DTS0580-1

D2000M MULTIPLEXER

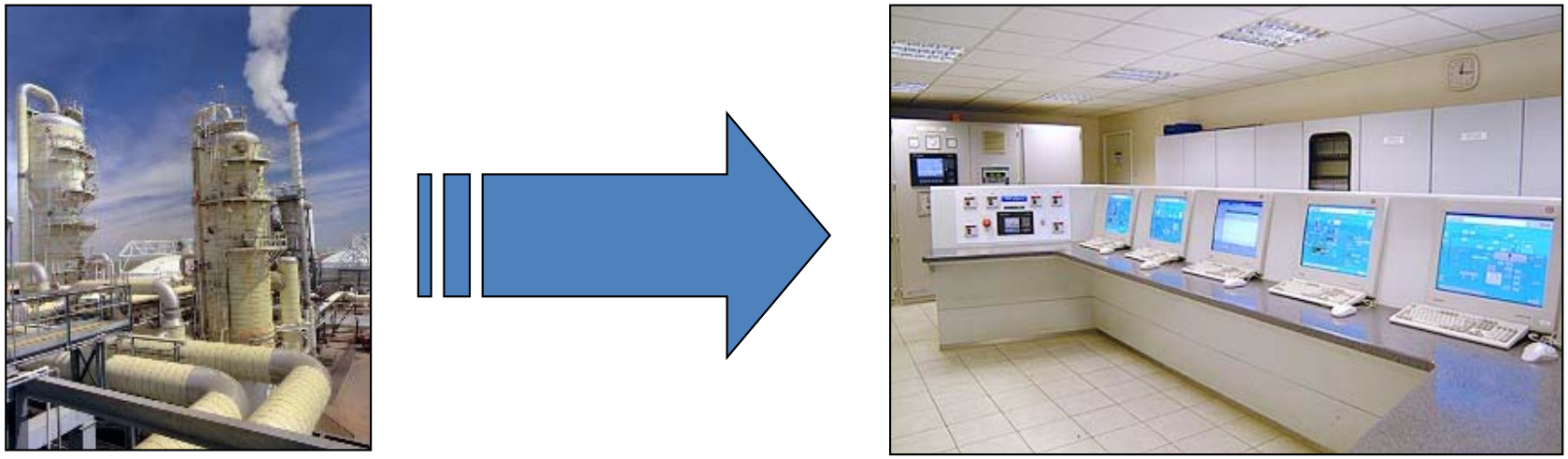
GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

Table of content

Industrial Applications

It is a need, in industrial processes, to acquire a relevant number of **input signals** and process variables and to collect them in a single remote collection area, for example, a **control room**.



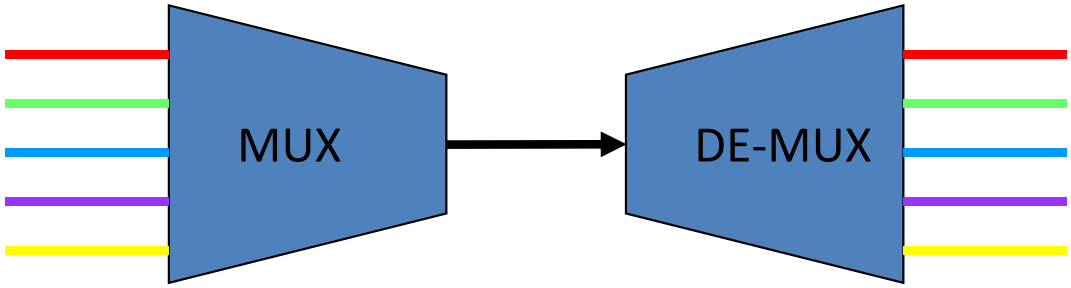
Signal Acquisition

Signal Inputs may be:

- **Analog:**
  - Thermocouples, Thermoresistances, RTDs, Voltage, Current
- **Digital:**
  - Voltage free contacts, Proximity Switches

The Multiplexing Technique 1/2

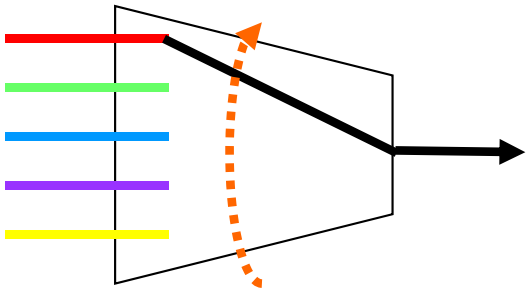
Multiplexing (also **MUXing**) is a term used in electrical engineering to refer to a process where multiple sources of information are combined together in order to ease the organization, conversion and transportation of their data from one place to another.



