



SIMATIC ET 200SP, Analog input module, AI 8xRTD/TC 2-wire High Feature Pack
quantity: 10 units, suitable for BU type A0, A1, Color code CC00, channel
diagnostics, 16 bit, +/-0.1%

General information	
Product type designation	AI 8xRTD/TC 2-wire HF
HW functional status	From FS05
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Measuring range scalable	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V14 / -
• STEP 7 configurable/integrated from version	V5.6
• PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET from GSD version/GSD revision	GSDML V2.3
Operating mode	
• Oversampling	No
• MSI	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	Yes
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Input current	
Current consumption, max.	35 mA
Power loss	
Power loss, typ.	0.75 W
Address area	
Address space per module	
• Address space per module, max.	16 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	Type A
Selection of BaseUnit for connection variants	

● 2-wire connection	BU type A0, A1
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	30 V
Constant measurement current for resistance-type transmitter, typ.	2 mA
Cycle time (all channels), min.	Sum of the basic conversion times and additional processing times (depending on the parameterization of the active channels)
Technical unit for temperature measurement adjustable	Yes; °C/°F/K
Input ranges (rated values), voltages	
● -1 V to +1 V — Input resistance (-1 V to +1 V)	Yes; 16 bit incl. sign 1 MΩ
● -250 mV to +250 mV — Input resistance (-250 mV to +250 mV)	Yes; 16 bit incl. sign 1 MΩ
● -50 mV to +50 mV — Input resistance (-50 mV to +50 mV)	Yes; 16 bit incl. sign 1 MΩ
● -80 mV to +80 mV — Input resistance (-80 mV to +80 mV)	Yes; 16 bit incl. sign 1 MΩ
Input ranges (rated values), thermocouples	
● Type B — Input resistance (Type B)	Yes; 16 bit incl. sign 1 MΩ
● Type C — Input resistance (Type C)	Yes; 16 bit incl. sign 1 MΩ
● Type E — Input resistance (Type E)	Yes; 16 bit incl. sign 1 MΩ
● Type J — Input resistance (type J)	Yes; 16 bit incl. sign 1 MΩ
● Type K — Input resistance (Type K)	Yes; 16 bit incl. sign 1 MΩ
● Type L — Input resistance (Type L)	Yes; 16 bit incl. sign 1 MΩ
● Type N — Input resistance (Type N)	Yes; 16 bit incl. sign 1 MΩ
● Type R — Input resistance (Type R)	Yes; 16 bit incl. sign 1 MΩ
● Type S — Input resistance (Type S)	Yes; 16 bit incl. sign 1 MΩ
● Type T — Input resistance (Type T)	Yes; 16 bit incl. sign 1 MΩ
● Type U — Input resistance (Type U)	Yes; 16 bit incl. sign 1 MΩ
● Type TXK/TXK(L) to GOST — Input resistance (Type TXK/TXK(L) to GOST)	Yes; 16 bit incl. sign 1 MΩ
Input ranges (rated values), resistance thermometer	
● Ni 100 — Input resistance (Ni 100)	Yes; 16 bit incl. sign 1 MΩ
● Ni 1000 — Input resistance (Ni 1000)	Yes; 16 bit incl. sign 1 MΩ
● LG-Ni 1000 — Input resistance (LG-Ni 1000)	Yes; 16 bit incl. sign 1 MΩ
● Ni 120 — Input resistance (Ni 120)	Yes; 16 bit incl. sign 1 MΩ
● Ni 200 — Input resistance (Ni 200)	Yes; 16 bit incl. sign 1 MΩ
● Ni 500 — Input resistance (Ni 500)	Yes; 16 bit incl. sign 1 MΩ
● Pt 100 — Input resistance (Pt 100)	Yes; 16 bit incl. sign 1 MΩ
● Pt 1000	Yes; 16 bit incl. sign

