PS3 Series

Pressure Controls

S3 is a Pressure Switch with fixed switch-point settings.

A1

Features

- Max. working pressure up to 45 bar
- Test Pressure up to 50 bar
- High and low pressure switches
- High temperature version with snubber for direct compressor mounting (Range 6)
- Direct mounting reduces the number of joints and thus avoiding potential leakage
- Precise setting and repeatability
- IP 65 protection if used with PS3-Nxx with plug
- (acc. EN 175301-803), no additional gasket required (molded into plug)

Options and Accessories

- For direct mounting on a pressure connection (free standing) or with a capillary tube
- TÜV approved versions for high and low pressure
- Micro-switch for narrow pressure differentials
- Gold plated contacts for low voltage/current applications
- Cables with plug to be ordered separately

PS3

Standards

- CE per Low Voltage Directive
- CE per PED Directive 97/23/EC, TÜV appr. versions only
- c UL us Underwriter Laboratories (File No. E85974) (for 43 bar)

Selection table

1. Standard types (Available in any volume)

Type	Part No.	Fixed setting [bar]		Reset	Maximum temperature		Leakage test pressure [bar]	Pressure connection
		Cut-out	Cut-in		Ambient	Pressure Connection		
High Pressure Controls								
PS3-A6S	**0715603**	16.0	11.0	auto	+ 70°C	+ 150°C	50	7/16"-20 UNF female thread with Schrader opener
PS3-A6S	**0715604**	19.0	15.0					
PS3-A6S	**0715600**	26.5	22.5					
Low Pressure Controls / Pressure Limiter for low pressure protection PSL EN 12263								
PS3-W1S	**0714760**	-0.3	1.2	auto	+ 70°C	+ 70°C	30	7/16"-20 UNF female thread with Schrader opener
PS3-W1S	**0714761**	0.3	1.8					
PS3-W1S	**0714762**	2.0	3.5					
Pressure Limiter for high pressure protection PSH with snubber for direct compressor mounting EN 12263								
PS3-W6S	**0715831**	14.0	10.0	auto	+ 70°C	+ 150°C	50	7/16"-20 UNF female thread with Schrader opener and snubber
PS3-W6S	**0715556**	21.0	16.0					
PS3-W6S	**0715555**	25.0	20.0					
PS3-W6S	**0715567**	29.0	23.0					
PS3-W6S	**0715550**	33.5	27.5					
PS3-W6S	**0715553**	40.0	33.0					
Pressure Cut Out for high pressure protection PZH with snubber for direct compressor mounting EN 12263								
PS3-B6S	**0715568**	19.2	approx. 5 bar below cut-out	external manual reset	+ 70°C	+ 150°C	50	7/16"-20 UNF female thread with Schrader opener and snubber
PS3-B6S	**0715564**	22.7						
PS3-B6S	**0715563**	27.3						
PS3-B6S	**0715569**	29.5						
PS3-B6S	**0715560**	36.0						

2. Customer specific types

Available in multipacks, minimum order quantity: 100 pieces

Technical Data

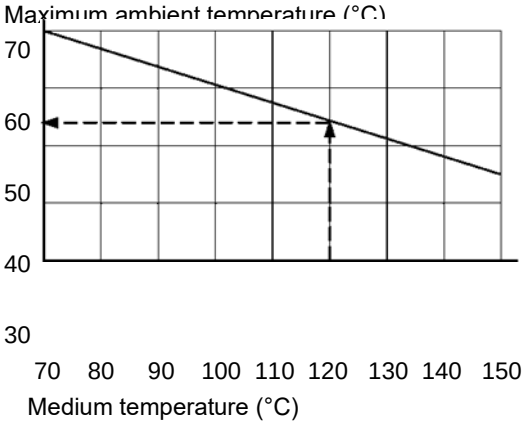
Pressure sensing element

Type of diaphragm	Max. medium temperature	Construction	Material	Snubber	Pressure Range	TÜV approval	Function Code *	Possible Pressure Conn.
Standard temperature	+ 70° C	Single diaphragm	Bronze	No	1-5	No	A,R	A,K,L,S,U,X
		Double diaphragm	Bronze	No	1-5	Yes	B,S,W	A,K,L,S,U,X
High temperature	+ 150° C	Bellows	Stainless steel	Yes	6	Yes	B,S,W	S,U,X
					6	No	A,R	S,U,X

*) see page 3 for more details

Note: For high temperature applications, i.e. medium temperatures between 70°C and 150°C, the maximum ambient temperature must be derated as per drawing.

