

ROLINE High Power PoE++ Splitter, 128W

21.13.1173

User Manual

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Table of Contents

Introduction.....	3
Features.....	4
Panels	4
Specifications	5
Safety Cautions	6
Mounting Support.....	7
Application Notes	9
Application Example	10

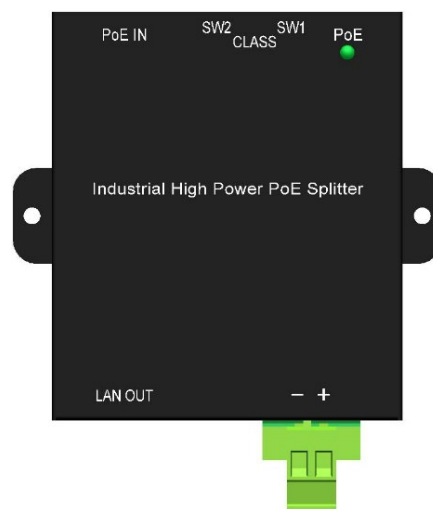
Introduction

The device is a high-performance PoE++ splitter that integrates Power over Ethernet (PoE) technology into PoE-incapable network devices by using only a single Cat.5/5e/6 cable for power and data transaction. It is a high-performance splitter capable of receiving power up to 128W in a voltage range of 36~57V over Ethernet twisted pair cable from IEEE 802.3af compliant PoE, 802.3at compliant PoE+ and proprietary PoE++ PSE end.

The splitter is equipped with a DIP switch that allows the user to select one of nine different classes to draw power from a remote PoE switching port or a mid-span injector. This feature supports efficient power management on the advanced PSE side.

The splitter comes with several optional DC-DC power converters that convert the PoE voltage to a customized voltage and supply power to the local end device. The converters are available with two voltages, 12V and 24V, and two power levels, 60W and 90W.

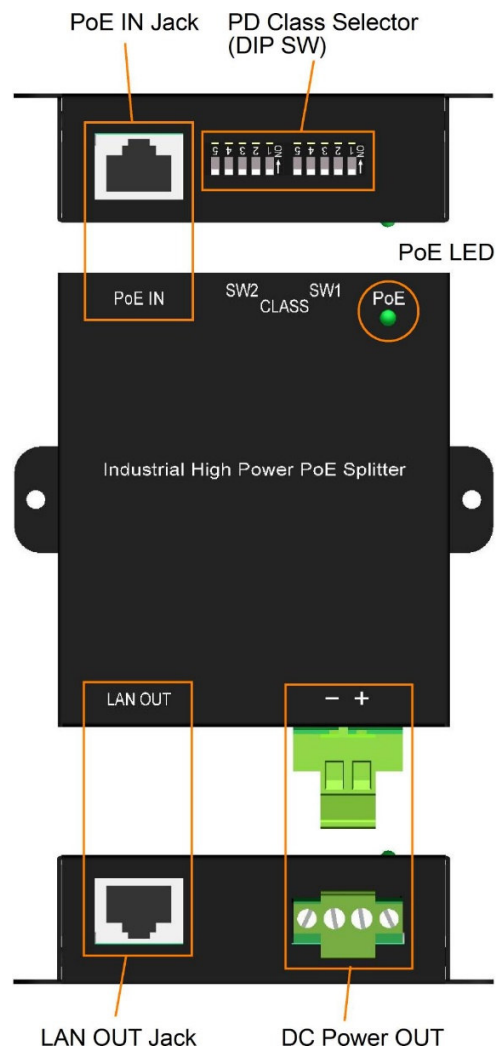
Supporting higher power levels with PoE++ opens new markets and extends the scope of PoE to existing markets that require higher power levels for applications such as: Building management (connected LED lighting), PTZ surveillance cameras, kiosks, POS terminals, thin clients and more. For industrial applications, the splitter is also equipped with optional brackets for Din-Rail mounting and panel mounting. To increase application safety, the splitter is equipped with short-circuit protection, undervoltage blocking, inrush current limitation and thermal protection.



