MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

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SIMATIC ET 200PRO

6ES7144-4FF01-0AB0

DISTRIBUTED I/O MODULE

OFFICIAL SOURCES

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Data sheet 6ES7144-4FF01-0AB0



SIMATIC DP, ELECTRONIC MODULE FOR ET200PRO 4 AI U HIGH FEATURE, +-10V; 0...10V; +-5V; 1...5V; CHANNEL DIAGNOSTICS; INCLUSIVE BUS MODULE CONNECTING MODULE IO 6ES7194-4..00-0AA0 MUST BE ORDERED SEPERATELY

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	
• up to 55 °C, max.	1 A
Power loss	
Power loss, typ.	1.1 W
Address area	
Address space per module	
• Address space per module, max.	8 byte
Analog inputs	

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Number of analog inputs	4
permissible input voltage for voltage input (destruction limit), max.	35 V
Cycle time (all channels) max.	5 ms
Input ranges	
• Voltage	Yes
• Current	No
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
• 1 V to 5 V	Yes
• -10 V to +10 V	Yes
• -5 V to +5 V	Yes
Cable length	
• shielded, max.	30 m

Analog value generation for the inputs	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	15 bit; 15 bits + sign at ±10 V, at ±5 V; 15 bits 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; 1 x cycle time
• Step: low	Yes; 4 x cycle time
• Step: Medium	Yes; 16 x cycle time
• Step: High	Yes; 64 x cycle time

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 %
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.1 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.075 %

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Interference voltage suppression for f = n x (f1 +/- 0.5 %), f1 = interference frequency	
• Series mode interference (peak value of interference < rated value of input range), min.	60 dB
• Common mode interference (USS < 2.5 V) , min.	80 dB; Interference voltage < 10 V
Interrupts/diagnostics/status information	
Diagnostic functions	Yes
Alarms	
• Diagnostic alarm	Yes; Parameterizable
• Hardware interrupt	Yes; (limit value alarm), can be parameterized for channel 0
Diagnostic messages	
• Diagnostic information readable	Yes
• Wire-break	Yes; at 1 to 5 V
• Short-circuit	Yes; at 1 to 5 V
Diagnostics indication LED	
• Group error SF (red)	Yes
Potential separation	
Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	Yes
Permissible potential difference	
Between the inputs and MANA (UCM)	10 Vpp AC
Isolation	
Isolation tested with	707 V DC (type test)
Dimensions	
Width	45 mm
Height	130 mm
Depth	35 mm
Weights	
Weight, approx.	150 g
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