



PCS

Position indicator switch



VI

Visual position indicator

for valves and actuators

PCS - VI

Position indicator for valves and actuators

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Description

The PCS is a mechanically activated switch for monitoring the position of the valve plate. This device can be fitted to Elektrogas aluminium valves series VMR, VML, VMM, VMH, EVRM-NA, EVRM-6NA, EVRM-NC, EVRM-6NC to check the closed position of the plate.

It can be fitted to the N.O. vent valve VMRNA to check the open position of the plate.

It can be also fitted to solenoid actuators (SR - SL - ST) to check the open/closed position of the butterfly valve (VF - VFH).

The VI is a mechanically activated indicator for monitoring externally the position of the valve plate. This device can be fitted to Elektrogas aluminium valves series VMR, VML, VMM, VMH, EVRM-NA, EVRM-6NA, EVRM-NC, EVRM-6NC: when red indicator is visible, valve is open, when indicator is blind, valve is closed.

Features

PCS and VI are available with working pressure 500mbar, 2bar or 6bar.

These devices can be fitted to Elektrogas valves provided with G1/8 threaded hole on the bottom. This connection is present as standard for valves DN65 or bigger. For models DN50 or smaller, it must be required in the order. Vent valve VMRNA are always equipped with G1/8 hole on the top for open position indicator. Solenoid actuator SR, SL or ST have to be manufactured with a special execution for assembling the indicator and it shall be required in the order.

An adapting rod is necessary to fit the indicator to an Elektrogas valve or actuator. The indicator is supplied with the rod already mounted, to make installation easier.

The switch can be rotated on 360° on rod axis.

PCS Electrical connection with ISO4400 plug.

They are suitable for air and non-aggressive gases (families 1-2-3 EN437). Special versions are available for use with aggressive gases.

The compact, robust and functional design permits a simple and quick installation, and it is essentially maintenance free.

All components are designed to withstand mechanical, thermal and chemical stresses present in a typical installation.



PCS can be provided in Ex-proof execution, for use in Zones 2 and 22, according to 2014/34/UE Directive (ATEX).

PCS and VI are 100% tested for seal and functioning.



WARNING

This device shall be installed in accordance with the laws in force.

Functioning and application

The PCS is a mechanically activated switch for monitoring the position of the valve plate.

In a normally closed valve (Fig.2 shows a PCS installed in a VMR valve), when valve is not energized, plate is in contact with valve seat. Switch rod is pushed and the electric contact is switched in configuration 1-3.

When valve opens, plate leaves seat and frees the rod, so that contact switches in configuration 1-2, under the action of a return spring.

The EN 161 standard specifies that switch has to commute when plate is within 1 mm to its closed position, so PCS is a device able to detect the closed status, not the completely open one.

Fig. 1 shows how contacts commute in a VMR valve.

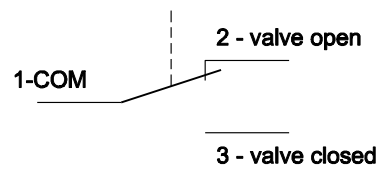


Fig. 1

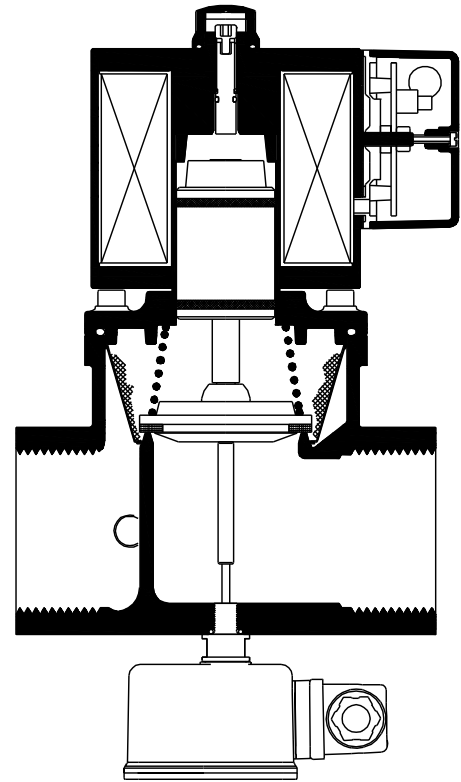


Fig. 2

Fig.3 shows PCS mounted on a solenoid actuator. In this case minimum and maximum regulation are not available and mounting of open position switch is possible only with SR type (fast opening-fast closing).

