

Industrial Mini-size 90W Giga PoE Injector

DP101-TX90

Industrial 1-port 90W PoE Injector

The DP101-TX90 is a high-performance industrial 90W PoE injector designed for robust power delivery in demanding environments. It supports IEEE 802.3af/at/bt standards and features an intelligent smart-PoE detection algorithm that ensures compatibility with both standard and legacy/non-standard PD devices. The injector can automatically deliver power over 2-pair or 4-pair wiring and safely limit output when connected to non-standard PDs, such as outdoor dome IP cameras or other high-power equipment. Engineered for reliability, the DP101-TX90 operates flawlessly in extreme temperatures from -40 to 75°C, features IP40-rated metal housing, and meets stringent industrial EMC standards—making it ideal for harsh industrial applications.



Features & Benefit

IEEE 802.3af/at/bt PoE Injector

- Supports **Alternative-A and Alternative-B 4-pair power feeding** for IEEE 802.3bt, delivering up to **90 W** at the PoE/PSE port.
- Provides **Alternative-A data-pair power feeding** for IEEE 802.3af/at PoE/PSE devices.
- Offers **manual power control** for safely powering **legacy or non-standard PDs with power budget control**

High-Speed Connection

- Supports **10/100/1000 Mbps** Ethernet with **Auto-MDI/MDI-X** for seamless cabling.
- **Link speed is automatically negotiated** between the PD and the data source equipment (switch).
- Provides sufficient bandwidth for **high-speed Wi-Fi access points** and supports **up to 75 W** power budget at the PD.

Smart PoE Capability

- **Automatically detects PD type**, distinguishing between standard and non-standard devices.
- **Applies limited power** to non-standard PDs to ensure safe operation.
- Includes **built-in over-current and cable-short protection** for non-standard PDs.
- **System Alarm Indication** for over-current protection (**OCP**), over-voltage protection (**OVP**) and over-temperature protection (**OTP**)

Hardened System Design

- Engineered to operate reliably in **-40 to 75°C** harsh environments.
- **Metal Enclosure** with **IP40** ingress protection
- **IEC 61000-6-2 / IEC 61000-6-4** compliance for heavy industrial EMC.
- Compliant to **Level 2 electromagnetic immunity** susceptibility standard.

Compact Size Design

- **Palm-sized form factor** minimizes space requirements in control cabinets or tight installations.
- **Flexible DIN-rail mounting kit** for quick, tidy installation.



Interfaces

System LED

- 1x Power
- 1x PoE
- 1x Ra (Alarm)

