M400, M401
M410, M411 Digital input module

Summary

The M4xx digital input module is a microprocessor-controlled, communicative 8 binary inputs module. The module uses a RS485 bus for communication, and can be easily integrated in a variety of supervision and control systems.

Applications

- **HVAC and industrial control systems – binary signal acquisition**

Functions

The module is delivered in four variants:
M400, M401: inputs at safety low voltage up to 50 VDC, 30 VAC
M410, M411: inputs at 100...230 VAC.
The M4x1 modules have the COM1 to COM4 terminals interconnected inside of the module (with a common name COM) and thus it is not necessary to provide external common potential for each of the inputs.

The module communicates by means of a RS485 data bus. The communication protocol ensures smooth and easy integration in a number of control and data acquisition systems.

Removable connectors are used for incoming and outgoing data line so that mounting is fast and easy. As some communication cables include more pairs in one cable, free cores may be used for powering the module.

The communication circuits are protected against overvoltage. If the module is terminating the communication bus, i.e. it is the last in line, a terminating 120 Ω resistor may be switched on by short-circuiting of the BUS END jumpers. Two LEDs located inside of the housing enable fast diagnostics – power up and communication. Eight LEDs at the inputs indicate the status of each of the inputs separately.

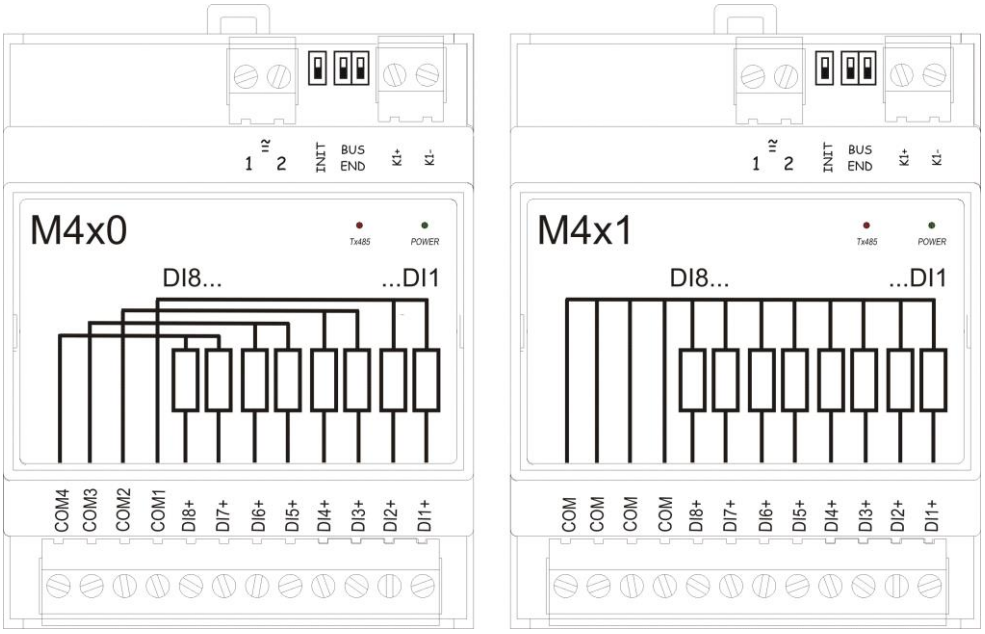
See *domat - Technical application notes* for connection examples.

All the settings are backed up in a EEPROM chip. The module is equipped with a watchdog circuit and the communication part is galvanically separated. The inputs are passive: in case of dry contacts, a power source (external or that for powering the module) is necessary. See below. For the AC signals, no polarity check is required.

Technical data

Supply voltage Consumption	10 V ÷ 35 V DC, 14 V ÷ 24 V AC 1000 mW
Working temperature of the module	0 ÷ 70°C
Communication Max. bus length Max. number of modules on the bus	RS485, 1200 ... 19200 bit/s 1200m 256
Number of binary inputs Common „-“ terminal	8 M401, M411
Input voltage for log. „0“	M400/401 – max. 5 V AC/DC M410/411 – max. 20 V AC
Input voltage for log. „1“	M400/401 – 18... 30 V DC, 18... 26 V AC @ 7 mA M410/411 – 100...250 V AC @ 10mA
Dimensions	see below

Terminals

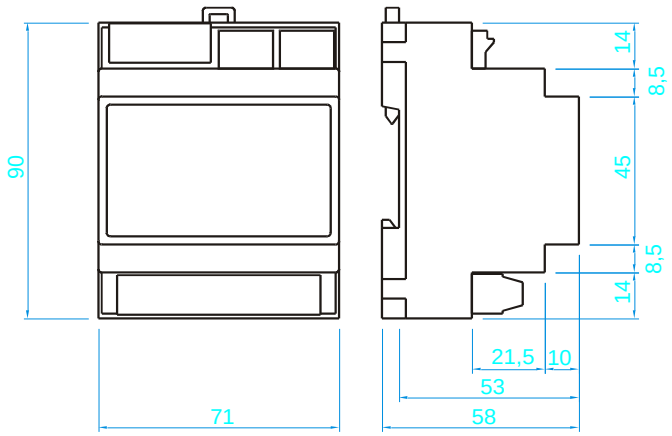


Marking	Description
D1+ to D8+	„+“ input terminals
COM	„-“ input terminals
1, 2	power, any polarity
K1+, K1-	communication bus

M4x0 modules (separate grounds)

Ground	For inputs
COM1	DI1+, DI2+
COM2	DI3+, DI4+
COM3	DI5+, DI6+
COM4	DI7+, DI8+

Dimensions



08/2013 Subject to technical changes.