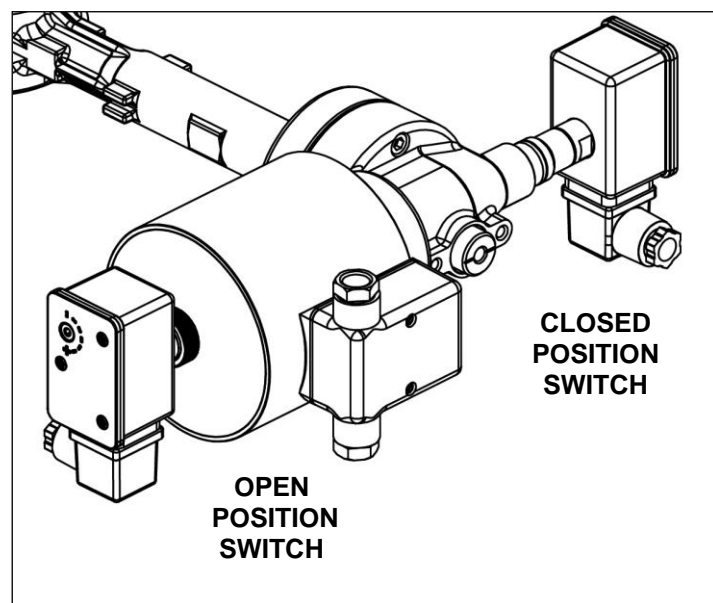


Fig. 3

In normally open valve VMRNa, PCS is mounted over the stem. When valve is not energized (open), disc is open and the magnetic core pushes the switch rod, so electric contact is switched in configuration 1-3. When valve is energized (closed), magnetic core pushes disc on seat and frees the PCS rod, so that contact switches in configuration 1-2.

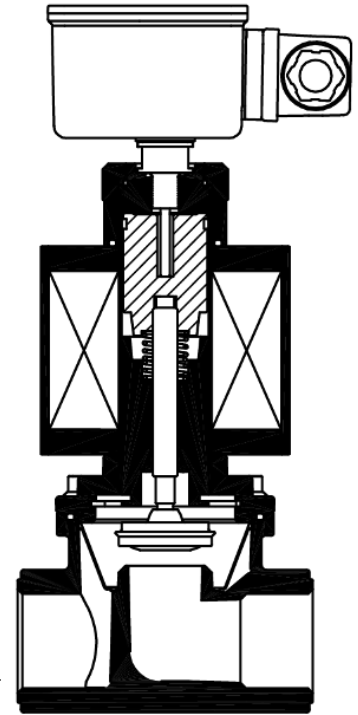
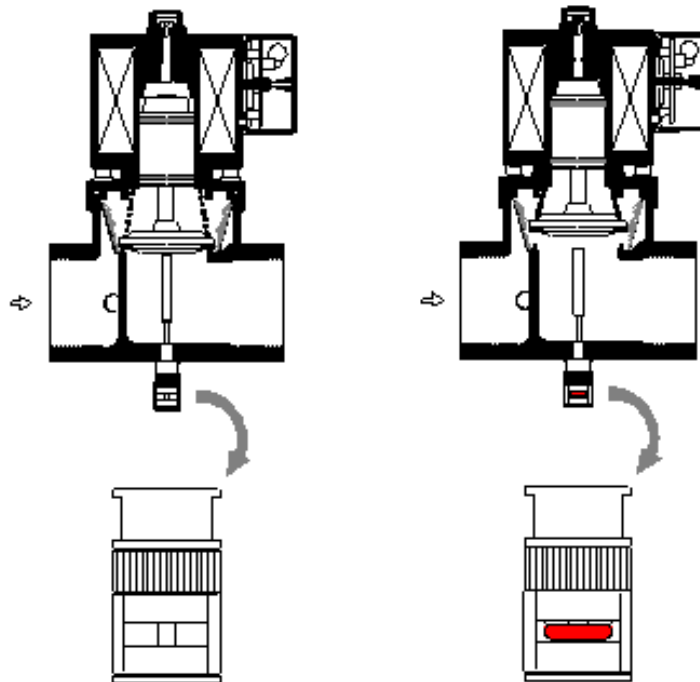


