

Installation Instruction for GM1 / GSM Expandable Safety Relay

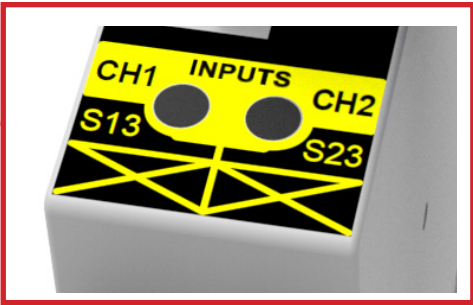
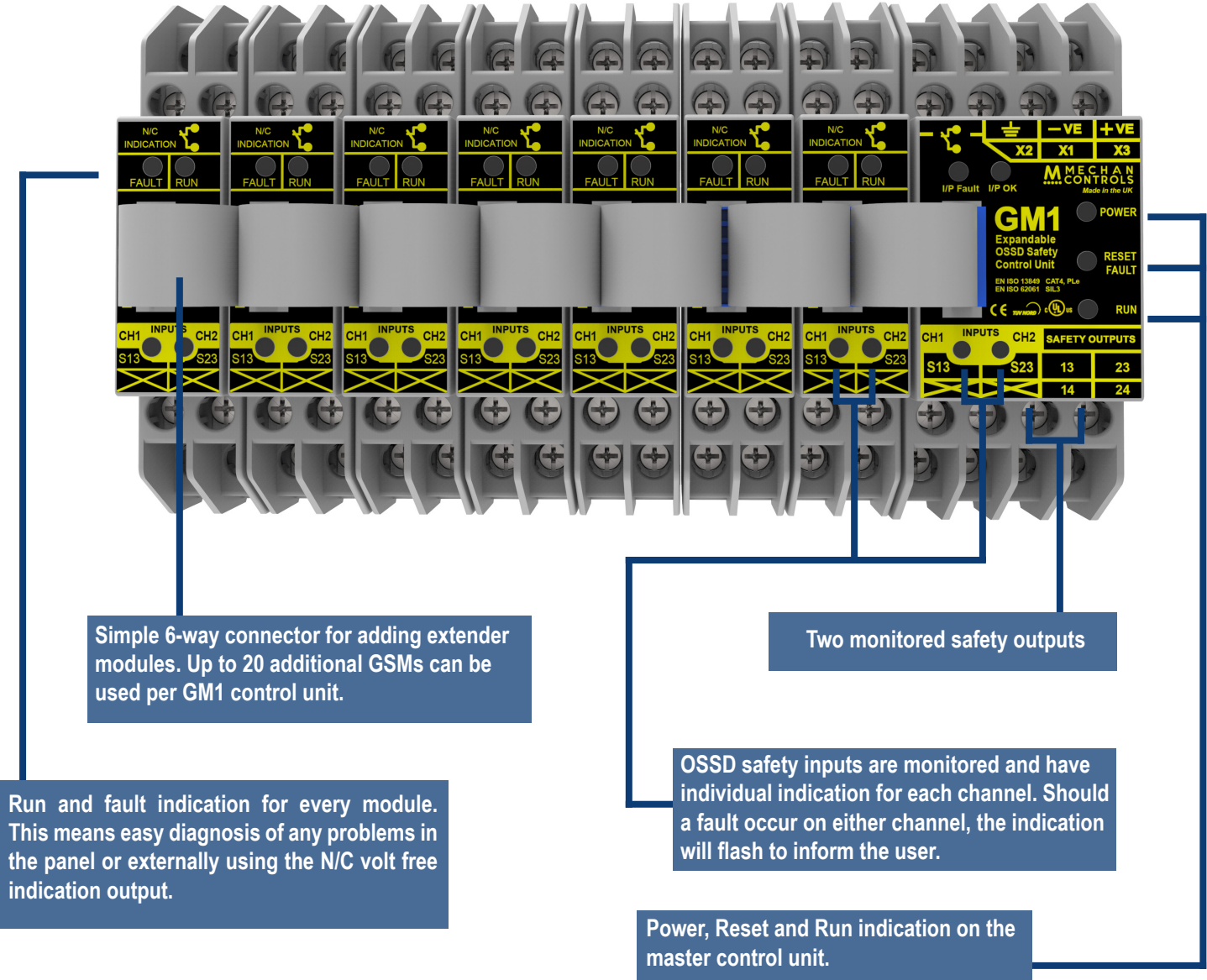
For use with Mechan Controls Light Curtains and O-Type Safety Switches



