

3.7.5 4 analog inputs 0/4 ... 20 mA (12 bits) - EPM-S403

This module detects up to four analog control signals from the process level and transmits them to the higher-level bus system.

Features

- ▶ 4 analog inputs
- ▶ Current range 0/4 ... 20 mA
- ▶ 12-bit resolution
- ▶ Signal function is parameterisable
- ▶ An LED indicates if an input signal is outside the permissible measuring range



Stop!

Overvoltage at the inputs

The electronics of the electronic module are not protected against too high input signals.

Possible consequences:

- ▶ The module is destroyed

Protective measures:

- ▶ Make sure that the signals and encoders connected match the measuring range parameterised.

Overview

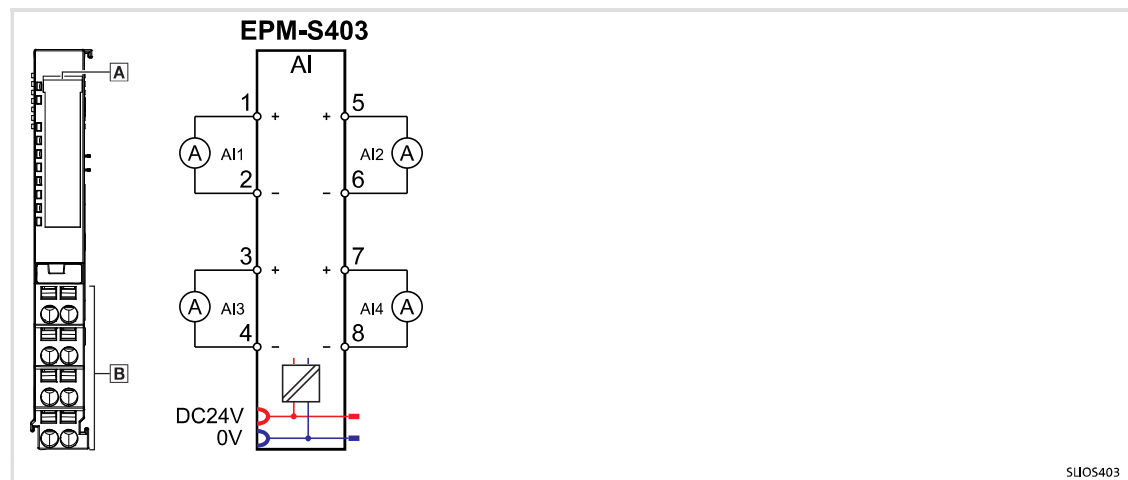


Fig. 3-48 Elements and circuit diagram

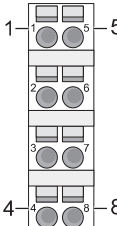
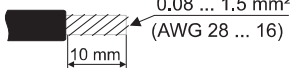
- A** Displays for module status
- B** Terminals
- 1 ... 8 Connection number

Status displays

Module status LEDs 				
View	Pos.	Designation	Colour	Explanation
 S40001	1	RUN	Green	On: Module is ready for operation
	2	MF	Red	On: Module error (see table below)
	3	AI1	Red	On: Channel 1, signal outside the measuring range, error in parameter setting
	4	AI2	Red	On: Channel 2, signal outside the measuring range, error in parameter setting
	5	AI3	Red	On: Channel 3, signal outside the measuring range, error in parameter setting
	6	AI4	Red	On: Channel 4, signal outside the measuring range, error in parameter setting
	7			
	8			
	9	-	-	Not assigned
	10			

Messages of the status LEDs RUN and MF		
RUN	MF	Meaning
On	Off	Module status OK Bus communication is OK
On	On	Module reports error Bus communication is OK
Off	On	Module reports error Bus communication not possible
Off	Off	Error in the bus supply voltage
Blinking	Blinking	Configuration error ( 274)

Terminals

Module terminals, spring terminals 			
View	Designation	Explanation	Terminal data
 S40002	1	Analog input AI1 (+)	
	2	Analog input AI1 (GND)	
	3	Analog input AI3 (+)	
	4	Analog input AI3 (GND)	
	5	Analog input AI2 (+)	
	6	Analog input AI2 (GND)	
	7	Analog input AI4 (+)	
	8	Analog input AI4 (GND)	



Note!

- Use parameter setting to deactivate unused inputs.
- The module does not provide any auxiliary supply for sensors.

Product description

I/O compound modules - analog I/O

4 analog inputs 0/4 ... 20 mA (12 bits) - EPM-S403

Technical data

EPM-S403: Rated data	
Module identifier	1029 _{dec}
Current consumption/power loss	
Current consumption from backplane bus	70 mA
Power loss	0.7 W
Analog inputs	
Number of inputs	4
Cable length	
shielded	200 m
Load voltage	
Nominal value	DC 24 V
Current consumption from load voltage L+	15 mA (without load)
Current inputs	
Input current ranges	0 mA ... +20 mA +4 mA ... +20 mA
Destruction limit (input current)	40 mA
Max. input resistance	110 Ω
Operational error limit	+/- 0.3 % ... +/- 0.5 %
Basic error limit	+/- 0.2 % ... +/- 0.3 %
Measuring principle	Gradual approximation
Resolution	12 bits
Basic conversion time	4 ms all channels
Interference voltage suppression for a frequency of	> 50 dB bei 50 Hz (UCM < 2 V)
Temperature error (relating to input range)	±0.005 %/K
Linearity distortion (relating to input range)	±0.02 %
Repeat accuracy (in steady-state vibration at 25°C, relating to the input range)	±0.05 %
Input data size	8 bytes
Status, alarm, diagnostics	
Status display	Yes
Alarms	No
Process alarm	No
Diagnostic alarm	No
Diagnostic function	Yes
Diagnostic information can be read out	Possible
Module status	Green LED
Module error display	Red LED
Channel error display	Red LEDs per channel

EPM-S403: Rated data**Electrical isolation**

Between the channels and the backplane bus	Yes
Between the channels and the voltage supply	Yes
Max. potential difference between inputs (U_{cm})	DC 2 V
Max. potential difference between the analog channel (e.g. input) and the I/O supply	DC 75 V / AC 60 V
Insulation checked with	DC 500 V