



Schneider Electric Solutions

A safe working environment for present and future



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onment e generations



gmi
technology for safety

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 stringent 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.

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 to find the GMI office or Official Partner near you and take advantage of the GMI global sales network.



9 • direct subsidiaries

75 • local authorized distributors

200 • total Staff

20 • FSE/EX/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.

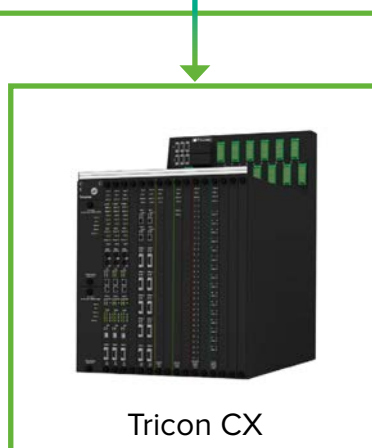
GM International has obtained SIL 3 Functional Safety Management approval by TÜV according to IEC 61508:2010 standard.

GMI Solutions

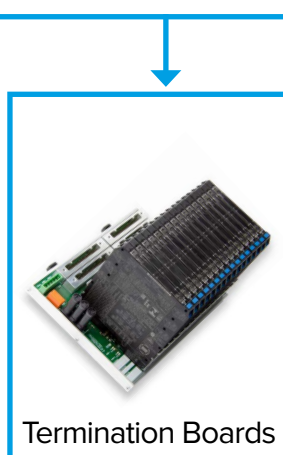
Power Supplies



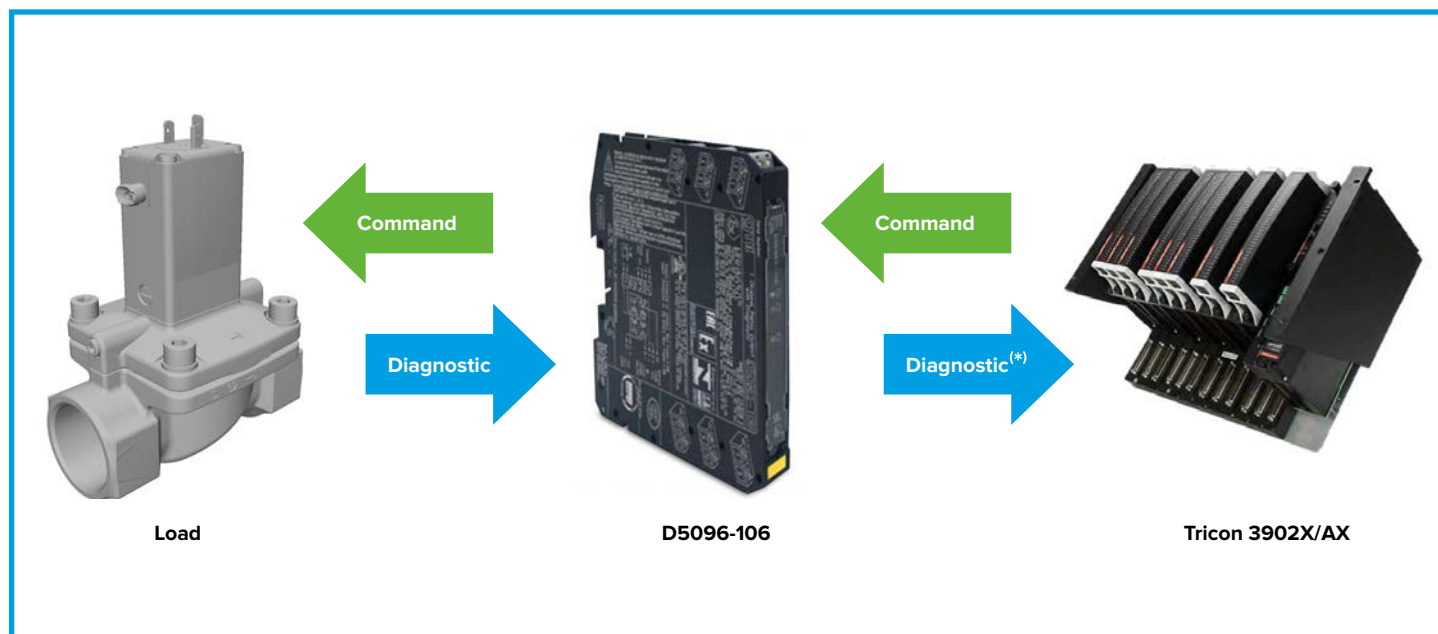
Safety Systems & DCS



System interfaces



Safety Relay for Tricon 3902X/AX



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 Tricon CX 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

