



Figure similar

\*\*\*spare part\*\*\* SIMATIC S7-300, analog input SM 331, isolated 8 AI, resolution 13 bit U//resistance/Pt100, NI100, NI1000, LG-NI1000, PTC/KTY, 66 ms conversion time; 1x 40-pole

General information	
Product function	
<ul style="list-style-type: none"> <li>• Isochronous mode</li> </ul>	No
Input current	
from backplane bus 5 V DC, max.	90 mA
Power loss	
Power loss, typ.	0.4 W
Analog inputs	
Number of analog inputs	8
<ul style="list-style-type: none"> <li>• For resistance measurement</li> </ul>	8
permissible input voltage for voltage input (destruction limit), max.	30 V; 12 V continuous, 30 V for max. 1 s
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
<ul style="list-style-type: none"> <li>• Voltage</li> <li>• Current</li> <li>• Thermocouple</li> <li>• Resistance thermometer</li> <li>• Resistance</li> </ul>	Yes Yes No Yes Yes
Input ranges (rated values), voltages	
<ul style="list-style-type: none"> <li>• 0 to +10 V                             <ul style="list-style-type: none"> <li>— Input resistance (0 to 10 V)</li> </ul> </li> <li>• 1 V to 5 V                             <ul style="list-style-type: none"> <li>— Input resistance (1 V to 5 V)</li> </ul> </li> <li>• 1 V to 10 V</li> <li>• -1 V to +1 V                             <ul style="list-style-type: none"> <li>— Input resistance (-1 V to +1 V)</li> </ul> </li> <li>• -10 V to +10 V                             <ul style="list-style-type: none"> <li>— Input resistance (-10 V to +10 V)</li> </ul> </li> <li>• -2.5 V to +2.5 V</li> <li>• -250 mV to +250 mV</li> <li>• -5 V to +5 V                             <ul style="list-style-type: none"> <li>— Input resistance (-5 V to +5 V)</li> </ul> </li> <li>• -50 mV to +50 mV</li> </ul>	Yes 100 kΩ Yes 100 kΩ No Yes 100 kΩ Yes 100 kΩ No No Yes 100 kΩ Yes

— Input resistance (-50 mV to +50 mV)	100 kΩ
● -500 mV to +500 mV	Yes
— Input resistance (-500 mV to +500 mV)	100 kΩ
● -80 mV to +80 mV	No
<b>Input ranges (rated values), currents</b>	
● 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	100 Ω
● -10 mA to +10 mA	No
● -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	100 Ω
● -3.2 mA to +3.2 mA	No
● 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	100 Ω
<b>Input ranges (rated values), thermocouples</b>	
● Type B	No
● Type C	No
● Type E	No
● Type J	No
● Type K	No
● Type L	No
● Type N	No
● Type R	No
● Type S	No
● Type T	No
● Type U	No
● Type TXK/TXK(L) to GOST	No
<b>Input ranges (rated values), resistance thermometer</b>	
● Cu 10	No
● Ni 100	Yes; Standard/climate
— Input resistance (Ni 100)	100 MΩ
● Ni 1000	Yes
— Input resistance (Ni 1000)	100 MΩ
● LG-Ni 1000	Yes; Standard/climate
— Input resistance (LG-Ni 1000)	100 MΩ
● Ni 120	No
● Ni 200	No
● Ni 500	No
● Pt 100	Yes; Standard/climate
— Input resistance (Pt 100)	100 MΩ
● Pt 1000	No
● Pt 200	No
● Pt 500	No
<b>Input ranges (rated values), resistors</b>	
● 0 to 150 ohms	No
● 0 to 300 ohms	No
● 0 to 600 ohms	Yes
— Input resistance (0 to 600 ohms)	100 MΩ
● 0 to 6000 ohms	Yes
— Input resistance (0 to 6000 ohms)	100 MΩ
<b>Thermocouple (TC)</b>	
<b>Temperature compensation</b>	
— parameterizable	No
— internal temperature compensation	No
— external temperature compensation with compensations socket	No
<b>Characteristic linearization</b>	
● parameterizable	Yes
— for thermocouples	No
— for resistance thermometer	yes; Pt100 standard/air con.; Ni100 standard/air con.; Ni1000 standard/air con.;

