

# Heavy duty pressure controls

## MBC 5000 and MBC 5100

### Features



- Designed for use in severe industrial environments
- High vibration stability
- Part of the Danfoss block system, consisting of MBC pressure controls, MBS pressure transmitters and MBV test valves
- MBC 5100 with all major ship approvals
- High repeatability
- Optimal compact design for machine building purposes
- Intended for alarm indication, shut down, control and diagnostics in many applications - motors, gears, thrusters, pumps, filters, compressors etc.

### Ship approvals MBC 5100

Lloyd's Register of Shipping  
 Germanischer Lloyd  
 RINA, Registro Italiano Navale  
 NKK, Nippon Kaiji Kyokai  
 DNV, Det Norske Veritas

BV, Bureau Veritas  
 American Bureau of Shipping  
 KRS, Korean Register of Shipping  
 MRS, Maritime Register of Shipping

### Technical data

#### Performance

Repeatability	Bellows versions	± 0.2 % FS (typ.) ± 0.5 % FS (max.)
	Diaphragm versions	± 0.5 % FS (typ.) ± 1 % FS (max.)
	Piston versions	± 1 % FS (typ.) ± 1 % FS (max.)
Response time		< 4 ms
Max. switch frequency		10/min (0.16 Hz)
Differential		see page 3
Permissible operating pressure		see page 3
Burst pressure		see page 3
Life time	Mechanical for diaphragm and bellows	> 400,000 cycles
	Mechanical for piston type	>1 million cycles
	Electrical at max. contact load	> 100,000 cycles

#### Electrical specifications

Switch				SPDT
Contact load	AC 1	10 A, 250 V	AC 15	0.5A, 250 V
	AC 3	3A, 250 V	DC 13	12 W, 125 V

#### Environmental conditions

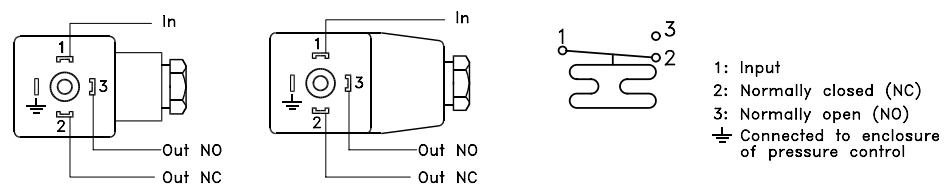
Temperature	Operation	Bellows versions Diaphragm versions Piston versions	-40 to +85 °C -10 to +85 °C -40 to +85 °C
	Transport	Bellows versions Diaphragm versions Piston versions	-50 to +85 °C -50 to +85 °C -40 to +85 °C
Enclosure			IP 65, IEC 529
Vibration stability	Sinusoidal	20 g, 25 Hz - 2 kHz	IEC 68-2-6
		piston type 4.4g, 25-200 Hz	IEC 60068-2-27

**Technical data**  
(continued)

*Mechanical characteristics*

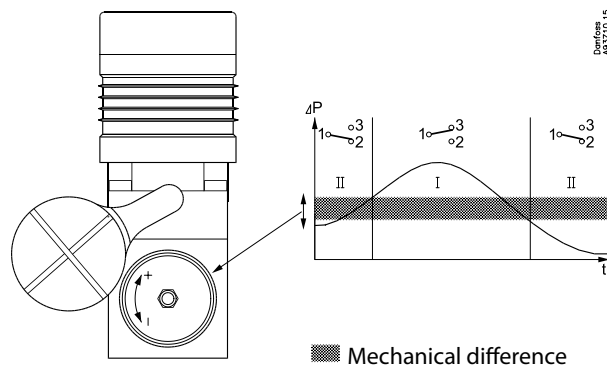
Pressure connection	Standard Option	G 1/4 female (ISO 228/1) or flange see specification form, page 3
Electrical connection	Plug	DIN 43650, Pg 9 / Pg 11 / Pg 13.5
Wetted parts material	Housing Bellows Diaphragm Piston O-ring	Anodized AIMgSi1 1.4306 (18/8) Viton Steel NBR
Enclosure material	Housing Plug fixture Contact system	AIMgSi1 Glass filled polyamid, PA 6.6 Silver (AG) microprofile
Weight		0.4 kg