The Multiplexing Technique 2/2

An **Multiplexer** system used for Signal Acquisition:

1. Consists of a Master Gateway and multiple Slave Units
2. Cyclically scans each input channel connected to the slave units that reside in the field, close to the sources;
3. Transmits collected data to the Gateway via a single (redundant) line.
4. Stores this data in a memory buffer.
5. Communicates with other entities, like PLCs, DCS, outputting the content of the buffer.

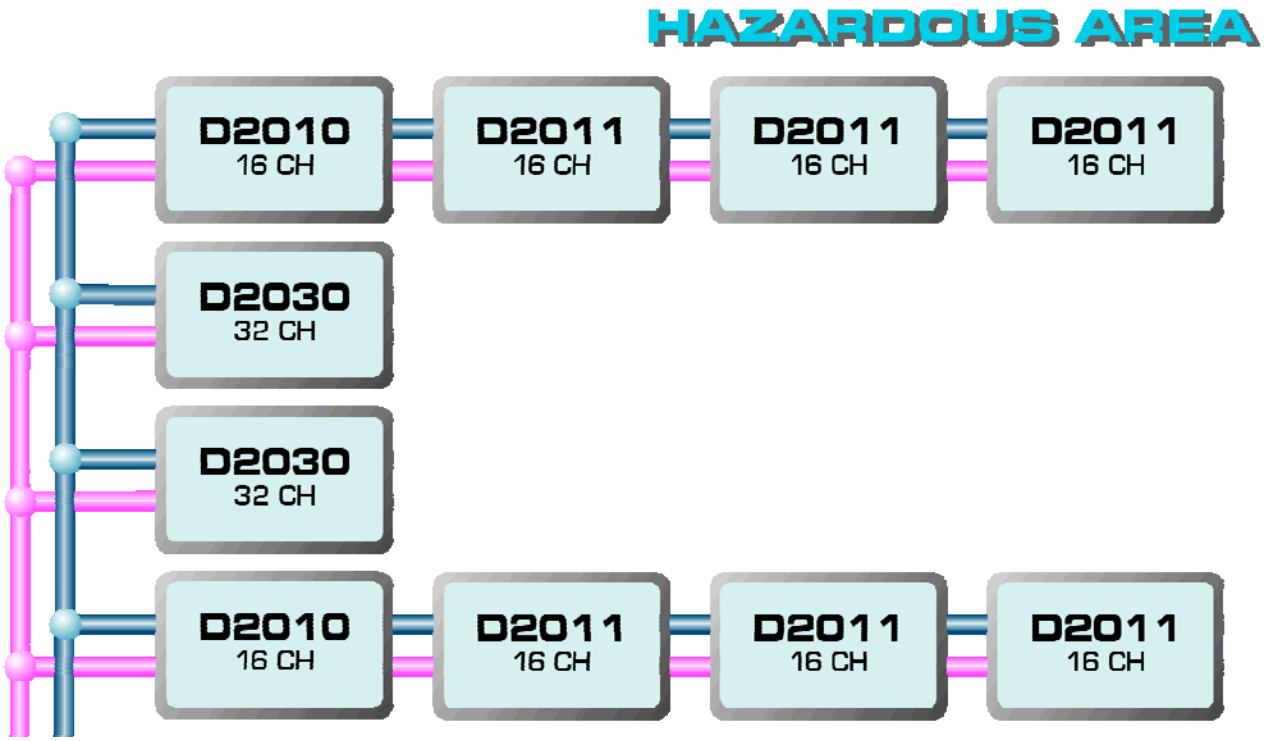


Time Division Multiplexing
consists of scanning all available channels one at a time at high speeds.

Multiplexing in Hazardous Areas

Slave units acquire Analog and Digital input signals.

