Fig. 1.   A simplified schematic diagram of the input circuits.

It can be seen from the diagram that the inputs are not isolated from each other, but all inputs are isolated from other circuits as a entire block.

The input circuits of all types of modules make it possible to process signals of both polarities, i.e. for signal levels 0V/24V the DIN_CM terminal can be connected either to 0V signal (suitable for PNP type outputs) or to 24V signal (suitable for NPN type outputs).

The MU-3226A modules contain 50 Hz signal filters in the processing circuits and they can also be used to process AC signals.

# MU-3222A
# MU-3225A
# MU-3226A

## Installation Guide

(further guides and software available at https://www.tedia.eu/mu)

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## General description

The MU-3222A/3225A/3226A modules are designed especially for distributed DAQ&C systems and offer the following functions:

- 32 digital inputs for 24 $V_{DC}$ signals (all three types), or also for 24 $V_{AC}$ signals with a frequency of 50 Hz (type MU-3226A only)
- 32 counters for DC signals up to a frequency of 200 Hz (type MU-3225A only), or DC and AC signals up to a frequency of 10 Hz (type MU-3226A only)
- RS-485 communication line (without isolation, i.e. the GND of the RS-485 line is shared with the power source GND)

## General instructions for use

The DAQ&C modules of the MicroUnit serie may be used only according to the manufacturer's recommendations and precautions given in manuals and other general standards and terms and may be used only such a way, that its failure caused by any reason will not be dangerous to any person or property.

## Installation

The modules are intended for mounting on a 35 mm DIN rail, operating temperature of -10~60 °C with relative humidity up to 90%, noncondensing. The location and meaning of the terminals are described in the figure and in the tables.

When connecting the power supply (10~30 $V_{DC}$; power consumption 2.0 W max.), it is necessary to pay attention to the correct polarity and voltage tolerance; failure to observe the permitted limits may result in permanent damage. Also, connecting the supply voltage to another terminal of the module can cause permanent damage.

When connecting the communication line, use shielded double line cable meeting RS-485 or RS-232 requirements. The cable shield must be connected to terminal 43.

All other signals are connected with appropriate wires to the screw terminals described and explained in the following tables and figures.

The length of the wires (except for the RS-485 line) should not exceed 2 meters.

## Configuration

A special software utility (allows to set communication parameters, behavior of digital ports, etc.) is intended for configuring the modules. Pay attention to the correct setting of the double switch located under the transparent cover.

segment 1      the ON position disables writing to the configuration memory

segment 2      the OFF position enables user parameters stored in the configuration memory (address, transfer rate, type of comm. protocol, etc); the ON position (or ON-OFF sequence) when power-up or restart sets up default communication parameters instead of user parameters (see the guide of the config software utility or programming guide)



digital inputs
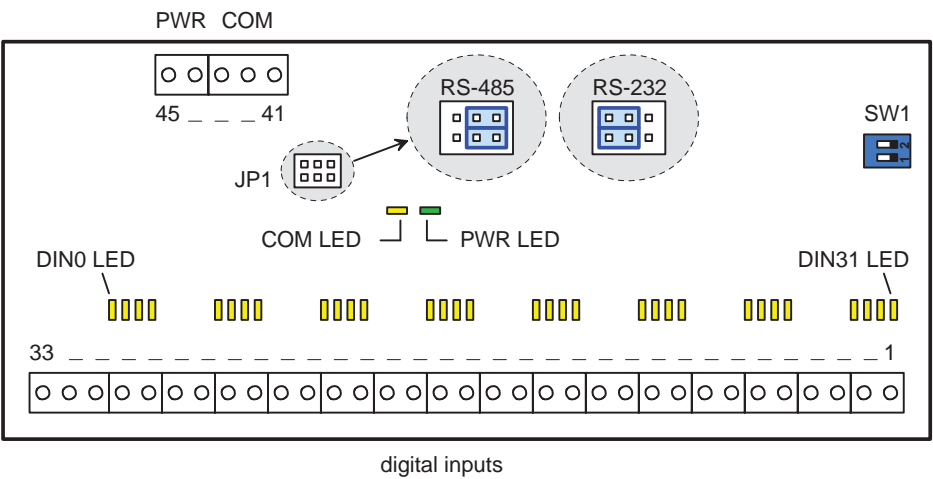
*Note:* *The figure shows LEDs indicating the presence of supply voltage, the activity of the communication line and the presence of voltage at the inputs (only when the power supply is on). Two plug-in jumpers are intended for the configuration of the communication line type.*

| Digital inputs terminals | |
|---|---|
| 1 | DIN31 digital input (see the following schematic diagram), CNT31 counter input |
| 2 | DIN30 digital input (see the following schematic diagram), CNT30 counter input |
| 3 | DIN29 digital input (see the following schematic diagram), CNT29 counter input |
| … | … |
| 31 | DIN1 digital input (see the following schematic diagram), CNT1 counter input |
| 32 | DIN0 digital input (see the following schematic diagram), CNT0 counter input |
| 33 | DIN_CM (common terminal of all DIN**/CNT** inputs) |
| maximum input voltage ±60 V (±75 V max. 1 s) | |

| Supply voltage and communication line terminals | |
|---|---|
| 41 | TX/RX+ (RS-485, signal B), or TXD (RS-232, output signal of the module) |
| 42 | TX/RX- (RS-485, signal A), or RXD (RS-232, input signal of the module) |
| 43 | GND_COM (GND terminal of communication line, connected with PGND) |
| 44 | PWR (supply voltage, positive) |
| 45 | PGND (supply voltage, negative) |
| supply voltage in the range of 10~30 $V_{DC}$ | |