



# Emerson DeltaV™ Product Solutions

# A safe working environment for present and future generations



## WE ARE WHERE YOU NEED THINK GLOBAL, ACT LOCAL

GM International offers localized pre- and post-sales support through its network of subsidiaries and partners.

Our sales network ensures fast response wherever you are.

Visit our website [www.gminternational.com](http://www.gminternational.com) to find the GMI office or Official Partner near you and take advantage of the GMI global sales network.

## OVER 40 YEARS IN INTRINSIC SAFETY AND INDUSTRIAL ELECTRONICS

GM International designs, engineers and manufactures a complete range of Intrinsically Safe and SIL 3 certified devices that meet the stringest quality requirements, ensuring the highest production standards in Intrinsically Safe applications.

The Company was founded in 1993, but the core Management experience remarkably exceeds over 40 years of qualified activity in hazardous locations and industrial electronics. GM International products interface all wiring between safe and hazardous areas and represent a fundamental, yet often underestimated, layer of the instrumentation package. Intrinsically Safe isolators provide energy limitation to protect from risks of explosion while providing the highest grade of availability to guarantee both continuous operation and effectiveness of the safety layer.

GM International's products are used in automation packages such as DCS - ESD - FGS - BMS - HIPPS - PLC - SCADA, in several industrial sectors: Oil & Gas, Petrochemical, Pharmaceutical, Fertilizer, Mining, Food & Beverages, Marine. GM International's products have been successfully installed in plants all over the world, including Europe, Russia, North America, Middle and Far East and China.



- 10** • direct subsidiaries
- 75** • local authorized distributors
- 200** • total Staff
- 20** • FSE/EX/Cyber Security courses per year
- 1000s** • of installations in all continents



**PESO**



## CERTIFIED PRODUCTS

GM International products have been granted I.S. certificates from the most credited Notified Bodies in the world. Certificates are available for ATEX (Europe), IECEX (International), UL/FM (USA and Canada), EAC-EX (Russia CTU and Ukraine), NEPSI (China), PESO (India), TIIS (Japan), INMETRO (Brazil). All certificates are available for download from our website.

GM International offers a wide range of products that have been proved to comply with the most severe quality and safety requirements. IEC61508 and IEC61511 standards represent a milestone in the progress of industry in the achievement of highest levels of safety through the entire instrumented system lifecycle. The majority of our products are SIL certified as well as our design, manufacturing and administrative facilities (FSM); reports and certificates from TÜV are also available for download.

GM International has obtained SIL 3 Functional Safety Management approval by TÜV according to IEC 61508:2010 standard.



