

ETH10-2wire-SET

2-wire transmission set LAN + PoE

10Mbps up to 1000m

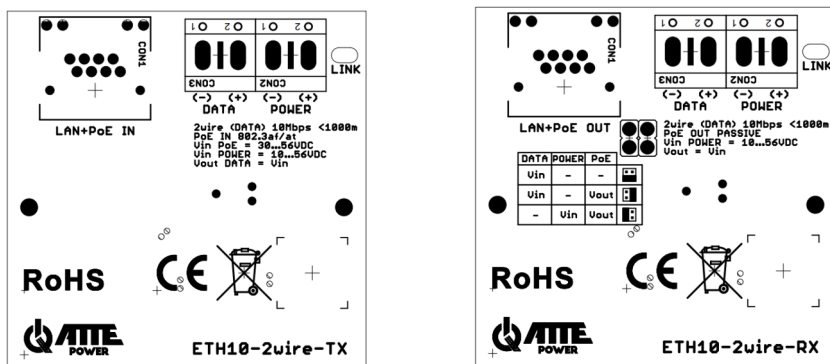
INSTRUCTION MANUAL

ETH10-2WIRE-SET is a set of active converters for data transmission from the Ethernet network and PoE power supply via 2 wires, e.g. one pair of UTP twisted pair. The devices allow the installation of PoE IP cameras in places where replacement of the existing cabling is impossible or unprofitable. The ETH10-2WIRE-TX module is powered from any PoE switch (RJ45 port) and via 2 wire cable, it enables two-way network communication and powering the ETH10-2WIRE-RX module. The maximum length of cable is 1000m. The camera or other PoE receiver can be connected to the RJ45 port of the ETH10-2WIRE-RX module at the end of the line.

The devices can be optionally powered from the POWER screw terminals.

The maximum distance of data transmission and PoE supply depends on the type, length and connections of the cables used. The presence of other cables in the cable route and additional indirect connections have a great impact on the transmission stability. The best parameters and the largest transmission range can be obtained by using 2 single, twisted cables, e.g. one pair of UTP twisted-pair cables.

The polycarbonate housing is a well-thought-out solution that ensures insulation and the small dimensions of the device. The small size gives a wide range of options for selecting the installation site.

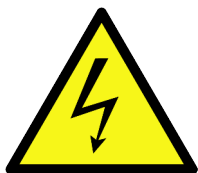


General view of the device

Technical Specification

LAN Ports	1 port RJ45 100Mbps
Connectors	RJ-45 Screw terminals 0.32-3.3 mm ² (22-12 AWG)
Ports Functions	ETH10-2wire-TX: PoE IN (power supply from PoE line): PASSIVE (up to 30W), 802.3af (up to 15W) PoE PINS: 1,2 (V+/-) 3,6 (V+/-) and/or 4,5 (V+/-) 7,8 (V+/-) POWER: alternative power supply when there is no PoE Vin POWER = 10 ... 56 VDC DATA (2wire line): data and power transmission over 2 wires ETH10-2wire-RX: PoE OUT (to PoE powered devices): PASSIVE PoE PINS: 4,5 (V+) 7,8 (V-) POWER (power supply): alternative power supply (see jumper configuration) DATA (2wire line): data and power transmission over 2 wires
Indication	LED port RJ45 (yellow) - voltage presence LED port RJ45 (green) - link and data transmission LAN LED LINK (green) - link and data transmission 2wire
Power Supply Voltage	ETH10-2wire-TX Vin PoE = 30 ... 56 VDC Vin POWER = 10 ... 56 VDC ETH10-2wire-RX Vin = 10 ... 56 VDC
Output Voltage	Vout = Vin
Power control	ETH10-2wire-RX jumpers - according to the configuration table (on the last page of the manual and on the label)
Power consumption	1,35 W
Maximum distance 2-WIRE	Maximum distance ETH10-2wire-TX to ETH10-2wire-RX (only DATA connectors): < 1000m - 2 single wires e.g. 1 twisted pair UTP The maximum distance of data transmission and PoE supply depends on the type, length and cross-section of the cables used. The presence of other cables in the cable route and additional indirect connections have a great impact on the transmission stability.
Length of the network cable	< 100m – distance from SWITCH PoE to ETH10-2wire-TX < 100m - distance from ETH10-2wire-RX to PoE Receiver/Camera
Ports Protection	Ports LAN and DATA: Surge protection Ports POWER: Reverse polarity protection Port PoE IN ETH10-2wire-TX: Overload protection 0,6A
Housing Construction	Polycarbonate
Ingress Protection Rating	IP20
Operating Temperature	-25°C...+65°C
Dimensions	ETH10-2wire-TX - 51 x 51 x 22mm ETH10-2wire-RX - 51 x 51 x 22mm
Weight	ETH10-2wire-TX - 0,025 kg ETH10-2wire-RX - 0,025kg

