3.7.2 2 analog inputs 0 ... 10 V (12 bits) - EPM-S400

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

Features

▶ 2 analog inputs

▶ Voltage range 0 ... 10 V

▶ 12-bit resolution

▶ Signal function is parameterisable

▶ An LED indicates if an input signal is outside the permissible measuring range

> **STOP** **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:**
>
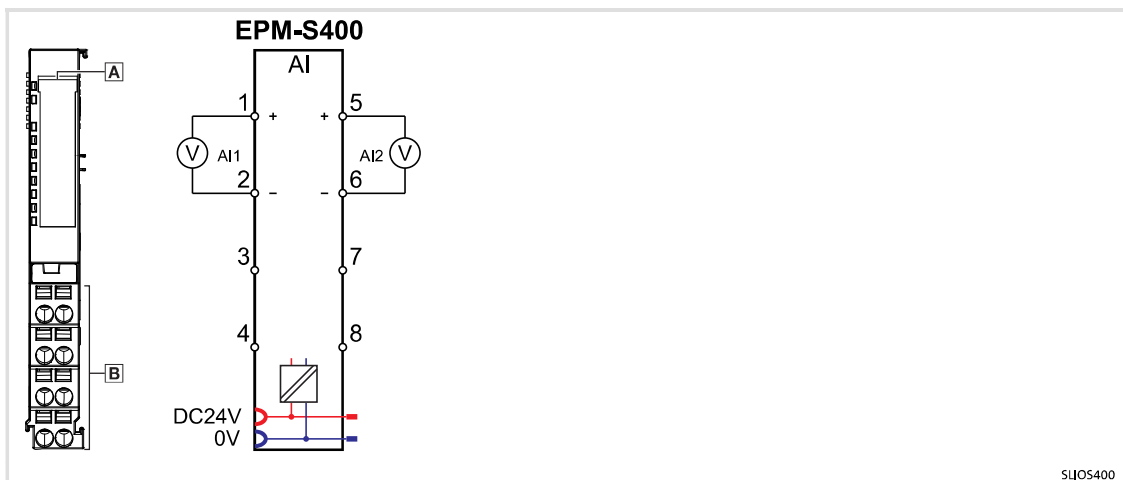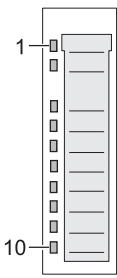> ▶ Make sure that the signals and encoders connected match the measuring range parameterised.

Overview

Fig. 3-45   Elements and circuit diagram
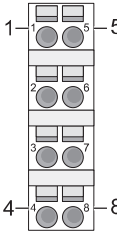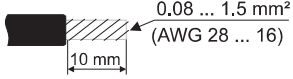
    A   Displays for module status
    B   Terminals
    1 ... 8   Connection number

Status displays

Module status LEDs Ⓐ

View	Pos.	Designation	Colour	Explanation
	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			
	6			
	7	-	-	Not assigned
	8			
	9			
SLIO001	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
	1	Analog input AI1 (+)	
	2	Analog input AI1 (GND)	
	3	Not assigned	
	4	Not assigned	0.08 ... 1.5 mm²
	5	Analog input AI2 (+)	(AWG 28 ... 16)
	6	Analog input AI2 (GND)	10 mm
	7	Not assigned	
SLIO002	8	Not assigned	

ℹ️ **Note!**

► Use parameter setting to deactivate unused inputs.

► The module does not provide any auxiliary supply for sensors.

Technical data

EPM-S400: Rated data		
Module identifier	1025_{dec}	
Current consumption/power loss		
Current consumption from backplane bus	70 mA	
Power loss	0.7 W	
Analog inputs		
Number of inputs	2	
Cable length		
shielded	200 m	
Load voltage		
Nominal value	DC 24 V	
Current consumption from load voltage L+	15 mA (without load)	
Voltage inputs		
Input voltage ranges	0 V ... +10 V	
Destruction limit (input voltage)	30 V	
Min. input resistance	100 kΩ	
Operational error limit	+/- 0.3 %	
Basic error limit	+/- 0.2 %	
Measuring principle	Gradual approximation	
Resolution	12 bits	
Basic conversion time	2 ms all channels	
Interference voltage suppression for a frequency of	> 50 dB bei 50 Hz (UCM < 2 V)	
Temperature error (relating to input range)	$\pm$ 0.005 %/K	
Linearity distortion (relating to input range)	$\pm$ 0.02 %	
Repeat accuracy (in steady-state vibration at 25°C, relating to the input range)	$\pm$ 0.05 %	
Input data size	4 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-S400: 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