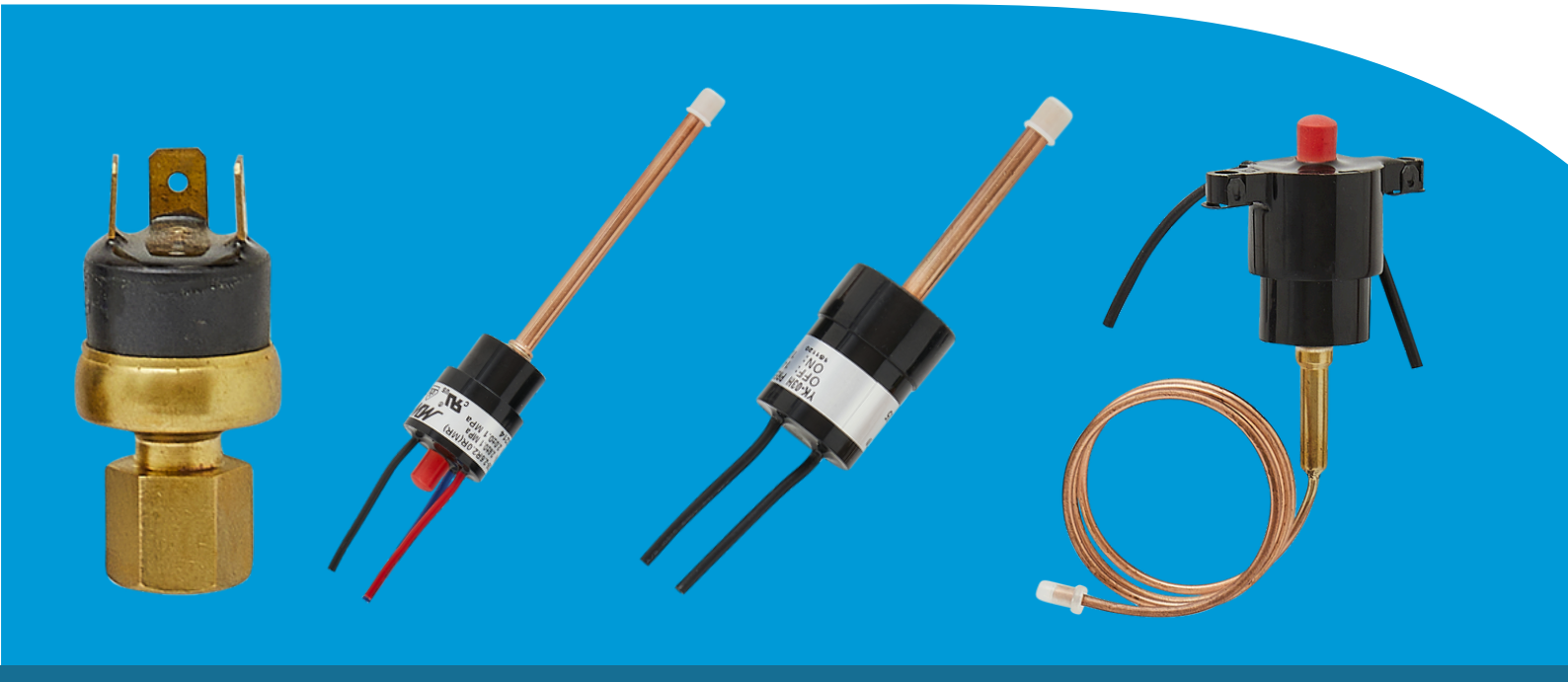
PRESSURE SWITCHES AND TRANSMITTERS

JØRGENSEN APPLIANCE A/S

COOLING · HEATING · VENTILATION · ELECTROMECHANICAL SOLUTIONS



- The new range of Match-Well electromechanical pressure switches with fixed setting are compact, lightweight and easy to install.
- Safe and reliable product, thanks to the soldering process for the stainless steel diaphragm which guarantees a perfect seal.
- Any pressure value between 0.2 and 55Bar can be set - And up to 175Bar for CO2).

