

# 51202H

1 channel – I.S isolating module for valve positioner

**Description:**

The module 51202H is used as interface between the instruments located in the hazardous area and the control room. It is particularly adapted for valve controllers .It accepts a control signal (Voltage or Current) and provides an isolated mA output signal. With D1 option the valve controller with Hart protocol can communicate through the module with a terminal communicator.

It must be installed in the safe area, on asymmetric or symmetric DIN rail, on removable socket or on a modulo 16 termination panel, type CL6331-2.

**Product options: codification 51202H – A – B – C – D**

**Main Power Supply:**

- A1: 24Vdc power supply
- A2: 48Vdc power supply

**Mounting:**

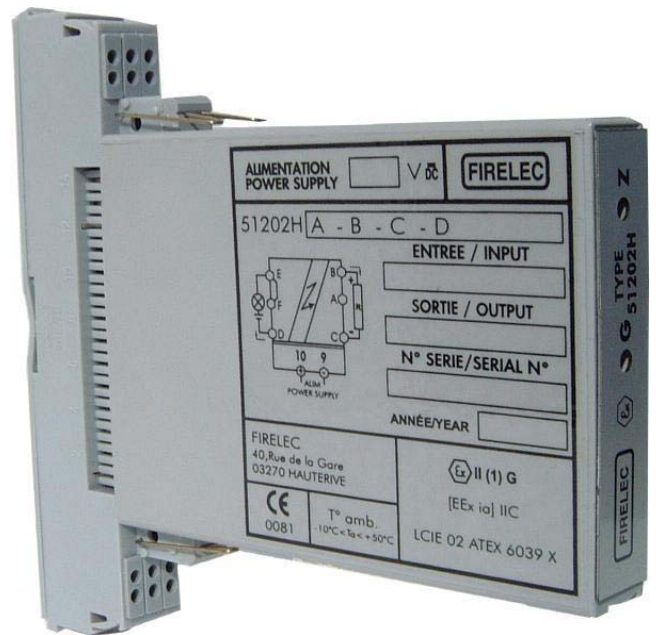
- BN: Without socket ( for mounting on panel)
- B1: Asymmetric DIN rail mounting (up to 20)
- B2: Symmetric DIN rail mounting (up to 20)
- B4: Individual DIN rail mounting

**Input / output range:**

- C1: 4 to 20 mA (input) 4-20mA (output)
- C2: 4 to 20mA (input) 0-20mA (output)
- C3: 0 to 20mA (input) 4-20mA (output)
- C4: 0 to 20mA (input) 0-20mA (output)
- C5: 0 to 10V (input) 4-20mA (output)
- C7: 1 to 5V (input) 4-20mA (output)

**Hart option:**

- DN: filter to Hart protocol
- D1: Hart protocol pass through



**Main characteristics:**

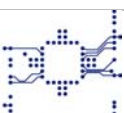
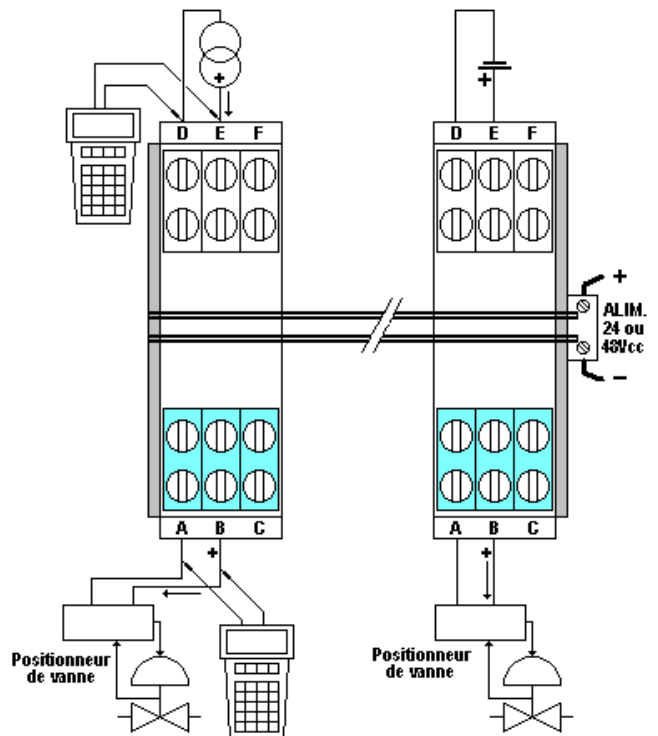
**1 output channel for valve positioner**