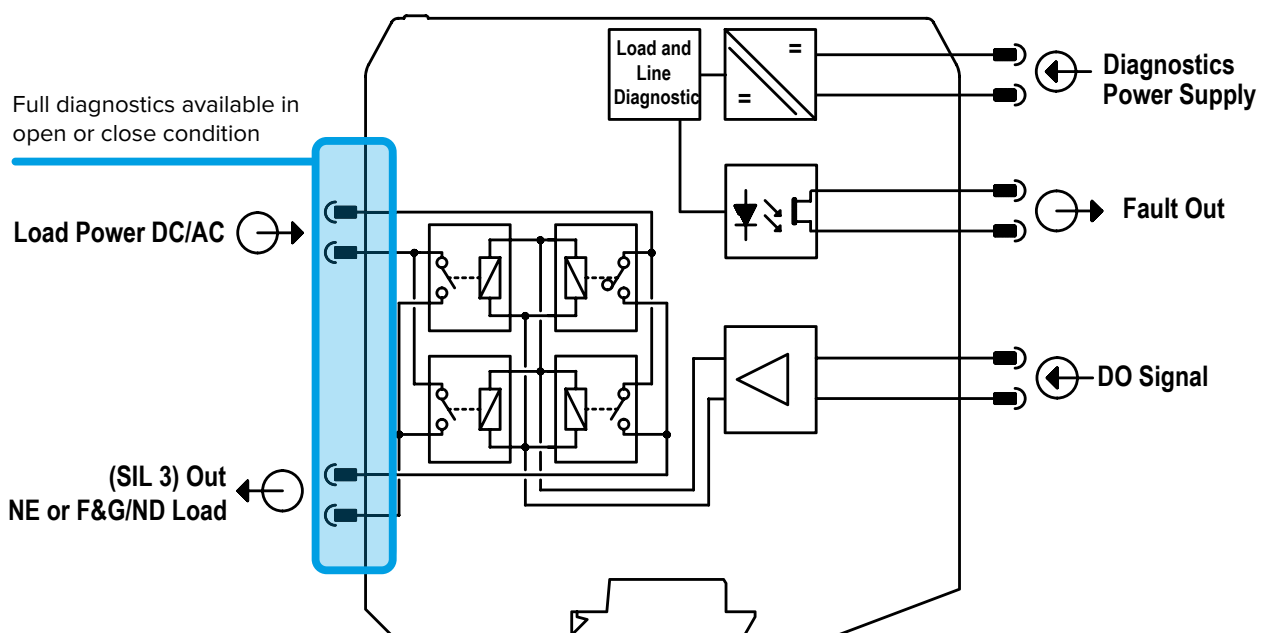
SIL certified relays are used for critical loops where careful consideration should be given to line and load monitoring. In a de-energize to safety application, a wire/coil failure leads to a safe state. In an energize to safety application, line failures lead to a dangerous state. In both cases failure 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

