SIEMENS

SIMATIC S7-1500, ANALOG OUTPUT MODULE AQ 8 X U/I HS 16 BITS OF RESOLUTION, ACCURACY 0.3 %, 8CHANNELS IN GROUPS OF 8, DIAGNOSIS, SUBSTITUTE VALUE 8 CHANNELS IN 0.125 MS INCL. INFEED ELEMENT, SHIELD CLAMP AND SHIELD TERMINAL

Figure similar

General information	
Product type designation	AQ 8xU/I HS
HW functional status	FS01
Firmware version	V2.0.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Scalable output range	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated as of version	V12 / V12
• 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	No
• MSO	Yes
CiR - Configuration in RUN	

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Reparameterization possible in RUN	Yes
Calibration possible in RUN	Yes

Supply voltage	
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
• -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 (based on output area, 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 area), (+/-)	0.05 %

Operational error limit in overall temperature range

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

Basic error limit (operational limit at 25 °C)

• Voltage, relative to output area, (+/-)	0.2 %
• Current, relative to output area, (+/-)	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	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 MANA and M internally (UISO)	75 V DC/60 V AC (base isolation)
between S- and MANA (UCM)	+/- 8 V

Isolation	
Isolation tested with	707 V DC (type test)

Decentralized operation	
Prioritized startup	No

Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm

Weights	
Weight, approx.	325 g

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