



Figure similar

\*\*\*spare part\*\*\* SIMATIC S7-300, analog input SM 331, isolated, 8 AI, resolution 14 bit, 0.052 ms/channel current, voltage alarm, diagnostics, 1x 20-pole, suitable for isochronous mode improved bus cycle time for isochronous mode

General information	
Product function	
• Isochronous mode	Yes
Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V
• Reverse polarity protection	Yes
Input current	
from load voltage L+ (without load), max.	50 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	20 V; 20 V DC permanent, 75 V DC for max. 1 s (duty factor 1:20)
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
• Voltage	Yes
• Current	Yes
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	
• 0 to +10 V	No
• 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	100 kΩ
• -1 V to +1 V	Yes
— Input resistance (-1 V to +1 V)	10 MΩ
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
• -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	100 kΩ
• -500 mV to +500 mV	Yes
• -80 mV to +80 mV	Yes
Input ranges (rated values), currents	
• 0 to 20 mA	Yes

— Input resistance (0 to 20 mA)	50 Ω
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	50 Ω
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 Ω

<b>Cable length</b>	
• shielded, max.	200 m

### Analog value generation for the inputs

<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	14 bit; Unipolar: 14 bit; bipolar: 13 bit + sign
• Integration time, parameterizable	Yes
• Basic conversion time (ms)	52 μs per channel
• Interference voltage suppression for interference frequency f1 in Hz	none / 400 / 60 / 50 Hz

### Encoder

<b>Connection of signal encoders</b>	
• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes

### Errors/accuracies

<b>Operational error limit in overall temperature range</b>	
• Voltage, relative to input range, (+/-)	0.4 %
• Current, relative to input range, (+/-)	0.3 %
<b>Basic error limit (operational limit at 25 °C)</b>	
• Voltage, relative to input range, (+/-)	0.25 %
• Current, relative to input range, (+/-)	0.2 %

### Interrupts/diagnostics/status information

Diagnostics function	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes; Parameterizable
• Limit value alarm	Yes; Parameterizable, channels 0 and 2
<b>Diagnoses</b>	
• Diagnostic information readable	Yes
<b>Diagnostics indication LED</b>	
• Group error SF (red)	Yes

### Potential separation

<b>Potential separation analog inputs</b>	
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	Yes

### Isolation

Isolation tested with	500 V DC
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### Connection method

required front connector	20-pin
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### Dimensions

Width	40 mm
Height	125 mm
Depth	117 mm

### Weights

Weight, approx.	230 g
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### Classifications

	Version	Classification
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



[Miscellaneous](#)



[Metrological Approval](#)



General Product Approval

EMV



[China RoHS](#)

[Manufacturer Declaration](#)



For use in hazardous locations



[EM](#)



[Miscellaneous](#)



For use in hazardous locations

Maritime application

[CCC-Ex](#)



[NK / Nippon Kaiji Kyokai](#)



Maritime application



[CCS \(China Classification Society\)](#)

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