

ED3541 Series

Hardened 10/100BASE-TX Ethernet Extender



Overview

The ED3541 Ethernet extender allows the extension of IP services beyond normal Ethernet distance limitations without changing cables, breaking the 100-meter Ethernet barrier.

The ED3541's hardened design features high shock and vibration, electrical noise immunity, a wide operating temperature range from -40°C to 75°C, and ruggedized aluminum housing. The ED3541 is the ideal Ethernet extender for environments where connectivity is crucial.

Spotlight

• UL60950 Certification

- Certified by UL60950-1 standard, providing protections to installers from risk of injury or damage

• High Speed Performance

- Up to 100Mbps at 200 meters distance
- Up to 1Mbps at 2200 meters distance

• Wide Operating Temperature

- -40°C to 75°C wide operating temperature range design is suitable for installation in outdoor cabinets

Архангельск (8182)63-90-72
Астана +7(7172)727-132
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41

Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пермь (342)205-81-47
Пенза (8412)22-31-16
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78

Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX
- IEEE802.3x full duplex and flow control

Processing Type

- Half-duplex back-pressure and IEEE802.3x Full-duplex flow control
- Auto Negotiation
- Auto MDI/MDIX

Power

Input Voltage

- 12 to 48VDC (Terminal Block)

Power Consumption

- 4.56W max. 0.38A @ 12VDC
0.07A @ 48VDC

Protection

- Over current protection
- Reverse polarity protection

Mechanical

Casing

- Aluminum case
- IP30

Dimensions

- 42mm (W) x 90mm (D) x 100mm (H)
(1.65" (W) x 3.54" (D) x 3.94" (H))

Weight

- 0.41 Kg (0.9 lbs.)

Installation

- DIN-Rail (Top hat type 35mm) mounting

Interface

Ethernet Port

- Port: One RJ-45 port
- Speed: 10/100Mbps
- Distance: 100 meters (328ft.)
- Cable: 10BASE-T: UTP CAT. 3, 4, 5 (2-pair wire)
100BASE-TX: UTP CAT. 5 (4-pair wire)

Ethernet Extender Port

- Port: One RJ-11/Terminal Block port
- Speed: Up to 100Mbps
- Distance: 2200 meters (7217 ft.)
- Cable: Telephone wire 24 AWG
(0.5mm diameter, 1-pair wire) or larger

DIP-Switch

- DIP 1 Site: Auto/Loc
- DIP 2 LDR: ON/OFF

LED Indicators

- Per Unit: Power 1, 2
- Per 10/100TX Port: Link/Activity, Full-duplex
- Line Speed: 100/80/60/40/20Mbps and Link below 20Mbps

Speed / Distance Reference

Distance (m)	Data rate (Mbps)
200	100
400	80
600	60
800	40
...	...
2200	1

Note:

- All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet
- The data rate will vary according to line quality

Environment

Operating Temperature

- -40°C to 75°C (-40°F to 167°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL60950-1, EN60950-1, IEC60950-1

EMI

FCC Part 15B, Class A

VCCI, Class A

EN61000-6-4

EMS

EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

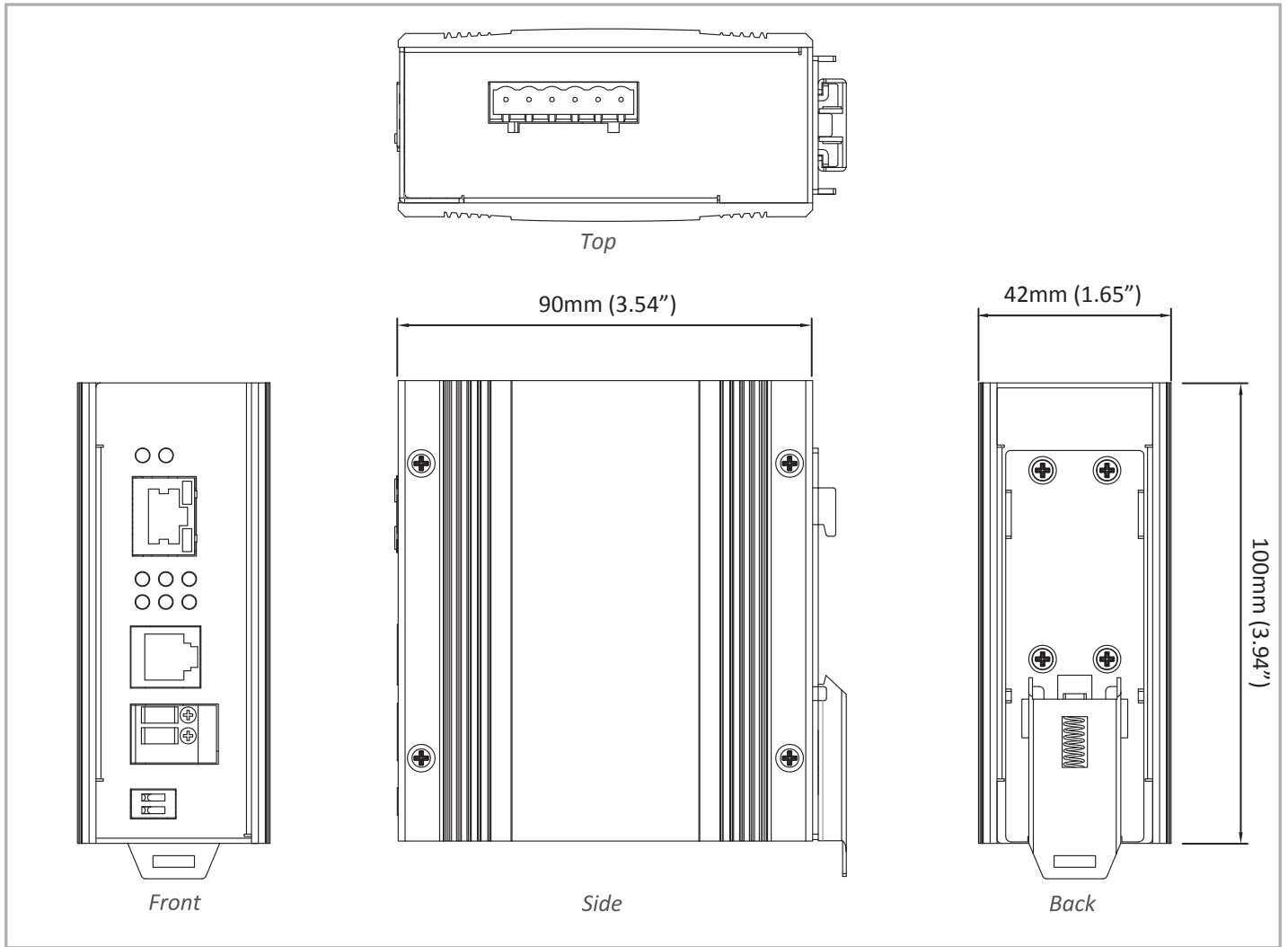
Environmental Test Compliance

IEC60068-2-6 Fc (Vibration Resistance)

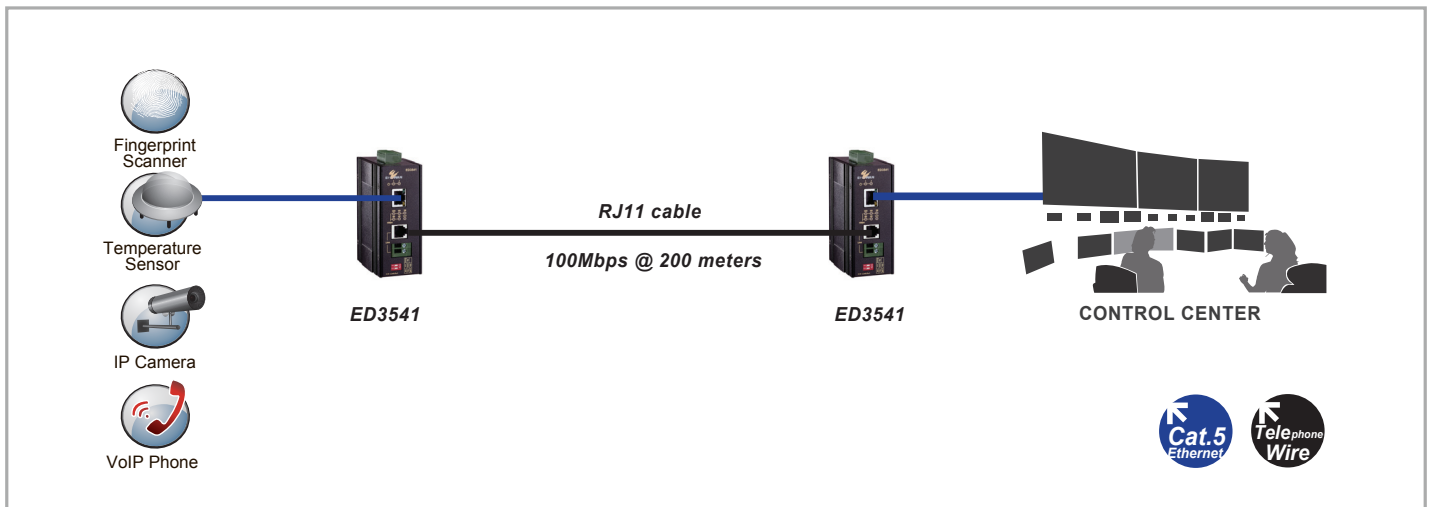
IEC60068-2-27 Ea (Shock)

FED STD 101C Method 5007.1 (Free fall w/ package)

Dimensions



Application Diagram



Ordering Information

Model

ED3541-00B	Hardened 10/100BASE-TX Ethernet Extender
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* DIN-Rail mounting kit included

Optional Accessories

DR-30-24	30W/1.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
MDR-40-48	40W/0.83A 48VDC Industrial Power Supply (for Terminal Block)

ED3238

10/100BASE-TX IEEE802.3af PoE Ethernet Extender over Coaxial Cable



Overview

The ED3238 Ethernet Extender utilizes EtherWAN's exclusive Power over Link™ (PoL™) technology to deliver both PoE power and Ethernet communications over a single legacy coaxial cable. The ED3238 PoL solution is comprised of an ED3238 Transmitter and Receiver working together to provide reliable communications and power to remote PoE Powered Devices (PD).

