

Siemens
EcoTech



SIMATIC S7-1500, analog output module AQ 8xHART HF, 16-bit resolution, accuracy 0.2%, 8 channels in groups of 8 diagnostics, substitute values, delivery including infeed element, shielding bracket and shield terminal; front connector (screw terminals or push-in) to be ordered separately

General information	
Product type designation	AQ 8xHART HF
HW functional status	from 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	V18 and V19 with HSP0423
• 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	V 2.43 / -
Operating mode	
• Oversampling	No
• MSO	Yes
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	Yes
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 (rated value)	280 mA; 8x 20 mA with 750 ohm load resistance
Current consumption, max.	370 mA
Power	
Power consumption from the backplane bus	0.6 W
Power loss	
Power loss, typ.	4.8 W; 8x 20 mA with 750 ohm load resistance
Analog outputs	
Number of analog outputs	8
Voltage output, short-circuit protection	Yes

Current output, no-load voltage, max.	30 V
Cycle time (all channels), min.	5 ms; independent of number of activated channels
Analog output with oversampling	No
Output ranges, current	
• 0 to 10 mA	No
• 0 to 20 mA	Yes
• -20 mA to +20 mA	No
• 4 mA to 20 mA	Yes
Connection of actuators	
• for voltage output two-wire connection	No
• for voltage output four-wire connection	No
• for current output two-wire connection	Yes
Load impedance (in rated range of output)	
• with current outputs, max.	750 Ω
• with current outputs, inductive load, max.	10 mH
Cable length	
• shielded, max.	800 m
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit
Settling time	
• for resistive load	3 ms; see additional description in the manual
• for inductive load	3 ms; 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), (+/-)	0.02 %
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), (+/-)	0.02 %
note regarding accuracy	at temperatures below 0 °C, the figures for operating error and temperature error are doubled
Operational error limit in overall temperature range	
• Current, relative to output range, (+/-)	0.2 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to output range, (+/-)	0.1 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire break	Yes
• short-circuit	Yes
• 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 different circuits	60 V DC/30 V AC		
Isolation			
Isolation tested with	707 V DC (type test)		
Standards, approvals, certificates			
Siemens Eco Profile (SEP)	Siemens EcoTech		
Suitable for safety-related tripping of standard modules	No		
Ecological footprint			
• environmental product declaration	Yes		
Global warming potential			
— global warming potential, (total) [CO2 eq]	37.6 kg		
— global warming potential, (during production) [CO2 eq]	11.1 kg		
— global warming potential, (during operation) [CO2 eq]	26.8 kg		
— global warming potential, (after end of life cycle) [CO2 eq]	-0.364 kg		
Security			
signed firmware update	Yes		
safely removing data	No		
data integrity	No		
Ambient conditions			
Ambient temperature during operation			
• horizontal installation, min.	-30 °C		
• horizontal installation, max.	60 °C		
• vertical installation, min.	-30 °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		
Absolute humidity			
• dew point, min.	-60 °C; suitable for dry room applications		
Dimensions			
Width	35 mm		
Height	147 mm		
Depth	129 mm		
Weights			
Weight, approx.	300 g		
Other			
Note:	please order front connectors (screw-in/push-in) separately		
Classifications			
		Version	Classification
	eClass	16	27-24-22-01
	eClass	14	27-24-22-01
	eClass	12	27-24-22-01
	eClass	9.1	27-24-22-01
	eClass	9	27-24-22-01
	eClass	8	27-24-22-01
	eClass	7.1	27-24-22-01
	eClass	6	27-24-22-01
	ETIM	10	EC001420
	ETIM	9	EC001420
	ETIM	8	EC001420
	ETIM	7	EC001420
Approvals / Certificates			
General Product Approval			EMV



[Miscellaneous](#)



[China RoHS](#)



For use in hazardous locations



[FM](#)

[CCC-Ex](#)



[Type Examination Certificate](#)



For use in hazardous locations

Maritime application

[Miscellaneous](#)

[CCC-Ex](#)



Maritime application

Environment

[NK / Nippon Kaiji Kyokai](#)



[CCS \(China Classification Society\)](#)

[KR \(Korean Register of Shipping\)](#)



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