ECS Link ENGLISH

LAN-TCP/IP Interface – Instruction Manual

Document: Mnl_ECSLAN_ModbusTCP_IIST044_04

Lateral communication module, suitable to read Energy values and Electrical Measurements from a 1Phase or a 3Phase Energy Meter and to make them available via Modbus/TCP protocol or through a browser.

Ordering Code = 261131

RISK OF ELECTROCUTION, BURNS AND EXPLOSION
The device must be installed and operated ONLY by duly authorized skilled persons.

DANGER: presence of dangerous Voltage

Carefully read this instruction manual before proceeding with the installation

Caution: symbol present of the device. Refer to this manual for further info.

Hazard resulting from application

The instrument must be installed and operated exclusively by skilled. It is strictly forbidden to use by instructed and ordinary persons or children. Furthermore, the installation and use of the instrument must comply with all the following requirements:

- Indoor Installation
- Overvoltage Category III
- Pollution degree 2 or lower
- DIN-rail mounted (35 mm). (the DIN rail must be at a height not exceeding 2 meters)
- Mounted inside a cabinet with IP51 degree of protection or better
- Under the environmental conditions specified in this manual

Failure to comply with even one of the listed requirements can cause injuries and/or property damages and relieves the Manufacturer from all civil and criminal liability.

Maintenance and Repair

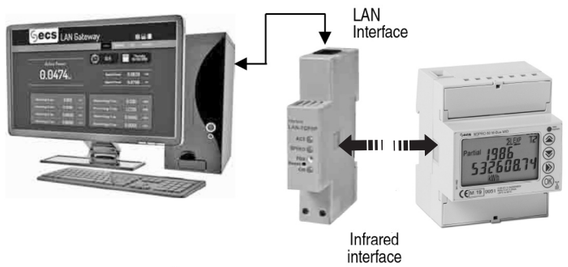
For this instrument, no maintenance, repair, or replacement of parts is foreseen. Such interventions are to be considered forbidden. In case of malfunction, it must be replaced.

Shorthand Guide

1) System Architecture

The Module has 2 communication interfaces:

- An Infrared Interface, receiving data from an Energy Meter
- A 10/100 BASE-T Ethernet LAN interface, transmitting data using Modbus/TCP protocol or making data available through a browser



2) Power Supply

The device is normally powered by mains supply: 230 Vac +/- 20%, 50/60 Hz
Power consumption: normal operation <= 0.5VA, during communication <= 0.75VA
The Modbus interface is isolated from mains supply (reinforced insulation). The lateral infrared interface is optically isolated.

3) Default settings

IP address: 192.168.1.253 — Subnet Mask: 255.255.255.0
Gateway: 192.168.1.1 — DHCP OFF
Primary DNS: 8.8.8.8 — Secondary DNS: 156.154.70.1
Administrator credentials= — Username: admin Password: admin

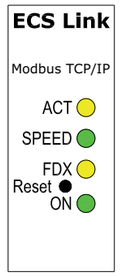
4) Front of the Module

On the front of the Module there are:
4 LEDs

- ACT LED (yellow): Blinking means LAN activity.
- SPEED LED (green): The LED is ON if the LAN is 100 Mbit/s, it's OFF if the LAN is 10 Mbit/s.
- FDX LED (yellow): The LED is ON if the LAN is full-duplex, it's OFF if the LAN is half-duplex.
- ON LED (green): Power supply on.

A miniature push-button key (Reset)

- A short pushing, shorter than 3 seconds → Device reboot.
- A push longer than 3 seconds → SPEED (green) and FDX (yellow) LEDs start blinking alternatively. In this phase, by releasing the Reset button, the default network parameters are restored and the device reboots. Otherwise, by keeping the button pushed for at least other 4 seconds, the 2 LEDs starts blinking together, and the procedure is cancelled.



