

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ET 200SP

6DL1164-6GH00-0PH1

16-CHANNEL ANALOG INPUT MODULE

Used with the applicable SIMATIC ET 200PA SMART+ configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official product documentation



ET 200PA SMART+, analog input module, AI 16xI 2-wire PA, suitable for terminal block, see System Manual, channel diagnostics

General information

Firmware version	
• FW update possible	Yes
Usable terminal block	see the system manual
Product function	
• I&M data	Yes; I&M 0
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	- / -
• STEP 7 configurable/integrated from version	- / -
• PCS 7 configurable/integrated from version	V9.1 SP2
• PCS neo can be configured/integrated from version	V5.0
Operating mode	
• Oversampling	No
• MSI	No
Redundancy	
• Redundancy capability	No

CiR - Configuration in RUN

Reparameterization possible in RUN	Yes
Calibration possible in RUN	No

Supply voltage

Rated value (DC)	24 V
Reverse polarity protection	Yes

Input current

Current consumption (rated value)	350 mA
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Encoder supply

Number of outputs	16
Output voltage (DC)	24 V
Output voltage, min.	19.2 V
Short-circuit protection	Yes

24 V encoder supply

• 24 V	Yes
• Short-circuit protection	Yes; Per output, thermal
• Output current per channel, max.	46 mA
• Output current per module, max.	0,8 mA

Power loss

Power loss, typ.	0,6 W
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Address area

Address space per module	
• Address space per module, max.	34 byte; 32-byte inputs and 2 bytes for QI information

• Inputs	34 byte
Analog inputs	
Number of analog inputs	16
• For current measurement	16
permissible input current for current input (destruction limit), max.	30 mA
Cycle time (all channels), min.	400 ms
Input ranges (rated values), currents	
• 0 to 20 mA	Yes; 16 bit incl. sign
— Input resistance (0 to 20 mA)	250 Ω
• 4 mA to 20 mA	Yes; 16 bit incl. sign
— Input resistance (4 mA to 20 mA)	250 Ω
Cable length	
• shielded, max.	800 m
• unshielded, max.	200 m
Analog value generation for the inputs	
Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; 15 bit at 0 ... 10 mA and 60 Hz interference suppression
• Integration time, parameterizable	Yes; channel by channel
• Integration time (ms)	16.6 / 20 / 100 ms
Smoothering of measured values	
• Parameterizable	Yes; none, weak, medium, strong, channel-by-channel
Encoder	
Connection of signal encoders	
• for current measurement as 2-wire transducer	Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0,01 %
Temperature error (relative to input range), (+/-)	0,005 %/K
Crosstalk between the inputs, min.	60 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0,05 %
Operational error limit in overall temperature range	
• Current, relative to input range, (+/-)	0,5 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to input range, (+/-)	0,3 %
Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	No
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire break	Yes; channel-by-channel, at 4 to 20 mA only
• short-circuit	No
• Overflow/Underflow	Yes; channel by channel
Diagnostics indication LED	
• MAINT LED	Yes; Yellow LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; green LED
• for channel diagnostics	No
• for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	Yes
• Between the channels and load voltage L+	No
• between the channels and the power supply of the electronics	No
Isolation	