Features

- Supplies PoE incapable network device with PoE
- IEEE 802.3at PoE+ and 802.3af PoE compliance
- Supports proprietary high power PoE++ up to 128W
- Supports 10BASE-T, 100BASE-TX, and 1000BASE-T
- Supports Alternative A or Alternative B PoE input over Cat.5/6
- Provides power class selection DIP for demanding power from PSE
- Supports Type 1 PSE classification and Type 2 PSE 2-event classification
- Provides a solution with isolated and high-efficient DC-DC power converters

Panels



Specifications

Standards IEEE 802.3 10BASE-T, 100BASE-TX, 1000BASE-T
 PoE In Jack Shielded RJ-45
 10BASE-T, 100BASE-TX, 1000BASE-T support
 Power pins – Pin1/2/3/6 and Pins 4/5/7/8 (support both)
 LAN cable - Cat.5 or better

Pin	10/100Base-TX	1000Base-T	PoE
1	RX+	BI_DA+	V _{poe+}
2	RX-	BI_DA-	V _{poe+}
3	TX+	BI_DB+	V _{poe-}
4		BI_DC+	V _{poe+}
5		BI_DC-	V _{poe+}
6	TX-	BI_DB-	V _{poe-}
7		BI_DD+	V _{poe-}
8		BI_DD-	V _{poe-}

PoE Standards IEEE 802.3af Type 1, IEEE 802.3at Type 2, Proprietary Type 3 & Type 4
 PoE Power Class Type 1 Class 0 ~ Class 3, Type 2 Class 4
 Proprietary PoE++ Class 5 ~ Class 8 (DIP SW selectable)
 PoE Input Voltage 36 ~ 57VDC
 DIP SW Selector SW1, SW2: PD class selection for PSE PD classification
 LAN Out Jack Shielded RJ-45
 10BASE-T, 100BASE-TX, 1000BASE-T support
 LAN cable - Cat.5 or better

Pin	10/100Base-TX	1000Base-T
1	RX+	BI_DA+
2	RX-	BI_DA-
3	TX+	BI_DB+
4		BI_DC+
5		BI_DC-
6	TX-	BI_DB-
7		BI_DD+
8		BI_DD-

DC Power Output 2P Flange European Terminal block – DC+/DC-
 Power wires: 12 ~ 22 AWG (1 meter max.)

Output Voltage	V_{poe} received at PoE IN jack
LED Display	PoE input status
Housing	Enclosed metal with no fan
Dimension	89.2 x 24 x 85 mm (LxWxH)
Mounting Support	DIN-Rail, Panel mounting
Temperature	Operating Temperature: -40°C ~ +70°C Storage Temperature: -40°C ~ +85°C Relative Humidity: 5% ~ 95% non-condensing

