

SMC guide to ATEX compliant products





ATEX Directive

Directive 94/9/EC

Equipment and Protective Systems intended for use in potentially **Explosive Atmospheres**

Outline of ATEX directive

Since 1st July 2003, equipment used in potentially explosive atmospheres within the EU is required to comply with the ATEX directive.

CE Marking and ATEX

All equipment within the scope of the Directive must bear the CE marking and comply with the directive's requirements. ATEX Directive incorporates conventional European standards for explosion-proof equipment.

Objective of the ATEX Directive

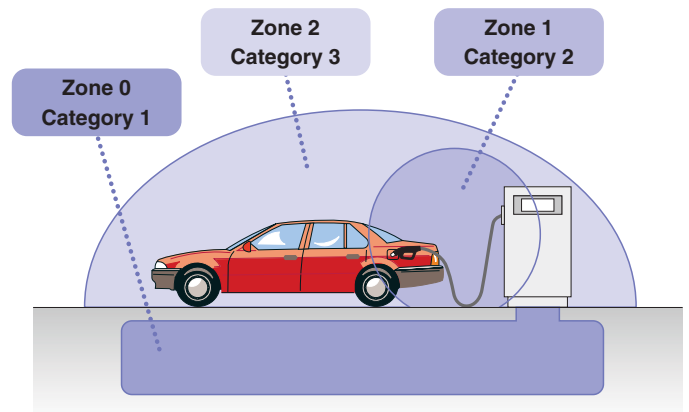
Major objective of the ATEX Directive is as follows:

- ⦿ Preventing electrostatic discharge
- ⦿ Preventing ignition likely to be caused by electrical sparks generated from friction, shock, and wear
- ⦿ Preventing ignition under the influence of elevated temperatures due to friction, shock, and wear
- ⦿ Concentrating on the duties of the manufacturers
- ⦿ Certifying equipment to the ATEX directive by Zone/Category

Zone/Category classification

The ATEX directive defines the categories of equipment and protective systems, which can be used in the corresponding zones as per the following table:

Zone	Equipment category	Presence of the explosive atmosphere
0	1	Continuously or for long periods >1000 hours/year
1	2	Occasionally 10 to 1000 hours/year
2	3	Rarely or for short periods <10 hours/year



SMC's Support

SMC's products corresponding to ATEX Directive

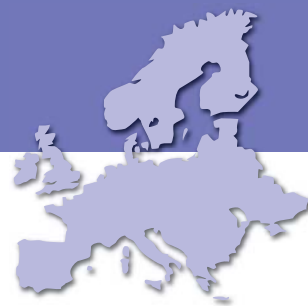
SMC's products which are within the scope of the ATEX Directive include electrical equipment and mechanical equipment such as pneumatic actuators (cylinders). SMC prepares pneumatic equipment for all industries compliant with the ATEX Directive to help our customers make a system corresponding to the Directive.

Certification Procedure

Our products are categorized as electrical and non-electrical products, and tested and certified as follows:

ATEX Category	Electrical products (Solenoid valve, auto switch, serial transmission system, electro-pneumatic positioner, etc.)		Non-electrical products (Cylinder, rotary actuator, etc.)	
	Certification method	Certified by	Certification method	Certified by
Category 1	1. Technical file 2. Quality audit 3. Type approval test	Certification authority Certification authority Certification authority	1. Technical file 2. Quality audit 3. Type approval test	Certification authority Certification authority Certification authority
Category 2	1. Technical file 2. Quality audit 3. Type approval test	Certification authority Certification authority Certification authority	1. Technical file (to be stored in the certification authority) 2. Quality: In-house manufacturing control	SMC SMC
Category 3	1. Technical file 2. In-house production control	SMC SMC	1. Technical file 2. In-house production control	SMC SMC

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<Note for ordering ATEX compliant products>

Some items may not be compliant with the ATEX Directive. For details, refer to How to Order.

For Self Declaration of Conformity, refer to our sales representative.

List of ATEX compliant products

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ATEX Compliant

Digital Pressure Switch for Air

Series 56-ISE70



CE II 3G Ex nA II T5 X 0°C ≤ Ta ≤ 50°C
II 3D tD A22 IP67 T53°C X

How to Order

1MPa

56 - ISE70 - 02 - 43 - M

ATEX category 3

Piping specifications

02	Rc1/4
N02	NPT1/4
F02	G1/4 (ISO1179)

Output specifications

27	2 settings NPN open collector 2 outputs (Pin no.: 2, 4)
43	Fixed setting: (The pressure set point for switching the output signal is common to NPN and PNP.) NPN open collector 1 output (Pin no.: 4) + PNP open collector 1 output (Pin no.: 2)
65	Fixed setting PNP open collector 1 output (Pin no.: 4)
67	2 settings PNP open collector 2 outputs (Pin no.: 2, 4)

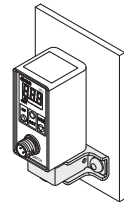
Unit specifications

Nil	With display unit switching function ^{Note 1)}
M	Fixed SI unit ^{Note 2)}
P	Pressure unit: psi (Initial value) With display unit switching function ^{Note 1)}

Note 1) Under the New Measurement Law, sales of switches with the unit switching function are not allowed for use in Japan. (Initial value: MPa)

Note 2) Fixed unit: Mpa

Option 2

Nil	None
A	With bracket  Note) Mounting screws are not included.

