

Pressure – Temperature Switches (complement to the mounting/setting leaflet)

F-FX-P-G-U-AIRGAS-C Series

ATEX INSTRUCTION MANUAL



You must read carefully all the instructions of this manual. You must not start the installation before taking these instructions into account. This equipment might receive some hazardous voltages. If you do not consider these instructions, you risk to face serious corporal and material injuries. Before setting up the installation, check both the model and power supply suit your application. The wiring of this equipment must be executed with the in forces rules by qualified staff.



1) INSTRUCTIONS OF STARTUP

1.1) FUNCTION

Pressure and temperature switches are aimed at detecting one or several pressure / temperature trips. In most cases, these trips are used as alarms requiring accurate and reliable devices free of any external power supply. In some other cases, these devices are used for a regulation application.

1.2) ATEX MARKING MEANING AND ATEX INSTALLATION ZONES

refer to the following § (according to the model)

1.3) INSTALLATION

Location : This equipment can be installed in some explosive atmospheres (surface industries) and is in compliance with the 2014/34/UE ATEX directive. The surface temperature must not exceed the one indicated on the cover.

Fixing and mounting : refer to § «MOUNTING» from mounting/setting leaflet.

- The housing must be protected against mechanical shocks. No drilling or machining must be done.

- Make sure the housing screws are appropriately tightened (couple : 1.2 N.m)

- make sure about the scellement about the cable gland

- the plumbing kit will be mounted in butée (couple : 2.5 N.m)

If you do not take these precautions into account, the envelop certification would be put at risk, and the ingress of protection of the housing might be modified !

Electrical wiring : refer to § «WIRING» from mounting/setting leaflet.

Electrical wiring must be executed when DE-ENERGIZED after mounting and fixing the instrument.

Electrical wiring must be executed with respect to the sound engineering practice and the in force norms. Cables must fit cable inputs furnished as standard. In order to guarantee a perfect tightness, the cable gland should be screwed with an appropriate spanner. Terminals wiring are designed for 1.5mm² or 2.5 mm² max. wires (an instrument with a cable output must be connected to a junction box with a certification complying with the required protection mode). In case of plug-in connector, connection will be executed with respect to the sound engineering practice. In case of multiwire cables, a particular care will be applied so that it is not possible that one wire remains free and that the «distances in the air» are respected according to the local law. Earthing connection must be connected to an equipotential earthing network.

Cables path : The type and the path of cables must comply with the in force rules. Careful precautions must be taken to avoid electromagnetic couplings with other cables capable of causing hazardous voltages or currents. Cables and wires must be protected against any damages.

Special conditions for a safe use : refer to the following § (according to the model)

2) F-P-G-U-AIRGAS SERIES - ATEX CERTIFIED INSTRUMENTS

2.1) Intrinsic safety models - F-P-G-U-AIRGAS SERIES

• Marking meaning

Manufacturer	GEORGIN - 92320 CHÂTILLON France		
Instrument type	P, F, G, Airgas Series – U and G Series (Gas certification only)		
ATEX protection	Intrinsic safety (according to EN 60079-0/11 & EN 61241-0/11)		
(EC)* examination type	LCIE 01 ATEX 6008X	LCIE 01 ATEX 6008X LCIE 08 ATEX 6057X (voluntary certificate*)	
Housing protection	IP 66 / 65 / 68 (except G and U Series)	IP 56 / 55 (except G and U Series)	IP20 + G and U Series
Marking	CE 0081 II 1GD Ex ia IIC T6 – Ex iaD 20	CE 0081 II 1G/3D Ex ia IIC T6 – Ex iaD 22	CE 0081 II 1G Ex ia IIC T6
For zones	0/1/2 for gas of groups : IIA,IIB,IIC 20/21/22 for dusts	0/1/2 for gas of groups : IIA,IIB,IIC 22 for non-conductive dusts	0/1/2 for gas of groups : IIA,IIB,IIC
Equipment category	1 GD	1G/3D (non-conductive dusts)	1G
Surface temperature	80°C		

• Special conditions for a safe use

These equipments must only be connected to intrinsically safe certified equipment. This association must be compatible to the intrinsic safety rules.

The electrical parameters of these equipments must not exceed the values indicated in the table beside.

The cable gland must be compatible to the intrinsic safety rules. In the standard version, the cable gland is in polyamid 6 – ISO16 – anchored – for 6...10mm unarmoured cable.

The ambient temperature of use must never overrun these limits : - 20...+70°C. The surface temperature of the device (indicated on the device) must never be exceeded : this temperature must take into account both ambient and fluid temperatures.

The installation of equipment in zone 0 must comply with the EN 60079-14 standard.

The envelop of F-Series devices must not be subjected to mechanical shocks or to frictions.

