



Figure similar

\*\*\*Spare part\*\*\* SIMATIC S7-200, Analog input EM 231, only for S7-22X CPU, 4 AI, +/-80 mV a. thermocouples Type J, K, S, T, R, E, N; 15 bit+sign

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	4
permissible input voltage for voltage input (destruction limit), max.	30 V
Loop resistance cable	100 Ω
Updating time (all channels)	405 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
<b>Integration and conversion time/resolution per channel</b>	
<ul style="list-style-type: none"> <li>Resolution with overrange (bit including sign), max.</li> <li>Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	16 bit; Temperature 0.1 °C / 0.1 °F 85 dB at 50 / 60 / 400 Hz
<b>Displayable conversion value range</b>	
<ul style="list-style-type: none"> <li>bipolar signals</li> </ul>	-27 648 to +27 648
<b>Errors/accuracies</b>	
cold connection point	±1,5 °C
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
<b>Operational error limit in overall temperature range</b>	
<ul style="list-style-type: none"> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.1 %
<b>Interference voltage suppression for <math>f = n \times (f1 \pm 1 \%)</math>, f1 = interference frequency</b>	
<ul style="list-style-type: none"> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> </ul>	120 V; AC 120 dB; At 120 V AC
<b>Interrupts/diagnostics/status information</b>	
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>external fault EXTF (red)</li> <li>Group error SF (red)</li> </ul>	Yes Yes
<b>Potential separation</b>	
<b>Potential separation analog inputs</b>	
<ul style="list-style-type: none"> <li>Potential separation analog inputs</li> </ul>	Yes
<b>Permissible potential difference</b>	
Between the inputs and MANA (UCM)	500 V AC
between M internally and the inputs	500 V AC
<b>connection method / header</b>	
Plug-in I/O terminals	No
<b>Dimensions</b>	
Width	71.2 mm
Height	80 mm
Depth	62 mm
<b>Weights</b>	
Weight, approx.	210 g
<b>last modified:</b>	3/12/2021 