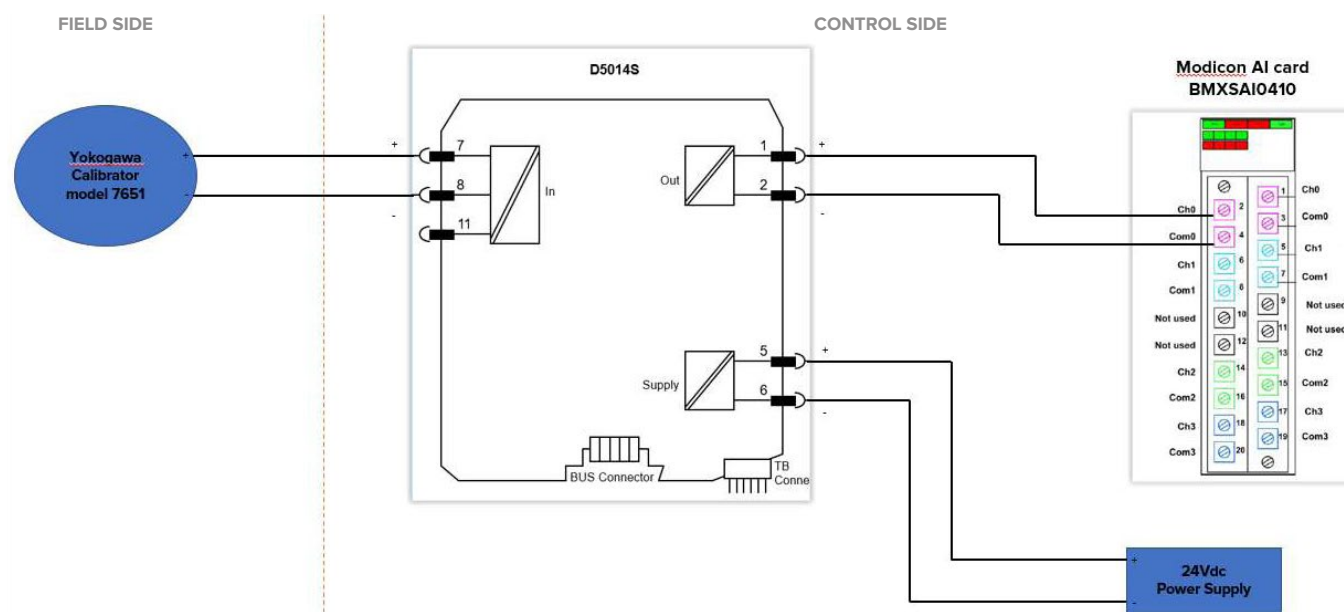
Technical Application Note #48

Triconex Safety System Boundary

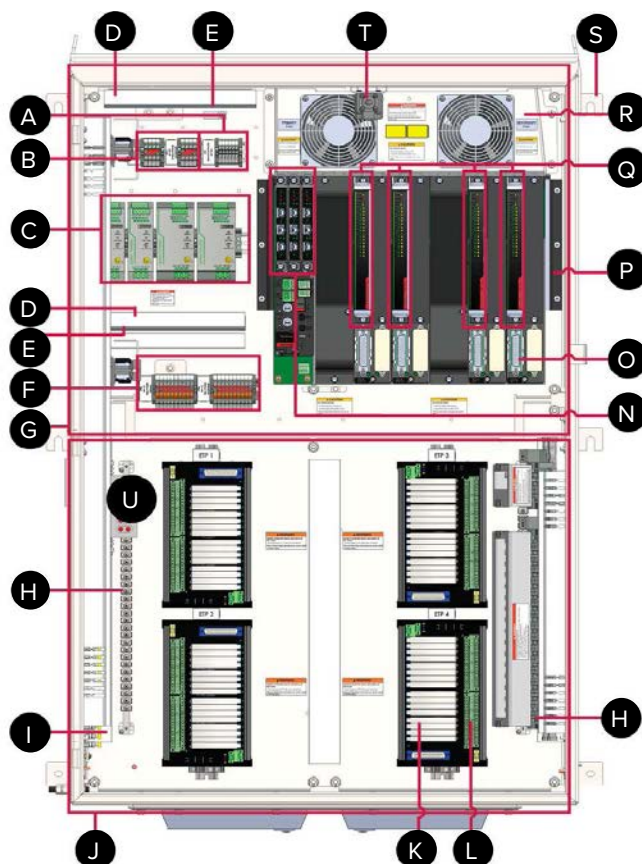
GM International (GMI) External Termination Panels (ETPs) Used with GMI Pluggable Conditioning Modules (PCMs) and Tricon CX I/O Modules

