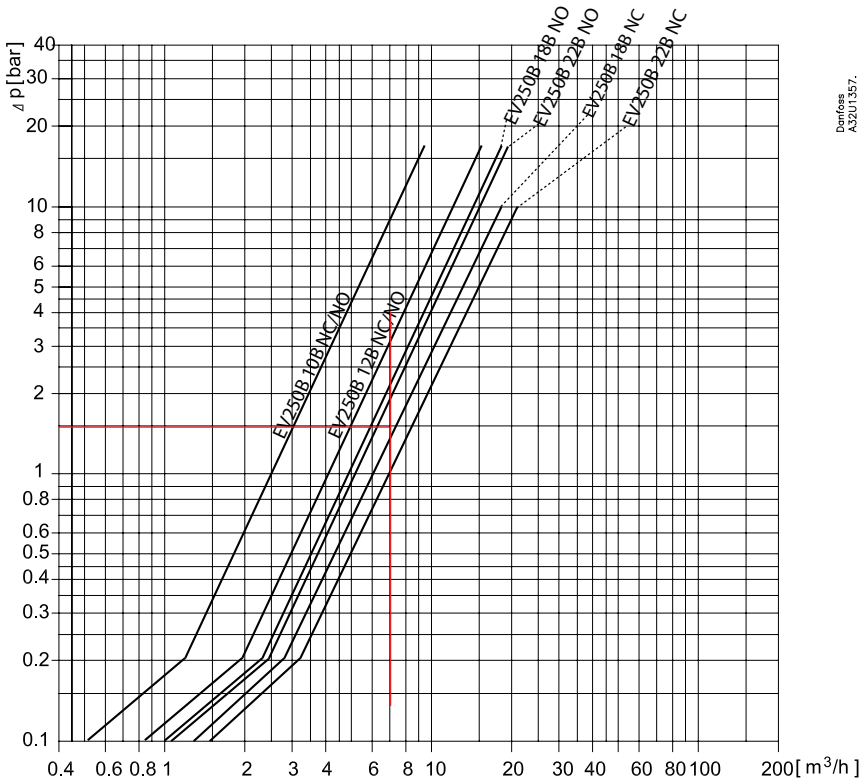
Cable plug, IP65 enclosure


To use with all BB and BY coils	**042N0156**	**042N0156**	No plug needed IP67 terminal box fitted as standard


To use with BB and BY coils - 24 V AC+DC	**042N0263**	**042N0263**
To use with BB and BY coils - 230 V AC	**042N0265**	**042N0265**

Capacity diagram for solenoid valve EV250B

Example, water: EV250B 12 at differential pressure of 3 bar: Approx. 7 m³/h



Spare parts and accessories for EV250B

Spare part kits for EV250B EPDM NC

Application	Seal material	Code number
EV250B 10 - EV250B 12	EPDM	**032U5315**
EV250B 18 - EV250B 22	EPDM	**032U5317**

Spare part kits for EV250B FKM NC

Application	Seal material	Code number
EV250B 10 - EV250B 12	FKM	**032U5271**
EV250B 18 - EV250B 22	FKM	**032U5273**

Sparepart kits for EV250B NO

Application	Seal material	Code number
EV250B 10 - EV250B 12	EPDM	**032U5319**
EV250B 10 - EV250B 12	FKM	**032U5320**
EV250B 18 - EV250B 22	EPDM	**032U5321**
EV250B 18 - EV250B 22	FKM	**032U5322**

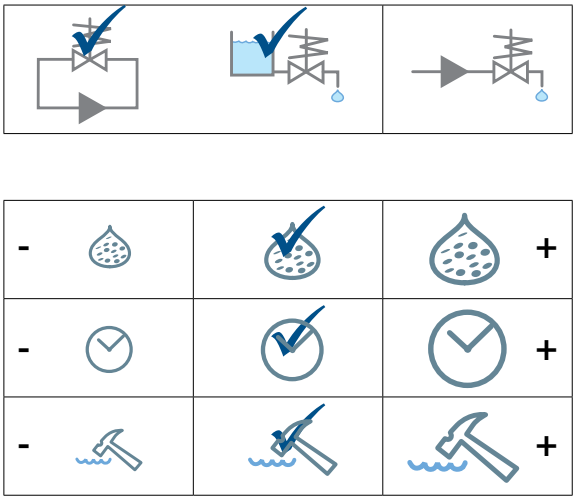
Permanent magnet

Desciption	Code number
Fits all EV250B valves	**018F0091**

Electronic timers for coils for pulse start, only IP65

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

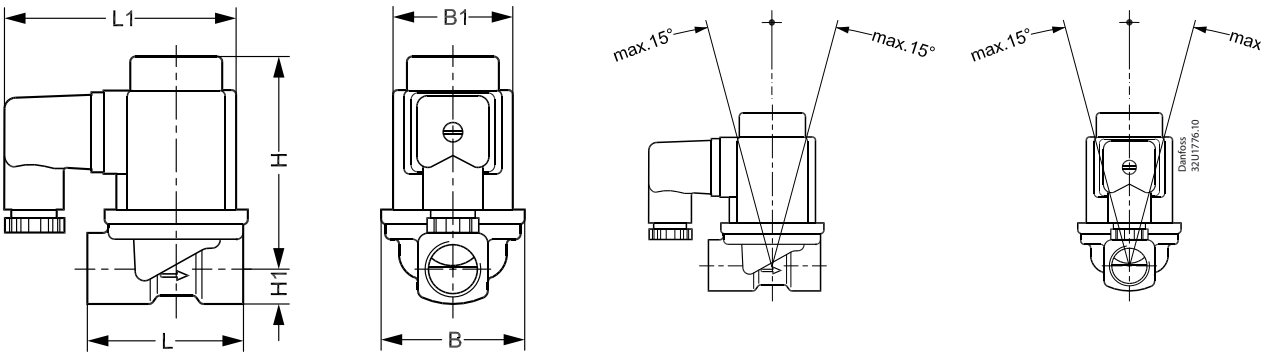
EV251B 2/2 way assisted lift solenoid valves



EV251B with assisted lift is expecially suitable for applications such as closed systems with low and fluctuating pressure conditions or open systems with differential pressure down to 0 bar.

- For water, oil, compressed air and similar neutral media
- K_v value: up to 3.5 m^3/h
- Differential pressure: up to 10 bar
- Viscosity: up to 50 cSt
- Ambient temperature: up to 80 °C
- Media temperature: -10 – 90 °C
- Coil enclosure: IP65
- Thread connections: G 3/8 to G1"
- EV251B valve is supplied complete including coil and plug
- Nominal pressure PN10

Dimensions, weight and mounting angle:



Type	L [mm]	L_1 [mm]	B [mm]	B_1 [mm]	H [mm]	H_1 [mm]	Weight with coil [kg]
EV251B 10	51.5	84	48.0	46	81	13	0.58
EV251B 12	58.0	84	54.0	46	81	13	0.64
EV251B 18	90.0	84	62.0	46	87	18	0.94
EV251B 22	90.0	84	62.0	46	91	18	0.94

EV251B 2/2 way assisted lift solenoid valves with coil and plug

Type	Connection	Kv [m³/h]	Media		Seal material	Differential pressure [bar]	Coil BB		Code number
			Water 90 °C	Oil / Air			[V] AC 50 Hz	[V] DC	
EV251B 10	G ⅜	1.5	✓	✓	NBR	0 – 10		24	**032U538002**
EV251B 10	G ⅜	1.5	✓	✓	NBR	0 – 10	24		**032U538016**
EV251B 10	G ⅜	1.5	✓	✓	NBR	0 – 10	230		**032U538031**
EV251B 12	G ½	2.5	✓	✓	NBR	0 – 10		24	**032U538102**
EV251B 12	G ½	2.5	✓	✓	NBR	0 – 10	24		**032U538116**
EV251B 12	G ½	2.5	✓	✓	NBR	0 – 10	230		**032U538131**
EV251B 18	G ¾	3.5	✓	✓	NBR	0 – 10		24	**032U538202**
EV251B 18	G ¾	3.5	✓	✓	NBR	0 – 10	24		**032U538216**
EV251B 18	G ¾	3.5	✓	✓	NBR	0 – 10	230		**032U538231**
EV251B 22	G 1	3.5	✓	✓	NBR	0 – 10		24	**032U538302**
EV251B 22	G 1	3.5	✓	✓	NBR	0 – 10	24		**032U538316**
EV251B 22	G 1	3.5	✓	✓	NBR	0 – 10	230		**032U538331**

Accessories for EV251B

Permanent magnet

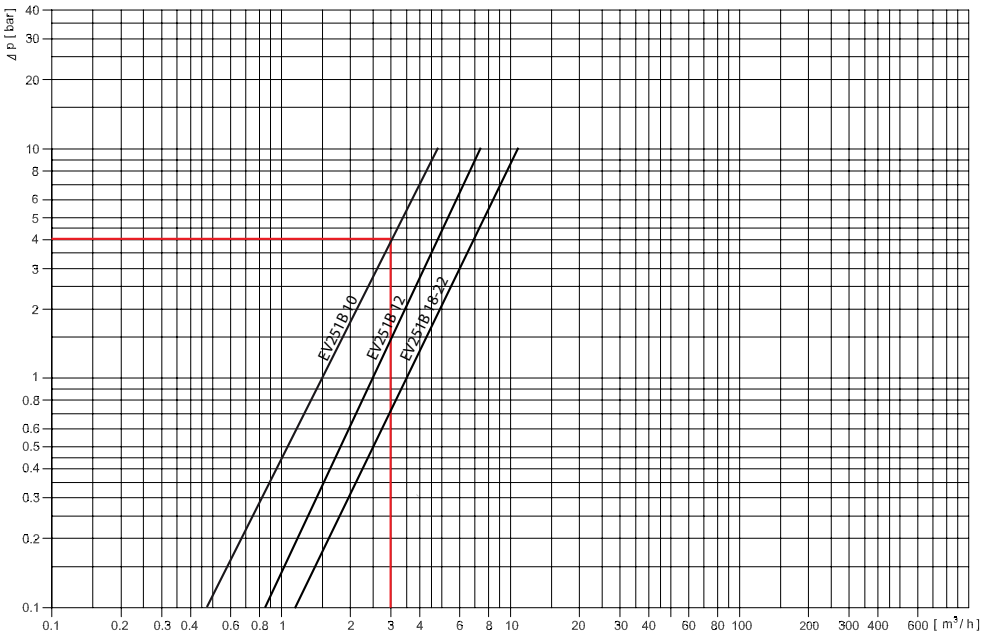
Description	Code number
Fits all EV251B valves	**018F0091**

Electronic timers for coils for pulse start, only IP65

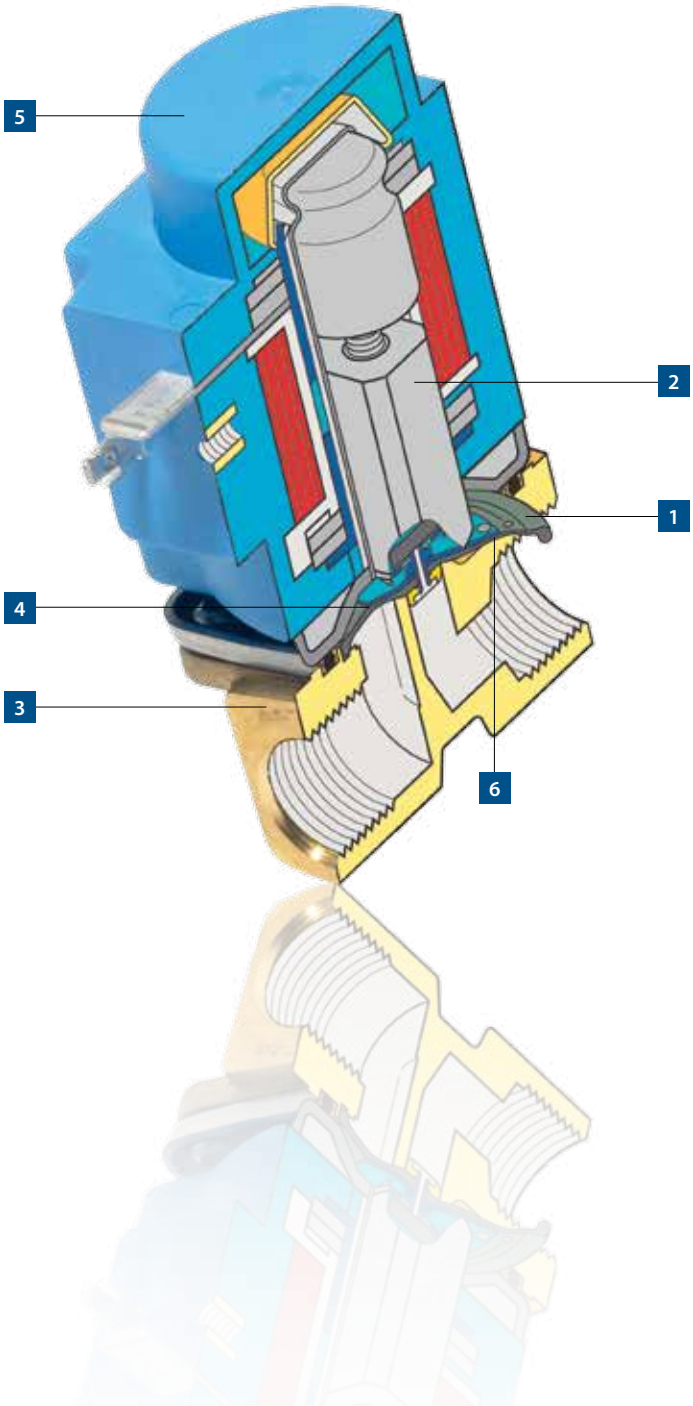
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

Capacity diagram for EV251B 10 - EV251B 22:

Example, water: EV251B 10
at 4 bar diff. pressure: Approx: 3 m³/h



The EV220B 6 - EV220B 22 for medium to large flow



The EV220B 6 - EV220B 22 is a high performance, robust valve programme.

1 Low water hammer

The softest closing valve on the market, the EV220B 6 - EV220B 22has an optimised diaphragm shape, added reinforcement for internal damping, and a special damping cone to ensure viscous damping in the critical late closing stage.

2 Insensitive to dirt

The square armature design enables the armature to move freely and reduces the risk of dirt particles lodging in the armature. If particles do lodge between the armature and the armature tube walls, they are quickly displaced by the fluid when the valve is activated.

3 Broad range of body and sealing materials

The EV220B 6 - EV220B 22 is available in two body materials. The brass version is ideal for applications with a limited risk of corrosion. Tougher applications should use versions with dezincification resistant brass (DZR brass) bodies and stainless steel inserts.

The EV220B 6 - EV220B 22 is also available with two seal materials. Both the EPDM and FKM seals can cope with all common media and a wide temperature range, while the EPDM versions have water approvals.

4 Long lifetime

The moulded rubber diaphragm has a special profile that greatly reduces the effects of stress and maximises valve lifetime.

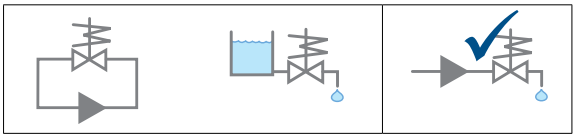
5 Wide coil range

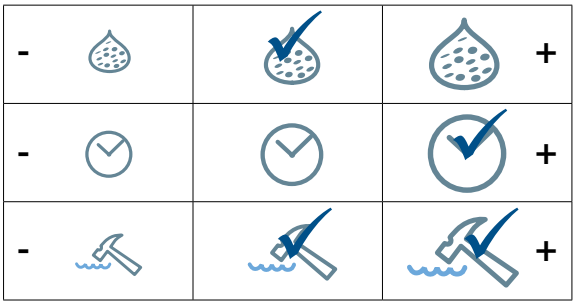
The valves use the standard B-range of coils from IP00 to IP67, including the clip-on system and specialty coils, making it easy to select a coil with the right features. And the special ATEX coil programme is ideal for hazardous environments.

6 High capacity across the entire pressure range

The optimised diaphragm shape gives a very high lift height, providing excellent capacity and tightness at any pressure.

EV220B 6 - EV220B 22 servo-operated 2/2-way solenoid valves

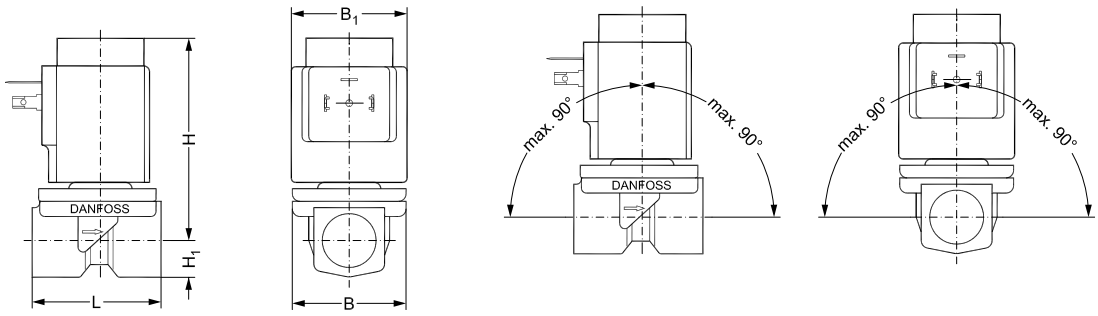




EV220B 6 - EV220B 22 is a direct servo-operated 2/2-way solenoid valve program with connections from 1/4" - 1". This program is especially for OEM applications demanding a robust solution and moderate flow rates.

- 2/2-way
- Servo-operated
- DN 6 - DN 22
- Brass or DZR (de-zincification resistant) brass valve body
- NC (normally closed) and NO (normally open) versions
- ISO 228/1 or NPT thread connection (EVSI and EVSI-U)
- Nominal pressure from PN 6
- Wetted parts: brass, stainless steel, copper, EPDM, FKM or NBR rubber

Dimensions, weight and mounting angle:



Type / orifice size	L [mm]	B [mm]	B_1 [mm] Coil type		H_1 [mm]	H [mm]	Weight with BB coil [kg]
			BA	BB/BE			
EV220B 6	45.5	43,.5	32	46	13.0	74.0	0.46
EV220B 10	51.5	48.0	32	46	13.0	77.0	0.53
EV220B 12	58.0	54.0	32	46	13.0	77.0	0.59
EV220B 18	90.0	62.0	32	46	18.0	83.0	0.89
EV220B 22	90.0	62.0	32	46	18.0	98.0	0.89

EV220B 6 - EV220B 22 servo-operated valves with coil and plug, IP65, brass, NC

Type	Connection	K_v [m^3/h]	Media		Seal material	Differential pressure [bar]	Coil BB		Code number
			Water 90 °C	Oil / Air			[V] AC 50 Hz	[V] DC	
EV220B 10	G ⅜	1.5	✓	✓	NBR	0.1 – 10		24	**032U151802**
EV220B 10	G ⅜	1.5	✓	✓	NBR	0.1 – 20	24		**032U151816**
EV220B 10	G ⅜	1.5	✓	✓	NBR	0.1 – 20	230		**032U151831**
EV220B 12	G ½	2.5	✓	✓	NBR	0.3 – 6*		24	**032U153802**
EV220B 12	G ½	2.5	✓	✓	NBR	0.3 – 10	24		**032U153816**
EV220B 12	G ½	2.5	✓	✓	NBR	0.3 – 10	230		**032U153831**
EV220B 18	G ¾	6	✓	✓	NBR	0.3 – 6*		24	**032U528602**
EV220B 18	G ¾	6	✓	✓	NBR	0.3 – 10	24		**032U528616**
EV220B 18	G ¾	6	✓	✓	NBR	0.3 – 10	230		**032U528631**
EV220B 22	G 1	6	✓	✓	NBR	0.3 – 6*		24	**032U528702**
EV220B 22	G 1	6	✓	✓	NBR	0.3 – 10	24		**032U528716**
EV220B 22	G 1	6	✓	✓	NBR	0.3 – 10	230		**032U528731**

** 6 bar max opening differential pressure is measured at 6% under voltage (22.6 volt DC hot coil), 50 °C ambient, 90 °C media temperature and nominal pressure PN 6*

EV220B 6 - EV220B 22 servo-operated valves, brass, NC

Type	Connection	K_v [m^3/h]	Media		Seal material	Differential pressure [bar]	Code number
			Water 100 °C	Oil / Air			
EV220B 6	G ¼	0.7	✓		EPDM	0.1 – 20	**032U1236**
EV220B 6	G ¼	0.7		✓	FKM	0.1 – 20	**032U1237**
EV220B 6	G ⅜	0.7	✓		EPDM	0.1 – 20	**032U1241**
EV220B 6	G ⅜	0.7		✓	FKM	0.1 – 20	**032U1242**
EV220B 10	G ⅜	1.5	✓		EPDM	0.1 – 20	**032U1246**
EV220B 10	G ⅜	1.5		✓	FKM	0.1 – 20	**032U1247**
EV220B 10	G ½	1.5	✓		EPDM	0.1 – 20	**032U1251**
EV220B 10	G ½	1.5		✓	FKM	0.1 – 20	**032U1252**
EV220B 12	G ½	2.5	✓		EPDM	0.3 – 10	**032U1256**
EV220B 12	G ½	2.5		✓	FKM	0.3 – 10	**032U1255**
EV220B 18	G ¾	6	✓		EPDM	0.3 – 10	**032U1261**
EV220B 18	G ¾	6		✓	FKM	0.3 – 10	**032U1260**
EV220B 22	G 1	6	✓		EPDM	0.3 – 10	**032U1263**
EV220B 22	G 1	6		✓	FKM	0.3 – 10	**032U1266**

EV220B 6 - EV220B 22 servo-operated valves, brass, NO

Type	Connection	K_v [m^3/h]	Media		Seal material	Differential pressure [bar]	Code number
			Water 100 °C	Oil / Air			
EV220B 6	G ⅜	0.7	✓		EPDM	0.1 – 10	**032U1238**
EV220B 6	G ⅜	0.7		✓	FKM	0.1 – 10	**032U1239**
EV220B 10	G ½	1		✓	FKM	0.1 – 10	**032U1249**

Coils for EV220B 6 - EV220B 22:

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] BA	BB	BY	BE	BA coil IP00	BB coil IP00 clip-on	BY coil IP65 clip-on	BE coil IP67 clip-on
24		50	8.5	11	14	12	**042N7508**	**018F7358**	**018F7655**	**018F6707**
24		60			12				**018F7655**	
48		50	9.5			11	**042N7510**			**018F6709**
110		50		15	14			**018F7360**	**018F7663**	
110		60		13				**018F7360**		
110 - 120		60			14				**018F7663**	
115		50	9.0	11		11	**042N7512**	**018F7361**		**018F6711**
220 - 230		50	12	11		12	**042N7501**	**018F7351**		**018F6701**
230		50			16				**018F7658**	
208 - 240		60			14				**018F7658**	
240		50	10	11		11	**042N7502**	**018F7352**		**018F6702**
380 - 400		50	12	14		14	**042N7504**	**018F7353**		**018F6703**
440		60		15		15		**018F7353**		**018F6703**
	12		14	13		15	**042N7550**	**018F7396**		**018F6756**
	24		14	16		13	**042N7551**	**018F7397**		**018F6757**

Cable plug, IP65 enclosure

To use with all BA, BB and BY coils	**042N0156**	**042N0156**	**042N0156**
To use with BA, BB and BY coils - 24 V AC+DC	**042N0263**	**042N0263**	**042N0263**
To use with BA, BB and BY coils - 230 V AC	**042N0265**	**042N0265**	**042N0265**

No plug needed IP67 terminal box fitted as standard

Spare parts and accessories for EV220B 6 - EV220B 22

Spare part kits, NC

Application	Seal material	Code number
EV220B 6	EPDM	**032U1062**
EV220B 6	FKM	**032U1063**
EV220B 10	EPDM	**032U1065**
EV220B 10	FKM	**032U1066**

Spare part kits, NC

Application	Seal material	Code number
EV220B 12	EPDM	**032U1068**
EV220B 12	FKM	**032U1067**
EV220B 18	EPDM	**032U1070**
EV220B 18	FKM	**032U1069**

Spare part kits, NO

Application	Seal material	Code number
EV220B 6	EPDM	**032U0165**
EV220B 6	FKM	**032U0166**
EV220B 10	FKM	**032U0167**

Permanent magnet

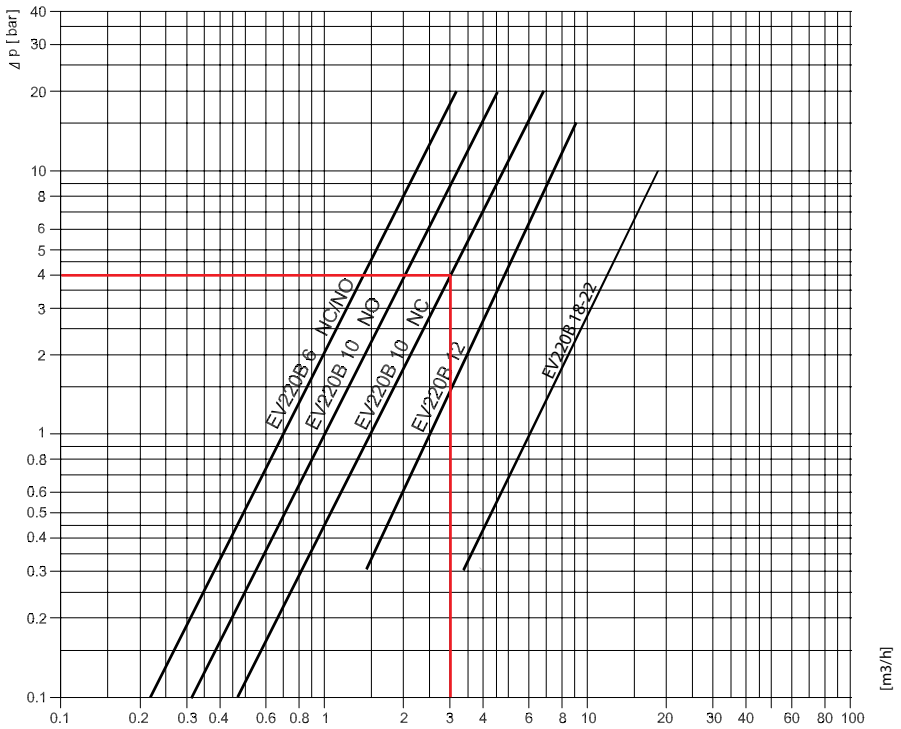
Description	Code number
Fits all EV220B valves	**018F0091**

Electronic timers for coils for pulse start, only IP65

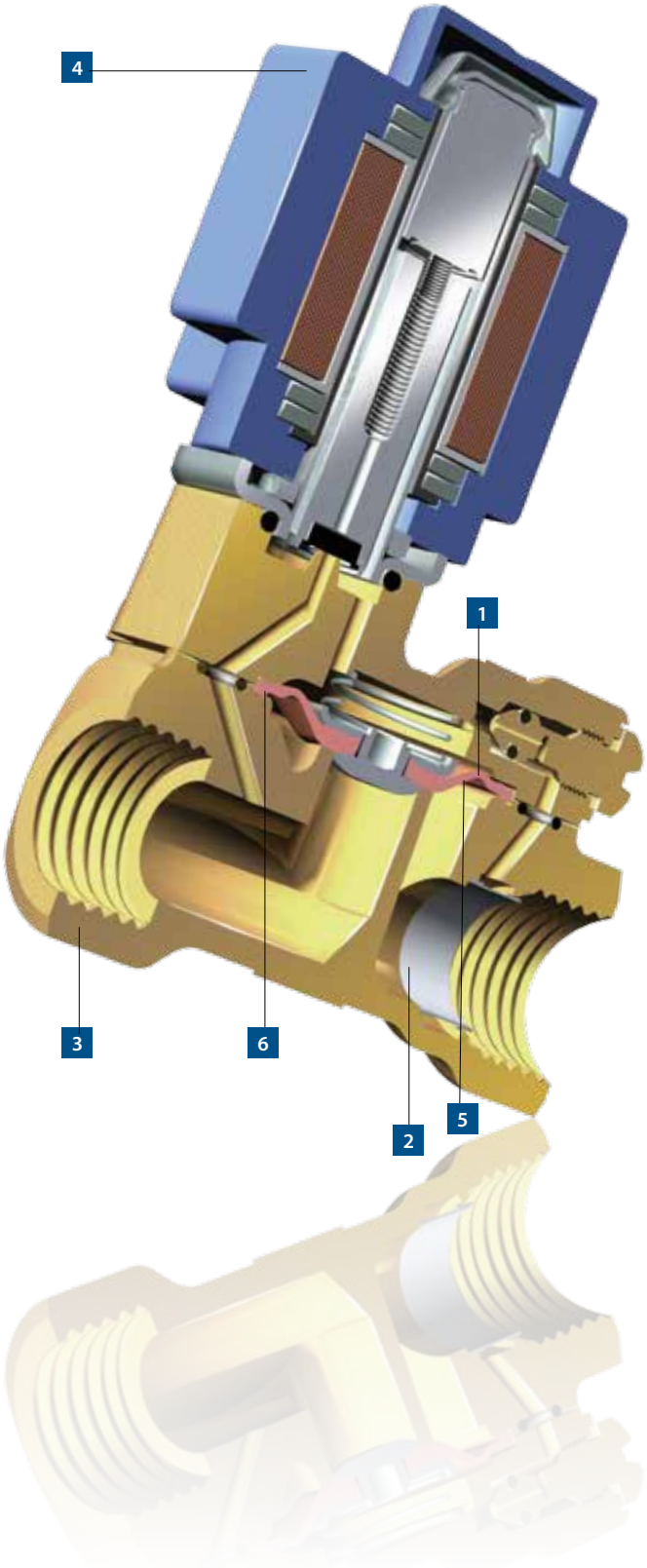
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

Capacity diagram for EV220B 6 - EV220B 22:

Example, water: EV220B 10 NC,
at 4 bar diff. pressure: Approx: 3 m³/h



The EV220B 15 - EV220B 50 for large capacities and damping water hammer



A universal indirect servo-operated 2/2 way solenoid valve range, the EV220B 15 - EV220B 50 is ideal for a wide variety of applications.

1 Effective against water hammer
To minimise water hammer, the valve's moulded diaphragm reinforces internal damping, and a special damping cone provides viscous damping in the very late closing stage. The closing speed can be adjusted by changing the equalising orifice.

2 Insensitive to dirt
A self-cleaning coaxial filter in the main valve flow prevents dirt entering the pilot system. However, if the equalising orifice does become blocked, the dirt can easily be removed with compressed air.

3 Broad temperature and material range
With a range of materials, there is an EV220B 15 - EV220B 50 valve suited to your application. The EV220B 15 - EV220B 50 is available in brass, as well as dezincification resistant brass (DZR) and stainless steel versions for aggressive steam applications.

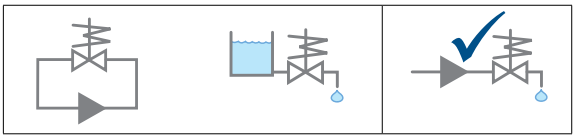
The EPDM seals remain soft even at -30 °C, while the FKM and NBR rubber seals can handle temperatures up to 120 °C.

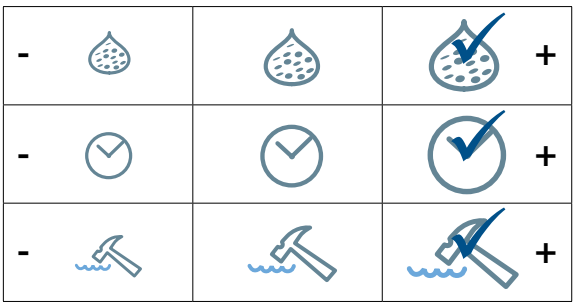
4 Wide coil range up to IP67
The EV220B range uses the standard B-range of coils from IP00 to IP67. Coils subject to water splash and temperatures up to 80 °C should use the more powerful and robust clip-on coils.

5 High capacity across the entire pressure range
The valve body has a smooth internal shape, and the specially designed diaphragm increases the lift height capacity. In indirect servo-operated valves, the kv-value is determined by the diameter of the orifice and the diaphragm lift height.

6 Good external tightness even at high differential pressures
Pressure in the valve increases the distance between the valve cover and body, so the moulded diaphragm has a built-in O-ring to avoid leakage. This provides an excellent seal between the valve cover and body even at high pressures, ensuring excellent external tightness.

EV220B 15 - EV220B 50 servo-operated 2/2-way solenoid valves

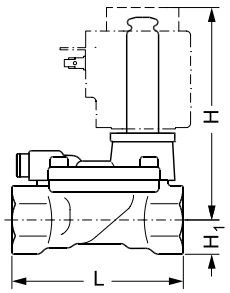


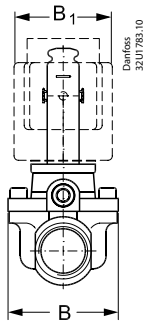


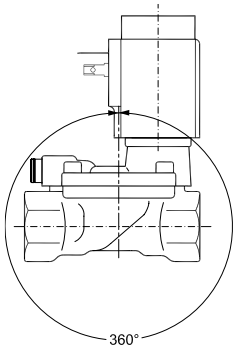
EV220B 15 - EV220B 50 is a universal indirect servo-operated 2/2-way solenoid valve program. Valve body in brass, dezincification resistant brass and stainless steel ensures that a broad variety of application can be covered.
Built-in pilot filter as standard, adjustable closing time and enclosures up to IP67 ensures optimal performance even under critical working conditions.

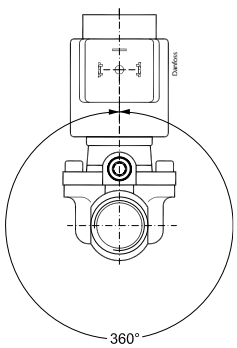
- 2/2-way
- Servo-operated
- DN 15 - DN 50
- Valve body available in brass, DZR brass, gun metal or stainless steel
- NC and NO versions
- ISO 228/1 or NPT thread connection (EVSI and EVSI-U)
- Built in filter for protection of pilot system
- Water hammer damped
- Adjustable closing time available
- Nominal pressure PN 16
- Wetted parts: brass, stainless steel, copper, tin, EPDM, FKM or NBR rubber

Dimensions, weight and mounting angle:









Type / orifice size	L [mm]	B [mm]	B_1 [mm] Coil type BA	B_1 [mm] Coil type BB/BE	H_1 [mm]	H [mm]	Weight with BB coil [kg]
EV220B 15	80.0	52.0	32	46	15.0	99.0	1.04
EV220B 20	90.0	58.0	32	46	18.0	103.0	1.24
EV220B 25	109.0	70.0	32	46	22.0	113.0	1.64
EV220B 32	120.0	82.0	32	46	27.0	120.0	2.24
EV220B 40	130.0	95.0	32	46	32.0	129.0	3.46
EV220B 50	162.0	113.0	32	46	37.0	135.0	4.54

EV220B 15 - EV220B 50 servo-operated valves with coil and plug, brass, IP65, NC

Type	Connection	Differential pressure [bar]	K_v [m^3/h]	Media		Seal material	Coil BB		Code number
				Water 90 °C	Oil / Air		[V] AC 50 Hz	[V] DC	
EV220B 15	G ½	0.3 – 16	4	✓	✓	NBR		24	**032U451402**
EV220B 15	G ½	0.3 – 16	4	✓	✓	NBR	24		**032U451416**
EV220B 15	G ½	0.3 – 16	4	✓	✓	NBR	230		**032U451431**
EV220B 20	G ¾	0.3 – 16	8	✓	✓	NBR		24	**032U453002**
EV220B 20	G ¾	0.3 – 16	8	✓	✓	NBR	24		**032U453016**
EV220B 20	G ¾	0.3 – 16	8	✓	✓	NBR	230		**032U453031**
EV220B 25	G 1	0.3 – 16	11	✓	✓	NBR		24	**032U453402**
EV220B 25	G 1	0.3 – 16	11	✓	✓	NBR	24		**032U453416**
EV220B 25	G 1	0.3 – 16	11	✓	✓	NBR	230		**032U453431**
EV220B 32	G 1 ¼	0.3 – 16	18	✓	✓	NBR		24	**032U456802**
EV220B 32	G 1 ¼	0.3 – 16	18	✓	✓	NBR	24		**032U456816**
EV220B 32	G 1 ¼	0.3 – 16	18	✓	✓	NBR	230		**032U456831**
EV220B 40	G 1 ½	0.3 – 16	24	✓	✓	NBR		24	**032U458502**
EV220B 40	G 1 ½	0.3 – 16	24	✓	✓	NBR	24		**032U458516**
EV220B 40	G 1 ½	0.3 – 16	24	✓	✓	NBR	230		**032U458531**
EV220B 50	G 2	0.3 – 16	40	✓	✓	NBR		24	**032U460402**
EV220B 50	G 2	0.3 – 16	40	✓	✓	NBR	24		**032U460416**
EV220B 50	G 2	0.3 – 16	40	✓	✓	NBR	230		**032U460431**

EV220B 15 - EV220B 50 servo-operated valves, NC

DZR brass, brass or stainless steel (SS)

Type	Connection	Differential pressure [bar]	K_v [m^3/h]	Media			Seal material	Body material			Code number
				Water 120 °C	Water 90 °C	Oil / Air		DZR	Brass	SS	
EV220B 15	G ½	0.3 – 16	4	✓			EPDM	✓			**032U5815**
EV220B 15	G ½	0.3 – 16	4	✓			EPDM		✓		**032U7115**
EV220B 15	G ½	0.3 – 16	4	✓			EPDM			✓	**032U8500**
EV220B 15	G ½	0.3 – 10	4			✓	FKM		✓		**032U7116**
EV220B 15	G ½	0.3 – 10	4			✓	FKM			✓	**032U8506**
EV220B 15	G ½	0.3 – 16	4		✓	✓	NBR		✓		**032U7170**
EV220B 20	G ¾	0.3 – 16	8	✓			EPDM	✓			**032U5820**
EV220B 20	G ¾	0.3 – 16	8	✓			EPDM		✓		**032U7120**
EV220B 20	G ¾	0.3 – 16	8	✓			EPDM			✓	**032U8501**
EV220B 20	G ¾	0.3 – 10	8			✓	FKM		✓		**032U7121**
EV220B 20	G ¾	0.3 – 10	8			✓	FKM			✓	**032U8507**
EV220B 20	G ¾	0.3 – 16	8		✓	✓	NBR		✓		**032U7171**
EV220B 25	G 1	0.3 – 16	11	✓			EPDM	✓			**032U5825**
EV220B 25	G 1	0.3 – 16	11				EPDM	✓			**032U5825**
EV220B 25	G 1	0.3 – 16	11	✓			EPDM		✓		**032U7125**
EV220B 25	G 1	0.3 – 16	11	✓			EPDM			✓	**032U8502**
EV220B 25	G 1	0.3 – 10	11			✓	FKM		✓		**032U7126**
EV220B 25	G 1	0.3 – 10	11			✓	FKM			✓	**032U8508**
EV220B 25	G 1	0.3 – 16	11		✓	✓	NBR		✓		**032U7172**
EV220B 32	G 1 ¼	0.3 – 16	18	✓			EPDM	✓			**032U5832**

EV220B 15 - EV220B 50 servo-operated valves, NC

DZR brass, brass or stainless steel (SS)

Type	Connection	Differential pressure [bar]	K_v [m^3/h]	Media			Seal material	Body material			Code number
				Water 120 °C	Water 90 °C	Oil / Air		DZR	Brass	SS	
EV220B 32	G 1 ¼	0.3 – 16	18	✓			EPDM		✓		**032U7132**
EV220B 32	G 1 ¼	0.3 – 16	18	✓			EPDM			✓	**032U8503**
EV220B 32	G 1 ¼	0.3 – 10	18			✓	FKM		✓		**032U7133**
EV220B 32	G 1 ¼	0.3 – 10	18			✓	FKM			✓	**032U8509**
EV220B 32	G 1 ¼	0.3 – 16	18		✓	✓	NBR		✓		**032U7173**
EV220B 40	G 1 ½	0.3 – 16	24	✓			EPDM	✓			**032U5840**
EV220B 40	G 1 ½	0.3 – 16	24	✓			EPDM		✓		**032U7140**
EV220B 40	G 1 ½	0.3 – 16	24	✓			EPDM			✓	**032U8504**
EV220B 40	G 1 ½	0.3 – 10	24			✓	FKM		✓		**032U7141**
EV220B 40	G 1 ½	0.3 – 10	24			✓	FKM			✓	**032U8510**
EV220B 40	G 1 ½	0.3 – 16	24		✓	✓	NBR		✓		**032U7174**
EV220B 50	G 2	0.3 – 16	40	✓			EPDM	✓			**032U5850**
EV220B 50	G 2	0.3 – 16	40	✓			EPDM		✓		**032U7150**
EV220B 50	G 2	0.3 – 16	40	✓			EPDM			✓	**032U8505**
EV220B 50	G 2	0.3 – 10	40			✓	FKM		✓		**032U7151**
EV220B 50	G 2	0.3 – 10	40			✓	FKM			✓	**032U8511**
EV220B 50	G 2	0.3 – 16	40		✓	✓	NBR		✓		**032U7175**

EV220B 15 - EV220B 50 servo-operated valves, brass, NO

Type	Connection	Differential pressure [bar]	K_v [m^3/h]	Media			Seal material	Code number
				Water 120 °C	Water 90 °C	Oil / Air		
EV220B 15	G ½	0.3 – 16	4	✓			EPDM	**032U7117**
EV220B 15	G ½	0.3 – 16	4		✓	✓	NBR	**032U7180**
EV220B 20	G ¾	0.3 – 16	8	✓			EPDM	**032U7122**
EV220B 20	G ¾	0.3 – 16	8		✓	✓	NBR	**032U7181**
EV220B 25	G 1	0.3 – 16	11	✓			EPDM	**032U7127**
EV220B 25	G 1	0.3 – 16	11		✓	✓	NBR	**032U7182**
EV220B 32	G 1 ¼	0.3 – 16	18	✓			EPDM	**032U7134**
EV220B 32	G 1 ¼	0.3 – 16	18		✓	✓	NBR	**032U7183**
EV220B 40	G 1 ½	0.3 – 16	24	✓			EPDM	**032U7142**
EV220B 40	G 1 ½	0.3 – 16	24		✓	✓	NBR	**032U7184**
EV220B 50	G 2	0.3 – 16	40	✓			EPDM	**032U7152**
EV220B 50	G 2	0.3 – 16	40		✓	✓	NBR	**032U7185**

Coils for EV220B 15 - EV220B 50

Voltage		Frequency	Power consumption [W]				BA coil IP00	BB coil IP00 clip-on	BY coil IP65 clip-on	BE coil IP67 clip-on
[V] AC	[V] DC	[Hz]	BA	BB	BY	BE				
24		50	8.5	11	14	12	**042N7508**	**018F7358**	**018F7655**	**018F6707**
24		60			12				**018F7655**	
48		50	9.5			11	**042N7510**			**018F6709**
110		50		15	14			**018F7360**	**018F7663**	
110		60		13				**018F7360**		
110 - 120		60			14				**018F7663**	
115		50	9.0	11		11	**042N7512**	**018F7361**		**018F6711**
220 - 230		50	12	11		12	**042N7501**	**018F7351**		**018F6701**
230		50			16				**018F7658**	
208 - 240		60			14				**018F7658**	
240		50	10	11		11	**042N7502**	**018F7352**		**018F6702**
380 - 400		50	12	14		14	**042N7504**	**018F7353**		**018F6703**
440		60		15		15		**018F7353**		**018F6703**
	12		14	13		15	**042N7550**	**018F7396**		**018F6756**
	24		14	16		13	**042N7551**	**018F7397**		**018F6757**

Cable plug, IP65 enclosure

To use with all BA, BB and BY coils	**042N0156**	**042N0156**	**042N0156**	No plug needed IP67 terminal box fitted as standard

To use with BA, BB and BY coils - 24 V AC+DC	**042N0263**	**042N0263**	**042N0263**	
To use with BA, BB and BY coils - 230 V AC	**042N0265**	**042N0265**	**042N0265**	

