

9478-ETG

MTL Intrinsically Safe Gigabit* Ethernet Galvanic Isolator

- **Intrinsically Safe ATEX / UKEX / IECEx Certification**
- **Galvanically Isolated Safe and Hazardous Area Ports**
- **Dual Port Switch 10/100/1000Mbps LAN (daisy-chain capability)**
- **Single IS Ethernet Switch Port 10/100/1000Mbps* LAN**
- **Safe and Hazardous sides link independently with auto- negotiation**
- **Status LEDs**
- **Single 12V/24VDC (10-30V) supply**
- **Compact dimensions (W: 42 x H: 160 x D: 140 mm)**
- **[Ex ia Ga] IIB, [Ex ia Da] IIIC (non-mining),
[Ex ia Ma] I (M1 mining).**
- **Ta = -40°C to +70°C**
- **Safe Area or Zone 2 / Zone 22 mounting**



The 9478-ET(G) is an Intrinsically Safe (IS) Ethernet Isolator suitable for Safe Area or Zone 2 / Zone 22 mounting for connection to intrinsically safe certified devices mounted in a Zone 0 location. The IS Ethernet isolator allows the interconnection of a Zone 2 or uncertified safe area device to the intrinsically safe 9400-ET range of Ethernet networking products, operating in the hazardous area.

The isolating barrier provides a compact alternative solution to fibre optic cable and media converters and for when it is desirable to use Cat5e/6 cables in preference to fibre

Transparent operation- 10/100/1000Mbps, Full/Half Duplex with AutoNegotiation. Supports IEEE 802.3: 10Base-T, 100Base-TX and 1000Base-TX.

The module is supplied as a DIN-rail mounting device.

There are 2x RJ45 (LAN) ports on the Safe Area side that support 10/100/1000 standard Ethernet connections – these can allow 'daisy chaining' of units together. The single Hazardous Area RJ45 provides an IS LAN connection

10/100/1000Mb* IS Ethernet twisted pair (Cat5e/6) RJ45 connection (100metres length max.) provide total galvanic isolation (Um=253Vac) from safe to hazardous areas.

The module operates from a single supply in the Safe Area of 10...30Vdc at approx. 24V @ 110mA or 12V @ 200mA.

The compact and cost effective design makes it the ideal choice for many applications:

Petrochem -	Process Monitoring, Galvanic Isolation...
Mining -	Underground Communication Links, Machine Monitoring....

Electrical connections are via cage-clamp and/or screw type plug/socket terminals along with RJ45 type connectors for the Ethernet LAN ports.

* 9478-ETG supports 10/100/1000Mbps on safe area and hazardous area ports
9478-ET supports 10/100Mbps on safe area and hazardous area ports

9478-ETG

April 2022

SPECIFICATION

Power supply

12V/24VDC (10-30V) Power Supply Input
Typically 24V @ 110mA or 12V @ 200 mA.

Input protection

Fuse + supply reversal diode

Ethernet

Standard 10/100/1000Base-T (Safe Area Port)
Intrinsically Safe 10/100/1000Base-T (Haz. Area Port)

Connector

RJ45 (x2) Safe Area
RJ45 (x1) Haz. Area

Cable Length

Up to 100m Cat5e

SAFETY

Location of Unit

Safe Area or Zone 2 / 22

Certification Code

[Ex ia Ga] IIB (9478-ETG)
[Ex ia Ga] IIC (9478-ET)
Ex ec [Ex ia] IIB T4 Gc (9478-ETG)
Ex ec [Ex ia] IIC T4 Gc (9478-ET)
[Ex ic Gc] IIB (9478-ETG)
[Ex ic Gc] IIC (9478-ET)
[Ex ia Da] IIIC (non-mining)
[Ex ia Ma] I (M1 mining)
Ta = -40°C to +70°C

Certificate numbers

CML 21ATEX21077X
CML 21ATEX41106X
CML 21UKEX21078X
CML 21UKEX41107X
IECEX CML 21.0121X
IECEX ExTC 22.0002X

See certificates for further information

ENVIRONMENTAL

Operating Temperature

-40°C...+70°C

Storage Temperature

-40°C...+70°C

Humidity

0...95% RH, non-condensing

Ingress Protection

Select enclosure to suit application,
see certificates for information

MECHANICAL

Width	42mm
Height	160mm
Depth	140mm
Weight	400g
Mounting	Din Rail

LED INDICATORS

	OFF	FLASH	ON
12V/24V PWR (green)	Power Fail	N/A	Power OK
HAZ PWR (green)	Internal Supply Fail	N/A	Power OK
STAT (green)	Fault	Healthy	Healthy
WDG (green)	Fault	Green – Healthy (10Hz)	Fault
RJ45 ACT (yellow)	Ethernet link disconnected	Ethernet link activity	Ethernet link connected
RJ45 1000 (green)	10/100Mbps	N/A	1000Mbps

Note: The HAZ PWR LED indicator monitors the internal isolated power supply generated from the 12V/24V Safe Area supply input.

DATA & POWER TERMINALS

Power (Enclosure Terminals)

Pin	Function	Pin	Function
1	Power In +12V/24V	2	Power 0V
3	Power In +12V/24V	4	Power 0V
5		6	
7		8	
9		10	

Note – Power terminals 1+2 and 3+4 internally connected
To allow looping to other units

LAN (RJ45 - SK1, SK2) 10/100/1000 BASE-T Ethernet

Pin	10/100 Function	Gigabit Function
1	Tx +	BI_DA+
2	Tx-	BI_DA-
3	Rx +	BI_DB+
4		BI_DC+
5		BI_DC-
6	Rx-	BI_DB-
7		BI_DD+
8		BI_DD-

Hazardous Area RJ45 SK2 is marked BLUE

ORDERING INFORMATION

Part Number	Description	Comments
9478-ETG	Ethernet Isolator – 10/100/1000Mbps Gigabit	Standard
9478-ET	Ethernet Isolator – 10/100/Mbps	Special Order