

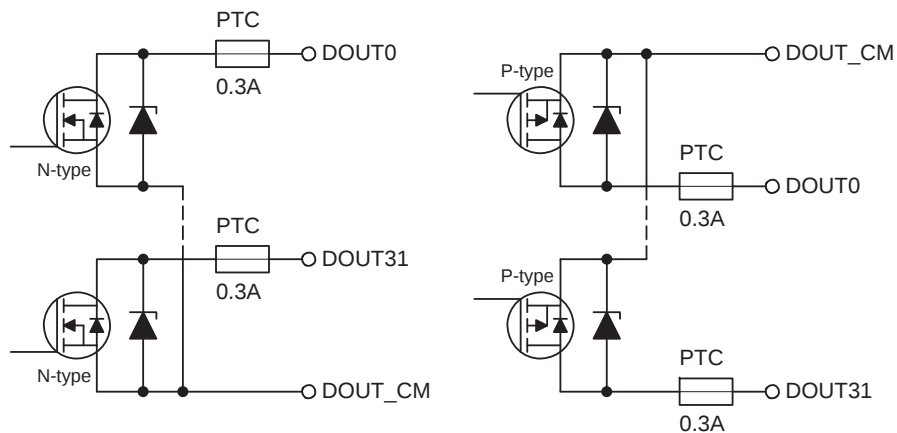


Fig. 1. A simplified schematic diagram of the output circuits of the MU-3251B (left) and MU-3253B (right) modules.

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

The outputs are protected against overvoltage (TVS diodes) and against overload with automatic recovery after disconnection of the load (PTC resettable fuses).

MU-3251B MU-3253B

Installation Guide

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

Manufacturing, sales office, service center and technical support:

address: TEDIA spol. s r. o.
Zabělská 12, 31200 Plzeň, Czech Republic
phone/e-mail: <https://www.tedia.eu/contacts>



General description

The MU-3251B/3253B modules are designed especially for distributed DAQ&C systems and offer the following functions:

- 32 digital outputs for DC signals 24 V, alternatively NPN type (MU-3251B), or PNP type (MU-3253B)
- 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 DAQ&C modules of the MicroUnit serie are intended for mounting on a 35 mm DIN rail, operating temperature of -10~60 °C with relative humidity up to 90%, noncondensing and normal levels of pollution.

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.

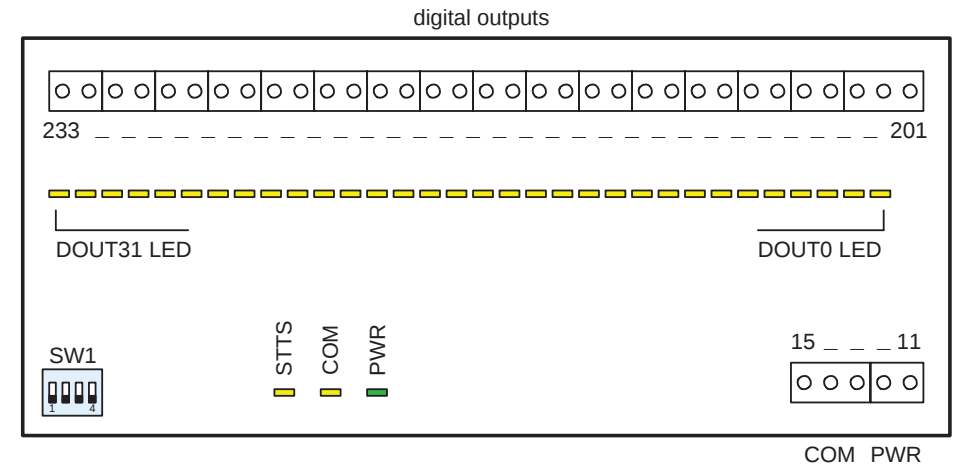
Configuration

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 activated (= switched on) digital outputs. 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 outputs terminals	
201	DOUT_CM (common terminal of all DOUT** outputs)
202	DOUT0 digital output (see the following schematic diagram)
203	DOUT1 digital output (see the following schematic diagram)
...	...
231	DOUT29 digital output (see the following schematic diagram)
232	DOUT30 digital output (see the following schematic diagram)
233	DOUT31 digital output (see the following schematic diagram)
maximum output voltage 32 V _{DC} and current 0.3 A _{DC} (2 A _{DC} max. 0.2 s)	