ENGINEERING
TOMORROW

Fluid control, pressure and temperature monitoring and control

# Core Industrial Products
## for Distributors and Wholesalers

**Easy**

**selection of future proof products.**

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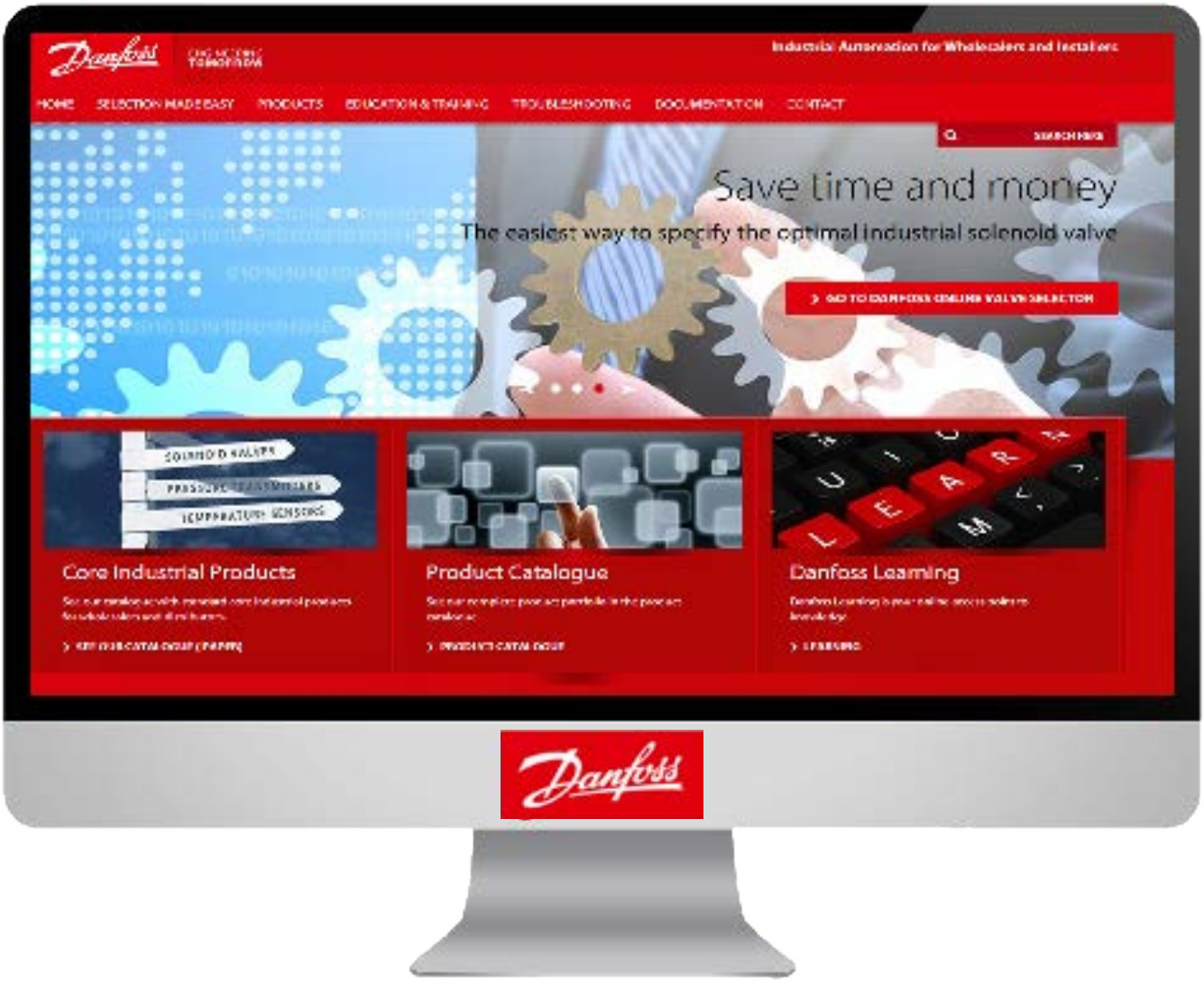



## Selection Made Easy

With only a few clicks, Danfoss product selectors can help you to find the product you need.

## Troubleshooting

Find information about how to use, maintain and troubleshoot our products


## Core Industrial Products

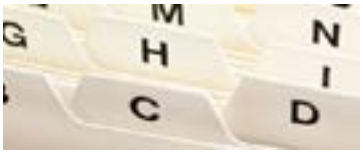
See our catalogue with standard core industrial products for wholesalers and distributors.

## Product Catalogue

See our complete product portfolio in the product catalogue.

## Danfoss Learning

Danfoss Learning is your online access point to knowledge.



## Documentation

Find data sheets and available products here.

# contents

## Content page

# Danfoss Industrial Automation
# core products

## Fluid controls

Solenoid valves: Direct, servo, assisted lift and proportional operated valves for water, air, oil and steam application. Differential pressure from 0 – 40 bar and connections from G 1/8 to 4" flange. Thermostatic valves for cooling applications, biomass boilers, fireplaces and solar systems. Regulation ranges from 0 – 90 °C and connections from G 3/8 to 4" flange.
Angle seat valves for demanding industrial applications. Differential pressure from 0 – 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

Angle seat 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

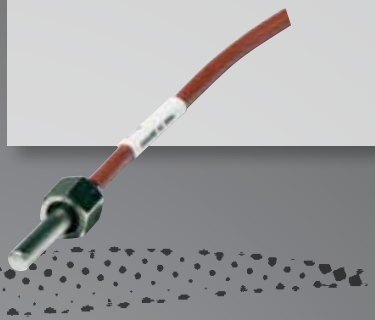
Pressure transmitter in block design for industrial and marine applications

Pressure transmitter in box design for marine applications

# Temperature sensors

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

Temperature transmitter in a cable version



Flexible temperature transmitter with different sensing elements and electrical connections

Temperature transmitter equipped with a DIN 43650 for industrial applications

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

# Switches

Pressure and temperature switches (on-off) for industrial and marine applications from -60 °C – 300 °C or -1 – 400 bar.
Degree of enclosure from IP33 – 67 in different designs, versions with marine, TÜV and ATEX approvals.

Pressure switch for industrial applications (enclosure degree from IP33 to IP55)

Pressure switch for boiler control

Temperature switch for industrial applications (enclosure degree from IP54 to IP65)

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.

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

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

Example:
# Heating systems

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

**Other applications**

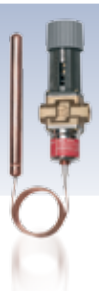
- Water booster pumps
- Membrane filtration units
- Fire-fighting pumping stations and equipment
- Biomass boilers
- Irrigation system
- Ultra and high purity water
- Catering water
- Desalination of saline water
- Water leak protection
- Car wash
- Dentist equipment
- Wind turbines
- Steam boilers
-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

# Solenoid valves

## 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 | Water | | | | | | |
| | Air and neutral gasses | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Oil | | | | | | |
| | Steam | ✓ | | ✓ | | | |
| Characteristics | Dirty media | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | Long lifetime | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | Soft closing (Low waterhammer) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | System suitability | Closed and drain | Open | Open | Open | Open | Open |
| | Connection | G ³/₈ – G 1 | G ¼ – G 1 | G ½ – G 2 | Flange connections: 2.5, 3 and 4" | G ¼ – G 2 | G ½ – G 1 |
| | Function | NC or NO | NC 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 |
| | Kv value $m^3/h$ | 2.5 – 7 | 0.7 – 6 | 4 – 40 | 50 – 130 | 1 – 32 | 4 – 11 |
| | Special features | | | | | | High pressure |
| | Approvals* | WRAS, VA | WRAS, VA and DNV | GL, WRAS, VA and DNV | | WRAS and VA | 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 | Stainless steel | Stainless steel | 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 = Germanisher 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 | → Open | Closed and drain | Closed and drain | Closed and drain | Closed and drain | Closed and drain | Closed and drain |
| | G ¼ – G 1 | G ¼ – G ¾ | G ⅛ – G1 | G ⅛ – G ⅜, flange 32 mm | G ⅛ – G ¼, flange 32 mm | G ⅛ – G ¼, flange 32 mm | G ⅜ – G 1 | G ⅜ – G 2 |
| | NC | NC | NC or NO | NC or NO | NC or NO | NC or NO | Thermostatic | NC or NO |
| | 6 – 25 | 6 – 20 | 1.5 – 25 | 1.5 – 3.5 | 1.2 – 3.5 | 1.2 – 2 | 10 – 25 | 15 – 50 |
| | 0.2 – 10 | 0.5 – 10 | 0 – 30 | 0 – 20 | 0 – 30 | 0 – 20 | 0 – 10 | 0 – 16 |
| | 185 °C | 80 °C | 140 °C | 100 °C | 120 °C | 100 °C | 130 °C | 180 °C |
| | 0.3 – 6 | 0.8 – 5 | 0.08 – 8 | 0.08 – 0.4 | 0.04 – 0.26 | 0.04 – 0.08 | 1.4 – 5.5 | 4.5 – 74 |
| | | | Isolating diaphragm | Manual override option | | Manual override option | | Options: Manual override position indicator |
| | | | GL, WRAS, VA 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 | | | ✓ | ✓✓ |
| Ozone | | | ✓ | ✓✓ |
| Propane | 20 | | ✓✓ | ✓✓ |
| Salt water (sea water) | 20 | 2 | - | ✓ |
| Steam | 185 | | - | ✓✓ |
| Sulphuric acid $H_2SO_4$ | | | - | - |
| 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 steel quality | Cast Iron | EPDM | NBR | FKM | PTFE |
| ✓✓ | ✓✓ | - | ✓✓ | ✓ | - | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | ✓ | - | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | - | ✓✓ | ✓✓ | ✓✓ |
| - | - | - | - | - | ✓ | ✓✓ |
| ✓ | - | - | ✓✓ | ✓✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | - | ✓✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | - | ✓✓ | ✓✓ | ✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | ✓ | ✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | ✓ | - | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | - | ✓✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | - | ✓✓ | - | - | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | - | ✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | - | ✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓✓ | - | ✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | ✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | - | ✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | - | - | ✓ |
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| - | - | - | ✓ | - | ✓ | ✓✓ |
| ✓✓ | ✓ | - | ✓✓ | ✓✓ | ✓ | ✓✓ |
| ✓✓ | ✓✓ | ✓ | ✓✓ | ✓✓ | ✓✓ | ✓✓ |
| ✓✓ | ✓✓ | - | ✓✓ | ✓✓ | ✓ | ✓✓ |

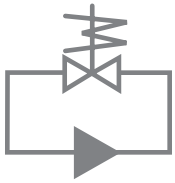
# Use the icons to find the right valve

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

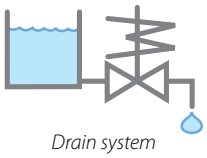
**Application**: Select the right valve based on the differential pressure of the system.

### Closed or drain systems

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



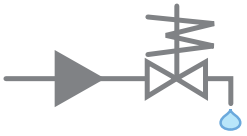
*Closed system*



*Drain system*

### Open systems

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

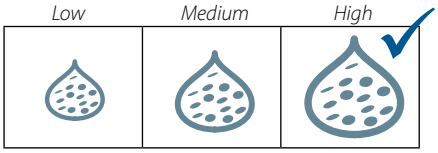


*Open system*

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

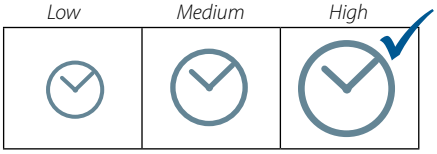
### Insensitive to dirt

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



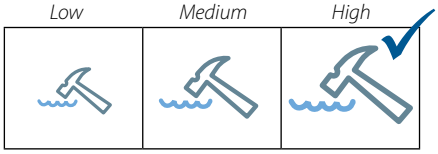

### Long lifetime and high performance

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




### Effective water hammer damping / soft closing

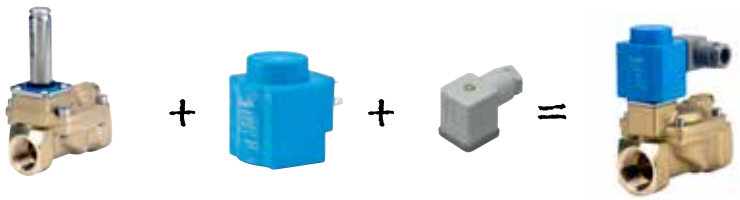
The valve design protects system damage from water hammer through soft closing. To minimize water hammer, some valves have an optimized diaphragm assembly and equalizing orifice. By changing the equalizing orifice on the EV220B 15-55, you can also increase the closing time.




*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.

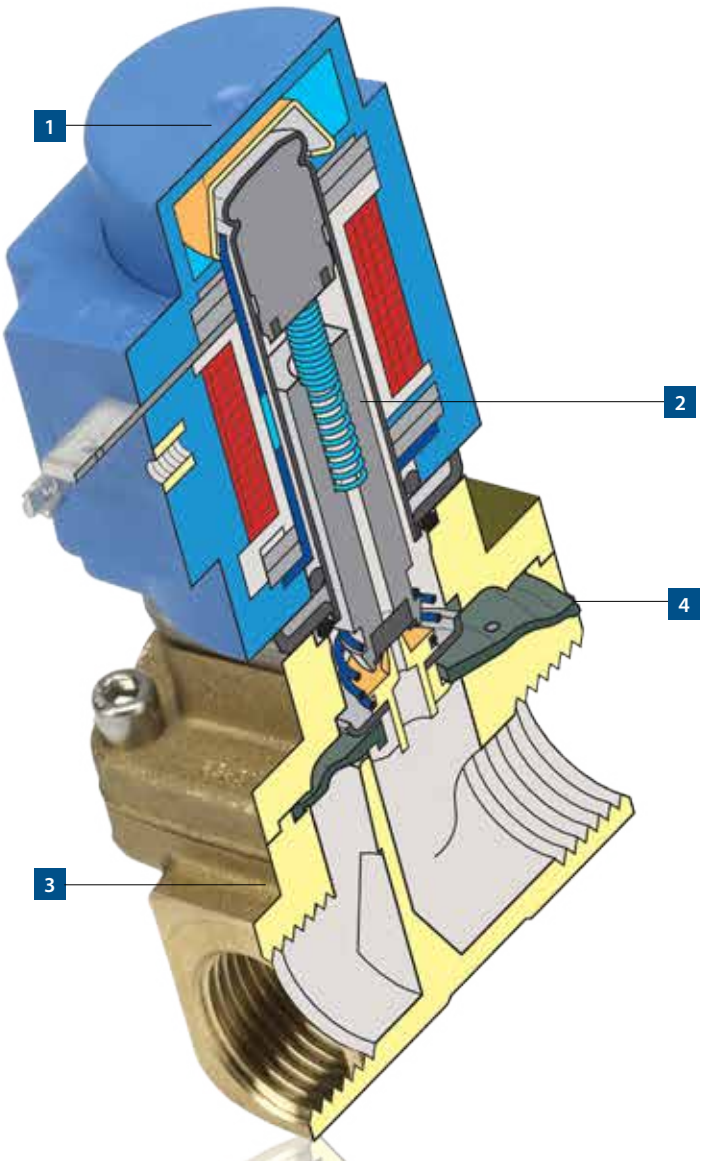
Developed to help wholesalers, retailers, installers and endusers pinpoint their solenoid valve needs, the web-based tool makes product selection quick and easy.

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:




# The EV250B for low and unspecified pressure conditions

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

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

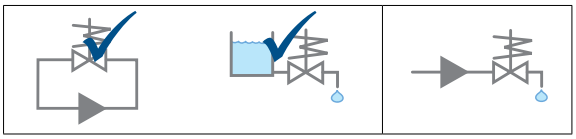
**2 High lift at zero or low differential pressures**
High armature lift secures a high opening degree from zero differential pressure.

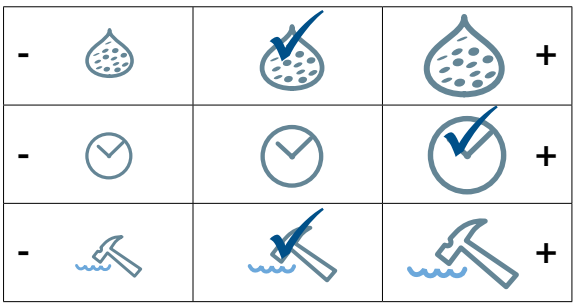
**3 For aggressive low-pressure steam**
Made from dezincification resistant brass (DZR), the EV250B valve body is suitable for aggressive technical water and steam.

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

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

# EV250B assisted lift 2/2-way solenoid valves

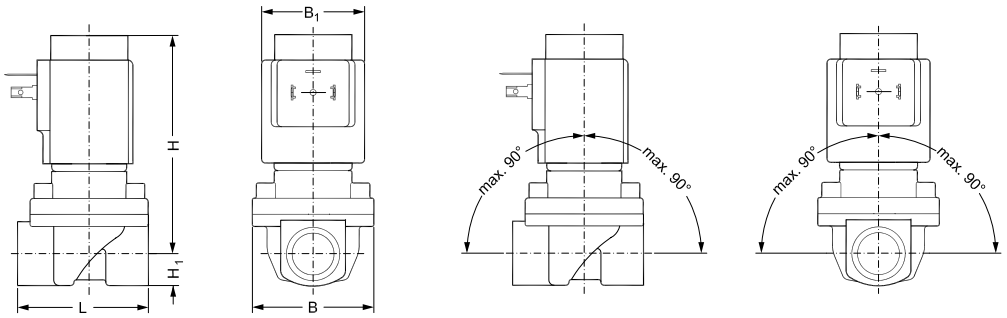





EV250B with assisted lift can operate from zero and up to 10 bar differential pressure.
This 2/2-way valve program is especially to use in closed circuits with low differential pressure, but demanding moderate flow rates. Valve body in dezincification resistant brass for ensuring a long life even in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

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

## Dimensions, weight and mounting angle:




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

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

| Type | Connection | Kv [m³/h] | Media Water 120 °C | Seal material | Differential pressure [bar] | Coil BB [V AC 50 Hz] | [V DC] | Code number |
|---|---|---|---|---|---|---|---|---|
| EV250B 10 | G ⅜ | 2.5 | ✓ | EPDM | 0 – 6* | | 24 | **032U157102** |
| EV250B 10 | G ⅜ | 2.5 | ✓ | EPDM | 0 – 10 | 24 | | **032U157116** |
| EV250B 10 | G ⅜ | 2.5 | ✓ | EPDM | 0 – 10 | 230 | | **032U157131** |
| EV250B 12 | G ½ | 4 | ✓ | EPDM | 0 – 6* | | 24 | **032U158002** |
| EV250B 12 | G ½ | 4 | ✓ | EPDM | 0 – 10 | 24 | | **032U158016** |
| EV250B 12 | G ½ | 4 | ✓ | EPDM | 0 – 10 | 230 | | **032U158031** |
| EV250B 18 | G ¾ | 6 | ✓ | EPDM | 0 – 6* | | 24 | **032U161402** |
| EV250B 18 | G ¾ | 6 | ✓ | EPDM | 0 – 10 | 24 | | **032U161416** |
| EV250B 18 | G ¾ | 6 | ✓ | EPDM | 0 – 10 | 230 | | **032U161431** |
| EV250B 22 | G 1 | 7 | ✓ | EPDM | 0 – 6* | | 24 | **032U162402** |
| EV250B 22 | G 1 | 7 | ✓ | EPDM | 0 – 10 | 24 | | **032U162416** |
| EV250B 22 | G 1 | 7 | ✓ | EPDM | 0 – 10 | 230 | | **032U162431** |

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

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

| Type | Connection | Kv [m³/h] | Media Water 120 °C | Seal material | Differential pressure [bar] | Coil BB [V AC 50 Hz] | [V DC] | Code number |
|---|---|---|---|---|---|---|---|---|
| EV250B 18 | G ¾ | 4.9 | ✓ | EPDM | 0 – 10 | 230 | | **032U537431** |
| EV250B 20 | G 1 | 5.2 | ✓ | EPDM | 0 – 10 | 230 | | **032U537631** |

## EV250B assisted lift valve, DZR brass, NC

| Type | Connection | Kv [m³/h] | Media Water 120 °C | Media Oil / Air | Seal material | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|
| EV250B 10 | G ⅜ | 2.5 | ✓ | | EPDM | 0 – 10 | **032U5250** |
| EV250B 10 | G ⅜ | 2.5 | | ✓ | FKM | 0 – 10 | **032U5251** |
| EV250B 12 | G ½ | 4 | ✓ | | EPDM | 0 – 10 | **032U5252** |
| EV250B 12 | G ½ | 4 | | ✓ | FKM | 0 – 10 | **032U5253** |
| EV250B 18 | G ¾ | 6 | ✓ | | EPDM | 0 – 10 | **032U5254** |
| EV250B 18 | G ¾ | 6 | | ✓ | FKM | 0 – 10 | **032U5255** |
| EV250B 22 | G 1 | 7 | ✓ | | EPDM | 0 – 10 | **032U5256** |
| EV250B 22 | G 1 | 7 | | ✓ | FKM | 0 – 10 | **032U5257** |

## EV250B assisted lift valve, DZR brass, NO

| Type | Connection | Kv [m³/h] | Media Water 120 °C | Seal material | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|
| EV250B 10 | G ⅜ | 2.5 | ✓ | EPDM | 0 – 10 | **032U5350** |
| EV250B 12 | G ½ | 4 | ✓ | EPDM | 0 – 10 | **032U5352** |
| EV250B 18 | G ¾ | 4.9 | ✓ | EPDM | 0 – 10 | **032U5354** |
| EV250B 22 | G 1 | 5.2 | ✓ | EPDM | 0 – 10 | **032U5356** |

## Coils for EV250B

| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BB | Effect [W] BE | BB coil IP00 clip-on | BE coil IP67 clip-on |
|---|---|---|---|---|---|---|
| 24 | | 50 | 10 | 10 | **018F7358** | **018F6707** |
| 48 | | 50 | | 10 | | **018F6709** |
| 110 | | 50 | 10 | | **018F7360** | |
| 115 | | 50 | 10 | 10 | **018F7361** | **018F6711** |
| 220 – 230 | | 50 | 10 | 10 | **018F7351** | **018F6701** |
| 240 | | 50 | 10 | 10 | **018F7352** | **018F6702** |
| 380 – 400 | | 50 | 10 | 10 | **018F7353** | **018F6703** |
| | 12 | - | 18 | 18 | **018F7396** | **018F6756** |
| | 24 | - | 18 | 18 | **018F7397** | **018F6757** |

## Cable plug, IP65 enclosure

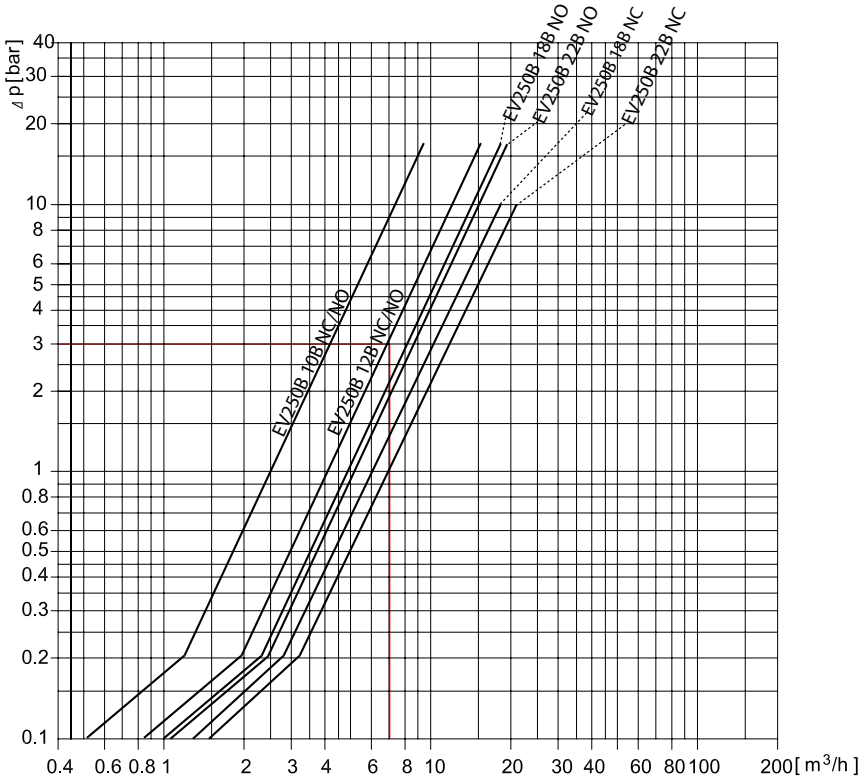
| | |
|---|---|
| To use with BB coils | **042N0156** |

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

No plug needed - IP67 terminal box fitted as standard

## Capacity diagram for solenoid valve EV250B

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



# Spare parts and accessories for EV250B

## Spare part kits for EV250B EPDM NC

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

## Spare part kits for EV250B FKM NC

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

## Sparepart kits for EV250B NO

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

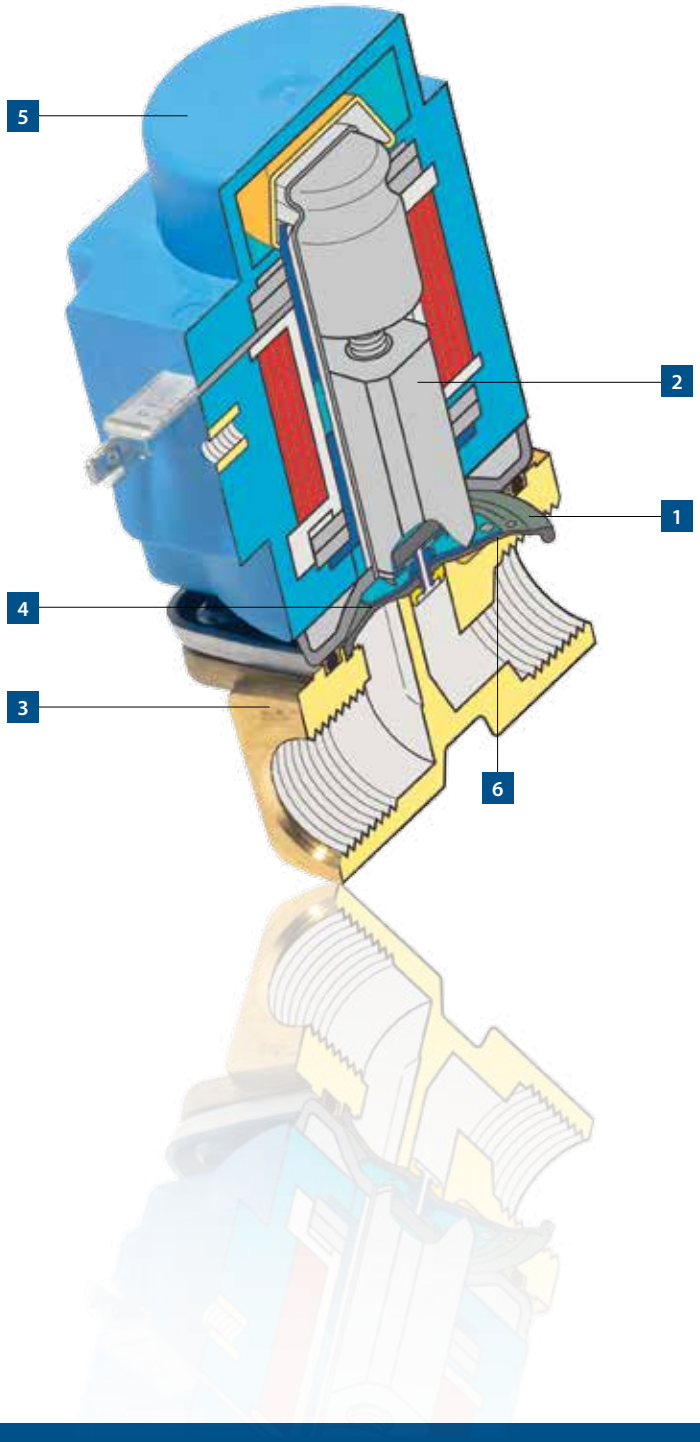
## Permanent magnet

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

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

| Type | Description | Control [V 50/60 Hz] | Power cons. Max [W] | Ambient temp. [°C] | Code number |
|---|---|---|---|---|---|
| ET 20 M | External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button)<br>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 22has an optimised diaphragm shape, added reinforcement for internal damping, and a special damping cone to ensure viscous damping in the critical late closing stage.

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

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

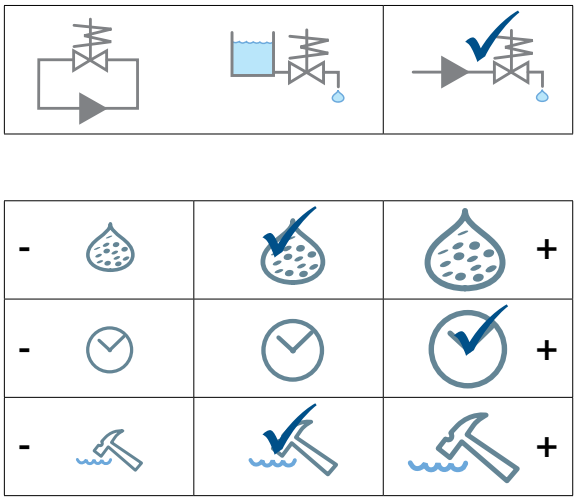
The EV220B 6 - EV220B 22 is also available with two seal materials. Both the EPDM and FKM seals can cope with all common media and a wide temperature range, while the EPDM versions have water approvals.

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

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

**6 High capacity across the entire pressure range**
The optimised diaphragm shape gives a very high lift height, providing excellent capacity and tightness at any pressure.

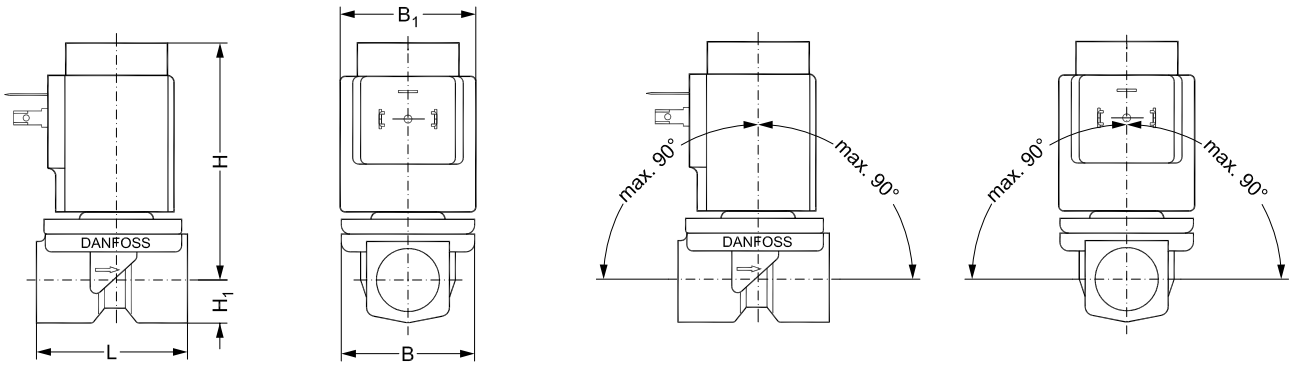
# EV220B 6 - EV220B 22 servo-operated 2/2-way solenoid valves




EV220B 6 - EV220B 22 is a direct servo-operated 2/2-way solenoid valve program with connections from ¼" – 1".
This program is especially for OEM applications demanding a robust solution and moderate flow rates.