When remote connectivity and power is required on legacy cable, the ED3238 transceiver connected with an AC/DC power adaptor which provides 15.4 watts of power and a bandwidth of 100Mbps to be delivered to the ED3238 receiver. The ED3238 receiver in turn powers up a remote PoE device such as an IP camera, a wireless access point, an emergency intercom, or a VoIP phone.

The ED3238 is compliant with UL60950-1 / IEC60950-1 standards with high electromagnetic sustainability and IEC60068 standards against shock and vibration, ensuring a reliable connection under harsh environments.

Spotlight

- **Power over Link™ up to 180 m (590 ft.)**
 - A superb 15.4 watts power with with 100Mbps bandwidth is delivered to the receiving side by 30m (min.) or 180m (max.) long coaxial cable.
- **Ethernet extension solution with high transmission data rate up to 100Mbps**
 - Up to 180 meters* transmission distance with 100Mbps data rate
- **Powered by IEEE802.3at Devices**
 - ED3238 transmitter side can be powered either by an IEEE802.3at PoE/PSE device or a 57VDC adaptor

* Operating distance: 30 to 180m

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX
- IEEE802.3af PoE/PSE

Forward and Filtering Rate

- 1,488,100pps for 1000Mbps

Processing Type

- IEEE802.3x Full-duplex flow control
- Auto Negotiation
- Auto MDI/MDIX

Power

Input

- DC Jack: 57VDC
- ED3238T PoE/PD port: 50VDC to 57VDC

Power Consumption

- Device: Max. 6W
- PoE power budget: 15.4W max.
(depending on power input)

Input Voltage v.s. Output Power

DC Jack Input Voltage	RG6/U 18AWG CCS	ED3238R PoE/PSE Output Power	RG11 14AWG CCS	ED3238R PoE/PSE Output Power
50VDC	180m	5.5W	250m	11W
51VDC	180m	7.0W	250m	13W
52VDC	180m	9.0W	250m	15W
52VDC	180m	10.5W	250m	16W
54VDC	180m	12.0W	250m	17W
55VDC	180m	14.0W	250m	17W
56VDC	180m	15.4W	250m	18W
57VDC	180m	15.4W	250m	18W

Mechanical

Casing

- Aluminum Case
- IP30

Dimensions

- 46mm (W) x 98mm (D) x 25mm (H)
(1.81" (W) x 3.86" (D) x 0.98" (H))

Weight

- 0.1Kg (0.221 lbs.)

Installation

- Panel or Rack mounting

Interface

Ethernet Port

- ED3238T/R: 1 x RJ-45 port
- ED3238T/R: 1 x PoE/PD port
- Speed: 10/100Mbps
- Distance: 100 meters (328ft.)
- Cable: 100BASE-TX: UTP CAT. 5 (4-pair wire)

Ethernet Extender Port

- Port: One 75Ω BNC Port (with F-type connector)
- Cable: Coaxial Cable (5C2V / RG6/U)
- Distance: 250m (820ft) RG11 AWG 14 CCS coaxial cable
180m (590ft) RG6/U AWG18 CCS coaxial cable
120m (394ft) RG59 coaxial cable

LED Indicators

- Power: Power status
- LINK/ACT: Data transmission and power delivery
- PoE: PD status

Environment

Operating Temperature

- -10°C to 50°C (14°F to 113°F)

Storage Temperature

- -20°C to 70°C (-4°F to 158°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL60950-1 and IEC60950-1

EMI

CE

EN55022

EN55024

EN61000-3-2

EN61000-3-3

FCC Part 15B, Class A

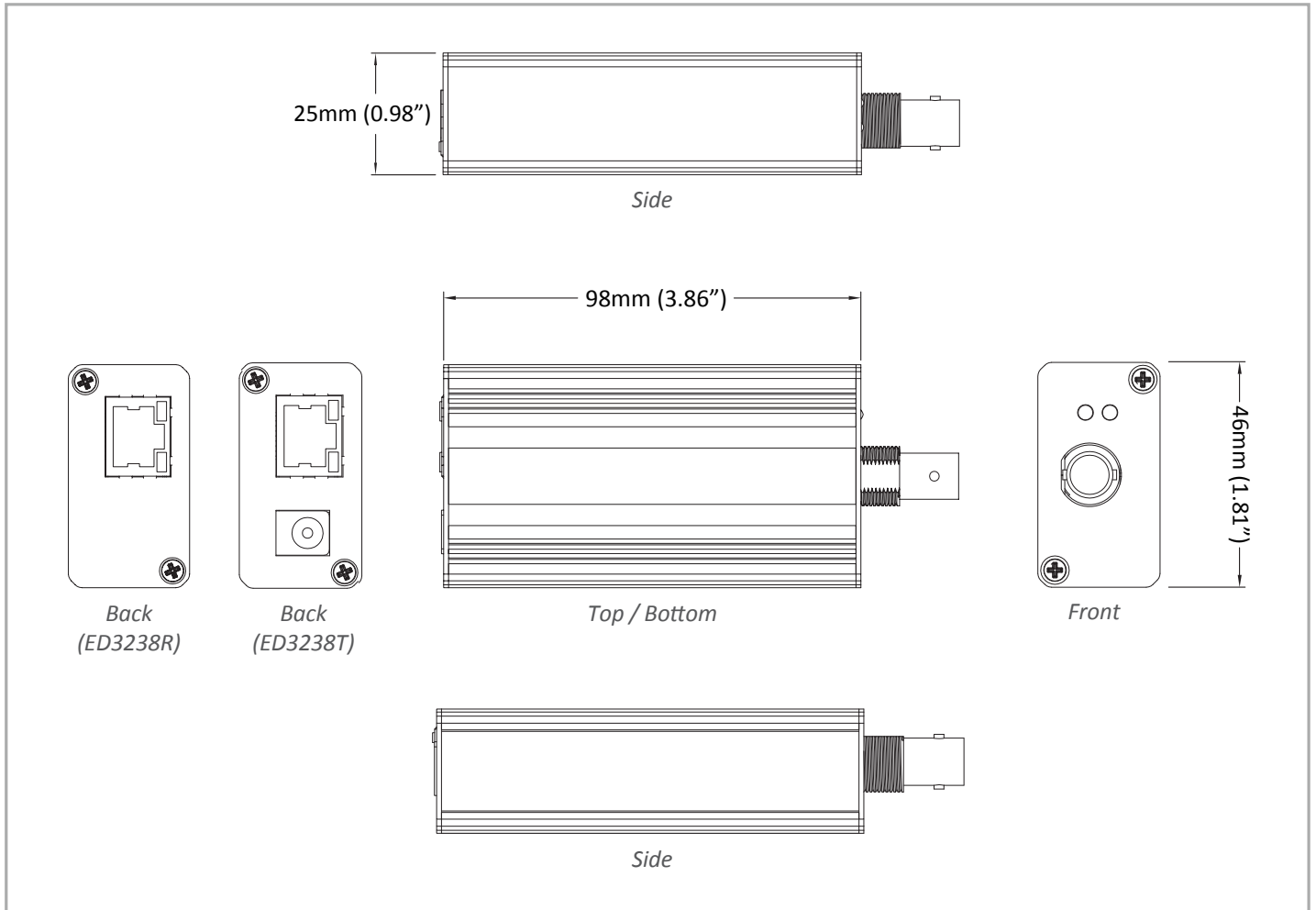
VCCI

EMS

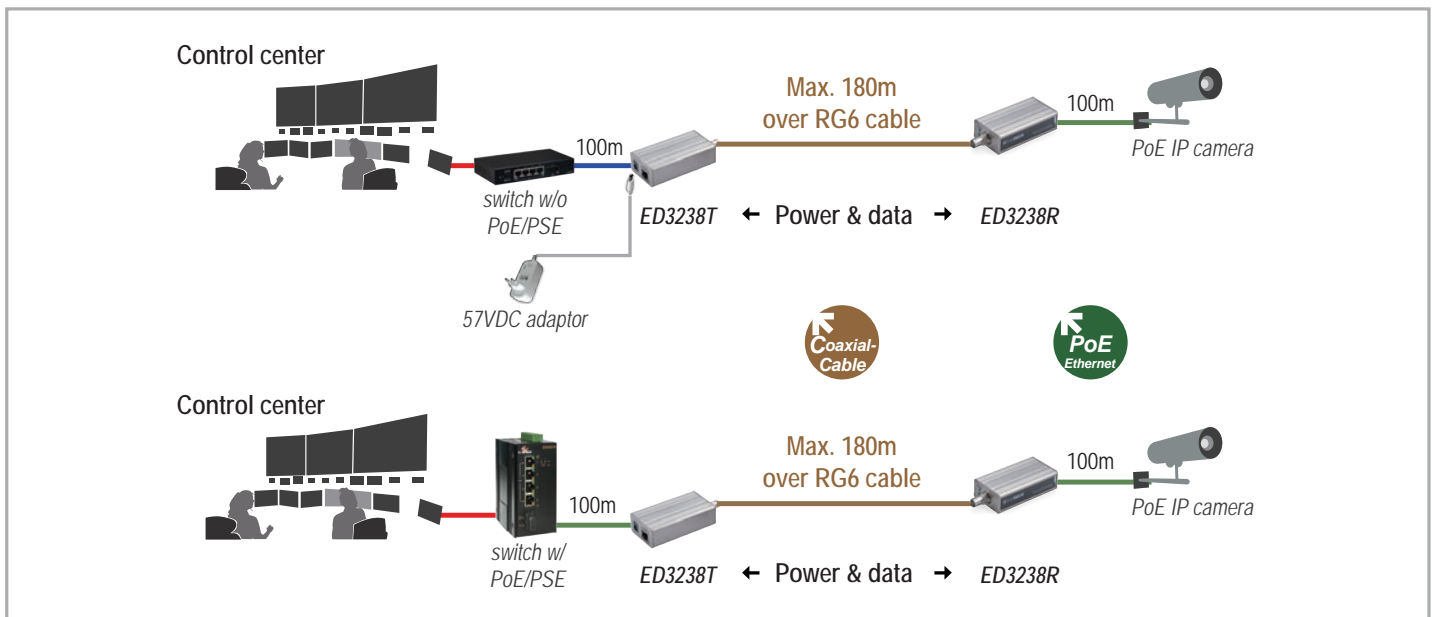
EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

Dimensions



Application Diagram



Ordering Information

Model

ED3238-TRU	PoL/PoE Ethernet extender over coaxial cable (including one ED3238T, one ED3238R and one 57VDC adaptor, USA type)
ED3238-TRE	PoL/PoE Ethernet extender over coaxial cable (including one ED3238T, one ED3238R and one 57VDC adaptor, Europe type)
ED3238-TRX	PoL/PoE Ethernet extender over coaxial cable (including one ED3238T and one ED3238R)

ED3331 Series

Industrial 10/100BASE-TX Ethernet Extender over Coaxial Cable



Overview

The ED3331 Series Ethernet Extender enables the extension of Ethernet connectivity over existing coaxial cable allowing legacy infrastructure to be leveraged for IP networks and extending the Ethernet distance limitations of 100-meters.

