

PROCESS SAFETY – GMI SOLUTIONS



Company



Safety, performance and reliability

OUR PRODUCTS, OUR COMMITMENT

GM International designs, engineers and manufactures a complete range of **Intrinsically Safe and SIL Certified Devices**.

For automation packages, DCS - ESD - FGS - BMS - HIPPS - PLC - SCADA - MARINE
In several industrial sectors: Oil and Gas, Petrochemical, Pharmaceutical, Fertilizer, Mining, Food.

- **40 years of Experience**

founded in 1993,
former Elcon Instruments

- **100% Internal Production**

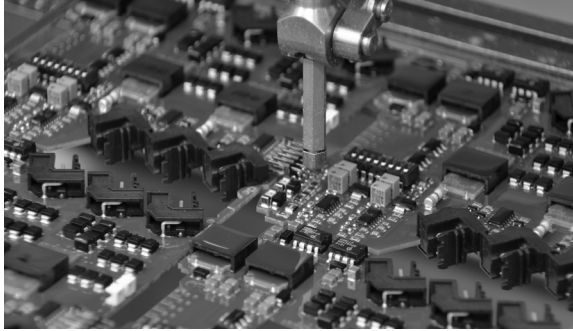
in State-of-the-Art facilities
near Milan, Italy

- **Global Player**

with presence in 5 continents

Manufacturing excellence

FOR A SAFE WORLD



- **100% Made in Italy**
- **State-of-Art technology**
- **Product traceability** incoming & outgoing
- **Full testing** on 100% of production
- **Highly automated** manufacturing process
- **RoHS & REACH** complaint

Social responsibility

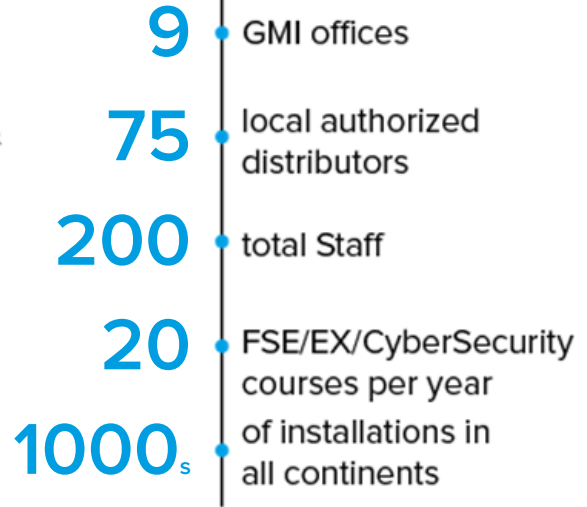
We design Intrinsically Safe Instruments and SIL certified devices in order to prevent accidents and understand, manage and reduce risks for people and environment.

Customers satisfaction is the way we demonstrate our social responsibility to contribute to sustainable development, minimizing climate impact and creating a safe and healthy working environment.

Worldwide
presence

Think local, act global

WE ARE WHERE YOU NEED



Who choose our solutions

Reference List

System vendors

- ABB
- BAKER HUGHES
- EMERSON
- GEBHARDT AUTOMATION
- HIMA
- HONEYWELL
- SIEMENS
- SCHNEIDER
- ROCKWELL AUTOMATION
- YOKOGAWA

E.P.C.

- AMEC FOSTER WHEELER
- BECHTEL
- FLUOR
- HHI
- JACOBS
- L&T
- MCDERMOTT
- NPCC
- SAIPEM
- PARSONS
- PETROFAC
- SK ENGINEERING
- SNC-LAVALIN
- TECNIMONT
- TECHNIP-FMC
- TR
- WORLEY

O.E.M.

- ABB OY DRIVES
- ACCAGEN SA
- APPLIED WEIGHING INT.
- BOBST GROUP
- CAMERON
- CANRIG DRILLING TECH.
- CLAMPON
- DRESSER RAND
- FMC
- GE
- HALLIBURTON
- HANLA LEVEL
- INKMAKER
- KONGSBERG SEATEX
- NOV
- PRECIAMOLEN
- SCHLUMBERGER
- SIEMENS IND. TURBINES
- SKANA KOREA HYDRA.
- WARTSILA NORWAY
- WEATHERFORD

End users

- 3M
- ADMA-OPCO
- AGIP
- ARAMCO
- BASF
- BHP
- BP
- CIBA GEIGY
- CAMERON
- ENEL
- ENI
- EXXON-MOBIL
- GASCO
- KOC / KNPC
- LOTOS
- ONGC
- ORLEN
- PFIZER
- SASOL
- SHELL
- SIRTE OIL
- STATOIL
- TOTAL