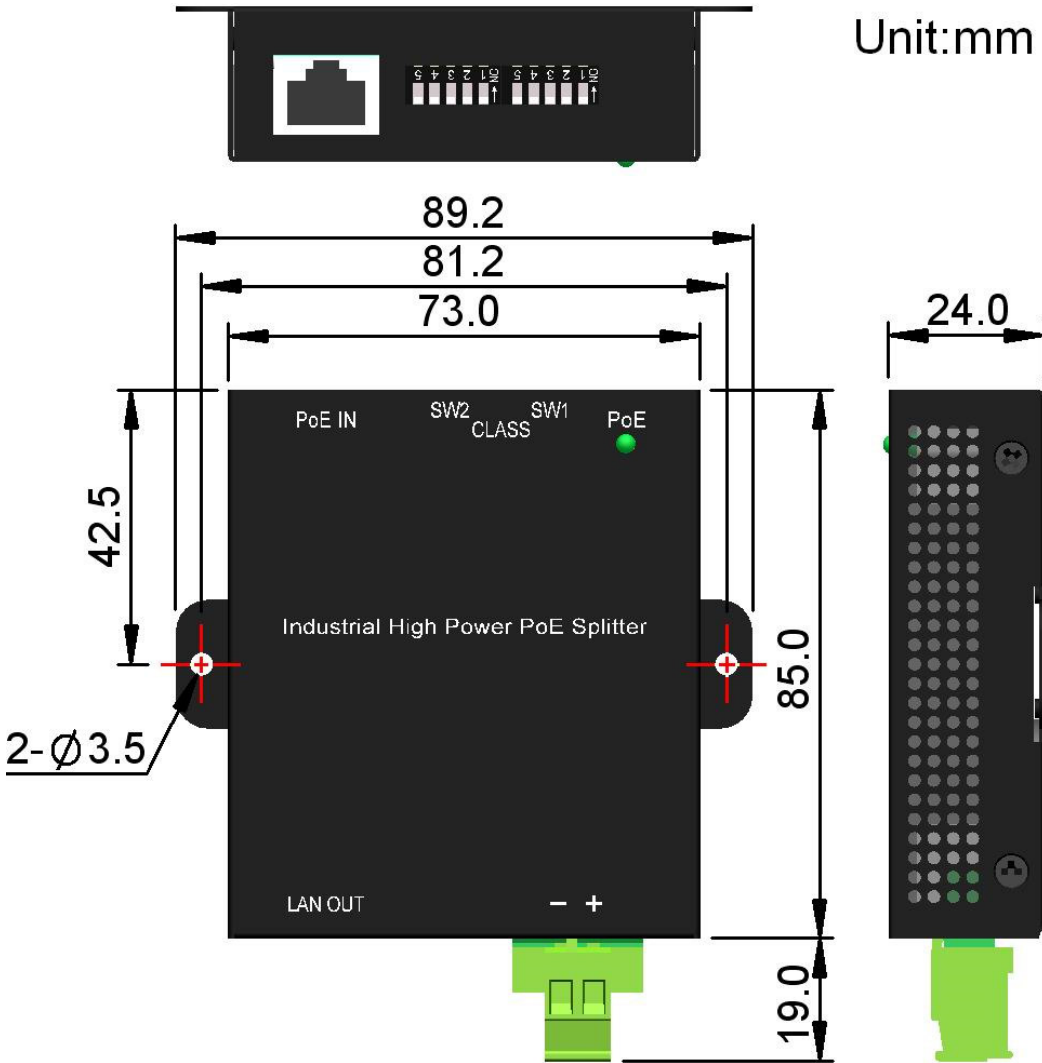
Safety Cautions

To reduce the risk of bodily injury, electrical shock, fire and damage to the product, observe the following precautions.

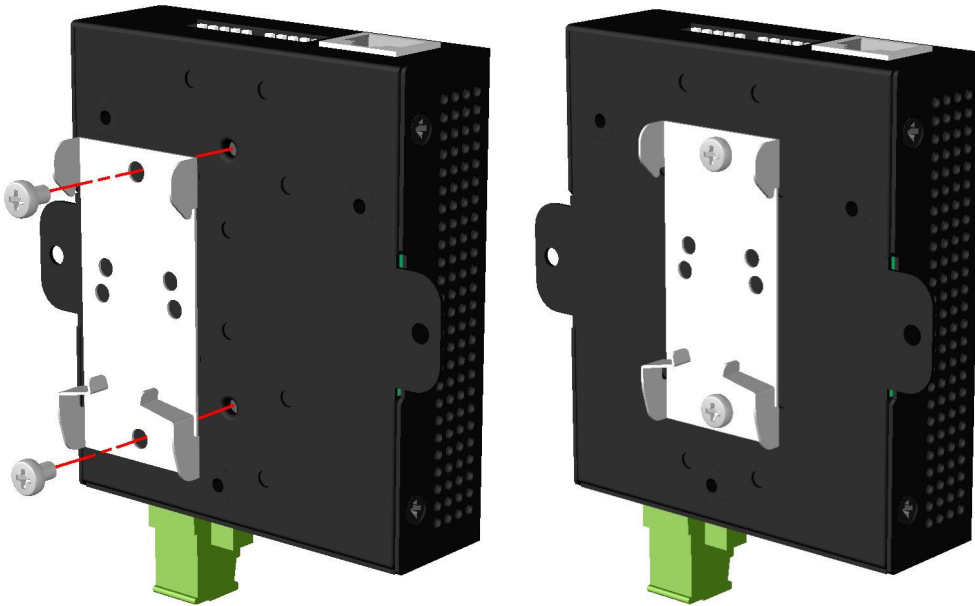
- ✓ Do not service any product except as explained in your system documentation.
- ✓ Opening or removing covers may expose you to electrical shock.
- ✓ Only a trained service technician should service components inside these compartments.
- ✓ If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
 - The power cable, extension cable, or plug is damaged.
 - An object has fallen into the product.
 - The product has been exposed to water.
 - The product has been dropped or damaged.
 - The product does not operate correctly when you follow the operating instructions.
- ✓ Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.