- 2/2-way
- Servo-operated
- DN 6 – DN 22
- Brass or DZR (de-zincification resistant) brass valve body
- NC (normally closed) and NO (normally open) versions
- ISO 228/1 or NPT thread connection (EVSI and EVSI-U)
- Nominal pressure from PN 10
- Wetted parts: brass, stainless steel, copper, EPDM, FKM or NBR rubber

## Dimensions, weight and mounting angle:




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

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

| Type | Connection | Kv [m³/h] | Media | | Seal material | Differential pressure [bar] | Coil BB | | Code number |
|---|---|---|---|---|---|---|---|---|---|
| | | | Water 90 °C | Oil / Air | | | [V AC 50 Hz] | [V DC] | |
| EV220B 10 | G ⅜ | 1.5 | ✓ | ✓ | NBR | 0.1 – 10 | | 24 | **032U151802** |
| EV220B 10 | G ⅜ | 1.5 | ✓ | ✓ | NBR | 0.1 – 30 | 24 | | **032U151816** |
| EV220B 10 | G ⅜ | 1.5 | ✓ | ✓ | NBR | 0.1 – 30 | 230 | | **032U151831** |
| EV220B 12 | G ½ | 2.5 | ✓ | ✓ | NBR | 0.3 – 6* | | 24 | **032U153802** |
| EV220B 12 | G ½ | 2.5 | ✓ | ✓ | NBR | 0.3 – 10 | 24 | | **032U153816** |
| EV220B 12 | G ½ | 2.5 | ✓ | ✓ | NBR | 0.3 – 10 | 230 | | **032U153831** |
| EV220B 18 | G ¾ | 6 | ✓ | ✓ | NBR | 0.3 – 6* | | 24 | **032U528602** |
| EV220B 18 | G ¾ | 6 | ✓ | ✓ | NBR | 0.3 – 10 | 24 | | **032U528616** |
| EV220B 18 | G ¾ | 6 | ✓ | ✓ | NBR | 0.3 – 10 | 230 | | **032U528631** |
| EV220B 22 | G 1 | 6 | ✓ | ✓ | NBR | 0.3 – 6* | | 24 | **032U528702** |
| EV220B 22 | G 1 | 6 | ✓ | ✓ | NBR | 0.3 – 10 | 24 | | **032U528716** |
| EV220B 22 | G 1 | 6 | ✓ | ✓ | NBR | 0.3 – 10 | 230 | | **032U528731** |

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

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

| Type | Connection | Kv [m³/h] | Media | | Seal material | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|
| | | | Water 100 °C | Oil / Air | | | |
| EV220B 6 | G ¼ | 0.7 | ✓ | | EPDM | 0.1 – 20 | **032U1236** |
| EV220B 6 | G ¼ | 0.7 | | ✓ | FKM | 0.1 – 30 | **032U1237** |
| EV220B 6 | G ⅜ | 0.7 | ✓ | | EPDM | 0.1 – 20 | **032U1241** |
| EV220B 6 | G ⅜ | 0.7 | | ✓ | FKM | 0.1 – 30 | **032U1242** |
| EV220B 10 | G ⅜ | 1.5 | ✓ | | EPDM | 0.1 – 20 | **032U1246** |
| EV220B 10 | G ⅜ | 1.5 | | ✓ | FKM | 0.1 – 30 | **032U1247** |
| EV220B 10 | G ½ | 1.5 | ✓ | | EPDM | 0.1 – 20 | **032U1251** |
| EV220B 10 | G ½ | 1.5 | | ✓ | FKM | 0.1 – 30 | **032U1252** |
| EV220B 12 | G ½ | 2.5 | ✓ | | EPDM | 0.3 – 10 | **032U1256** |
| EV220B 12 | G ½ | 2.5 | | ✓ | FKM | 0.3 – 10 | **032U1255** |
| EV220B 18 | G ¾ | 6 | ✓ | | EPDM | 0.3 – 10 | **032U1261** |
| EV220B 18 | G ¾ | 6 | | ✓ | FKM | 0.3 – 10 | **032U1260** |
| EV220B 22 | G 1 | 6 | ✓ | | EPDM | 0.3 – 10 | **032U1263** |
| EV220B 22 | G 1 | 6 | | ✓ | FKM | 0.3 – 10 | **032U1266** |

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

| Type | Connection | Kv [m³/h] | Media | | Seal material | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|
| | | | Water 100 °C | Oil / Air | | | |
| EV220B 6 | G ⅜ | 0.7 | ✓ | | EPDM | 0.1 – 10 | **032U1238** |
| EV220B 6 | G ⅜ | 0.7 | | ✓ | FKM | 0.1 – 10 | **032U1239** |
| EV220B 10 | G ½ | 1 | | ✓ | FKM | 0.1 – 10 | **032U1249** |

## Coils for EV220B 6 - EV220B 22:



| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BA | Effect [W] BB | Effect [W] BE | BA coil IP00 | BB coil IP00 clip-on | BE coil IP67 clip-on |
|---|---|---|---|---|---|---|---|---|
| 24 | | 50 | 9 | 10 | 10 | **042N7508** | **018F7358** | **018F6707** |
| 48 | | 50 | 9 | | 10 | **042N7510** | | **018F6709** |
| 110 | | 50 | | 10 | | | **018F7360** | |
| 115 | | 50 | 9 | 10 | 10 | **042N7512** | **018F7361** | **018F6711** |
| 220 – 230 | | 50 | 9 | 10 | 10 | **042N7501** | **018F7351** | **018F6701** |
| 240 | | 50 | 9 | 10 | 10 | **042N7502** | **018F7352** | **018F6702** |
| 380 – 400 | | 50 | 9 | 10 | 10 | **042N7504** | **018F7353** | **018F6703** |
| | 12 | - | 15 | 18 | 18 | **042N7550** | **018F7396** | **018F6756** |
| | 24 | - | 15 | 18 | 18 | **042N7551** | **018F7397** | **018F6757** |

## Cable plug, IP65 enclosure


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

No plug needed - IP67 terminal box fitted as standard

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

### Spare part kits, NC

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

### Spare part kits, NC

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

### Spare part kits, NO

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

### Permanent magnet

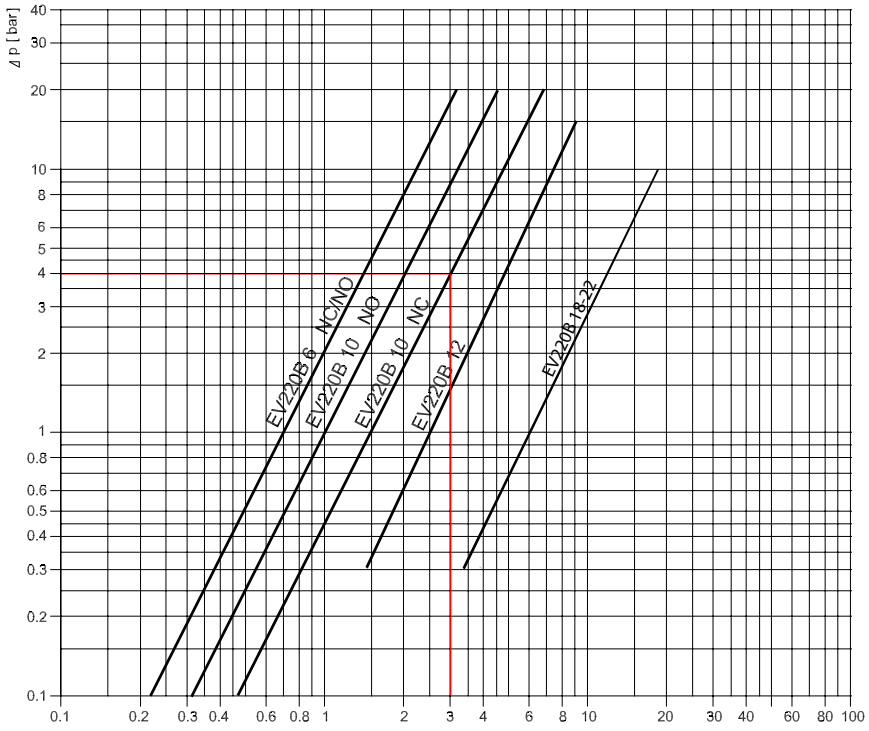
| Description | Code number |
|---|---|
| Fits all EV220B valves | **018F0091** |

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

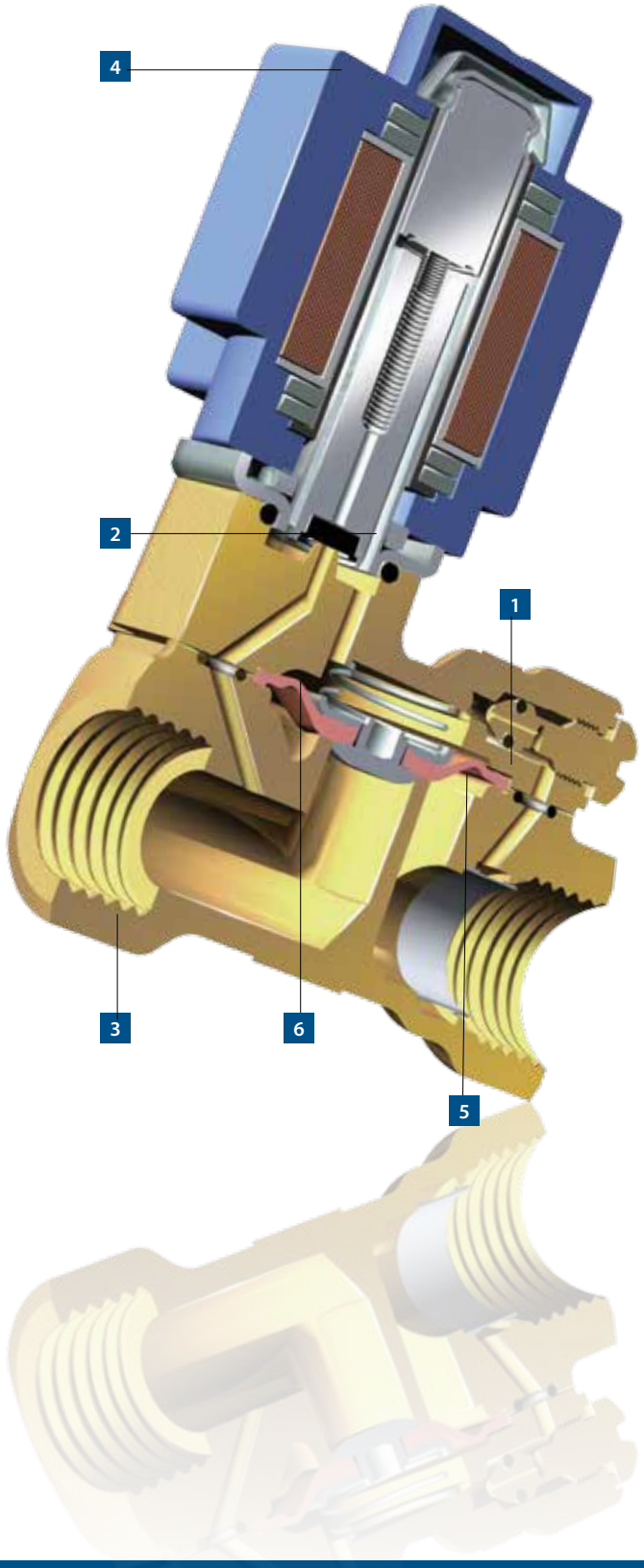
| Type | Description | Control [V 50/60 Hz] | Power cons. Max [W] | Ambient temp. [°C] | Code number |
|---|---|---|---|---|---|
| ET 20 M | External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button)<br>Electrical connection DIN 43650 A / EN 175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

## Capacity diagram forEV220B 6 - EV220B 22:

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



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




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

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

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

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

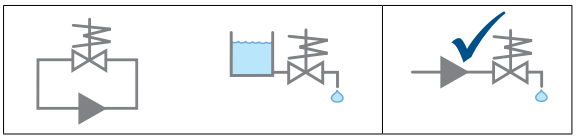
The EPDM seals remain soft even at -30 °C, while the FKM and NBR rubber seals can handle temperatures up to 100 °C.

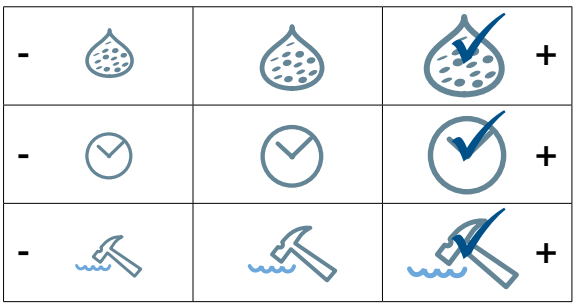
**4 Wide coil range up to IP67**
The EV220B range uses the standard B-range of coils from IP00 to IP67. Coils subject to water splash and temperatures up to 80 °C should use the more powerful and robust clip-on coils.

**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

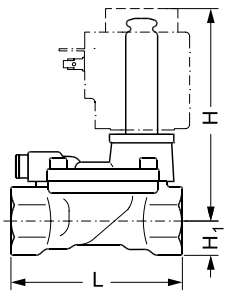


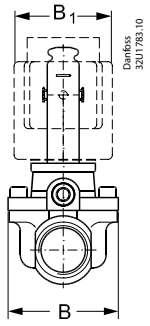


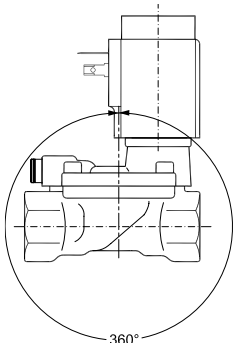

EV220B 15 - EV220B 50 is a universal indirect servo-operated 2/2-way solenoid valve program. Valve body in brass, dezincification resistant brass and stainless steel ensures that a broad variety of application can be covered.
Built-in pilot filter as standard, adjustable closing time and enclosures up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

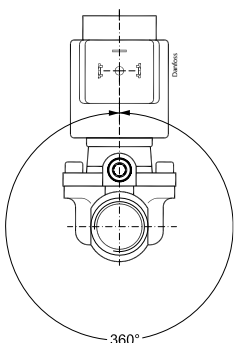
- 2/2-way
- Servo-operated
- DN 15 – DN 50
- Valve body available in brass, DZR brass, gun metal or stainless steel
- NC and NO versions
- ISO 228/1 or NPT thread connection (EVSI and EVSI-U)
- Built in filter for protection of pilot system
- Water hammer damped
- Adjustable closing time available
- Nominal pressure from PN 10
- Wetted parts: brass, stainless steel, copper, tin, EPDM, FKM or NBR rubber

## Dimensions, weight and mounting angle:




| Type / orifice size | L [mm] | B [mm] | $B_1$ [mm] Coil type BA | $B_1$ [mm] Coil type BB/BE | $H_1$ [mm] | H [mm] | Weight with BB coil [kg] |
|---|---|---|---|---|---|---|---|
| EV220B 15 | 80 | 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] | Kv [m³/h] | Media | | Seal material | Coil BB | | Code number |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Water 90 °C | Oil / Air | | [V AC 50 Hz] | [V DC] | |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | ✓ | NBR | | 24 | **032U451402** |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | ✓ | NBR | 24 | | **032U451416** |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | ✓ | NBR | 230 | | **032U451431** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | ✓ | NBR | | 24 | **032U453002** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | ✓ | NBR | 24 | | **032U453016** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | ✓ | NBR | 230 | | **032U453031** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | ✓ | NBR | | 24 | **032U453402** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | ✓ | NBR | 24 | | **032U453416** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | ✓ | NBR | 230 | | **032U453431** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | ✓ | NBR | | 24 | **032U456802** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | ✓ | NBR | 24 | | **032U456816** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | ✓ | NBR | 230 | | **032U456831** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | ✓ | NBR | | 24 | **032U458502** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | ✓ | NBR | 24 | | **032U458516** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | ✓ | NBR | 230 | | **032U458531** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | ✓ | NBR | | 24 | **032U460402** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | ✓ | NBR | 24 | | **032U460416** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | ✓ | NBR | 230 | | **032U460431** |

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

**DZR brass, brass or stainless steel (SS)**

| Type | Connection | Differential pressure [bar] | Kv [m³/h] | Media | | | Seal material | Body material | | | Code number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water 120 °C | Water 90 °C | Oil / Air | | DZR | Brass | SS | |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | | | EPDM | ✓ | | | **032U5815** |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | | | EPDM | | ✓ | | **032U7115** |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | | | EPDM | | | ✓ | **032U8500** |
| EV220B 15 | G ½ | 0.3 – 10 | 4 | | | ✓ | FKM | | ✓ | | **032U7116** |
| EV220B 15 | G ½ | 0.3 – 10 | 4 | | | ✓ | FKM | | | ✓ | **032U8506** |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | | ✓ | ✓ | NBR | | ✓ | | **032U7170** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | | | EPDM | ✓ | | | **032U5820** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | | | EPDM | | ✓ | | **032U7120** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | | | EPDM | | | ✓ | **032U8501** |
| EV220B 20 | G ¾ | 0.3 – 10 | 8 | | | ✓ | FKM | | ✓ | | **032U7121** |
| EV220B 20 | G ¾ | 0.3 – 10 | 8 | | | ✓ | FKM | | | ✓ | **032U8507** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | | ✓ | ✓ | NBR | | ✓ | | **032U7171** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | | | EPDM | ✓ | | | **032U5825** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | | | | EPDM | ✓ | | | **032U5825** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | | | EPDM | | ✓ | | **032U7125** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | | | EPDM | | | ✓ | **032U8502** |
| EV220B 25 | G 1 | 0.3 – 10 | 11 | | | ✓ | FKM | | ✓ | | **032U7126** |
| EV220B 25 | G 1 | 0.3 – 10 | 11 | | | ✓ | FKM | | | ✓ | **032U8508** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | | ✓ | ✓ | NBR | | ✓ | | **032U7172** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | | | EPDM | ✓ | | | **032U5832** |

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

**DZR brass, brass or stainless steel (SS)**

| Type | Connection | Differential pressure [bar] | Kv [m³/h] | Media | | | Seal material | Body material | | | Code number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water 120 °C | Water 90 °C | Oil / Air | | DZR | Brass | SS | |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | | | EPDM | | ✓ | | **032U7132** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | | | EPDM | | | ✓ | **032U8503** |
| EV220B 32 | G 1 ¼ | 0.3 – 10 | 18 | | | ✓ | FKM | | ✓ | | **032U7133** |
| EV220B 32 | G 1 ¼ | 0.3 – 10 | 18 | | | ✓ | FKM | | | ✓ | **032U8509** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | | ✓ | ✓ | NBR | | ✓ | | **032U7173** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | | | EPDM | ✓ | | | **032U5840** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | | | EPDM | | ✓ | | **032U7140** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | | | EPDM | | | ✓ | **032U8504** |
| EV220B 40 | G 1 ½ | 0.3 – 10 | 24 | | | ✓ | FKM | | ✓ | | **032U7141** |
| EV220B 40 | G 1 ½ | 0.3 – 10 | 24 | | | ✓ | FKM | | | ✓ | **032U8510** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | | ✓ | ✓ | NBR | | ✓ | | **032U7174** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | | | EPDM | ✓ | | | **032U5850** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | | | EPDM | | ✓ | | **032U7150** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | | | EPDM | | | ✓ | **032U8505** |
| EV220B 50 | G 2 | 0.3 – 10 | 40 | | | ✓ | FKM | | ✓ | | **032U7151** |
| EV220B 50 | G 2 | 0.3 – 10 | 40 | | | ✓ | FKM | | | ✓ | **032U8511** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | | ✓ | ✓ | NBR | | ✓ | | **032U7175** |

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

| Type | Connection | Differential pressure [bar] | Kv [m³/h] | Media | | | Seal material | Code number |
|---|---|---|---|---|---|---|---|---|
| | | | | Water 120 °C | Water 90 °C | Oil / Air | | |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | ✓ | | | EPDM | **032U7117** |
| EV220B 15 | G ½ | 0.3 – 16 | 4 | | ✓ | ✓ | NBR | **032U7180** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | ✓ | | | EPDM | **032U7122** |
| EV220B 20 | G ¾ | 0.3 – 16 | 8 | | ✓ | ✓ | NBR | **032U7181** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | ✓ | | | EPDM | **032U7127** |
| EV220B 25 | G 1 | 0.3 – 16 | 11 | | ✓ | ✓ | NBR | **032U7182** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | ✓ | | | EPDM | **032U7134** |
| EV220B 32 | G 1 ¼ | 0.3 – 16 | 18 | | ✓ | ✓ | NBR | **032U7183** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | ✓ | | | EPDM | **032U7142** |
| EV220B 40 | G 1 ½ | 0.3 – 16 | 24 | | ✓ | ✓ | NBR | **032U7184** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | ✓ | | | EPDM | **032U7152** |
| EV220B 50 | G 2 | 0.3 – 16 | 40 | | ✓ | ✓ | NBR | **032U7185** |

## Coils for EV220B 15 - EV220B 50



| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BA | Effect [W] BB | Effect [W] BE | BA coil IP00 | BB coil IP00 clip-on | BE coil IP67 clip-on |
|---|---|---|---|---|---|---|---|---|
| 24 | | 50 | 9 | 10 | 10 | **042N7508** | **018F7358** | **018F6707** |
| 48 | | 50 | 9 | | 10 | **042N7510** | | **018F6709** |
| 110 | | 50 | | 10 | | | **018F7360** | |
| 115 | | 50 | 9 | 10 | 10 | **042N7512** | **018F7361** | **018F6711** |
| 220 – 230 | | 50 | 9 | 10 | 10 | **042N7501** | **018F7351** | **018F6701** |
| 240 | | 50 | 9 | 10 | 10 | **042N7502** | **018F7352** | **018F6702** |
| 380 – 400 | | 50 | 9 | 10 | 10 | **042N7504** | **018F7353** | **018F6703** |
| | 12 | - | 15 | 18 | 18 | **042N7550** | **018F7396** | **018F6756** |
| | 24 | - | 15 | 18 | 18 | **042N7551** | **018F7397** | **018F6757** |

## Cable plug, IP65 enclosure


| | | |
|---|---|---|
| To use with all BA and BB coils | **042N0156** | **042N0156** |


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

No plug needed - IP67 terminal box fitted as standard

# 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.<br>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.<br>Note: Valve height is increased by 16 mm | **032U7390** |

# Spare parts and accessories for EV220B 15 - EV220B 50

## Isolating diaphragm kits

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

## Adjustable orifice kit, brass

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

## Equalizing orifice

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

## Permanent magnet

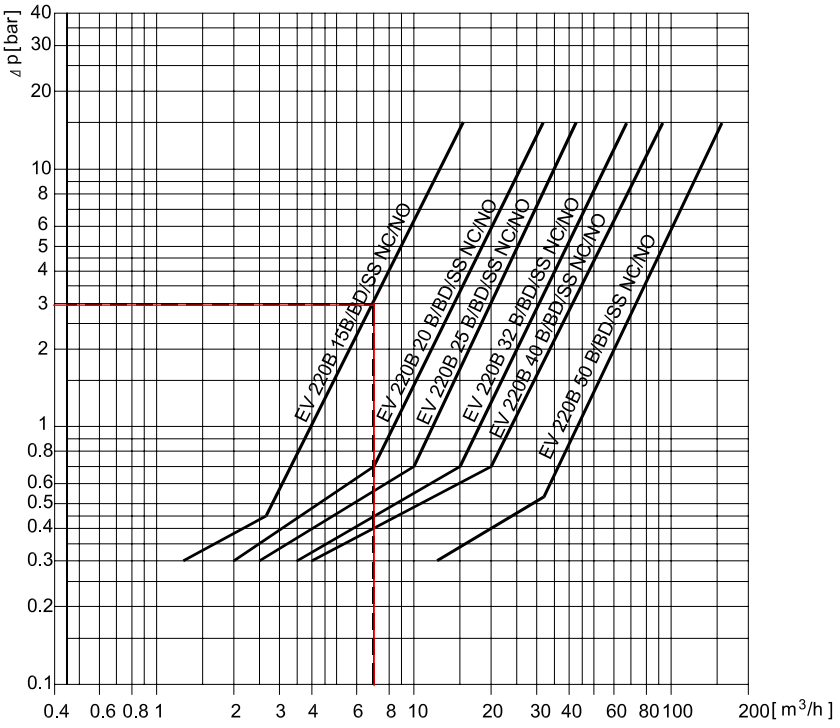
| Application | | Code number |
|---|---|---|
| Fits all EV220B valves | | **018F0091** |

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

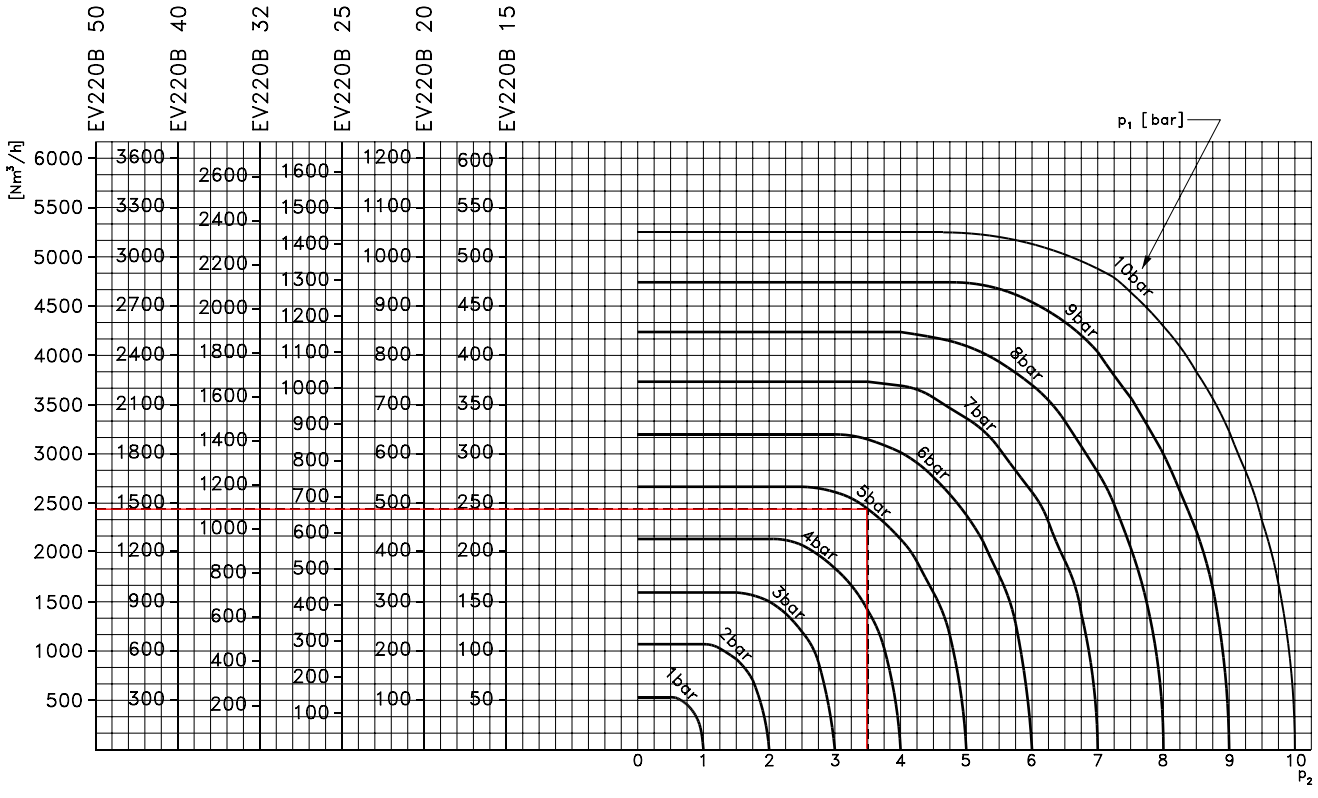
| Type | Description | Control [V 50/60 Hz] | Power cons. Max [W] | Ambient temp. [°C] | Code number |
|---|---|---|---|---|---|
| ET 20 M | External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button)<br>Electrical connection DIN 43650 A / EN 175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

## Capacity diagram for EV220B 15 - EV220B 50:

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

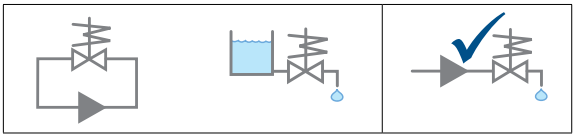


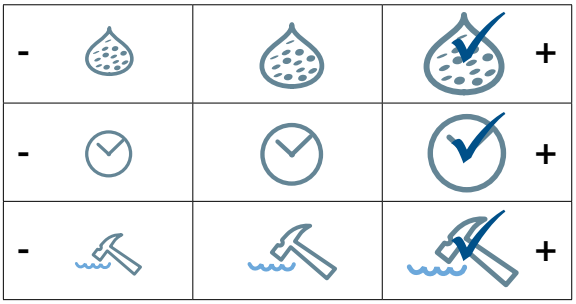

*Example, air:*
*Capacity for EV220B 15B at inlet pressure ($p_1$) of 5 bar and outlet pressure ($p_2$) of 3.5 bar: Approx. 245 Nm³/h*




*Flow information on other media types: Please contact Danfoss.*

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

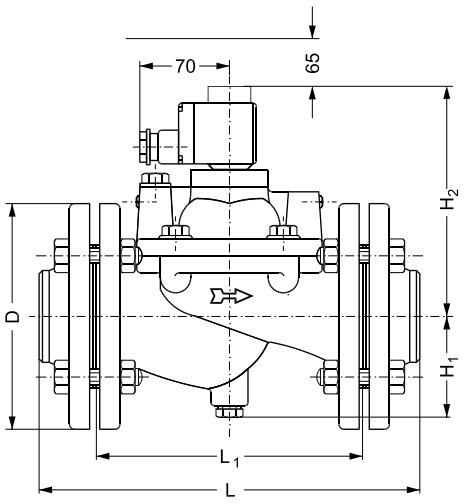


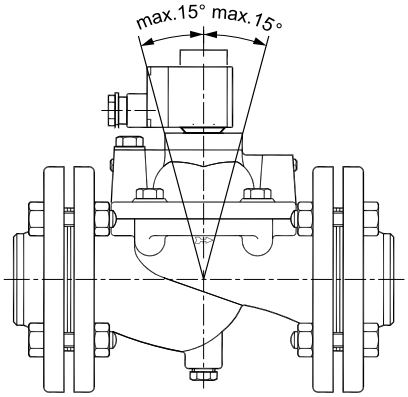


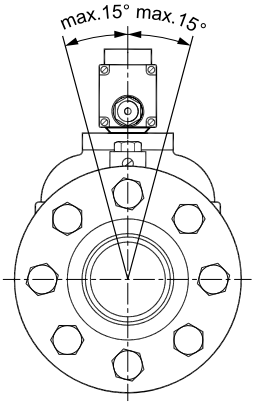

EV220B 65 - EV220B 100 is a 2/2-way solenoid valve program for use in robust industrial applications, demanding high flow rates. The valve is designed with cast iron valve bodies and flanged connection.
Water-hammer damped design and built-in pilot filter ensures a reliable operational period.

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

## Dimensions, weight and mounting angle:




*All dimensions in millimetres*

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

## EV220B 65 - EV220B 100 servo-operated valves, NC

| Type | Connection Flange / [inch] | Kv [m³/h] | Media Water 120 °C | Media Water 90 °C | Media Oil / Air | Seal material | Body material Cast iron | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|---|---|
| EV220B 65 | 2 ½ | 50 | | ✓ | ✓ | NBR | ✓ | 0.25 – 10 | **016D3330** |
| EV220B 65 | 2 ½ | 50 | ✓ | | | EPDM | ✓ | 0.25 – 10 | **016D6065** |
| EV220B 80 | 3 | 75 | | ✓ | ✓ | NBR | ✓ | 0.25 – 10 | **016D3331** |
| EV220B 80 | 3 | 75 | ✓ | | | EPDM | ✓ | 0.25 – 10 | **016D6080** |
| EV220B 100 | 4 | 130 | ✓ | | | EPDM | ✓ | 0.25 – 10 | **016D6100** |

## Coils for EV220B 65 - EV220B 100

| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BB | Effect [W] BE | BB coil IP00 clip-on | BE coil IP67 clip-on |
|---|---|---|---|---|---|---|
| 24 | | 50 | 10 | 10 | **018F7358** | **018F6707** |
| 48 | | 50 | | 10 | | **018F6709** |
| 110 | | 50 | 10 | | **018F7360** | |
| 115 | | 50 | 10 | 10 | **018F7361** | **018F6711** |
| 220 – 230 | | 50 | 10 | 10 | **018F7351** | **018F6701** |
| 240 | | 50 | 10 | 10 | **018F7352** | **018F6702** |
| 380 – 400 | | 50 | 10 | 10 | **018F7353** | **018F6703** |
| | 12 | - | 18 | 18 | **018F7396** | **018F6756** |
| | 24 | - | 18 | 18 | **018F7397** | **018F6757** |

## Cable plug, IP65 enclosure

| | |
|---|---|
| To use with all BB coils | **042N0156** |

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

No plug needed - IP67 terminal box fitted as standard

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

### Permanent magnet

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

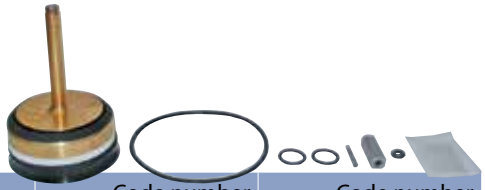
### Electronic timers for coils for pulse start , only IP65

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

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

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

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



### Spare part kit

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

### Seal kit

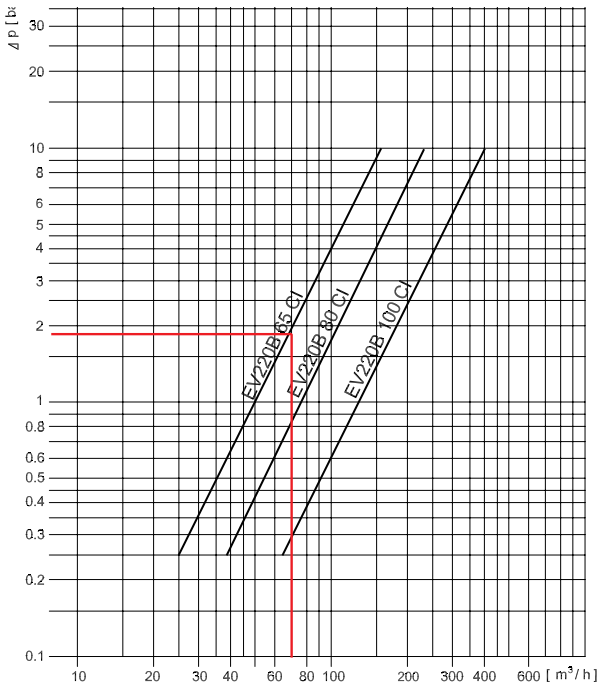
| Application | | Code number EPDM |
|---|---|---|
| EV220B 65 | | **016D0075** |
| EV220B 80 | | **016D0076** |
| EV220B 100 | | **016D0077** |

### Manual override kit, hand operated

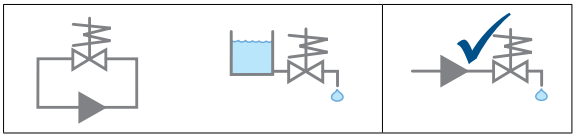
| Application | Seal material | Description | Code number |
|---|---|---|---|
| EV220B 65 - EV 220B 100 | EPDM | Manual override kit. Used for manual override in event of power failure.<br>Note: Valve height is increased by 16 mm | **032U7390** |

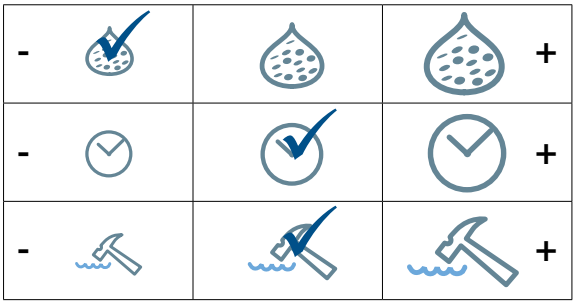
## Capacity diagram for EV220B 65 - EV220B 100:

*Example, water:*
*Capacity for EV220B 65 - EV220B 100 at differential pressure of 2 bar: Approx. 70 $m^3/h$*



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

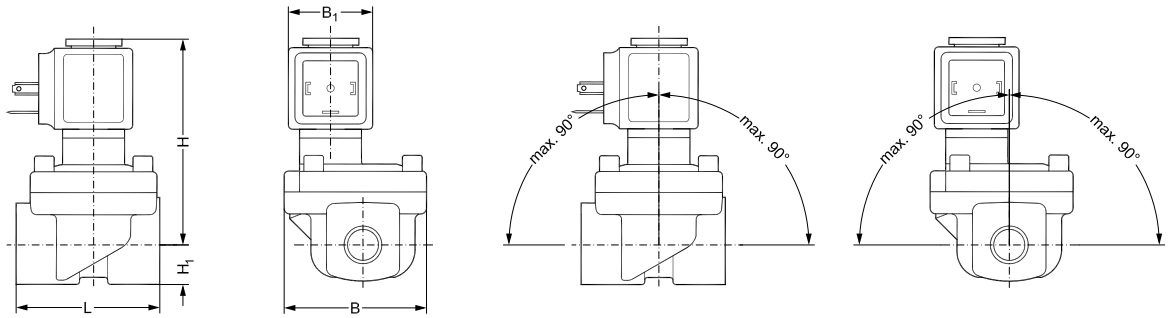





EV220A is a compact servo-operated 2/2-way solenoid valve program, especially designed for use in machines and equipment with limited space.