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CE 0035 cULus VDE

Pressure Switch

TECHNICAL SPECIFICATIONS				
The product complies with the following harmonized Standards			EN 60730-1 / EN 60730-2-6 / EN 12263	
Construction of control			Incorporated control	
Purpose of control			Pressure operating control (VDE) Pressure protective control (UL)	
Type of action			Manual reset: 2.C (UL) - 1.B (VDE) Automatic reset: 2.B (UL) - 1.B (VDE)	
Contacts configuration			SPST-NO, SPST-NC, SPDT	
Degree of protection by enclosure			IP67 (versions with cable)	
Pollution degree			3 (UL) 2 (VDE)	
Overvoltage category			II	
Rated impulse voltage			4'000 V (UL) 2'500 V (VDE)	
Refrigerants			see List of compatible refrigerants	
Ambient operating conditions			0…80 °C (32 ... 176 °F) (UL) 0…85 °C (32 ... 185 °F) (VDE)	
Transportation and storage conditions			-40 ... 60 °C (-40 ... 140 °F) (UL) -25 ... 60 °C (-13 ... 140 °F)	
Temperature system Ts (Fluid temperature)			-54 ... 135 °C (-65.2 ... 275 °F) -54 ... 150 °C (-65.2 ... 302 °F)	within the range: < 1.5 bar (22 psi) 1.5 ... 55 bar (22 ... 798 psi) 120...175 bar (1740...2538 psi)
Reset mode			Automatic or manual	
Momentary pressure surge (**Pmax**)			1.1 x **PS**	
Pressure range	-	Auto Reset	0.2 ... 55 bar (2.9 ... 798 psi)	
		Manual Reset	10 ... 55 bar (145 ... 798 psi)	
		CO_2 Applications	120 ... 175 bar (1740 ... 2538 psi)	
Maximum pressure system **PS**	CUT OUT Pressure	< 1.5 bar (< 22 psi)	28 bar (406 psi)	
		1.5 ≤ 43 bar (22 ≤ 623 psi)	50 bar (725 psi)	
		> 43 ... 55 bar (> 623 ... 798 psi)	1.1 x (CUT OUT + 2 bar)	
		120 … 175 bar (1740 ... 2538 psi)	1.1 x (CUT OUT + 2 bar)	
Burst pressure test	Working range	0.2 … 55 bar (2.9 ... 798 psi)	345 bar (5000 psi)	
		120 … 175 bar (1740 ... 2538 psi)	**Pmax** x 4	
Standard electrical connection (1)			Faston 6.35 mm / 0.25 in. Cable: 1.0 m (3.28 ft) UL1015 (0.82 mm^2 / 18 AWG) Other types of electrical connection upon request	
Standard pressure fitting			7/16-20 UNF with depressor Other types of fitting upon request	
Approvals			UL - VDE - PED category IV	
			CO2 models: PED category IV	
Vibration Resistance			8 g's at 50 to 2000 Hz	

COMPATIBLE REFRIGERANTS					
Refrigerant	**Safety Group**	**Refrigerant**	**Safety Group**	**Refrigerant**	**Safety Group**
R1224yd(Z)	A1	R456A	A1	R446A	A2L
R1233zd	A1	R458A	A1	R447A	A2L
R1234zd	A1	R460A	A1	R447B	A2L
R1336mzz(E)	A1	R460B	A1	R451A	A2L
R1336mzz(Z)	A1	R460C	A1	R451B	A2L
R13I1	A1	R461A	A1	R452B	A2L
R134a	A1	R463A	A1	R454B	A2L
R404A	A1	R464A	A1	R454C	A2L
R407C	A1	R507	A1	R455A	A2L
R407F	A1	R513A	A1	R457A	A2L
R407G	A1	R513B	A1	R459A	A2L
R407H	A1	R515A	A1	R459B	A2L
R407I	A1	R515B	A1	R467A	A2L
R410A	A1	R1132a	A2	R468A	A2L
R417B	A1	R419B	A2	R516A	A2L
R417C	A1	R439A	A2	R290	A3
R422E	A1	R440A	A2	R436C	A3
R442A	A1	R462A	A2	R441A	A3
R448A	A1	R465A	A2	R443A	A3
R449A	A1	R512A	A2	R511A	A3
R449B	A1	R1234yf	A2L	R600a	A3
R449C	A1	R1234ze	A2L	R1150	A3
R450A	A1	R32	A2L	R170	A3
R452A	A1	R123	A2L	R514A	B1
R452C	A1	R444A	A2L	R1130(E)	B1
R453A	A1	R444B	A2L	R744	A1
R454A	A1	R445A	A2L		

