

DOO IK ENG

- TEMPERATURE SENSOR
- PRESSURE SWITCH
- NON FLOW SWITCH
- THERMOMETER

COMPANY HISTORY & CERTIFICATE



COMPANY HISTORY

- 2004. 06 DOOSAN ENGINE PART SALES AGENT
- 2005. 01 DSEC REGISTERED
- 2006. 06 DOOSAN ENGINE REGISTERED
- 2008. 01 ABS Temperature Type Approval Certificate
- 2008. 11 BV Temperature Type Approval Certificate
- 2009. 01 GL Temperature Type Approval Certificate
- 2009. 01 LR Temperature Type Approval Certificate
- 2009. 09 ISO 9001 & 2008
- 2009. 04 DNV Temperature Type Approval Certificate
- 2011. 01 DSME / DSSC REGISTERD
- 2013. 06 DANFOSS PART SALES AGENT



CERTIFICATE



ISO



BV



GL



ABS



DNV



LR

TEMPERATURE SENSOR



TEMPERATURE SENSOR

Outline of Platinum Resistance Bulb

The temperature resistance characteristic of platinum wire is internationally utilized for measuring temperatures in the range of -200°C to 600°C

High Temperature Platinum Thermal Resistance Bulb

The platinum thermal resistance bulb is used to measure and monitor the exhaust and steam temperature of the main engine and the boiler.

This resistance element, provided as a unit by depositing platinum wires and internal conductors to an aluminum oxide bobbin, matches a thermocouple in mechanical strength.

The platinum thermal resistance bulb allows accuracy and stability even under such a strict environment as a continuous high working temperature of 700°C

Low Temperature Platinum(ceramics) Thermal Resistance Bulb

The platinum(ceramics) thermal resistance bulb is used to measure and monitor the temperatures of lubricating oil, cooling water and bearings of various engines as well as the air temperature.

Since the delay characteristic(response speed) is most important factor for low temperature use, this thermal resistance bulb is so designed that its resistor element keeps excellent heat which may otherwise develop in it.

The adoption of double protection tube does not affect the characteristic, maintaining the same characteristics as those of protection tube types.

Standard Type of Platinum Resistance Bulb

MODEL	Operating Range(°C)	Material of Protection tube	Remark
DI-1100 Series	0~200	SUS 304	1. Nominal resistance Pt100 Ω (at 0°C) 2. Wire connecting terminal
	0~300		
	0~600		
	-50~100		
	0~200	SUS 304, BsB	

Note :

We can supply two(2) element type R,B sensor according to your order.

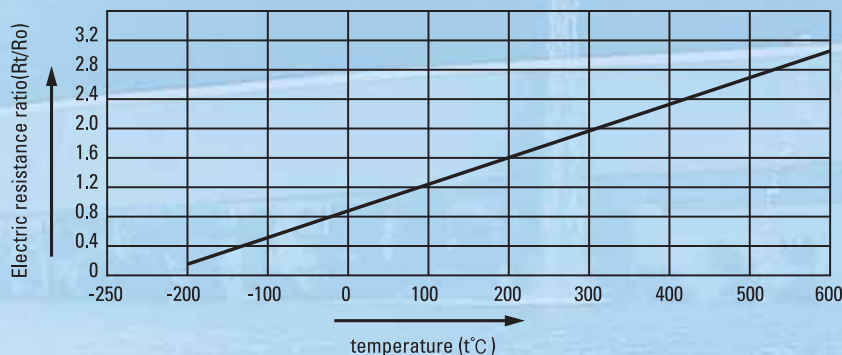
Tolerance of Platinum Resistance Bulb

Operating Temperature(°C)	Class	Tolerance(°C)
-200~600	A	$\pm(0.15+0.0021 t)$
	B	$\pm(0.3+0.0051 t)$

Note :

1. Prepared according to DIN
2. t : Means measuring temperature.
3. R_{100}/R_0 : 1.3851
4. R_0 : Resistance at 0°C (100 Ω)
5. R_{100} : Resistance at 100°C (138.51 Ω)