- 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 from PN 16
- Wetted parts: brass, stainless steel, copper, EPDM or NBR rubber

## Dimensions, weight and mounting angle:




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

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

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

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

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

## Coils for EV220A

| Voltage [AC] | Voltage [DC] | Frequency [Hz] | Effect [W] AM coil | AM coil DIN 43650-A |
|---|---|---|---|---|
| 24 | | 50/60 | 7.5 | **042N0842** |
| 110 | | 50/60 | 7.5 | **042N0845** |
| 230 | | 50/60 | 7.5 | **042N0840** |
| 240 | | 50/60 | 7.5 | **042N0841** |
| | 12 | - | 9.5 | **042N0848** |
| | 24 | - | 9.5 | **042N0843** |

## Cable plugs, IP65 enclosure

| | |
|---|---|
| To use with AM coils | **042N0156** |

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

## Spare parts and accessories for EV220A

### Spare part kits, NC

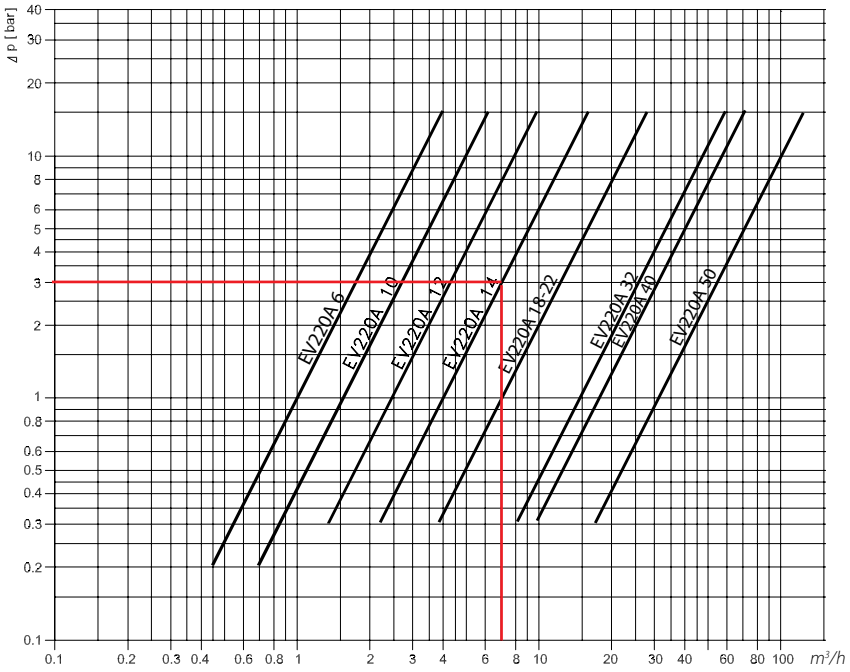
| Application | Seal material | Code number |
|---|---|---|
| EV220A 6 - EV220A 10 | EPDM | **042U1000** |
| EV220A 6 - EV220A 10 | NBR | **042U1001** |
| EV220A 12 - EV220A 14 | EPDM | **042U1003** |
| EV220A 12 - EV220A 14 | NBR | **042U1004** |
| EV220A 18 - EV220A 22 | EPDM | **042U1006** |
| EV220A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

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

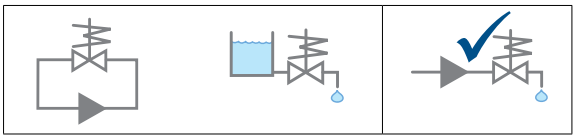
| Type | Description | Control [V 50/60 Hz] | Power cons. Max [W] | Ambient temp. [°C] | Code number |
|---|---|---|---|---|---|
| ET 20 M | External adjustable timing from 1 – 45 minutes with 1 – 15 seconds drain open. With manual override (test button)<br>Electrical connection DIN 43650 A / EN 175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

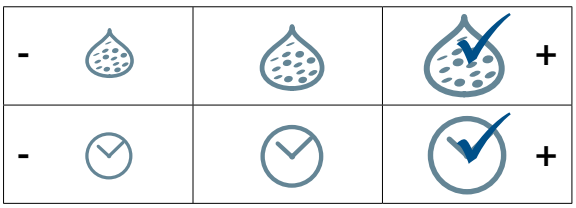
# Capacity diagram for EV220A

*Example for water:*
*Capacity for EV220A at differential pressure of 3 bar: Approx. 7 m³/h*



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

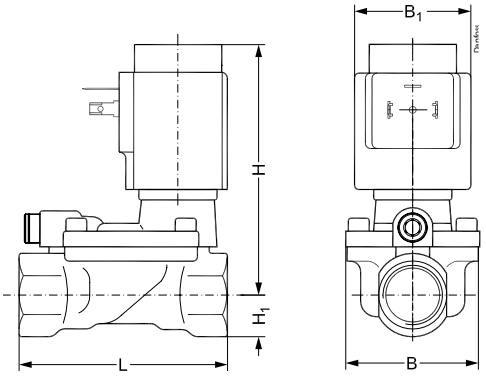


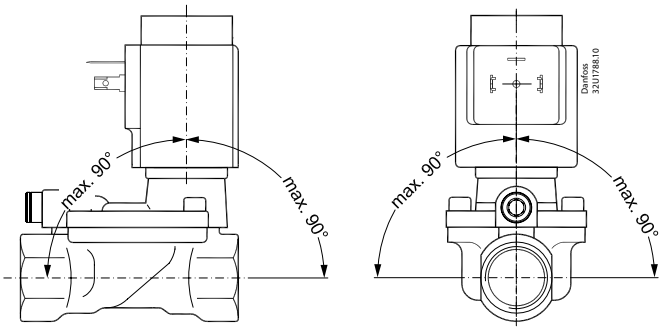



EV224B is a high pressure indirect servo-operated 2/2-way solenoid valve with working pressure up to 40 bar, medium temperature up to 60 °C and available in NC and NO versions. Built-in pilot filter as standard, adjustable closing time, enclosures up to IP67 (depending on coil) ensure a reliable and 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 from PN 40
- Wetted parts: brass, stainless steel, copper, tin, PTFE (only NO) and NBR rubber

## Dimensions, weight and mounting angle:




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

## EV224B servo-operated valves, NC

| Type | Connection | Kv [m³/h] | Seal material | Media Air 60 °C | Body material Brass | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|
| EV224B 15 | G ½ | 4 | NBR | ✓ | ✓ | 0.3 – 40 | **032U8360** |
| EV224B 20 | G ¾ | 8 | NBR | ✓ | ✓ | 0.3 – 40 | **032U8362** |
| EV224B 25 | G 1 | 11 | NBR | ✓ | ✓ | 0.3 – 40 | **032U8364** |

## EV224B servo-operated valves, NO

| Type | Connection | Kv [m³/h] | Seal material | Media Air 60 °C | Body material Brass | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|
| EV224B 15 | G ½ | 4 | NBR | ✓ | ✓ | 0.3 – 40 | **032U8361** |
| EV224B 20 | G ¾ | 8 | NBR | ✓ | ✓ | 0.3 – 40 | **032U8363** |
| EV224B 25 | G 1 | 11 | NBR | ✓ | ✓ | 0.3 – 40 | **032U8365** |

## Coils for EV224B

| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BB | Effect [W] BE | BB coil IP00 clip-on | BE coil IP67 clip-on |
|---|---|---|---|---|---|---|
| 24 | | 50 | 10 | 10 | **018F7358** | **018F6707** |
| 48 | | 50 | | 10 | | **018F6709** |
| 110 | | 50 | 10 | | **018F7360** | |
| 115 | | 50 | 10 | 10 | **018F7361** | **018F6711** |
| 220 – 230 | | 50 | 10 | 10 | **018F7351** | **018F6701** |
| 240 | | 50 | 10 | 10 | **018F7352** | **018F6702** |
| 380 – 400 | | 50 | 10 | 10 | **018F7353** | **018F6703** |
| | 12 | - | 18 | 18 | **018F7396** | **018F6756** |
| | 24 | - | 18 | 18 | **018F7397** | **018F6757** |

## Cable plugs, IP65 enclosure

| | |
|---|---|
| To use with BB coils | **042N0156** |

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

No plug needed - IP67 terminal box fitted as standard

# 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)<br>Electrical connection DIN 43650 A / EN 175 301-803-A | 24 – 240 | 20.0 | -10 – 50 | **042N0185** |

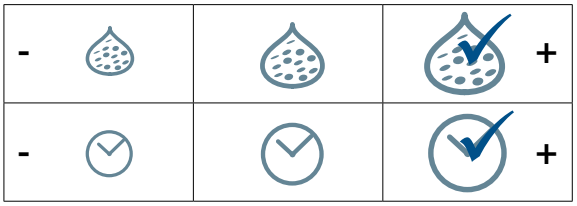
## Spare part kits, NC

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

## Spare part kits, NO

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

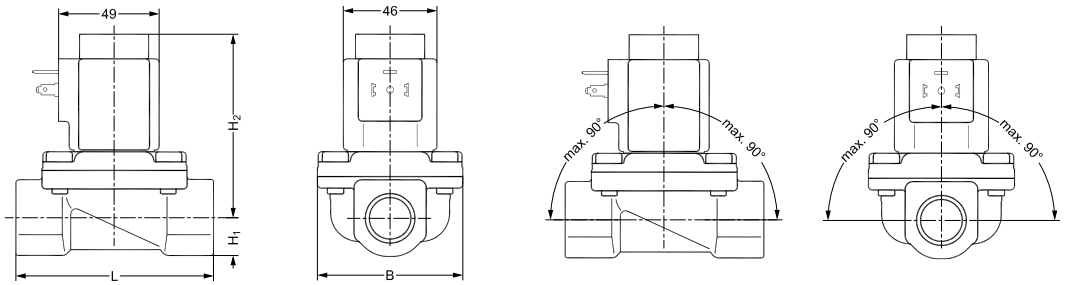
# EV225B servo-operated 2/2-way solenoid valves for steam




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

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

## Dimensions, weight and mounting angle:




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

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

| Type | Connection | Kv [m³/h] | BQ coil, 10 W AC Temp. max [°C] | BQ coil, 10 W AC Diff. pressure [bar] | 24 V 50 Hz | 110 V 60 Hz | 230 V 50 Hz | 220 V 60Hz | Code number |
|---|---|---|---|---|---|---|---|---|---|
| EV225B 10 | G ½ | 2.2 | 185 | 0.2 – 10 | ✓ | | | | **032U380416** |
| EV225B 15 | G ½ | 3.0 | 185 | 0.2 – 10 | ✓ | | | | **032U380516** |
| EV225B 20 | G ¾ | 5.0 | 185 | 0.2 – 10 | ✓ | | | | **032U380616** |
| EV225B 25 | G 1 | 6.0 | 185 | 0.2 – 10 | ✓ | | | | **032U380716** |
| EV225B 10 | G ½ | 2.2 | 185 | 0.2 – 10 | | ✓ | | | **032U380420** |
| EV225B 15 | G ½ | 3.0 | 185 | 0.2 – 10 | | ✓ | | | **032U380520** |
| EV225B 20 | G ¾ | 5.0 | 185 | 0.2 – 10 | | ✓ | | | **032U380620** |
| EV225B 25 | G 1 | 6.0 | 185 | 0.2 – 10 | | ✓ | | | **032U380720** |
| EV225B 10 | G ½ | 2.2 | 185 | 0.2 – 10 | | | ✓ | | **032U380431** |
| EV225B 15 | G ½ | 3.0 | 185 | 0.2 – 10 | | | ✓ | | **032U380531** |
| EV225B 20 | G ¾ | 5.0 | 185 | 0.2 – 10 | | | ✓ | | **032U380631** |
| EV225B 25 | G 1 | 6.0 | 185 | 0.2 – 10 | | | ✓ | | **032U380731** |
| EV225B 10 | G ½ | 2.2 | 185 | 0.2 – 10 | | | | ✓ | **032U380429** |
| EV225B 15 | G ½ | 3.0 | 185 | 0.2 – 10 | | | | ✓ | **032U380529** |
| EV225B 20 | G ¾ | 5.0 | 185 | 0.2 – 10 | | | | ✓ | **032U380629** |
| EV225B 25 | G 1 | 6.0 | 185 | 0.2 – 10 | | | | ✓ | **032U380729** |

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

| Type | Connection | Kv [m³/h] | BN coil, 20 W Temp. max [°C] | BN coil, 20 W Diff. pressure [bar] | 24 V DC | | Code number |
|---|---|---|---|---|---|---|---|
| EV225B 10 | G ½ | 2.2 | 160 | 0.2 – 5 | ✓ | | **032U380402** |
| EV225B 15 | G ½ | 3.0 | 160 | 0.2 – 5 | ✓ | | **032U380502** |
| EV225B 20 | G ¾ | 5.0 | 160 | 0.2 – 5 | ✓ | | **032U380602** |
| EV225B 25 | G 1 | 6.0 | 160 | 0.2 – 5 | ✓ | | **032U380702** |

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

| Type | Connection | Kv [m³/h] | BQ coil, 10 W AC Temp. max [°C] | BQ coil, 10 W AC Diff. pressure [bar] | BN coil, 20 W DC Temp. max [°C] | BN coil, 20 W DC Diff. pressure [bar] | BB coil, 10 W AC Temp. max [°C] | BB coil, 10 W AC Diff. pressure [bar] | BB coil, 18 W DC Temp. max [°C] | BB coil, 18 W DC Diff. pressure [bar] | Code number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EV225B 6 | G ¼ | 0.9 | 185 | 0.2 – 10 | 160 | 0.2 – 5 | 160 | 0.2 – 5 | 140 | 0.2 – 3.6 | **032U3802** |
| EV225B 10 | G ⅜ | 2.2 | 185 | 0.2 – 10 | 160 | 0.2 – 5 | 160 | 0.2 – 5 | 140 | 0.2 – 3.6 | **032U3803** |
| EV225B 10 | G ½ | 2.2 | 185 | 0.2 – 10 | 160 | 0.2 – 5 | 160 | 0.2 – 5 | 140 | 0.2 – 3.6 | **032U3804** |
| EV225B 20 | G ¾ | 5.0 | 185 | 0.2 – 10 | 160 | 0.2 – 5 | 160 | 0.2 – 5 | 140 | 0.2 – 3.6 | **032U3806** |
| EV225B 25 | G 1 | 6.0 | 185 | 0.2 – 10 | 160 | 0.2 – 5 | 160 | 0.2 – 5 | 140 | 0.2 – 3.6 | **032U3807** |

## Coils for EV225B




| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BQ | Effect [W] BN | Effect [W] BB | BQ coil, AC 10 bar, 185 °C IP65 clip-on | BN coil, DC 5 bar, 160 °C IP65 clip-on | BB coil, AC 5 bar, 160 °C IP65 clip-on | BB coil, DC 3.6 bar, 140 °C IP65 clip-on |
|---|---|---|---|---|---|---|---|---|---|
| 24 | | 50 | 10 | | 10 | **018F4517** | | **018F7358** | |
| 24 | | 60 | | | 10 | | | **018F7365** | |
| 115 | | 50 | | | 10 | | | **018F7361** | |
| 110 | | 60 | 10 | | 10 | **018F4519** | | **018F7360** | |
| 220 | | 60 | 10 | | | **018F4520** | | | |
| 230 | | 50 | 10 | | 10 | **018F4511** | | **018F7351** | |
| 230 | | 60 | | | 10 | | | **018F7363** | |
| 240 | | 50 | | | 10 | | | **018F7352** | |
| 380 | | 50 | | | 10 | | | **018F7353** | |
| | 12 | | | | 18 | | | | **018F7396** |
| | 24 | | | 20 | 18 | | **018F6968** | | **018F7397** |

## Cable plug, IP65 enclosure



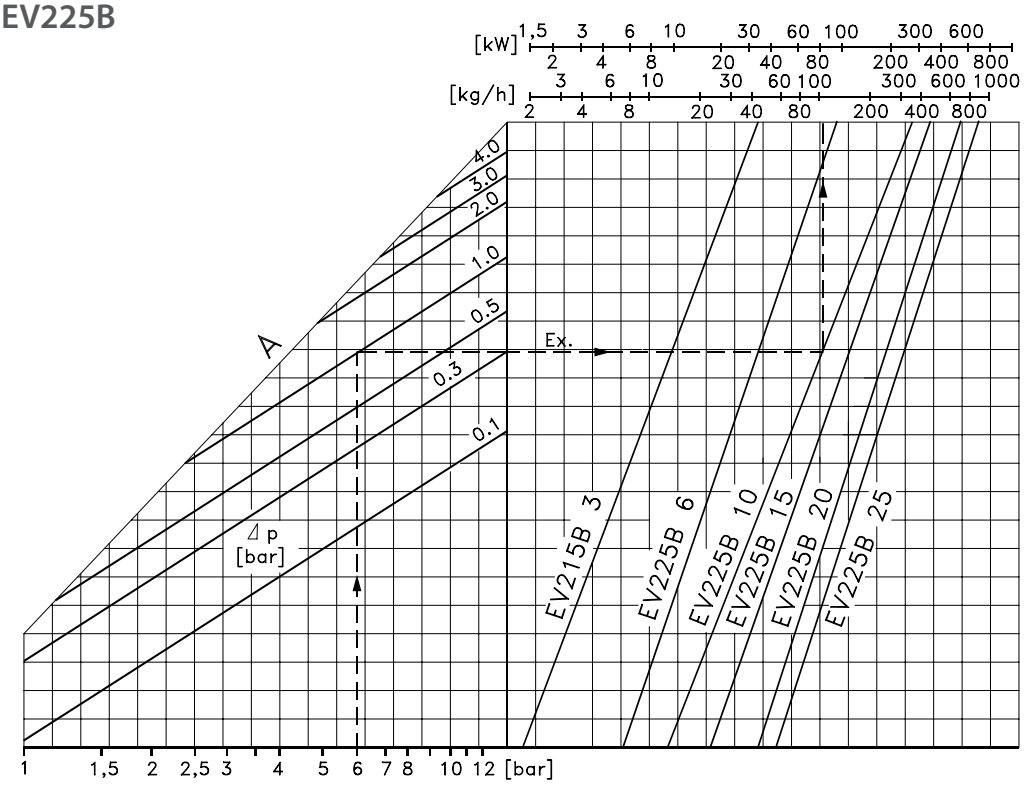

| | | | | |
|---|---|---|---|---|
| To use with all BB coils | **042N0156** | **042N0156** | **042N0156** | **042N0156** |

## Spare part kits

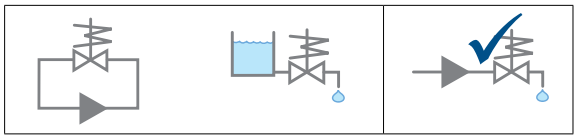
| Application | Seal material | Code number |
|---|---|---|
| EV225 6 - EV225 10 | PTFE | **032U3171** |
| EV225 15 | PTFE | **032U3172** |
| EV225 20 - EV225 25 | PTFE | **032U3173** |

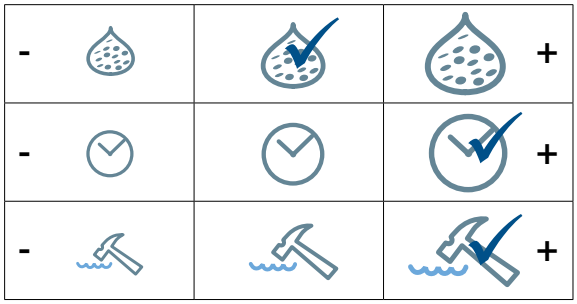
## Capacity diagram for EV225B

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



# EV260B servo-operated 2-way proportional solenoid valves

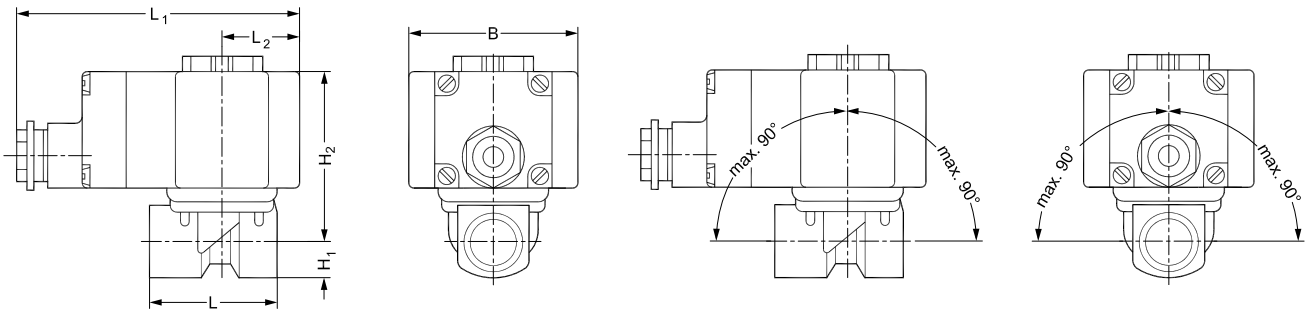






EV260B is a proportional (modulating) servo-operated 2-way solenoid valve program with connections from ¼" – ¾".
Through stepless regulation of the coil current, the armature can be placed in any position in the armature tube, thus setting the valve to any position between completely closed and completely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

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

## Dimensions, weight and mounting angle:




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

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

## EV260B proportional valve, brass, NC

| Type | Connection | Kv [m³/h] | Seal material | Medium water [°C] | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|
| EV260B 6 | G ¼ | 0.8 | PTFE | -10 – 80 | 0.5 – 10 | **032U8052** |
| EV260B 6 | G ⅜ | 0.8 | PTFE | -10 – 80 | 0.5 – 10 | **032U8053** |
| EV260B 10 | G ⅜ | 1.3 | PTFE | -10 – 80 | 0.5 – 10 | **032U8054** |
| EV260B 10 | G ½ | 1.3 | PTFE | -10 – 80 | 0.5 – 10 | **032U8055** |
| EV260B 15 | G ½ | 2.1 | PTFE | -10 – 80 | 0.5 – 10 | **032U8056** |
| EV260B 20 | G ¾ | 5 | PTFE | -10 – 80 | 0.5 – 10 | **032U8057** |

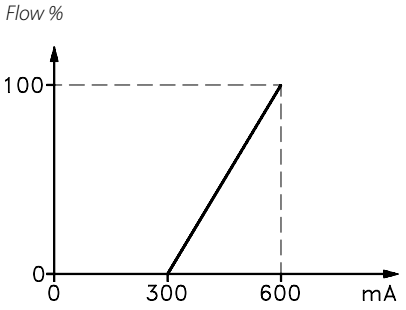
## Coils for EV260B

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

## Spare part kits for EV260B

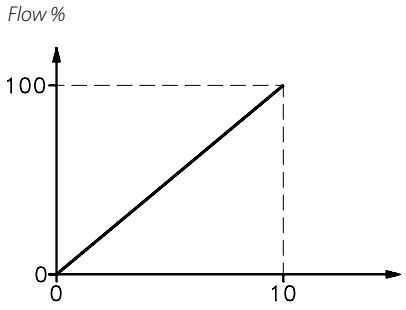
| Application | Seal material | Code number |
|---|---|---|
| EV260B 6 | PTFE | **032U8039** |
| EV260B 10 | PTFE | **032U8040** |
| EV260B 15 | PTFE | **032U8041** |
| EV260B 20 | PTFE | **032U8042** |

## Signal flow characteristics for EV260B



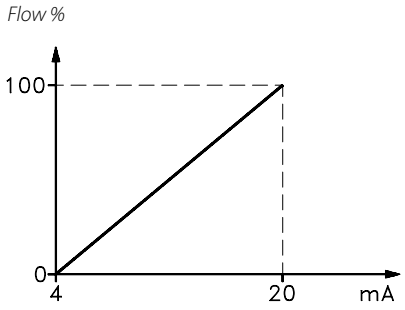

*Supply voltage: 24 V pulsating d.c.*

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




*Supply voltage: 21-30 V d.c.*

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

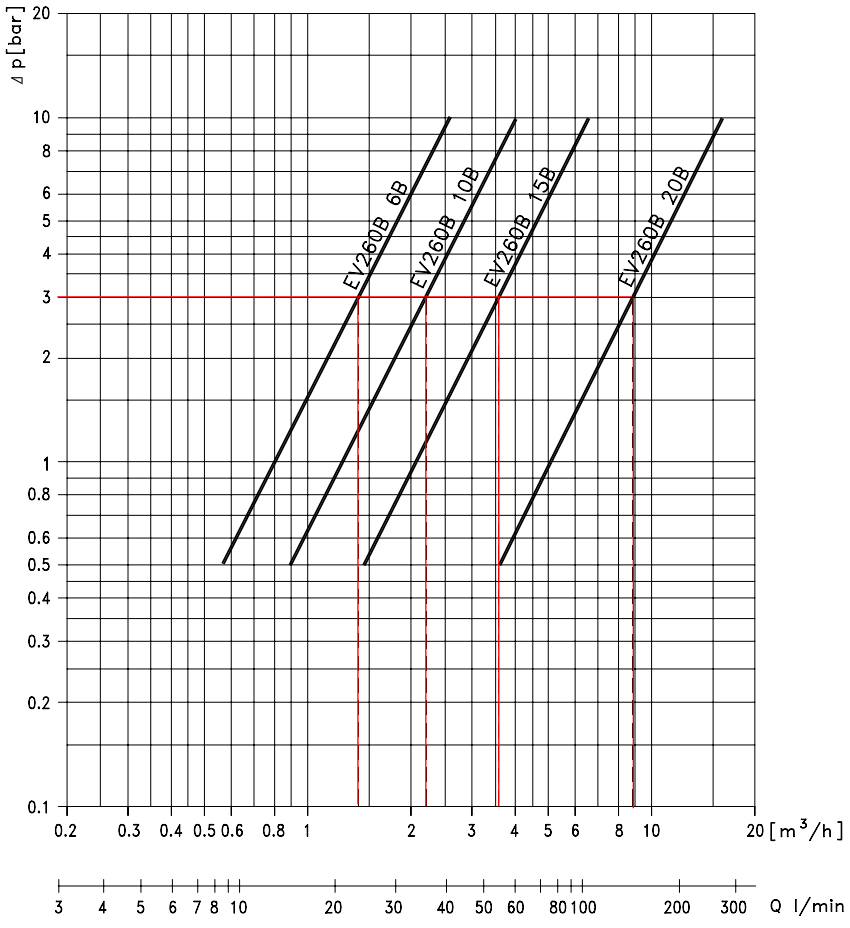



*Supply voltage: 21-30 V d.c.*

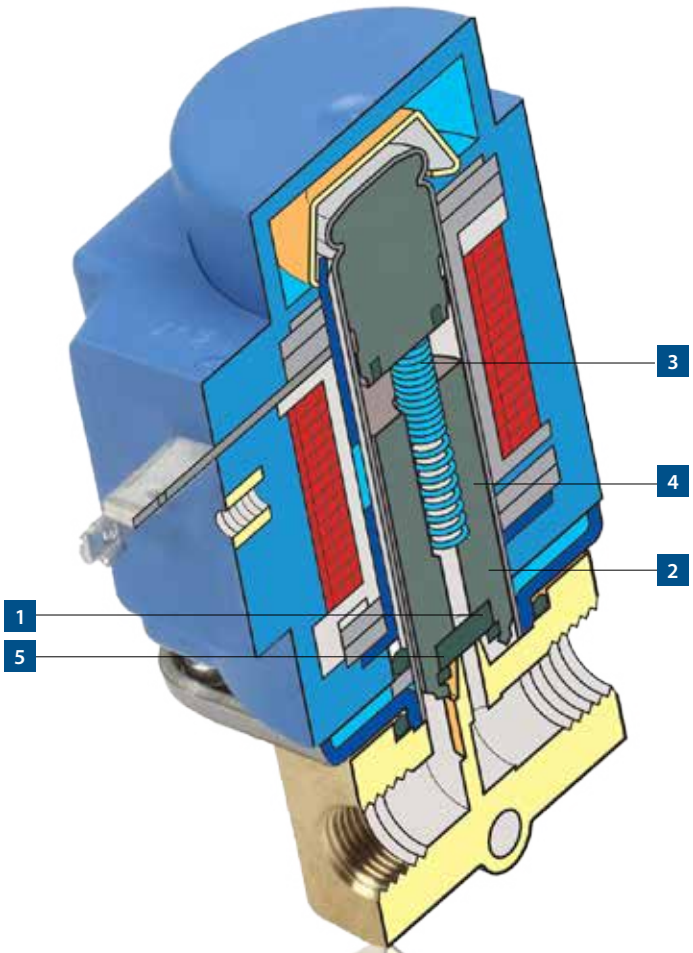
*Coil type BL. With signal converter and 4-20 mA pilot signal.*
*The ration between pilot signal and flow is directly proportional throughout the regulation range.*

## Capacity diagram for EV260B

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



# The EV210B solenoid valve for tough working conditions




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

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

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

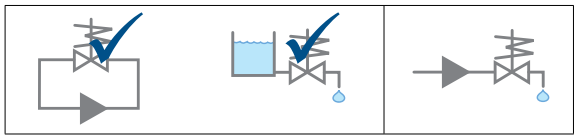
**3 Long life**
Designed to last, the EV210B has a high wall thickness, a unique square-shaped armature and a specially designed spring. And because the spring movements are very close, wear is significantly reduced.

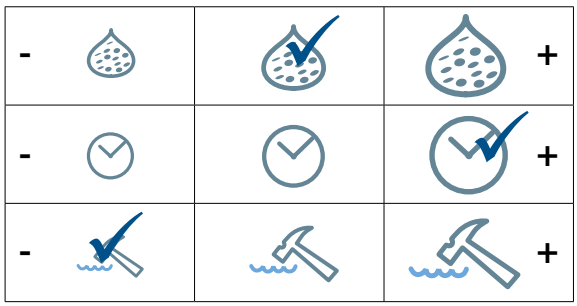
**4 Insensitive to dirt**
Due to the armature's unique design, there is a low risk of particles sticking to the armature. If particles become lodged between the armature and the armature tube or top, they will be displaced by the fluid when the armature moves.