Automatic reset models SPST with quick connector: tested as enclosed-break-device according to IEC/EN 60079-15:2010, Clause 22.4, Group IIA for a resistive load of 6 A.

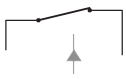
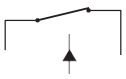
Manual reset models / Automatic Reset models with lead wire: Tested as sealed device according to IEC 60079-0:2017, Clause 26.5 and IEC 60079-15:2017, Clause 9 and 12.

STANDARD CODES				
Application	**Reset**	**CUT-OUT [bar (psi)]**	**CUT-IN [bar (psi)]**	**Contact configuration**
High Pressure	automatic	18 (261)	13 (188)	SPST - NC
	manual	18 (261)	13 (188)	SPST - NC
	automatic	24 (348)	18 (261)	SPST - NC
	automatic	26 (377)	20 (290)	SPST - NC
	automatic	28 (406)	21 (304)	SPST - NC
	manual	28 (406)	21 (304)	SPST - NC
	automatic	42 (609)	33 (479)	SPST - NC
	manual	42 (609)	33 (479)	SPST - NC
Low Pressure	automatic	0.7 (10.15)	1.7 (24.66)	SPST - NO
	automatic	1.7 (24.66)	2.7 (39.16)	SPST - NO
	automatic	2.5 (36.25)	4.2 (60.91)	SPST - NO
Fan control	automatic	8.5 (123)	11 (159)	SPST - NO
	automatic	13 (188)	16 (232)	SPST - NO
CO_2 high pressure	automatic	125 (1812)	90 (1305)	SPST - NC