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GM1 / GSM Features and Benefits

The GM1/GSM is an expandable safety controls unit designed to monitor multiple Mechan Controls Lightcurtains (MLG-Series) or O-Type safety switches. The master control unit (GM1) can monitor one pair of MLG-Series Lightcurtain (transmitter & receiver) and each additional Light curtain set can be monitored by adding an additional GSM extender module. This system can also be used to safely monitor other Mechan Controls products such as O-Type safety switches. **This system does not require programming!**



New and improved OSSD input indication displays which channel is faulty by flashing yellow.

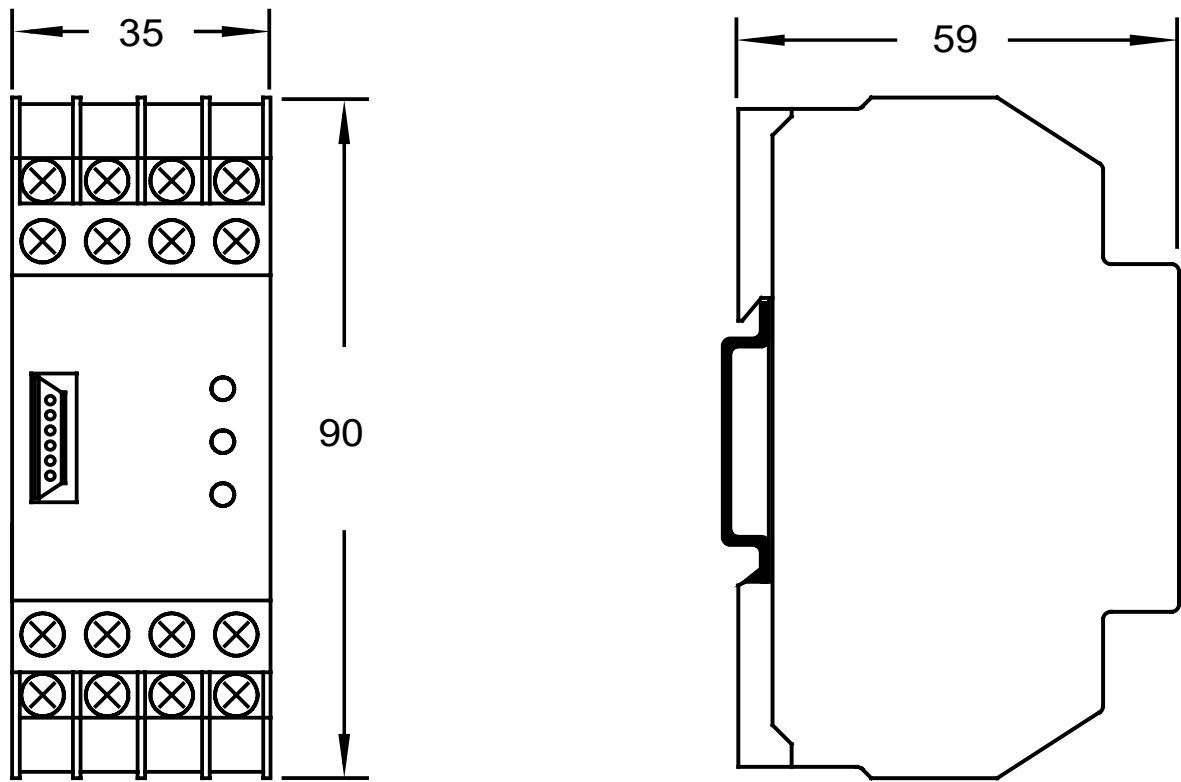
Technical Specifications

Technical Specifications	GM1 Control Unit	GSM Extender Unit
Supply Nominal Voltage	24Vdc (+/- 15 %)	From Control Unit
Nominal Power Consumption	100mA	30mA
OSSD Inputs	2	2
Safety Outputs	2 x N/O (Normally Open)	-
Safety output rating (max)	4A/230Vac; 2A/24Vdc(Res.)@Cos=1	-
Safety output rating (min)	10V/10mA	-