Upgrading an existing legacy control or surveillance system to a new IP-based system is a complicated task, especially when existing cable infrastructure is old coaxial cable. EtherWAN's ED3331 Series provides Ethernet connection and extension over these existing copper wire cables minimizing the expense of pulling new cable infrastructure.

The ED3331 Series is built with industrial grade specifications, providing wide temperature operation range from -10°C to 60°C to overcome industrial environments. Incorporating VDSL technology, the ED3331's BNC extender ports provide long distance transmission with 75Mbps rate at 200 meters, or 1Mbps at 2600 meters; 5 speed LED Indicators in the front panel provide easy lookup for the connection speed.

Spotlight

• UL508 Certification

- Specific design for industrial communication applications with UL508 safety certification

• Transmission Speed LED Indication

- Supports ten speed LED Indicators

• Industrial Operating Temperature Range

- From -10°C to 60°C, wide operating temperature is suitable for outdoor cabinet installation

• Optional Chassis System

- Supports wall mounting or EtherWAN's EMC1600 chassis system for easy group installation with power redundancy

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX
- IEEE802.3x full duplex and flow control

Processing Type

- Half-duplex back-pressure and IEEE802.3x Full-duplex flow control
- Auto Negotiation
- Auto-MDI/MDIX

Power

Input Voltage

- 12VDC

Power Consumption

- 5.76W Max. 0.48A @ 12VDC

Protection

- Over current protection
- Reverse polarity protection

Mechanical

Casing

- Aluminum case

Dimensions

- 80.3mm (W) x 109.2mm (D) x 23.8mm (H)
(3.16" (W) x 4.30" (D) x 0.94" (H))

Weight

- 150g (0.33lb.)

Installation

- DIN-Rail (Top hat type 35mm) mounting
- Wall mounting
- Install with EMC1600 Chassis

Interface

Ethernet Port

- Port: One RJ-45 port
- Speed: 10/100Mbps
- Distance: 100meters (328ft.)
- Cable: 10BASE-T: UTP CAT. 3, 4, 5 (2-pair wire)
100BASE-TX: UTP CAT. 5 (4-pair wire)

Ethernet Extender Port

- One 75Ω BNC Port (with F-type connector)
- Speed: 1/5/10/20/30/40/50/60/70/75Mbps
- Distance: 2600 meters (8,530ft.)
- Cable: Coaxial Cable (5C2V/ RG6(=RG6/U))

DIP-Switch

- One DIP Switch: Local (CO) or Remote (CPE)

LED Indicators

- Per Unit: Power
- Per 10/100TX Port: Link/Activity, Full-duplex
- Line: Error, Link, Local, Remote

Speed / Distance Reference

Speed	Distance
1-5Mbps	2,600M(8,530ft.)
6-10Mbps	2,400M(7,874ft.)
11-16Mbps	2,000M(6,561ft.)
17-20Mbps	1,800M(5,905ft.)
21-29Mbps	1,600M(5,249ft.)
30-43Mbps	1,400M(4,593ft.)
44-54Mbps	1,200M(3,937ft.)
55-63Mbps	1,000M(3,280ft.)
64-74Mbps	600M(1,968ft.)
75-85Mbps	200M(656ft.)

- Note: All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet

Environment

Operating Temperature

- -10°C to 60°C (14°F to 140°F)

Storage Temperature

- -20°C to 70°C (-4°F to 158°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL508

EMI

FCC Part 15B, Class A

VCCI, Class A

EN61000-6-3

EN55022

EN61000-3-3

EMS

EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

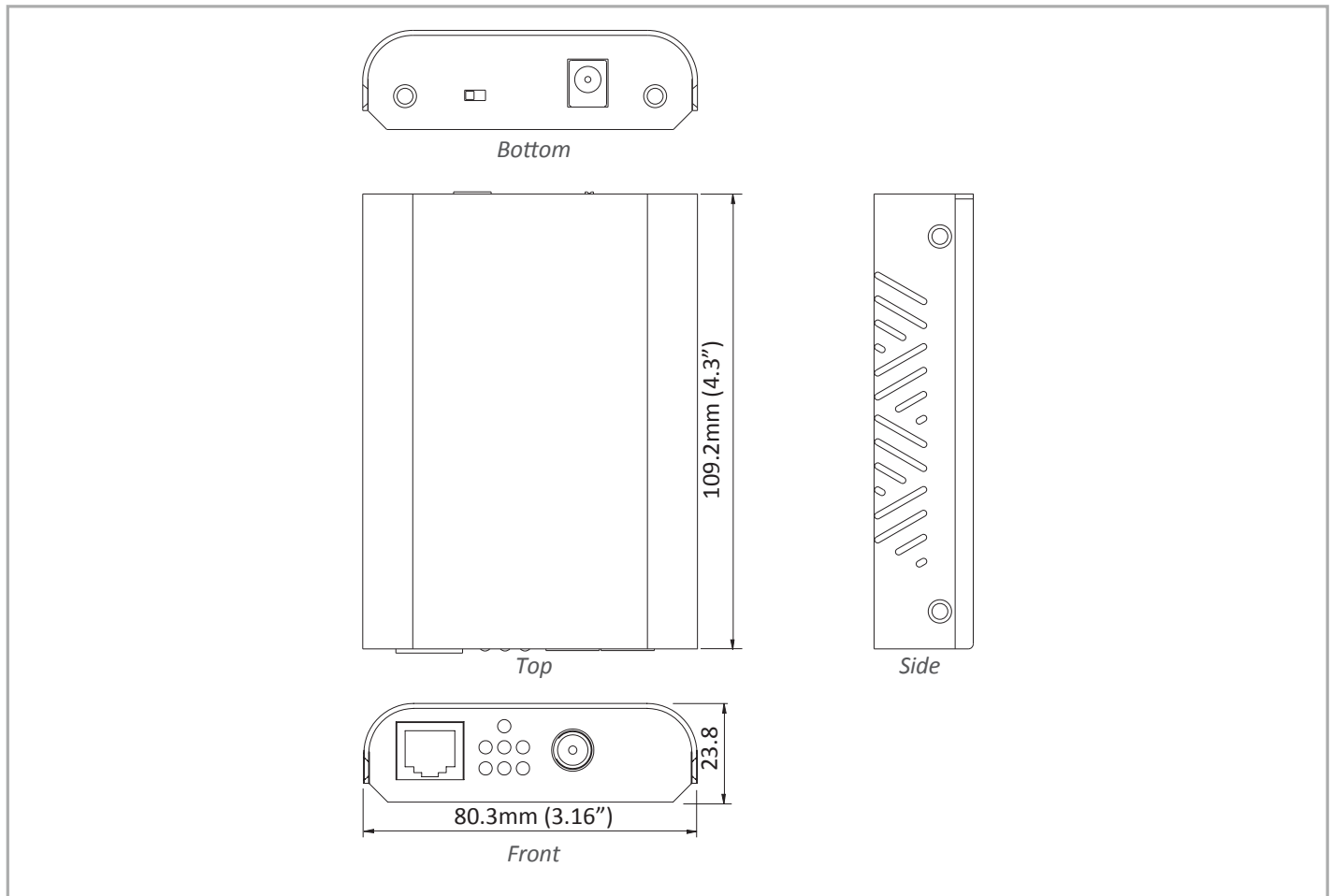
Environmental Test Compliance

IEC60068-2-6 Fc (Vibration Resistance)