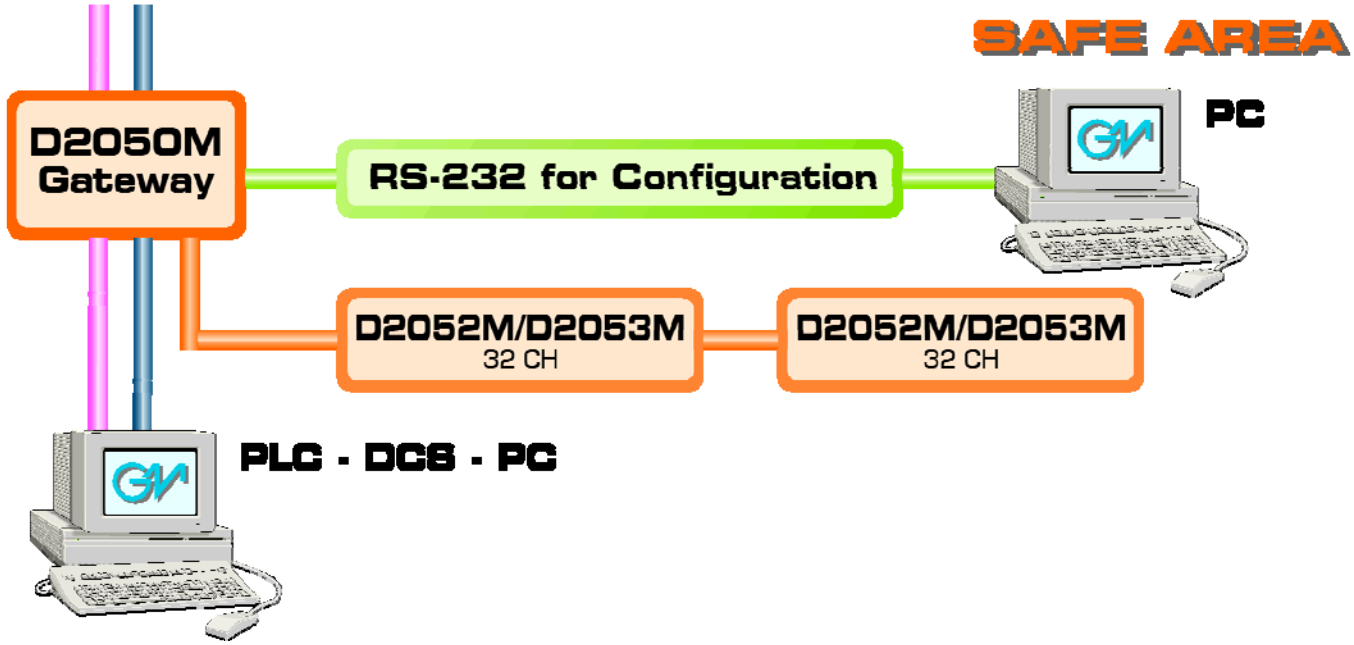
These units are suitable and certified for installation in **Zone 1, 2** without requiring any other certification and accept inputs from **Zone 0, 1, 2**



Collecting Data in Safe Area

The **Gateway**, located in **Safe Area**, collects data from the Slaves and makes it available to entities like Personal Computers, PLC, DCS, via **RS-232**, **RS-485 Modbus** communication lines.

Digital inputs can be mirrored in Safe Area with a Transistor or Relay output.