I/O Module	GMI ETP Model	ETP Details	Supported PCMs
3506X DI	TBE-D5016-TRI-012	SIL3, HazLoc, 16 PCMs	D6001S, D5031S, D5032S, D5037S, D5038SA, D5039SA, D5093S, D5038XA, D5039XA
3626X DO	TBE-D5016-TRI-007	SIL3, HazLoc, 16 PCMs	D6001S, D5040S, D5048S, D5049S, D5090S, D5091S, D5096S, D5097S, D5098S
3722X AI, 3723X AI	TBE-D5016-TRI-011	SIL3, HazLoc, 16 PCMs	D5011S, D5014S, D5015SS, D5072S, D6001S, D6017SS
3809X/AX AO	TB-D5016-TRI-010	SIL3, HazLoc, 16 PCMs	D5020S, D6001S
3902X/AX UIO	TB-D5016-TRI-010	SIL3, HazLoc, 16 PCMs	D6001S, D6004S, D5031S, D5032S, D5037S, D5093S, D5038SB, D5039SB, D5049S, D5090S-102, D5091S-103, D5096S-106, D5097S-107, D5014S, D5015SK, D6017SK, D5072S-099, D5020S

Test Report 0258 Compatibility between GM International modules (AI, DI, DO) and the Schneider Modicon M580 system



Safety Intelligent Enclosure



Legend			
A	Alarm Terminals	K	Pluggable Conditioning Modules (PCMs)(a)
B	System Power Terminals, 24 VDC	L	External Termination Panels (ETPs)(b)
C	Power Supply Units (System and Field)	N	I/O Bus Interface Modules
D	Wire Duct	O	Field External Termination Connectors (FETs)
E	Divider Plate	P	Tricon CX I/O Expansion Chassis
F	Field Power Terminals, 24 VDC	Q	UIO Modules
G	I/O Expansion Chassis Sub- Panel Assembly	R	Fan Tray Assembly
H	Functional Earthing Bar (Shield Ground)	S	Wall-Mounting Bracket
I	Field Wire Duct	T	Door Switch
J	ETP Sub-Panel Assembly	U	ESD Bonding Point

Modicon M580 - M340

Customized Termination Boards D5000/D6000 Series

These Termination Boards, with (TBE) or without (TB) metal enclosure, provide direct connection between the I/O Card of the system and D5000 / D6000 Series modules, which interface the field. Intrinsically Safe protection and signal isolation between Safe and Hazardous Area are provided by D5000 Series Associated Apparatus. 24 Vdc Power Supply of the TB is connected to two plug-in terminal blocks to enforce redundancy. Power supplies out of range and cumulative module fault can be monitored through a dedicated contact. Modules are supplied via Termination Board power bus. TB are provided with one universal mounting kit for wall and DIN-Rail, while TBE can be mounted on DIN-Rail with either plastic or metal clips, depending on the chosen accessory.



Find Out More!