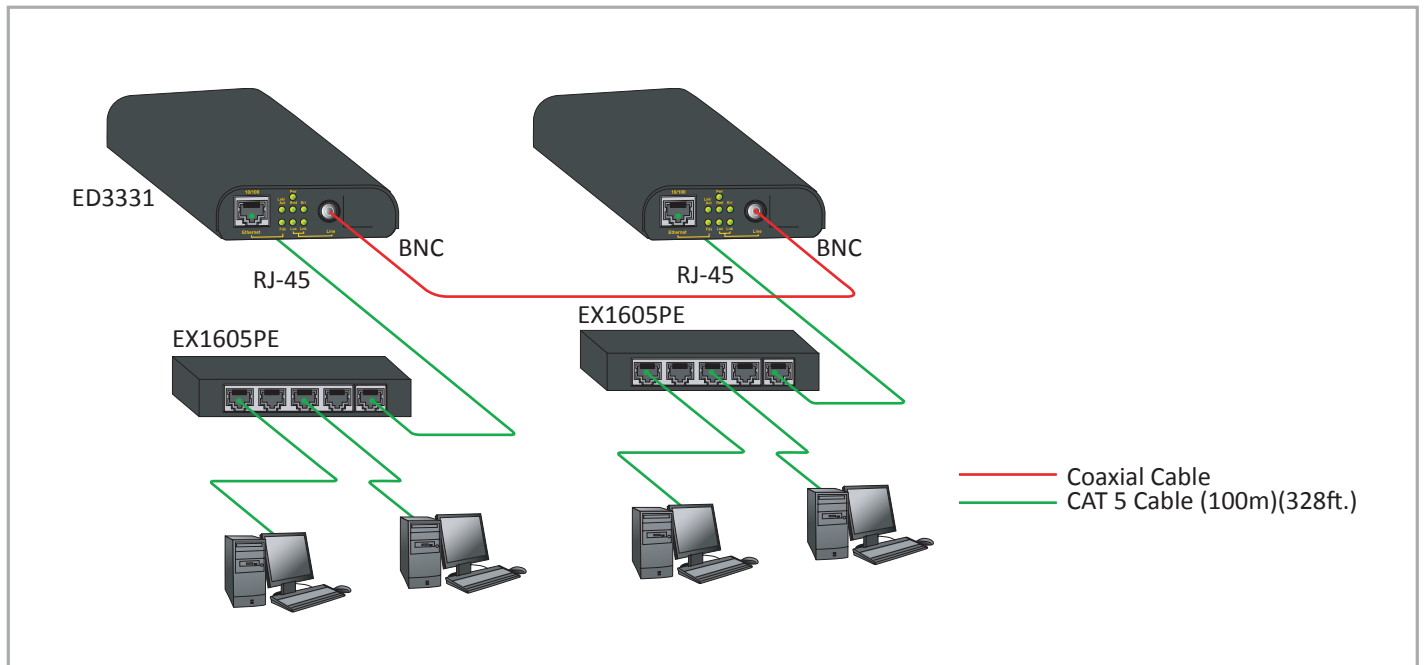
IEC60068-2-27 Ea (Shock)

FED STD 101C Method 5007.1 (Free fall w/ package)

Dimensions



Application Diagram



Ordering Information

Model

ED3331-00Z	Industrial 10/100BASE-TX Ethernet Extender over Coaxial Cable
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External Power Adaptor Options (Z)

A	with external power adapter for AU
E	with external power adapter for EU
J	with external power adapter for JP
K	with external power adapter for UK
U	with external power adapter for USA
3C	with external power adapter for China

ED3341 Series

Hardened 10/100BASE-TX Ethernet Extender over Coaxial Cable



Overview

The ED3341 Series Ethernet Extender enables the extension of Ethernet connectivity over existing coaxial cable allowing legacy infrastructure to be leveraged for IP networks and extending the Ethernet distance limitations of 100 meters.

Upgrading an existing legacy control or surveillance system to a new IP-based system is a complicated task, especially when existing cable infrastructure is an old coaxial cable. EtherWAN's ED3341 Series provides Ethernet connection and extension over these existing coaxial cables, minimizing the expense of pulling new cable infrastructure.

The ED3341 Series is built with hardened specifications, providing wide temperature operation range from -40°C to 75°C to overcome severe outdoor environments. Incorporating VDSL technology, the ED3341's BNC extender ports provide long distance transmission with 75Mbps rate at 200 meters, or 1Mbps at 2600 meters; 10 speed LED indicators in the front panel provide easy lookup for the connection speed.

Spotlight

• UL508 Certification

- Specific design for industrial communication applications with UL508 safety certification

• EN50121-4 and EN50155 Certification

- Specific design for railway environment application

• Wide Operating Temperature

- -40°C to 75°C wide operating temperature range design is suitable for installation in outdoor cabinet

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX
- IEEE802.3x full duplex and flow control

Processing Type

- Half-duplex back-pressure and IEEE802.3x Full-duplex flow control
- Auto Negotiation
- Auto MDI/MDIX

Power

Input Voltage

- 12VDC (DC Jack)
- 12 to 48VDC (Terminal Block)

Power Consumption

- 7.2W Max. 0.6A @ 12VDC, 0.15A @ 48VDC

Protection

- Over current protection
- Reverse polarity protection

Mechanical

Casing

- Aluminum case
- IP30

Dimensions

- 50mm (W) x 110mm (D) x 135mm (H)
(1.97" (W) x 4.33" (D) x 5.31" (H))

Weight

- 0.8Kg (1.76lbs.)

Installation

- DIN-Rail (Top hat type 35mm), Panel or Rack mounting

Interface

Ethernet Port

- Port: One RJ-45 port
- Speed: 10/100Mbps
- Distance: 100meters (328ft.)
- Cable: 10BASE-T: UTP CAT. 3, 4, 5 (2-pair wire)
100BASE-TX: UTP CAT. 5 (4-pair wire)

Ethernet Extender Port

- Port: One 75Ω BNC Port (with F-type connector)
- Speed: 1/5/10/20/30/40/50/60/70/75Mbps
- Distance: 2600 meters (8,530ft.)
- Cable: Coaxial Cable (5C2V/ RG6(=RG6/U))

DIP-Switch

- One DIP Switch: Local (CO) or Remote (CPE)

LED Indicators

- Per Unit: Power Status (Power)
- Per Port 10/100TX: Link/Activity, Full-duplex
- Line: Error, Link, Local, Remote

Speed / Distance Reference

Speed	Distance
1-5Mbps	2,600M(8,530ft.)
6-10Mbps	2,400M(7,874ft.)
11-16Mbps	2,000M(6,561ft.)
17-20Mbps	1,800M(5,905ft.)
21-29Mbps	1,600M(5,249ft.)
30-43Mbps	1,400M(4,593ft.)
44-54Mbps	1,200M(3,937ft.)
55-63Mbps	1,000M(3,280ft.)
64-74Mbps	600M(1,968ft.)
75-85Mbps	200M(656ft.)

- Note: All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet

Environment

Operating Temperature

- -40°C to 70°C (-40°F to 158°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL508

EMI

FCC Part 15B, Class A

EN61000-6-4, EN55022, EN61000-3-2 and EN61000-3-3

EMS

EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

Environmental Test Compliance

IEC60068-2-6 Fc (Vibration Resistance)

IEC60068-2-27 Ea (Shock)

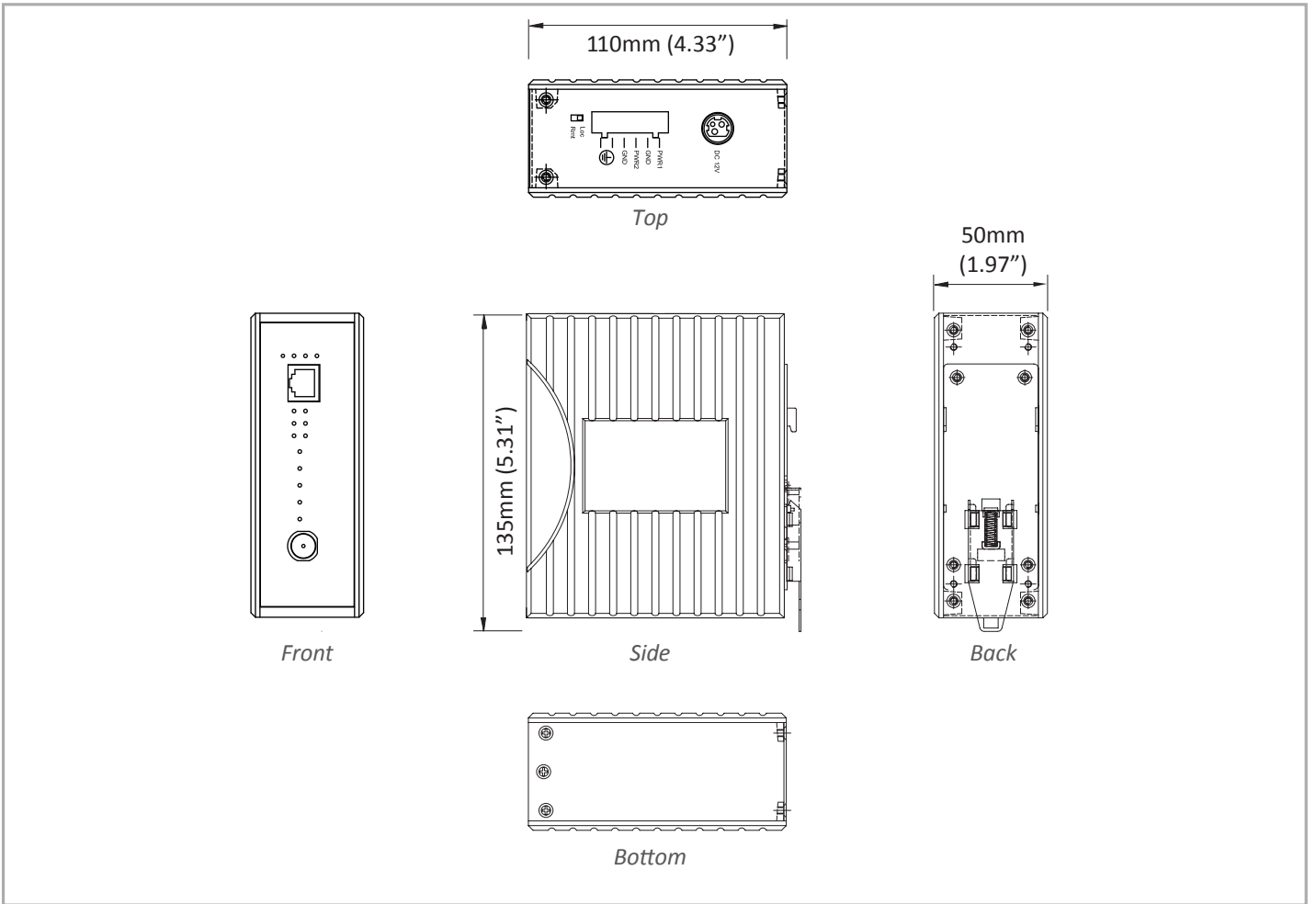
FED STD 101C Method 5007.1 (Free fall w/ package)