Platinum Temperature Characteristic Curve



Note :

R_0 : Resistance at 0°C
 R_t : Resistance at t°C

TEMPERATURE SENSOR (DI-1100 Series)

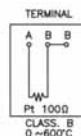


DI - 1100 (PT 100Ω 600°C)



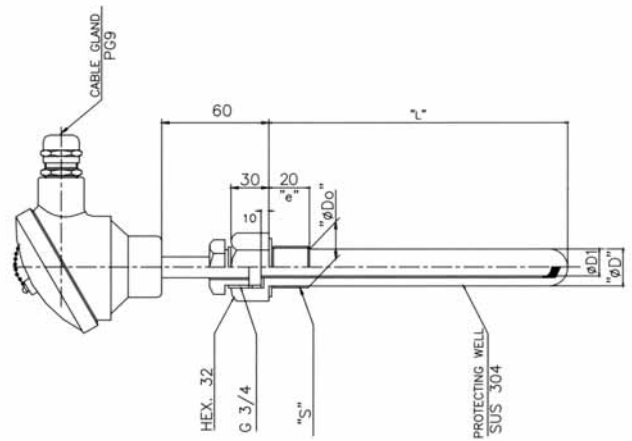
STANDARD LENGTH

L	#D1	D ₀ /D	e
80	12	23/17	20
100			
120			
150			
180			
200	15	23/20	20
250			
300			
350			



NOTE

- (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-1100S) AT FITTING STATE.
- (2) S,D,G,L,e ; SEE THE MEASURING POINT LIST.

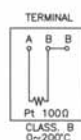


DI - 1100 (PT100Ω 200°C)



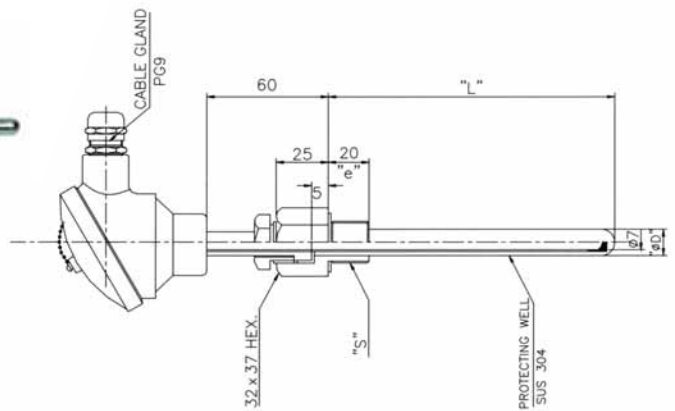
STANDARD LENGTH

L	#D	e
80	12.7	20
100		
120		
150		
180		
200	13.8	20
250		
300		

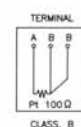


NOTE

- (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-1100S) AT FITTING STATE.
- (2) S,D,G,L,e ; SEE THE MEASURING POINT LIST.

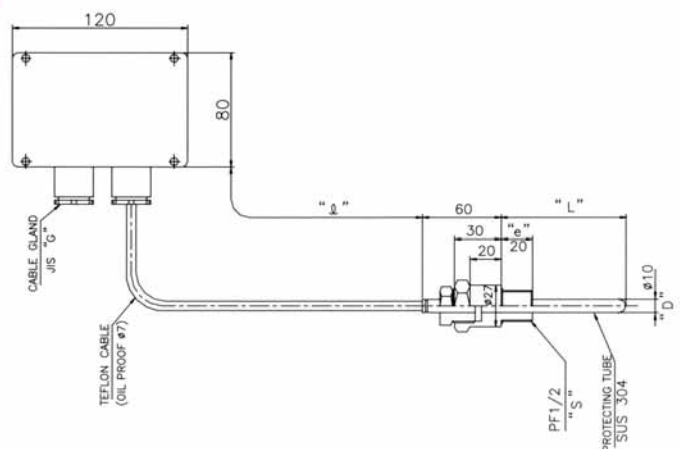


DI - 1100 (PT100Ω 100°C)



NOTE

- (1) S,D,G,L,e ; SEE THE MEASURING POINT LIST.



