

INJ 2100-T DIN Rail PoE Injectors with surge protection

 [perle.com/products/poe-injectors/din-rail-inj-2100-t.shtml](https://www.perle.com/products/poe-injectors/din-rail-inj-2100-t.shtml)

IEEE 802.3bt/at/af Mid-span Injector up to 60W

- 10/100/1000 Mbps
- Supply PSE power to PoE, PoE+ and Hi-PoE compliant devices
- Provide 4 to 60 Watts of PoE power
- IEEE 802.3af, IEEE802.3at and IEEE802.3bt compliant
- Support for PoE PDs: Class 1 to 6 & Type 1, 2 and 3
- Extended supply voltage range of 18 V DC ... 57 V DC, redundant
- Safe shield connection to ground potential
- Extended temperature range of -40°C to +75°C
- Electrical isolation of the internal power supply unit
- Integrated surge protection to ensure high system availability
- Wiring space covered with front panel cover



INJ 2100-T PoE Injectors are DIN Rail mounted single port, **PoE mid-span injectors**. In environments vulnerable to voltage surges, it acts as an intermediary devices between a non-PoE switch and a PoE device to inject **fully compliant** power over the Ethernet cable. With electrical isolation of the internal power supply, the INJ-2100-T units are protected against short circuits on the PoE side. The integrated surge protection increases system availability by protecting the connected end devices.

Generating **up to 60 Watts**, the INJ-2100-T provides electrical power to remote **PD access points, pan-tilt and zoom (PTZ) cameras** and **video-phones**. It complies with the **IEEE802.3bt Hi-PoE (60W of power)** or **IEEE 802.3at PoE+ (30W of power)** standards and is also backward compatible with IEEE802.3af PoE (15.4W of power). [Learn more about PoE.](#)

With the INJ-2100-T, there is no need to buy an expensive PoE switch or install electrical wiring and outlets in hard to reach locations. Just use an open port on an existing non-PoE switch to save time and money by sending power and data over the same cable.

INJ-2100-T Injector Benefits

DIN Rail Enclosure	Easily mount on a DIN rail or inside distribution boxes using native DIN Rail enclosure with grounding clip. No need for add-on brackets.
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Power Over Ethernet (PSE)	Performs the Power Sourcing Equipment (PSE) function on 1 UTP port for IEEE 802.3af (up to 15.4 watts PoE), IEEE 802.3at (up to 30 watts PoE+) or IEEE802.3bt (up to 60 watts Hi-PoE) compliant devices.
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Electrical isolation of the internal power supply unit	The supply voltage and Power over Ethernet port are electrically isolated. This provides optimum protection against short circuits in the data cables on the field side. The passive network isolator protects Ethernet devices from potential differences of up to 4 kV.
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On-board PoE Power Controller	This PoE power controller provides compliant power provisioning and monitoring, properly sensing through signature detection whether or not the attach Ethernet devices are PoE capable or not. This provides a safe connection for both PoE and Non-PoE capable devices. Click here for more details
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Advanced Power Management	<ul style="list-style-type: none"> • PD signature detection • Current limiting protection • Over-Current Protection • PD power classification detection (Class 0,1,2,3,4,5,6) • Reverse polarity protection
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Integrated Surge Protection	The integrated surge protection protects the devices and the application against sudden high voltages in the field data cables. The injector and the downstream devices are protected against over-voltages that can arise via Port 2 (the PoE-conducting port). The surge protection function is done in accordance with CAT5e for data rates of up to 1GB.
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Potential Separation	Safe shield connection to ground potential
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Shield current monitoring The cable shield current monitoring can be used for diagnostics. An LED indicates if there are differences in potential or other shield currents caused by EMC. The LED lights up in the event of cable shield currents greater than +30mA and less than -30mA on the PoE-conducting port. The LED may flicker or flash because the shield currents are not constant. Customer can reduce the equipotential bonding across the data lines by laying the equipotential bonding lines between the individual installation sites separately.



Potential Separation Safe shield connection to ground potential

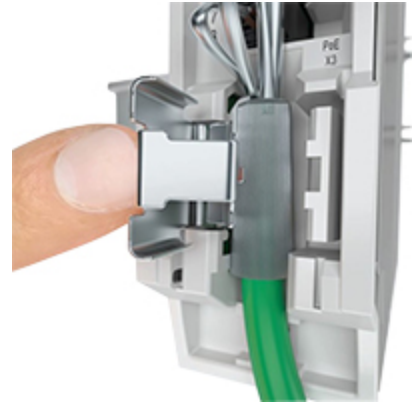
Multiple connection technologies For greater flexibility and time savings during installation you can choose between IDC, Push-in, Screw connections.