**Electrical connection**



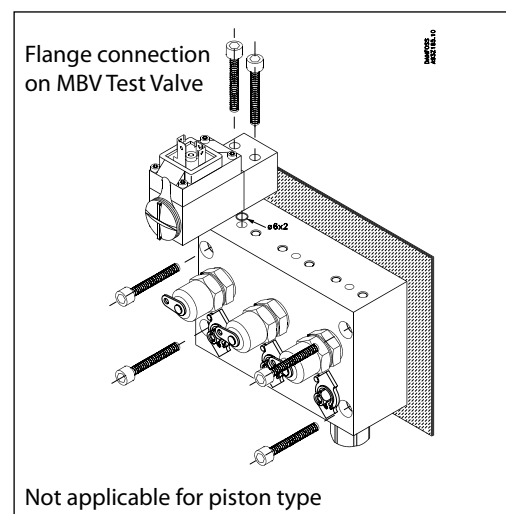
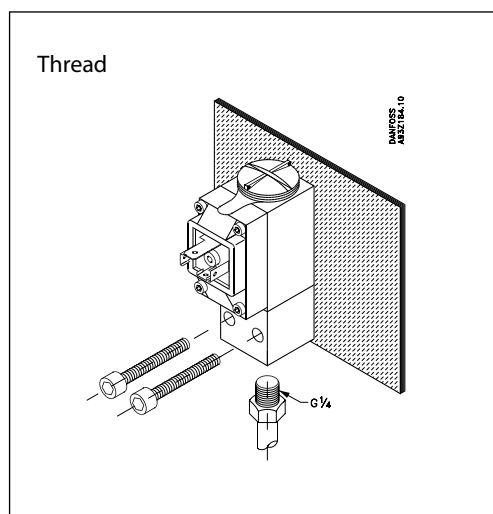
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AGSZ19-10-11.02

**Adjustment**



One full turn (360°) of MBC setting screw is approx. equal to 7% of the setting range

**Mechanical connection**



**How to choose**

To achieve the best operating conditions for MBC pressure controls, it is recommended to apply the following rules of thumb:

- Choose:
- the MBC type/types which meet the demands for the operating pressure
  - the MBC version with the lowest possible setting range
  - a diaphragm type, if pressure peaks and pulsations occur in the system (if possible)
  - bellows types, if low differential is needed
  - piston type for high pressure