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

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

# EV210B direct-operated 2/2-way solenoid valves

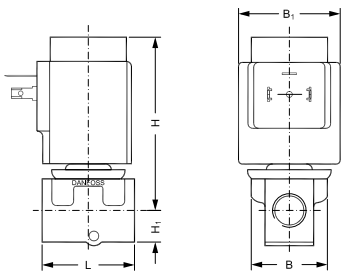


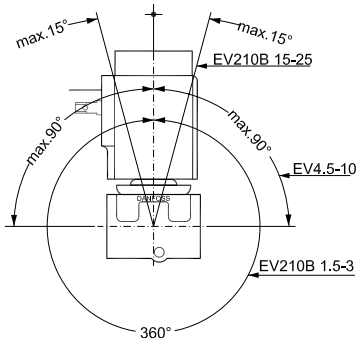


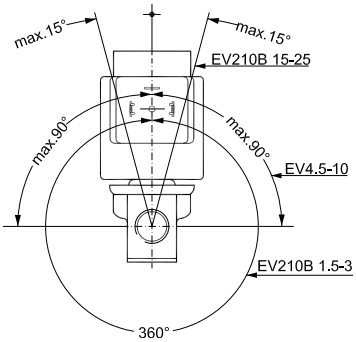

EV210B covers a wide range of direct-operated 2/2-way solenoid valves for universal use. EV210B is a real robust valve program with high performance and can be used in all kind of tough working conditions.

- 2/2-way
- High Performance series
- Direct-operated
- DN 1.5 – DN 25
- Brass or stainless steel valve body
- NC (normally closed) and NO (normally open) versions
- ISO 228/1 G 1⁄8" to G 1"
- UL listed version with NPT for North America (EVI)
- Wetted parts: brass, stainless steel, copper, EPDM, FKM or NBR rubber

## Dimensions, weight and mounting angle:




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

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

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

## EV210B direct operated valve, brass, NC

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

## EV210B direct operated valve, DZR brass, NC

| Type | Connection | Kv [m³/h] | Media | | Seal material | Differential pressure [bar] | | Code number |
|---|---|---|---|---|---|---|---|---|
| | | | Water 120 °C | Oil / Air | | BA/BE coil [AC] / [DC] | BB coil [AC] / [DC] | |
| EV210B 15 | G ½ | 2.85 | ✓ | | EPDM | 0 – 0.25 / - | 0 – 0.3 / 0 – 0.15 | **032U3619** |
| EV210B 15 | G ½ | 2.85 | | ✓ | FKM | 0 – 0.25 / - | 0 – 0.3 / 0 – 0.15 | **032U3620** |
| EV210B 20 | G ¾ | 4.50 | ✓ | | EPDM | - | 0 – 0.28 / 0 – 0.12 | **032U3621** |
| EV210B 20 | G ¾ | 4.50 | | ✓ | FKM | - | 0 – 0.28 / 0 – 0.12 | **032U3622** |
| EV210B 25 | G 1 | 8.00 | ✓ | | EPDM | - | 0 – 0.25 / 0 – 0.09 | **032U3623** |
| EV210B 25 | G 1 | 8.00 | | ✓ | FKM | - | 0 – 0.25 / 0 – 0.09 | **032U3624** |

## EV210B direct operated valve, brass, NO

| Type | Connection | Kv [m³/h] | Media | | Seal material | Differential pressure [bar] BA/BE/BB coil [AC] / [DC] | Code number |
|---|---|---|---|---|---|---|---|
| | | | Water 120 °C | Oil / Air | | | |
| EV210B 1.5 | G ⅛ | 0.08 | ✓ | | EPDM | 0 – 30 | **032U3630** |
| EV210B 1.5 | G ⅛ | 0.08 | | ✓ | FKM | 0 – 30 | **032U3631** |
| EV210B 2.0 | G ⅛ | 0.15 | ✓ | | EPDM | 0 – 12 | **032U3632** |
| EV210B 2.0 | G ⅛ | 0.15 | | ✓ | FKM | 0 – 12 | **032U3633** |
| EV210B 3.0 | G ⅛ | 0.30 | ✓ | | EPDM | 0 – 5 | **032U3634** |
| EV210B 3.0 | G ⅛ | 0.30 | | ✓ | FKM | 0 – 5 | **032U3635** |
| EV210B 2.0 | G ¼ | 0.15 | ✓ | | EPDM | 0 – 12 | **032U3636** |
| EV210B 2.0 | G ¼ | 0.15 | | ✓ | FKM | 0 – 12 | **032U3637** |
| EV210B 3.0 | G ¼ | 0.30 | ✓ | | EPDM | 0 – 5 | **032U3638** |
| EV210B 3.0 | G ¼ | 0.30 | | ✓ | FKM | 0 – 5 | **032U3639** |
| EV210B 4.5 | G ¼ | 0.55 | ✓ | | EPDM | 0 – 2 | **032U3640** |
| EV210B 4.5 | G ¼ | 0.55 | | ✓ | FKM | 0 – 2 | **032U3641** |

## Coils for EV210B



| Voltage [AC] | Voltage [DC] | Frequenzy [Hz] | Effect [W] BA coil | Effect [W] BB coil | Effect [W] BE coil | BA coil IP00 | BB coil IP00 clip-on | BE coil IP67 clip-on |
|---|---|---|---|---|---|---|---|---|
| 24 | | 50 | 9 | 10 | 10 | **042N7508** | **018F7358** | **018F6707** |
| 48 | | 50 | 9 | | 10 | **042N7510** | | **018F6709** |
| 110 | | 50 | | 10 | | | **018F7360** | |
| 115 | | 50 | 9 | 10 | 10 | **042N7512** | **018F7361** | **018F6711** |
| 220 – 230 | | 50 | 9 | 10 | 10 | **042N7501** | **018F7351** | **018F6701** |
| 240 | | 50 | 9 | 10 | 10 | **042N7502** | **018F7352** | **018F6702** |
| 380 – 400 | | 50 | 9 | 10 | 10 | **042N7504** | **018F7353** | **018F6703** |
| | 12 | - | 15 | 18 | 18 | **042N7550** | **018F7396** | **018F6756** |
| | 24 | - | 15 | 18 | 18 | **042N7551** | **018F7397** | **018F6757** |

## Cable plug, IP65 enclosure


| | | |
|---|---|---|
| To use with all BA and BB coils | **042N0156** | **042N0156** |

No plug needed - IP67 terminal box fitted as standard


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

## Spare parts and accessories for EV210B

### Isolating diaphragm kit, NC

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

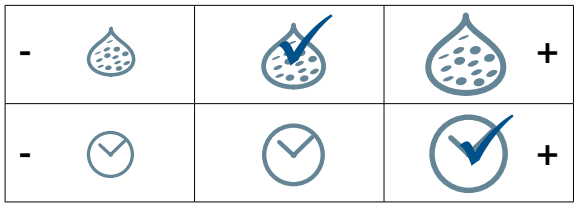
### Permanent magnet

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

### Electronic timers for coils for pulse start

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

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

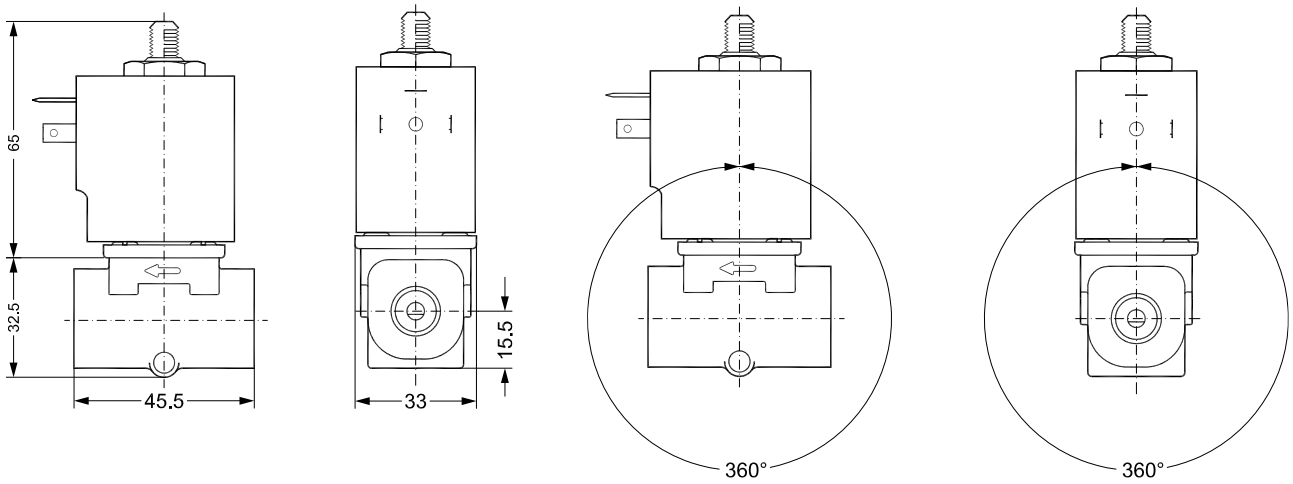



EV310B covers a wide range of direct-operated 3/2-way solenoid valves for universal use.
EV310B is a real robust valve program with high performance and can be used in all kind of tough working conditions.
Clip-on coils can not be used on EV310B.

- 3/2-way
- Direct-operated
- DN 1.5 – DN 3.5
- Ambient temperature: 40 °C
- Brass valve body
- Thread (G 1/8" to G 3/8") or flange (32x32 mm) connections
- NC (normally closed) and NO (normally open) versions
- Manual override versions
- Nominal pressure from 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 | Kv [m³/h] | Media Oil / Air | Seal material | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|
| EV310B 2 | G ⅛ | 0.15 | ✓ | FKM | 0 – 16 | **032U4901** |
| EV310B 2 | G ¼ | 0.15 | ✓ | FKM | 0 – 16 | **032U4904** |

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

## EV310B without coil, brass, NC, manual override unit

| Type | Connection | Kv [m³/h] | Media Oil / Air | Seal material | Differential pressure [bar] | Code number |
|---|---|---|---|---|---|---|
| EV310B 2 | G ⅛ | 0.15 | ✓ | FKM | 0 – 16 | **032U4916** |
| EV310B 2 | G ¼ | 0.15 | ✓ | FKM | 0 – 16 | **032U4919** |

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

## Coils for EV310B

| Voltage [AC] | Voltage [DC] | Frequency [Hz] | Effect [W] BA coil | | BA coil IP00 |
|---|---|---|---|---|---|
| 24 | | 50 | 9 | | **042N7508** |
| 48 | | 50 | 9 | | **042N7510** |
| 115 | | 50 | 9 | | **042N7512** |
| 220 – 230 | | 50 | 9 | | **042N7501** |
| 240 | | 50 | 9 | | **042N7502** |
| 380 – 400 | | 50 | 9 | | **042N7504** |
| | 12 | - | 15 | | **042N7550** |
| | 24 | - | 15 | | **042N7551** |

## Cable plug, IP65 enclosure

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

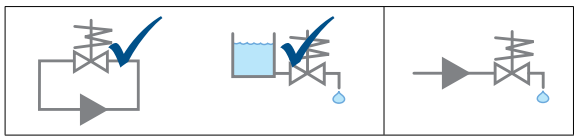
| | |
|---|---|
| To use with BA coils - 24 V AC + DC | **042N0263** |
| To use with BA coils - 230 V | **042N0265** |

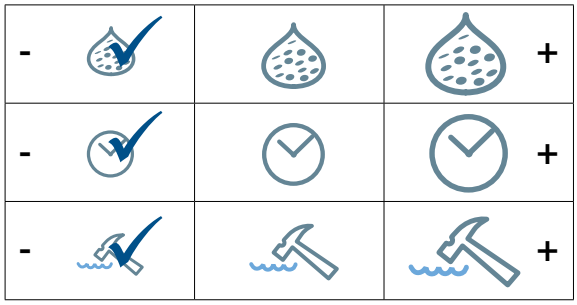
## Accessories for EV310B

### 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)<br>Electrical connection DIN 43650 A / EN 175 301-803-A | 24 – 240 | 20.0 | -10 – 50 | **042N0185** |

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

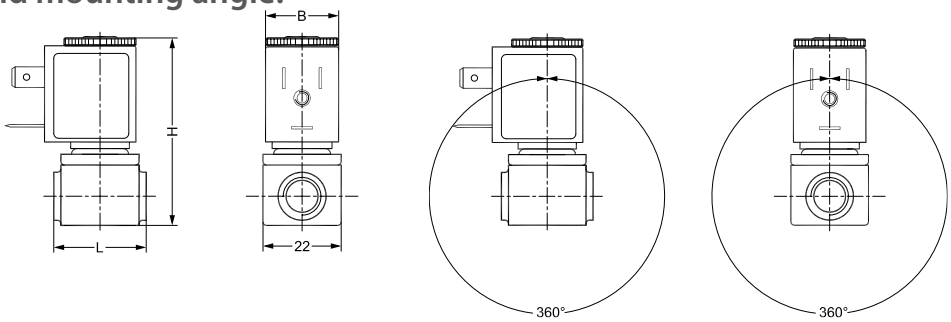





EV210A covers a wide range of small, direct-operated 2/2-way solenoid valves for use in industrial machinery.
The compact design together with the broad range of coils means that EV210A covers a broad variety of industrial applications.

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

## Dimensions, weight and mounting angle:




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

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

| Type | Connection | Kv [m³/h] | Media: Water 120 °C | Media: Oil / Air | Seal material | Body material: Brass | Body material: SS | Differential pressure [bar]: AB coil [AC] / [DC] | Differential pressure [bar]: AM coil [AC] / [DC] | Code number |
|---|---|---|---|---|---|---|---|---|---|---|
| EV210A 1.2 | G ⅛ | 0.04 | ✓ | | EPDM | ✓ | | 0 – 30 / 0 – 17.5 | 0 – 30 / 0 – 24 | **032H8000** |
| EV210A 1.2 | G ⅛ | 0.04 | | ✓ | FKM | ✓ | | 0 – 28 / 0 – 16 | 0 – 30 / 0 – 24 | **032H8001** |
| EV210A 1.5 | G ⅛ | 0.08 | | ✓ | FKM | ✓ | | 0 – 15 / 0 – 8 | 0 – 26 / 0 – 19 | **032H8003** |
| EV210A 1.5 | G ⅛ | 0.08 | | ✓ | FKM | | ✓ | 0 – 15 / 0 – 8 | 0 – 26 / 0 – 19 | **032H8027** |
| EV210A 2 | G ⅛ | 0.11 | ✓ | | EPDM | ✓ | | 0 – 11 / 0 – 5.5 | 0 – 23 / 0 – 18.5 | **032H8004** |
| EV210A 2 | G ⅛ | 0.11 | | ✓ | FKM | ✓ | | 0 – 9 / 0 – 5 | 0 – 22 / 0 – 17 | **032H8005** |

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

| Type | Connection | Kv [m³/h] | Media | | Seal material | Body material | | Differential pressure [bar] | | Code number |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Water 120 °C | Oil / Air | | Brass | SS | AB coil [AC] / [DC] | AM coil [AC] / [DC] | |
| EV210A 2 | G 1/8 | 0.11 | | ✓ | FKM | | ✓ | 0 – 9 / 0 – 5 | 0 – 22 / 0 – 17 | **032H8029** |
| EV210A 2.5 | G 1/8 | 0.17 | ✓ | | EPDM | ✓ | | 0 – 6 / 0 – 3 | 0 – 17 / 0 – 13 | **032H8006** |
| EV210A 2.5 | G 1/8 | 0.17 | | ✓ | FKM | ✓ | | 0 – 5 / 0 – 2.5 | 0 – 16 / 0 – 12 | **032H8007** |
| EV210A 2.5 | G 1/8 | 0.17 | | ✓ | FKM | | ✓ | 0 – 5 / 0 – 2.5 | 0 – 16 / 0 – 12 | **032H8031** |
| EV210A 3 | G 1/8 | 0.22 | ✓ | | EPDM | ✓ | | 0 – 4 / 0 – 1.5 | 0 – 13 / 0 – 9 | **032H8008** |
| EV210A 3 | G 1/8 | 0.22 | | ✓ | FKM | ✓ | | 0 – 3 / 0 – 1.5 | 0 – 12 / 0 – 8 | **032H8009** |
| EV210A 3 | G 1/8 | 0.22 | | ✓ | FKM | | ✓ | 0 – 3 / 0 – 1.5 | 0 – 12 / 0 – 8 | **032H8033** |
| EV210A 2.5 | G ¼ | 0.17 | ✓ | | EPDM | ✓ | | 0 – 6 / 0 – 3 | 0 – 17 / 0 – 13 | **032H8014** |
| EV210A 2.5 | G ¼ | 0.17 | | ✓ | FKM | ✓ | | 0 – 5 / 0 – 2.5 | 0 – 16 / 0 – 12 | **032H8015** |
| EV210A 2.5 | G ¼ | 0.17 | | ✓ | FKM | | ✓ | 0 – 5 / 0 – 2.5 | 0 – 16 / 0 – 12 | **032H8039** |
| EV210A 3 | G ¼ | 0.22 | ✓ | | EPDM | ✓ | | 0 – 4 / 0 – 1.5 | 0 – 13 / 0 – 9 | **032H8016** |
| EV210A 3 | G ¼ | 0.22 | | ✓ | FKM | ✓ | | 0 – 3 / 0 – 1.5 | 0 – 12 / 0 – 8 | **032H8017** |
| EV210A 3 | G ¼ | 0.22 | | ✓ | FKM | | ✓ | 0 – 3 / 0 – 1.5 | 0 – 12 / 0 – 8 | **032H8041** |
| EV210A 3.5 | G ¼ | 0.26 | ✓ | | EPDM | ✓ | | 0 – 2.8 / 0 – 1.2 | 0 – 11 / 0 – 6 | **032H8018** |
| EV210A 3.5 | G ¼ | 0.26 | | ✓ | FKM | ✓ | | 0 – 2 / 0 – 0.8 | 0 – 10 / 0 – 5.5 | **032H8019** |
| EV210A 3.5 | G ¼ | 0.26 | | ✓ | FKM | | ✓ | 0 – 2 / 0 – 0.8 | 0 – 10 / 0 – 5.5 | **032H8043** |

## Coils for EV210A

| Voltage [AC] | Voltage [DC] | Frequency [Hz] | Effect [W] AB coil | Effect [W] AM coil | AB coil DIN 43650-B | AM coil DIN 43650-A |
|---|---|---|---|---|---|---|
| 24 | | 50/60 | 4.5 | 7.5 | **042N0802** | **042N0842** |
| 110 | | 50/60 | 4.5 | 7.5 | **042N0804** | **042N0845** |
| 230 | | 50/60 | 4.5 | 7.5 | **042N0800** | **042N0840** |
| 240 | | 50/60 | 4.5 | 7.5 | **042N0801** | **042N0841** |
| | 12 | - | 5 | 9.5 | **042N0806** | **042N0848** |
| | 24 | - | 5 | 9.5 | **042N0803** | **042N0843** |

## Cable plugs, IP65 enclosure

| | | |
|---|---|---|
| To use with all AB and AM coils | **042N0139** | **042N0156** |

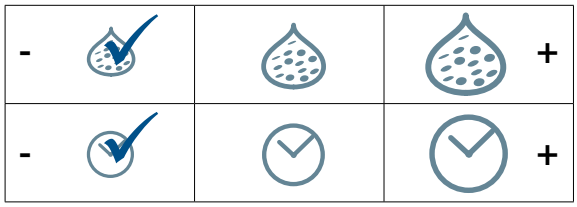
| | | |
|---|---|---|
| To use with AB and AM coils - 24 V AC + DC | **042N0267** | **042N0263** |
| To use with AB and AM coils - 230 V AC | | **042N0265** |

## Accessories for EV210A

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

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

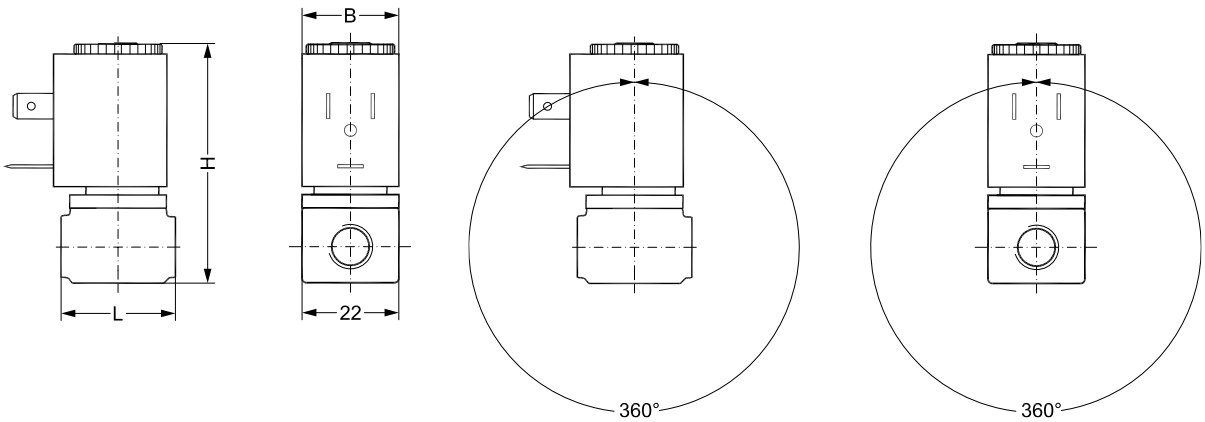
# EV310A direct-operated 3/2-way compact solenoid valves




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

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

## Dimensions, weight and mounting angle:




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

## EV310A direct-operated valve, brass, NC

| Type | Connection | Kv [m³/h] | Media Oil / Air | Seal material | Differential pressure [bar] AM coil [AC] / [DC] Oil | Differential pressure [bar] AM coil [AC] / [DC] Air | Code number |
|---|---|---|---|---|---|---|---|
| EV310A 1.5 | G ⅛ | 0.07 | ✓ | FKM | 0 – 5 | 0 – 12 | **032H8087** |
| EV310A 2.0 | G ⅛ | 0.08 | ✓ | FKM | 0 – 4 | 0 – 8 | **032H8089** |
| EV310A 1.2 | G ¼ | 0.04 | ✓ | FKM | 0 – 9 | 0 – 20 | **032H8095** |
| EV310A 1.5 | G ¼ | 0.07 | ✓ | FKM | 0 – 5 | 0 – 12 | **032H8097** |
| EV310A 2.0 | G ¼ | 0.08 | ✓ | FKM | 0 – 4 | 0 – 8 | **032H8099** |

## EV310A direct-operated valve, brass, NO

| Type | Connection | Kv [m³/h] | Media Oil / Air | Seal material | Differential pressure [bar] AM coil | Code number |
|---|---|---|---|---|---|---|
| EV310A 1.2 | G ⅛ | 0.04 | ✓ | FKM | 0 – 13 / 0 – 9 | **032H8125** |

## Coils for EV310A

| Voltage [AC] | Voltage [DC] | Frequency [Hz] | Effect [W] AM coil | | AM coil DIN 43650-A |
|---|---|---|---|---|---|
| 24 | | 50/60 | 7.5 | | **042N0842** |
| 110 | | 50/60 | 7.5 | | **042N0845** |
| 230 | | 50/60 | 7.5 | | **042N0840** |
| 240 | | 50/60 | 7.5 | | **042N0841** |
| | 12 | - | 9.5 | | **042N0848** |
| | 24 | - | 9.5 | | **042N0843** |

## Cable plugs, IP65 enclosure

| | |
|---|---|
| To use with all AB and AM coils | **042N0156** |

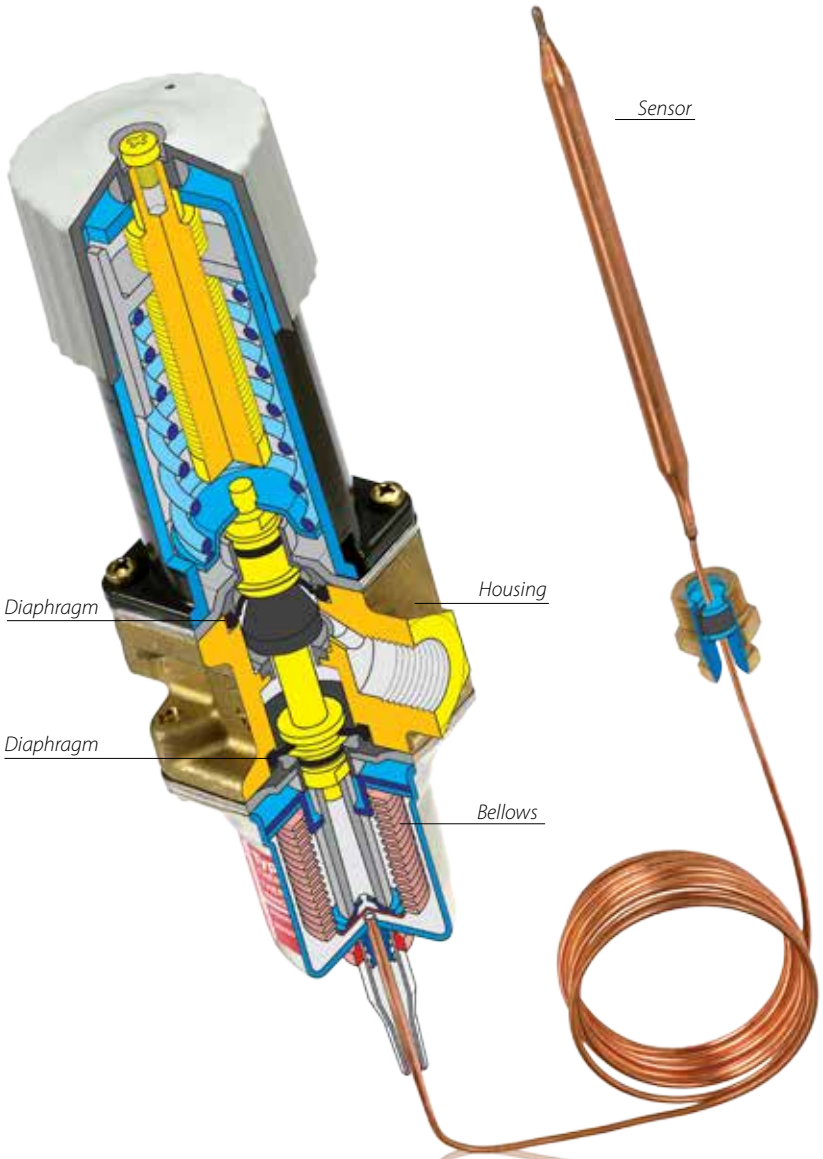
| | |
|---|---|
| To use with AB and AM coils - 24 V AC + DC | **042N0263** |
| To use with AB and AM coils - 230 V AC | **042N0265** |

## Accessories for EV310A

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

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

# The ‘fit and forget’ AVTA thermostatic valve




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

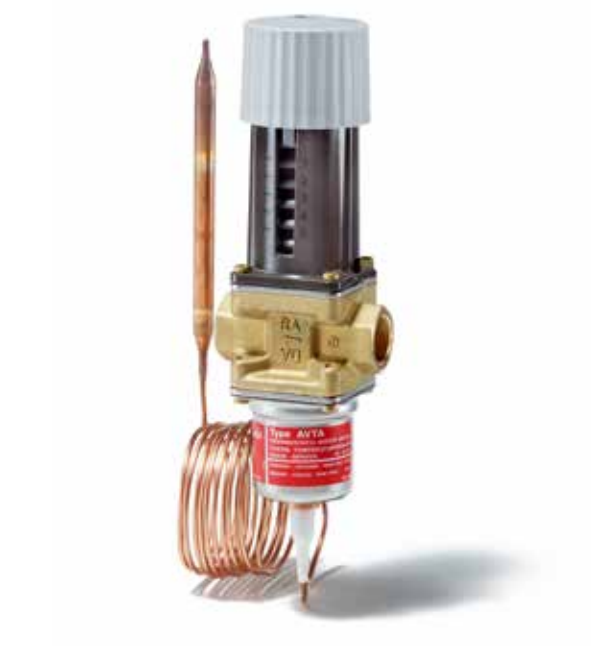
**Self-acting - no electricity required**
The AVTA does not require electricity to function because a temperature-dependent pressurised charge or vapour charge provides accurate flow control based on the sensor temperature. And because it needs no power supply, it keeps working as long as the coolant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

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

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

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

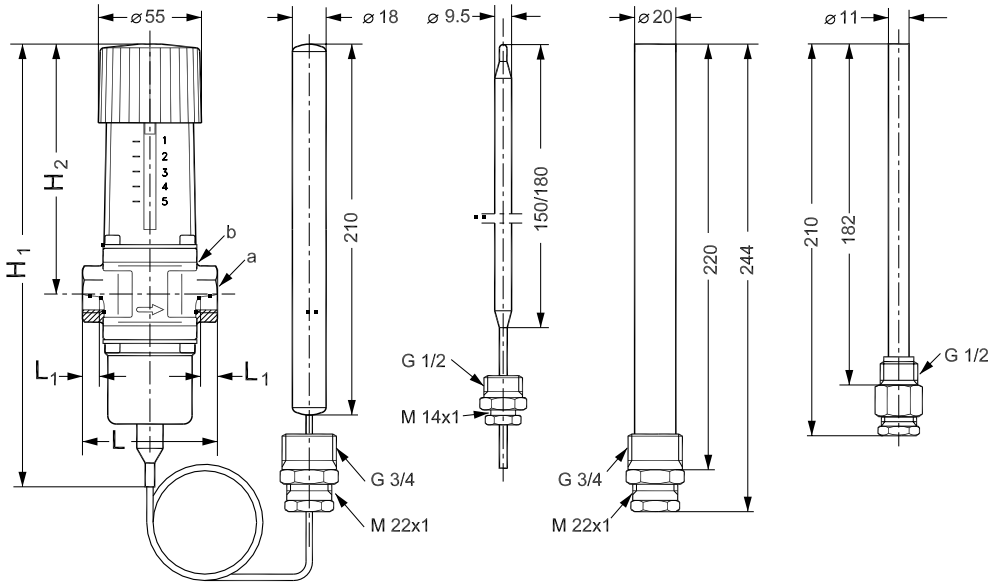
# AVTA thermostatic valves for industrial cooling applications



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

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

## Dimensions, weight and mounting angle:




*All dimensions in millimetres*

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

# AVTA thermostatic valve

## Adsorption charge. Brass valve body

| Type | Connection | Temperature setting range [°C] | Max sensor temperature [°C] | Kv [m³/h] | Sensor dimensions Ø x L [mm] | Capillary tube, length [m] | Code number |
|---|---|---|---|---|---|---|---|
| AVTA 10 | G ⅜ | 10 – 80 | 130 | 1.4 | 9.5 x 150 | 2.3 | **003N1144** |
| AVTA 15 | G ½ | 10 – 80 | 130 | 1.9 | 9.5 x 150 | 2.3 | **003N0107** |
| AVTA 20 | G ¾ | 10 – 80 | 130 | 3.4 | 9.5 x 150 | 2.3 | **003N0108** |
| AVTA 25 | G 1 | 10 – 80 | 130 | 5.5 | 9.5 x 150 | 2.3 | **003N0109** |

## Universal charge. Brass valve body

| Type | Connection | Temperature setting range [°C] | Max sensor temperature [°C] | Kv [m³/h] | Sensor dimensions Ø x L [mm] | Capillary tube, length [m] | Code number |
|---|---|---|---|---|---|---|---|
| AVTA 10 | G ⅜ | 0 – 30 | 57 | 1.4 | 18 x 210 | 2 | **003N1132** |
| AVTA 15 | G ½ | 0 – 30 | 57 | 1.9 | 18 x 210 | 2 | **003N2132** |
| AVTA 20 | G ¾ | 0 – 30 | 57 | 3.4 | 18 x 210 | 2 | **003N3132** |
| AVTA 25 | G 1 | 0 – 30 | 57 | 5.5 | 18 x 210 | 2 | **003N4132** |
| AVTA 10 | G ⅜ | 25 – 65 | 90 | 1.4 | 18 x 210 | 2 | **003N1162** |
| AVTA 15 | G ½ | 25 – 65 | 90 | 1.9 | 18 x 210 | 2 | **003N2162** |
| AVTA 20 | G ¾ | 25 – 65 | 90 | 3.4 | 18 x 210 | 2 | **003N3162** |
| AVTA 25 | G 1 | 25 – 65 | 90 | 5.5 | 18 x 210 | 2 | **003N4162** |
| AVTA 10 | G ⅜ | 50 – 90 | 125 | 1.4 | 18 x 210 | 2 | **003N1182** |
| AVTA 15 | G ½ | 50 – 90 | 125 | 1.9 | 18 x 210 | 2 | **003N2182** |
| AVTA 20 | G ¾ | 50 – 90 | 125 | 3.4 | 18 x 210 | 2 | **003N3182** |
| AVTA 25 | G 1 | 50 – 90 | 125 | 5.5 | 18 x 210 | 2 | **003N4182** |

## Mass charge. Brass valve body

| Type | Connection | Temperature setting range [°C] | Max sensor temperature [°C] | Kv [m³/h] | Sensor dimensions Ø x L [mm] | Capillary tube, length [m] | Code number |
|---|---|---|---|---|---|---|---|
| AVTA 15 | G ½ | 0 – 30 | 57 | 1.9 | 9.5 x 180 | 2 | **003N0042** |
| AVTA 20 | G ¾ | 0 – 30 | 57 | 3.4 | 9.5 x 180 | 2 | **003N0043** |
| AVTA 15 | G ½ | 25 – 65 | 90 | 1.9 | 9.5 x 180 | 2 | **003N0045** |
| AVTA 20 | G ¾ | 25 – 65 | 90 | 3.4 | 9.5 x 180 | 2 | **003N0046** |
| AVTA 25 | G 1 | 25 – 65 | 90 | 5.5 | 9.5 x 180 | 2 | **003N0047** |

## Adsorption charge. Stainless steel valve body

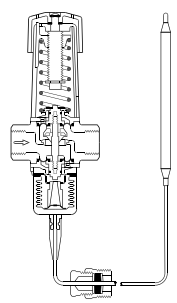
| Type | Connection | Temperature setting range [°C] | Max sensor temperature [°C] | Kv [m³/h] | Sensor dimensions Ø x L [mm] | Capillary tube, length [m] | Code number |
|---|---|---|---|---|---|---|---|
| AVTA 15 | G ½ | 10 – 80 | 130 | 1.9 | 9.5 x 150 | 2.3 | **003N2150** |
| AVTA 20 | G ¾ | 10 – 80 | 130 | 3.4 | 9.5 x 150 | 2.3 | **003N3150** |
| AVTA 25 | G 1 | 10 – 80 | 130 | 5.5 | 9.5 x 150 | 2.3 | **003N4150** |

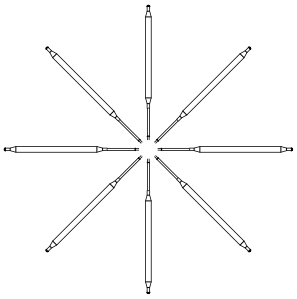
*For all types: Media temperature range: -25 – 130 °C.*
*For higher Kv values (larger capacities) and other requirements please contact Danfoss.*
*Ask Danfoss or your local wholesaler if larger size than G1 is needed*

# Charges

## Adsorption charge

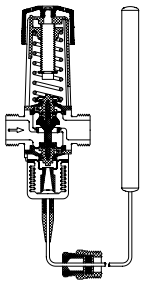
The charge consists of active carbon and $CO_2$ which is adsorbed on falling sensor temperature and thereby produce pressure changes in the element.
The sensor can be installed in any position as far as orientation and temperature are concerned.

