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A Sonepar Company

[Ex ia Ga] IIC

9000Ex-31
9000Ex-32

Smart Current Driver

Stable | PESO Certified | Accurate | HART Protocol Supported

RoHS

9000Ex-31 and 9000Ex-32 are single-channel Smart Current Drivers that provide a galvanically isolated 4–20 mA signal to the hazardous area, corresponding to a 4–20 mA input signal from the safe area. They repeat the current signal in another floating circuit to drive a hazardous area load, using isolating transformers that provide galvanic isolation. The Smart Current Driver operates SMART I/P converters, electric valves, and positioners in hazardous areas. It features high output capacity combined with a low voltage drop across its input terminals.

9000Ex-31 and 9000Ex-32 are DIN-rail mount Smart Current Drivers with a width of 17.6 mm. These Smart Current Drivers are classified as associated apparatus. Connections to the safe area and hazardous area are located on opposite sides of the enclosure, using plugs and sockets. Additionally, hazardous area terminals are color-coded in blue for easy identification.

It restricts the transfer of energy from unspecified non-hazardous area apparatus to intrinsically safe circuits by limiting voltage and current. The apparatus also enables bi-directional signal communication between hazardous and non-hazardous areas through the connection of a HART communicator.

Process controllers with a readback facility can detect open or short circuits in the field wiring. In the event of a fault condition, the current drawn at the input terminals drops to a preset level. 9000Ex-31 having similar construction to the 9000Ex-32 variant with same input and output parameters but have a short circuit fault detection feature unlike 9000Ex-32.

Features

- Intrinsically safe Associated Device
- Line fault detection (LFD)
- Compact DIN-Rail mount design of 17.6mm width
- High KV 3 port isolation
- High Accuracy, low drift, low temperature effect
- Low power dissipation
- Bi-Directional HART communication between the hazardous and non-hazardous area

Application

- Used for I/P Converter, control valve and other field devices exposed to explosive atmosphere
- Transmitting control signals to transmitter measuring Temperature, Pressure or Flow
- Used in industrial automation
- Control of Valves Positioner in Hazardous area
- Monitoring and Controlling operation in potential explosive environment
- Prevents electrical noise, ground loops, and voltage spike

TECHNICAL SPECIFICATIONS

Safe-area Input

Input Type	Current
Input Range	4 to 20mA
No. of channel	One
Voltage Drop	Approx. 6 V at 20 mA
Temperature Coefficient	≤50 ppm/°C
CMRR	≥ 100 dB
NMRR	≥ 70 dB

Hazardous-area Output

Output Type	Current
Output Range	4 to 20mA
Response Time	≤100ms
Accuracy	± 0.1% of FS
Output Load Resistance	100 Ω to 650Ω @20mA
Line Fault Detection (LFD)	Field wiring open circuit or ≤50 Ω (Short Circuit) then the input current ≤1.2 mA (Short Circuit LFD is available with 9000Ex-31)
Communication Supported	HART pass supported

Power Supply

Voltage	20 to 35 VDC
Power Consumption (20mA signal)	≤1W@24V
Power Dissipation (20mA signal)	≤0.74W@24V
Power ON status LED	Red

Isolation (Withstanding voltage)
Between Power to Input and Output: Galvanic Isolation of 2KVAC for 1 minute
Between Input to Output: Galvanic Isolation of 2KVAC for 1 minute
Insulation resistance: >200MΩ@1000V DC between All Ports.

Physical

Mounting Type	DIN Rail (35 mm)
Terminal Block	UL, CSA standard
Terminal Cable Size	2.5mm²
Enclosure Material	PA66
IP Rating	IP20
Dimension (in mm)	17.6(W)x99(H)x114(D) mm
Weight	≤ 150 g

Safety Description

Terminals OP+ to OP-	Uo=28V Io=91mA Po=0.65W Um=250V rms
Certificate Report No.	KLPL/Ex/25-025X
PESO Approval No.	A/P/HQ/GA/104/5532
Ex Standards Complied	IS/IEC 60079-0:2017 IS/IEC 60079-11:2023

For Details, Please refer Operational Manual

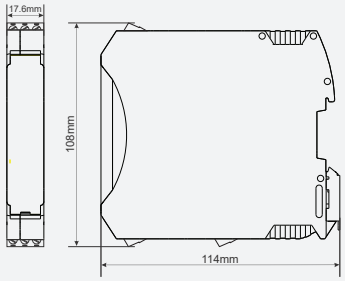
Environmental

Operating Temperature	-20 to 60 °C
Storage Temperature	-20° to 70°C
Relative Humidity	30 to 95% RH (Non-Condensing)
Protection	Conformal Coating on PCB

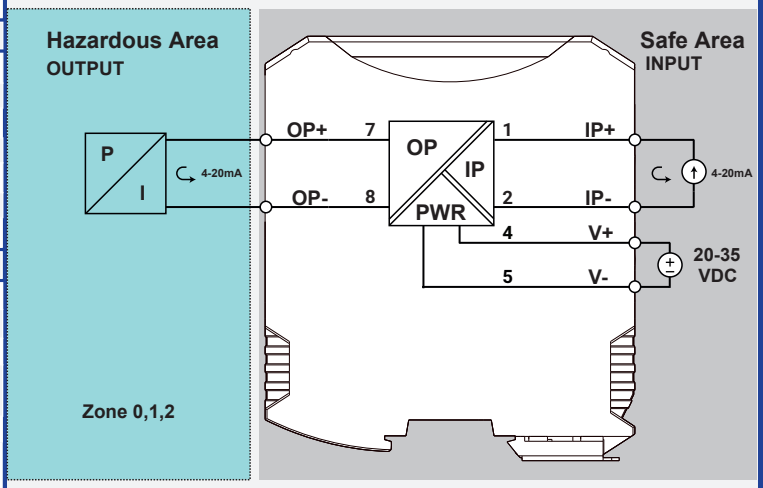
Line Fault Detection

Model	Open Circuit Line Fault Detection	Short Circuit Line Fault Detection
9000Ex-31	√	√
9000Ex-32	√	X

Dimensions



Connection Diagram



Ordering Code

Model	Line Fault Detection
9000Ex-31	Open Circuit & Short Circuit
9000Ex-32	Open Circuit

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