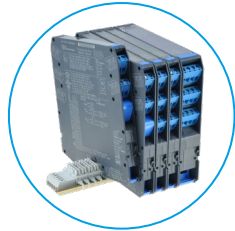
Technology for safety

Product range



Our product
range

GMI Safety Solutions



IS barriers



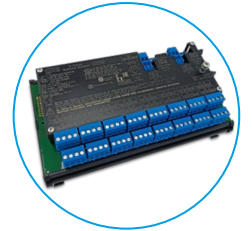
Safety Relays



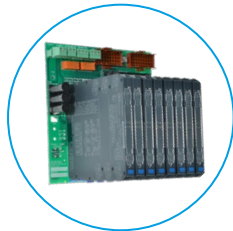
Isolators



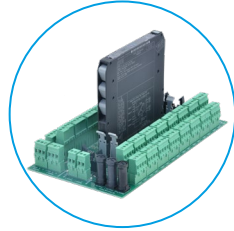
Power supplies



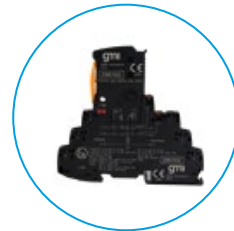
Multiplexers



Termination
Boards



HART Multiplexers



Surge protectors



FS & Ex courses
& Services

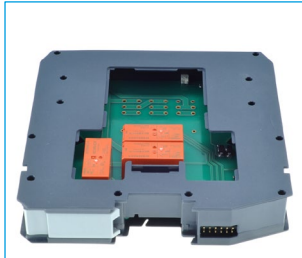
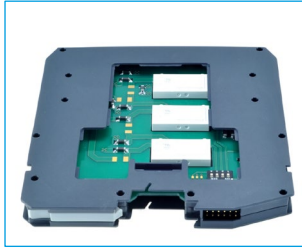
Intrinsically Safe: Isolators, Conditioners



D5000 SERIES STRENGTHS

- **Reduced Footprint: High Density:** 6 mm per channel
- **Reduced Bulk Power Supply:** Low power consumption
- **Reduced Cooling Needs:** Low heat dissipation
- **Higher Reliability In & Outdoor:** Certified -40° to + 70° C
- **Higher Resilience to Surges:** 2.5 KV isolation
- **Data Guaranteed by 3rd Party:** SIL 3 (2) TÜV certification
- **Current & Valid Standard:** Certified IEC 61508:2010, Ed.2
- **Lower Ownership Cost:** Certified for 20 years operation
- **Reduced Spare Inventory:** Universal Mounting (Stand Alone DIN-Rail, Power Bus System and Termination Boards)
- **Independent SIL certified Dual Ch.:** Dual power supply

SIL 3 Safety Relays with or without Line and Load Monitoring Function



SAFETY RELAYS STRENGTHS

- **Reduced Footprint:** High Density: 12/22 mm per Ch.
- **Full 3rd Party Certification:** Coil-to-Contact TÜV certified
- **True Reliability:** Compatible to DO Card LM Pulses
- **Full compliance to Specs:** Smart Line/Load Monitoring
- **Reduced Space/Eng Costs:** Transparent Fault Indication
- **Lower Ownership Cost:** 10/20 years, T-proof Times
- **Reduced Down Time:** Increased Availability for NE/ND
- **Ease of Engineering:** Universal SF Modules
- **Guaranteed Reliability:** Gold Plated & Sealed Relay
- **Reduced Spare Inventory:** Universal Mounting (Stand Alone DIN-Rail, Power Bus System and Termination Boards)
- **Full Application Coverage:** Modules available: 5 & 10 A Contacts, All Safety Functions, DC and AC Coil, ETS or DTS or Inverter

Isolators, Signal Conditioners, Trip Amplifiers



D6000 SERIES STRENGTHS

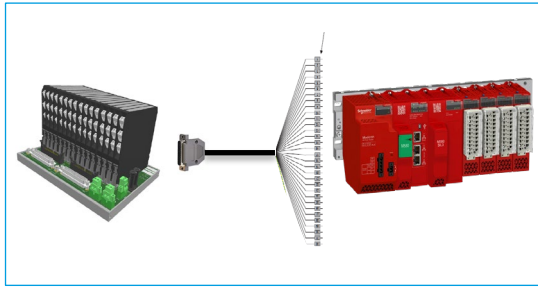
- **SIL 3:** TÜV certification; according IEC 61508:2010, Ed.2
- **Reduced Footprint:** High density: 1, 2, 4 or 8 ch.s each
- **Simplified Installation/Config.:** DIP switch configurability
- **Faster Reaction Time; Lower Down Time:** LED indication for power, signal status and line fault
- **Lower Ownership Cost:** Certified for 20 years operation
- **Reduced Spare Inventory:** Universal Mounting (Stand Alone DIN-Rail, Power Bus System and Termination Boards)
- **Improved Reliability:** Low power consumption and heat dissipation
- **Higher Reliability In & Outdoor:** Certified -40° to + 70° C
- RS-485 Modbus output version available

Termination Boards



TERMINATION BOARDS STRENGTHS

- **Smaller Footprint:** Very compact design, up to 64 I/O Channels in one Board
- **Flexibility:** Mounting hardware for DIN Rail or Wall
- **High Availability:** Power Supply and support of I/O Redundancy
- **Easy maintenance and Troubleshooting:** Fault Led Indication and common fault repeater
- Available with **customized connectors/cables** for direct interface to any PLC / DCS / ESD Systems



HART Multiplexer Systems



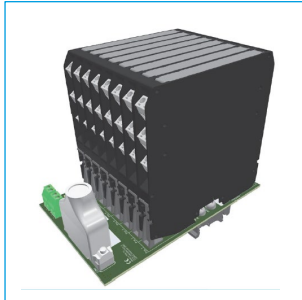
The new **SIL 3** certified GMI HART Interface System drastically reduces the complexity and cost of HMS installations by eliminating the need to use slaves; hence, reducing by 2-4 times the number of modules required and at the same time increasing the speed (baud rate) of the system.