	LG-Ni1000 standard/air con.	
<b>Cable length</b>		
<ul style="list-style-type: none"> <li>shielded, max.</li> </ul>	200 m; max. 50 m at 50 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>Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	13 bit Yes; 60 / 50 ms 66 / 55 ms 50 / 60 Hz	
<b>Encoder</b>		
<b>Connection of signal encoders</b>		
<ul style="list-style-type: none"> <li>for voltage measurement</li> <li>for current measurement as 2-wire transducer</li> <li>for current measurement as 4-wire transducer</li> <li>for resistance measurement with two-wire connection</li> <li>for resistance measurement with three-wire connection</li> <li>for resistance measurement with four-wire connection</li> </ul>	Yes Yes; with external supply Yes Yes Yes Yes	
<b>Errors/accuracies</b>		
<b>Operational error limit in overall temperature range</b>		
<ul style="list-style-type: none"> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>Resistance, relative to input range, (+/-)</li> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	0.6 %; $\pm 0.6$ % ( $\pm 5$ V, 10 V, 1 to 5 V, 0 to 10 V); $\pm 0.5$ % ( $\pm 50$ mV, 500 mV, 1 V) 0.5 %; $\pm 20$ mA, 0 to 20 mA, 4 to 20 mA 0.5 %; 0 to 6 kohms, 0 to 600 kohms 1 Kelvin (Pt100, Ni100, climatic; Ni1000, LG-Ni1000, standard; Ni1000, LG-Ni1000, climatic); 1.2 Kelvin (Pt100, Ni100, standard)	
<b>Basic error limit (operational limit at 25 °C)</b>		
<ul style="list-style-type: none"> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>Resistance, relative to input range, (+/-)</li> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	0.4 %; 0.4% ( $\pm 5$ V, 10 V, 1 to 5 V, 0 to 10 V); 0.3% ( $\pm 50$ mV, 500 mV, 1 V) 0.3 %; $\pm 20$ mA, 0 to 20 mA, 4 to 20 mA 0.3 %; 0 to 6 kohms, 0 to 600 kohms 1 Kelvin (Pt100, Ni100, standard); 0.8 Kelvin (Pt100, Ni100, climatic; Ni1000, LG-Ni1000, standard; Ni1000, LG-Ni1000, climatic)	
<b>Interrupts/diagnostics/status information</b>		
Diagnostics function	No	
<b>Alarms</b>		
<ul style="list-style-type: none"> <li>Diagnostic alarm</li> <li>Limit value alarm</li> </ul>	No No	
<b>Diagnoses</b>		
<ul style="list-style-type: none"> <li>Diagnostic information readable</li> </ul>	No	
<b>Diagnostics indication LED</b>		
<ul style="list-style-type: none"> <li>Group error SF (red)</li> </ul>	No	
<b>Potential separation</b>		
<b>Potential separation analog inputs</b>		
<ul style="list-style-type: none"> <li>between the channels</li> <li>between the channels and backplane bus</li> </ul>	No Yes	
<b>Isolation</b>		
Isolation tested with	500 V DC	
<b>Connection method</b>		
required front connector	40-pin	
<b>Dimensions</b>		
Width	40 mm	
Height	125 mm	
Depth	117 mm	
<b>Weights</b>		
Weight, approx.	250 g	
<b>Classifications</b>		
	<b>Version</b>	<b>Classification</b>
eClass	14	27-24-22-01
eClass	12	27-24-22-01

eClass	9.1	27-24-22-01
eClass	9	27-24-22-01
eClass	8	27-24-22-01
eClass	7.1	27-24-22-01
eClass	6	27-24-22-01
ETIM	10	EC001420
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05

**Approvals / Certificates**

**General Product Approval**



**General Product Approval**

**For use in hazardous locations**

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**Maritime application**



**other**

**Railway**

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