STANDARD VALUES FOR PRESSURE, TOLERANCE AND DIFFERENTIAL (*)					
Low pressure automatic reset					
CUT-OUT		**CUT-IN**		**Maximum differential [bar (psi)]**	**Minimum differential [bar (psi)]**
Pressure range [bar (psi)]	**Tolerance [bar (psi)]**	**Pressure range [bar (psi)]**	**Tolerance [bar (psi)]**		
0.2 (2.90)	0.2 (2.90)	1 (14.5)	0.3 (4.35)	0.8 (11.60)	0.3 (4.35)
0.3 (4.35)	0.3 (4.35)	1 ... 1.5 (14.5 21.75)	0.3 (4.35)	1.2 (17.40)	0.5 (7.25)
0.4 (5.80)	0.3 (4.35)	1 ... 1.5 (14.5 21.75)	0.3 (4.35)	1.1 (15.95)	0.5 (7.25)
0.5 ... 1.5 (7.25 21.75)	0.4 (5.80)	1.5 ... 3 (21.75 43.51)	0.5 (7.25)	1.5 (21.75)	0.5 (7.25)
1.5 ... 3 (21.75 43.51)	0.5 (7.25)	2 ... 5 (29 72.52)	0.5 (7.25)	2 (29)	0.5 (7.25)
3 ... 6 (43.51 87.02)	0.5 (7.25)	4 ... 8 (58.01 ... 116)	0.5 (7.25)	2 (29)	0.5 (7.25)
7 ... 8 (101 ... 116)	0.7 (10.15)	8 ... 12 (116 ... 174)	0.8 (11.60)	3 (43.51)	0.5 (7.25)
9 ... 10 (130 ... 145)	0.8 (11.60)	10 ... 14 (145 ... 203)	0.8 (11.60)	4 (58.01)	0.5 (7.25)
High pressure automatic reset					
CUT-OUT		**CUT-IN**		**Maximum differential [bar (psi)]**	**Minimum differential [bar (psi)]**
Pressure range [bar (psi)]	**Tolerance [bar (psi)]**	**Pressure range [bar (psi)]**	**Tolerance [bar (psi)]**		
11 ... 13 (159 ... 188)	1 (14.5)	6 ... 8 (87.02 ... 116)	0.5 (7.25)	5 (72.52)	2 (29)
14 ... 16 (203 ... 232)	1 (14.5)	9 ... 11 (130 ... 159)	0.8 (11.60)	5 (72.52)	2 (29)
17 ... 25 (246 ... 362)	1 (14.5)	15 ... 20 (217 ... 290)	1 (14.5)	5 (72.52)	2 (29)
26 ... 30 (377 ... 435)	1 (14.5)	20 ... 24 (290 ... 348)	1 (14.5)	6 (87.02)	2 (29)
32 ... 35 (464 ... 507)	1 (14.5)	26 ... 30 (377 ... 435)	1 (14.5)	6 (87.02)	2 (29)
36 ... 39 (522 ... 565)	1.5 (21.75)	27 ... 29 (391 ... 420)	1 (14.5)	9 (130)	2 (29)
40 ... 55 (580 ... 797)	1.5 (21.75)	30 ... 50 (435 ... 725)	1.5 (21.75)	10 (145)	2 (29)

STANDARD VALUES FOR PRESSURE, TOLERANCE AND DIFFERENTIAL (*)					
High pressure manual reset					
CUT-OUT		**CUT-IN**		**Maximum differential [bar (psi)]**	**Minimum differential [bar (psi)]**
Pressure range [bar (psi)]	**Tolerance [bar (psi)]**	**Pressure range [bar (psi)]**	**Tolerance [bar (psi)]**		
15 ... 35 (217 ... 507)	1 (14.5)	10 ... 24 (145 ... 348)	2 (29)	10 (145)	6 (87.02)
36 ... 39 (522 ... 565)	1.5 (21.75)	30 ... 31 (435 ... 449)	2 (29)	10 (145)	7 (101)
40 ... 55 (580 ... 797)	1.5 (21.75)	30 ... 50 (435 ... 725)	2 (29)	15 (217)	10 (145)
CO_2 automatic reset					
CUT-OUT		**CUT-IN**		**Maximum differential [bar (psi)]**	**Minimum differential [bar (psi)]**
Pressure range [bar (psi)]	**Tolerance [bar (psi)]**	**Pressure range [bar (psi)]**	**Tolerance [bar (psi)]**		
100 ... 120 (1450 ... 1740)	15 (217)	70 ... 90 (1015 ... 1305)	20 (290)	40 (580)	30 (435)
130 ... 150 (1885 ... 2175)	15 (217)	90 ... 100 (1305 ... 1450)	20 (290)	50 (725)	40 (580)
160 ... 180 (2320 ... 2610)	20 (290)	100 ... 120 (1450 ... 1740)	20 (290)	60 (870)	50 (725)