Industrial Compliance

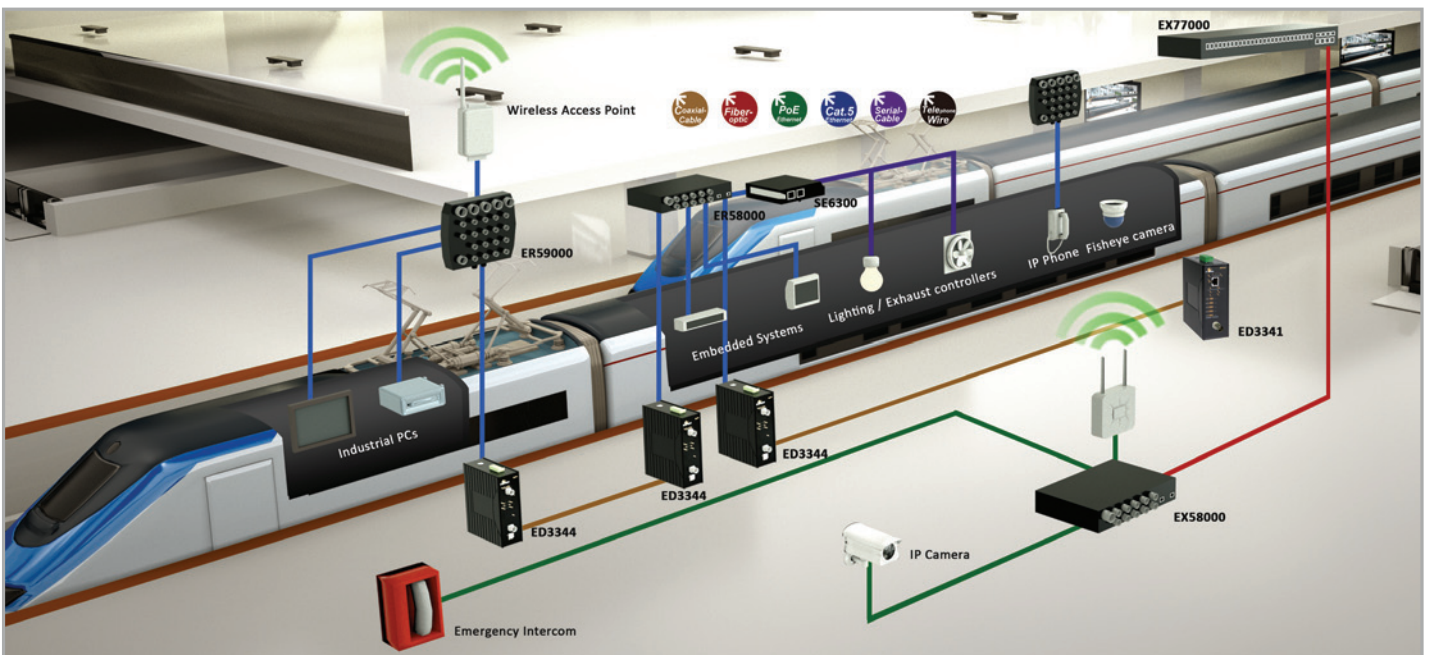
EN50121-4

EN50155

Dimensions



Application Diagram



Ordering Information

Model

ED3341-00B	Hardened 10/100BASE-TX Ethernet Extender Over Coaxial Cable
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Optional Accessories

KP-AA96-480	Panel Mounting Kit
MDR-40-48	40W/0.83A DIN-Rail 48VDC Industrial Power Supply (for Terminal Block)
DR-30-24	30W/1.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
DR-60-24	60W/2.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
DR-75-24	75W/3.2A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
DR-120-24	120W/5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
41-136046-X	36W/3A 12VDC Hardened Power Adapter with Open Wire in Aluminum Housing (for Terminal Block) (X)=1: US, 2: EU, 3: UK, 4: AU, 5: JP, 6: SA
41-136044-X	36W/3A 12VDC Hardened Power Adapter with Latched DC Jack in Aluminum Housing (for DC Jack) (X)=1: US, 2: EU, 3: UK, 4: AU, 5: JP, 6: SA

ED3344 Series

Hardened 10/100/BASE-TX M12 Ethernet Extender over Coaxial Cable



Overview

The ED3344 Series Ethernet Extender enables the extension of Ethernet connectivity over existing coaxial cable allowing legacy infrastructure to be leveraged for IP networks and extending the Ethernet distance limitations of 100 meters.

Upgrading an existing legacy control or surveillance system to a new IP-based system is a complicated task, especially when existing cable infrastructure is old coaxial cable. EtherWAN's ED3344 Series provides Ethernet connection and extension over these existing coaxial cables minimizing the expense of pulling new cable infrastructure.

The ED3344 Series is built with hardened specifications, providing wide temperature operation range from -40°C to 75°C to overcome severe outdoor environments. Featured with a M12 Ethernet connector, The ED3344 provides high mechanical strength and suitable for railway applications. Incorporating VDSL technology, the ED3344's BNC extender ports provide long distance transmission with 75Mbps rate at 200 meters, or 1Mbps at 2600 meters; 10 speed LED indicators in the front panel provide easy lookup for the connection speed

Spotlight

• UL508 Certification

- Specific design for industrial communication applications with UL508 safety certification

• EN50121-4 and EN50155 Certification

- Specific design for railway environment application

• Wide Operating Temperature

- -40°C to 75°C wide operating temperature range design is suitable for installation in outdoor cabinet

• M12 Ethernet Connector

- M12 Ethernet port provides strong mechanical strength

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX
- IEEE802.3x full duplex and flow control

Processing Type

- Half-duplex back-pressure and IEEE802.3x Full-duplex flow control
- Auto Negotiation
- Auto-MDI/MDIX

Power

Input Voltage

- 12 to 48VDC (Terminal Block and Latched DC Jack)

Power Consumption

- 7.2W Max. 0.6A @ 12VDC, 0.15A @ 48VDC

Protection

- Over current protection
- Reverse polarity protection

Mechanical

Casing

- Aluminum case
- IP30

Dimensions

- 50mm (W) x 110mm (D) x 135mm (H)
(1.97" (W) x 4.33" (D) x 5.31" (H))

Weight

- 0.8Kg (1.76lbs.)

Installation

- DIN-Rail (Top hat type 35mm), Panel, or Rack mounting

Interface

Ethernet Port

- Port: One M12, 4Pin, D-type port
- Speed: 10/100Mbps
- Distance: 100meters (328ft.)
- Cable: 10BASE-T: UTP CAT. 3, 4, 5 (2-pair wire)
100BASE-TX: UTP CAT. 5 (4-pair wire)

Ethernet Extender Port

- One 50Ω BNC Port (with F-type connector)
- Speed: 1/5/10/20/30/40/50/60/70/75Mbps
- Distance: 2600 meters (8,530ft.)
- Cable: Coaxial Cable (5C2V/RG6AU)

DIP-Switch

- One DIP Switch: Local (CO) or Remote (CPE)

Console Port

- Port: One DB9 RS-232 port

LED Indicators

- Per Unit: Power
- Per 10/100TX Port: Link/Activity, Full-duplex
- Line: Error, Link, Local, Remote

Speed / Distance Reference

Speed	Distance
1-5Mbps	2,600M(8,530ft.)
6-10Mbps	2,400M(7,874ft.)
11-16Mbps	2,000M(6,561ft.)
17-20Mbps	1,800M(5,905ft.)
21-29Mbps	1,600M(5,249ft.)
30-43Mbps	1,400M(4,593ft.)
44-54Mbps	1,200M(3,937ft.)
55-63Mbps	1,000M(3,280ft.)
64-74Mbps	600M(1,968ft.)
75-85Mbps	200M(656ft.)

- Note: All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet

Environment

Operating Temperature

- -40°C to 75°C (-40°F to 167°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL508

EMI

FCC Part 15B, Class A

VCCI, Class A

EN61000-6-4, EN55022, EN61000-3-2 and EN61000-3-3

EMS

EM50121-3-2

- EN61000-6-2
- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

Environmental Test Compliance

EN61373 (Vibration and Shock)

IEC60068-2-6 Fc (Vibration Resistance)