- **IDC Terminal Block** – due to the tool used, it offers increased productivity and security
- **Push-in Terminal Block** – wires can be pushed-in, no tool required
- **Screw Terminal Block** – used for tight connections

Covered cable wiring space A hinged cover protects the wiring space on the field cable side with connection terminal blocks and shield contacting. This ensures a uniform installation pattern. In addition to this visual extra, the sensitive connection wires are protected from external influences

Quick tool-free shield connection with no loose parts

The cable shielding can be connected to the device quickly and easily without tools – with strain relief assured at the same time. Simply lay the cable in the shaft provided, close the shroud and, you're done.



INJ 2101-T	INJ 2111-T	INJ 2102-T	INJ 2112-T	INJ 2103-T	INJ 2113-T
27030118	27030138	27030128	27030148	10040658	10040668

Serial Interface

Interface 1	Ethernet				
Connection method	Screw terminal block	IDC connection		Push-in connection	
Transmission length	100 m (including patch cables)				
Conductor cross section solid min.	0.14 mm ²		0.2 mm ²		
Conductor cross section solid max.	1.5 mm ²	0.34 mm ²		1.5 mm ²	
Conductor cross section flexible min.	0.14 mm ²		0.2 mm ²		
Conductor cross section flexible max.	1.5 mm ²	0.34 mm ²		1.5 mm ²	

Conductor cross section AWG min.	28		26		
Conductor cross section AWG max.	16		22		16
Torque	0.22 Nm...0.25 Nm				
Stripping length	5 mm				8 mm
Pin assignment	1:1				
Basic functions	PSE/Midspan, compliant with IEEE 802.3af, at				
Serial transmission speed	10/100/1000 Mbps				
Output nominal voltage	54 V DC (PoE)				
Output power	30 W	60 W	30 W	60 W	30 W
Maximum output power	40 W	75 W	40 W	75 W	40 W
Interface 2	Ethernet				
Connection method	RJ45 CAT5e				
Wire diameter incl. insulation	1.6 mm (Terminal block is tested with PVC insulation - other insulation materials available on request)				
Ambient conditions					
Ambient temperature (operation)	-40 °C ... 75 °C				

Ambient temperature (storage/transport)	-40 °C ... 85 °C
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Permissible humidity (operation)	10 % ... 95 % (non-condensing)
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Altitude	5000 m (For restrictions see manufacturer's declaration)
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Degree of protection	IP20 (Manufacturer's declaration)
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General

Electrical isolation	VCC // SCM + FE // PoE
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Test voltage data interface/power supply	1.5 kV AC (50 Hz, 1 min.)
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Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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Mounting position	Vertical
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Net weight	324.72 g
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Housing material	Plastic
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Color	Gray
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MTTF (SN 29500 standard, temperature 25 °C, operating cycle 21 % (5 days a week, 8 hours a day))	1510 Years	1797 Years	1510 Years	1797 Years	1510 Years
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MTTF (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day))	661 Years	733 Years	661 Years	733 Years	661 Years
MTTF (SN 29500 standard, temperature 40 °C, operating cycle 100 % (7 days a week, 24 hours a day))	256 Years	283 Years	256 Years	283 Years	256 Years
Conformance	CE-compliant				
UL, USA	UL 60079-0 Ed. 6 / UL 60079-15 Ed. 4				
UL, USA/Canada	Class I, Zone 2, AEx nA IIC T4, Ex nA IIC Gc X T4				
	Class I, Division 2, Groups A, B, C, D				
UL, Canada	CSA 22.2 No. 60079-0 Ed. 3 / CSA 22.2 No. 60079-15:16				
Standards and Regulations					
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU				
Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6				
Test result	10 Hz ... 57 Hz, amplitude ±3.5 mm, 57 Hz ... 150 Hz, 5g				
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27				
Test result	30g for 11 ms, three shocks in each spatial direction				
Type of test	Continuous shock according to EN 60068-2-27/IEC 60068-2-27				
Test result	10g for 16 ms, 1000 shocks in each spatial direction				