**Bi-directional Hart communication pass through**

**Triple isolation between input, output and main power supply**

**EN50020 [EExia] IIC Classification**  
**ATEX Certification: LCIE 02 ATEX6039X**

**DIN rail or panel modulo 16 mounting**



## Spécifications techniques

### Power supply

Voltage range (option A1)	21Vdc to 28Vdc
Voltage range (option A2)	42Vdc to 56Vdc
Consumption (option A1):	50mA at 20mA of output
Consumption (option A2):	30mA at 20mA of output
Fusible protection:	160mA 250V quick action (5x20) PC>4000A

### Input specifications

Impedance for current input:	About 120 $\Omega$
Impedance for Hart signal (option D1):	>250 $\Omega$
Impedance for voltage input:	>25k $\Omega$
Fusible protection:	50mA 250V PC>4000A

### Output specifications

Current range:	4-20mA or 0-20mA
Max load:	750 $\Omega$ at nominal main power supply

### Transfer characteristics:

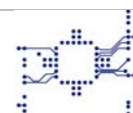
Accuracy et 20°C:	Better than 0,15%
Response time:	90% of the final value in 150ms.

### Environment and mechanical characteristics

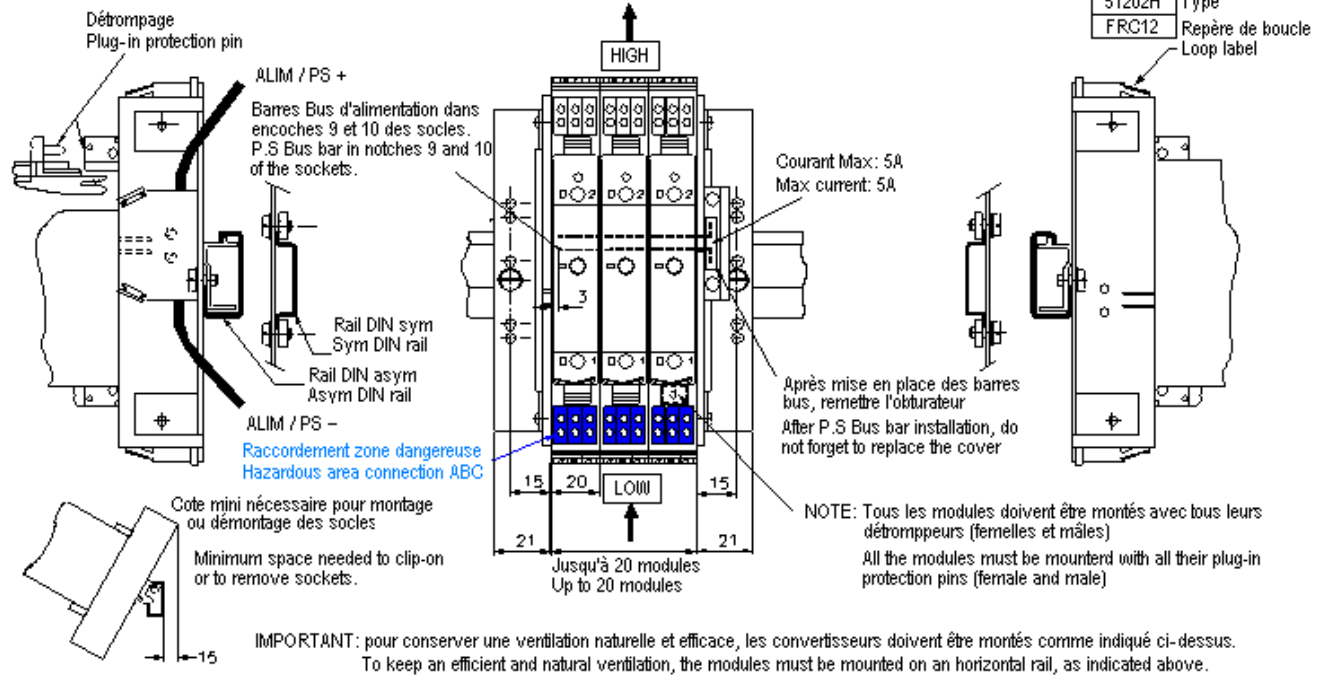
Isolation voltage (Input / output / P.S):	1500Vdc
Drift:	0.01%/°C
Common mode rejection:	DC: without measurable effect - AC (50Hz): 120 dB
Protection:	IP20
Wire conductor section:	24 to 12 AWG (0.2 to 2.5 mm <sup>2</sup> )
Weight:	100g
Dimensions:	H=147mm W=17mm D=160mm with socket
Operating temperature:	-10°C to 50°C
Storage temperature:	-20°C to 60°C
Relative humidity:	10 to 90% (no condensation)
Mounting:	<u>DIN rail</u> : on socket , by group up to 20, or individually <u>Rack 19"</u> : on modulo 16 panel type CL6331-2