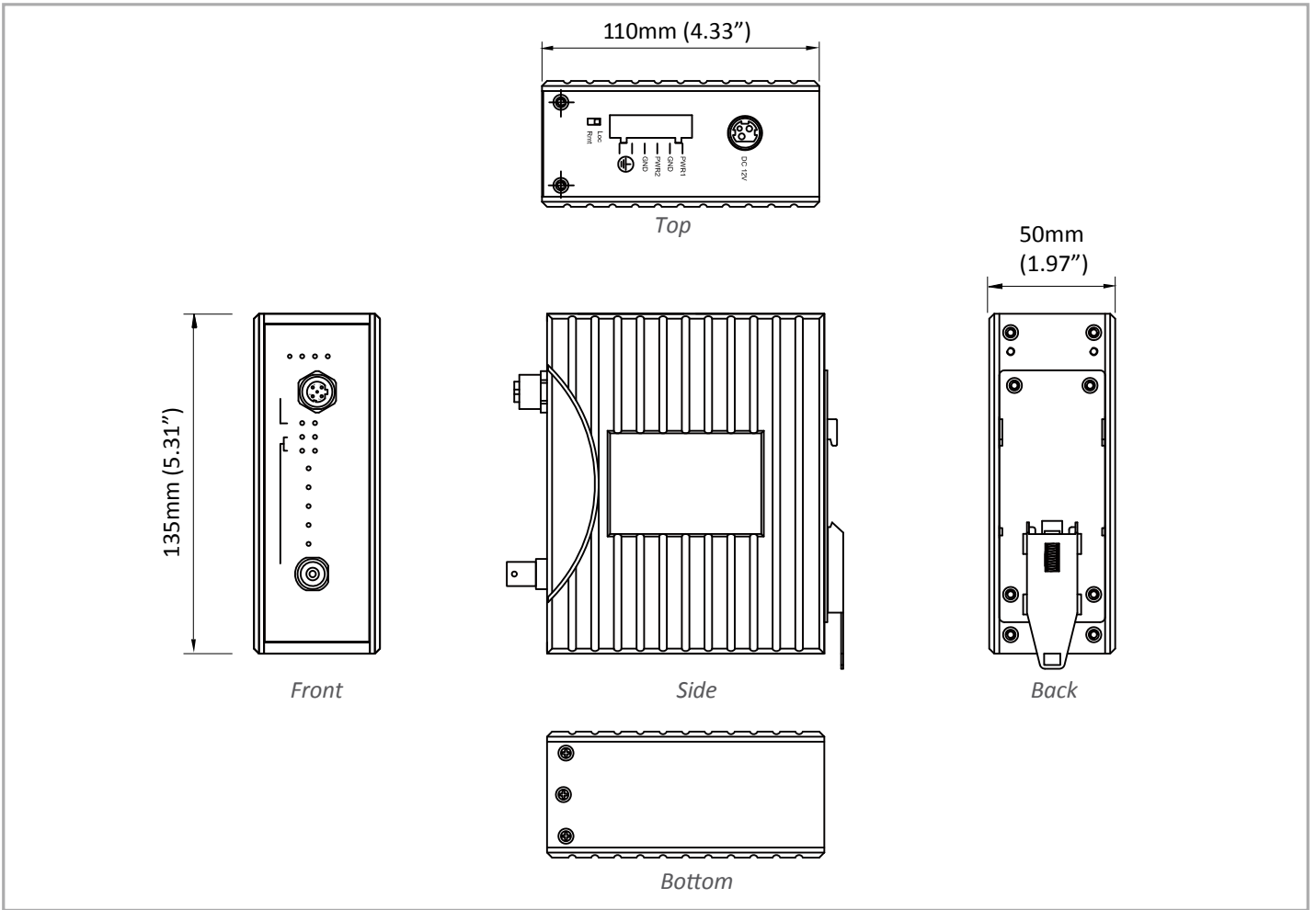
IEC60068-2-27 Ea (Shock)

FED STD 101C Method 5007.1 (Free fall w/ package)

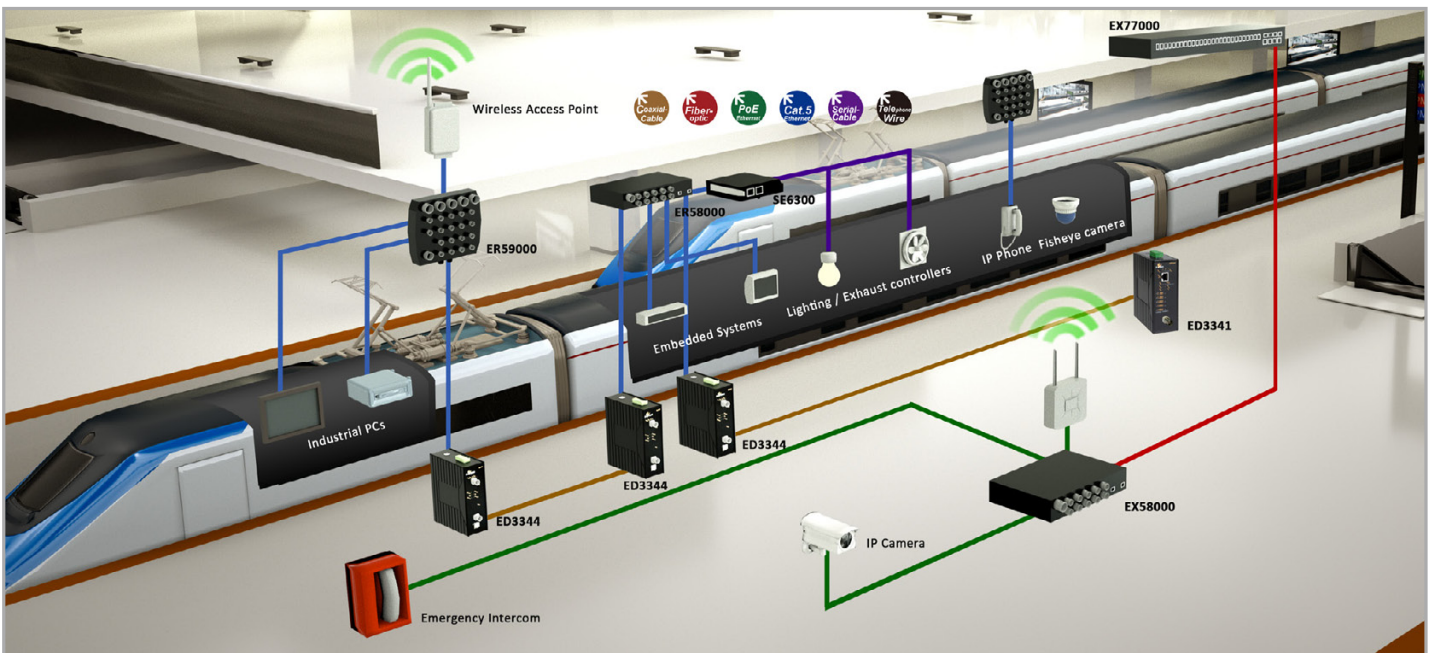
Industrial Compliance

EN50155 and EN50121-4

Dimensions



Application Diagram



Ordering Information

Model

ED3344-00B	Hardened 10/100Base-TX M12 Ethernet Extender over Coaxial Cable
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Optional Accessories

KP-AA96-480	Panel mounting kit
MDR-40-48	40W/0.83A DIN-Rail 48VDC Industrial Power Supply (for Terminal Block)
DR-30-24	30W/1.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
DR-60-24	60W/2.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
DR-75-24	75W/3.2A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
DR-120-24	120W/5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
41-136046-X	36W/3A 12VDC hardened power adapter with open wire in aluminum housing (for Terminal Block) (X)=1: US, 2: EU, 3: UK, 4: AU, 5: JP, 6: SA
41-136044-X	36W/3A 12VDC hardened power adapter with latched DC jack in aluminum housing (for DC Jack) (X)=1: US, 2: EU, 3: UK, 4: AU, 5: JP, 6: SA

ED3538

Hardened 10/100BASE-TX PoL/PoE Ethernet Extender over Copper Wires



Overview

The ED3538 Hardened Ethernet Extender utilizes EtherWAN's exclusive Power over Link™ (PoL™) technology to deliver both PoE power and Ethernet communications over a single legacy twisted pair cable. The ED3538 PoL solution is comprised of an ED3538 Transmitter and Receiver working together to provide reliable communications and power to remote PoE Powered Devices (PD).

When remote connectivity and power is required on legacy cable, the ED3538 transceiver connected with an AC/DC power provides 30 watts of power and a bandwidth of 100Mbps to be delivered to the ED3538 receiver. The ED3538 receiver in turn powers up a remote PoE device such as an IP camera, a wireless access point, an emergency intercom, or a VoIP phone.

When the application demands long-distance and more power delivery, the ED3538 can also be connected with power at both ends, to maximize the transmission distance to 2200 meters.

The ED3538 is compliant with UL60950-1 / IEC60950-1 / EN61000-6-4 / EN61000-6-2 standards with high electromagnetic sustainability and IEC60068 standards against shock and vibration, ensuring a reliable connection under harsh environments.

Spotlight

- **Power over Link™ up to 1.2 km (3936 ft.)**
 - Over an 1200 meters long RJ11 cable, a guaranteed 5 watts power with 20Mbps bandwidth is delivered to the receiving side
- **Ethernet extension solution with high transmission data rate up to 100Mbps**
 - Up to 300 meters transmission distance with 100Mbps data rate
- **Transmission rate and PSE output power indicator LEDs**
 - Six transmission rate LEDs and three PoE/PSE output power LEDs on the front panel

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX,
- IEEE802.3x full duplex and flow control
- IEEE802.3af/at PoE/PSE

Protocols

- Transparent to higher layer protocols

Processing Type

- IEEE802.3x Full-duplex flow control
- Auto-Negotiation
- Auto MDI/MDIX

Power

Input

- Terminal Block: 46 - 57VDC
- DC JACK: 48VDC
- 2.5A @ 48VDC (Peak current 3.26A)

Power Consumption

- Max. 65W with Power over Link™ (PoL) function enabled
- ED3538T: Max. 5W (without PoL / PoE)
- ED3538R: Max. 5W (without PoL / PoE)
Max. 35W (with PoE only)

Protection

- Overload current protection
- Reverse polarity protection

Mechanical

Casing

- Aluminum case
- IP30

Dimensions

- 50mm (W) x 110mm (D) x 135mm (H)
(1.97" (W) x 4.33" (D) x 5.31" (H))

Weight

- 0.8Kg (1.76lbs.)

Installation

- DIN-Rail (Top hat type 35mm), Panel or Rack mounting

Interface

Ethernet Port

- ED3538T/R: 1 x 10/100BASE-TX Full-duplex RJ-45 port
- ED3538R: 1 x PoE/PSE port
- Speed: 10/100Mbps
- Cable: 100BASE-TX, UTP CAT. 5 (4-pair wire)
- Distance: 100 meters (328ft.)

