



A30

CONVERTER

from USB or RS 232 or RS485
to RS 485 or TTL



Engineering Manual

Code : ISTR-MA30ENG01

Ascon Technologic S.r.l.

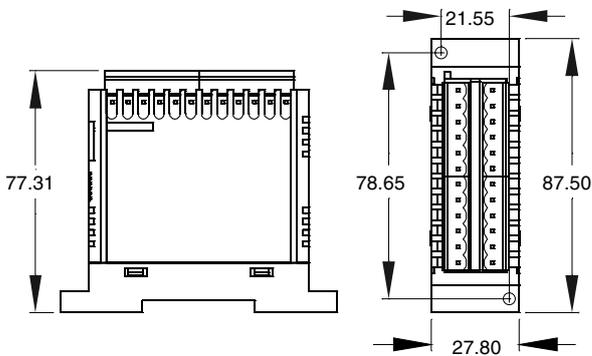
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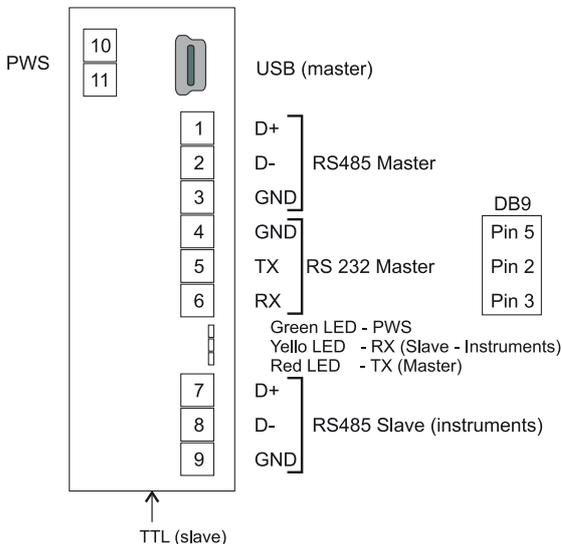
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1. OUTLINE DIMENSIONS (mm)



2. CONNECTION DIAGRAM



3. INSTALLATION

3.1 PRELIMINARY HARDWARE SETTING



1. Termination resistors for RS485 master;
2. Pull-up D+ master;
3. Pull-down D- master;
4. NC;
5. FF filter on TTL slave (ON = filter enabled);
6. Termination resistor for RS485 slaves;
7. Pull-up D+ slaves;
8. Pull-down D- slaves.

3.2 MOUNTING REQUIREMENTS

This instrument is intended for permanent installation, for indoor use only, in an electrical panel, for a DIN rail mounting. Select a mounting location having the following characteristics:

1. It should be easily accessible;
2. There is minimum vibrations and no impact;
3. There are no corrosive gases;
4. There are no water or other fluids (i.e. condensation);
5. The ambient temperature is in accordance with the operative temperature (0... 50°C);
6. The relative humidity is in accordance with the instrument specifications (20... 85%).

3.3 GENERAL NOTES ABOUT WIRING

1. Do not run input wires together with power cables;
2. When a shielded cable is used, it should be connected at one point only;

To avoid electrical shock, connect power line at last.

3.4 SERIAL INTERFACE

3.4.1 Interface type

A30U Model

- USB to RS 485 selfpowered;
- USB to TTL selfpowered.

A30 - Model

- USB to RS 485;
- USB to TTL;
- RS 232 to RS485;
- RS 232 to TTL;
- RS 485 to RS 485;
- RS 485 to TTL.

USB Compatibility: 2.0 full speed compliant with USB 1.1.

RS 485 and RS 232 Voltage levels: According to EIA standard;

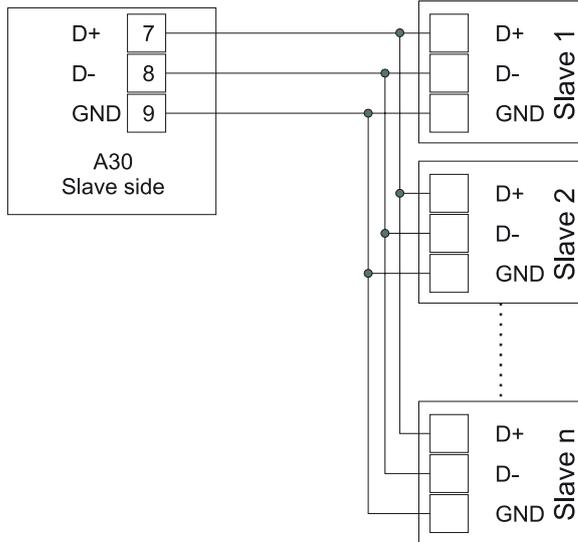
Protocol type: Free (full or half duplex according to the selected interface);

Byte format: Automatic selection;

Stop bit: Automatic selection;

Baud rate: Automatic selection;

Maximum baud rate (RS 485 only): 38400 baud.



