

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



Figure similar

<b>Input current</b>	
from backplane bus 5 V DC, max.	650 mA
<b>Power loss</b>	
Power loss, typ.	3.3 W
<b>Analog inputs</b>	
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)
<b>Input ranges</b>	
• Voltage	No
• Current	No
• Thermocouple	No
• Resistance thermometer	Yes
• Resistance	Yes
Input ranges (rated values), resistance thermometer	

<ul style="list-style-type: none"> <li>• Ni 100</li> <li>• Input resistance (Ni 100)</li> <li>• Ni 1000</li> <li>• Input resistance (Ni 1000)</li> <li>• Pt 100</li> <li>• Input resistance (Pt 100)</li> <li>• Pt 1000</li> <li>• Input resistance (Pt 1000)</li> <li>• Pt 200</li> <li>• Input resistance (Pt 200)</li> <li>• Pt 500</li> <li>• Input resistance (Pt 500)</li> </ul>	<p>Yes</p> <p>&gt; 10 000 ohms</p> <p>Yes; Different characteristics selectable: Europe/U.S.</p> <p>&gt; 10 000 ohms</p> <p>Yes</p> <p>&gt; 10 000 ohms</p> <p>Yes</p> <p>&gt; 10 000 ohms</p> <p>Yes</p> <p>&gt; 10 000 ohms</p> <p>Yes</p> <p>&gt; 10 000 ohms</p>
<b>Characteristic linearization</b>	
<ul style="list-style-type: none"> <li>• parameterizable <ul style="list-style-type: none"> <li>— for resistance thermometer</li> </ul> </li> </ul>	<p>Yes</p> <p>Pt100, Pt200, Pt500, Pt1000, Ni100, Ni1000; different characteristics selectable (Europe/U.S.)</p>
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	200 m; 50 m with thermocouples and input ranges $\pm 80$ mV
<b>Analog value generation for the inputs</b>	
<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>• Integration time, parameterizable</li> <li>• Basic conversion time (ms)</li> <li>• Integration time (ms)</li> <li>• Basic conversion time, including integration time (ms) <ul style="list-style-type: none"> <li>— additional conversion time for wire-break monitoring</li> <li>— additional conversion time for wire-break monitoring and resistance measurement</li> </ul> </li> <li>• Interference voltage suppression for interference frequency <math>f_1</math> in Hz</li> </ul>	<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>
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
<ul style="list-style-type: none"> <li>• for resistance measurement with three-wire connection</li> <li>• for resistance measurement with four-wire connection</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>Errors/accuracies</b>	
<b>Operational error limit in overall temperature range</b>	

• 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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<b>last modified:</b>	06/27/2019
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