E.g.: On medium temperature 120 C the ambient temperature of 55°C around the switch housing should not be exceeded.



	Standard (SPDT)	Standard (SPDT) Gold plated contacts	Micro switch (SPDT)	Micro switch (SPDT) Gold plated Contacts
Inductive load (AC15)	3A / 230VAC	0.1A / 230VAC	1.5A / 230VAC	0.1A / 230VAC
Inductive load (DC)	0.1A / 230VDC	0.1A / 230VDC	0.1A / 230VDC	0.1A / 230VDC
Motor rating amps (FLA)	6A / 120 / 240VAC	-	2.5A / 120 / 240VAC	-
Lock rotor amps (LRA)	36A / 120 / 240VAC	-	15A / 120 / 240VAC	-

Note: Standard contact not suitable for electronic applications (< 100 mA)

Protection according to EN 60529 / IEC 529 plug	IP 00 IP 30 with terminal cover IP 65 with PS3-Nxx cables with plug or Plug DIN 43650
Resistance to vibration (at 10...950 Hz)	4g
Medium compatibility	HFC, HCFC, HFO, HFO blends

Temperature range TS: Ambient, storage and transportation Medium	 -40°C to 70°C -40°C to 70°C (150°C for Range 6)
Available approvals	TÜV, UL
Weight (approx.)	0.1 kg

Pressure Ranges

Pressure Range code	Type of contact	Adjusting Range [bar]	Max. Operating Pressure PS [bar]	Proof Press. PT [bar]	Differential reset [bar]	Differential automatic [bar]
1 / A	Standard (SPDT)	-0.6 ... 6	27	30	approx. 1.3	see charts on page 5 - 7
3 /C		0.1 ... 16			approx. 1.5	
4 / D and 5 / E		6 … 30	31	36	approx. 4	
6 / F		10 … 43	45	50	approx. 5	
J / S	Micro switch (SPDT)	-0.6 ... 6	27	30		approx. 0.2 … 0.3
L / U		0.1 ... 16				approx. 0.3 … 0.45
N / W		6 ... 30	31	36		approx. 0.4 … 0.6
O / X		10 ... 43	45	50		approx. 0.5 … 0.8

Tolerances [bar]

Range code	1 / J	3 / L	4	5 / N	6 / O	4, 5, 6 (TÜV appr.)
Setting	±0.16	±0.4	±0.8	±0.8	±0.8	according to EN 12 263 and to a maximum of +0 to -1.6 bar (in case of HP application)

Note: Tolerances are valid between -20°C...+55°C.

Name Scheme Pressure Controls PS3 Series

PS	3	-	A	5	A

Product Name

PS3: Compact fixed setting pressostat

PSC: Customer special version of PS3

Function

A = Pressure control, automatic, hp and lp

R = Pressure control, external manual reset, hp and lp

W = Pressure limiter, automatic TÜV Range 1-5 (high temperature Range 6, O, F, X only)

B = Pressure cut-out, external manual reset TÜV Range 1-5 (high temperature, Range 6, O, F, X only)

S = Safety pressure cut-out, internal manual reset TÜV Range 1-5 (high temperature, Range 6, O, F, X only)

Pressure Connector

A = 7/16”-20 UNF male (Range 1-5), with console

G = G¼" female brass

K= 1 m cap. tube w. flare nut 7/16”-20UNF (Range 1-5), with console

L = ¼”-ODM solder with 1 m cap. tube (Range 1-5), with console

R = G¼" male brass

S = 7/16"-20 UNF female, Schrader depressor (Range 6 with snubber)

U = 6 mm ODF brazing, with console (Range 6 with snubber)

X = 1/4" ODF brazing, with console (Range 6 with snubber)