# DeltaV™ Alliance Products

## Power Supplies



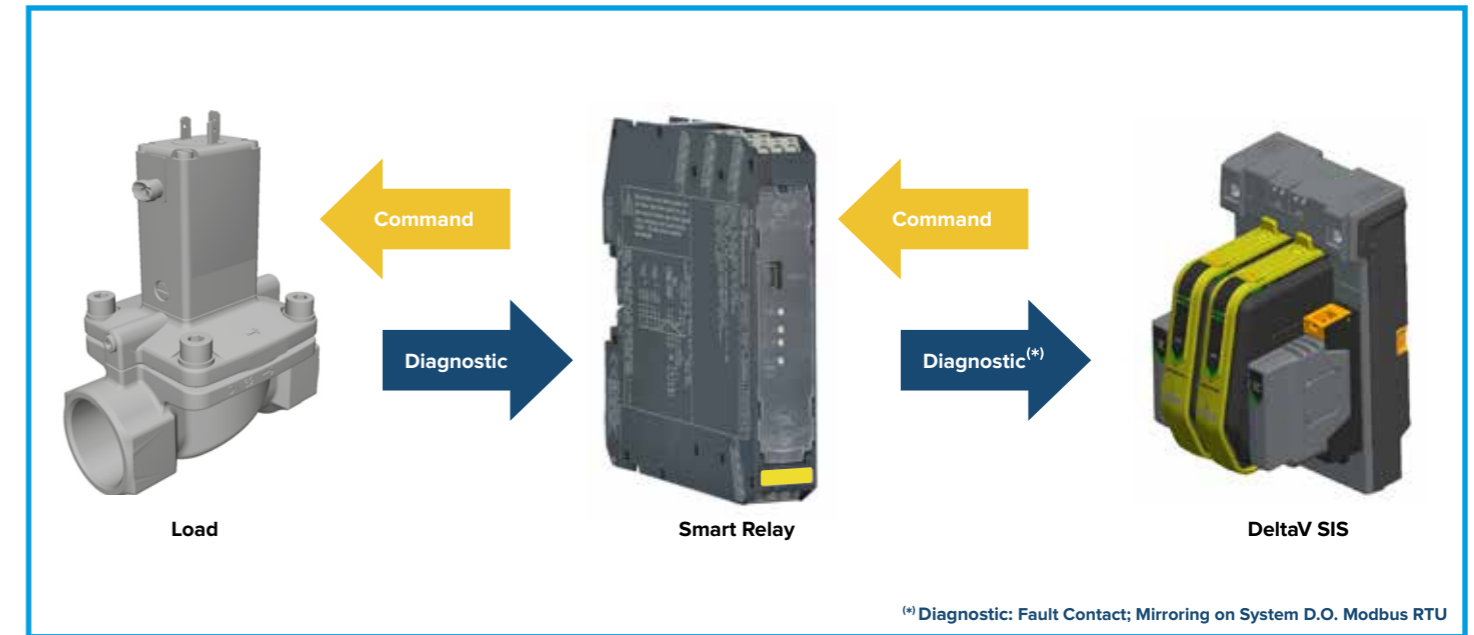
## Safety Systems & DCS



## Safety interfaces



## Emerson DeltaV-SIS, Solenoid Valve



### STRENGTHS

- **Universal Solution:**  
Extension of the limit of the DeltaV SIS DO card for compliance to any load and conditions.
- **Improved Diagnostic Level:**  
Indication of any kind of fault: Open/Short Circuit, Power Supply Fault, Ground Leakage, Load Resistance Variations, Relay Failure
- **Higher Availability & Fault Tolerance:**  
Prevention of spurious trip and higher availability for a more resilient solution preventing down-time.
- **Highest SIS Requirement:**  
SIL3 Certification with Lifetime of 20 years.
- **Transparent Fault Detection:**  
Mirroring to DeltaV SIS Digital Output card through its standard diagnostic.
- **Cost Reduction:**  
Eliminating the need to use additional DI cards; reducing hardware, wiring and simplifying engineering.
- **Flexible Solution:**  
Reducing project custom engineering given the ability to handle all type of loads and conditions.
- **Modbus Interface:**  
Monitoring of the load and fault conditions for improved troubleshooting and continuous data acquisition.
- **Unipolar or Bipolar Load:**  
Lower costs or improved operator safety depending on installation specification.
- **Proven Track Record:**  
Guaranteed interoperability and safety thanks to certifications, tests and references.