— Input resistance (Pt 1000)	1 MΩ
• Pt 200	Yes; 16 bit incl. sign
— Input resistance (Pt 200)	1 MΩ
• Pt 500	Yes; 16 bit incl. sign
— Input resistance (Pt 500)	1 MΩ
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes; 15 bit
— Input resistance (0 to 150 ohms)	1 MΩ
• 0 to 300 ohms	Yes; 15 bit
— Input resistance (0 to 300 ohms)	1 MΩ
• 0 to 600 ohms	Yes; 15 bit
— Input resistance (0 to 600 ohms)	1 MΩ
• 0 to 3000 ohms	Yes; 15 bit
— Input resistance (0 to 3000 ohms)	1 MΩ
• 0 to 6000 ohms	Yes; 15 bit
— Input resistance (0 to 6000 ohms)	1 MΩ
• PTC	Yes; 15 bit
— Input resistance (PTC)	1 MΩ
Thermocouple (TC)	
Temperature compensation	
— parameterizable	Yes
— Reference channel of the module	Yes
— internal comparison point	Yes; with BaseUnit type A1
— Reference channel of the group	Yes
— Number of reference channel groups	4; Group 0 to 3
— fixed reference temperature	Yes
Cable length	
• shielded, max.	200 m; 50 m with thermocouples
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
• Integration time, parameterizable	Yes
• Basic conversion time, including integration time (ms)	
— additional processing time for wire-break check	2 ms; In the ranges resistance thermometers, resistors and thermocouples
• Interference voltage suppression for interference frequency f1 in Hz	16.6 / 50 / 60 Hz
• Conversion time (per channel)	180 / 60 / 50 ms
Smoothing of measured values	
• Number of smoothing levels	4; None; 4/8/16 times
• parameterizable	Yes
Encoder	
Connection of signal encoders	
• for voltage measurement	Yes
• for resistance measurement with two-wire connection	Yes
• for resistance measurement with three-wire connection	No
• for resistance measurement with four-wire connection	No
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %; ±0.1 % for resistance thermometers and resistance
Temperature error (relative to input range), (+/-)	0.0009 %/K; ±0.005 % / K at thermocouple
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.1 %
• Resistance, relative to input range, (+/-)	0.1 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.05 %
• Resistance, relative to input range, (+/-)	0.05 %

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.		70 dB	
Common mode voltage, max.		10 V	
Common mode interference, min.		90 dB	
Interrupts/diagnostics/status information			
Diagnostics function		Yes	
Alarms			
Diagnostic alarm		Yes	
Limit value alarm		Yes; two upper and two lower limit values in each case	
Diagnoses			
Monitoring the supply voltage		Yes	
Wire-break		Yes; channel by channel	
Group error		Yes	
Overflow/underflow		Yes; channel by channel	
Diagnostics indication LED			
Monitoring of the supply voltage (PWR-LED)		Yes; green PWR LED	
Channel status display		Yes; green LED	
for channel diagnostics		Yes; red LED	
for module diagnostics		Yes; green/red DIAG LED	
Potential separation			
Potential separation channels			
between the channels		No	
between the channels and backplane bus		Yes	
between the channels and the power supply of the electronics		Yes	
Permissible potential difference			
between the inputs (UCM)		10 V DC	
Isolation			
Isolation tested with		707 V DC (type test)	
Standards, approvals, certificates			
Ecological footprint			
environmental product declaration		Yes	
Global warming potential			
— global warming potential, (total) [CO2 eq]		9.32 kg	
— global warming potential, (during production) [CO2 eq]		4.97 kg	
— global warming potential, (during operation) [CO2 eq]		4.79 kg	
— global warming potential, (after end of life cycle) [CO2 eq]		-0.449 kg	
Ambient conditions			
Ambient temperature during operation			
horizontal installation, min.		-30 °C; < 0 °C as of FS05	
horizontal installation, max.		60 °C	
vertical installation, min.		-30 °C; < 0 °C as of FS05	
vertical installation, max.		50 °C	
Altitude during operation relating to sea level			
Installation altitude above sea level, max.		5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Dimensions			
Width		15 mm	
Height		73 mm	
Depth		58 mm	
Classifications			
		Version	Classification
	eClass	14	27-24-26-01
	eClass	12	27-24-26-01
	eClass	9.1	27-24-26-01
	eClass	9	27-24-26-01

eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	10	EC001596
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval


EG-Konf.



[Manufacturer Declaration](#)

[Miscellaneous](#)

[Metrological Approval](#)


RCM

Maritime application Environment


RMRS


EPD

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