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D2030M Unit without cover

GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

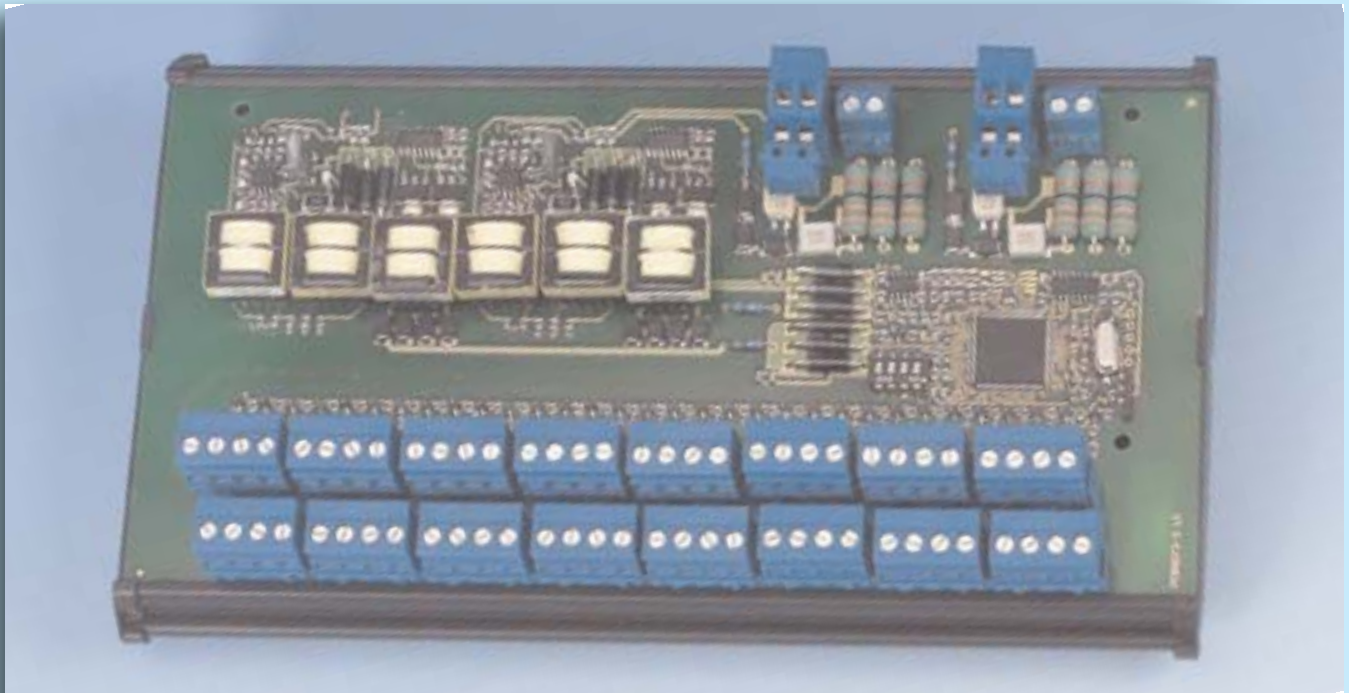**D2030**

Intrinsically Safe Digital Multiplexer Model D2030M for DIN-Rail Mounting in Zone 0, 1, 2

Characteristics:

General description:

D2000M Series Intrinsically Safe Multiplexing System consists of 1 to 4 Analog-Temperature Multiplexer Units model D2010M, up to 12 Expander Units model D2011M, and up to 4 D2030M Digital Multiplexer Units, mounted in Zone 0, 1, 2 Hazardous Area, Gas Group IIC T4, connected via a single/redundant 2 wire data communication / Supply line to a Modbus Gateway Unit model D2050M, mounted in Safe Area and connected to a PLC, DCS or PC.

The Multiplexer Units D2030M, can be installed in the field, close to input sensors, for data aquisition from Hazardous Area and connected to a Safe Area PLC/DCS or other devices, via 2 wire communication link and Gateway Unit D2050M, saving wiring, cables and costs. The Units are primarily intended for Hazardous Area acquisition from contacts or proximity detectors.

