Data sheet



Differential pressure switch

MBC 5080 and 5180

Heavy duty industry and marine applications

Description

MBC differential 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 common marine approvals.

Features & benefits

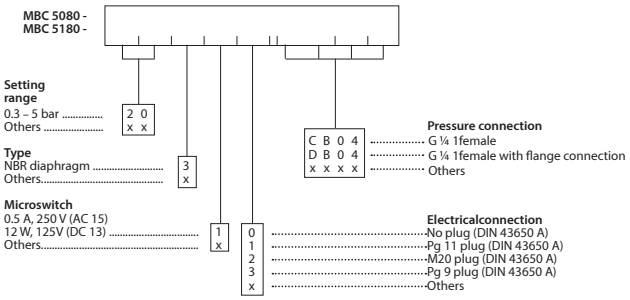
- Designed for use in severe marine and industrial environments
- High vibration stability
- Part of the Danfoss block-system, consisting of MBC pressure switches, MBS pressure transmitters and MBV test-valves
- MBC 5180 with ship approvals
- Low fixed hysteresis and high repeatability
- Optimal compact design for machine building purposes
- Intended for alarm indication, shut-down, control and diagnosing in many applications - motors, gears, thrusters, pumps, filters, compressors etc.

Ordering

Product code numbers

Diff.press.setting range [bar] [min]	Diff.press.setting range [bar] [max]	Type	Specification key	Code number
0.30	5.00	MBC 5180	2031-1DB04	061B128066
0.30	5.00	MBC 5180	2031-1CB04	061B129066

Ordering of customized types



Functions

Settings

Mechanical differential
MBC standard versions are adjusted at minimum differential range 0.3 bar.

Variation in the system pressure will not affect the differential setting.

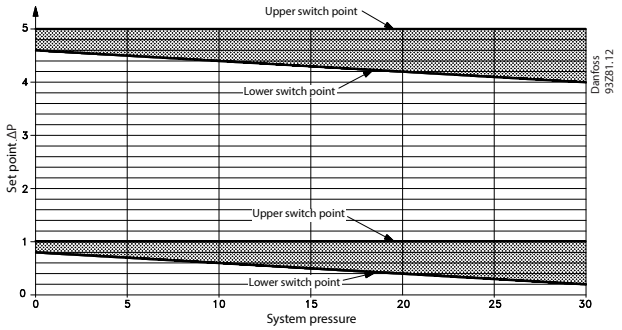
If the differential is set to a high value at 0 bar system pressure, there will be a small change in the setpoint.

Example:
MBC 5080 and MBC 5180 set to 5.0 bar differential at 0 bar system pressure will at 30 bar system pressure give alarm at approx. 34.2 bar. Differential decreased 0.8 bar.

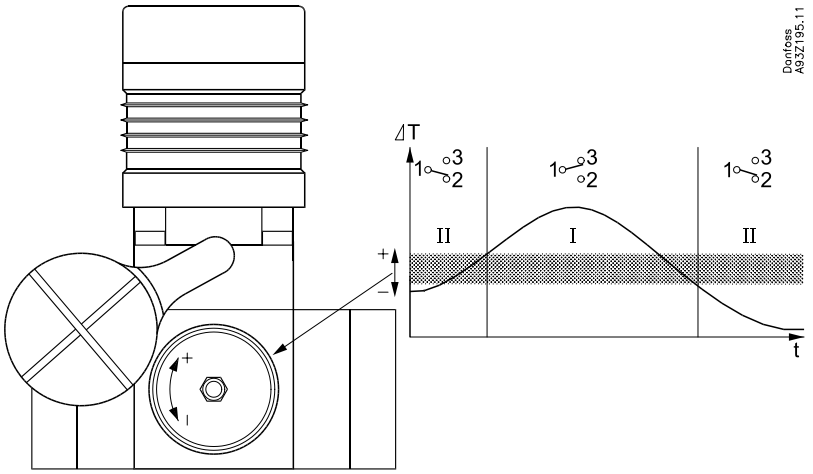
Our experience is that MBC 5080 and MBC 5180 often are used at a differential setting close to minimum, where the differential would be independent of the system pressure.

If a high differential is needed, we recommend making a differential setting at the system pressure that is normal for the application.

