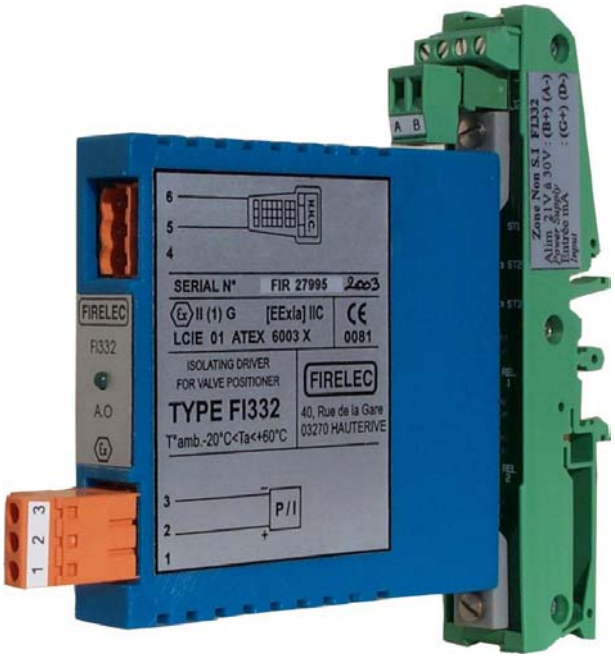
FI332

1 channel – I.S. driver for valve positioner

Description:

The module FI332 receives a 4-20mA signal from a D.C.S and produces an isolated 4-20mA signal to drive a current / pressure converter located in a hazardous area. It must be installed in non-hazardous area .
It permits bi-directional transmission of the digital HART communication from the input loop to the output loop. Using the dedicated connector on the front side , it is easy to communicate with a H.H.C, from the control room with the smart valve controller
The module FI332 must be associated to a certified IS apparatus, and this combination must be compatible regarding the intrinsic safety parameters.



Product options:

Option **ST**:FI332-**ST**: valve positioner connected using Screw Terminals
Option **CCT**:FI332-**CCT**: valve positioner connected using Cage Clamp or spring Terminals

Main characteristics:

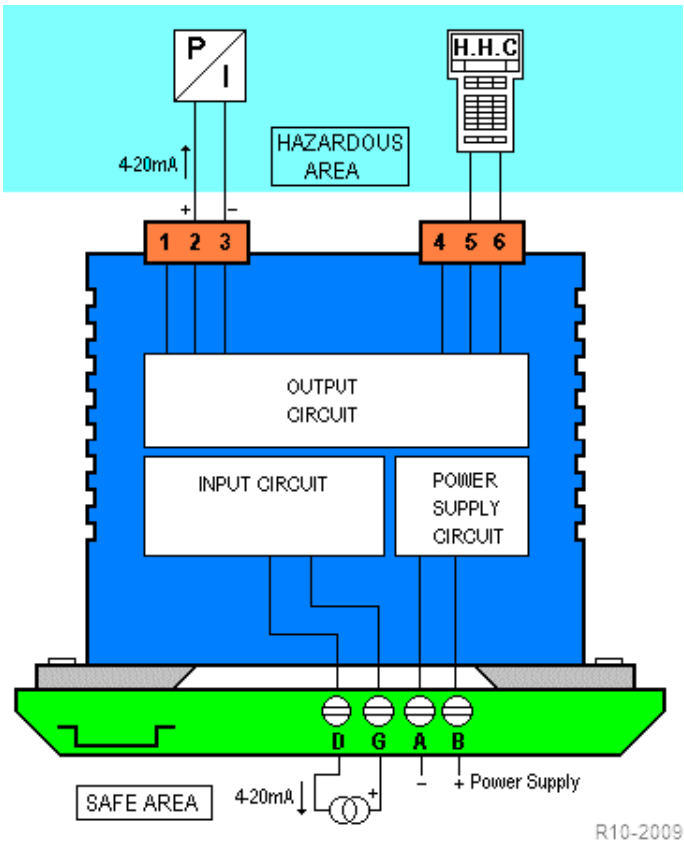
1 channel for I.S valve positioner

Bi-directional Hart communication pass through

Triple isolation between input, output and power supply

EN50020 Classification [EExia] IIC
ATEX certification LCIE 01 ATEX6003X

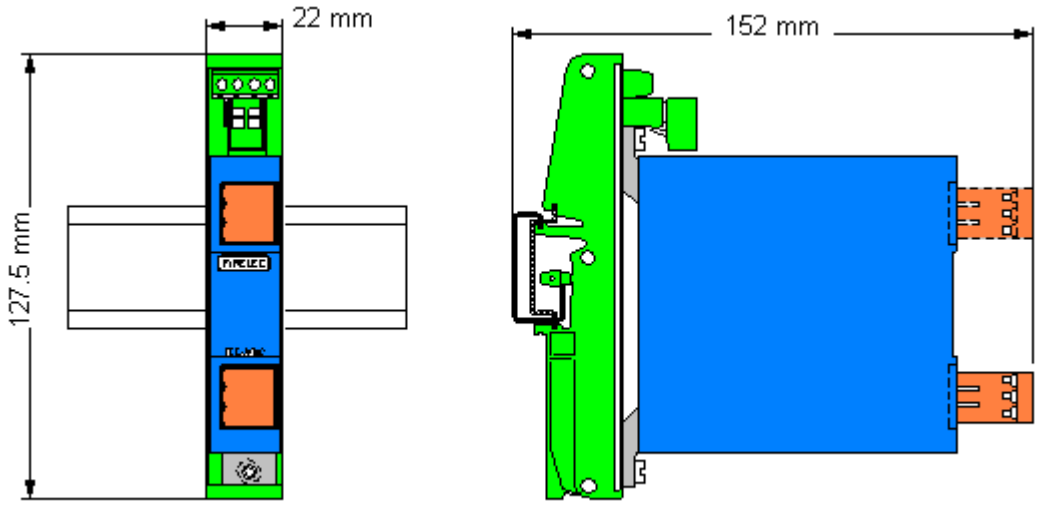
DIN rail mounting, individually or on termination panel modulo 8



Technical specifications

Power Supply	
Voltage range:	21Vdc to 30Vdc
Power ON indication:	By green Led on front plate
Consumption (25Vdc):	65mA at 20mA output
Replaceable fuse:	100 mA 250V quick action
Protection:	Reverse polarity and over voltage picks
Input specifications	
Input Impedance for DC signal:	About 120 ohms
HART input impedance:	>250 ohms.
Output specifications	
Current:	4-20mA
Low limit:	0.1mA (open input circuit)
Max load at 20mA output:	630Ω (21V), 770Ω (25V), 950Ω (30V)
Transfer characteristics	
Accuracy at 20°C:	Better than 0.15%
Response time:	90% of the final value in 80ms.
Mechanical and environment characteristics	
Isolation Voltage (input / output / P.S):	1500Vdc
Drift:	0.01%/°C
Common mode rejection	DC: without measurable effect. AC(50Hz): 120dB
Protection:	IP20
Wiring conductor section:	Option ST: 24 to 12 AWG (0.2 to 2.5 mm²) Option CCT: 24 to 12 AWG (0.2 to 2.5 mm²)
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:	DIN rail: panel modulo 8 type FI308, or individually
Intrinsic safety parameters	
ATEX certificate:	LCIE01 ATEX6003X
U max:	19.5Vdc
I max:	120mA
Co max:	0.23µF
Lo max:	2mH

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

Instruction note

Intrinsic safety specifications:

The FI332 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.

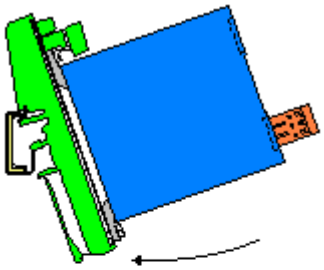
The Intrinsic safety electric parameters are as follow

Module	Terminals	Uo max (V)	Io max (mA)	Co max (µF)	Lo max (mH)
FI332	2-3	19,5	120	0,23	2

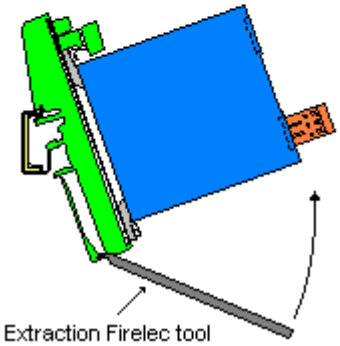
The input of the module must be connected to equipment powered on no more than 250Vac.

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.



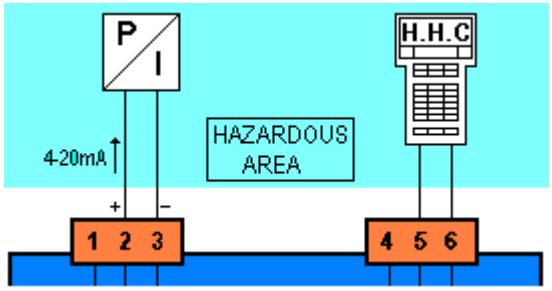
Asymmetric or symmetric DIN rail mounting.
Push down following the arrow.



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

Output signal connexion:

Each module can drive a valve positioner located in the hazardous area.
The valve positioner located in the hazardous area is connected using a removal connector 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.



Hand Hart Communicator connexion:

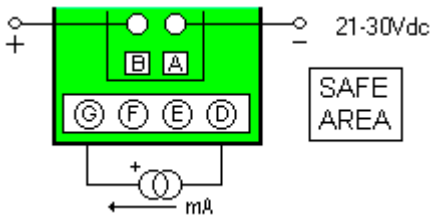
The H.H.C can be connected on the front side of the module, using a dedicated connector labelled 4,5,6. See figure above for the connexion.

Input signal connexion:

The input signal located in the safe area is connected between terminals G (+) et D (-), at the bottom side of the module. The available capacity of the terminals is 0,14 to 1.5 mm².

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.

Start-up :

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

The module is protected against reverse polarity. A green LED in the front side of the module indicate 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 fuses F1 (100mA) et F2 (50mA) and replace them 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