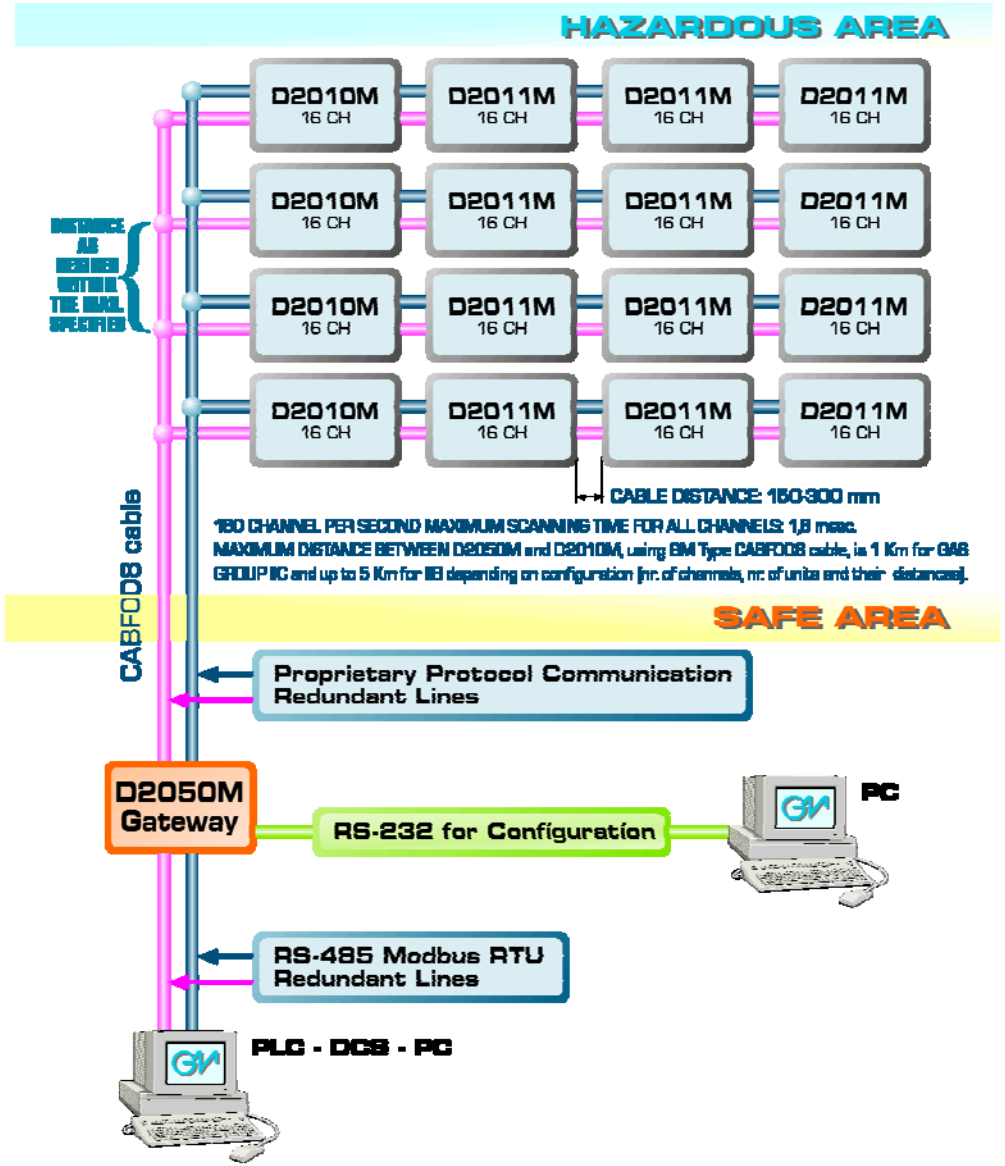


GM International D2000M Series

- High density, up to 256 Analog Inputs and up to 128 Digital Inputs in the same system (expandable up to 7936 inputs adding more Gateways)

- Input sensors: 2-3-4 wire RTD, Pt100, Pt50, Ni100, Cu100, Cu53, Cu50, Cu46, Thermocouples A1, A2, A3, B, E, J, K, L, Lr, N, R, S, T, U.

- Robust Isolation (+- 200V channel to channel), provides high immunity against interference and ground loops

