

SIMATIC S7-200, Analog input EM 231, only for S7-22X CPU, 8 AI, +/-80 mV a. thermocouples Type J, K, S, T, R, E, N; 15 bit+sign



Figure similar

Input current	
from load voltage L+ (without load), max.	60 mA
from backplane bus 5 V DC, max.	87 mA
Power loss	
Power loss, typ.	1.8 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	30 V
Loop resistance cable	100 Ω
Updating time (all channels)	810 ms
Input ranges	
• Voltage	Yes
• Current	No
• Thermocouple	Yes
• Resistance thermometer	No

• Resistance	No
Input ranges (rated values), voltages	
• -80 mV to +80 mV	Yes
— Input resistance (-80 mV to +80 mV)	1 MΩ
Input ranges (rated values), thermocouples	
• Type E	Yes
— Input resistance (Type E)	1 MΩ
• Type J	Yes
— Input resistance (type J)	1 MΩ
• Type K	Yes
— Input resistance (Type K)	1 MΩ
• Type N	Yes
— Input resistance (Type N)	1 MΩ
• Type R	Yes
— Input resistance (Type R)	1 MΩ
• Type S	Yes
— Input resistance (Type S)	1 MΩ
• Type T	Yes
— Input resistance (Type T)	1 MΩ
Cable length	
• shielded, max.	100 m; to the sensor
Analog value generation for the inputs	
Measurement principle	Sigma Delta
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; Temperature 0.1 °C / 0.1 °F
• Interference voltage suppression for interference frequency f1 in Hz	85 dB at 50 / 60 / 400 Hz
Displayable conversion value range	
• bipolar signals	-27.648 to +27.648
Errors/accuracies	
cold connection point	±1,5 °C
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.1 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = interference frequency	
• Common mode voltage, max.	120 V; AC
• Common mode interference, min.	120 dB; At 120 V AC
Interrupts/diagnostics/status information	
Diagnostics indication LED	

- external fault EXTf (red)
- Group error SF (red)

Yes
Yes

Potential separation

Potential separation analog inputs

- Potential separation analog inputs

Yes

Permissible potential difference

between M internally and the inputs

500 V AC

Connection method

Plug-in I/O terminals

No

Dimensions

Width

71.2 mm

Height

80 mm

Depth

62 mm

Weights

Weight, approx.

210 g

last modified:

03/14/2020