domat
control system

M504   Analog input module

Summary

The M504 analog input module is a microprocessor-controlled, communicative 4 analog differential 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 – analog signal acquisition**

Functions

The module incorporates 4 analog differential voltage inputs. Each input is rangeable (150mV to 10V) and can also be used as a 0 to 20mA current input if the corresponding DIP switch is activated.

The module communicates by means of optically separated RS485 data bus. The Modbus RTU communication protocol ensures smooth and easy integration in a variety of control and data acquisition systems. Removable connectors are used for all signals as well as for data line so that mounting is fast and easy.

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.

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.

Technical data

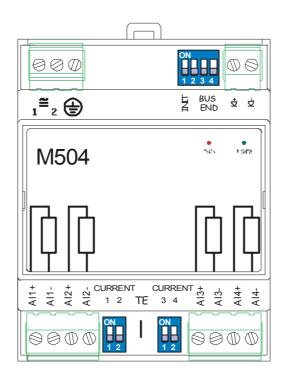|	
Supply voltage	10 V ÷ 35 V DC, 14 V ÷ 24 V AC
Consumption	1500 mW
Working temperature of the module	0 ÷ 70°C
Communication	RS485, 1200 ... 19200 bit/s
Max. bus length	1200m
Max. number of modules on the bus	256
Number of analog inputs	4
Input ranges	+/- 150mV, +/- 500mV, +/- 1V, +/- 5V, +/- 10V, 0...20 mA
Sampling rate	10 samples / s
Effective resolution	16 bit
Input impedance	>10MΩ
Dimensions	71 (l) x 90 (w) x 58 (h) mm

Terminals

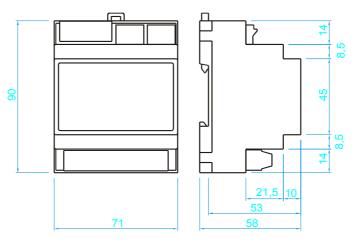|	
1	power, any polarity
2	power, any polarity
TE	technical ground
K1+	RS485, positive
K1-	RS485, negative
AI1+	input 1, positive
AI1-	input 1, negative
AI2+	input 2, positive
AI2-	input 2, negative
AI3+	input 3, positive
AI3-	input 3, negative
AI4+	input 8, positive
AI4-	input 8, negative
TE	technical ground

CURRENT 1..4
if ON, AI1..AI4 as 0..20 mA
BUS END
if 3 and 4 are ON, the RS485 bus is terminated
INIT   if 1 is ON at power up, bus address is 1, comm speed 9600,8,N,1

Dimensions

08/2014 Subject to technical changes.