

ZoneBarrier

High Energy Ethernet range

Surge protection for 1000/100/10-Base-T Ethernet Applications

- Rugged 10kA Surge Capacity
- Models for Standard Ethernet, Industrial Ethernet and PoE
- DIN Rail or Surface Mount
- 3 Stage Hybrid Protection Circuit
- Precise voltage limiting characteristics
- Shielded RJ45 Connectors
- 10 Year "No Fuss" Warranty
- UL497B Listed



The ZoneBarrier High Energy Ethernet range combines high speed, high surge current capacity, industrial capabilities, and hazardous area capabilities (pending) into a single package.

This product is ideally suited for industrial, process, network, plus security, and surveillance camera applications.

The application of high speed Ethernet and Power over Ethernet (PoE) devices is increasing dramatically in industries such as process, industrial, manufacturing, intelligent transportation system (ITS), and Security. Due to the application flexibility of these new high speed Ethernet devices many are now being installed in areas very susceptible to lightning and other types of damaging surge events.

Due to the operational criticality of many of these devices, any downtime or loss of function can become a major concern to the overall system availability and functional safety.

The need for a durable high speed protection solution capable of being installed into these harsh and sometimes hazardous locations has become increasingly more in demand.

The ZoneBarrier High Energy Ethernet range was developed specifically to fit the needs for these types of applications.



Powering Business Worldwide

Eaton Electric Limited,
Great Marlings, Butterfield, Luton
Beds, LU2 8DL, UK.
Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283
E-mail: mtlenquiry@eaton.com
www.mtl-inst.com

© 2017 Eaton
All Rights Reserved
Publication No. EPS 901-181 Rev D
January 2017

MTL ZoneBarrier

January 2017

SPECIFICATION

All figures typical at 25°C (77°F) unless otherwise stated

Maximum surge current

10kA (8/20µs waveform) per wire

Leakage Current

<1µA

Maximum rated load current

1.0A

Maximum Frequency

See table below

Attenuation

Better than: -0.5dB at 250MHz

N.E.X.T.

Worst pair: Better than -37dB

Return Loss

Better than -10dB at 250MHz

Ambient temperature

-40 C to +85 C (working)

-40 F to +185 F (working)

Humidity

5 to 95% RH (non-condensing)

Lines protected

Eight (8) per port

Connector type

SRJ45 (Shielded RJ45)

Compliance

BS EN 61326-1:2006

IEC 61643.21-2009

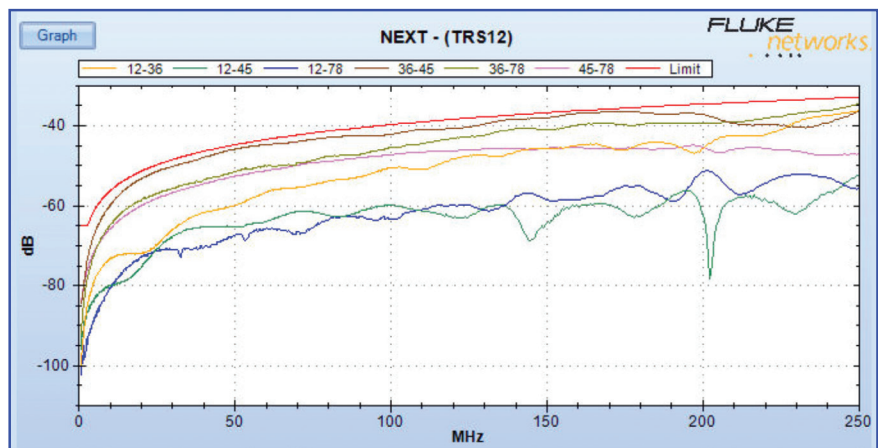
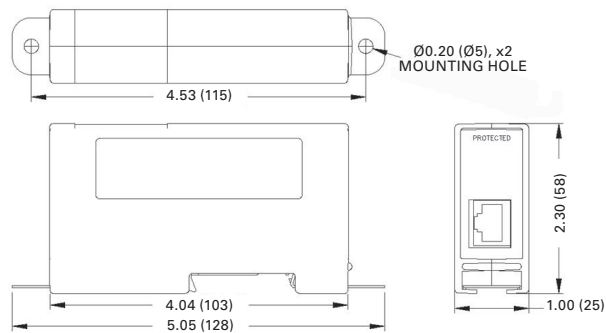
Standards

TIA/EIA-568-B.2-1

IEEE 802.3ab

IEEE 803.3af

IEEE 803.3at



N.E.X.T. Performance

APPROVALS

Country (Authority)	Standard No.	Certificate / File	Approved for	Product
UL (USA)	UL 497B Listed	E175267	Isolated loop communication circuits	ZB24596 ZB24598 ZB24597
EC (Baseefa)	EN 60079-0:2012 EN 60079-11:2012	BASEEFA 13ATEX0257X	II 1G Ex ia IIC T4 Ga	ZB24596 ZB24598 ZB24597
Global (IEC)	IEC 60079-0:2011 IEC 60079-11:2011	IECEX BAS 13.0136X	Ex ia IIC T4 Ga	ZB24596 ZB24598 ZB24597

