



SIMATIC DP, ELECTRONIC MODULE 2 AI U HIGH FEATURE FOR ET 200S, 15 MM WIDE, CYCLE TIME PER MODULE: 0.5MS, +/- 10V; 15 BI + SIGN, +/-5V;15BIT+SIGN, 1..5V; 15BIT, OPERATIONAL LIMITS +/-0.1% WITH LED SF (GROUP FAULT)

Supply voltage

Load voltage L+

- | | |
|-------------------------------|------|
| • Rated value (DC) | 24 V |
| • Reverse polarity protection | Yes |

Input current

- | | |
|---|-------|
| from load voltage L+ (without load), max. | 55 mA |
| from backplane bus 3.3 V DC, max. | 10 mA |

Output voltage

Power supply to the transmitters

- | | |
|-----------|----|
| • present | No |
|-----------|----|

Power losses

- | | |
|------------------|--------|
| Power loss, typ. | 0.85 W |
|------------------|--------|

Address area

Address space per module

- | | |
|----------------------------------|--------|
| • Address space per module, max. | 4 byte |
|----------------------------------|--------|

Analog inputs

- | | |
|---|--|
| Number of analog inputs | 2 |
| permissible input voltage for voltage input (destruction limit), max. | 35 V; 35 V continuous; 75 V for max. 1 ms |
| Cycle time (all channels) max. | 0.5 ms; 0.5 ms for 2 channels without noise suppression, 18 / 21 ms per channel with noise suppression |

Input ranges

- | | |
|-----------|-----|
| • Voltage | Yes |
|-----------|-----|

• Current	No
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	
• 1 V to 5 V	Yes
• Input resistance (1 V to 5 V)	800 kΩ
• -10 V to +10 V	Yes
• Input resistance (-10 V to +10 V)	800 kΩ
• -5 V to +5 V	Yes
• Input resistance (-5 V to +5 V)	800 kΩ
Cable length	
• shielded, max.	200 m

Analog value creation

Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; 0 to 5 V: 15 bits, +/-10 V: 16 bits, +/-5 V: 16 bits
• Integration time, parameterizable	Yes
• Interference voltage suppression for interference frequency f1 in Hz	60 / 50 Hz / no
• Conversion time (per channel)	0.04 ms; Without noise suppression 17/20 ms per channel with error
Smoothing of measured values	
• Parameterizable	Yes; In 4 stages: 1 x, 4 x, 16 x, 32 x cycle time
• Step: None	Yes; 1 x
• Step: low	Yes; 4 x
• Step: Medium	Yes; 16 x
• Step: High	Yes; 32 x

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), (+/-)	0.003 %/K
Crosstalk between the inputs, min.	-100 dB
Repeat accuracy in steady state at 25 °C (relative to input area), (+/-)	0.01 %
Operational limit in overall temperature range	
• Voltage, relative to input area, (+/-)	0.1 %; 0.2% without interference frequency suppression
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input area, (+/-)	0.05 %; 0.1% without interference frequency suppression

Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ interference frequency	
<ul style="list-style-type: none"> Series mode interference (peak value of interference < rated value of input range), min. 	90 dB
<ul style="list-style-type: none"> common mode voltage (USS < 2.5 V) , min. 	100 dB
Isochronous mode	
Isochronous operation (application synchronized up to terminal)	Yes
Interrupts/diagnostics/status information	
Alarms	
<ul style="list-style-type: none"> Hardware interrupt 	Yes
Diagnostic messages	
<ul style="list-style-type: none"> Diagnostic functions 	Yes
<ul style="list-style-type: none"> Wire break 	Yes; Measuring range 1 to 5 V only
<ul style="list-style-type: none"> Group error 	Yes
<ul style="list-style-type: none"> Overflow/underflow 	Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> Group error SF (red) 	Yes
Parameter	
Remark	12 bytes, 4 bytes in compatibility mode
Measurement type/range	deactivated / +/-5 V / 1 to 5 V / +/-10 V
Group diagnostics	Disable / enable
Overflow/underflow	Disable / enable
Galvanic isolation	
Galvanic isolation analog inputs	
<ul style="list-style-type: none"> between the channels 	No; however, increased permissible potential difference between the inputs.
<ul style="list-style-type: none"> between the channels and the backplane bus 	Yes
<ul style="list-style-type: none"> between the channels and the load voltage L+ 	Yes
Permissible potential difference	
between the inputs (UCM)	140V DC/100V AC
Isolation	
Isolation checked with	500 V DC
Dimensions	
Width	15 mm
Height	81 mm
Depth	52 mm
Weights	
Weight, approx.	45 g
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