D2030M scans all enabled channels and stores all data in a memory buffer, where they can be rapidly accessed by the Modbus Gateway Unit D2050M. Each Mux Unit D2030M accepts directly up to 32 input channels and is expandable to 128 channels.

Four D2030M Units reach 128 inputs with a single Modbus Gateway Unit D2050M.

Redundant cummunication is obtained by dual data/supply interface line. Safety Parameters mantain compatibility with Gas Group II C even in redundant mode.

Features:

Intrinsically Safe for installation in Zone 0, 1, 2, 20, 21, 22 Gas Group IIC T4.

Inputs from contacts or NAMUR Proximity Sensors.

32 input channels.

Expandability up to 128 channels per System and 31 Systems on a single serial link for up to 3968 Channels.

Field Redundant communication.

EMC according to EN50081-2, EN50082-2.

ATEX certified.

High Reliability, SMD components.

High Density, 32 channels per unit, 128 channels per System.

Software configuration.

Lower PLC/DCS I/O cards cost.

Lower Cables and installation costs.

Lower cost, including wiring, 1 Terminal Block per input connection, no external Terminal Block required.

Semplified installation using standard DIN Rail mounting Units.

Technical Data:

Supply:
Via D2050M Interface Unit.

Max. Power Consumption: D2030M: 200 mW.

Isolation:
I.S. In/Out, Communication line, 0,5 KV;
I.S. In/Ground 500 V;
Communication line/Ground 500 V;
I.S. In/I.S. In between Units 500 V.

Input switching current levels:
ON $\geq$ 2.1 mA, OFF $\leq$ 1.2 mA,
Switch current $\approx$ 1.6 mA $\pm$ 0.2 mA hysteresis.

Fault current levels: Open fault $\leq$ 0.2 mA, Short fault $\geq$ 6 mA.

Input equivalent source: 7,5 V 1 KΩ typical

Scan cycle Time:
for four D2030M units (128 channels): 50 ms.

Compatibility:

CE

CE mark compliant, conforms to 94/9/EC Atex Directive and to 89/336/CEE EMC Directive, EN60010-1.

Environmental Condition:
Operating: - 20 to + 60 °C, Relative Humidity max 90 % non condensing, up to 35 °C.

Storage: 40 to + 80 °C.

Safety description of measuring inputs:

$\langle Ex \rangle$

Uo/Voc = 9,6 V, Io/Isc = 14 mA, Po/Po = 29 mW,
at terminals 1-2, 3-4.
II 1 G D EEx ia IIC T4 or I M2 EEx ia IS Apparatus.

Approvals:
DNV-2005-OSL-ATEX-nnnn conforms to EN 60079-0, EN 60079-11, EN 60079-25, IEC 60079-27, EN 50281-1-1, EN 50284.

Mounting:
DIN Rail T35 according EN50022.
Weight: About 300 g.
Connections: By screw terminals for up to 2,5 mm^2.
Installation Area: Zone 0, 1, 2, Gas Group IIC, IIB, IIA, T4.
Protection Class: IP 20.
Dimentions: 127W x 220L x 78D mm.

Note: for field mounting see GM 2300 Series enclosures.