TECHNICAL FEATURES

	SPST automatic reset		SPST manual reset	
Operating principle	The stainless steel diaphragm expands and contracts when subjected to the effects of pressure. Movement of the diaphragm triggers a piston which opens or closes the electrical contact. The switch is reset automatically when the pressure increases or decreases to reach the nominal value.		When the system pressure rises above the nominal value, the diaphragm expands, pushing the safety disc to the block position while cutting off electrical contact. When the pressure drops, the membrane contracts while the disc remains in its safety block position; this block is removed manually, using the reset button. The button also resets the electrical contact at the same time.	
Typical application	Protection from high and low pressure in refrigeration and air conditioning systems, ice machines, etc. It can also be used to control the pressure in hydraulic or steam systems, air compressors and industrial equipment.		All air conditioning and refrigeration systems requiring protection from particularly high pressure values and where operator intervention is required in order to restore operating conditions. Can be installed directly on the piping or on the control panel.	
Pressure range	0.2 ... 55 bar (2.9 ... 798 psi)		10 ... 55 bar (145 ... 798 psi)	
Burst Pressure	345 bar (5000 psi)		345 bar (5000 psi)	
Contact capacity	Pressure protective control 6A inductive 250 Vac 3A resistive 36 Vdc 125 VA 24 Vac pilot duty 375 VA 120/240 Vac pilot duty 6FLA 36LRA 120/250 Vac	Pressure operating control 6A resistive 250 Vac	Pressure protective control 6FLA 36LRA 120/240 Vac Pressure operating control 3A inductive 250Vac 125VA 24 Vac pilot duty 375VA 120/240Vac pilot duty	Pressure operating control 6 A resistive 125/250 Vac
Lifetime cycles (*)	100’000	30’000	10’000	
Approvals	CE0035 - PED CAT IV – VDE - UL		CE0035 - PED CAT IV – VDE - UL	
Electrical contact	SPST-NC  PRESSURE RISING SPST-NO PRESSURE RISING		SPST-NC  PRESSURE RISING	

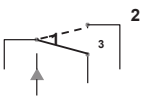
TECHNICAL FEATURES

	SPDT automatic reset	SPDT manual reset	SPST for CO_2
Operating principle	The stainless steel diaphragm ex- pands and contracts when subjected to the effects of pressure. When the pressure rises, contact (H) opens while contact (L) closes. As the pressure increases, the contact 1-3 or (1-2) opens and simultaneously contact 1-2 or (1-4) closes. As the pressure decreases, contact 1-2 or (1-4) opens and simultaneously contact 1-3 or (1-2) closes.	When the system pressure rises above the nominal value, the diaphragm expands, pushing the safety disc to the block position. Contact 1-3 or (1-2) opens and at the same time contact 1-2 or (1-4) closes. When the pressure decreases the diaphragm contracts, while the When the pressure decreases, the diaphragm contracts and the disc remains in the safety lock position; it is unlocked manually by pressing the reset button. The button simultaneously resets the electrical contact; contact 1-2 or (1-4) opens and contact 1-3 or (1-2) closes.	The stainless steel diaphragm expands and contracts when subjected to the effects of pressure. Movement of the membrane triggers a piston which opens or closes the electrical contact. The switch is reset automatically when the pressure decreases to reach the nominal value.
Typical application	Mainly used in refrigeration and air conditioning systems.	All air conditioning and refrigeration systems requiring protection from particularly high pressure values and where operator intervention is required in order to restore operating conditions. Can be installed directly on the piping or on the control panel.	Designed and created specifically for equipment which uses CO_2 and equipment with pressure range over 120 bar.

Pressure range	0,2 ... 55 bar (2,9 ... 798 psi)		10 ... 55 bar (145 ... 798 psi)		120 ... 175 bar (1740 ... 2538 psi)	
Burst Pressure	345 bar (5000 psi)		345 bar (5000 psi)		Pmax X 4	
	UL	**VDE**	**UL**	**VDE**	**UL**	**VDE**
	Pressure protective control	Pressure operating control	Pressure protective control	Pressure operating control	Pressure operating control	
Contact capacity	NC: 6A resistive 120/250 Vac NO: 3A resistive 120/250 Vac NC: 6FLA 36LRA 120/250 Vac NO: 3FLA 18LRA 120/250 Vac	NC: 6 A resistive 125/250 Vac NO: 3 A resistive 125/250 Vac	NC: 6FLA 36LRA 250 Vac NO: 3FLA 18LRA 250 Vac	NC: 6A resistive 125/250 Vac NO: 3A resistive 125/250 Vac	6A inductive 250 Vac	/
Lifetime cycles (*)	100,000	30,000	10,000		30,000	
Approvals	CE0035 - PED CAT IV – VDE - UL		CE0035 - PED CAT IV – VDE - UL		CE0035 - PED CAT IV – UL	