# SIL2/SIL3 Safety relays

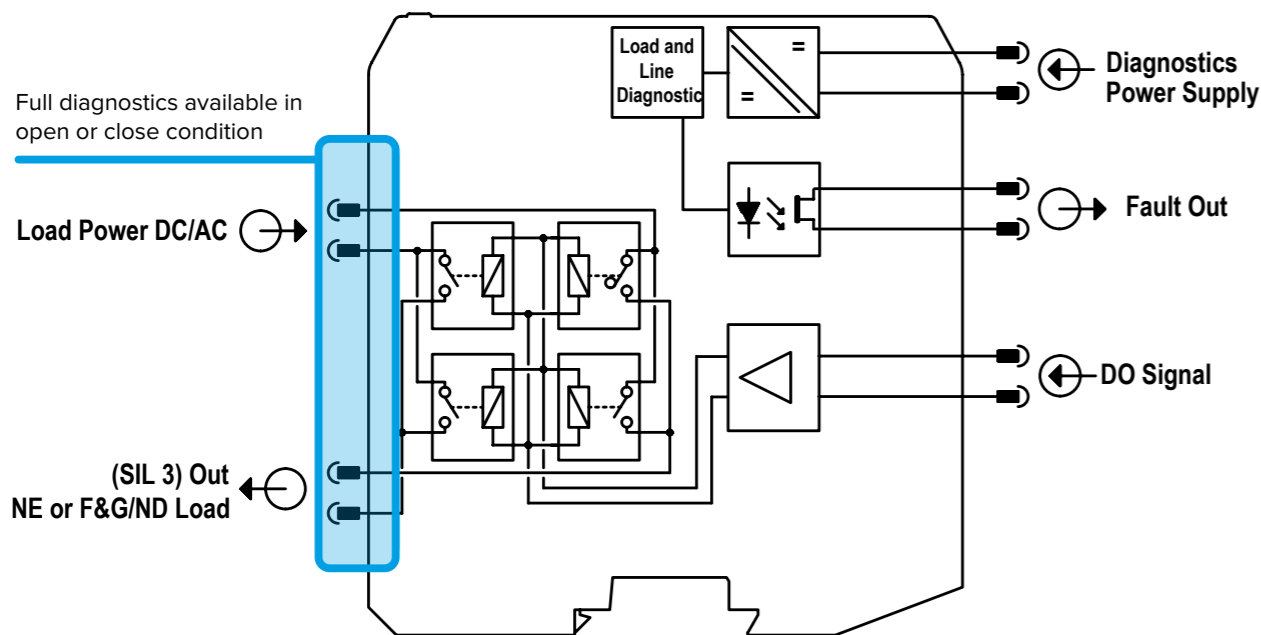
SIL certified relays are used for critical loops where careful consideration should be given to line and load monitoring. In a de-energize to safety application, a wire/coil failure leads to a safe state. In an energize to safety application, line failures lead to a dangerous state. In both cases failure detection is essential. GM International relays perform diagnostics of the load, wire, power supply and internal coils in all operating conditions, providing an independent alarm contact as well as transparently transferring the fault indication to compatible DO cards.

### STRENGTHS

- High density: 12,5/22,5 mm per channel
- SIL2 / SIL3 TÜV certified
- Compatible with DO card line monitoring pulses
- Smart line/load monitoring with transparent fault indication (no additional contacts)
- Extended T-proof time: 10/20 years
- Universal mounting: DIN rail and termination boards
- Certified operating temperature -40° to + 70° C
- Totally independent double channel modules
- 5 / 10 A Contact, NE / ND applications
- G3 conformal coating
- Gold-plated relay contacts



## Line & Load Monitoring



# Intrinsically safe isolators

Intrinsically Safe Galvanic Isolators provide the most simple and cost effective means of implementing intrinsic safety into hazardous area applications. D5000 Series uses state-of-the-art solutions to achieve the highest performance for intrinsically safe applications. Guaranteed by over 15 certification bodies worldwide.

### STRENGTHS

- High density: 6 mm per channel
- Low power consumption
- Low heat dissipation
- Certified operating temperature -40° to + 70° C
- 2.5 KV isolation
- SIL2 / SIL3 TÜV certified
- IEC 61508:2010, Ed.2 certified
- G3 conformal coating
- 20 years certified lifetime
- Universal mounting: DIN rail, power bus system and termination boards
- Dual power supply
- Easier troubleshooting via status led indication



Operating temperature certified from -40°C to +70°C



### WIDE FUNCTIONALITY

- Three port galvanic isolation to eliminate noise, ground loop problems providing intrinsic safety without a high integrity safety earth connection
- Optional power bus DIN rail connector
- Standard termination board with custom connectors for integration into customized boards
- EMC compatibility to EN61000-6-2, EN61000-6-4, EN61326-1, EN61326-3-1 for safety system
- Wide range DC power supply (18-30 Vdc)



### LONGER LIFETIME

- Capability to withstand higher temperatures improves the lifetime in normal conditions.
- Very high reliability in extreme environment applications
- Reduced cabinet dimensions require less ventilation