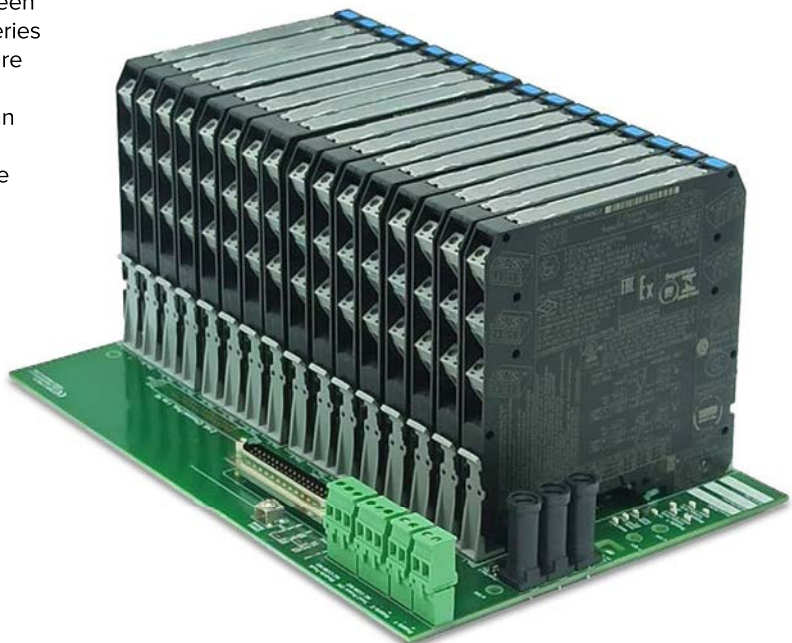


Foxboro FBM200

Customized Termination Boards D5000/D6000 Series

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Intrinsically Safe protection and signal isolation between Safe and Hazardous Area are provided by D5000 Series Associated Apparatus. Two 24 Vdc Power Supplies are connected to the TB to enforce redundancy. Power supplies out of range and cumulative module fault can be monitored through a dedicated contact. Modules are supplied via Termination Board power bus. TB are provided with DIN-Rail mounting kit with plastic clips.



Find Out More!



Tricon CX

Customized Termination Boards D5000/D6000 Series

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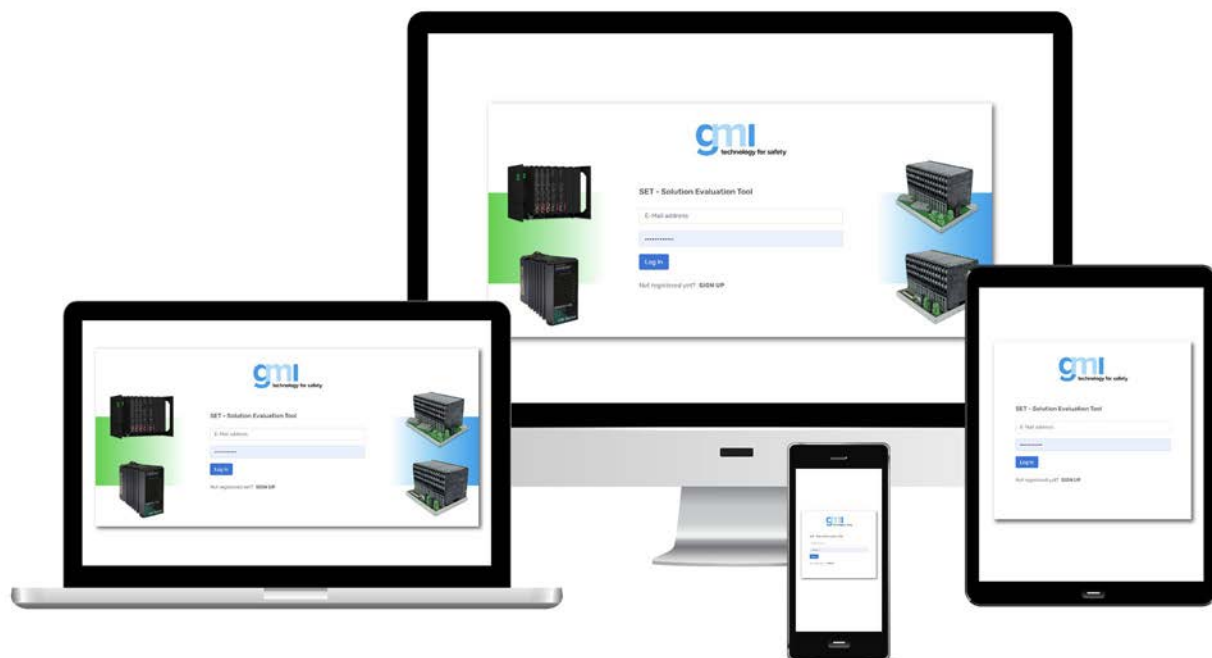
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Find Out More!



Solutions Evaluation Tool (SET)



SET is a tool dedicated to Schneider Electric's technical proposals. It provides simple guidance for creating a project offer for both DCS (Distributed Control Systems) and safety systems. The result is a comprehensive and detailed pricing quote, including all necessary costs and specifications. SET enables Schneider Electric professionals to quickly configure customized solutions, ensuring accuracy and efficiency in the proposal process. Additionally, with its intuitive interface and advanced features, SET facilitates the integration of various project components, thereby optimizing time and resources.

Notes

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**OUR
TECHNOLOGY**

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



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

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