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-3222B
MU-3225B
MU-3226B

Installation Guide

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

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General description

The MU-3222B/3225B/3226B 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-3226B only)
- 32 counters for DC signals up to a frequency of 200 Hz (type MU-3225B only), or DC and AC signals up to a frequency of 10 Hz (type MU-3226B 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 requirements. The cable shield must be connected to terminal 13.

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 quadruple switch located in the corner of the board.

segment 1   the ON position disables writing to the configuration memory
segments 2-4   operating mode (switch position in read when power-up or restart)

S2	S3	S4	operating mode
ON	OFF	OFF	configuration mode with fixed communication parameters (Modbus RTU, even parity, baud rate 9600 Bd, address 247)
ON	ON	OFF	configuration mode with fixed communication parameters (AIBus-2, baud rate 9600 Bd, address 0)
OFF	OFF	OFF	standard mode with user-configured communication parameters, firmware update disabled
OFF	OFF	ON	standard mode with user-configured communication parameters, firmware update disabled (allows remote firmware update, but increases the risk of failure during the boot procedure)
	other		reserved for other firmware update modes

The factory configuration is set to AIBus-2, 9600 Bd with address 1, all switches OFF.
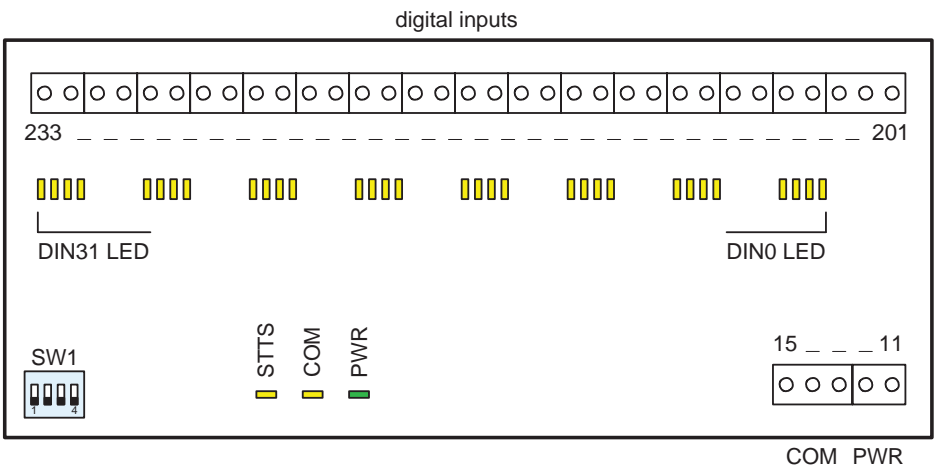
Note: *The figure shows LEDs indicating the presence of supply voltage, the activity of the communication line and the presence of voltage at the inputs (only when the power supply is on). The LED marked STTS indicates firmware update mode.*

Supply voltage and communication line terminals	
11	PGND (supply voltage, negative)
12	PWR (supply voltage, positive)
13	GND_COM (GND terminal of communication line, connected with PGND)
14	TX/RX- (RS-485, signal A)
15	TX/RX+ (RS-485, signal B)
supply voltage in the range of 10~30 V_{DC}	

Digital inputs terminals	
201	DIN_CM (common terminal of all DIN**/CNT** inputs)
202	DIN0 digital input (see the following schematic diagram), CNT0 counter input
203	DIN1 digital input (see the following schematic diagram), CNT1 counter input
…	…
231	DIN29 digital input (see the following schematic diagram), CNT29 counter input
232	DIN30 digital input (see the following schematic diagram), CNT30 counter input
233	DIN31 digital input (see the following schematic diagram), CNT31 counter input
maximum input voltage ±60 V (±75 V max. 1 s)	