### Intrinsic Safety parameters

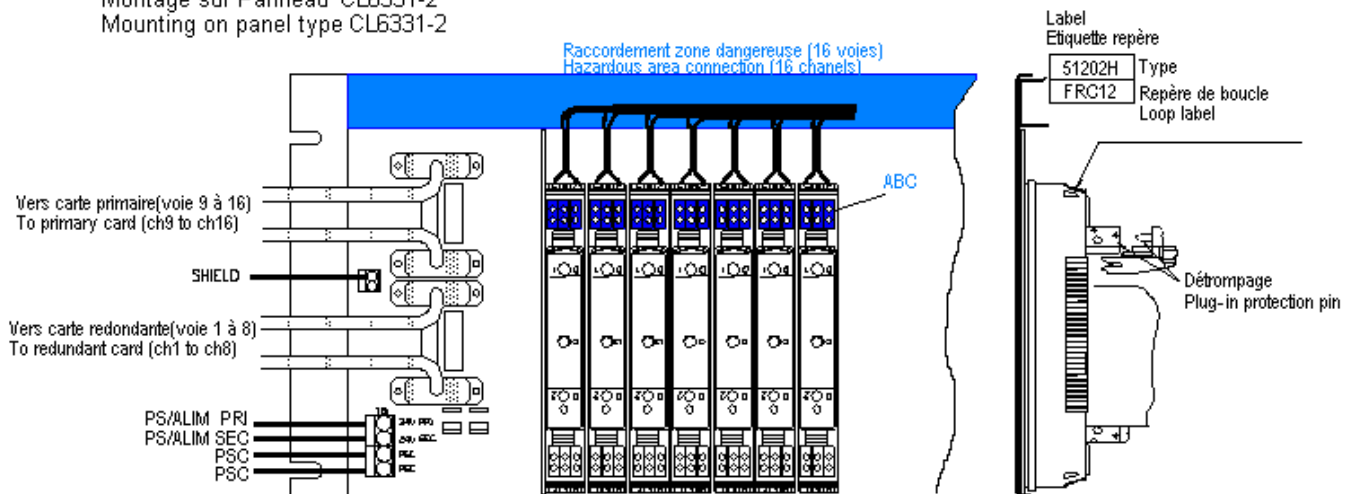
ATEX certificate:	LCIE02 ATEX6039X		
Option DN (filter to Hart signal )			
Uo max (V)	Io max (mA)	19.5V	95mA
Co max ( $\mu$ F)	Lo max (mH)	0.230 $\mu$ F	3mH
Option D1 (Hart signal pass through)			
Uo max (V)	Io max (V)	19.5V	120mA
Co max ( $\mu$ F)	Lo max (mH)	0.230 $\mu$ F	2mH