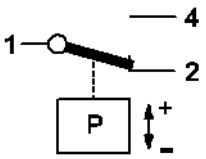
Pressure Range / Contacts

	Standard Contacts	Microswitch	
1 =	lp max 6 bar	J =	lp max 6 bar
3 =	lp max 16 bar	L =	lp max 16 bar
4 =	hp max 30 bar	M =	hp max 30 bar
5 =	hp max 30 bar	N =	hp max 30 bar
6 =	hp max 45 bar	O =	hp max 45 bar

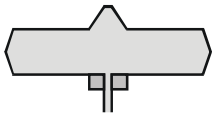
	Gold Plated Contacts	Microswitch (Gold Plated Contacts)	
A =	lp max 6 bar	S =	lp max 6 bar
C =	lp max 16 bar	U =	lp max 16 bar
D =	hp max 30 bar	V =	hp max 30 bar
E =	hp max 30 bar	W =	hp max 30 bar
F =	hp max 45 bar	X =	hp max 45 bar

General Hints

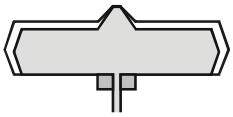
PS3 are equipped with a SPDT snap action contact, switching from 1-2 to 1-4 on rising pressure and from 1-4 to 1-2 on falling pressure (see diagram). The PS3 is factory preset according to customer's specification and is not adjustable. Several models are available:



- Low pressure switch, with automatic or manual reset
- High pressure switch, with automatic or manual reset
- TÜV approved safety high pressure limiter with automatic reset
- TÜV approved safety high pressure cut-out, with internal or external manual reset

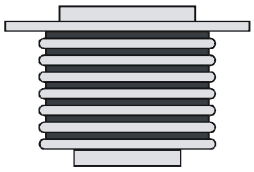


single diaphragm



double diaphragm

TÜV approval for pressure switches can be reached either by using a double diaphragm (Pressure range 1-5) which acts in a fail-safe mode or by a single pressure element (Bellows, Pressure range 6) which is able to resists to > 2 Mil. cycles between 50% and 100% of the maximum operating pressure (see 4.6.1 of EN 12263).



bellows (pressure range 6)

Switching points

The differential of factory set switch points can be factory adjusted within the limits given in the charts on page 5 to 7. Use the recommended lower switch point line in working envelope for optimum results.

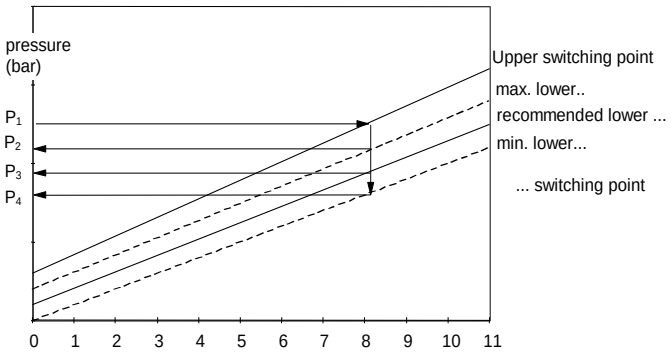
Example:

Step 1: Select your desired upper switch point P_1. Draw a horizontal line to cross the upper switch point line.

Step 2: Draw a vertical line from this intersection point.

Step 3: Select your desired switch point between P_2 and P_4.