TEMPERATURE SENSOR

SPECIFICATION FOR THERMOCOUPLE TEMPERATURE SENSOR

Scope

This specification applies to the thermocouple temperature sensor which is used for every part of machinery.

Specification

- Element wire : Ni-Cr(+), Ni-Al(-)
- Nominal resistance value : 0.000mV at 0 °C
- Class : 1(IEC 584-1), temp range : 0~750 °C
- Thermocouple temperature of standard element : according to IEC 584-1

DI - 4100 THERMOCOUPLE 750°C



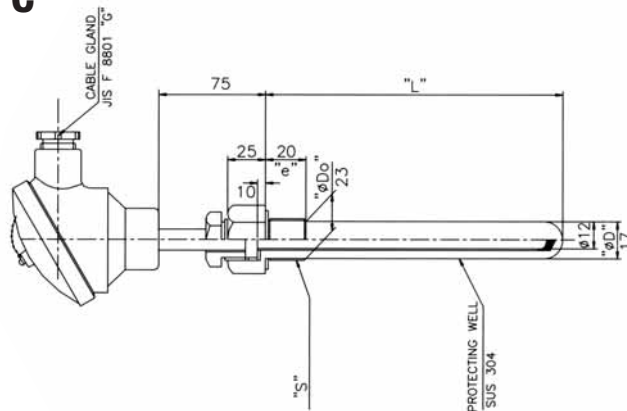
TERMINAL

CLASS. 1
0~750°C

STANDARD LENGTH			
L	Do/D	φ	
80			
100			
120			
150			
180	23/17		20
200			
250			
300			

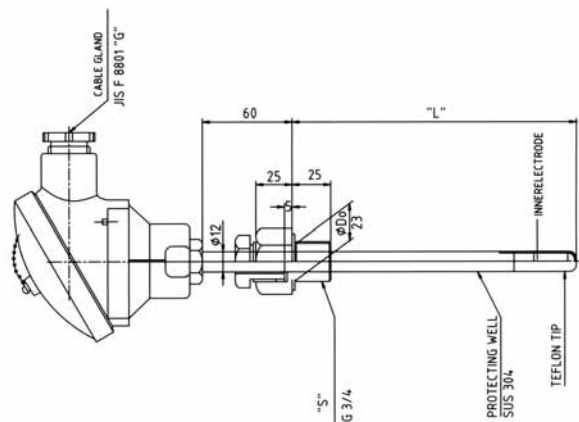
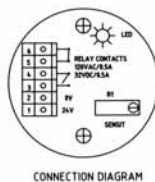
NOTE

- (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-4100S) AT FITTING STATE.
 (2) S.D.G.L.e : SEE THE MEASURING POINT LIST.



NON FLOW SWITCH

P.C.O NON FLOW SWITCH



THERMOMETER



DI - 1000 ADJUSTABLE DIAL THERMOMETER 100°C

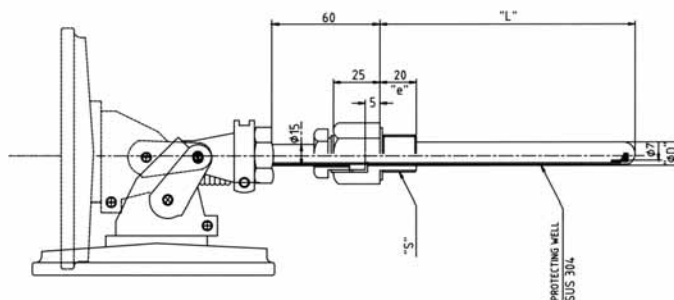


1 STANDARD LENGTH

L	φD	e
40	12.7	20
63		
80		
100		
120		
150	13.8	
200		
250		

NOTE

- (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-1000S) AT FITTING STATE.
- (2) S,D,G,L,e ; SEE THE MEASURING POINT LIST.
- (3) LIQUID FILLED TYPE