5700 SERIES STRENGTHS

- **Reduced Number of components:** Each Multiplexer Module controls up to 256 Channels; only 63 Mux Modules to control a total of 16.128 channels
- **Reduced Wirings and Complexity:** Less Components, Less Cables, Less Wirings for hassle free, simplified, Design and Installation
- **Reduced Spare Parts:** Inventory and Maintenance Cost are substantially reduced
- **Increased performances:** 115.200 bps baud rate

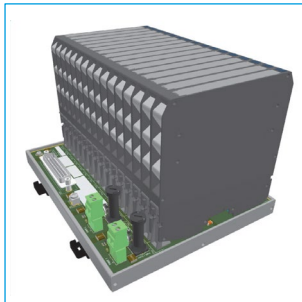


Custom solutions for SE



TERMINATION BOARDS

- **Foxboro:** FBM I/O modules TB; including universal I/O.
- **Triconex:** Tricon e Tricon CX modules TB; including universal I/O.
- **Modicon:** M580 Safety modules TB



CONDITIONING MODULES

- **Intrinsically Safe:** Solutions available for ALL I/O type signals (**D5000**)
- **Standard:** Pass through, Isolators and DO solution for NIS (**D6000**)
- **Safety Relay:** SIL 3 solution with & without Line Monitoring (**D5000**)

SAFETY Loop

FOR THE MOST DEMANDING SOLUTIONS (SIS, ESD, F&G, HIPPS, BMS etc....)



GMI Solutions

- **SIL2-SIL3 Signal Conditioners:** D6000 series
- **Pass Through:** D6000 series
- **SIL2-SIL3 I.S. Isolators:** D5000 series
- **SIL3 Safety Relays:** D5000 series
- **Termination Boards:**
TB-D5000-TRI (Triconex)
TBE-D5008-GMI-001 (Modicon)

SE Solutions

- **Triconex:** Tricon and Tricon CX modules TB; including universal I/O
- **M580 Safety:** TB for current solutions

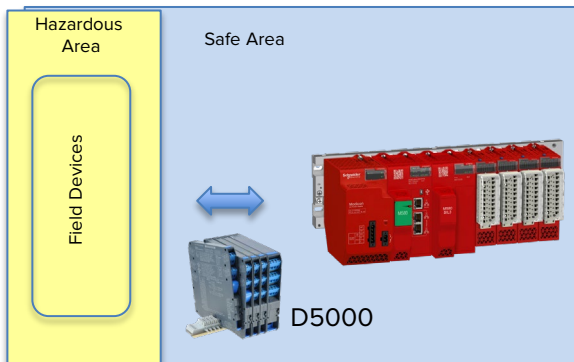
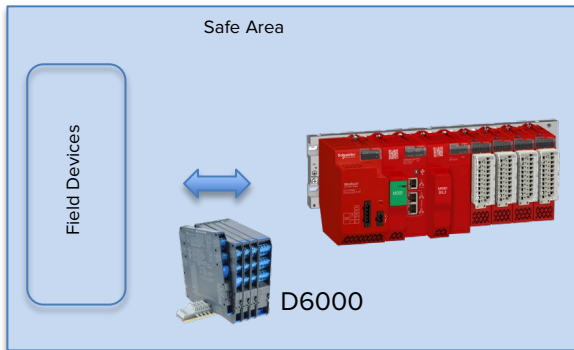
Technical details

Solutions for Modicon
M580 Safety



GMI Solutions, Din Rail Mounting

APPLICATIONS FOR SAFE AND HAZARDOUS



SAFE AREA

- **Signal Isolators** (4..20mA, Sink/Source Contacts, RTD, TC etc.)
- **Signal Converters** (Proximity → Relay Contact, TC/RTD →4-20mA, Load Cell → 4-20mA, Trip Alarm, Duplicator, Frequency etc.)
- **Safety Relays** (5A, 10A)

