

6ES7144-4FF00-0AB0

ET200PRO, EM 4AI-U HF

Technical data

*** SPARE PART*** 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.	45 mA; Typical
from backplane bus 3.3 V DC, max.	10 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	
Number of analog inputs	4
permissible input voltage for voltage input (destruction limit), max.	35 V
Cycle time (all channels) max.	267 ms
Input ranges (rated values), voltages	
• 1 V to 5 V	Yes
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
• -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; at ±10 V, at ±5 V; 14 bit at 0 to 10 V, at 1 to 5 V
• Integration time (ms)	20 / 16,667
• Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
• Conversion time (per channel)	67 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 voltage measurement	Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	0.002 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.025 %
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.15 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.1 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = interference frequency	
• Series mode interference (peak value of interference < rated value of 50 dB input range), min.	
• Common mode interference (USS < 2.5 V), min.	70 dB; Interference voltage < 5 V
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes; Parameterizable
• Hardware interrupt	Yes; (limit value alarm), can be parameterized for channel 0
Diagnoses	
• 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)	5 Vpp AC
Isolation	
Isolation tested with	500 V DC
Dimensions	
Width	45 mm
Height	130 mm
Depth	35 mm
Weights	
Weight, approx.	150 g
last modified:	10/19/2020
Last changes: 10/21/2020	