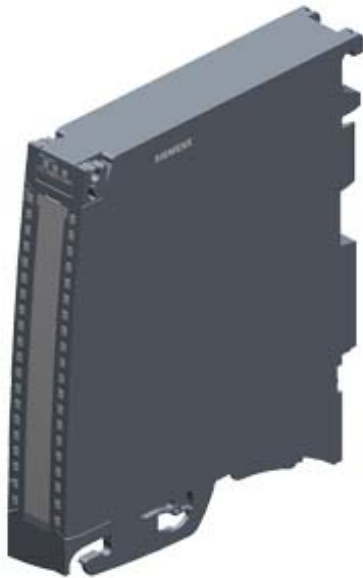


SIMATIC S7-1500 Analog output module AQ 2x U/I ST, 16 bit resolution, accuracy 0.3%. 2 channels in groups of 2; Diagnostics; Substitute value; Delivery including push-in front connector, infeed element, shield bracket and shield terminal



General information	
Product type designation	AQ 2xU/I ST
HW functional status	FS01
Firmware version	V1.0.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Prioritized startup	No
• Output range scalable	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V13 / V13.0.2
• STEP 7 configurable/integrated from version	V5.5 SP3 / -
• PROFIBUS from GSD version/GSD revision	V1.0 / V5.1
• PROFINET from GSD version/GSD revision	V2.3 / -
Operating mode	
• Oversampling	No
• MSO	Yes

<b>CiR - Configuration in RUN</b>	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	Yes
<b>Supply voltage</b>	
Type of supply voltage	DC
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
<b>Input current</b>	
Current consumption, max.	110 mA; with 24 V DC supply
<b>Power</b>	
Power available from the backplane bus	0.65 W
<b>Power loss</b>	
Power loss, typ.	2.7 W
<b>Analog outputs</b>	
Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	24 mA
Current output, no-load voltage, max.	22 V
Cycle time (all channels), min.	3.2 ms; independent of number of activated channels
<b>Output ranges, voltage</b>	
• 0 to 10 V	Yes
• 1 V to 5 V	Yes
• -5 V to +5 V	No
• -10 V to +10 V	Yes
<b>Output ranges, current</b>	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes
• 4 mA to 20 mA	Yes
<b>Connection of actuators</b>	
• for voltage output two-wire connection	Yes
• for voltage output four-wire connection	Yes
• for current output two-wire connection	Yes
<b>Load impedance (in rated range of output)</b>	
• with voltage outputs, min.	1 k $\Omega$ ; 0.5 k $\Omega$ at 1 to 5 V
• with voltage outputs, capacitive load, max.	1 $\mu$ F
• with current outputs, max.	750 $\Omega$
• with current outputs, inductive load, max.	10 mH
<b>Cable length</b>	

- shielded, max.

800 m; for current, 200 m for voltage

## Analog value generation for the outputs

### Integration and conversion time/resolution per channel

- Resolution with overrange (bit including sign), max. 16 bit
- Conversion time (per channel) 0.5 ms

### Settling time

- for resistive load 1.5 ms
- for capacitive load 2.5 ms
- for inductive load 2.5 ms

## Errors/accuracies

- Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-) 0.02 %
- Linearity error (relative to output range), (+/-) 0.15 %
- Temperature error (relative to output range), (+/-) 0.002 %/K
- Crosstalk between the outputs, max. -100 dB
- Repeat accuracy in steady state at 25 °C (relative to output range), (+/-) 0.05 %

### Operational error limit in overall temperature range

- Voltage, relative to output range, (+/-) 0.3 %
- Current, relative to output range, (+/-) 0.3 %

### Basic error limit (operational limit at 25 °C)

- Voltage, relative to output range, (+/-) 0.2 %
- Current, relative to output range, (+/-) 0.2 %

## Interrupts/diagnostics/status information

- Diagnostics function Yes
- Substitute values connectable Yes

### Alarms

- Diagnostic alarm Yes

### Diagnoses

- Monitoring the supply voltage Yes
- Wire-break Yes; Only for output type "current"
- Short-circuit Yes; Only for output type "voltage"
- Overflow/underflow Yes

### Diagnostics indication LED

- RUN LED Yes; green LED
- ERROR LED Yes; red LED
- Monitoring of the supply voltage (PWR-LED) Yes; green LED
- Channel status display Yes; green LED
- for channel diagnostics Yes; red LED
- for module diagnostics Yes; red LED

Potential separation	
Potential separation channels	
• between the channels	No
• between the channels, in groups of	2
• between the channels and backplane bus	Yes
• Between the channels and load voltage L+	Yes
Permissible potential difference	
between S- and MANA (UCM)	8 V DC
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
• vertical installation, min.	0 °C
• vertical installation, max.	40 °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	25 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	200 g
Other	
Note:	Supplied incl. 40-pole push-in front connectors
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