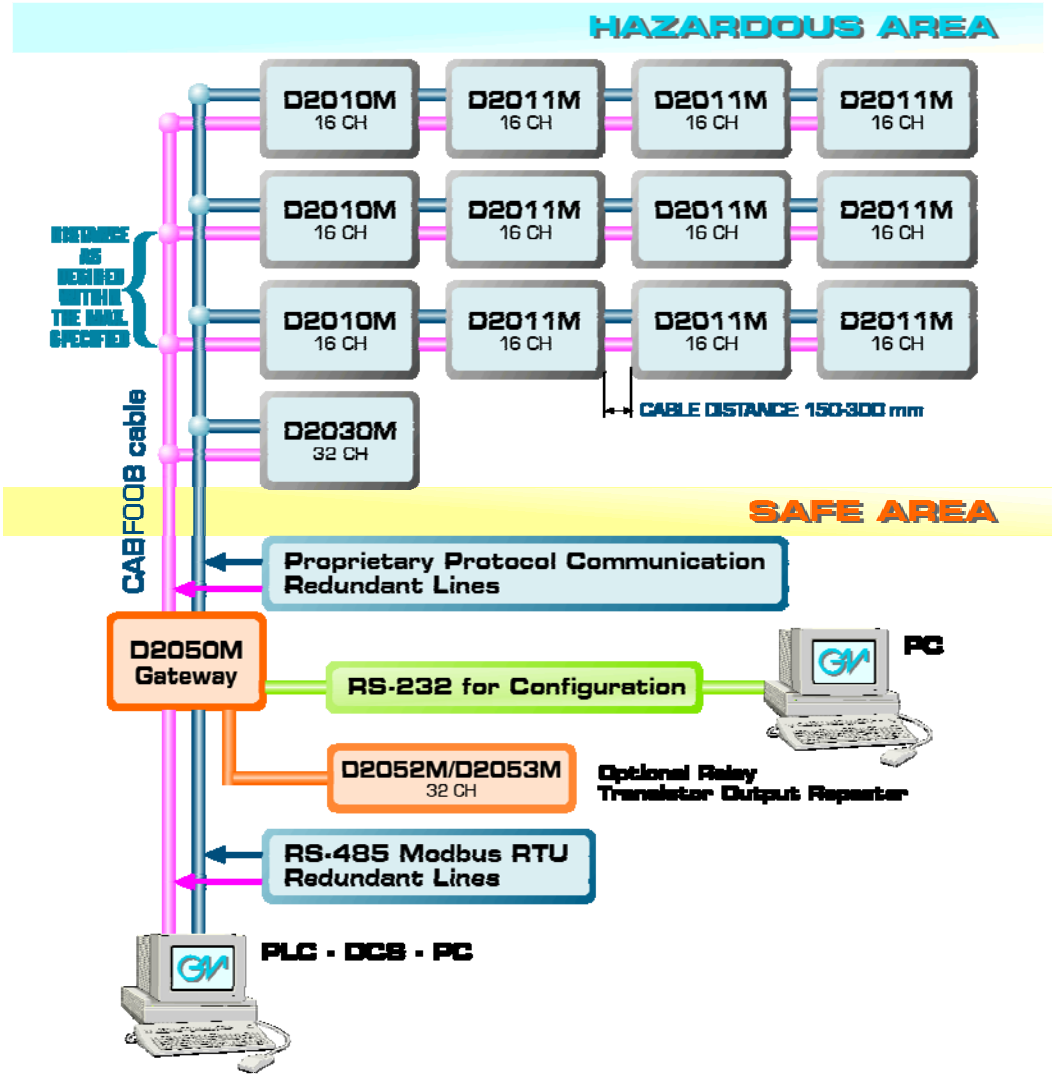


TECHNOLOGY FOR SAFETY

GM INTERNATIONAL TECHNOLOGY FOR SAFETY

GM International D2000M Series

- Intrinsically Safe for installation in Zone 1, 2
- Inputs from Zone 0, 1, 2
- Field Units can be placed up to 5 km from Gateway
- High Accuracy 18bit A/D converter
- Redundant communication lines
- Programmable via PC (RS232) and Modbus (RS485)

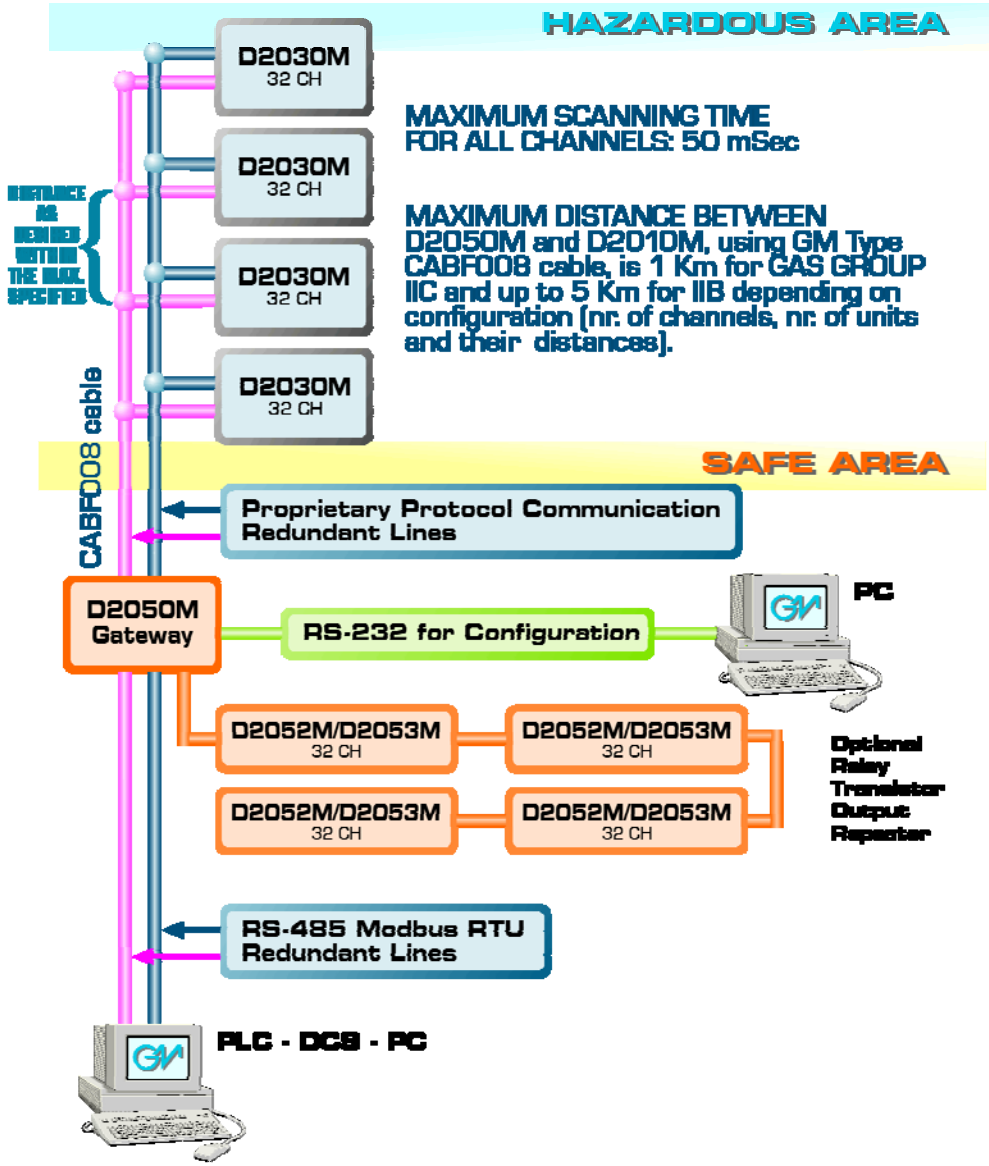


GM INTERNATIONAL TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

GM International D2000M Series

- Intrinsically Safe for installation in Zone 1, 2
- Reduces field wiring and installation costs
- Eliminates the need of expensive PLC - DCS I/O cards
- Field Unit operatiing temperature: -40 to +60°C

