

SIMATIC S7-1500 Analog output module AQ8xU/I HS, 16 bit resolution, accuracy 0.3%, 8 channels in groups of 8; Diagnostics; Substitute value 8 channels in 0.125 ms Oversampling; Delivery including infeed element, shield bracket and shield terminal: Front connector (screw terminals or push-in) to be ordered separately



Figure similar

General information	
Product type designation	AQ 8xU/I HS
HW functional status	FS01
Firmware version	V2.1.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Prioritized startup	No
• Output range scalable	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated as of version	V14 / -
• STEP 7 configurable/integrated as of version	V5.5 SP3 / -
• PROFIBUS as of GSD version/GSD revision	V1.0 / V5.1
• PROFINET as of GSD version/GSD revision	V2.3 / -
Operating mode	
• Oversampling	Yes

- MSO

Yes

CiR – Configuration in RUN

Reparameterization possible in RUN

Yes

Calibration possible in RUN

Yes

Supply voltage

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

Input current

Current consumption, max.

260 mA; with 24 V DC supply

Power

Power available from the backplane bus

1.15 W

Power loss

Power loss, typ.

7 W

Analog outputs

Number of analog outputs

8

Voltage output, short-circuit protection

Yes

Voltage output, short-circuit current, max.

45 mA

Current output, no-load voltage, max.

20 V

Cycle time (all channels), min.

125 µs; independent of number of activated channels

Output ranges, voltage

- 0 to 10 V

Yes

- 1 V to 5 V

Yes

- -5 V to +5 V

No

- -10 V to +10 V

Yes

Output ranges, current

- 0 to 20 mA

Yes

- -20 mA to +20 mA

Yes

- 4 mA to 20 mA

Yes

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.

1 kΩ

- with voltage outputs, capacitive load, max.

100 nF

- with current outputs, max.

500 Ω

- with current outputs, inductive load, max.

1 mH

Cable length	
• shielded, max.	200 m
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)	50 µs; independent of number of activated channels
Settling time	
• for resistive load	30 µs; see additional description in the manual
• for capacitive load	100 µs; see additional description in the manual
• for inductive load	100 µs; see additional description in the manual
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 %
Isochronous mode	
Isochronous operation (application synchronized up to terminal)	Yes
Execution and activation time (TCO), min.	100 µs
Bus cycle time (TDP), min.	250 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; 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 | 8 |
| • 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
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Isolation

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

Altitude during operation relating to sea level

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|---|--|
| • Installation altitude above sea level, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
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Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

Weights

Weight, approx.	325 g
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last modified:	03/16/2020
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