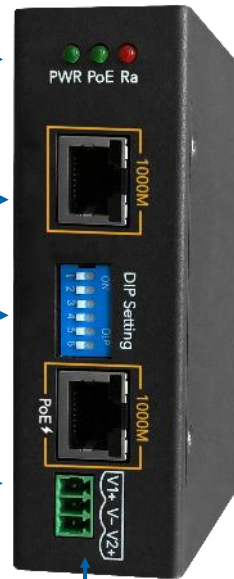
100/1000Mbps RJ-45

DIP Switch

- 1x Alarm
- 1 x PoE Enable
- 4 x Auto & Manual Power Class

100/1000Mbps RJ-45 90W/PSE

LED Ra	Alert status
On	OVP, OCP, OTP Event
Blinking	Temperature > 129°C



DIN Clip

Grounding Screw

Power Connector

- 1 x 3 pin terminal block

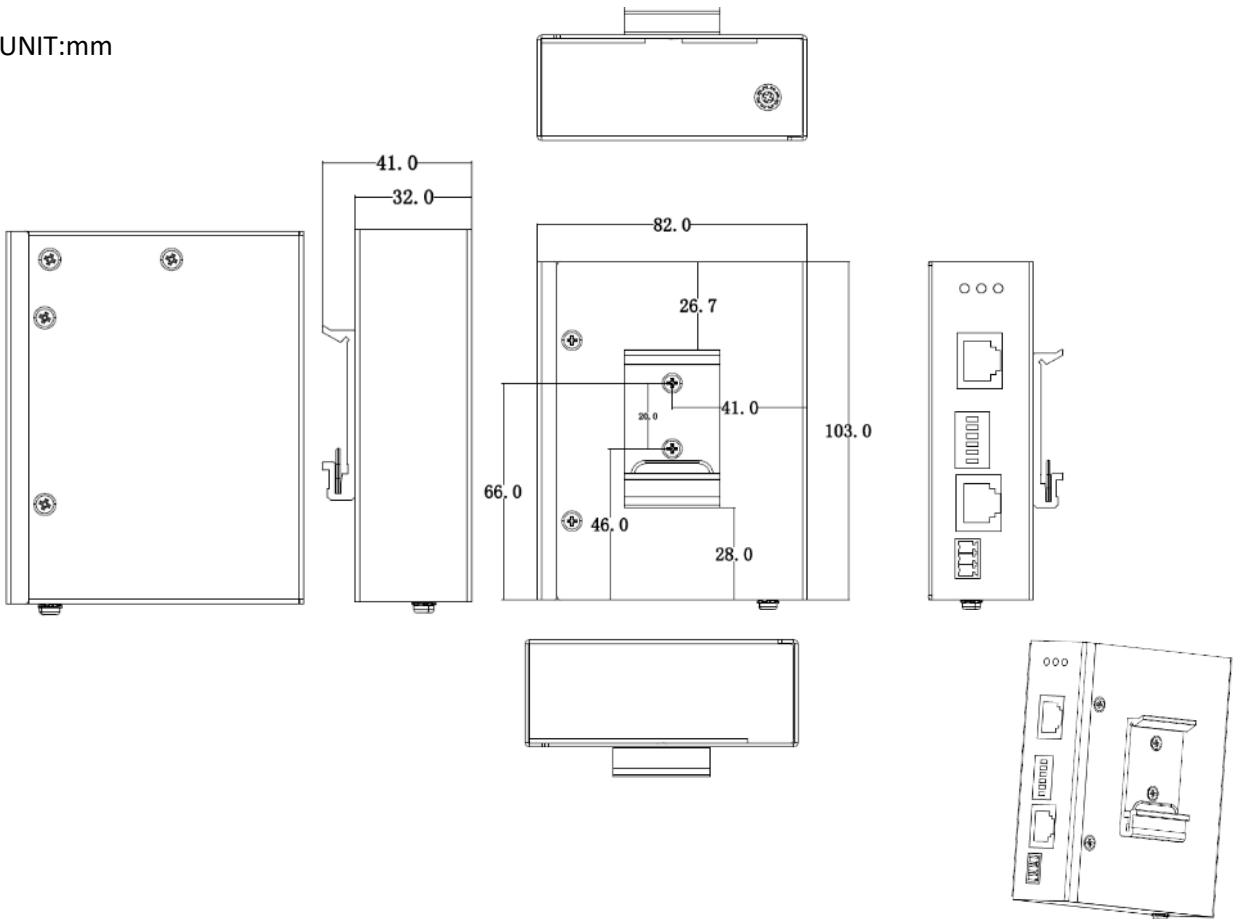
DIP-1	DIP-2	DIP-3~6
Alarm	PoE Enable	Auto Mode:1111,000 PoE Manual Class 1~8 0001~1000
0000 Auto Classification	0101 Class 5: 45w	
0001 Class 1: 4 w	0110 Class 6: 60w	
0010 Class 2: 7 w	0111 Class 7: 75w	
0011 Class 3: 15.4 w	1000 Class 8: 90w	
0100 Class 4: 30w	1111 Auto Classification	

DIP switch ON="1", Off="0"