Spare parts for EV220B 15 - EV220B 50

Spare part kit, NC

Application	Seal material	Code number
EV220B 15	EPDM	**032U1071**
EV220B 15	FKM	**032U1072**
EV220B 15	NBR	**032U6013**
EV220B 20	EPDM	**032U1073**
EV220B 20	FKM	**032U1074**
EV220B 20	NBR	**032U6014**
EV220B 25	EPDM	**032U1075**
EV220B 25	FKM	**032U1076**
EV220B 25	NBR	**032U6015**
EV220B 32	EPDM	**032U1077**
EV220B 32	FKM	**032U1078**
EV220B 32	NBR	**032U6016**
EV220B 40	EPDM	**032U1079**
EV220B 40	FKM	**032U1080**
EV220B 40	NBR	**032U6017**
EV220B 50	EPDM	**032U1081**
EV220B 50	FKM	**032U1082**
EV220B 50	NBR	**032U6018**

Spare part kit, NO

Application	Seal material	Code number
EV220B 15 - EV220B 50	FKM	**032U0295**
EV220B 15 - EV220B 50	EPDM	**032U0296**
EV220B 15 - EV220B 50	NBR	**032U0299**

Manual override kit, tool operated

Application	Description	Code number
EV220B 15 - EV220B 50	Manual override kit. Used for manual override in event of power failure. Note: Valve height is increased by 16 mm	**032U0150**

Manual override kit, hand operated

Application	Seal material	Description	Code number
EV220B - EV220B 50	EPDM	Manual override kit. Used for manual override in event of power failure. Note: Valve height is increased by 16 mm	**032U7390**

Spare parts and accessories for EV220B 15 - EV220B 50

Isolating diaphragm kits

Application	Seal material	Description	Code number
EV220B 15 - EV220B 50	EPDM	The isolating diaphragm protects the actuator against dirt and corrosion.	**042U1009**
EV220B 15 - EV220B 50	FKM		**042U1010**

Adjustable orifice kit, brass

Application	Seal material		Code number
EV220B 15 - EV220B 50	EPDM		**032U0682**
EV220B 15 - EV220B 50	NBR		**032U0681**
EV220B 15 - EV220B 50	FKM		**032U0683**

Equalizing orifice

Application	Seal material	Dimension [mm]	Description	Code number
EV220B 25 - EV220B 32	FKM	1.2	The valves closing time can be changed by installing an equalizing orifice of a size which deviates from the standard valve.	**032U0085**
EV220B 15 - EV220B 20	EPDM	0.5		**032U0082**
EV220B 25 - EV220B 40	EPDM	0.8		**032U0084**
EV220B 50	EPDM	1.2		**032U0086**
EV220B 40 - EV220B 50	FKM	1.4		**032U0087**

Permanent magnet

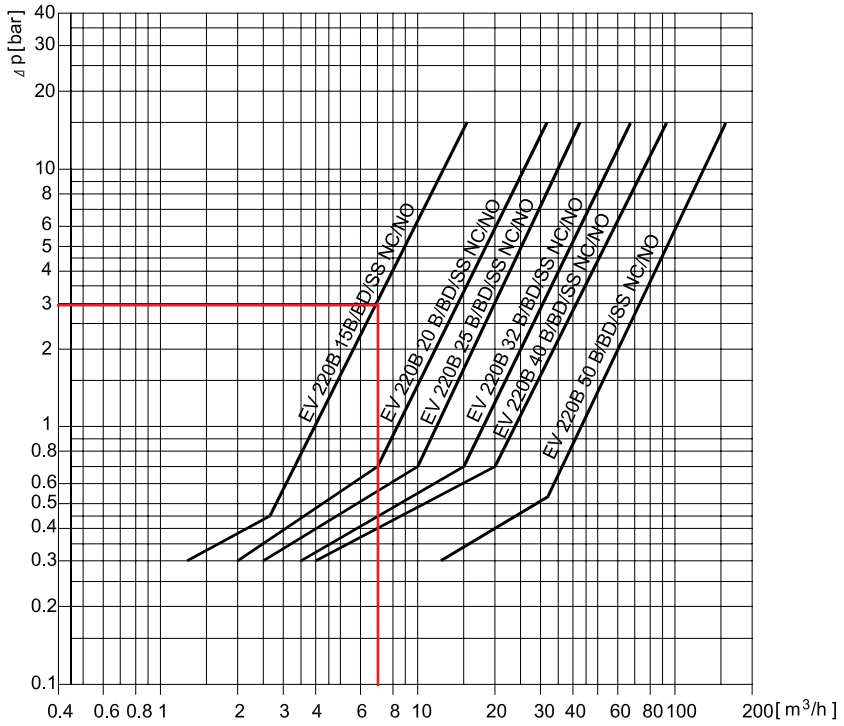
Application		Code number
Fits all EV220B valves		**018F0091**

Electronic timers for coils for pulse start, only IP65

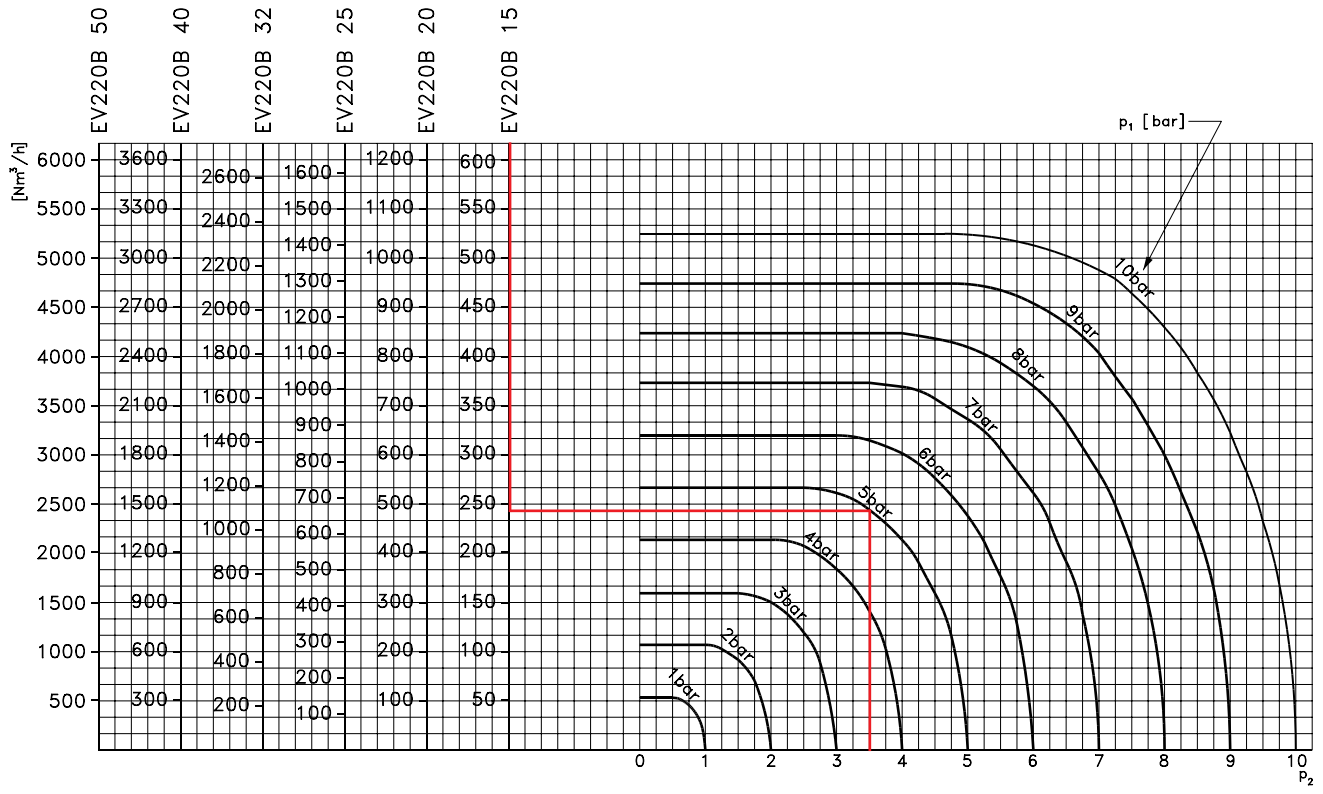
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

Capacity diagram for EV220B 15 - EV220B 50:

Example, water:
Capacity for EV220B 15 at differential pressure of 3 bar. Approx. 7 m³/h

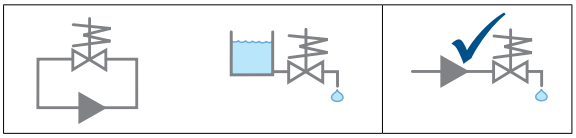


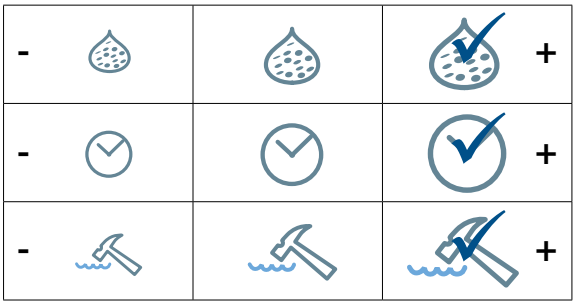
Example, air:
Capacity for EV220B 15 at inlet pressure (p_1) of 5 bar and outlet pressure (p_2) of 3.5 bar: Approx. 245 Nm³/h



Flow information on other media types: Please contact Danfoss.

EV220B 65 - EV220B 100 servo-operated 2/2-way solenoid valves

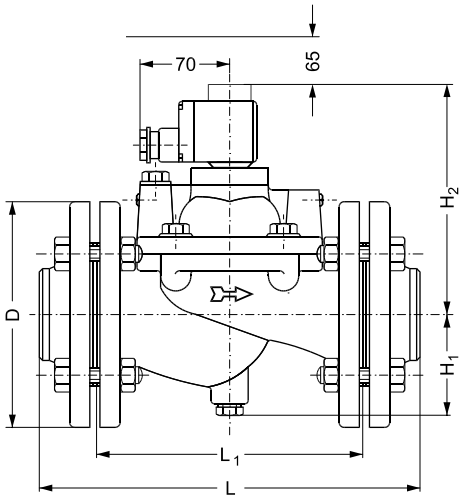


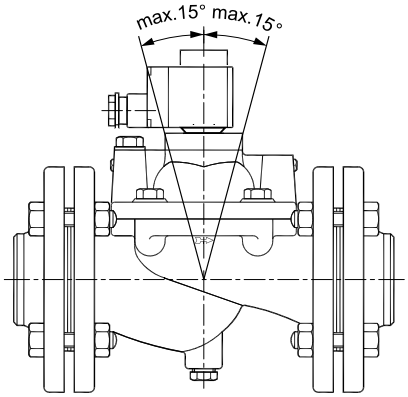


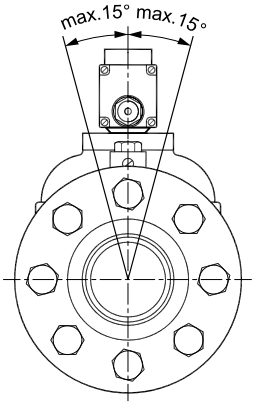
EV220B 65 - EV220B 100 is a 2/2-way solenoid valve program for use in robust industrial applications, demanding high flow rates. The valve is designed with cast iron valve bodies and flanged connection.
Water-hammer damped design and built-in pilot filter ensures a reliable operational period.

- 2/2-way
- Servo-operated
- DN 65 - DN 100
- Cast iron valve body
- Flange connection
- Max. medium temperature: 90 °C
- Nominal pressure PN 10
- Wetted parts: brass, centellen WS 3820 and NBR rubber

Dimensions, weight and mounting angle:







Type / orifice size	L [mm]	L_1 [mm]	Coil width [mm]		øD [mm]	H_1 [mm]	H_2 [mm]	Weight with BE coil [kg]
			10 W AC	20 W DC				
EV220B 65	320	224	46	66	185	85	185	24
EV220B 80	370	265	46	66	200	93	215	34
EV220B 100	430	315	46	66	220	103	240	44

EV220B 65 - EV220B 100 servo-operated valves, NC

Type	Connection Flange / [inch]	K_v [m^3/h]	Media: Water 90 °C	Media: Oil	Seal material	Body material Cast iron	Differential pressure [bar]	Code number
EV220B 65	2 ½	50	✓	✓	NBR	✓	0.25 – 10	**016D3330**
EV220B 65	2 ½	50	✓		EPDM	✓	0.25 – 10	**016D6065**
EV220B 80	3	75	✓	✓	NBR	✓	0.25 – 10	**016D3331**
EV220B 80	3	75	✓		EPDM	✓	0.25 – 10	**016D6080**
EV220B 100	4	130	✓		EPDM	✓	0.25 – 10	**016D6100**

Coils for EV220B 65 - EV220B 100

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] BB	Power consumption [W] BE	BB coil IP00 clip-on	BE coil IP67 clip-on
24		50	11	12	**018F7358**	**018F6707**
48		50		11		**018F6709**
110		50	15		**018F7360**	
110		60	13		**018F7360**	
115		50	11	11	**018F7361**	**018F6711**
220 - 230		50	11	12	**018F7351**	**018F6701**
240		50	11	11	**018F7352**	**018F6702**
380 - 400		50	14	14	**018F7353**	**018F6703**
440		60	15	15	**018F7353**	**018F6703**
	12	–	13	13	**018F7396**	**018F6756**
	24	–	16	16	**018F7397**	**018F6757**

Cable plug, IP65 enclosure

To use with all BB coils	**042N0156**	No plug needed - IP67 terminal box fitted as standard

To use with BB coils - 24 V AC+DC	**042N0263**	
To use with BB coils - 230 V AC	**042N0265**	

Accessories for EV220B 65 - EV220B 100 servo-operated valves

Permanent magnet

Application	Code number
Fits all EV220B valves	**018F0091**

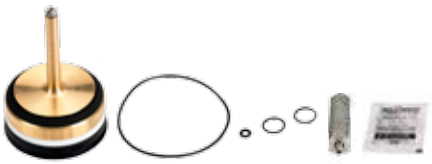
Electronic timers for coils for pulse start , only IP65

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

Spare parts for EV220B 65 - EV220B 100 servo-operated valves

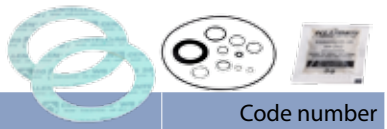
Flange sets. Each set contains 2 flanges

Application	Connection	Code number
EV220B 65	2½ in weld	**027N3065**
EV220B 80	3 in weld	**027N3080**
EV220B 100	4 in weld	**027N3100**



Spare part kit

Application		Code number EPDM	Code number NBR
EV220B 65		**016D0078**	**016D0095**
EV220B 80		**016D0079**	**016D0096**
EV220B 100		**016D0080**	



Seal kit

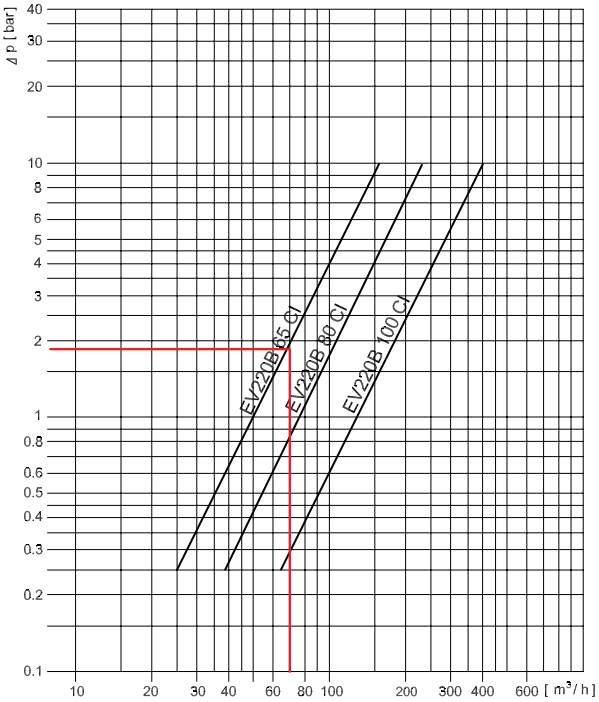
Application		Code number EPDM
EV220B 65		**016D0075**
EV220B 80		**016D0076**
EV220B 100		**016D0077**

Manual override kit, hand operated

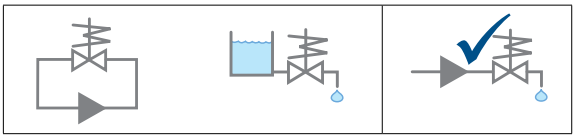
Application	Seal material	Description	Code number
EV220B 65 - EV220B 100	EPDM	Manual override kit. Used for manual override in event of power failure. Note: Valve height is increased by 16 mm	**032U7390**

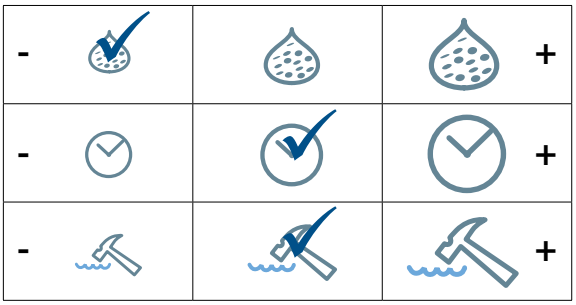
Capacity diagram for EV220B 65 - EV220B 100:

Example, water:
Capacity for EV220B 65 at
differential pressure of 2 bar: Approx. 70 m³/h



EV220A servo-operated 2/2-way solenoid valves



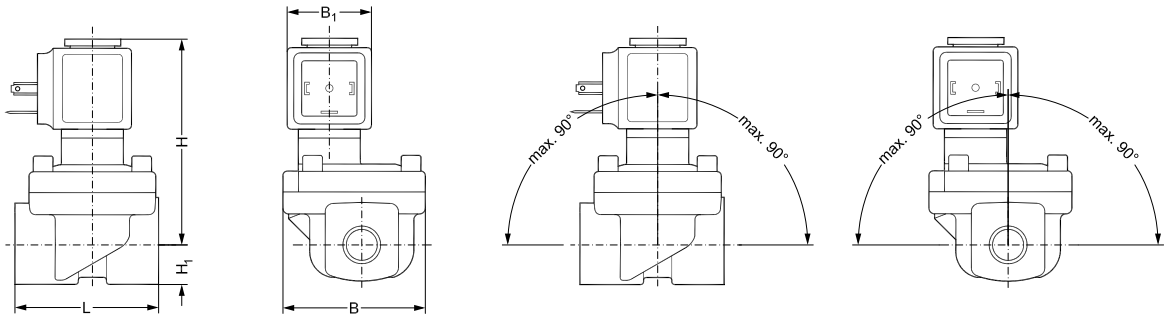


EV220A is a compact servo-operated 2/2-way solenoid valve program, especially designed for use in machines and equipment with limited space.

- 2/2-way
- Servo-operated
- DN 6 - DN50
- G ¼" to G 2"

- Ambient temperature: 50 °C
- Brass valve body
- NC (normally closed) and NO (normally open) versions
- ISO 228/1 or NPT thread connection
- Nominal pressure PN 16
- Wetted parts: brass, stainless steel, copper, EPDM or NBR rubber

Dimensions, weight and mounting angle:



Type / orifice size	L [mm]	B [mm]	B_1 [mm] coil type AM	H [mm] NC	H [mm] NO	H_1 [mm]	Weight with AM coil [kg]
EV220A 6	51	50	33	76	80	13	0.56
EV220A 10	51	50	33	76	80	13	0.54
EV220A 12	58	58	33	77	81	13	0.62
EV220A 14	58	58	33	77	81	13	0.6
EV220A 18	90	58	33	78	82	18	0.82
EV220A 22	90	58	33	83	87	22	1.1
EV220A 32	120	82	33	95	-	27	2.1
EV220A 40	130	95	33	105	-	32	3.3
EV220A 50	162	113	33	111	-	37	4.4

EV220A servo-operated 2/2-way solenoid valves, brass, NC

Type	Connection	Kv [m³/h]	Media			Seal material	Differential pressure [bar]	Code number
			Water 120 °C	Water 90 °C	Oil / Air			
EV220A 6	G ¼	1	✓			EPDM	0.2 – 16	**042U4001**
EV220A 6	G ¼	1		✓	✓	NBR	0.2 – 16	**042U4003**
EV220A 10	G ⅜	1.6	✓			EPDM	0.2 – 16	**042U4011**
EV220A 10	G ⅜	1.6		✓	✓	NBR	0.2 – 16	**042U4013**
EV220A 10	G ½	1.6	✓			EPDM	0.2 – 16	**042U4012**
EV220A 10	G ½	1.6		✓	✓	NBR	0.2 – 16	**042U4014**
EV220A 12	G ½	2.5		✓	✓	NBR	0.3 – 16	**042U4023**
EV220A 14	G ½	4	✓			EPDM	0.3 – 16	**042U4022**
EV220A14	G ½	4		✓	✓	NBR	0.3 – 16	**042U4024**
EV220A 18	G ¾	7	✓			EPDM	0.3 – 16	**042U4031**
EV220A 18	G ¾	7		✓	✓	NBR	0.3 – 16	**042U4032**
EV220A 22	G 1	7	✓			EPDM	0.3 – 16	**042U4041**
EV220A 22	G 1	7		✓	✓	NBR	0.3 – 16	**042U4042**
EV220A 32	G 1 ¼	15	✓			EPDM	0.3 – 16	**042U4085**
EV220A 32	G 1 ¼	15		✓	✓	NBR	0.3 – 16	**042U4084**
EV220A 40	G 1 ½	18	✓			EPDM	0.3 – 16	**042U4087**
EV220A 40	G 1 ½	18		✓	✓	NBR	0.3 – 16	**042U4086**
EV220A 50	G 2	32	✓			EPDM	0.3 – 16	**042U4089**
EV220A 50	G 2	32		✓	✓	NBR	0.3 – 16	**042U4088**

EV220A servo-operated 2/2-way solenoid valves, brass, NO

Type	Connection	Kv [m³/h]	Media			Seal material	Differential pressure [bar]	Code number
			Water 120 °C	Water 90 °C	Oil / Air			
EV220A 6	G ¼	1		✓	✓	NBR	0.2 – 16	**042U4053**
EV220A 10	G ⅜	1.6		✓	✓	NBR	0.2 – 16	**042U4063**
EV220A 14	G ½	4		✓	✓	NBR	0.3 – 16	**042U4074**
EV220A 18	G ¾	7		✓	✓	NBR	0.3 – 16	**042U4082**
EV220A 22	G 1	7		✓	✓	NBR	0.3 – 16	**042U4092**

Coils for EV220A

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] AM coil	AM coil DIN 43650-A
24		50/60	7.5/5.5	**042N0842**
110		50/60	7.5/5.5	**042N0845**
230		50/60	9.5/6.5	**042N0840**
240		50/60	7.5/5.5	**042N0841**
	12	-	8.5	**042N0848**
	24	-	9.0	**042N0843**

Cable plugs, IP65 enclosure

To use with AM coils	**042N0156**

To use with AM coils - 24 V AC and DC	**042N0263**
To use with AM coils - 230 V AC	**042N0265**

Spare parts and accessories for EV220A

Spare part kits, NC

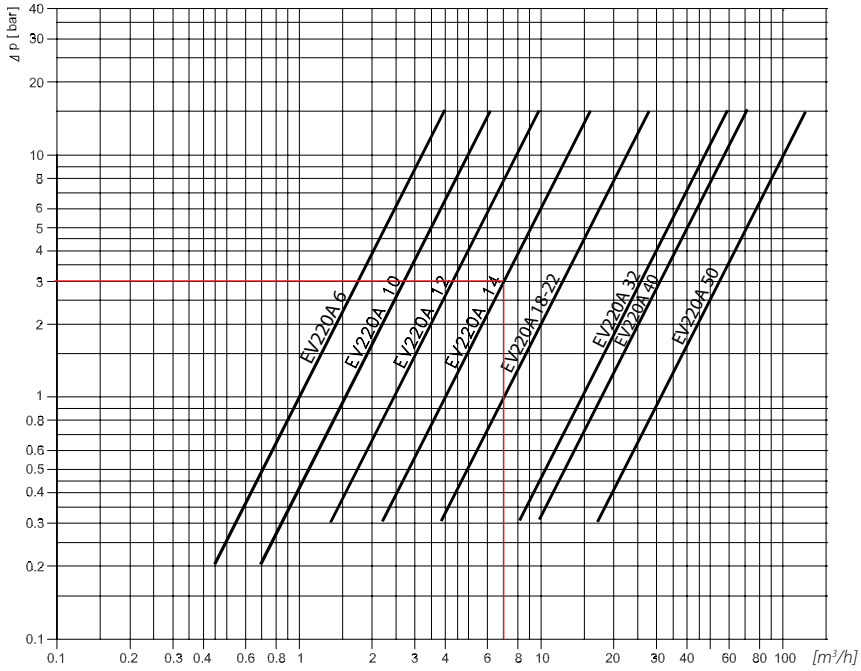
Application	Seal material	Code number
EV220A 6 - EV220A 10	EPDM	**042U1000**
EV220A 6 - EV220A 10	NBR	**042U1001**
EV220A 12 - EV220A 14	EPDM	**042U1003**
EV220A 12 - EV220A 14	NBR	**042U1004**
EV220A 18 - EV220A 22	EPDM	**042U1006**
EV220A 18 - EV220A 22	NBR	**042U1007**
EV220A 32	EPDM	**042U1037**
EV220A 32	NBR	**042U1038**
EV220A 40	EPDM	**042U1039**
EV220A 40	NBR	**042U1040**
EV220A 50	EPDM	**042U1041**
EV220A 50	NBR	**042U1042**

Electronic timers for coils for pulse start, only AM coil

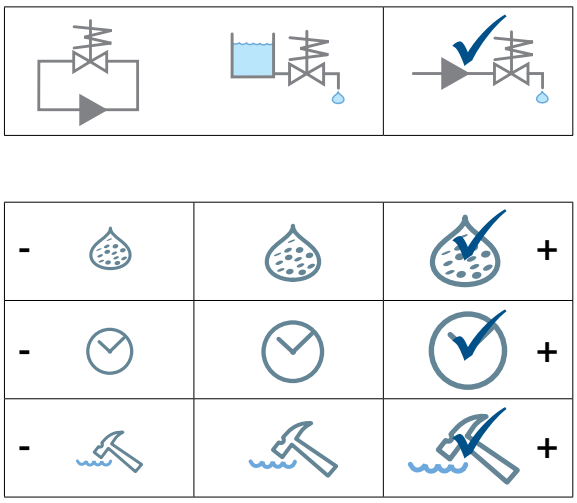
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

Capacity diagram for EV220A

Example for water:
Capacity for EV220A at differential pressure of 3 bar: Approx. 7 m³h



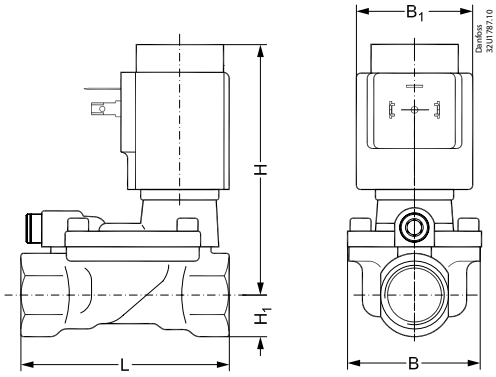
EV224B servo-operated 2/2-way solenoid valves for high pressure air

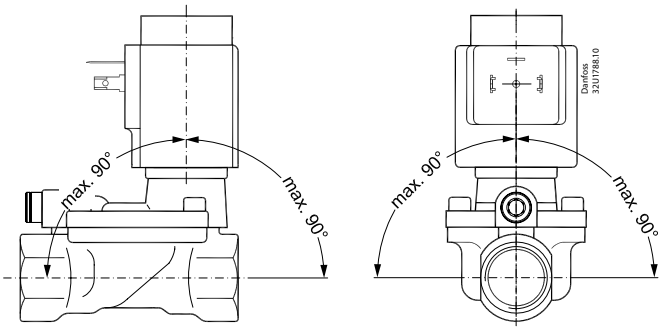


EV224B is a high pressure indirect servo-operated 2/2-way solenoid valve with working pressure up to 40 bar, medium temperature up to 60 °C and available in NC and NO versions. Built-in pilot filter as standard, adjustable closing time, enclosures up to IP67 (depending on coil) ensure a reliable and satisfactory function.

- For high pressure air applications up to 40 bar
- 2/2-way
- Servo-operated
- DN 15 - DN 25
- Ambient temperature: 80 °C
- NC and NO versions
- Brass valve body
- Built in filter for protection of pilot system
- Based on proven EV220B technology
- Nominal pressure from PN 33
- Wetted parts: brass, stainless steel, copper, tin, PTFE (only NO) and NBR rubber

Dimensions, weight and mounting angle:





Type / orifice size	L [mm]	B [mm]	B_1 [mm] Coil type BB/BE	H_1 [mm]	H [mm]	Weight with BB coil [kg]
EV224B 15	80.0	52.0	46	15.0	99.0	1.04
EV224B 20	90.0	58.0	46	18.0	103.0	1.24
EV224B 25	109.0	70.0	46	22.0	113.0	1.64

EV224B servo-operated valves, NC

Type	Connection	K_v [m^3/h]	Seal material	Media Air 60 °C	Body material Brass	Differential pressure [bar]	Code number
EV224B 15	G ½	4	NBR	✓	✓	0.3 – 40	**032U8360**
EV224B 20	G ¾	8	NBR	✓	✓	0.3 – 35	**032U8362**
EV224B 25	G 1	11	NBR	✓	✓	0.3 - 33	**032U8364**

EV224B servo-operated valves, NO

Type	Connection	K_v [m^3/h]	Seal material	Media Air 60 °C	Body material Brass	Differential pressure [bar]	Code number
EV224B 15	G ½	4	NBR	✓	✓	0.3 – 40	**032U8361**
EV224B 20	G ¾	8	NBR	✓	✓	0.3 – 35	**032U8363**
EV224B 25	G 1	11	NBR	✓	✓	0.3 - 33	**032U8365**

Coils for EV224B

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] BB	Power consumption [W] BE	BB coil IP00 clip-on	BE coil IP67 clip-on
24		50	11	12	**018F7358**	**018F6707**
48		50		11		**018F6709**
110		50	15		**018F7360**	
110		60	13		**018F7360**	
115		50	11	11	**018F7361**	**018F6711**
220 - 230		50	11	12	**018F7351**	**018F6701**
240		50	11	11	**018F7352**	**018F6702**
380 - 400		50	14	14	**018F7353**	**018F6703**
440		60	15	15	**018F7353**	**018F6703**
	12	–	13	13	**018F7396**	**018F6756**
	24	–	16	16	**018F7397**	**018F6757**

Cable plug, IP65 enclosure

To use with all BB coils	**042N0156**	No plug needed - IP67 terminal box fitted as standard

To use with BB coils - 24 V AC+DC	**042N0263**	
To use with BB coils - 230 V AC	**042N0265**	

Spare parts and accessories for EV224B

Electronic timers for coils for pulse start, only IP65

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

Spare part kits, NC

Application	Seal material		Code number
EV224B 15	NBR		**032U6156**
EV224B 20	NBR		**032U6158**
EV224B 25	NBR		**032U6160**

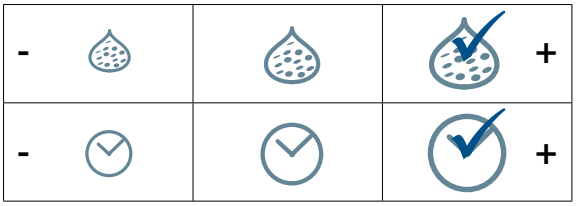
Spare part kits, NO

Application	Seal material		Code number
EV224B 15	NBR		**032U6157**
EV224B 20	NBR		**032U6159**
EV224B 25	NBR		**032U6161**

Spare part kits for synthetic oil, NC/NO

Application	Seal material		Code number
EV224B 15	FKM		**032U8118**
EV224B 20	FKM		**032U8119**

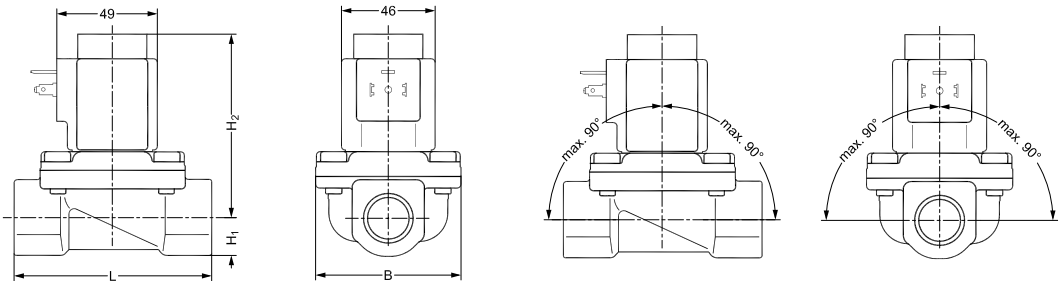
EV225B servo-operated 2/2-way solenoid valves for steam



EV225B is a servo-operated 2/2-way solenoid valve for use in steam application.
The design is based on a PTFE diaphragm concept, ensuring high reliable function even in connection with contaminated steam.
Valve body in dezincification resistant brass and valve seats made in stainless steel for ensuring a long life even in connection with aggressive steam media.

- 2/2-way
- Specifically designed for steam applications, 160 °C or 185 °C
- Servo-operated
- DN 6 - DN 25
- Ambient temperature: 40 °C
- G ¼" – G 1"
- DZR brass valve body
- NC (normally closed)
- ISO 228/1 or UL listed version with NPT for North America (EVSIS/UL)

Dimensions, weight and mounting angle:



Type / orifice size	L [mm]	B [mm]	H [mm]	H_1 [mm]	H_2 [mm]	Weight with BQ/BB coil [kg]	Weight with BN coil [kg]
EV225B 6	62	46	98	13	85	0.75	1.03
EV225B 10	62	46	98	13	85	0.72	1.00
EV225B 15	81	56	102	15	87	0.86	1.14
EV225B 20	98	72	110	18	92	1.40	1.68
EV225B 25	106	72	117	21	96	1.70	1.98

EV225B servo operated steam valve with BQ coil and plug, DZR brass, NC

Type	Connection	K_v [m^3/h]	BQ coil, 10 W AC Temp. max [°C]	BQ coil, 10 W AC Diff. pressure [bar]	24 V 50 Hz	110 V 60 Hz	230 V 50 Hz	220 V 60Hz	Code number
EV225B 10	G ½	2.2	185	0.2 – 10	✓				**032U380416**
EV225B 15	G ½	3.0	185	0.2 – 10	✓				**032U380516**
EV225B 20	G ¾	5.0	185	0.2 – 10	✓				**032U380616**
EV225B 25	G 1	6.0	185	0.2 – 10	✓				**032U380716**
EV225B 10	G ½	2.2	185	0.2 – 10		✓			**032U380420**
EV225B 15	G ½	3.0	185	0.2 – 10		✓			**032U380520**
EV225B 20	G ¾	5.0	185	0.2 – 10		✓			**032U380620**
EV225B 25	G 1	6.0	185	0.2 – 10		✓			**032U380720**
EV225B 10	G ½	2.2	185	0.2 – 10			✓		**032U380431**
EV225B 15	G ½	3.0	185	0.2 – 10			✓		**032U380531**
EV225B 20	G ¾	5.0	185	0.2 – 10			✓		**032U380631**
EV225B 25	G 1	6.0	185	0.2 – 10			✓		**032U380731**
EV225B 10	G ½	2.2	185	0.2 – 10				✓	**032U380429**
EV225B 15	G ½	3.0	185	0.2 – 10				✓	**032U380529**
EV225B 20	G ¾	5.0	185	0.2 – 10				✓	**032U380629**
EV225B 25	G 1	6.0	185	0.2 – 10				✓	**032U380729**

EV225B servo operated steam valve with BN coil and plug, DZR brass, NC

Type	Connection	K_v [m^3/h]	BN coil, 20 W Temp. max [°C]	BN coil, 20 W Diff. pressure [bar]	24 V DC		Code number
EV225B 10	G ½	2.2	160	0.2 – 5	✓		**032U380402**
EV225B 15	G ½	3.0	160	0.2 – 5	✓		**032U380502**
EV225B 20	G ¾	5.0	160	0.2 – 5	✓		**032U380602**
EV225B 25	G 1	6.0	160	0.2 – 5	✓		**032U380702**

EV225B servo-operated steam valve, DZR brass, NC, PTFE seal material

Type	Connection	K_v [m^3/h]	BQ coil, 10 W AC Temp. max [°C]	BQ coil, 10 W AC Diff. pressure [bar]	BN coil, 20 W DC Temp. max [°C]	BN coil, 20 W DC Diff. pressure [bar]	BB coil, 10 W AC Temp. max [°C]	BB coil, 10 W AC Diff. pressure [bar]	BB coil, 18 W DC Temp. max [°C]	BB coil, 18 W DC Diff. pressure [bar]	Code number
EV225B 6	G ¼	0.9	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	**032U3802**
EV225B 10	G ⅜	2.2	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	**032U3803**
EV225B 10	G ½	2.2	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	**032U3804**
EV225B 15	G ½	3.0	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	**032U3805**
EV225B 20	G ¾	5.0	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	**032U3806**
EV225B 25	G 1	6.0	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	**032U3807**

Coils for EV225B

Voltage		Frequency	Power consumption [W]		BQ coil, AC 10 bar, 185 °C		BN coil, DC 5 bar, 160 °C
[V] AC	[V] DC	[Hz]	BQ	BN	IP65 clip-on		IP65 clip-on
24		50	10		**018F4517**		
24		60	9.0		**018F4517**		
110		50	13.5		**018F4519**		
230		50	10		**018F4511**		
208 – 240		60	9.5		**018F4511**		
240		50					
	24	–		20			**018F6968**

Cable plug, IP65 enclosure

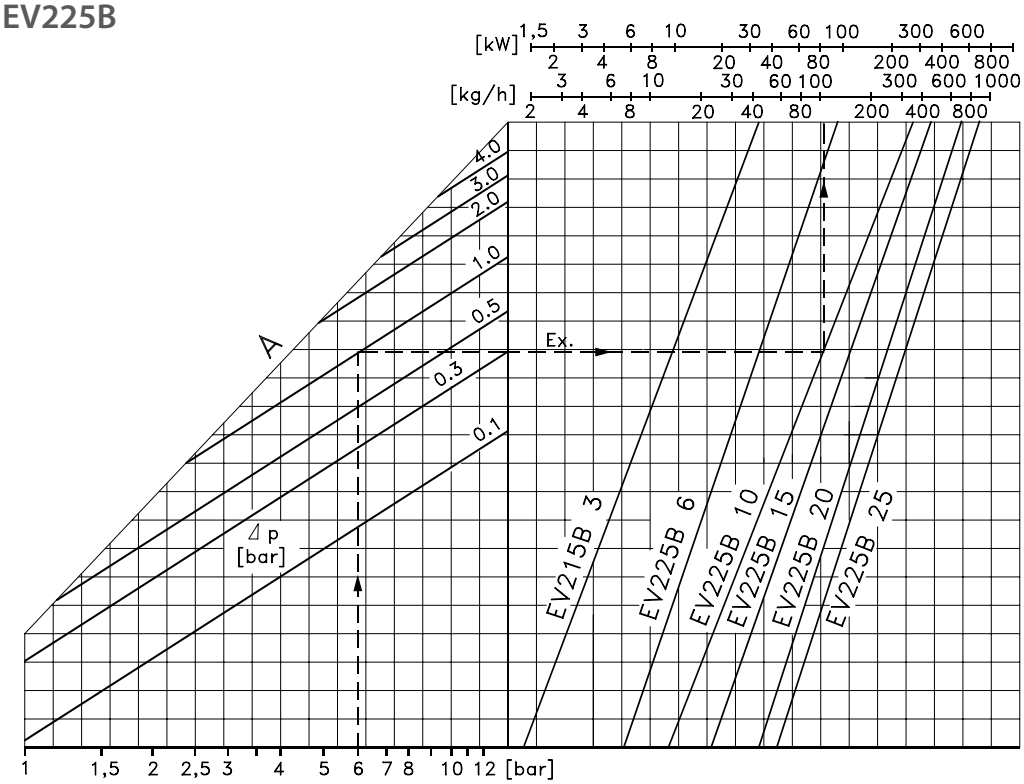
To use with all BQ and BN coils		**042N0156**	**042N0156**

Spare part kits

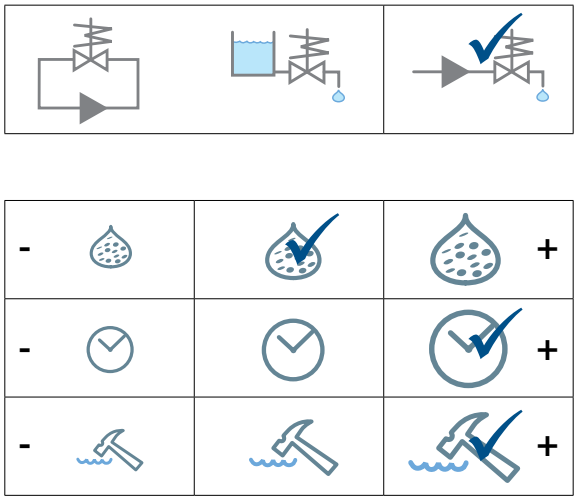
Application	Seal material	Code number
EV225B 6 - EV225B 10	PTFE	**032U3171**
EV225B 15	PTFE	**032U3172**
EV225B 20 - EV225B 25	PTFE	**032U3173**

Capacity diagram for EV225B

Example, steam:
Capacity for EV225 10 BD; inlet pressure (p_1) of 6 bar absolute; differential pressure at 1 bar:
Approx. 100 kg/h / 80 kW



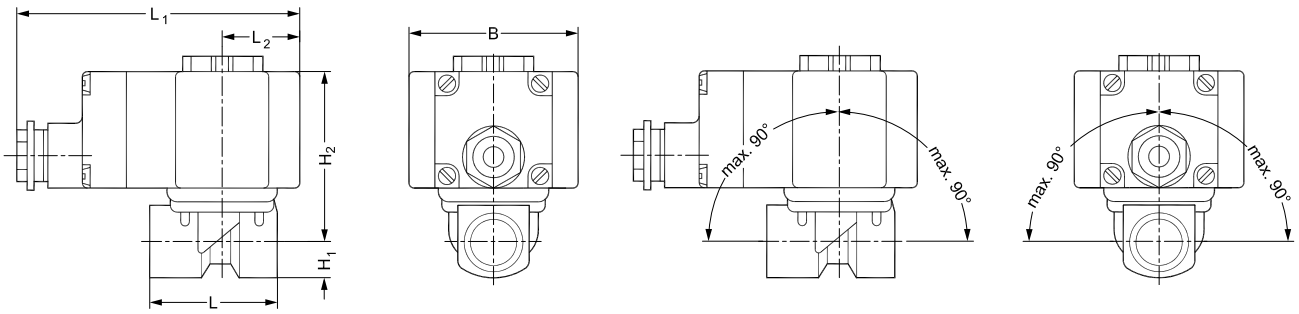
EV260B servo-operated 2-way proportional solenoid valves



EV260B is a proportional (modulating) servo-operated 2-way solenoid valve program with connections from ¼" to ¾".
Through stepless regulation of the coil current, the armature can be placed in any position in the armature tube, thus setting the valve to any position between completely closed and completely open.
The valve is fully open when the coil current has reached its maximum value.