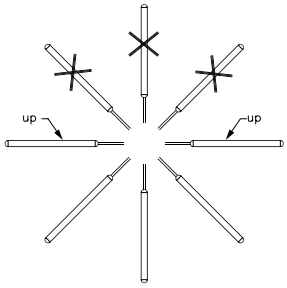




## Universal charge

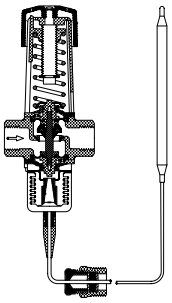
The charge is a mix of liquid and gas where the liquid surface (sensing point) is alway inside the sensor.
The sensor can be installed colder or warmer than the valve, and oriented as shown.

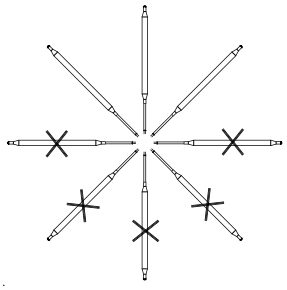





## Mass charge

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





# Spare parts and accessories for AVTA

## Service sensor elements

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

## Sensor pockets

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

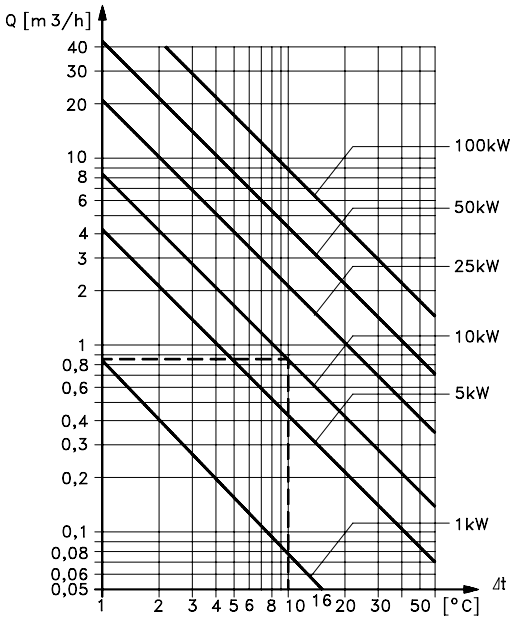
## Capillary tube glands

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

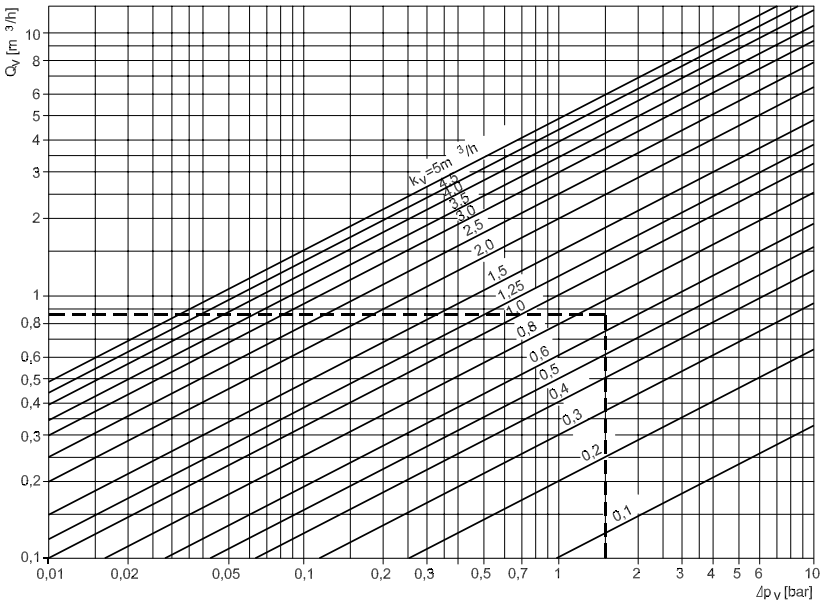
## Bracket

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

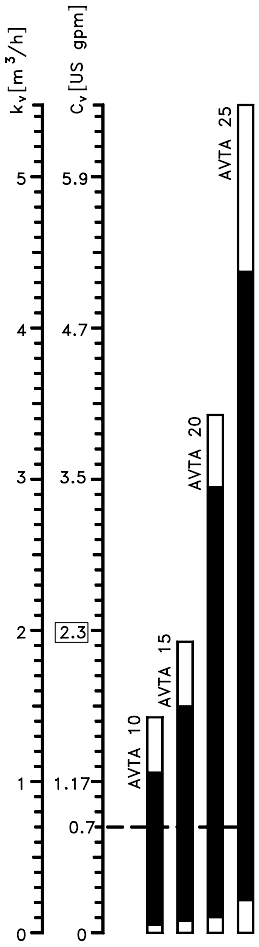
# AVTA thermostatic valve - sizing




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

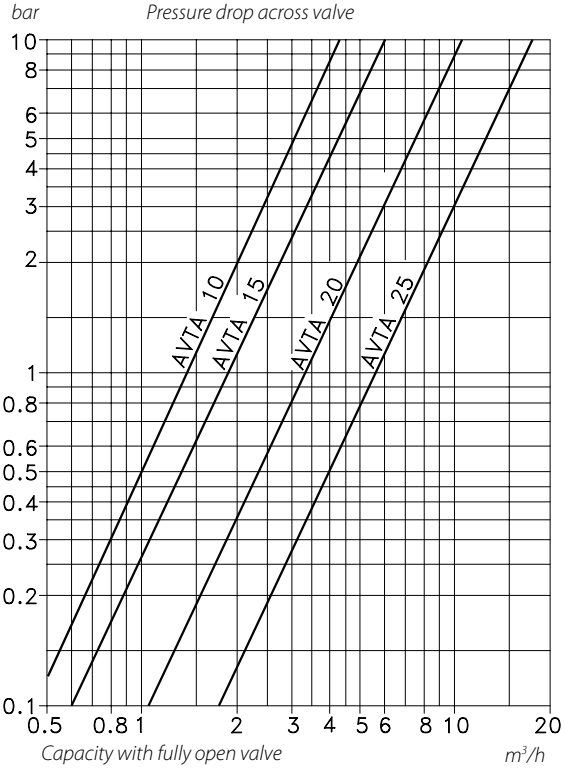



*Relation between water quantity and pressure drop across valve.*
*Example: Flow 0.85 m³/h with a pressure drop of 1.5 bar.*
*The $k_v$ value becomes 0.7 m³/h.*

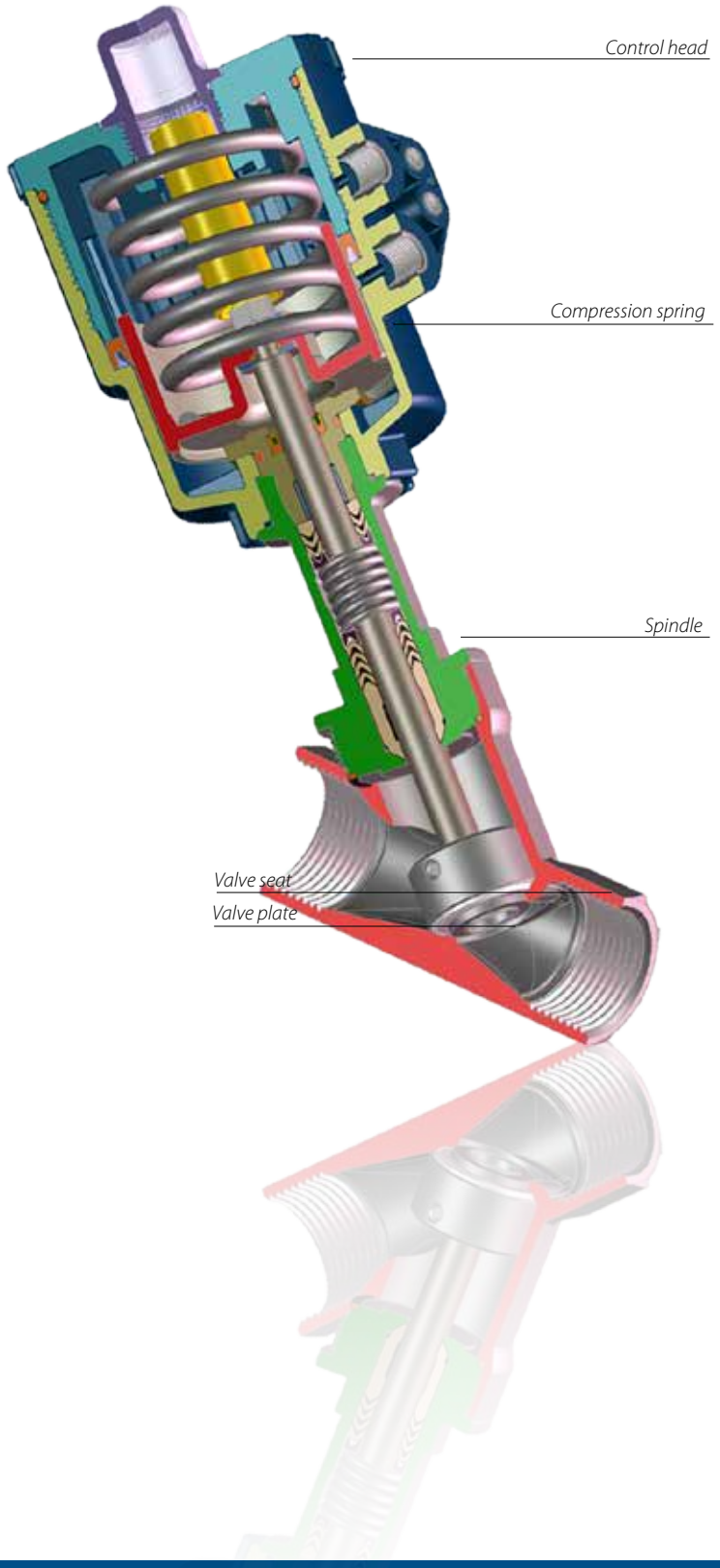



*Nomogram showing the valve $k_v$ range.*
*$k_v$ values are always given for water flow in m³/h with a pressure drop Δp of 1 bar.*
*The valve should be selected so that the necessary $k_v$ value lies in the middle of the regulation range.*
*Example: AVTA 10 and 15 are the most suitable for a $k_v$ value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

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



# AV210 angle-seat valve for high capacity applications




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

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

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

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

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

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

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

**Accessories**
For even higher performance and versatility, the AV210 can be fitted with the following accessories:

- Manual override
- Flow limiters
- Valve position indicators

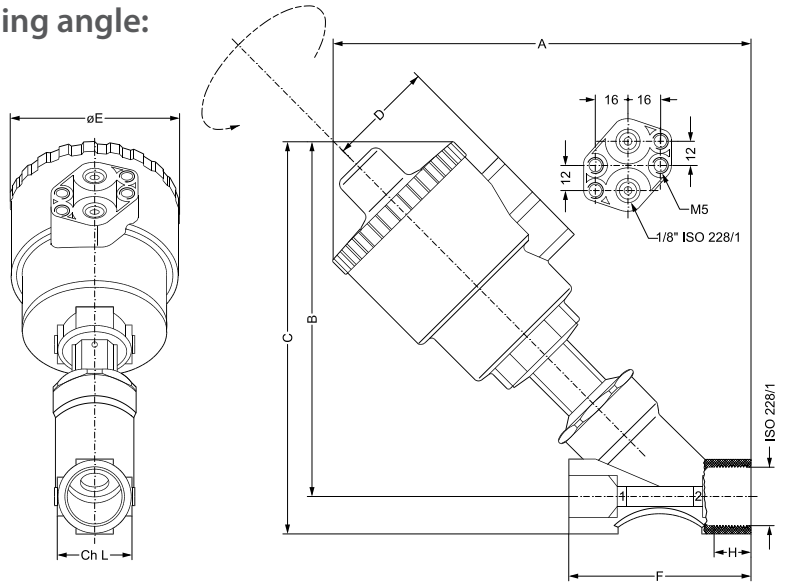
# AV210 angle seat valves

AV210 is an externally operated angle seat 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 "troubleshooter" 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:

*Namour connection not available in 40 mm control head*




*All dimensions in millimiters*

### 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 ½ | 40 | -/144 | -/121 | -/134 | -/35 | -/61 | -/65 | -/13 | -/27 | 1 |
| 15 | G ½ | 50 | 190/163 | 156/140 | 169/153 | 44/44 | 70/70 | 85/65 | 15/13 | 25/27 | 1 |
| 20 | G ¾ | 50 | 195/173 | 160/147 | 176/163 | 44/44 | 70/70 | 95/75 | 16.3/14.3 | 31/27.5 | 1.2 |
| 20 | G ¾ | 63 | 213/191 | 178/165 | 194.4/181 | 50.5/50.5 | 84.4/84.4 | 95/75 | 16.3/14.3 | 31/27.5 | 1.2 |
| 25 | G 1 | 63 | 219/206 | 182/176 | 202/196 | 50.5/50.5 | 84.4/84.4 | 105/90 | 19.5/17.5 | 38/41 | 1.6 |
| 25 | G 1 | 90 | 259/246 | 222/216 | 242/236 | 66.2/66.2 | 116.4/116.4 | 105/90 | 19.5/17.5 | 38/41 | 1.7 |
| 32 | G 1 ¼ | 90 | 266/255 | 226/220 | 249/245 | 66.2/66.2 | 116.4/116.4 | 120/110 | 19/19 | 47/50 | 3 |
| 40 | G 1 ½ | 90 | 271/270 | 230/235 | 258/264 | 66.2/66.2 | 116.4/116.4 | 130/120 | 18/18 | 54/58 | 3.4 |
| 40 | G 1 ½ | 110 | 307/306 | 266/271 | 294/300 | 77.4/77.4 | 140.6/140.6 | 130/120 | 18/18 | 54/58 | 4 |
| 50 | G 2 | 110 | 321/316 | 276/276 | 310/311 | 77.4/77.4 | 140.6/140.6 | 150/150 | 20/20 | 66/70 | 5.3 |

## AV210 angle seat valves, PTFE seal material, NC

### Closing against flow recommended

| Type | Connection | Kv [m³/h] | Body material | | Differential pressure [bar] | Control pressure [bar] | Control head diameter Ø [mm] | Code number |
|---|---|---|---|---|---|---|---|---|
| | | | Bronze RG5 | Stainless steel | | | | |
| AV210A 15 | G ³/₈ | 4.5 | ✓ | | 0 – 16 | 4.2 – 10 | 40 | **042N4400** |
| AV210B 15 | G ³/₈ | 4.9 | ✓ | | 0 – 16 | 4 – 10 | 50 | **042N4401** |
| AV210B 15 | G ³/₈ | 4.9 | | ✓ | 0 – 16 | 4 – 10 | 50 | **042N4450** |
| AV210A 15 | G ½ | 5.3 | ✓ | | 0 – 16 | 4.2 – 10 | 40 | **042N4402** |
| AV210B 15 | G ½ | 5.7 | ✓ | | 0 – 16 | 4 – 10 | 50 | **042N4403** |
| AV210B 15 | G ½ | 5.7 | | ✓ | 0 – 16 | 4 – 10 | 50 | **042N4451** |
| AV210B 20 | G ¾ | 10 | ✓ | | 0 – 10 | 4 – 10 | 50 | **042N4404** |
| AV210B 20 | G ¾ | 10 | | ✓ | 0 – 10 | 4 – 10 | 50 | **042N4452** |
| AV210C 20 | G ¾ | 10 | | ✓ | 0 – 16 | 4 – 10 | 63 | **042N4453** |
| AV210C 25 | G 1 | 20 | ✓ | | 0 – 11 | 4 –10 | 63 | **042N4406** |
| AV210D 25 | G 1 | 20 | ✓ | | 0 – 16 | 4 – 8 | 90 | **042N4407** |
| AV210C 25 | G 1 | 20 | | ✓ | 0 – 11 | 4 – 10 | 63 | **042N4454** |
| AV210D 25 | G 1 | 20 | | ✓ | 0 – 16 | 4 – 8 | 90 | **042N4455** |
| AV210D 32 | G 1 ¼ | 29 | ✓ | | 0 – 14 | 4 – 8 | 90 | **042N4408** |
| AV210D 32 | G 1 ¼ | 29 | | ✓ | 0 – 14 | 4 – 8 | 90 | **042N4456** |
| AV210D 40 | G 1 ½ | 46 | ✓ | | 0 – 11 | 4 – 8 | 90 | **042N4409** |
| AV210D 40 | G 1 ½ | 46 | | ✓ | 0 – 11 | 4 – 8 | 90 | **042N4457** |
| AV210E 50 | G 2 | 67 | ✓ | | 0 –10 | 4 – 8 | 110 | **042N4411** |
| AV210E 50 | G 2 | 67 | | ✓ | 0 – 10 | 4 – 8 | 110 | **042N4459** |

## AV210 angle seat valves, PTFE seal material, NO

### Closing against flow recommended

| Type | Connection | Kv [m³/h] | Body material | | Differential pressure [bar] | Control pressure [bar] | Control head diameter Ø [mm] | Code number |
|---|---|---|---|---|---|---|---|---|
| | | | Bronze RG5 | Stainless steel | | | | |
| AV210B 15 | G ³/₈ | 4.9 | | ✓ | 0 – 16 | 5 – 10 | 50 | **042N4480** |
| AV210B 15 | G ½ | 5.7 | ✓ | | 0 –16 | 5 – 10 | 50 | **042N4431** |
| AV210B 15 | G ½ | 5.7 | | ✓ | 0 – 16 | 5 – 10 | 50 | **042N4481** |
| AV210B 20 | G ¾ | 10 | ✓ | | 0 – 16 | 5 – 10 | 50 | **042N4432** |
| AV210B 20 | G ¾ | 10 | | ✓ | 0 – 16 | 5 – 10 | 50 | **042N4482** |
| AV210C 25 | G 1 | 20 | ✓ | | 0 – 16 | 5 – 10 | 63 | **042N4433** |
| AV210C 25 | G 1 | 20 | | ✓ | 0 – 16 | 5 – 10 | 63 | **042N4483** |
| AV210C 32 | G 1 ¼ | 29 | ✓ | | 0 –16 | 6 – 10 | 63 | **042N4434** |
| AV210C 32 | G 1 ¼ | 29 | | ✓ | 0 – 16 | 6 – 10 | 63 | **042N4484** |
| AV210D 40 | G 1 ½ | 46 | ✓ | | 0 –16 | 5 – 10 | 90 | **042N4435** |
| AV210D 40 | G 1 ½ | 46 | | ✓ | 0 – 16 | 5 – 10 | 90 | **042N4485** |
| AV210E 50 | G 2 | 67 | ✓ | | 0 –16 | 5 –10 | 110 | **042N4436** |
| AV210E 50 | G 2 | 67 | | ✓ | 0 – 16 | 5 – 10 | 110 | **042N4486** |

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

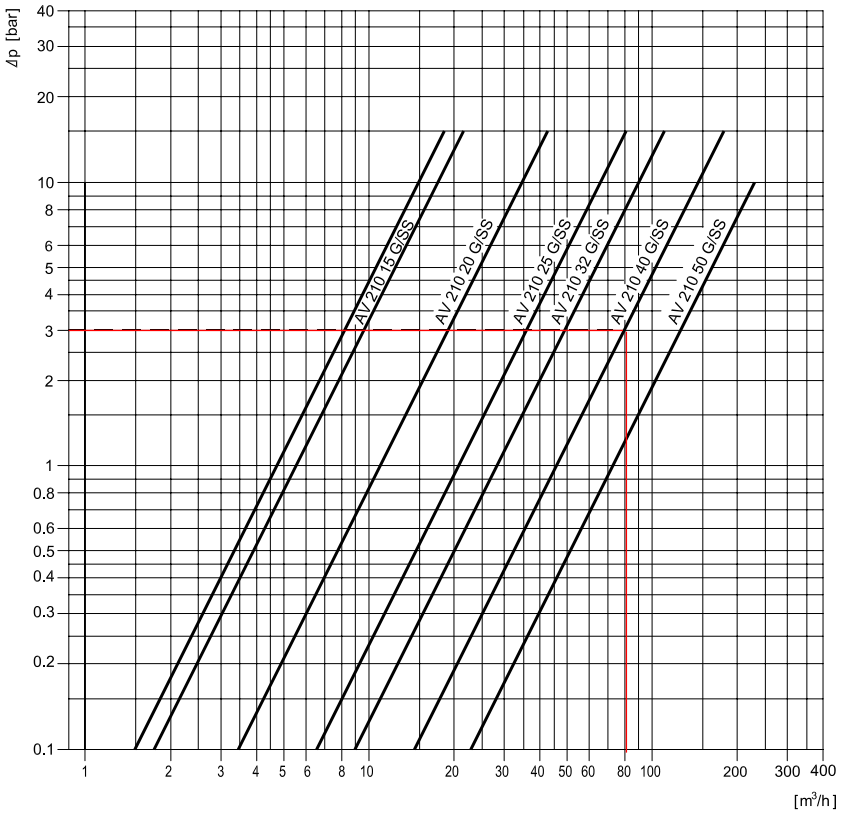
## AV210 angle seat valves - accessories & spare parts

**Position indicators. Voltage: Max 5A 250 V a.c. / 1A 250 V d.c.**

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

## Capacity diagram, water

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



Safety application - tilt control - mobile hydraulic

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

# Pressure transmitters

## in this catalogue

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

*Railways and marine*

*Electric power and wind turbines*

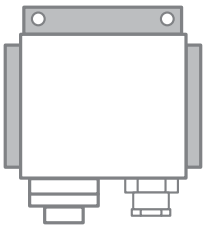
*Industrial hydraulics, air compressors, water pumps and industrial engines*

*Boiler and boiler room equipment, sterilisers and autoclaves*

# Sensor packages designed for customer needs

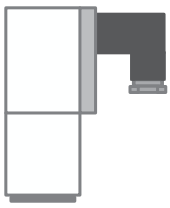
The extent of automation in both mobile and stationary applications has over the past decade increased dramatically and the demand for sensors and controls has increased accordingly.
Danfoss has followed this development closely, and as a result we now have a programme of products perfectly aligned to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

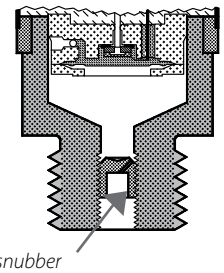
The cartridge transmitter can be mounted directly to the customer's system at the point of measurement, even where there is very little space. This eliminates the need for extra piping and joints.

### 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

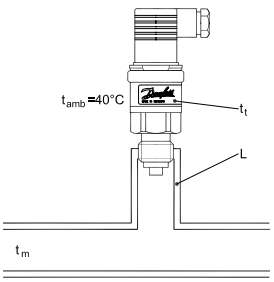
In applications where there is a risk of liquid hammering and cavitation it is recommended to select a transmitter with an integral pulse-snubber. The Danfoss pressure transmitters with a pulse-snubber are indicated with a "5" in the third type digit (example: MBS 1750).



*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 |



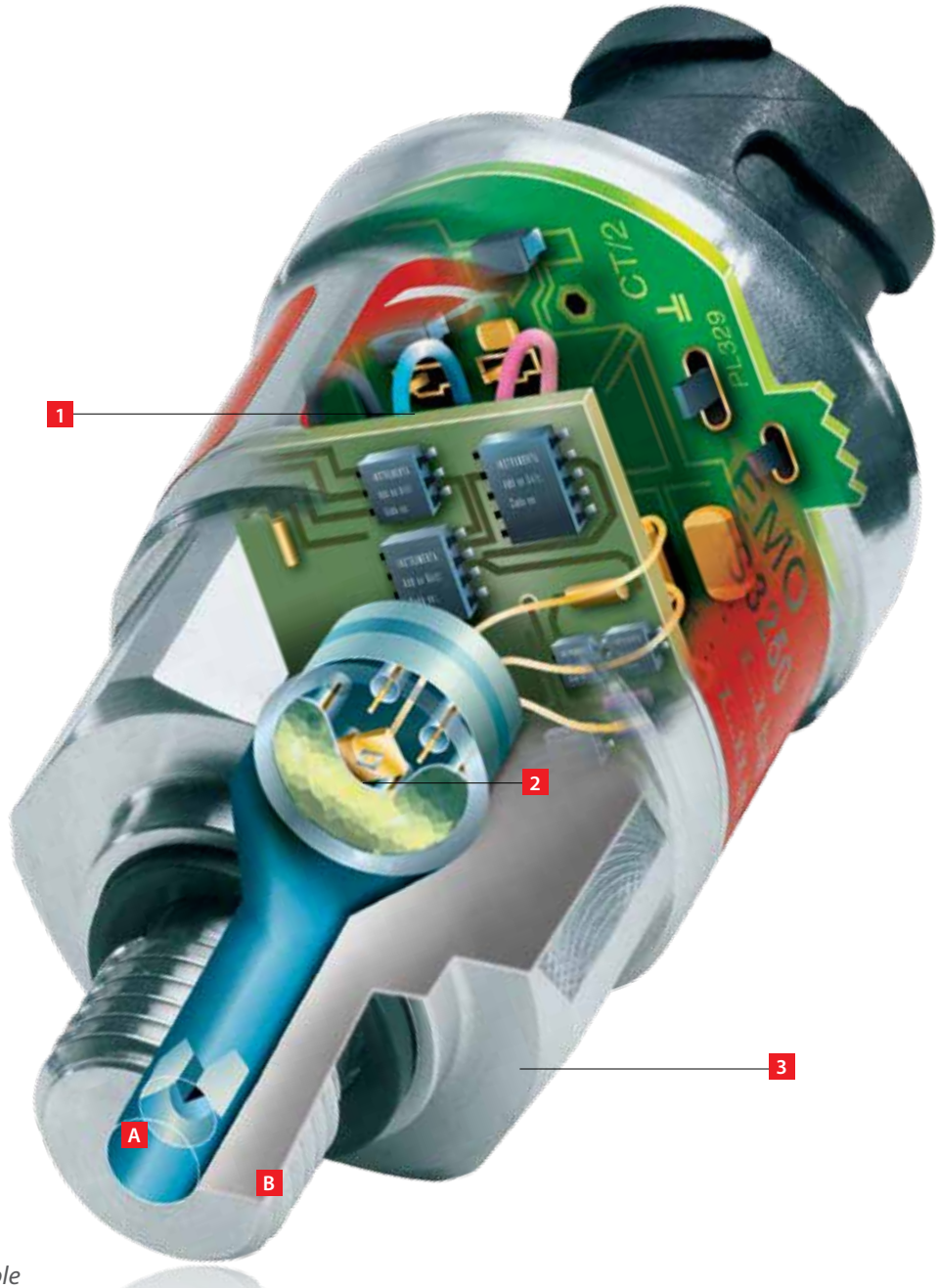
# MBS transmitter made from expert know-how

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*




*A variety of process connections available*

## 1 Electronics

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

- Accuracy
- Temperature range coverage
- EMI/RFI protection

## 2 Sensing element

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

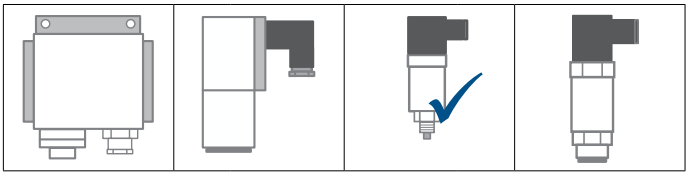
## 3 Packaging

The transmitter design offers long-life stability through:

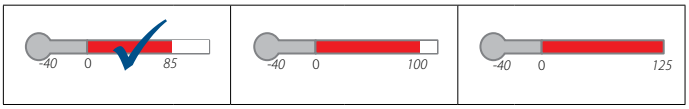
- High shock and vibration stability
- High enclosure grade IP67
- Pulse restriction solution which prevents liquid hammering and cavitation. (pulse-snubber) A
- Wetted parts that are all made from stainless steel (AISI 316L) B

# MBS 1700 compact pressure transmitter

**Design**



**Temperature °C**

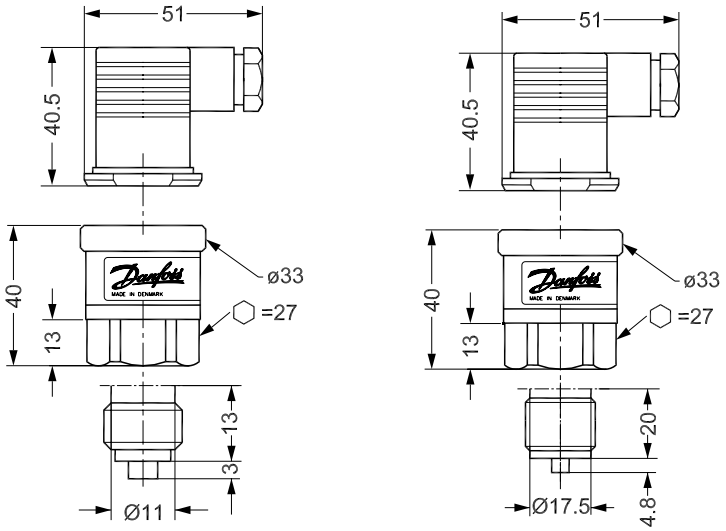



Pressure transmitter, type MBS 1700 is designed to a variety of applications and easy installations within the distributor market. The transmitter offers highly reliable pressure measurement, ensuring that even the slightest change is detected immediately.

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

## Dimensions and weight:

*Weight: 0.17 kg*




*All dimensions in millimetres*

*Approvals: CE*

## MBS 1700 pressure transmitters

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

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

[1)] *Gauge / relative*

## Spareparts and accessories for MBS 1700

### Plug

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

### Adapters

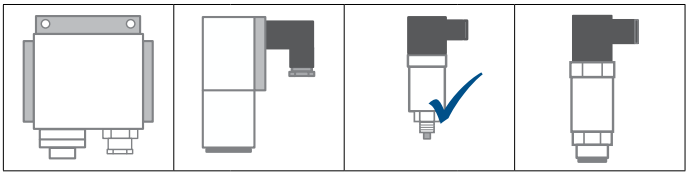
| Description | Code number |
|---|---|
| G ½ female to G ¼ male | **060G1021** |
| G ½ female to G ¼ male (DIN 3852) male | **060G1022** |
| G ½ female to G $^3/_8$ male | **060G1023** |
| G ½ female to G ¼ flare male | **060G1024** |
| G ½ female with pulse-snubber | **060G0252** |

### Plug in display

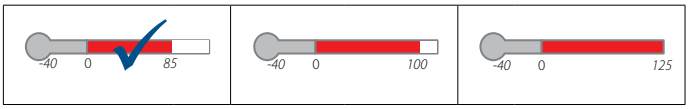
| Type | Description | Code number |
|---|---|---|
| MBD 1000 | Microprocessor controlled plug-in display | **060G2850** |

# MBS 1750 compact pressure transmitters with pulse-snubber


**Design**



**Temperature**

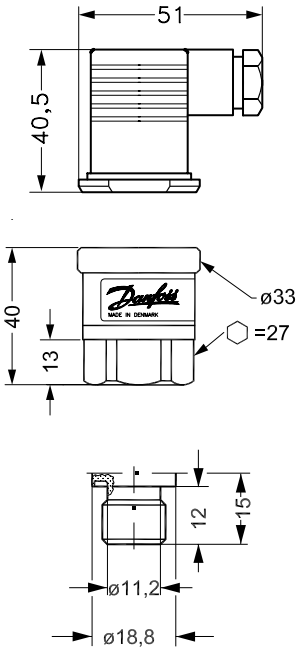



Pressure transmitter, type MBS 1750 is designed to a variety of applications and easy to install especially where cavitation, liquid hammer or pressure peaks can occur. The transmitter offers highly reliable pressure measurement, ensuring that even the slightest change is detected immediately.

