

# 9478-ETG

## MTL Intrinsically Safe Gigabit\* Ethernet Galvanic Isolator

- **Intrinsically Safe ATEX / UKEX / IECEx Certification / North America (MET<sub>C/US</sub>) approval**
- **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

\* 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

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:

<b>Petrochem -</b>	Process Monitoring, Galvanic Isolation...
<b>Mining -</b>	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

June 2023

## 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

<b>Width</b>	42mm
<b>Height</b>	160mm
<b>Depth</b>	140mm
<b>Weight</b>	400g
<b>Mounting</b>	Din Rail

## LED INDICATORS

	OFF	FLASH	ON
<b>12V/24V PWR (green)</b>	Power Fail	N/A	Power OK
<b>HAZ PWR (green)</b>	Internal Supply Fail	N/A	Power OK
<b>STAT (green)</b>	Fault	Healthy	Healthy
<b>WDG (green)</b>	Fault	Green – Healthy (10Hz)	Fault
<b>RJ45 ACT (yellow)</b>	Ethernet link disconnected	Ethernet link activity	Ethernet link connected
<b>RJ45 1000 (green)</b>	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+3 and 2+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	<b>Standard</b>
9478-ET	Ethernet Isolator – 10/100/Mbps	Special Order



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Publication No. 9478-ETG Rev 3 290623  
June 2023

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