HAZARDOUS AREA

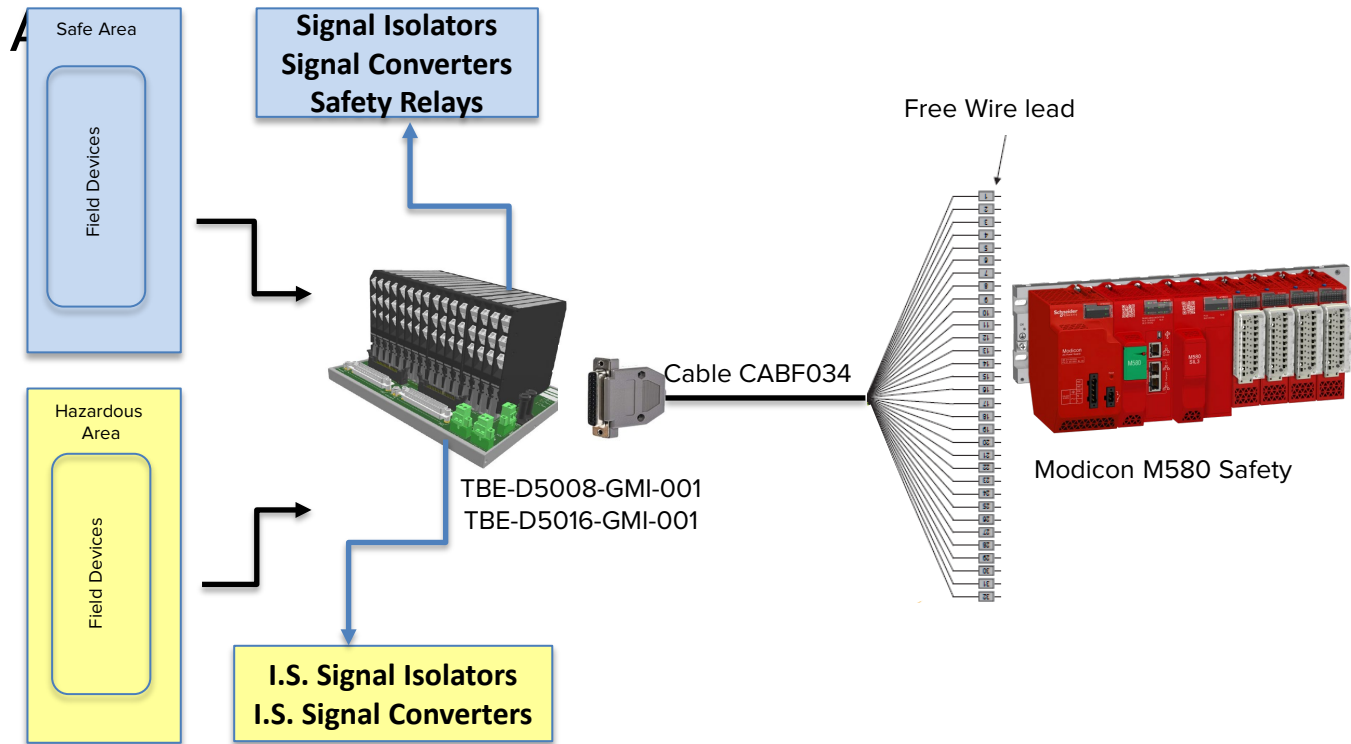
- **I.S. Signal Isolators** (4..20mA, Sink/Source, Contact, RTD, TC, Solenoid Valve etc.)
- **I.S. Signal Converters** (Proximity → Relay Contact, TC/RTD →4-20mA, Load Cell → 4-20mA, Trip Alarm, Duplicator, Frequency etc.)

* Application from **Zone 0 / Div.1**

** Installation in **Zone 2 / Div.2**

GMI Solutions, Termination Boards (1)

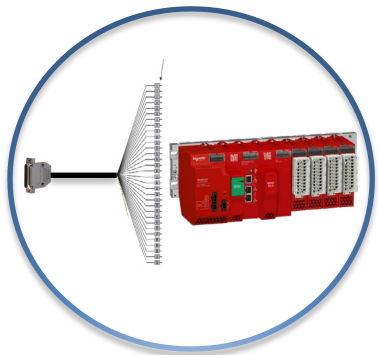
APPLICATIONS FOR SAFE AND HAZARDOUS



GMI Solutions, Termination Boards (2)

APPLICATIONS FOR SAFE AND HAZARDOUS AREA

Easy wire connection with **Modicon** removable terminal block, ref. BMXFTB2000/2010/2020

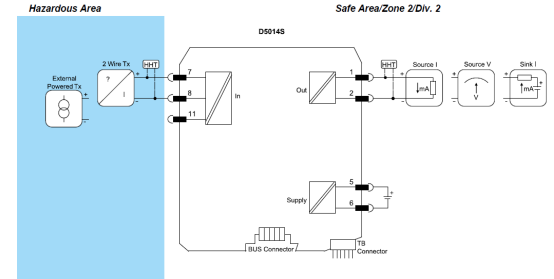


Cable reference

- CABF034 (1 meter)
- CABF034/02 (2 meters)
- CABF034/03 (3 meters)
- CABF034/07 (7 meters)
- CABF034/XX (x meters)

Solution for AI (BMSXSAI0410)