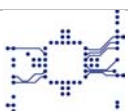
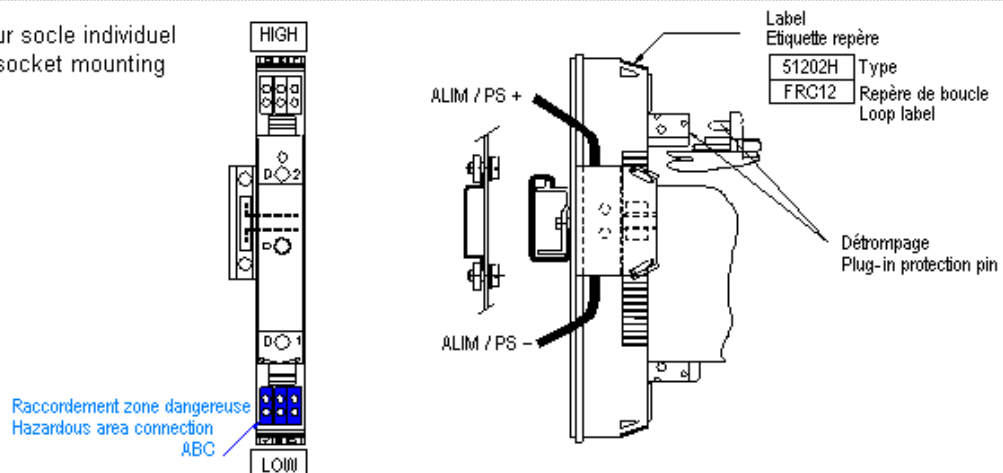
Montage sur rail DIN  
DIN rail mounting



Montage sur Panneau CL6331-2  
Mounting on panel type CL6331-2



Montage rail DIN sur socle individuel  
DIN rail individual socket mounting



**Instruction note**

**Intrinsic safety specifications:**

The 51202H 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 A,B) and this association must be compatible regarding the I.S parameters.

The Intrinsic safety electric parameters are as follow

Option DN (bornes A,B)		Option D1(bornes A,B)	
Vmax: 19.5V	I <sub>max</sub> : 95mA	Vmax:19.5V	I <sub>max</sub> :120mA
C=230nF	L=3mH	C=230nF	L=2mH

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

**Mounting:**

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 50°C.

The module is protected by an IP20 polyamide enclosure (CTI>300). It is plugged in a socket made of the same material than the enclosure, with a dual connecting protection (plug-in direction and module type). The socket itself is mounted on DIN rail, or installed on a termination panel modulo 16 type CL6331-2.

**IMPORTANT**

**To be in conformity with the intrinsic safety standards, when the system is on operation, all the sockets must be occupied simultaneously, either with modules or with a substitute cards type 41013.**

**Output signal connexion:**

The signals coming from the hazardous area are connected on the socket, on screw terminals labelled A and B (blue terminals). The conductor section is between 24 and 12 AWG (0.2 to 2.5 mm<sup>2</sup>). Take care of the compatibility of the I.S instrument connected.  
See figure 1 below.

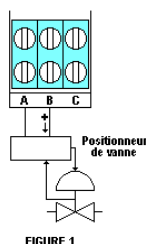


FIGURE 1

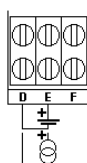


FIGURE 2

**Input signal connexion:**

The signals coming from the non hazardous area are connected on the socket, on screw terminals (E and D). The conductor section is between 24 to 12 AWG (0.2 to 2.5 mm<sup>2</sup>). See figure 2.

In case of panel mounting, the input signals are connected to the non hazardous area via a SUBD25 female connector.

**Power Supply connexion:**

**DIN rail mounting ( up to 20 modules):**

The power supply 24Vdc or 48 Vdc is distributed by bus bars (pin 9 (-) and 10 (+) on the module socket. The power supply is connected on the side terminal block ( conductor section 0.5mm<sup>2</sup> to 4mm<sup>2</sup>). See the label for the polarity before connecting.

**DIN rail mounting on individual socket:**

The 24Vdc or 48Vdc power supply is connected on the side terminal block ( conductor section 0.5mm<sup>2</sup> to 4mm<sup>2</sup>). See the label for the polarity.

**Mounting on panel modulo 16, type CL6331-2**

The 24Vdc power supply is connected on the green terminal block ( conductor section 0.5mm<sup>2</sup> to 4mm<sup>2</sup>). There is the possibility of connecting a primary and a redundant 24Vdc power supply.

**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.**

Each module has an identification label on the enclosure, which provides the following informations:

- The type of the barrier
- The power supply value
- The serial number
- The value of the input and output signals

In case of bad working, extract the module, remove the enclosure. Check the fuses F1 (160mA) et F2 (50mA) and replace them if necessary.

**Take care of the breaking capacity of the fuses. It must be > or equal to 4000A.**

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