Parameters Table:
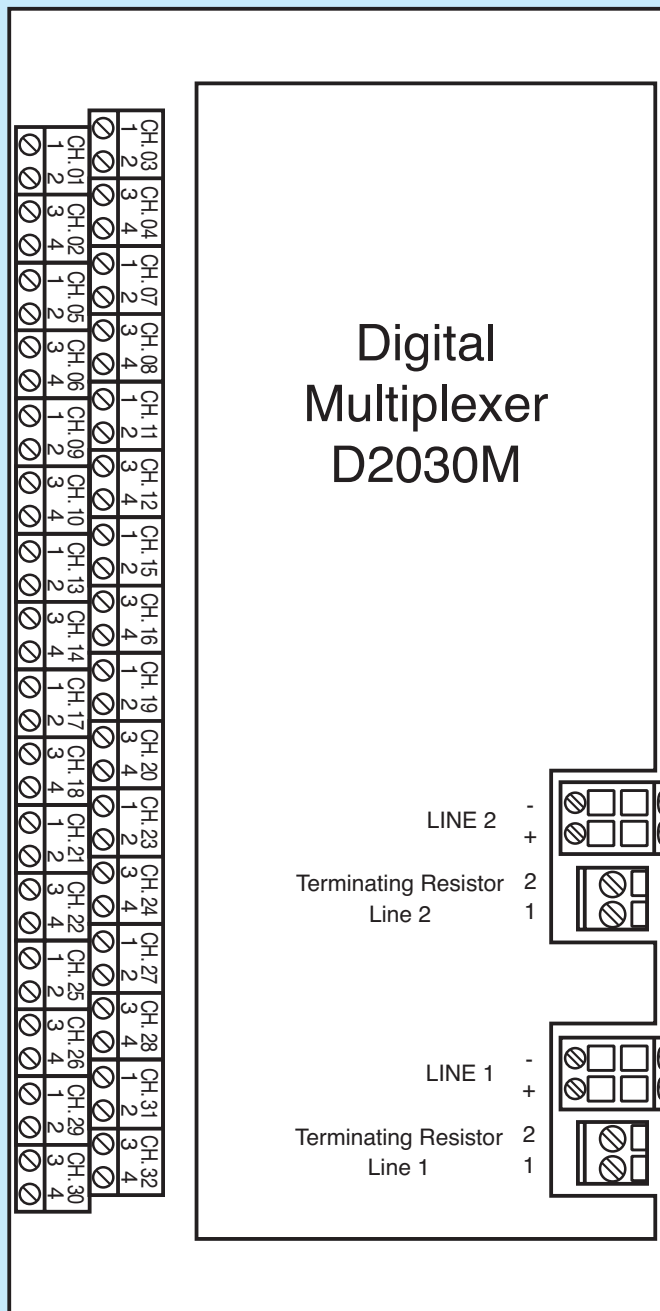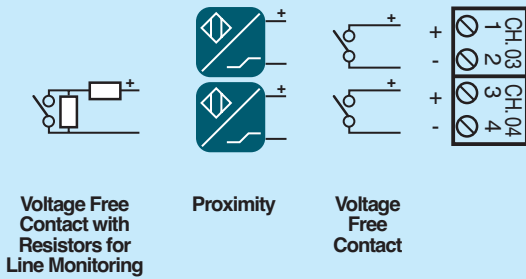
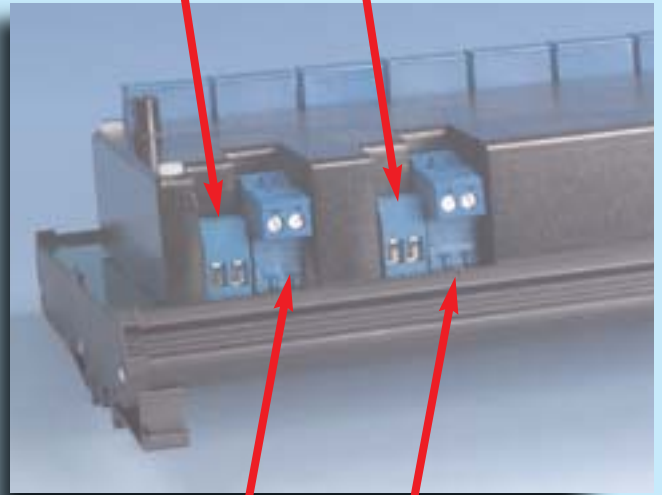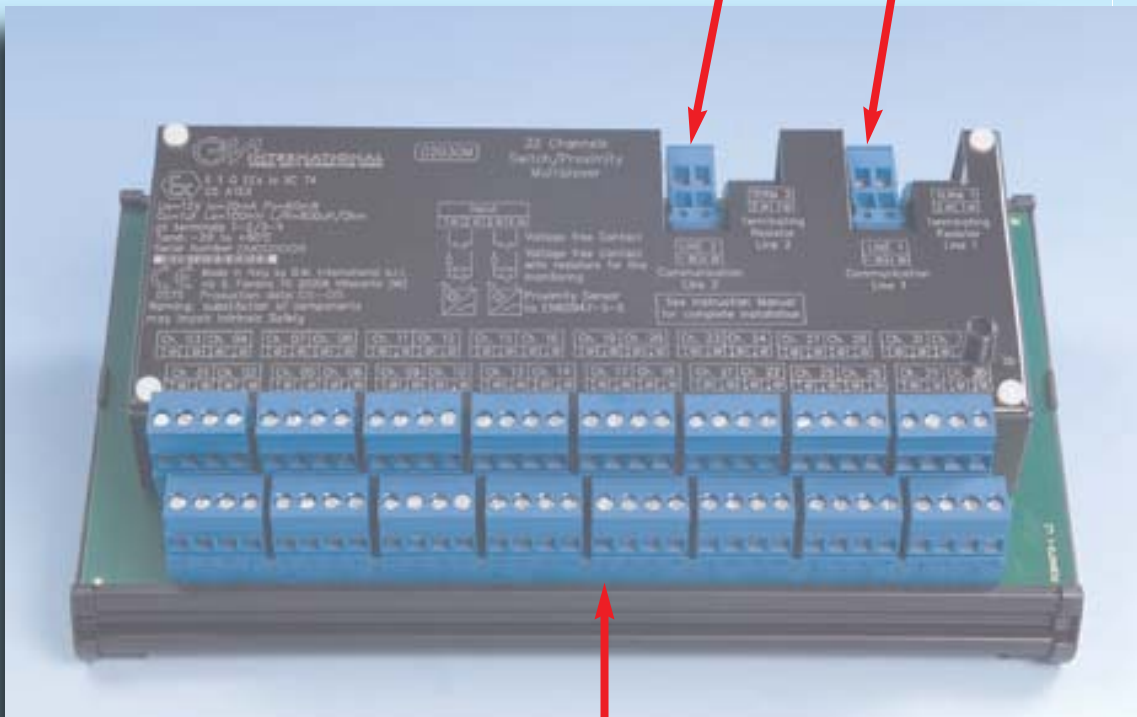| Safety Description	Maximum External Parameters	
	Group Cenelec	Co/Ca (μF)
Uo/Voc = 9,6 V	IIC	
Io/Isc = 14 mA	II B	
Po/Po = 29 mW	II A	