- Proportional (modulating)
- For stepless flow regulation
- 2-way
- Servo-operated
- DN 6 - DN 20
- Ambient temperature: 50 °C
- Short reaction time
- Linear characteristic thoughout the regulation range
- Closes on power failure (fail-safe function)
- IP67 coil enclosure
- 24 V DC supply voltage
- This product is only applicable for liquids
- Nominal pressure PN 10
- Wetted parts: brass, stainless steel, PTFE, CR, NBR or FKM rubber

Dimensions, weight and mounting angle:



Type / orifice size	L [mm]	L_1 [mm]	L_2 [mm]	H_1 [mm]	H_2 [mm]	B [mm]	Weight without signal converter [kg]	Weight with signal converter [kg]
EV260B 6	62	112[1)]	30	13	71	68	1.02	1.22
EV260B 10	62	112[1)]	30	13	71	68	1.02	1.22
EV260B 15	81	112[1)]	30	15	74	68	1.17	1.37
EV260B 20	98	112[1)]	30	18	79	68	1.71	1.91

1) With the BM and the BL coil the measurement is 128 mm

EV260B proportional valve, brass, NC

Type	Connection	K_v [m^3/h]	Seal material	Medium water [°C]	Differential pressure [bar]	Code number
EV260B 6	G ¼	0.8	PTFE	-10 – 80	0.5 – 10	**032U8052**
EV260B 6	G ⅜	0.8	PTFE	-10 – 80	0.5 – 10	**032U8053**
EV260B 10	G ⅜	1.3	PTFE	-10 – 80	0.5 – 10	**032U8054**
EV260B 10	G ½	1.3	PTFE	-10 – 80	0.5 – 10	**032U8055**
EV260B 15	G ½	2.1	PTFE	-10 – 80	0.5 – 10	**032U8056**
EV260B 20	G ¾	5	PTFE	-10 – 80	0.5 – 10	**032U8057**

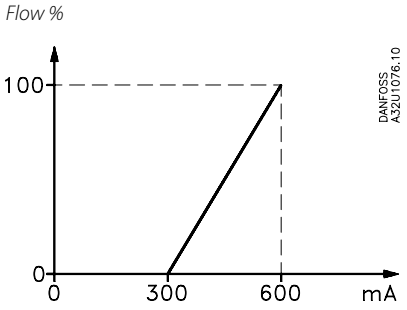
Coils for EV260B

Voltage [V] DC	BK coil 300-600 mA	BM coil 0-10 V	BL coil 4-20 mA
24	**018Z6987**	**018Z0290**	**018Z0291**
	IP67 terminal box fitted as standard	IP67 terminal box fitted as standard	IP67 terminal box fitted as standard

Spare part kits for EV260B

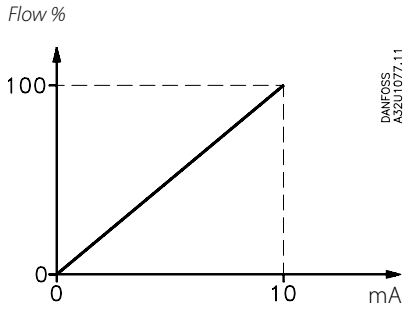
Application	Seal material	Code number
EV260B 6	PTFE	**032U8039**
EV260B 10	PTFE	**032U8040**
EV260B 15	PTFE	**032U8041**
EV260B 20	PTFE	**032U8042**

Signal flow characteristics for EV260B



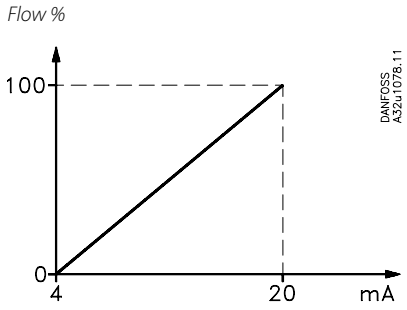
Supply voltage: 24 V pulsating DC

Coil type BK. Without signal converter
The basic version consists of a valve with a coil for pulsating direct current. The supply voltage of 24V DC can be established with full-wave rectified alternating current. The valve begins to open at a coil current of approx. 300 mA and is fully open at a coil current of approx. 600 mA. The ration between coil current and flow between the two outer points is directly proportional.



Supply voltage: 21-30 V DC

Coil type BM. With signal converter and 0-10 V pilot signal. The ration between pilot signal and flow is directly proportional throughout the regulation range.

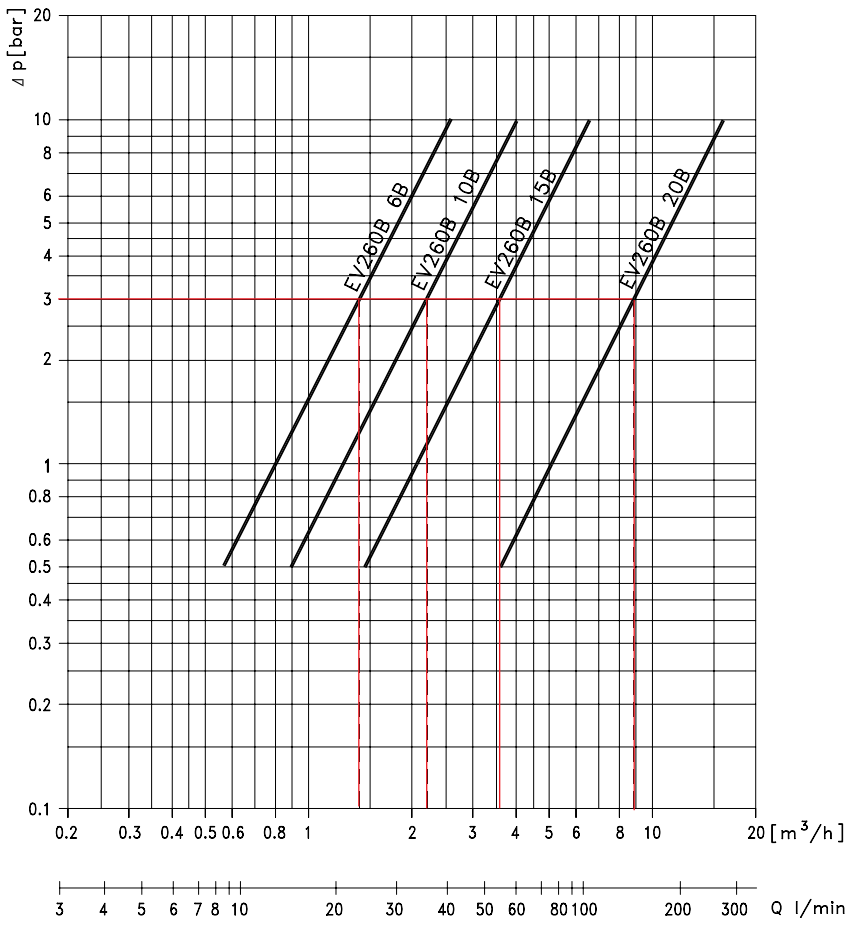


Supply voltage: 21-30 V DC

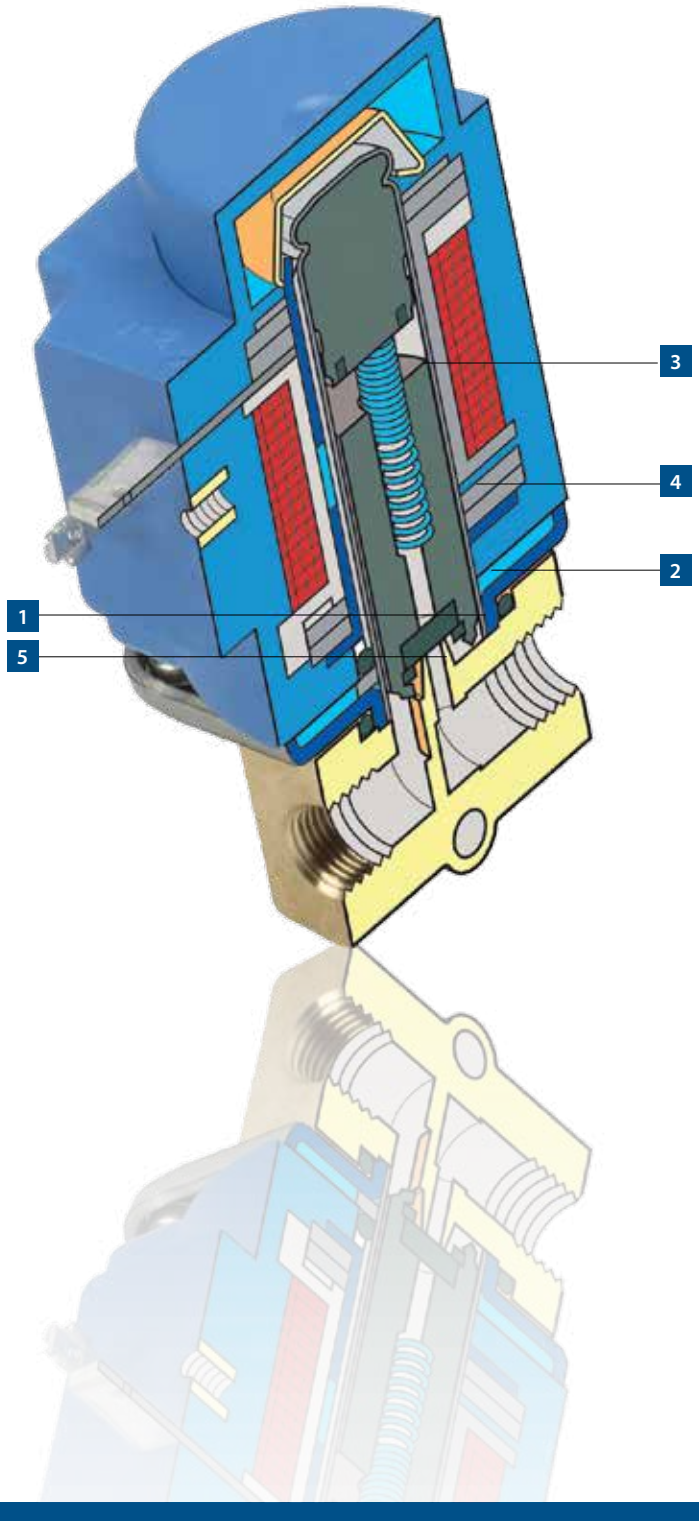
Coil type BL. With signal converter and 4-20 mA pilot signal.
The ration between pilot signal and flow is directly proportional throughout the regulation range.

Capacity diagram for EV260B

For water at fully opened valve
Example: Differential pressure of 3 bar:
EV260B 6 B: Appr. 1.4 m³/h
EV260B 10 B: Appr. 2.2 m³/h
EV260B 15 B: Appr. 3.6 m³/h
EV260B 20 B: Appr. 8.7 m³/h



The EV210B solenoid valve for tough working conditions



The EV210B is designed to control the flow of water, oil or air in a wide range of applications.

1 Increased performance without increasing coil power
The EV210B's non-fixed valve plate doubles performance without increasing the coil power or reducing the valve's lifetime. When the coil is energised, the armature moves and accumulates energy, and when it hits the valve plate, the impact lifts the plate to increase performance.

2 Modular design for customised solutions
EV210B with direct actuator is extremely durable at high temperature and pressure. The valve has a modular design which is perfect for customised solutions.

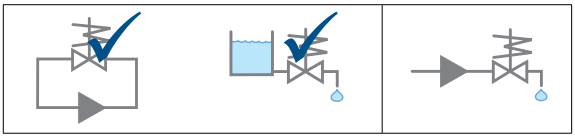
3 Long life
Designed to last, the EV210B has a high wall thickness, a unique square-shaped armature and a specially designed spring. And because the spring movements are very close, wear is significantly reduced.

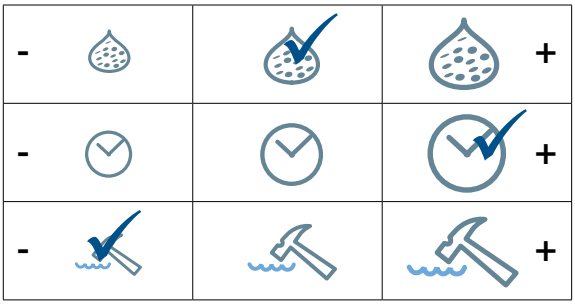
4 Insensitive to dirt
Due to the armature's unique design, there is a low risk of particles sticking to the armature. If particles become lodged between the armature and the armature tube or top, they will be displaced by the fluid when the armature moves.

5 Optimum Kv-values for many connections
The optimum shape and diameter of the valve plate, as well as the valve plate lift ensure that the EV210B has high Kv-values (capacity).

Secure opening and closing
To prevent particles lodging in the armature, an isolating diaphragm is available for valves up to 4.5 mm.

EV210B direct-operated 2/2-way solenoid valves



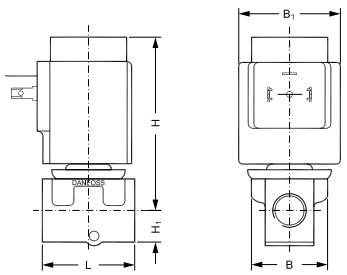


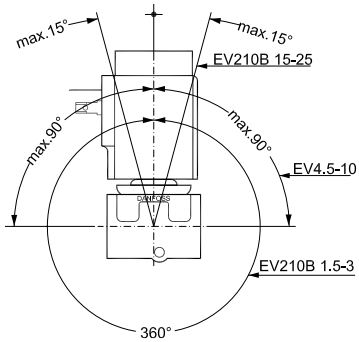
EV210B covers a wide range of direct-operated 2/2-way solenoid valves for universal use. EV210B is a real robust valve program with high performance and can be used in all kind of tough working conditions.

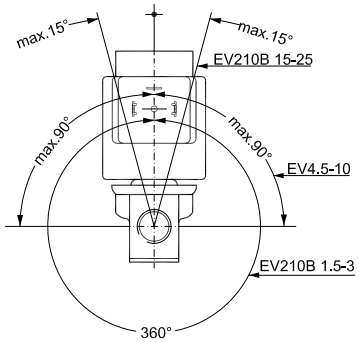
- 2/2-way
- High Performance series
- Direct-operated
- DN 1.5 - DN 25

- Brass or stainless steel valve body
- NC (normally closed) and NO (normally open) versions
- ISO 228/1 G 1/8" to G 1"
- UL listed version with NPT for North America (EVI)
- Wetted parts: brass, stainless steel, copper, EPDM, FKM or NBR rubber

Dimensions, weight and mounting angle:







Type / orifice size	L [mm]	B [mm]	B_1 [mm] Coil type BA	B_1 [mm] Coil type BB	H_1 [mm]	H [mm]	Weight with BB coil [kg]
EV210B 1.5/2	35.0	34	32	46	12.0	70.0	0.39
EV210B 3/4.5	38.0	34	32	46	11.0	70.0	0.44
EV210B 6	45.5	34	32	46	15.5	72.5	0.46
EV210B 8/10	49.0	34	32	46	15.5	72.5	0.53
EV210B 15	58.0	53.0	32	46	12.5	92.5	0.69
EV210B 20	90.0	58.0	32	46	18.0	92.0	1.34
EV210B 25	90.0	58.0	32	46	23.0	96.0	1.34

EV210B direct operated valve with coil and plug IP65, brass, NC

Type	Connection	K_v [m³/h]	Media Oil / Air	Seal material	Differential pressure [bar]	Coil BB [V] AC 50 Hz	Coil BB [V] DC	Code number
EV210B 1.5	G 1/8	0.08	✓	FKM	0 – 30		24	**032U145802**
EV210B 1.5	G 1/8	0.08	✓	FKM	0 – 30	230		**032U145831**
EV210B 3	G 1/4	0.30	✓	FKM	0 –13		24	**032U147002**
EV210B 3	G 1/4	0.30	✓	FKM	0 – 20	24		**032U147016**
EV210B 3	G 1/4	0.30	✓	FKM	0 – 20	230		**032U147031**
EV210B 4.5	G 3/8	0.55	✓	FKM	0 – 4.5		24	**032U148002**
EV210B 4.5	G 3/8	0.55	✓	FKM	0 – 10	24		**032U148016**
EV210B 4.5	G 3/8	0.55	✓	FKM	0 – 10	230		**032U148031**

EV210B direct operated valve, brass, NC

Type	Connection	K_v [m³/h]	Media Water 120 °C	Media Water 90 °C	Media Oil / Air	Seal material	Differential pressure [bar] BA coil AC / DC	Differential pressure [bar] BB/BE coil AC / DC	Code number
EV210B 1.5	G 1/8	0.08	✓			EPDM	0 – 30 / 0 – 30	0 – 30 / 0 – 30	**032U5701**
EV210B 1.5	G 1/8	0.08			✓	FKM	0 – 30 / 0 – 30	0 – 30 / 0 – 30	**032U5702**
EV210B 1.5	G 1/8	0.08		✓	✓	NBR	0 – 30 / 0 – 30	0 – 30 / 0 – 30	**032U1200**
EV210B 1.5	G 1/4	0.08			✓	FKM	0 – 30 / 0 – 30	0 – 30 / 0 – 30	**032U3629**
EV210B 1.5	G 1/4	0.08		✓	✓	NBR	0 – 30 / 0 – 30	0 – 30 / 0 – 30	**032U1205**
EV210B 2	G 1/8	0.15			✓	FKM	0 – 30 / 0 – 20	0 – 30 / 0 – 30	**032U5704**
EV210B 2	G 1/4	0.15	✓			EPDM	0 – 30 / 0 – 20	0 – 30 / 0 – 30	**032U5707**
EV210B 2	G 1/4	0.15			✓	FKM	0 – 30 / 0 – 20	0 – 30 / 0 – 30	**032U5708**
EV210B 3	G 1/8	0.30			✓	FKM	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U5706**
EV210B 3	G 1/8	0.30	✓			EPDM	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U5705**
EV210B 3	G 1/4	0.30		✓	✓	NBR	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U1220**
EV210B 3	G 1/4	0.30	✓			EPDM	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U5709**
EV210B 3	G 1/4	0.30			✓	FKM	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U5710**
EV210B 3	G 3/8	0.30	✓			EPDM	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U3642**
EV210B 3	G 3/8	0.30		✓	✓	NBR	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U1225**
EV210B 3	G 3/8	0.30			✓	FKM	0 – 15 / 0 – 9	0 – 20 / 0 – 13	**032U3643**
EV210B 4.5	G 1/4	0.55			✓	FKM	0 – 8 / 0 – 3.5	0 – 10 / 0 – 4.5	**032U3601**
EV210B 4.5	G 3/8	0.55	✓			EPDM	0 – 8 / 0 – 3.5	0 – 10 / 0 – 4.5	**032U3605**
EV210B 4.5	G 3/8	0.55			✓	FKM	0 – 8 / 0 – 3.5	0 – 10 / 0 – 4.5	**032U3606**
EV210B 6	G 3/8	0.70		✓	✓	NBR	0 – 2.5 / 0 – 1	0 – 4 / 0 – 2	**032U1231**
EV210B 6	G 3/8	0.70	✓			EPDM	0 – 2.5 / 0 – 1	0 – 4 / 0 – 2	**032U3607**
EV210B 6	G 3/8	0.70			✓	FKM	0 – 2.5 / 0 – 1	0 – 4 / 0 – 2	**032U3608**
EV210B 8	G 1/2	1.00	✓			EPDM	0 – 1.5 / 0 – 0.5	0 – 2 / 0 – 1.2	**032U3615**
EV210B 8	G 1/2	1.00			✓	FKM	0 – 1.5 / 0 – 0.5	0 – 2 / 0 – 1.2	**032U3616**
EV210B 10	G 1/2	1.50	✓			EPDM	0 – 0.8 / 0 – 0.3	0 – 1.2 / 0 – 0.6	**032U3617**
EV210B 10	G 1/2	1.50			✓	FKM	0 – 0.8 / 0 – 0.3	0 – 1.2 / 0 – 0.6	**032U3618**

EV210B direct operated valve, DZR brass, NC

Type	Connection	K_v [m^3/h]	Media		Seal material	Differential pressure [bar]		Code number
			Water 120 °C	Oil / Air		BA/BE coil AC / DC	BB coil AC / DC	
EV210B 15	G ½	2.85	✓		EPDM	0 – 0.25 / -	0 – 0.3 / 0 – 0.15	**032U3619**
EV210B 15	G ½	2.85		✓	FKM	0 – 0.25 / -	0 – 0.3 / 0 – 0.15	**032U3620**
EV210B 20	G ¾	4.50	✓		EPDM	-	0 – 0.28 / 0 – 0.12	**032U3621**
EV210B 20	G ¾	4.50		✓	FKM	-	0 – 0.28 / 0 – 0.12	**032U3622**
EV210B 25	G 1	8.00	✓		EPDM	-	0 – 0.25 / 0 – 0.09	**032U3623**
EV210B 25	G 1	8.00		✓	FKM	-	0 – 0.25 / 0 – 0.09	**032U3624**

EV210B direct operated valve, brass, NO

Type	Connection	K_v [m^3/h]	Media		Seal material	Differential pressure [bar] BA/BE/BB coil AC / DC	Code number
			Water 120 °C	Oil / Air			
EV210B 1.5	G ⅛	0.08	✓		EPDM	0 – 30	**032U3630**
EV210B 1.5	G ⅛	0.08		✓	FKM	0 – 30	**032U3631**
EV210B 2.0	G ⅛	0.15	✓		EPDM	0 – 12	**032U3632**
EV210B 2.0	G ⅛	0.15		✓	FKM	0 – 12	**032U3633**
EV210B 2.0	G ¼	0.15	✓		EPDM	0 – 12	**032U3636**
EV210B 2.0	G ¼	0.15		✓	FKM	0 – 12	**032U3637**
EV210B 3.0	G ¼	0.30	✓		EPDM	0 – 5	**032U3638**
EV210B 3.0	G ¼	0.30		✓	FKM	0 – 5	**032U3639**
EV210B 4.5	G ¼	0.55	✓		EPDM	0 – 2	**032U3640**
EV210B 4.5	G ¼	0.55		✓	FKM	0 – 2	**032U3641**

Coils for EV210B

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] BA	BB	BY	BE	BA coil IP00	BB coil IP00 clip-on	BY coil IP65 clip-on	BE coil IP67 clip-on
24		50	8.5	11	14	12	**042N7508**	**018F7358**	**018F7655**	**018F6707**
24		60			12				**018F7655**	
48		50	9.5			11	**042N7510**			**018F6709**
110		50		15	14			**018F7360**	**018F7663**	
110		60		13				**018F7360**		
110 - 120		60			14				**018F7663**	
115		50	9.0	11		11	**042N7512**	**018F7361**		**018F6711**
220 - 230		50	12	11		12	**042N7501**	**018F7351**		**018F6701**
230		50			16				**018F7658**	
208 - 240		60			14				**018F7658**	
240		50	10	11		11	**042N7502**	**018F7352**		**018F6702**
380 - 400		50	12	14		14	**042N7504**	**018F7353**		**018F6703**
440		60		15		15		**018F7353**		**018F6703**
	12		14	13		15	**042N7550**	**018F7396**		**018F6756**
	24		14	16		13	**042N7551**	**018F7397**		**018F6757**

Cable plug, IP65 enclosure

To use with all BA, BB and BY coils	**042N0156**	**042N0156**	**042N0156**	No plug needed IP67 terminal box fitted as standard

To use with BA, BB and BY coils - 24 V AC+DC	**042N0263**	**042N0263**	**042N0263**
To use with BA, BB and BY coils - 230 V AC	**042N0265**	**042N0265**	**042N0265**

Spare parts and accessories for EV210B

Isolating diaphragm kit, NC

Application	Seal material	Code number
EV210B 1.5 - 4.5	EPDM	**042U1009**
EV210B 1.5 - 4.5	FKM	**042U1010**

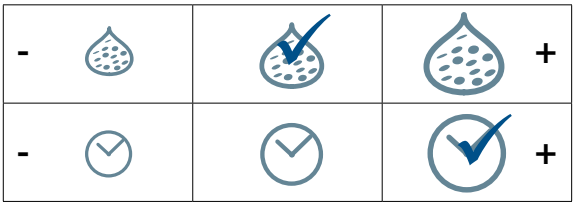
Permanent magnet

Application	Code number
Fits all EV210B valves	**018F0091**

Electronic timers for coils for pulse start

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

EV310B direct-operated 3/2-way solenoid valves

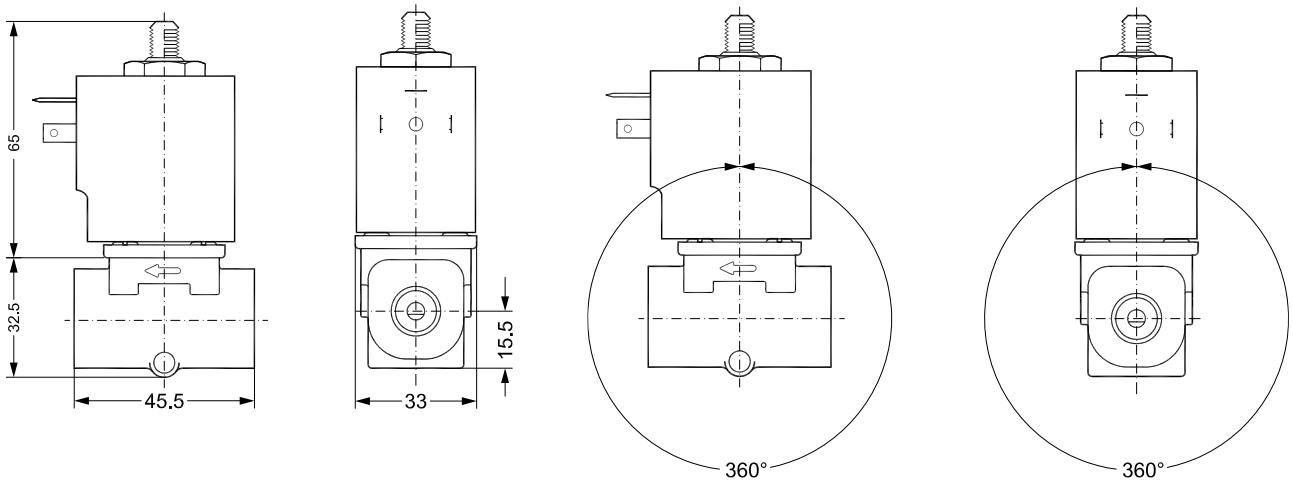


EV310B covers a wide range of direct-operated 3/2-way solenoid valves for universal use.
EV310B is a real robust valve program with high performance and can be used in all kind of tough working conditions.
Clip-on coils can not be used on EV310B.

- 3/2-way
- Direct-operated
- DN 1.5 - DN 3.5
- Ambient temperature: 40 °C
- Brass valve body
- Thread (G 1/8" to G 3/8") or flange (32x32 mm) connections
- NC (normally closed) and NO (normally open) versions
- Manual override versions
- Nominal pressure PN 16
- Wetted parts: brass, stainless steel, copper and FKM rubber

Dimensions, weight and mounting angle:

Weight without coil: 0.220 kg



All dimensions in millimetres

EV310B without coil, brass, NC

Type	Connection	K_v [m^3/h]	Media Oil / Air	Seal material	Differential pressure [bar]	Code number
EV310B 2	G ⅛	0.15	✓	FKM	0 – 16	**032U4901**
EV310B 2	G ¼	0.15	✓	FKM	0 – 16	**032U4904**

Media: EPDM: Water (120 °C), FKM: Oil and Air, NBR: Water (90 °C), Oil and Air

EV310B without coil, brass, NC, manual override unit

Type	Connection	K_v [m^3/h]	Media Oil / Air	Seal material	Differential pressure [bar]	Code number
EV310B 2	G ⅛	0.15	✓	FKM	0 – 16	**032U4916**
EV310B 2	G ¼	0.15	✓	FKM	0 – 16	**032U4919**

Media: EPDM: Water (120 °C), FKM: Oil and Air, NBR: Water (90 °C), Oil and Air

Coils for EV310B

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] BA coil		BA coil IP00
24		50	8.5		**042N7508**
48		50	9.5		**042N7510**
115		50	9.0		**042N7512**
220 - 230		50	12		**042N7501**
240		50	10		**042N7502**
380 - 400		50	12		**042N7504**
	12		14		**042N7550**
	24		14		**042N7551**

Cable plug, IP65 enclosure

To use with all BA coils	**042N0156**

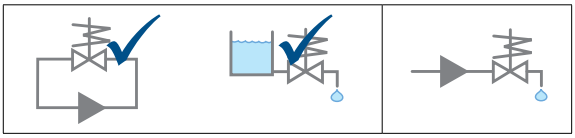
To use with BA coils - 24 V AC+DC	**042N0263**
To use with BA coils - 230 V AC	**042N0265**

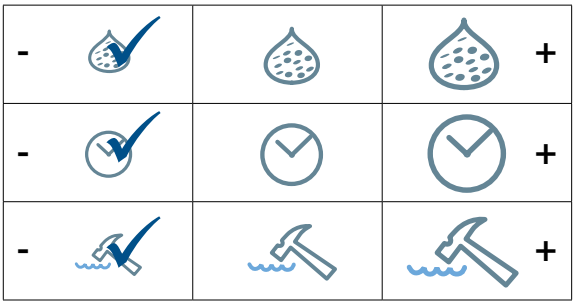
Accessories for EV310B

Electronic timers for coils for pulse start

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

EV210A direct-operated 2/2-way compact solenoid valves

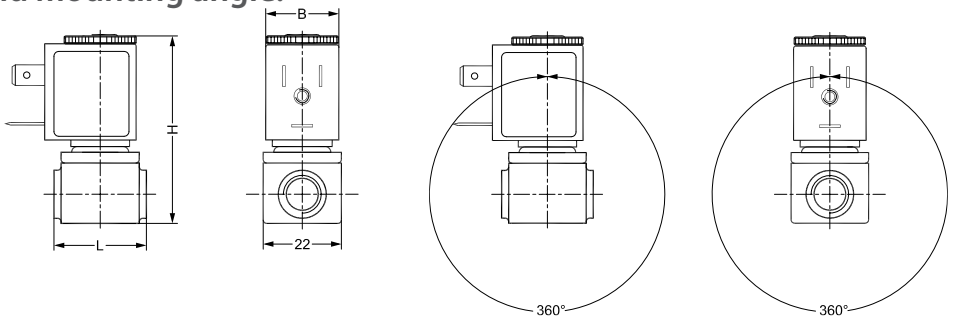




EV210A covers a wide range of small, direct-operated 2/2-way solenoid valves for use in industrial machinery.
The compact design together with the broad range of coils means that EV210A covers a broad variety of industrial applications.

- 2/2-way
- Compact dimensions
- Direct-operated
- DN 1.2 - DN 3.5
- G ⅛ to G ¼
- Ambient temperature: 50 °C
- Brass or stainless steel valve body
- NC (normally closed)
- Wetted parts: brass, stainless steel, copper, EPDM or FKM rubber

Dimensions, weight and mounting angle:



Thread ISO 228/1	L [mm]	B [mm] Coil type AB	B [mm] Coil type AM	H [mm]	A [mm]	Weight with AB coil [kg]
G ⅛	26	22	33	54	13	0.09
G ¼	35	22	33	59	17.5	0.115

EV210A direct operated valve, brass or stainless steel (SS), NC

Type	Connection	K_v [m^3/h]	Media: Water 120 °C	Media: Oil / Air	Seal material	Body material: Brass	Body material: SS	Differential pressure [bar]: AB coil AC / DC	Differential pressure [bar]: AM coil AC / DC	Code number
EV210A 1.2	G ⅛	0.04	✓		EPDM	✓		0 – 30 / 0 – 17.5	0 – 30 / 0 – 24	**032H8000**
EV210A 1.2	G ⅛	0.04		✓	FKM	✓		0 – 28 / 0 – 16	0 – 30 / 0 – 24	**032H8001**
EV210A 1.5	G ⅛	0.08		✓	FKM	✓		0 – 15 / 0 – 8	0 – 26 / 0 – 19	**032H8003**
EV210A 1.5	G ⅛	0.08		✓	FKM		✓	0 – 15 / 0 – 8	0 – 26 / 0 – 19	**032H8027**
EV210A 2	G ⅛	0.11	✓		EPDM	✓		0 – 11 / 0 – 5.5	0 – 23 / 0 – 18.5	**032H8004**
EV210A 2	G ⅛	0.11		✓	FKM	✓		0 – 9 / 0 – 5	0 – 22 / 0 – 17	**032H8005**

EV210A direct operated valve, brass or stainless steel (SS), NC

Type	Connection	K_v [m^3/h]	Media		Seal material	Body material		Differential pressure [bar]		Code number
			Water 120 °C	Oil / Air		Brass	SS	AB coil AC / DC	AM coil AC / DC	
EV210A 2	G 1/8	0.11		✓	FKM		✓	0 – 9 / 0 – 5	0 – 22 / 0 – 17	**032H8029**
EV210A 2.5	G 1/8	0.17	✓		EPDM	✓		0 – 6 / 0 – 3	0 – 17 / 0 – 13	**032H8006**
EV210A 2.5	G 1/8	0.17		✓	FKM	✓		0 – 5 / 0 – 2.5	0 – 16 / 0 – 12	**032H8007**
EV210A 3	G 1/8	0.22	✓		EPDM	✓		0 – 4 / 0 – 1.5	0 – 13 / 0 – 9	**032H8008**
EV210A 3	G 1/8	0.22		✓	FKM	✓		0 – 3 / 0 – 1.5	0 – 12 / 0 – 8	**032H8009**
EV210A 3	G 1/8	0.22		✓	FKM		✓	0 – 3 / 0 – 1.5	0 – 12 / 0 – 8	**032H8033**
EV210A 2.5	G 1/4	0.17	✓		EPDM	✓		0 – 6 / 0 – 3	0 – 17 / 0 – 13	**032H8014**
EV210A 2.5	G 1/4	0.17		✓	FKM	✓		0 – 5 / 0 – 2.5	0 – 16 / 0 – 12	**032H8015**
EV210A 2.5	G 1/4	0.17		✓	FKM		✓	0 – 5 / 0 – 2.5	0 – 16 / 0 – 12	**032H8039**
EV210A 3	G 1/4	0.22	✓		EPDM	✓		0 – 4 / 0 – 1.5	0 – 13 / 0 – 9	**032H8016**
EV210A 3	G 1/4	0.22		✓	FKM	✓		0 – 3 / 0 – 1.5	0 – 12 / 0 – 8	**032H8017**
EV210A 3	G 1/4	0.22		✓	FKM		✓	0 – 3 / 0 – 1.5	0 – 12 / 0 – 8	**032H8041**
EV210A 3.5	G 1/4	0.26	✓		EPDM	✓		0 – 2.8 / 0 – 1.2	0 – 11 / 0 – 6	**032H8018**
EV210A 3.5	G 1/4	0.26		✓	FKM	✓		0 – 2 / 0 – 0.8	0 – 10 / 0 – 5.5	**032H8019**
EV210A 3.5	G 1/4	0.26		✓	FKM		✓	0 – 2 / 0 – 0.8	0 – 10 / 0 – 5.5	**032H8043**

Coils for EV210A

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] AP coil	Power consumption [W] AM coil	AP coil DIN 43650-A	AM coil DIN 43650-A
24		50		7.5		**042N0842**
24		60	5	5.5	**042N4193**	**042N0842**
110		50		7.5		**042N0845**
110		60		5.5		**042N0845**
110 – 120		60	5		**042N4192**	
230		50		9.5	**042N4191**	**042N0840**
230		60		6.5		**042N0840**
208 – 240		60	5.5		**042N4191**	
240		50		7.5		**042N0841**
240		60		5.5		**042N0841**
	12	–		8.5		**042N0848**
	24	–		9.0		**042N0843**

Cable plugs, IP65 enclosure

To use with all AP, AM coils	**042N0156**	**042N0156**

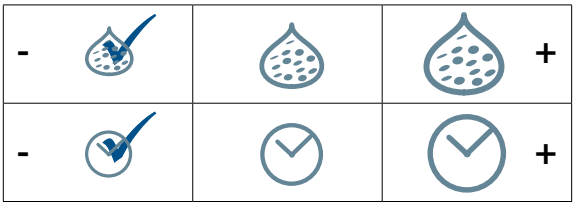
To use with AP, AM coils - 24 V AC and DC	**042N0263**	**042N0263**
To use with AP, AM coils - 230 V AC	**042N0265**	**042N0265**

Accessories for EV210A

Electronic timers for coils for pulse start, IP65 only

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

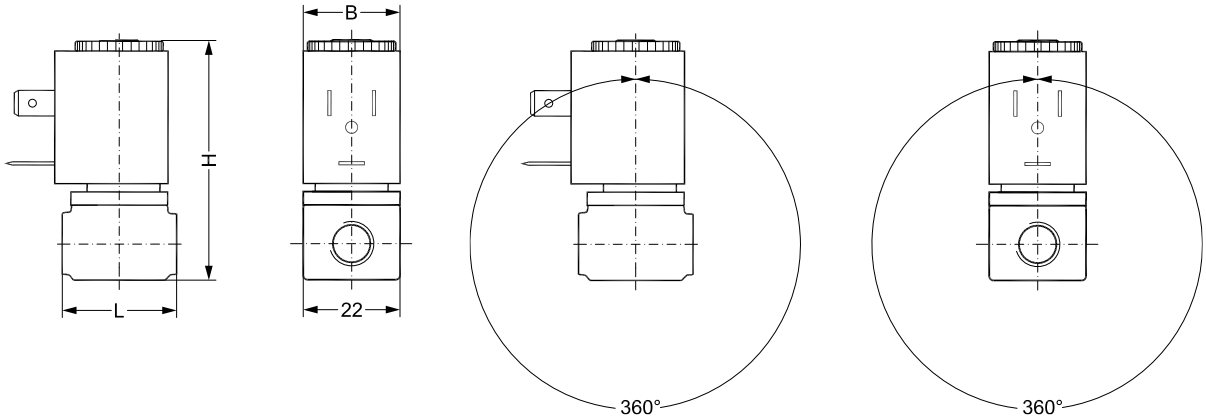
EV310A direct-operated 3/2-way compact solenoid valves



EV310A covers a wide range of small competitive, direct-operated 3/2-way solenoid valves for use within industrial applications, for example pilot valve applications.

- 3/2-way
- Direct-operated
- DN 1.2 - DN2
- G 1/8" to G 1/4"
- Ambient temperature: 50 °C
- Brass or stainless steel valve body
- NC (normally closed) and NO (normally open) versions
- Wetted parts: brass, stainless steel, copper and FKM rubber

Dimensions, weight and mounting angle:



Thread ISO 228/1	L [mm]	B [mm] Coil type		H [mm]	A [mm]	Weight with AB coil [kg]
		AB	AM			
G 1/8	26	22	33	54	13	0.090
G 1/4	35	22	33	59	17.5	0.115

EV310A direct-operated valve, brass, NC

Type	Connection	K_v [m^3/h]	Media Oil / Air	Seal material	Differential pressure [bar] AM coil AC / DC Oil	Differential pressure [bar] AM coil AC / DC Air	Code number
EV310A 1.5	G 1/8	0.07	✓	FKM	0 – 5	0 – 12	**032H8087**
EV310A 2.0	G 1/8	0.08	✓	FKM	0 – 4	0 – 8	**032H8089**
EV310A 1.2	G 1/4	0.04	✓	FKM	0 – 9	0 – 20	**032H8095**
EV310A 1.5	G 1/4	0.07	✓	FKM	0 – 5	0 – 12	**032H8097**
EV310A 2.0	G 1/4	0.08	✓	FKM	0 – 4	0 – 8	**032H8099**

EV310A direct-operated valve, brass, NO

Type	Connection	K_v [m^3/h]	Media Oil / Air	Seal material	Differential pressure [bar] AM coil AC / DC	Code number
EV310A 1.2	G 1/8	0.04	✓	FKM	0 – 13/0 – 9	**032H8125**

Coils for EV310A

Voltage [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W] AP coil	Power consumption [W] AM coil	AP coil DIN 43650-A	AM coil DIN 43650-A
24		50		7.5		**042N0842**
24		60	5	5.5	**042N4193**	**042N0842**
110		50		7.5		**042N0845**
110		60		5.5		**042N0845**
110 – 120		60	5		**042N4192**	
230		50		9.5	**042N4191**	**042N0840**
230		60		6.5		**042N0840**
208 – 240		60	5.5		**042N4191**	
240		50		7.5		**042N0841**
240		60		5.5		**042N0841**
	12	–		8.5		**042N0848**
	24	–		9.0		**042N0843**

Cable plugs, IP65 enclosure

	AP coil DIN 43650-A	AM coil DIN 43650-A
To use with all AP, AM coils	**042N0156**	**042N0156**

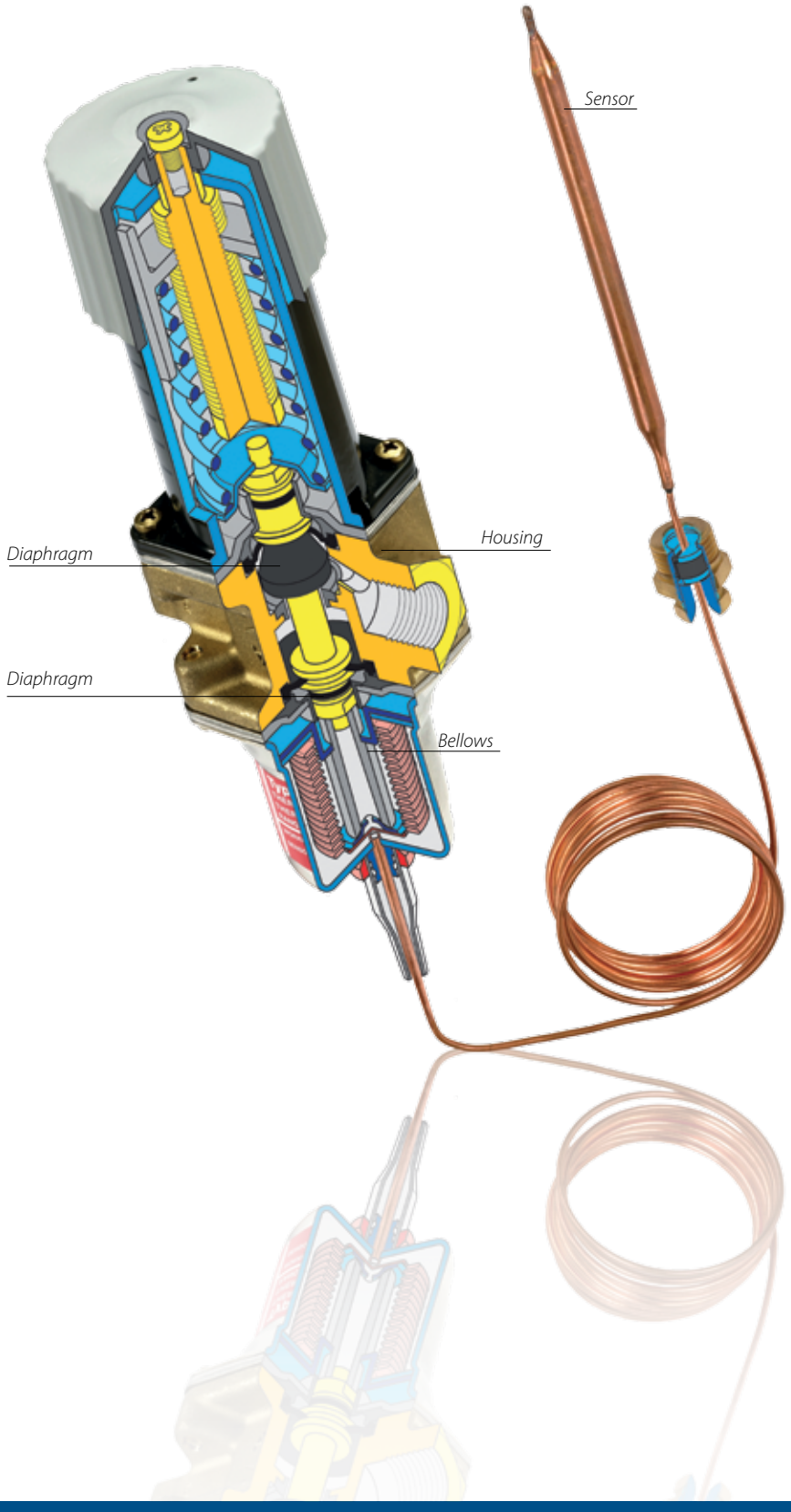
To use with AP, AM coils - 24 V AC and DC	**042N0263**	**042N0263**
To use with AP, AM coils - 230 V AC	**042N0265**	**042N0265**

Accessories for EV310A

Electronic timers for coils for pulse start, for IP65 only

Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	**042N0185**

The 'fit and forget' AVTA thermostatic valve



A self-acting thermostatic valve, the AVTA controls the temperature in cooling water applications. Often referred to as the 'fit and forget' valve due to its proven reliability, the AVTA is easy to install and functions without electrical power.

