

SIMATIC DP, Electronics module f. ET200 PRO, 4 AI TC High Feature, TC type B, E, J, K, L, N, R, S,T Voltage +/-80 mV, Channel diagnostics, incl. bus module, Connection module IO 6ES7194-4..00-0AA0 order separately



Figure similar

Supply voltage	
Rated value (DC)	24 V
Reverse polarity protection	Yes; against destruction
Input current	
from supply voltage 1L+, max.	34 mA; Typical
from backplane bus 3.3 V DC, max.	20 mA; Typical
Power loss	
Power loss, typ.	0.7 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.	20 V
Cycle time (all channels) max.	Number of active channels per module x basic conversion time

Technical unit for temperature measurement adjustable	Yes; °C/°F/K
<b>Input ranges (rated values), voltages</b>	
• -80 mV to +80 mV	Yes
— Input resistance (-80 mV to +80 mV)	10 MΩ
<b>Input ranges (rated values), thermocouples</b>	
• Type B	Yes
— Input resistance (Type B)	10 MΩ
• Type E	Yes
— Input resistance (Type E)	10 MΩ
• Type J	Yes
— Input resistance (type J)	10 MΩ
• Type K	Yes
— Input resistance (Type K)	10 MΩ
• Type L	Yes
— Input resistance (Type L)	10 MΩ
• Type N	Yes
— Input resistance (Type N)	10 MΩ
• Type R	Yes
— Input resistance (Type R)	10 MΩ
• Type S	Yes
— Input resistance (Type S)	10 MΩ
• Type T	Yes
— Input resistance (Type T)	10 MΩ
<b>Thermocouple (TC)</b>	
<b>Temperature compensation</b>	
— internal temperature compensation	Yes
— external temperature compensation with compensations socket	Yes
<b>Cable length</b>	
• shielded, max.	30 m
<b>Analog value generation for the inputs</b>	
Measurement principle	integrating
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	15 bit; + sign
• Integration time (ms)	2,5 / 16,67 / 20 / 100 ms
• Interference voltage suppression for interference frequency f1 in Hz	10 / 50 / 60 / 400 Hz
• Conversion time (per channel)	4.7/19/22/102 ms
<b>Smoothing of measured values</b>	
• 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), (+/-)	0.0004 %/K; Positive temperature
Crosstalk between the inputs, min.	-90 dB; max.
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.01 %

### Operational error limit in overall temperature range

- |   |                              |
|---|------------------------------|
| • Voltage, relative to input range, (+/-) | 0.12 %; Positive temperature |
|---|------------------------------|

### Basic error limit (operational limit at 25 °C)

- |   |       |
|---|-------|
| • Voltage, relative to input range, (+/-) | 0.1 % |
|---|-------|

### Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$ , $f_1$ = interference frequency

- |  |                                    |
|--|------------------------------------|
| • Series mode interference (peak value of interference < rated value of input range), min. | 42 dB                              |
| • Common mode interference (USS < 2.5 V), min.   | 85 dB; Interference voltage < 10 V |

## Interrupts/diagnostics/status information

Diagnostics function	Yes
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### Alarms

- |                      |                      |
|----------------------|----------------------|
| • Diagnostic alarm   | Yes; Parameterizable |
| • Hardware interrupt | No                   |

### Diagnoses

- |                                   |     |
|-----------------------------------|-----|
| • Diagnostic information readable | Yes |
| • Wire-break                      | Yes |
| • Overflow/underflow              | Yes |

### Diagnostics indication LED

- |                        |     |
|------------------------|-----|
| • Group error SF (red) | Yes |
|------------------------|-----|

## Parameter

Measurement type/range	deactivated/ $\pm 80$ mV/ TC-EL Type T (Cu-CuNi)/ TC-EL Type K (NiCr-Ni)/ TC-EL Type B (PtRh-PtRh)/ TC-EL Type N (NiCrSi-NiSi)/ TC-EL Typ E (NiCr-CuNi)/ TC-EL Type R (PtRh-Pt)/ TC-EL Type S (PtRh-Pt)/ TC-EL Type J (Fe-Cu-Ni)/ TC-EL Type L (Fe-CuNi)
Comparison point	None/internal/RTD(0)/dyn. ref. temp./fix. ref. temp.

## Potential separation

Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	Yes
Permissible potential difference	
between the inputs (UCM)	20 Vpp AC
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for applications according to AMS 2750	Yes; Declaration of Conformity, see online support entry 109757262
Suitable for applications according to CQI-9	Yes; Based on AMS 2750 E
Dimensions	
Width	45 mm
Height	130 mm
Depth	35 mm
Weights	
Weight, approx.	150 g
<b>last modified:</b>	09/14/2020