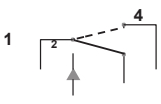
Electrical contact

SPDT CABLE



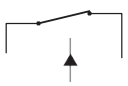
PRESSURE RISING

SPDT FASTON



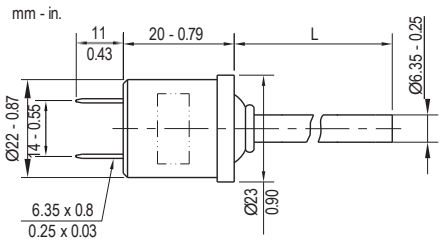
PRESSURE RISING

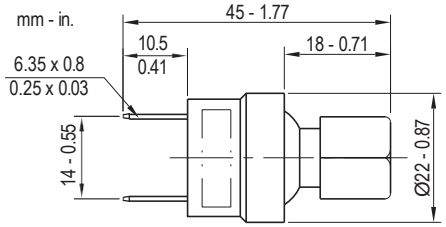
SPST-NC

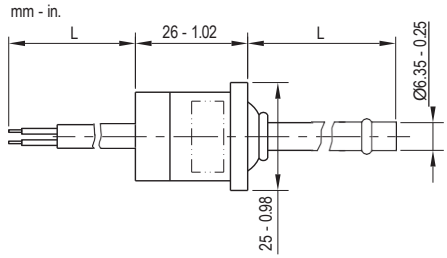


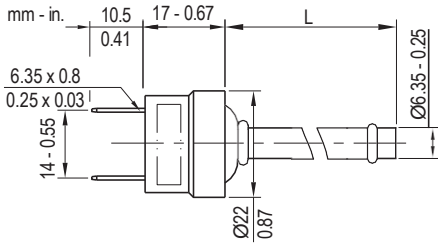
PRESSURE RISING

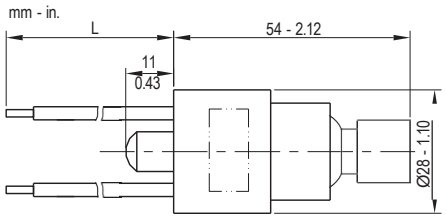
TYPICAL DIMENSION DIAGRAMS

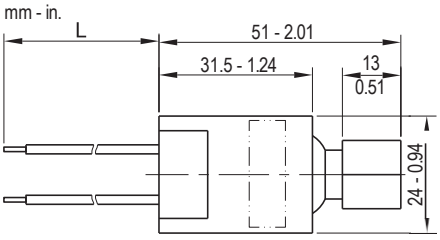


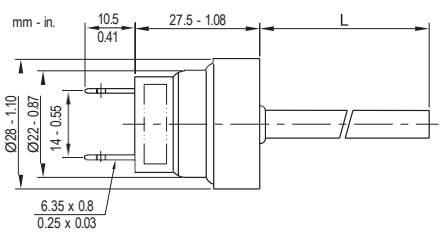


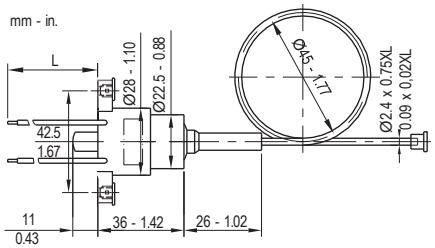


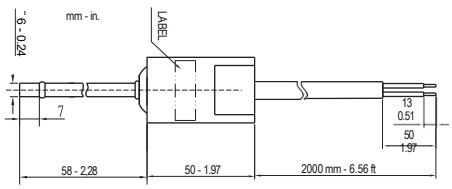






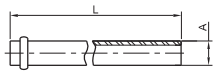






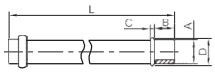
PRESSURE FITTINGS

Pipe



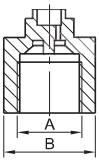
Ref.	Dimensions	Applicable pressure value
A	Ø 6 mm (0.24 in.) Ø 6.35 mm (0.25 in.)	0...180 bar (0...2611 psi)
L	30...150 mm (1.18. 5.90 in.)	