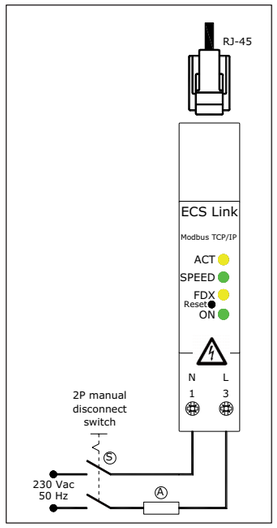
Wiring Diagram

Ⓢ Two poles disconnect device with a contact separation of at least 3 mm

Ⓐ Cartridge Fuse 5X20mm, Certified according to IEC 60127-2. Medium Acting
Operating current 125 mA.
Voltage rating 250 Vac.
For example: Littelfuse 0128.125

Both fuse and fuse holder must have a minimum creepage distance of 4mm and minimum clearance distance of 3 mm between poles. The fuse breaks the Phase wire current. The fuse holder is DIN-rail mounting and must be mounted closely to the device

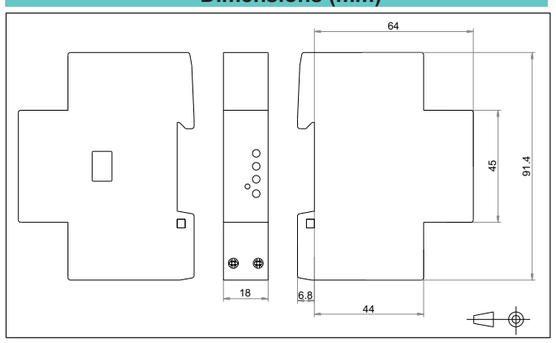
The DIN rail on which the meter is mounted must be earthed.



Installation

- Mount the Module on a 35 mm DIN rail, on the left side of an Energy Meter, so that the side infrared interfaces face each other. The DIN rail must be earthed.
- Make sure that the slide clicks, for a stable installation.
- Connect the LAN cable to the RJ-45 connector.
- Connect the 230 VAC supply to the terminals on the lower side of the interface.
- Using a Web Browser, connect to the LAN-Gateway IP address

Dimensions (mm)



Technical Specification

(ref. IEEE 802.3 AS, EN 62368-1:2018, EN 55032 CISPR 32, EN 61000-4)

LAN Interface 10/100 BASE-T Ethernet	Hardware connection	RJ-45
	SW protocol	TCP/IP EU863-870
	Application level protocols	HTTP, Modbus/TCP SNTP, DHCP, DNS
DIN-rail mounting (acc. to DIN 43380 and EN60715)	Housing	1 module (18 mm)
	DIN-rail	35 mm
	Module depth	70 mm
Power supply	Operating Voltage	230 V~ +/- 20%
	Power consumption	<=1.5 W
	Operating Frequency	45-65 Hz
Wiring Connection	screw head Z +/-	POZIDRIV PZ0
	Solid wire min (max) section	0.15 (2.5) mm2
	Stranded wire min (max) section	0.15 (4) mm2

Wires acc. to IEC 60332-1-2 if section>= 0.5 mm2, acc. to IEC 60332-2-2 for smaller sections

EMC Disturbances — Compliant with Conducted emissions and Radio interferences EN 55032 CISPR 32 Class B

EMC Immunity
EN 61000-4-2 - Electrostatic discharge immunity 8kV
EN 61000-4-3 - Immunity to radiated RF electromagnetic field
EN 61000-4-4 - Electrical fast transient/burst immunity – 4 kV on mains circuit – 2kV (capacitive clamped) on LAN connector
EN 61000-4-5 – Immunity to surges – 4 kV surge pulses

Electric Safety (acc. to EN 62368-1:2018)	Pollution degree	2
	Overvoltage category	III
	Working Voltage	300 V
	Flammability (acc. to UL 94)	class V0

Insulation (acc. to IEC 61140) — II ⧈ (symbol IEC 60417-5172 (2003-02))
Reinforced Insulation between Mains supply circuit (HLV circuit) and communication circuit (SELV circuit)

- a.c. Required Transient Voltage = 4 kV peak
- Impulse withstand voltage test (1.2/50 µsec pulse) = 7.68 kV peak
- AC withstand voltage test (for 5 seconds) =4.18 Vrms
- routine AC withstand voltage test = 3,4 kV rms on each single equipment for 1 second

Environmental conditions	Operating Temperature	-25°C — +55°C
	Storage Temperature	-25°C — +70°C
	Relative Humidity not condensing	
	yearly average	<= 75%
	on 30 days per year	<= 95%
	Installation	Indoor
	Altitude	<=2000 m.
	Degree of Protection	IP20 (*)

(*) The device must be installed inside a cabinet with IP rating IP51 or better. Any exposed parts (outside the cabinet) must have a minimum degree of protection IP51. Furthermore, the cabinet must have a Flammability degree V1 (according to UL-94) or better.

Manufacturer

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Notes