# MSA Agreement

## Emerson - GMI Partnership



# DeltaV™ Alliance Product Program

## GM International Alliance Product List

### SAFETY RELAYS

Product Part Number	Product Description
D5293S	5 A SIL 3 RELAY OUT MODULE FOR NE LOAD WITH LOAD AND LINE DIAGNOSTIC
D5294S	5 A SIL 3 NO CONTACT RELAY OUT MODULE FOR NE OR F&G/ND LOAD WITH OPEN/SHORT CIRCUIT DIAGNOSTIC
D5096S	5 A SIL 3 NO CONTACT RELAY OUT MODULE FOR NE OR F&G/ND LOAD WITH OPEN/SHORT CIRCUIT DIAGNOSTIC
D5094S	5 A SIL 3 NO CONTACT RELAY OUT MODULE FOR NE OR F&G/ND LOAD
D5098S	5 A SIL 3 RELAY OUTPUT MODULE FOR NE LOAD
D5090S	5 A SIL 3 RELAY OUTPUT MODULE FOR NE LOAD
D5091S	5 A SIL 3 RELAY OUTPUT MODULE FOR ND LOAD WITH ND OR NE RELAY CONDITION

### I.S ISOLATORS

Product Part Number	Product Description
D5040S	SIL 3 DIGITAL OUTPUT DRIVER, NE LOADS, LOOP POWERED
D1061S	SINGLE CHANNEL RS 422 / RS 485 ISOLATING REPEATER
D5014S	I.S. SIL 3 HART TRANSMITTER POWER SUPPLY
D5015SK	I.S. SIL 2 HART TRANSMITTER POWER SUPPLY
D5031S	SIL 3 SWITCH / PROXIMITY DETECTOR REPEATER
D5038SA	I.S. SIL 3 LINE-FAULT TRANSPARENT SWITCH PROXIMITY REPEATER
D5039SA	I.S. SIL2 Line-Fault Transparent Switch/Proximity Repeater
D5037S	SIL 2 Switch/Proximity Detector Repeater Transistor Out
D5040S	SIL 3 Digital Output Driver, NE Loads, Loop Powered
D5048S	SIL 3 Digital Output Driver, NE Loads, Loop Powered
D5049S	SIL 3 Digital Output Driver, NE Loads Bus Powered

### POWER SUPPLIES

Product Part Number	Product Description
PSD1220	SIL3 POWER SUPPLY PSD1220, 24VDC, 20 A, ZONE 2
PSW1250	SIL3 POWER SUPPLY, 24VDC, 50 A, ZONE 2 / DIV. 2
PSS1250-HS-7-1-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2 Hot Swap; 150+150 A; SIL 3
PSS1250-HS-7-2-D	19" Rack for N° 6 PSM1250+N° 1 PSO1250 Module; Zone 2 Hot Swap; 100+100 & 50+50 A; SIL 3
PSS1250-HS-7-3-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2 Hot Swap; N° 3 x 50+50 A; SIL 3
PSS1250-HS-7-4-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2 Hot Swap; N° 2 x 100+50 A; SIL 3
PSS1250-7-1-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2; 150+150 A; SIL 3
PSS1250-7-2-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2; 100+100 & 50+50 A; SIL3
PSS1250-7-3-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2; N° 3 x 50+50 A; SIL 3
PSS1250-7-4-D	19" Rack for N° 6 PSM1250 + N° 1 PSO1250 Module; Zone 2; N° 2 x 100+50 A; SIL 3
PSS1250-HS-3-D	9" Rack for N° 2 PSM1250 + N° 1 PSO1250 Module; Zone 2 Hot Swap; 50+50 A; SIL 3
PSS1250-3-D	9" Rack for N° 2 PSM1250 + N° 1 PSO1250 Module; Zone 2; 50+50 A; SIL 3
PSS1250-HS-2	7" Rack for N° 2 PSM1250; Zone 2 Hot Swap; 50+50 A; SIL 3
PSS1250-2	7" Rack for N° 2 PSM1250; Zone 2; 50+50 A; SIL 3

# INTRINSICALLY SAFE PRODUCTS AND SIL DEVICES

From the latest intrinsically safe interface, to safety relays for high integrity applications, to enhances power supply units with high availability, GM International products represent the most advanced solution for today's critical applications.

Our products are certified up to SIL 3 and offer the highest levels of functional safety and availability for any application..