DI - 2000 DIAL THERMOMETER 200°C

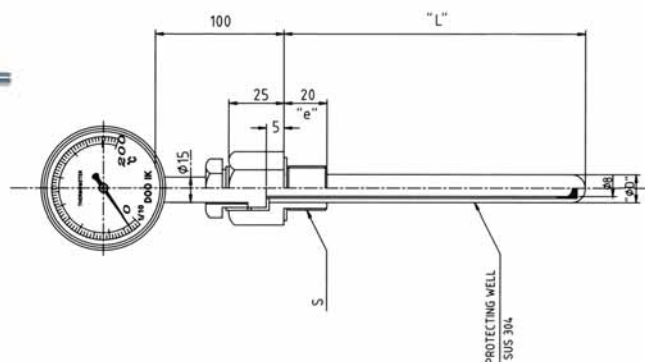


STANDARD LENGTH

L	φD	e
40	12.7	20
63		
80		
100		
120		
150	13.8	
200		
250		

NOTE

- (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT(DI-2000S) AT FITTING STATE.
- (2) S,D,G,L,e ; SEE THE MEASURING POINT LIST.
- (3) LIQUID FILLED TYPE



DI - 3000 DIAL THERMOMETER 650°C

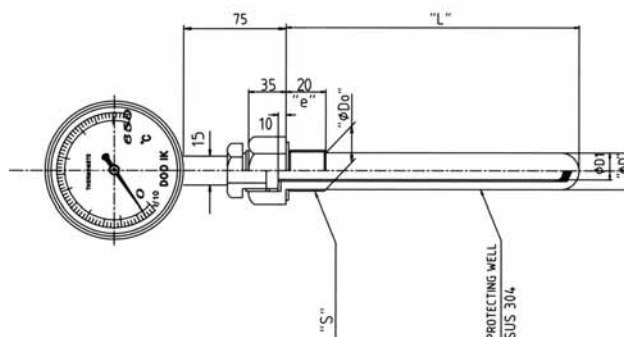


STANDARD LENGTH

L	φD	e
80	23.1/17	20
100		
120		
150		
200		
250	13.8	
300		

NOTE

- (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-3000S) AT FITTING STATE.
- (2) S,D,G,L,e ; SEE THE MEASURING POINT LIST.
- (3) LIQUID FILLED TYPE



THERMOMETER



DI - 4000 REMOTE READING DIAL THERMOMETER 650°C

1. STANDARD LENGTH		
L	φD	e
40	12.7	20
63		
80		
100		
120		
150	13.8	20
200		
250		

NOTE
 (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-4000S) AT FITTING STATE.
 (2) S,D,G,L,e : SEE THE MEASURING POINT LIST.
 (3) LIQUID FILLED TYPE



DI - 100 GLASS TYPE THERMOMETER 100°C

1. STANDARD LENGTH		
L	φD	e
40	12.7	20
63		
80		
100		
120		
150	13.8	20
200		
250		

NOTE
 (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-100S) AT FITTING STATE.
 (2) S,D,G,L,e : SEE THE MEASURING POINT LIST.
 (3) LIQUID FILLED TYPE



DI - 100 GLASS TYPE(90° ANGLE) THERMOMETER 100°C

1. STANDARD LENGTH		
L	φD	e
40	12.7	20
63		
80		
100		
120		
150	13.8	20
200		
250		

NOTE
 (1) THIS TYPE IS ABLE TO CHANGE THE INTERNAL ELEMENT (DI-100S) AT FITTING STATE.
 (2) S,D,G,L,e : SEE THE MEASURING POINT LIST.

