

SIMATIC ET 200SP, Analog output module, AQ 2x U/I High Feature suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.1%



General information	
Product type designation	AQ 2xU/I HF
HW functional status	from FS04
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
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated as of version 	V13 / V13
<ul style="list-style-type: none"> STEP 7 configurable/integrated as of version 	V5.5 SP3 / -
<ul style="list-style-type: none"> PCS 7 configurable/integrated as of version 	V8.1 SP1
<ul style="list-style-type: none"> PROFIBUS as of GSD version/GSD revision 	GSD Revision 5
<ul style="list-style-type: none"> PROFINET as of GSD version/GSD revision 	GSDML V2.3
Operating mode	
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> MSO 	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 (rated value)	45 mA; without load
Current consumption, max.	90 mA; 2 channels current output 20 mA

Power loss

Power loss, typ.	0.9 W
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Address area

Address space per module

- Address space per module, max. 4 byte; + 1 byte for QI information

Analog outputs

Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	750 μ s

Output ranges, voltage

- 0 to 10 V Yes; 15 bit
- 1 V to 5 V Yes; 13 bit
- -5 V to +5 V Yes; 15 bit incl. sign
- -10 V to +10 V Yes; 16 bit incl. sign

Output ranges, current

- 0 to 20 mA Yes; 15 bit
- -20 mA to +20 mA Yes; 16 bit incl. sign
- 4 mA to 20 mA Yes; 14 bit

Connection of actuators

- for voltage output two-wire connection Yes
- for voltage output four-wire connection Yes
- for current output two-wire connection Yes

Load impedance (in rated range of output)

- with voltage outputs, min. 2 k Ω
- with voltage outputs, capacitive load, max. 1 μ F
- with current outputs, max. 500 Ω
- with current outputs, inductive load, max. 1 mH

Destruction limits against externally applied voltages and currents

• Voltages at the outputs	30 V
Cable length	
• shielded, max.	1 000 m; 200 m for voltage output
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit
Settling time	
• for resistive load	0.05 ms
• for capacitive load	0.05 ms; Max. 47 nF and 20 m cable length
• for inductive load	0.05 ms
Errors/accuracies	
Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)	0.02 %
Linearity error (relative to output range), (+/-)	0.03 %
Temperature error (relative to output range), (+/-)	0.003 %/K
Crosstalk between the outputs, max.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.03 %
Operational error limit in overall temperature range	
• Voltage, relative to output range, (+/-)	0.2 %
• Current, relative to output range, (+/-)	0.2 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to output range, (+/-)	0.1 %
• Current, relative to output range, (+/-)	0.1 %
Isochronous mode	
Execution and activation time (TCO), min.	500 µs
Bus cycle time (TDP), min.	750 µs
Jitter, max.	5 µs
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
Diagnostic messages	
• Monitoring the supply voltage	Yes
• Wire-break	Yes; channel-by-channel, only for output type "current"
• Short-circuit	Yes; channel-by-channel, only for output type "voltage"
• Group error	Yes
• Overflow/underflow	Yes
Diagnostics indication LED	

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| • 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

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| • between the channels | No |
| • between the channels and backplane bus | Yes |
| • between the channels and the power supply of the electronics | Yes |

Isolation

Isolation tested with	707 V DC (type test)
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Ambient conditions

Ambient temperature during operation

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| • horizontal installation, min. | -30 °C |
| • horizontal installation, max. | 60 °C |
| • vertical installation, min. | -30 °C |
| • vertical installation, max. | 50 °C |

Altitude during operation relating to sea level

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| • Installation altitude above sea level, max. | 2 000 m; On request: Installation altitudes greater than 2 000 m |
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Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

Weights

Weight, approx.	31 g
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last modified:	05/28/2020
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