NOTE for USA and Canada:

II C equal to Gas Groups A and B
II B equal to Gas Groups C, D, E, F and G.
II A equal to Gas Groups D, E, F and G.

Ordering Information:

Model: **D2030M**

32 channel

Voltage Free Contact with Resistors for Line Monitoring

Proximity

Voltage Free Contact

CH.03 1 2 3 4
CH.04

Digital
Multiplexer
D2030M

CH.01 1 2 3 4
CH.02
CH.05 1 2 3 4
CH.06
CH.09 1 2 3 4
CH.10
CH.13 1 2 3 4
CH.14
CH.17 1 2 3 4
CH.18
CH.21 1 2 3 4
CH.22
CH.25 1 2 3 4
CH.26
CH.29 1 2 3 4
CH.30

CH.03 1 2 3 4
CH.04
CH.07 1 2 3 4
CH.08
CH.11 1 2 3 4
CH.12
CH.15 1 2 3 4
CH.16
CH.19 1 2 3 4
CH.20
CH.23 1 2 3 4
CH.24
CH.27 1 2 3 4
CH.28
CH.31 1 2 3 4
CH.32

LINE 2   -
          +

Terminating Resistor   2
Line 2   1

LINE 1   -
          +

Terminating Resistor   2
Line 1   1

Lines Termination Resistor Terminal Blocks

Communication Lines double Terminal Block
Plug-in type

32 channels Input Terminal Blocks plug-in type