PRESSURE TRANSMITTER



MBS 5100 pressure transmitter

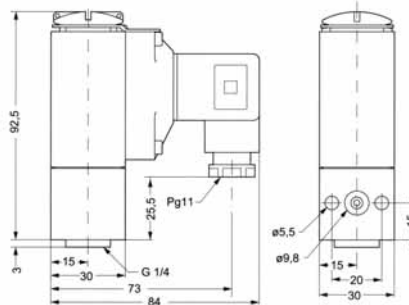
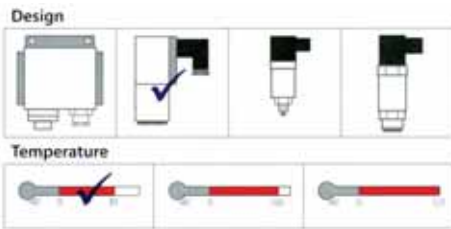


The ship approved high accuracy pressure transmitter MBS 5100 is designed for use in almost all marine applications, and offers a reliable pressure measurement, even under harsh environmental conditions.

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 to 85°C
- Measuring range 0-600 bar
- Pressure connection G 1/4 female
- Available with all relevant marine approvals
- Designed to meet the strict demands in marine equipment



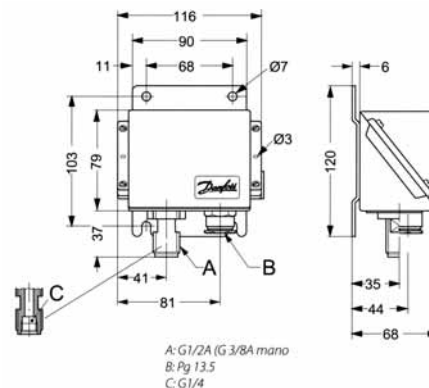
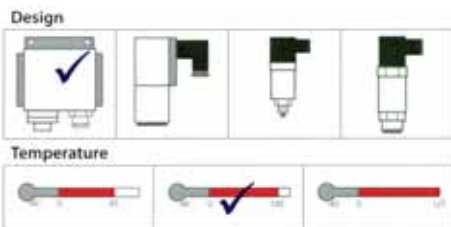
EMP 2 pressure transmitters



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

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

- 4-20 mA output signal
- Operating temperature -10 to 70°C
- Measuring range 0-400 bar
- Pressure connections G 1/4, G 1/2A standard, G 3/8, A mano
- With zero point and span adjustment
- Available with all relevant marine approvals
- For use in harsh industrial / marine environments



PRESSURE SWITCHES

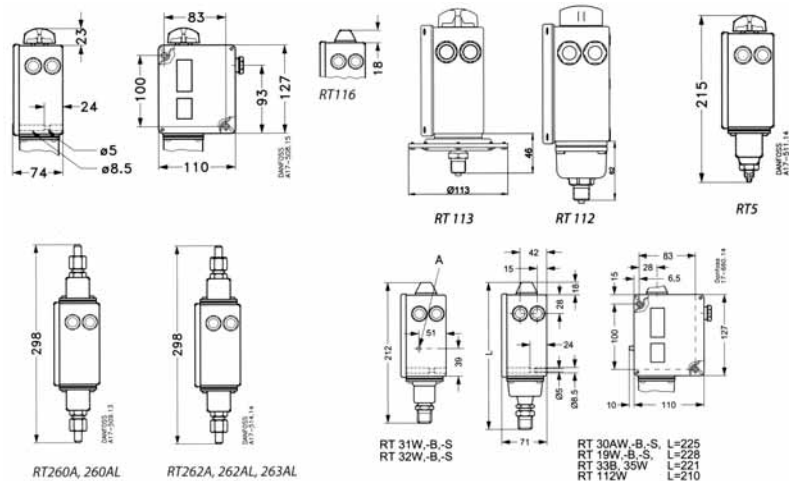


RT pressure switches



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



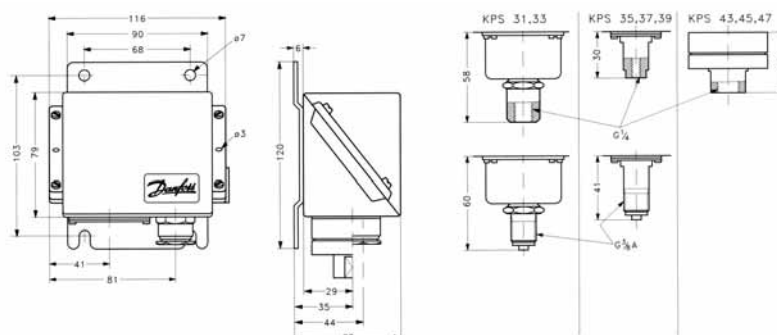
KPS heavy-duty pressure switches



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 to 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



