

■ FI302

2 channels – I.S. discrete input for switch or proximity detector. Solid state or dry contact output

Description :

The module FI302 can receive two digital signals from I.S proximity detectors or dry contact located in the hazardous area and controls two safe area D.C.S loads located in non-hazardous area.

The module FI302 must be installed in safe area .

The relation Input / output of each channel can be reversed by two independent switches inside the module.

The status of each channel is indicated by a yellow LED in the front side.

The module FI302 must be associated to a certified IS apparatus, and this combination must be compatible regarding the intrinsic safety parameters

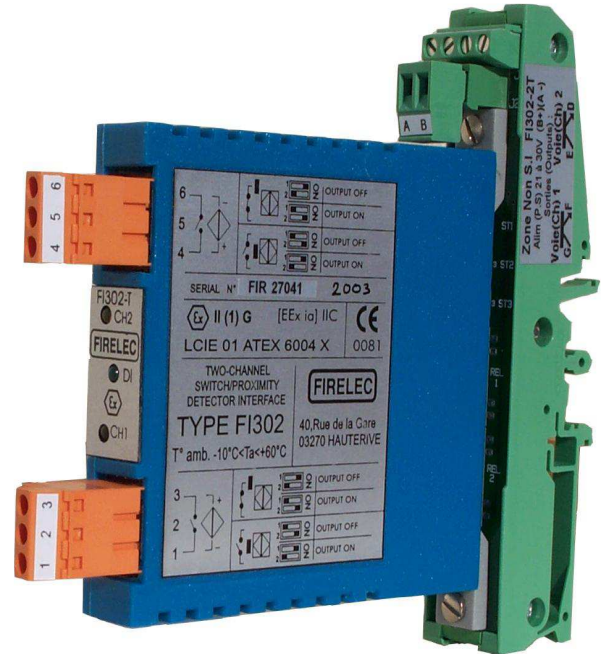
Product options:

Option T. FI302-T: solid state output

Option R. FI302-R: dry contact output (reed relay)

Option ST:FI302-ST: proximity detector or dry contact connected using Screw Terminals

Option CCT:FI302-CCT: proximity detector or dry contact connected using Cage Clamp or spring Terminals



Main characteristics:

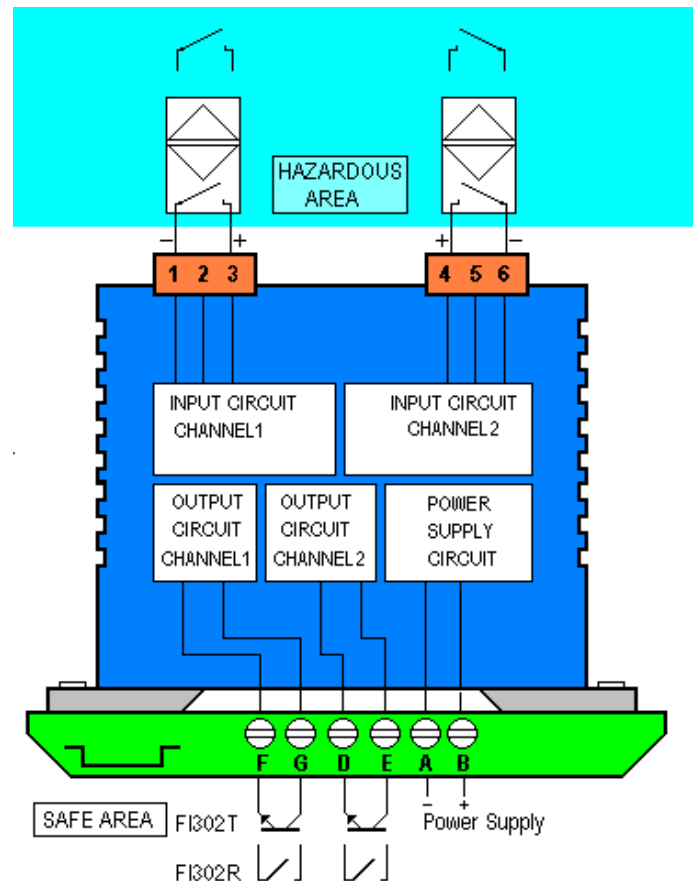
2 channels for I.S discrete input

2 isolated solid state (FI302-T) or dry contact (FI302-R) outputs

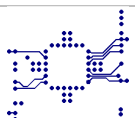
Triple isolation between input, output and power supply