Self-acting - no electricity required
The AVTA does not require electricity to function because a temperature-dependent pressurised charge or vapour charge provides accurate flow control based on the sensor temperature. And because it needs no power supply, it keeps working as long as the coolant is pressurised.

Exact temperature control
Designed for low hysteresis, the hermetically-sealed thermostatic element consists of a cylindrical sensor connected to a bellow with a capillary tube.

Dirt resistant
The force-balanced design prevents particles from adhering to the large valve opening. But if dirt does become lodged in the valve, the sensor simply detects that more cooling water is needed and the valve opens wider to allow more water to pass and dislodge the particles.

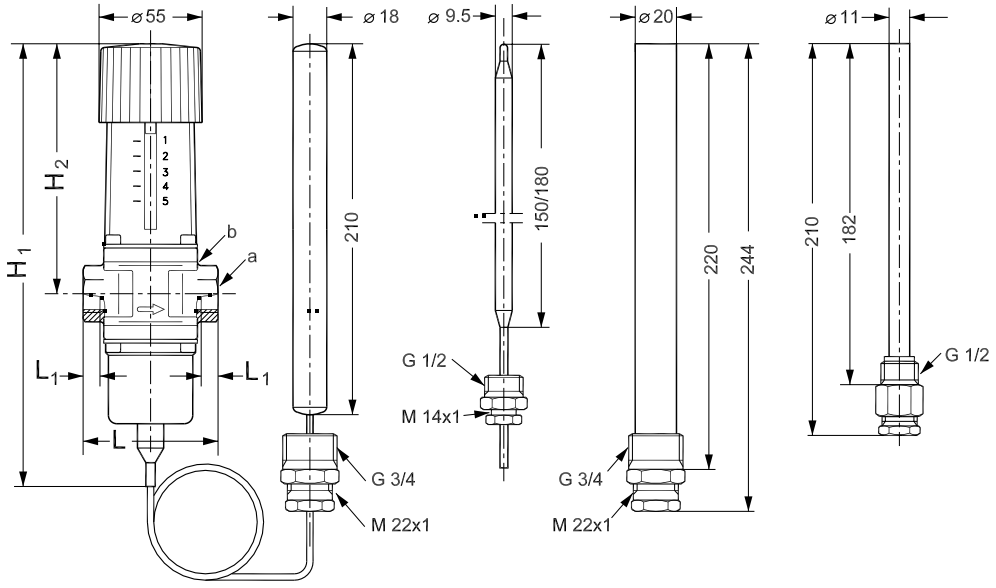
Insensitive to pressure
Pressure equalising diaphragms ensure reliable function across the entire pressure range – from zero to ten bar pressure – by balancing the forces on the bellows and setting sections. And with reinforced EPDM diaphragms, the valve can take up to 25 bar pressure.

AVTA thermostatic valves for industrial cooling applications

AVTA thermostatic valves are widely used for temperature control in many different sorts of equipment and installations where cooling is required.

- Self-acting thermostatic valves for accurate cooling flow control based on sensor temperature
- Capillary sensor with adsorption charge, mass charge or universal charge, depending on application
- Open on rising temperature
- Brass or stainless steel valve body
- For extremely aggressive media, also available in titanium (please contact Danfoss)

Dimensions, weight and mounting angle:



All dimensions in millimetres

Brass Type	H_1 [mm]	H_2 [mm]	L [mm]	L_1 [mm]	a	b [mm]	Weight [kg]
AVTA 10	240	133	72	14	G ⅜	27	1.45
AVTA 15	240	133	72	14	G ½	27	1.45
AVTA 20	240	133	90	16	G ¾	32	1.50
AVTA 25	240	138	95	19	G 1	41	1.65

AVTA thermostatic valve

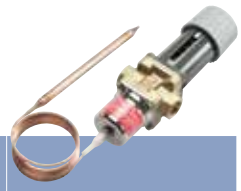
Adsorption charge. Brass valve body

Type	Connection	Temperature setting range [°C]	Max sensor temperature [°C]	K_v [m^3/h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 10	G ⅜	10 – 80	130	1.4	9.5 x 150	2.3	**003N1144**
AVTA 15	G ½	10 – 80	130	1.9	9.5 x 150	2.3	**003N0107**
AVTA 20	G ¾	10 – 80	130	3.4	9.5 x 150	2.3	**003N0108**
AVTA 25	G 1	10 – 80	130	5.5	9.5 x 150	2.3	**003N0109**

Universal charge. Brass valve body

Type	Connection	Temperature setting range [°C]	Max sensor temperature [°C]	K_v [m^3/h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 10	G ⅜	0 – 30	57	1.4	18 x 210	2	**003N1132**
AVTA 15	G ½	0 – 30	57	1.9	18 x 210	2	**003N2132**
AVTA 20	G ¾	0 – 30	57	3.4	18 x 210	2	**003N3132**
AVTA 25	G 1	0 – 30	57	5.5	18 x 210	2	**003N4132**
AVTA 10	G ⅜	25 – 65	90	1.4	18 x 210	2	**003N1162**
AVTA 15	G ½	25 – 65	90	1.9	18 x 210	2	**003N2162**
AVTA 20	G ¾	25 – 65	90	3.4	18 x 210	2	**003N3162**
AVTA 25	G 1	25 – 65	90	5.5	18 x 210	2	**003N4162**
AVTA 10	G ⅜	50 – 90	125	1.4	18 x 210	2	**003N1182**
AVTA 15	G ½	50 – 90	125	1.9	18 x 210	2	**003N2182**
AVTA 20	G ¾	50 – 90	125	3.4	18 x 210	2	**003N3182**
AVTA 25	G 1	50 – 90	125	5.5	18 x 210	2	**003N4182**

Mass charge. Brass valve body



Type	Connection	Temperature setting range [°C]	Max sensor temperature [°C]	K_v [m^3/h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 15	G ½	0 – 30	57	1.9	9.5 x 180	2	**003N0042**
AVTA 20	G ¾	0 – 30	57	3.4	9.5 x 180	2	**003N0043**
AVTA 15	G ½	25 – 65	90	1.9	9.5 x 180	2	**003N0045**
AVTA 20	G ¾	25 – 65	90	3.4	9.5 x 180	2	**003N0046**
AVTA 25	G 1	25 – 65	90	5.5	9.5 x 180	2	**003N0047**

Adsorption charge. Stainless steel valve body

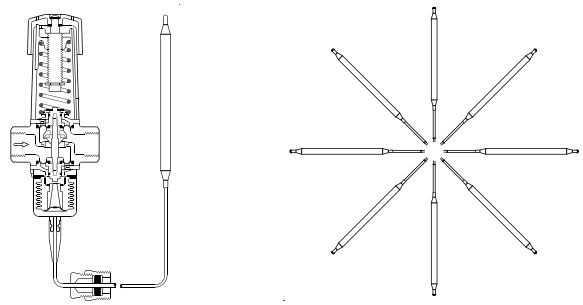
Type	Connection	Temperature setting range [°C]	Max sensor temperature [°C]	K_v [m^3/h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 15	G ½	10 – 80	130	1.9	9.5 x 150	2.3	**003N2150**
AVTA 20	G ¾	10 – 80	130	3.4	9.5 x 150	2.3	**003N3150**
AVTA 25	G 1	10 – 80	130	5.5	9.5 x 150	2.3	**003N4150**

For all types: Media temperature range: -25 – 130 °C.
For higher Kv values (larger capacities) and other requirements please contact Danfoss.
Ask Danfoss or your local wholesaler if larger size than G1 is needed

Charges

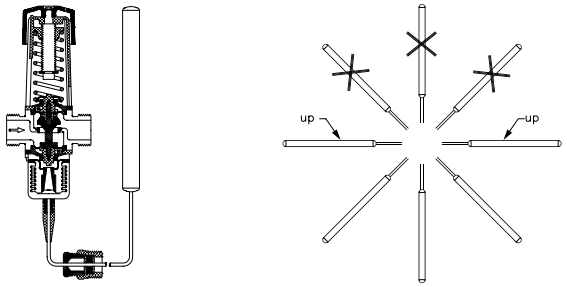
Adsorption charge

The charge consists of active carbon and CO_2 which is adsorbed on falling sensor temperature and thereby produce pressure changes in the element.
The sensor can be installed in any position as far as orientation and temperature are concerned.



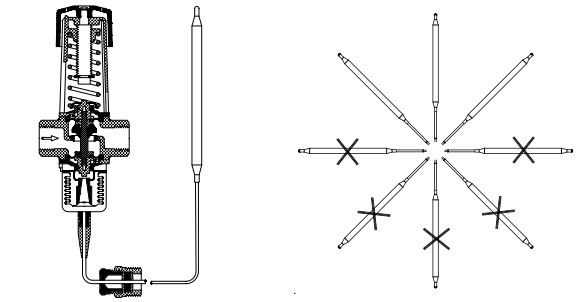
Universal charge

The charge is a mix of liquid and gas where the liquid surface (sensing point) is alway inside the sensor.
The sensor can be installed colder or warmer than the valve, and oriented as shown.



Mass charge

The charge is a mix of liquid and gas.
Due to the volumetric conditions the sensor must be installed warmer than the valve, since the liquid surface (sensing point) must be in the sensor. Orientation as shown.



Spare parts and accessories for AVTA

Service sensor elements

Sensor size ø x L [mm]	Cap. tube, length [m]	Charge			Temperature range [°C]	Code number
		Adsorption	Universal	Mass		
18 x 210	2		✓		0 – 30	**003N0075**
18 x 210	2		✓		25 – 65	**003N0078**
18 x 210	2		✓		50 – 90	**003N0062**
9.5 x 180	2			✓	25 – 65	**003N0091**
9.5 x 150	2.3	✓			10 – 80	**003N0278**

Sensor pockets

Sensor size ø x L [mm]	Connection standard	Connection size [inch]	Sensor pocket insertion [mm]	Pocket material		Code number
				Brass	Stainless steel	
9.5x180 / 9.5x150	ISO 228-1	G ½	182	✓		**017-436766**
9.5x180 / 9.5x150	ISO 7-1	G ½	182		✓	**003N0196**
18x210	ISO 228-1	G ¾	220	✓		**003N0050**
18x210	ISO 7-1	G ¾	220		✓	**003N0192**

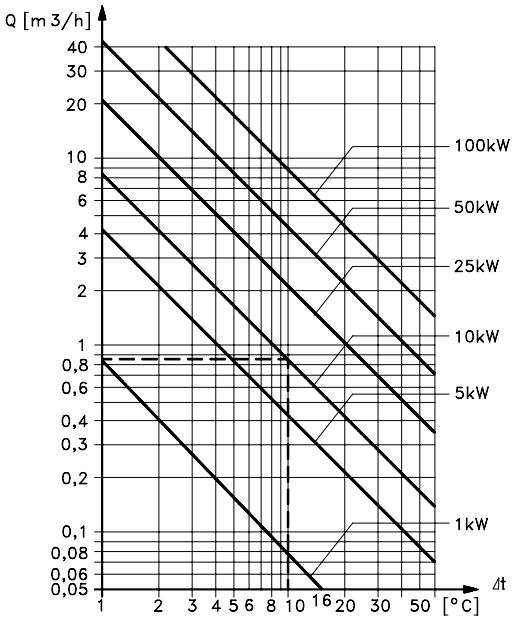
Capillary tube glands

Sensor size ø x L [mm]	Connection standard	Connection size inch	Material	Charge		Code number
				Adsorption / Mass	Universal	
9.5x180 / 9.5x150	ISO 228-1	G ½	Brass	✓		**017-422066**
18x210	ISO 228-1	G ¾	Brass		✓	**003N0155**

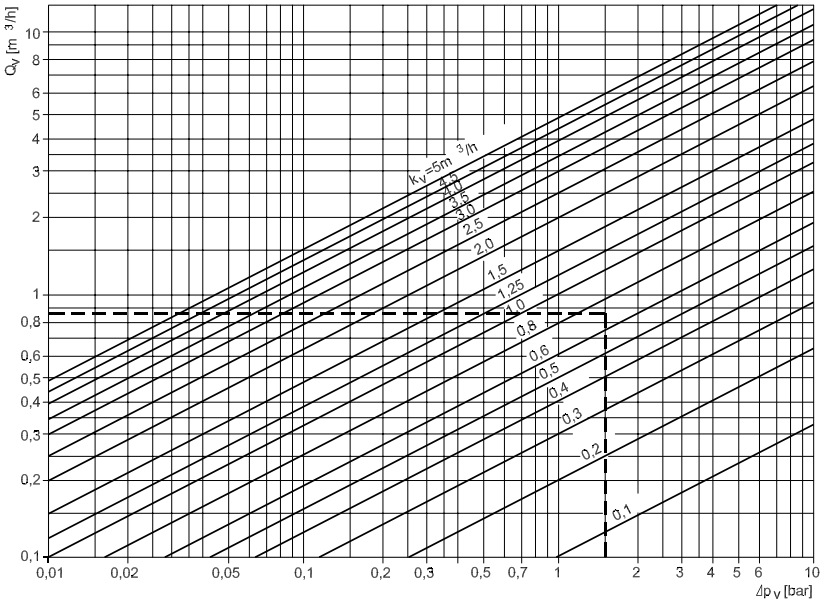
Bracket

Type	Material		Code number
Bracket	Zinc plated steel		**003N0388**

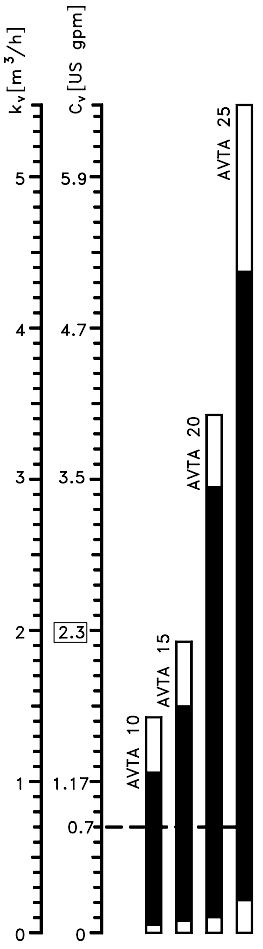
AVTA thermostatic valve - sizing



Heating or cooling with water.
Example: Necessary cooling output 10 kW with Δt = 10 °C.
Required flow 0.85 m³/h.

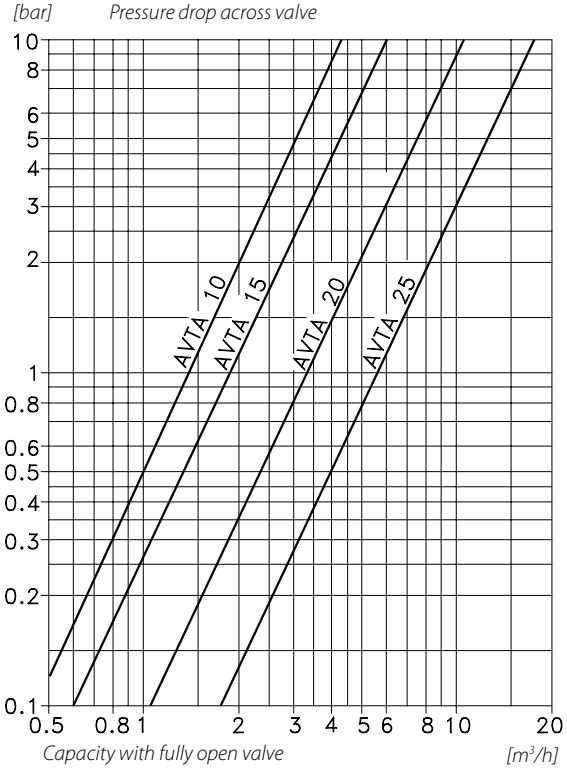


Relation between water quantity and pressure drop across valve.
Example: Flow 0.85 m³/h with a pressure drop of 1.5 bar.
The k_v value becomes 0.7 m³/h.

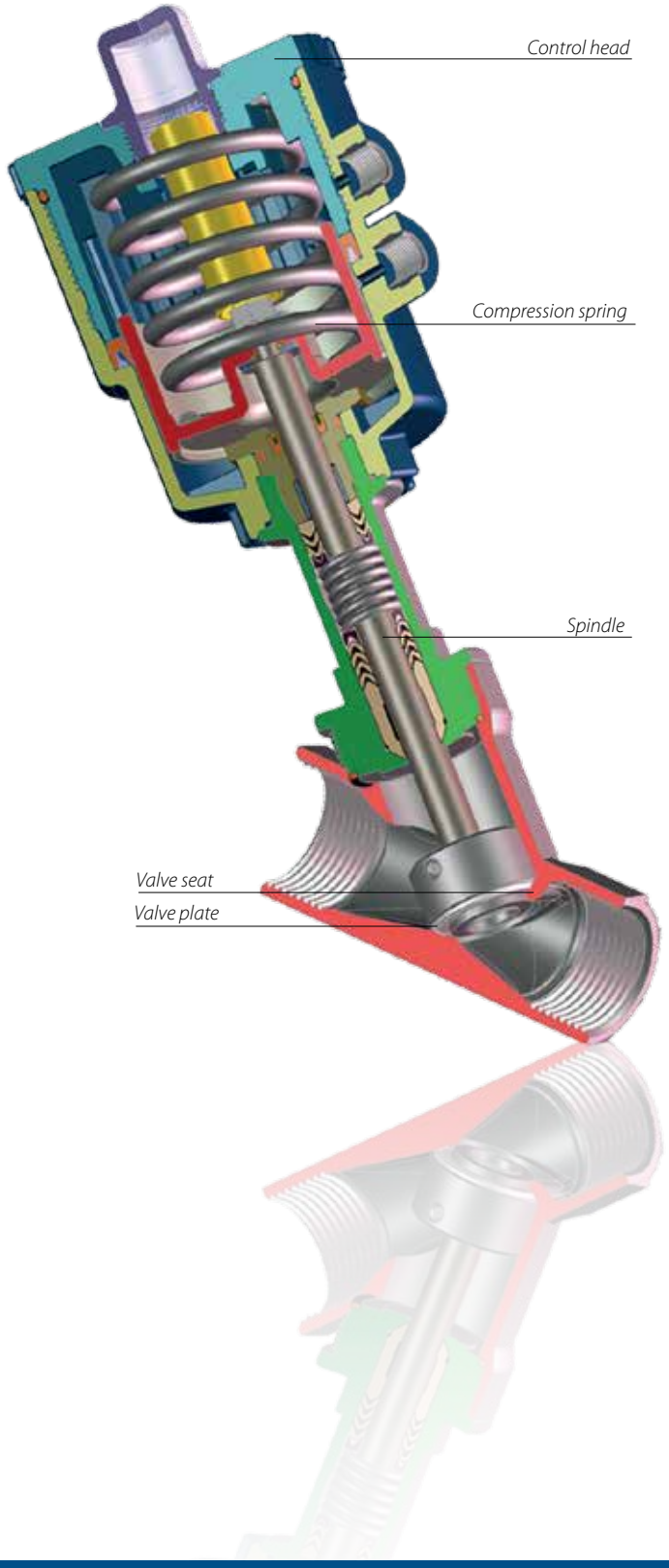


Nomogram showing the valve k_v range.
k_v values are always given for water flow in [m³/h] with a pressure drop Δp of 1 bar.
The valve should be selected so that the necessary k_v value lies in the middle of the regulation range.
Example: AVTA 10 and 15 are the most suitable for a k_v value of 0.7

Valve flow quantity in fully open position, as a function of pressure drop Δp.
With fully open valve the differential pressure should be around 50% of the total pressure drop across the cooling system.



AV210 externally operated valve for high capacity applications



The AV210 can operate at very high medium temperatures and viscosities, and can withstand dirt particles in the medium.

Wide temperature range
Known as the 'trouble-shooter', the AV210 is made from FKM, PTFE, and gun metal (RG5/bronze) or stainless steel (AISI 316), so it can withstand temperatures as low as -30 °C and as high as 180 °C.

Dirt resistant
Mounted on a spindle, the resilient internal valve seat is made of AISI 316, a high grade corrosion-resistant stainless steel. And the PTFE valve plate gives excellent resistance to dirt particles in the medium.

Insensitive to media pressure and viscosity
Made for air, neutral gases and fresh water applications, the valve is designed to operate with media viscosities up to 400cSt and 10 bar pressure – and it is not affected by low flow rates or pressure loss across the opening.

Tight fit even at high differential pressures
As the valve seat is pressurised at the valve opening, the standard AV210 valve closes against the flow. When closed the spindle is not exposed to the medium, significantly reducing water hammer. The AV210 can also close with the flow if required.

High capacity
For optimum capacity, the special control head design and high closing spring allows the valve plate to lift higher than the usual 25 percent of the valve diameter.

Modular design
Available in five sizes, it is easy to find an AV210 to suit your size and pressure range requirements.

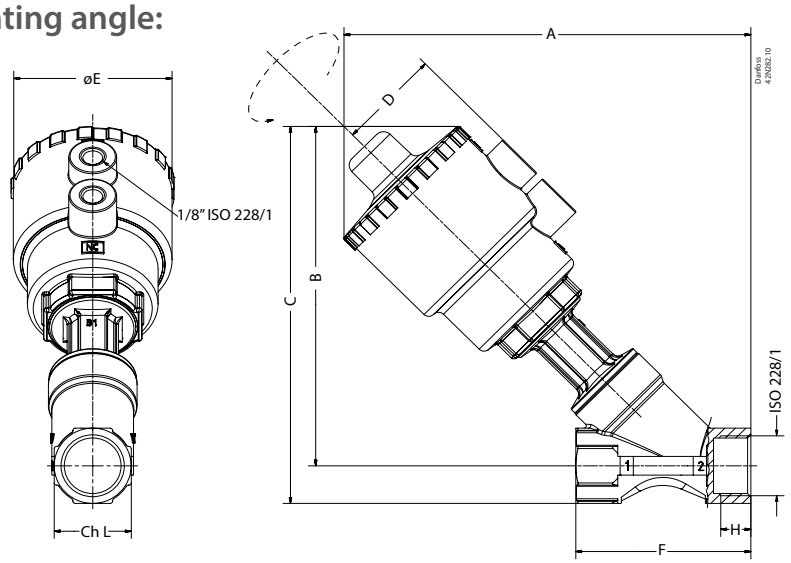
Accessories
For even higher performance and versatility, the AV210 can be fitted with the following accessories:
- Manual override
- Flow limiters
- Valve position indicators

AV210 externally operated valves

AV210 is an externally operated valve for use in demanding industrial applications. The valve can operate at very high medium temperatures and viscosities, and is insensitive to dirt particles in the medium; thus, it is often called a "trouble-shooter" valve. The valve is available in gun metal (RG5/bronze) and stainless steel (AISI316).

- High capacity basic program
- 2/2-way
- Angle-seated piston
- NC version: Both closing against and withflow direction
- NO version: Closing against the flow direction
- Bronze or stainless steel valve body
- Danfoss recommends a EV310A as pilot solenoid valve

Dimensions, weight and mounting angle:



Stainless Steel / Bronze RG5

Type / orifice size	Connection ISO 228/1	Diameter control head [mm]	A [mm]	B [mm]	C [mm]	D [mm]	øE [mm]	F [mm]	H [mm]	ch.L [mm]	Weight [kg]
15	G ⅜	40	190/144	156/121	169/134	44/35	70/61	85/65	12/12	25/27	1.1
15	G ⅜	50	-/163	-/140	-/153	-/44	-/70	-/65	-/12	-/27	1.1
15	G ½	40	-/144	-/121	-/134	-/35	-/61	-/65	-/13	-/27	1
15	G ½	50	190/163	156/140	169/153	44/44	70/70	85/65	15/13	25/27	1
20	G ¾	50	195/173	160/147	176/163	44/44	70/70	95/75	16.3/14.3	31/27.5	1.2
20	G ¾	63	213/191	178/165	194.4/181	50.5/50.5	84.4/84.4	95/75	16.3/14.3	31/27.5	1.2
25	G 1	63	219/206	182/176	202/196	50.5/50.5	84.4/84.4	105/90	19.5/17.5	38/41	1.6
25	G 1	90	259/246	222/216	242/236	66.2/66.2	116.4/116.4	105/90	19.5/17.5	38/41	1.7
32	G 1 ¼	90	266/255	226/220	249/245	66.2/66.2	116.4/116.4	120/110	19/19	47/50	3
40	G 1 ½	90	271/270	230/235	258/264	66.2/66.2	116.4/116.4	130/120	18/18	54/58	3.4
40	G 1 ½	110	307/306	266/271	294/300	77.4/77.4	140.6/140.6	130/120	18/18	54/58	4
50	G 2	110	321/316	276/276	310/311	77.4/77.4	140.6/140.6	150/150	20/20	66/70	5.3

AV210 externally operated valves, PTFE seal material, NC

Closing against flow recommended

Type	Connection	K_v [m^3/h]	Body material Bronze RG5	Body material Stainless steel	Differential pressure [bar]	Control pressure [bar]	Control head diameter ø [mm]	Code number
AV210A 15	G ⅜	4.5	✓		0 – 16	4.2 – 10	40	**042N4400**
AV210B 15	G ⅜	4.9	✓		0 – 16	4 – 10	50	**042N4401**
AV210B 15	G ⅜	4.9		✓	0 – 16	4 – 10	50	**042N4450**
AV210A 15	G ½	5.3	✓		0 – 16	4.2 – 10	40	**042N4402**
AV210B 15	G ½	5.7	✓		0 – 16	4 – 10	50	**042N4403**
AV210B 15	G ½	5.7		✓	0 – 16	4 – 10	50	**042N4451**
AV210B 20	G ¾	10	✓		0 – 10	4 – 10	50	**042N4404**
AV210B 20	G ¾	10		✓	0 – 10	4 – 10	50	**042N4452**
AV210C 20	G ¾	10		✓	0 – 16	4 – 10	63	**042N4453**
AV210C 25	G 1	20	✓		0 – 11	4 –10	63	**042N4406**
AV210D 25	G 1	20	✓		0 – 16	4 – 8	90	**042N4407**
AV210C 25	G 1	20		✓	0 – 11	4 – 10	63	**042N4454**
AV210D 25	G 1	20		✓	0 – 16	4 – 8	90	**042N4455**
AV210D 32	G 1 ¼	29	✓		0 – 14	4 – 8	90	**042N4408**
AV210D 32	G 1 ¼	29		✓	0 – 14	4 – 8	90	**042N4456**
AV210D 40	G 1 ½	46	✓		0 – 11	4 – 8	90	**042N4409**
AV210D 40	G 1 ½	46		✓	0 – 11	4 – 8	90	**042N4457**
AV210E 50	G 2	67	✓		0 –10	4 – 8	110	**042N4411**
AV210E 50	G 2	67		✓	0 – 10	4 – 8	110	**042N4459**

AV210 externally operated valves, PTFE seal material, NO

Closing against flow recommended

Type	Connection	K_v [m^3/h]	Body material Bronze RG5	Body material Stainless steel	Differential pressure [bar]	Control pressure [bar]	Control head diameter ø [mm]	Code number
AV210B 15	G ⅜	4.9		✓	0 – 16	5 – 10	50	**042N4480**
AV210B 15	G ½	5.7	✓		0 –16	5 – 10	50	**042N4431**
AV210B 15	G ½	5.7		✓	0 – 16	5 – 10	50	**042N4481**
AV210B 20	G ¾	10	✓		0 – 16	5 – 10	50	**042N4432**
AV210B 20	G ¾	10		✓	0 – 16	5 – 10	50	**042N4482**
AV210C 25	G 1	20	✓		0 – 16	5 – 10	63	**042N4433**
AV210C 25	G 1	20		✓	0 – 16	5 – 10	63	**042N4483**
AV210C 32	G 1 ¼	29		✓	0 – 16	6 – 10	63	**042N4484**
AV210D 40	G 1 ½	46	✓		0 –16	5 – 10	90	**042N4435**
AV210D 40	G 1 ½	46		✓	0 – 16	5 – 10	90	**042N4485**
AV210E 50	G 2	67	✓		0 –16	5 –10	110	**042N4436**
AV210E 50	G 2	67		✓	0 – 16	5 – 10	110	**042N4486**

** in case control pressure is reduced below 5 or 6 bar max. differential pressure will be reduced accordingly.*

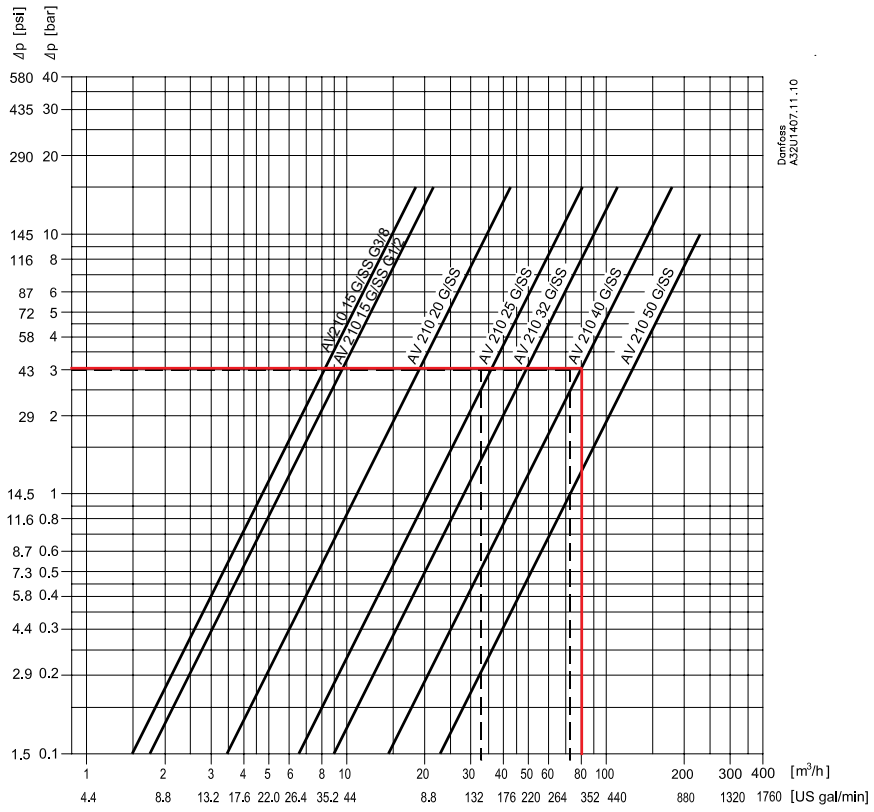
AV210 externally operated valves - accessories & spare parts

Position indicators. Voltage: Max 5A 250 V AC / 1A 250 V DC

Enclosure	Control head diameter ø [mm]		Code number
IP65	50		**042N4820**
IP65	63		**042N4821**
IP65	90		**042N4822**
IP65	110		**042N4823**

Capacity diagram, water

Example for water:
Capacity for AV 210 40 at differential pressure of 3 bar:
Approx 80 m³/h



Safety application - tilt control - mobile hydraulic

An MBS 3050 pressure transmitter controls the pressure circuit. Its integrated pulse-snubber ensures reliable operation despite cavitation, liquid hammer or pressure peaks

Pressure transmitters

Industries

Serving a broad, global market within diverse and demanding industries, Industrial Automation is your one-stop partner for industrial control components. Through Danfoss Industrial Automation you gain access to the entire Danfoss pool of technology for a wide range of industries.

HYDRAULICS

In a world depending on infrastructure, mobile hydraulic equipment is key to making modern living possible for an ever growing population. Whether used in construction, agriculture or for material handling, mobile hydraulics equipment offers efficiency, economy, safety and environmental advantages.

MARINE

From the handling of sewage water to the treatment of exhaust gasses: A modern ship contains most of the applications found on shore, albeit in a limited space. Danfoss Industrial Automation is a global leader in supplying pressure transmitters to equipment placed in and around the engine room: 2 and 4 stroke diesel and gas engines, propulsion systems, fuel treatment, oil separators among others.

AIR COMPRESSORS

Spanning from very small units for medical use to very large industrial compressors operating in the kilowatt power band, the air compressor industry covers a huge range of equipment. Equally varied are the fundamental compressor technologies used.

PUMPS

The global need for clean water is enormous and on the rise, calling for a dedicated common effort to control the water cycle. Danfoss is well prepared to contribute to such endeavors.
To us, the pump is the key to controlling the water cycle – from intake to effluent. Consequently, we have developed a range of sensors and switches for pumps, tailored for the most common applications in the water industry.

Pressure transmitters

in this catalogue

	Type	Standard	MBS 1700		MBS 3000		MBS 3200
		Pulse-snubber		MBS 1750		MBS 3050	
Industries		Transportation					
		Heating and sanitation					
		Machine and equipment					
		Energy					
Characteristics		Sensor technology	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive
		Accuracy FS (typ)	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%
		Max. measuring range	25 bar 362 psi	400 bar 5,800 psi	600 bar 9,000 psi	600 bar 9,000 psi	600 bar 9,000 psi
		Output signal	4 – 20 mA	4 – 20 mA	4 – 20 mA and absolute voltage	4 – 20 mA and absolute voltage	4 – 20 mA and absolute voltage
		Medium temperature	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 125 °C -40 – 257 °F
		Enclosure IP	IP65	IP65	IP65 IP67	IP65 IP67	IP65 IP67
		Wetted parts material	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L
		Housing material	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6
		Zero point and span adjustment					
		Marine approvals					
		ATEX approvals			Zone 2	Zone 2	Zone 2
		UL HazLoc			Class 1, Div. 2	Class 1, Div. 2	Class 1, Div. 2

Mobile hydraulics

Railways and marine

Electric power and wind turbines

Industrial hydraulics, air compressors, water pumps and industrial engines

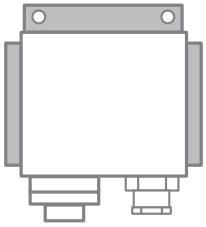
Boiler and boiler room equipment, sterilisers and autoclaves

MBS 3250	MBS 4510	MBS 9200	MBS 3100	MBS 3150	MBS 5100	MBS 5150	MBS 9300	EMP 2
Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive	Piezo resistive
± 0.5%	± 0.5%	± 0.5% – ± 2% (depending on pressure range)	± 0.5%	± 0.5%	± 0.3%	± 0.3%	± 0.5% – ± 2% (depending on pressure range)	± 0.3%
600 bar 9,000 psi	25 bar 360 psi	250 mbar 3.62 psi	600 bar 9,000 psi	600 bar 9,000 psi	600 bar 9,000 psi	600 bar 9,000 psi	250 mbar 3.62 psi	400 bar 6,000 psi
4 – 20 mA and absolute voltage	4 – 20 mA	4 – 20 mA or Ratiometric	4 – 20 mA	4 – 20 mA	4 – 20 mA	4 – 20 mA	4 – 20 mA	4 – 20 mA
-40 – 125 °C -40 – 257 °F	-10 – 85 °C 14 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 85 °C -40 – 185 °F	-40 – 100 °C -40 – 212 °F
IP65 IP67	IP65	IP65	IP65 IP67	IP65 IP67	IP65	IP65	IP65	IP67
AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI316L
AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	AISI 316L, PA 6.6	Al
	•				•	•		•
			•	•	•	•	•	•
Zone 2	Zone 2		Zone 2	Zone 2	Zone 2	Zone 2		Zone 2
Class 1, Div. 2	Class 1, Div. 2		Class 1, Div. 2	Class 1, Div. 2	Class 1, Div. 2	Class 1, Div. 2		

Sensor packages designed for customer needs

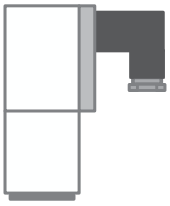
The extent of automation in both mobile and stationary applications has over the past decade increased dramatically and the demand for sensors and controls has increased accordingly.
Danfoss has followed this development closely, and as a result we now have a programme of products perfectly aligned to our customer's needs.

Box transmitter



Often used in applications requiring robust performance and enclosures. The Danfoss Box solution has been on the market for more than 30 years.
It is still widely used within the marine sector.

Block transmitter



Used in applications where space has become an issue. The Danfoss "Block" design is more compact compared to the traditional "Box" design.
Where a combination of sensor and valve is needed, Danfoss also offers the "Block" valve - MBV.

Cartridge transmitter

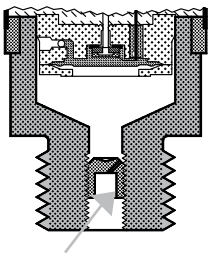
The cartridge transmitter can be mounted directly to the customer's system at the point of measurement, even where there is very little space. This eliminates the need for extra piping and joints.

Cartridge transmitter with flush diaphragm

Often used in applications where measurement have to be made on highly viscous or slurry media. The front mounted diaphragm prevents blocking of the pressure port.

Pulse-snubber

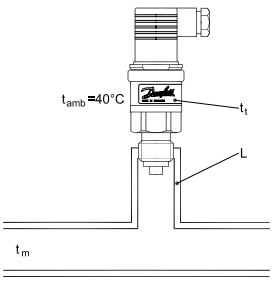
In applications where there is a risk of liquid hammering and cavitation it is recommended to select a transmitter with an integral pulse-snubber. The Danfoss pressure transmitters with a pulse-snubber are indicated with a "5" in the third type digit (example: MBS 1750).



Pulse-snubber

Temperature influence

Media temperature (t_m) [°C]	Heat isolator (L) [cm]	Transmitter temperature (t_t) [°C]
120	2	85
	5	75
	10	70
100	2	75
	5	65
	10	60



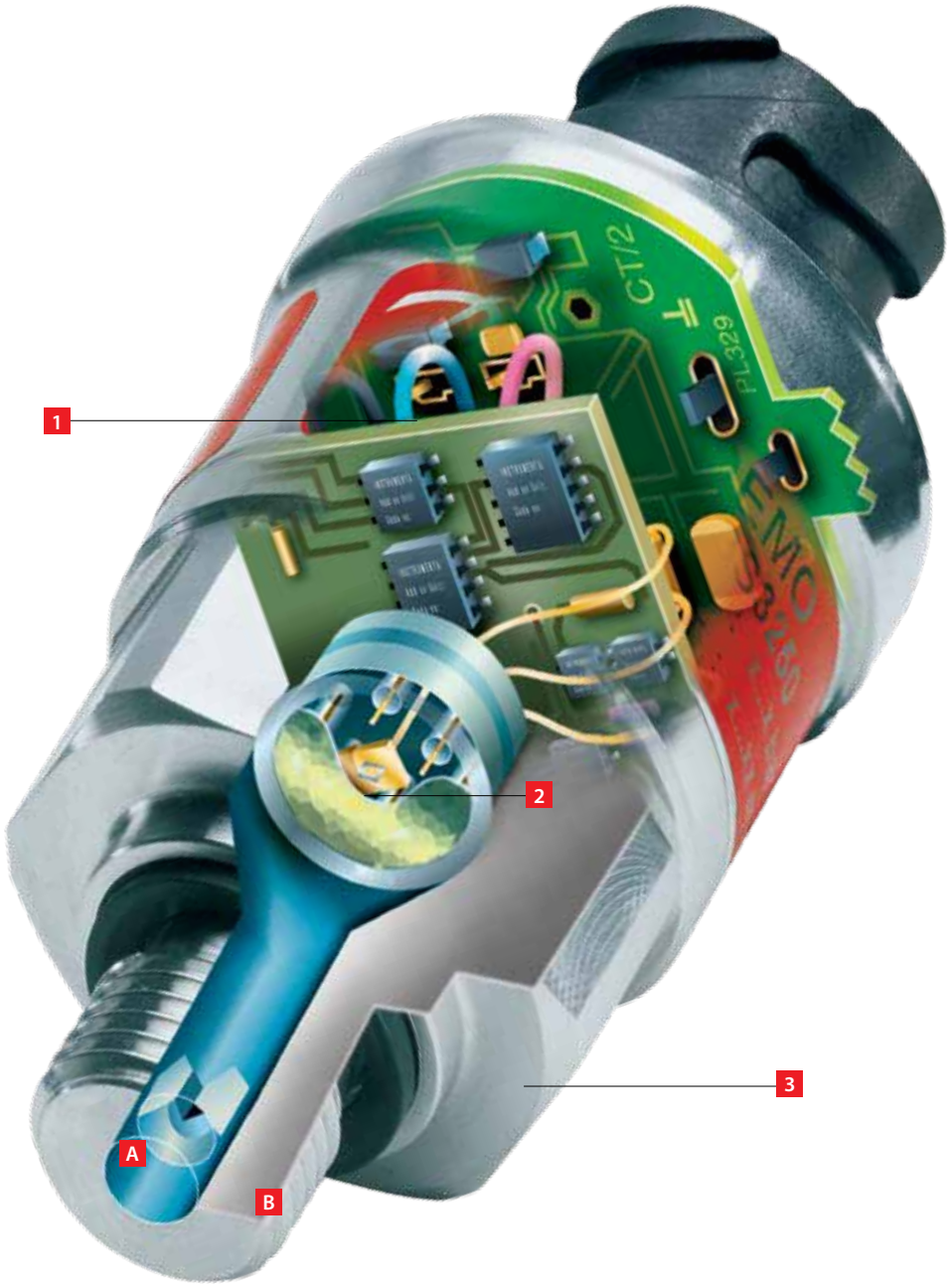
MBS transmitter made from expert know-how

A typical pressure transmitter has three general functional elements:

- The electronics
- The sensing element
- The packaging

It is the solution of each of these elements and the combination that determines the performance of the products. All Danfoss pressure transmitters are certified according to ISO 9001 and ISO 14001.

A variety of electrical connections available



1 Electronics

Danfoss MBS pressure transmitters are available with analogue electronic solutions and offer unique specifications in terms of:

- Accuracy
- Temperature range coverage
- EMI/RFI protection

2 Sensing element

- Piezoresistive semi-conductor technology covering pressure ranges from 0 – 600 bar. This technology is available in absolute or gauge versions.

3 Packaging

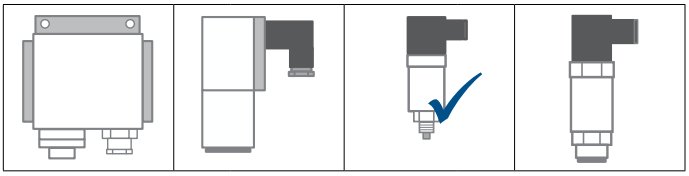
The transmitter design offers long-life stability through:

- High shock and vibration stability
- High enclosure grade IP67
- Pulse restriction solution which prevents liquid hammering and cavitation. (pulse-snubber) A
- Wetted parts that are all made from stainless steel (AISI 316L) B

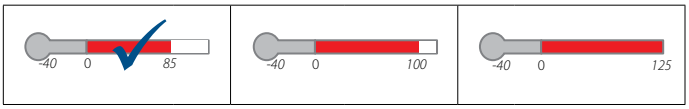
A variety of process connections available

MBS 1700 compact pressure transmitter

Design



Temperature °C

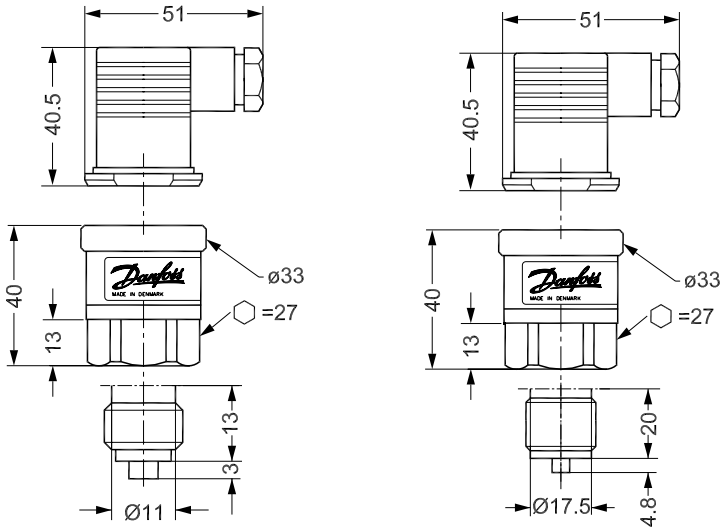


Pressure transmitter, type MBS 1700 is designed to a variety of applications and easy installations within the distributor market. The transmitter offers highly reliable pressure measurement, ensuring that even the slightest change is detected immediately.