Safety output fuse rating	AC=5A; DC=2.5A; Quick blow	-
Auxiliary Contact	1 x N/C (Normally Closed)	1 x N/C (Normally Closed)
Drop out time	Deactivation by inputs, 13ms	-
Internal fuse / Recovery Time	1.6 Amp Resettable / >2 Seconds	-
Reset Circuit	Reset Manual X1-X3 / Automatic X1-X2	-
Max conductor size	2 x 1.5mm Stranded with Sleeves, 2 x 2.5mm Solid	2 x 1.5mm Stranded with Sleeves, 2 x 2.5mm Solid
Operating temperature	0C to +55C (85% Humidity Max)	0C to +55C (85% Humidity Max)
Storage temperature	-10C to +60C	-10C to +60C
Housing material	Polycarbonate Grey	Polycarbonate Grey
IP Rating	Housing IP30, Terminals IP20	Housing IP30, Terminals IP20
Mounting / Fixing	35mm Symmetric DIN Rail	35mm Symmetric DIN Rail

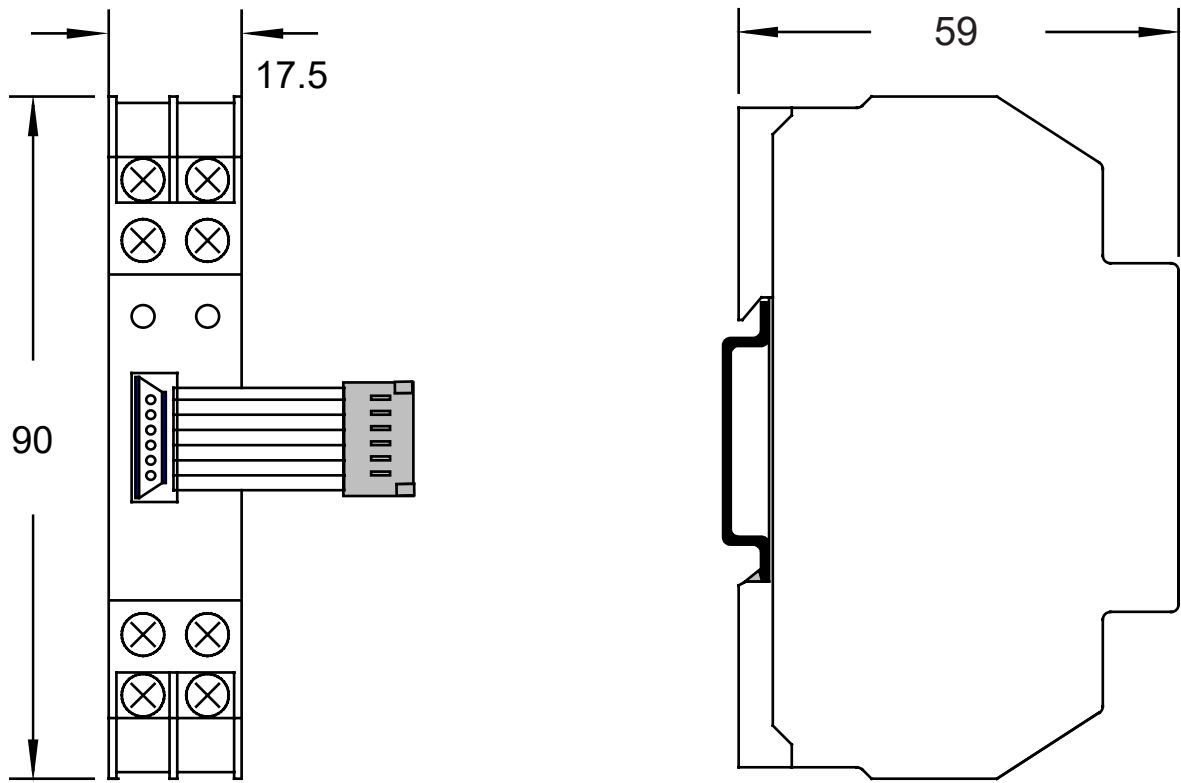
Safety Related Data			
B10d	2,000,000	PFH	6.52 x 10-9
TM (Mission Time)	20 Years	PFHd	6.0 x 10-9
DC	99%	SFF	99.50%
MTTFd	High > 100 Years (Based on usage rate of 360 Days/Year, 24 Hours/Day, 10 Operations/Hour)		
PL in accordance with EN ISO 13849-1	PL-e, CAT 4		
SIL CL in accordance with EN IEC 62061	SIL3		