To order specify -

Order by model, as listed in the Specification table

Model	ZB24596	ZB24598	ZB24597
Application	Standard 1000-Base-T Ethernet	Industrial 1000-Base-T Ethernet	PoE 1000-Base-T Ethernet
Nominal voltage	5V	12V	48V
Rated voltage	8V	17V	52V
Voltage protection level	10V	20V	90V
Maximum Frequency	300MHz per pair	300MHz per pair	300MHz per pair



Eaton Electric Limited,
Great Marlings, Butterfield, Luton
Beds, LU2 8DL, UK.
Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283
E-mail: mtlenquiry@eaton.com
www.mtl-inst.com

© 2017 Eaton
All Rights Reserved
Publication No. EPS 901-181 Rev D 230117
January 2017

EUROPE (EMEA):
+44 (0)1582 723633
mtlenquiry@eaton.com

THE AMERICAS:
+1 800 835 7075
mtl-us-info@eaton.com

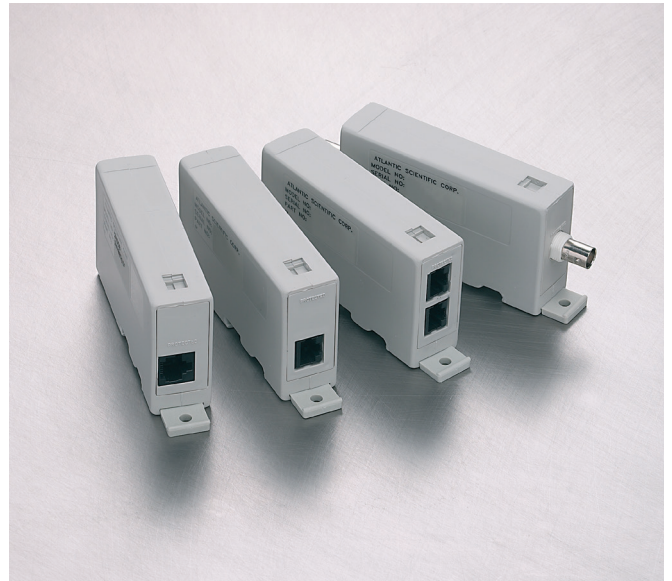
ASIA-PACIFIC:
+65 6 645 9888
sales.mtlsing@eaton.com

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.

ZoneBarrier Network

Protects network and communications applications against induced surges and transients

- **Modular, expandable protection for one to an unlimited number of ports**
- **Wall, DIN rail or 19" rack mountable**
- **Wide range of connector types available**
- **Three stage protection**
- **Category 6 universal model available**
- **10 year product warranty**



The ZoneBarrier range is a uniquely modular communication line interface protection system for IT networks and industrial communication systems. By providing an effective barrier between uncontrolled transient environments and your valuable electronic systems, the ZoneBarrier range protects against costly system down time and equipment failure.

The sophisticated hybrid circuitry employed by the ZoneBarrier range protects your equipment without impeding normal operation. ZoneBarrier protection components comprise a combination of high energy Gas Discharge Tubes with ultra-fast diodes and Silicon Avalanche Diodes. This combination of high quality surge protection components gives the ZoneBarrier range its characteristic low let-through voltage and high, 10kA, surge current capacity which provides excellent protection. ZoneBarrier devices have RJ45, terminal strip or pluggable terminal strip connectors.

Designed for multi-port or single-port applications the ZoneBarrier range offers a flexible surge protection solution that is capable of growing with your requirements. A ZoneBarrier module can be used as a stand-alone device, providing protection for a single workstation, or as a building block in a surge protection solution, as simple or as complex as your requirements, now and in the future.

The small foot print of ZoneBarrier modules allows a single module to be conveniently located near to the equipment it is protecting. Where multiple modules are required, ZoneBarrier units can be mounted on standard DIN rail. A DIN rail kit is also available for 19" rack applications which can hold up to 32 modules, providing protection of an impressive 64 100Base-T lines while occupying less than 5.2 inches (or a 3U space).

All widely used network systems can be protected by the ZoneBarrier range. ZoneBarrier modules are available for 100Base-T, 1,000Base-T, 10Base-2, RS232, RS422, RS423 and others with a range of connector types to suit all common network applications.

Additional protection circuitry should be provided for other parts of the network, or other systems which may be interconnected, e.g. incoming AC power, telephone wiring, fire and security systems, etc. ZoneBarrier modules are available to meet these requirements, contact your local supplier for details.