- 4 – 20 mA output signal
- Measuring range: 0 – 25 bar
- Pressure connection G ¼ A (EN 837) and G ½ A (EN 837)
- Temperature compensated and laser calibrated
- Excellent vibration stability
- Easy installation – fit and forget
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.17 kg



All dimensions in millimetres

Approvals: CE

MBS 1700 pressure transmitters

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN175301-803A, Pg 9
Range: Limited, no further variants possible

Measuring range P_e [bar][1)]	Pressure connection G ½ EN 837	Pressure connection G ¼ EN 837	Code number
0 – 6		✓	**060G6100**
0 – 6	✓		**060G6104**
0 – 10		✓	**060G6101**
0 – 10	✓		**060G6105**
0 – 16		✓	**060G6102**
0 – 16	✓		**060G6106**
0 – 25		✓	**060G6103**
0 – 25	✓		**060G6107**

[1)] *Gauge / relative*

Spareparts and accessories for MBS 1700

Plug

Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, plug with 5 m cable	**060G1034**

Adapters

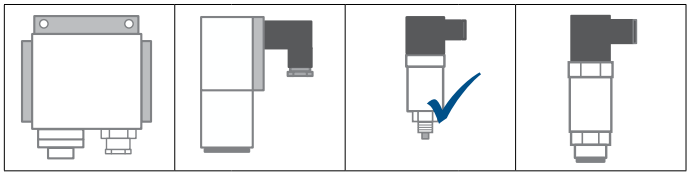
Description	Code number
G ½ female to G ¼ male	**060G1021**
G ½ female to G ¼ male (DIN 3852) male	**060G1022**
G ½ female to G ³/₈ male	**060G1023**
G ½ female to G ¼ flare male	**060G1024**
G ½ female with pulse-snubber	**060G0252**

Plug in display

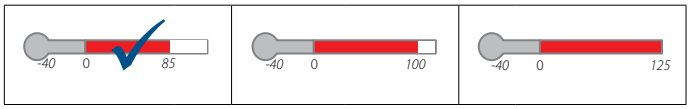
Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

MBS 1750 compact pressure transmitters with pulse-snubber

Design



Temperature

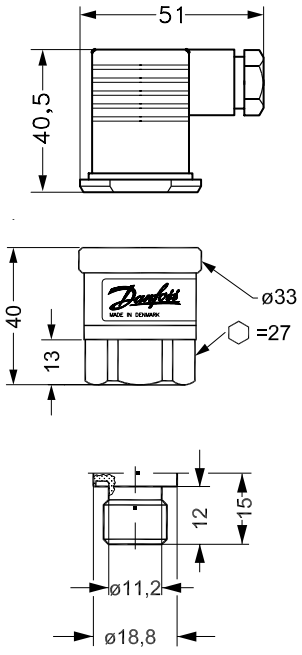


Pressure transmitter, type MBS 1750 is designed to a variety of applications and easy to install especially where cavitation, liquid hammer or pressure peaks can occur. The transmitter offers highly reliable pressure measurement, ensuring that even the slightest change is detected immediately.

- 4 – 20 mA output signal
- Measuring range: 0 – 400 bar
- Pressure connection G ¼ DIN 3852-E
- Temperature compensated and laser calibrated
- Excellent vibration stability
- Integrated pulse snubber to protect against cavitation, liquid hammer or pressure peaks
- Easy installation – fit and forget
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.17 kg



All dimensions in millimetres

Approvals: CE

MBS 1750 pressure transmitters with pulse-snubber

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN175301-803A, Pg 9
Range: Limited, no further variants possible

Measuring range P_e [bar][1)]	Pressure connection G ¼ DIN3852-E		Code number
0 – 60	✓		**060G6108**
0 – 100	✓		**060G6112**
0 – 160	✓		**060G6109**
0 – 250	✓		**060G6110**
0 – 400	✓		**060G6111**

[1)] *Gauge / relative*

Spare parts and accessories

Plug

Description		Code number
EN-175301-803-A, Pg 9 plug		**060G0008**
EN-175301-803-A, plug with 5 m cable		**060G1034**

Adapters

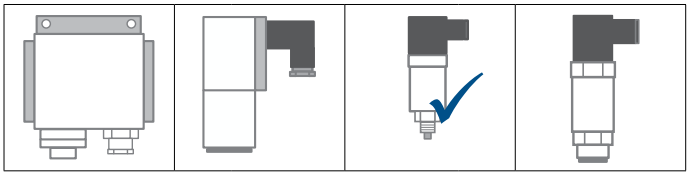
Description	Code number
G ½ female to G ¼ male	**060G1021**
G ½ female to G ¼ (DIN3852) male	**060G1022**
G ½ female to G ⅜ male	**060G1023**
G ½ female to G ¼ flare male	**060G1024**
G ½ with pulse-snubber	**060G0252**

Plug in display

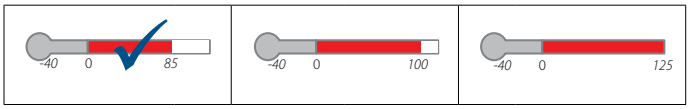
Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

MBS 3000 compact pressure transmitter

Design



Temperature

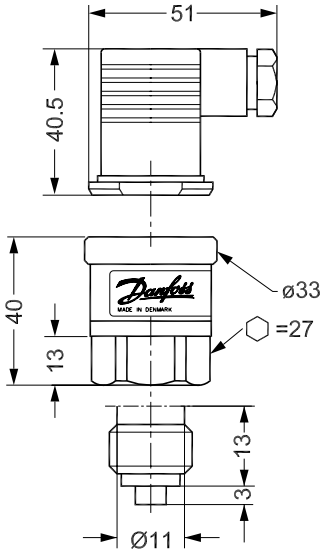


The compact pressure transmitter MBS 3000 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.
Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

- 4 – 20 mA output signal
- Operating temperature: -40 – 85 °C
- Measuring range: 0 – 600 bar
- Standard pressure connection G ¼A
- For use in severe industrial environments such as pumps, compressors, pneumatics and water treatment
- Wetted parts: stainless steel (AISI 316)

Dimensions:

Weight: 0.17 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost

MBS 3000 compact pressure transmitter

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN175301-803A, Pg 9
Range: Flexible, different electrical and pressure connections available

Measuring range P_e [bar][1)]	Pressure connection		Output signal			Code number
	G ¼ EN 837	M20 x 1.5	4 – 20mA	0 – 10V		
0 – 1	✓		✓			**060G1113**
0 – 1.6	✓		✓			**060G1429**
0 – 2.5	✓		✓			**060G1122**
0 – 4	✓		✓			**060G1123**
0 – 4	✓			✓		**060G3812**
0 – 4		✓		✓		**060G3828**
0 – 6	✓		✓			**060G1124**
0 – 6	✓			✓		**060G3902**
0 – 6		✓		✓		**060G3829**
0 – 10	✓		✓			**060G1125**
0 – 10	✓			✓		**060G1650**
0 – 10		✓		✓		**060G3830**
0 – 16	✓		✓			**060G1133**
0 – 16	✓			✓		**060G3813**
0 – 16		✓		✓		**060G3831**
0 – 25	✓		✓			**060G1430**
0 – 25	✓			✓		**060G3814**
0 – 25		✓		✓		**060G3832**
0 – 40	✓		✓			**060G1105**
0 – 40	✓			✓		**060G3815**
0 – 40		✓		✓		**060G3833**
0 – 60	✓		✓			**060G1106**
0 – 100	✓		✓			**060G1107**
0 – 160	✓		✓			**060G1112**
0 – 250	✓		✓			**060G1111**
0 – 400	✓		✓			**060G1109**
0 – 600	✓		✓			**060G1110**

[1)] *Gauge / relative*

Spare parts and accessories for MBS 3000

Plug

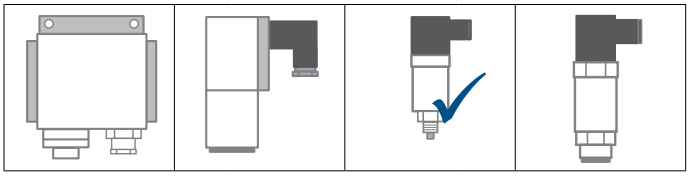
Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**
EN 175301-803-A, plug with 5 m cable	**060G1034**

Plug in display

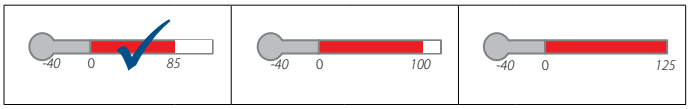
Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

MBS 3050 compact pressure transmitters with pulse snubber

Design



Temperature



The compact heavy duty pressure transmitter MBS 3050 is designed for use in hydraulic applications with severe medium influences like cavitation, liquid hammer or pressure peaks and offers a reliable pressure measurement, even under harsh environmental conditions.

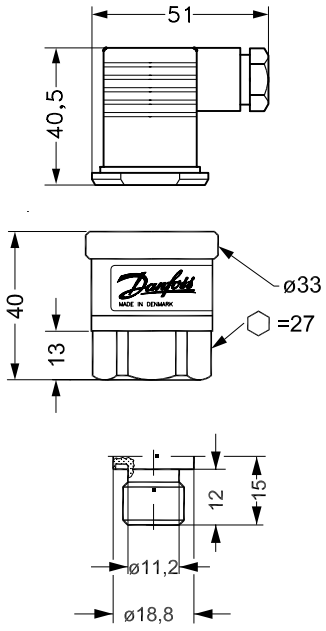
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.

Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

- 4 – 20 mA output signal
- Operating temperature: -40 – 85 °C
- Measuring range: 0 – 600 bar
- Standard pressure connection DIN 3852 - G ¼A
- With integrated pulse-snubber to protect against cavitation, liquid hammer or pressure peaks
- Especially suited for hydraulic applications
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.17 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost

MBS 3050 compact pressure transmitters with pulse-snubber

Accuracy: + /- 0.5 % FS (typ.)
Media temperature: -40 – 85 °C
Electrical connections: EN175301-803A, Pg 9
Range: Flexible, different electrical and pressure connections available

Pressure range P_e [bar][1]	Output signal mA	Output signal V	Pressure connection G ¼ DIN3852-E		Code number
0 – 250	4 – 20		✓		**060G3582**
0 – 400	4 – 20		✓		**060G3583**
0 – 250		1 – 5	✓		**060G3584**
0 – 400		1 – 5	✓		**060G3585**
0 – 250		0 – 10	✓		**060G3557**
0 – 400		0 – 10	✓		**060G3586**

[1] *Gauge / relative*

Spare parts and accessories for MBS 3050

Plug in display

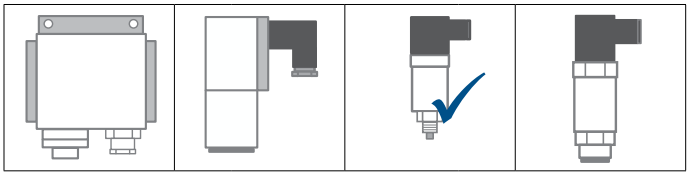
Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

Plug

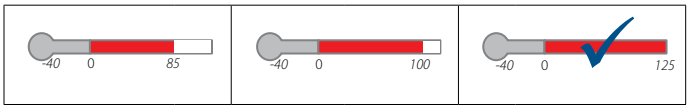
Description		Code number
EN 175301-803-A, Pg 9 plug		**060G0008**
En 175301-803-A, Pg 11 plug		**060G0007**
En 175301-803-A, plug with 5 m cable		**060G1034**

MBS 3200 compact pressure transmitters

Design



Temperature

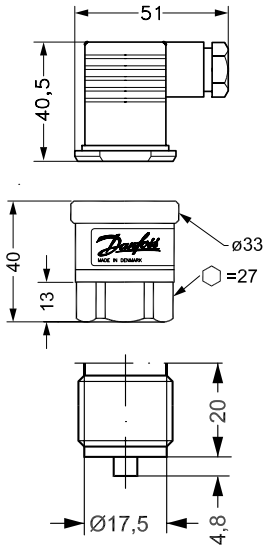


The compact high temperature pressure transmitter MBS 3200 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 – 10V output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure and electrical connections. Excellent vibration stability, robust construction, a high degree of EMC/EMI protection and a high operating temperature, equip the pressure transmitter to meet the most stringent industrial requirements.

- 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 – 10 V output signal
- Operating temperature: -40 – 125 °C
- Measuring range: 0 – 600 bar
- A wide range of pressure and electrical connections are available
- For use in severe industrial environments
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.17 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost

MBS 3200 compact pressure transmitters

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 125 °C
Output signal: 4 – 20 mA
Electrical connections: EN175301-803A, Pg 9
Range: Flexible - different electrical and pressure connections available

Pressure range P_e [bar][1)]	Pressure connection G ½ EN 837		Code number
0 – 6	✓		**060G1874**
0 – 10	✓		**060G1875**
0 – 16	✓		**060G1876**
0 – 25	✓		**060G1877**

[1)] *Gauge / relative*

Spareparts and accessories for MBS 3200

Plug in display

Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

Plug

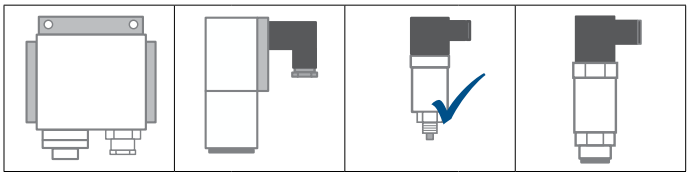
Description		Code number
EN 175301-803-A, Pg 9 plug		**060G0008**
En 175301-803-A, Pg 11 plug		**060G0007**
En 175301-803-A, plug with 5 m cable		**060G1034**

Adapters

Description	Code number
G ½ female to G ¼ male	**060G1021**
G ½ female to G ¼ (DIN3852) male	**060G1022**
G ½ female to G ⅜ male	**060G1023**
G ½ female to G ¼ flare male	**060G1024**
G ½ with pulse-snubber	**060G0252**

MBS 3250 compact pressure transmitters with pulse-snubber

Design



Temperature

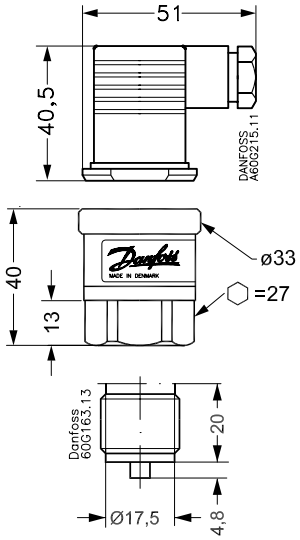
The compact high temperature pressure transmitter MBS 3250 is designed for use in hydraulic applications with severe medium influences like cavitation, liquid hammer or pressure peaks and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible heavy duty pressure transmitter programme covers 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 – 10V output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.

Excellent vibration stability, uniquely robust construction, a high degree of EMC/EMI protection and a high operating temperature equip the pressure transmitter to meet the most stringent industrial and hydraulic requirements.

- 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 – 10 V output signal
- Operating temperature: -40 – 125 °C
- Measuring range: 0 – 600 bar
- A wide range of pressure and electrical connections are available
- For use in severe industrial environments
- With pulse-snubber
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.17 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost

MBS 3250 pressure transmitters with pulse-snubber

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 125 °C
Output signal: 4 – 20 mA
Electrical connections: EN175301-803A, Pg 9
Range: Flexible - different electrical and pressure connections available

Pressure range P_e [bar][1)]	Pressure connection G ¼ DIN 3852-E		Code number
0 – 2.5	✓		**060G1861**
0 – 4	✓		**060G1862**
0 – 6	✓		**060G1863**
0 – 10	✓		**060G1791**
0 – 16	✓		**060G1864**
0 – 25	✓		**060G1865**
0 – 40	✓		**060G1790**
0 – 60	✓		**060G1866**
0 – 100	✓		**060G1867**
0 – 160	✓		**060G1868**
0 – 250	✓		**060G1779**
0 – 400	✓		**060G1869**
0 – 600	✓		**060G1778**

[1)] *Gauge / relative*

Spareparts and accessories for MBS 3250

Plug in display

Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

Plug

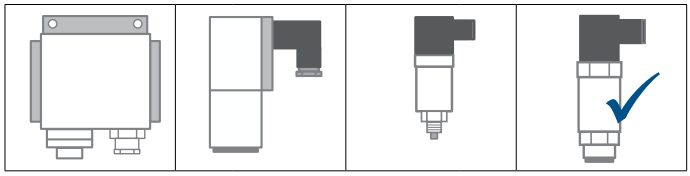
Description		Code number
EN 175301-803-A, Pg 9 plug		**060G0008**
En 175301-803-A, Pg 11 plug		**060G0007**
En 175301-803-A, plug with 5 m cable		**060G1034**

Adapters

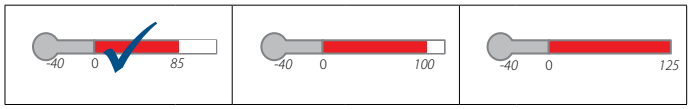
Description	Code number
G ½ female to G ¼ male	**060G1021**
G ½ female to G ¼ (DIN3852) male	**060G1022**
G ½ female to G ⅜ male	**060G1023**
G ½ female to G ¼ flare male	**060G1024**

MBS 4510 flush diaphragm pressure transmitter

Design



Temperature

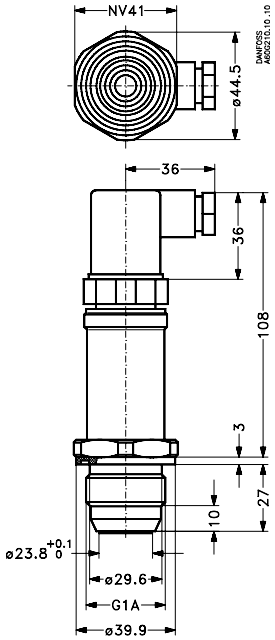


The high accuracy flush diaphragm pressure transmitter MBS 4510 is designed for use in non-uniform, high viscous or crystallizing media within industry, food and beverage, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 250 mbar til 0 – 25 bar, zero point and span adjustment, plug connection and a G1A conic pressure connection with a flush mounted diaphragm.
Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

- 4 – 20 mA output signal
- Operating temperature: -10 – 85 °C
- Measuring ranges from 0 – 250 m bar to 0 – 25 bar
- Available with many different pressure connections
- With zero point and span adjustment
- With flush diaphragm
- For use in food and beverage industry as well as industrial applications with aggressive, heterogeneous and highly viscous media
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.4 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost

MBS 4510 flush diaphragm pressure transmitter

Accuracy: +/- 0.2% FS (typ.)
Media temperature: -10 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 9
Zero and span adjustment

Measuring range P_e [bar][1)]	Pressure connection G 1 A with cone		Code number
0 – 0.25	✓		**060G2418**
0 – 0.4	✓		**060G2419**
0 – 0.6	✓		**060G2420**
0 – 1	✓		**060G2421**
0 – 1.6	✓		**060G2422**
0 – 2.5	✓		**060G2423**
0 – 4	✓		**060G2424**
0 – 6	✓		**060G2425**
0 – 10	✓		**060G2426**
0 – 16	✓		**060G2427**
0 – 25	✓		**060G2428**

[1)] *Gauge / relative*

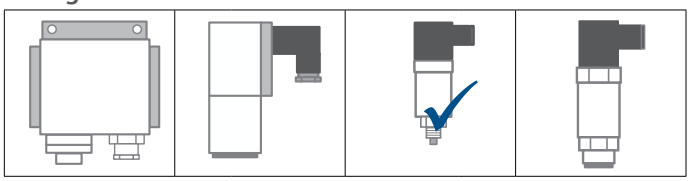
Spare parts and accessories for MBS 4510

Adapters

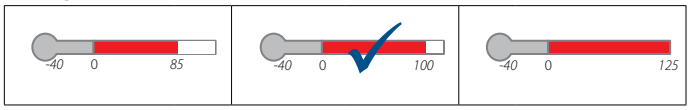
Description	Code number
Welding nipple for conic metal/metal seal	**060G2501**
DIN 11851 (diary connection) DN40	**060G2505**
DIN 11851 (diary connection) DN50	**060G2506**
Clamp, ISO 2852, 1½ in	**060G2502**
Clamp, ISO 2852, 2 in	**060G2510**
SMS 1145 connection, 1½ in	**060G2503**

MBS 9200 Low pressure transmitter

Design



Temperature

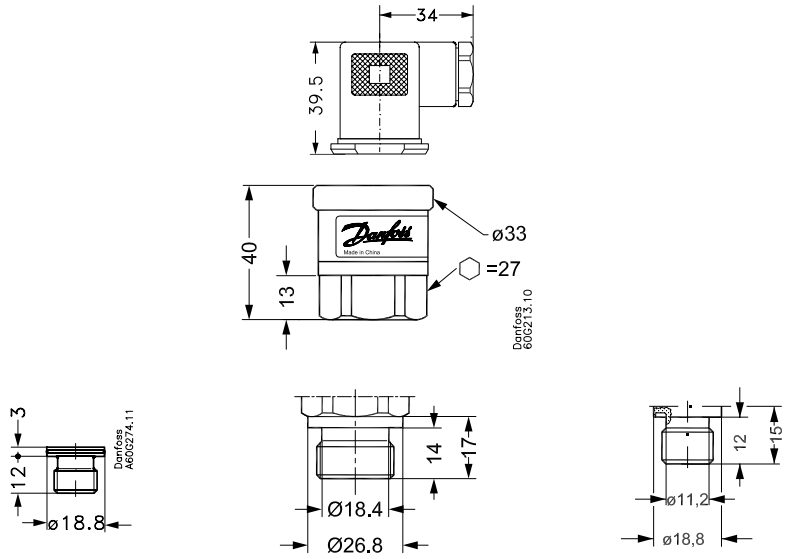


The compact pressure transmitter MBS 9200 is designed for use in industrial applicationes e.g. cranckcase and turbocharger on industrial engines, filter monitoring as well as applications within level measurement.
The programme cover 4 – 20 mA and ratiometric output signal, gauge versions, pressure span from 40 – 250 mbar as well as bidirectional ranges e.g. -70 – 70 mbar etc.
Excellent vibration stability, robust construction, and a high degree of EMC / EMI protection equip the pressure transmitter to meet the most stringent industrial requirements..

- 4 – 20 mA or ratiometric output signal
- Full scale span from 40 – 250 mbar as well as bidirectional ranges e.g. -70 – 70 mbar etc.
  (lowest zero point -100 mbar)
- Digital temperature compensated
- Reverse polarity protection
- With build-in clipping function and self-dianostic on request
- Enclosure and wetted parts of stainless steel (AISI 316L)
- Customer specific version on request

Dimensions and weight:

Weight: 0.2 kg



All dimensions in millimetres

Approvals: CE

MBS 9200 Low pressure transmitter

Accuracy: ± 0.5 – ± 2% FSS (depending on pressure span)
Media temperature: -25° – 100 °C (depending on gasket material)
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 9
Range: Flexible, different electrical and pressure connections available

Measuring range	Pressure connection		Gasket		
P_e [bar][1])	DIN 3852-E-G1/4 Gasket: DIN 3869-14	DIN 3852-E-G1/4 Gasket: DIN 3869-14	FPM	NBR	Code numbers
0.02 – 0.02		✓	✓		**064G5225**
0 – 0.1	✓		✓		**064G5214**
0 – 0.1		✓		✓	**064G5222**
0 – 0.15	✓		✓		**064G5216**
0 – 0.25	✓		✓		**064G5215**
0 – 0.25	✓			✓	**064G5218**

[1]) *Gauge / relative*

Spare parts and accessories for MBS 9200

Plugs

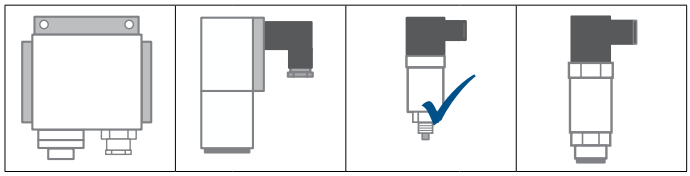
Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**

Plug in display

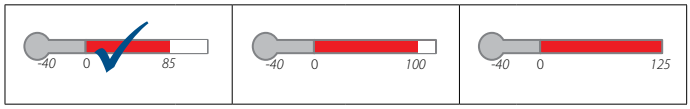
Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

MBS 3100 compact pressure transmitter

Design



Temperature

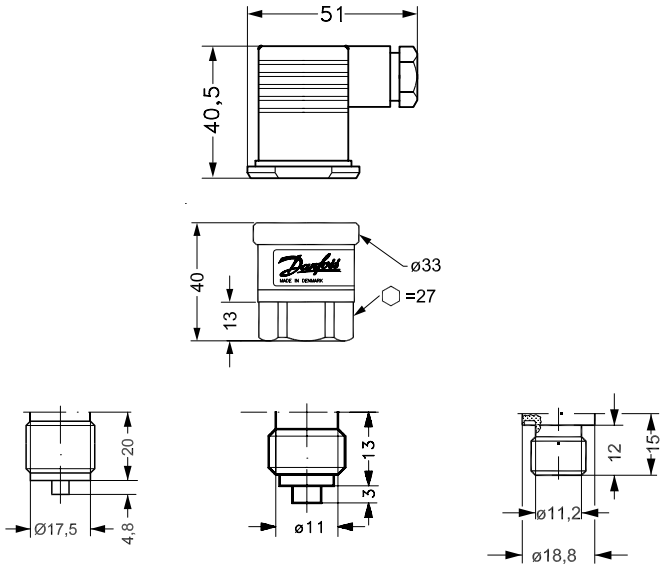


The compact ship approved pressure transmitter MBS 3100 is designed for use in almost all marine applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar, plug and cable connections and a wide range of pressure connections.
Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent marine requirements.

- 4 – 20 mA output signal
- Operating temperature: -40 – 85 °C
- Measuring range: 0 – 600 bar
- Standard pressure connection G ¼A EN 837, G ¼A, O-ring DIN 3852, G ½A EN 837
- Available with all relevant marine approvals
- Suited for marine applications
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.2 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost, LR, DNV, GL, RINA, ABS, BV, NKK, PRS, MRS, CSS

MBS 3100 compact pressure transmitter

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 11
Range: Flexible – many different electrical and pressure connections available

Measuring range	Pressure connection			
P_e [bar][1]	G ¼ A EN 837	G ¼ A, O-ring DIN 3852	G ½ A EN 837	Code numbers
0 – 4	✓			**060G1367**
0 – 6	✓			**060G1368**
0 – 10	✓			**060G1369**
0 – 16	✓			**060G1370**
0 – 25	✓			**060G1371**
0 – 40	✓			**060G1372**
0 – 4		✓		**060G1463**
0 – 6		✓		**060G1464**
0 – 10		✓		**060G1465**
0 – 16		✓		**060G1466**
0 – 25		✓		**060G1467**
0 – 40		✓		**060G1468**
-1 – 1.5[2]			✓	**060G5600**
-1 – 5[2]			✓	**060G5601**
0 – 4			✓	**060G1469**
0 – 6			✓	**060G1470**
0 – 10			✓	**060G1471**
0 – 16			✓	**060G1472**
0 – 25			✓	**060G1473**
0 – 40			✓	**060G3388**

[1] *Gauge / relative*
[2] *Sealed gauge*

Spare parts and accessories for MBS 3100

Plugs

Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**
EN 175301-803-A, Pg 13.5 plug	**060G0005**
EN 175301-803-A, plug with 5 m cable	**060G1034**

Adapters

Description	Code number
G ½ female to G ¼ male	**060G1021**
G ½ female to G ¼ (DIN 3852) male	**060G1022**
G ½ female to ⅜ male	**060G1023**
G ½ female to ¼ flare male	**060G1024**
G ½ female with pulse-snubber	**060G0252**

Plug in display

Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

Isolating valve for pressure connection in compliance with DIN 3852-E

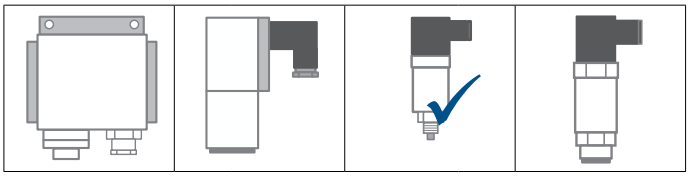
Type	Female thread	Male thread	Code number
MBV 2000	G ¼ DIN 3852	G ¼ DIN 3852-E	**061B6001**
MBV 2000	G ¼ DIN 3852	G ½ DIN 3852-E	**061B6002**
MBV 2000	G ½ DIN 3852	G ½A DIN 3852-E	**061B6003**
MBV 2000	G ¼ DIN 3852	¼-18 NPT DIN 3866-A	**061B6004**

Test valve

Type	Pressure range, bar	Pressure connection	Transmitter connection	Code number
MBV 3000	0 – 120	DIN 3852-E-G ¼	DIN 3852-X-G ½	**061B6100**

MBS 3150 compact pressure transmitter with pulse-snubber

Design



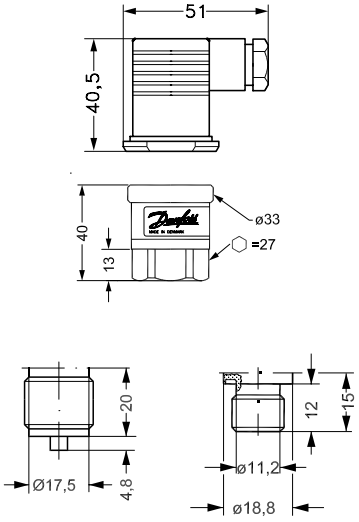
Temperature

The compact ship approved pressure transmitter MBS 3150 is designed for use in marine applications with severe medium influences like cavitation, liquid hammer or pressure peaks and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar, plug and cable connections and a wide range of pressure connections.
Excellent vibration stability, uniquely robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent marine requirements.

- 4 – 20 mA output signal
- Operating temperature: -40 – 85 °C
- Measuring range: 0 – 600 bar
- Standard pressure connection G ¼A, O-ring DIN 3852, G ½A EN 837
- With integrated pulse-snubber
- Available with all relevant marine approvals and designed to meet the strict demands on marine equipment
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.2 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost, LR, DNV, GL, RINA, ABS, BV, NKK, PRS, MRS, CSS

MBS 3150 compact pressure transmitter with pulse-snubber

Accuracy: +/- 0.5% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 11
Range: Flexible – many different electrical and pressure connections available

Measuring range	Pressure connection			
P_e [bar][1)]	G ½ A EN 837	G ¼ A, O-ring DIN 3852		Code numbers
0 – 6	✓			**060G1476**
0 – 10	✓			**060G1477**
0 – 6		✓		**060G1474**
0 – 10		✓		**060G1475**

[1)] *Gauge / relative*

Spare parts and accessories for MBS 3150

Plugs

Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**
EN 175301-803-A, Pg 13.5 plug	**060G0005**
EN 175301-803-A, plug with 5 m cable	**060G1034**

Adapters

Description	Code number
G ½ female to G ¼ male	**060G1021**
G ½ female to G ¼ (DIN 3852) male	**060G1022**
G ½ female to ⅜ male	**060G1023**
G ½ female to ¼ flare male	**060G1024**
G ½ female with pulse-snubber	**060G0252**

Plug in display

Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

Isolating valve for pressure connection in compliance with DIN 3852-E

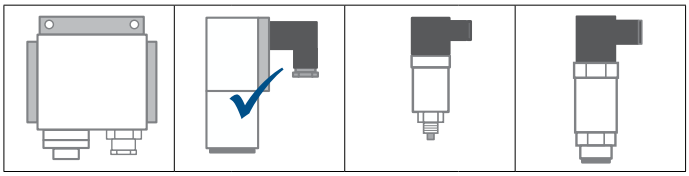
Type	Female thread	Male thread	Code number
MBV 2000	G ¼ DIN 3852	G ¼ DIN 3852-E	**061B6001**
MBV 2000	G ¼ DIN 3852	G ½ DIN 3852-E	**061B6002**
MBV 2000	G ½ DIN 3852	G ½A DIN 3852-E	**061B6003**

Test valve

Type	Pressure range, bar	Pressure connection	Transmitter connection	Code number
MBV 3000	0 – 120	DIN 3852-E-G ½	DIN 3852-X-G ¼	**061B6100**

MBS 5100 pressure transmitter

Design



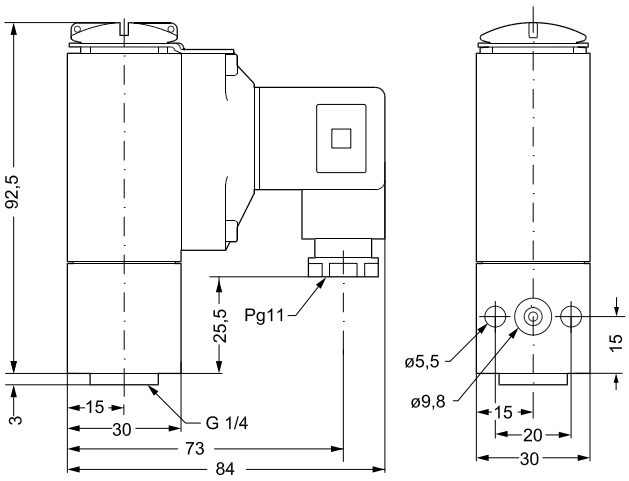
Temperature

The ship approved high accuracy pressure transmitter MBS 5100 is designed for use in almost all marine applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme in block design covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar, zero point and span adjustment, plug connection and female/flange pressure connections.
Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

- 4 – 20 mA output signal
- Operating temperature: -40 – 85 °C
- Measuring range: 0 – 600 bar
- Pressure connection G ¼ female
- Available with all relevant marine approvals
- Designed to meet the strict demands in marine equipment
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.4 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost, LR, DNV, GL, RINA, ABS, BV, NKK, PRS, MRS, CSS

MBS 5100 pressure transmitter

Accuracy: +/- 0.1% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 11
Zero and span adjustment

Measuring range P_e [bar][1)]	Pressure connection G ¼ with flange		Code number
0 – 1	✓		**060N1032**
0 – 2,5	✓		**060N1033**
0 – 4	✓		**060N1034**
0 – 6	✓		**060N1035**
0 – 10	✓		**060N1036**
0 – 16	✓		**060N1037**
0 – 25	✓		**060N1038**
0 – 40	✓		**060N1039**
0 – 60	✓		**060N1040**
0 – 100	✓		**060N1041**

[1)] *Gauge / relative*

Spare parts and accessories for MBS 5100

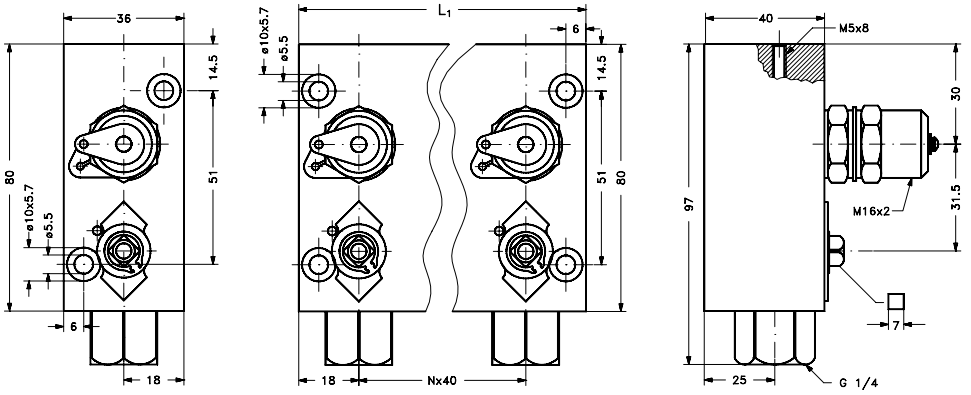
Plugs

Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**
EN 175301-803-A, Pg 13.5 plug	**060G0005**
EN 175301-803-A, plug with 5 m cable	**060G1034**

MBV 5000 pressure test valve

Media temperature: -20 – 120 °C
Pressure connection: G ¼ (Input)
Flange / M5 x 8 (Output)

Output no.	Length (L_1) mm		Code numbers
x1	36		**061B7000**
x2	76		**061B7001**
x3	116		**061B7002**
x4	156		**061B7003**
x5	196		**061B7004**
x2	76		**061B7005**
x3	116		**061B7006**
x4	156		**061B7007**
x5	196		**061B7008**
x2	76		**061B7009**
x3	116		**061B7010**
x4	156		**061B7011**
x5	196		**061B7012**

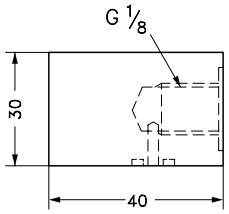


Weight: 0.4 – 2 kg depending on the different configurations

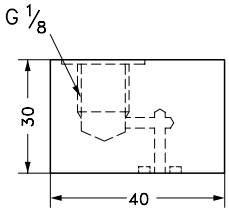
All dimensions in millimetres

Standard flange - G ⅛ adapters

Cover



Angleway adapter

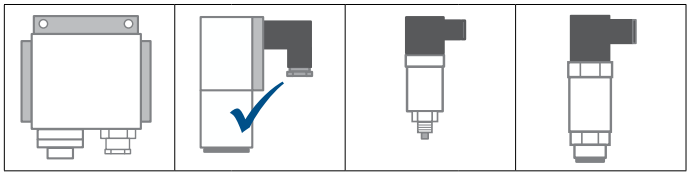


Straightway adapter

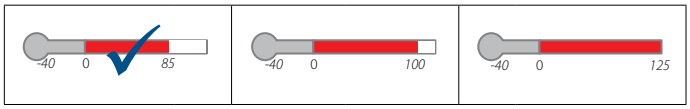
Description	Code number
Cover	**061B720001**
Angleway adapter	**061B720101**
Straightway adapter	**061B720201**

MBS 5150 pressure transmitters with pulse-snubber

Design



Temperature

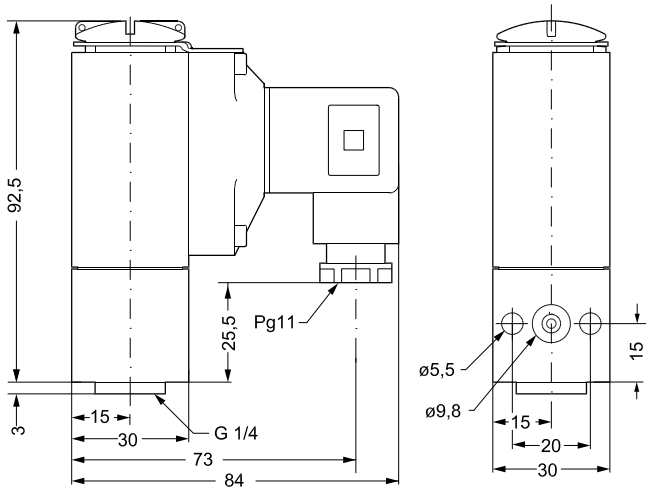


The ship approved high accuracy pressure transmitter MBS 5150 is designed for use in marine applications with severe medium influences like cavitation, liquid hammer or pressure peaks, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme in block design covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar, zero point and span adjustment, plug connection and female/flange pressure connections.
Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

- 4 – 20 mA output signal
- Operating temperature: -40 – 85 °C
- Measuring range: 0 – 600 bar
- Pressure connection G ¼ female
- With integrated pulse-snubber
- Available with all relevant marine approvals
- Designed to meet the strict demands in marine equipment
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 0.4 kg



All dimensions in millimetres

Approvals: CE, UL, UL Hazloc, Ex-N, Gost, LR, DNV, GL, RINA, ABS, BV, NKK, PRS, MRS, CSS

MBS 5150 pressure transmitter with pulse-snubber

Accuracy: +/- 0.1% FS (typ.)
Media temperature: -40 – 85 °C
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 11
Zero and span adjustment

Measuring range P_e [bar][1)]	Pressure connection G ¼ with flange		Code number
0 – 1	✓		**060N1081**
0 – 2,5	✓		**060N1083**
0 – 4	✓		**060N1084**
0 – 6	✓		**060N1063**
0 – 10	✓		**060N1064**
0 – 16	✓		**060N1065**
0 – 25	✓		**060N1085**
0 – 40	✓		**060N1066**
0 – 60	✓		**060N1086**
0 – 100	✓		**060N1087**

[1)] *Relative / gauge*

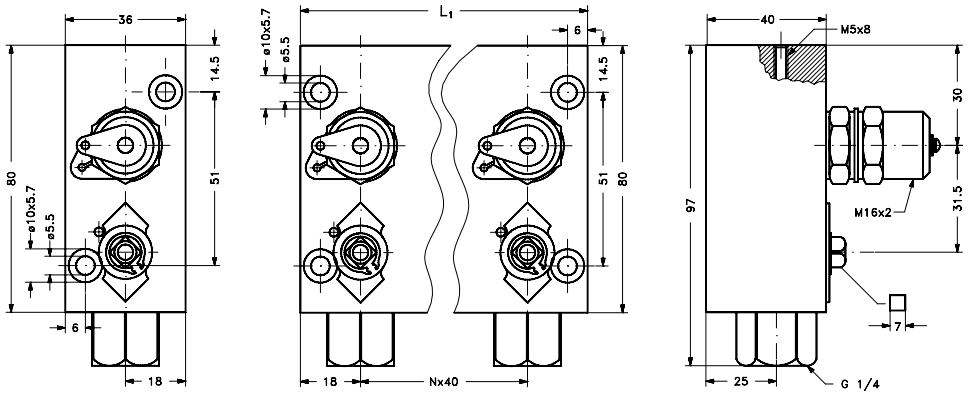
Spare parts and accessories for MBS 5150

Plugs

Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**
EN 175301-803-A, Pg 13.5 plug	**060G0005**
EN 175301-803-A, plug with 5 m cable	**060G1034**

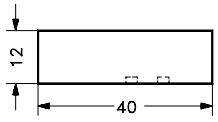
MBV 5000 pressure test valve
Media temperature: -20 – 120 °C
Pressure connection: G ¼ (Input)
Flange / M5 x 8 (Output)

Output no.	Length (L_1) mm	Code numbers
x1	36	**061B7000**
x2	76	**061B7001**
x3	116	**061B7002**
x4	156	**061B7003**
x5	196	**061B7004**
x2	76	**061B7005**
x3	116	**061B7006**
x4	156	**061B7007**
x5	196	**061B7008**
x2	76	**061B7009**
x3	116	**061B7010**
x4	156	**061B7011**
x5	196	**061B7012**

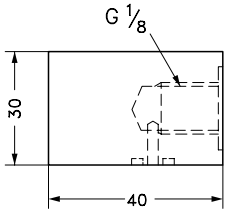


Weight: 0.4 – 2 kg depending on the different configurations

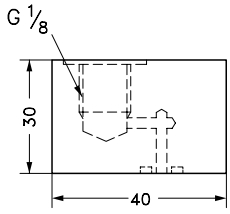
All dimensions in millimetres



Cover



Angleway adapter



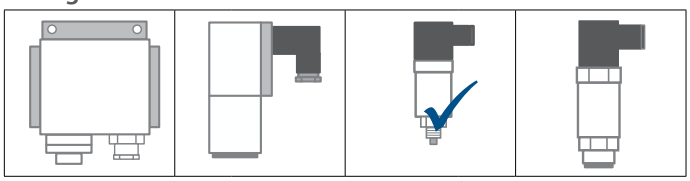
Straightway adapter

Standard flange - G ¹/₈ adapters

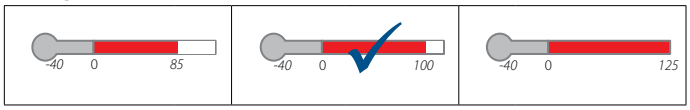
Description	Code number
Cover	**061B720001**
Angleway adapter	**061B720101**
Straightway adapter	**061B720201**

MBS 9300 Low pressure transmitter

Design



Temperature

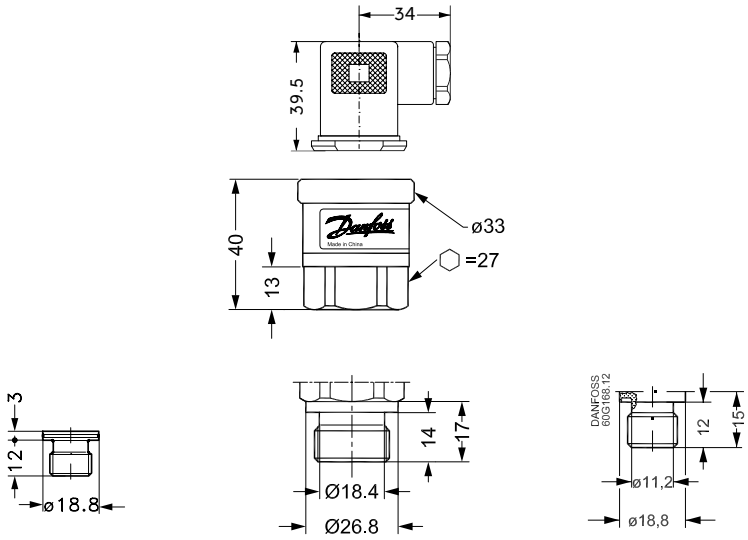


The compact pressure transmitter MBS 9300 is designed for use in marine applicationes e.g. cranckcase and turbocharger on industrial engines, filter monitoring as well as applications within level measurement.
The programme cover 4 – 20 mA output signal, gauge versions, pressure span from 40 – 250 mbar as well as bidirectional ranges e.g. -70 – 70 mbar etc.
Excellent vibration stability, robust construction, and a high degree of EMC / EMI protection equip the pressure transmitter to meet the most stringent marine requirements.

