



SIMATIC ET 200SP, Analog input module, AI 2xU Standard Pack quantity: 1 unit, suitable for BU type A0, A1, Color code CC00, Module diagnostics, 16 bit

General information	
Product type designation	AI 2xU ST
HW functional status	from FS04
Firmware version	Yes
<ul style="list-style-type: none"> FW update possible 	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	No
<ul style="list-style-type: none"> Measuring range scalable 	No
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	V13 SP1
<ul style="list-style-type: none"> STEP 7 configurable/integrated from version 	V5.5 SP3 / -
<ul style="list-style-type: none"> PROFIBUS from GSD version/GSD revision 	One GSD file each, Revision 3 and 5 and higher
<ul style="list-style-type: none"> PROFINET from GSD version/GSD revision 	GSDML V2.3
Operating mode	
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> MSI 	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No
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.	37 mA
Encoder supply	
24 V encoder supply	No
<ul style="list-style-type: none"> 24 V 	No
Additional 24 V encoder supply	No
<ul style="list-style-type: none"> 24 V 	No
Power loss	
Power loss, typ.	0.9 W
Address area	
Address space per module	4 byte; + 1 byte for QI information
<ul style="list-style-type: none"> Address space per module, max. 	4 byte; + 1 byte for QI information

Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> • Mechanical coding element • Type of mechanical coding element 	Yes Type A
Selection of BaseUnit for connection variants	
<ul style="list-style-type: none"> • 1-wire connection • 2-wire connection 	BU type A0, A1 BU type A0, A1
Analog inputs	
Number of analog inputs	2
<ul style="list-style-type: none"> • For voltage measurement 	2
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	500 µs
Input ranges (rated values), voltages	
<ul style="list-style-type: none"> • 0 to +10 V <ul style="list-style-type: none"> — Input resistance (0 to 10 V) • 1 V to 5 V <ul style="list-style-type: none"> — Input resistance (1 V to 5 V) • -10 V to +10 V <ul style="list-style-type: none"> — Input resistance (-10 V to +10 V) • -5 V to +5 V <ul style="list-style-type: none"> — Input resistance (-5 V to +5 V) 	Yes; 15 bit 180 kΩ Yes; 15 bit 180 kΩ Yes; 16 bit incl. sign 180 kΩ Yes; 16 bit incl. sign 180 kΩ
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	200 m
Analog value generation for the inputs	
Measurement principle	Sigma Delta
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Interference voltage suppression for interference frequency f1 in Hz • Conversion time (per channel) 	16 bit Yes 16.6 / 50 / 60 Hz / off 50 ms @ 60 Hz, 60 ms @ 50 Hz, 180 ms @ 16.6 Hz, 250 µs without filter
Smoothing of measured values	
<ul style="list-style-type: none"> • Number of smoothing levels • parameterizable • Step: None • Step: low • Step: Medium • Step: High 	4 Yes Yes; 1x cycle time Yes; 4x cycle time Yes; 8x cycle time Yes; 16x cycle time
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for voltage measurement 	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.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) 	0.5 %
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) 	0.3 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = interference frequency	
<ul style="list-style-type: none"> • Series mode interference (peak value of interference < rated value of input range), min. • Common mode voltage, max. • Common mode interference, min. 	70 dB 10 V 90 dB
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm • Limit value alarm 	Yes No

Diagnoses	
<ul style="list-style-type: none"> Monitoring of the supply voltage 	Yes
<ul style="list-style-type: none"> Wire-break 	No
<ul style="list-style-type: none"> Short-circuit 	Yes; at 1 to 5 V
<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"> Monitoring of the supply voltage (PWR-LED) 	Yes; green PWR LED
<ul style="list-style-type: none"> Channel status display 	Yes; green LED
<ul style="list-style-type: none"> for channel diagnostics 	No
<ul style="list-style-type: none"> for module diagnostics 	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> between the channels 	No
<ul style="list-style-type: none"> between the channels and backplane bus 	Yes
<ul style="list-style-type: none"> between the channels and the power supply of the electronics 	Yes
Permissible potential difference	
between the inputs (UCM)	10 Vpp
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> horizontal installation, min. 	-30 °C; < 0 °C as of FS04
<ul style="list-style-type: none"> horizontal installation, max. 	60 °C
<ul style="list-style-type: none"> vertical installation, min. 	-30 °C; < 0 °C as of FS04
<ul style="list-style-type: none"> vertical installation, max. 	50 °C
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> 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
Weights	
Weight, approx.	31 g
last modified:	1/24/2021 