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

## Dimensions and weight:

*Weight: 0.17 kg*




*All dimensions in millimetres*

*Approvals: CE*

## MBS 1750 pressure transmitters with pulse-snubber

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

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

[1)] *Gauge / relative*

## Spare parts and accessories

### Plug

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

### Adapters

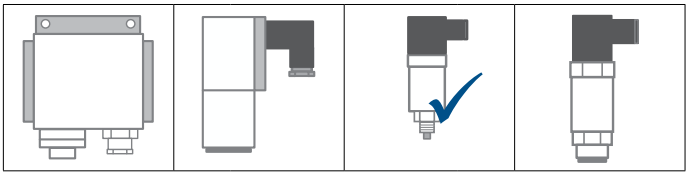
| Description | Code number |
|---|---|
| G ½ female to G ¼ male | **060G1021** |
| G ½ female to G ¼ (DIN3852) male | **060G1022** |
| G ½ female to G $^3/_8$ male | **060G1023** |
| G ½ female to ¼ flare male | **060G1024** |
| G ½ with pulse-snubber | **060G0252** |

### Plug in display

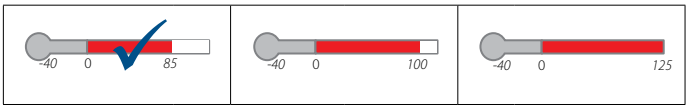
| Type | Description | Code number |
|---|---|---|
| MBD 1000 | Microprocessor controlled plug-in display | **060G2850** |

# MBS 3000 compact pressure transmitter

**Design**



**Temperature**

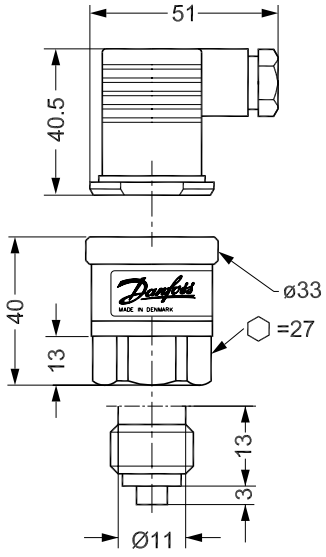



The compact pressure transmitter MBS 3000 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions,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

- 4 - 20 mA output signal
- Operating temperature -40 – 85 °C
- Measuring range 0 – 600 bar
- Standard pressure connection G ¼A ISO 228/1
- For use in severe industrial environments such as pumps, compressors, pneumatics and water treatment
- Wetted parts: stainless steel (AISI 316)

## Dimensions:

*Weight: 0.17 kg*




*All dimensions in millimetres*

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

## MBS 3000 compact pressure transmitter

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

| Measuring range $P_e$ [bar][1] | Pressure connection | | | Output signal | | Code number |
|---|---|---|---|---|---|---|
| | G ¼ EN 837 | G ¼ A | 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** |

[1] *Gauge / relative*

## Spare parts and accessories for MBS 3000

### Plug

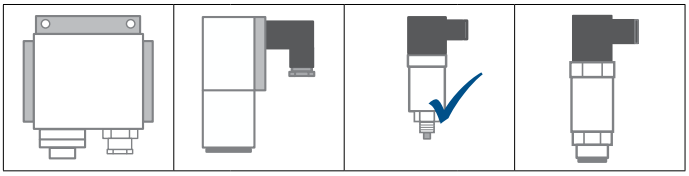
| Description | Code number |
|---|---|
| EN 175301-803-A, Pg 9 plug | **060G0008** |
| EN 175301-803-A, Pg 11 plug | **060G0007** |
| EN 175301-803-A, plug with 5 m cable | **060G1034** |

### Plug in display

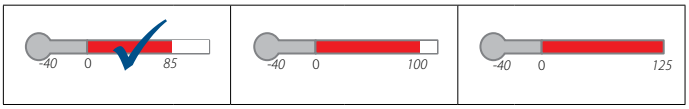
| Type | Description | Code number |
|---|---|---|
| MBD 1000 | Microprocessor controlled plug-in display | **060G2850** |

# MBS 3050 compact pressure transmitters with pulse snubber

**Design**



**Temperature**




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

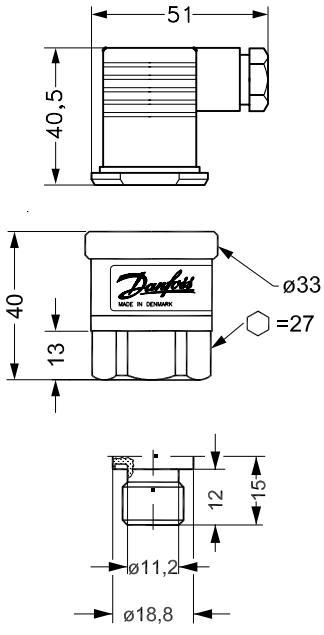
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar and a wide range of pressure- and electrical connections.

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

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

## Dimensions and weight:

*Weight: 0.17 kg*




*All dimensions in millimetres*

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

## MBS 3050 compact pressure transmitters with pulse-snubber

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

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

[1] *Gauge / relative*

## Spare parts and accessories for MBS 3050

### Plug in display

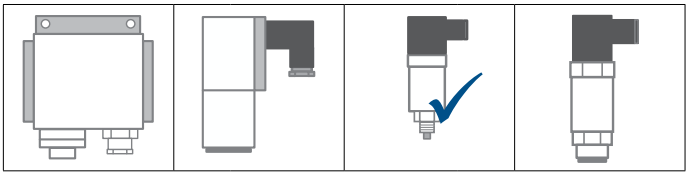
| Type | Description | Code number |
|---|---|---|
| MBD 1000 | Microprocessor controlled plug-in display | **060G2850** |

### Plug

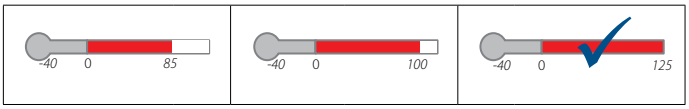
| Description | | Code number |
|---|---|---|
| EN 175301-803-A, Pg 9 plug | | **060G0008** |
| En 175301-803-A, Pg 11 plug | | **060G0007** |
| En 175301-803-A, plug with 5 m cable | | **060G1034** |

# MBS 3200 compact pressure transmitters


**Design**



**Temperature**

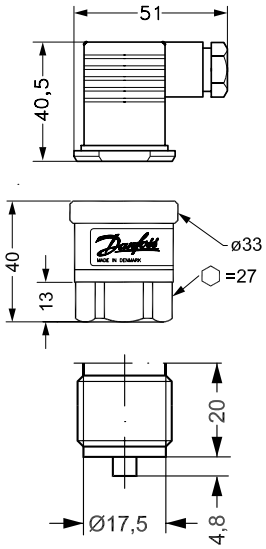



The compact high temperature pressure transmitter MBS 3200 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers 4 – 20 mA, 0 – 5 V, 1 – 5 V, 1 – 6 V and 0 –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

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

## Dimensions and weight:

*Weight: 0.17 kg*




*All dimensions in millimetres*

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

## MBS 3200 compact pressure transmitters

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

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

[1)] *Gauge / relative*

## Spareparts and accessories for MBS 3200

### Plug in display

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

### Plug

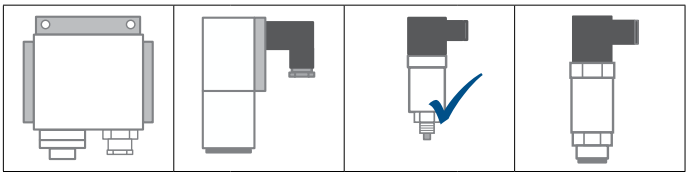
| Description | | Code number |
|---|---|---|
| EN 175301-803-A, Pg 9 plug | | **060G0008** |
| En 175301-803-A, Pg 11 plug | | **060G0007** |
| En 175301-803-A, plug with 5 m cable | | **060G1034** |

### Adapters

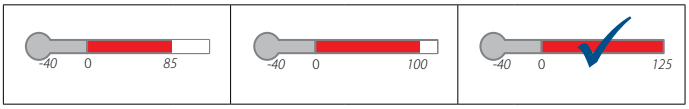
| Description | Code number |
|---|---|
| G ½ female to G ¼ male | **060G1021** |
| G ½ female to G ¼ (DIN3852) male | **060G1022** |
| G ½ female to G 3/8 male | **060G1023** |
| G ½ female to ¼ flare male | **060G1024** |
| G ½ with pulse-snubber | **060G0252** |

# MBS 3250 compact pressure transmitters with pulse-snubber

**Design**



**Temperature**



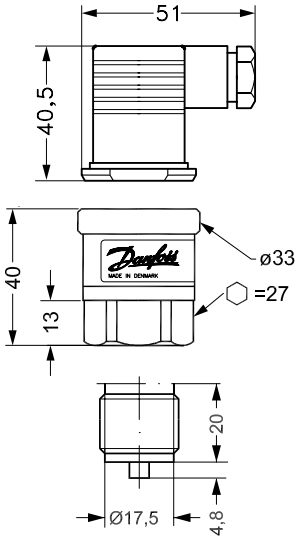

The compact high temperature pressure transmitter MBS 3250 is designed for use in hydraulic applications with severe medium influences like cavitation, liquid hammer or pressure peaks and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible heavy duty pressure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

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

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

## Dimensions and weight:

*Weight: 0.17 kg*




*All dimensions in millimetres*

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

## MBS 3250 pressure transmitters with pulse-snubber

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

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

[1)] *Gauge / relative*

## Spareparts and accessories for MBS 3250

### Plug in display

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

### Plug

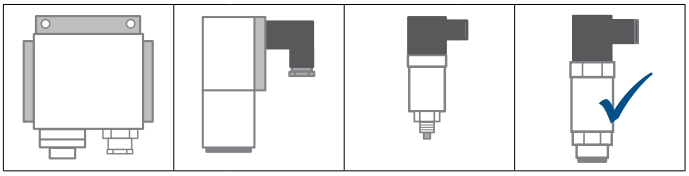
| Description | | Code number |
|---|---|---|
| EN 175301-803-A, Pg 9 plug | | **060G0008** |
| En 175301-803-A, Pg 11 plug | | **060G0007** |
| En 175301-803-A, plug with 5 m cable | | **060G1034** |

### Adapters

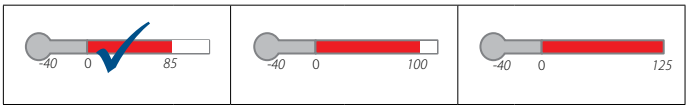
| Description | Code number |
|---|---|
| G ½ female to G ¼ male | **060G1021** |
| G ½ female to G ¼ (DIN3852) male | **060G1022** |
| G ½ female to G $^3/_8$ male | **060G1023** |
| G ½ female to ¼ flare male | **060G1024** |

# MBS 4510 flush diaphragm pressure transmitter

**Design**



**Temperature**

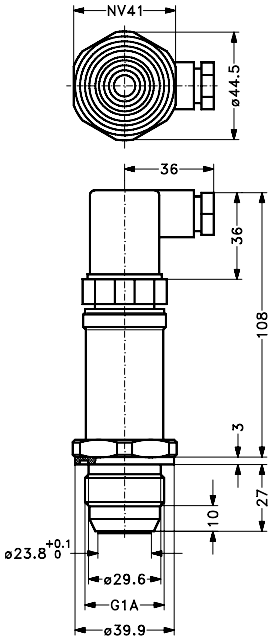



The high accuracy flush diaphragm pressure transmitter MBS 4510 is designed for use in non-uniform, high viscous or crystallizing media within industry, food and beverage, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme covers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

- 4 – 20 mA output signal
- Operating temperature -10 – 85 °C
- Measuring ranges 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:

*Weight: 0.4 kg*




*All dimensions in millimetres*

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

## MBS 4510 flush diaphragm pressure transmitter

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

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

[1)] *Gauge / relative*

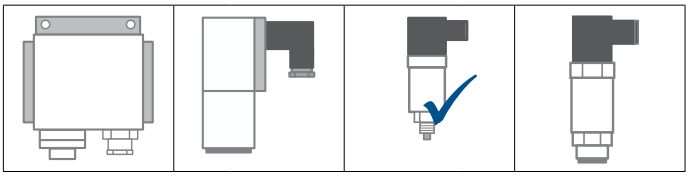
## Spare parts and accessories for MBS 4510

### Adapters

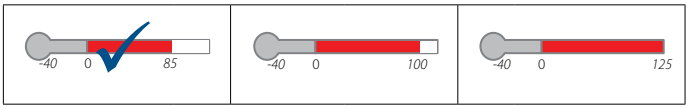
| Description | Code number |
|---|---|
| Welding nipple for conic metal/metal seal | **060G2501** |
| DIN 11851 (diary connection) DN40 | **060G2505** |
| DIN 11851 (diary connection) DN50 | **060G2506** |
| Clamp, ISO 2852, 1½ in | **060G2502** |
| Clamp, ISO 2852, 2 in | **060G2510** |
| SMS 1145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

# MBS 3100 compact pressure transmitter

**Design**



**Temperature**

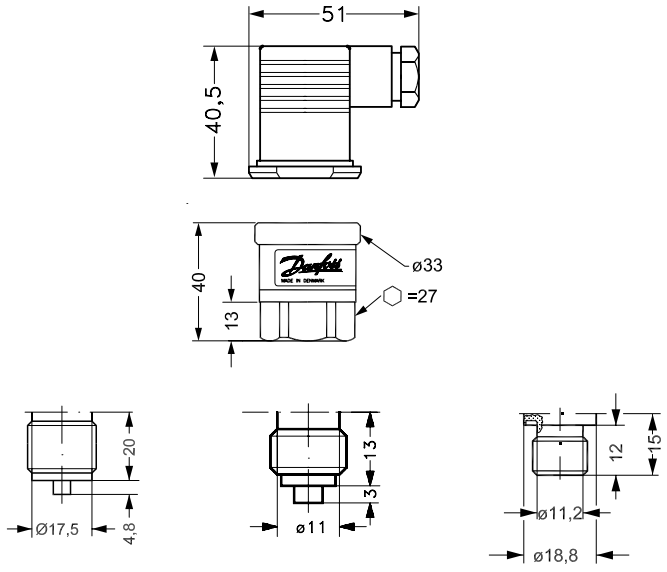



The compact ship approved pressure transmitter MBS 3100 is designed for use in almost all marine applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute and gauge (relative)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

- 4 – 20 mA output signal
- Operating temperature -40 – 85 °C
- Measuring range 0 – 600 bar
- Standard pressure connection G ¼A DIN 16288, G ¼A, O-ring DIN 3852 G ½A DIN 16288
- Available with all relevant marine approvals
- Suited for marine applications
- Wetted parts: stainless steel (AISI 316)

## Dimensions and weight:

*Weight: 0.2 kg*




*All dimensions in millimetres*

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

## MBS 3100 compact pressure transmitter

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

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

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

## Spare parts and accessories for MBS 3100

### Plugs

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

### Adapters

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

## Plug in display

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

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

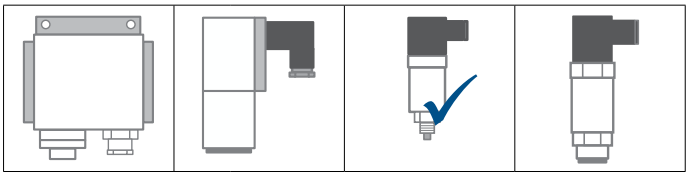
| Type | Female thread | Male thread | Code number |
|---|---|---|---|
| MBV 2000 | G ¼ DIN 3852 | G ¼ DIN 3852-E | **061B6001** |
| MBV 2000 | G ¼ DIN 3852 | G ½ DIN 3852-E | **061B6002** |
| MBV 2000 | G ½ DIN 3852 | G ½A DIN 3852-E | **061B6003** |

## Test valve

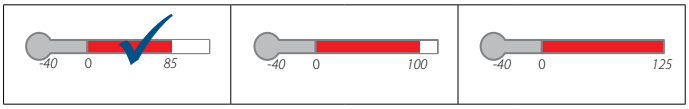
| Type | Pressure range, bar | Pressure connection | Transmitter connection | Code number |
|---|---|---|---|---|
| MBV 3000 | 0 – 120 | DIN 3852-E-G ¼ | DIN 3852-X-G ½ | **061B6100** |

# MBS 3150 compact pressure transmitter with pulse-snubber

**Design**



**Temperature**

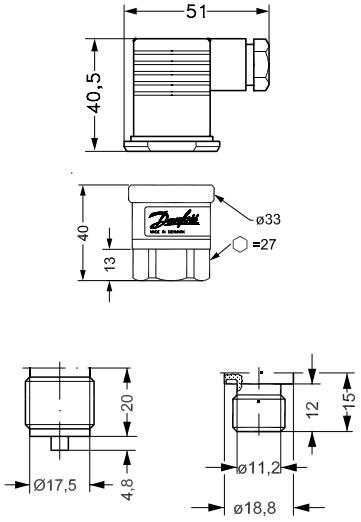



The compact ship approved pressure transmitter MBS 3150 is designed for use in marine applications with severe medium influences like cavitation, liquid hammer or pressure peaks and offers a reliable pressure measurement, even under harsh environmental conditions.
The flexible pressure transmitter programme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

- 4 – 20 mA output signal
- Operating temperature -40 – 85 °C
- Measuring range 0 – 600 bar
- Standard pressure connection G ¼A, O-ring DIN 3852, G ½A DIN 16288
- With integrated pulse-snubber
- Available with all relevant marine approvals and designed to meet the strict demands on marine equipment
- Wetted parts: stainless steel (AISI 316)

## Dimensions and weight:

*Weight: 0.2 kg*




*All dimensions in millimetres*

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

## MBS 3150 compact pressure transmitter with pulse-snubber

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

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

[1)] *Gauge / relative*

## Spare parts and accessories for MBS 3150

### Plugs

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

### Adapters

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

### Plug in display

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

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

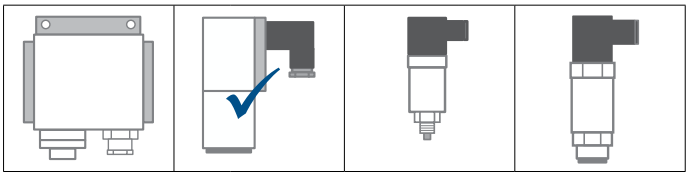
| Type | Female thread | Male thread | Code number |
|---|---|---|---|
| MBV 2000 | G ¼ DIN 3852 | G ¼ DIN 3852-E | **061B6001** |
| MBV 2000 | G ¼ DIN 3852 | G ½ DIN 3852-E | **061B6002** |
| MBV 2000 | G ½ DIN 3852 | G ½A DIN 3852-E | **061B6003** |

### Test valve

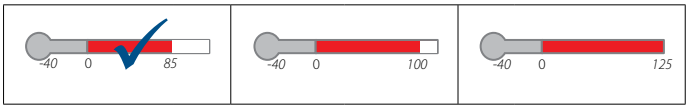
| Type | Pressure range, bar | Pressure connection | Transmitter connection | Code number |
|---|---|---|---|---|
| MBV 3000 | 0 – 120 | DIN 3852-E-G ½ | DIN 3852-X-G ¼ | **061B6100** |

# MBS 5100 pressure transmitter


**Design**



**Temperature**

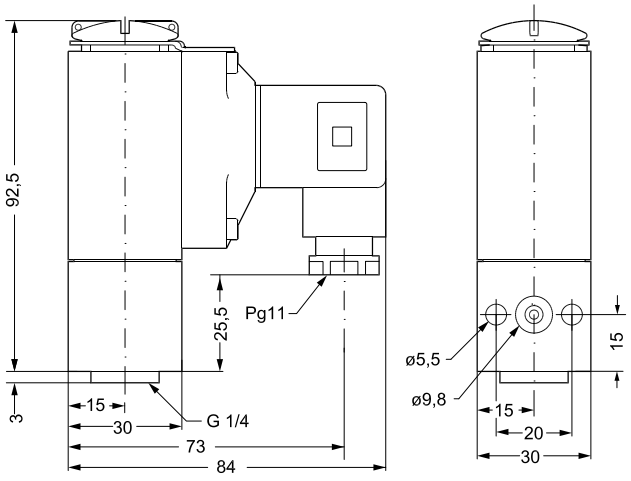



The ship approved high accuracy pressure transmitter MBS 5100 is designed for use in almost all marine applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme in block design covers a 4 – 20 mA output signal, absolute and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

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

## Dimensions and weight:

*Weight: 0.4 kg*




*All dimensions in millimetres*

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

## MBS 5100 pressure transmitter

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

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

[1)] *Gauge / relative*

## Spare parts and accessories for MBS 5100

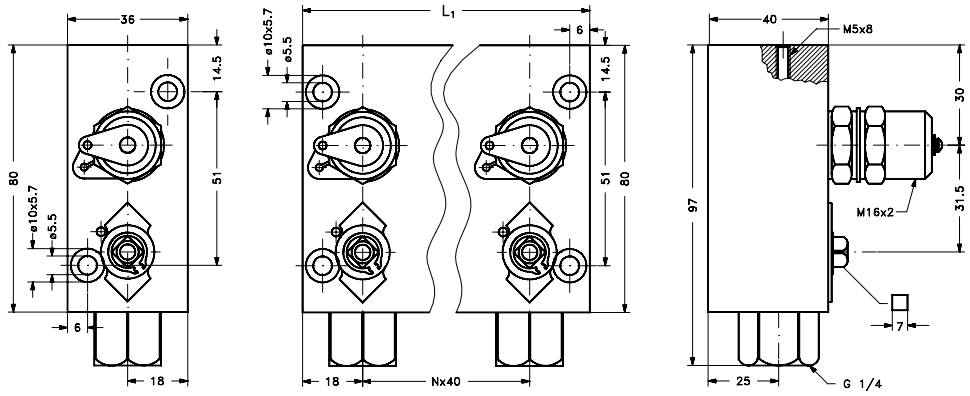
### Plugs

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

## MBV 5000 pressure test valve

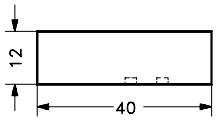
**Media temperature:** -20 – 120 °C
**Pressure connection:** G ¼ (Input)
Flange / M5 x 8 (Output)

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

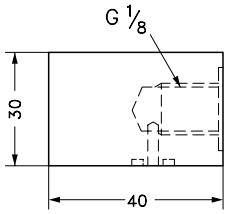



*Weight: 0.4 - 2 kg depending on the different configurations*

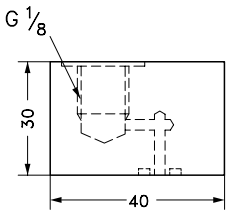
*All dimensions in millimetres*




*Cover*




*Angleway adapter*



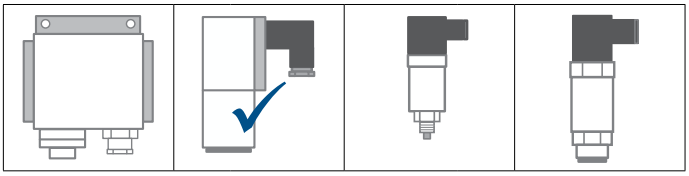

*Straightway adapter*

### Standard flange - G ⅛ adapters

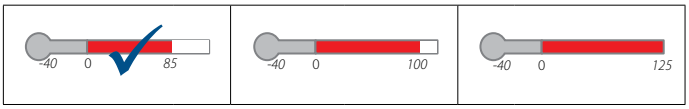
| Description | Code number |
|---|---|
| Cover | **061B720001** |
| Angleway adapter | **061B720101** |
| Straightway adapter | **061B720201** |

# MBS 5150 pressure transmitters with pulse-snubber


**Design**



**Temperature**

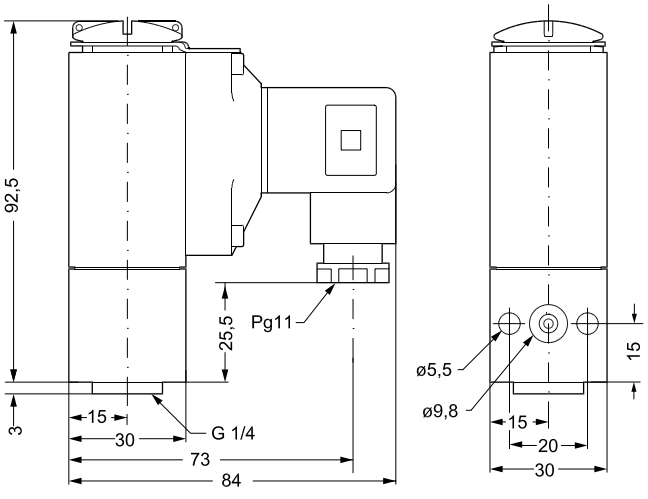



The ship approved high accuracy pressure transmitter MBS 5150 is designed for use in marine applications with severe medium influences like cavitation, liquid hammer or pressure peaks, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme 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 ¼ female
- With integrated pulse-snubber
- Available with all relevant marine approvals
- Designed to meet the strict demands in marine equipment
- Wetted parts: stainless steel (AISI 316)

## Dimensions and weight:

*Weight: 0.4 kg*




*All dimensions in millimetres*

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

## MBS 5150 pressure transmitter with pulse-snubber

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

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

[1)] *Relative / gauge*

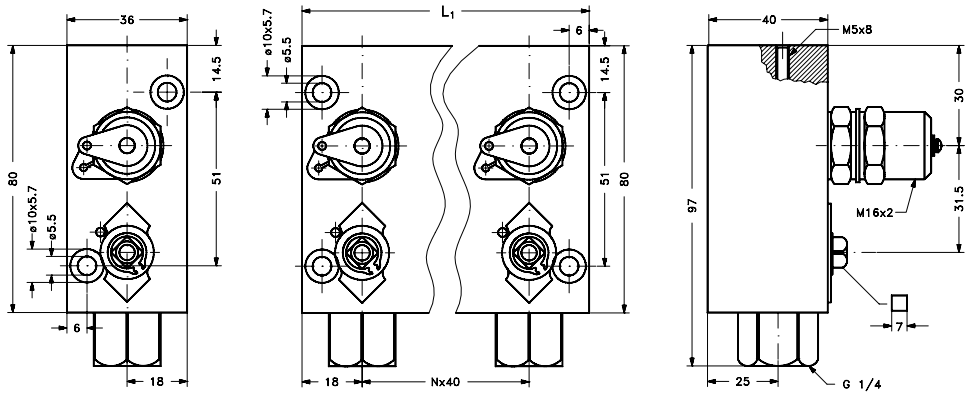
## Spare parts and accessories for MBS 5150

### Plugs

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

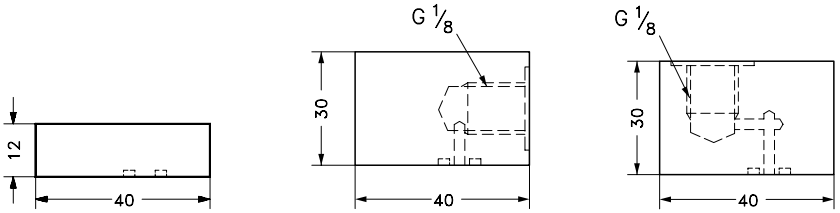
**MBV 5000 pressure test valve**
**Media temperature:** -20 – 120 °C
**Pressure connection:** G ¼ (Input)
Flange / M5 x 8 (Output)

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




*Weight: 0.4 - 2 kg depending on the different configurations*

*All dimensions in millimetres*



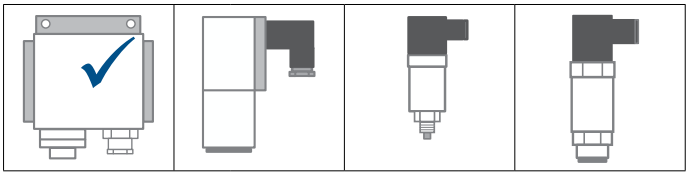

*Cover* *Angleway adapter* *Straightway adapter*

**Standard flange - G ⅛ adapters**

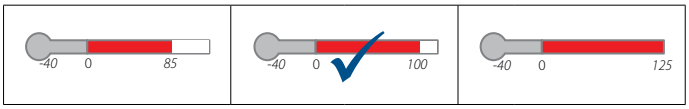
| Description | Code number |
|---|---|
| Cover | **061B720001** |
| Angleway adapter | **061B720101** |
| Straightway adapter | **061B720201** |

# EMP 2 pressure transmitters

**Design**



**Temperature**

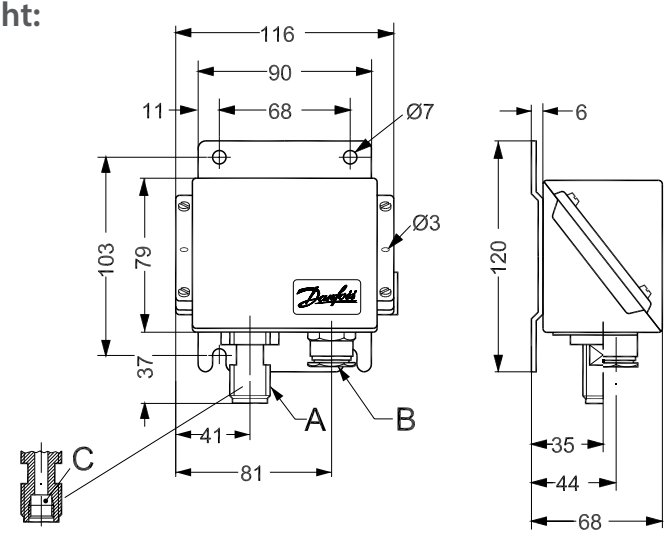



The ship approved pressure transmitter EMP 2 is designed for use in almost all marine and industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.
The pressure transmitter programme in box design covers a 4 – 20 mA output signal, gauge (relative)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

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

## Dimensions and weight:

*Weight: 1 kg*




*A: G ½A (G ⅜A mano*
*B: Pg 13.5*
*C: G ¼*

*All dimensions in millimeters*

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

## EMP 2 pressure transmitters

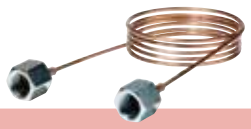
**Accuracy:** +/- 0.3 % FS
**Media temperature:** -40 – 100 °C
**Output signal:** 4 – 20 mA
**Electrical connections:** Terminal block, Pg 13.5
**Zero and span adjustment**

| Operating pressure $P_e$ [bar][1)] | Pressure connection G ½ A | Pressure connection G ³/₈ A | Code number |
|---|---|---|---|
| –1 – 1.5 [1)] | ✓ | | **084G2100** |
| –1 – 5 [1)] | ✓ | | **084G2101** |
| 0.2 – 1 | ✓ | | **084G2102** |
| 0 – 1 | ✓ | | **084G2103** |
| 0 – 1.6 | ✓ | | **084G2104** |
| 0 – 2.5 | ✓ | | **084G2105** |
| 0 – 4 | ✓ | | **084G2106** |
| 0 – 4 | | ✓ | **084G2206** |
| 0 – 6 | ✓ | | **084G2107** |
| 0 – 6 | | ✓ | **084G2207** |
| 0 – 6 | ✓ | | **084G2108** |
| 0 – 10 | ✓ | | **084G2109** |
| 0 – 10 | | ✓ | **084G2209** |
| 0 – 10 | ✓ | | **084G2110** |
| 0 – 16 | ✓ | | **084G2111** |
| 0 – 16 | | ✓ | **084G2211** |
| 0 – 25 | ✓ | | **084G2112** |
| 0 – 40 | ✓ | | **084G2113** |
| 0 – 40 | | ✓ | **084G2213** |
| 0 – 60 | ✓ | | **084G2114** |
| 0 – 100 | ✓ | | **084G2115** |
| 0 – 160 | ✓ | | **084G2116** |
| 0 – 250 | ✓ | | **084G2117** |
| –1 – 9 [1)] | ✓ | | **084G2120** |

[1)] *Gauge / relative*

## Spareparts and accessories for EMP

*Damping coil, copper*



*Damping coil, stainless steel*

*Damping coil, armoured*

### Damping coil

| Description | Material | Code number |
|---|---|---|
| G ³/₈ unions and 1.5 m capillary tube. | Copper | **060-104766** |
| G ½ 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 ¼ A x G ³/₈ A with copper washer. | Brass | **060-333266** |
| G ¼ A x M10 ext. x 1 with copper washer. | Brass | **060-333866** |