- 4 – 20 mA output signal
- Full scale span from 40 – 250 mbar as well as bidirectional ranges e.g. -70 – 70 mbar etc.
  (lowest zero point -100 mbar)
- Digital temperature compensated
- Reverse polarity protection
- With build-in clipping function and self-dianostic on request
- Enclosure and wetted parts of stainless steel (AISI 316L)
- Customer specific version on request

Dimensions and weight:

Weight: 0.2 kg



All dimensions in millimetres

Approvals: CE, DNV, BV, ABS, LR, RINA, KR

MBS 9300 Low pressure transmitter

Accuracy: ± 0.5 – ± 2% FSS (depending on pressure span)
Media temperature: -25° – 100 °C (depending on gasket material)
Output signal: 4 – 20 mA
Electrical connections: EN 175301-803-A, Pg 9
Range: Flexible, different electrical and pressure connections available

Measuring range	Pressure connection		Gasket		
P_e [bar][1])	DIN 3852-E-G1/4 Gasket: DIN 3869-14	DIN 3852-E-G1/2 Gasket: DIN 3869-14	FPM	NBR	Code numbers
- 0.07 – 0.07	✓		✓		**064G5202**
- 0.03 – 0.03	✓		✓		**064G5201**
- 0.02 – 0.02	✓			✓	**064G5207**
0 – 0.25	✓		✓		**064G5228**
0 – 0.04	✓		✓		**064G5221**
0 – 0.06	✓		✓		**064G5219**
0 – 0.1	✓			✓	**064G5224**
0 – 0.1		✓		✓	**064G5226**

[1]) Gauge / relative

Spare parts and accessories for MBS 9300

Plugs

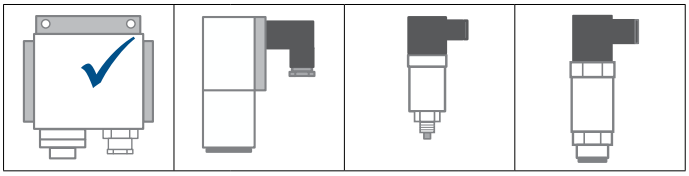
Description	Code number
EN 175301-803-A, Pg 9 plug	**060G0008**
EN 175301-803-A, Pg 11 plug	**060G0007**
EN 175301-803-A, Pg 13.5 plug	**060G0005**

Plug in display

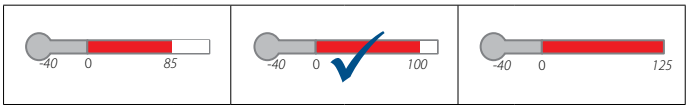
Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

EMP 2 pressure transmitters

Design



Temperature

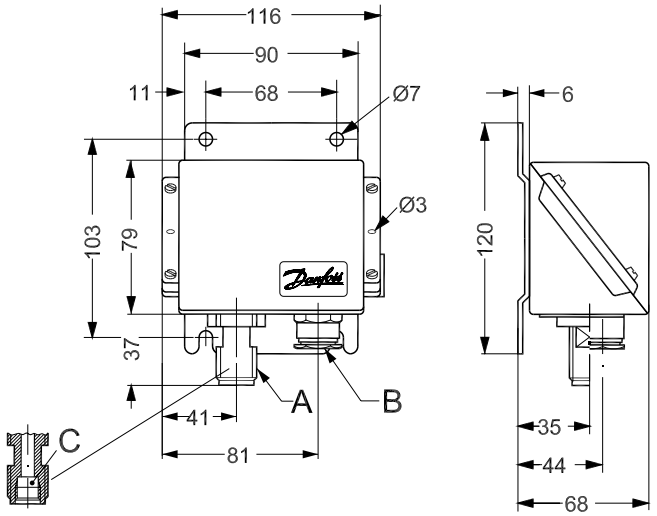


The ship approved pressure transmitter EMP 2 is designed for use in almost all marine and industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme in box design covers a 4 – 20 mA output signal, gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 400 bar, zero point and span adjustment, Pg 13.5 cable entry and different pressure connections.
A robust construction enables the pressure transmitter to meet the strictest requirements.

- 4 – 20 mA output signal
- Operating temperature: -10 – 70 °C
- Measuring range: 0 – 400 bar
- Pressure connections G ¼, G ½A standard, G ⅜ A mano
- With zero point and span adjustment
- Available with all relevant marine approvals
- For use in harsh industrial / marine environments
- Wetted parts: stainless steel (AISI 316)

Dimensions and weight:

Weight: 1 kg



A: G ½A (G ⅜A mano
B: Pg 13.5
C: G ¼

All dimensions in millimeters

Approvals: CE, UL, UL Hazloc, Ex-N, Gost, LR, DNV, GL, RINA, ABS, BV, NKK, PRS, MRS, CSS

EMP 2 pressure transmitters

Accuracy: +/- 0.3 % FS
Media temperature: -40 – 100 °C
Output signal: 4 – 20 mA
Electrical connections: Terminal block, Pg 13.5
Zero and span adjustment

Operating pressure	Pressure connection		
P_e [bar][1)]	G ½ A	G ⅜ A	Code number
–1 – 1.5 [1)]	✓		**084G2100**
–1 – 5 [1)]	✓		**084G2101**
0.2 – 1	✓		**084G2102**
0 – 1	✓		**084G2103**
0 – 1.6	✓		**084G2104**
0 – 2.5	✓		**084G2105**
0 – 4	✓		**084G2106**
0 – 4		✓	**084G2206**
0 – 6	✓		**084G2107**
0 – 6		✓	**084G2207**
0 – 6	✓		**084G2108**
0 – 10	✓		**084G2109**
0 – 10		✓	**084G2209**
0 – 10	✓		**084G2110**
0 – 16	✓		**084G2111**
0 – 16		✓	**084G2211**
0 – 25	✓		**084G2112**
0 – 40	✓		**084G2113**
0 – 40		✓	**084G2213**
0 – 60	✓		**084G2114**
0 – 100	✓		**084G2115**
0 – 160	✓		**084G2116**
0 – 250	✓		**084G2117**
–1 – 9 [1)]	✓		**084G2120**

[1)] *Gauge / relative*

Spareparts and accessories for EMP 2

Damping coil, copper

Damping coil, stainless steel

Damping coil, armoured

Damping coil

Description	Material	Code number
G ⅜ unions and 1.5 m capillary tube.	Copper	**060-104766**
G ½ unions and 1 m capillary tube.	Stainless steel	**060-016966**
G ⅜ unions and 1 m capillary tube. Armoured.	Copper	**060-333366**

Nipple

Description	Material	Code number
G ¼ A x G ⅜ A with copper washer.	Brass	**060-333266**


MBS 1700
060G6100
MBS 1700
060G6104

Temperature sensors

Serving a broad, global market within diverse and demanding industries, Industrial Automation is your one-stop partner for industrial control components. Through Danfoss Industrial Automation you gain access to the entire Danfoss pool of technology for a wide range of industries.

HYDRAULICS

In a world depending on infrastructure, mobile hydraulic equipment is key to making modern living possible for an ever growing population. Whether used in construction, agriculture or for material handling, mobile hydraulics equipment offers efficiency, economy, safety and environmental advantages.

MARINE

From the handling of sewage water to the treatment of exhaust gasses: A modern ship contains most of the applications found on shore, albeit in a limited space. Danfoss Industrial Automation is a global leader in supplying pressure transmitters to equipment placed in and around the engine room: 2 and 4 stroke diesel and gas engines, propulsion systems, fuel treatment, oil separators among others.

AIR COMPRESSORS

Spanning from very small units for medical use to very large industrial compressors operating in the kilowatt power band, the air compressor industry covers a huge range of equipment.
Equally varied are the fundamental compressor technologies used.

PUMPS

The global need for clean water is enormous and on the rise, calling for a dedicated common effort to control the water cycle. Danfoss is well prepared to contribute to such endeavors. To us, the pump is the key to controlling the water cycle – from intake to effluent. Consequently, we have developed a range of sensors and switches for pumps, tailored for the most common \ applications in the water industry.

Examples

Onboard complex, new ships, the MBT temperature sensor control that vital parts of the propulsion system all run perfectly, within the parameters of safe operation.

On wind turbines, helping to increase the amount of wind-produced power worldwide, the MBT temperature sensor gives reliable readings of hydraulic oil temperatures.

Temperature sensors

in this catalogue

		MBT 3250	MBT 5250	MBT 153	MBT 3270	MBT 5252	MBT 3560
Segments	Transportation	✓	✓		✓	✓	✓
	Heating and sanitation		✓			✓	
	Machine and equipment	✓	✓		✓	✓	✓
	Energy	✓	✓			✓	✓
Characteristics	Pt 100/Pt 1000	✓	✓	✓	✓	✓	
	NTC/PTC	✓	✓	✓	✓	✓	
	Transmitter						mA/V DC
	Transmitter as option					mA	
	Measuring insert	Changeable	Changeable	Fixed	Fixed	Changeable	Fixed
	Medium temperature	-50 – 200 °C (-58 – 392 °F)	-50 – 200 °C (-58 – 392 °F)	-50 – 200 °C (-58 – 392 °F)	-50 – 300 °C (-58 – 572 °F)	-50 – 400 °C (-58 – 752 °F)	-50 – 200 °C (-58 – 392 °F)
	Enclosure	IP65 (NEMA 4)	IP65 (NEMA 4)	IP67 (NEMA 6)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65/IP67 (NEMA 4/ NEMA 6)
	Material protection tube	W.no. 1.4571 (AISI 316 Ti)	W.no. 1.4571 (AISI 316 Ti)	W.no. 1.4571 (AISI 316 Ti)	W.no. 1.4571 (AISI 316 Ti)	W.no. 1.4571 (AISI 316 Ti)	W.no. 1.4571 (AISI 316 Ti)
	Reaction time t0.5 in water (sec)	9 s	9 s	1 s	1.5 s	12 s	10 s
	Marine approvals		✓			✓	

Marine and mobile hydraulics

Boiler and boiler room equipment, sterilisers and autoclaves

Electric power and wind turbines

Industrial hydraulics, air compressors, water pumps and industrial engines

Temperature sensors that can take the heat

An outstanding temperature sensor performance is characterised by:

- The element
- The ability to react fast and precise
- The packaging

1 Elements

- RTD (Pt100/Pt1000) – for standardised signals and high accuracy the RTD's are a perfect choice
- Changeable measuring insert

2 The ability to react fast and precise

Special care has been put into the design of the sensor in relation to the reaction time. A specially developed sensor element fixture ensures contact between the element and the housing material in order to secure a fast heat transfer from the media to the sensor element. On top of this the sensor construction ensures minimum radiation of heat, which results in a measurement very close to the actual temperature of the media.

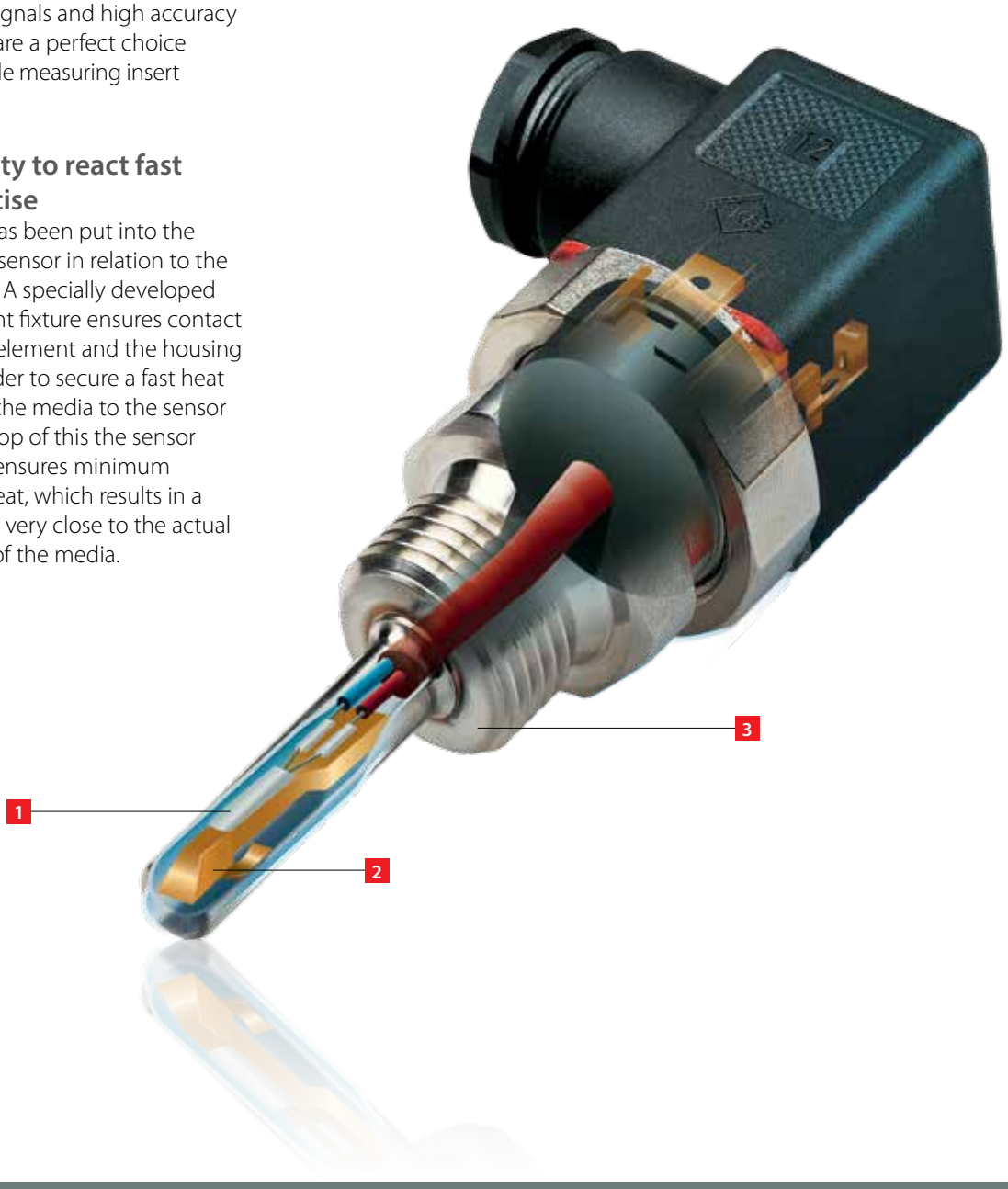
3 Packaging

The sensor design offers long-life stability through:

- High shock and vibration stability
- High enclosure grade IP65

Sensor material:

- Stainless steel (AISI 316)
- Gold plated contacts to secure flawless signal



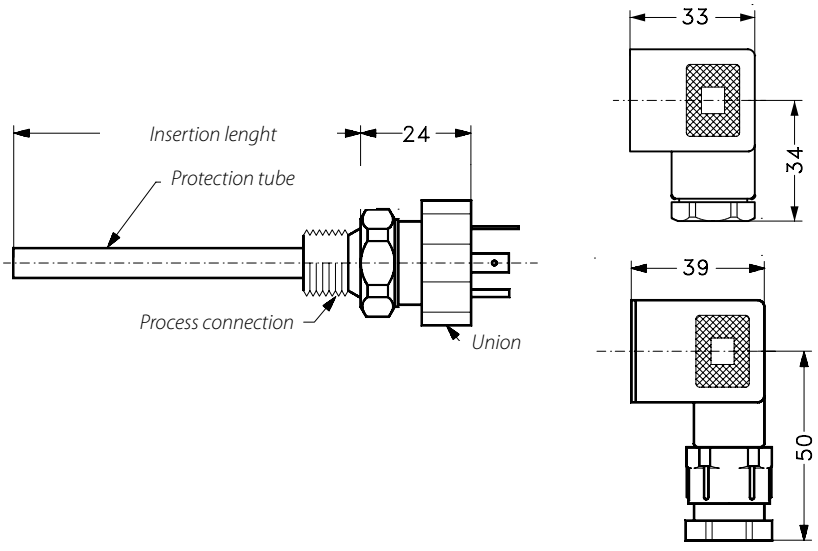
MBT 3250 temperature sensor

The MBT 3250 is a heavy-duty temperature sensor that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry applications.
This temperature sensor is based on a standardized Pt100 or Pt1000 element, which gives a reliable and accurate measurement. The MBT 3250 can be delivered with NTC/PTC elements on request.
The measuring insert is based on a silicone cable, which makes the sensor very resistant towards vibrations. All parts in contact with the media are made of stainless steel AISI 316 Ti. The MBT 3250 is equipped with a EN 175301-803-A, Pg 9 plug as standard, but can be delivered with M12 or DIN 72585 Bayonet on request.

- For gaseous or liquid media, e.g. air, gas, vapour, water or oil
- Up to 200 °C media temperatures
- Pt100 or Pt1000 resistance element
- Can be used with 2- or 3-wire connections
- Gold plated male and female connector
- Interchangeable measuring insert
- Available with all relevant marine approvals
- Wetted parts: Stainless Steel (AISI 316)

Dimensions and weight:

Weight: 0.145 kg – 0.220 kg depending on insertion lenght



All dimensions in millimetres

Approvals: CE

MBT 3250 temperature sensor

Measuring range: -50 – 200 °C
Resistance element: 1 x Pt 100
Extension length: None

Insertion length [mm]	Process connection size	Electrical connection: EN 175301-803-A		Code number
		Pg 9	Pg 11	
50	G ½ A	✓		**084Z2446**
50	G ½ A		✓	**084Z2447**
50	G ¾ A		✓	**084Z2448**
100	G ¾ A		✓	**084Z2449**
100	G ½ A	✓		**084Z2450**
100	G ½ A		✓	**084Z2451**
150	G ½ A		✓	**084Z2452**
150	G ½ A	✓		**084Z2453**
150	G ¾ A			**084Z2454**
150	G ¾ A		✓	**084Z2455**
200	G ½ A	✓		**084Z2456**
200	G ½ A		✓	**084Z2457**
200	G ¾ A			**084Z2458**
200	G ¾ A		✓	**084Z2459**
50	G ¾ A			**084Z2460**
100	G ¾ A			**084Z2461**

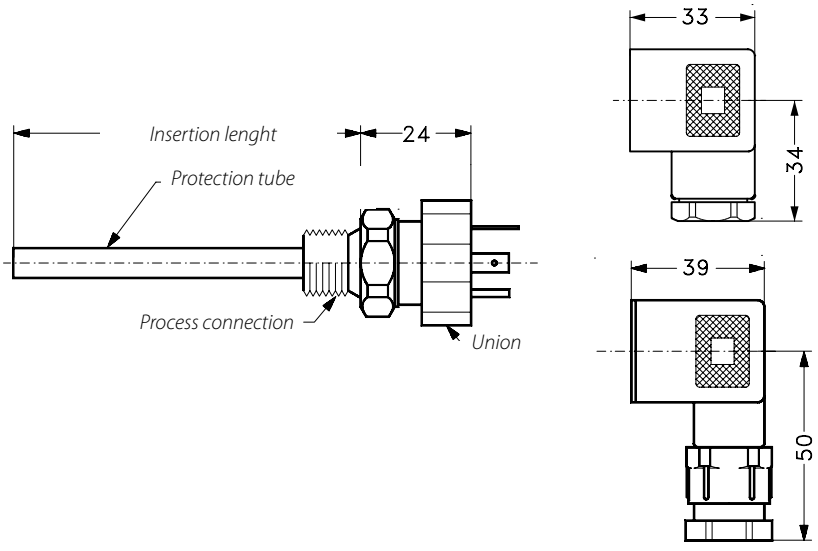
MBT 5250 temperature sensor

The MBT 5250 is a heavy-duty temperature sensor that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry and marine applications. This temperature sensor is based on a standardized Pt100 or Pt1000 element, which gives a reliable and accurate measurement. The MBT 5250 can be delivered with NTC/PTC elements on request. The measuring insert is based on a silicone cable, which makes the sensor very resistant towards vibrations. All parts in contact with the media are made of stainless steel AISI 316 Ti. The MBT 5250 is equipped with a EN 175301-803-A, Pg 9 plug as standard, but can be delivered with M12 or DIN 72585 Bayonet on request.

- For gaseous or liquid media, e.g. air, gas, vapour, water or oil
- Up to 200 °C media temperatures
- Pt100 or Pt1000 resistance element
- Can be used with 2- or 3-wire connections
- Gold plated male and female connector
- Interchangeable measuring insert
- Available with all relevant marine approvals
- Wetted parts: Stainless Steel (AISI 316)

Dimensions and weight:

Weight: 0.145 kg – 0.220 kg depending on insertion lenght



All dimensions in millimetres

Approvals: CE, LR, GL BV, DNV, ClassNK, RINA, ABS, CCS

MBT 5250 temperature sensor

Measuring range: -50 – 200 °C
Resistance element: 1 x Pt 100
Extension length: None

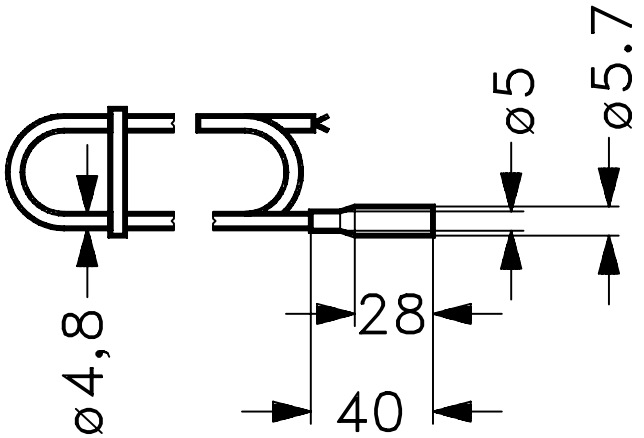
Insertion length	Process connection	Electrical connection: EN 175301-803-A			Code number
[mm]	size	Pg 9	Pg 11	Pg 13.5	
50	G ½ A	✓			**084Z8011**
50	G ½ A		✓		**084Z8036**
50	G ¾ A		✓		**084Z8037**
100	G ¾ A		✓		**084Z8006**
100	G ½ A	✓			**084Z8012**
100	G ½ A		✓		**084Z8039**
150	G ½ A		✓		**084Z8008**
150	G ½ A	✓			**084Z8010**
150	G ¾ A			✓	**084Z8014**
150	G ¾ A		✓		**084Z8041**
200	G ½ A	✓			**084Z8022**
200	G ½ A		✓		**084Z8043**
200	G ¾ A			✓	**084Z8218**
200	G ¾ A		✓		**084Z8044**
50	G ¾ A			✓	**084Z8058**
100	G ¾ A			✓	**084Z8013**

MBT 153 cable-type temperature sensors

The MBT 153 is a heavy-duty temperature sensor that can be used for controlling cooling water and ventilation systems within general industry and marine applications.
This temperature sensor is based on a standardized Pt100 or Pt1000 element, which gives a reliable and accurate measurement. On request the MBT 153 can also be delivered with NTC/PTC elements. The sensor is based on a stainless steel housing with a cable, which makes the sensor extremely flexible.
The MBT 153 can be combined with a sensor pocket to protect the cable from the media. The MBT 153 has a PVC or silicone cable as standard but it can be delivered with teflon cable on request.

- Temperature range: -50 – 200 °C
- Short response times
- Pt100 or Pt1000 resistance element
- 2- or 4-wire connection
- Wetted parts: Stainless Steel (AISI 316)

Dimensions and weight:



Weight: 0.120 kg – 0.425 kg depending on cable length

All dimensions in millimitres

Approvals: CE, LR, DNV, ClassNK

MBT 153 cable-type temperature sensors

Measuring range: **-50 – 200 °C**
Short response time

Resistance element			Cable type		Wires	
Pt 100	Pt 1000	Cable length [m]	PVC	Silicone	(2- or 4-wire connection)	Code number
✓		3.5	✓		2	**084Z6030**
✓		8.5	✓		2	**084Z6032**
	✓	3.5	✓		2	**084Z6033**
	✓	5.5	✓		2	**084Z6034**
	✓	8.5	✓		2	**084Z6035**
✓		3.5		✓	2	**084Z6036**
✓		5.5		✓	2	**084Z6037**
✓		8.5		✓	2	**084Z6038**
	✓	3.5		✓	2	**084Z6039**
✓		3.5		✓	4	**084Z6215**
✓		5.5		✓	4	**084Z6042**
✓		8.5		✓	4	**084Z6216**

Spare parts and accessories

Sensor pocket MBT 120

Insertion length [mm]	Process connections G ½ A	External diameter [mm]	Code number
50	✓	8	**084Z6050**
100	✓	8	**084Z6051**
200	✓	8	**084Z6053**
250	✓	8	**084Z6054**

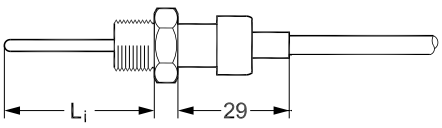
MBT 3270 temperature sensors

The flexible temperature sensor MBT 3270 can be used in many industrial applications such as: Air Compressors, Mobile Hydraulics and Exhaust gas return systems.
In other words application where robustness, size and performance are essentials.
The sensor can be equipped with different sensing element (RTD, NTC and PTC) and is available with different electrical connections (Cable, Delphi Metri Pack, AMP junior power Timer, Deutch DT04).

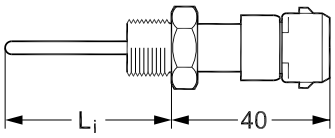
- Robust, high protection against moisture
- Fixed measuring insert
- Brass or stainless steel
- Very low response times
- Temperature range up to 300 °C
- Wetted parts: Stainless Steel (AISI 316)

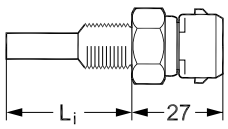
Dimensions and weight:

Weight: 0.085 kg



-50 – 300 °C





-50 – 150 °C

All dimensions in millimetres

MBT 3270 temperature sensors

Fixed measuring insert
Very low response times

Resistance element		Insertion length (L_i)	Temperature range [°C]	Insertion	Wetted parts	Electrical connection			Code number
Pt 100	Pt 1000	[mm]		ø [mm]		AMP	Cable [m]	Deutsch	
✓		24	-50 – 150	6	AISI316	✓			**084Z2014**
	✓	28	-50 – 150	4.2	Brass	✓			**084Z2012**
✓		40	-50 – 300	3	AISI316	✓			**084Z2018**
✓		40	-50 – 300	3	AISI316			✓	**084Z2019**
✓		40	-50 – 300	3	AISI316		2		**084Z2021**

Approvals: CE

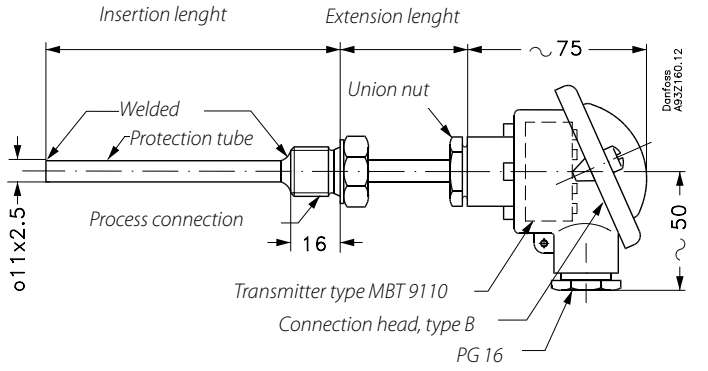
MBT 5252 temperature sensors

The MBT 5252 is a heavy-duty temperature sensor that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry and marine applications. This temperature sensor is based on a standardized Pt100 or Pt1000 element, which gives a reliable and accurate measurement. NTC/ PTC elements available on request.
MBT 5252 can also be delivered with transmitter insert for 4 – 20 mA output. In the low temperature version (-50 – 200 °C) the measuring insert is based on a silicone cable, which makes the sensor very resistant towards vibrations.
All parts in contact with the media are made of stainless steel AISI 316 Ti. The MBT 5252 is equipped with a B-head as standard, but can be delivered with B-mini on request.

- For gaseous or liquid media, e.g. air, gas, vapour, water or oil
- Up to 400 °C media temperatures
- Available with built-in transmitter
- Available with all relevant marine approvals
- Wetted parts: Stainless Steel (AISI 316)

Dimensions and weight:

Weight: 0.37 kg – 0.45 kg
depending on insertion length



All dimensions in millimetres

Approvals: CE, LR, BV, DNV, ClassNK, RINA, ABS, KRS, CCS

MBT 5252 temperature sensors

Measuring range: -50 – 200 °C
Resistance element: Pt 100
Connection head: B-head
Extension length: 50 mm

Insertion length [mm]	Transmitter output 4 – 20 mA	Transmitter setting 0 – 100 °C	Code Number G ½A	Code Number G ¾A
50	-	-	**084Z8210**	**084Z8230**
80	-	-	**084Z6140**	**084Z6164**
100	-	-	**084Z8211**	**084Z8231**
150	-	-	**084Z8212**	**084Z8232**
200	-	-	**084Z8213**	**084Z8233**
250	-	-	**084Z6139**	**084Z6141**
50	✓	✓	**084Z8214**	-
80	✓	✓	**084Z6142**	**084Z6144**
100	✓	✓	**084Z8215**	**084Z8235**
150	✓	✓	**084Z8216**	**084Z8236**
200	✓	✓	**084Z8217**	**084Z8237**
250	✓	✓	**084Z6143**	-

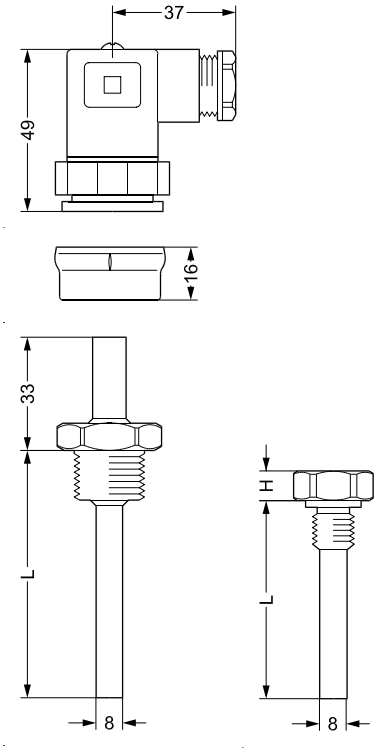
MBT 3560 temperature sensors with built-in transmitter

With MBT 3560 we have combined the technology of our standard temperature sensors and the electrical connections from the MBS pressure transmitters with a new developed electronics which has resulted in a compact temperature sensor with a built-in transmitter.The MBT 3560 is designed for use in harsh industrial enviroments where reliable, robust and accurate equipment is required. Available with a wide selection of process and electrical connections. Can be delivered with a 33 mm extension length which makes it possible to measure temperatures up to 200 °C without damaging the built-in electronics.

- Ultra compact design
- Acid-resistant stainless steel enclosure (AISI 316L)
- Temperature range: -50 – 200 °C
- Pt 1000 resistance element
- Output signals: 4 – 20 mA or Ratiometric
- Protection tube: ø8 mm
- Multiple insertion lengths: 50 mm – 250 mm
- Wetted parts: Stainless Steel (AISI 316)

Dimensions and weight:

Weight: 0.15 kg – 0.22 kg depending on insertion length



L= Insertion length
H=9 mm

All dimensions in millimetres

Approvals: CE

MBT 3560 Temperature sensors with built-in transmitter

Measuring range: -50 – 200 °C
Electrical connection: EN175301-803A, Pg 9
Resistance element: Pt 1000
Protection tube: Ø 8 mm
Process connection: G ¼ A

Insertion length [mm]	Transmitter output 4 – 20 mA	Transmitter settings [°C]	Extension length [mm]	Code number
50	✓	0 – 100	-	**084Z4030**
100	✓	0 – 100	-	**084Z4031**
150	✓	0 – 100	-	**084Z4032**
200	✓	0 – 100	-	**084Z4033**
250	✓	0 – 100	-	**084Z4034**
50	✓	0 – 200	33	**084Z4035**
100	✓	0 – 200	33	**084Z4036**
150	✓	0 – 200	33	**084Z4037**
200	✓	0 – 200	33	**084Z4038**
250	✓	0 – 200	33	**084Z4039**

Spare part and accessories

Sensor pocket

Instertion length [mm]	Pocket insertion length [mm]	Process connection G ½ A	Protection tube ø 11 [mm]	Code number
50	37.50	✓	✓	**084Z7258**
100	87.50	✓	✓	**084Z7259**
150	137.50	✓	✓	**084Z7260**
200	187.50	✓	✓	**084Z7261**
250	237.50	✓	✓	**084Z7262**
50	37.50	½ - 14 NPT	×	**084Z3033**
100	87.50	½ - 14 NPT	×	**084Z3053**

Plug in display

Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	**060G2850**

Pressure switches and Thermostats

When it comes to demanding applications, Danfoss' know-how and expertise is unsurpassed. Our robust switches offer flawless performance day after day and are trusted in the most challenging situations in a variety of industries and applications, of which some are mentioned in the following.

Marine and railway equipment

Break down of essential functions in trains and ships due to failures in the controls and safety equipment can be dangerous, very costly and time consuming. These customers therefore choose partners who have a good reputation and superior products to offer, among others:

- Temperature and pressure control and alarm functions in lubrication oil systems – type KPS, CAS and MBC.
- Pressure control for air compressors – type MBC, KP and RT.
- Essential safety control on trains – type RT and CAS.

Water pumps and air compressors

In water pumps and air compressors it is important to keep a constant pressure and a continuous flow. To ensure this Danfoss offers a range of switches for:

- Monitoring and direct start/stop of single or three phase motors – type RT, MBC, CS, CAS and KP/KPI.
- Dry run protection of pumps – type KP/KPI and RT.

Industrial boilers and boiler room equipment

For boilers and in boiler rooms, accurate monitoring of steam/hot water installations, heat exchangers and water treatment equipment for feed water is vital. Danfoss' programme for steam and high-pressure hot water boilers and burners includes:

- Safety approved pressure switches – type BCP and RT.
- Reliable alarm and safety functions – type BCP, RT and KP.

Hydraulic equipment and windmills

Danfoss switches are intended for flawless alarm indication, shut down, control and diagnostics in a variety of demanding applications:

- Cooling and lubrication systems for generators and gearboxes – type MBC, KPS, KPI, KP, CAS and RT.
- Hydraulic units such as disk brakes and pitch cylinders – type MBC, KPS and RT.
- Power packs – type MBC and KP.

Autoclaves and sterilisers

High control and safety are essential within the autoclave process.

Temperatures and pressures must be controlled within narrow limits over time by products with high repeatability and trustworthy performance:

- Check of door sealing – type KP, BCP and RT.
- Pressure controls of steam supply – type KP, RT and BCP.
- Control and alarm of pressure in the process chamber – type BCP, KP and RT.

Examples

The BCP pressure switch packs all our expertise into a sleek, modern design. The advanced technology built into this durable boiler control sets new standards for reliability - and ensures a long life with a minimum of maintenance.

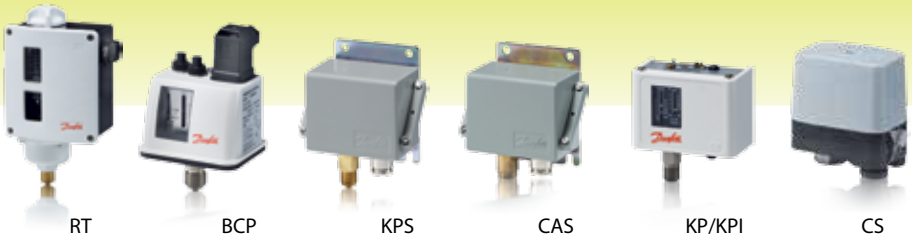
Marine applications where space and reliability are the most important features are the natural habitat of the MBC 5100 block-type pressure switch. With their high vibration resistance and all common marine approvals, they are trusted at high seas.

On wind turbines, helping to increase the amount of wind-produced power worldwide, the KPS temperature switch provides on-off limits when critical temperatures are reached.

Industrial Switches

In this catalogue

Pressure switches



Type	RT	BCP	KPS	CAS	KP/KPI	CS
Segments						
Marine and railway equipment	⚓		⚓	⚓		
Industrial boilers and boiler room equipment	🔥	🔥			🔥	
Autoclaves and sterilisers						
Water pumps and air compressors						
Hydraulic equipment						
Windmills						
Characteristics						
Setting range	-1 – 30 bar	0.03 – 40 bar	0 – 60 bar	0 – 60 bar	-0.2 – 28 bar	2 – 20 bar
Contact system	SPDT	SPDT	SPDT	SPDT	SPDT	TPST and SPST
Electrical rating AC-3 Electrical rating AC-15	4 A, 400 V 3 A, 400 V	1 A, 250 V	6 A, 400 V 4 A, 400 V	- 0.1 A, 220 V	16/ 6 A, 400 V 10/4 A, 400 V	12 A, 415 V –
Electrical connection	Screw terminals	DIN plug	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Contact material	Silver or Gold	Gold	Gold	Silver	Silver or Gold	Silver
Differential	Adjustable	Adjustable	Adjustable	Fixed	Adjustable	Adjustable
Special approvals	Marine, TÜV	TÜV	Marine, UL	Marine	Marine	
Degree of enclosure	IP66 or IP54	IP65	IP67	IP67	IP30, IP44 or IP55	IP43 or IP55
Design	Box industrial	Box industrial	Box heavy duty	Box heavy duty	Box	Box
Adjustable neutral zone	Yes					

⚓ *Railways and marine*

Electric power and wind turbines

Industrial hydraulics, air compressors and water pumps

🔥 *Boiler and boiler room equipment, sterilisers and autoclaves*

	Differential pressure switches			Thermostats			
 MBC	 RT	 CAS	 MBC	 RT	 KPS	 KP	 MBC
-0.2 – 400 bar	0 – 11 bar	0.2 – 2.5 bar	0.3 – 5 bar	-60 – 300 °C	-10 – 200 °C	0 – 150 °C	-10 – 200 °C
SPDT	SPDT	SPDT	SPDT	SPDT	SPDT	SPDT	SPDT
0.5 A, 250 V	4 A, 400 V 3 A, 400 V	- 0.1 A, 220 V	0.5 A, 250 V	4 A, 400 V 3 A, 400 V	6 A, 400 V 4 A, 400 V	16 A, 400 V 10 A, 400 V	0.5 A, 250 V
DIN plug	Screw terminals	Screw terminals	DIN plug	Screw terminals	Screw terminals	Screw terminals	DIN plug
Silver	Silver or Gold	Silver	Silver	Silver or Gold	Gold	Silver	Silver
Fixed	Fixed	Fixed	Fixed	Adjustable	Adjustable	Adjustable	Fixed
Marine	Marine	Marine	Marine	Marine	Marine, UL	Marine, UL	Marine
IP65	IP66	IP67	IP65	IP66 or IP54	IP67	IP30, IP44 or IP55	IP65
Compact	Box industrial	Box heavy duty	Compact	Box industrial	Box heavy duty	Box	Compact
	Yes			Yes			

Discover a variety of built-in benefits

Ongoing development of new technology and new features is at the very heart of Danfoss. We want our switches to be among the very best on the market – living up to your expectations.

1 Adjustable differential switching
Pressure switches and Thermostats have either fixed or adjustable differential settings, good readability, and high accuracy of range setting with use of the scale.

2 Bellows technology
The lifetime of a pressure switches and thermostat is determined by the quality of the bellows. Using advanced technology, and being world leader, Danfoss' bellows are manufactured without any welding points, which makes them stress free and completely tight.

3 Designed for various applications
Danfoss offers a very broad range of purpose-specific enclosures and connections.

4 Snap action contacts
All contacts are "snap-action" types, maintaining the contact force until the moment of contact break. Units with gold-plated contacts are ideal for low electrical loads while the silver-cadmium contacts are developed for high loads.

15 international approvals
Danfoss offers a wide range of approvals suited for different industries and geographical markets.

High vibration stability
Outstanding vibration stability in switches ensures flawless operation even in heavy-duty applications.

Wide pressure ranges
The programme covers working ranges from -1 bar up to 400 bar.

High reliability
All switches feature high accuracy, repeatability and stability over time.

Different temperature sensing elements
As experts in charging technologies Danfoss offers temperature switches that operate in a wide temperature range.

Selection Made Easy

Need help selecting the right component for your application? With only a few clicks, Danfoss product selectors can help you find the right product for standard applications.

Developed to help wholesalers, retailers, installers and end-users pinpoint the solenoid valve needs, the web-based tool makes product selection quick and easy.

All it takes is an internet connection to access the pressure switch selector tool from your desk or laptop, tablet or smart-phone.

To discover just how easy the product selectors are to use, please visit:

http://switchselector.danfoss.com

To visit by mobile, scan the QR code:

Pressure switches and Thermostats – Introduction

Setting range
Most of Danfoss pressure switches and thermostats have a given pressure / temperature range which can be set by the user from a scale on the unit. The given cut-in / cut-out temperature or pressure is indicative only. For accurate setting a thermometer or pressure gauge must be used.

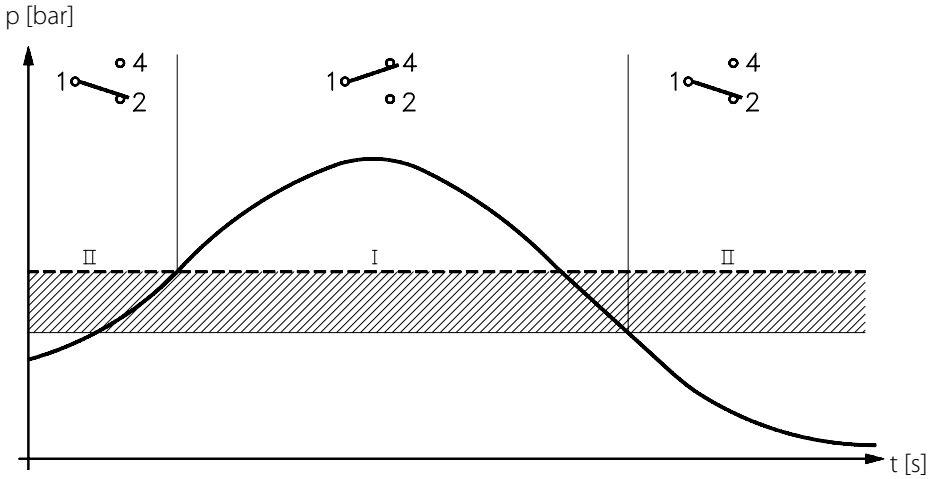
Differential
Differential is a difference between cut-in and cut-out values. It is not recommended to set small differential as it causes system hunting. The bigger differential the less switch over cycles per ahour what benefits in longer life of the contact system.

