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TOMORROW



Fluid control, pressure and temperature monitoring and control

## Core Industrial Products for Distributors and Wholesalers

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# 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 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



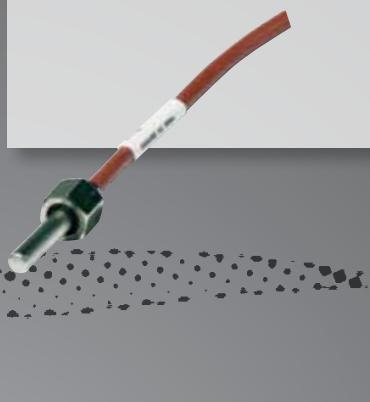
Pressure transmitter in  
box design for marine  
applications



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

\* Only EPDM versions in Normally Closed (NC) valves are WRAS approved. GL = Germanischer Lloyd. WRAS = Water Regulations Advisory Scheme. VA = Water supply and drainage of ETA Denmark.

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 1/4 – G 1	G 1/4 – G 3/4	G 1/8 – G 1	G 1/8 – G 3/8, flange 32 mm	G 1/8 – G 1/4, flange 32 mm	G 1/8 – G 1/4, flange 32 mm	G 3/8 – G 1	G 3/8 – 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

DNV = Det Norske Veritas. SVGW = Schweizerischer Verein des Gas- und Wasserfaches.

# 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 H <sub>2</sub> SO <sub>4</sub>			–	–	–
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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✓✓	✓✓	✓✓		✓✓	—	✓	✓✓
✓✓	✓✓	✓✓		✓✓	—	—	✓
✓✓	✓✓	✓✓		—	✓✓	✓✓	✓✓
✓✓	✓✓	—		✓✓	✓✓	✓	✓✓
✓✓	✓✓	—		—	—	—	✓✓
✓✓	✓	—		✓✓	✓✓	✓	✓✓
✓✓	✓✓	✓		✓✓	✓✓	✓✓	✓✓
✓✓	✓✓	—		✓✓	✓✓	✓	✓✓

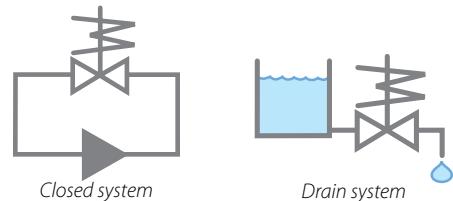
# Use the icons to find the right valve

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.

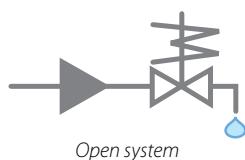
Closed or drain systems

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.



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.



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

Insensitive to dirt

Long lifetime and high performance

Effective water hammer damping / soft closing

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

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.

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.

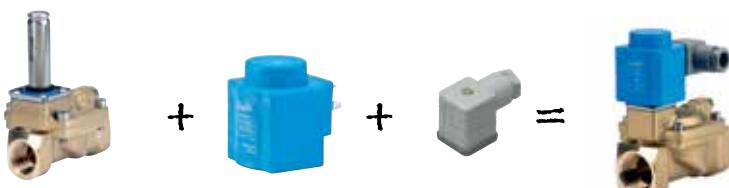


Results are based on comparisons between Danfoss valves only.

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.



Complete valve

Coil

Plug

Valve housing

# 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:

**Welcome**  
The Danfoss Valve Selector will help you as installer or end-user to specify the correct industrial solenoid valve for your application.  
► Contact  
► More info

**Medium**  
Please select

**System** ⓘ

**Function**

**Connection size**

**Cell voltage**

**Reset**      **Show result!**

**Visit our mobile site**  
Scan the QR code to visit the Danfoss Valve Selector on your mobile device.  
No scanner? - Search "Barcode Reader" in APP-store or Android Market

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**Solenoid valves**

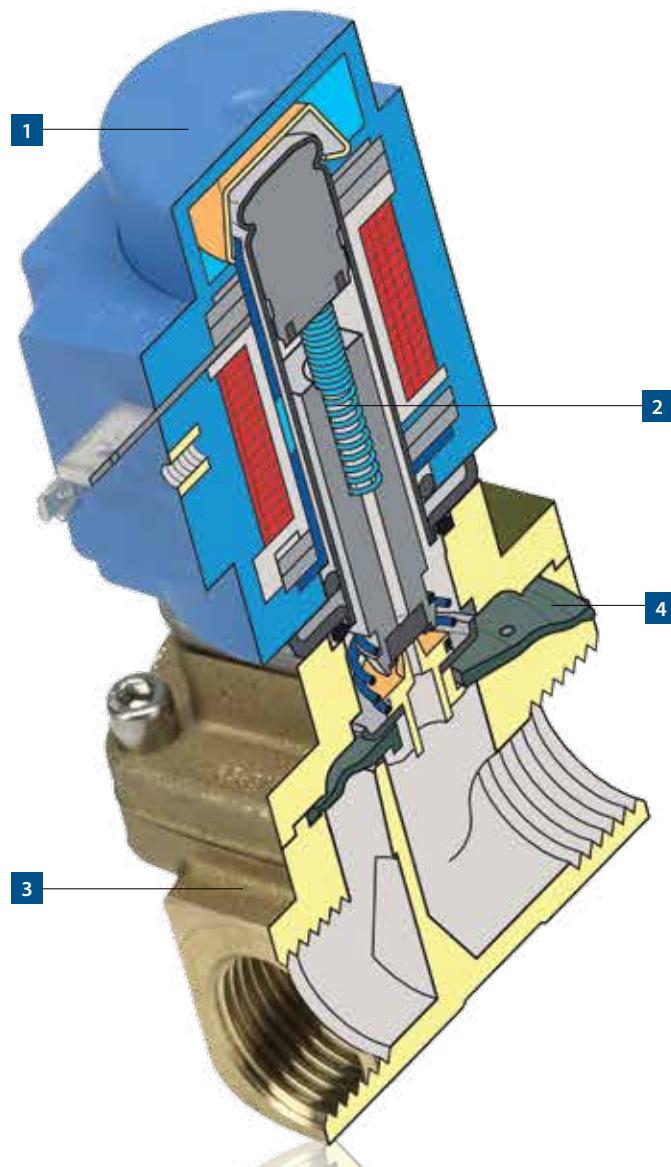
**Code no: 032U7115**  
Indirect servo-operated solenoid valve, type EV220B  
Connection size: G 1/2  
Function: Voltage off > Valve closed (NC)  
► More details

**Code no: 018F7360**  
Coil type BB, clip-on, IP65 with cable plug  
Cell voltage: AC - 110 V - 50/60 Hz  
► More details

**Code no: 042N0156**

**Medium:** Water (max 90°C)  
**System:** Mains water feed

► Print this page      ► Where to buy  
► Send result as email      ► New search  
► Send result as text message



## 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.

### **3 For aggressive low-pressure steam**

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

### **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.

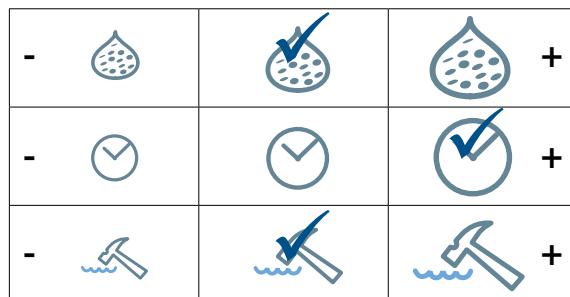
### **4 Good external tightness even at high differential pressures**

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



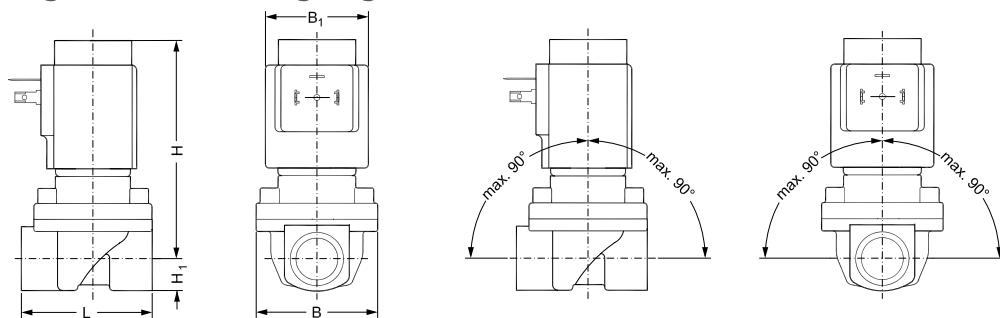
EV250B with assisted lift can operate from zero and up to 10 bar differential pressure.

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 <sub>1</sub> [mm] Coil type	H <sub>1</sub> [mm]	H [mm]	Weight with BB coil [kg]
			BB/BE			
G 3/8	58	52.3	46	12.5	91	0.84
G 1/2	58	52.3	46	12.5	91	0.84
G 3/4	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 <sub>v</sub> [m <sup>3</sup> /h]	Media Water 120 °C	Seal material	Differential pressure [bar]	Coil BB [V] AC 50 Hz	[V] DC	Code number
EV250B 10	G 3/8	2.5	✓	EPDM	0 – 6*		24	<b>032U157102</b>
EV250B 10	G 3/8	2.5	✓	EPDM	0 – 10	24		<b>032U157116</b>
EV250B 10	G 3/8	2.5	✓	EPDM	0 – 10	230		<b>032U157131</b>
EV250B 12	G 1/2	4	✓	EPDM	0 – 6*		24	<b>032U158002</b>
EV250B 12	G 1/2	4	✓	EPDM	0 – 10	24		<b>032U158016</b>
EV250B 12	G 1/2	4	✓	EPDM	0 – 10	230		<b>032U158031</b>
EV250B 18	G 3/4	6	✓	EPDM	0 – 6*		24	<b>032U161402</b>
EV250B 18	G 3/4	6	✓	EPDM	0 – 10	24		<b>032U161416</b>
EV250B 18	G 3/4	6	✓	EPDM	0 – 10	230		<b>032U161431</b>
EV250B 22	G 1	7	✓	EPDM	0 – 6*		24	<b>032U162402</b>
EV250B 22	G 1	7	✓	EPDM	0 – 10	24		<b>032U162416</b>
EV250B 22	G 1	7	✓	EPDM	0 – 10	230		<b>032U162431</b>

\* 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 <sub>v</sub> [m <sup>3</sup> /h]	Media Water 120 °C	Seal material	Differential pressure [bar]	Coil BB [V] AC 50 Hz	[V] DC	Code number
EV250B 18	G 3/4	4.9	✓	EPDM	0 – 10	230		<b>032U537431</b>
EV250B 20	G 1	5.2	✓	EPDM	0 – 10	230		<b>032U537631</b>

## EV250B assisted lift valve, DZR brass, NC



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Media Water 120 °C	Oil / Air	Seal material	Differential pressure [bar]	Code number
EV250B 10	G 3/8	2.5	✓		EPDM	0 – 10	<b>032U5250</b>
EV250B 10	G 3/8	2.5		✓	FKM	0 – 10	<b>032U5251</b>
EV250B 12	G 1/2	4	✓		EPDM	0 – 10	<b>032U5252</b>
EV250B 12	G 1/2	4		✓	FKM	0 – 10	<b>032U5253</b>
EV250B 18	G 3/4	6	✓		EPDM	0 – 10	<b>032U5254</b>
EV250B 18	G 3/4	6		✓	FKM	0 – 10	<b>032U5255</b>
EV250B 22	G 1	7	✓		EPDM	0 – 10	<b>032U5256</b>
EV250B 22	G 1	7		✓	FKM	0 – 10	<b>032U5257</b>

## EV250B assisted lift valve, DZR brass, NO



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Media Water 120 °C	Seal material	Differential pressure [bar]	Code number
EV250B 10	G 3/8	2.5	✓	EPDM	0 – 10	<b>032U5350</b>
EV250B 12	G 1/2	4	✓	EPDM	0 – 10	<b>032U5352</b>
EV250B 18	G 3/4	4.9	✓	EPDM	0 – 10	<b>032U5354</b>
EV250B 22	G 1	5.2	✓	EPDM	0 – 10	<b>032U5356</b>

## Coils for EV250B

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

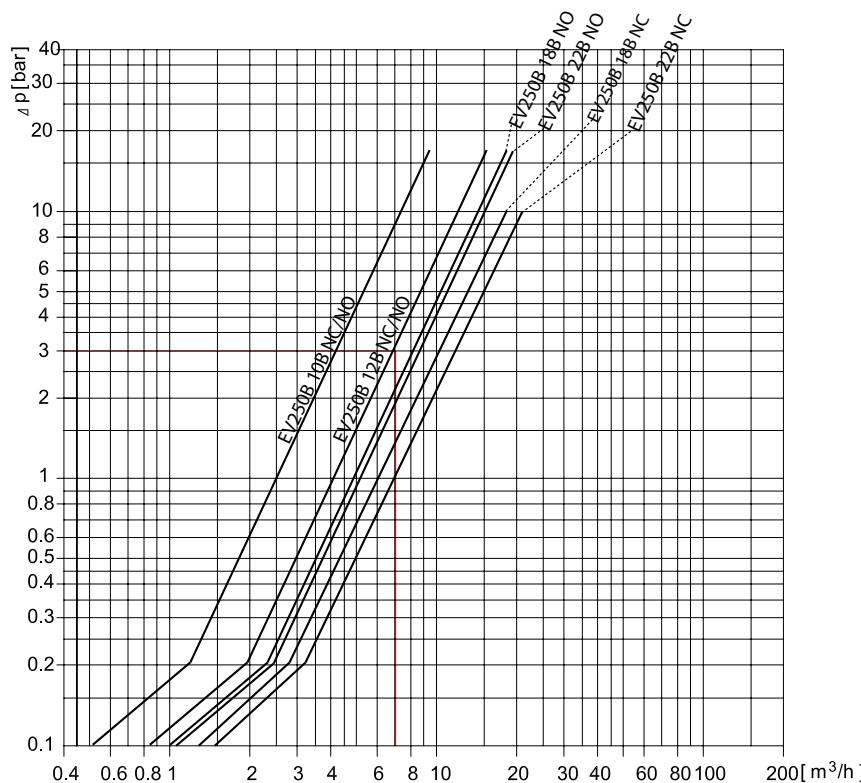


## Cable plug, IP65 enclosure

To use with all BB and BY coils	<b>042N0156</b>	<b>042N0156</b>	No plug needed IP67 terminal box fitted as standard
To use with BB and BY coils - 24 V AC+DC	<b>042N0263</b>	<b>042N0263</b>	
To use with BB and BY coils - 230 V AC	<b>042N0265</b>	<b>042N0265</b>	

## Capacity diagram for solenoid valve EV250B

Example, water: EV250B 12  
at differential pressure of 3 bar:  
Approx. 7 m<sup>3</sup>/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

Description	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

# 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 22 has 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

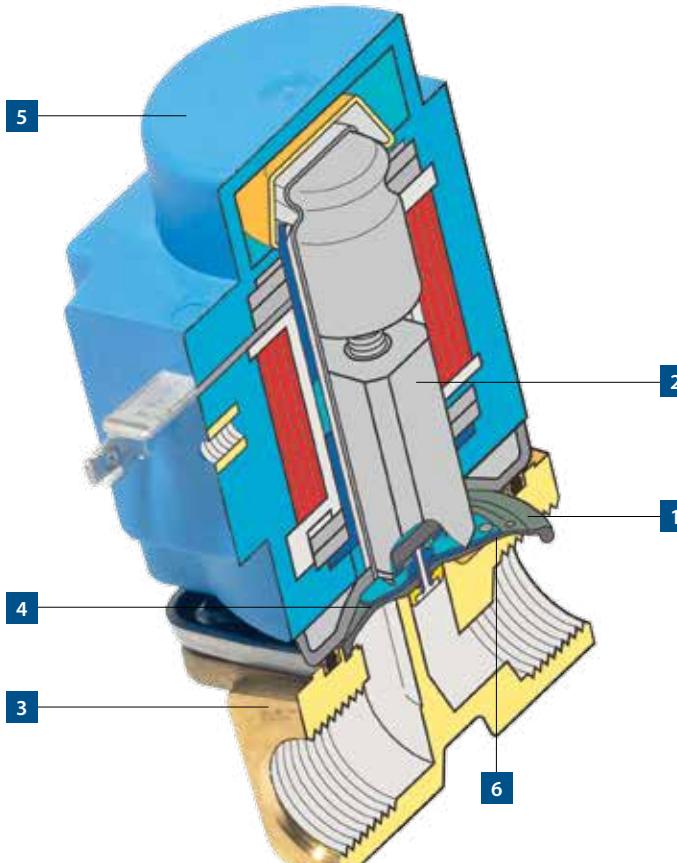
The moulded rubber diaphragm has a special profile that greatly reduces the effects of stress and maximises valve lifetime.

## 5 Wide coil range

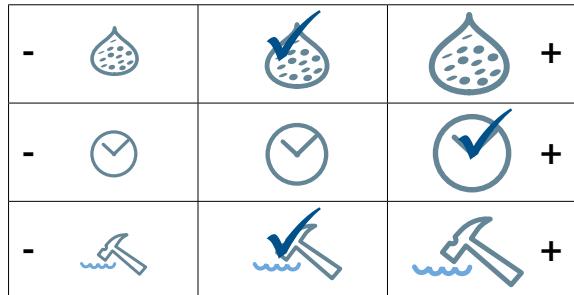
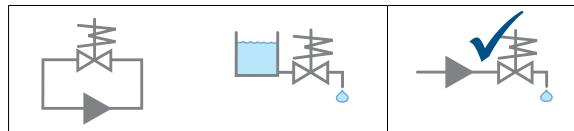
The valves use the standard B-range of coils from IP00 to IP67, including the clip-on system and specialty coils, making it easy to select a coil with the right features. And the special ATEX coil programme is ideal for hazardous environments.

## 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.



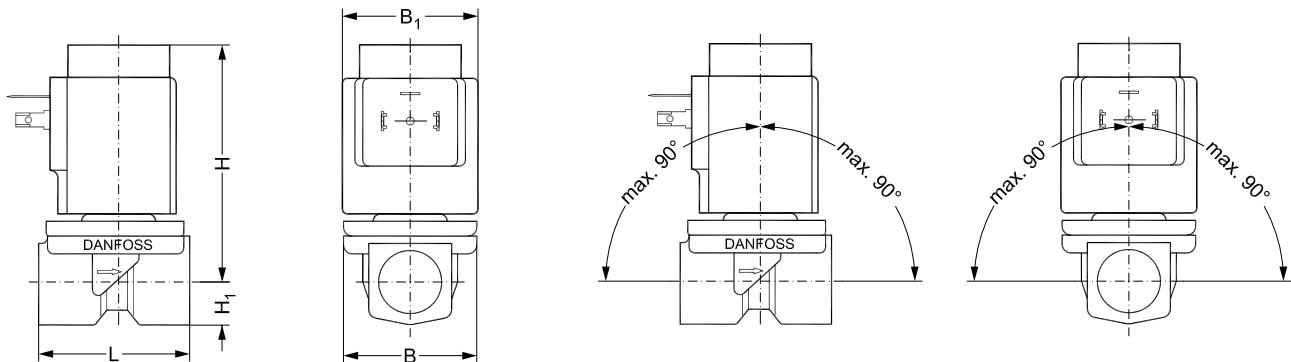
# EV220B 6 - EV220B 22 servo-operated 2/2-way solenoid valves



EV220B 6 - EV220B 22 is a direct servo-operated 2/2-way solenoid valve program with connections from  $\frac{1}{4}$ " – 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 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 <sub>1</sub> [mm] Coil type		H <sub>1</sub> [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 <sub>v</sub> [m <sup>3</sup> /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 3/8	1.5	✓	✓	NBR	0.1 – 10		24	<b>032U151802</b>
EV220B 10	G 3/8	1.5	✓	✓	NBR	0.1 – 20	24		<b>032U151816</b>
EV220B 10	G 3/8	1.5	✓	✓	NBR	0.1 – 20	230		<b>032U151831</b>
EV220B 12	G 1/2	2.5	✓	✓	NBR	0.3 – 6*		24	<b>032U153802</b>
EV220B 12	G 1/2	2.5	✓	✓	NBR	0.3 – 10	24		<b>032U153816</b>
EV220B 12	G 1/2	2.5	✓	✓	NBR	0.3 – 10	230		<b>032U153831</b>
EV220B 18	G 3/4	6	✓	✓	NBR	0.3 – 6*		24	<b>032U528602</b>
EV220B 18	G 3/4	6	✓	✓	NBR	0.3 – 10	24		<b>032U528616</b>
EV220B 18	G 3/4	6	✓	✓	NBR	0.3 – 10	230		<b>032U528631</b>
EV220B 22	G 1	6	✓	✓	NBR	0.3 – 6*		24	<b>032U528702</b>
EV220B 22	G 1	6	✓	✓	NBR	0.3 – 10	24		<b>032U528716</b>
EV220B 22	G 1	6	✓	✓	NBR	0.3 – 10	230		<b>032U528731</b>

\* 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 <sub>v</sub> [m <sup>3</sup> /h]	Media		Seal material	Differential pressure [bar]	Code number
			Water 100 °C	Oil / Air			
EV220B 6	G 1/4	0.7	✓		EPDM	0.1 – 20	<b>032U1236</b>
EV220B 6	G 1/4	0.7		✓	FKM	0.1 – 20	<b>032U1237</b>
EV220B 6	G 3/8	0.7	✓		EPDM	0.1 – 20	<b>032U1241</b>
EV220B 6	G 3/8	0.7		✓	FKM	0.1 – 20	<b>032U1242</b>
EV220B 10	G 3/8	1.5	✓		EPDM	0.1 – 20	<b>032U1246</b>
EV220B 10	G 3/8	1.5		✓	FKM	0.1 – 20	<b>032U1247</b>
EV220B 10	G 1/2	1.5	✓		EPDM	0.1 – 20	<b>032U1251</b>
EV220B 10	G 1/2	1.5		✓	FKM	0.1 – 20	<b>032U1252</b>
EV220B 12	G 1/2	2.5	✓		EPDM	0.3 – 10	<b>032U1256</b>
EV220B 12	G 1/2	2.5		✓	FKM	0.3 – 10	<b>032U1255</b>
EV220B 18	G 3/4	6	✓		EPDM	0.3 – 10	<b>032U1261</b>
EV220B 18	G 3/4	6		✓	FKM	0.3 – 10	<b>032U1260</b>
EV220B 22	G 1	6	✓		EPDM	0.3 – 10	<b>032U1263</b>
EV220B 22	G 1	6		✓	FKM	0.3 – 10	<b>032U1266</b>

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



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Media		Seal material	Differential pressure [bar]	Code number
			Water 100 °C	Oil / Air			
EV220B 6	G 3/8	0.7	✓		EPDM	0.1 – 10	<b>032U1238</b>
EV220B 6	G 3/8	0.7		✓	FKM	0.1 – 10	<b>032U1239</b>
EV220B 10	G 1/2	1		✓	FKM	0.1 – 10	<b>032U1249</b>



## Coils for EV220B 6 - EV220B 22:

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

## Cable plug, IP65 enclosure

To use with all BA, BB and BY coils	<b>042N0156</b>	<b>042N0156</b>	<b>042N0156</b>	No plug needed IP67 terminal box fitted as standard
	<b>042N0263</b>	<b>042N0263</b>	<b>042N0263</b>	
To use with BA, BB and BY coils - 24 V AC+DC	<b>042N0263</b>	<b>042N0263</b>	<b>042N0263</b>	
To use with BA, BB and BY coils - 230 V AC	<b>042N0265</b>	<b>042N0265</b>	<b>042N0265</b>	

## Spare parts and accessories for EV220B 6 - EV220B 22



### Spare part kits, NC

Application	Seal material	Code number
EV220B 6	EPDM	<b>032U1062</b>
EV220B 6	FKM	<b>032U1063</b>
EV220B 10	EPDM	<b>032U1065</b>
EV220B 10	FKM	<b>032U1066</b>

### Spare part kits, NC

Application	Seal material	Code number
EV220B 12	EPDM	<b>032U1068</b>
EV220B 12	FKM	<b>032U1067</b>
EV220B 18	EPDM	<b>032U1070</b>
EV220B 18	FKM	<b>032U1069</b>



### Spare part kits, NO

Application	Seal material	Code number
EV220B 6	EPDM	<b>032U0165</b>
EV220B 6	FKM	<b>032U0166</b>
EV220B 10	FKM	<b>032U0167</b>





## Permanent magnet

### Description

Fits all EV220B valves

### Code number

**018F0091**

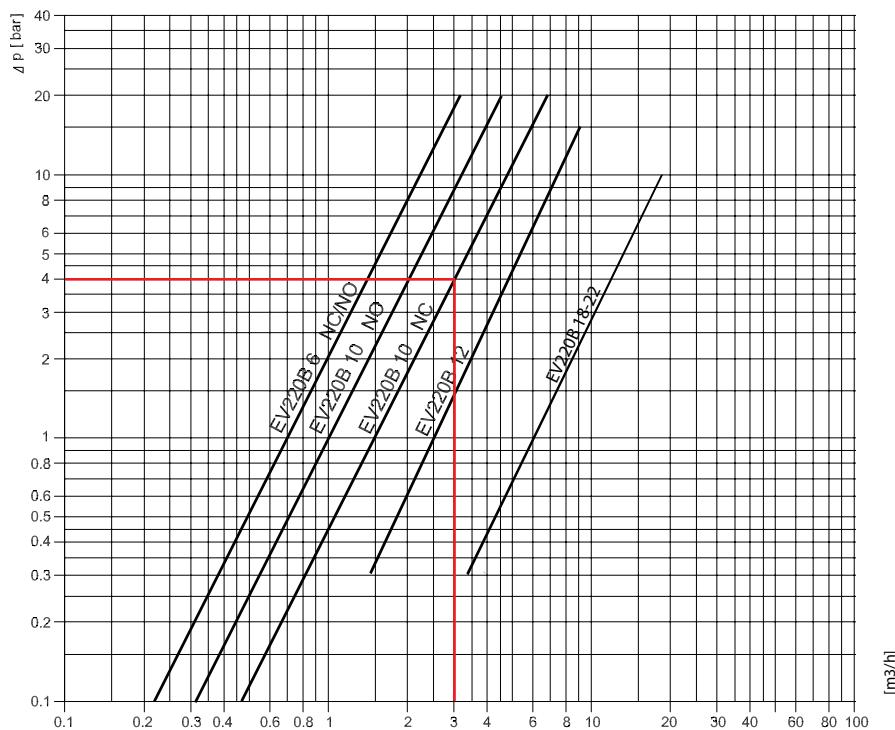


### Electronic timers for coils for pulse start, only IP65

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	<b>042N0185</b>

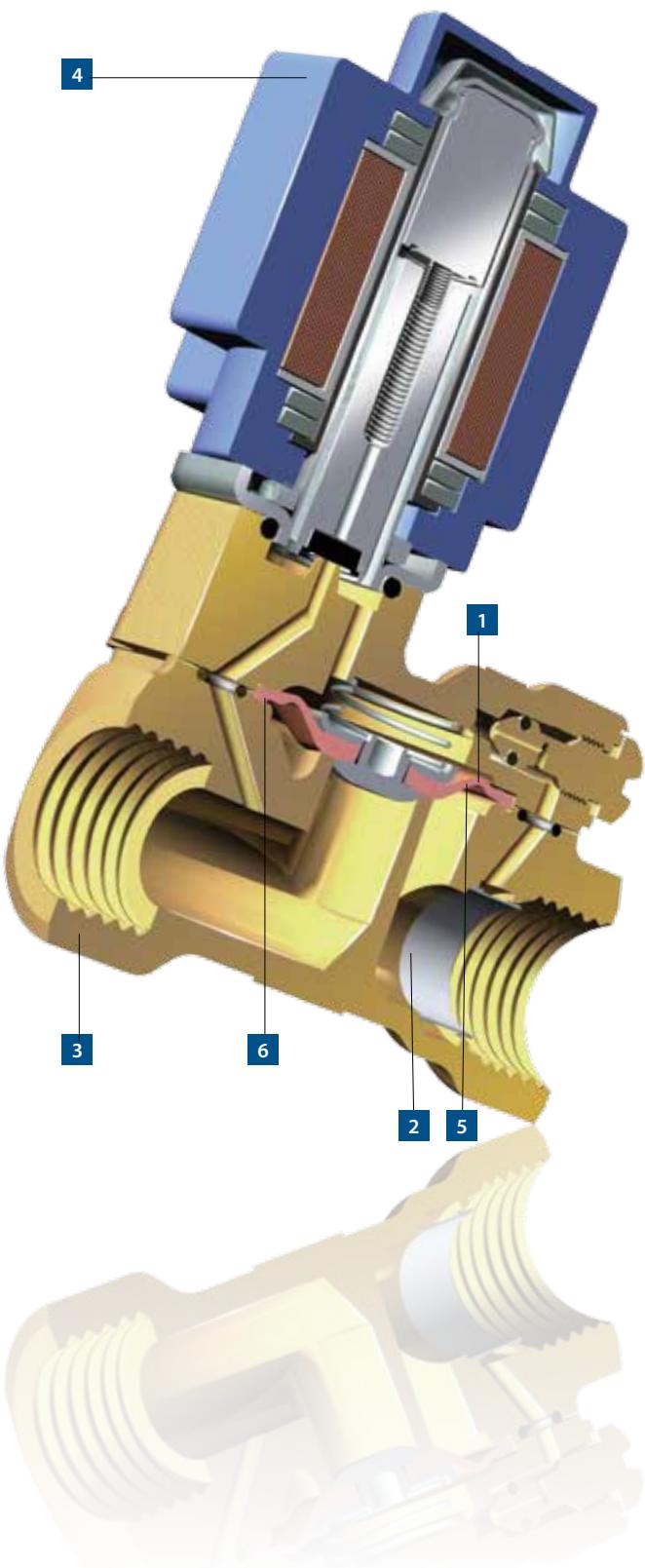
## Capacity diagram for EV220B 6 - EV220B 22:

Example, water: EV220B 10 NC,  
at 4 bar diff. pressure: Approx: 3 m<sup>3</sup>/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.