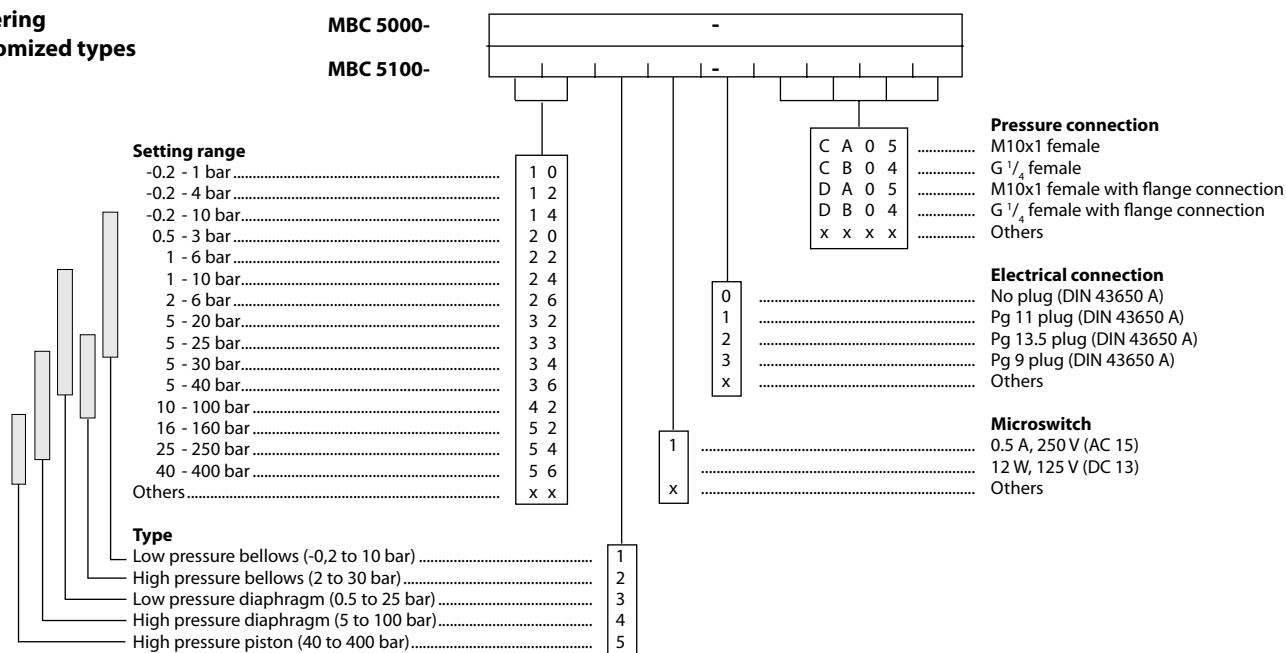
**Ordering standard types**

Type: LP = Low pressure HP = High Pressure	Setting range Pe [bar]	Fixed differential Pe [bar] (typ)	Permissible operating pressure Pe [bar]	Min. burst pressure Pe [bar]	Type designation MBC 5000-/ MBC 5100-	MBC 5100 Ship approved  Code no.	MBC 5000 Standard  Code no.
LP bellows	-0.2 to 1	0.15 to 0.45 <sup>1)</sup>	15	30	1011-1DB04	<b>061B000566</b>	<b>061B200566</b>
LP bellows	-0.2 to 4	0.15 to 0.45 <sup>1)</sup>	15	30	1211-1DB04	<b>061B000466<sup>2)</sup></b>	<b>061B200466</b>
LP bellows	-0.2 to 10	0.15 to 0.60 <sup>1)</sup>	15	30	1411-1DB04	<b>061B000266<sup>2)</sup></b>	<b>061B200266</b>
LP bellows	-0.2 to 10	0.15 to 0.60 <sup>1)</sup>	15	30	1411-1CB04	<b>061B000066</b>	<b>061B200066</b>
LP bellows	0.5 to 3	0.15 to 0.30 <sup>1)</sup>	15	30	2011-1DB04	<b>061B002966</b>	
LP bellows	1 to 6	0.15 to 0.45 <sup>1)</sup>	15	30	2211-1DB04	<b>061B000766</b>	
HP bellows	5 to 30	0.40 to 1.5 <sup>1)</sup>	45	90	3421-1DB04	<b>061B000366<sup>2)</sup></b>	<b>061B200366</b>
LP diaphragm	0.5 to 3	0.25 to 0.80 <sup>1)</sup>	150	300	2031-1DB04	<b>061B101766</b>	
LP diaphragm	1 to 6	0.30 to 2.0 <sup>1)</sup>	150	300	2231-1DB04	<b>061B100966</b>	
LP diaphragm	1 to 10	0.30 to 2.0 <sup>1)</sup>	150	300	2431-1DB04	<b>061B100466<sup>2)</sup></b>	<b>061B300466</b>
LP diaphragm	5 to 20	0.4 to 2.5 <sup>1)</sup>	150	300	3231-1DB04	<b>061B100266<sup>2)</sup></b>	<b>061B300266</b>
LP diaphragm	5 to 25	0.4 to 2.5 <sup>1)</sup>	150	300	3331-1DB04	<b>061B102466</b>	
HP diaphragm	5 to 40	1.0 to 7.0 <sup>1)</sup>	150	300	3641-1DB04	<b>061B100566<sup>2)</sup></b>	<b>061B300566</b>
HP diaphragm	10 to 100	1.7 to 14 <sup>1)</sup>	150	300	4241-1DB04	<b>061B100366<sup>2)</sup></b>	<b>061B300366</b>
HP piston	16 to 160	12 to 30	600	1200	5251-1CB04	<b>061B510066</b>	<b>061B500266</b>
HP piston	25 to 250	12 to 40	600	1200	5451 - 1CB04	<b>061B510166</b>	<b>061B500166</b>
HP piston	40 to 400	15 to 50	600	1200	5651 - 1CB04	<b>061B510266</b>	<b>061B500066</b>