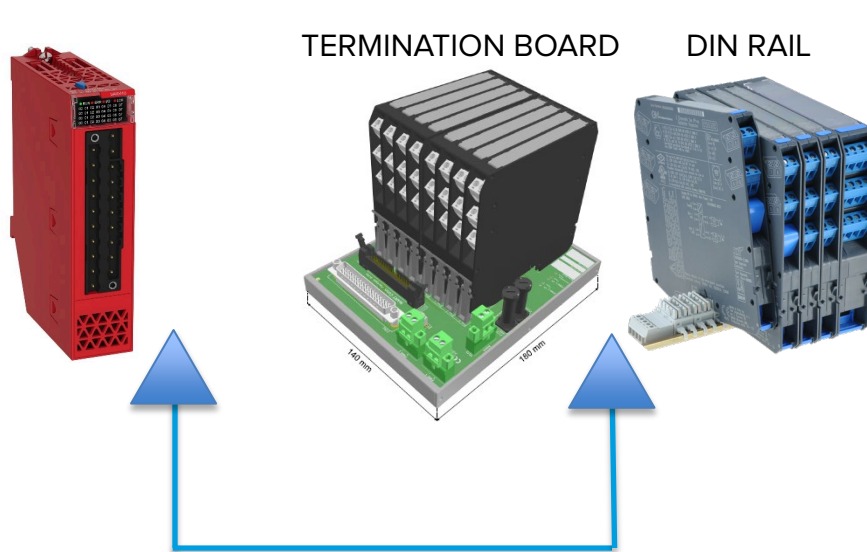
- I.S. Isolators
- N.I.S. Isolators
- Pass through modules
- Active/Passive, 2/3/4 wire transmitters
- Single/Dual channel
- Installation in Zone 2/Div. 2
- HART compatibility
- Line fault detection/transparency



AI Module BMSXSAI0410

WITH **SINGLE** CHANNEL GMI MODULES

AI Module
BMSXSAI0410 (4 CH)

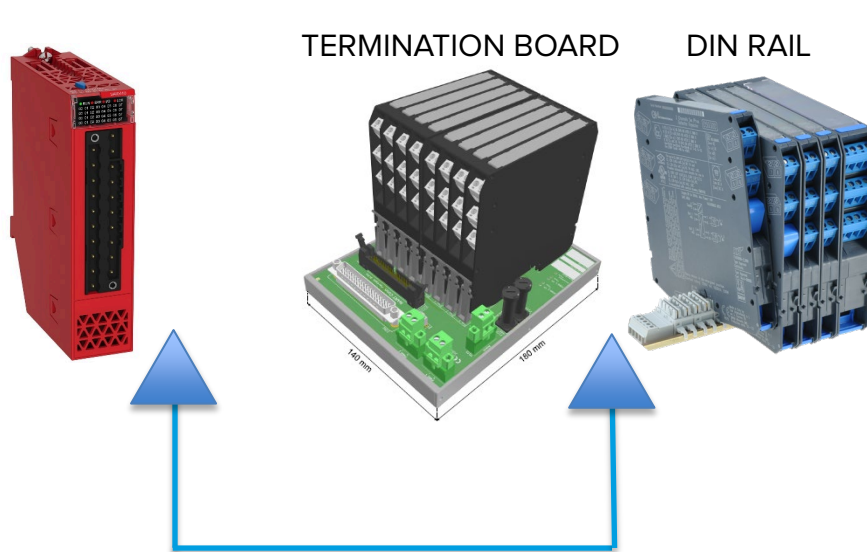


GMI Modules	
I.S.	N.I.S.
D5011S	D6001S
D5014S	D6004S
D5015SS	D6011S
D5072S	D6014S
	D6015SS
	D6017SS
	D6072S

AI Module BMSXSAI0410

WITH **DUAL** CHANNEL GMI MODULES

AI Module
BMSXSAI0410 (4 CH)



GMI Modules	
I.S.	N.I.S.
D5011D	D6001D
D5014D	D6011D
D5072D	D6014D
	D6072D

Intrinsic Safety and Non Intrinsic Safety (AI) WITH **SINGLE CHANNEL GMI MODULES**

ANALOG INPUT – AI IS

MOD.	DESCRIPTION	L.F. DET.	L.F. TRANSP.	FIELD	SIL	HART	REMARKS	ZONE2 / DIV2
D5011S	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE	3	YES		YES
D5014S	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE/PASSIVE	3	YES		YES
D5015SS	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE/PASSIVE	2	YES		YES
D5072S	TEMPERATURE SIGNAL CONVERTER, MULTIFUNCTION	YES	-	TC/RTD/POT	2	-		YES

ANALOG INPUT – AI NIS

MOD.	DESCRIPTION	L.F. DET.	L.F. TRANSP.	FIELD	SIL	HART	REMARKS	ZONE2/ DIV2
D6011S	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE	3	YES		NO
D6014S	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE/PASSIVE	3	YES		NO
D6015SS	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE/PASSIVE	2	YES	-	NO
D6017SS	TRANSMITTER POWER SUPPLY	-	YES	2/3/4-WIRE TRANSMITTERS	3	YES	HART FOR ACTIVE TRANSMITTERS	NO
D6072S	TEMPERATURE SIGNAL CONVERTER, MULTIFUNCTION	YES	-	TC/RTD/POT	2	-	-	NO
D6001S	PASS THROUGH MODULE	-	-	-	3	YES	HIGH CURRENT	YES
D6004S	PASS THROUGH MODULE	-	-	SUITABLE FOR 2/3/4-WIRE TRANSMITTERS	3	YES	-	YES