Figure: Mechanical differential



Adjustment
Figure: Mechanical differential adjustment



	Mechanical difference

Product details

General data

Table: Performance

Repeatability upper switch point		±0.1 bar (typ.)
Static pressure on LP-side (Pressure released totally after activating the switch point)		±0.2 bar (max.)
Maximum switch frequency		10 times per minute (0.16 Hz)
Permissible operating pressure (HP)		45 bar
Min. bursting pressure		90 bar
Lifetime	Mechanical	> 400.000 cycles
	Electrical at max. contact load	> 100.000 cycles

Table: Electrical specifications

Switch		**SPDT**
Contact load	AC15	0.5 A, 250 V
	DC13	12 W, 125 V

Table: Mechanical characteristics

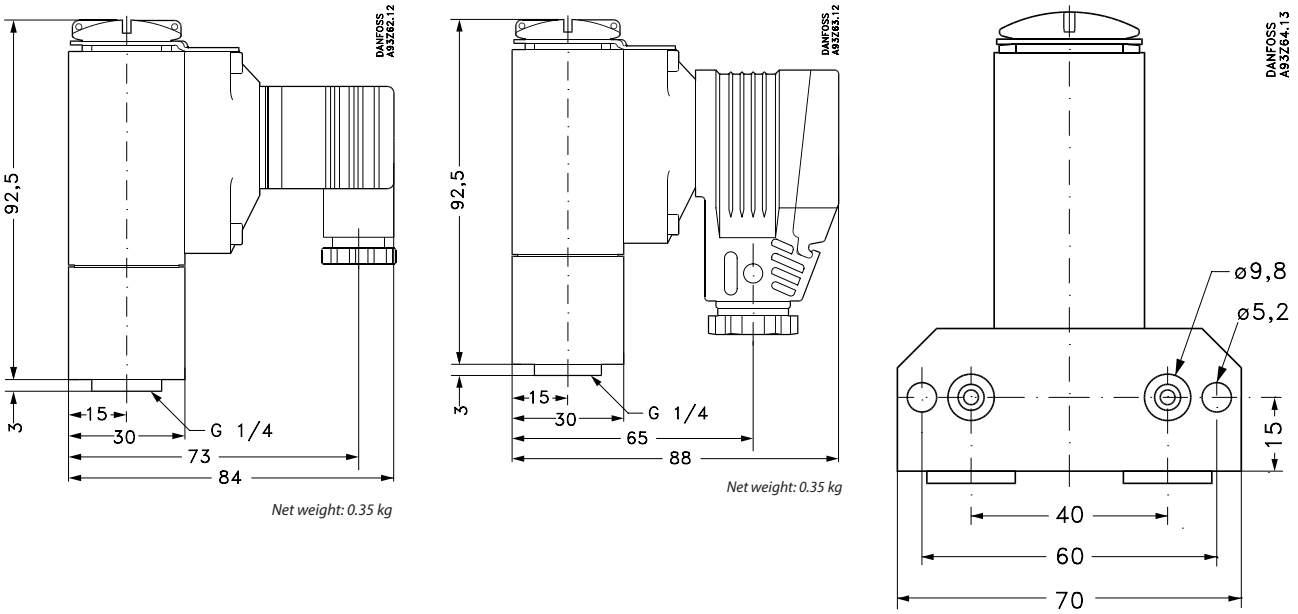
Pressure connection	Standard	G¼ female (ISO 228-1) or flange
	Option	See specification form
Electrical connection	Plug	DIN 43650 or M20
Wetted parts material	Housing	Anodized AlMgSi1, AW-6082 T6
	Diaphragm	NBR
	O-ring	NBR
	Hole plug (flange version)	Nickel plated brass
	O-ring (flange version)	NBR
Enclosure material	Housing	Anodized AlMgSi1, AW-6082 T6
	Plug fixture	Glass filled polyamid, PA 6.6
Net weight		0.35 kg

Performance and environmental conditions

Table: Environmental conditions

Temperature	Operation		-10 – 85 °C
	Transport		-50 – 85 °C
Enclosure			IP65, EN 60529
Vibration stability	Sinusoidal	4 g, 25-00 Hz	EN 60068-2-6
Shock resistance	Shock	50 g / 6 ms	EN 60068-2-27

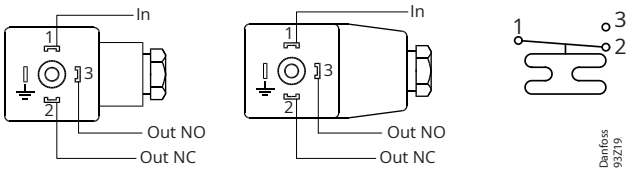
Dimensions



All dimensions are in mm.