Fig. 4

VI is similar to PCS, but switch is replaced with a red indicator. In a normally closed valve (Fig.5 shows a VI installed in a VMR valve), when valve is not energized, plate is in contact with seat and VI rod is pushed, so red indicator is blind.

When valve opens, plate leaves seat and frees the rod, so that red indicator is visible.



WARNING

Location and mode of installation must be in compliance with local rules in force.

Technical specifications

Tab. 1

Connection	G1/8 (ISO 228-1)		
Max operating pressure	500 mbar	2 bar	6 bar
Max testing pressure	0.75 bar	3 bar	9 bar
Environmental temperature	-15°C / +60°C		
Installation	See valve instruction sheet for the correct position		
Gas type	Air and non aggressive gases (fam. 1-2-3 EN 437) Special versions for aggressive gases		
Materials in contact with media	Aluminum, Brass, Stainless steel NBR, PTFE, FPM (Special versions for aggressive gases without brass and NBR)		
PCS - switching capacity	<i>Standard Silver contact</i> Resistive Load Inductive Load/ Lamp 250VAC 2A 250VAC 0.3A 125VAC 3A 125VAC 0.5A 30VDC 3A 30VDC 1A <i>Special Gold plated contact:</i> Resistive Load Inductive Load/ Lamp 125VAC 0.1A --- 30VDC 0.1A ---		
PCS - electrical connection	ISO 4400 plug with PG11 cable gland		
PCS - enclosure	IP54 (EN 60529) optional IP65		
Weight	VI 0,070 Kg PCS 0,200 Kg PCS Ex-proof version 0,300 Kg		