- Notes:**
1. RS-485 interface allows to connect up to 30 devices to one remote master unit. An isolation unit (RS485 to RS485) is required when other units must be connected.
 2. The cable length must not exceed 1500 m at 9600 baud.

3.5 POWER SUPPLY



Supply Voltage: - 100... 240 VAC (-15... +10%);
- 24 VAC/DC ($\pm 10\%$).

Power consumption: 5 VA max..

- Notes:**
1. Before connecting the instrument to the power line, make sure that line voltage is equal to the voltage shown on the identification label;
 2. To avoid electrical shock, connect power line at the end of the wiring procedure.
 3. For supply connections use No. 16 AWG or larger wires rated for at least 75°C.
 4. Use copper conductors only.
 5. For power supply the polarity is a do not care condition;
 6. The power supply input is **NOT** fuse protected. Please, provide a T type 1A, 250 V fuse externally.

4. TECHNICAL CHARACTERISTICS

4.1 TECHNICAL SPECIFICATION

Case: Plastic, self-extinguishing degree: V-0 according to UL 94;

Terminals protection: IP 20 according to EN 60070-1;

Terminal block:

- **Power supply:** Screw terminals [screw M3, for cables between 0.25... 2.5 mm² (AWG 23 to AWG 14)];
- **RS-232/RS485:** Screw terminals [screw M2, for cables between 0.25... 1.5 mm² (AWG 23... AWG 16)].

Dimensions: 28 x 88 mm, depth 78 mm;

Weight: 180 g approx.;

Power supply: see "How To Order"

Power supply: - 100... 240 VAC/DC (-15 ... +10%);
- 24 VAC/DC ($\pm 10\%$).

Power consumption: 5 VA max.;

Isolation between power supply (100/240VAC) and communication lines: Reinforced according to EN 61010-1. Voltage test 2500 Vrms (1 min);

Isolation between power supply (24VAC/DC) and communication lines: Reinforced according to EN 61010-1. Voltage test 1500 Vrms (1 min);

Isolation between Master and slave side: functional isolation (250 VAC);

Electromagnetic compatibility and safety requirements: Compliance: directive EMC EN 61326-1, directive LV EN 61010-1)

Installation category: II;

Pollution category: 2;

Operating temperature: 0... 50°C (32... 122°F).

Storage temperature: -30... +70°C (-22... +158°F).

Humidity: 20... 85% RH, non condensing.

5. GENERAL NOTES

5.1 PROPER USE

Every possible use not described in this manual must be considered as an improper use.

This instrument is in compliance with EN 61010-1 "Safety requirements for electrical equipment for measurement, control and laboratory use"; **for this reason it could not be used as part of a safety equipment.**

Whenever a failure or a malfunction of the device may cause dangerous situations for persons, things or animals, please remember that the plant has to be equipped with additional safety devices.

Ascon Tecnologic srl and its legal representatives do not assume any responsibility for any damage to people, things or animals deriving from violation, wrong or improper use or in any case not in compliance with the instrument's features.

5.2 WARRANTY AND REPAIRS

This product is under warranty against manufacturing defects or faulty materials that are found within 12 months from delivery date. The warranty is limited to repairs or to the replacement of the instrument.

The tampering of the instrument or an improper use of the product will bring about the immediate withdrawal of the warranty's effects. In the event of a faulty instrument, either within the period of warranty, or further to its expiry, please contact our sales department to obtain authorisation for sending the instrument to our company.

The faulty product must be shipped to Ascon Tecnologic with a detailed description of the faults found, without any fees or charge for Ascon Tecnologic, except in the event of alternative agreements.

5.3 MAINTENANCE

This instrument does not require periodical recalibration and it has no consumable parts so that no particular maintenance is required. Some times, a cleaning action is suggestable.

1. SWITCH THE EQUIPMENT OFF;
2. Using a vacuum cleaner or a compressed air jet (max. 3 kg/cm²) remove all deposits of dust and dirt which may be present on the louvers and on the internal circuits being careful not to damage the electronic components;
3. To clean external plastic or rubber parts use only a cloth moistened with:
 - Ethyl Alcohol (pure or denatured) [C₂H₅OH];
 - Isopropyl Alcohol (pure or denatured) (CH₃)₂CHOH];
 - Water (H₂O).
4. Make sure that there are no loose terminals.
5. Before to turn the instrument ON, make sure that it is perfectly dry.
6. Turn the instrument ON

6. HOW TO ORDER

Model

A30 U = USB to RS485 or TTL converter

A30 - = USB/RS232/RS485 to RS485 or TTL converter

Power supply

- = 5 V provided by USB port (A30U only)

L = 24 V AC/DC (A30- only)

H = 100 - 240 V AC (A30- only)

Terminals

E = Removable with screw terminals

N = removable without connectors