Contact function, setting for rising pressure / temperature

- RT with maximum reset
- KPI
- KP and BCP with automatic and maximum reset
- KPS (except KPS 31)

Setting range

Differential

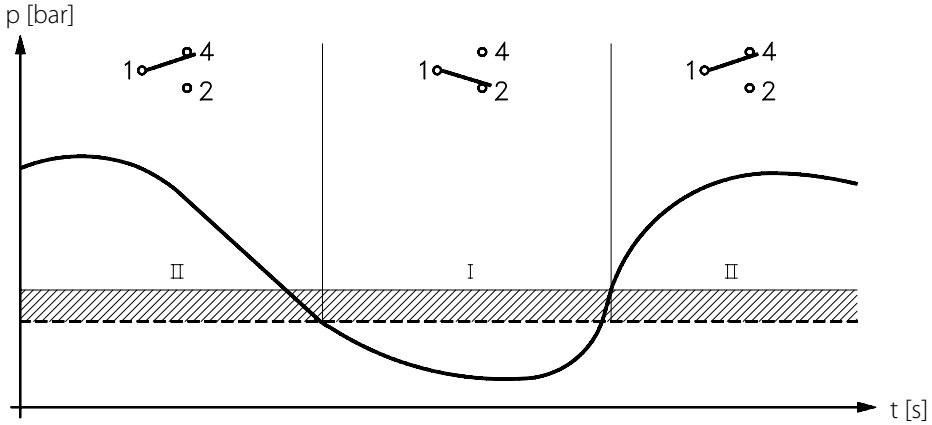


Contact function, setting for falling pressure / temperature

- RT with automatic and minimum reset
- KP and BCP with minimum reset
- CAS
- KPS 31

Setting range

Differential



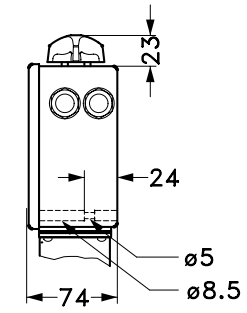
RT pressure switches

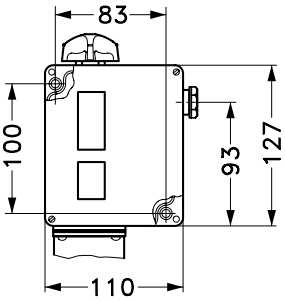
RT switches are used in general industrial, heating and marine sectors. The RT single pressure switches series consist of a variety of controls including neutral zone pressure switches and safety pressure switches for steam boiler plant.
RT switches have been in service for more than 70 years.

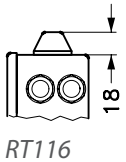
- Pressure range: -1 – 30 bar
- Replaceable contact system
- Also available with gold plated contact systems
- Fail-safe design
- Adjustable differential
- Adjustable neutral zone
- Enclosure IP66
- Available with TÜV approvals
- Available with min. and max. reset function (IP54)
- Also available as differential switch
- Available with all relevant marine approvals
- Versions for drinking water

Dimensions and weight:

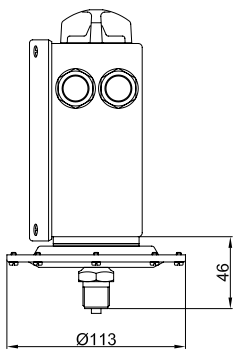
Weight: Appr. 1 kg



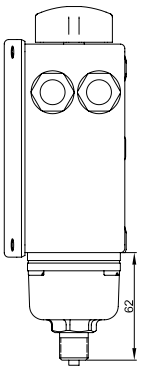




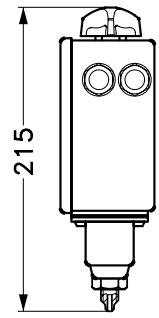
RT116



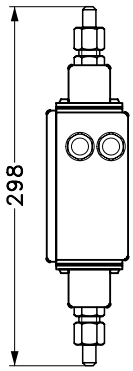
RT 113



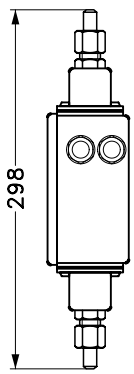
RT 112



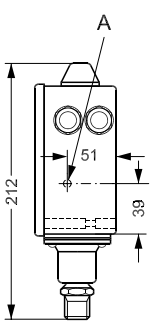
RT5



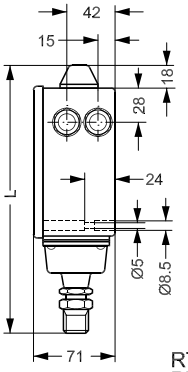
RT260A, 260AL

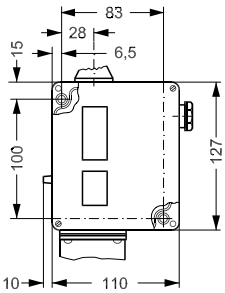


RT262A, 262AL, 263AL



RT 31W,-B,-S
RT 32W,-B,-S





RT 30AW,-B,-S, L=225
RT 19W,-B,-S, L=228
RT 33B, 35W L=221
RT 112W L=210

All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. Relevant marine approvals.

RT pressure switches

Contact type: Single pole double throw (SPDT)
Contact material: Silver cadmium oxide (other contact types - see accessories)
Loads: AC-1 ohmic 10A 400V
AC-3 (motor) 4A 400V
AC-15 (inductive) 3A 400V
Ambient temperature: -50 – 70 °C
Media temperature: -40 – 100 °C

RT pressure switches

Pressure connection: G 3/8 A

Type	Setting range P_e [bar]	Mechanical differential [bar]	Max. working pressure P_e [bar]	Reset			Code number
				Auto-matic	Min.	Max.	
RT121	-1 – 0	0.09 – 0.4	7.0	✓			**017-521566**
RT113[1)]	0 – 0.3	0.01 – 0.05	0.4	✓			**017-519666**
RT112	0.1 – 1.1	0.07 – 0.16	7.0	✓			**017-519166**
RT112	0.1 – 1.1	0.07	7.0			✓	**017-519266**
RT110	0.2 – 3	0.08 – 0.25	7	✓			**017-529166**
RT200	0.2 – 6	0.25 – 1.2	22	✓			**017-523766**
RT200	0.2 – 6	0.25	22			✓	**017-523866**
RT200	0.2 – 6	0.25	22		✓		**017-523966**
RT116	1 – 10	0.3 – 1.3	22	✓			**017-520366**
RT116	1 – 10	0.3	22			✓	**017-520466**
RT116	1 – 10	0.3	22		✓		**017-519966**
RT116[2)]	1 – 10	0.3 – 1.3	22	✓			**017-520066**
RT5	4 – 17	1.2 – 1.3	22			✓	**017-509466**
RT5	4 – 17	1.2 – 4	22	✓			**017-525566**
RT117	10 – 30	1 – 4	42	✓			**017-529566**

[1)]Ambient temperature: -10 – 70 °C
[2)]Tamper proof setting knob

RT pressure switches with neutral zone

Pressure connection: G 3/8 A

Type	Setting range P_e [bar]	Mechanical differential [bar]	Adjustable neutral zone [bar]	Max. working pressure P_e [bar]	Code number
RT 200L	0.2 – 6	0.25	0.25 – 0.7	22	**017L003266**

RT pressure switches for steam plant

Pressure connection: G ½ A

Type	Setting range P_e [bar]	Mechanical differential [bar]	Max. working pressure P_e [bar]	Reset			Code number
				Auto-matic	Min.	Max.	
PED approved. For rising pressure. Ambient temperature: -40 – 70 °C							
RT112W	0.1 – 1.1	0.07	7	✓			**017-528266**
RT35W	0 – 2.5	0.1	7	✓			**017-528066**
RT30AS	1 – 10	0.4	22			✓	**017-518966**
RT30AB	1 – 10	0.6	22			✓	**017-518866**
RT30AW	1 – 10	0.8	22	✓			**017-518766**
RT19B	5 – 25	1.0	42			✓	**017-518266**
RT19W	5 – 25	1.2	42	✓			**017-518166**
PED approval. For falling pressure. Ambient temperature: -40 – 70 °C							
RT33B	0 – 2.5	0.1	7		✓		**017-526266**
RT31W	2 – 10	0.3 – 1	22	✓			**017-526766**
RT31B	2 – 10	0.3	22		✓		**017-526866**
RT31S	2 –10	0.3	22		✓		**017-526966**

All RT pressure switches for steam plant are TÜV approved. Media temperature: –40 – 150 °C

Differential pressure switches

Pressure connection: G 3/8 A

Type	Setting range P_e [bar]	Mechanical differential [bar]	Operation range [bar]	Max. working pressure P_e [bar]	Code number
RT262A	0.1 – 1.5	0.1	-1 – 9	11	**017D002566**
RT262A	0 – 0.3	0.035	-1 – 10	11	**017D002766**
RT260A	0.5 – 4	0.3	-1 – 18	22	**017D002166**
RT260A	0.5 – 6	0.5	-1 – 36	42	**017D002366**
RT260A	1.5 – 11	0.5	-1 – 31	42	**017D002466**

Differential pressure switches with adjustable neutral zone

Pressure connection: G 3/8 A

Type	Setting range P_e [bar]	Mechanical differential [bar]	Adjustable neutral zone [bar]	Operation range [bar]	Max. working pressure P_e [bar]	Code number
RT263AL	0.1 – 1	0.05	0.05 – 0.23	-1 – 6	7	**017D004566**
RT260AL	0.5 – 4	0.3	0.3 – 0.9	-1 – 18	22	**017D004866**

Spareparts and accessories for RT pressure switches

Type	Version	Description	
Contact system	Standard	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Fitted in all standard versions of type RT	**017-403066**
Contact system	Standard	Snap action single-pole changeover switch (SPDT) with gold plated (oxide free) contact surfaces. Increases cut-in reliability on alarm and monitoring systems etc.	**017-424066**
Contact system	Max reset	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Designed for RT units performing max reset function.	**017-404266**
Contact system	Min reset	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Designed for RT units performing min reset function.	**017-404166**

Setting knob *Seal cap* *Seal screws* *Solder nipple* *Reducer* *Adaptor*

Type	Description	
Setting knob	Replacement. Pale grey Ral 7035	**017-436366**
Seal cap	Seal cap to replace setting knob so that setting can only be altered with tools (tamper proof seal cap). Black	**017-436066**
Screws	Seal screws for cover and seal cap	**017-425166**
Solder nipple	Pipe thread ISO 228/1, G ³/₈ connector, nipple and AL washer (10 mm ext. / 8 mm int. diam). for soldering onto steel or copper tubing. Steel span of jaws: 22	**017-436866**
Reducer	Pipe thread ISO 228/1, G ½A x G ³/₈, steel, span of jaws 22	**017-421966**
Reducer	Pipe thread ISO 228/1, G ³/₈ x 7/16 – 20 UNF reducer, washer, brass, span of jaws 22	**017-420566**
Adaptor	Pipe thread ISO 228/1, G ³/₈ A x R ³/₈ (ISO 7/1) brass, span of jaws 17	**060-324166**

Damping coil, 7/16 – 20 UNF connectors *Damping coil, G ³/₈ connectors* *Damping coil, armoured* *Air bell for liquid level control*

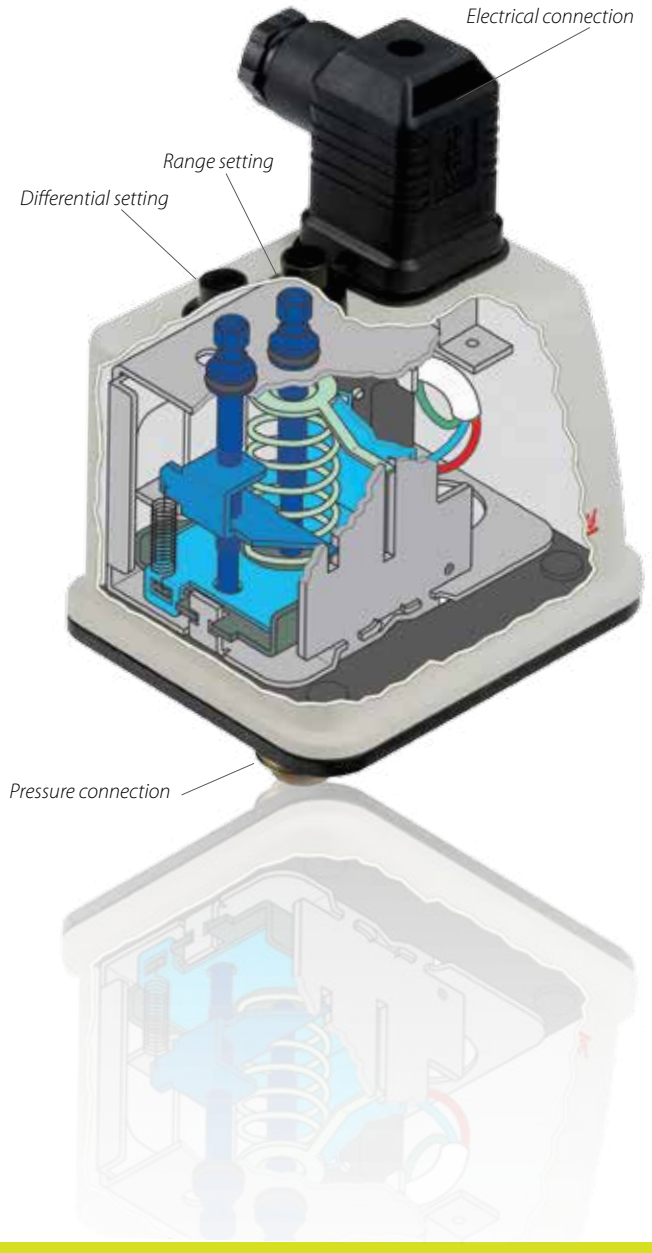
Type	Description	
Damping coil	1 m. damping coil with 7/16 – 20 UNF connectors. REducer code no 017-420566 is necessary if the damping coil is to be used with RT units with pipe thread: ISO 228/1, G ³/₈ connection.	**060-019166**
Damping coil	Pipe thread ISO 228/1, damping coil with G ³/₈ connector and 1.5 m copper capillary tube. Standard washers are supplied	**060-104766**
Armoured damping coil	Pipe thread ISO 228/1, damping coil with G ³/₈ connector and 1 m. copper capillary tube. Standard washers are supplied	**060-333366**
Air bell for liquid level control	Air bell for liquid level control RT113. 62 mm diam. ext x 204 mm length. Pipe thread ISO 228/1, G ³/₈ connector and nipple (10 mm o.d./6.5 mm i.d.) for welding or brazing on to steel or copper tubing. Brass.	**017-401366**

The BCP pressure switch for reliable boiler control

A series of dedicated pressure switches, BCPs control, monitor and limit the pressure in steam and hot water boilers. Simple to install and operate, BCP pressure switches combine advanced technology, durability and design to provide failsafe boiler operation.

Fluid temperature
The BCP can cope with fluid temperatures up to 120 °C. For temperatures above 120°C, a water-filled loop must be installed.

Pressure range from 0 – 40 bar
The BCP is designed to handle a wide pressure range from low pressure BCP1 with a narrow differential, to high pressure BCP7.



Plug and play (DIN 43650)
A DIN 43650 plug and an external reset – operated by a screwdriver – makes electrical installation and operation easy.

Manual reset with a standard screwdriver
All BCP pressure switches are available with an automatic reset for boiler operations, or a manual reset to be used as a safety limit switch.

Failsafe versions
For added safety, dual bellows enable an off function (safety cut-out) if a fault occurs.

Approvals
The BCP range is CE-marked in accordance with EN 60730-1, VdTÜV-Merkblatt Druck 100 TÜV. SDWFS/SDBFS. 15 – 335 and PED 97/23/ED, category IV, safety equipment. It is tested according to EN12952-11 and EN12953-9.

Bracket for wall and DIN rail mounting
The BCP can be directly mounted on the pressure connection or wall mounted with a a bracket.

User friendly
- Easy external adjustment of the pressure setting and pressure differential
- Separate scales for pressure setting and differential setting

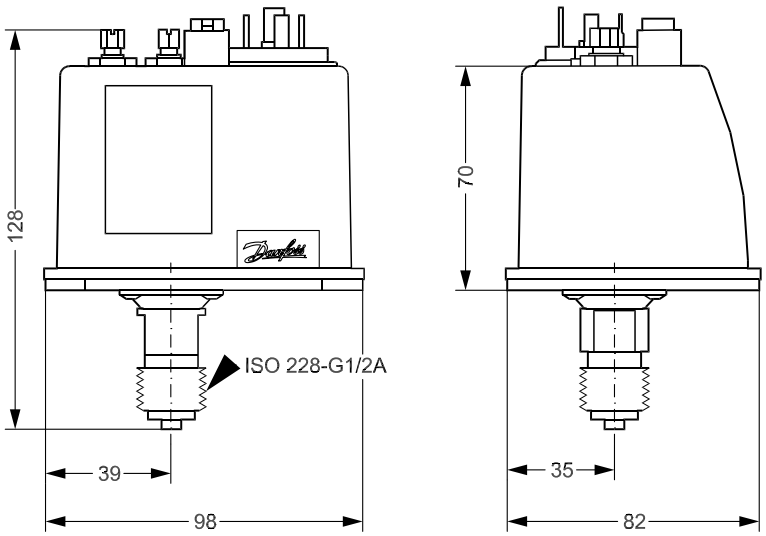
BCP pressure controller / pressure limiter

The BCP type is a series of dedicated pressure switches for control, monitoring and safety of steam and hot water boilers. The BCP incorporates a single-pole changeover microswitch where the contact position depends on the pressure in the connection port and the range set value. For installations, in which operation is particularly critical for safety reason, the use of fail-safe control is recommended.

- Available as high and low pressure limiters as well as pressure controllers
- Wide pressure range: from low pressure BCP1 with narrow differential to high pressure BCP7
- The fail-safe dual bellows enable premature cut-out when fault occurs
- Din plug mounted on the top of control for easy electrical wiring
- Single-pole changeover switch (SPDT), switch + alarm
- Direct mounting on pressure connection or wall mounting by means of a bracket
- Versions with automatic and manual resets available
- Screw adjustments made on top of housing
- Manual reset for pressure limiters possible only by means of tools

Dimensions and weight:

Weight: 0.5 kg



Dimensions in millimetres

Approvals: CE marked in accordance with EN60730-1 and PED 97/23.

BCP pressure controller/ pressure limiter

Contact type: Single pole double throw (SPDT)
Contact material: Gold plated silver
Loads: AC-1 (ohmic) 6A 250V
AC-15 (inductive) 1 A 250V
Pressure connection: G ½A
Enclosure: IP65
Ambient temperature: -20 – 70 °C
Media temperature: Up to 120 °C

BCP pressure controller, automatic reset

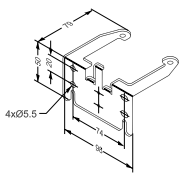
Type	Setting range P_e [bar]	Differential [bar]	Max. working pressure P_e [bar]	Max. test pressure P_e [bar]	Code number
BCP1	0.1 – 1.1	0.15 – 0.6	6	7	**017B0002**
BCP2	0 – 2.5	0.4 – 1	10	11	**017B0006**
BCP3	0 – 6	0.7 – 1.4	16	18	**017B0010**
BCP4	1 – 10	1 – 2.5	25	28	**017B0014**
BCP5	2 – 16	2 – 3.2	32	35	**017B0018**
BCP6	5 – 25	2.5 – 4	40	45	**017B0022**
BCP7	10 – 40	3 – 6	63	70	**017B0026**

BCP pressure limiter

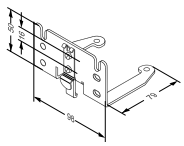
Type	Setting range P_e [bar]	Differential [bar]	Max. working pressure P_e [bar]	Max. test pressure P_e [bar]	Code number
For falling pressure, minimum reset					
BCP2L	0 – 2.5	0.2	10	11	**017B0058**
BCP3L	0 – 6	0.4	16	18	**017B0062**
BCP4L	1 – 10	0.45	25	28	**017B0066**
BCP5L	2 – 16	1.2	32	35	**017B0070**
BCP6L	5 – 20	1.2	40	45	**017B0074**
For rising pressure, maximum reset					
BCP1H	0.1 – 1.1	0.1	6	7	**017B0030**
BCP2H	0 – 2,5	0.2	10	11	**017B0034**
BCP3H	0 – 6	0.4	16	18	**017B0038**
BCP4H	1 – 10	0.45	25	28	**017B0042**
BCP5H	2 – 16	1.2	32	35	**017B0046**
BCP6H	5 – 25	1.5	40	45	**017B0050**
BCP7H	10 – 40	2.3	63	70	**017B0054**

Spareparts for BCP pressure switch

Description	Code numbers
Bracket for wall mounting	**017B1018**
Bracket for 35 mm rail mounting	**017B1019**



For wall mounting



For 35 mm rail mounting

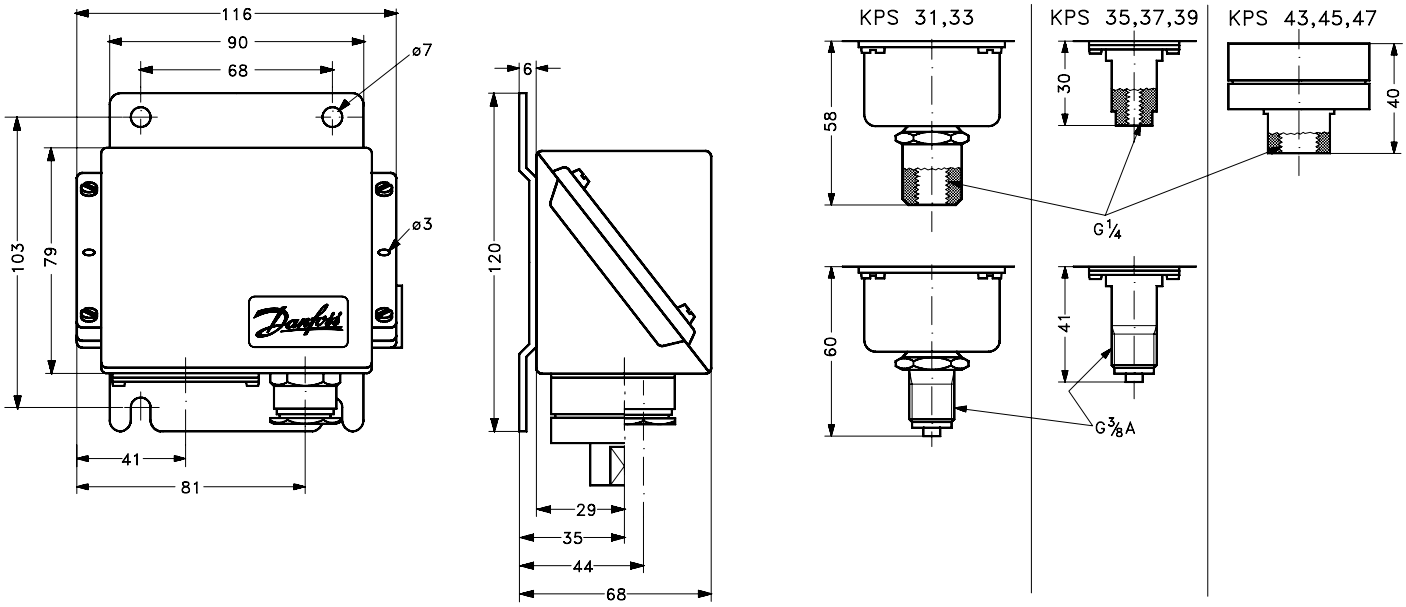
KPS heavy-duty pressure switches

In the KPS series, special attention has been given to meeting important demands for a high level of enclosure, a robust, compact construction and resistance to shock and vibration.
The KPS range covers most outdoor as well as indoor application requirements, and are suitable for use in alarm and regulation systems in factories, diesel plant, compressors, powerstation and on board ships.

- Pressure range: 0 – 60 bar
- Gold plated contact systems
- Adjustable or fixed differential
- Robust and compact construction
- Resistance to shock and vibrations
- Diaphragm version for applications with: Pulsations/pressure peaks
- Also sea water as media
- Enclosure IP67. Sturdy and sea water resistant.
- Available with all relevant marine approvals

Dimensions and weight:

Weight:
KPS 31 – 39: 1.0 kg
KPS 43 – 47: 1.3 kg



Dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. UL E73170. All relevant marine approvals

KPS heavy-duty pressure switches

Contact type: Single pole double throw (SPDT)
Contact material: Gold plated silver
Loads: AC-1 (ohmic) 10A 440V
AC-3 (motor) 6A 440V
AC-15 (inductive) 4A 440V
Enclosure: IP67

Type	Setting range P_e [bar]	Differential [bar]	Max. working pressure P_e [bar]	Connection size G ¼ A	Connection size G ⅜ A	Code number
Controls for low and medium pressure. Ambient temperature: -40 – 70 °C. Media temperature: -40 – 100 °C						
KPS31	0 – 2.5	0.1	6		✓	**060-310966**
KPS31	0 – 2.5	0.1	6	✓		**060-311066**
KPS33	0 – 3.5	0.2	10		✓	**060-310366**
KPS33	0 – 3.5	0.2	10	✓		**060-310466**
KPS35	0 –8	0.4 – 1.5	12		✓	**060-310066**
KPS35	0 – 8	0.4 – 1.5	12	✓		**060-310566**
KPS35	0 – 8	0,4	12	✓		**060-310866**
KPS37	6 – 18	0.85 – 2.5	22		✓	**060-310166**
KPS37	6 – 18	0.85 – 2.5	22	✓		**060-310666**
KPS39	10 – 35	2 – 6	45		✓	**060-310266**
KPS39	10 – 35	2 – 6	45	✓		**060-310766**
Controls for high pressure and strongly pulsating media. Ambient temperature: -25 – 70 °C. Media temperature: -25 – 100 °C						
KPS43	1 – 10	0.7 –2.8	120	✓		**060-312066**
KPS45	4 – 40	2.2 – 11	120	✓		**060-312166**
KPS47	6 – 60	3.5 – 17	120	✓		**060-312266**

Spareparts for KPS

Reducer *Adaptor* *Nipple*

Description	Code numbers
Reducer. G ⅜ x 7/16 – 20 UNF (¼ flare) reduction with washer	**017-420566**
Adaptor G ⅜ A x ¼ – 18 NPT with washer	**060-333666**
Nipple G ¼ A x G ⅜ A	**060-333266**
Damping coil with ¼ flare connectors and 1 m copper capillary tube. Damping coils used for applications with ⅜ RG connector requires the use of reducer.	**060-017166**
Damping coil with G ⅜ connectors and 1.5 m copper capillary tube	**060-104766**
Armoured damping coil with ⅜ connectors and 1 m armoured capillary tube. Standard washers included.	**060-333366**

Damping coil, ¼ flare connectors

Damping coil, G ⅜ connectors

Damping coil, armoured

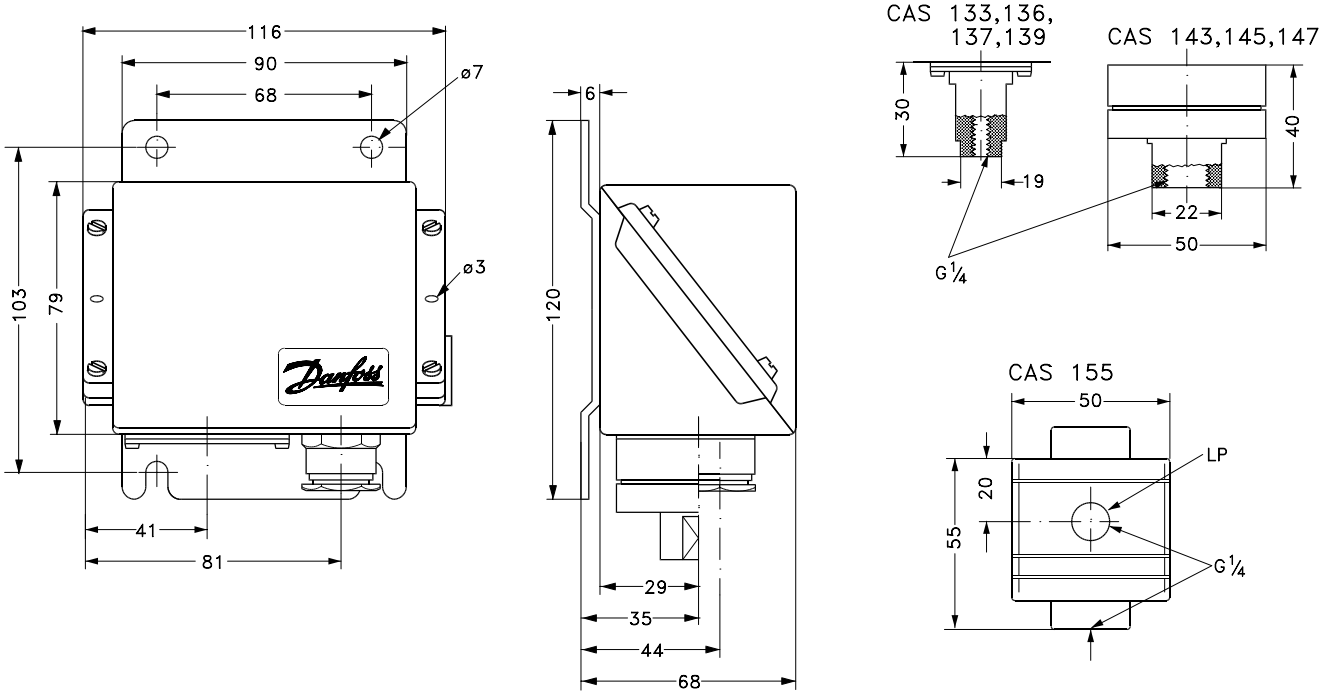
CAS heavy-duty pressure switches

In the CAS pressure switches series, special attention has been given to meeting demands for a high level of enclosure, low differential, robust, compact construction and resistance to shock and vibration. The CAS series covers most outdoor as well as indoor application requirements. CAS pressure switches are suitable for use in alarm and regulation systems in factories, diesel plant, compressors, power stations and on board ships.

- Pressure range: 0 – 60 bar
- Low differential (fixed) micro switch
- Enclosure IP67. Sturdy and sea water resistant
- Robust and compact construction
- Resistance to shock and vibrations
- Diaphragm version applications with: Pulsations/pressure peaks and seawater as media
- Also available as differential pressure switch
- Available with all relevant land and marine approvals

Dimensions and weight:

Weight:
CAS 133 – 139 1.0 kg.
CAS 143 – 147 1.3 kg.



All dimensions in millimetres

Approvals: CE marked in accordance with EN 60947-5. All relevant land and marine approvals.

CAS Heavy-duty pressure switches

Contact type: Single pole double throw (SPDT)
Loads: AC-1 (ohmic)
AC-3 (motor)
AC15 (inductive) 0.1 A 220V
Pressure connection: G ¼ A

Type	Setting range P_e [bar]	Differential [bar]	Max. working pressure P_e [bar]	Code number
Ambient temperature: -40 – 70 °C. Media temperature: -40 – 100 °C				
CAS133	0 – 3.5	0.1	10	**060-315066**
CAS136	0 – 10	0.2	22	**060-315166**
CAS137	6 – 18	0.3	27	**060-315266**
CAS139	10 – 35	0.6	53	**060-315366**
CAS pressure switches for high pressure and strongly pulsating media				
Ambient temperature: -25 – 70 °C. Media temperature: -25 – 100 °C				
CAS143	1 – 10	0.2 – 0.6	120	**060-316066**
CAS145	4 – 40	0.8 – 2.4	120	**060-316166**
CAS147	6 – 60	1 – 3	120	**060-316266**

CAS differential pressure switch

Pressure connection: 2 x G ¼. Ambient temperature: -25 – 70 °C

Type	Setting range P_e [bar]	Differential [bar]	Max. working pressure P_e [bar]	Code number
CAS155	0.2 – 2.5	0.1	0 – 8	**060-313066**

Spare parts for CAS pressure switch

Connector w nipple *Reducer* *Adaptor*

Description	Code numbers
Connector with nipple. Pipe thread ISO 228/1, G ⅜ connector, nipple and AL washer (10 mm ext. / 8 mm int. diam). for soldering onto steel or copper tubing. Steel span of jaws: 22	**017-436866**
Connector with nipple. G ⅜ connector nipple and washer (10 mm ext. / 6.5 mm int. diam). For welding. Steel span of jaws: 22	**017-422966**
Reducer. G ⅜ x 7/16 – 20 UNF (¼ flare) reduction with washer	**017-420566**
Adaptor G ⅜ A x ¼ – 18 NPT with washer	**060-333666**
Nipple G ¼ A x G ⅜ A	**060-333266**
Damping coil with G ⅜ connectors and 1.5 m copper capillary tube	**060-104766**
Armoured damping coil with ⅜ connectors and 1 m armoured capillary tube. Standard washers included.	**060-333366**

Nipple G ¼ A x G ⅜A

Damping coil

Damping coil, armoured

The KPI pressure switch for liquid and gaseous media

Designed to control and monitor industrial application systems, the KPI is a compact and robust solution that offers safety and longevity.

Wide setting range
Available in pressure ranges from -0.2 – 28 bar, there is a KPI with the pressure setting you require.

Pressure control for most industrial applications
Easy and stable setting values make it easy to control liquid and gaseous media in most industrial applications, e.g. pumps and compressors

Easy to install
The small dimensions of the KPI saves space and makes it easy to install.

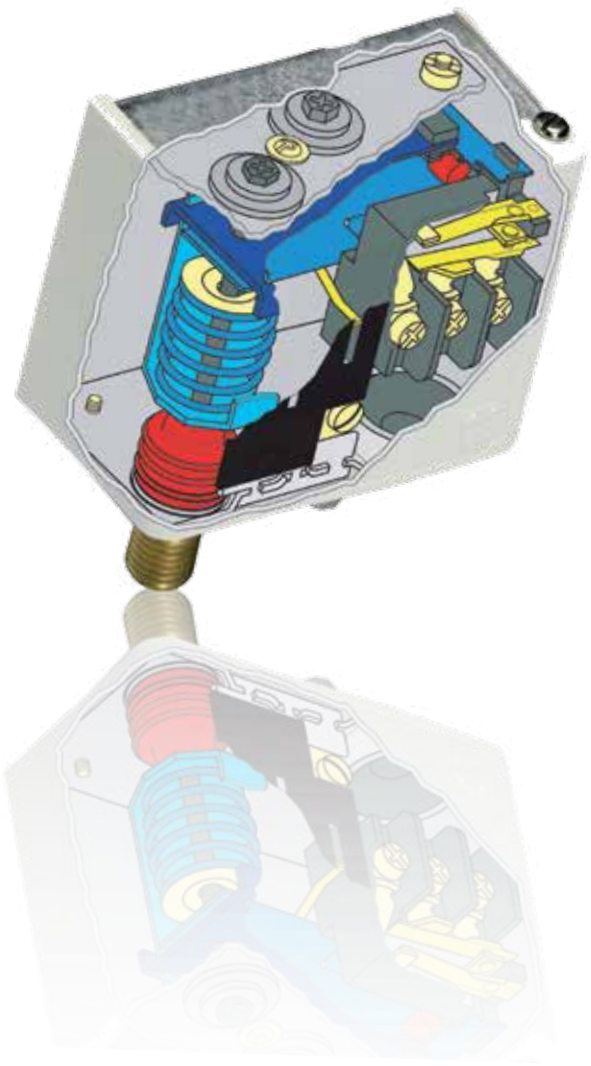
Shock and impact resistant
Vibration-proof from 0 – 1000 Hz, 4g (1g = 9.81m/s2), the KPI is ideal for mobile applications where shock and strokes occur.

Ultra-short bounce times
The perfect Single Pole Double Throw (SPDT) snap-function minimises wear during each operation and extends contact life.

Cable entry for 6 – 14 mm diameter cables
Two cable entries on the front of the pressure switch provide a number of possible electrical cable connections.

High contact load
The SPDT's silver contacts can cope with loads up to 16A, 400V AC-3. And gold contacts are also available to ensure perfect function with low electrical loads.

Longevity
On average, the KPI can perform more than 400,000 electrical operations during its lifetime, which is four times more than approval requirements.



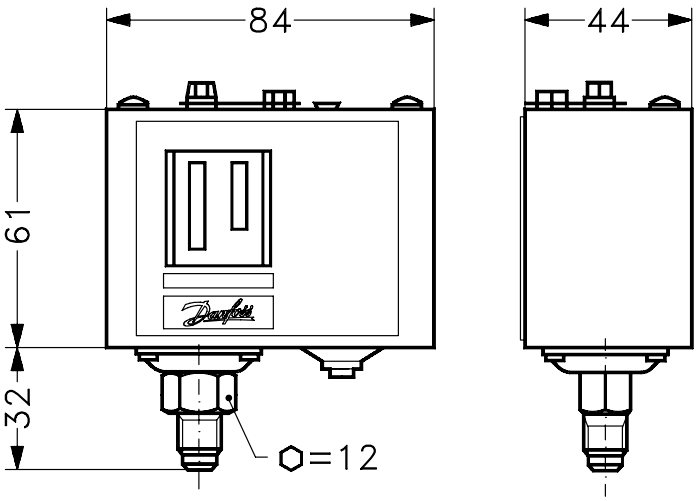
KPI pressure switches for light industry

Danfoss KPI pressure switches are used for control, monitoring and alarm systems in industrial applications.
The KPI series are suitable for plant in connection with liquid and gaseous media. They are fitted with a single-pole switch changeover (SPDT).

- Pressure range: -0.2 – 28 bar
- High contact load
- Ultra short bounce-time
- Available with gold plated contact systems
- Adjustable differential
- Scale for setting of range and differential
- Enclosure IP44 when mounted with top cover and back plate
- Snap action contact system with omega spring
- Versions for drinking water

Dimensions and weight:

Weight: 0.3 kg



All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. Electrical safety certificate - FM. UL E31024.

KPI pressure switches for light industry

Contact function: Single pole double throw (SPDT)
Contact material: Silver cadmium oxide
Loads: AC-1 ohmic 10A 440V
AC-3 (motor) 6A 440V
AC-15 (inductive) 4A 440V
Reset: Automatic
Pressure connection: G ¼A
Ambient temperature: -40 – 65 °C
Media temperature: -40 – 100 °C

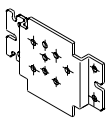
Type	Setting range P_e [bar]	Differential [bar]	Max. working pressure P_e [bar]	Enclo-sure	Code number
KPI 35	-0.2 – 8	0.4 – 1.5	18	IP30	**060-121766**
KPI 35[1)]	-0.2 – 8	0.4 – 1.5	18	IP30	**060-316466**
KPI 35	-0.2 – 8	0.5 – 2	18	IP30	**060-121966**
KPI 36	2 – 12	0.5 – 1.6	18	IP30	**060-316966**
KPI 36[1)]	4 – 12	0.5 – 1.6	18	IP30	**060-113866**
KPI 36	2 – 12	0.5 – 1.6	18	IP55	**060-319366**
KPI 36	4 – 12	0.5 – 1.6	18	IP30	**060-118966**
KPI 38	8 – 28	1.8 – 6	30	IP30	**060-508166**

[1)] *Contact material: Gold plated silver*

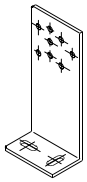
Spareparts and accessories for KPI pressure switch

Type	Description	Code numbers
Wall bracket	Mounting screw and washers included	**060-105566**
Angle bracket	Mounting screw and washers included	**060-105666**
Seal screw for locking plate	Seal screw according to DIN 405, for locking of setting point	**060-105766**
Screwed cable entry	Pg 13.5 with special nut. For 6 – 14 mm diameter cables	**060-105966**
Top cover	For single control. If a wall or angle bracket is mounted on the backplate of the housing, the KP will have an IP44 grade of enclosure by means of this cover	**060-109766**
IP55 enclosure	For single control. Specially designed IP55 enclosure , not transparent	**060-033066**

Brackets



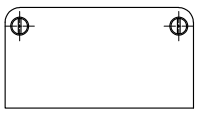
For wall mounting



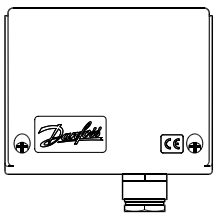
For 35 mm rail mounting

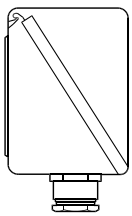
Seal screw

Screwed cable entry



Top cover





IP55 enclosure

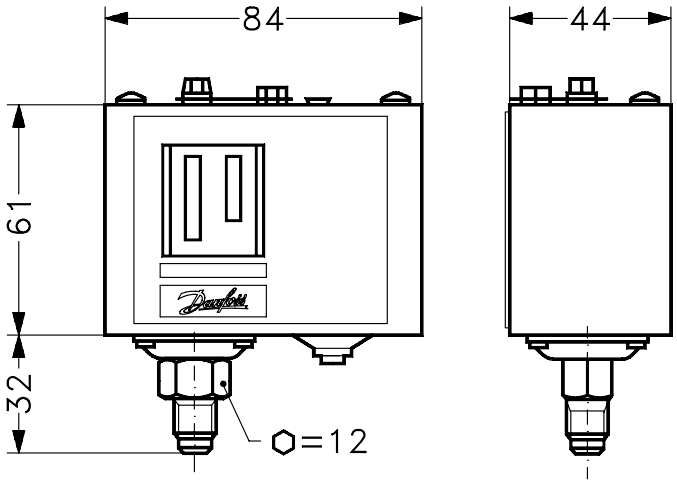
KP pressure switches for light industry

Danfoss KP pressure switches are used for control, monitoring and alarm systems in industrial applications.
The KP series are suitable for gaseous media and air. They are fitted with a single-pole switch changeover (SPDT), and can control single-phase ac motors of up to 2 kW directly.

- Pressure range: -0.2 – 21 bar
- High contact load - Ultra short bounce-time
- Also available with gold plated contact systems
- Media: Gaseous media and air
- Enclosure IP44 when mounted with top cover and back plate
- Small dimensions - space saving - easy to install

Dimensions and weight:

Weight: 0.34 kg



KP 35 and KP 36

All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. Electrical Safety Certificate - FM. UL E31024.