Standards/ regulations	EN 61000-4-2
Contact discharge	± 6 kV (Test Level 3)
Indirect discharge	± 6 kV
Standards/ regulations	EN 61000-4-3
Frequency range	80 MHz ... 3 GHz (Test Level 3)
Standards/ regulations	EN 61000-4-4
Comments	Criterion B
Standards/ regulations	EN 61000-4-5
Signal	± 1 kV (Data line, asymmetrical) ± 2 kV (I/O cable on field side only, asymmetric)
Standards/ regulations	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Standards/ regulations	IEC 61643-21
IEC test classification	C2
Conformance	CE-compliant
UL, USA	UL 60079-0 Ed. 6 / UL 60079-15 Ed. 4
UL, USA/Canada	Class I, Zone 2, AEx nA IIC T4, Ex nA IIC Gc X T4 Class I, Division 2, Groups A, B, C, D
UL, Canada	CSA 22.2 No. 60079-0 Ed. 3 / CSA 22.2 No. 60079-15:16
Noxious gas test	ISA-S71.04-1985 G3 Harsh Group A

Function

Designation	Shield current monitoring
Switch-on threshold	≥ 30 mA
Local diagnostics	Yellow LED
Precision	± 5 %
Response time	3 s
Continuous shield current	≤ 2 A
Power consumption	270 mW (Shield current monitoring)

Dimensions

Width	30.2 mm
Height	130 mm
Depth	120 mm

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Power Supply

Nominal supply voltage	24 V DC				
	48 V DC				
Supply voltage range	18 V DC ... 57 V DC				
Max. current consumption	2.1 A	4.2 A	2.1 A	4.2 A	2.1 A
	1.4 A (24 V DC)	2.73 A (24 V DC)	1.4 A (24 V DC)	2.73 A (24 V DC)	1.4 A (24 V DC)

	0.7 A (48 V DC)	1.34 A (48 V DC)	0.7 A (48 V DC)	1.34 A (48 V DC)	0.7 A (48 V DC)
Power consumption	≤ 75 W				
Protective circuit	Reverse polarity protection				
Conductor cross section flexible max.	4.00 mm ²				
Conductor cross section flexible min.	0.75 mm ²				
Conductor cross section solid max.	4.00 mm ²				
Conductor cross section solid min.	0.75 mm ²				
Conductor cross section AWG max.	12				
Conductor cross section AWG min.	20				