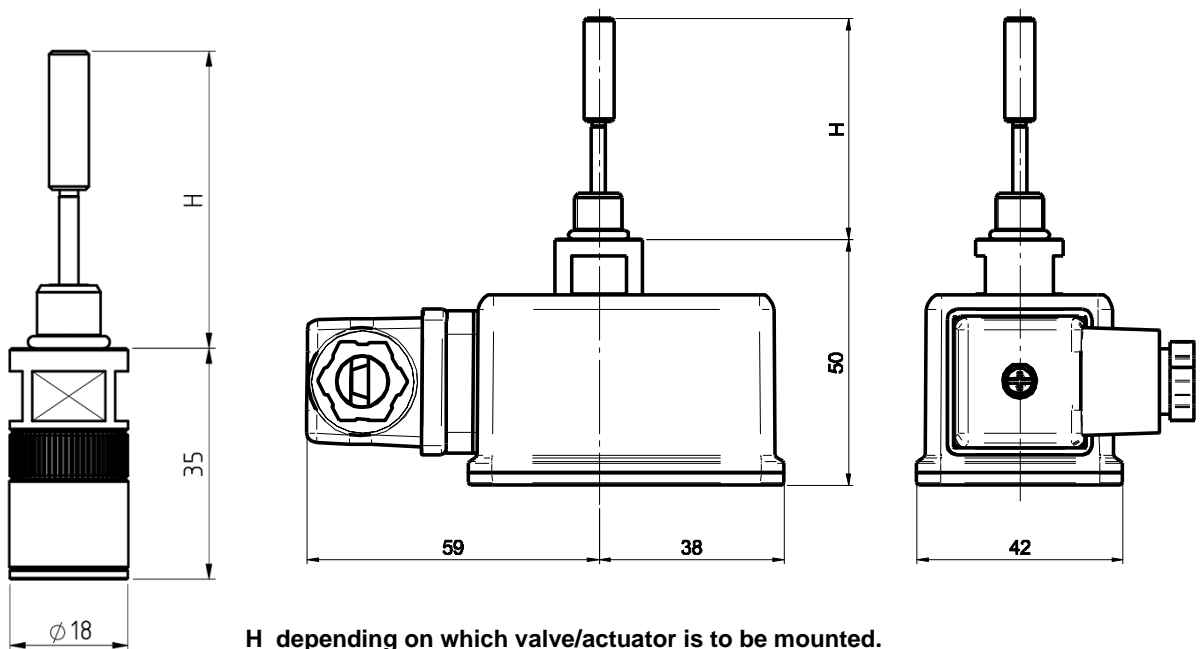


Fig. 5

Ordering information

Tab. 2

	-	PCS	6	.X
Pmax				
-	500 mbar *			
2	2 bar			
6	6 bar **			
PCS position indicator switch				
VI visual position indicator				
Rod type				
1	for	VMR0/1	EVRMNA0/1	EVRMNC0/1
3	“	VMR2/3	EVRMNA2/3	EVRMNC2/3
4	“	VMR35/4	EVRMNA35/4	EVRMNC35/4
4F	“	VMR4.F	EVRMNA4.F	EVRMNC4.F
6	“	VMR6	EVRMNA6	EVRMNC6
8	“	VMR7/8	EVRMNA7/8	EVRMNC7/8
9	“	VMR9	EVRMNA9	EVRMNC9
95	“	VMR93/95	EVRMNA93/95	EVRMNC93/95
98	“		EVRMNA98	EVRMNC98
98S	“		EVRMNA98.S	EVRMNC98.S
910	“		EVRMNA910	EVRMNC910
912	“		EVRMNA912	EVRMNC912
M3	“	VMM20/25		
M6	“	VMM32/40/50		
M8	“	VMM65/80		
HP	“	VMH (all models)		
RA	“	VMRNA (open position of N.O. valve)		
S	“	SR-L-T (closed position)		
S4	“	SR4 (open position)		
S8	“	SR8 (open position)		
Special versions				
J	Biogas and COG			
X	ATEX execution			
B	Gold alloy contacts			
T	Plug with leds			

* PCS or VI with max working pressure 500 mbar are suitable to be installed also in valve EVRM NA or NC with PS 0.6 bar.

** if VMR-VML or EVRMNC-NA valves 6bar version are used with pressure lower than 1,5 bar, it is advisable to use the 2 bar version for VI or PCS.

Examples:

PCS9: closed position switch suitable for VMR9, EVRMNA9, EVRMNC9 (DN100)

6PCS9: closed position switch suitable for EVRM6NA9, EVRM6NC9 (6 bar - DN100)

Special versions

- Gold plated contact for stable long term working with low voltages;
- Models for aggressive gases such as biogas and COG (J version). They are free of non-ferrous metals and provided with special seals;
- PCS can be supplied with plug with leds (in case of use with normally close valve, if green led is on, valve is closed; if red led is on, valve is open);
- Special execution for Atex environment, with metallic enclosure, suitable for Zones 2 and 22, according to 2014/34/UE Directive (ATEX). It is only IP65.

category II 3 G,D
 protection mode Ex nR IIA T4 Gc X
 Ex tc IIIC T135°C Dc X
 ambient temperature -15 / +40 °C

**Standards and approvals**

PCS complies with the essential requirements of the following European Directives and their amendments:



2016/426/EU (Gas Appliances Regulation)
 2014/34/EU (ATEX) when shown upon the product
 2014/35/EU (Low Voltage Directive)
 2011/65/EU (RoHS II)

CE-Reg.-No. 0063AQ1350

Quality Management System is certified according to UNI EN ISO 9001.



The information in this document contains general descriptions of technical options available and based on current specifications.

The company reserves the right to make changes in specifications and models as design improvements are introduced, without prior notice.

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