

# Alco Controls™

## Pressure Switch Series CS3

Technical Bulletin

CS3 product series are a safety pressure switch with fixed switch-point settings for R744 applications.




### Features

- Pressure Range 8/Q
  - Versions with fixed factory cut-out settings available between 60 bar to 140 bar
  - Maximum Working Pressure of 140 bar
  - Factory Test Pressure of 154 bar
  - Narrow differential (approx. 6 bar) between cut-out and cut-in (in Microswitch version)
- Pressure Range 7/P
  - Versions with fixed factory cut-out settings available between 40 bar to 70 bar
  - Maximum Working Pressure of 90 bar
  - Factory Test Pressure of 100 bar
  - Narrow differential (approx. 4 bar) between cut-out and cut-in (in Microswitch version)
- Manual reset versions available
- Precise switching and repeatability; Snap Action Contacts => Chatter Free (Bounce free) and Accurate Operation
- Contacts are designed as SPDT (Single pole double throw) for control function and alarm/status reporting
- 2 million cycles reliability (TÜV EN 12263 approved)
- Direct compressor mounting with adapter option
- IP65 protection if used with PS3-Nxx with plug (acc. EN 175301-803), no additional gasket required (molded into plug)



**CS3**

### Applied Standards

-  per Low Voltage Directive
-  per PED Directive 97/23/EC
- Manufactured and tested to VDE standards on our own responsibility
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### Selection table

#### 1. Standard types (Minimum order quantity 60pcs)

##### Pressure Range 8/Q

Type	Part No.	Fixed setting [bar]		Reset	Electrical Switch	Pressure connection
		Cut-out	Cut-in			
Pressure Limiter CS3-WQS	0718008M	106 bar	Approx. 100 bar	Automatic	Micro switch	7/16"-20 UNF female thread with Schrader opener
Pressure Limiter CS3-W8S	0718009M	106 bar	Approx. 80 bar		Standard switch	
Pressure Cut-out CS3-B8S	0718001M	108 bar	Approx. 25 bar below cut-out	External manual		
Safety Pressure Cut-out CS3-S8S	0718002M	108 bar	Approx. 25 bar below cut-out	Internal manual		

##### Pressure Range 7/P

Type	Part No.	Fixed setting [bar]		Reset	Electrical Switch	Pressure connection
		Cut-out	Cut-in			
Pressure Limiter CS3-WPS	0718007M	54 bar	50 bar	Automatic	Micro switch	7/16"-20 UNF female thread with Schrader opener
Pressure Limiter CS3-W7S	0718006M	54 bar	41 bar		Standard switch	
Pressure Cut-out CS3-B7S	0718004M	54 bar	Approx. 13 bar below cut-out	External manual		
Safety Pressure Cut-out CS3-S7S	0718005M	54 bar	Approx. 13 bar below cut-out	Internal manual		

Note: cables with plug must be ordered separately (see page 3).

# Pressure Switch Series CS3

## 2. Customer specific types (Minimum order quantity 60 pcs)

Other settings upon request and within technical capabilities of the product

- Pressure Range 8/Q: Versions with fixed factory cut-out settings available between 60 bar to 140 bar
- Pressure Range 7/P: Versions with fixed factory cut-out settings available between 40 bar to 70 bar

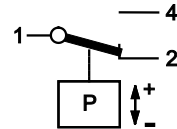
### Type code CS3

<b>CS 3 - W 8 S</b>	
<b>Product Name</b> CS3: Compact fixed setting pressure switch	<b>Pressure Connector</b> S = 7/16"-20 UNF female, Schrader depressor (with snubber)
<b>Function</b> W = Pressure limiter, automatic, type approval EN 12263, PSH B = Pressure cut-out, external manual reset type approval, EN 12263, PZH S = Safety pressure cut-out, internal manual reset type approval, EN 12263 PZHH	<b>Pressure Range / Contacts</b> <b>Standard Contacts</b> 8 = 60...140 bar 7 = 40...70 bar <b>Microswitch</b> Q = 60...140 bar P = 40...70 bar

### Design features

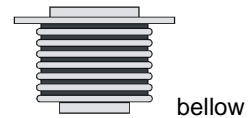
#### 1. Electrical

CS3 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 CS3 is factory preset according to customer's specification and is not adjustable.