WARNING



Before installation and during maintenance make sure that the mains voltage 230VAC is disconnected

Installation

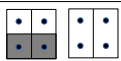
1. The devices should be installed in a place or in an enclosure that provides a protection against moisture and dust, appropriate for the IP20 class.
2. To the DATA screw connectors connect the transmission wires of the 2wire track, keeping the appropriate polarity at the beginning and at the end of the line.
2wire transmission range will depend on the type of cables used. The potentially best parameters and transmission range can be obtained by using 2 single, twisted cables, e.g. one pair of UTP twisted pair. An additional factor that may adversely affect the operating parameters of the devices will be electromagnetic disturbances affecting transmission cables.
3. Connect the power line from the PoE switch to the LAN + PoE IN port of the ETH10-2wire-TX module
 - alternatively, the power supply can be realized via the POWER screw connector, e.g. in the case where the switch does not support PoE
 - the power supplied on the ETH10-2wire-TX module is transmitted via the 2wire (DATA) to the ETH10-2wire-RX module
 - optionally, the PoE voltage applied to the LAN + PoE IN port is also available on the POWER connector. We recommend using this voltage only when powering the ETH10-2wire-TX module from the PoE PASSIVE switch
4. The presence of power at the beginning and at the end of the line is indicated by a yellow LED on the RJ45 port
5. The status of the link in the 2wire (DATA) circuit is indicated by green LED at the screw connections (LED LINK)
 - Green LED ON - correct communication setup between TX / RX
 - Green LED fast blinking - data transmission (after connecting network devices)
6. Using the jumpers on the ETH10-2wire-RX module, select the power configuration appropriate for your application (details in the table at the end of the manual or on the module label)

Examples of configuration options:

- **Mode 1:** the ETH10-2wire-RX module is powered from the voltage supplied to the DATA connector (2wire transmission path). We connect a network device that does not support PoE to the RJ45 port. The POWER connector remains unused. (factory configuration)
 - **Mode 2:** the ETH10-2wire-RX module and the PoE receiver connected to the RJ45 port are powered from the voltage supplied to the DATA connector (2wire transmission path). The POWER connector remains unused.
 - **Mode 3:** the ETH10-2wire-RX module and the PoE receiver connected to the RJ45 port are powered from the additional voltage supplied to the POWER connector. The configuration is used, for example, when the PoE receiver requires a voltage value different than that available from the DATA line or when the power demand of the PoE receiver exceeds the budget available on the DATA line (resulting, for example, from voltage drops).
7. Connect the selected network device to the LAN + PoE OUT port of the ETH10-2wire-RX module. The earlier configuration of the jumpers determines whether PoE power will be available on the RJ45 port.
 8. The status of the ETHERNET link is indicated by a green LED in the RJ45 connector:
 - LED ON - correct communication established

- LED fast blinking - data transmission

Jumpers configuration

		DATA	POWER	PoE	OPIS
Mode 1		Vin	-	-	Powered from DATA. RJ45 output – only LAN
Mode 2		Vin	-	Vout	Powered from DATA. RJ45 output - LAN + PoE
Mode 3		-	Vin	Vout	Powered from POWER. RJ45 output - LAN + PoE

Safety Precautions

- The installation and wiring must be performed by a competent engineer. For permanently connected equipment, a readily accessible disconnect device must be incorporated in the fixed wiring. The device must be connected to the mains supply 230 VAC 50 Hz via a specified fused connection outlet.
- It is recommended that the device should be mounted in places protected from direct influence of atmospheric factors, in particular against rain and direct sunlight.

WEEE MARKING



This symbol on the product or on its packaging indicates that the product must not be disposed of with normal household waste. Instead such equipment must be disposed of by arranging to return it to a designated collection point for the recycling of waste electrical and electronic equipment.