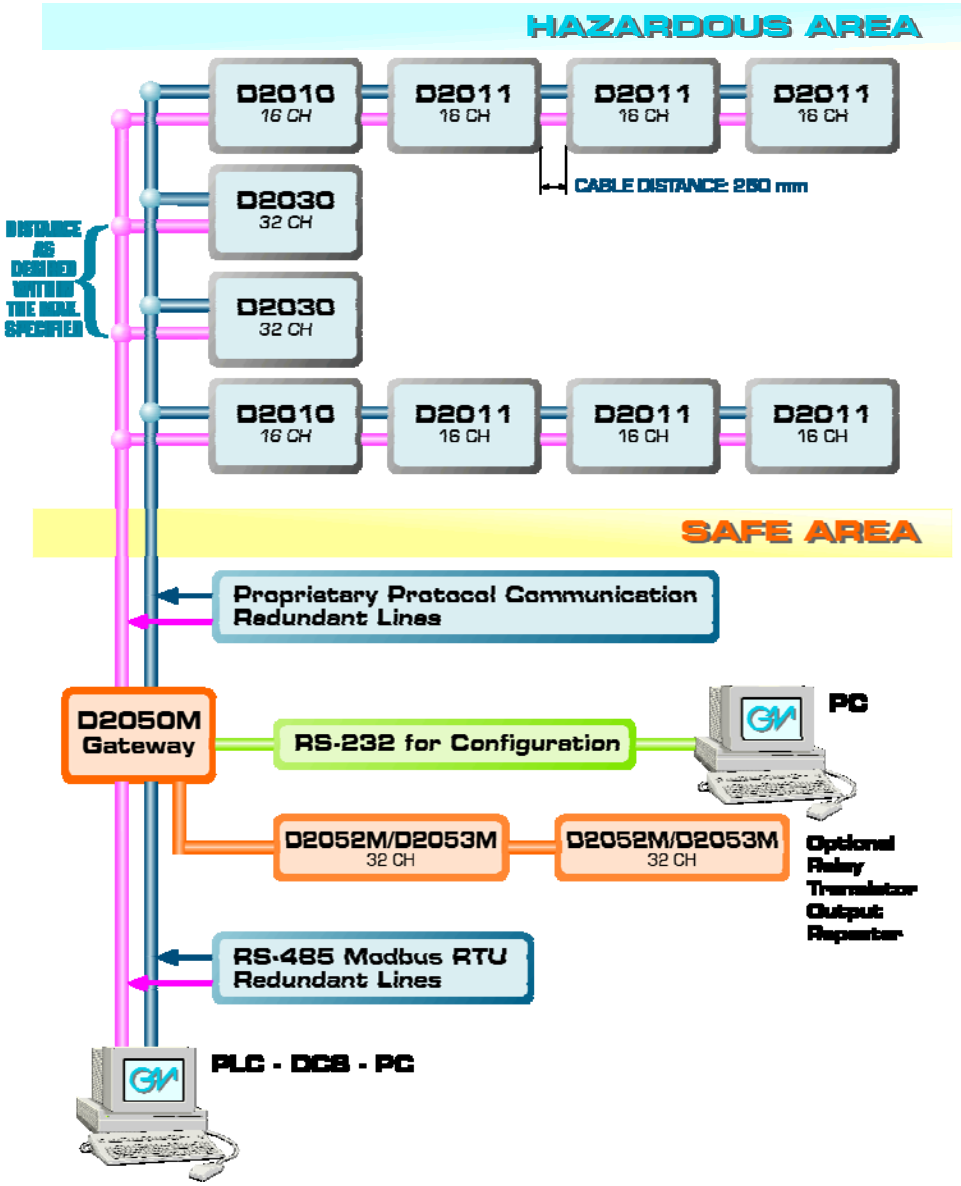


TECHNOLOGY FOR SAFETY

GM INTERNATIONAL TECHNOLOGY FOR SAFETY

Model: D2010M

- Repeats input contacts via Relays (D2052M) or Transistor Outputs (D2053M)
- Gateway D2050M can be installed in Zone 1 / Div. 1 by using an explosion proof enclosure
- AISI 316 stainless steel enclosures are available for field units (Series GM2300)