## Intrinsically Safe Isolators

OUR  
TECHNOLOGY



### D5000 SERIES

- Slim 12,5 mm modules in single, dual or multi-channel configuration
- Certified for operation in -40 to +70 C° temperature range
- Low power consumption and heat dissipation
- Universal Mounting: DIN rail, power bus and termination board
- 2500 V isolation
- Marine type approval
- G3 coating
- Certified for 20 years of operation according to IEC 61508:2010 (ed.2)
- Suitable for Zone/Division 2 installation
- Remote monitoring feature via RS-485 Modbus



### D1000 SERIES

- High Density with up to 4 channels in 22.5 mm enclosure
- Certified for operation in -40 to +60 C° temperature range
- Standard TS35 mm DIN-Rail and power bus mounting
- Easy accessible plug-in enclosure
- 1500 V Isolation
- Marine type approval
- G3 coating
- Certified for 10 years of operation according to IEC 61508:2010 (ed.2)
- Suitable for Zone/Division 2 installation





## Safety relays



### SMART RELAYS

- Smart units with transparent line and load monitoring feature for both NE and ND applications
- Suitable for operation in -40 to +70 C° temperature range
- High availability and extended T-Proof intervals
- Universal Mounting: DIN rail, power bus and termination board
- Third party SIL 3 certified according to IEC 61508:2010 (ed.2)
- LED indication for power, signal status and line fault condition
- Marine type approval
- G3 coating
- Suitable for Zone/Division 2 installation
- Remote monitoring feature via RS-485 Modbus



## Galvanic Isolators



### D6000 SERIES

- Slim 12,5 mm modules in single, dual or multi-channel configuration
- Certified for operation in -40 to +70 C° temperature range
- DIP switches / Software configurability for easy set-up
- Universal Mounting: DIN rail, power bus and termination board
- Third party SIL 3 certified according to IEC 61508:2010 (ed.2)
- LED Indication for power, signal status and line fault condition
- 2500 V isolation
- Marine type approval
- G3 coating
- Remote monitoring feature via RS-485 Modbus



## SIL 3 / Ex Surge Protectors



### D9000 SERIES

- Slim 6,2 mm enclosure with or without removable plug module
- SIL 3 certified according to IEC 61508:2010 (ed.2)
- Ex applications: input from Zone 0 (Zone 20)
- EX certified for installation up to Zone 1
- Local and remote fault condition indication
- HART signal compatible
- Disconnection of signal circuit by knife or screw



## SIL 2 / SIL 3 Power supplies



### PSX1200 SERIES

- Third party SIL 3 certified according to IEC 61508:2010 (ed.2)
- Certified for Zone/Division 2 installation
- Hot-swappable module for rack version
- Suitable for operation in -40 to +70 C° temperature range
- Guaranteed availability with over and under output voltage protection
- Certified up to SIL 3 by third party, according to IEC 61508:2010 (ed.2)
- Remote monitoring feature via RS-485 Modbus and remote/local fault indication
- G3 coating



## SIL 3 HART Interface solution



### HART MULTIPLEXER SYSTEM

- Innovative space and cost saving solution with up to 256 channels per module
- Overall architecture suitable for up to 16128 channels
- Termination boards available for any application
- SIL 3 certified according to IEC 61508:2010 (ed.2)
- Optimal communication performance with 115200 bps baud rate
- Certified for Zone/Division 2 installation
- Suitable for operation in -40 to +70 C° temperature range



## Temperature/Digital I.S. Multiplexer



### D2000 SERIES

- Proven solution to drastically reduce field wiring and installation costs
- Up to 256 channels per module and 7936 channels per system
- Up to 5 Km from field units to control room
- Redundant field and control room communication lines
- Optimal communication performance with 115200 bps baud rate
- Certified for Zone/Division 1 installation without the need of EX-e or Ex-d enclosures
- Suitable for operation in -40 to +60 C° temperature range



## Custom & universal termination boards



Customized or standard, with customizable connection cable

### TERMINATION BOARDS

- Suitable for SIL 3 applications
- High density and compact design with up to 64 channels per TB
- Single, dual and redundant connection solutions available
- Custom versions available for most DCS, ESD and PLC systems
- Universal installation of AI, AO, DI, DO, for IS or NIS modules
- Redundant power supply with local and remote alarm indication
- HART Compatible and suitable for connection to HART Multiplexer
- Optional G3 coating



## Software and configuration tools



Configuration software for all products can be downloaded from our website free of charge; several on-line and off-line application tools are also available for downloading or upon request.

For more information: [www.gminternational.com](http://www.gminternational.com)