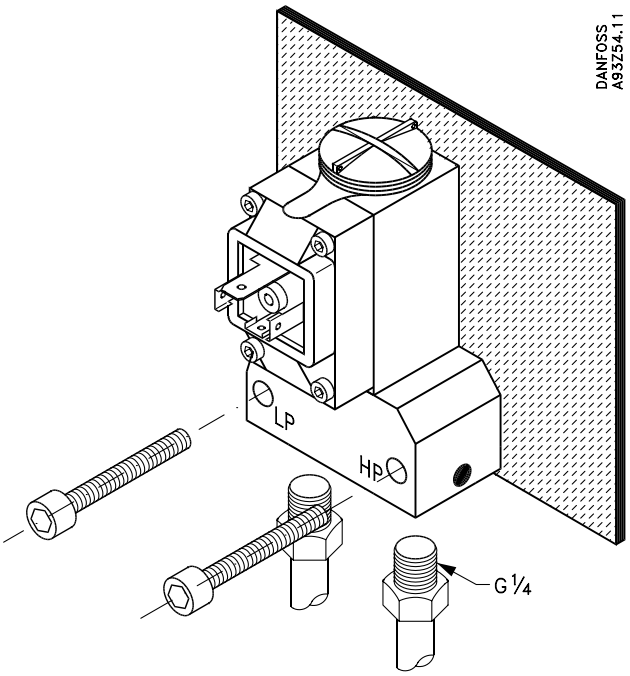
Connections

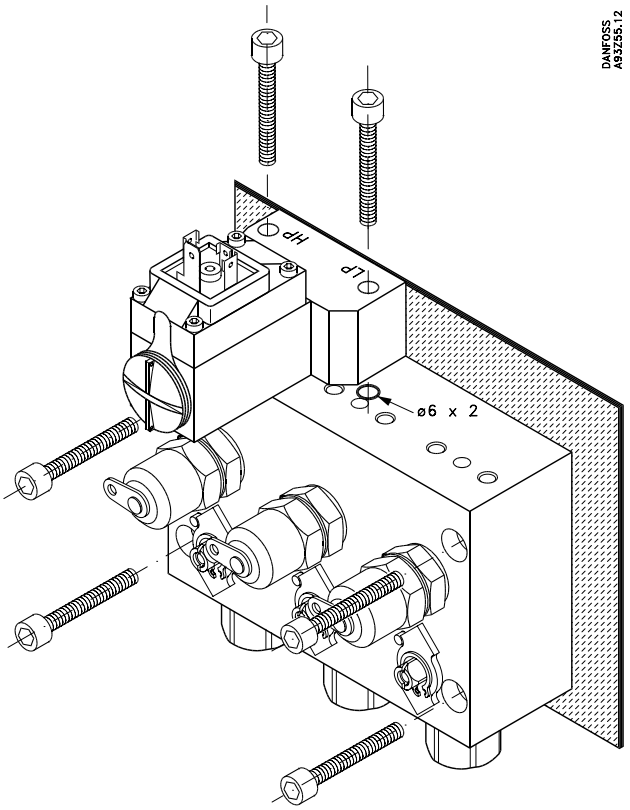
Electrical connection



1	Input
2	Normally closed (NC)
3	Normally open (NO)
⏚	Connected to enclosure of pressure control

Mechanical connections





Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
Marine Certificate	CCS GB23PTB00006_04	CCS - China Classification Society	Marine
Marine Certificate	KR HMB 17529-AE005	KR - Korean Register of Shipping	Marine
CCC Declaration	Danfoss CCC 2020970305003454	Danfoss	
Marine Certificate	ABS 25-0336462-PDA	ABS - American Bureau of Shipping	
CCC Declaration	Danfoss CCC 2020970305003455	Danfoss	
Marine Certificate	DNV GL TAA00001W8 Rev. 3	DNV GL	
Marine Certificate	NKK TA22325M	ClassNK - The Japanese Marine Association	
EU Declaration	Danfoss EU 060-9680.AC	Danfoss	LVD
Manufacturer's Declaration	Danfoss MD 060-9639.AB	Danfoss	China RoHS
CCC Declaration	Danfoss CCC 2024010305641307	CCC - China Compulsory Certification	CCC
Export Control Declaration	Pressure switches & Thermostats	Danfoss	
Electrical Safety Certificate	EAC KZ 7100841.01.01.01391	EAC - Eurasian Customs Union	EMC
UA Declaration	Danfoss UA 2023-01-10 Regulators PL01 PL04	Danfoss	Pressure, PED
Pressure Safety Certificate	LLC CDC EURO-TYSK UA.TR.089.1015.05-22	LLC CDC EURO TYSK - Ukraine	Pressure
UA Declaration	Danfoss UA 2024-07-25 cooling sensors	Danfoss	LVD, EMC
Marine Certificate	LR2205700TA	LR - Lloyd's Register	Marine

Contact details

Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.

The Danfoss Design center

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