PRESSURE SWITCHES

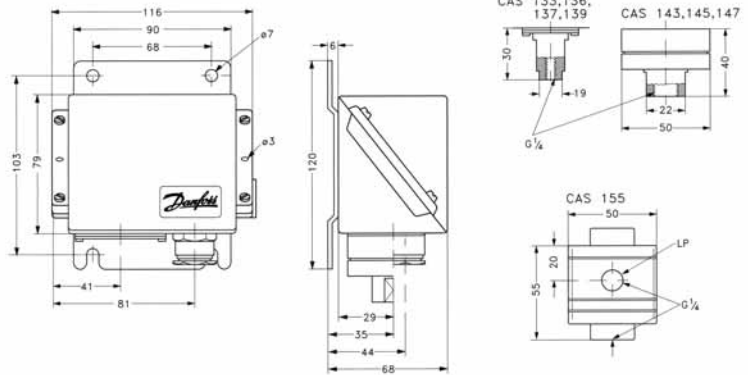


CAS heavy-duty pressure switches



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 to 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

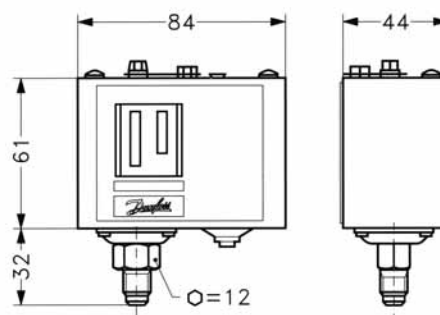


KP pressure switches for light industry



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 to 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



PRESSURE SWITCHES



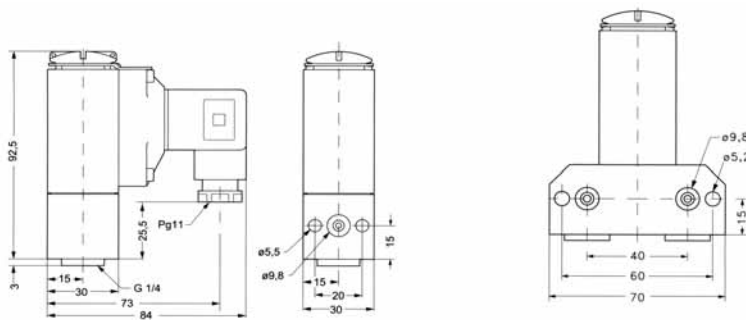
MBC 5100 block-type compact pressure switches



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 pressure. MBV test valves can be delivered as standard option for MBC pressure switches.

- All relevant marine approvals
- Pressure ranges: -0.2 to 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



TEMPERATURE SWITCHES



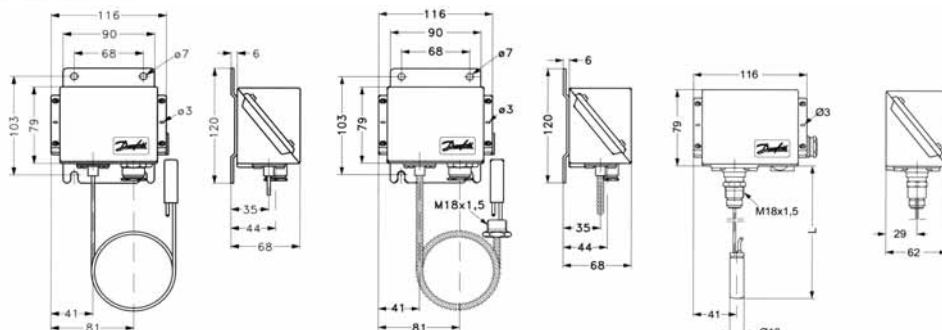
KPS temperature switches



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 to +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



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



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