

SIMATIC S7-400, ANALOG INPUT SM 431, 8AI; 16 BIT RESOLUTION, RESIST./PT100/NI100 OPTIC. ISOLATED, DIAGNOSTIC, ALARM, 20 MS MODULE UPDATE



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 f1 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	

<ul style="list-style-type: none"> • Resistance thermometer, relative to input range, (+/-) 	+/-1 °C
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Resistance thermometer, relative to input range, (+/-) 	+/-0,2 °C
Interrupts/diagnostics/status information	
Diagnostics	Yes
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm 	Yes; Parameterizable
<ul style="list-style-type: none"> • Limit value alarm 	Yes
Potential separation	
Potential separation analog inputs	
<ul style="list-style-type: none"> • Potential separation analog inputs 	Yes; internal/external
<ul style="list-style-type: none"> • between the channels 	No
Isolation	
Isolation tested with	1500 V DC
Dimensions	
Width	25 mm
Height	290 mm
Depth	210 mm
Weights	
Weight, approx.	650 g
last modified:	03/24/2017