Pipe



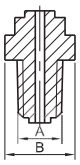
Ref.	Dimensions	Applicable pressure value
A	Ø 6 mm (0.24 in.) Ø 6.35 mm (0.25 in.)	0...55 bar (0...798 psi)
L	30...150 mm (1.18. 5.90 in.)	
B	3...12 mm (0.12. 0.47 in.)	
C	2...4 mm (0.8. 0.16 in.)	
D	Ø 6.35...9 mm (0.25. 0.35 in.)	

Threaded female



Ref.	Dimensions	Applicable pressure value
A	NPT1/4	0...55 bar (0...798 psi)
	7/16-20-UNF	
	1/2-20-UNF	
B	S14	
	S17	

Threaded male



Ref.	Dimensions	Applicable pressure value
A	NPT1/8	0...55 bar (0...798 psi)
B	S14	

Pressure Transmitter

DYK

Applications

- Multi-line air conditioning
- Precision computer room air conditioning
- Interrow refrigeration air conditioning
- Air source heat pump

Description

DYK pressure transmitter is a pressure transmitter specially developed for refrigerant pressure measurement. The selection of ceramic capacitive sensitive components and special calibration circuits can realize pressure measurement based on absolute vacuum or sealed gauge pressure. The product can withstand large destructive pressure, and also has the advantages of high accuracy at working temperature, high waterproof level, anti-condensation water, etc. It is an ideal choice for refrigerant pressure measurement.
We can supply you with different pressure units and process connections in short order to meet the requirements of your specific operating application.