Safety Standards	
Approvals	CE Complies with all relevant sections of the CE Marking Directive
	UL 508 Industrial Control
	TUV Approved
International Directives	Machinery Directive 2006/42/EC, Low Voltage Directive 2006/95/EC; EMC Directive 2014/30/EU, RoHS Directive 2011/65/EC
International Standards	EN 12100 Safety of Machinery. General principles for design.
	EN ISO 13849 Safety of Machinery. Safety related parts of control systems.
	EN ISO 62061 Safety of Machinery. Functional safety of safety related electrical, electronic and programmable electronic control systems
	EN 60204 Safety of Machinery. Electrical equipment of machines.
	EN 60947-5-1 Low-voltage switchgear and controlgear.
	EN 60947-5-3 Low-voltage switchgear and controlgear.

GM1 Master Control Unit



GSM Extender Module



**ALL DIMENSIONS IN MM*

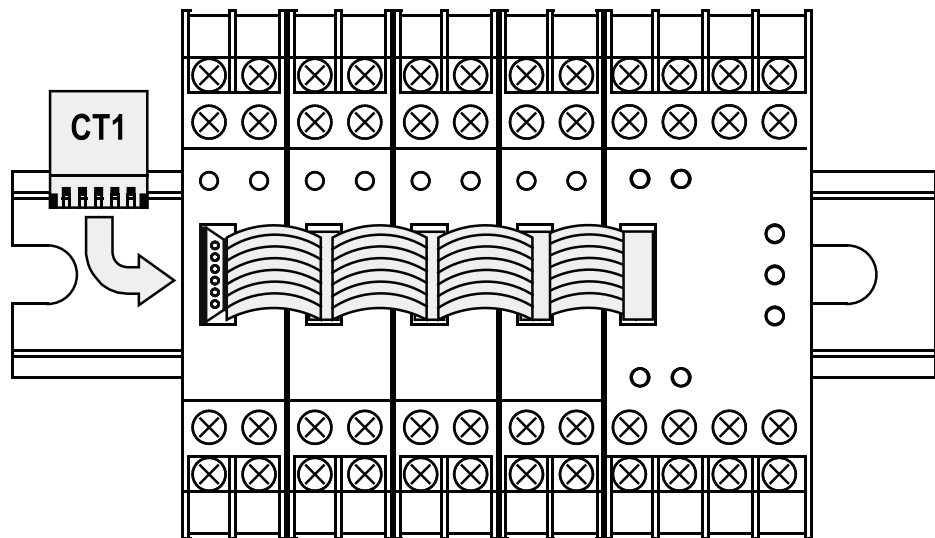
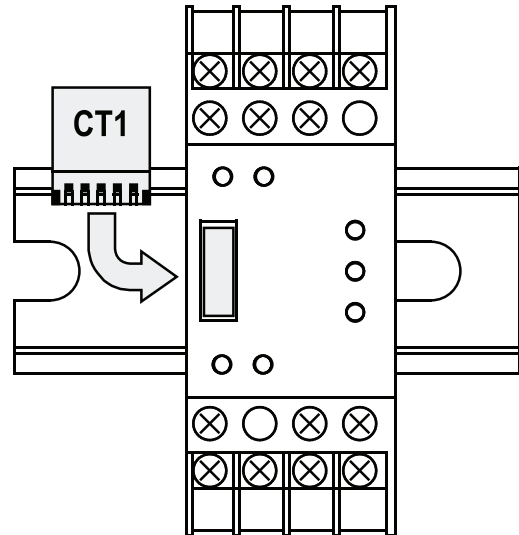
System Assembly

Assemble the required number of modules on the DIN-Rail, starting with the GM1 and clipping the GSM's to the left of the GM1.

