X1-IS-AO-02

I.S. SIL2 HART® Isolating Driver

The Isolating Driver X1-IS-AO-02 module is a high integrity analog output interface suitable for applications requiring SIL 2 level in safety related systems for high risk industries. It isolates and transfers a 4-20 mA signal from a controller located in Safe Area to a load in Hazardous Area. The circuit allows bi-directional communication signals, for HART® smart positioners. Line and load open/short circuit detection is provided: the fault in the field is directly mirrored to the PLC AO card as open circuit and it is also reported on the common fault line. To ease maintenance operations, field devices can be disconnected through a two-position insertion/extraction mechanism. This product requires a dedicated Termination Board.

FEATURES

- SIL 2 / SC 3
- Input from Zone 0 / Division 1
- Installation in Zone 2 / Division 2
- Loop disconnection to ease maintenance operations
- Mechanical polarization key to prevent destructive mismatches
- HART® compatible
- Line & Load short/open circuit programmable diagnostics
- Out-of-range fault with programmable thresholds
- Field fault mirroring to the DCS/PLC IO Card
- High Accuracy
- Three port isolation, Input/Output/Supply

GATEWAY

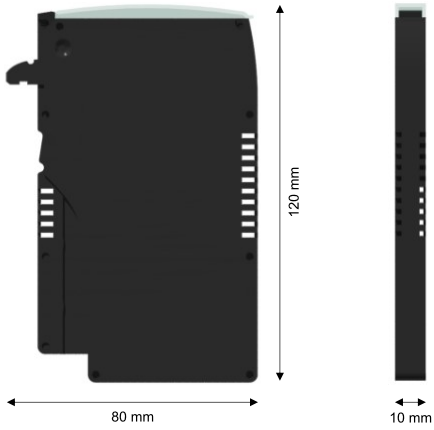
X1 Series Gateway family X1-GW makes available HART® Multiplexing and other optional features. See Instruction Manual for the specific functions available in this model.

ORDERING INFORMATION

Ordering codes

X1-IS-AO-02-S: 1 channel

OVERALL DIMENSIONS



TECHNICAL DATA

General

Power dissipation: 0.95 W @ 24 Vdc with 20 mA on I/P output, typical.

System Supply

24 Vdc nom (18 to 28.8 Vdc).
Current consumption: 37 mA @ 24 Vdc with 20 mA on I/P output, typical.

System In

Current 4 to 20 mA.
Input fault impedance: 16 kΩ @ 24 Vdc (input current 1.5 mA), typical.

Field Out

Current 4 to 20 mA + HART®.
Maximum load: 500 Ω.
Response time: 5 ms.

Fault

Load short/open with settable limits on voltage, current and resistance.
Fault signalling: common fault & fault mirroring on DCS/PLC IO.

Performance

Ref. Conditions: 24 V supply, 250 Ω load, 23 ± 1 °C Tamb.
Accuracy (linearity, calibration and installation): ≤ ±40 µA.
Temp. influence: ≤ ±2 µA/°C.

Isolation

Field Out/System In 2.5 kV; Field Out/System Supply 2.5 kV; System In/System Supply 500 V.

Environmental conditions

Operating temperature: temperature limits –40 to +70 °C.
Storage temperature: temperature limits –45 to +80 °C.

Safety description

Associated apparatus and non-sparking electrical equipment.
Uo = 26.8 V, Io = 92 mA, Po = 616 mW at terminals A-Z.
Um = 250 Vrms or Vdc, -40 °C ≤ Ta ≤ 70 °C.

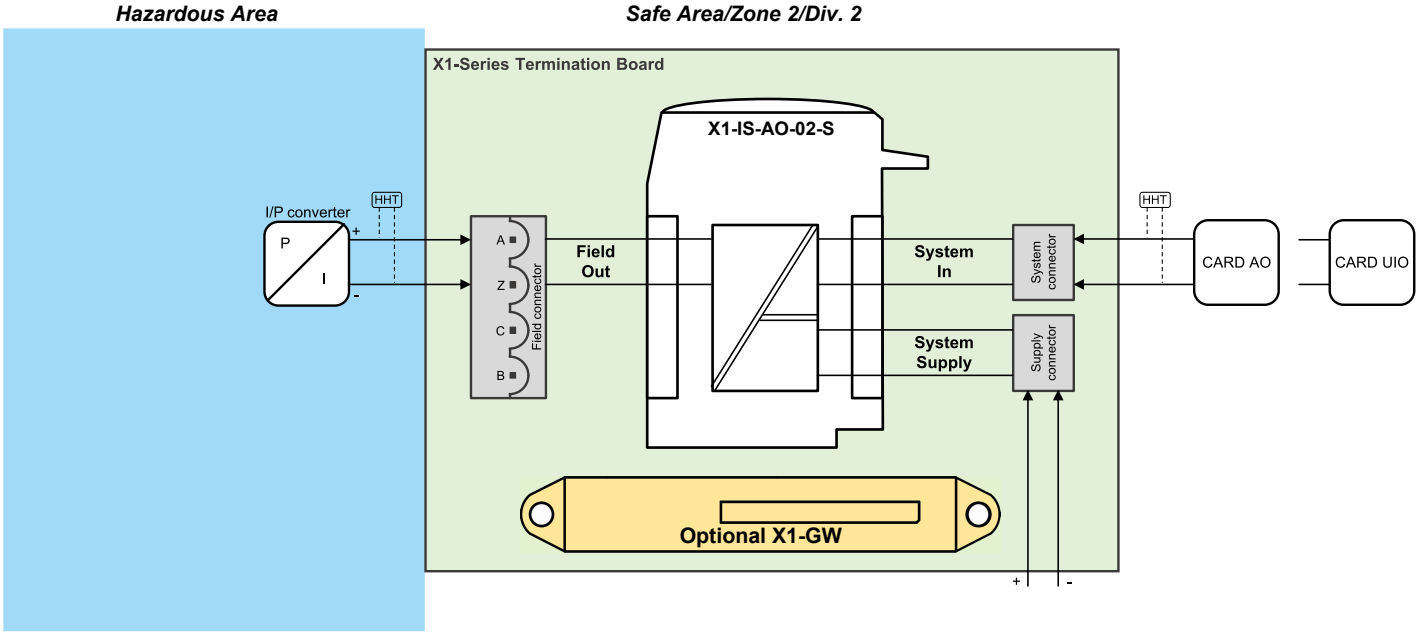
Mounting

On custom Termination Board.
Weight: about 70 g.
Dimensions: Width 10 mm, Depth 80 mm, Height 120 mm.

Functional Safety Management Certification:
GM International is certified to conform to IEC61508:2010 part 1 clauses 5-6 for safety related systems up to and included SIL3. In addition, GM International products have been granted I.S. certificates from the most credited Notified Bodies in the world.

Data specified in this document are merely descriptive of the products and should be integrated with relevant technical specifications. Our products are in constant development and the information presented herein refers to the time of document issue. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. Terms & Conditions can be found at our website. For more information refer to istruction manual.

FUNCTION DIAGRAM



*Additional installation diagrams may be found in Instruction Manual.

FSM SIL 3

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