Mounting Support

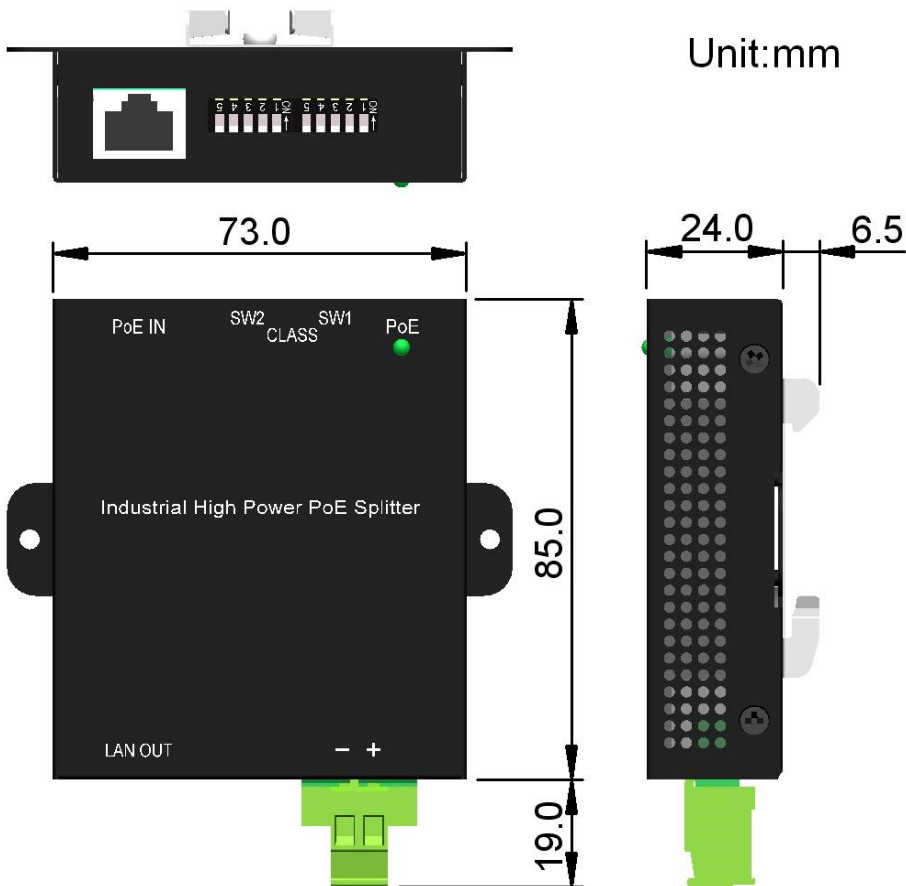
Panel mount & Dimension



Din-Rail mounting bracket installation

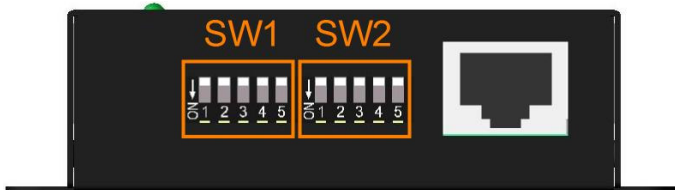


Dimension



Application Notes

This power class selection informs the remote PSE about the PD power for PD detection and power classification operation. It does not cause any limitation of power consumption on the splitter itself. Note that some PSE devices use class notification for PoE power management and may limit the power output according to the class notification received.



PD Class Selection (DIP SW)

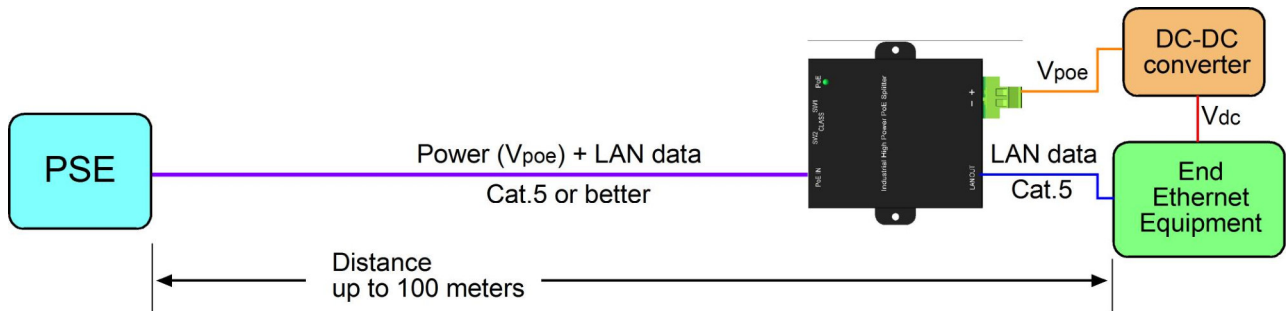
Type	Class	Std.	Power Request (min.)	SW1 ²	SW2 ³
1	0	802.3af	12.95W	1 ON	5 ON
1	1	802.3af	3.84W	2 ON	5 ON
1	2	802.3af	6.49W	3 ON	5 ON
1	3	802.3af	12.95W	4 ON	5 ON
2	4	802.3at	25.5W	5 ON	5 ON
3 ¹	5	proprietary	38.7W	1 ON	1 ON
3 ¹	6	proprietary	52.7W	2 ON	2 ON
4 ¹	7	proprietary	70W	3 ON	3 ON
4 ¹	8	proprietary	90W	4 ON	4 ON

Notes:

1. The classes of Type 3 and Type 4 are proprietary standard.
2. One switch is set ON and others are set OFF in SW1 group.
3. One switch is set ON and others are set OFF in SW2 group.

Application Example

Typical connection of a PoE application:



Compatible PSE devices:

- IEEE 802.3af Mid-span injector
- IEEE 802.3af compliant Ethernet switch port
- IEEE 802.3at Mid-span injector
- IEEE 802.3at compliant Ethernet switch port
- 21.13.1202 PoE++ Mid-span injector

Notes:

1. The V_{poe} measured at the splitter end could be different from that measured at the PSE end. The voltage drop is caused by Cat.5 line resistance. The V_{poe} measured at the splitter end may be in the range of 36 ~ 57VDC.
2. Reference data for voltage drop over standard Cat.5 (Wire: 24AWG, Length: 100m):

Current	Cable pairs	Voltage drop
2A	4	2V
2A	2	8.3V
1A	4	1V
1A	2	4.1V

3. The splitter supports receiving PoE with all 4 pairs. (Some PSE devices use 2 pairs only for power delivery.)