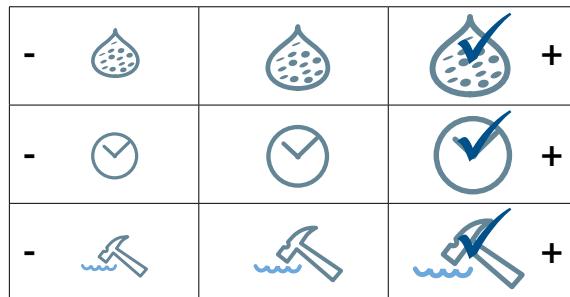
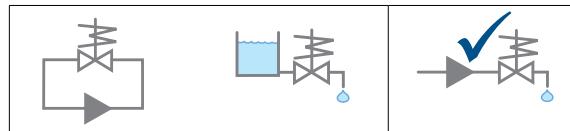
## 5 High capacity across the entire pressure range

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

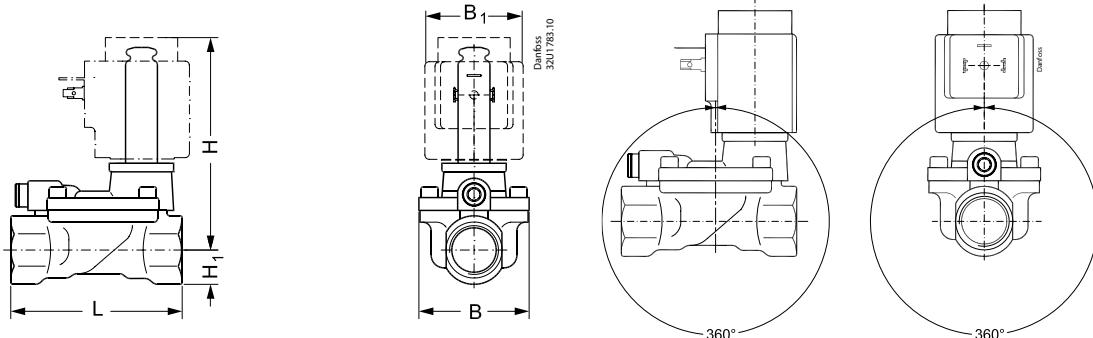


EV220B 15 - EV220B 50 is a universal indirect servo-operated 2/2-way solenoid valve program. Valve body in brass, dezincification resistant brass and stainless steel ensures that a broad variety of application can be covered. Built-in pilot filter as standard, adjustable closing time and enclosures up 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 <sub>1</sub> [mm] Coil type		H <sub>1</sub> [mm]	H [mm]	Weight with BB coil [kg]
			BA	BB/BE			
EV220B 15	80	52	32	46	15	99	1.04
EV220B 20	90	58	32	46	18	103	1.24
EV220B 25	109	70	32	46	22	113	1.64
EV220B 32	120	82	32	46	27	120	2.24
EV220B 40	130	95	32	46	32	129	3.46
EV220B 50	162	113	32	46	37	135	4.54

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



Type	Connection	Differential pressure [bar]	K <sub>v</sub> [m <sup>3</sup> /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	<b>032U451402</b>
EV220B 15	G ½	0.3 – 16	4	✓	✓	NBR	24		<b>032U451416</b>
EV220B 15	G ½	0.3 – 16	4	✓	✓	NBR	230		<b>032U451431</b>
EV220B 20	G ¾	0.3 – 16	8	✓	✓	NBR		24	<b>032U453002</b>
EV220B 20	G ¾	0.3 – 16	8	✓	✓	NBR	24		<b>032U453016</b>
EV220B 20	G ¾	0.3 – 16	8	✓	✓	NBR	230		<b>032U453031</b>
EV220B 25	G 1	0.3 – 16	11	✓	✓	NBR		24	<b>032U453402</b>
EV220B 25	G 1	0.3 – 16	11	✓	✓	NBR	24		<b>032U453416</b>
EV220B 25	G 1	0.3 – 16	11	✓	✓	NBR	230		<b>032U453431</b>
EV220B 32	G 1 ¼	0.3 – 16	18	✓	✓	NBR		24	<b>032U456802</b>
EV220B 32	G 1 ¼	0.3 – 16	18	✓	✓	NBR	24		<b>032U456816</b>
EV220B 32	G 1 ¼	0.3 – 16	18	✓	✓	NBR	230		<b>032U456831</b>
EV220B 40	G 1 ½	0.3 – 16	24	✓	✓	NBR		24	<b>032U458502</b>
EV220B 40	G 1 ½	0.3 – 16	24	✓	✓	NBR	24		<b>032U458516</b>
EV220B 40	G 1 ½	0.3 – 16	24	✓	✓	NBR	230		<b>032U458531</b>
EV220B 50	G 2	0.3 – 16	40	✓	✓	NBR		24	<b>032U460402</b>
EV220B 50	G 2	0.3 – 16	40	✓	✓	NBR	24		<b>032U460416</b>
EV220B 50	G 2	0.3 – 16	40	✓	✓	NBR	230		<b>032U460431</b>

## EV220B 15 – EV220B 50 servo-operated valves, NC

DZR brass, brass or stainless steel (SS)



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

**EV220B 15 – EV220B 50 servo-operated valves, NC**  
DZR brass, brass or stainless steel (SS)



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

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



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



## Coils for EV220B 15 - EV220B 50

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

## Cable plug, IP65 enclosure

To use with all BA, BB and BY coils	<b>042N0156</b>	<b>042N0156</b>	<b>042N0156</b>	No plug needed IP67 terminal box fitted as standard
To use with BA, BB and BY coils - 24 V AC+DC	<b>042N0263</b>	<b>042N0263</b>	<b>042N0263</b>	
To use with BA, BB and BY coils - 230 V AC	<b>042N0265</b>	<b>042N0265</b>	<b>042N0265</b>	

## 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 15 – 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		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

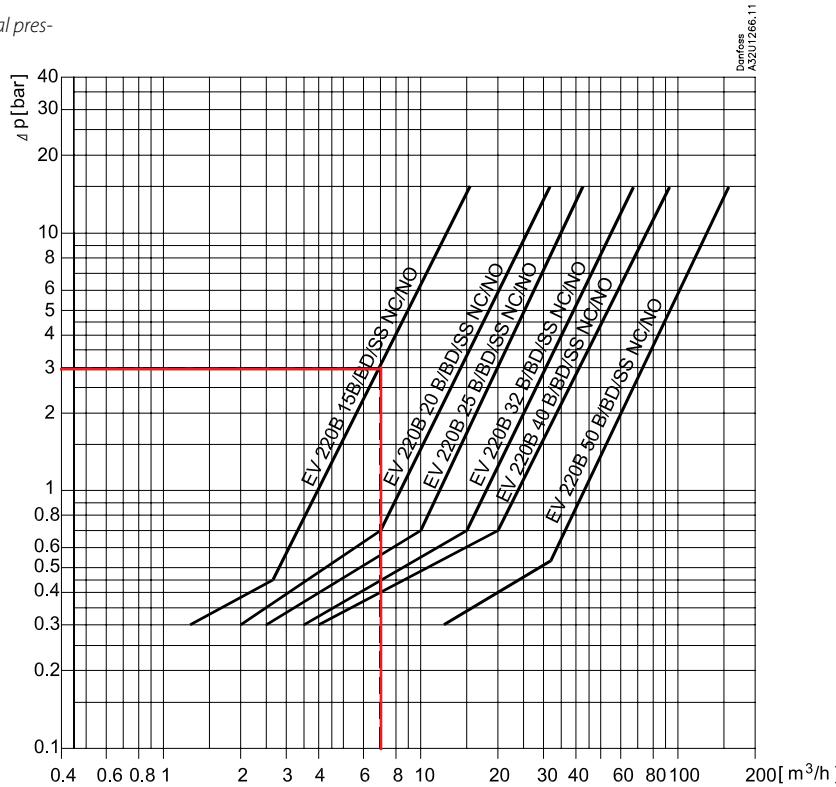
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301-803-A	24 – 240	20.0	-10 – 50	042N0185



## Capacity diagram for EV220B 15 – EV220B 50:

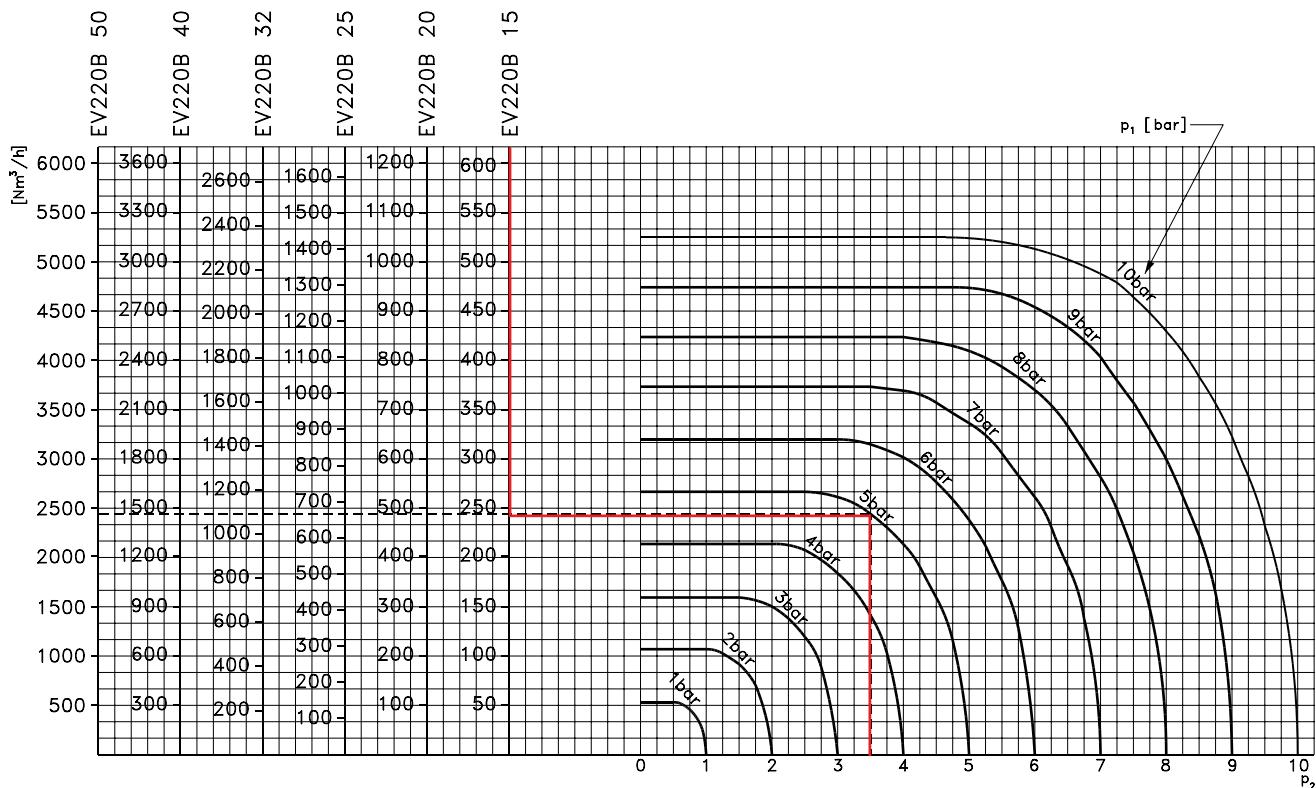
Example, water:

Capacity for EV220B 15 at differential pressure of 3 bar. Approx. 7 m<sup>3</sup>/h



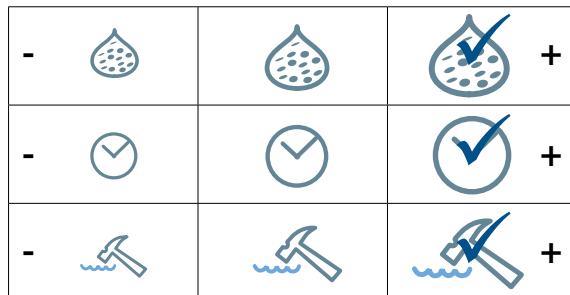
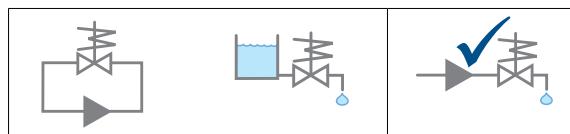
Example, air:

Capacity for EV220B 15 at inlet pressure ( $p_1$ ) of 5 bar and outlet pressure ( $p_2$ ) of 3.5 bar: Approx. 245 Nm<sup>3</sup>/h



Flow information on other media types: Please contact Danfoss.

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

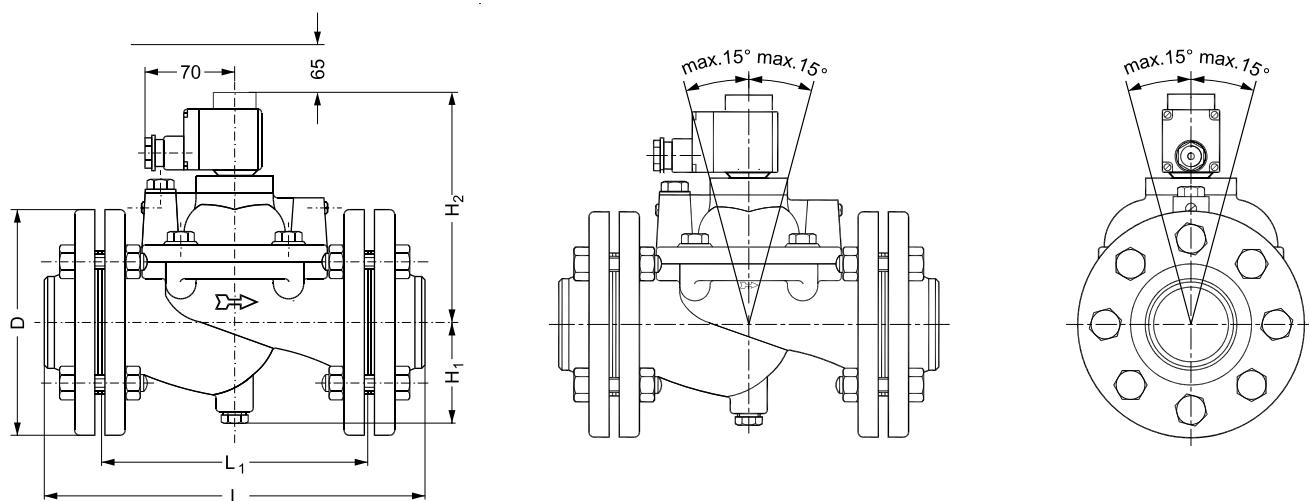


EV220B 65 – EV220B 100 is a 2/2-way solenoid valve program for use in robust industrial applications, demanding high flow rates. The valve is designed with cast iron valve bodies and flanged connection.

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 <sub>1</sub> [mm]	Coil width [mm]		ØD [mm]	H <sub>1</sub> [mm]	H <sub>2</sub> [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 <sub>v</sub> [m <sup>3</sup> /h]	Media Water 90 °C	Oil	Seal material	Body material Cast iron	Differential pressure [bar]	Code number
EV220B 65	2 ½	50	✓	✓	NBR	✓	0.25 – 10	<b>016D3330</b>
EV220B 65	2 ½	50	✓		EPDM	✓	0.25 – 10	<b>016D6065</b>
EV220B 80	3	75	✓	✓	NBR	✓	0.25 – 10	<b>016D3331</b>
EV220B 80	3	75	✓		EPDM	✓	0.25 – 10	<b>016D6080</b>
EV220B 100	4	130	✓		EPDM	✓	0.25 – 10	<b>016D6100</b>



### 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	<b>018F7358</b>	
48		50		11		<b>018F6709</b>
110		50	15		<b>018F7360</b>	
110		60	13		<b>018F7360</b>	
115		50	11	11	<b>018F7361</b>	
220 - 230		50	11	12	<b>018F7351</b>	
240		50	11	11	<b>018F7352</b>	
380 - 400		50	14	14	<b>018F7353</b>	
440		60	15	15	<b>018F7353</b>	
12	–	–	13	13	<b>018F7396</b>	
24	–	–	16	16	<b>018F7397</b>	



### Cable plug, IP65 enclosure

To use with all BB coils	<b>042N0156</b>	No plug needed - IP67 terminal box fitted as standard
To use with BB coils - 24 V AC+DC	<b>042N0263</b>	
To use with BB coils - 230 V AC	<b>042N0265</b>	



### Accessories for EV220B 65 – EV220B 100 servo-operated valves

#### Permanent magnet

Application	Code number
Fits all EV220B valves	<b>018F0091</b>



#### Electronic timers for coils for pulse start , only IP65

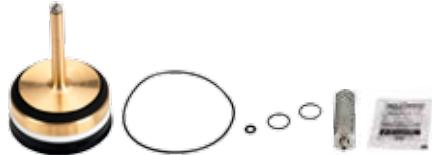
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301 – 803-A	24 – 240	20.0	-10 – 50	<b>042N0185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

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



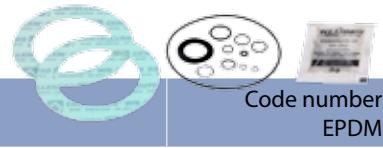
**Flange sets. Each set contains 2 flanges**

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



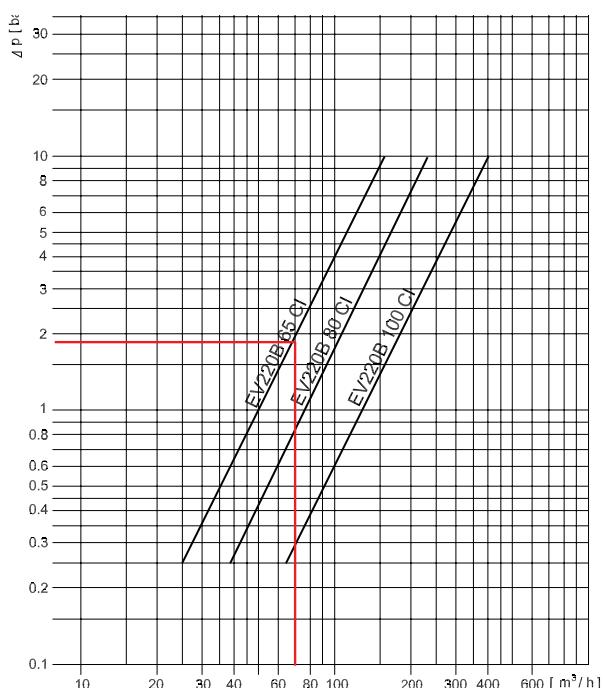
**Manual override kit, hand operated**

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

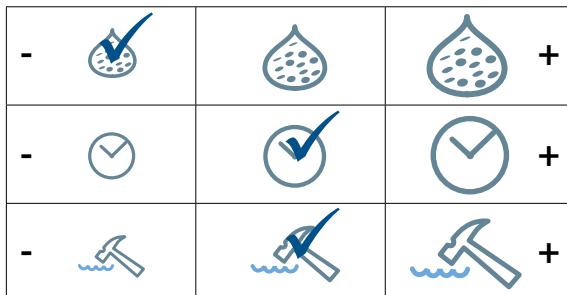
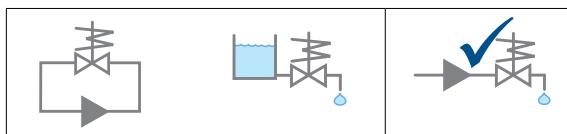
## Capacity diagram for EV220B 65 – EV220B 100:

Example, water:

Capacity for EV220B 65 at differential pressure of 2 bar: Approx. 70 m<sup>3</sup>/h



# EV220A servo-operated 2/2-way solenoid valves

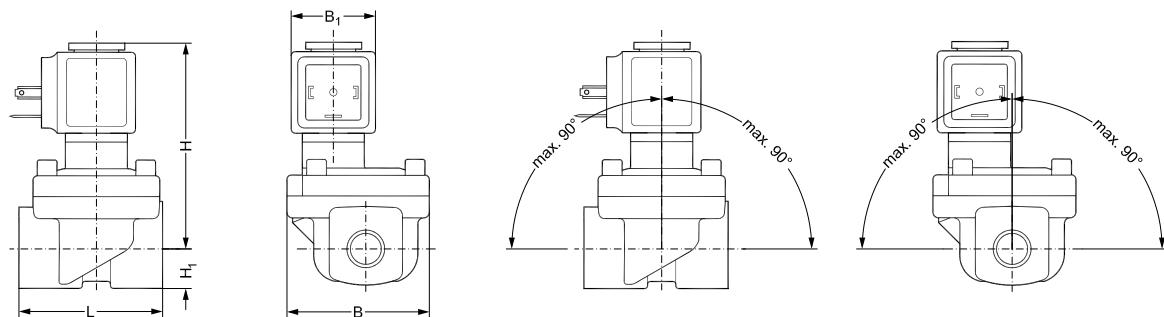


EV220A is a compact servo-operated 2/2-way solenoid valve program, especially designed for use in machines and equipment with limited space.

- 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]	<u>B<sub>1</sub> [mm] coil type</u>		<u>H [mm]</u>		H <sub>1</sub> [mm]	Weight with AM coil [kg]
			AM	NC	NO			
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	K <sub>v</sub> [m <sup>3</sup> /h]	Water 120 °C	Media Water 90 °C	Oil / Air	Seal material	Differential pressure [bar]	Code number
EV220A 6	G 1/4	1	✓			EPDM	0.2 – 16	<b>042U4001</b>
EV220A 6	G 1/4	1		✓	✓	NBR	0.2 – 16	<b>042U4003</b>
EV220A 10	G 3/8	1.6	✓			EPDM	0.2 – 16	<b>042U4011</b>
EV220A 10	G 3/8	1.6		✓	✓	NBR	0.2 – 16	<b>042U4013</b>
EV220A 10	G 1/2	1.6	✓			EPDM	0.2 – 16	<b>042U4012</b>
EV220A 10	G 1/2	1.6		✓	✓	NBR	0.2 – 16	<b>042U4014</b>
EV220A 12	G 1/2	2.5		✓	✓	NBR	0.3 – 16	<b>042U4023</b>
EV220A 14	G 1/2	4	✓			EPDM	0.3 – 16	<b>042U4022</b>
EV220A 14	G 1/2	4		✓	✓	NBR	0.3 – 16	<b>042U4024</b>
EV220A 18	G 3/4	7	✓			EPDM	0.3 – 16	<b>042U4031</b>
EV220A 18	G 3/4	7		✓	✓	NBR	0.3 – 16	<b>042U4032</b>
EV220A 22	G 1	7	✓			EPDM	0.3 – 16	<b>042U4041</b>
EV220A 22	G 1	7		✓	✓	NBR	0.3 – 16	<b>042U4042</b>
EV220A 32	G 1 1/4	15	✓			EPDM	0.3 – 16	<b>042U4085</b>
EV220A 32	G 1 1/4	15		✓	✓	NBR	0.3 – 16	<b>042U4084</b>
EV220A 40	G 1 1/2	18	✓			EPDM	0.3 – 16	<b>042U4087</b>
EV220A 40	G 1 1/2	18		✓	✓	NBR	0.3 – 16	<b>042U4086</b>
EV220A 50	G 2	32	✓			EPDM	0.3 – 16	<b>042U4089</b>
EV220A 50	G 2	32		✓	✓	NBR	0.3 – 16	<b>042U4088</b>

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



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Water 120 °C	Media Water 90 °C	Oil / Air	Seal material	Differential pressure [bar]	Code number
EV220A 6	G 1/4	1		✓	✓	NBR	0.2 – 16	<b>042U4053</b>
EV220A 10	G 3/8	1.6		✓	✓	NBR	0.2 – 16	<b>042U4063</b>
EV220A 14	G 1/2	4		✓	✓	NBR	0.3 – 16	<b>042U4074</b>
EV220A 18	G 3/4	7		✓	✓	NBR	0.3 – 16	<b>042U4082</b>
EV220A 22	G 1	7		✓	✓	NBR	0.3 – 16	<b>042U4092</b>



## Coils for EV220A

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

## Cable plugs, IP65 enclosure

To use with AM coils		<b>042N0156</b>
To use with AM coils - 24 V AC + DC		<b>042N0263</b>
To use with AM coils - 230 V AC		<b>042N0265</b>

## Spare parts and accessories for EV220A



### Spare part kits, NC

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

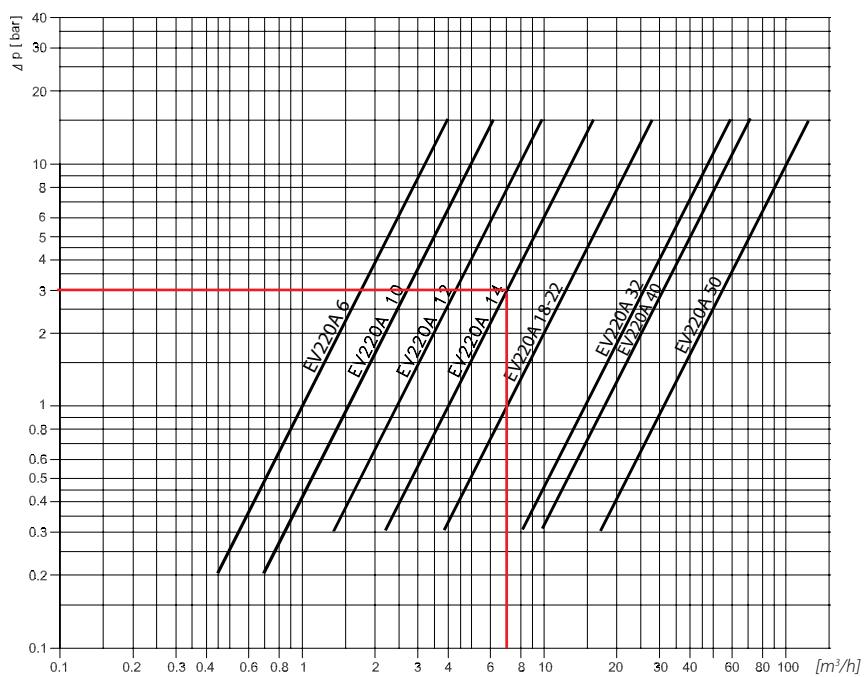
## Electronic timers for coils for pulse start, only AM coil



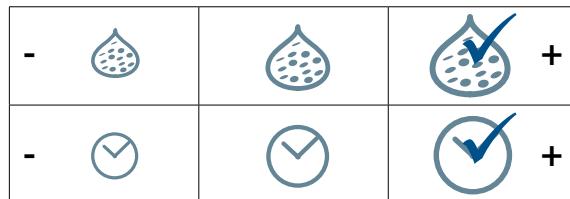
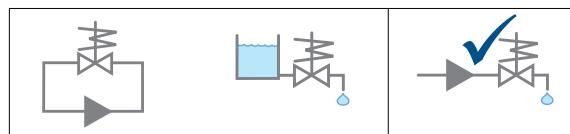
Type	Description	Control [V] 50/60 Hz	Power cons. Max [W]	Ambient temp. [°C]	Code number
ET 20 M	External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button) Electrical connection DIN 43650 A / EN 175 301 – 803-A	24 – 240	20.0	-10 – 50	<b>042N0185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

## Capacity diagram for EV220A

Example for water:  
Capacity for EV220A at differential pressure of 3 bar: Approx. 7 m<sup>3</sup>/h



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

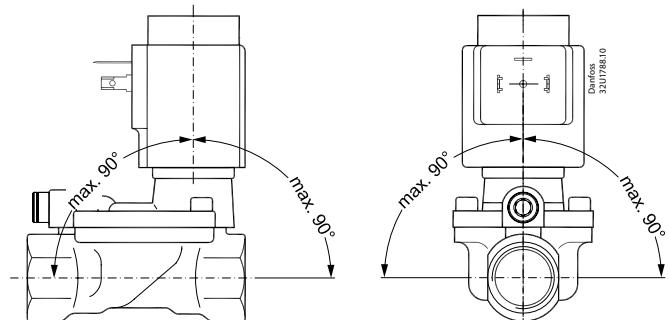
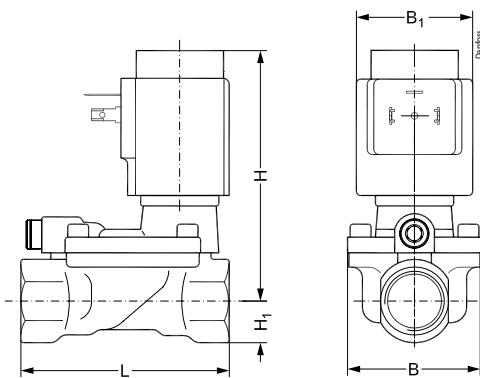


EV224B is a high pressure indirect servo-operated 2/2-way solenoid valve with working pressure up to 40 bar, medium temperature up to 60 °C and available in NC and NO versions. Built-in pilot filter as standard, adjustable closing time, enclosures up to IP67 (depending on coil) ensure a reliable and 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 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 <sub>1</sub> [mm] Coil type	H <sub>1</sub> [mm]	H [mm]	Weight with BB coil [kg]
			BB/BE			
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 <sub>v</sub> [m <sup>3</sup> /h]	Seal material	Media Air 60 °C	Body material Brass	Differential pressure [bar]	Code number
EV224B 15	G 1/2	4	NBR	✓	✓	0.3 - 40	<b>032U8360</b>
EV224B 20	G 3/4	8	NBR	✓	✓	0.3 - 35	<b>032U8362</b>
EV224B 25	G 1	11	NBR	✓	✓	0.3 - 33	<b>032U8364</b>

## EV224B servo-operated valves, NO



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Seal material	Media Air 60 °C	Body material Brass	Differential pressure [bar]	Code number
EV224B 15	G 1/2	4	NBR	✓	✓	0.3 - 40	<b>032U8361</b>
EV224B 20	G 3/4	8	NBR	✓	✓	0.3 - 35	<b>032U8363</b>
EV224B 25	G 1	11	NBR	✓	✓	0.3 - 33	<b>032U8365</b>

## Coils for EV224B



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

## 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	<b>042N0185</b>

### Spare part kits, NC



Application	Seal material	Code number
EV224B 15	NBR	<b>032U6156</b>
EV224B 20	NBR	<b>032U6158</b>
EV224B 25	NBR	<b>032U6160</b>

### Spare part kits, NO



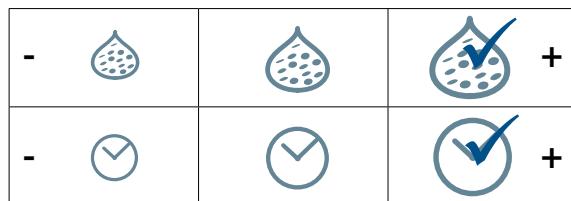
Application	Seal material	Code number
EV224B 15	NBR	<b>032U6157</b>
EV224B 20	NBR	<b>032U6159</b>
EV224B 25	NBR	<b>032U6161</b>

### Spare part kits for synthetic oil, NC/NO



Application	Seal material	Code number
EV224B 15	FKM	<b>032U8118</b>
EV224B 20	FKM	<b>032U8119</b>

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



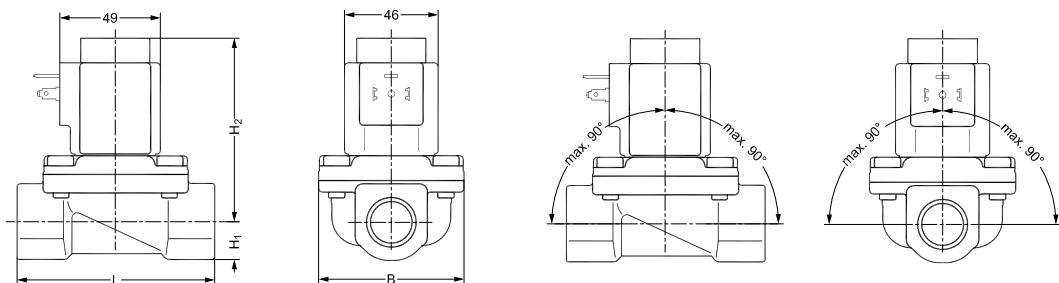
EV225B is a servo-operated 2/2-way solenoid valve for use in steam application.