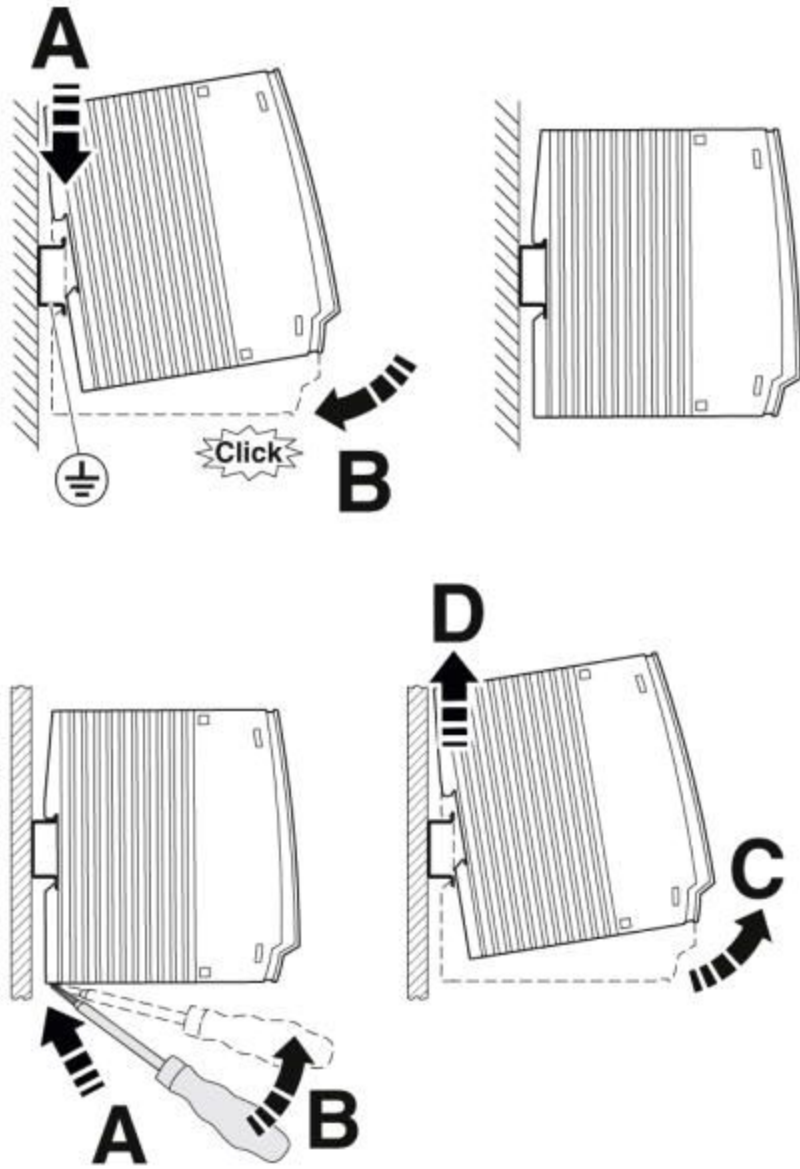
Approvals

- cULus Listed
- cUL Listed
- UL Listed

Environmental Product Compliance

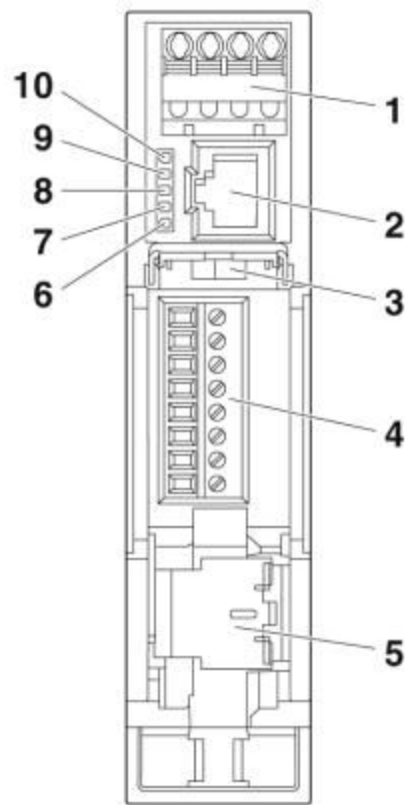
REACH SVHC	Lead 7439-92-1	
China RoHS	Environmentally Friendly Use Period = 50	Environmentally friendly use period: unlimited = EFUP-e

Easily Mount your PoE Injector on a DIN Rail



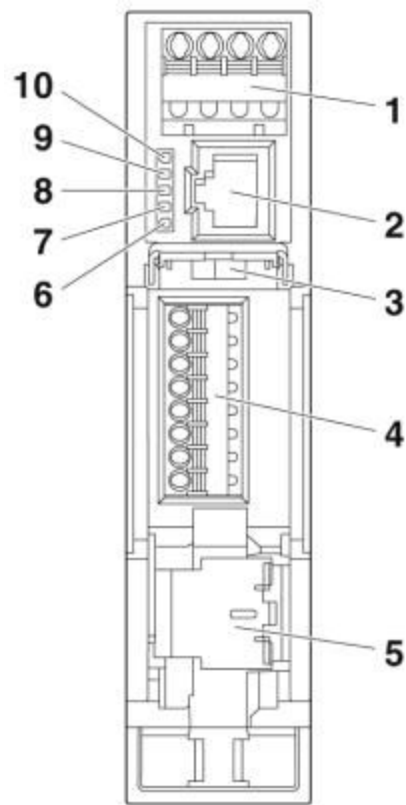
INJ 2101-T and INJ 2111-T PoE Injector Front View