Ethernet Extender Port

- 1 x RJ11 port
- 1 x 2-pin Terminal Block (Wire range: 12 - 30 AWG)

DIP Switch

- ED3538T: PoL: ON/OFF, Type: Perf/Std
- ED3538R: Mode: Loc/Rmt, Type: Perf/Std

LED Indicators

- Per Unit: Power
- Per 10/100TX Port: Link/Activity, Full-duplex
- Line Speed: Six indicators for 100/80/60/40/20Mbps and Link below 20Mbps
- PoE: Power over Ethernet function availability

Distance / Speed / PoE Output Reference

PoL™ Enabled

Distance	Data Rate	ED3538R PoE Output
300m	100Mbps	30.0W
400m	90Mbps	15.4W
600m	60Mbps	14.0W
800m	45Mbps	9.5W
1000m	35Mbps	7.0W
1200m	20Mbps	5.0W

PoL™ Disabled (Power supply on 3538R)

Distance	Data Rate	ED3538R PoE Output
1400m	15Mbps	30.0W
1600m	10Mbps	30.0W
1800m	3Mbps	30.0W
Up to 2200m	1Mbps	30.0W

NOTE: Reference Performance on 24 AWG copper wire (0.5mm diameter, 1-pair wire, Cable impedance: 100ohm)

Environment

Operating Temperature

- -40°C to 75°C (-40°F to 167°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL60950-1, IEC60950-1

EMI

FCC Part 15B, Class A

EN61000-6-4, EN55022, EN61000-3-2 and EN61000-3-3

EMS

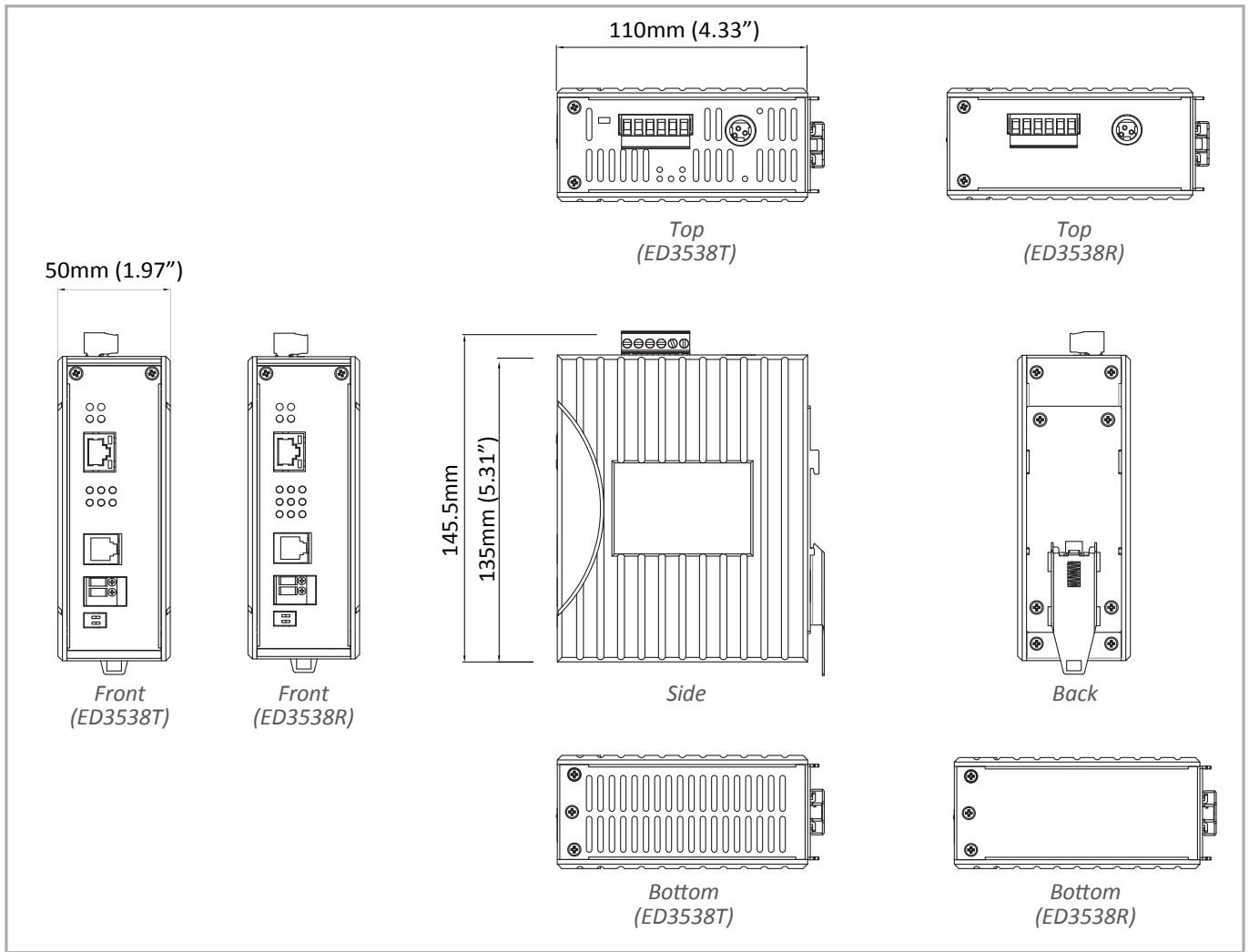
EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

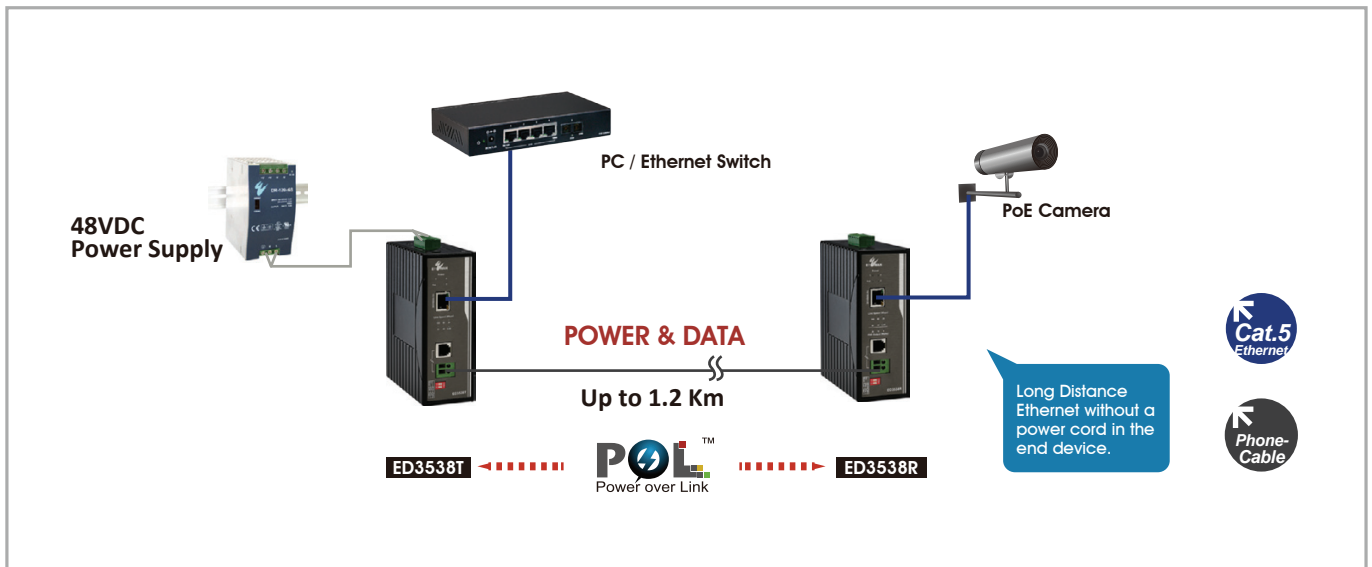
Environmental Test Compliance

IEC60068-2-6 Fc (Vibration), IEC60068-2-27 Ea (Shock), IEC60068-2-32 Ed (Free fall w/ package)

Dimensions



Application Diagram



Ordering Information

Model

ED3538	Hardened PoL/PoE Ethernet Extender over Copper Wires (including one ED3538T and one ED3538R)
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Note:

* ED3538T is the power transmitter of PoL and ED3538R is the power receiver of PoL

* DIN-Rail mounting kit included

Optional Power Supplies

Power supply suggestion	30 watts PoE application
SDR-120-48 / DR-120-48 (120W 48VDC)	For 1 pair
SDR-240-48 (240W 48VDC)	For 3 pairs
SDR-480-48 (480W 48VDC)	For 7 pairs

ED3638

Hardened 10/100BASE-TX PoL™/PoE Ethernet Extender over Coaxial Cable



Overview

The ED3638 Hardened Ethernet Extender utilizes EtherWAN's exclusive Power over Link™ (PoL™) technology to deliver both PoE power and Ethernet communications over a single legacy coaxial cable. The ED3638 PoL™ solution is comprised of an ED3638 Transmitter and Receiver working together to provide reliable communications and power to remote PoE Powered Devices (PD).

When remote connectivity and power is required on legacy cable, the ED3638 transceiver connected with an AC/DC power provides 30 watts of power and a bandwidth of 100Mbps to be delivered to the ED3638 receiver. The ED3638 receiver in turn powers up a remote PoE device such as an IP camera, a wireless access point, an emergency intercom, or a VoIP phone.

When the application demands long-distance and more power delivery, the ED3638 can also be connected with power at both ends, to maximize the transmission distance to 2400 meters.

The ED3638 is compliant with UL60950-1 / IEC60950-1 / EN61000-6-4 / EN61000-6-2 standards with high electromagnetic sustainability and IEC60068 standards against shock and vibration, ensuring a reliable connection under harsh environments.

Spotlight

- **Power over Link™ up to 1.8 km (5905 ft.)**
 - Over an 1800 meters long coaxial cable, a guaranteed 4 watts power with 15Mbps bandwidth is delivered to the receiving side
- **Ethernet extension solution with high transmission data rate up to 100Mbps**
 - Up to 400 meters transmission distance with 100Mbps data rate
- **Transmission rate and PSE output power indicator LEDs**
 - Six transmission rate LEDs and three PoE/PSE output power LEDs on the front panel

Hardware Specifications

Technology

Standards

- IEEE802.3 10BASE-T
- IEEE802.3u 100BASE-TX,
- IEEE802.3x, full duplex and flow control
- IEEE802.3af/at PoE/PSE

Protocols

- Transparent to higher layer protocols

Processing Type

- IEEE802.3x Full-duplex flow control

Power

Input

- Terminal Block: 46 - 57VDC
- DC JACK: 48VDC
- 2.5A @ 48VDC (Peak current 3.26A)

Power Consumption

- Max. 65W with Power over Link (PoL) function enabled
- ED3638T: Max. 5W (without PoL / PoE)
- ED3638R: Max. 5W (without PoL / PoE)
Max. 35W (with PoE only)

Protection

- Over current protection
- Reverse polarity protection

Mechanical

Casing

- Aluminum case
- IP30

Dimensions

- 50mm (W) x 110mm (D) x 135mm (H)
(1.97" (W) x 4.33" (D) x 5.31" (H))

Weight

- 0.8Kg (1.76lbs.)