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 1/4" – 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 <sub>1</sub> [mm]	H <sub>2</sub> [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 <sub>v</sub> [m <sup>3</sup> /h]	BQ coil, 10 W AC Temp. max [°C]	Diff. pressure [bar]	24 V 50 Hz	110 V 60 Hz	230 V 50 Hz	220 V 60 Hz	Code number
EV225B 10	G 1/2	2.2	185	0.2 – 10	✓				032U380416
EV225B 15	G 1/2	3.0	185	0.2 – 10	✓				032U380516
EV225B 20	G 3/4	5.0	185	0.2 – 10	✓				032U380616
EV225B 25	G 1	6.0	185	0.2 – 10	✓				032U380716
EV225B 10	G 1/2	2.2	185	0.2 – 10		✓			032U380420
EV225B 15	G 1/2	3.0	185	0.2 – 10		✓			032U380520
EV225B 20	G 3/4	5.0	185	0.2 – 10		✓			032U380620
EV225B 25	G 1	6.0	185	0.2 – 10		✓			032U380720
EV225B 10	G 1/2	2.2	185	0.2 – 10			✓		032U380431
EV225B 15	G 1/2	3.0	185	0.2 – 10			✓		032U380531
EV225B 20	G 3/4	5.0	185	0.2 – 10			✓		032U380631
EV225B 25	G 1	6.0	185	0.2 – 10			✓		032U380731
EV225B 10	G 1/2	2.2	185	0.2 – 10				✓	032U380429
EV225B 15	G 1/2	3.0	185	0.2 – 10				✓	032U380529
EV225B 20	G 3/4	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 <sub>v</sub> [m <sup>3</sup> /h]	BN coil, 20 W Temp. max [°C]	Diff. pressure [bar]	24 V DC				Code number
EV225B 10	G 1/2	2.2	160	0.2 – 5	✓				032U380402
EV225B 15	G 1/2	3.0	160	0.2 – 5	✓				032U380502
EV225B 20	G 3/4	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 <sub>v</sub> [m <sup>3</sup> /h]	BQ coil, 10 W AC Temp. max [°C]	Diff. pressure [bar]	BN coil, 20 W DC Temp. max [°C]	Diff. pressure [bar]	BB coil, 10 W AC Temp. max [°C]	Diff. pressure [bar]	BB coil, 18 W DC Temp. max [°C]	Diff. pressure [bar]	Code number
EV225B 6	G 1/4	0.9	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	032U3802
EV225B 10	G 3/8	2.2	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	032U3803
EV225B 10	G 1/2	2.2	185	0.2 – 10	160	0.2 – 5	160	0.2 – 5	140	0.2 – 3.6	032U3804
EV225B 20	G 3/4	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 [V] AC	Voltage [V] DC	Frequency [Hz]	Power consumption [W]		BQ coil, AC 10 bar, 185 °C IP65 clip-on	BN coil, DC 5 bar, 160 °C IP65 clip-on
			BQ	BN		
24		50	10		<b>018F4517</b>	
24		60	9.0		<b>018F4517</b>	
110		50	13.5		<b>018F4519</b>	
230		50	10		<b>018F4511</b>	
208 – 240		60	9.5		<b>018F4511</b>	
240		50				
24	–		20		<b>018F6968</b>	

## Cable plug, IP65 enclosure

To use with all BQ and BN coils



**042N0156**

**042N0156**

## Spare part kits

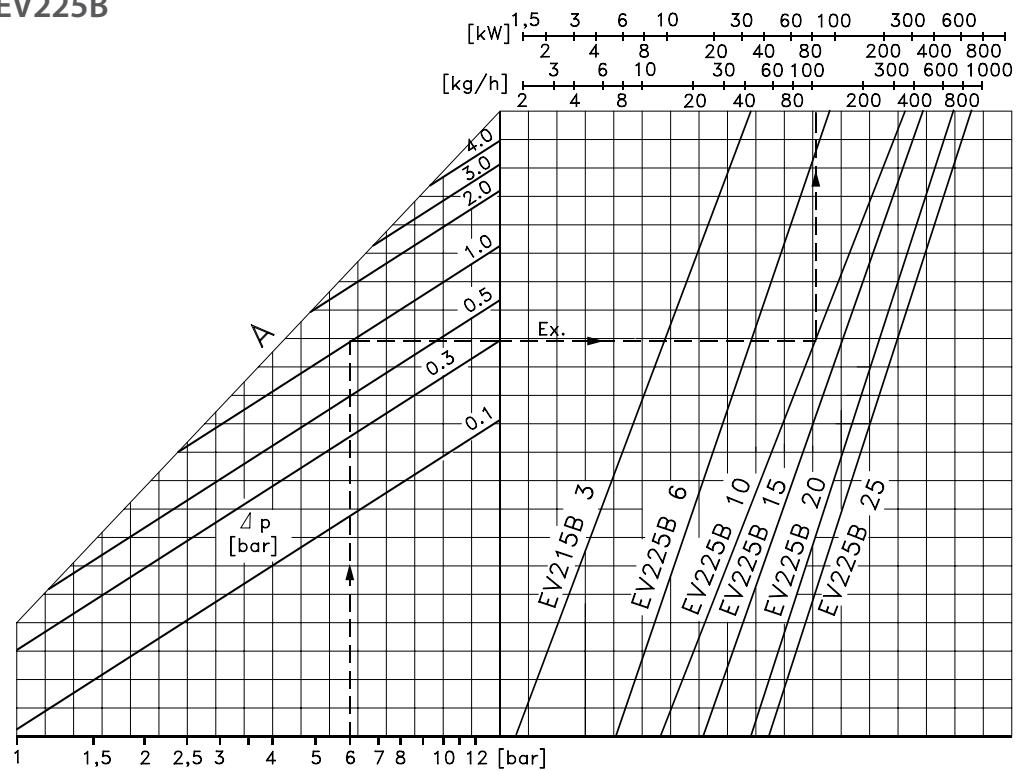
Application	Seal material	Code number
EV225B 6 – EV225B 10	PTFE	<b>032U3171</b>
EV225B 15	PTFE	<b>032U3172</b>
EV225B 20 – EV225B 25	PTFE	<b>032U3173</b>



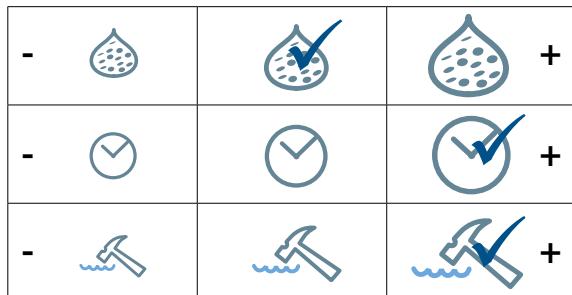
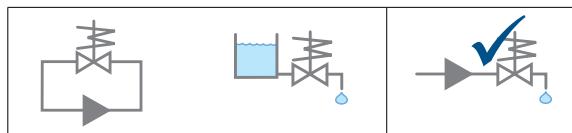
## Capacity diagram for EV225B

Example, steam:

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



# EV260B servo-operated 2-way proportional solenoid valves



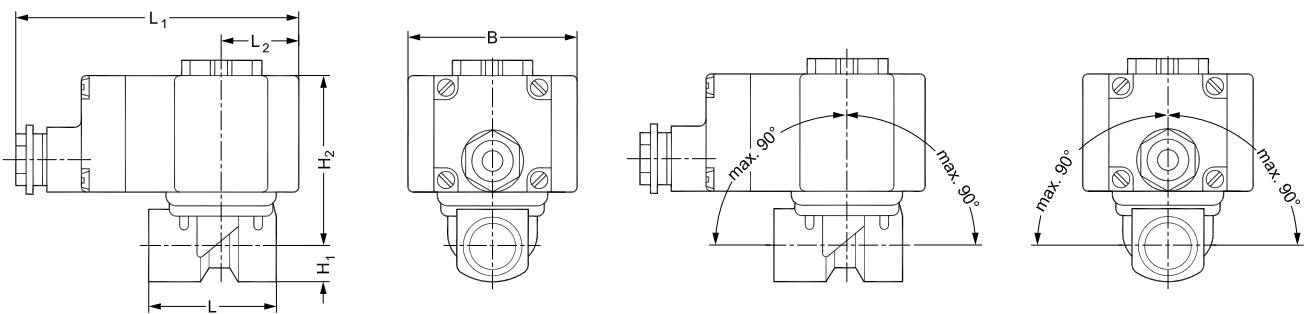
EV260B is a proportional (modulating) servo-operated 2-way solenoid valve program with connections from  $\frac{1}{4}''$  –  $\frac{3}{4}''$ . Through stepless regulation of the coil current, the armature can be placed in any position in the armature tube, thus setting the valve to any position between 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 throughout 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 <sub>1</sub> [mm]	L <sub>2</sub> [mm]	H <sub>1</sub> [mm]	H <sub>2</sub> [mm]	B [mm]	Weight without signal converter [kg]	Weight with signal converter [kg]
EV260B 6	62	112 <sup>1)</sup>	30	13	71	68	1.02	1.22
EV260B 10	62	112 <sup>1)</sup>	30	13	71	68	1.02	1.22
EV260B 15	81	112 <sup>1)</sup>	30	15	74	68	1.17	1.37
EV260B 20	98	112 <sup>1)</sup>	30	18	79	68	1.71	1.91

<sup>1)</sup> With the BM and the BL coil the measurement is 128 mm

## EV260B proportional valve, brass, NC



Type	Connection	$K_v$ [m³/h]	Seal material	Medium water [°C]	Differential pressure [bar]	Code number
EV260B 6	G 1/4	0.8	PTFE	-10 – 80	0.5 – 10	<b>032U8052</b>
EV260B 6	G 3/8	0.8	PTFE	-10 – 80	0.5 – 10	<b>032U8053</b>
EV260B 10	G 3/8	1.3	PTFE	-10 – 80	0.5 – 10	<b>032U8054</b>
EV260B 10	G 1/2	1.3	PTFE	-10 – 80	0.5 – 10	<b>032U8055</b>
EV260B 15	G 1/2	2.1	PTFE	-10 – 80	0.5 – 10	<b>032U8056</b>
EV260B 20	G 3/4	5	PTFE	-10 – 80	0.5 – 10	<b>032U8057</b>

### Coils for EV260B



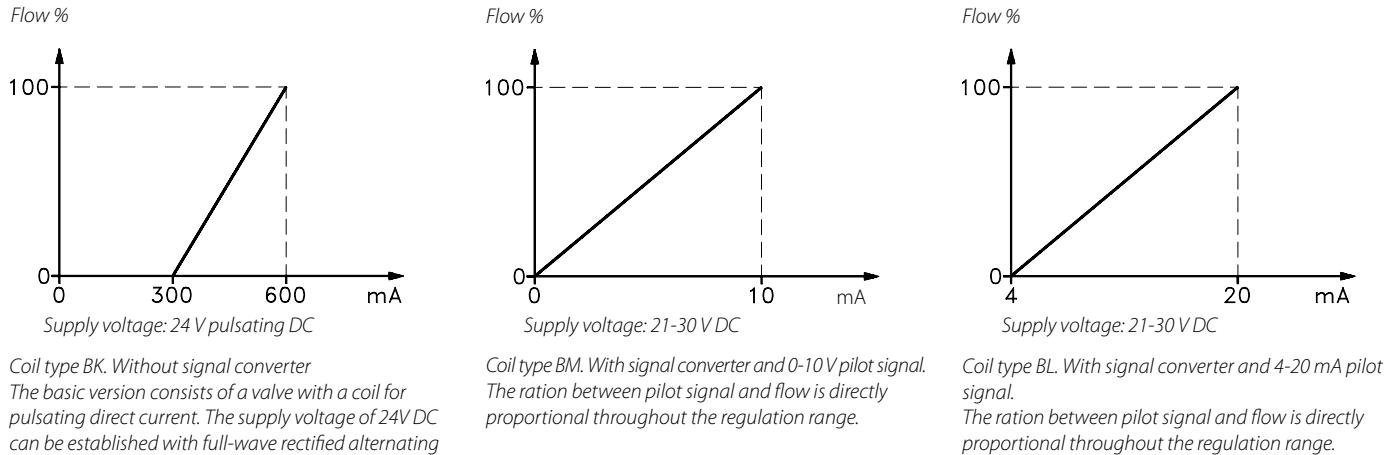
Voltage [V] DC	BK coil 300-600 mA	BM coil 0-10 V	BL coil 4-20 mA
24	<b>018Z6987</b>	<b>018Z0290</b>	<b>018Z0291</b>
	IP67 terminal box fitted as standard	IP67 terminal box fitted as standard	IP67 terminal box fitted as standard

### Spare part kits for EV260B

Application	Seal material	Code number
EV260B 6	PTFE	<b>032U8039</b>
EV260B 10	PTFE	<b>032U8040</b>
EV260B 15	PTFE	<b>032U8041</b>
EV260B 20	PTFE	<b>032U8042</b>



## Signal flow characteristics for EV260B



## Capacity diagram for EV260B

For water at fully opened valve

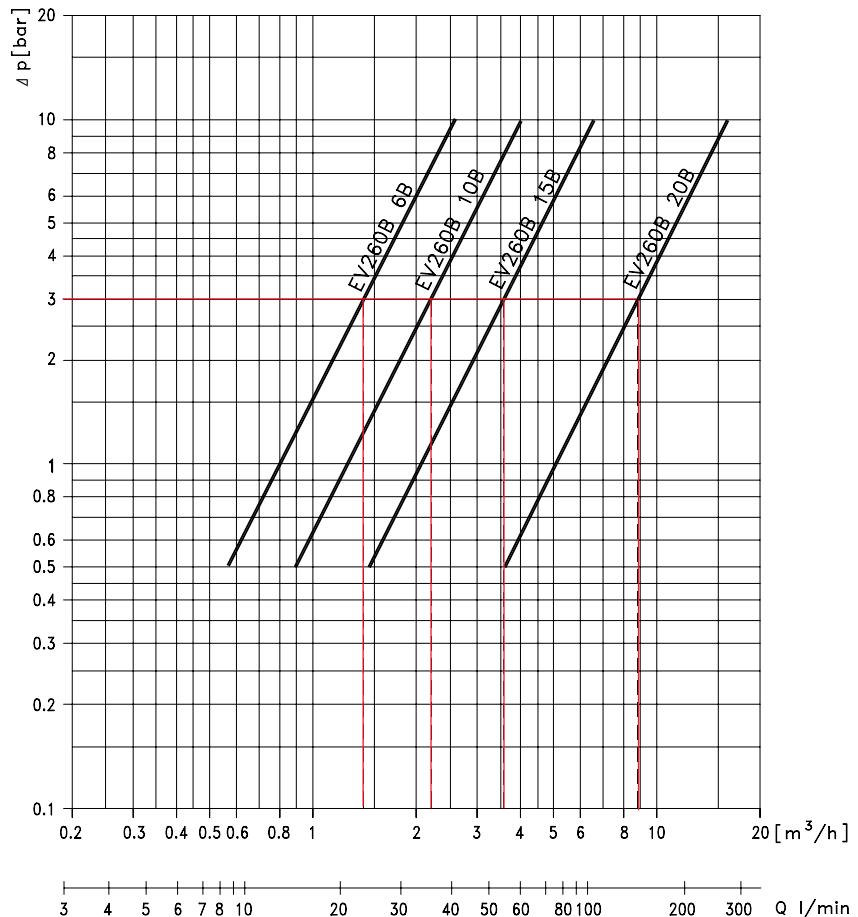
Example: Differential pressure of 3 bar:

EV260B 6 B: Appr. 1.4 m<sup>3</sup>/h

EV260B 10 B: Appr. 2.2 m<sup>3</sup>/h

EV260B 15 B: Appr. 3.6 m<sup>3</sup>/h

EV260B 20 B: Appr. 8.7 m<sup>3</sup>/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

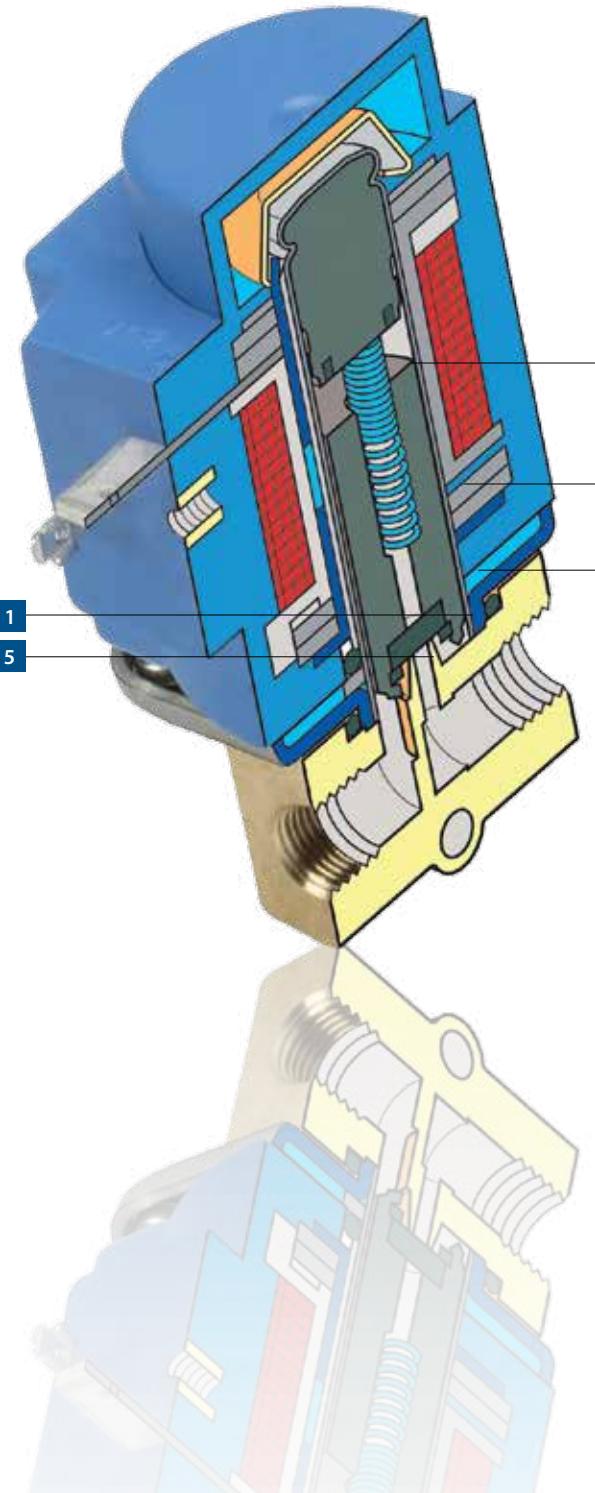
Due to the armature's unique design, there is a low risk of particles sticking to the armature. If particles become lodged between the armature and the armature tube or top, they will be displaced by the fluid when the armature moves.

## 5 Optimum Kv-values for many connections

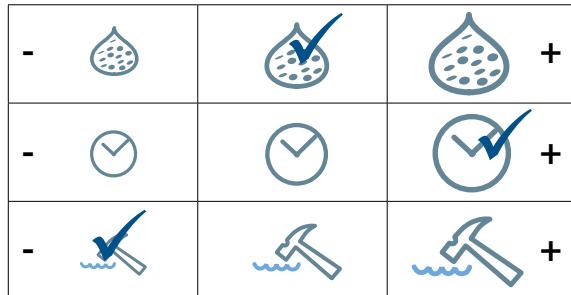
The optimum shape and diameter of the valve plate, as well as the valve plate lift ensure that the EV210B has high Kv-values (capacity).

### 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

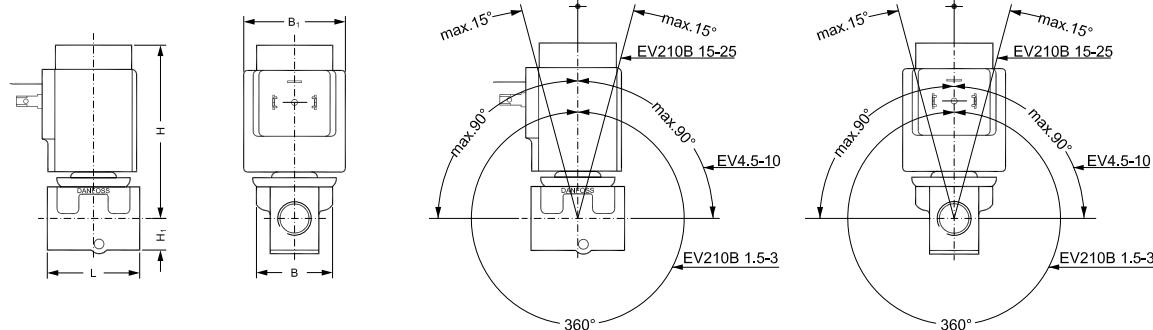


EV210B covers a wide range of direct-operated 2/2-way solenoid valves for universal use. EV210B is a real robust valve program with high performance and can be used in all kind of tough working conditions.

- 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" – 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 <sub>1</sub> [mm] Coil type		H <sub>1</sub> [mm]	H [mm]	Weight with BB coil [kg]
			BA	BB			
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 <sub>v</sub> [m <sup>3</sup> /h]	Media Oil / Air	Seal material	Differential pressure [bar]	Coil BB [V] AC 50 Hz	[V] DC	Code number
EV210B 1.5	G 1/8	0.08	✓	FKM	0 – 30	24		<b>032U145802</b>
EV210B 1.5	G 1/8	0.08	✓	FKM	0 – 30	230		<b>032U145831</b>
EV210B 3	G 1/4	0.30	✓	FKM	0 – 13	24		<b>032U147002</b>
EV210B 3	G 1/4	0.30	✓	FKM	0 – 20	24		<b>032U147016</b>
EV210B 3	G 1/4	0.30	✓	FKM	0 – 20	230		<b>032U147031</b>
EV210B 4.5	G 3/8	0.55	✓	FKM	0 – 4.5	24		<b>032U148002</b>
EV210B 4.5	G 3/8	0.55	✓	FKM	0 – 10	24		<b>032U148016</b>
EV210B 4.5	G 3/8	0.55	✓	FKM	0 – 10	230		<b>032U148031</b>

## EV210B direct operated valve, brass, NC



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

## EV210B direct operated valve, DZR brass, NC



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Media		Seal material	Differential pressure [bar] BA / BE coil AC / DC	BB coil AC / DC	Code number
			Water 120 °C	Oil / Air				
EV210B 15	G 1/2	2.85	✓		EPDM	0 – 0.25 / –	0 – 0.3 / 0 – 0.15	<b>032U3619</b>
EV210B 15	G 1/2	2.85		✓	FKM	0 – 0.25 / –	0 – 0.3 / 0 – 0.15	<b>032U3620</b>
EV210B 20	G 3/4	4.50	✓		EPDM	–	0 – 0.28 / 0 – 0.12	<b>032U3621</b>
EV210B 20	G 3/4	4.50		✓	FKM	–	0 – 0.28 / 0 – 0.12	<b>032U3622</b>
EV210B 25	G 1	8.00	✓		EPDM	–	0 – 0.25 / 0 – 0.09	<b>032U3623</b>
EV210B 25	G 1	8.00		✓	FKM	–	0 – 0.25 / 0 – 0.09	<b>032U3624</b>

## EV210B direct operated valve, brass, NO



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Media		Seal material	Differential pressure [bar] BA / BE / BB coil AC / DC	Code number
			Water 120 °C	Oil / Air			
EV210B 1.5	G 1/8	0.08	✓		EPDM	0 – 30	<b>032U3630</b>
EV210B 1.5	G 1/8	0.08		✓	FKM	0 – 30	<b>032U3631</b>
EV210B 2.0	G 1/8	0.15	✓		EPDM	0 – 12	<b>032U3632</b>
EV210B 2.0	G 1/8	0.15		✓	FKM	0 – 12	<b>032U3633</b>
EV210B 2.0	G 1/4	0.15	✓		EPDM	0 – 12	<b>032U3636</b>
EV210B 2.0	G 1/4	0.15		✓	FKM	0 – 12	<b>032U3637</b>
EV210B 3.0	G 1/4	0.30	✓		EPDM	0 – 5	<b>032U3638</b>
EV210B 3.0	G 1/4	0.30		✓	FKM	0 – 5	<b>032U3639</b>
EV210B 4.5	G 1/4	0.55	✓		EPDM	0 – 2	<b>032U3640</b>
EV210B 4.5	G 1/4	0.55		✓	FKM	0 – 2	<b>032U3641</b>

## Coils for EV220B 15 - EV220B 50



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

## Cable plug, IP65 enclosure



To use with all BA, BB and BY coils	<b>042N0156</b>	<b>042N0156</b>	<b>042N0156</b>
	<b>042N0263</b>	<b>042N0263</b>	<b>042N0263</b>
To use with BA, BB and BY coils - 24 V AC+DC	<b>042N0265</b>	<b>042N0265</b>	<b>042N0265</b>

No plug needed IP67 terminal box fitted as standard

## Spare parts and accessories for EV210B



### Isolating diaphragm kit, NC

Application	Seal material	Code number
EV210B 1.5 – 4.5	EPDM	<b>042U1009</b>
EV210B 1.5 – 4.5	FKM	<b>042U1010</b>

### Permanent magnet



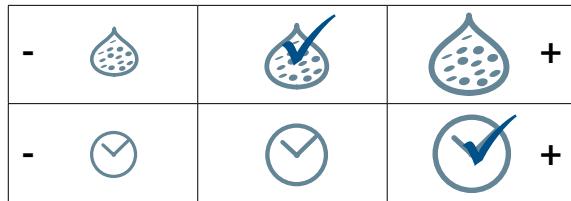
Application	Code number
Fits all EV210B valves	<b>018F0091</b>

### 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	<b>042N0185</b>

# EV310B direct-operated 3/2-way solenoid valves

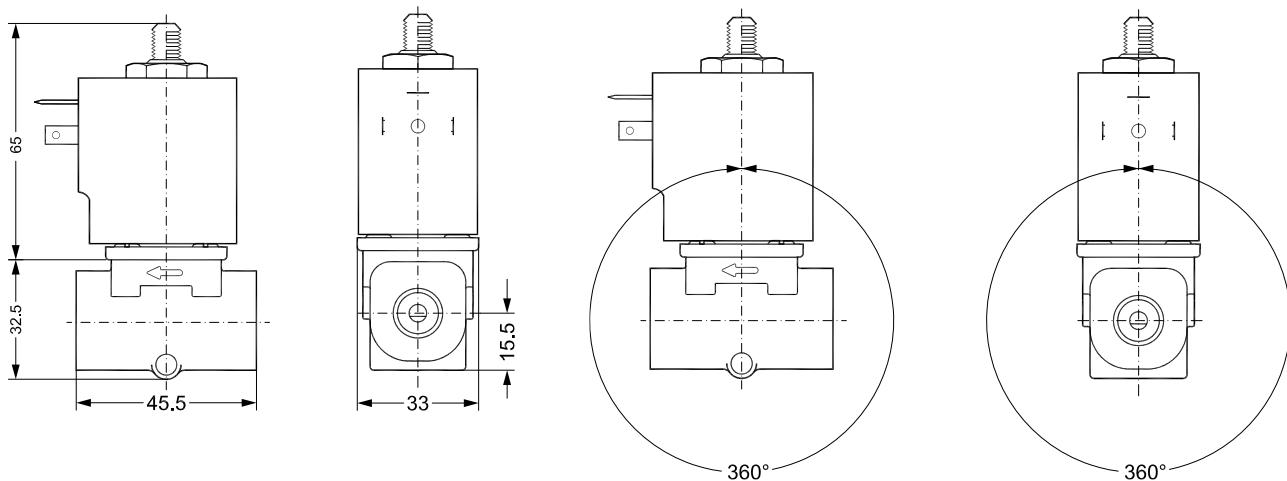


EV310B covers a wide range of direct-operated 3/2-way solenoid valves for universal use.  
EV310B is a real robust valve program with high performance and can be used in all kind of tough working conditions.  
Clip-on coils can not be used on EV310B.

- 3/2-way
- Direct-operated
- DN 1.5 – DN 3.5
- Ambient temperature: 40 °C
- Brass valve body
- Thread (G 1/8" – 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 <sub>v</sub> [m <sup>3</sup> /h]	Media Oil / Air	Seal material	Differential pressure [bar]	Code number
EV310B 2	G 1/8	0.15	✓	FKM	0 – 16	<b>032U4901</b>
EV310B 2	G 1/4	0.15	✓	FKM	0 – 16	<b>032U4904</b>

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 <sub>v</sub> [m <sup>3</sup> /h]	Media Oil / Air	Seal material	Differential pressure [bar]	Code number
EV310B 2	G 1/8	0.15	✓	FKM	0 – 16	<b>032U4916</b>
EV310B 2	G 1/4	0.15	✓	FKM	0 – 16	<b>032U4919</b>

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



## Coils for EV310B

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



## 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**



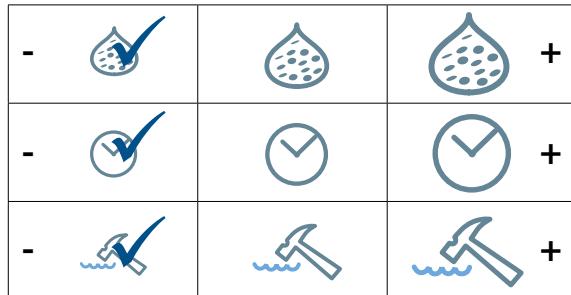
## Accessories for EV310B

### 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	<b>042N0185</b>



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

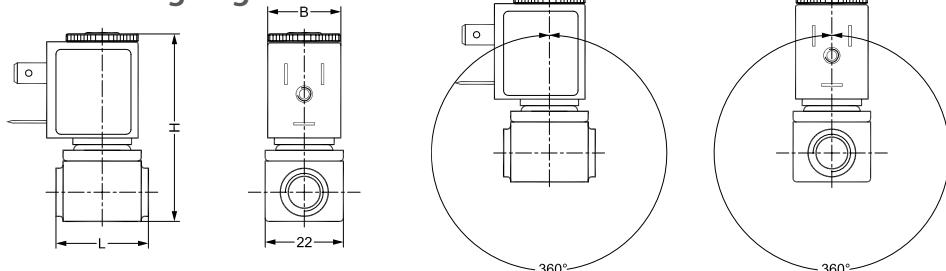


EV210A covers a wide range of small, direct-operated 2/2-way solenoid valves for use in industrial machinery.