The GM1 and GSM requires 2 x OSSD inputs to operate. The maximum number of modules that can be added is 20.

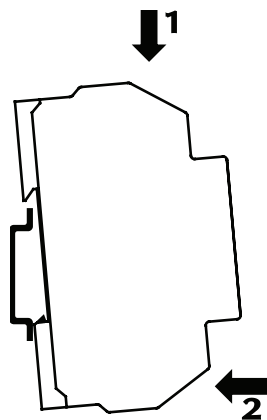
The 'Control Bus' straps on each extender unit connect to the adjacent (right hand side) module as shown.

The 'Control Bus' terminator, CT1 (supplied with the GM1), must be plugged into the last GSM extender module in the system.



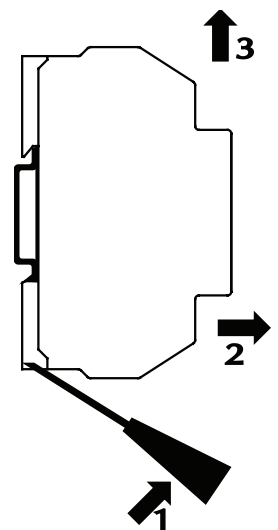
The control modules are designed to be mounted in an IP55 (minimum) control cabinet.

The modules clip on too standard 35 mm symmetric (top hat) DIN-Rail

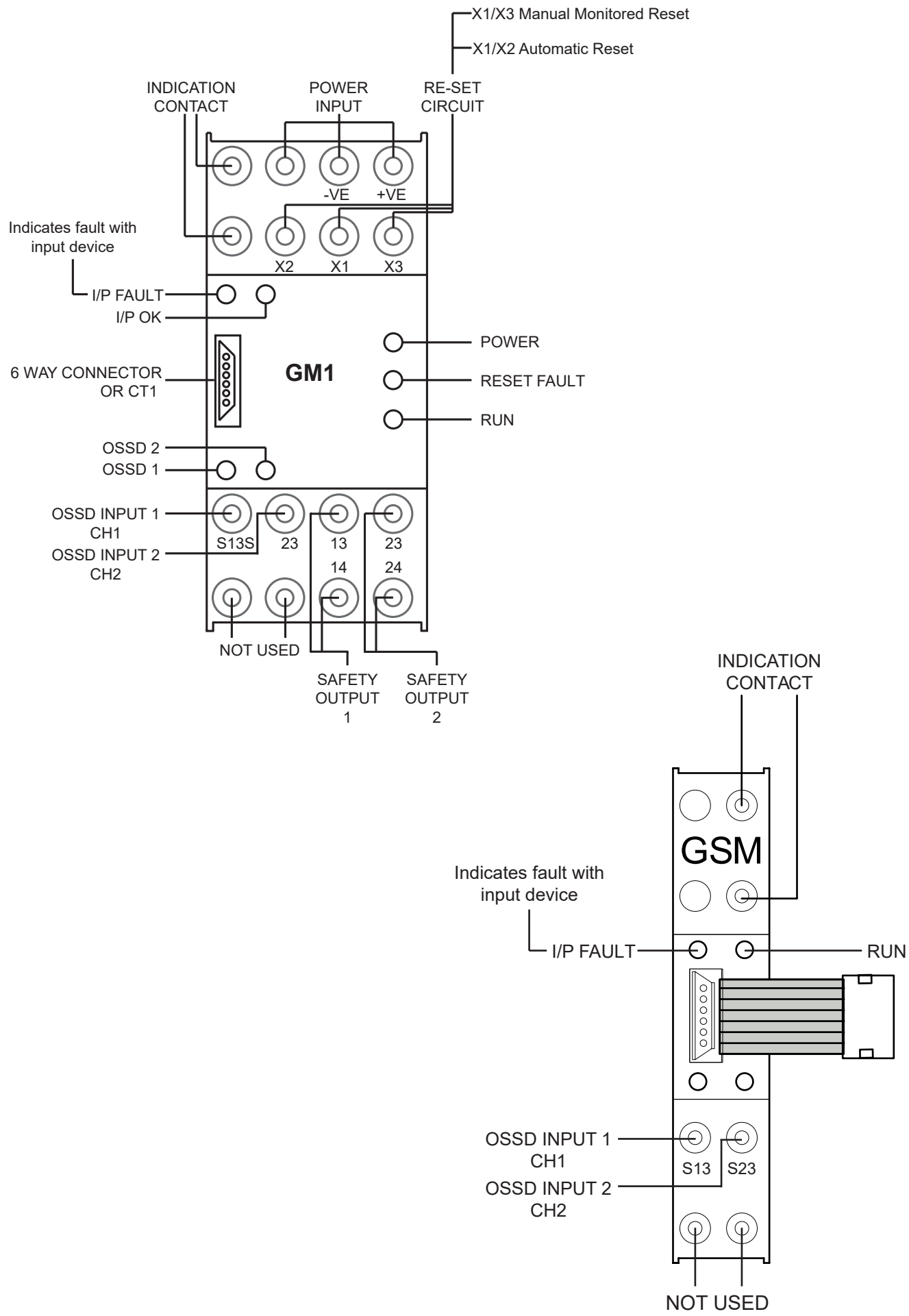


To remove the modules, gently lever out the DIN clip with a small screwdriver as shown (1).

Tilt the unit in the direction (2) and slip the unit off the DIN Rail (3)