Installation

- DIN-Rail (Top hat type 35mm), Panel, or Rack mounting

Interface

Ethernet Port

- ED3638T/R: 1x RJ-45 port, 10/100BASE-TX Full-duplex
- ED3638R: 1x PoE/PSE port
- Auto-Negotiation, Auto-MDI/MDIX
- Speed: 10/100Mbps
- Distance: 100meters (328ft.)
- Cable: 100BASE-TX: UTP CAT. 5 (4-pair wire)

Ethernet Extender Port

- Port: One 75Ω BNC Port (with F-type connector)
- Cable: Coaxial Cable (5C2V / RG6)
- Coaxial Cable (5C2V / RG6)

DIP Switch

- ED3638T: PoL: ON/OFF, Type: Perf/Std
- ED3638R: Mode: Loc/Rmt, Type: Perf/Std

LED Indicators

- Per Unit: Power Status (Power)
- Per Port 10/100TX: Link/Activity, Full-duplex
- Line Speed: Six indicators for 100/80/60/40/20Mbps and Link below 20Mbps
- PoE: Power over Ethernet function availability

Speed / Distance / PoE Output Reference

PoL™ Enabled

Distance	Data Rate	ED3638R PoE Output
400m	100Mbps	30.0W
800m	60Mbps	15.4W
1000m	50Mbps	12.0W
1200m	45Mbps	8.0W
1600m	20Mbps	6.0W
1800m	15Mbps	4.0W

PoL™ Disabled (Power Supply Applies on ED3638R)

Distance	Data Rate	ED3638R PoE Output
2000m	9Mbps	30.0W
2200m	6Mbps	30.0W
Up to 2400m	4Mbps	30.0W

Environment

Operating Temperature

- -40°C to 75°C (-40°F to 167°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

Regulatory Approvals

ISO

- Manufactured in an ISO9001 facility

Safety

UL60950-1 and IEC60950-1

EMI

FCC Part 15B, Class A

EN61000-6-4

EN55022

EN61000-3-2

EN61000-3-3

EMS

EN61000-6-2

- EN61000-4-2 (ESD Standards)
- EN61000-4-3 (Radiated RFI Standards)
- EN61000-4-4 (Burst Standards)
- EN61000-4-5 (Surge Standards)
- EN61000-4-6 (Induced RFI Standards)
- EN61000-4-8 (Magnetic Field Standards)

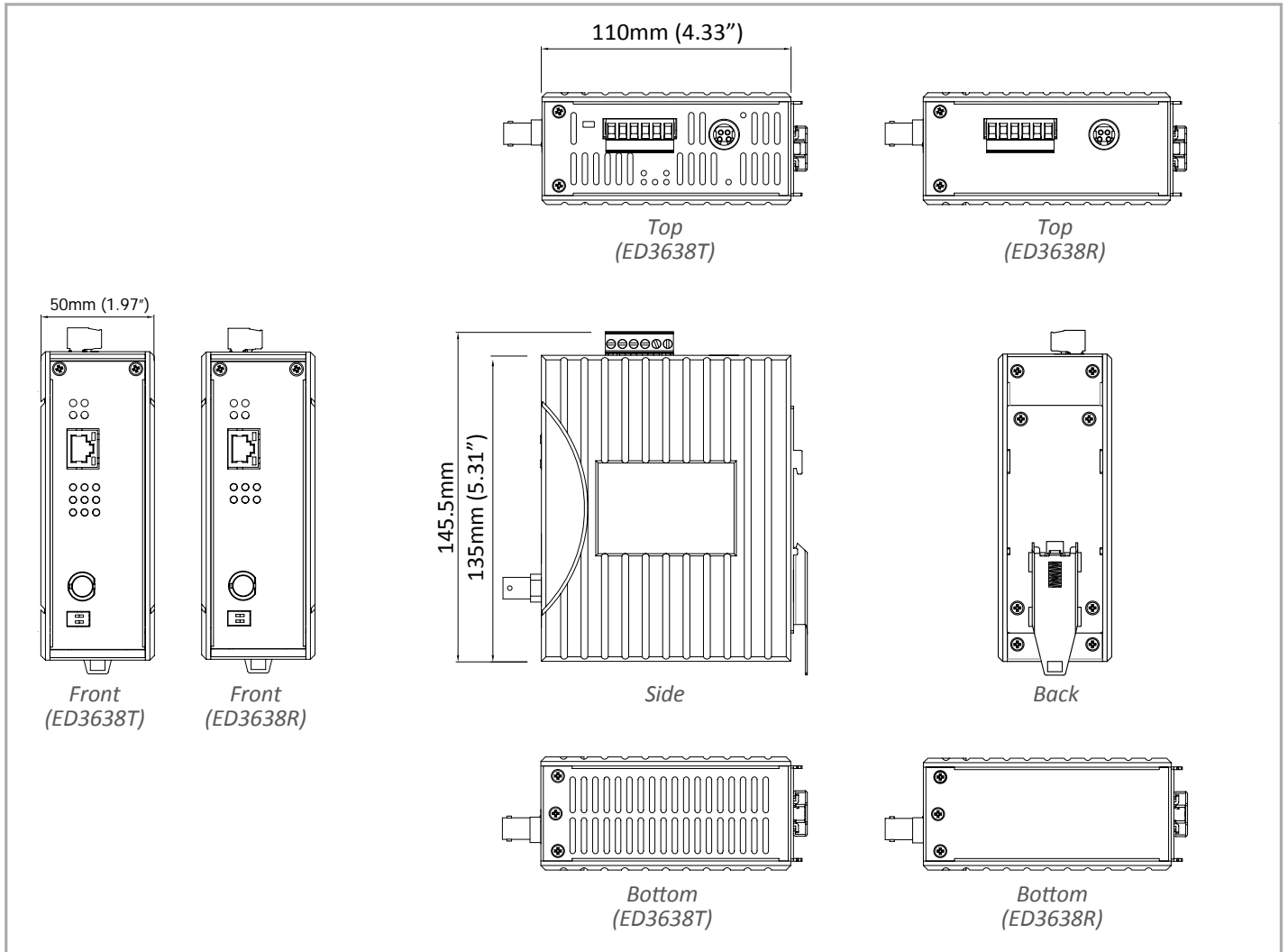
Environmental Test Compliance

IEC60068-2-6 Fc (Vibration Resistance)

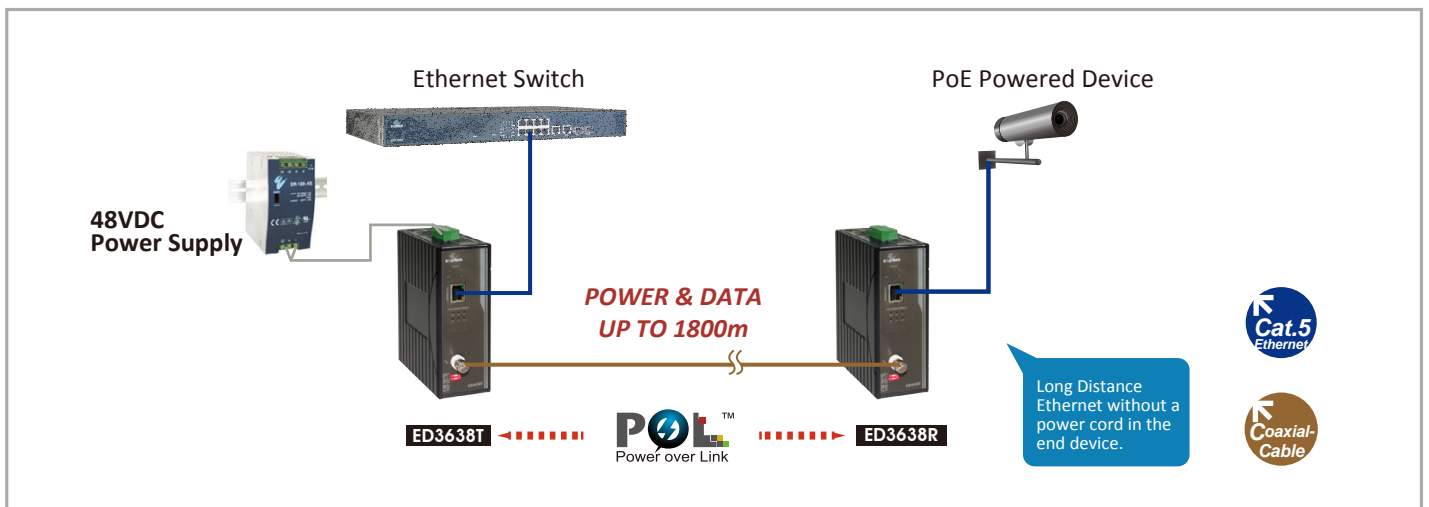
IEC60068-2-27 Ea (Shock)

IEC60068-2-32 Ed (Free Fall)

Dimensions



Application Diagram



Ordering Information

Model

ED3638	Hardened PoL/PoE Ethernet Extender over Coaxial Cable (including one ED3638T and one ED3638R)
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Note:

* ED3638T is PoL Transceiver and ED3638R is PoL Receiver

* DIN-Rail mounting kit included

Optional Power Supplies

Power supply suggestion	30-watt PoE application
SDR-120-48 / DR-120-48 (120W 48VDC)	For one pair
SDR-240-48 (240W 48VDC)	For three pairs
SDR-480-48 (480W 48VDC)	For seven pairs

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Астана +7(7172)727-132
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
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Тула (4872)74-02-29
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