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 1/8 – G 1/4
- 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		H [mm]	A [mm]	Weight with AB coil [kg]
		AB	AM			
G 1/8	26	22	33	54	13	0.09
G 1/4	35	22	33	59	17.5	0.115

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

Type	Connection	K <sub>v</sub> [m <sup>3</sup> /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 1.2	G 1/8	0.04	✓		EPDM	✓		0 – 30 / 0 – 17.5	0 – 30 / 0 – 24	<b>032H8000</b>
EV210A 1.2	G 1/8	0.04		✓	FKM	✓		0 – 28 / 0 – 16	0 – 30 / 0 – 24	<b>032H8001</b>
EV210A 1.5	G 1/8	0.08		✓	FKM	✓		0 – 15 / 0 – 8	0 – 26 / 0 – 19	<b>032H8003</b>
EV210A 1.5	G 1/8	0.08		✓	FKM		✓	0 – 15 / 0 – 8	0 – 26 / 0 – 19	<b>032H8027</b>
EV210A 2	G 1/8	0.11	✓		EPDM	✓		0 – 11 / 0 – 5.5	0 – 23 / 0 – 18.5	<b>032H8004</b>
EV210A 2	G 1/8	0.11		✓	FKM	✓		0 – 9 / 0 – 5	0 – 22 / 0 – 17	<b>032H8005</b>



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

Type	Connection	K <sub>v</sub> [m <sup>3</sup> /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	<b>032H8029</b>
EV210A 2.5	G 1/8	0.17	✓		EPDM	✓		0 - 6 / 0 - 3	0 - 17 / 0 - 13	<b>032H8006</b>
EV210A 2.5	G 1/8	0.17		✓	FKM	✓		0 - 5 / 0 - 2.5	0 - 16 / 0 - 12	<b>032H8007</b>
EV210A 3	G 1/8	0.22	✓		EPDM	✓		0 - 4 / 0 - 1.5	0 - 13 / 0 - 9	<b>032H8008</b>
EV210A 3	G 1/8	0.22		✓	FKM	✓		0 - 3 / 0 - 1.5	0 - 12 / 0 - 8	<b>032H8009</b>
EV210A 3	G 1/8	0.22		✓	FKM		✓	0 - 3 / 0 - 1.5	0 - 12 / 0 - 8	<b>032H8033</b>
EV210A 2.5	G 1/4	0.17	✓		EPDM	✓		0 - 6 / 0 - 3	0 - 17 / 0 - 13	<b>032H8014</b>
EV210A 2.5	G 1/4	0.17		✓	FKM	✓		0 - 5 / 0 - 2.5	0 - 16 / 0 - 12	<b>032H8015</b>
EV210A 2.5	G 1/4	0.17		✓	FKM		✓	0 - 5 / 0 - 2.5	0 - 16 / 0 - 12	<b>032H8039</b>
EV210A 3	G 1/4	0.22	✓		EPDM	✓		0 - 4 / 0 - 1.5	0 - 13 / 0 - 9	<b>032H8016</b>
EV210A 3	G 1/4	0.22		✓	FKM	✓		0 - 3 / 0 - 1.5	0 - 12 / 0 - 8	<b>032H8017</b>
EV210A 3	G 1/4	0.22		✓	FKM		✓	0 - 3 / 0 - 1.5	0 - 12 / 0 - 8	<b>032H8041</b>
EV210A 3.5	G 1/4	0.26	✓		EPDM	✓		0 - 2.8 / 0 - 1.2	0 - 11 / 0 - 6	<b>032H8018</b>
EV210A 3.5	G 1/4	0.26		✓	FKM	✓		0 - 2 / 0 - 0.8	0 - 10 / 0 - 5.5	<b>032H8019</b>
EV210A 3.5	G 1/4	0.26		✓	FKM		✓	0 - 2 / 0 - 0.8	0 - 10 / 0 - 5.5	<b>032H8043</b>

## Coils for EV210A

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

## Cable plugs, IP65 enclosure

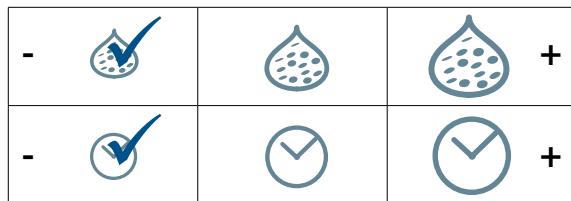
To use with all AP, AM coils		
To use with AP, AM coils - 24 V AC and DC		
To use with AP, AM coils - 230 V AC		

## 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	

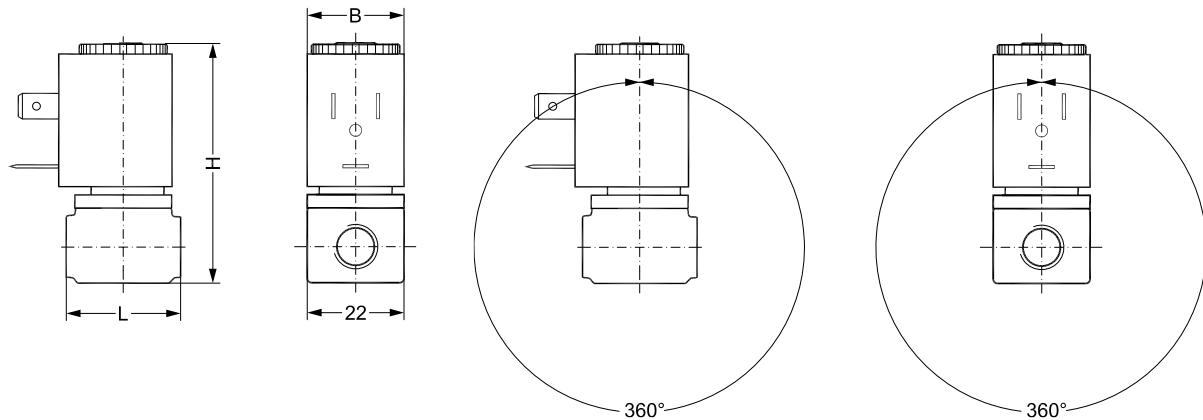
# EV310A direct-operated 3/2-way compact solenoid valves



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" – 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 <sub>v</sub> [m <sup>3</sup> /h]	Media Oil / Air	Seal material	Differential pressure [bar] AM coil AC / DC Oil	AM coil AC / DC Air	Code number
EV310A 1.5	G 1/8	0.07	✓	FKM	0 – 5	0 – 12	<b>032H8087</b>
EV310A 2.0	G 1/8	0.08	✓	FKM	0 – 4	0 – 8	<b>032H8089</b>
EV310A 1.2	G 1/4	0.04	✓	FKM	0 – 9	0 – 20	<b>032H8095</b>
EV310A 1.5	G 1/4	0.07	✓	FKM	0 – 5	0 – 12	<b>032H8097</b>
EV310A 2.0	G 1/4	0.08	✓	FKM	0 – 4	0 – 8	<b>032H8099</b>



## EV310A direct-operated valve, brass, NO

Type	Connection	K <sub>v</sub> [m <sup>3</sup> /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	<b>032H8125</b>



## Coils for EV310A

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



## Cable plugs, IP65 enclosure

To use with all AP, AM coils	<b>042N0156</b>	<b>042N0156</b>
To use with AP, AM coils - 24 V AC and DC	<b>042N0263</b>	<b>042N0263</b>
To use with AP, AM coils - 230 V AC	<b>042N0265</b>	<b>042N0265</b>



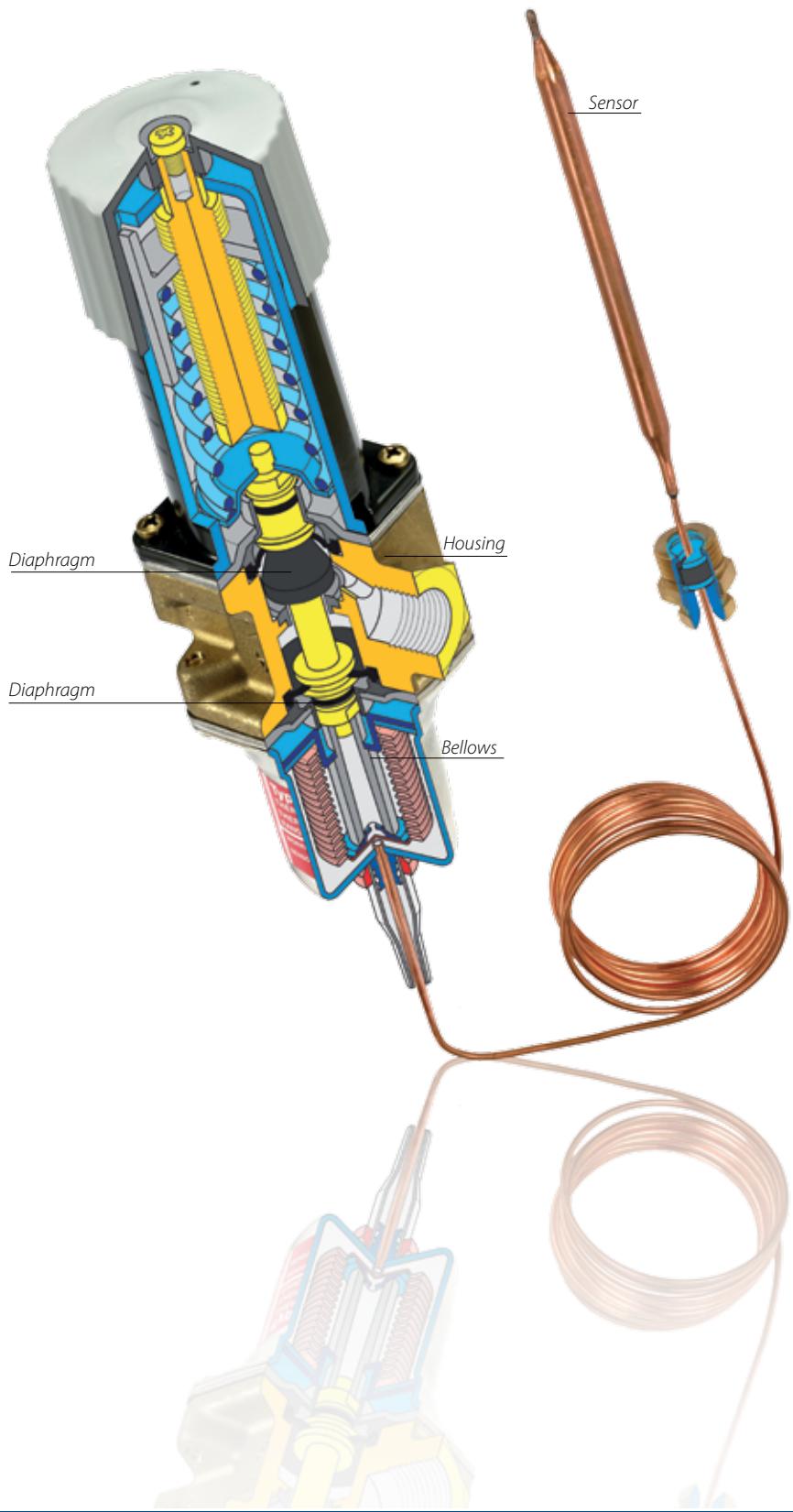
## Accessories for EV310A

### 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	<b>042N0185</b>



# 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.

## **In 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.

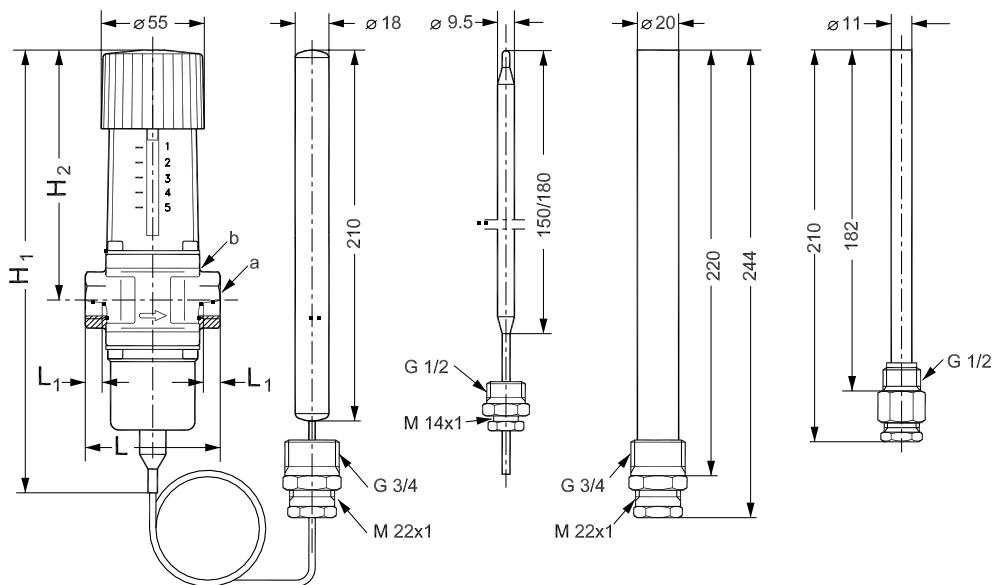
# AVTA thermostatic valves for industrial cooling applications



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	Weight [kg]
AVTA 10	240	133	72	14	$G\ \frac{3}{8}$	27	1.45
AVTA 15	240	133	72	14	$G\ \frac{1}{2}$	27	1.45
AVTA 20	240	133	90	16	$G\ \frac{3}{4}$	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 <sub>v</sub> [m <sup>3</sup> /h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 10	G 3/8	10 – 80	130	1.4	9.5 x 150	2.3	003N1144
AVTA 15	G 1/2	10 – 80	130	1.9	9.5 x 150	2.3	003N0107
AVTA 20	G 3/4	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 <sub>v</sub> [m <sup>3</sup> /h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 10	G 3/8	0 – 30	57	1.4	18 x 210	2	003N1132
AVTA 15	G 1/2	0 – 30	57	1.9	18 x 210	2	003N2132
AVTA 20	G 3/4	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 3/8	25 – 65	90	1.4	18 x 210	2	003N1162
AVTA 15	G 1/2	25 – 65	90	1.9	18 x 210	2	003N2162
AVTA 20	G 3/4	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 3/8	50 – 90	125	1.4	18 x 210	2	003N1182
AVTA 15	G 1/2	50 – 90	125	1.9	18 x 210	2	003N2182
AVTA 20	G 3/4	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 <sub>v</sub> [m <sup>3</sup> /h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 15	G 1/2	0 – 30	57	1.9	9.5 x 180	2	003N0042
AVTA 20	G 3/4	0 – 30	57	3.4	9.5 x 180	2	003N0043
AVTA 15	G 1/2	25 – 65	90	1.9	9.5 x 180	2	003N0045
AVTA 20	G 3/4	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 <sub>v</sub> [m <sup>3</sup> /h]	Sensor dimensions ø x L [mm]	Capillary tube, length [m]	Code number
AVTA 15	G 1/2	10 – 80	130	1.9	9.5 x 150	2.3	003N2150
AVTA 20	G 3/4	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.

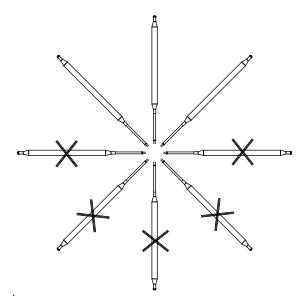
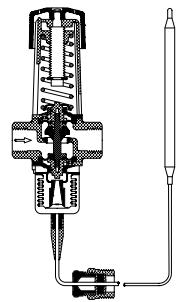
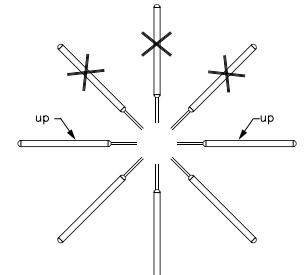
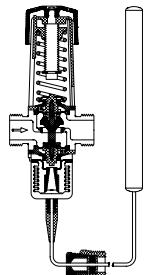
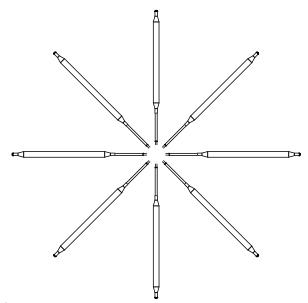
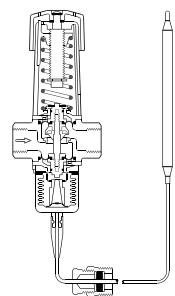
Ask Danfoss or your local wholesaler if larger size than G1 is needed

## Charges

### Adsorption charge

The charge consists of active carbon and CO<sub>2</sub> 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 always 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

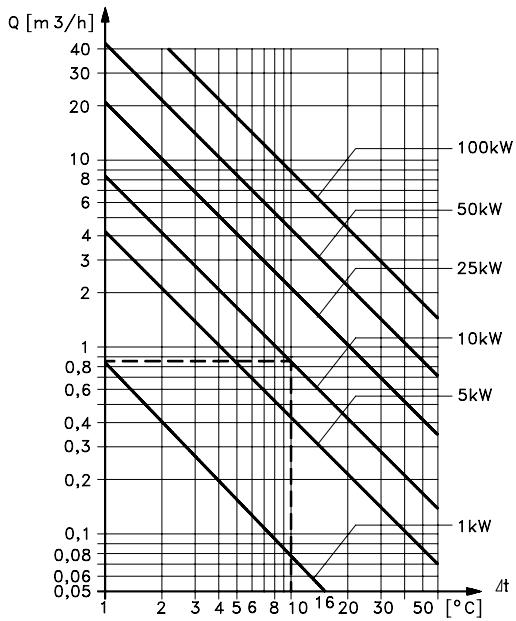


### Bracket

Type	Material	Code number
Bracket	Zinc plated steel	003N0388

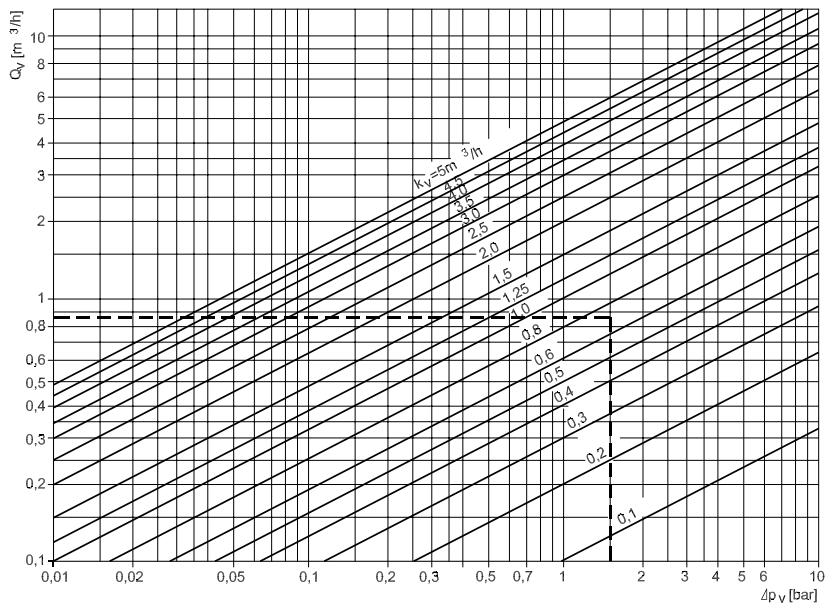


## AVTA thermostatic valve - sizing



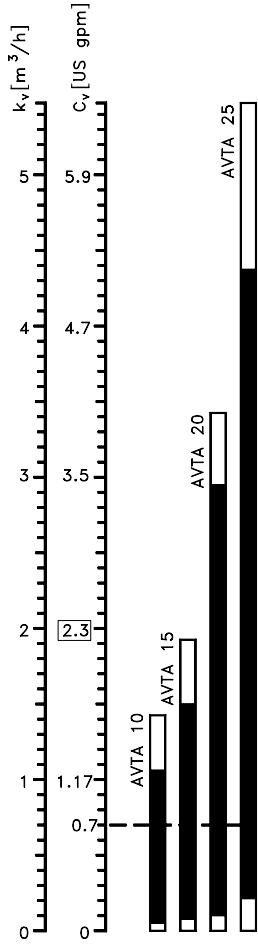
Heating or cooling with water.

Example: Necessary cooling output 10 kW with  $\Delta t = 10^\circ\text{C}$ .  
Required flow 0.85  $\text{m}^3/\text{h}$ .



Relation between water quantity and pressure drop across valve.

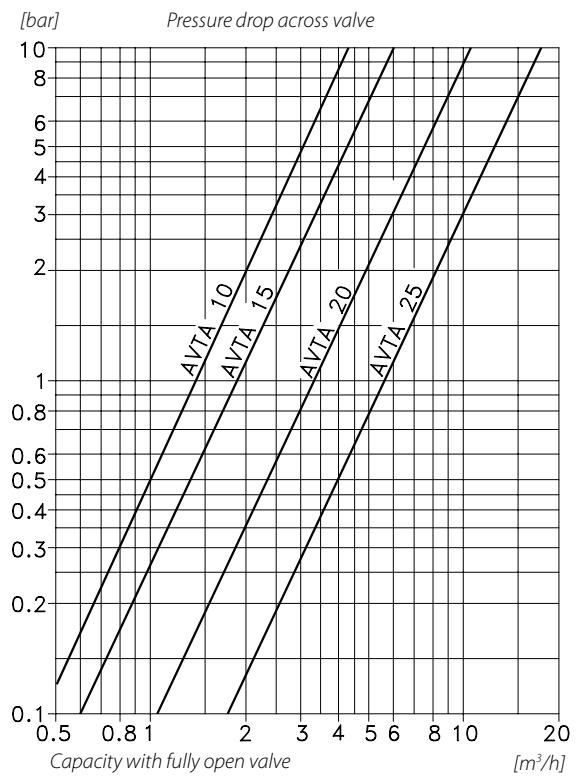
Example: Flow 0.85  $\text{m}^3/\text{h}$  with a pressure drop of 1.5 bar.  
The  $k_v$  value becomes 0.7  $\text{m}^3/\text{h}$ .



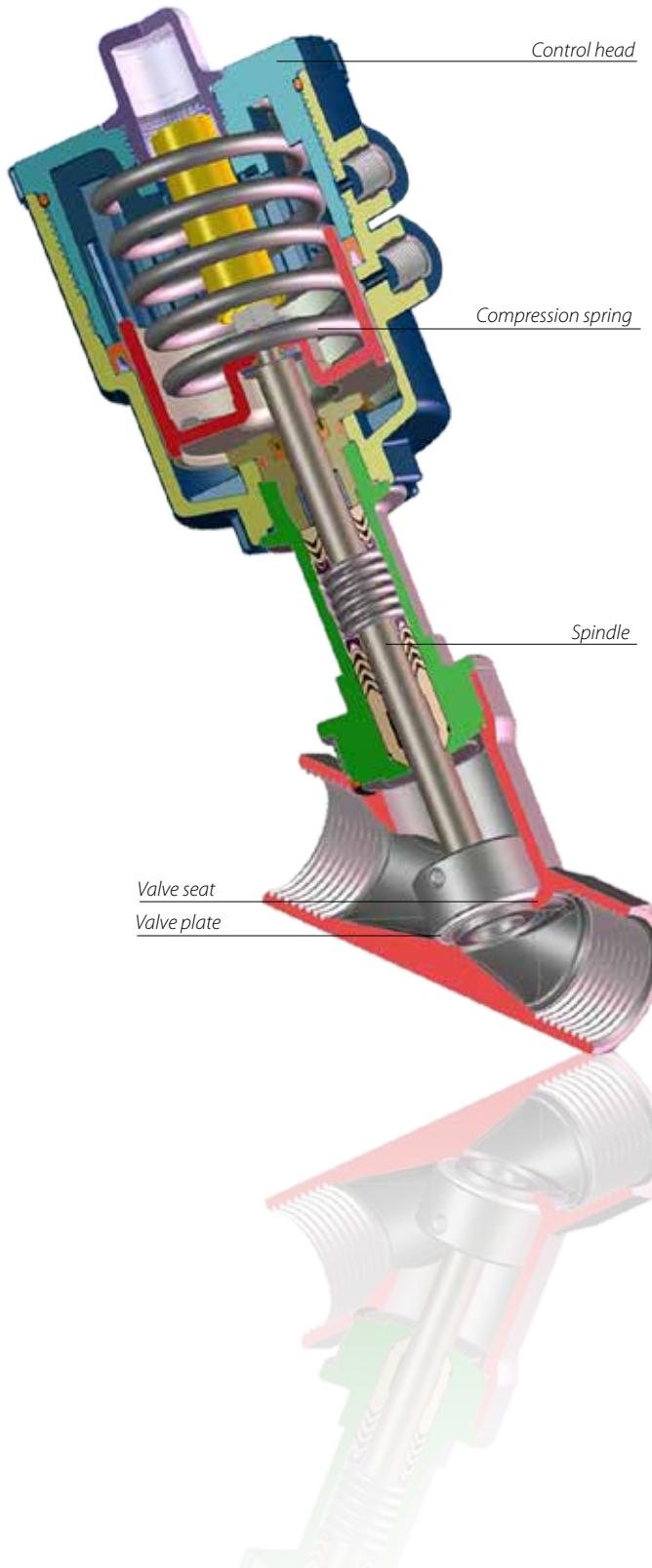
Nomogram showing the valve  $k_v$  range.  
 $k_v$  values are always given for water flow in  $\text{m}^3/\text{h}$  with a pressure drop  $\Delta p$  of 1 bar.  
The valve should be selected so that the necessary  $k_v$  value lies in the middle of the regulation range.

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  $\Delta p$ .  
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.

## In 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

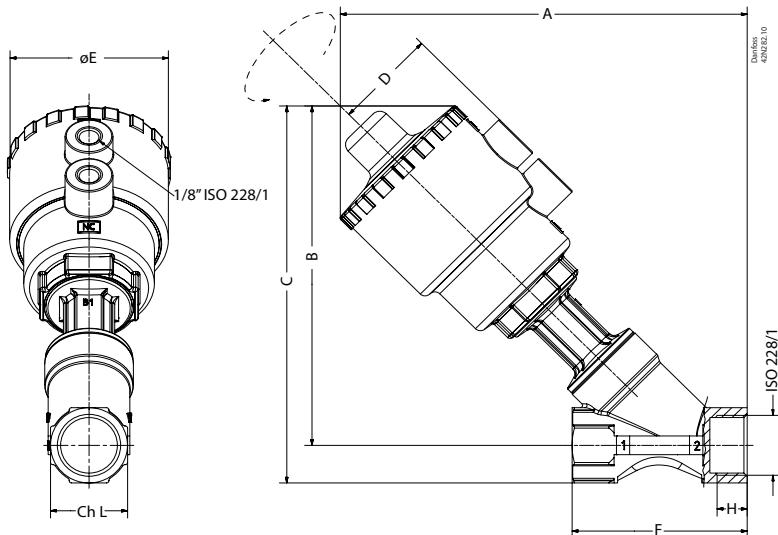
# AV210 externally operated valves



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 an EV310A / EV310B 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 3/8	40	190/144	156/121	169/134	44/35	70/61	85/65	12/12	25/27	1.1
15	G 3/8	50	- / 163	- / 140	- / 153	- / 44	- / 70	- / 65	- / 12	- / 27	1.1
15	G 1/2	40	- / 144	- / 121	- / 134	- / 35	- / 61	- / 65	- / 13	- / 27	1
15	G 1/2	50	190/163	156/140	169/153	44/44	70/70	85/65	15/13	25/27	1
20	G 3/4	50	195/173	160/147	176/163	44/44	70/70	95/75	16.3/14.3	31/27.5	1.2
20	G 3/4	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 1/4	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 1/2	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 1/2	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 <sub>v</sub> [m <sup>3</sup> /h]	Body material	Differential pressure [bar]	Control pressure [bar]	Control head diameter ø [mm]	Code number
AV210A 15	G 3/8	4.5	✓ Bronze RG5	0 – 16	4.2 – 10	40	<b>042N4400</b>
AV210B 15	G 3/8	4.9	✓ Stainless steel	0 – 16	4 – 10	50	<b>042N4401</b>
AV210B 15	G 3/8	4.9	✓ Stainless steel	0 – 16	4 – 10	50	<b>042N4450</b>
AV210A 15	G 1/2	5.3	✓ Bronze RG5	0 – 16	4.2 – 10	40	<b>042N4402</b>
AV210B 15	G 1/2	5.7	✓ Stainless steel	0 – 16	4 – 10	50	<b>042N4403</b>
AV210B 15	G 1/2	5.7	✓ Stainless steel	0 – 16	4 – 10	50	<b>042N4451</b>
AV210B 20	G 3/4	10	✓ Stainless steel	0 – 10	4 – 10	50	<b>042N4404</b>
AV210B 20	G 3/4	10	✓ Stainless steel	0 – 10	4 – 10	50	<b>042N4452</b>
AV210C 20	G 3/4	10	✓ Stainless steel	0 – 16	4 – 10	63	<b>042N4453</b>
AV210C 25	G 1	20	✓ Stainless steel	0 – 11	4 – 10	63	<b>042N4406</b>
AV210D 25	G 1	20	✓ Stainless steel	0 – 16	4 – 8	90	<b>042N4407</b>
AV210C 25	G 1	20	✓ Stainless steel	0 – 11	4 – 10	63	<b>042N4454</b>
AV210D 25	G 1	20	✓ Stainless steel	0 – 16	4 – 8	90	<b>042N4455</b>
AV210D 32	G 1 1/4	29	✓ Stainless steel	0 – 14	4 – 8	90	<b>042N4408</b>
AV210D 32	G 1 1/4	29	✓ Stainless steel	0 – 14	4 – 8	90	<b>042N4456</b>
AV210D 40	G 1 1/2	46	✓ Stainless steel	0 – 11	4 – 8	90	<b>042N4409</b>
AV210D 40	G 1 1/2	46	✓ Stainless steel	0 – 11	4 – 8	90	<b>042N4457</b>
AV210E 50	G 2	67	✓ Stainless steel	0 – 10	4 – 8	110	<b>042N4411</b>
AV210E 50	G 2	67	✓ Stainless steel	0 – 10	4 – 8	110	<b>042N4459</b>

## AV210 externally operated valves, PTFE seal material, NO

Closing against flow recommended



Type	Connection	K <sub>v</sub> [m <sup>3</sup> /h]	Body material	Differential pressure [bar]	Control pressure [bar]	Control head diameter ø [mm]	Code number
AV210B 15	G 3/8	4.9	✓ Stainless steel	0 – 16	5 – 10	50	<b>042N4480</b>
AV210B 15	G 1/2	5.7	✓ Stainless steel	0 – 16	5 – 10	50	<b>042N4431</b>
AV210B 15	G 1/2	5.7	✓ Stainless steel	0 – 16	5 – 10	50	<b>042N4481</b>
AV210B 20	G 3/4	10	✓ Stainless steel	0 – 16	5 – 10	50	<b>042N4432</b>
AV210B 20	G 3/4	10	✓ Stainless steel	0 – 16	5 – 10	50	<b>042N4482</b>
AV210C 25	G 1	20	✓ Stainless steel	0 – 16	5 – 10	63	<b>042N4433</b>
AV210C 25	G 1	20	✓ Stainless steel	0 – 16	5 – 10	63	<b>042N4483</b>
AV210C 32	G 1 1/4	29	✓ Stainless steel	0 – 16	6 – 10	63	<b>042N4434</b>
AV210C 32	G 1 1/4	29	✓ Stainless steel	0 – 16	6 – 10	63	<b>042N4484</b>
AV210D 40	G 1 1/2	46	✓ Stainless steel	0 – 16	5 – 10	90	<b>042N4435</b>
AV210D 40	G 1 1/2	46	✓ Stainless steel	0 – 16	5 – 10	90	<b>042N4485</b>
AV210E 50	G 2	67	✓ Stainless steel	0 – 16	5 – 10	110	<b>042N4436</b>
AV210E 50	G 2	67	✓ Stainless steel	0 – 16	5 – 10	110	<b>042N4486</b>

\* 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

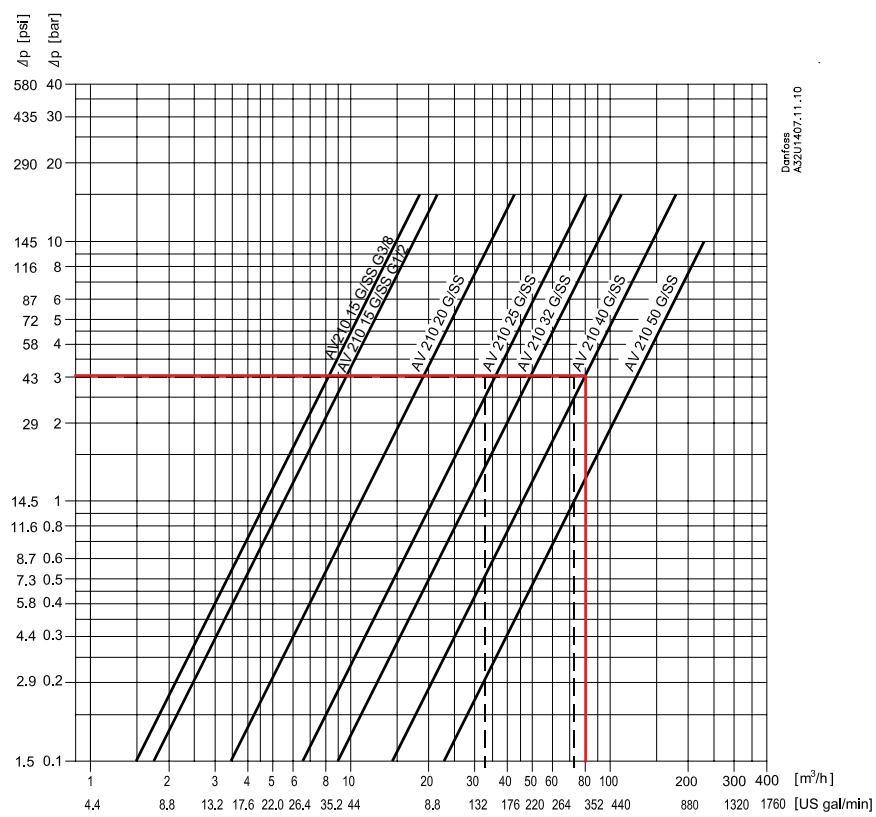


Enclosure	Control head diameter $\varnothing$ [mm]	Code number
IP65	50	042N4820
IP65	63	042N4821
IP65	90	042N4822
IP65	110	042N4823

### Capacity diagram, water

Example for water:

Capacity for AV 210 40 at differential pressure of 3 bar:  
Approx 80 m<sup>3</sup>/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					
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 4510

MBS 9200

MBS 3100

MBS 3150

MBS 5100

MBS 5150

MBS 9300

EMP 2

MBS 3250



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 psi25 bar  
360 psi250 mbar  
3.62 psi600 bar  
9,000 psi600 bar  
9,000 psi600 bar  
9,000 psi600 bar  
9,000 psi250 mbar  
3.62 psi400 bar  
6,000 psi4 – 20 mA  
and absolute  
voltage

4 – 20 mA

4 – 20 mA or  
Ratiometric

4 – 20 mA

-40 – 125 °C  
-40 – 257 °F-10 – 85 °C  
14 – 185 °F-40 – 85 °C  
-40 – 185 °F-40 – 100 °C  
-40 – 212 °FIP65  
IP67

IP65

IP65

IP65  
IP67

IP65

IP65

IP65

IP65

IP67

AISI 316L

AISI 316L,  
PA 6.6AISI 316L,  
PA 6.6

AI

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Zone 2

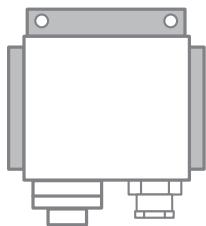
Class 1,  
Div. 2Class 1,  
Div. 2

# 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.

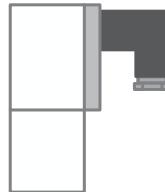
Danfoss has followed this development closely, and as a result we now have a programme of products perfectly aligned to our customer's needs.