Intrinsic Safety and Non Intrinsic Safety (AI) WITH **DUAL** CHANNEL GMI MODULES

ANALOG INPUT – AI IS

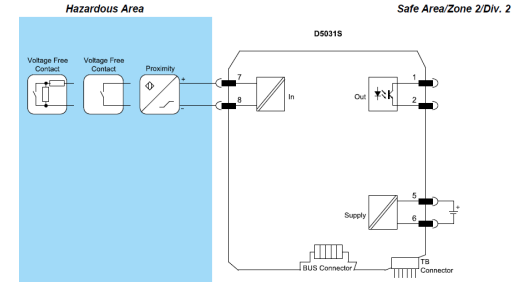
MOD.	DESCRIPTION	L.F. DET.	L.F. TRANSP.	FIELD	SIL	HART	REMARKS	ZONE2 / DIV2
D5011D	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE	3	YES		YES
D5014D	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE/PASSIVE	3	YES		YES
D5072D	TEMPERATURE SIGNAL CONVERTER, MULTIFUNCTION	YES	-	TC/RTD/POT	2	-		YES

ANALOG INPUT – AI NIS

MOD.	DESCRIPTION	L.F. DET.	L.F. TRANSP.	FIELD	SIL	HART	REMARKS	ZONE2/ DIV2
D6011D	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE	3	YES		NO
D6014D	TRANSMITTER POWER SUPPLY	-	YES	ACTIVE/PASSIVE	3	YES		NO
D6072D	TEMPERATURE SIGNAL CONVERTER, MULTIFUNCTION	YES	-	TC/RTD/POT	2	-	-	NO
D6001D	PASS THROUGH MODULE	-	-	-	3	YES	HIGH CURRENT	YES

Solution for DI (BMXSDI1602)

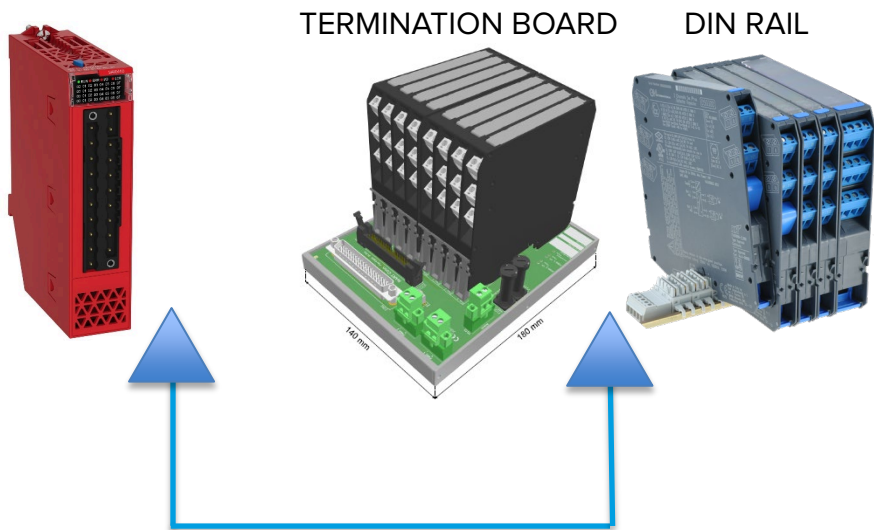
- Switches/Proximities
- I.S. Isolators
- N.I.S. Isolators
- Pass through modules
- Single/dual channel
- Installation in Zone 2/Div. 2
- Line fault detection/transparency
- Signal duplication



DI Module BMXSDI1602

WITH **SINGLE** CHANNEL GMI MODULES

DI Module
BMXSDI1602 (16 CH)

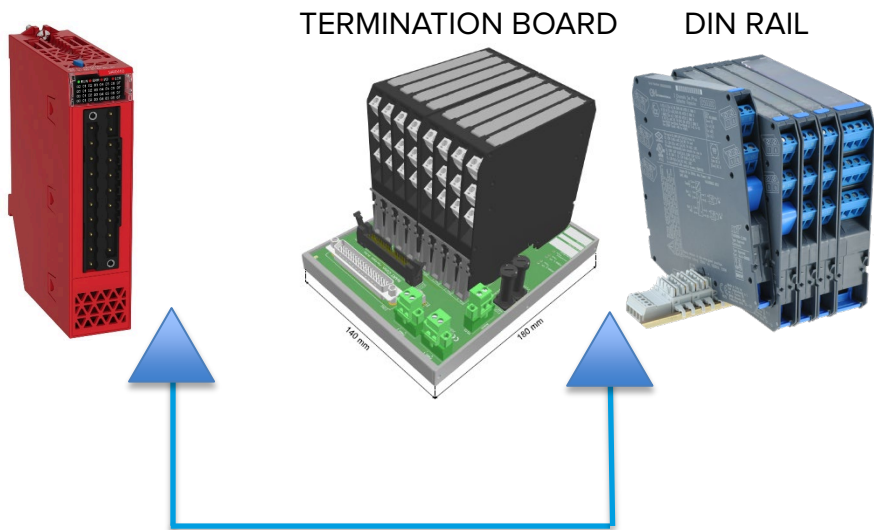


GMI Modules	
I.S.	N.I.S.
D5031S	D6001S
D5032S	D6031S
D5037S	D6032S
D5038SD	D6037S
D5039SD	D6038SD
	D6039SD
	D5093S

DI Module BMXSDI1602

WITH **DUAL** CHANNEL GMI MODULES

DI Module
BMXSDI1602 (16 CH)