Dimensions

UNIT:mm



Technology																					
Standard	IEEE 802.3 10Base-T Ethernet																				
	IEEE 802.3u 100Base-TX/ IEEE 802.3ab 1000Base-T																				
	IEEE 802.3ab 1000Base-T Gigabit Ethernet Copper																				
	IEEE 802.3af Power Over Ethernet, PSE-Injector																				
	IEEE 802.3at High Power PoE, PoE ⁺ , PSE-Injector																				
	IEEE 802.3bt PoE ⁺⁺ , PSE-Injector																				
System Performance																					
PoE Operating Mode	<p>PoE Power Output Enable/Disable</p> <p>Auto Mode: In Auto Mode, the PSE follows the complete PoE sequence, including Detection, Classification, Powering, and Disconnection. This mode is enabled when DIP switches 2–6 are set to the “On” position.</p> <p>Manual Mode: In Manual Mode, the Power Sourcing Equipment (PSE) delivers power directly without executing the standard PoE procedures. Detection, Classification, Powering, and Disconnection behaviors are bypassed. The power budget is controlled according to the PoE Class (0–8) configured via the DIP-switch settings.</p>																				
PoE Power forwarding Mode	<p>IEEE 802.3af/at: Alternative-A, 2-Pair powering. RJ45 (1,2):V-, RJ45(3,6):V+</p> <p>IEEE 802.3bt: Alternative A + Alternative B, 4-Pair Powering, RJ45 (1,2,7,8):V- , RJ45 (3,6,4,5):V+</p>																				
PoE Output Budget	<p>IEEE802.3af:15W @ typical DC 48V, Rating 46~57V</p> <p>IEEE802.3at:30W @ typical DC 52V, Rating 50~57V</p> <p>IEEE802.3bt:90W @ typical DC 55V, Rating 53~57V</p>																				
PoE Protection	<p>The DP101-TX is equipped with multiple protection mechanisms, including Over-Voltage Protection (OVP), Over-Current Protection (OCP), and Over-Temperature Protection (OTP). When any of these events is detected, the system immediately shuts down the PSE power output and will not resume operation until the fault condition has cleared.</p> <p>Over-Temperature Protection (OTP) Threshold:</p> <p>Shutdown Temperature: PSE output is disabled when the internal temperature exceeds 150°C.</p> <p>Recovery Temperature: PSE power output automatically resumes once the temperature drops below 129°C.</p>																				
Interface																					
Data Port	Data In: RJ-45 support 100/1000Mbps link speed																				
PSE Port	PoE/ PSE Output : RJ-45 support 100/1000Mbps link speed																				
System LED	<p>1 x Power: Green On</p> <p>1 x PoE: Green On (PoE Active)</p> <p>1 x Ra: Alarm (Red On): Over-Current, Over-Voltage, Over-Temperature event occurred; Red Blinking: Temperature of PSE Chip exceed 129°C</p>																				
DIP Switch	<table border="1"> <thead> <tr> <th>DIP1</th> <th>DIP2</th> <th>DIP 3~6</th> </tr> </thead> <tbody> <tr> <td>Alarm Indicate</td> <td>PoE Enable</td> <td>PoE Auto Mode:1111 PoE Manual Class 0~8 (0000~1000)</td> </tr> <tr> <td colspan="2">0000 Auto Classification</td> <td rowspan="5">DIP Switch 3~6</td> </tr> <tr> <td colspan="2">0001 Class 1: 4 w</td> </tr> <tr> <td colspan="2">0010 Class 2: 7 w</td> </tr> <tr> <td colspan="2">0011 Class 3: 15.4 w</td> </tr> <tr> <td colspan="2">0100 Class 4: 30w</td> </tr> <tr> <td colspan="2"></td> <td>1111 Auto Classification</td> </tr> </tbody> </table>	DIP1	DIP2	DIP 3~6	Alarm Indicate	PoE Enable	PoE Auto Mode:1111 PoE Manual Class 0~8 (0000~1000)	0000 Auto Classification		DIP Switch 3~6	0001 Class 1: 4 w		0010 Class 2: 7 w		0011 Class 3: 15.4 w		0100 Class 4: 30w				1111 Auto Classification
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Power input	<p>3-Pin Removable Terminal Connector with Power Redundancy, Polarity Reverse Protection</p> <ul style="list-style-type: none"> • V1+ , V2+ : Redundant Power Input (V+) • V- (COM): Common Power-GND (V-) for V1 and V2 																				

Power input	3-Pin Removable Terminal Connector with Power Redundancy, Polarity Reverse Protection <ul style="list-style-type: none"> • V1+ , V2+ : Redundant Power Input (V+) • V- (COM): Common Power-GND (V-) for both V1+ and V2+
Power Requirement	
Input Voltage	54VDC (46~57VDC : IEEE 802.3af; 50~57VDC: IEEE 802.3at; 53~57VDC: IEEE 802.3bt)
Reverse Polarity Protect	Yes
Input Current	0.04A @54V full traffic without PD loading
Power Consumption	Max. 106W@54VDC full traffic with PD loading, suggest to reserve 15% tolerance
Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal
Dimension	103mm (H) x 32mm (W) x 82mm (D) / without DIN Rail Clip
Ingress Protection	IP40
Weight	315g without package (160*125*80mm)
Packing	54pcs / Carton (50*39*52cm, Weight 29kg)
Environmental	
Operating Temperature & Humidity	-40°C~75°C, 0%~95% Non-Condensing (I-Grade)
Storage Temperature	-40°C~85°C
MTBF	>200,000 hours
Hi-Pot Insulation	AC1.0KV for Power/Ethernet port to Chassis Ground
Warranty	5 years
Standard	
EMC	IEC/ EN61000-6-2, IEC/EN61000-6-4
EMI	CISPR 22, FCC part 15B Class A

Ordering Information

Model Name	Description
DP101-TX90	Industrial Gigabit Ethernet PoE 802.3bt 90W Injector
	Package List
	1 x Product Unit
	1 x 3-pin Removable Terminal Connector
	1 x Attached Din Clip
	1 x Quick Installation Guide