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.

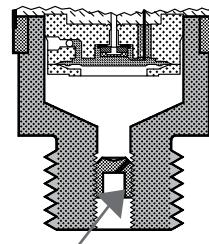
Cartridge transmitter with flush diaphragm



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

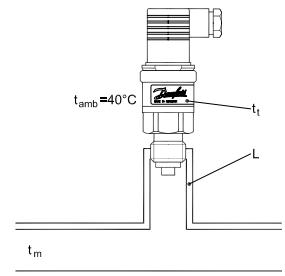
In applications where there is a risk of liquid hammering and cavitation it is recommended to select a transmitter with an integral pulse-snubber. The Danfoss pressure transmitters with a pulse-snubber are indicated with a "5" in the third type digit (example: MBS 1750).



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

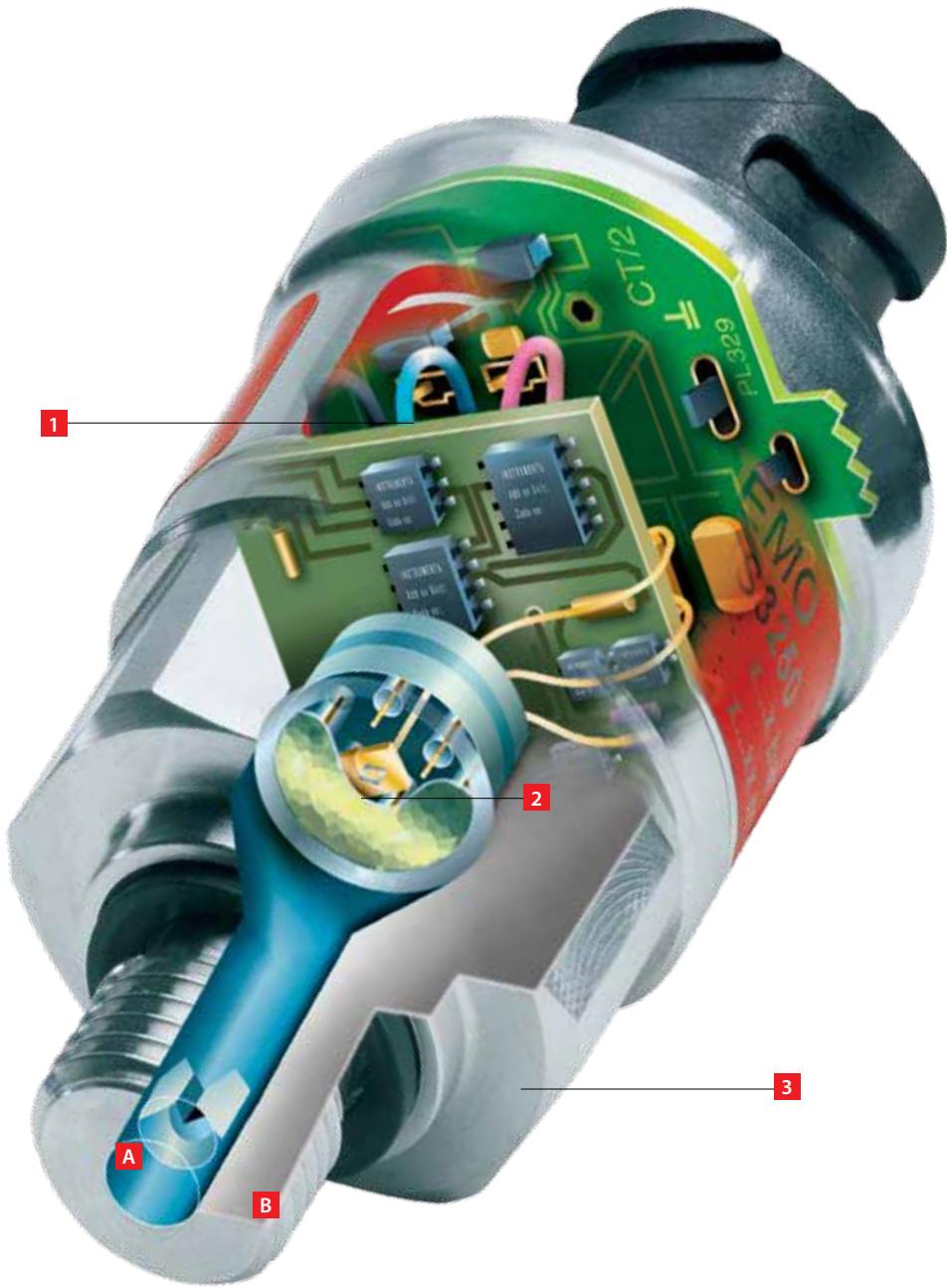
- Piezoresistive semi-conductor technology covering pressure ranges: 0 – 600 bar.

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**

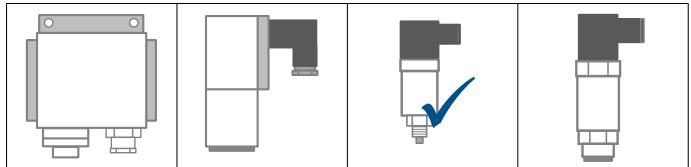


*A variety of process connections available*

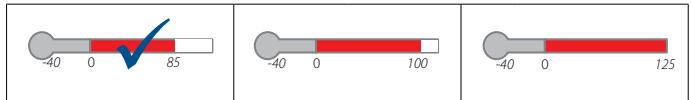
# MBS 1700 compact pressure transmitter



Design



Temperature °C

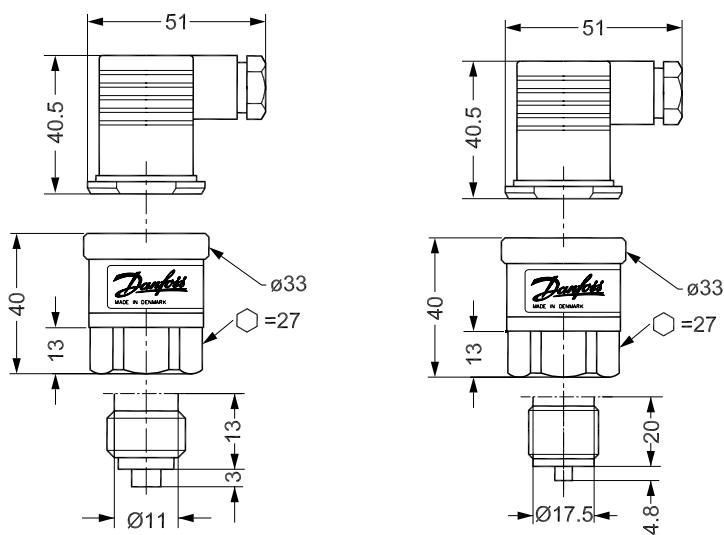


Pressure transmitter, type MBS 1700 is designed to a variety of applications and easy installations within the distributor market. The transmitter offers highly reliable pressure measurement, ensuring that even the slightest change is detected immediately.

- 4 – 20 mA output signal
- Measuring range: 0 – 25 bar
- Pressure connection G 1/4 A (EN 837) and G 1/2 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 <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection		Code number
	G 1/2 EN 837	G 1/4 EN 837	
0 – 6		✓	060G6100
0 – 6	✓		060G6104
0 – 10		✓	060G6101
0 – 10	✓		060G6105
0 – 16		✓	060G6102
0 – 16	✓		060G6106
0 – 25		✓	060G6103
0 – 25	✓		060G6107

<sup>1)</sup> 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 1/2 female – G 1/4 male	060G1021
G 1/2 female – G 1/4 male (DIN 3852) male	060G1022
G 1/2 female – G 3/8 male	060G1023
G 1/2 female – G 1/4 flare male	060G1024
G 1/2 female with pulse-snubber	060G0252

### Plug in display

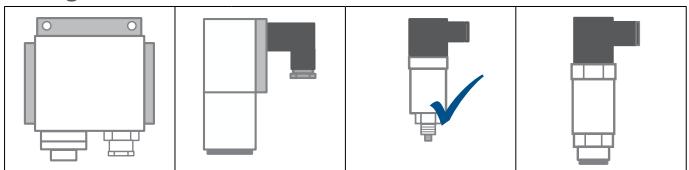


Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	060G2850

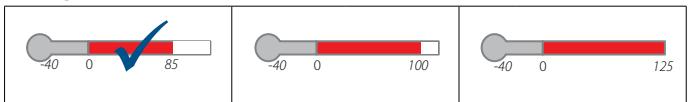
# MBS 1750 compact pressure transmitters with pulse-snubber



Design



Temperature

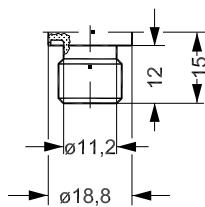
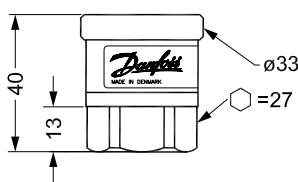
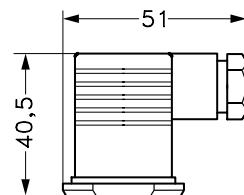


Pressure transmitter, type MBS 1750 is designed to a variety of applications and easy to install especially where cavitation, liquid hammer or pressure peaks can occur. The transmitter offers highly reliable pressure measurement, ensuring that even the slightest change is detected immediately.

- 4 – 20 mA output signal
- Measuring range: 0 – 400 bar
- Pressure connection G 1/4 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 <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection G 1/4 DIN3852-E	Code number
0 – 60	✓	<b>060G6108</b>
0 – 100	✓	<b>060G6112</b>
0 – 160	✓	<b>060G6109</b>
0 – 400	✓	<b>060G6111</b>

<sup>1)</sup> Gauge / relative

## Spare parts and accessories

### Plug



Description	Code number
EN-175301-803-A, Pg 9 plug	<b>060G0008</b>
EN-175301-803-A, plug with 5 m cable	<b>060G1034</b>

### Adapters



Description	Code number
G 1/2 female – G 1/4 male	<b>060G1021</b>
G 1/2 female – G 1/4 (DIN3852) male	<b>060G1022</b>
G 1/2 female – G 3/8 male	<b>060G1023</b>
G 1/2 female – 1/4 flare male	<b>060G1024</b>
G 1/2 with pulse-snubber	<b>060G0252</b>

### Plug in display

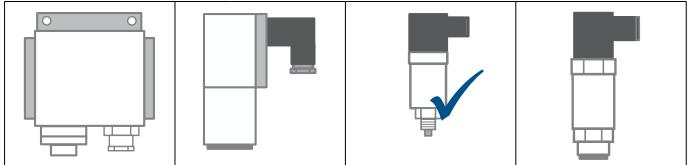


Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	<b>060G2850</b>

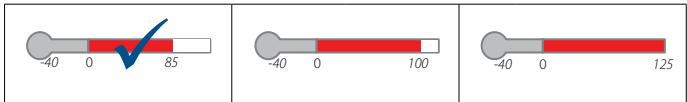
# MBS 3000 compact pressure transmitter



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.

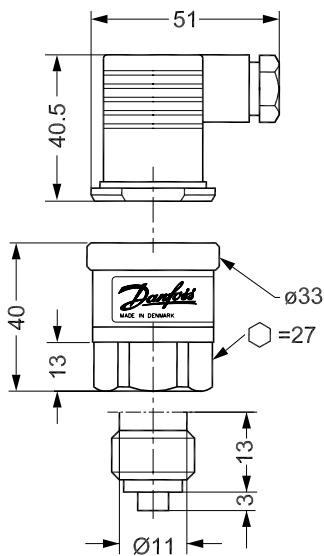
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.

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 1/4 A
- 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 <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection		Output signal			Code number
	G 1/4 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 – 60	✓		✓			060G1106
0 – 100	✓		✓			060G1107
0 – 160	✓		✓			060G1112
0 – 250	✓		✓			060G1111
0 – 400	✓		✓			060G1109
0 – 600	✓		✓			060G1110

<sup>1)</sup> 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

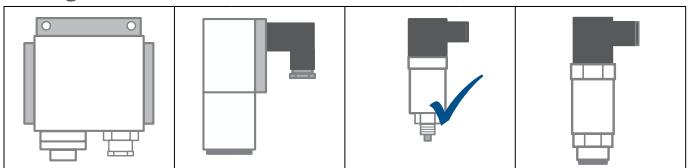


Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	060G2850

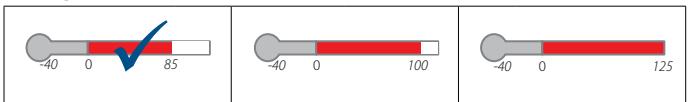
# MBS 3050 compact pressure transmitters with pulse snubber



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.

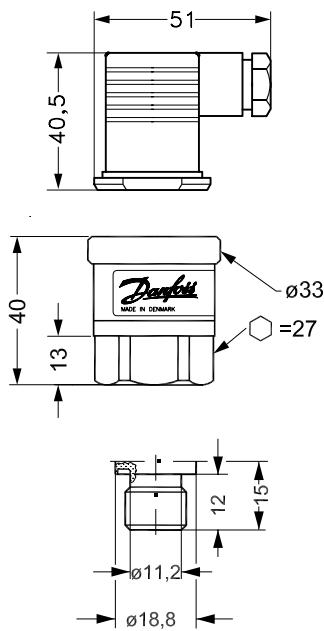
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.

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 1/4 A
- 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 <sub>e</sub> [bar] <sup>1)</sup>	Output signal [mA]	[V]	Pressure connection G 1/4 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

<sup>1)</sup>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

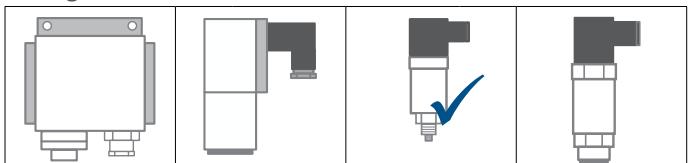


Description	Code number
EN 175301-803-A, Pg 9 plug	060G0008
En 175301-803-A, Pg 11 plug	060G0007
En 175301-803-A, plug with 5 m cable	060G1034

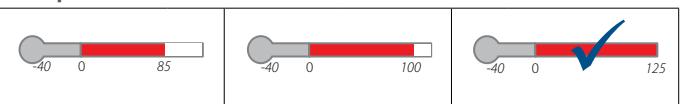
# MBS 3200 compact pressure transmitters



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.

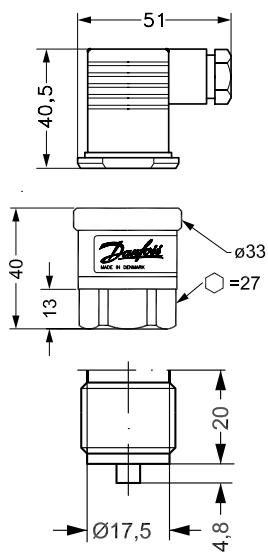
The flexible pressure transmitter programme covers 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 – 10V output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure and electrical connections. Excellent vibration stability, robust construction, 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 <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection G 1/2 EN 837	Code number
0 – 6	✓	060G1874
0 – 10	✓	060G1875
0 – 16	✓	060G1876
0 – 25	✓	060G1877

<sup>1)</sup> 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

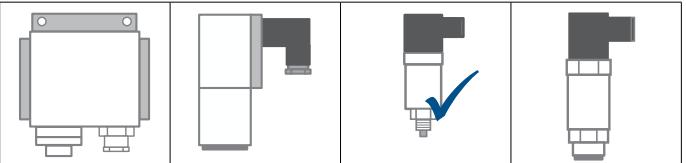


Description	Code number
G 1/2 female – G 1/4 male	060G1021
G 1/2 female – G 1/4 (DIN3852) male	060G1022
G 1/2 female – G 3/8 male	060G1023
G 1/2 female – 1/4 flare male	060G1024
G 1/2 with pulse-snubber	060G0252

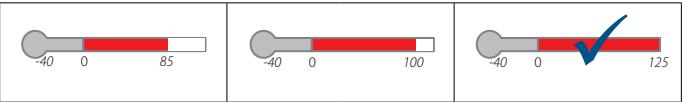
# MBS 3250 compact pressure transmitters with pulse-snubber



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.

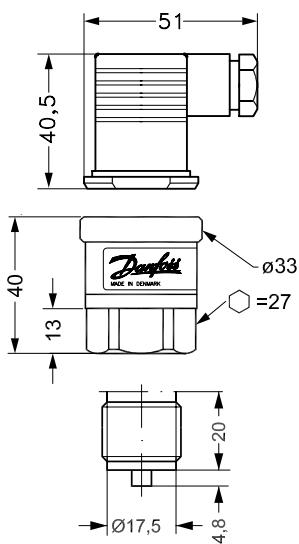
The flexible heavy duty pressure transmitter programme covers 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 – 10V output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.

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 – 10V 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 <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection G 1/4 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

<sup>1)</sup> 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 1/2 female – G 1/4 male	060G1021
G 1/2 female – G 1/4 (DIN3852) male	060G1022
G 1/2 female – G 3/8 male	060G1023
G 1/2 female – 1/4 flare male	060G1024

# MBS 4510 flush diaphragm pressure transmitter

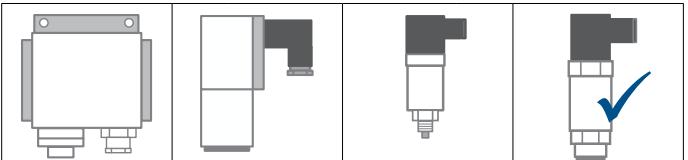


The high accuracy flush diaphragm pressure transmitter MBS 4510 is designed for use in non-uniform, high viscous or crystallizing media within industry, food and beverage, and offers a reliable pressure measurement, even under harsh environmental conditions.

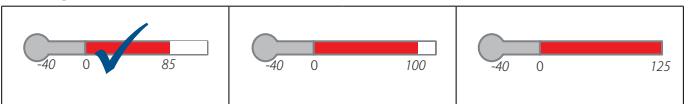
The pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 250 mbar til 0 – 25 bar, zero point and span adjustment, plug connection and a G1A conic pressure connection with a flush mounted diaphragm.

Excellent vibration stability, robust construction, and a high

## Design



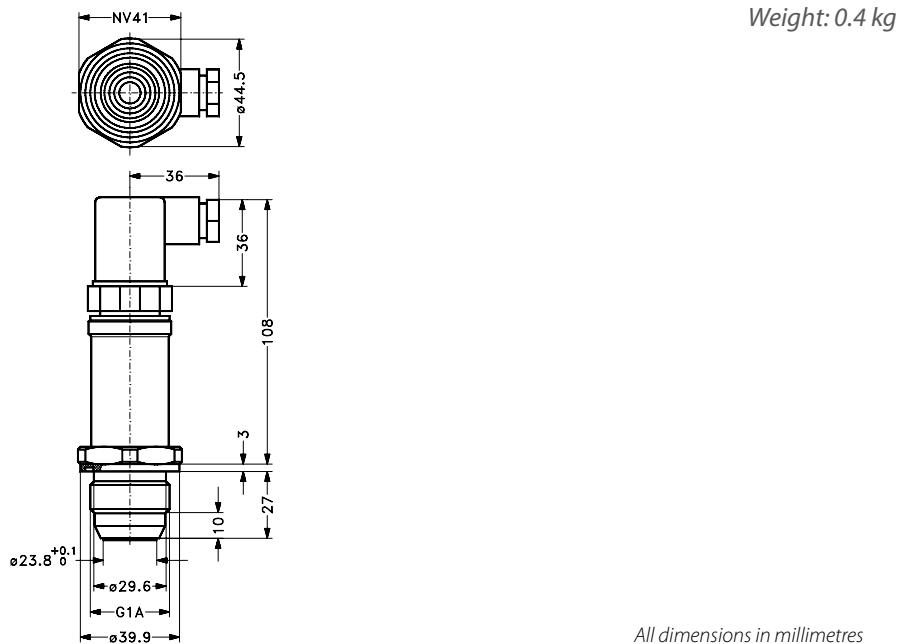
## Temperature



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 mbar 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:



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 <sub>e</sub> [bar] <sup>1)</sup>	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

<sup>1)</sup> Gauge / relative

## Spare parts and accessories for MBS 4510

### Adapters

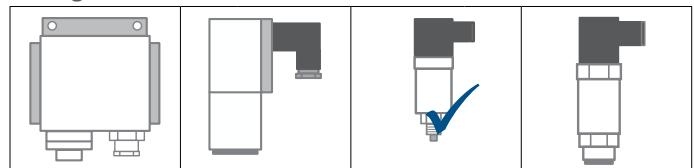


Description	Code number
Welding nipple for conic metal/metal seal	060G2501
DIN 11851 (diary connection) DN40	060G2505
DIN 11851 (diary connection) DN50	060G2506
Clamp, ISO 2852, 1½ in	060G2502
Clamp, ISO 2852, 2 in	060G2510
SMS 1145 connection, 1½ in	060G2503

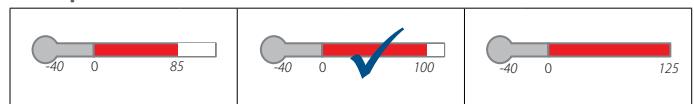
# MBS 9200 Low pressure transmitter



Design



Temperature



The compact pressure transmitter MBS 9200 is designed for use in industrial applications e.g. crankcase and turbocharger on industrial engines, filter monitoring as well as applications within level measurement.

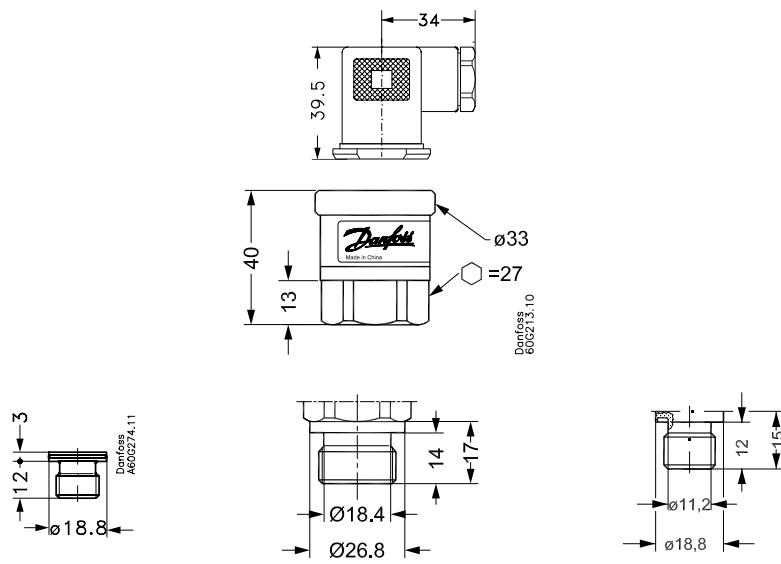
The programme cover 4 – 20 mA and ratiometric output signal, gauge versions, pressure span from 40 – 250 mbar as well as bidirectional ranges e.g. -70 – 70 mbar etc.

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:  $\pm 0.5 - \pm 2\%$  FSS (depending on pressure span)

Media temperature:  $-25^\circ - 100^\circ\text{C}$  (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 $P_e$ [bar] <sup>1)</sup>	Pressure connection		Gasket		Code numbers
	DIN 3852-E-G1/4 Gasket: DIN 3869-14	DIN 3852-E-G1/4 Gasket: DIN 3869-14	FPM	NBR	
- 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

<sup>1)</sup>) 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



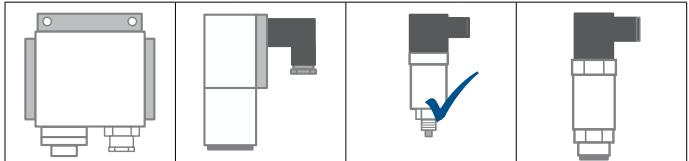
### Plug in display

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

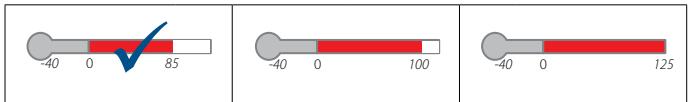
# MBS 3100 compact pressure transmitter



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.

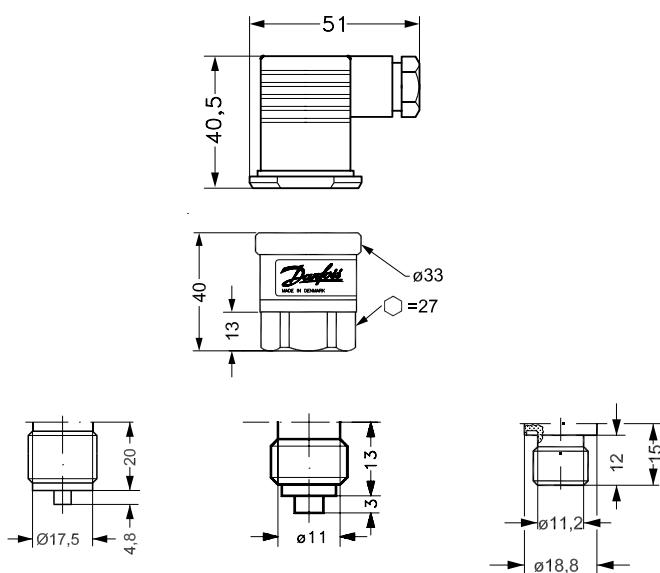
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar, plug and cable connections and a wide range of pressure connections.

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 1/4 A EN 837, G 1/4 A, O-ring DIN 3852 G 1/2 A 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 $P_e$ [bar] <sup>1)</sup>	Pressure connection			Code numbers
	G 1/4 A EN 837	G 1/4 A, O-ring DIN 3852	G 1/2 A EN 837	
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 <sup>2)</sup>			✓	060G5600
-1 – 5 <sup>2)</sup>			✓	060G5601
0 – 4			✓	060G1469
0 – 6			✓	060G1470
0 – 10			✓	060G1471
0 – 16			✓	060G1472
0 – 25			✓	060G1473
0 – 40			✓	060G3388

<sup>1)</sup> Gauge / relative

<sup>2)</sup> 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 1/2 female – G 1/4 male	060G1021
G 1/2 female – G 1/4 (DIN 3852) male	060G1022
G 1/2 female – 3/8 male	060G1023
G 1/2 female – 1/4 flare male	060G1024
G 1/2 female with pulse-snubber	060G0252



### Plug in display

Type	Description	Code number
MBD 1000	Microprocessor controlled plug-in display	<b>060G2850</b>

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



Type	Female thread	Male thread	Code number
MBV 2000	G 1/4 DIN 3852	G 1/4 DIN 3852-E	<b>061B6001</b>
MBV 2000	G 1/4 DIN 3852	G 1/2 DIN 3852-E	<b>061B6002</b>
MBV 2000	G 1/2 DIN 3852	G 1/2 A DIN 3852-E	<b>061B6003</b>

### Test valve

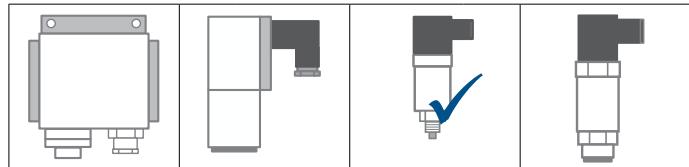


Type	Pressure range, bar	Pressure connection	Transmitter connection	Code number
MBV 3000	0 – 120	DIN 3852-E-G 1/4	DIN 3852-X-G 1/2	<b>061B6100</b>

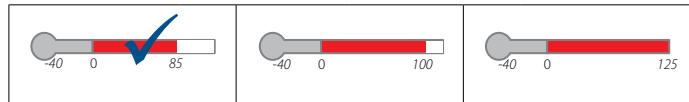
# MBS 3150 compact pressure transmitter with pulse-snubber



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.

