

SIMATIC ET 200SP, Analog output module, AQ 4xU/I Standard, suitable for BU type A0, A1, Color code CC00, Module diagnostics, 16 bit, +/-0.3%



General information	
Product type designation	AQ 4xU/I ST
Firmware version	V1.1
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> <li>Output range scalable</li> </ul>	No
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated as of version</li> </ul>	V11 SP2 / V13
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated as of version</li> </ul>	V5.5 SP3 / -
<ul style="list-style-type: none"> <li>PCS 7 configurable/integrated as of version</li> </ul>	V8.1 SP1
<ul style="list-style-type: none"> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>	GSD Revision 5
<ul style="list-style-type: none"> <li>PROFINET as of GSD version/GSD revision</li> </ul>	GSDML V2.3
Operating mode	
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	No
<ul style="list-style-type: none"> <li>MSO</li> </ul>	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.	150 mA
---------------------------	--------

## Power loss

Power loss, typ.	1.5 W
------------------	-------

## Address area

Address space per module	
• Address space per module, max.	8 byte; + 1 byte for QI information

## Analog outputs

Number of analog outputs	4
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	5 ms
Analog output with oversampling	No

### 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 $\Omega$
• with voltage outputs, capacitive load, max.	1 $\mu$ F
• with current outputs, max.	500 $\Omega$
• with current outputs, inductive load, max.	1 mH

### Destruction limits against externally applied voltages and currents

• Voltages at the outputs	30 V
---------------------------	------

<b>Cable length</b>	
• shielded, max.	1 000 m; 200 m for voltage output
<b>Analog value generation for the outputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit
<b>Settling time</b>	
• for resistive load	0.1 ms
• for capacitive load	1 ms
• for inductive load	0.5 ms
<b>Errors/accuracies</b>	
Linearity error (relative to output range), (+/-)	0.03 %
Temperature error (relative to output range), (+/-)	0.005 %/K
Crosstalk between the outputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
<b>Operational error limit in overall temperature range</b>	
• Voltage, relative to output range, (+/-)	0.5 %
• Current, relative to output range, (+/-)	0.5 %
<b>Basic error limit (operational limit at 25 °C)</b>	
• Voltage, relative to output range, (+/-)	0.3 %
• Current, relative to output range, (+/-)	0.3 %
<b>Isochronous mode</b>	
Isochronous operation (application synchronized up to terminal)	No
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
• Monitoring the supply voltage	Yes
• Wire-break	Yes
• Short-circuit	Yes
• Group error	Yes
• Overflow/underflow	Yes
<b>Diagnostics indication LED</b>	
• 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 channels

- |  |     |
|--|-----|
| • 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)
-----------------------	----------------------

## Ambient conditions

### Ambient temperature during operation

- |                                 |                         |
|---------------------------------|-------------------------|
| • horizontal installation, min. | 0 °C                    |
| • horizontal installation, max. | 60 °C; Observe derating |
| • vertical installation, min.   | 0 °C                    |
| • vertical installation, max.   | 50 °C; Observe derating |

## Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

## Weights

Weight, approx.	31 g
-----------------	------

<b>last modified:</b>	01/29/2018
-----------------------	------------