MBS 1700
060G6100
MBS 1700
060G6104

# Temperature sensors

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

**HYDRAULICS**

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

**MARINE**

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

**AIR COMPRESSORS**

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

**PUMPS**

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

# Temperature sensors

## in this catalogue

| | | 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 d.c. |
| | Transmitter as option | mA | | | | mA | |
| | Measuring insert | Changeable | Changeable | Fixed | Fixed | Changeable | Fixed |
| | Medium temperature | -50 – 200 °C (-58 – 392 °F) | -50 – 200 °C (-58 – 392 °F) | -50 – 200 °C (-58 – 392 °F) | -50 – 300 °C (-58 – 572 °F) | -50 – 400 °C (-58 – 752 °F) | -50 – 200 °C (-58 – 392 °F) |
| | Enclosure | IP65 (NEMA 4) | IP65 (NEMA 4) | IP67 (NEMA 6) | IP65 (NEMA 4) | IP65 (NEMA 4) | IP65/IP67 (NEMA 4/ NEMA 6) |
| | Material protection tube | W.no. 1.4571 (AISI 316 Ti) | W.no. 1.4571 (AISI 316 Ti) | W.no. 1.4571 (AISI 316 Ti) | W.no. 1.4571 (AISI 316 Ti) | W.no. 1.4571 (AISI 316 Ti) | W.no. 1.4571 (AISI 316 Ti) |
| | Reaction time t0.5 in water (sec) | 14 s | 9 s | 1 s | 1.5 s | 12 s | 10 s |
| | Marine approvals | | ✓ | | | ✓ | |

*Marine, mobile hydraulics and Excavator*

*Boiler and boiler room equipment, sterilisers and autoclaves*

*Electric power and wind turbines*

*Industrial hydraulics, air compressors, water pumps and industrial engines*

# Temperature sensors that can take the heat

An outstanding temperature sensor performance is characterised by:

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

## 1 Elements

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

## 2 The ability to react fast and precise

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

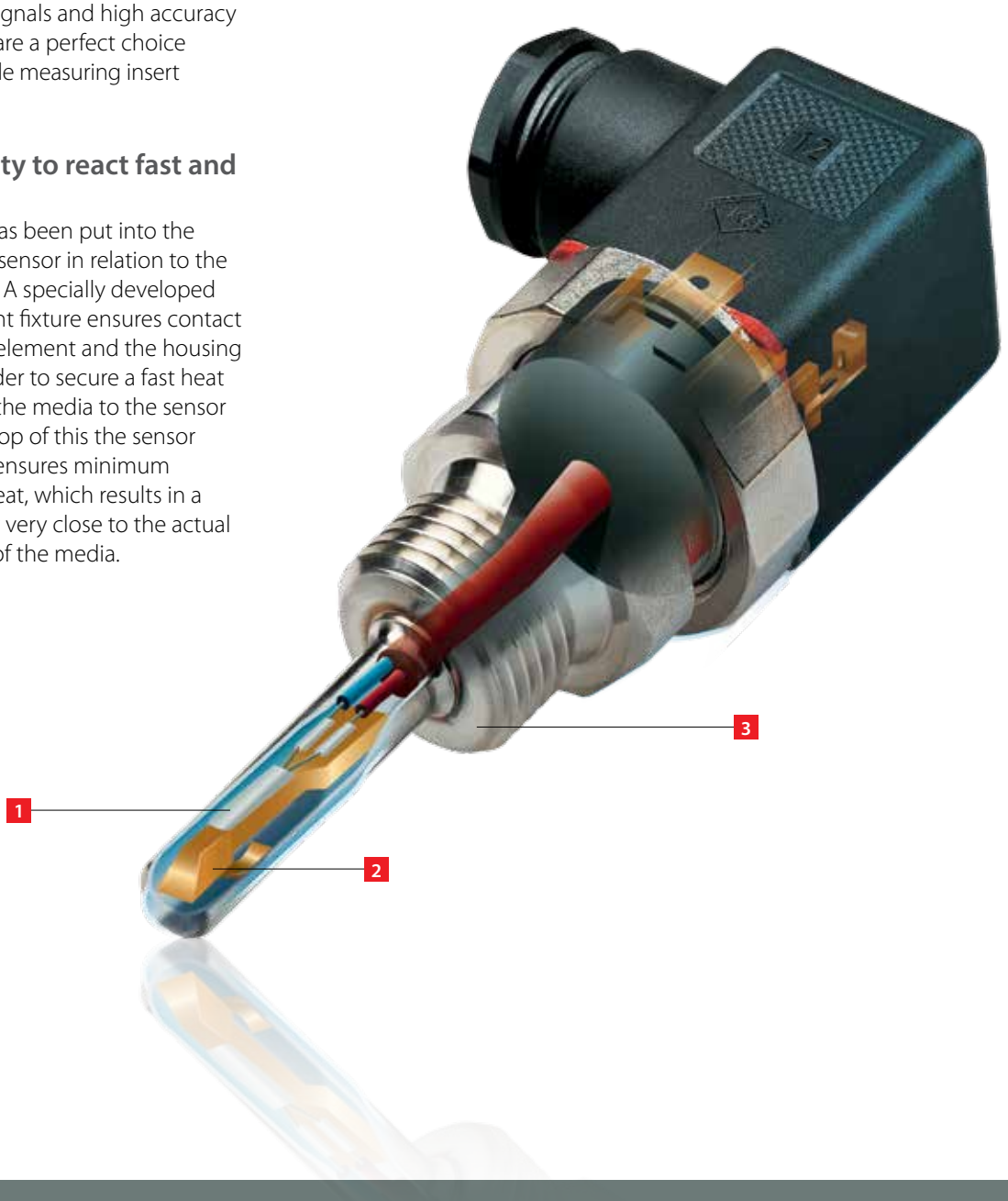
## 3 Packaging

The sensor design offers long-life stability through:

- High shock and vibration stability
- High enclosure grade IP65

Sensor material:

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



# MBT 3252 temperature sensor

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

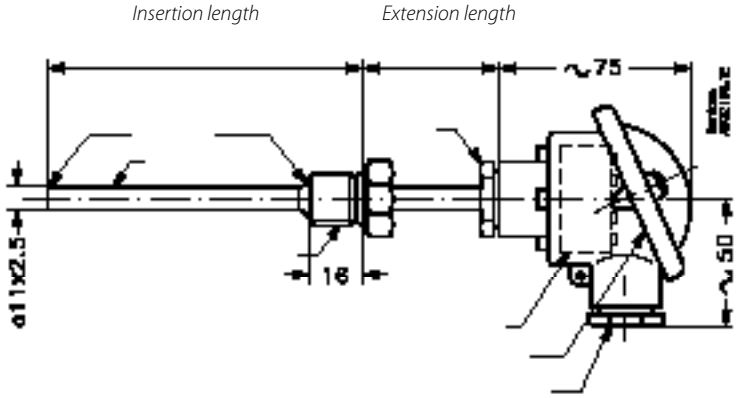
MBT 3252 is based on a standardised Pt 100 element, which gives a reliable and accurate measurement. The changeable insert is equipped with silicone cable, which makes the sensor very resistant towards vibrations.

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

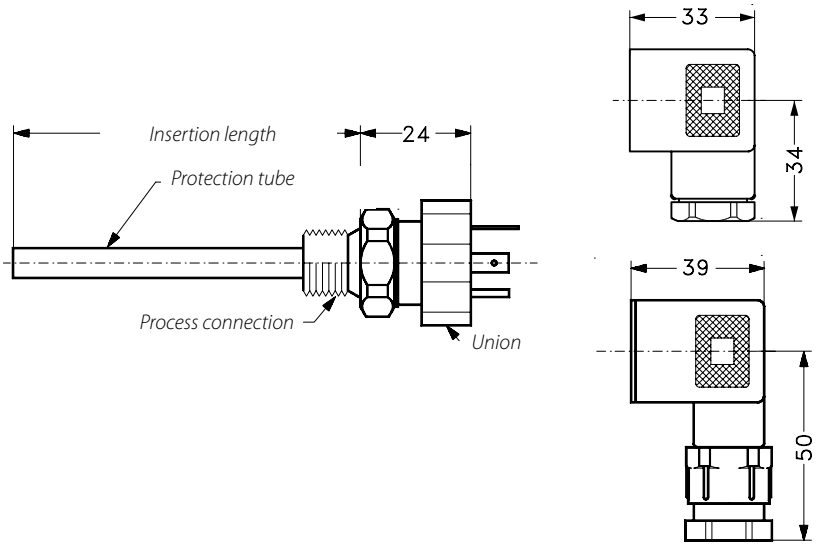
# MBT 5250 temperature sensor

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

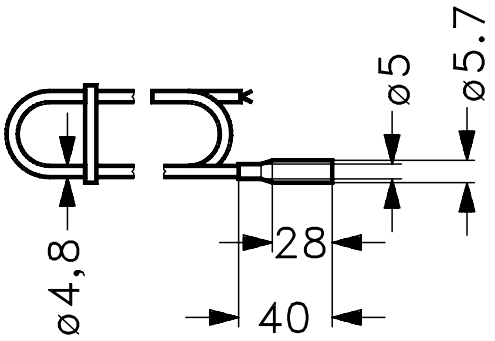
| Insertion length | Process connection | Electrical connection: EN 175301-803-A | | | Code number |
|---|---|---|---|---|---|
| [mm] | size | Pg 9 | Pg 11 | Pg 13.5 | |
| 50 | G ½ A | ✓ | – | – | **084Z8011** |
| 50 | G ½ A | – | ✓ | – | **084Z8036** |
| 50 | G ¾ A | – | ✓ | – | **084Z8037** |
| 100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

# MBT 153 cable-type temperature sensors

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

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

## Dimensions and weight:




*Weight: 0.120 kg – 0.425 kg depending on cable length*

*All dimensions in millimitres*

*Approvals: CE, LR, DNV, ClassNK*

## MBT 153 cable-type temperature sensors

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

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

## Spare parts and accessories

### Sensor pocket MBT 120

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

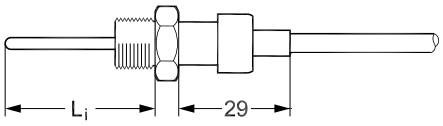
# MBT 3270 temperature sensors

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

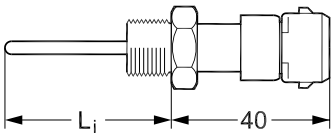
- Robust, high protection against moisture
- Fixed measuring insert
- Brass or stainless steel
- Very low response times
- Temperature range up to 300 °C
- Wetted parts: Stainless Steel (AISI 316)

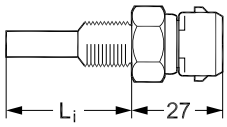
## Dimensions and weight:

*Weight: 0.085 kg*




*-50 – 300 °C*




*-50 – 150 °C*

*All dimensions in millimetres*

## MBT 3270 temperature sensors

**Fixed measuring insert**
**Very low response times**

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

*Approvals: CE*

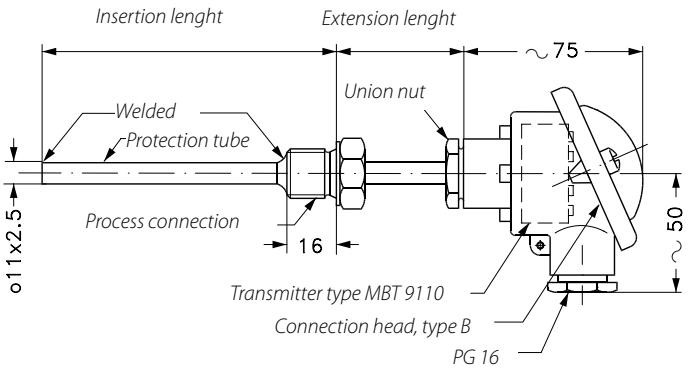
# MBT 5252 temperature sensors

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

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

## Dimensions and weight:

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




*All dimensions in millimetres*

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

## MBT 5252 temperature sensors

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

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

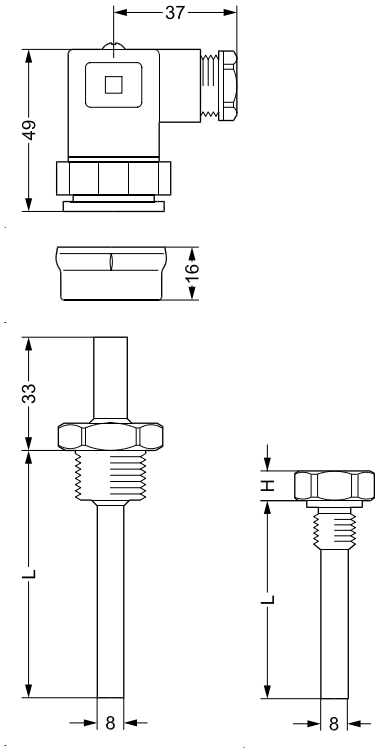
# MBT 3560 temperature sensors with built-in transmitter

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

- Ultra compact design
- Acid-resistant stainless steel enclosure (AISI 316L)
- Temperature range -50 – 200 °C
- Pt 1000 resistance element
- Output signals: 4 – 20 mA or Ratiometric
- Protection tube: ø 8 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:** Ø 8 mm
**Process connection:** G ¼ A

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

## Spare part and accessories

### Sensor pocket

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

### Plug in display

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

# Pressure and temperature switches

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 controls – type BCP and RT.
- Reliable alarm and safety functions – type BCP, RT and KP.

### Water pumps and air compressors

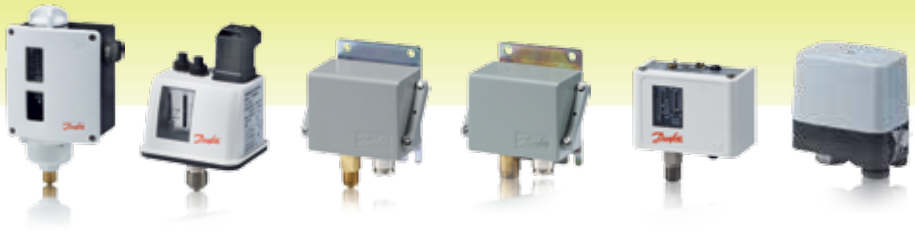
In water pumps and air compressors it is important to keep a constant pressure and a continuous flow. To ensure this Danfoss offers a range of switches for:

- 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.

# Industrial Switches

## In this catalogue

### Pressure switches



*industrial engines*

*Railways and marine*

*Electric power and wind turbines*

*Industrial hydraulics, air compressors and water pumps*

*Boiler and boiler room equipment, sterilisers and autoclaves*

## Differential pressure switches

## Temperature switches


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 |
| 3 A, 250 V<br>0.5 A, 250 V | 4 A, 400 V<br>3 A, 400 V | -<br>0.1 A, 220 V | 3 A, 250 V<br>0.5 A, 250 V | 4 A, 400 V<br>3 A, 400 V | 6 A, 400 V<br>4 A, 400 V | 16 A, 400 V<br>10 A, 400 V | 3 A, 250 V<br>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 and temperature controls 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 and temperature switch is determined by the quality of the bellows. Using advanced technology, and being world leader, Danfoss' bellows are manufactured without any welding points, which makes them stress free and completely tight.

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

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

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

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

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

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

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

# Selection Made Easy

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

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

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

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

http://switchselector.danfoss.com

To visit by mobile, scan the QR code:

# Pressure and temperature switches – Introduction

**Setting range**
All Danfoss pressure and temperature switches 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.

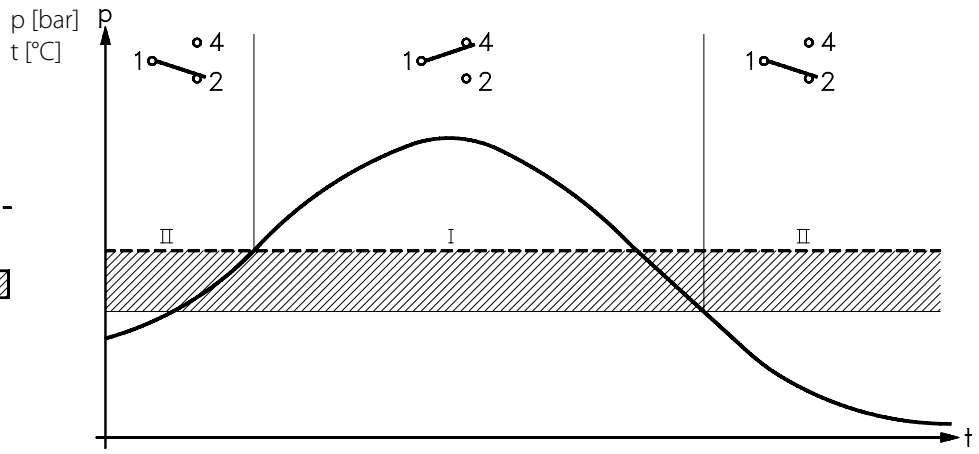
**Differential**
Differential is a difference between cut-in and cut-out values. It is not recommended to se small differential as it causes system hunting. The bigger differential the less switch over cycles per ahour what benefits in longer life of the contact system.

## Contact function, setting for rising pressure / temperature

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

Setting range

Differential

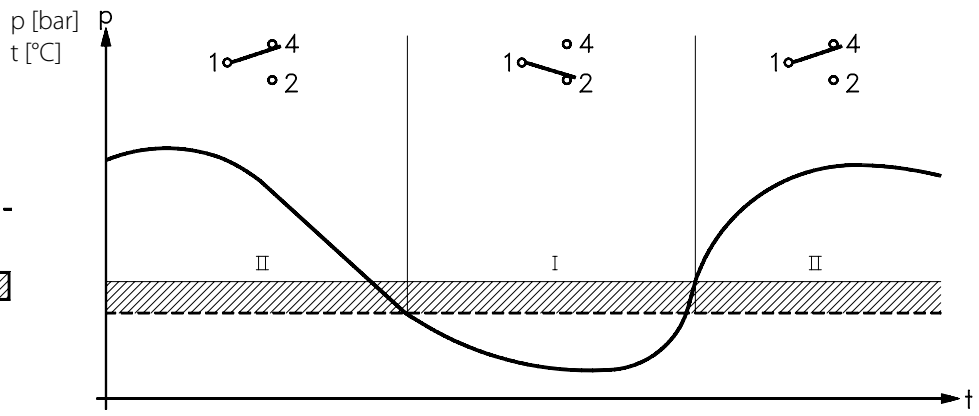



## Contact function, setting for falling pressure / temperature

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

Setting range

Differential



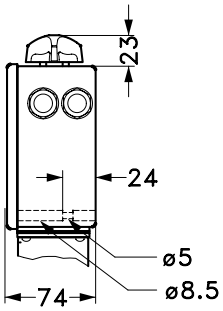
# RT pressure switches

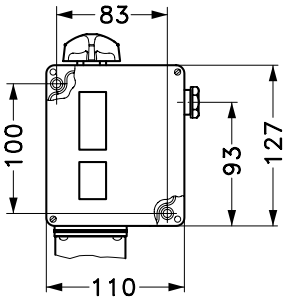
RT switches are used in general industrial, heating and marine sectors. The RT single pressure switches series consist of a variety of controls including neutral zone pressure switches and safety pressure switches for steam boiler plant.
RT switches have been in service for more than 70 years.

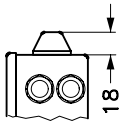
- Pressure ranges: -1 – 30 bar
- Replaceable contact system
- Also available with gold plated contact systems
- Fail-safe design
- Adjustable differential
- Adjustable neutral zone
- Enclosure IP66
- Available with TÜV approvals
- Available with min. and max. reset function (IP54)
- Also available as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

## Dimensions and weight:

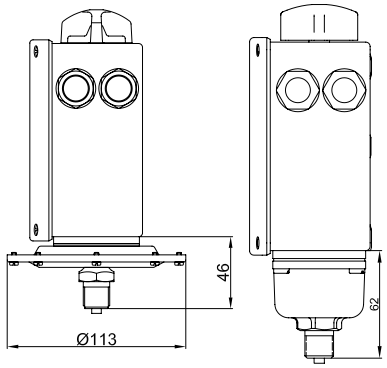
*Weight: Appr. 1 kg*



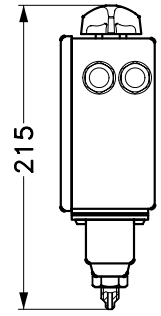



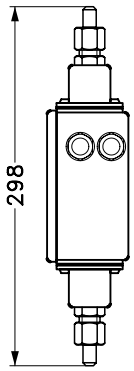

*RT116*



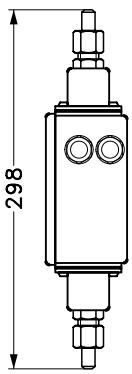

*RT 113* *RT 112*



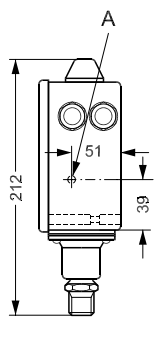

*RT5*



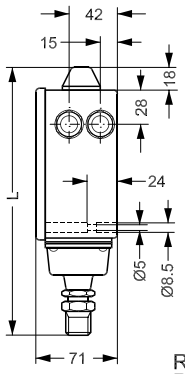

*RT260A, 260AL*

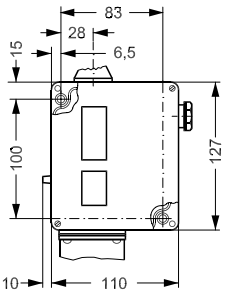



*RT262A, 262AL, 263AL*




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




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

*All dimensions in millimetres*

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

## RT pressure switches

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

## RT pressure switches

**Pressure connection: G ³/₈ A**

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

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

## RT pressure switches with neutral zone

**Pressure connection: G ³/₈ A**

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

## RT pressure switches for steam plant

**Pressure connection: G ½ A**

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

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

## Differential pressure switches

**Pressure connection: G ³/₈ A**

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

## Differential pressure switches with adjustable neutral zone

**Pressure connection: G ³/₈ A**

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

## Spareparts and accessories for RT pressure switches

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

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

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

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

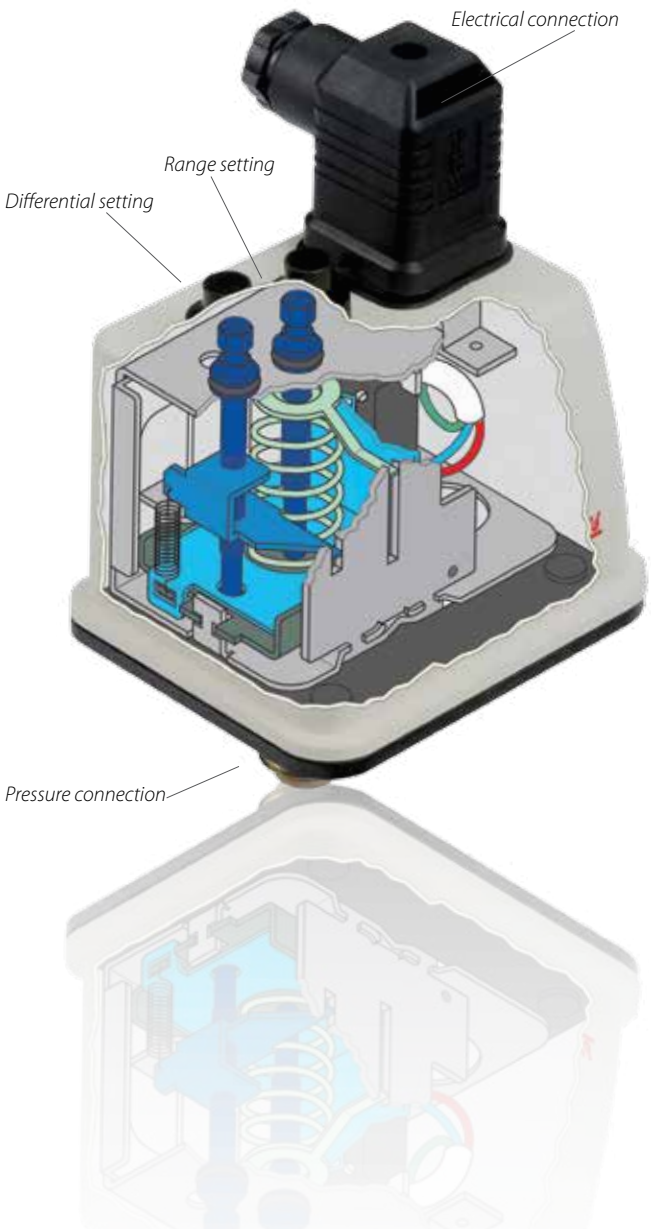
| Type | Description | |
|---|---|---|
| Damping coil | 1 m. damping coil with 7/16 - 20 UNF connectors. REducer code no 017-420566 is necessary if the damping coil is to be used with RT units with pipe thread: ISO 228/1, G3/8 connection. | **060-019166** |
| Damping coil | Pipe thread ISO 228/1, damping coil with G ³/₈ connector and 1.5 m copper capillary tube. Standard washers are supplied | **060-104766** |
| Armoured damping coil | Pipe thread ISO 228/1, damping coil with G ³/₈ connector and 1 m. copper capillary tube. Standard washers are supplied | **060-333366** |
| Air bell for liquid level control | Air bell for liquid level control RT113. 62 mm diam. ext x 204 mm length. Pipe thread ISO 228/1, G ³/₈ connector and nipple (10 mm o.d./6.5 mm i.d.) for welding or brazing on to steel or copper tubing. Brass. | **017-401366** |

# The BCP pressure switch for reliable boiler control

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

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

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




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

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

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

**Approvals**
The BCP range is CE-marked in accordance with EN 60730-1, VdTÜV-Merkblatt Druck 100 TÜV. SDWFS/SDBFS. 08 – 335 and PED 97/23/ED, category IV, safety equipment. It is tested according to EN12952-11 and EN12953-9.

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

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

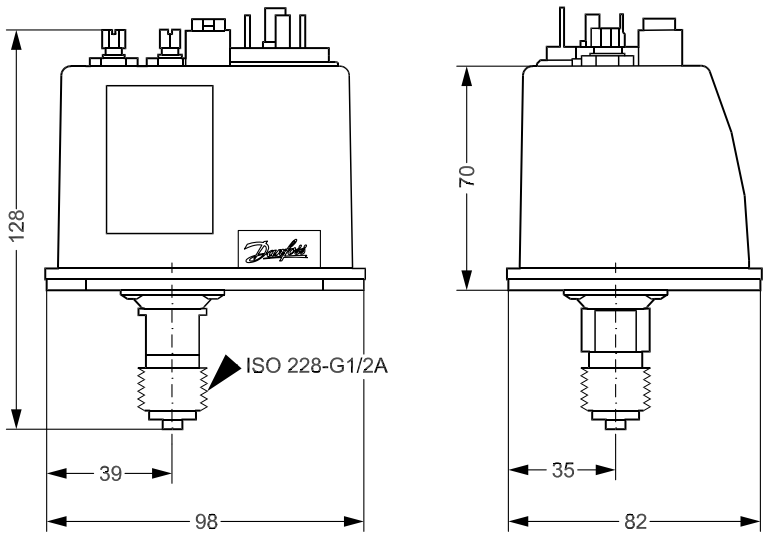
# BCP pressure controller / pressure limiter

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

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

## 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. *(On request silver cadmium oxide is available for higher loads)*
**Loads:** AC-1 (ohmic) 6A 250V
AC-15 (inductive) 1 A 250V
**Pressure connection:** G ½A
**Enclosure:** IP65
**Ambient temperature:** -20 – 70 °C
**Media temperature:** Up to 120 °C

### BCP pressure controller, automatic reset

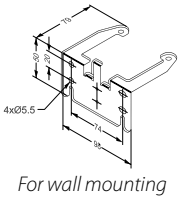
| Type | Setting range $P_e$ [bar] | Differential [bar] | Max. working pressure $P_e$ [bar] | Max. test pressure $P_e$ [bar] | Code number |
|---|---|---|---|---|---|
| BCP1 | 0.1 – 1.1 | 0.15 – 0.6 | 6 | 7 | **017B0002** |
| BCP2 | 0 – 2.5 | 0.4 – 1 | 10 | 11 | **017B0006** |
| BCP3 | 0 – 6 | 0.7 –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

### BCP pressure limiter

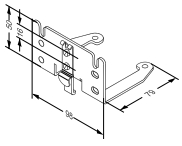
| Type | Setting range $P_e$ [bar] | Differential [bar] | Max. working pressure $P_e$ [bar] | Max. test pressure $P_e$ [bar] | Code number |
|---|---|---|---|---|---|
| **For falling pressure, minimum reset** | | | | | |
| BCP2L | 0 – 2.5 | 0.2 | 10 | 11 | **017B0058** |
| BCP3L | 0 – 6 | 0.4 | 16 |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

## Spareparts for BCP pressure switch

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




*For wall mounting*



*For 35 mm rail mounting*

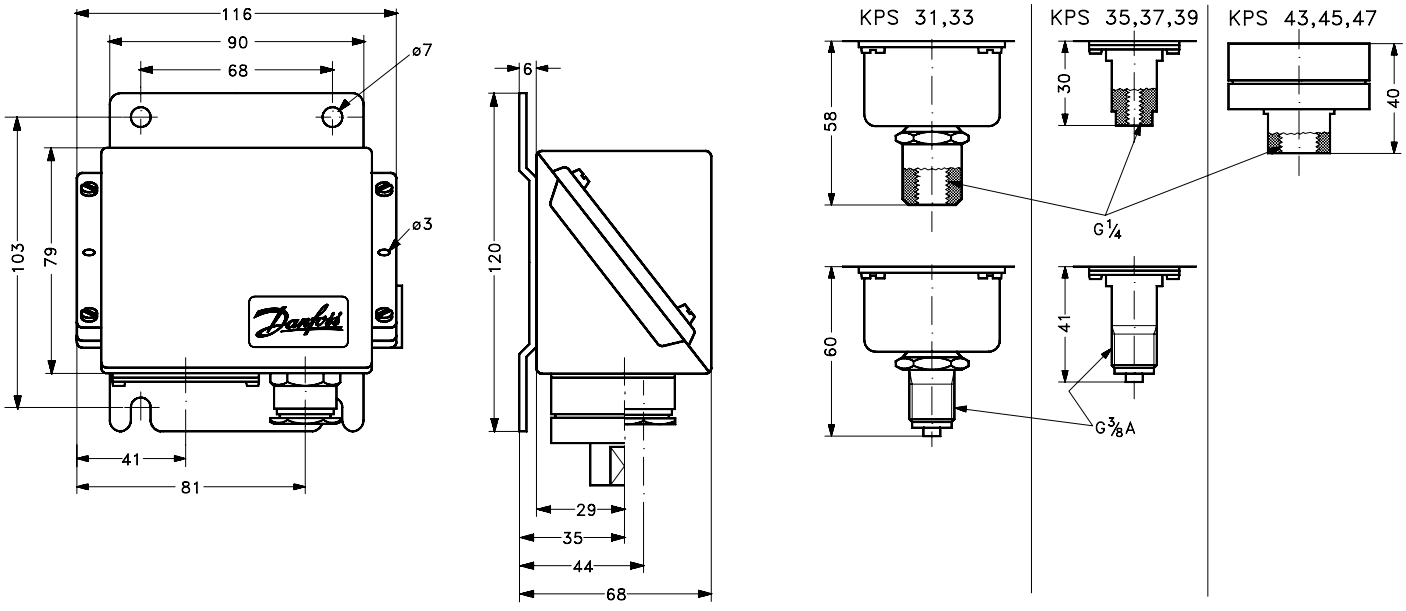
# KPS heavy-duty pressure switches

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

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

## Dimensions and weight:

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




*Dimensions in millimetres*

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

## KPS heavy-duty pressure switches

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

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

## Spareparts for KPS

*Reducer* *Adaptor* *Nipple*

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

*Damping coil, ¼ flare connectors*

*Damping coil, G ⅜ connectors*

*Damping coil, armoured*

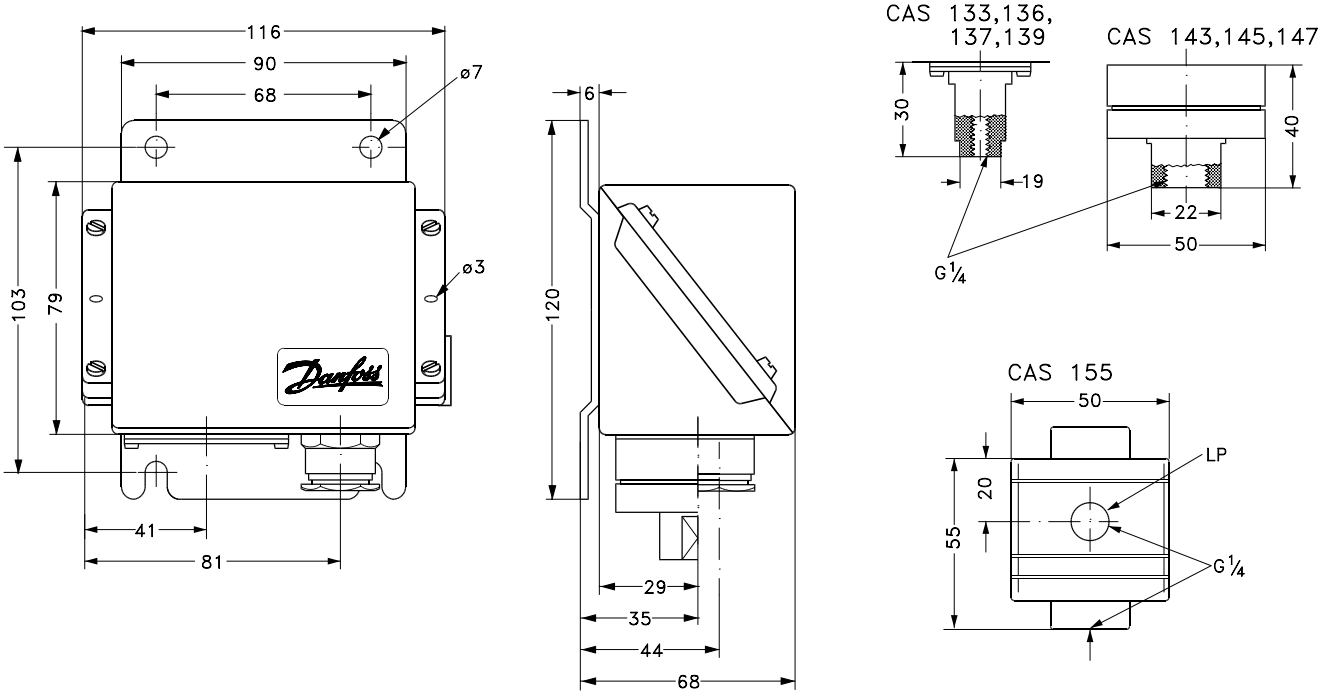
# CAS heavy-duty pressure switches

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

- Pressure ranges: 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 with pipe thread connection

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

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

## CAS differential pressure switch

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

## Spare parts for CAS pressure switch


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


*Nipple G ¼ A x G ⅜A*


*Damping coil*


*Damping coil, armoured*

# The KPI pressure switch for liquid and gaseous media

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

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

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

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

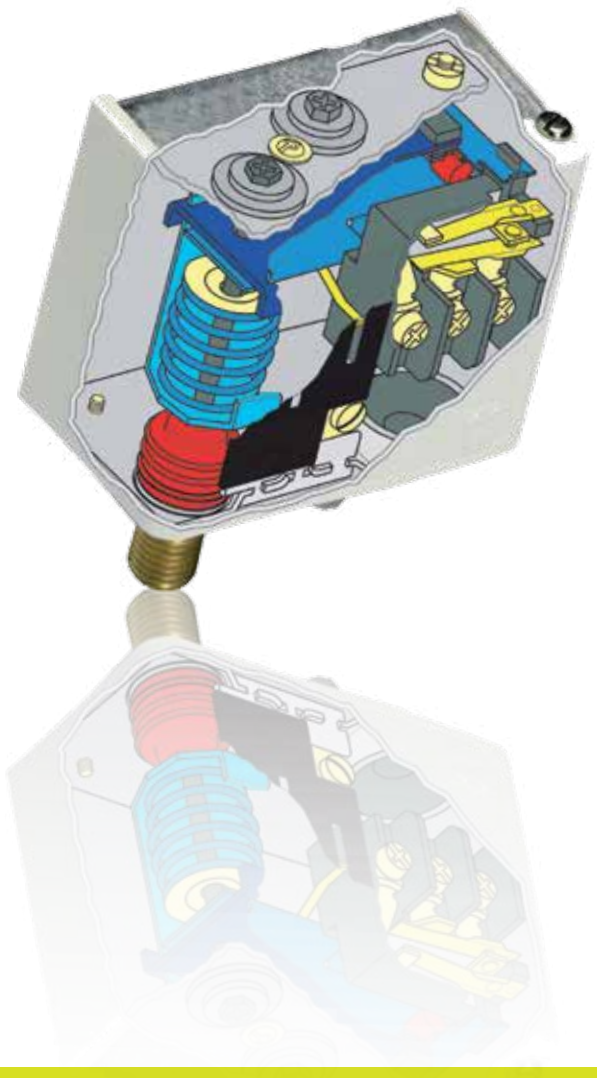
**Shock and impact resistant**
Vibration-proof from 0 – 1000 Hz, 4g (1g = 9.81m/s$^2$), the KPI is ideal for mobile applications where shock and strokes occur.

