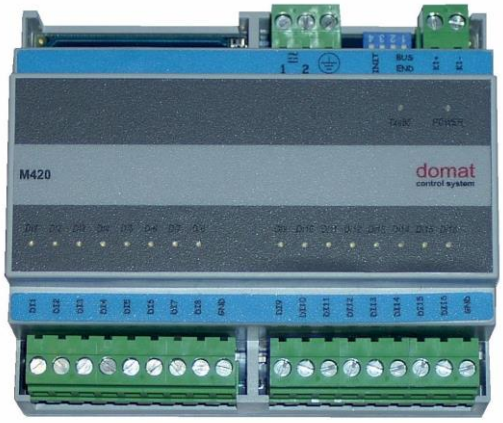
M420 Digital input module



Summary

The M420 digital input module is a microprocessor-controlled, communicative 16 binary inputs module. The module uses a RS485 bus with Modbus RTU, and can be easily integrated in a variety of supervision and control systems.

Applications

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

Functions

The inputs are designed for small voltage up to 50 V DC, 30 V AC. Eight inputs have common ground - GND. The GND terminals are not interconnected inside of the module and therefore each of them may host another potential. The inputs are optically separated from the rest of the circuitry.

The module communicates by means of a optically insulated 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 module mounts on a DIN rail.

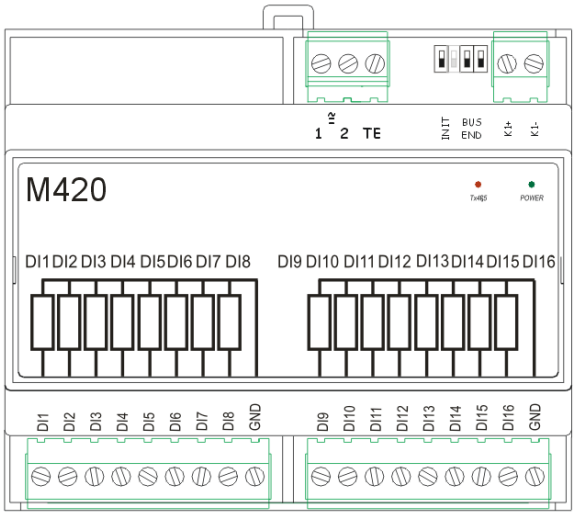
The communication circuits are protected against overvoltage. If the module is terminating the communication bus, i.e. it is the last in line, a terminating 120 Ω resistor may be switched on by short-circuiting of the BUS END DIP switches (1, 2). Two LEDs located inside of the housing enable fast diagnostics – power up and communication. 16 LEDs at the inputs indicate the status of each of the inputs separately.

All settings (address, latch, power-up behavior) are stored in a EEPROM. The module is equipped by a watchdog.

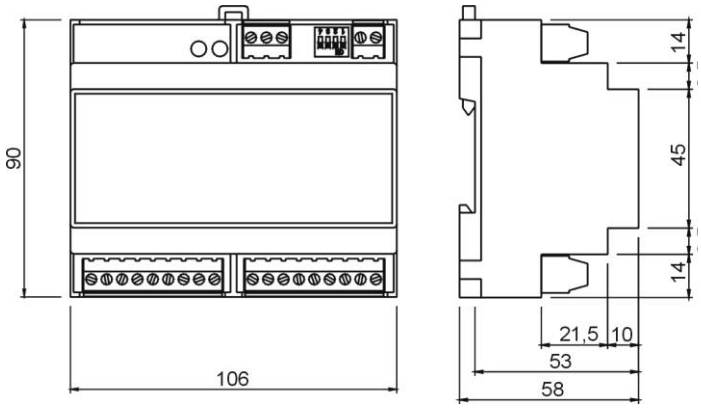
Technical data

Supply voltage	10 V ÷ 35 V DC, 14 V ÷ 24 V AC
Consumption	1000 mW
Working temperature of the module	0 ÷ 70°C
Communication	RS485, 1200 ... 115200 bit/s
Max. bus length	1200m
Max. number of modules on the bus	256
Number of binary inputs	16
Input voltage for log. „0“	max. 5 V AC/DC
Input voltage for log. „1“	18 ... 30 V DC, 18... 26V AC @ 7mA
Dimensions	see below

Terminals



Dimensions



Marking	Description
DI1 to DI16	**+** (positive) terminals of digital inputs
GND	COM **–** (negative) terminals for DI1 to 8 and DI9 to 16
1,2	Power (any polarity)
K1+	Communication bus RS485+
K1-	Communication bus RS485-
BUS END	bus terminating resistor DIP - SW 1 and 2 switch to ON
INIT	To set the module in the INIT mode (address 1, baud rate 9600 bps, 8N1) set the DIP - SW 4 to ON and apply power

07/2013 Subject to technical changes.