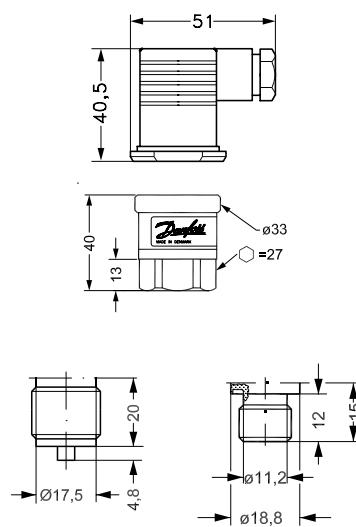
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar, plug and cable connections and a wide range of pressure connections.

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 1/4 A, O-ring DIN 3852, G 1/2 A 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 P <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection		Code numbers
	G 1/2 A EN 837	G 1/4 A, O-ring DIN 3852	
0 – 6	✓		060G1476
0 – 10	✓		060G1477
0 – 6		✓	060G1474
0 – 10		✓	060G1475

<sup>1)</sup> 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 1/2 female to G 1/4 male	060G1021
G 1/2 female to G 1/4 (DIN 3852) male	060G1022
G 1/2 female to 3/8 male	060G1023
G 1/2 female to 1/4 flare male	060G1024
G 1/2 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 1/4 DIN 3852	G 1/4 DIN 3852-E	061B6001
MBV 2000	G 1/4 DIN 3852	G 1/2 DIN 3852-E	061B6002
MBV 2000	G 1/2 DIN 3852	G 1/2 A DIN 3852-E	061B6003

### Test valve

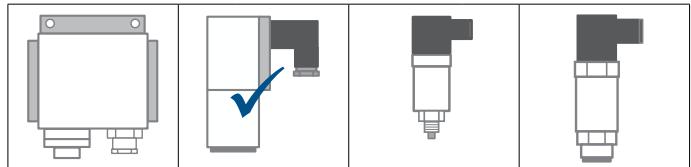


Type	Pressure range, bar	Pressure connection	Transmitter connection	Code number
MBV 3000	0 – 120	DIN 3852-E-G 1/2	DIN 3852-X-G 1/4	061B6100

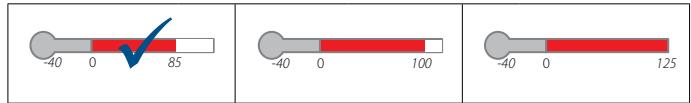
# MBS 5100 pressure transmitter



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.

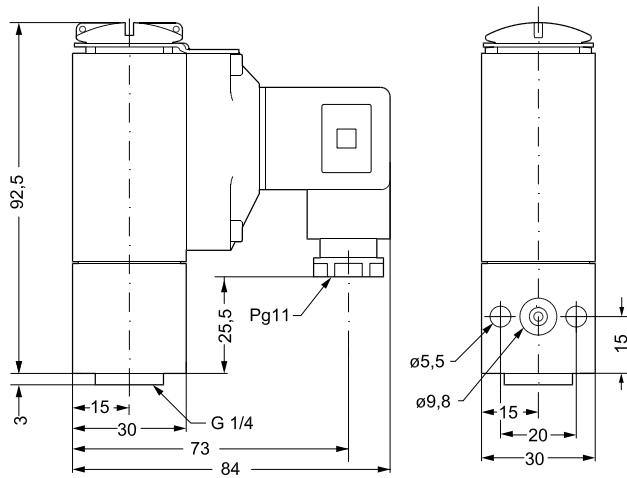
Excellent vibration stability, robust construction, and a high

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 1/4 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] <sup>1)</sup>	Pressure connection G 1/4 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

<sup>1)</sup> 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

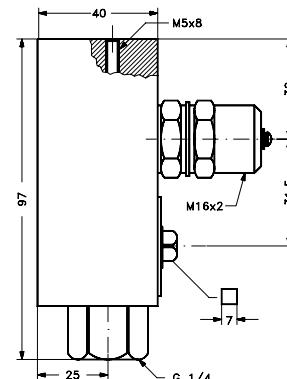
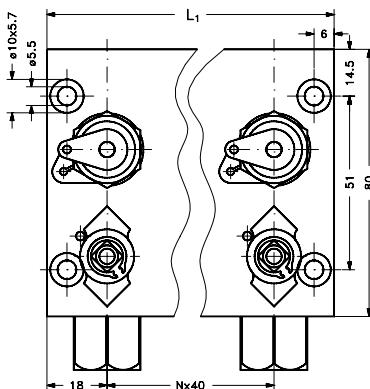
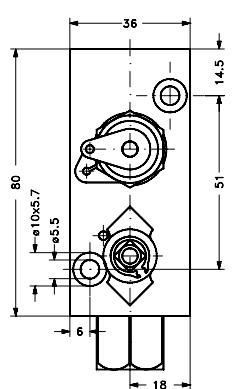
Media temperature: -20 – 120 °C

Pressure connection: G 1/4 (Input)

Flange / M5 x 8 (Output)



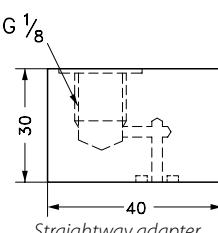
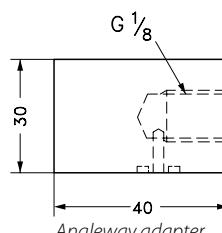
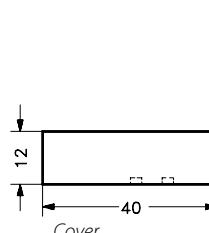
Output no.	Length (L <sub>1</sub> ) mm	Code numbers
x1	36	061B7000
x2	76	061B7001
x3	116	061B7002
x4	156	061B7003
x5	196	061B7004
x2	76	061B7005
x3	116	061B7006
x4	156	061B7007
x5	196	061B7008
x2	76	061B7009
x3	116	061B7010
x4	156	061B7011
x5	196	061B7012



Weight: 0.4 - 2 kg  
depending on the  
different  
configurations

All dimensions in millimetres

### Standard flange - G 1/8 adapters



#### Description

#### Code number

Cover

061B720001

Angleway adapter

061B720101

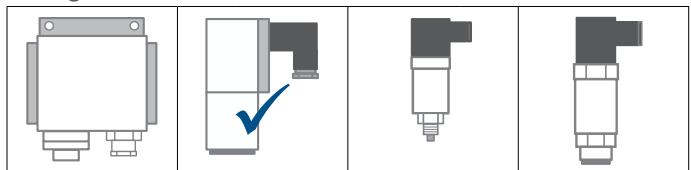
Straightway adapter

061B720201

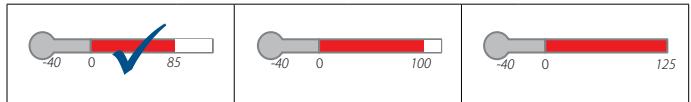
# MBS 5150 pressure transmitters with pulse-snubber



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.

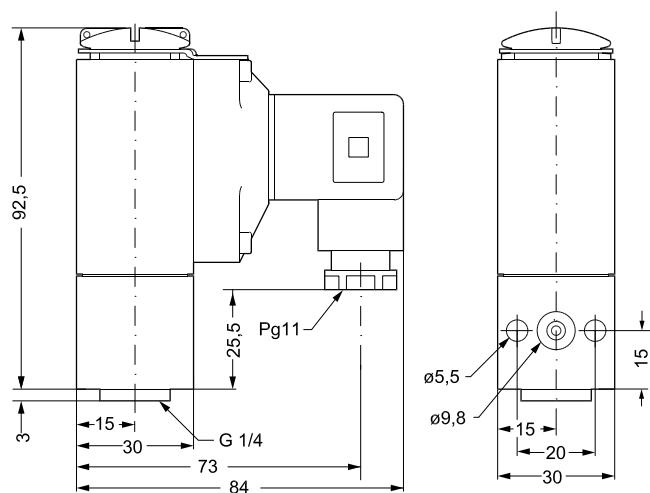
Excellent vibration stability, robust construction, and a high

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 1/4 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 <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection G 1/4 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

<sup>1)</sup> 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

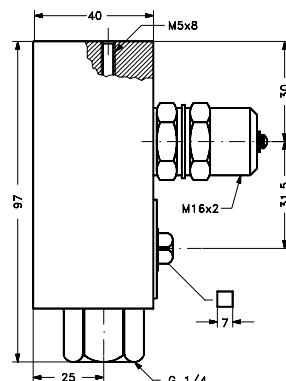
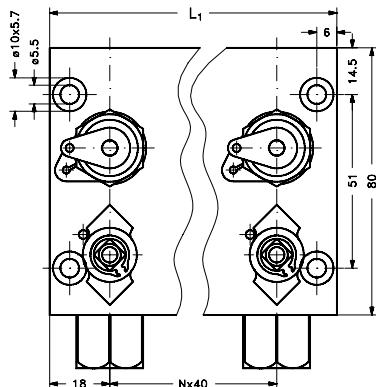
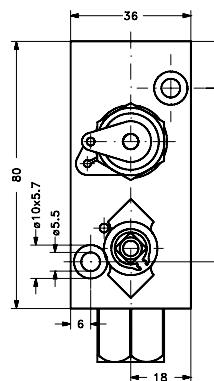
Media temperature: -20 – 120 °C

Pressure connection: G 1/4 (Input)

Flange / M5 x 8 (Output)

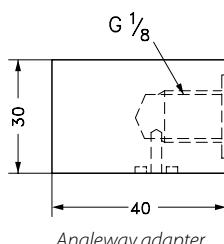
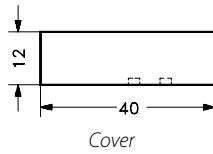


Output no.	Length (L <sub>i</sub> ) mm	Code numbers
x1	36	061B7000
x2	76	061B7001
x3	116	061B7002
x4	156	061B7003
x5	196	061B7004
x2	76	061B7005
x3	116	061B7006
x4	156	061B7007
x5	196	061B7008
x2	76	061B7009
x3	116	061B7010
x4	156	061B7011
x5	196	061B7012

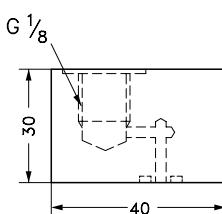


Weight: 0.4 - 2 kg  
depending on the  
different  
configurations

All dimensions in millimetres



Angleway adapter



Straightway adapter

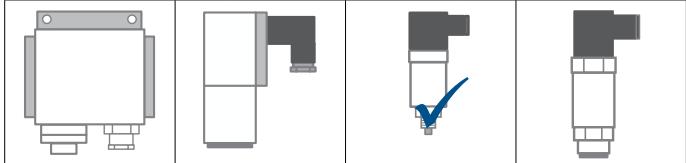
## Standard flange - G 1/8 adapters

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

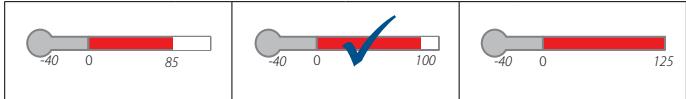
# MBS 9300 Low pressure transmitter



Design



Temperature



The compact pressure transmitter MBS 9300 is designed for use in marine applications e.g. crankcase and turbocharger on marine engines, filter monitoring as well as applications within level measurement.

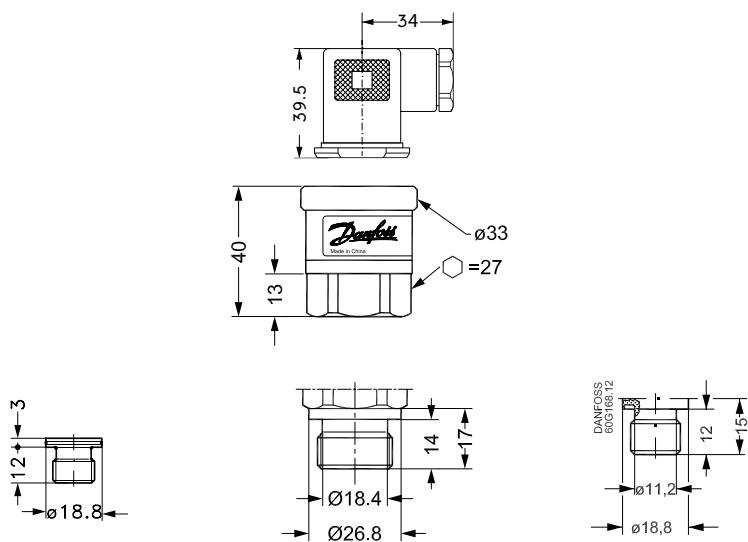
The programme cover 4 – 20 mA output signal, gauge versions, pressure span from 40 – 250 mbar as well as bidirectional ranges e.g. -70 – 70 mbar etc.

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-diagnostic 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:	$\pm 0.5 - \pm 2\%$ 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 $P_e$ [bar] <sup>1)</sup>	Pressure connection		Gasket		Code numbers
	DIN 3852-E-G1/4 Gasket: DIN 3869-14	DIN 3852-E-G1/2 Gasket: DIN 3869-14	FPM	NBR	
-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

<sup>1)</sup>) 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

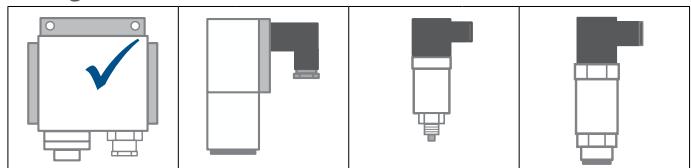


The ship approved pressure transmitter EMP 2 is designed for use in almost all marine and industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.

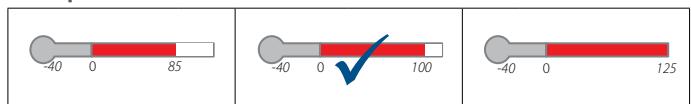
The pressure transmitter programme in box design covers a 4 – 20 mA output signal, gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 400 bar, zero point and span adjustment, Pg 13.5 cable entry and different pressure connections.

A robust construction enables the pressure transmitter to meet

## Design



## Temperature

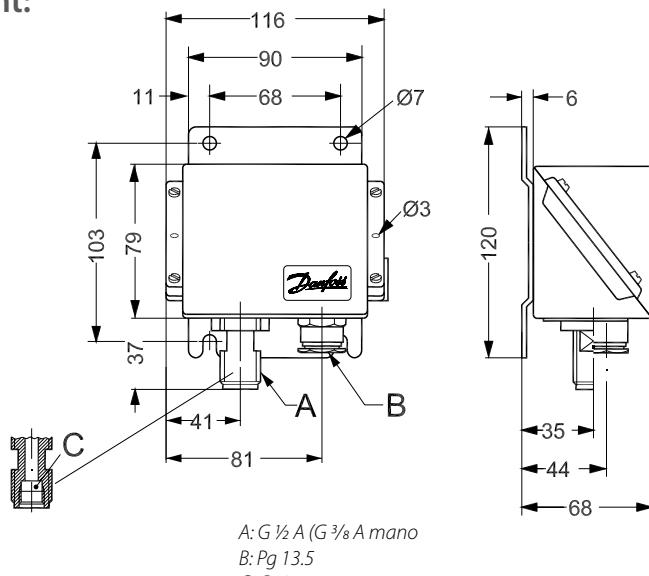


the strictest requirements.

- 4 – 20 mA output signal
- Operating temperature: -10 – 70 °C
- Measuring range: 0 – 400 bar
- Pressure connections G 1/4, G 1/2 A standard, G 3/8 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 1/2 A (G 3/8 A mano)  
B: Pg 13.5  
C: G 1/4

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 P <sub>e</sub> [bar] <sup>1)</sup>	Pressure connection		Code number
	G 1/2 A	G 3/8 A	
-1 – 1.5 <sup>1)</sup>	✓		084G2100
-1 – 5 <sup>1)</sup>	✓		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 <sup>1)</sup>	✓		084G2120

<sup>1)</sup> Gauge / relative

## Spareparts and accessories for EMP 2



### Damping coil

Description	Material	Code number
G 3/8 unions and 1.5 m capillary tube.	Copper	060-104766
G 1/2 unions and 1 m capillary tube.	Stainless steel	060-016966
G 3/8 unions and 1 m capillary tube. Armoured.	Copper	060-333366

### Nipple

Description	Material	Code number
G 1/4 A x G 3/8 A with copper washer.	Brass	060-333266





# 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 3252	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				mA
	Measuring insert	Changeable	Changeable	Changeable	Fixed	Fixed	Changeable
	Medium temperature	-50 – 200 °C (-58 – 392 °F)	-50 – 300 °C (-58 – 572 °F)	-50 – 400 °C (-58 – 752 °F)			
	Enclosure	IP65 (NEMA 4)	IP65 (NEMA 4)	IP65 (NEMA 4)	IP67 (NEMA 6)	IP65 (NEMA 4)	IP65 (NEMA 4)
	Material protection tube	W.no. 1.4571 (AISI 316 Ti)					
Reaction time t0.5 in water (sec)		9 s	14 s	9 s	1 s	1.5 s	12 s
Marine approvals				✓			✓



Marine, mobile hydraulics



Electric power and wind turbines



Boiler and boiler room equipment, sterilisers and autoclaves



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.

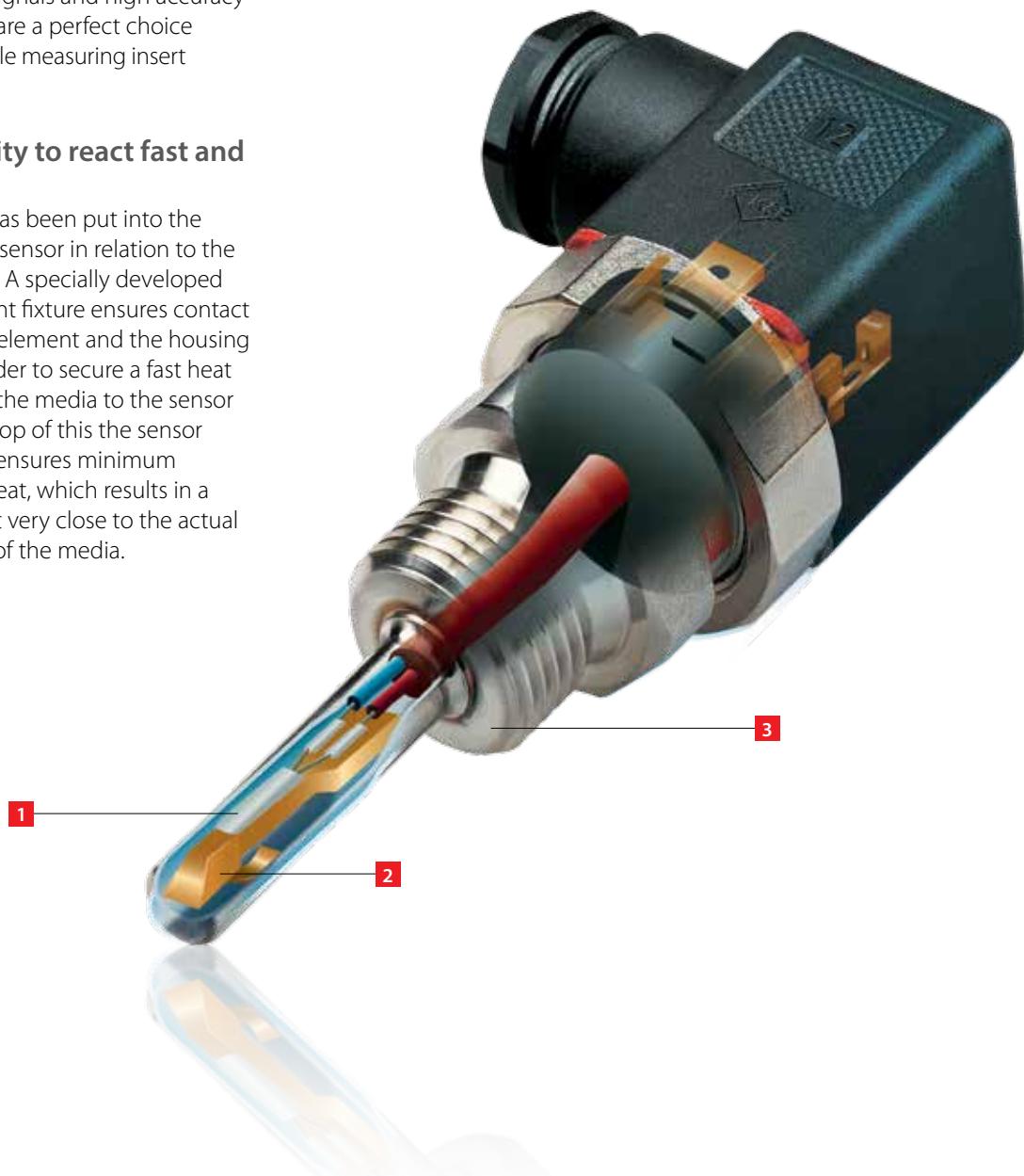
## 3 Packaging

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



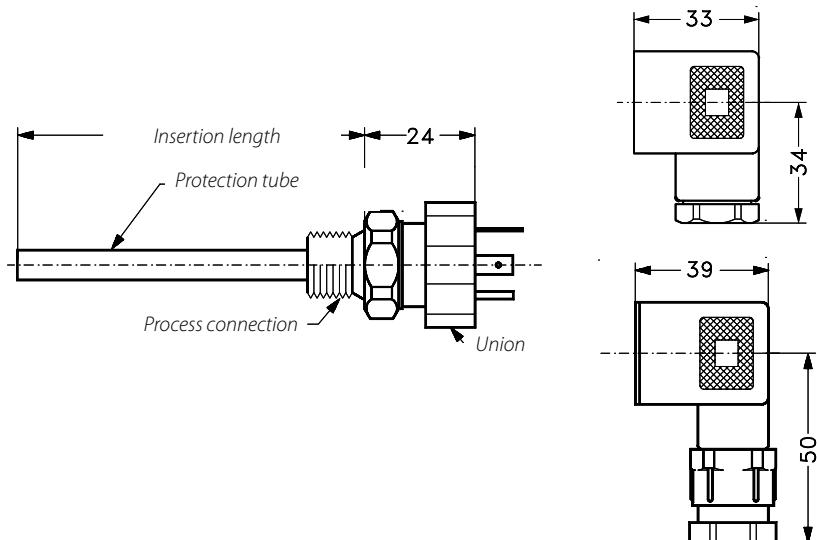
The MBT 3250 is a heavy-duty temperature sensor that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry applications.

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
- Wetted parts: Stainless Steel (AISI 316)

## Dimensions and weight:

Weight: 0.145 kg –  
0.220 kg depending  
on insertion length



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 3252 temperature sensor



MBT 3252 heavy-duty sensor for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry.

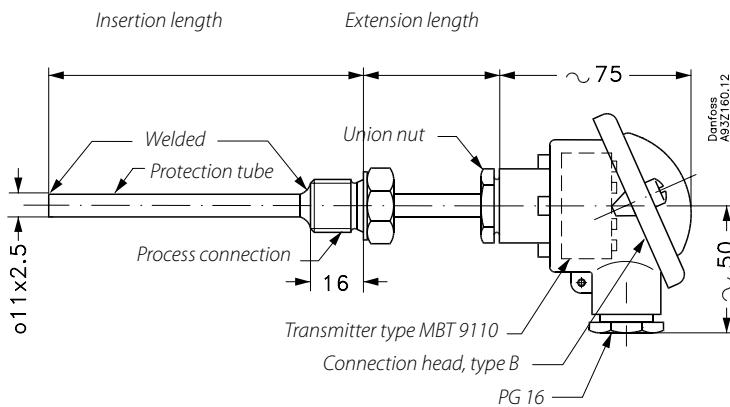
MBT 3252 is based on a standardised Pt 100 element, which gives a reliable and accurate measurement. The changeable insert is equipped with silicone cable, which makes the sensor very resistant towards vibrations.

MBT 3252 is equipped with a B-head as standard. If needed, a transmitter (MBT 9110) can be ordered as an integrated part of the MBT 3252 temperature sensor.

- For gaseous or liquid media, e.g. air, gas, vapour, water or oil.
- Up to 200 °C media temperature
- Resistance or 4 – 20 mA signal
- Available with built-in transmitter
- Wetted parts: Stainless steel (AISI 316)

## Dimensions and weight:

*Weight: 0.37 kg -  
0.45 kg depending  
on insertion length*



*All dimensions in millimetres*

## MBT 3252 temperature sensor

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 ½ A
50	–	–	084Z2266
100	–	–	084Z2267
150	–	–	084Z2268
200	–	–	084Z2269
250	–	–	084Z2270
50	✓	✓	084Z2271
100	✓	✓	084Z2272
150	✓	✓	084Z2273
200	✓	✓	084Z2274
250	✓	✓	084Z2275

# MBT 5250 temperature sensor

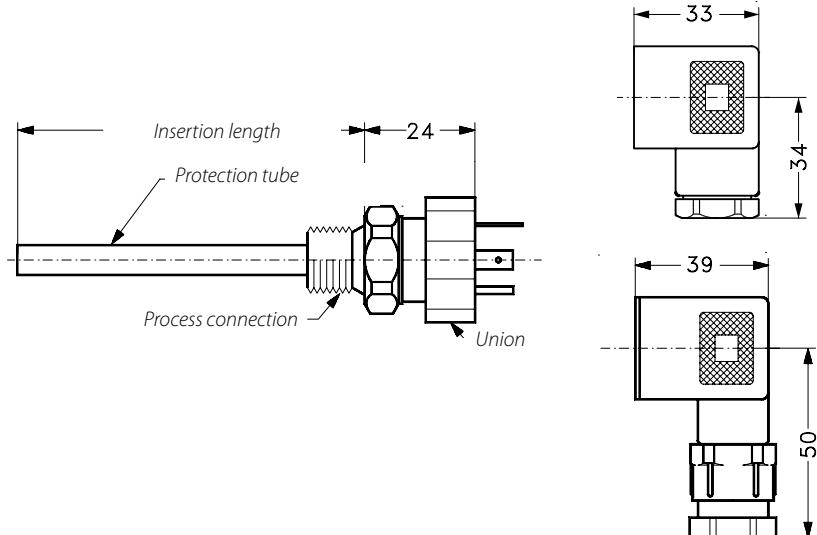


The MBT 5250 is a heavy-duty temperature sensor that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry and marine applications. This temperature sensor is based on a standardized Pt100 or Pt1000 element, which gives a reliable and 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 length



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 [mm]	Process connection size	Electrical connection: EN 175301-803-A			Code number
		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



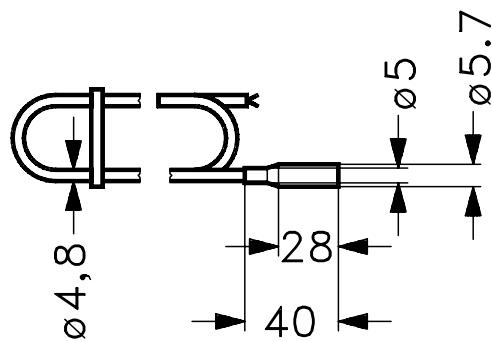
The MBT 153 is a heavy-duty temperature sensor that can be used for controlling cooling water and ventilation systems within general industry and marine applications.

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 millimetres

Approvals: CE, LR, DNV, ClassNK

## MBT 153 cable-type temperature sensors

Measuring range: -50 – 200 °C

Short response time



Resistance element		Cable length [m]	Cable type		Wires (2- or 4-wire connection)	Code number
Pt 100	Pt 1000		PVC	Silicone		
✓	–	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.

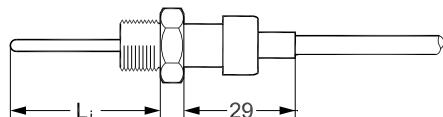
In other words application where robustness, size and performance are essentials.

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).

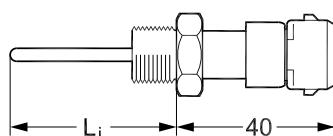
- Robust, high protection against moisture
- Fixed measuring insert
- Brass or stainless steel
- Very low response times
- Temperature range up to 300 °C
- Wetted parts: Stainless Steel (AISI 316)

## Dimensions and weight:

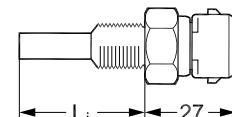
Weight: 0.085 kg



-50 – 300 °C



-50 – 300 °C



All dimensions in millimetres

## MBT 3270 temperature sensors

Fixed measuring insert

Very low response times



Resistance element Pt 100	Pt 1000	Insertion length (L <sub>i</sub> ) [mm]	Temperature range [°C]	Insertion ø [mm]	Wetted parts	Electrical connection			Code number
						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.

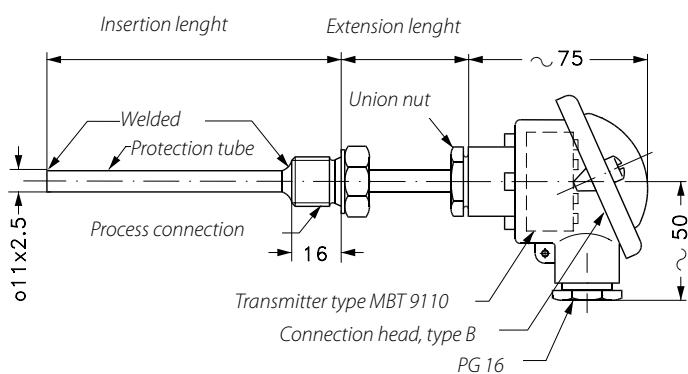
MBT 5252 can also be delivered with transmitter insert for 4 – 20 mA output. In the low temperature version (-50 – 200 °C) the measuring insert is based on a silicone cable, which makes the sensor very resistant towards vibrations.

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	Code Number
			G ½ A	G ¾ A
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

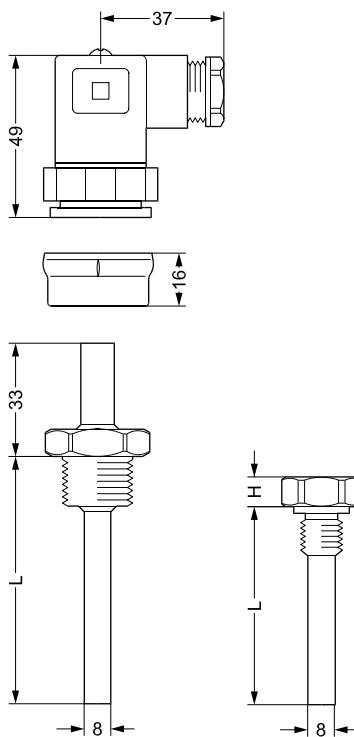


With MBT 3560 we have combined the technology of our standard temperature sensors and the electrical connections from the MBS pressure transmitters with a new developed electronics which has resulted in a compact temperature sensor with a built-in transmitter. The MBT 3560 is designed for use in harsh industrial environments 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 – 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: Ø8 mm  
 Process connection: G 1/4 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



Insertion length [mm]	Pocket insertion length [mm]	Process connection	Protection tube Ø11 [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	1/2 – 14 NPT	✗	084Z3033
100	87.50	1/2 – 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.