ZoneBarrier Network

September 2016

SPECIFICATION

Maximum load current

0.5 Amps

Ambient temperature limits

-40°F to +185°F (working)

-40°C to +85°C (working)

Humidity

95% RH (non-condensing)

Casing

Molded plastic

Weight

2.8 oz (0.08Kg)

Dimensions

See figure 1

EMC compliance

BS EN 60950: 1992

BS EN 61000-6-2: 1999

IEC 61000-4-5 and CCITT K17

Model	Type	Maximum surge current (kA)	Wires	Working voltage (V)	Let-through voltage (V)	Bandwidth (MHz)	Connectors
ZB24509	RS232	3	4 + Shield	15	27	0.5	Terminal Strip
ZB24510	RS232	3	5	15	27	0.5	Terminal Strip
ZB24511	RS232	3	8	18	27	0.5	RJ45
ZB24518	RS485	10	2	5	10	50	Terminal Strip
ZB24528	RS422	10	4 + Shield	8	15	50	Terminal Strip
ZB24537	DS3	10	Coax	8	30	70	BNC
ZB24540	100Base-T*	1	8	5	10	155	RJ45
ZB24550	100Base-T*	1	2 x 4	5	10	155	2 x RJ45
ZB24563	1000Base-T+	1	8	5	10	250	RJ45

INSTALLATION

All ZoneBarrier modules are installed in-line and are identified with "Protected" and "Unprotected" for fail-safe installation.

DIN rail mounting (figure 2)

ZoneBarrier modules can be mounted on any standard T-section DIN rail or on the optional 19" DIN rail assembly. To attach the ZoneBarrier module to the DIN rail, simply locate the DIN rail foot of the module over on edge of the DIN rail and then securely push the ZoneBarrier onto the DIN rail. Note the DIN rail must be properly grounded.

Stand-alone installation (figure 3)

To install a ZoneBarrier module as a stand-alone protector, attach a ground lead to the supplied ring terminal and secure this with the self tapping screw provided to the base of the unit. Using screws (or bolts) mount the module on any flat surface.

To order specify -

Model number as per specification table above.

DIN rail mounting options

- DR21607 5" DIN rail for up to 4 ZoneBarriers
- DR21649 17.5" DIN rail for up to 16 ZoneBarriers
- DR24500 19" DIN rail (with mounting brackets) for up to 32 ZoneBarriers

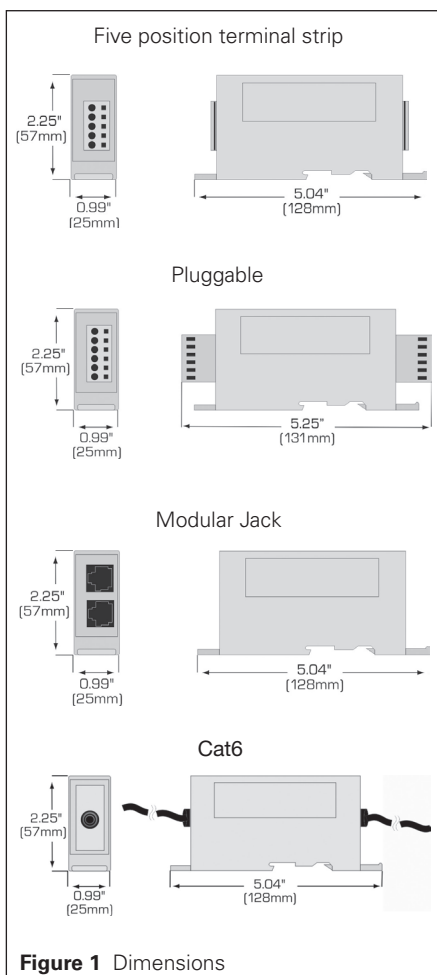


Figure 1 Dimensions

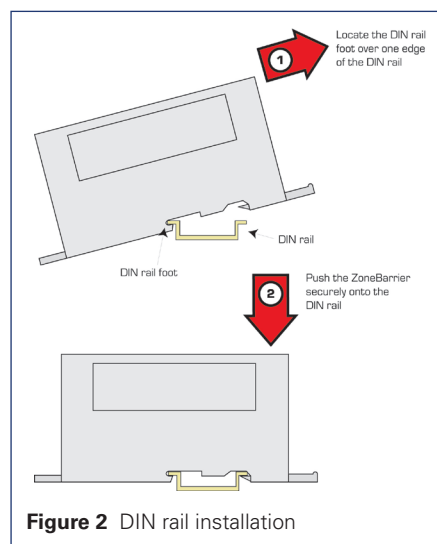


Figure 2 DIN rail installation

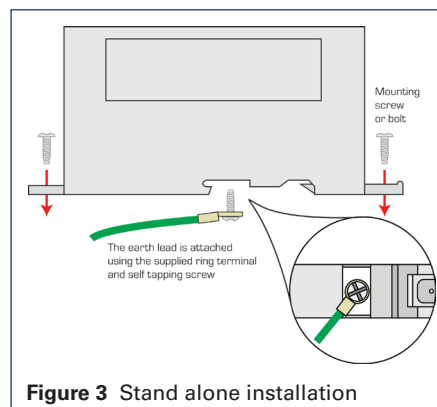


Figure 3 Stand alone installation

Approvals

Country	Standard/Authority	Approved for	Product
United States & Canada	UL 497B Listed UL Certified Cat.5	Networks	ZB24528, ZB24540, ZB24563