EN50020 Classification [EExia] IIC
ATEX certification LCIE 01 ATEX6004X

DIN rail mounting, individually or on termination panel modulo 8 or modulo 16



R10-2009



Technical specifications :
Power Supply

Voltage range:	21Vdc to 30Vdc
Power ON indication:	By green Led on front plate
Consumption (25Vdc):	55 mA with the two channels ON
Replaceable fuse:	100 mA 250V quick action
Protection:	Reverse polarity, Over voltage picks

Input specifications

Number of channel:	2
Voltage applied to sensor:	8.2Vdc +/- 5%
Short circuit current:	5.4 mA
ON / OFF commutation level:	1.2mA and 2.1mA
Input impedance:	1.5k Ω
Hysteresis:	0.2 mA

Output specifications

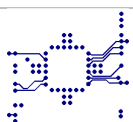
FI302-T (solid state output)	
Operating frequency	Dc to 3KHz (Standard)
Current	5mA (min) 30mA (max)
Voltage	10 to 30Vdc
FI302-R (dry contact output)	
Max current	0.5A
Max voltage	200VDC

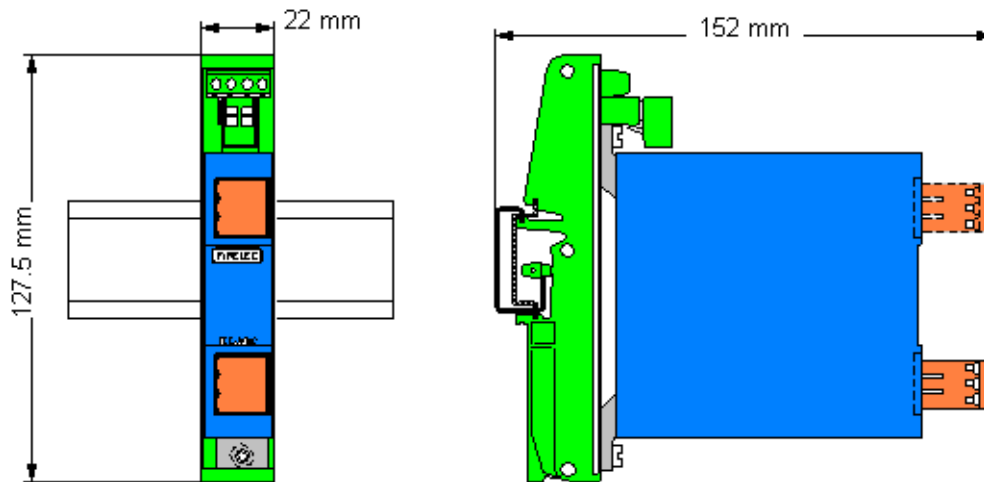
Mechanical and environment characteristics

Isolation Voltage (input1/input2/output/P.S):	1500Vdc
Protection:	IP20
Wiring conductor section:	Option ST: 24 to 12 AWG (0.2 to 2.5 mm ²) Option CCT: 24 to 12 AWG (0.2 to 2.5 mm ²)
Weight:	100g
Size:	H=130mm W=22mm D=145mm with front connector
Operating temperature:	-10°C to 60°C
Storage temperature:	-20°C to 60°C
Relative humidity:	10 to 90% (no condensation)
Mounting:	<u>DIN rail</u> : panel modulo 8 type FI301 or modulo 16 type FI316-1, or individually

Intrinsic safety parameters

ATEX certificate:	LCIE01 ATEX6004X
U max:	10V
I max:	21mA
Co max:	2.6 μ F
Lo max:	70mH



Individual mounting on DIN rail

Individual mounting connection
Power Supply connection:

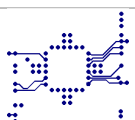
Screw Terminal B (+) and A (-) AWG 14 to 26 or 0.14 to 1.5mm²

Output connection:
Channel 1:

Screw terminals G (+) and F (-) AWG 14 to 26 or 0.14 to 1.5mm²

Channel 2:

Screw terminals E (+) and D (-) AWG 14 to 26 or 0.14 to 1.5mm²



Instruction note :

Intrinsic safety specifications:

The FI302-T or FI302-R intrinsic safety module complies with the European standards EN50014 and EN50020. Its classification is [EExia]IIC. It must be mounted in the safety area and connected only to an intrinsic safety certified material (terminals 1,2,3 and 4,5,6 of the front side connectors), and this association must be compatible regarding the I.S parameters.