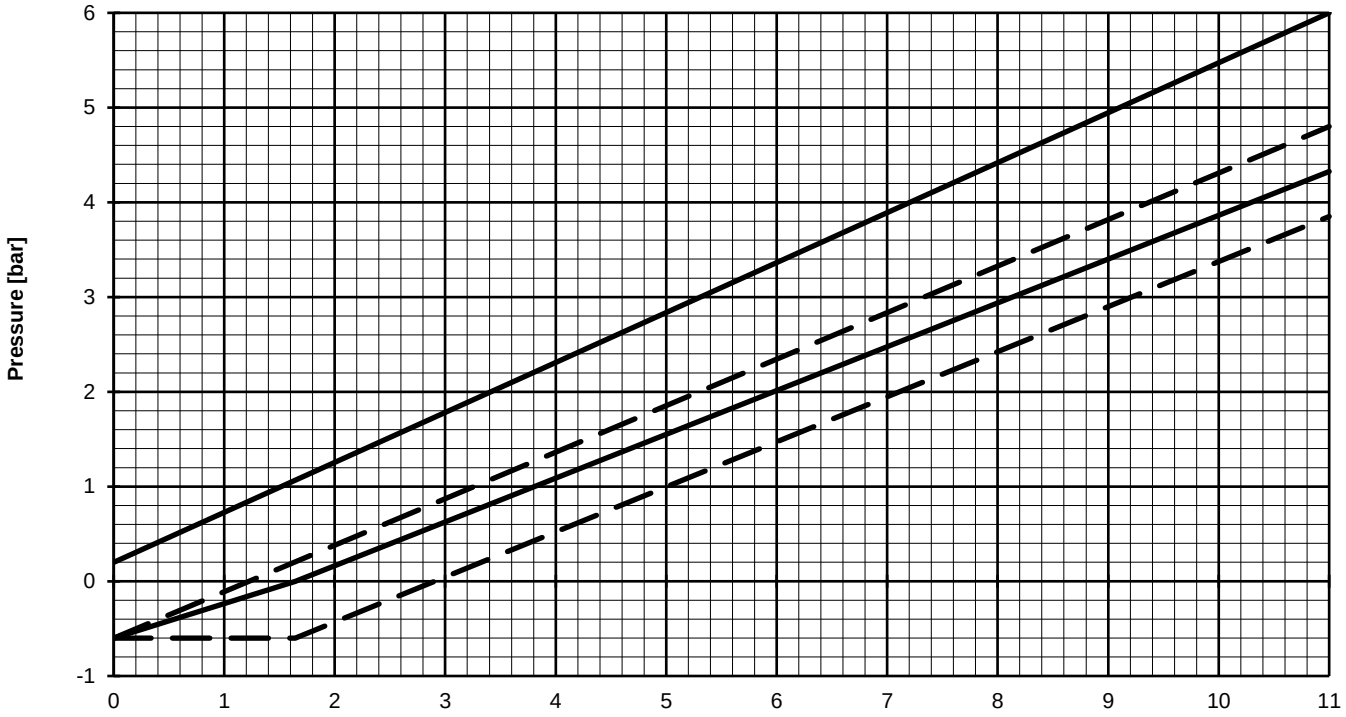
Example



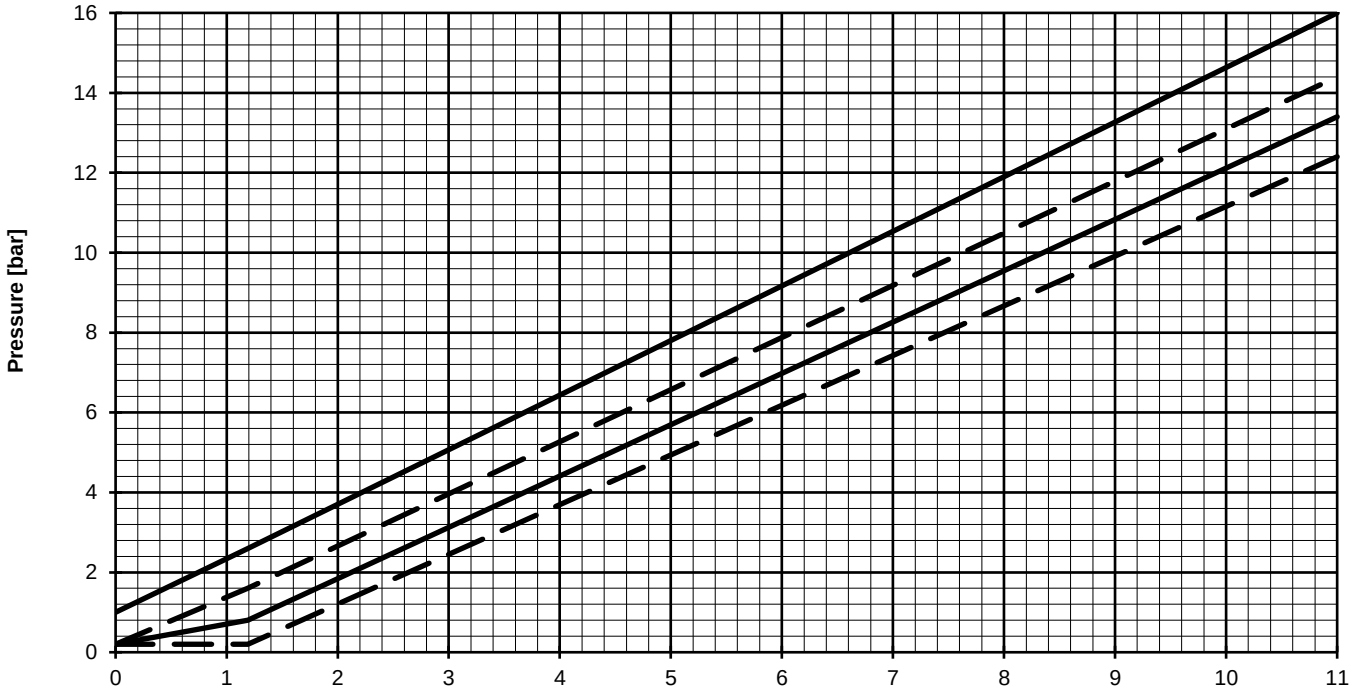
Notes:

1. Specify always upper and lower switching points for pressure switch with automatic reset function.
2. Specify only cut-out switching point for pressure switch with manual reset function.
3. For versions with micro-switch only one switching point can be adjusted while the second switching point is determined by the fixed differential of the micro-switch (see Pressure Ranges on page 2).
4. Specify such devices with one switching point as the significant point and the other one as non-significant by putting the latter in brackets, e.g. PS3-AJS 2.0/(1.8)

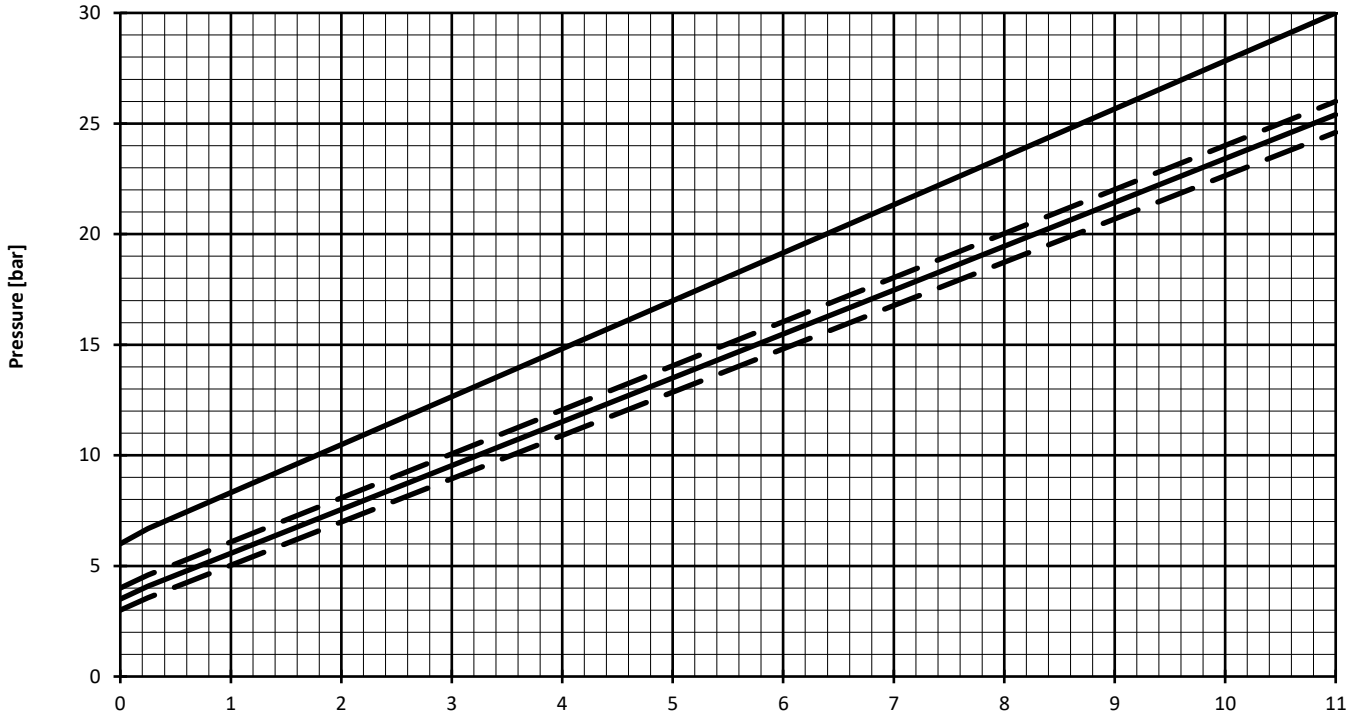
Range 1 / A



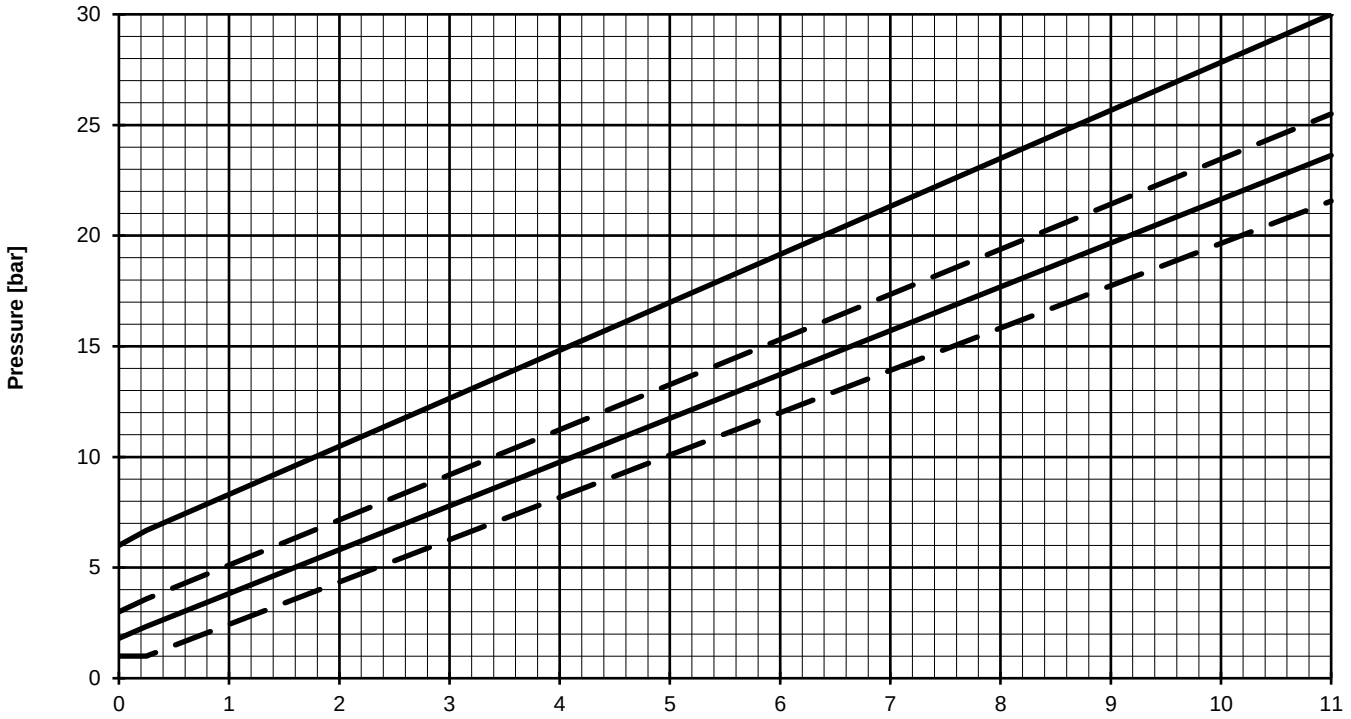
