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[19430]

Category: Automation systems

Analogue input module
DIN rail mounting
8 analogue inputs, universal, 16 Bit

DIGICONTROL ems 4.AE03B

Application

The ems 4.AE03B is a module for recording temperatures of the resistance thermometer PT/NI/CU 1000 with an integrated microcontroller and memory module for accommodating a specially coordinated programme.
Two measuring ranges are available for temperature measurement, which cover different temperature ranges depending on the sensor type. The respective input signal type (PT-/NI-/CU-1000 / 0(2)...10 VDC / 0(4) ... 20 mA) and the measuring range required (for temperature measurements) are configured separately for each input using the configuration tool.
The transmission frequency of the module and attenuation of the input signal can be parameterised via one hysteresis value and one filter constant per input.

Technical features
*   8 analogue inputs PT-/NI-/CU-1000 / 0(2)...10VDC / 0(4) ... 20 mA , 16 Bit
*   2 selectable temperature measuring ranges (see the following table)

The following temperature measuring ranges are produced depending on the sensor used
:

Sensor type	Meas range1(exp.)	Resolution	Meas range.2(standard)	Resolution
PT 1000	-200 ℃ ... +850 ℃	0.02 ℃	-200 ℃ ... +390 ℃	0.01 ℃
NI 1000, DIN	-60 ℃ ... +270 ℃	0.013 ℃	-60 ℃ ... +200 ℃	0.007 ℃
NI 1000, TKR5000	-60 ℃ ... +250 ℃	0.013 ℃	-60 ℃ ... +240 ℃	0.008 ℃
CU 1000	-230 ℃ ... +850 ℃	0.013 ℃	-230 ℃ ... +340 ℃	0.009 ℃

