3.7.9 4 analog outputs 0 ... 10 V (12 bits) - EPM-S501

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

Features

- 4 analog outputs
- Voltage output 0 ... +10 V
- 12-bit resolution
- Signal function parameterisable
- 24 V DC supply voltage
- A reference potential for all outputs
- Short circuit protection
- An LED indicates if an output signal is outside the permissible measuring range

Overview

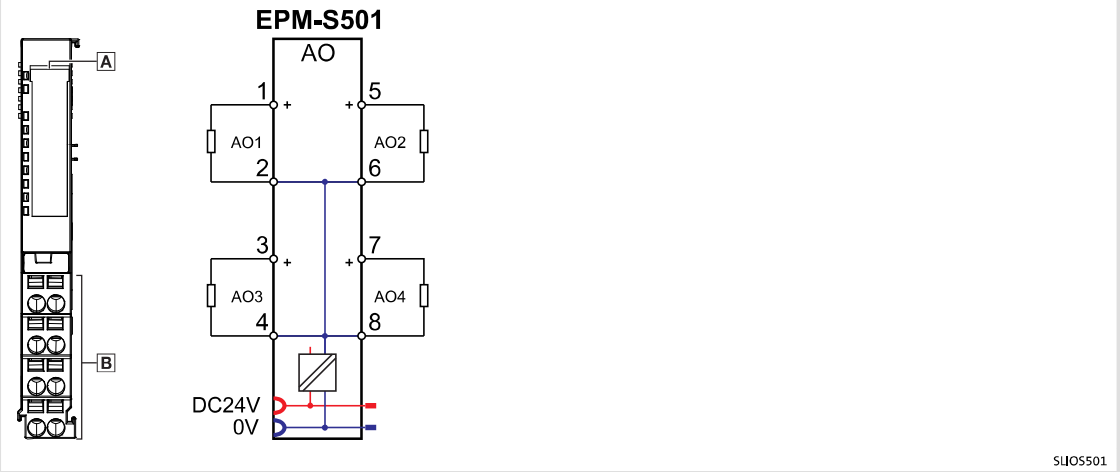
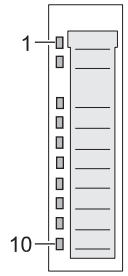


Fig. 3-52 Elements and circuit diagram

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

Status displays

Module status LEDs A

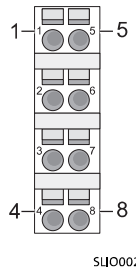
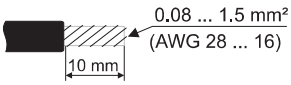
View	Pos.	Designation	Colour	Explanation
	1	RUN	Green	On: Module is ready for operation
	2	MF	Red	On: Module error (see table below)
	3	AO1	Red	Channel 1, overload, short-circuit, error in parameter setting
	4	AO2	Red	Channel 2, overload, short-circuit, error in parameter setting
	5	AO3	Red	Channel 3, overload, short-circuit, error in parameter setting
	6	AO4	Red	Channel 4, overload, short-circuit, error in parameter setting
	7	-	-	Not assigned
	8			
	9			
	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 B

View	Designation	Explanation	Terminal data
	1	Analog output AO1 (+)	
	2	Analog output AO1 (GND)	
	3	Analog output AO3 (+)	
	4	Analog output AO3 (GND)	
	5	Analog output AO2 (+)	
	6	Analog output AO2 (GND)	
	7	Analog output AO4 (+)	
	8	Analog output AO4 (GND)	

Note!

- ► When connecting the actuators, make sure that the polarity is correct.
- ► Outputs that are not used are not connected.
- ► The module does not provide any auxiliary supply for actuators.

Technical data

EPM-S501: Rated data	
Module identifier	1283_{dec}
Current consumption/power loss	
Current consumption from backplane bus	80 mA
Power loss	1.2 W
Analog outputs	
Number of outputs	4
Cable length	
shielded	200 m
Load voltage	
Nominal value	DC 24 V
Current consumption from load voltage L+	35 mA (without load)
Voltage outputs	
Output voltage ranges	0 V ... +10 V
Min. load impedance	5 kΩ
Max. capacitive load	1 µF
Operational error limit	+/- 0.3 %
Basic error limit	+/- 0.2 %
Short circuit protection	Yes
Wire-break protection	No
Voltage at the outputs	15 V
Current	30 mA
Interference suppression (cross-talk between the outputs)	> 40 dB
Resolution	12 bits
Basic conversion time	2 ms all channels
Substitute values can be applied	Yes
Temperature error (relating to the output range)	± 0.01 %/K
Linearity distortion (relating to the output range)	± 0.1 %
Output ripple; bandwidth 0 to 50 kHz (relating to the output range)	± 0.05 %
Repeat accuracy (in steady-state vibration at 25°C, relating to the output range)	± 0.05 %
Dwell time	
for ohmic loads	1.5 ms
for capacitive loads	2 ms
Output data size	8 bytes

EPM-S501: Rated data	
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
Electrical isolation	
Between the channels and the backplane bus	Yes
Between the channels and the voltage supply	Yes
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