Range 3 / C

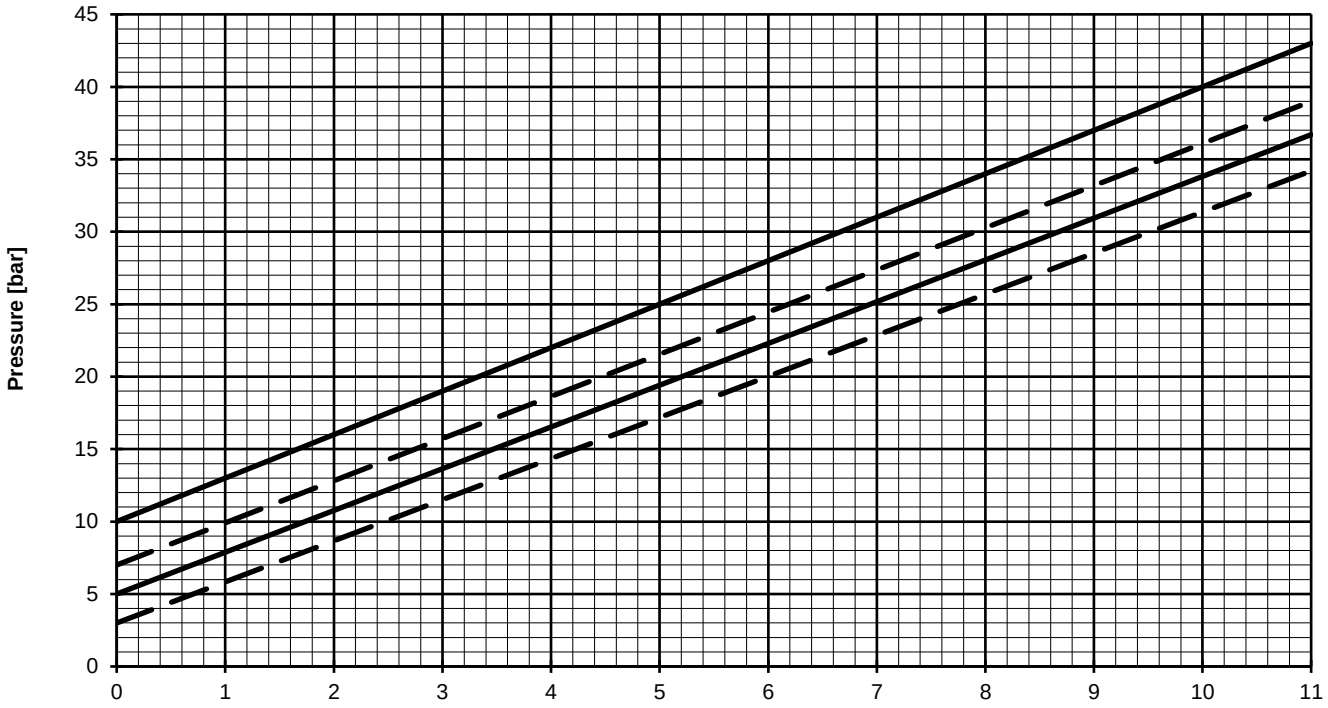


Range 4 / D



Range 5 / E





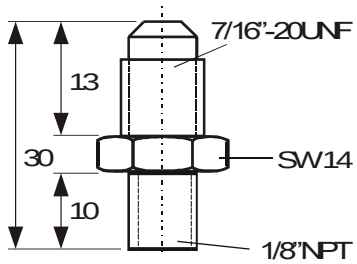
Accessories

Cables Assemblies

Type	Part No.	No of leads	Cross-section of leads [mm²]	Temperature Range [°C]	Cable length [m]
PS3-N15	804580	3	0.75	-50…+80	1.5
PS3-N30	804581				3.0
PS3-N60	804582				6.0