## Industrial boilers and boiler room equipment

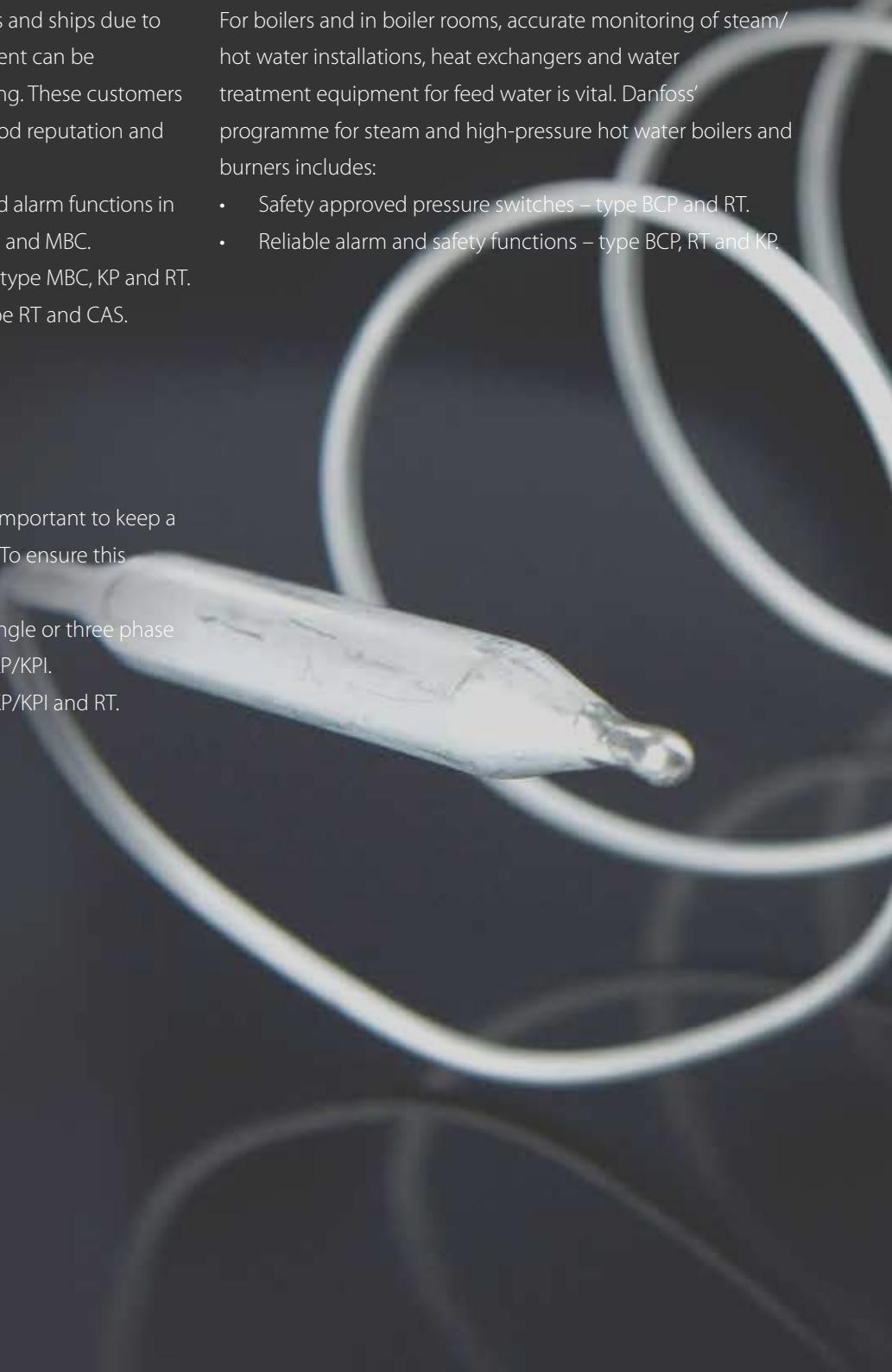
For boilers and in boiler rooms, accurate monitoring of steam/hot water installations, heat exchangers and water treatment equipment for feed water is vital. Danfoss' programme for steam and high-pressure hot water boilers and burners includes:

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

## 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.



## 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
	Contact system	SPDT	SPDT	SPDT	SPDT	SPDT
	Electrical rating AC-3	4 A, 400 V	1 A, 250 V	6 A, 400 V	–	16/6 A, 400 V
	Electrical rating AC-15	3 A, 400 V		4 A, 400 V	0.1 A, 220 V	10/4 A, 400 V
	Electrical connection	Screw terminals	DIN plug	Screw terminals	Screw terminals	Screw terminals
	Contact material	Silver or Gold	Gold	Gold	Silver	Silver or Gold
	Differential	Adjustable	Adjustable	Adjustable	Fixed	Adjustable
	Special approvals	Marine, TÜV	TÜV	Marine, UL	Marine	Marine
	Degree of enclosure	IP66 or IP54	IP65	IP67	IP67	IP30, IP44 or IP55
	Design	Box industrial	Box industrial	Box heavy duty	Box heavy duty	Box
Adjustable neutral zone		Yes				



Railways and marine



Industrial hydraulics, air compressors and water pumps



Electric power and wind turbines



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 smartphone.

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:

The screenshot shows the Danfoss Pressure Switch Selector website. On the left, there's a 'Welcome' section with a brief description of the selector's purpose, a 'Contact' link, and a 'Click for more information' link. Below this is a large search form with dropdown menus for 'Application' (set to 'Please select'), 'Enclosure', 'Reset function', 'Connection size', and 'Setting range'. There are also 'Reset' and 'Search' buttons. To the right of the search form is a product detail page for a KPR36 Pressure Control. The product image is shown with its code number (060-31696), application (Boiler Room), enclosure (IP30), reset function (Automatic), connection size (G 1/4 A), setting range (3.00 - 12.00 bar), ambient temperature (-40 - 65 °C), and differential (0.50 - 1.60 bar). A 'More details' link is also present. At the bottom of the page, there are links for 'Send email', 'Send text message', 'Print this page', and 'Where to buy'. The footer of the page includes 'INDUSTRIAL AUTOMATION', 'Privacy Policy', and 'Country' selection options.

# Pressure switches and Thermostats – Introduction

## Setting range

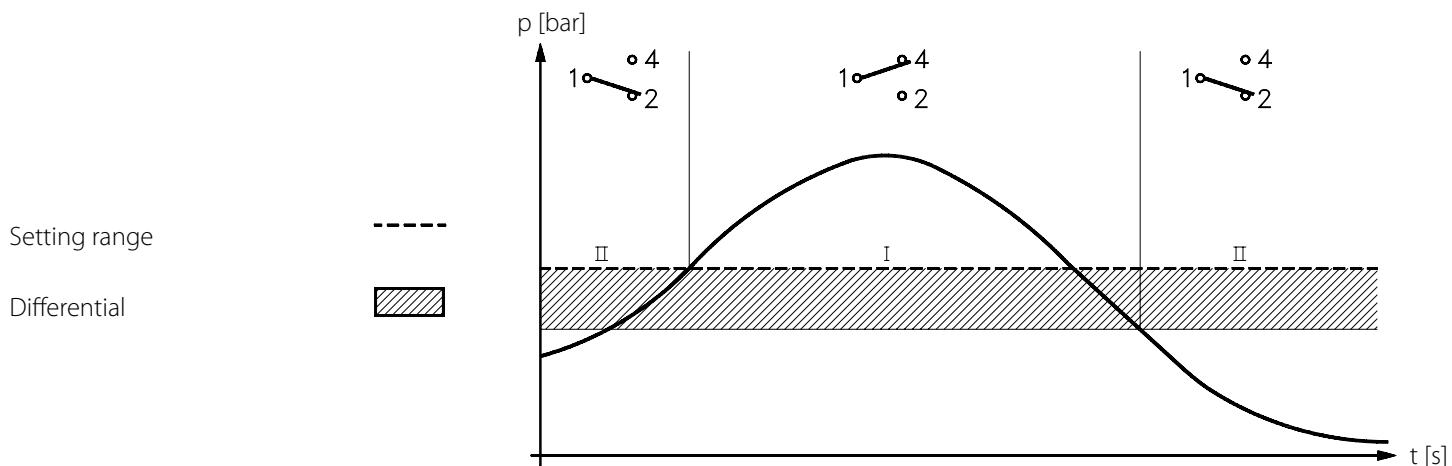
Most of Danfoss pressure switches and thermostats have a given pressure / temperature range which can be set by the user from a scale on the unit. The given cut-in / cut-out temperature or pressure is indicative only. For accurate setting a thermometer or pressure gauge must be used.

## 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 hour what benefits in longer life of the contact system.

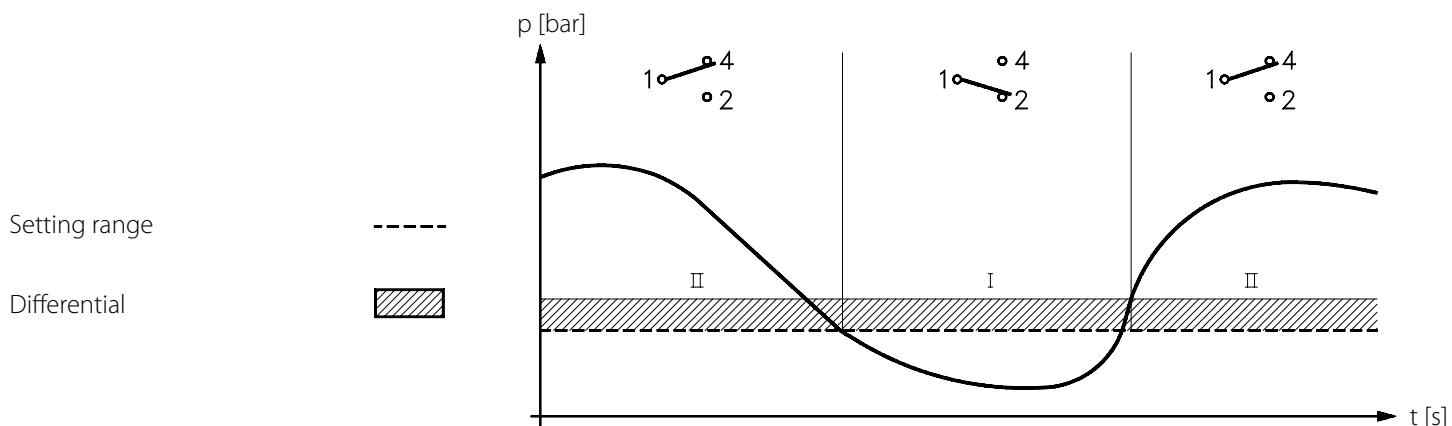
## Contact function, setting for rising pressure / temperature

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



## Contact function, setting for falling pressure / temperature

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



# RT pressure switches



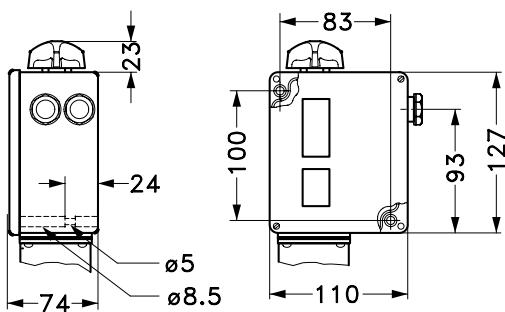
RT switches are used in general industrial, heating and marine sectors. The RT single pressure switches series consist of a variety of controls including neutral zone pressure switches and safety pressure switches for steam boiler plant.

RT switches have been in service for more than 70 years.

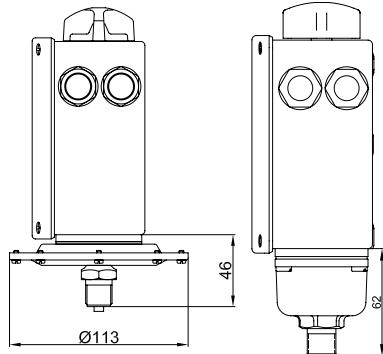
- Pressure range: -1 – 30 bar
- Replaceable contact system
- Also available with gold plated contact systems
- Fail-safe design
- Adjustable differential
- Adjustable neutral zone
- Enclosure IP66
- Available with TÜV approvals
- Available with min. and max. reset function (IP54)
- Also available as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

## Dimensions and weight:

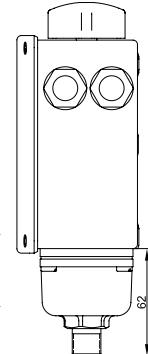
Weight: Appr. 1 kg



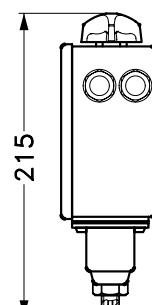
RT116



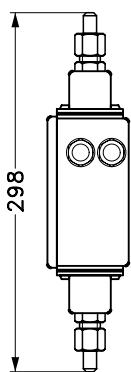
RT 113



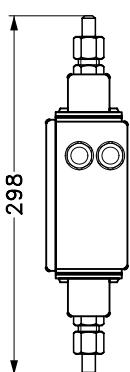
RT 112



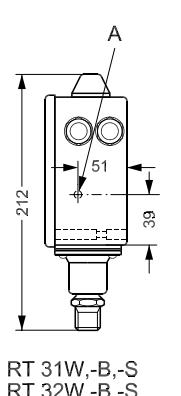
RT5



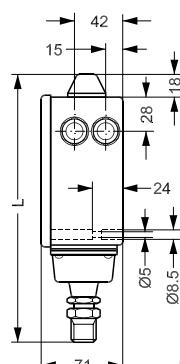
RT260A, 260AL



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

<sup>1)</sup>Ambient temperature: -10 – 70 °C

<sup>2)</sup>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	<b>017L003266</b>



## RT pressure switches for steam plant

Pressure connection: G 1/2 A



Type	Setting range P <sub>e</sub> [bar]	Mechanical differential [bar]	Max. working pressure P <sub>e</sub> [bar]	Reset	Automatic	Min.	Max.	Code number
<b>PED approved. For rising pressure. Ambient temperature: -40 – 70 °C</b>								
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
<b>PED approval. For falling pressure. Ambient temperature: -40 – 70 °C</b>								
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 <sub>e</sub> [bar]	Mechanical differential [bar]	Operation range [bar]	Max. working pressure P <sub>e</sub> [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 <sub>e</sub> [bar]	Mechanical differential [bar]	Adjustable neutral zone [bar]	Operation range [bar]	Max. working pressure P <sub>e</sub> [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	<b>017-403066</b>
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.	<b>017-424066</b>
Contact system	Max reset	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Designed for RT units performing max reset function.	<b>017-404266</b>
Contact system	Min reset	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Designed for RT units performing min reset function.	<b>017-404166</b>



Type	Description	
Setting knob	Replacement. Pale grey Ral 7035	<b>017-436366</b>
Seal cap	Seal cap to replace setting knob so that setting can only be altered with tools (tamper proof seal cap). Black	<b>017-436066</b>
Screws	Seal screws for cover and seal cap	<b>017-425166</b>
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	<b>017-436866</b>
Reducer	Pipe thread ISO 228/1, G 1/2 A x G 3/8, steel, span of jaws 22	<b>017-421966</b>
Reducer	Pipe thread ISO 228/1, G 3/8 x 7/16 - 20 UNF reducer, washer, brass, span of jaws 22	<b>017-420566</b>
Adaptor	Pipe thread ISO 228/1, G 3/8 A x R 3/8 (ISO 7/1) brass, span of jaws 17	<b>060-324166</b>



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, G3/8 connection.	<b>060-019166</b>
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	<b>060-104766</b>
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	<b>060-333366</b>
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.	<b>017-401366</b>

# The BCP pressure switch for reliable boiler control

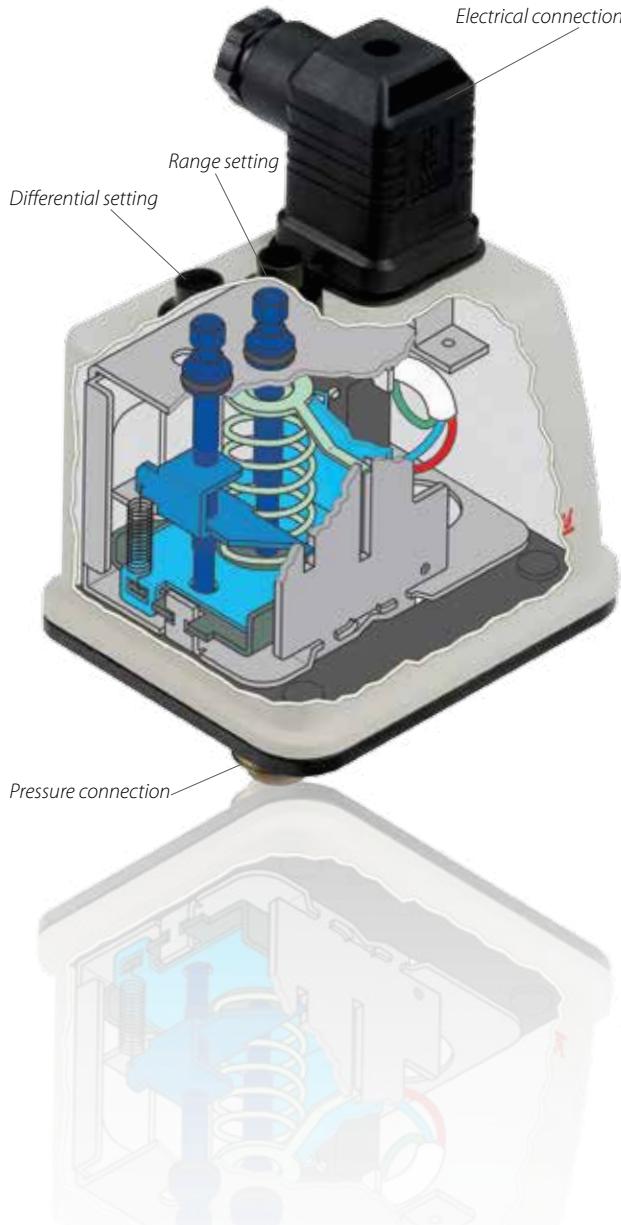
A series of dedicated pressure switches, BCPs control, monitor and limit the pressure in steam and hot water boilers. Simple to install and operate, BCP pressure switches combine advanced technology, durability and design to provide failsafe boiler operation.

## 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: 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 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

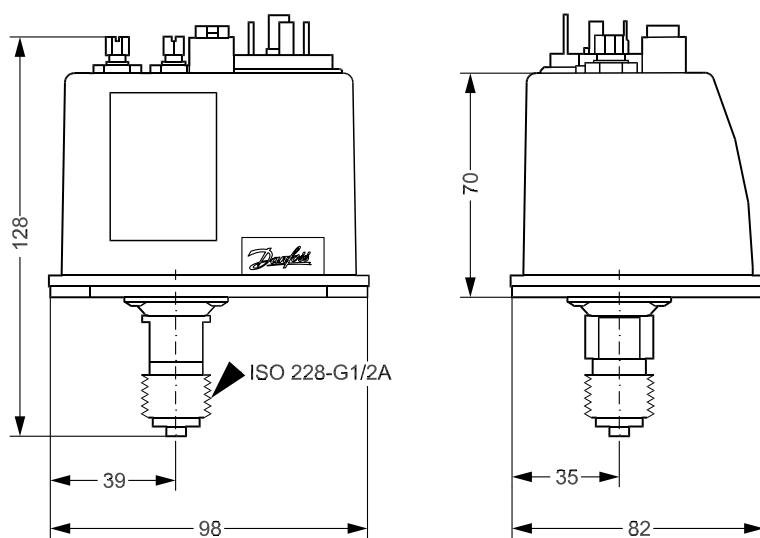


The BCP type is a series of dedicated pressure switches for control, monitoring and safety of steam and hot water boilers. The BCP incorporates a single-pole changeover microswitch where the contact position depends on the pressure in the connection port and the range set value. For installations, in 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: 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 1/2 A
Enclosure:	IP65
Ambient temperature:	-20 – 70 °C
Media temperature:	Up to 120 °C



## BCP pressure controller, automatic reset

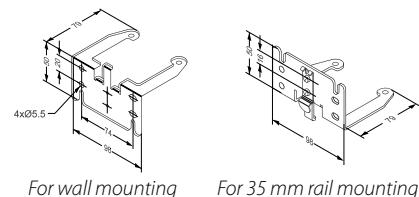
Type	Setting range $P_e$ [bar]	Differential [bar]	Max. working pressure $P_e$ [bar]	Max. test pressure $P_e$ [bar]	Code number
BCP1	0.1 – 1.1	0.15 – 0.6	6	7	017B0002
BCP2	0 – 2.5	0.4 – 1	10	11	017B0006
BCP3	0 – 6	0.7 – 1.4	16	18	017B0010
BCP4	1 – 10	1 – 2.5	25	28	017B0014
BCP5	2 – 16	2 – 3.2	32	35	017B0018
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
<b>For falling pressure, minimum reset</b>					
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
<b>For rising pressure, maximum reset</b>					
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



# 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.

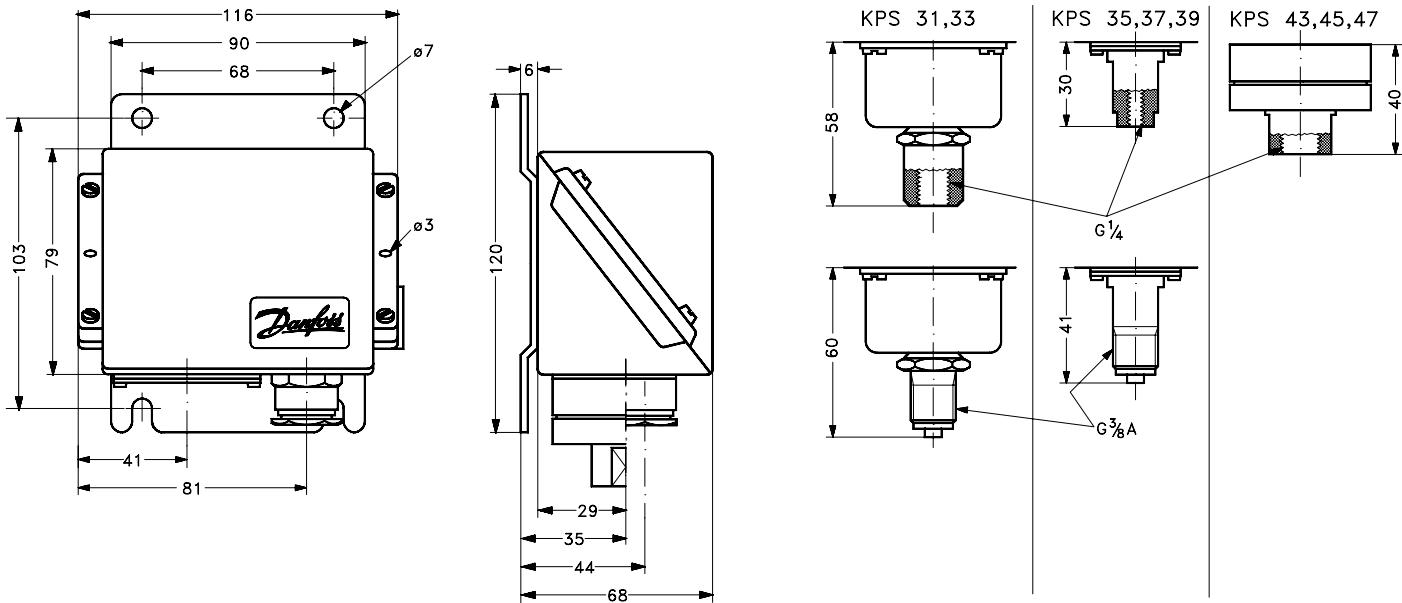
The KPS range covers most outdoor as well as indoor application requirements, and are suitable for use in alarm and regulation systems in factories, diesel plant, compressors, powerstation and on board ships.

- 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
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Type	Setting range P <sub>e</sub> [bar]	Differential [bar]	Max. working pressure P <sub>e</sub> [bar]	Connection size G 1/4 A	G 3/8 A	Code number
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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

Description	Code numbers
Reducer. G 3/8 x 7/16 - 20 UNF (1/4 flare) reduction with washer	017-420566
Adaptor G 3/8 A x 1/4 – 18 NPT with washer	060-333666
Nipple G 1/4 A x G 3/8 A	060-333266
Damping coil with 1/4 flare connectors and 1 m copper capillary tube. Damping coils used for applications with 3/8 RG connector requires the use of reducer.	060-017166
Damping coil with G 3/8 connectors and 1.5 m copper capillary tube	060-104766
Armoured damping coil with 3/8 connectors and 1 m armoured capillary tube. Standard washers included.	060-333366



Damping coil,  
1/4 flare connectors



Damping coil,  
G 3/8 connectors



Damping coil,  
armoured

# CAS heavy-duty pressure switches



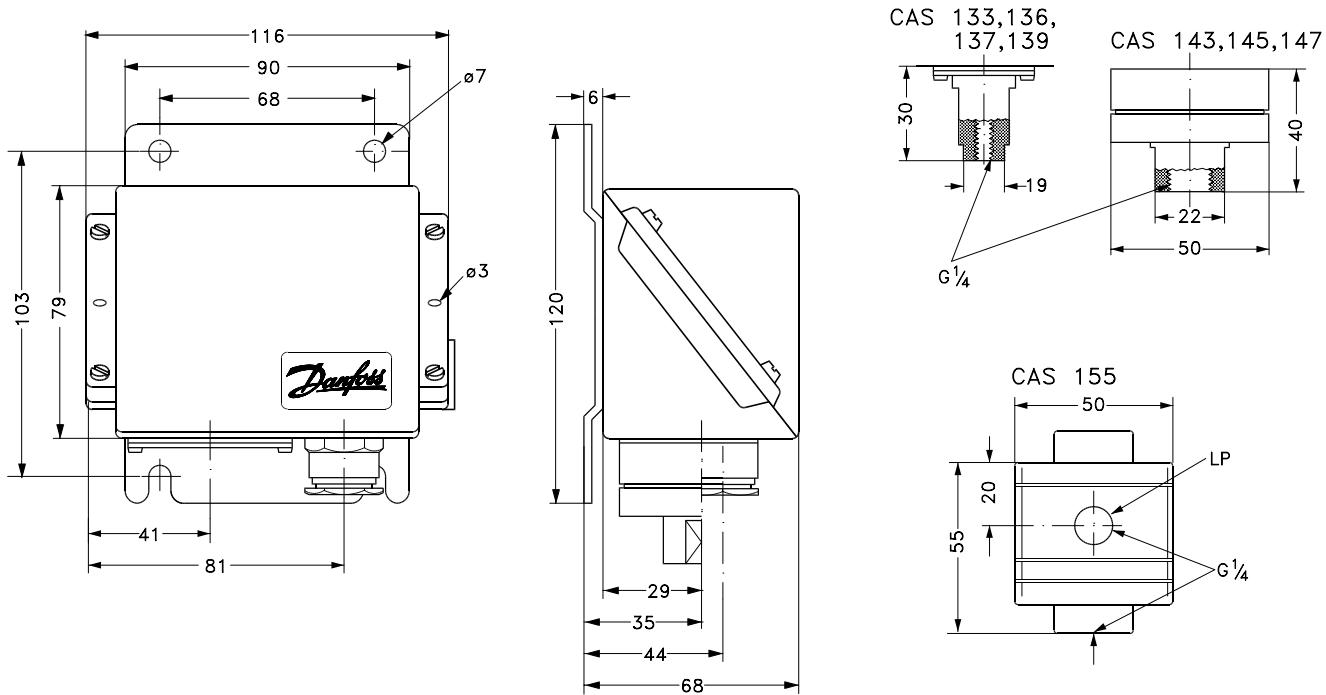
In the CAS pressure switches series, special attention has been given to meeting demands for a high level of enclosure, low differential, robust, compact construction and resistance to shock and vibration. The CAS series covers most outdoor as well as indoor application requirements. CAS pressure switches 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 1/4 A



Type	Setting range P <sub>e</sub> [bar]	Differential [bar]	Max. working pressure P <sub>e</sub> [bar]	Code number
<b>Ambient temperature: -40 – 70 °C. Media temperature: -40 – 100 °C.</b>				
CAS133	0 – 3.5	0.1	10	<b>060-315066</b>
CAS136	0 – 10	0.2	22	<b>060-315166</b>
CAS137	6 – 18	0.3	27	<b>060-315266</b>
CAS139	10 – 35	0.6	53	<b>060-315366</b>

## 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	<b>060-316066</b>
CAS145	4 – 40	0.8 – 2.4	120	<b>060-316166</b>
CAS147	6 – 60	1 – 3	120	<b>060-316266</b>

## CAS differential pressure switch

Pressure connection: 2 x G 1/4. Ambient temperature: -25 – 70 °C



## Spare parts for CAS pressure switch

Description	Code numbers
Connector with 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	<b>017-436866</b>
Connector with nipple. G 3/8 connector nipple and washer (10 mm ext. / 6.5 mm int. diam). For welding. Steel span of jaws: 22	<b>017-422966</b>
Reducer. G 3/8 x 7/16 - 20 UNF (1/4 flare) reduction with washer	<b>017-420566</b>
Adaptor G 3/8 A x 1/4 - 18 NPT with washer	<b>060-333666</b>
Nipple G 1/4 A x G 3/8 A	<b>060-333266</b>
Damping coil with G 3/8 connectors and 1.5 m copper capillary tube	<b>060-104766</b>
Armoured damping coil with 3/8 connectors and 1 m armoured capillary tube. Standard washers included.	<b>060-333366</b>



Nipple G 1/4 A x G 3/8 A



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: -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: 0 – 1000 Hz, 4g (1g = 9.81m/s<sup>2</sup>), 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

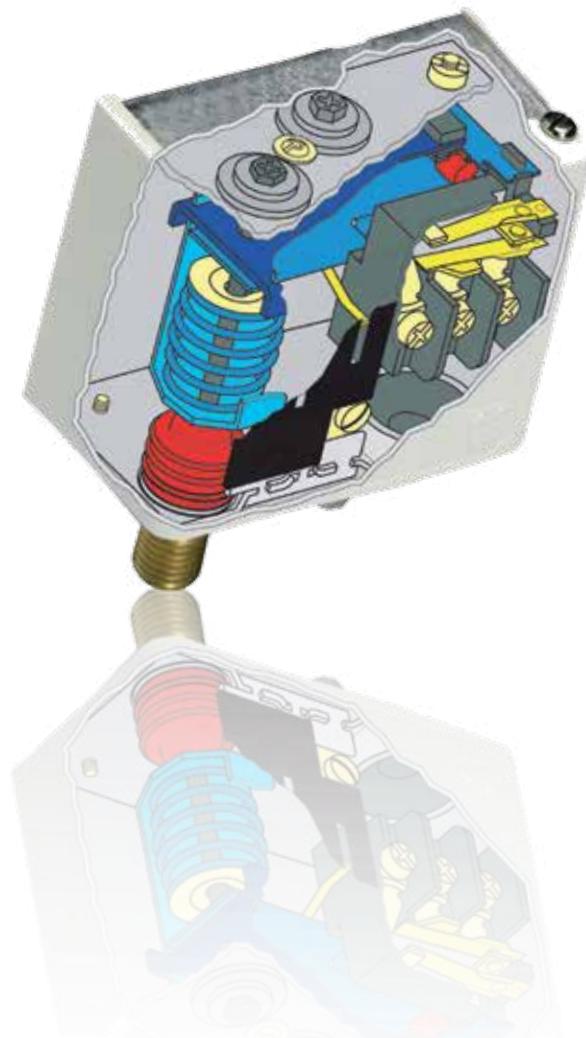
Two cable entries on the front of the pressure switch provide a number of possible electrical cable connections.