GMI Modules	
I.S.	N.I.S.
D5031D	D6001D
D5032D	D6031D
D5037D	D6032D
D5038DD	D6037D
D5038XD	D6038DD
D5039DD	D6038XD
D5039XD	D6039DD
	D6039XD
	D5093D

Intrinsic Safety and Non Intrinsic Safety (DI)

WITH **SINGLE** CHANNEL GMI MODULES

DIGITAL INPUT – DI IS

MOD.	DESCRIPTION	L.F. DETECTION	L.F. TRANSP.	OUTPUT	SIL	REMARKS	ZONE2/DIV2
D5031S	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	3		YES
D5032S	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	RELAY	3	ONLY T.B.	YES
D5037S	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	2		YES
D5038SD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	RELAY	3		YES
D5039SD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	SOLID STATE	2		YES

DIGITAL INPUT – DI NIS

MOD.	DESCRIPTION	L.F. DETECTION	L.F. TRANSP.	OUTPUT	SIL	REMARKS	ZONE2/DIV2
D6031S	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	3		NO
D6032S	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	RELAY	3	ONLY T.B.	NO
D6037S	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	2		NO
D6038SD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	RELAY	3	HIGH CURRENT	NO
D6039SD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	SOLID STATE	2	DUAL CHANNEL	NO
D5093S	24 TO 220 VAC/VDC SWITCH REPEATER	-	-	SOLID STATE	3		NO
D6001S	PASS THROUGH MODULE	-	-	-	3	HIGH CURRENT	NO

Intrinsic Safety (DI)

WITH **DUAL** CHANNEL GMI MODULES

DIGITAL INPUT – DI IS

MOD.	DESCRIPTION	L.F. DETECTION	L.F. TRANSP.	OUTPUT	SIL	REMARKS	ZONE2/DIV2
D5031D	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	3		YES
D5032D	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	RELAY	3	ONLY T.B.	YES
D5037D	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	2		YES
D5038DD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	RELAY	3		YES
D5039DD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	SOLID STATE	2		YES
D5039XD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	SOLID STATE	2		YES

Non Intrinsic Safety (DI)

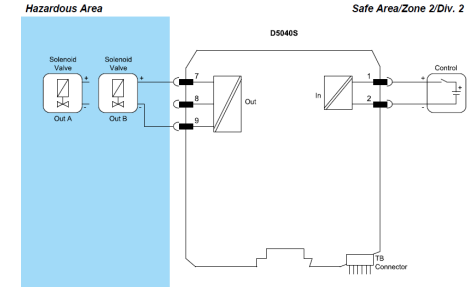
WITH **DUAL** CHANNEL GMI MODULES

DIGITAL INPUT/OUTPUT – DI NIS

MOD.	DESCRIPTION	L.F. DETECTION	L.F. TRANSP.	OUTPUT	SIL	REMARKS	ZONE2/DIV2
D6031D	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	3		NO
D6032D	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	RELAY	3	RELAY	NO
D6037D	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	-	SOLID STATE	2	SOLID STATE	NO
D6038DD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	RELAY	3	-	NO
D6038XD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	RELAY	3	SOLID STATE	NO
D6039DD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	SOLID STATE	2	-	NO
D6039XD	SWITCH/PROXIMITY DETECTOR/REPEATER	YES	YES	SOLID STATE	2	SOLID STATE	NO
D5093D	24 TO 220 VAC/VDC SWITCH REPEATER	-	-	SOLID STATE	3	-	
D6001D	PASS THROUGH MODULE	-	-	-	3	HIGH CURRENT	NO

Solution for DO (BMXSDO0802)

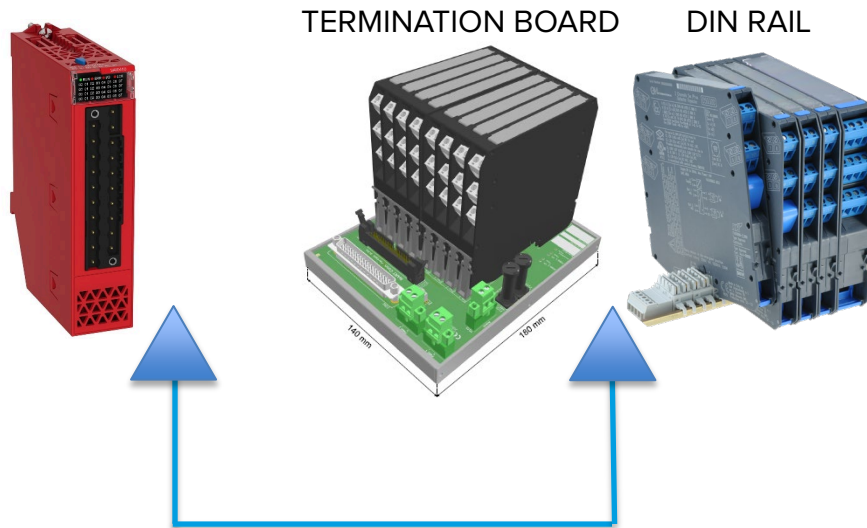
- Pass through modules
- 5 A Relays
- Installation in Zone 2/Div. 2



