

SIMATIC DP, Electronic module for ET 200 PRO 4 AI I High Feature, +20 mA; 0...20 mA; 4-20mA; Channel diagnostics; incl. bus module, Connection module IO 6ES7194-4..00-0AA0 order separately



Supply voltage	
Rated value (DC)	24 V
Reverse polarity protection	Yes; against destruction
Input current	
from supply voltage 1L+, max.	40 mA; Typical
from backplane bus 3.3 V DC, max.	12 mA; Typical
Encoder supply	
Number of outputs	4
Short-circuit protection	Yes; per module, electronic to frame
Output current	
<ul style="list-style-type: none"> <li>up to 55 °C, max.</li> </ul>	1 A
Power loss	
Power loss, typ.	1.1 W
Address area	
Address space per module	
<ul style="list-style-type: none"> <li>Address space per module, max.</li> </ul>	8 byte
Analog inputs	

Number of analog inputs	4
permissible input current for current input (destruction limit), max.	40 mA
Cycle time (all channels) max.	10 ms
<b>Input ranges (rated values), currents</b>	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	50 $\Omega$
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	50 $\Omega$
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 $\Omega$
<b>Cable length</b>	
• shielded, max.	30 m

### Analog value generation for the inputs

Measurement principle	integrating
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### Integration and conversion time/resolution per channel

• Resolution with overrange (bit including sign), max.	15 bit; 15 bit + sign at $\pm 10$ V, at $\pm 5$ V; 15 bit at 0 V to 10 V, at 1 V to 5 V
• Integration time (ms)	0,3 / 16,7 / 20 / 60
• Interference voltage suppression for interference frequency f1 in Hz	16,67 / 50 / 60 / 3 600
• Conversion time (per channel)	1.1 ms

### Smoothing of measured values

• parameterizable	Yes
• Step: None	Yes; 1x cycle time
• Step: low	Yes; 4x cycle time
• Step: Medium	Yes; 16x cycle time
• Step: High	Yes; 64x cycle time

### Encoder

#### Connection of signal encoders

• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes

### Errors/accuracies

Linearity error (relative to input range), (+/-)	0.0075 %
Temperature error (relative to input range), (+/-)	0.00075 %/K
Crosstalk between the inputs, min.	-70 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.004 %
<b>Operational error limit in overall temperature range</b>	
• Current, relative to input range, (+/-)	0.1 %
<b>Basic error limit (operational limit at 25 °C)</b>	
• Current, relative to input range, (+/-)	0.075 %

Interference voltage suppression for $f = n \times (f_1 \pm 0.5 \%)$ , $f_1 =$ interference frequency	
<ul style="list-style-type: none"> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> </ul>	60 dB
<ul style="list-style-type: none"> <li>Common mode interference (USS &lt; 2.5 V), min.</li> </ul>	80 dB; Interference voltage < 5 V

### Interrupts/diagnostics/status information

Diagnostics function	Yes
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>Diagnostic alarm</li> </ul>	Yes; Parameterizable
<ul style="list-style-type: none"> <li>Hardware interrupt</li> </ul>	Yes; (limit value alarm), can be parameterized for channel 0
<b>Diagnostic messages</b>	
<ul style="list-style-type: none"> <li>Diagnostic information readable</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Wire-break</li> </ul>	Yes; at 4 to 20 mA
<ul style="list-style-type: none"> <li>Short-circuit</li> </ul>	Yes; at 4 to 20 mA
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>Group error SF (red)</li> </ul>	Yes

### Potential separation

Potential separation analog inputs	
<ul style="list-style-type: none"> <li>between the channels</li> </ul>	No
<ul style="list-style-type: none"> <li>between the channels and backplane bus</li> </ul>	Yes

### Isolation

Isolation tested with	707 V DC (type test)
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### Dimensions

Width	45 mm
Height	130 mm
Depth	35 mm

### Weights

Weight, approx.	150 g
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**last modified:** 05/09/2020