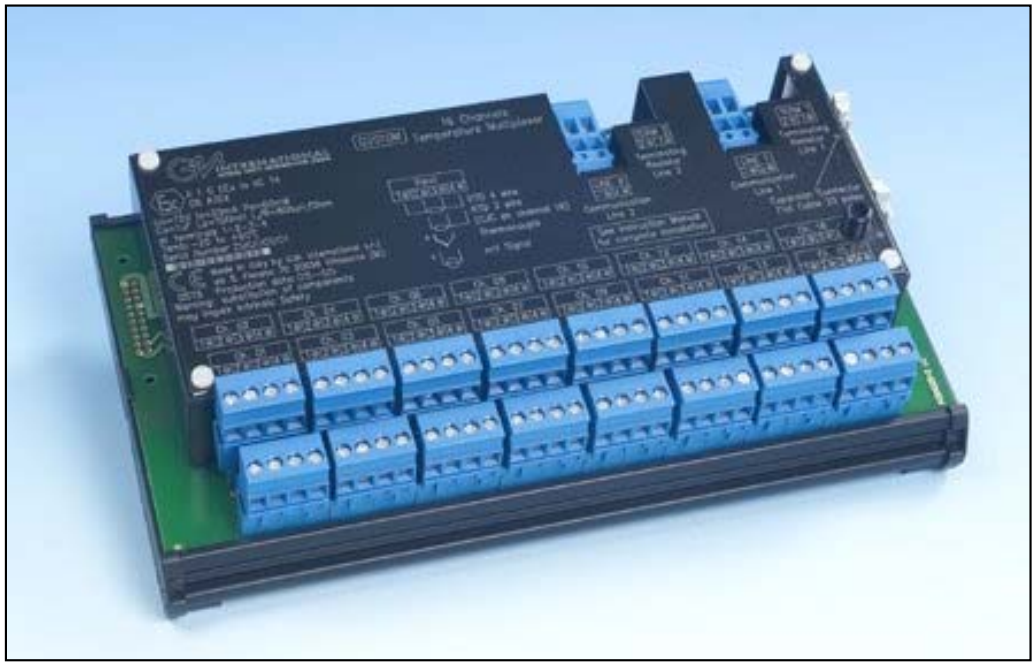
TECHNOLOGY FOR SAFETY

GM INTERNATIONAL TECHNOLOGY FOR SAFETY

Model: D2010M

Analog Input Module:

- 16 Input Channels
- Input Sensors: 2-3-4 wire RTD, Pt100, Pt50, Ni100, Cu100, Cu53, Cu50, Cu46,
  Thermocouples
  A1, A2, A3, B, E, J, K,
  L, Lr, N, R, S, T, U.
- Up to 64 Channels
  using D2011M
- II 1 GD EEx ia IIC T4



GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

Model: D2011M

Analog Input Expander:

- 16 Input Channels
- Same Input Sensors as D2010M
- Expansion for D2010M Module
- II 1 GD EEx ia IIC T4

GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

Model: D2030M

Digital Input Module:

- 32 Input Channels
- Contact
- Proximity Switch
- II 1 GD EEx ia IIC T4

GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

Model: D2050M

Gateway:

- Up to 256 Input Channels
- Redundant Modbus Output
- Redundant In-Out Connections
- 24 Vdc Supply
- RS-232 PC Line for Configuration
- II (1) GD [EEx ia] IIC
- -20 to +40

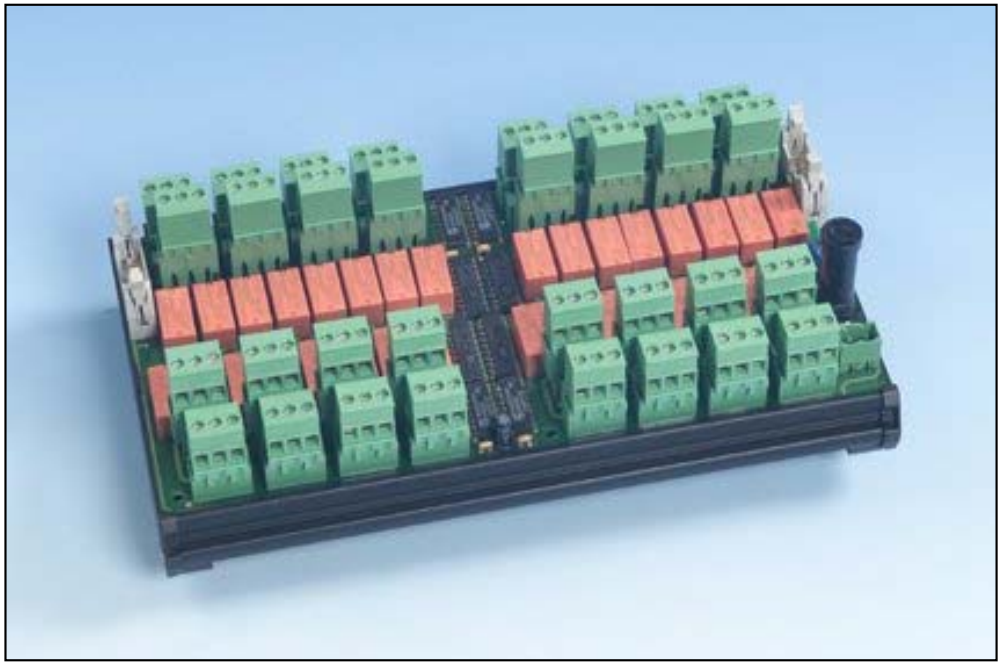
GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