• Particular recommendations

Make sure the housing screws and the cable gland are appropriately tightened. If you do not take these precautions into account, the envelop certification would be put at risk, and the index of protection of the housing might be modified !

2.2) Increased safety models - F-FP-P SERIES

• Marking meaning

Manufacturer	GEORGIN - 92320 CHÂTILLON France		
Instrument type	Séries P, F et FP		
Protection ATEX	Increased safety "e" and explosion proof "d" (according EN 60079-0/1/7 & EN 61241-0/1)		
(EC)* examination type	LCIE 02 ATEX 6161X	LCIE 02 ATEX 6161X LCIE 08 ATEX 6057X (voluntary attestation*)	
Housing protection	IP 66 / 68	IP 56	
Marking	CE 0081  II 2GD Ex d IIC T6 – Ex tD A21 (or T3 if presence of line resistances : only for F series)	CE 0081  II 2G/3D Ex d IIC T6 – Ex tD A22 (or T3 if presence of line resistances : only for F series)	
For zones	1/2 for gas of groups IIA,IIB,IIC (according to EN60079-10) 21/22 for dusts	1/2 for gas of groups IIA,IIB,IIC (according to EN60079-10) 22 for non-conductive dusts	
Equipment category	2 GD	2G/3D (non-conductive dusts)	
Surface temperature	80°C (or 160°C if presence of line resistances with F-Series)		

• Special conditions for a safe use

The use of an EEx d or EEx e certified cable gland is compulsory. The index of protection of the cable gland must be at least equivalent to the one of the equipment. In the standard version, the cable gland is in nickel plated brass – ISO16 – Ex e - anchored – for 6...11mm unarmoured cable. In all cases, the following values must not be exceeded : Umax=250 V/ Imax=7A/ max. dissipated power= 2W (if presence of line resistances).

The value of Umax and Imax must be completed by the user according to manufacturer datas (ND_ATEX_ed-1001/appendix 1). The ambient temperature of use must never overrun these limits : - 20...+60°C. The surface temperature of the device (indicated on the device) must never be exceeded : this temperature must take into account both ambient and fluid temperatures.

• Particular recommendations

The indication « **WARNING : DO NOT OPEN WHILE ENERGIZED** » must be strictly respected before any operation on the instrument.

This precaution is written on the cover. Make sure the housing screws and the cable gland are appropriately tightened. If you do not take these precautions into account, the envelop certification would be put at risk, and the index of protection of the housing might be modified !

2.3) Explosion proof housing models - F-P SERIES

• Marking meaning

Manufacturer	GEORGIN - 92320 CHÂTILLON France		
Instrument type	P-Series (RTPE), F-Series (RTPF)		
ATEX protection	Explosion proof housing (according to EN 60079-0/1 – 61241-0/1)		
EC examination type	LCIE 01 ATEX 6071X		
Housing protection	IP 66 / 68		
Marquage	CE 0081 II 2GD Ex d IIC T6 – Ex tD A21 (with or without line resistances)		
For zones	1/2 pour les gaz de groupes IIA,IIB,IIC* (for IIC Zone, refer to § "concerning cable inputs") 21/22 for dusts		
Equipment category	2 GD		
Surface temperature	80°C		

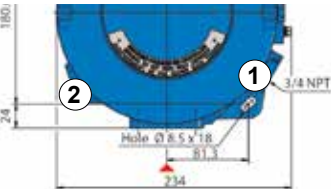
• Special conditions for a safe use

The use of a Ex d certified cable gland is compulsory. The index of protection of the cable gland must be at least equivalent to the one of the device. The cable gland must be mounted according to the attached datasheet. Apply graphite grease on the cable entry threading before tightening the cable gland. The ambient temperature of use must never overrun these limits : -20...+70°C (F-Series /RTPF) and –20...+60°C (P-Series/RTPE) or for special application -40...+70°C (F-Series/RTPF) and -40...+60°C (P-Series/RTPE). The surface temperature of the device (indicated on the device) must never be exceeded : this temperature must take into account both ambient and fluid temperatures.

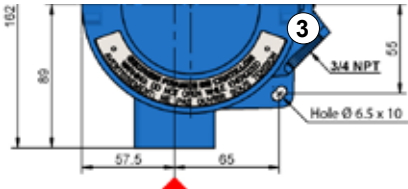
• Concerning cable inputs

According to the ATEX 6 Series (EN60079-14), some new rules are introduced concerning cable input for explosionproof products in Gas zone. Our product is certified according to the mentioned information in « Marking meaning ». The certification of the cable gland has a direct link on the pressure/temperature switch certification and can lead to the downgrading of the device.

Cable input identification



P-Series : 1 input as a standard (1), 1 as an option (2)



F-Series : 1 input as a standard (3)

Particular recommendations : closing the cover

- the safety is guaranteed as long as the cover is correctly screwed and clamped.