#### 2. Mechanical

Single pressure element Bellow (stainless steel) is able to resist to > 2 Mio. cycles between 50% and 100% of the maximum operating pressure (see 4.6.1 of EN 12263).



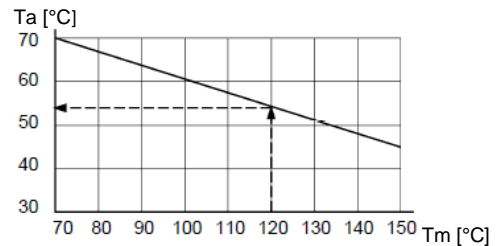
### Technical Data

Protection class acc. to EN 60529	IP 65 with PS3-Nxx IP00 without appliance socket	Vibration resistance	4g (at 10...250 Hz)
Max. working pressure PS	Pressure Range 8/Q: 140 bar Pressure Range 7/P: 90 bar	Medium compatibility	R744 <b>Note: CS3 are not released for use with flammable refrigerants!</b>
Factory Test pressure PT	Pressure Range 8/Q: 154 bar Pressure Range 7/P: 100 bar	Storage, transport & ambient temperature (housing)*	-40°C...+70°C
Tolerances (as per EN 12263) - Only for Standard types (See page 1) <b>Note:</b> Tolerances are valid between -20...+55°C.	<u>Pressure Range 8/Q</u> Tolerance: 0 to -6bar  <u>Pressure Range 7/P</u> Tolerance: 0 to -3bar	Medium temperature*	-40°C...+150°C
		Marking	CE acc. Low voltage Directive CE <sub>0035</sub> acc. To PED 97/23/EC EAC

\*) **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.

T<sub>m</sub> = Medium temperature  
T<sub>a</sub> = Ambient temperature



## Pressure Switch Series CS3

### Electrical Data

	Standard (SPDT)	Micro switch (SPDT)
Inductive load (AC15)	3A / 230VAC	1.5A / 230VAC
Inductive load (DC)	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

### Accessories

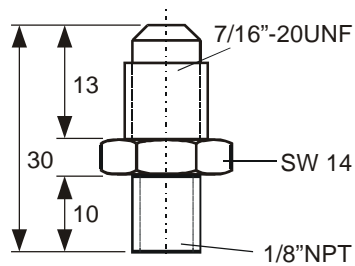
#### Cables Assemblies

Type	Part No.	No of leads	Diameter of leads	Temperature Range [°C]	Cable length [m]
PS3-N15	804580	3	0.75 mm <sup>2</sup>	-50...+80	1.5
PS3-N30	804581				3.0
PS3-N60	804582				6.0



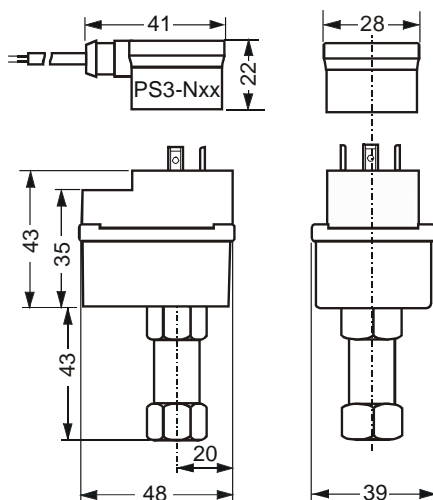
Plug according to EN75301	Part No.
PG9	801012
PG11	801013

### Other Accessories



**Adapter 1/8" NPT (male) - 7/16" - 20 UNF - (female)**  
 (for compressor direct mounting)  
**Part No.: 800316**

### Dimensions [mm]



#### Connection S

7/16-20 UNF female with Schrader valve opener