## 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



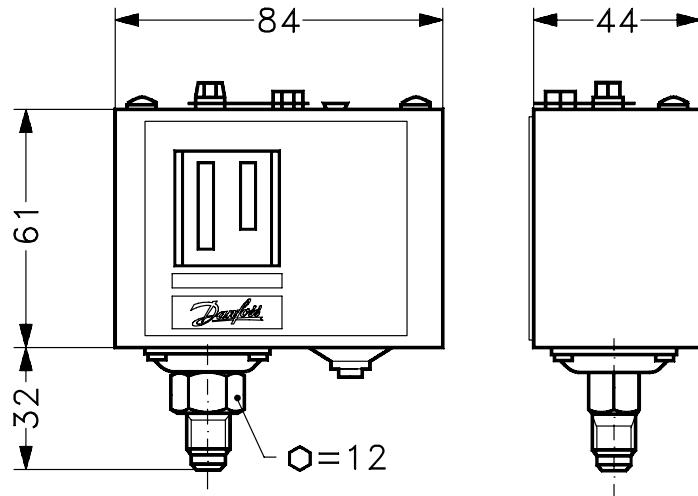
Danfoss KPI pressure switches are used for control, monitoring and alarm systems in industrial applications.

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 1/4 A
Ambient temperature:	-40 – 65 °C
Media temperature:	-40 – 100 °C



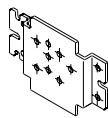
Type	Setting range $P_e$ [bar]	Differential $P_e$ [bar]	Max. working pressure $P_e$ [bar]	Enclosure	Code number
KPI 35	-0.2 – 8	0.4 – 1.5	18	IP30	<b>060-121766</b>
KPI 35 <sup>1)</sup>	-0.2 – 8	0.4 – 1.5	18	IP30	<b>060-316466</b>
KPI 35	-0.2 – 8	0.5 – 2	18	IP30	<b>060-121966</b>
KPI 36	2 – 12	0.5 – 1.6	18	IP30	<b>060-316966</b>
KPI 36 <sup>1)</sup>	4 – 12	0.5 – 1.6	18	IP30	<b>060-113866</b>
KPI 36	2 – 12	0.5 – 1.6	18	IP55	<b>060-319466</b>
KPI 36	4 – 12	0.5 – 1.6	18	IP30	<b>060-118966</b>
KPI 38	8 – 28	1.8 – 6	30	IP30	<b>060-508166</b>

<sup>1)</sup> Contact material: Gold plated silver

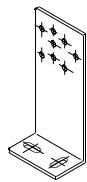
## Spareparts and accessories for KPI pressure switch

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

Brackets



For wall mounting

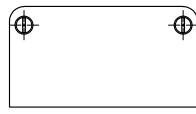


For 35 mm rail mounting

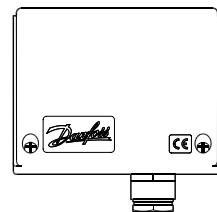
Seal screw



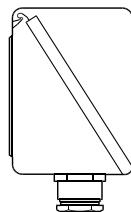
Screwed cable entry



Top cover



IP55 enclosure



## KP pressure switches for light industry



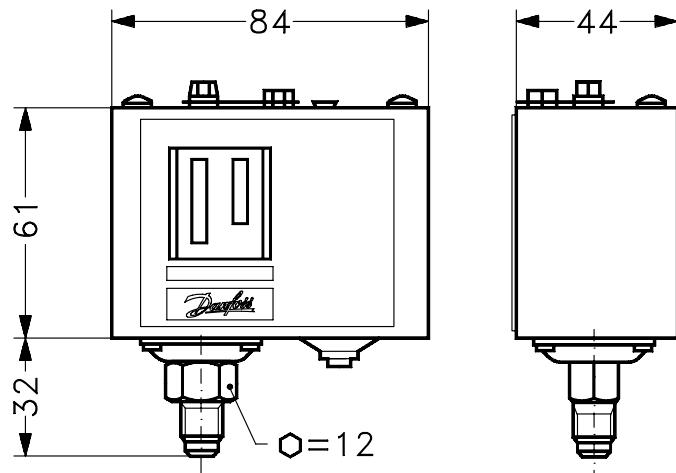
Danfoss KP pressure switches are used for control, monitoring and alarm systems in industrial applications.

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



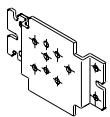
Type	Setting range $P_e$ [bar]	Differential $P_e$ [bar]	Max. working pressure $P_e$ [bar]	Enclosure	Code number
<b>Pressure connection: G 1/4 A</b>					
KP2	-0.2 – 3.5	0.3 – 1.0	10	IP30	<b>060-131866</b>
KP35	-0.2 – 7.5	0.7 – 4	17	IP30	<b>060-113366</b>
KP35	-0.2 – 7.5	0.7 – 4	17	IP55	<b>060-538666</b>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

<sup>1)</sup> Contact material: Gold plated silver

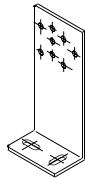
## Spareparts and accessories for KP pressure switch

Type	Description	
Wall bracket	Mounting screw and washers included	<b>060-105566</b>
Angle bracket	Mounting screw and washers included	<b>060-105666</b>
Seal screw for locking plate	Seal screw according to DIN 405, for locking of setting point	<b>060-105766</b>
Screwed cable entry	Pg 13.5 with special nut. For 6 – 14 mm diameter cables	<b>060-105966</b>
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	<b>060-109766</b>
IP55 enclosure	For single control. Specially designed IP55 enclosure , not transparent	<b>060-033066</b>

Brackets



For wall mounting



For 35 mm rail mounting



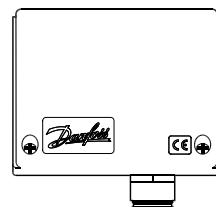
Seal screw



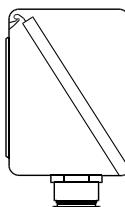
Screwed cable entry



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 to 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



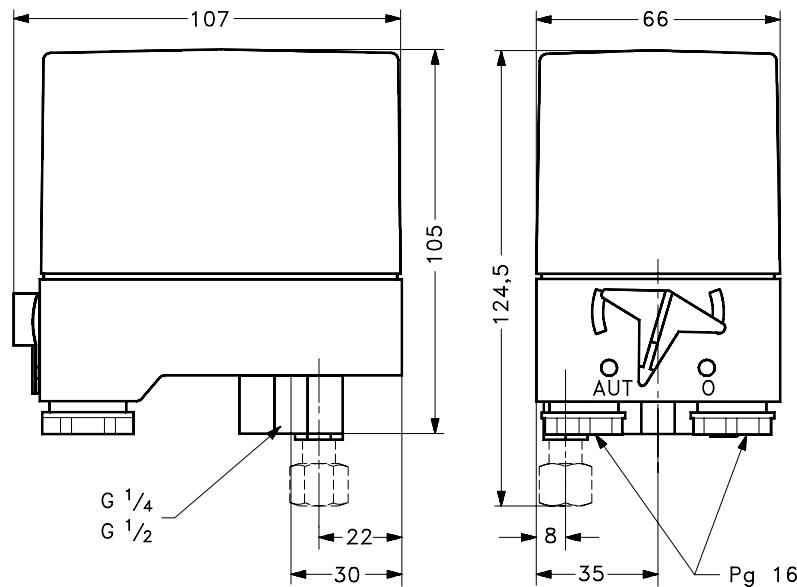
CS pressure switches have a three-pole switch and adjustable differential.

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: 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 12A 220 – 415V

9A 600V

Ambient temperature: -20 – 70 °C

Media temperature: Water: 0 – 70 °C

Air: -20 – 70 °C



Setting range P <sub>e</sub> [bar]	Factory setting P <sub>e</sub> [bar]	Min. differential [bar]	Max. differential [bar]	Max. working pressure P <sub>e</sub> [bar]	Connection size G 1/4 A	Connection size G 1/2 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 <sub>e</sub> [bar]	Min. differential [bar]	Max. differential [bar]	Max. working pressure P <sub>e</sub> [bar]	Connection size G 1/4 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
Pressure relief valve, incl. fixing screw for 6 mm pipe/hose	031E029866
Pressure relief valve, incl. fixing screw for 1/4 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



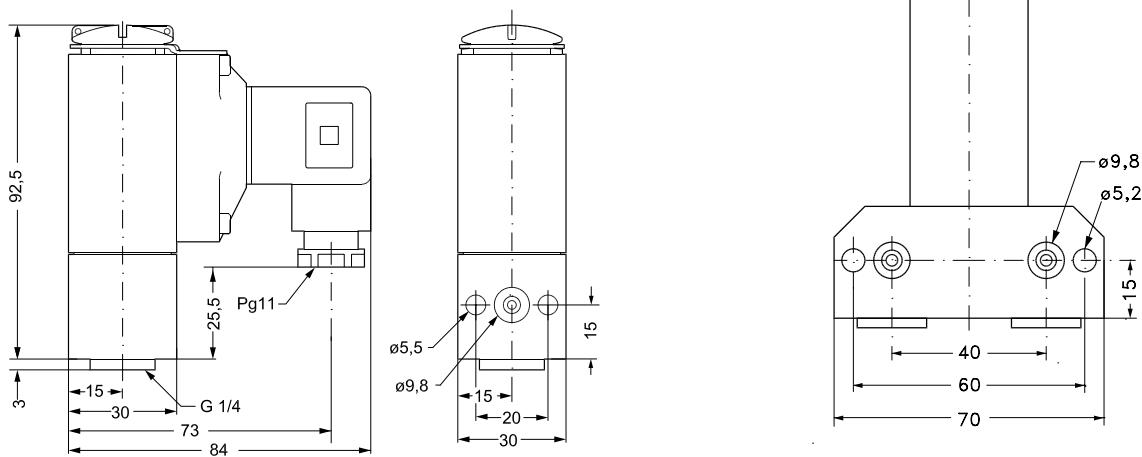
MBC pressure switches are used in industry and marine applications where space and reliability are the most important features. MBCs are compact pressure switches, designed according to our new block design to survive in the harsh conditions known from machine rooms onboard ships.

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 1/4 A	Connection Flange	Code number
<b>Low pressure bellows. Ambient temperature: -40 – 85 °C. Media temperature: -40 – 85 °C</b>						
-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
<b>Low pressure diaphragm. Ambient temperature: -10 – 85 °C. Media temperature: -10 – 85 °C</b>						
1 – 10	0.30	2.5	150	✓	✓	061B100466
1 – 10	0.30	2.5	150	✓		061B100866
5 – 20	0.4	2.5	150	✓	✓	061B100266
<b>High pressure diaphragm. Ambient temperature: -10 – 85 °C. Media temperature: -10 – 85 °C</b>						
5 – 40	1.0	7	150	✓	✓	061B100566
10 – 100	1.7	14	150	✓	✓	061B100366
<b>High pressure piston. Ambient temperature: -40 – 85 °C. Media temperature: -40 – 85 °C</b>						
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 1/4 A	Connection G 1/4 A w. flange	Code number
<b>Ambient temperature: -10 – 85 °C. Media temperature: -10 – 85 °C</b>					
0.3 – 5	0 – 30	45		✓	061B128066
0.3 – 5	0 – 30	45	✓		061B129066

## Spareparts for MBC5100

Type	Description	
Pulse-snubber	Male, G 1/4 A, length 20 mm	061B400101
Pulse-snubber	Male, G 1/4 A, 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.

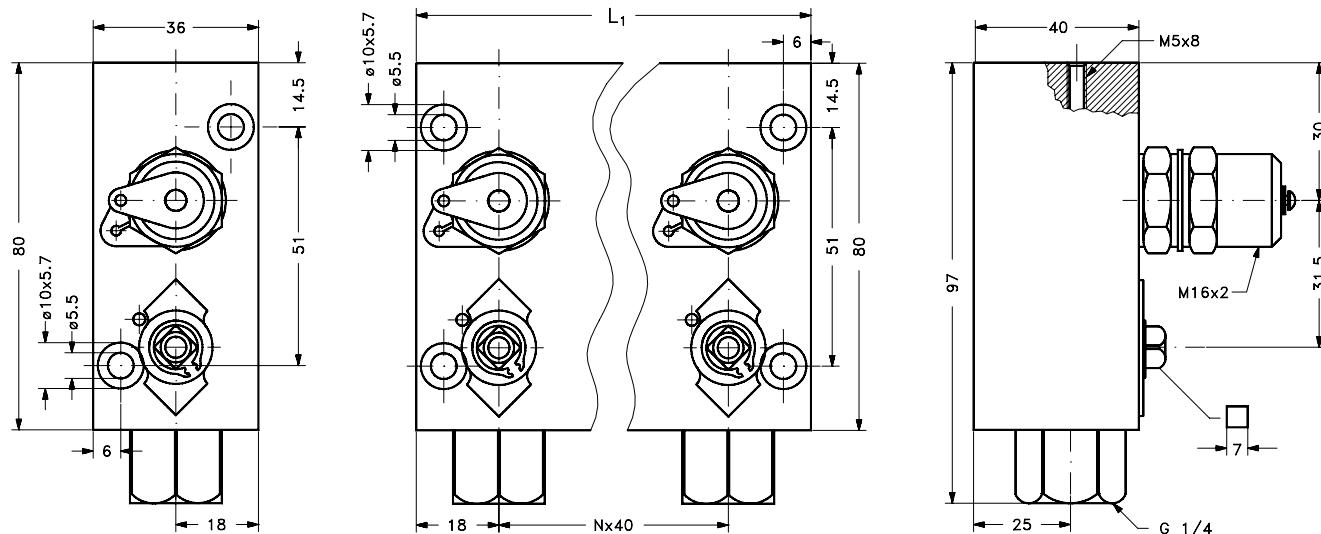
The block valve meets demands for fast installation, simple isolation, and easy test pressure connection.

- 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

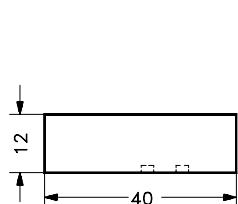


Type	Output no.	Length [mm]	Weight [kg]	Code number
MBV5000-1111	x1	36	0.4	061B7000
MBV5000-1211	x2	76	0.8	061B7001
MBV5000-1311	x3	116	1.2	061B7002
MBV5000-1411	x4	156	1.6	061B7003
MBV5000-1511	x5	196	2.0	061B7004
MBV5000-2211	x2	76	0.8	061B7005
MBV5000-2311	x3	116	1.2	061B7006
MBV5000-2411	x4	156	1.6	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

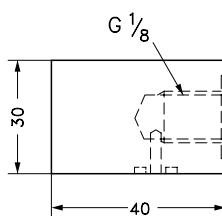
## Spareparts for MBV 5000

### Standard flange - G 1/8 adapters

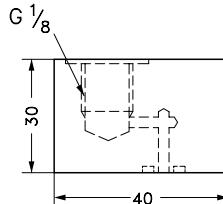
Description	Code number
Cover	061B720001
Angleway adapter	061B720101
Straightway adapter	061B720201



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: -60 – 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



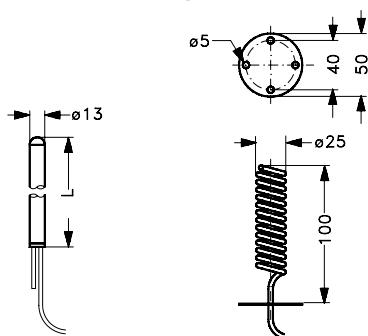
RT switches are used in general industrial and marine sectors. The RT thermostat series consist of a variety of room thermostats and remote sensor thermostats including neutral zone thermostat. RT thermostats are generally recommended for applications where safety or economical consequences are critical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

RT controls have been in service for more than 70 years.

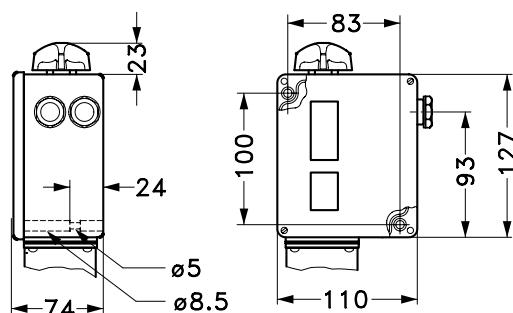
- Temperature range: -60 – 300 °C
- Replaceable contact system
- Also available with gold plated contact systems
- Adjustable differential
- Enclosure IP66
- Available with external max. reset function (IP54)
- Available with neutral zone
- Available with all relevant marine approvals

## Dimensions and weight:

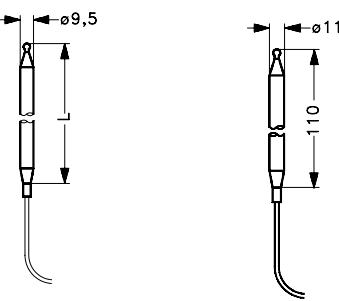
Weight: Appr. 1 kg



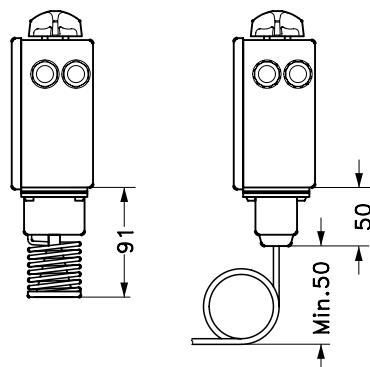
RT106



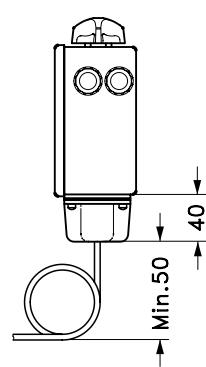
RT140



RT120, RT101, RT14,  
RT107, RT123, RT108



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



RT 14, RT 101, RT 108,  
RT 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]	at highest setting [°C]	Max sensor temperature [°C]	Capillary tube length [m]	Code number
<b>Reset: Automatic. Enclosure: IP66</b>						
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
<b>Reset: Max. Enclosure: IP54</b>						
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]	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 <sup>1)</sup>	0 – 38	1.5 – 5	0.7 – 1.9	100	017L002466

<sup>1)</sup> Neutral zone setting: max 5 °C

## RT thermostats - duct sensor

Enclosure: IP66



Type	Setting range [°C]	Adjustable differential setting range at lowest setting [°C]	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		Pocket dimensions		Code number	
RT120, RT101, RT14, RT107, RT123	80	✓		112	11		<b>017-437066</b>
RT120, RT101	80/97		✓	112	11		<b>017-436966</b>
RT14	150	✓		182	11		<b>017-436766</b>
RT108	410	✓		465	11		<b>017-421666</b>

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	<b>017-403066</b>
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.	<b>017-424066</b>
Contact system	Max reset	Snap action single-pole changeover switch (SPDT) with silver cadmium oxide contact. Designed for RT units performing max reset function.	<b>017-404266</b>



Type	Description	
Setting knob	Replacement. Pale grey Ral 7035	<b>017-436366</b>
Seal cap	Seal cap to replace setting knob so that setting can only be altered with tools (tamper proof seal cap). Black	<b>017-436066</b>
Screws	Seal screws for cover and seal cap	<b>017-425166</b>
Stuffing box kit	For all thermostats with remote sensor. G 1/2 A (pipe thread ISO228/1), oil resistant rubber washer for max 110 °C/90 bar	<b>017-422066</b>
Stuffing box kit	For all thermostats with remote sensor. G 3/4 A (pipe thread ISO228/1), oil resistant rubber washer for max 110 °C/90 bar	<b>003N0155</b>
Sensor clip	For all RT units with remote sensor. L = 76 mm	<b>017-420366</b>



# KPS thermostats



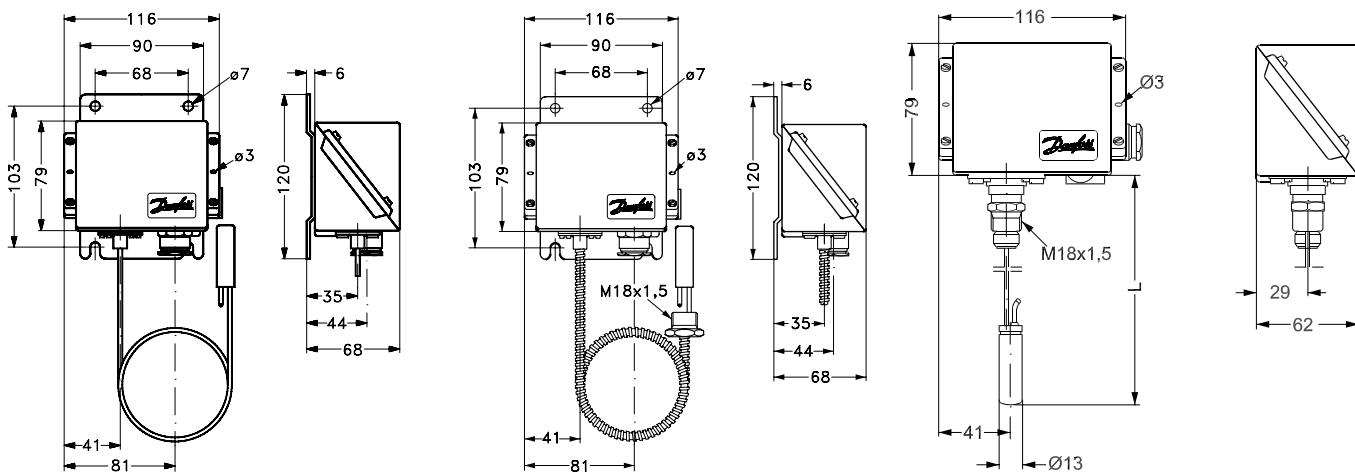
In the KPS thermostats series, special attention has been given to meeting important demands for a high level of enclosure, a robust, compact construction and resistance to shock and vibration.

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	<b>060L311266</b>
KPS77	20 – 60	3 – 14	130	2	13 x 63	<b>060L310166</b>
KPS79	50 – 100	4 – 16	200	2	13 x 63	<b>060L310466</b>
KPS81	60 – 150	5 – 25	250	2	13 x 63	<b>060L310666</b>
KPS80	70 – 120	4.5 – 18	220	2	13 x 63	<b>060L312866</b>
KPS80	70 – 120	4.5 – 18	220	5	13 x 90	<b>060L313066</b>
KPS80	70 – 120	4.5 – 18	220	3	13 x 63	<b>060L315666</b>
KPS83	100 – 200	6.5 – 30	300	2	13 x 63	<b>060L310866</b>

### 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 75	<b>060L310066</b>
KPS77	20 – 60	3 – 14	130	13 x 110	<b>060L311866</b>
KPS79	50 – 100	4 – 16	200	13 x 110	<b>060L310366</b>
KPS79	50 – 100	4 – 16	200	13 x 75	<b>060L312166</b>
KPS80	70 – 120	4.5 – 18	220	13 x 75	<b>060L312666</b>



### KPS, remote sensor with capillary tube

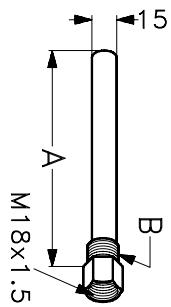
Type	Setting range [°C]	Adjustable differential range [°C]	Max sensor temperature [°C]	Capillary tube length [m]	Sensor size (ø x L) [mm]	Code number
KPS77	20 – 60	3 – 14	130	2	13 x 63	<b>060L310266</b>
KPS79	50 – 100	4 – 16	200	2	13 x 63	<b>060L310566</b>
KPS80	70 – 120	4.5 – 18	220	2	13 x 63	<b>060L312966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



## 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
110	✓		✓		060L327166
160	✓		✓		060L326366
200	✓		✓		060L320666
250	✓		✓		060L325466
75	✓			✓	060L326766
110	✓			✓	060L326866
160	✓			✓	060L326966



### Stuffing box kits

#### Description

For KPS thermostats with armoured capillary tube



Code number

060L036666

# KP thermostats

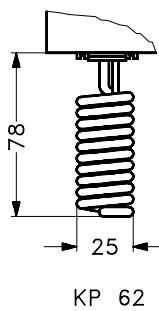


Danfoss KP thermostats are used for control, monitoring and alarm systems in industry. The KP thermostat series are temperature activated electric switches fitted with a single-pole double throw switch (SPDT), which can control single-phase ac motors of up to 2 kW directly.

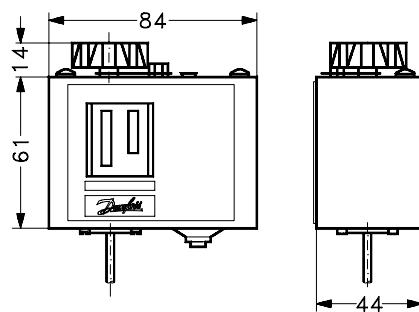
- Temperature range: -30 – 150 °C
- High contact load - Ultra short bounce-time
- Also available with gold plated contact systems
- Enclosure IP44 when mounted with top cover and back plate
- Also available with enclosure IP55 for OEM customers
- Small dimensions - space saving - easy to install

## Dimensions and weight:

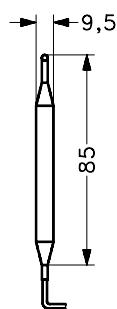
Weight: Appr. 0.4 kg



KP 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	<b>060L111366</b>
KP77	20 – 60	3.5 – 10	130	9.5 x 85	2	<b>060L112166</b>
KP78	30 – 90	5 – 15	150	9.5 x 85	2	<b>060L118466</b>
KP79	50 – 100	5 – 15	150	9.5 x 85	2	<b>060L112666</b>
KP81	80 – 150	7 – 20	200	9.5 x 85	2	<b>060L112566</b>
KP81 <sup>1)</sup>	80 – 150	8	200	9.5 x 85	2	<b>060L115566</b>

<sup>1)</sup> 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	<b>060L110166</b>
KP61	-30 – 15	1.5 – 23	120	2.5	2	<b>060L110066</b>



### 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	<b>060L111066</b>
KP68	-5 – 35	1.8 – 25	120	40 x 30	<b>060L111166</b>
KP75 <sup>1)</sup>	0 – 40	3 – 10	80	25 x 78	<b>060L117166</b>
KP76	5 – 45	2 – 20	120	25 x 78	<b>060L120066</b>

<sup>1)</sup> Contact material: Gold plated silver

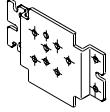


## Spareparts and accessories for KP thermostat

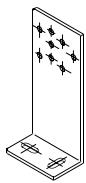


Type	Description	Code numbers
Wall bracket	Mounting screw and washers included	<b>060-105566</b>
Angle bracket	Mounting screw and washers included	<b>060-105666</b>
Screwed cable entry	Pg 13.5 with special nut. For 6 – 14 mm diameter cables	<b>060-105966</b>
Top cover	For single control. If a wall or angle bracket is mounted on the backplate of the housing, the KP will have an IP44 grade of enclosure by means of this cover	<b>060-109766</b>
IP55 enclosure	For single control. Specially designed IP55 enclosure , not transparent	<b>060-033066</b>
Sensor pocket	Application: KP 77, 78, 79, 81. Brass. Pocket dimension: L 110 x ø15 mm. With stuffing box	<b>017-437066</b>
Sensor pocket	Application: KP 77, 78, 79, 81. Stainless steel. Pocket dimension: L 110 x ø15 mm. With stuffing box	<b>017-436966</b>

*Brackets*



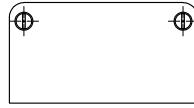
*For wall mounting*



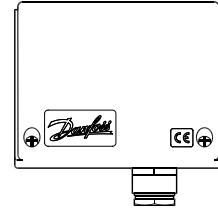
*For 35 mm rail mounting*



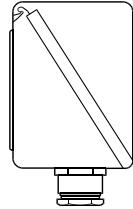
*Screwed cable entry*



*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 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

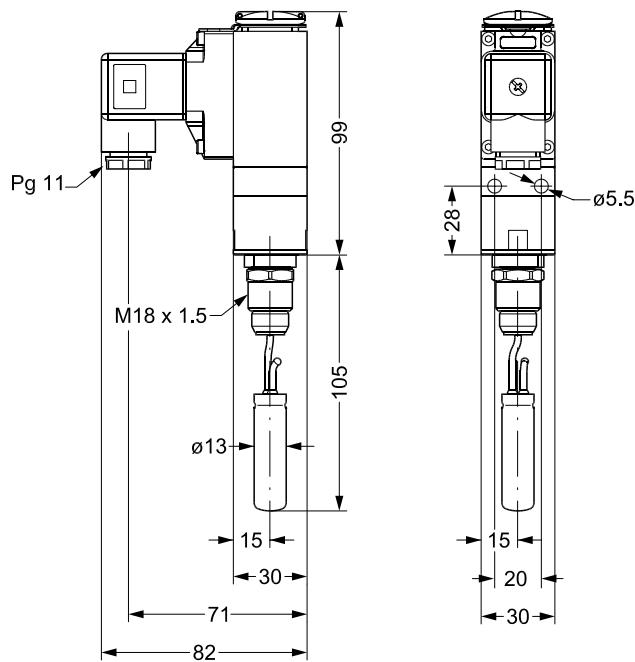


MBC 8100 thermostats are used in marine applications where space and reliability are the most important features. MBCs are compact thermostats, designed according to our new block design to survive in the harsh conditions known from machine rooms onboard ships.

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



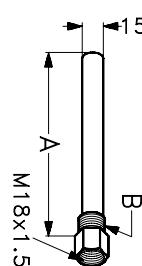
### MBC 8100 with armoured capillary tube, length: 2 m

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
110	✓		✓		060L327166
160	✓		✓		060L326366
200	✓		✓		060L320666
250	✓		✓		060L325466
75	✓			✓	060L326766
110	✓			✓	060L326866
160	✓			✓	060L326966



### Stuffing box kits

Description	Code number
For MBC thermostats with armoured capillary tube	060L036666



# Code number index

Code number .....	page						
003N0042 .....	64	017-422066..	161	017-528266..	137	018F6703 .....	35
003N0043 .....	64	017-422966..	145	017-529166..	136	018F6703 .....	35
003N0045 .....	64	017-424066..	138	017-529566..	136	018F6703 .....	42
003N0046 .....	64	017-424066..	161	017B0002 .....	141	018F6703 .....	42
003N0047 .....	64	017-425166..	138	017B0006 .....	141	018F6703 .....	55
003N0050 .....	66	017-425166..	161	017B0010 .....	141	018F6703 .....	55
003N0062 .....	66	017-436066..	138	017B0014 .....	141	018F6707 .....	19
003N0075 .....	66	017-436066..	161	017B0018 .....	141	018F6707 .....	24
003N0078 .....	66	017-436366..	138	017B0022 .....	141	018F6707 .....	30
003N0091 .....	66	017-436366..	161	017B0026 .....	141	018F6707 .....	35
003N0107 .....	64	017-436766..	66	017B0030 .....	141	018F6707 .....	42
003N0108 .....	64	017-436766..	161	017B0034 .....	141	018F6707 .....	55
003N0109 .....	64	017-436866..	138	017B0038 .....	141	018F6709 .....	19
003N0155 .....	66	017-436866..	145	017B0042 .....	141	018F6709 .....	24
003N0155 .....	161	017-436966..	161	017B0046 .....	141	018F6709 .....	30
003N0192 .....	66	017-437066..	161	017B0050 .....	141	018F6709 .....	35
003N0196 .....	66	017-500366..	160	017B0054 .....	141	018F6709 .....	42
003N0278 .....	66	017-500466..	160	017B0058 .....	141	018F6709 .....	55
003N0388 .....	66	017-500666..	160	017B0062 .....	141	018F6711 .....	19
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# ENGINEERING TOMORROW

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