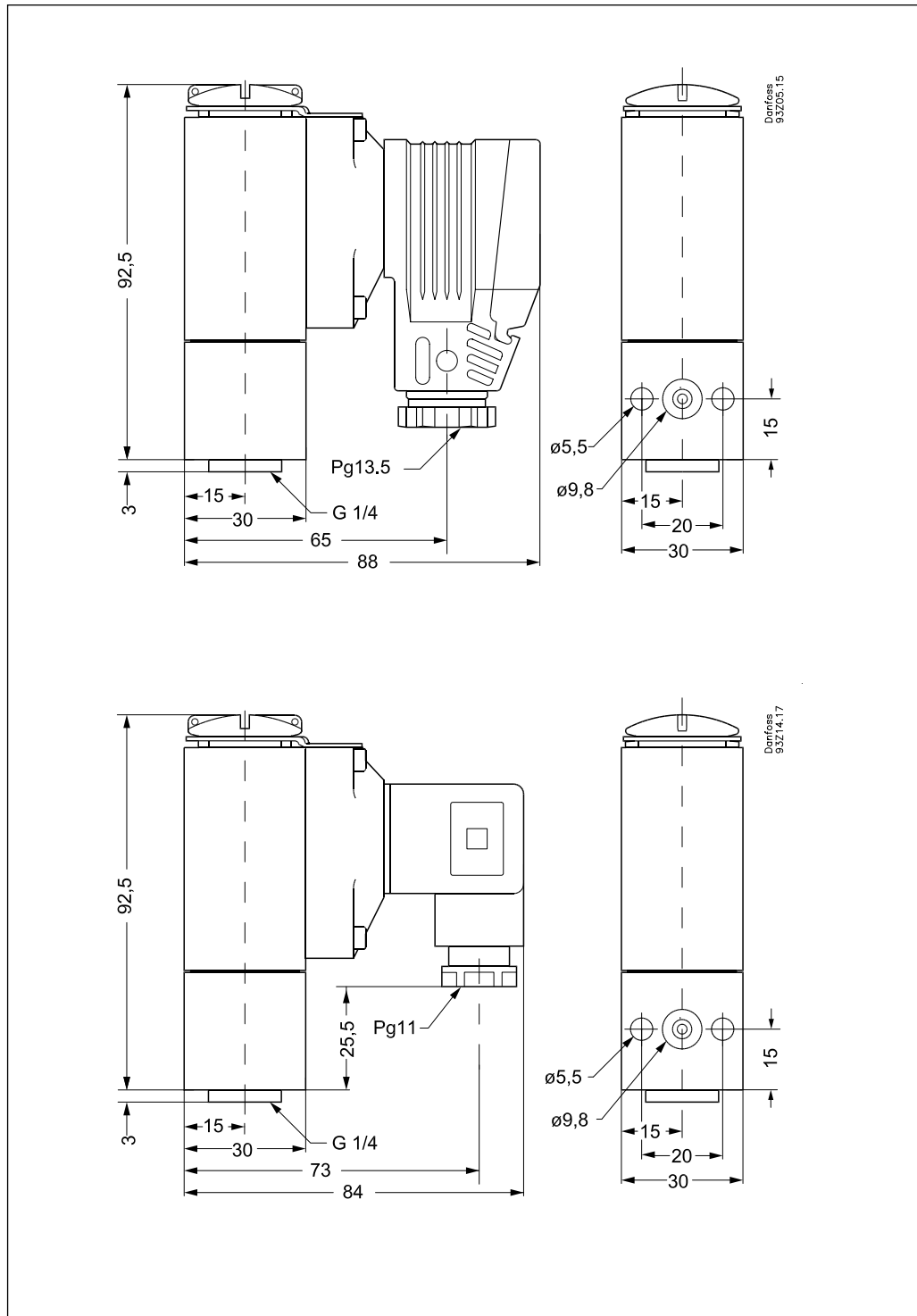
<sup>1)</sup>Lowest differential at min. setting range, highest differential at max. setting range

<sup>2)</sup>Preferred versions

**Ordering customized types**



Dimensions



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