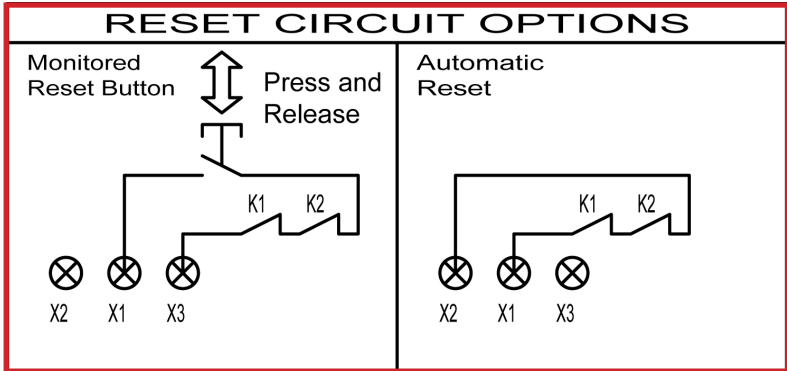
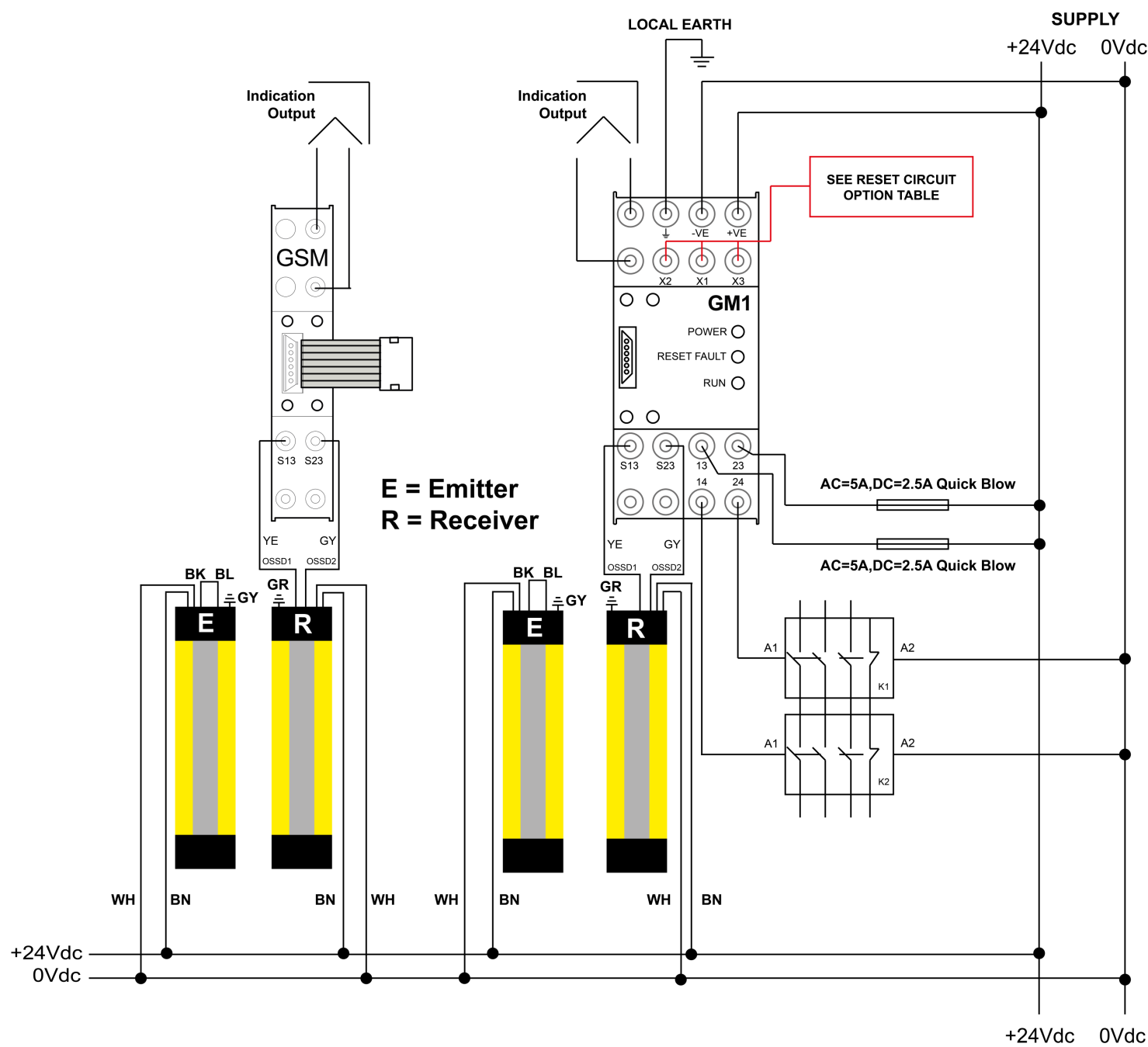


Connections



Connections

Connection example of GM1 and GSM monitoring 2 MLG-Series light curtain systems. Maximum 20 lights curtains (x1 GM1 x19 GSM) can be connected in a single system.



Important Information

Safety Assessment

A risk assessment should take place to establish that the specifications of these products are suitable for the application required. See Technical Specifications or contact Mechan Controls for further information.

The products may only be installed, commissioned, operated, maintained by competent persons.

A competent person is a qualified and knowledgeable person who, because of their training, experience and current professional activity, has the specialist knowledge required. An understanding of European and International laws, directives and standards is recommended.

Maintenance

It is recommended to check the safe operation of the modules and look for signs of damage or excessive wear on a weekly basis. Damaged units should be replaced or returned to the manufacturer for repair where practical.

Disclaimer

In the interest of product development specifications are subject to change without notice. It is the responsibility of the user to ensure compliance with any acts or by-laws in place. All information regarding Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

Warranty

Warranty will be void if the following points are true:

- The product was not used for its intended purpose
- Damage was caused by usage not stated in the manual
- Modifications have been made to the products (e.g. exchanging components)
- Operating personnel are not suitably qualified

Warning!



Failure to use the product for its intended purpose may lead to loss of safety resulting in serious injury or death.



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