KP pressure switches for light industry

Contact system: Single pole double throw (SPDT)
Contact material: Silver cadmium oxide
Loads: AC-1 ohmic 16A 400V
AC-3 (motor) 16A 400V
AC-15 (inductive) 10A 400V
Reset function: Automatic
Ambient temperature: -40 – 65 °C
Media temperature: -40 – 100 °C

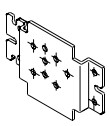
Type	Setting range P_e [bar]	Differential P_e [bar]	Max. working pressure P_e [bar]	Enclosure	Code number
Pressure connection: G ¼A					
KP2	0.2 – 3.5	0.3 – 1.0	10	IP30	**060-131866**
KP35	-0.2 – 7.5	0.7 – 4	17	IP30	**060-113366**
KP35	-0.2 – 7.5	0.7 – 4	17	IP55	**060-538666**
KP35[1)]	-0.2 – 7.5	0.7 – 4	17	IP30	**060-504766**
KP36[1)]	2 – 14	0.7 – 4	17	IP30	**060-113766**
KP36	2 – 14	0.7 – 4	17	IP30	**060-110866**
KP36	2 – 14	0.7 – 4	17	IP55	**060-538766**
KP36[1)]	4 – 12	0.5 – 1.6	17	IP30	**060-114466**
KP36	4 – 12	0.5 – 1.6	17	IP30	**060-122166**

[1)] Contact material: Gold plated silver

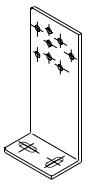
Spareparts and accessories for KP pressure switch

Type	Description	
Wall bracket	Mounting screw and washers included	**060-105566**
Angle bracket	Mounting screw and washers included	**060-105666**
Seal screw for locking plate	Seal screw according to DIN 405, for locking of setting point	**060-105766**
Screwed cable entry	Pg 13.5 with special nut. For 6 – 14 mm diameter cables	**060-105966**
Top cover	For single control. If a wall or angle bracket is mounted on the backplate of the housing, the KP will have an IP44 grade of enclosure by means of this cover	**060-109766**
IP55 enclosure	For single control. Specially designed IP55 enclosure , not transparent	**060-033066**

Brackets



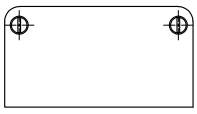
For wall mounting



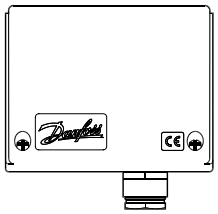
For 35 mm rail mounting

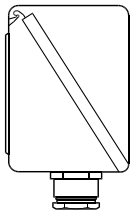
Seal screw

Screwed cable entry



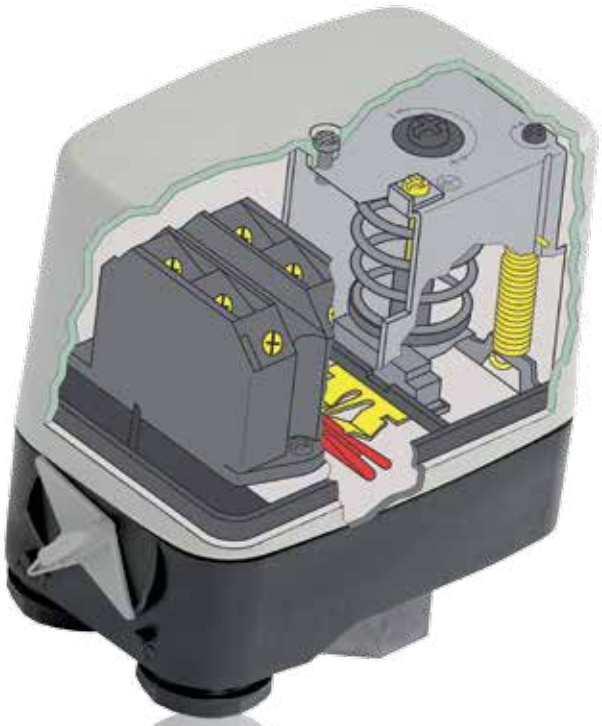
Top cover





IP55 enclosure

The CS pressure switch for pressure control



Designed for air compressors and water pump applications, the CS pressure switch has a built-in, pressure-operated three-pole contact system. Made for the direct start of pumps and as on/off functions in control circuits, the CS switch is robust and reliable.

Adjustable range and differential
The CS switch can be adjusted to suit a variety of working conditions and pressures, ranging from 2 – 20 bar.

Special compressor application accessory
To prevent air compressors starting under load, a pressure relief valve can be used with the CS switch to relieve pressure on the compressor piston.

Robust and tight
Enclosed in heavy-duty plastic, the CS switch is available in IP43 or IP55 versions to ensure high performance in wet or dusty environments.

Safe and reliable
For added safety in the event of system failure or maintenance purposes, the CS is fitted with a manual switch to lock the contact system in the open position, independent of the pressure in the system.

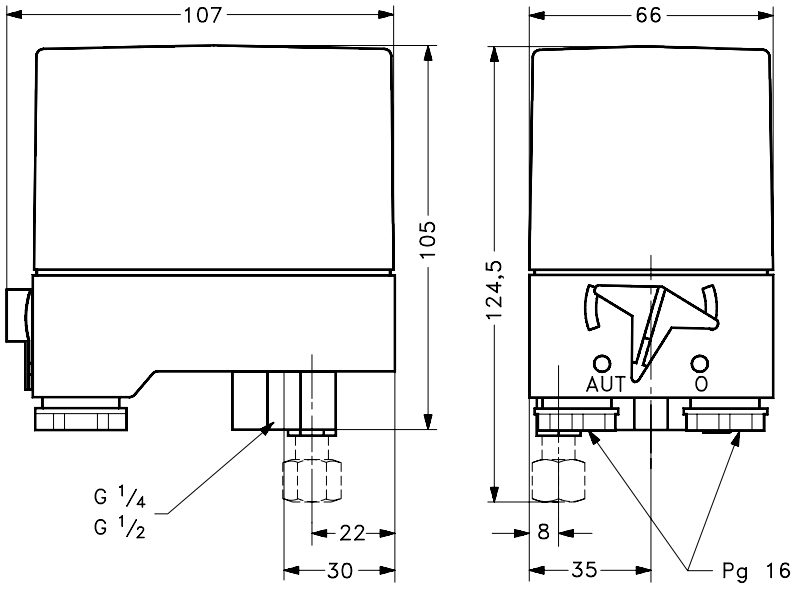
CS pressure switches for air and water

CS pressure switches have a three-pole switch and adjustable differential.
The pressure switches are fitted with a manual switch that will lock the contact system in the open position independently of the pressure in the system.

- For automatic start and stop of air compressors and water pumps
- Pressure range: 2 – 20 bar
- Contact system: 3-pole (standard) and 1-pole (accessory)
- Adjustable differential from: 0.7 – 7 bar
- Manual switch to lock the contact system
- Relief valve (accessory)
- Enclosure IP43 or IP55
- Versions for drinking water

Dimensions and weight:

Weight: 0.5 kg



All dimensions in millimetres

Approvals: CE according to EN 60947-4-5

CS pressure switches

Contact function: Triple pole single throw (TPST)
Contact material: Silver cadmium oxide
Loads: AC-3 12 A 220 – 415 V
9 A 600 V
Ambient temperature: -20 – 70 °C
Media temperature: Water: 0 – 70 °C
Air: -20 – 70 °C

Setting range P_e [bar]	Factory setting P_e [bar]	Min. differential [bar]	Max. differential [bar]	Max. working pressure P_e [bar]	Connection size G ¼ A	Connection size G ½ A	Enclosure	Code number
2 – 6	4	0.72 – 1	1 – 2	6	✓		IP43	**031E020066**
2 – 6	4	0.72 –1	1 – 2	6	✓		IP55	**031E020566**
2 – 6	4	0.72 – 1	1 – 2	6		✓	IP43	**031E021066**
2 – 6	4	0.72 – 1	1 – 2	6		✓	IP55	**031E021566**
4 – 12	4	1 – 1.5	2 – 4	12	✓		IP43	**031E022066**
4 – 12	4	1 – 1.5	2 – 4	12	✓		IP55	**031E022566**
4 – 12	4	1 – 1.5	2 – 4	12		✓	IP43	**031E023066**
4 – 12	4	1 – 3	2 – 4	12		✓	IP55	**031E023566**
7 – 20	7	2 – 3.5	3.5 – 7	20	✓		IP55	**031E024566**
7 – 20	7	2 – 3.5	3.5 – 7	20		✓	IP43	**031E025066**
7 – 20	7	2 – 3.5	3.5 – 7	20		✓	IP55	**031E025566**

Contact function: SPST

Setting range P_e [bar]	Min. differential [bar]	Max. differential [bar]	Max. working pressure P_e [bar]	Connection size G ¼ A	Enclosure	Code number
2 – 6	0.72 – 1	1 – 2	6	✓	IP43	**031E020266**

TPST contact system

Pressure relief valve

Spareparts for CS pressure switch

Description	Code number
Three pole contact system TPST	**031E029166**
Pressure relief valve, incl. fixing screw for 6 mm pipe/hose	**031E029866**
Pressure relief valve, incl. fixing screw for ¼ in. pipe/hose	**031E029766**
Two Pg 16 screwed cable entries with gaskets, cable diam. 6.5 – 15 mm	**031E029366**
Nipple with 7/16 – 20 UNF and M10 x 1 int.	**031E029666**

Screwed cable entries

Nipple

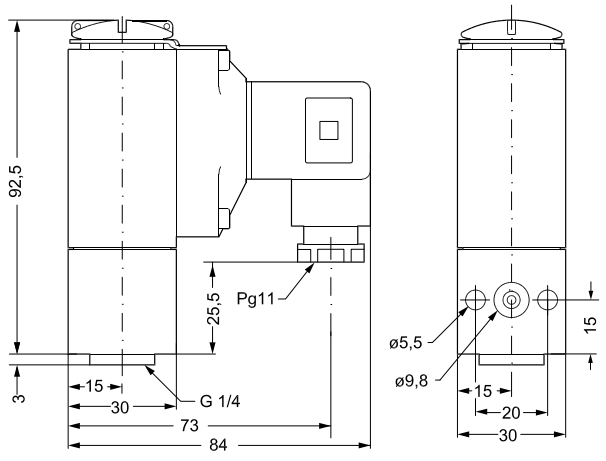
MBC 5100 block-type compact pressure switches

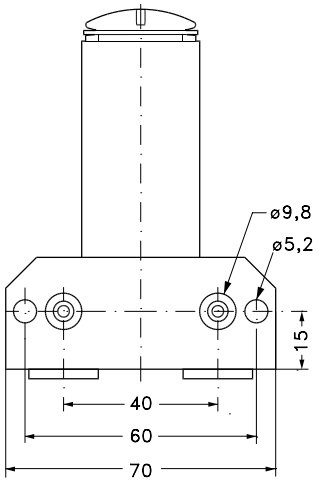
MBC pressure switches are used in industry and marine applications where space and reliability are the most important features. MBCs are compact pressure switches, designed according to our new block design to survive in the harsh conditions known from machine rooms onboard ships.
MBCs have high vibration resistance and feature all commonly marine approvals. The fixed, but low differential guarantees accurate monitoring of critical pressures. MBV test valves can be delivered as standard option for MBC pressure switches.

- All relevant marine approvals
- Pressure range: -0.2 – 400 bar
- Low differential (fixed) micro switch
- Resistant to shock and vibrations
- Enclosure IP65
- Diaphragm version for applications with pulsations/pressure peaks
- Compact design
- Low installations costs
- Fast and easy to operate
- Easy to mount on block test valve
- Available as differential pressure switch

Dimensions and weight:

Weight: 0.4 kg.





All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-5. All relevant marine approvals

MBC 5100 block-type compact pressure switches

Contact function: Single pole double throw (SPDT)
Contact material: Silver
Loads: AC-15 (inductive) 0.5A, 250V
Plug Pg 11. Other electrical connections available on request

Setting range P_e [bar]	Differential at min. range setting [bar]	Differential at max. range setting [bar]	Max. working pressure P_e [bar]	Connection G ¼ A	Connection Flange	Code number
Low pressure bellows. Ambient temperature: -40 – 85 °C. Media temperature: -40 – 85 °C						
-0.2 – 1	0.15	0.45	15	✓	✓	**061B000566**
-0.2 – 4	0.15	0.45	15	✓	✓	**061B000466**
-0.2 – 4	0.15	0.45	15	✓		**061B001066**
-0.2 – 10	0.15	0.6	15	✓	✓	**061B000266**
Low pressure diaphragm. Ambient temperature: -10 – 85 °C. Media temperature: -10 – 85 °C						
1 – 10	0.30	2.5	150	✓	✓	**061B100466**
1 – 10	0.30	2.5	150	✓		**061B100866**
5 – 20	0.4	2.5	150	✓	✓	**061B100266**
High pressure diaphragm. Ambient temperature: -10 – 85 °C. Media temperature: -10 – 85 °C						
5 – 40	1.0	7	150	✓	✓	**061B100566**
10 – 100	1.7	14	150	✓	✓	**061B100366**
High pressure piston. Ambient temperature: -40 – 85 °C. Media temperature: -40 – 85 °C						
16 – 160	12	30	600	✓		**061B510066**
25 – 250	12	40	600	✓		**061B510166**
40 – 400	15	50	600	✓		**061B510266**

MBC 5180 block-type differential pressure switch

Setting range P_e [bar]	Operating range LP side P_e [bar]	Max. working pressure P_e [bar]	Connection G ¼ A	Connection G ¼ A w. flange	Code number
Ambient temperature: -10 – 85 °C. Media temperature: -10 – 85 °C					
0.3 – 5	0 – 30	45		✓	**061B128066**
0.3 – 5	0 – 30	45	✓		**061B129066**

Spareparts for MBC5100

Type	Description	
Pulse-snubber	Male, G ¼A, length 20 mm	**061B400101**
Pulse-snubber	Male, G ¼A, length 34 mm	**061B400201**
Pulse-snubber	For flange connection	**061B722101**

Pulse snubber 20 mm

Pulse snubber 34 mm

Pulse snubber for flange connection

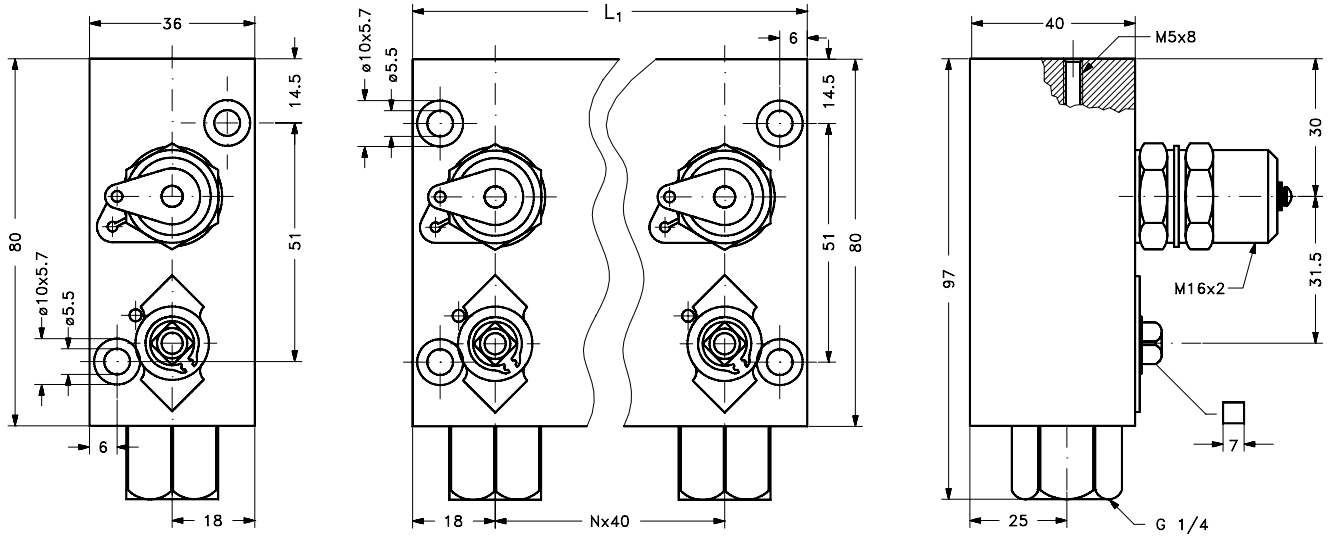
MBV 5000 pressure test valve

The MBV 5000 is a part of a block concept covering block pressure switches, block pressure transmitters, block test valves and accessories.
The block concept has been developed to save space, weight, and costs and meet the strict demands on marine equipment, including EU stipulations on such products.
MBV 5000 is designed in many different configurations for use in many different marine applications, for example: Monitoring, alarm indication, shut-down, diagnosing on equipment such as motors, gears, thrusters, pumps, filters, compressors, etc.
The block valve meets demands for fast installation, simple isolation, and easy test pressure connection.

- The MBV block valves designed in many configurations are for use with the MBC pressure switch or the MBS block pressure transmitter within the marine industry
- The valve meets demands for fast installation, simple isolation and easy test pressure connection

Dimensions and weight:

Weight: From 0.4 – 2.0 kg



All dimensions in millimetres

MBV 5000 pressure test valve

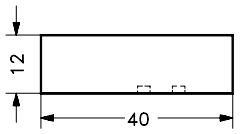
Max working pressure, liquid media only: 180 bar P_e
Ambient temperature: -20 – 120 °C
Media temperature: -20 – 120 °C

Type	Output no.	Length [mm]	Weight [kg]		Code number
MBV5000-1111	x1	36	0.4		**061B7000**
MBV5000-1211	x2	76	0.8		**061B7001**
MBV5000-1311	x3	116	1.2		**061B7002**
MBV5000-1411	x4	156	1.6		**061B7003**
MBV5000-1511	x5	196	2.0		**061B7004**
MBV5000-2211	x2	76	0.8		**061B7005**
MBV5000-2311	x3	116	1.2		**061B7006**
MBV5000-2411	x4	156	1.6		**061B7007**
MBV5000-2511	x5	196	2.0		**061B7008**
MBV5000-3211	x2	76	0.7		**061B7009**
MBV5000-3311	x3	116	1.0		**061B7010**
MBV5000-3411	x4	156	1.3		**061B7011**
MBV5000-3511	x5	196	1.6		**061B7012**

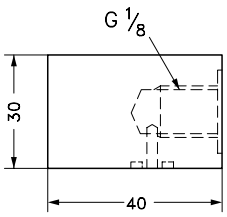
Spareparts for MBV 5000

Standard flange - G 1/8 adapters

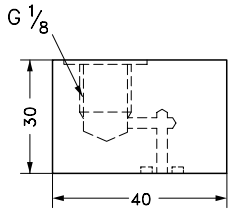
Description	Code number
Cover	**061B720001**
Angleway adapter	**061B720101**
Straightway adapter	**061B720201**



Cover



Angleway adapter



Straightway adapter

RT thermostats for temperature regulation

Suitable for a wide range of demanding industrial applications, RT thermostats are designed to maintain a specific temperature difference between two media.

Wide regulating range
The RT has a wide temperature regulating range from: -60 °C – 300 °C. Precise scales make it easy to set the temperature range and differential.

Variety of sensors and functions
An IP66 enclosure and a range of sensor types – such as capillary tube sensors , room sensors and duct sensors –
enable neutral zone adjustment and manual reset functions.

Contact systems
RT thermostats are available with standard contact systems for 3A, 400V AC-15 loads and 4A, 400V AC-3. Special contact versions are also available as spare parts.

Ultra-short bounce times
The perfect Single Pole Double Throw (SPDT) snap function minimises wear during each operation and extends the contact life.

Cable entry for 6-14 mm diameter cables
Two cable entries provide a number of possible electrical cable connections.

Longevity
The RT has a mechanical lifetime of one million cycles over the full temperature range, and an electrical lifetime of 100,000 cycles at maximum load.

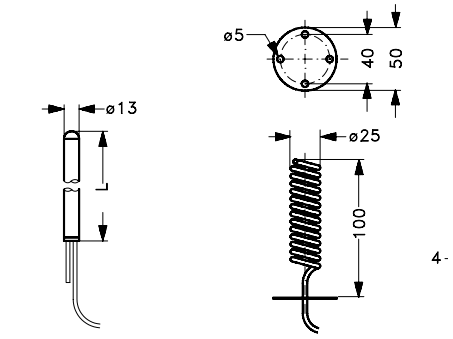
RT thermostats

RT switches are used in general industrial and marine sectors.
The RT thermostat series consist of a variety of room temperature switches and remote sensor thermostats including neutral zone temperature switches. RT thermostats are generally recommended for applications where safety or economical consequences are critical factors.
RT controls have been in service for more than 70 years.

- Temperature range: - 60 °C – 300 °C
- Replaceable contact system
- Also available with gold plated contact systems
- Adjustable differential
- Enclosure IP66
- Available with external max. reset function (IP54)
- Available with neutral zone
- Available with all relevant marine approvals

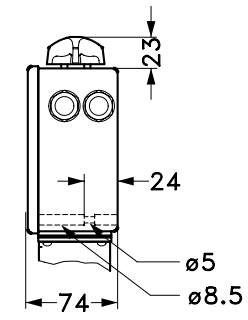
Dimensions and weight:

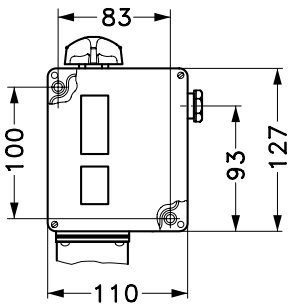
Weight: Appr. 1 kg

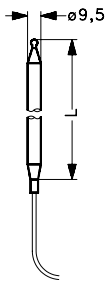


RT106

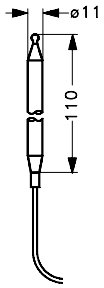
RT140



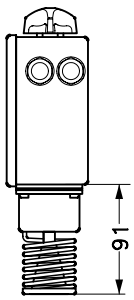




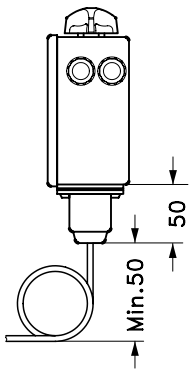
RT120, RT101, RT14, RT 107, RT 123, RT 108



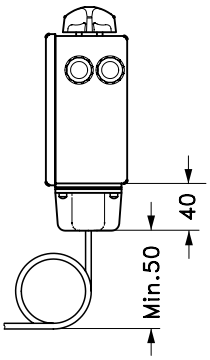
RT124



RT 4, RT 16L, RT 34, RT 103



RT 106, RT 107, RT 120, RT 123



RT 14, RT 101, RT 108, T 124, RT 140,

All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. Relevant marine approvals

RT thermostats - remote sensor with capillary tube

Contact function: Single pole double throw (SPDT)
Contact material: Silver cadmium oxide (other contact material - see accessories)
Loads: AC-1 ohmic 10A 400V
AC-3 (motor) 4A 400V
AC-15 (inductive) 3A 400V
Ambient temperature: -50 – 70 °C

Type	Setting range [°C]	Adjustable differential range at lowest setting [°C]	Adjustable differential range at highest setting [°C]	Max sensor temperature [°C]	Capillary tube length [m]	Code number
Reset: Automatic. Enclosure: IP66						
RT14	-5 – 30	2 – 8	2 – 10	150	2	**017-509966**
RT106	20 – 90	4 – 20	2 – 7	120	2	**017-504866**
RT101	25 – 90	2.4 – 10	3.5 – 20	300	2	**017-500366**
RT101	25 – 90	2.4 – 10	3.5 – 20	300	3	**017-500666**
RT101	25 – 90	2.4 – 10	3.5 – 20	300	5	**017-502266**
RT108	30 – 140	5 – 20	4 – 14	220	2	**017-506066**
RT107	70 – 150	6 – 25	1.8 – 8	215	2	**017-513566**
RT107	70 – 150	6 – 25	1.8 – 8	215	3	**017-513966**
RT107	70 – 150	6 – 25	1.8 – 8	215	5	**017-514066**
RT120	120 – 215	7 – 30	1.8 – 9	260	2	**017-520866**
RT123	150 – 250	6.5 – 30	1.8 – 9	300	2	**017-522066**
RT124	200 – 300	5 – 25	2.5 – 10	350	2	**017-522766**
Reset: Max. Enclosure: IP54						
RT101	25 – 90	2.4	4.1	300	2	**017-500466**
RT107	70 – 150	6	1.8	215	2	**017-513666**
RT107	70 – 150	6	1.8	215	5	**017-514166**
RT120	120 – 215	7	1,8	260	2	**017-521466**
RT123	150 – 250	6.5	1.8	300	2	**017-522466**
RT124	200 – 300	5	2.5	350	2	**017-523166**

RT thermostats - room sensor

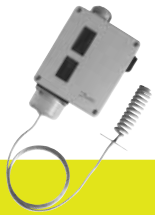
Enclosure: IP66

Type	Setting range [°C]	Adjustable differential range at lowest setting [°C]	Adjustable differential range at highest setting [°C]	Max sensor temperature [°C]	Code number
RT4	-5 – 30	1.5 –7	1.2 – 4	75	**017-503666**
RT103	10 – 45	1.3 – 7	1 – 5	100	**017-515566**
RT34	-25 – 15	2 – 10	1 – 12	100	**017-511866**
RT16L[1)]	0 – 38	1.5 – 5	0.7 – 1.9	100	**017L002466**

[1)] *Neutral zone setting: 0.7 – 1.5 bar*

RT thermostats - duct sensor

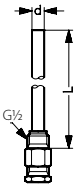
Enclosure: IP66



Type	Setting range [°C]	Adjustable differential setting range at lowest setting [°C]	Adjustable differential setting range at highest setting [°C]	Max sensor temperature [°C]	Capillary tube length [m]	Code number
RT140	15 – 45	1.8 – 8	2.5 – 11	240	2	**017-523666**

Spareparts and accessories for RT thermostats

Sensor pockets with stuffing box

Type / application	Sensor length [mm]	Pocket material Brass	Pocket material 18/8 steel	Pocket dimensions L [mm]	Pocket dimensions d [mm]		Code number
RT120, RT101, RT14, RT107, RT123	80	✓		112	11		**017-437066**
RT120, RT101	80/97		✓	112	11		**017-436966**
RT14	150	✓		182	11		**017-436766**
RT108	410	✓		465	11		**017-421666**
RT106	76	✓		110	15		**060L333066**

Type	Version	Description	
Contact system	Standard	Single-pole changeover switch (SPDT) with terminal board proof against leakage current. Fitted in all stand versions of type RT	**017-403066**
Contact system	Standard	Single-pole changeover switch (SPDT) with gold plated (oxide free) contact surfaces. Increases cut-in reliability on alarm and monitoring systems etc.	**017-424066**
Contact system	Max reset	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Designed for RT units performing max reset function.	**017-404266**

Setting knob *Seal cap* *Seal screws*

Type	Description	
Setting knob	Replacement. Pale grey Ral 7035	**017-436366**
Seal cap	Seal cap to replace setting knob so that setting can only be altered with tools (tamper proof seal cap). Black	**017-436066**
Screws	Seal screws for cover and seal cap	**017-425166**
Stuffing box kit	For all thermostats with remote sensor. G ½A (pipe thread ISO228/1), oil resistant rubber washer for max 110 °C/90 bar	**017-422066**
Stuffing box kit	For all thermostats with remote sensor. G ¾A (pipe thread ISO228/1), oil resistant rubber washer for max 110 °C/90 bar	**003N0155**
Sensor clip	For all RT units with remote sensor. L = 76 mm	**017-420366**
Heat conductive compound	For RT thermostats with the sensor insert in a pocket. Tube with 3.5cm³ compound to be filled in the sensor pocket to improve heat transfer between pocket and sensor. Application range for compound: -20 – 150 °C, momentarily up to 220 °C.	**041E0114**

Sensor clip

Stuffing box kit

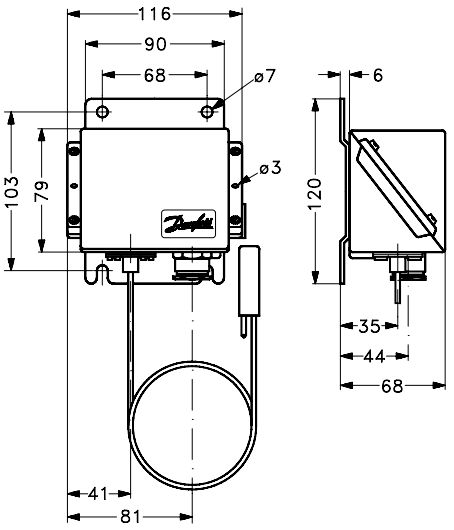
KPS thermostats

In the KPS thermostats series, special attention has been given to meeting important demands for a high level of enclosure, a robust, compact construction and resistance to shock and vibration.
The KPS range covers most outdoor as well as indoor application requirements, and are suitable for use in monitoring, alarm and regulation systems in factories, diesel plant, compressors, powerstation and on board ships.

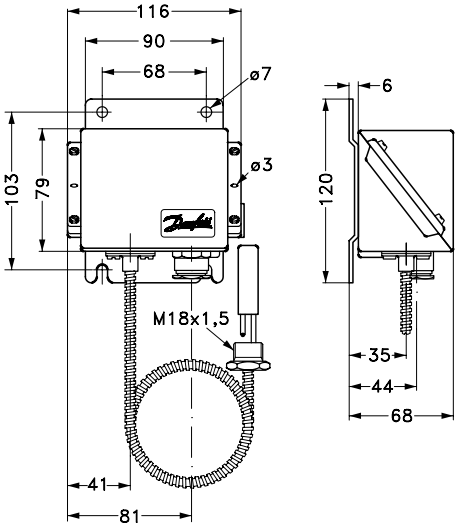
- Temperature setting range: -10 – 200 °C
- Gold plated contact systems
- Adjustable or fixed differential
- Robust and compact construction
- Resistance to shock and vibrations
- Enclosure IP67. Sturdy and sea water resistant.
- Available with all relevant marine approvals

Dimensions and weight:

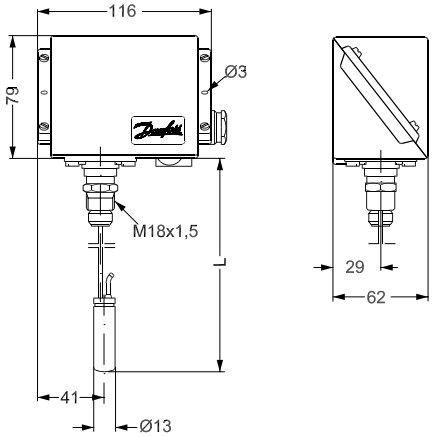
Weight: 1.0 – 1.4 kg



Weight:
Including 2 m capillary tube:
Appr. 1.2 kg



Weight:
Including 2 m armoured capillary tube: Appr. 1.4 kg



Weight:
Including rigid sensor:
Appr. 1.0 kg

All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. UL E73170. All relevant marine approvals.

KPS thermostats

Contact function: Single pole double throw (SPDT)
Contact material: Gold plated silver
Load:
AC-1 (ohmic): 10A, 440V
AC-3 (motor): 6A, 440V
AC-15 (inductive): 4A, 440V
Ambient temperature: -40 – 70 °C

KPS, remote sensor with armoured capillary tube

Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Capillary tube length [m]	Sensor size (ø x L) [mm]	Code number
KPS76	-10 – 30	3 – 10	80	2	13 x 63	**060L311266**
KPS77	20 – 60	3 – 14	130	2	13 x 63	**060L310166**
KPS79	50 – 100	4 – 16	200	2	13 x 63	**060L310466**
KPS81	60 – 150	5 – 25	250	2	13 x 63	**060L310666**
KPS80	70 – 120	4.5 – 18	220	2	13 x 63	**060L312866**
KPS80	70 – 120	4.5 – 18	220	5	13 x 90	**060L313066**
KPS80	70 – 120	4.5 – 18	220	3	13 x 63	**060L315666**
KPS83	100 – 200	6.5 – 30	300	2	13 x 63	**060L310866**

KPS, rigid sensor

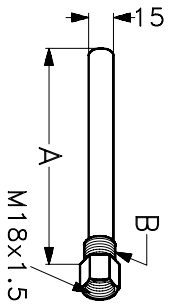
Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Sensor size (ø x L) [mm]	Code number
KPS77	20 – 60	3 – 14	130	13 x 63	**060L310066**
KPS77	20 – 60	3 – 14	130	13 x 63	**060L311866**
KPS79	50 – 100	4 – 16	200	13 x 63	**060L310366**
KPS79	50 – 100	4 – 16	200	13 x 63	**060L312166**
KPS80	70 – 120	4.5 – 18	220	13 x 63	**060L312666**

KPS, remote sensor with capillary tube

Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Capillary tube length [m]	Sensor size (ø x L) [mm]	Code number
KPS77	20 – 60	3 – 14	130	2	13 x 63	**060L310266**
KPS79	50 – 100	4 – 16	200	2	13 x 63	**060L310566**
KPS80	70 – 120	4.5 – 18	220	2	13 x 63	**060L312966**

Spareparts and accessories for KPS thermostats

Sensor pockets without stuffing box

Pocket length - A [mm]	Pocket thread - B		Pocket material			Code number
	G ½ A	G ¾ A	Brass	18/8 steel		
75	✓		✓			**060L326266**
75		✓	✓			**060L326666**
75			✓			**060L328166**
110	✓		✓			**060L327166**
110			✓			**060L340366**
160	✓		✓			**060L326366**
200	✓		✓			**060L320666**
250	✓		✓			**060L325466**
75	✓			✓		**060L326766**
110	✓			✓		**060L326866**
160	✓			✓		**060L326966**

Stuffing box kits

Description	Code number
For KPS thermostats without armoured capillary tube	**060L327366**
For KPS thermostats with armoured capillary tube	**060L036666**

Heat conductive compound

Description	Code number
For KPS thermostats with sensor fitted in a sensor pocket. Compound for filling sensor pocket pocket to improve heat transfer between pocket and sensor. Application temperature range: -20 – 150 °C, momentarily up to 220 °C	**041E0114**

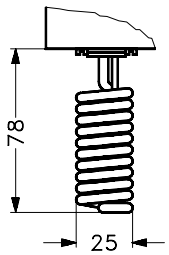
KP thermostats

Danfoss KP thermostats are used for control, monitoring and alarm systems in industry. The KP thermostat series are temperature activated electric switches fitted with a single-pole double throw switch (SPDT), which can control single-phase ac motors of up to 2 kW directly.

- Temperature range: -30 °C – 150 °C
- High contact load - Ultra short bounce-time
- Also available with gold plated contact systems
- Enclosure IP44 when mounted with top cover and back plate
- Also available with enclosure IP55 for OEM customers
- Small dimensions - space saving - easy to install

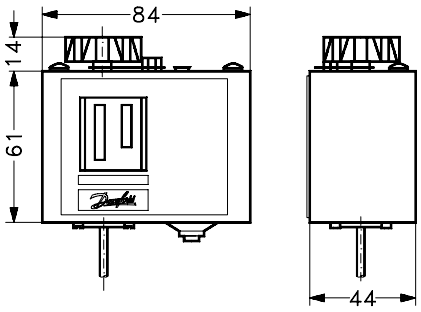
Dimensions and weight:

Weight: Appr. 0.4 kg

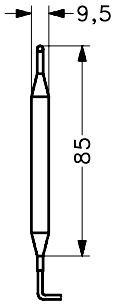


KP 62

KP 75: Sensor tinned copper Cu/Sn 5



KP 61, 62, 68, 75, KP 78, KP 79, KP 81



KP 78, 79, 81: Sensor tinned copper Cu/Sn 5

All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-4/-5. Electrical Safety Certificate - FM. UL E31024.

KP thermostats

Contact system: Single pole double throw (SPDT)
Contact material: Silver cadmium oxide
Load:
AC-1 (ohmic): 16A 400V
AC-3 (motor): 16A 400V
AC-15 (inductive): 10A 400V
Enclosure: IP30
Ambient temperature: -40 – 65 °C
Reset: Automatic

Remote sensor with capillary tube

Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Sensor size (ø x L) [mm]	Capillary tube length [m]	Code number
KP71	-5 – 20	2.2 – 10	80	9.5 x 115	2	**060L111366**
KP77	20 – 60	3.5 –10	130	9.5 x 85	2	**060L112166**
KP78	30 – 90	5 – 15	150	9.5 x 85	2	**060L118466**
KP79	50 – 100	5 – 15	150	9.5 x 85	2	**060L112666**
KP81	80 – 150	7 – 20	200	9.5 x 85	2	**060L112566**
KP81[1)]	80 – 150	8	200	9.5 x 85	2	**060L115566**

[1)] Maximum reset function

Straight capillary tube sensor

Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Sensor ø [mm]	Capillary tube sensor length [m]	Code number
KP61	-30 – 15	1.5 – 23	120	2.5	5	**060L110166**
KP61	-30 – 15	1.5 – 23	120	2.5	2	**060L110066**

Room sensor

Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Sensor size (ø x L) [mm]	Code number
KP62	-30 – 15	2 – 20	80	25 x 78	**060L111066**
KP68	-5 – 35	1.8 – 25	120	40 x 30	**060L111166**
KP75[1)]	0 – 40	3 – 10	80	25 x 78	**060L117166**
KP76	5 – 45	2 –20	120	25 x 78	**060L120066**

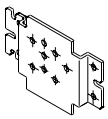
[1)] Contact material: Gold plated silver

Spareparts and accessories for KP thermostats

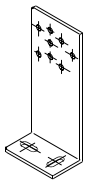
Sensor pocket

Type	Description	Code numbers
Wall bracket	Mounting screw and washers included	**060-105566**
Angle bracket	Mounting screw and washers included	**060-105666**
Screwed cable entry	Pg 13.5 with special nut. For 6 – 14 mm diameter cables	**060-105966**
Top cover	For single control. If a wall or angle bracket is mounted on the backplate of the housing, the KP will have an IP44 grade of enclosure by means of this cover	**060-109766**
IP55 enclosure	For single control. Specially designed IP55 enclosure , not transparent	**060-033066**
Sensor pocket	Application: KP 77, 78, 79, 81. Brass. Pocket dimension: L 110 x Ø 15 mm. With stuffing box	**017-437066**
Sensor pocket	Application: KP 77, 78, 79, 81. Stainless steel. Pocket dimension: L 110 x Ø 15 mm. With stuffing box	**017-436966**
Heat conductive compound	For sensor pockets. Tube with 3.5cm^3 compound to be filled in the sensor pocket to improve heat transfer between pocket and sensor. Application range for compound: -20 – 150 °C, momentarily up to 220 °C.	**041E0114**

Brackets



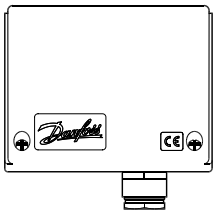
For wall mounting

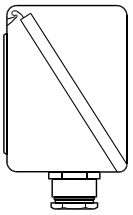


For 35 mm rail mounting

Screwed cable entry

Top cover





IP55 enclosure

The MBC 8100 compact thermostats

MBC 8100 thermostats are suitable for use in monitoring and alarm systems in factories, diesel plants, compressors and power stations, as well as in marine applications.

Alarm and monitoring
As part of alarm and control circuits, the switches give signals within narrow non-drifting limits, typically in lubrication and cooling oil applications, including diesel engines and gear boxes.

Compact space-saving solution
The block design allows packed mounting, providing a high degree of integrity for your machinery.

Excellent vibration and shock resistance
Ideal for heavy-duty applications, the MBC 8100's high vibration resistance increases the reliability of the entire system.

Adjustable range with fixed differential
The MBC 8100 comes pre-set from the factory, but it also has as an adjustable range and low fixed differential for accurate monitoring of critical temperatures.

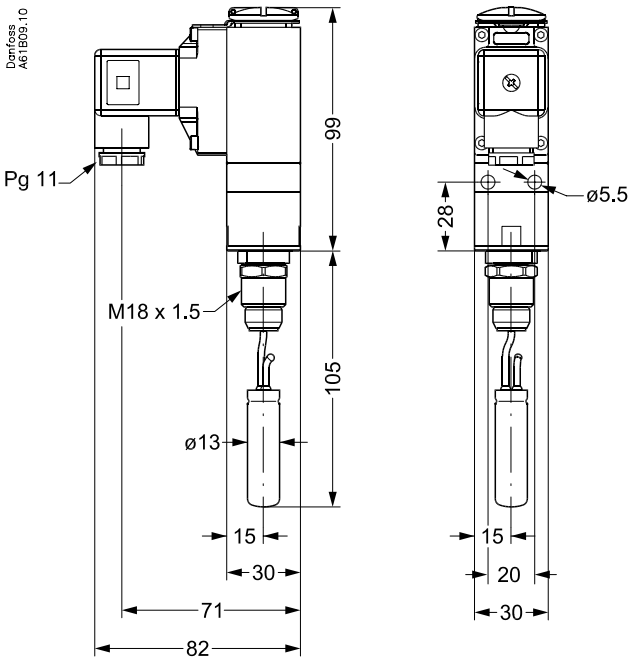
Resistance
The sensor pocket is available in brass or stainless steel.

MBC 8100 block-type compact thermostats for marine applications

MBC 8100 thermostats are used in marine applications where space and reliability are the most important features. MBCs are compact thermostats, designed according to our new block design to survive in the harsh conditions known from machine rooms onboard ships. MBCs have high vibration resistance and feature all commonly marine approvals. The fixed, but low differential guarantees accurate monitoring of critical temperatures.

- Block design
- Fully electromechanical
- Temperature range: -10 – 200 °C
- Available with all relevant marine approvals
- Designed to meet the strict demands in the marine equipment

Dimensions and weight:



All dimensions in millimetres

Approvals: CE marked in accordance with EN60947-5. All relevant marine approvals.

MBC 8100 block-type compact thermostats

Contact function: Single pole double throw (SPDT)
Loads: AC-15 (inductive) 0.5A, 250V
Ambient temperature: -40 – 70 °C
Enclosure: IP65
Electrical connection: Plug Pg 11. Other connections available on request.

MBC 8100 with rigid sensor

Temp. setting range [°C]	Fixed diff. [°C]	Max. sensor temp. [°C]	Sensor size (ø x L) [mm]	Sensor pocket, length [mm]	Code number
20 – 60	3	130	13 x 50	75	**061B800266**
50 – 100	4	200	13 x 50	75	**061B800366**
60 – 150	6	250	13 x 50	75	**061B800566**
70 – 120	5	220	13 x 50	75	**061B800466**

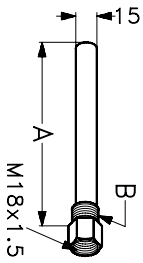
MBC 8100 with armoured capillary tube, length: 2 m

Temp. setting range [°C]	Fixed diff. [°C]	Max. sensor temp. [°C]	Sensor size (ø x L) [mm]		Code number
-10 – 30	3	80	13 x 50		**061B810166**
20 – 60	3	130	13 x 50		**061B810266**
50 – 100	4	200	13 x 50		**061B810366**
70 – 120	5	220	13 x 50		**061B810466**
60 – 150	6	250	13 x 50		**061B810566**

Spareparts and accessories for MBC 8100 thermostats

Sensor pockets without stuffing box

Pocket length - A [mm]	Pocket thread - B		Pocket material			Code number
	G ½ A	G ¾ A	Brass	18/8 steel		
75	✓		✓			**060L326266**
75		✓	✓			**060L326666**
75			✓			**060L328166**
110	✓		✓			**060L327166**
110			✓			**060L340366**
160	✓		✓			**060L326366**
200	✓		✓			**060L320666**
250	✓		✓			**060L325466**
75	✓			✓		**060L326766**
110	✓			✓		**060L326866**
160	✓			✓		**060L326966**



Stuffing box kits

Description	Code number
For MBC thermostats without armoured capillary tube	**060L327366**
For MBC thermostats with armoured capillary tube	**060L036666**

Type	Description	Code number
Heat condictive compound	For thermostats with sensor fitted in a sensor pocket. Compound for filling sensor pocket pocket to improve heat transfer between pocket and sensor. Application temperature range: -20 – 150 °C, momentarily up to 220°C	**041E0114**

Code number index

ENGINEERING
TOMORROW

ENGINEERING **TOMORROW**

Danfoss A/S | Industrial Automation | 6430 Nordborg, Denmark | ia@danfoss.com | iasupport.danfoss.com

Danfoss is a leading global player within the development and production of mechanical and electronic products and controls. Since *1933*, our extensive know-how has made modern life easier and we continue to break new ground within our core business areas.

Every day, more than *250,000* items are produced at *70* factories in *25* countries. Impressive as these figures are, we are most proud of the way our dedicated employees apply the high-quality components in customer solutions, adding value to the end products. Building strong partnerships is of great importance to us, because it is purely by understanding our customers' needs that we can meet the expectations of tomorrow.

This is also true in Industrial Automation, a Danfoss entity dedicated to focusing on the industrial world of today. Through us, you gain access to the entire Danfoss pool of technologies, with special emphasis on sensors and controls.

We offer safer, more reliable and more efficient solutions in a close cooperation based on firm values.