Model: D2052M

Repeater:

- 32 Relay Contact Outputs
- Expandable to: 128 Channels

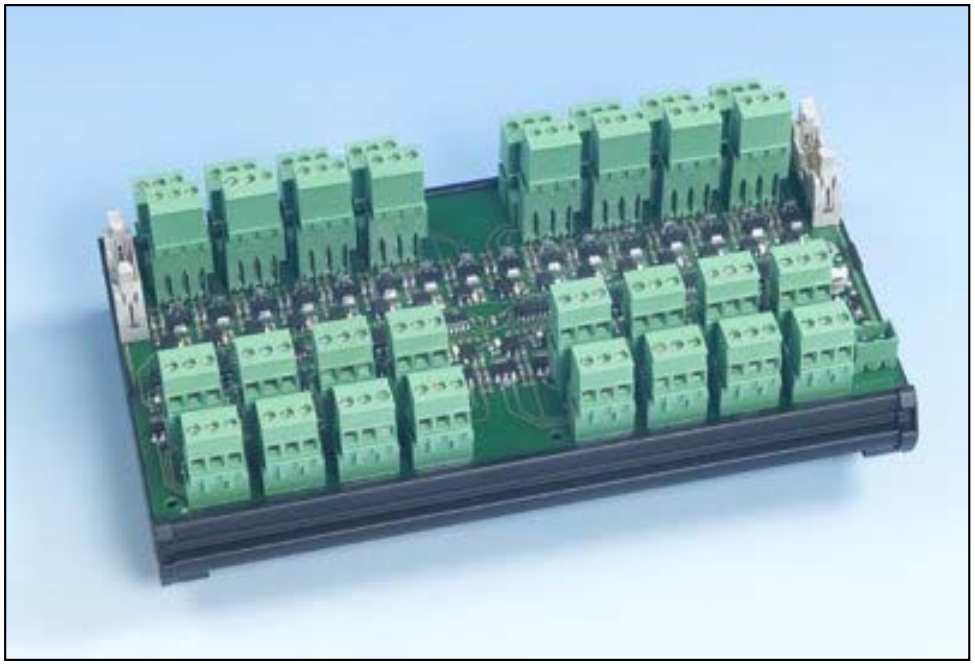


GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

Model: D2053M

Repeater:

- 32 Transistor Outputs
- Expandable to: 128 Channels



GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

GM 2300 Series Enclosures

Carbon Steel &

Stainless Steel 316 Boxes

for field installation of

D2000M Series Mux

GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

GM 2300 Series Enclosures

Model: GM2300

316 Stainless Steel Box

for Two D2010M/11M Units

or One D2030M Unit

GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

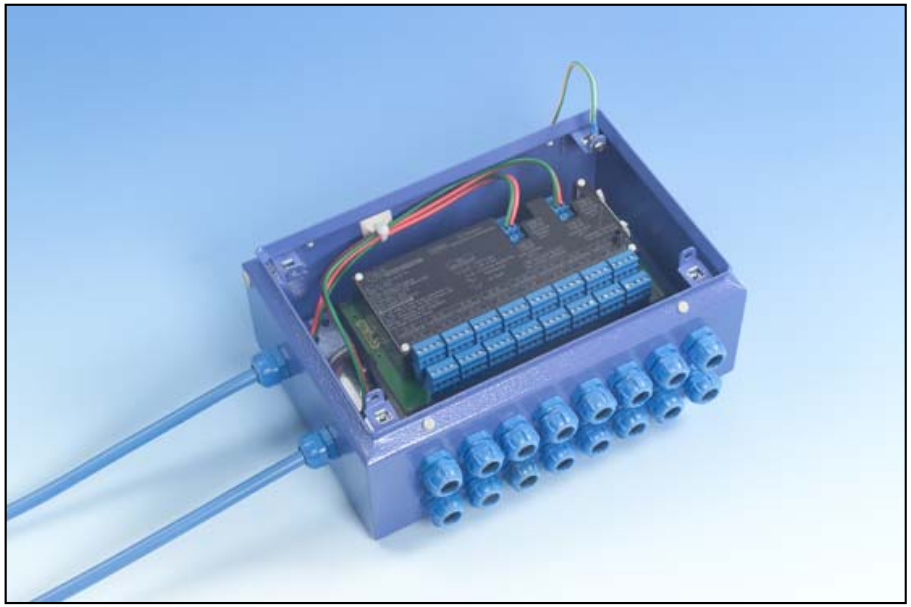
TECHNOLOGY FOR SAFETY

GM 2300 Series Enclosures

Model: GM2300

Carbon Steel Box

for One D2010 Unit



GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

TECHNOLOGY FOR SAFETY

G.M. International S.r.l.
Via San Fiorano, 70
20852 Villasanta (MB)
ITALY

www.gmintsrl.com
info@gmintsrl.com

TECHNOLOGY FOR SAFETY