

SIMATIC S7-400, analog input SM 431, 8 AI, resolution 16 bit, resistor/PT100/Ni100 isolated, diagnostics alarm, 20 ms conversion time



Figure similar

Input current	
from backplane bus 5 V DC, max.	650 mA
Power loss	
Power loss, typ.	3.3 W
Analog inputs	
Number of analog inputs	8
• For resistance measurement	8
permissible input voltage for voltage input (destruction limit), max.	35 V; 35 V continuous, 75 V for max. 1 s (mark to space ratio 1:20)
Input ranges	
• Voltage	No
• Current	No
• Thermocouple	No
• Resistance thermometer	Yes
• Resistance	Yes
Input ranges (rated values), resistance thermometer	

<ul style="list-style-type: none"> • Ni 100 • Input resistance (Ni 100) • Ni 1000 • Input resistance (Ni 1000) • Pt 100 • Input resistance (Pt 100) • Pt 1000 • Input resistance (Pt 1000) • Pt 200 • Input resistance (Pt 200) • Pt 500 • Input resistance (Pt 500) 	<p>Yes</p> <p>> 10 000 ohms</p> <p>Yes; Different characteristics selectable: Europe/U.S.</p> <p>> 10 000 ohms</p> <p>Yes</p> <p>> 10 000 ohms</p> <p>Yes</p> <p>> 10 000 ohms</p> <p>Yes</p> <p>> 10 000 ohms</p> <p>Yes</p> <p>> 10 000 ohms</p>
Characteristic linearization	
<ul style="list-style-type: none"> • parameterizable <ul style="list-style-type: none"> — for resistance thermometer 	<p>Yes</p> <p>Pt100, Pt200, Pt500, Pt1000, Ni100, Ni1000; different characteristics selectable (Europe/U.S.)</p>
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	200 m; 50 m with thermocouples and input ranges ± 80 mV
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Basic conversion time (ms) • Integration time (ms) • Basic conversion time, including integration time (ms) <ul style="list-style-type: none"> — additional conversion time for wire-break monitoring — additional conversion time for wire-break monitoring and resistance measurement • Interference voltage suppression for interference frequency f_1 in Hz 	<p>16 bit</p> <p>Yes</p> <p>8 / 23 / 25 ms</p> <p>20 ms at 50 Hz (entire module incl. wire break)</p> <p>110 ms / 4 ms</p> <p>none</p> <p>none/ 60 / 50 Hz</p>
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for resistance measurement with three-wire connection • for resistance measurement with four-wire connection 	<p>Yes</p> <p>Yes</p>
Errors/accuracies	
Operational error limit in overall temperature range	

• Resistance thermometer, relative to input range, (+/-)	±1 °C
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Basic error limit (operational limit at 25 °C)

• Resistance thermometer, relative to input range, (+/-)	±0,2 °C
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Interrupts/diagnostics/status information

Alarms

• Diagnostic alarm	Yes; Parameterizable
• Limit value alarm	Yes

Potential separation

Potential separation analog inputs

• Potential separation analog inputs	Yes; internal/external
• between the channels	No

Isolation

Isolation tested with	1500 V DC
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Dimensions

Width	25 mm
Height	290 mm
Depth	210 mm

Weights

Weight, approx.	650 g
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last modified:	07/17/2018
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