- turn the cover clockwise. A metallic stem properly engaged in the 2 bumps provided on the cover may be used for a correct tightness. Once properly tightened, a space of 0.5 mm must remain between the case and the cover.

- clamp the cover with the screw provided on the right hand side of the housing.

- the indication « **WARNING : DO NOT OPEN WHILE ENERGIZED** » must be strictly respected before any operation on the instrument.

This precaution is recalled on the cover.

- For the maintenance of the thread and of the seal of the flameproof enclosure, we recommend a graphited grease.

2.4) Explosion proof switch(es) models - F-FX-C SERIES

• Marking meaning

Manufacturer	GEORGIN - 92320 CHÂTILLON France		
Instrument type	P, F and FP Series		
ATEX protection	Explosion proof switch(es) – with cable (according to EN 60079-0/1 & EN 61241-0/1)		
EC examination type	LCIE 01 ATEX 6071X	LCIE 01 ATEX 6071X LCIE 08 ATEX 6057X (voluntary attestation*)	
Housing protection	IP 66 / 68		IP 56
Marking	CE 0081  II 2GD Ex d IIC T6 – Ex tD A21		CE 0081  II 2G/3D Ex d IIC T6 – Ex tD A22
For zones	1/2 for gas of groups IIA,IIB,IIC (according to EN60079-10) 21/22 for dust		1/2 for gas of groups IIA,IIB,IIC (according to EN60079-10) 22 for non-conductive dusts
Equipment category	2 GD		2G/3D (non-conductive dusts)
Surface temperature	80°C		

• Special conditions for a safe use

The external electrical connection must be done with an element complying with the required protection mode. The cable must be fixed and protected from mechanical damages.

The ambient temperature of use must never overrun these limits : -20...+70°C. The surface temperature of the device (indicated on the device) must never be exceeded : this temperature must take into account both ambient and fluid temperatures.

• Particular recommendations

The indication « **WARNING : DO NOT OPEN WHILE ENERGIZED** » must be strictly respected before any operation on the instrument.

This precaution is recalled on the cover. Make sure the housing screws and the cable gland are appropriately tightened. If you do not take these precautions into account, the envelop certification would be put at risk, and the index of protection of the housing might be modified !

2.5) Pneumatic models - F-FP-P-C SERIES

• Marking meaning

Manufacturer	GEORGIN - 92320 CHÂTILLON France		
Instrument type	P, F and FP Series		C Series
Serial number	year ## / month ## /serial number		
Housing protection	IP66		IP20
Category	2GD		2G
Marking	II 2G Ex h IIC Tx Gb X II 2D Ex h IIIC Tx°C Db X (-10°C<Tamb<+60°C)		
For zones	1/2 for gas of groups IIA,IIB,IIC 21/22 for dust of groups IIIA,IIIB,IIC		1/2 for gas of groups IIA,IIB,IIC
Temperature range	-10°C to 60°C		

Temperature class Tx

Temperature of measured fluid and gas	Temperature class (ATEX Gas)	Temperature class (ATEX dust)
80°C	T6	85°C
95°C	T5	100°C
130°C	T4	135°C

• Special conditions for safe use

Protection by 'safety of construction' is defined by standard EN 80079-36 (general rules: EN 80079-37):

Ignition sources (defined by EN 1127-1) are avoided by the design, construction, operation and maintenance rules.

- The sensors must be suitable for the product and the environment (for example: installation of a siphon or capillary in the high temperature case). The process temperature, combined with the signal fluid temperature and the ambient temperature of the installation location, must not generate a surface temperature greater than the values indicated in §1.20.

In no case must the ambient operating temperature differ from: -10...+60°C.

- Certain parts of the equipment can store an electrostatic charge (plastic part or able to charge itself or as a minimum the polyester casing, the cell, the pneumatic tubes). In explosion risk zones, the surface of the equipment must only be cleaned with a damp cloth. The equipment casing must not be subjected to mechanical shocks or friction. The pneumatic supply to the device should be stopped before any intervention on the equipment.

- Despite a clear differentiation between the measure fluid circuit and the signal fluid, all interaction incompatibilities must be considered and prohibited (Exothermic reaction).

• Particular recommendations

The air connection tubes (feed, exhaust, use – parts not supplied by GeorGIN) must be antistatic, complying with 80079-36 standard. Equipment fitted with a 'leak' type pneumatic cell has its protection rating reduced to IP56, so an IP66 protection rating is only guaranteed if the exhaust is piped.

