

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	From FS01
Firmware version	V2.1.0
<ul style="list-style-type: none"> FW update possible 	Yes
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 	Yes
<ul style="list-style-type: none"> Prioritized startup 	No
<ul style="list-style-type: none"> Output range scalable 	No
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	V14 / -
<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 	V1.0 / V5.1
<ul style="list-style-type: none"> PROFINET from GSD version/GSD revision 	V2.3 / -
Operating mode	

- Oversampling
- MSO

Yes
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
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Power

Power available from the backplane bus	1.15 W
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Power loss

Power loss, typ.	7 W
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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	
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
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

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|--|----------------|
| • 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

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| • 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

Ambient temperature during operation

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|---------------------------------|-------------------|
| • horizontal installation, min. | -30 °C; From FS03 |
| • horizontal installation, max. | 60 °C |
| • vertical installation, min. | -30 °C; From FS03 |
| • vertical installation, max. | 40 °C |

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:	09/03/2020
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