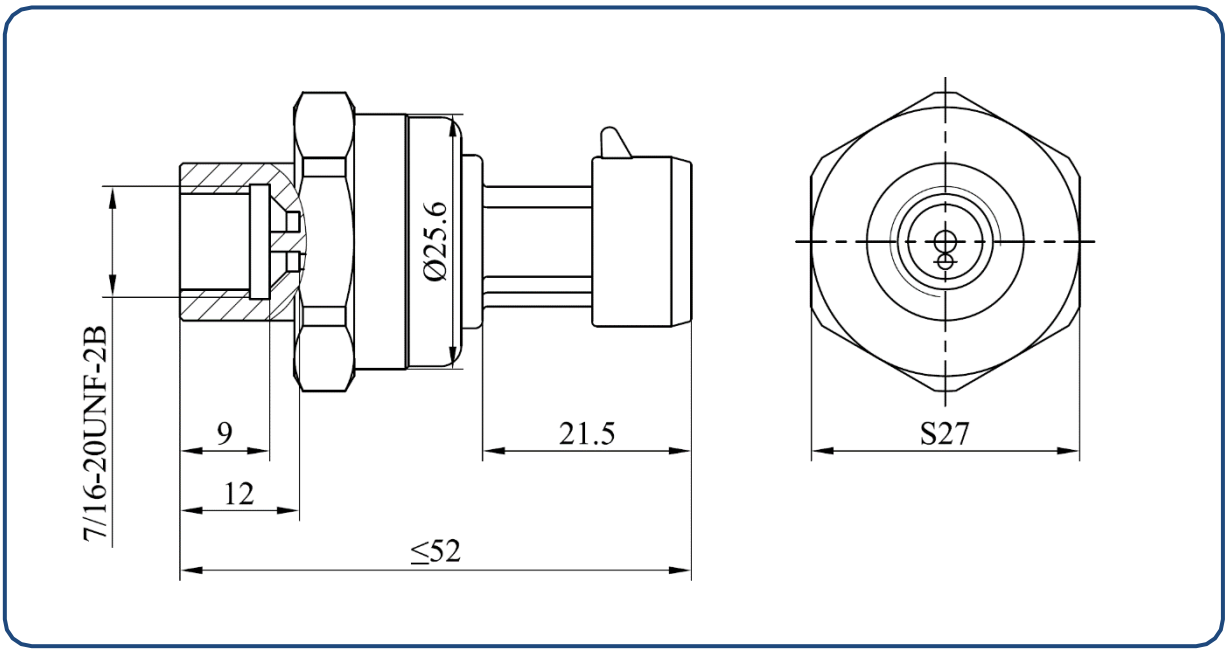
Features

- Ceramic capacitor core
- Good linearity, small temperature drift
- High overload
- Fully sealed, anti-condensation
- Protection level IP67
- Forward and reverse overvoltage
- Suitable for mass production

Performance Specifications

Pressure Range	-1~10bar…50bar (Sealed Gage)
Standard Range	A：0～20bar
	B：0～46bar
	C：0～50bar
Overload Pressure	200%F.S
Burst Pressure	300%F.S
Accuracy at 25℃	±1.5%F.S (include no-linearity, hysteresis, repeatability, and calibration error) Note 1
Total Error Accuracy	±2.5%F.S (include no-linearity, hysteresis, repeatability, and calibration error) Note 1
Long-term Stability.	±0.25％F.S/year
Response Time	(10%~90%)≤10ms
Medium Temperature	-35℃~120℃
Ambient Temperature	-35℃~105℃
Storage Temperature	-35℃~105℃
Output Signal	0.5~4.5 VDC (Ratio)
Supply Voltage	5±0.25VDC
Current without Load	≤ 10mA
Output Load	≥ 10KΩ
Overvoltage	20VDC
Reverse Voltage	-14VDC
Insulate Resistance	≥100MΩ@500VDC
Dielectric Strength	1800VAC@1s or 1500VAC@1min (no spark, arc, no damage)
ESD	Contact ±8kV, air ±15kV
EMC	EN 61000-6-2，EN 61000-6-3
IP Rating	IP67
Random Vibration	10g，5~2000Hz
Shock	X/Y/Z, 20g, half-sine 11ms
Drop (any Axis)	1m
Pressure Connector	7/16-20UNF-2B
Connector Material	Brass
Electrical Connection	Packard Metri-Pack
Seal Material	Neoprene

Structure and Dimension (mm)



Electrical Connection

Packard Metri-Pack	PIN	Three line (0.5～4.5VDC) Define	Color of Wire
	A	GND	Black
	B	Supply power (VCC)	Red
	C	Voltage output (OUT)	Green

COMPANY
Jørgensen Appliance A/S established in 2004, as a manufacturer representative.
We represent some of the top manufacturers in the world, that offer products and solutions for the HVAC&R market in Scandinavia and Europe.

MISSION STATEMENT
We understand the market and customer's end application requirements.

KEEP AN EYE ON THE PROJECT
Based on the unique project knowledge of our team and our partners, all the technical design-in activities are application and project focused.

MARKETS
- Commercial refrigeration
- Airconditioning
- HVAC&R Industry
- Heatpumps

PARTNERS AND SUPPLIERS

HIGHLY · HITACHI · SANHUA · tecasa · thermorex · 唯益换热器 WEYEE HEAT EXCHANGER CO.,LTD · MW · SAMSUNG · SACET · LSCONTROL · RIGOMEC SOLUTIONS FOR HVAC&R SYSTEMS · cebi

We hope this product overview inspires you to choose some of our highquality components.

If you have requirements for components that you can't find here, then visit our website, or feel free to call or email us for further information, and we will help for an appropriate solution.

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JØRGENSEN APPLIANCE A/S
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