3) FX SERIES - ATEX & IECEx CERTIFIED INSTRUMENTS

3.1) Increased safety models - FX Series

Manufacturer	GEORGIN - 92320 CHÂTILLON France					
Serial number	year ## / month ## / serial number					
Instrument type	FX Series - Stainless steel housing					
Protection ATEX	Increased safety "e" and explosion proof "d" (according EN 60079-0, -1, -7, -31 et IEC 60079-0, -1, -7, -31)					
(EU)* examination type	INERIS 16ATEX0044X & IECEx INE 16.0053X					
Housing protection	IP66/IP67 (immersion under 0,15 to 1 meter)					
Marking	CE 0081 II 2GD Ex db eb IIC T? Gb Ex tb IIIC T***C IP66 Db					<i>note :</i> <i>** Surface temperature</i> <i>? Temperature category</i>
	max Temperature Process	80°C	95°C	130°C	150°C	150°C (models with line resistance)
	Temperature Class (Gaz)	T6	T5	T4	T3	T3
	Surface Temperature (Dust)	T80°C	T95°C	T105°C	T120°C	T120°C

For zones	1/2 for gas of groups IIA, IIB, IIC	21/22 for dusts IIIA, IIIB, IIIC
Equipment category	2 GD	
other indications	T cable = 72°C	
Special conditions for a safe use	When using the terminal strips Type MK 3 from WEIDMULLER INTERFACE GmbH & Co ,the terminal must only be installed and wired with cable in an ambient temperature of -10°C to +80°C" acc. to §15.9 EC Type examination certificate Sira 01ATEX3249U	

• Special conditions for a safe use

In the standard version, the cable gland is in nickel plated brass – ISO20 – Ex e - anchored – for 6...13mm unarmoured cable.

If the product is order without the cable gland, the use of an Ex d or Ex e certified (for gaz application) or ex t certified(for dust application) cable gland is compulsory. Regarding the cover, screws tightening torque must of 1.2 N m +/-10%. The index of protection of the cable gland must be at least equivalent to the one of the equipment.

In all cases, the following values must not be exceeded : Umax=250 V/ Imax=5A/ max. If the product is equipped with line resistances, dissipated power ≤ 1.2W, R série ≤ 1500 Ohm, R parallèle ≤ 1500 Ohm and U ≤ 30Vdc. The maximum current allowed on the microswitch is 5A. The ambient temperature of use must never overrun these limits : - 20...+60°C. The surface temperature of the device (please refer to above table) must never be exceeded : this temperature must take into account both ambient and fluid temperatures.

• Particular recommendations

The indication « **WARNING : DO NOT OPEN WHILE ENERGIZED** » must be strictly respected before any operation on the instrument.

This precaution is written on the cover.

3.2) Intrinsic safety models - FX Series

Manufacturer	GEORGIN - 92320 CHÂTILLON France					
Serial number	year ## / month ## /serial number					
Instrument type	FX Series - Stainless steel housing					
Protection ATEX	Intrinsic Safety (according EN 60079-0, -11)					
(EU)* examination type	INERIS 18ATEX0036X & IECEx INE 18.0031X					
Housing protection	IP6X					
Marking	CE 0081  II 1GD Ex ia IIC, IIB, IIA T? Ga Ex ia IIIC, IIIB, IIIA T***C IP6X Da			note : ** Surface temperature ? Temperature category		
	max Temperature Process	80°C	95°C	130°C	150°C	130°C (models with line resistance)
	Temperature Class (Gaz)	T6	T5	T4	T3	T4
	Surface Temperature (Dust)	T85°C	T100°C	T135°C	T200°C	T135°C
For zones	0/1/2 for gas of groups IIA,IIB,IIC			20/21/22 for dusts of groups IIIA,IIIB,IIIC		
Equipment category	1 GD					

• Special conditions for a safe use

These equipments must only be connected to intrinsically safe certified equipment. This association must be compatible to the intrinsic safety rules.

The electrical parameters of these equipments must not exceed the values indicated in the table beside.

The cable gland must be compatible to the intrinsic safety rules. The index of protection of the cable gland must be at least equivalent to the one of the equipment.

The ambient temperature of use must never overrun these limits : - 20...+60°C.

Regarding the cover, screws tightening torque must of 1.2 N m +/-10%.

The surface temperature of the device (indicated on the device) must never be exceeded : this temperature must take into account both ambient and fluid temperatures.

• Particular recommendations

Make sure the housing screws and the cable gland are appropriately tightened. If you do not take these precautions into account, the envelop certification would be put at risk, and the index of protection of the housing might be modified !

4) SETTING

refer to § «SETTING" from mounting/setting leaflet

5) MAINTENANCE

Precautions to be observed during maintenance

The dismantling of the equipment must be executed when DE-ENERGIZED with a spanner adapted to the connection.

GEORGIN guarantees the certification of the equipment EX Works. Any operation other than the setting of the device (refer to § «SETTING" from mounting/setting leaflet) will rule out GEORGIN's responsibility in case of failure.

If a fault is suspected or observed, the equipment must be returned to our services or mandatory, only authorized to expertise or repair the equipment.

6) CONTACT US