Option 1

Nil	None
S	Lead wire with M12 connector (5 m), straight
L	Lead wire with M12 connector (5 m), right-angled

Specifications

Model	56-ISE70
Rated pressure range	0 to 1 MPa
Pressure display range/Set pressure range	-0.1 to 1 MPa
Withstand pressure	1.5 MPa
Pressure display resolution/Minimum unit setting	0.01 MPa
Applicable fluid	Air, Non-corrosive gas, Non-flammable gas
Power supply voltage	12 to 24 VDC±10%, Ripple (p-p) 10% or less (with power supply polarity protection)
Current consumption	55 mA or less (at no load)

Follow the instructions given below when handling the pressure switch.


- Operating temperature range is 0 to 50°C
- Do not expose the pressure switch to heat radiation from a heat source located nearby. It can cause malfunction.
- Do not expose the pressure switch/connector/cable to vibration and impact. Otherwise it can cause damage or malfunction.
- Protect the product from direct sunlight or UV light using a suitable protective cover.
- Do not disconnect the M12 connector while energized.
- Use only an ATEX approved M12 connector.
- For cleaning this product, use a clean and damp cloth, to prevent the buildup of an electrostatic charge.
- Ground properly to prevent the buildup of an electrostatic charge.

All other specifications are the same as the standard products Series ISE70.
For details, refer to the **WEB catalog** or Best Pneumatics No. 6.

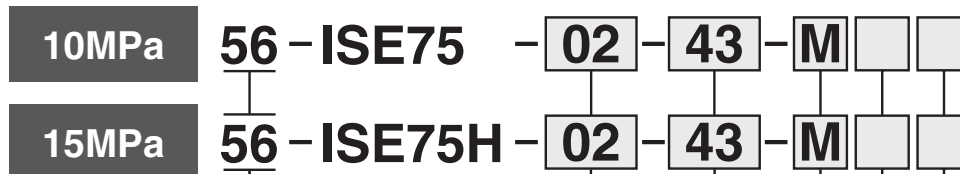
ATEX Compliant

Digital Pressure Switch for General Fluids

Series 56-ISE75/75H

CE  II 3G Ex nA II T4 X -5°C ≤ Ta ≤ 50°C
II 3D tD A22 IP67 T54°C X

How to Order



ATEX category 3

Piping specifications

02	Rc1/4
N02	NPT1/4
F02	G1/4 (ISO1179)

Output specifications

27	2 settings NPN open collector 2 outputs (Pin no.: 2, 4)
43	Fixed setting: (The pressure set point for switching the output signal is common to NPN and PNP.) NPN open collector 1 output (Pin no.: 4) + PNP open collector 1 output (Pin no.: 2)
65	Fixed setting PNP open collector 1 output (Pin no.: 4)
67	2 settings PNP open collector 2 outputs (Pin no.: 2, 4)

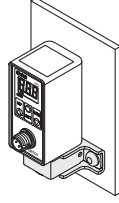
Unit specifications

Nil	With display unit switching function ^{Note 1)}
M	Fixed SI unit ^{Note 2)}
P	Pressure unit: psi (Initial value) With display unit switching function ^{Note 1)}

Note 1) Under the New Measurement Law, sales of switches with the unit switching function are not allowed for use in Japan. (Initial value: MPa)

Note 2) Fixed unit: Mpa

Option 2

Nil	None
A	With bracket  Note) Mounting screws are not included.

Option 1

Nil	None
S	Lead wire with M12 connector (5 m), straight
L	Lead wire with M12 connector (5 m), right-angled

Specifications

Model	56-ISE75	56-ISE75H
Rated pressure range	0 to 10 MPa	0 to 15 MPa
Pressure display range/Set pressure range	0.4 to 10 MPa	0.5 to 15 MPa
Withstand pressure	30 MPa	45 MPa
Pressure display resolution/Minimum unit setting	0.1 MPa	
Applicable fluid	Fluid or gas that will not corrode SUS304, SUS430 and SUS630	
Power supply voltage	12 to 24 VDC±10%, Ripple (p-p) 10% or less (with power supply polarity protection)	
Current consumption	55 mA or less (at no load)	

Follow the instructions given below when handling the pressure switch.

- Operating temperature range is - 5 to 50°C
- Do not expose the pressure switch to heat radiation from a heat source located nearby. It can cause malfunction.
- Do not expose the pressure switch/connector/cable to vibration and impact. Otherwise it can cause damage or malfunction.
- Protect the product from direct sunlight or UV light using a suitable protective cover.
- Do not disconnect the M12 connector while energized.
- Use only an ATEX approved M12 connector.
- For cleaning this product, use a clean and damp cloth, to prevent the buildup of an electrostatic charge.
- Ground properly to prevent the buildup of an electrostatic charge.

All other specifications are the same as the standard products Series ISE75/ISE75H.
For details, refer to **the WEB catalog** or Best Pneumatics No. 6.