Plug according to EN 175301	Part No.
PG9	801012
PG11	801013

Other Accessories

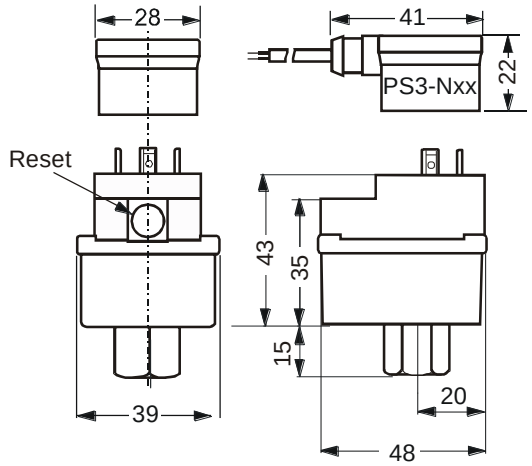


Adapter 1/8"NPT-male-7/16"-20UNF-male
(for compressor direct mounting)
PCN: 800 316

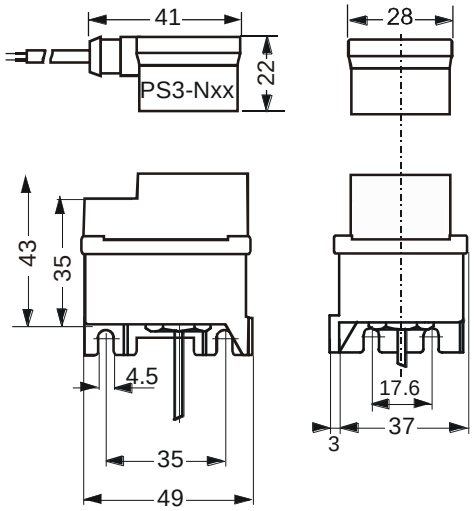
Dimensions

Dimensions for Range 1…5, A…E, J…N, S…W [mm]

Free standing



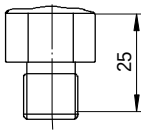
Panel mounting



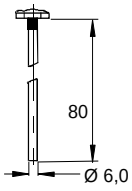
Pressure Connection S
7/16-20 UNF female, with Schrader valve opener

Pressure Connection K
1 m cap tube with flare nut 7/16-20 UNF

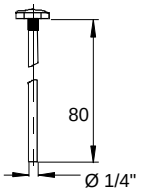
Other Pressure Connections for Range 1…5, A…E, J…N, S…W [mm]



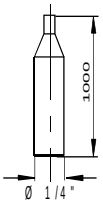
A (Range 1-5)
7/16”-20 UNF male



U
80 mm solder connection
Ø 6 mm

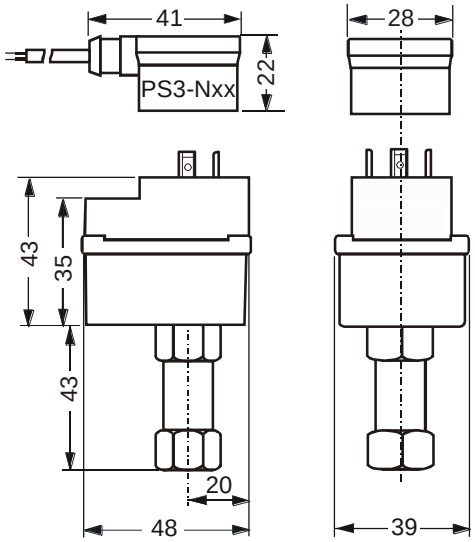


X
80 mm solder connection
Ø ¼”

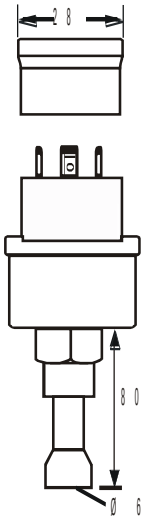


L
1 m cap tube
Ø ¼” solder conn.

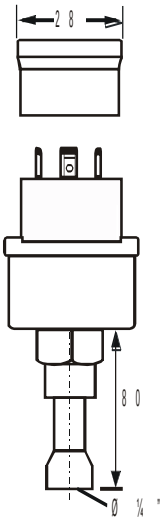
Dimensions for Range 6, F, O, X [mm]



Connection S
7/16-20 UNF female
with Schrader valve opener



Connection U
80mm solder connection
Ø 6mm



Connection X
80mm solder connection
Ø ¼”