DO Module BMXSDO0802

WITH **SINGLE** CHANNEL GMI MODULES

DO Module
BMXSDO0802 (8 CH)

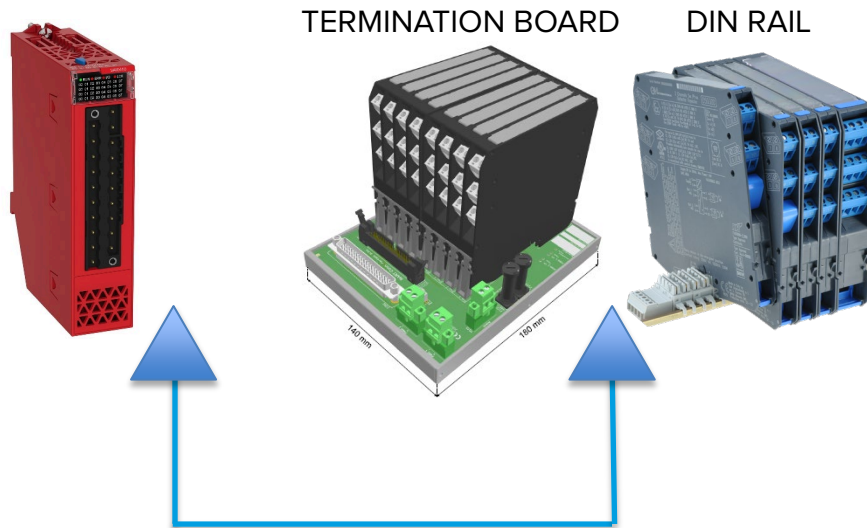


GMI Modules	
I.S.	N.I.S.
D5040S	D6001S
D5048S	D5090S
D5049S	D5091S
	D5094S
	D5095S
	D5096S-100
	D5098S

DO Module BMXSDO0802

WITH **DUAL** CHANNEL GMI MODULES

DO Module
BMXSDO0802 (8 CH)



GMI Modules	
I.S.	N.I.S.
D5040D	D6001D
	D5098D

Intrinsic Safety and Non Intrinsic Safety (DO)

DIGITAL OUTPUT – DO IS

MOD.	DESCRIPTION	L.F. DET.	L.F. TRANSP.	FIELD	SIL	REMARKS	ZONE2 /DIV2
D5040S	DIGITAL OUTPUT DRIVER LOOP POWERED	NO	NO	SOLENOID VALVE / LED	3	1/2 FIELD SELECTABLE OUTPUTS	YES
D5048S	DIGITAL OUTPUT DRIVER - LOOP POWERED	YES	NO	SOLENOID VALVE / LED	3	1/3 FIELD SELECTABLE OUTPUTS	YES
D5049S	DIGITAL OUTPUT DRIVER - LOOP POWERED	YES	YES	SOLENOID VALVE / LED	3	1/3 FIELD SELECTABLE OUTPUTS	YES

DIGITAL OUTPUT – DO NIS

MOD.	DESCRIPTION	RELAY STATUS	LOAD STATUS	NO/NC CONTACT	HIGH AVAILABILITY	SIL	REMARKS	ZONE2 /DIV2
D5090S	RELAY OUTPUT MODULE	NE	NE	NO	/	3		YES
D5091S	RELAY OUTPUT MODULE	NE/ND	ND	NO/NC	/	3		YES
D5094S	RELAY OUTPUT MODULE	NE/ND	NE/ND	NO	YES	3		YES
D5095S	RELAY OUTPUT MODULE	NE/ND	ND/NE	NC	YES	3		YES
D5096S-100	RELAY OUTPUT MODULE	NE/ND	NE/ND	NO	YES	3	L.M. MIRRORED TO DO	YES
D5098S	RELAY OUTPUT MODULE	NE	NE	NO	/	3		YES
D6001S	PASS THROUGH MODULE	-	-	-	-	3	LOW CURRENT	YES

Test Report available

WITH CONFIGURATION PARAMETERS IN SE ECOSTRUXURE CONTROL EXPERT



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

Sheet 1 of 11

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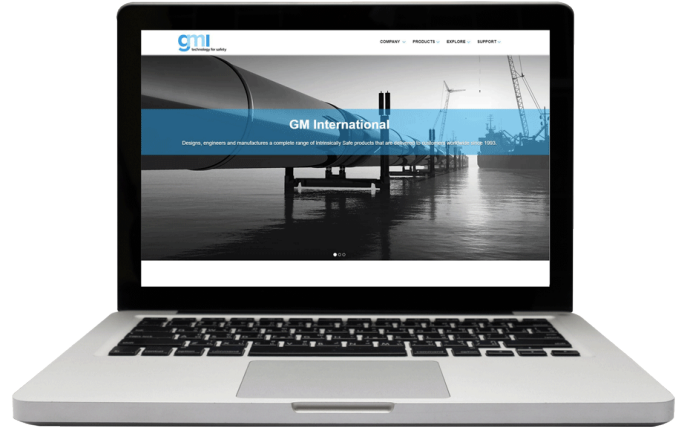
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