1 x RJ45 socket, 1 x Screw Terminal Block



INJ 2103-T and INJ 2113-T PoE Injector Front View

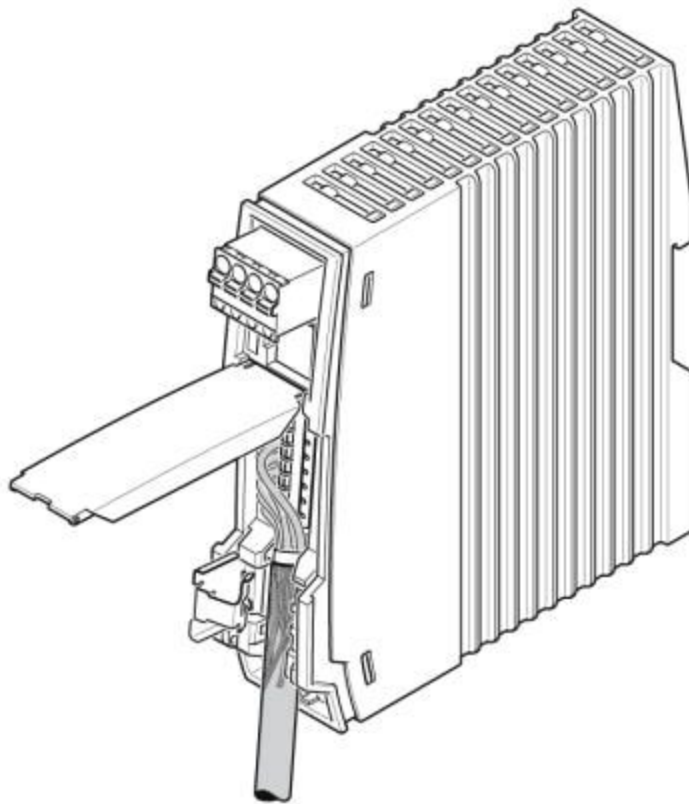
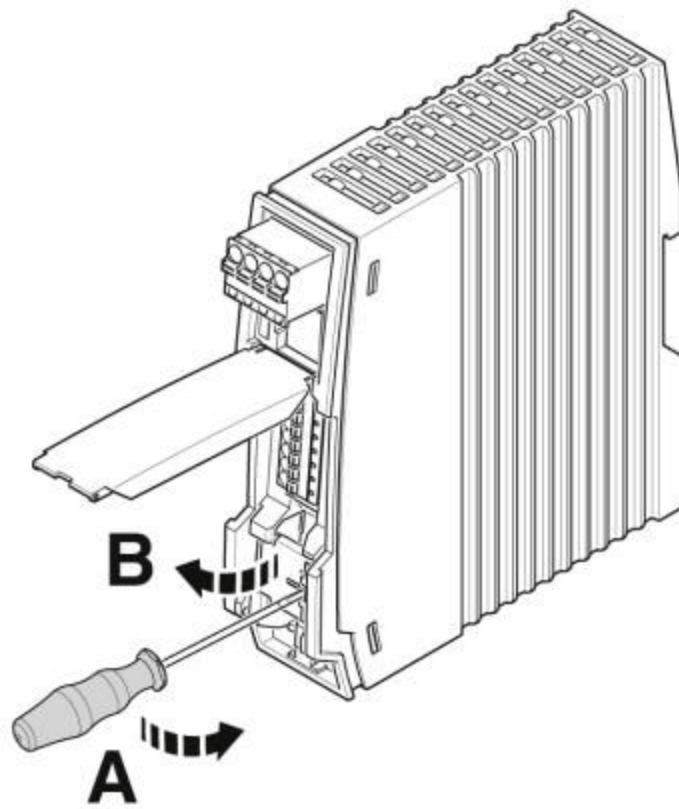
1 x RJ45 socket, 1 x Push-in Terminal Block



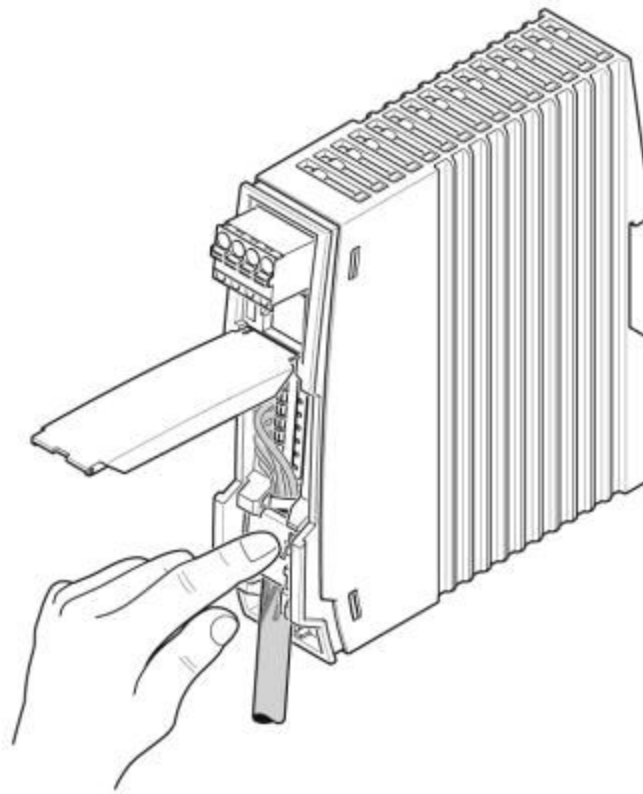
Shield Connection with strain relief

Open shield contact spring

Close shield contact spring



Insert the cable



INJ 2100-T PoE Injector Circuit Diagram