**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 AC3. 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.



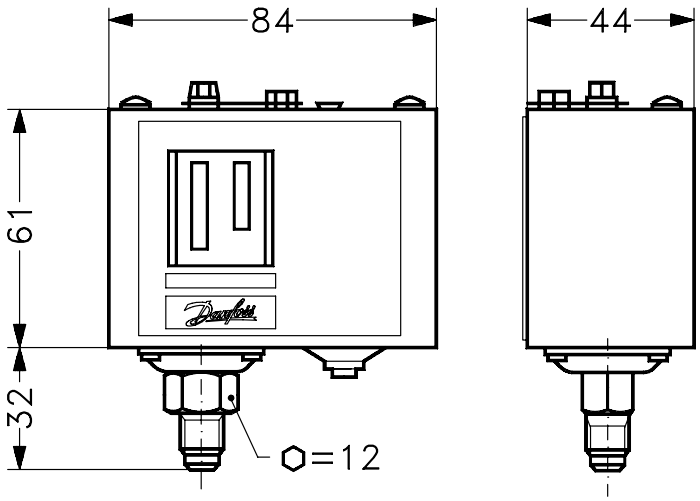
# KPI pressure switches for light industry

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 ranges: -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

## 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 with pipe thread connection

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

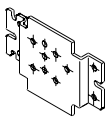
| Type | Setting range $P_e$ [bar] | Differential $P_e$ [bar] | Max. working pressure $P_e$ [bar] | Enclo-sure | Code number |
|---|---|---|---|---|---|
| KPI 35 | -0.2 – 8 | 0.4 – 1.5 | 18 | IP30 | **060-121766** |
| KPI 35[1)] | -0.2 – 8 | 0.4 – 1.5 | 18 | IP30 | **060-316466** |
| KPI 35 | -0.2 –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

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

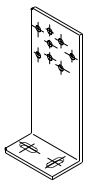
## Spareparts and accessories for KPI pressure switch

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

*Brackets*

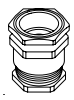


*For wall mounting*

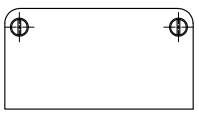


*For 35 mm rail mounting*

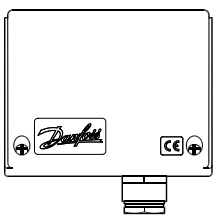
*Seal screw*

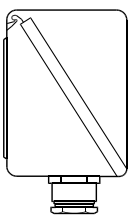


*Screwed cable entry*



*Top cover*





*IP55 enclosure*

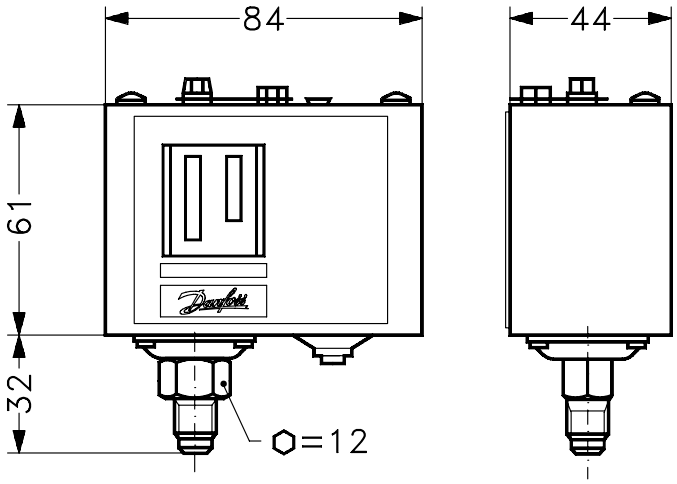
# KP pressure switches for light industry

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

- Pressure ranges: -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. Relevant marine approvals.*

## KP pressure switches for light industry with pipe thread connection

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

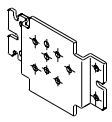
| Type | Setting range $P_e$ [bar] | Differential $P_e$ [bar] | Max. working pressure $P_e$ [bar] | Enclosure | Code number |
|---|---|---|---|---|---|
| **Pressure connection: G ¼A** | | | | | |
| KP2 | -0.2 – 3.5 | 0.3 – 1.0 | 10 | IP30 | **060-131866** |
| KP35 | -0.2 – 7.5 | 0.7 – 4 | 17 | IP30 |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

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

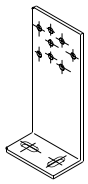
## Spareparts and accessories for KP pressure switch

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

*Brackets*



*For wall mounting*

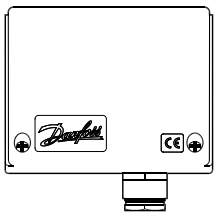


*For 35 mm rail mounting*

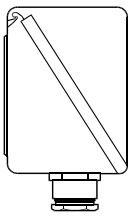
*Seal screw*

*Screwed cable entry*

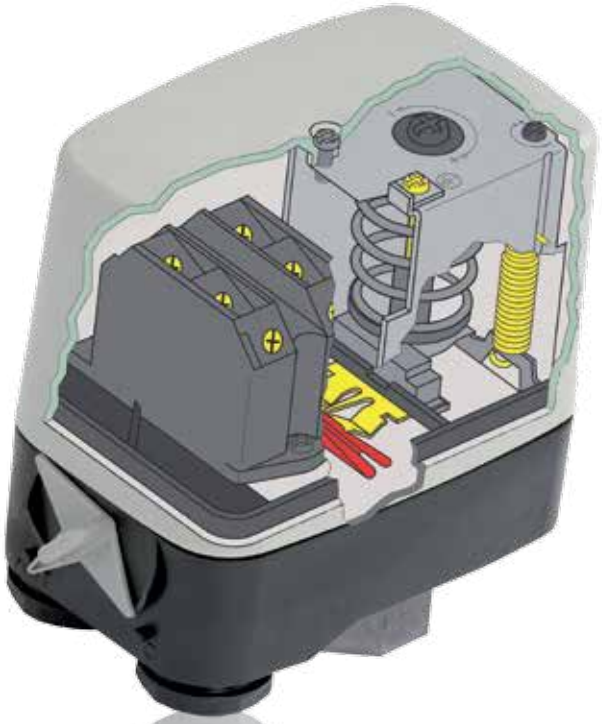
*Top cover*



*IP55 enclosure*



# The CS pressure switch for excellent pressure control



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

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

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

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

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

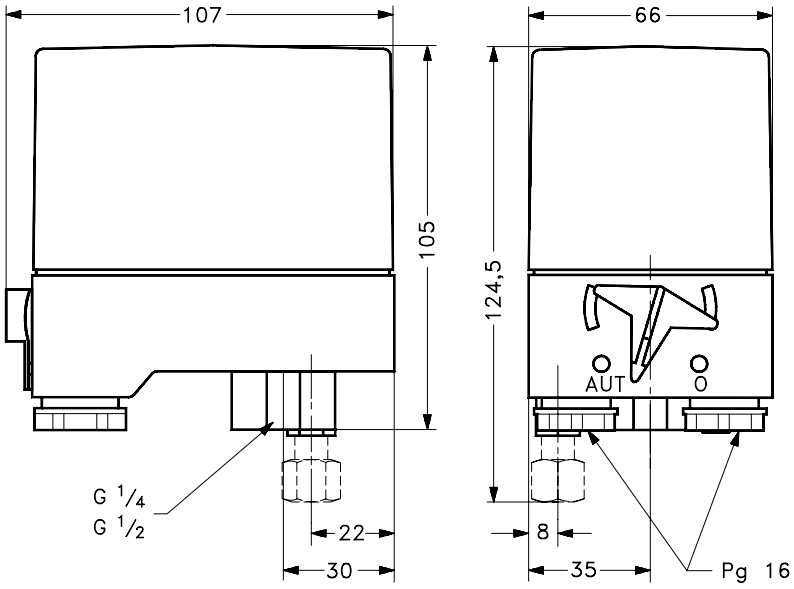
# CS pressure switches for air and water

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

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

## Dimensions and weight:

*Weight: 0.5 kg*




*All dimensions in millimetres*

*Approvals: CE according to EN 60947-4-5*

## CS pressure switches

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

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

**Contact function: SPST**

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

*TPST contact system*

*Pressure relief valve*

## Spareparts for CS pressure switch

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

*Screwed cable entries*

*Nipple*

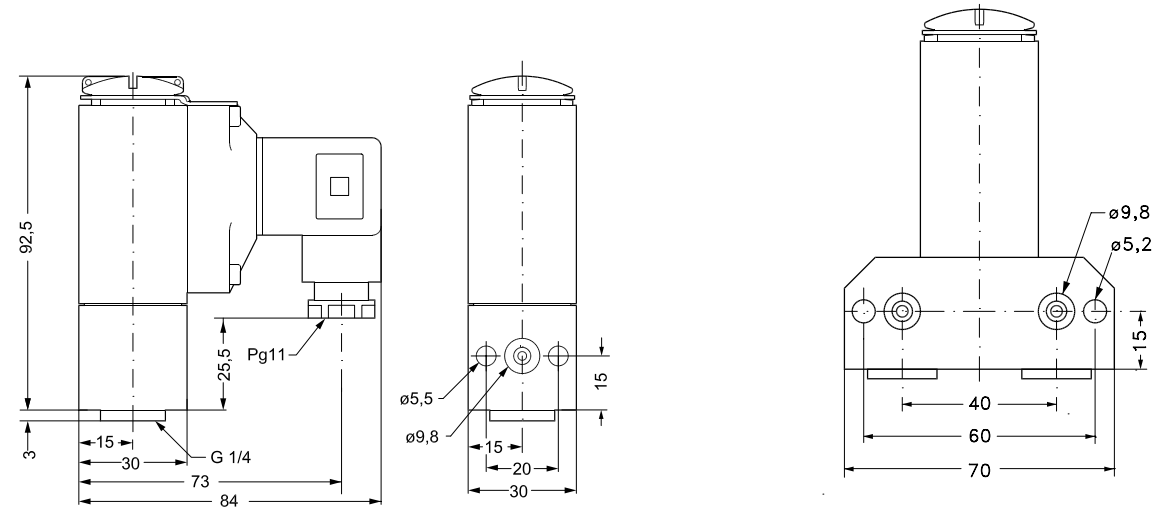
# MBC 5100 block-type compact pressure switches


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

- All relevant marine approvals
- Pressure ranges: -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-1 (ohmic) 10A, 250V
AC-3 (motor) 3A, 250V
AC-15 (inductive) 0.5A, 250V

**Plug Pg 11. Other electrical connections available on request**

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

## MBC 5180 block-type differential pressure switch

| Setting range $P_e$ [bar] | Operating range LP side $P_e$ [bar] | Max. working pressure $P_e$ [bar] | Connection G ¼ A | Connection G ¼ A w. flange | Code number |
|---|---|---|---|---|---|
| 0.3 – 5 | 0 – 30 | 45 | | ✓ | **061B128066** |
| 0.3 – 5 | 0 – 30 | 45 | ✓ | | **061B129066** |

## Spareparts for MBC5100

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

*Pulse snubber 20 mm*

*Pulse snubber 34 mm*

*Pulse snubber for flange connection*

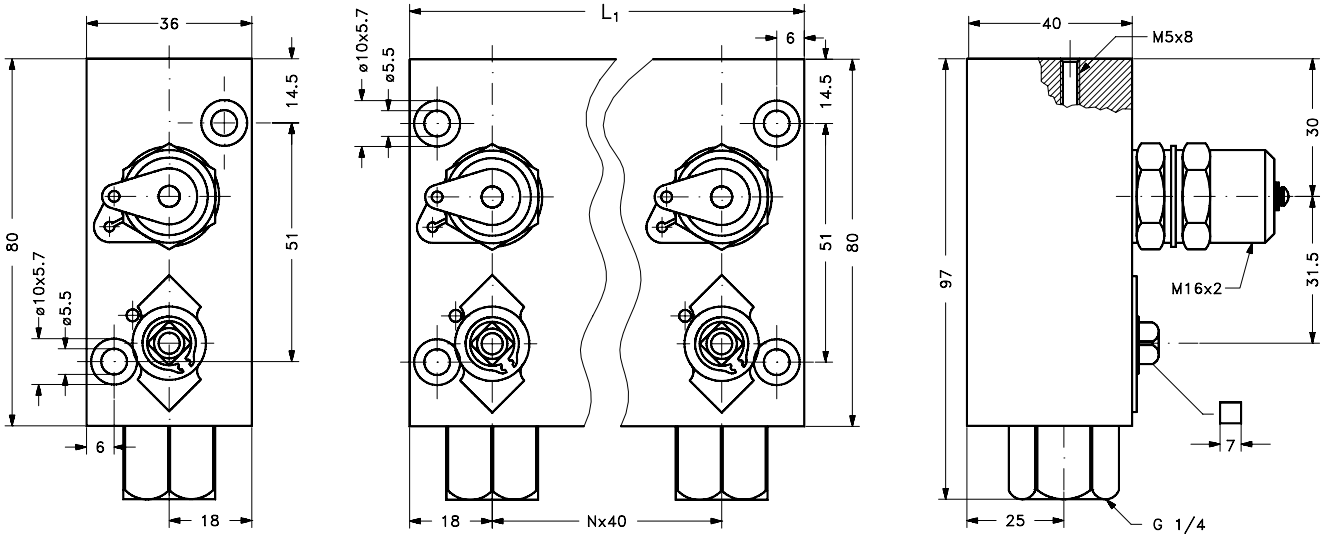
# MBV 5000 pressure test valve

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

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

## Dimensions and weight:

*Weight: From 0.4 – 2.0 kg*




*All dimensions in millimetres*

## MBV 5000 pressure test valve

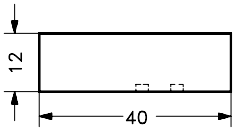
**Max working pressure, liquid media:** 180 bar $P_e$ / gaseous media: 120 bar $P_e$
**Ambient temperature:** -20 – 120 °C
**Media temperature:** -20 – 120 °C

| 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** |

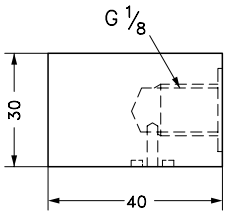
## Spareparts for MBV 5000

### Standard flange - G 1/8 adapters

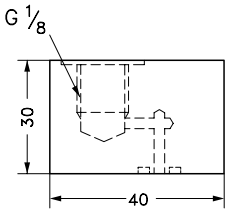
| Description | Code number |
|---|---|
| Cover | **061B720001** |
| Angleway adapter | **061B720101** |
| Straightway adapter | **061B720201** |




*Cover*




*Angleway adapter*




*Straightway adapter*

# RT temperature switches for temperature regulation

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

**Wide regulating range**
The RT has a wide temperature regulating range from -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 temperature switches are available with standard contact systems for 3A, 400V AC15 loads and 4A, 400V AC3. 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.

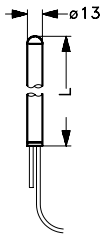
# RT temperature switches

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

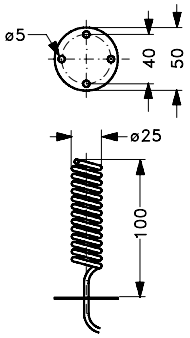
- Temperature range: -60 – 300 °C
- Replaceable contact system
- Also available with gold plated contact systems
- Adjustable differential
- Enclosure IP66
- Available with external max. reset function (IP54)
- Available with dead zone
- Available with all relevant marine approvals

## Dimensions and weight:

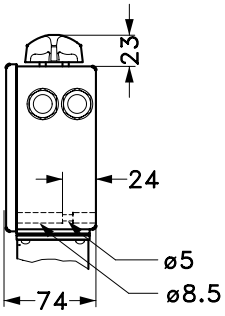
*Weight: Appr. 1 kg*

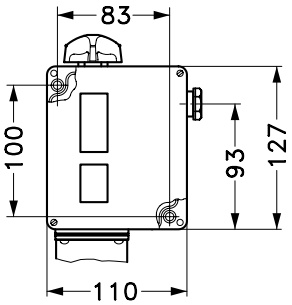


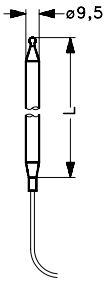

*RT106*



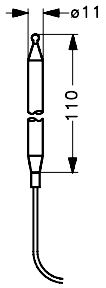

*RT140*



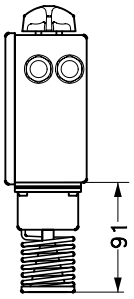



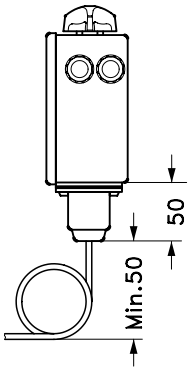

*RT120, RT101, RT14, RT 107, RT 123, RT 108*



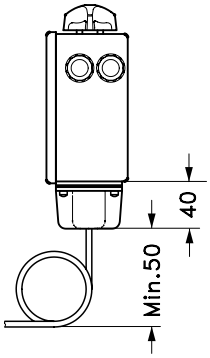

*RT124*




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




*RT 106, RT 107, RT 120, RT 123*




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

*All dimensions in millimetres*

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

## RT temperature switches - 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
**Media Temperature:** -40 – 100 °C

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

## RT temperature switches - room sensor

**Enclosure: IP66**

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

[1)] *Neutral zone setting: max 5 °C*

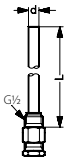
## RT temperature switches - duct sensor

**Enclosure: IP66**

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

# Spareparts and accessories for RT temperature switches

## Sensor pockets with stuffing box

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

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

*Setting knob* *Seal cap* *Seal screws*



| Type | Description | |
|---|---|---|
| Setting knob | Replacement. Pale grey Ral 7035 | **017-436366** |
| Seal cap | Seal cap to replace setting knob so that setting can only be altered with tools (tamper proof seal cap). Black | **017-436066** |
| Screws | Seal screws for cover and seal cap | **017-425166** |
| Stuffing box kit | For all thermostats with remote sensor. G ½A (pipe thread ISO228/1), oil resistant rubber washer for max 110 °C/90 bar | **017-422066** |
| Stuffing box kit | For all thermostats with remote sensor. G ¾A (pipe thread ISO228/1), oil resistant rubber washer for max 110 °C/90 bar | **003N0155** |
| Sensor clip | For all RT units with remote sensor. L = 76 mm | **017-420366** |

*Sensor clip*

*Stuffing box kit*

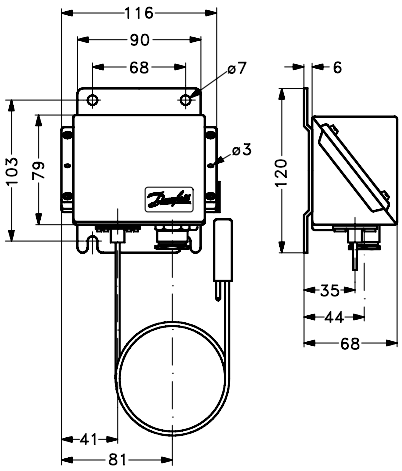
# KPS temperature switches

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.

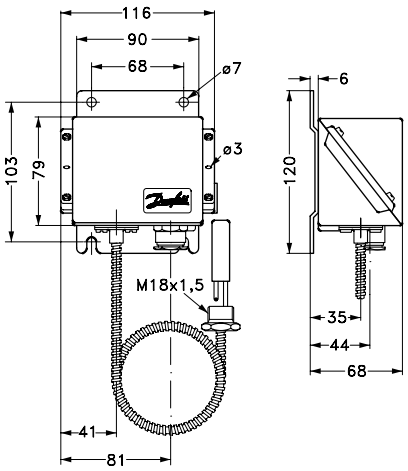
- Temperature setting ranges: -10 – 200 °C
- Gold plated contact systems
- Adjustable or fixed differential
- Robust and compact construction
- Resistance to shock and vibrations
- Enclosure IP67. Sturdy and sea water resistant.
- Available with all relevant marine approvals

## Dimensions and weight:

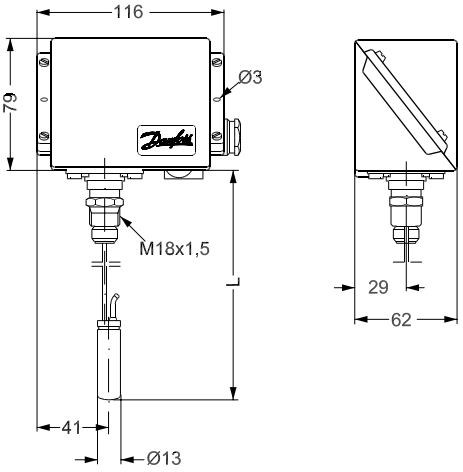
*Weight: 1.0 – 1.4 kg*




*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 temperature switches

**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 (ØxL) [mm] | Code number |
|---|---|---|---|---|---|---|
| KPS76 | -10 – 30 | 3 – 10 | 80 | 2 | 13 x 63 | **060L311266** |
| KPS77 | 20 – 60 | 3 – 14 | 130 | 2 | 13 x 63 | **060L310166** |
| KPS79 | 50 – 100 | 4 – 16 | 200 | 2 | 13 x 63 | **060L310466** |
| KPS81 | 60 – 150 | 5 – 25 | 250 | 2 | 13 x 63 | **060L310666** |
| KPS80 | 70 – 120 | 4.5 – 18 | 220 | 2 | 13 x 63 | **060L312866** |
| KPS80 | 70 – 120 | 4.5 – 18 | 220 | 5 | 13 x 90 | **060L313066** |
| KPS80 | 70 – 120 | 4.5 – 18 | 220 | 3 | 13 x 63 | **060L315666** |
| KPS83 | 100 – 200 | 6.5 – 30 | 300 | 2 | 13 x 63 | **060L310866** |

### KPS, rigid sensor

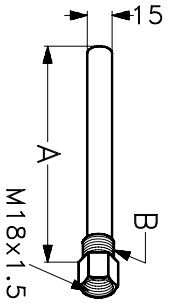
| Type | Setting range [°C] | Adjustable differential range [°C] | Max sensor temperature [°C] | Sensor size (ØxL) [mm] | Code number |
|---|---|---|---|---|---|
| KPS77 | 20 – 60 | 3 – 14 | 130 | 13 x 75 | **060L310066** |
| KPS77 | 20 – 60 | 3 – 14 | 130 | 13 x 110 | **060L311866** |
| KPS79 | 50 – 100 | 4 – 16 | 200 | 13 x 110 | **060L310366** |
| KPS79 | 50 – 100 | 4 – 16 | 200 | 13 x 75 | **060L312166** |
| KPS80 | 70 – 120 | 4.5 – 18 | 220 | 13 x 75 | **060L312666** |

### KPS, remote sensor with capillary tube

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

# Spareparts and accessories for KPS temperature switches

## Sensor pockets without stuffing box

| Pocket length - A [mm] | Pocket thread - B | | | | Pocket material | | | Code number |
|---|---|---|---|---|---|---|---|---|
| | | | ISO 228/1 | | | | | |
| | G ½ A | G ⅜ A | G ¾ A | G ½ 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 KPS thermostats with armoured capillary tube | **060L036666** |

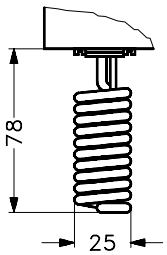
# KP temperature switches

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 ranges: -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

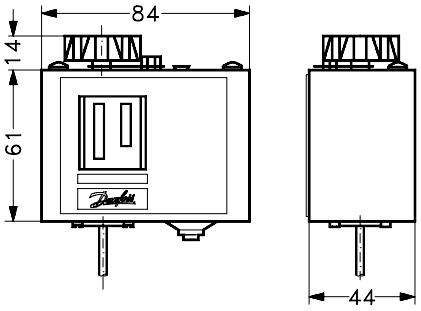
## Dimensions and weight:

*Weight: Appr. 0.4 kg*

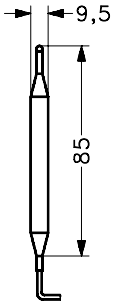



KP 62

*KP 75: Sensor tinned copper Cu/Sn 5*




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




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

*All dimensions in millimetres*

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

## KP temperature switches

**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 (ØxL) [mm] | Capillary tube length [m] | Code number |
|---|---|---|---|---|---|---|
| KP71 | -5 – 20 | 2.2 – 10 | 80 | 9.5 x 115 | 2 | **060L111366** |
| KP77 | 20 – 60 | 3.5 –10 | 130 | 9.5 x 85 | 2 | **060L112166** |
| KP78 | 30 – 90 | 5 – 15 | 150 | 9.5 x 85 | 2 | **060L118466** |
| KP79 | 50 – 100 | 5 – 15 | 150 | 9.5 x 85 | 2 | **060L112666** |
| KP81 | 80 – 150 | 7 – 20 | 200 | 9.5 x 85 | 2 | **060L112566** |
| KP81[1)] | 80 – 150 | 8 | 200 | 9.5 x 85 | 2 | **060L115566** |

*[1)] Maximum reset function*

### Straight capillary tube sensor

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

### Room sensor

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

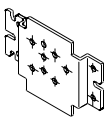
*[1)] Contact material: Gold plated silver*

# Spareparts and accessories for KP temperature switch

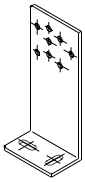
*Sensor pocket*

| Type | Description | Code numbers |
|---|---|---|
| Wall bracket | Mounting screw and washers included | **060-105566** |
| Angle bracket | Mounting screw and washers included | **060-105666** |
| Screwed cable entry | Pg 13.5 with special nut. For 6 – 14 mm diameter cables | **060-105966** |
| Top cover | For single control. If a wall or angle bracket is mounted on the backplate of the housing, the KP will have an IP44 grade of enclosure by means of this cover | **060-109766** |
| IP55 enclosure | For single control. Specially designed IP55 enclosure , not transparent | **060-033066** |
| Sensor pocket | Application: KP 77, 78, 79, 81. Brass. Pocket dimension: L 110 x Ø 15 mm. With stuffing box | **017-437066** |
| Sensor pocket | Application: KP 77, 78, 79, 81. Stainless steel. Pocket dimension: L 110 x Ø 15 mm. With stuffing box | **017-436966** |

*Brackets*

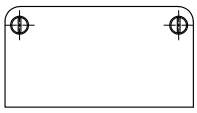


*For wall mounting*

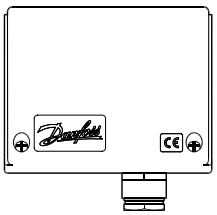


*For 35 mm rail mounting*

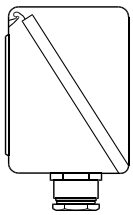
*Screwed cable entry*



*Top cover*



*IP55 enclosure*



# The MBC 8100 compact temperature switches

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

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

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

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

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

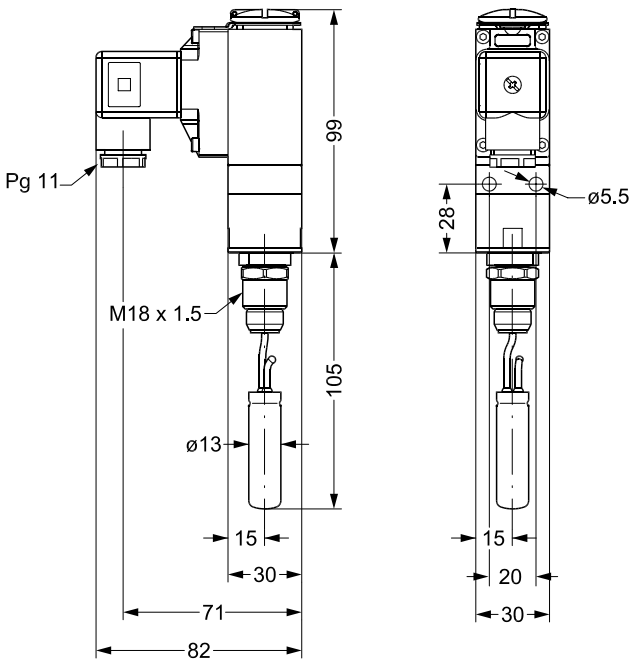
**Resistance to media**
The sensor pocket is available in brass or stainless steel.

# MBC 8100 block-type compact temperature switches 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. Also available without marine approvals (MBC 8000; please contact Danfoss for information)

- Block design
- Fully electromechanical
- -10 – 200 °C temperature range
- 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 temperature switches

**Contact function:** Single pole double throw (SPDT)
**Loads:** AC-1 (ohmic) 10A, 250V
AC-3 (motor) 3A, 250V
AC-15 (inductive) 0.5A, 250V
**Ambient temperature:** -40 – 85 °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 (ØxL) [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** |

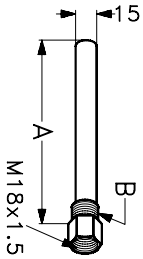
### MBC 8100 with armoured capillary tube, length: 2 m

| Temp. setting range [°C] | Fixed diff. [°C] | Max. sensor temp. [°C] | Sensor size (ØxL) [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 temperature switches

### Sensor pockets without stuffing box

| Pocket length - A [mm] | Pocket thread - B | | | | Pocket material | | Code number |
|---|---|---|---|---|---|---|---|
| | | | ISO 228/1 | | | | |
| | G ½ A | G ⅜ A | G ¾ A | G ½ 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

ENGINEERING
TOMORROW

# Here **today.** Here **tomorrow.**

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

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

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

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

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



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