Article number: EMS4.AE03B

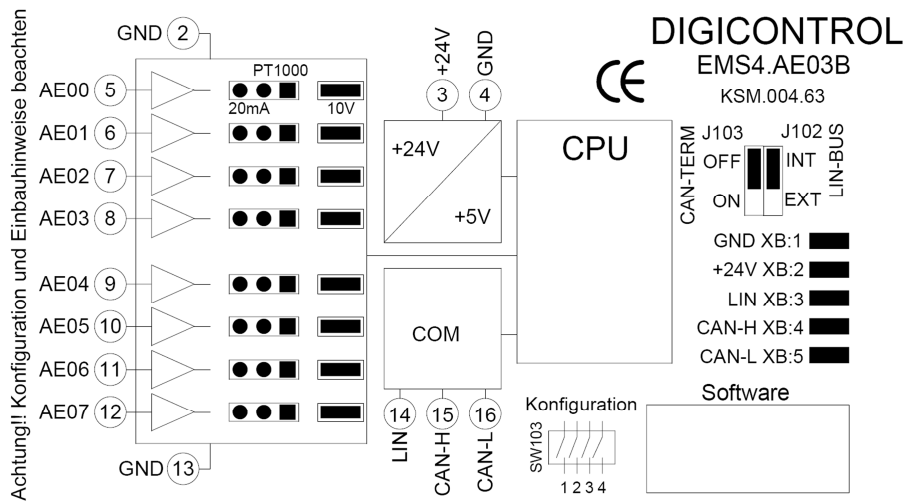### Specifications

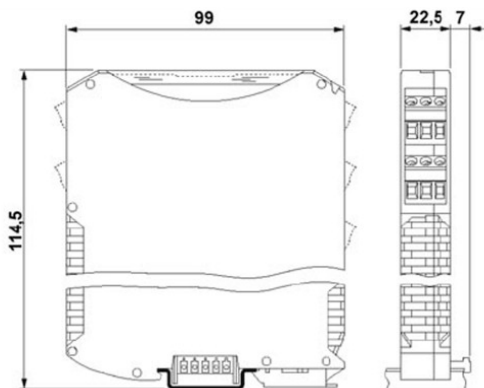|	
Number of inputs	8
Resolution	16 Bit
Input signal	PT- / NI- / CU- 1000 / 0(2) ..10 V DC / 0(4) .. 20 mA
Input temperature range	adjustable: -50...+50 ℃, -50...150 ℃, -50...350 ℃
Dimensions	22.5 x 100 x 115 mm
Connecting terminals	via screw terminals for wires up to 2.5mm²
EMC electromagnetic interference	EN 61000-6-4, EN 50081, (EN55022)
EMC interference immunity	EN 61000-6-2, EN 50082, (EN55024)
EMC burst	EN 61000-4-4
Housing	Plastic housing
Weight	130 g
DIN rail bus connector CAN / LIN	max. 30 mating cycles, contact load 1A
Storage temperature	-10...+70 ℃
Power consumption	2 W power consumption during functional operation, 4 W with CAN bus activity
Humidity	up to 85% without condensation according to VDE 0160, EN 50178, Class 3K3
Installation positions	On vertical surfaces (wall mounting, terminals at top and bottom)
Interfaces	1 x LIN
Protection type	IP 20

Service button	on device front
Power supply	24 VDC ±10 %
Module status display	via Duo-LED
System bus	CAN
Ambient temperature during operation	+5...+40°C

Module configuration, connection

Dimensions

Position of the jumpers / DIP switches

AE0
AE1
AE2
AE3
3 2 1

AE3 AE2 AE1 AE0
4 5

1-2 = PT / NI1000

2-3 = 0...20mA

4-5 = 0...10V

AE7
AE6
AE5
AE4

AE4 AE5 AE6 AE7
4 5

µC

3 2 1
OFF   INT
ON   EXT

CAN-Abschluss
LIN-Bus (intext)

ON
OFF
1 2 3 4
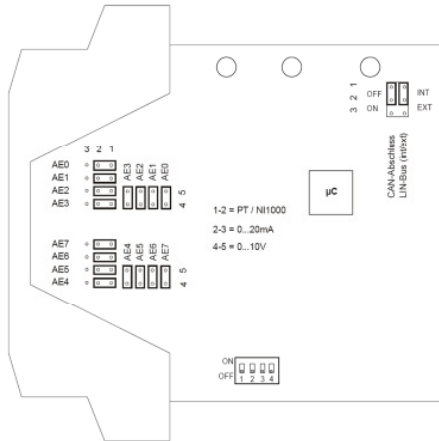
ems 4 - Module configuration

Each ems 4 module is assigned an individual module address by the webCADpro configuration tool.
By default the address for all modules is 0.
There are two ways of programming the address for the ems 4 modules.
This can be conducted by using:
1. The service button on the ems 4 modules
2. The serial number (programmed when the module is manufactured)

A detailed description can be found in the operating manual.

ems 4 - Installation instructions

- Also observe the installation instructions in the operating manual!
- The modules should never be dismantled when they are energised or installed in live systems!
- Subject to technical alterations

ems 4 - Module version identification

The type plate, which includes the device's serial number, can be found on the front right-hand side of of the ems 4 modules. The serial number is programmed when the module is manufactured. It can be used, for example, to programme the module address via the control unit (see the Configuration Tool section). The serial number and software version can also be viewed via the webCADpro configuration tool (see the MultiLink Manager section).

ems 4 - General module data

- Module widths (DIN rail mounting) in a 22.5 mm x n grid
- Standard: 22.5 mm, 45.0 mm, 67.5 mm, 90.0 mm
- Connection voltage: 24 VDC, ±10 %, must be connected separately every 10 modules
- Connection terminals pluggable up to 2.5mm²
- CAN system bus on 5-pin bus connector
- CAN bus connector can be mounted in a DIN rail module
- Bus terminal 1, 0 VDC system voltage
- Bus terminal 2, +24 VDC system voltage
- Bus terminal 3, LIN sub bus
- Bus terminal 4, CAN H signal
- Bus terminal 5, CAN L signal
- DUO LED for status display
- 4-pin DIP switch for CAN transfer speed
- Maximum 62 bus modules can be connected to the system bus (CAN) without a repeater
- Type information and connection diagram printed on the side
- Front plates: White background, black / blue inscription
- The housing colour is light grey (similar to RAL 7035)
- Each module has additional space (15 mm x 9 mm) for an equipment identification label