The Intrinsic safety electric parameters are as follow

Module Unit	Uo max (V)	Io max (mA)	Co max (µF)	Lo max (mH)
FI302	10	21	2.6	70

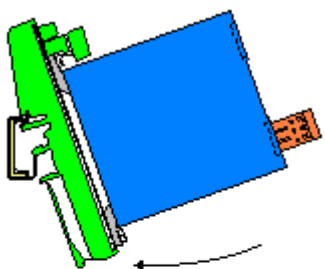
The outputs of the module must be connected to equipment powered on no more than 250Vac.

Mounting:

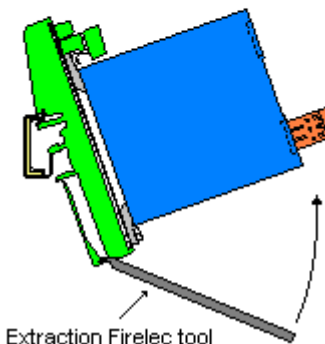
The module can be mounted on a symmetric or asymmetric. DIN rail. To keep an efficient and natural ventilation, it is better to install the module on horizontal rail.

To ensure good reliable operation, the module must be installed in a dry and clean place, with an ambient temperature constantly kept between 10 and 30°C. The ambient temperature limits for continuous working are -10°C to 60°C.

The module is protected by an IP20 polyamide enclosure.



Asymmetric or symmetric DIN rail mounting. Push down following the arrow.



Asymmetric or symmetric DIN rail dismounting using the FIRELEC tool. Insert the tool at the bottom, and push up following the arrow.

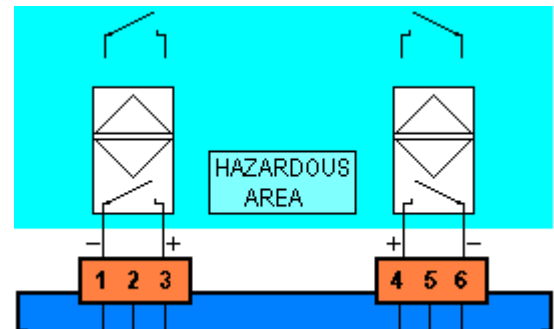
Extraction Firelec tool

Input signal connexion:

Each module has two separate input loops.

The proximity detectors or the dry contacts located in the hazardous area are connected using removal connectors on the front side of the module. The available capacity of the terminals is 0.2 to 2.5mm².

See figure below for the right connexion.



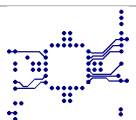
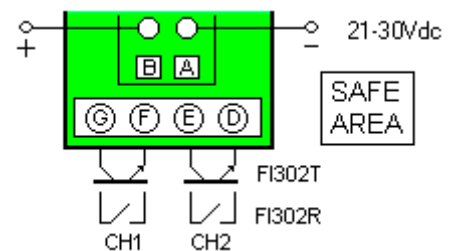
Output signal connexion :

The output loads located in the safe area are connected between terminals G and F for the channel 1, E and D for the channel 2, at the bottom side of the module. The available capacity of the terminals is 14 to 26 AWG (0,14 to 1.5 mm²).

Depending on the type of proximity switch used (inductive or capacitive switch), the input / output relation can be reversed, using a dip switch inside the module. The side label of the module shows how to set the switch.

Power Supply connexion :

The 24Vdc power supply (21V to 30V) is connected between terminals A (-) and B (+) of a removal connector, plugged at the bottom side of the module. The available capacity of the terminals is 14 to 26 AWG (0,14 to 1.5 mm²).











IMPORTANT

Cables routed to the hazardous area must be properly SEGREGATED from other cables by routing through separate cable tray. See I.S electric parameters for max Co and Lo.

Changing input/output relation:

Before changing the input / output relation, disconnect the power from the module. Remove the orange connectors and the enclosure, then set the switches as indicated on the label or below.

	1 2		NO	OUTPUT OFF
	1 2		NO	OUTPUT ON
	1 2		NO	OUTPUT OFF
	1 2		NO	OUTPUT ON

Start-up :

Never plug-in the module which is not protected by its enclosure.

The module is protected against reverse polarity. A green LED on the front side of the module indicates Power ON, when the module is under power. If the LED stay OFF, extract the module, remove the orange connector and the enclosure. Check the fuse F1 (100mA) and replace it if necessary.

Be careful the fuse must have a breaking capacity of 60A min.

If the failure remains, send back the module to FIRELEC which is the only one entitled to repair it.

Signals connexions are shown below

