

Siemens
EcoTech



SIMATIC S7-1500, analog output module AQ 4xU/I ST, 16-bit resolution accuracy 0.3%. 4 channels in groups of 4, diagnostics; substitute value; the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 2 / PL c according to EN ISO 13849-1:2015. 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 4xU/I ST
HW functional status	from FS04
Firmware version	V2.2.0
<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 	No
<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 	V12 / V12
<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	
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> 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, max.	190 mA; with 24 V DC supply
Power	
Power consumption from the backplane bus	0.6 W
Power loss	
Power loss, typ.	4 W
Analog outputs	
Number of analog outputs	4
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
Analog output with oversampling	No
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 k Ω ; 0.5 k Ω m at 1 to 5 V
• with voltage outputs, capacitive load, max.	1 μ F
• with current outputs, max.	750 Ω
• with current outputs, inductive load, max.	10 mH
Cable length	
• 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 %
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	
• 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

<ul style="list-style-type: none"> Monitoring of the supply voltage (PWR-LED) 	Yes; green LED	
<ul style="list-style-type: none"> Channel status display 	Yes; green LED	
<ul style="list-style-type: none"> for channel diagnostics 	Yes; red LED	
<ul style="list-style-type: none"> for module diagnostics 	Yes; red LED	
Potential separation		
Potential separation channels		
<ul style="list-style-type: none"> between the channels 	No	
<ul style="list-style-type: none"> between the channels, in groups of 	4	
<ul style="list-style-type: none"> between the channels and backplane bus 	Yes	
<ul style="list-style-type: none"> 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)	
Standards, approvals, certificates		
Siemens Eco Profile (SEP)	Siemens EcoTech	
Suitable for safety-related tripping of standard modules	Yes; From FS05	
Ecological footprint		
<ul style="list-style-type: none"> 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	
Highest safety class achievable for safety-related tripping of standard modules		
<ul style="list-style-type: none"> Performance level according to ISO 13849-1 	PL d	
<ul style="list-style-type: none"> Category according to ISO 13849-1 	Cat. 3	
<ul style="list-style-type: none"> SIL acc. to IEC 62061 	SIL 2	
<ul style="list-style-type: none"> remark on safety-oriented shutdown 	https://support.industry.siemens.com/cs/de/en/view/39198632	
Security		
signed firmware update	No	
safely removing data	No	
data integrity	No	
Ambient conditions		
Ambient temperature during operation		
<ul style="list-style-type: none"> horizontal installation, min. 	-30 °C; From FS06	
<ul style="list-style-type: none"> horizontal installation, max. 	60 °C	
<ul style="list-style-type: none"> vertical installation, min. 	-30 °C; From FS06	
<ul style="list-style-type: none"> vertical installation, max. 	40 °C	
Altitude during operation relating to sea level		
<ul style="list-style-type: none"> Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Absolute humidity		
<ul style="list-style-type: none"> dew point, min. 	-60 °C; suitable for dry room applications	
Dimensions		
Width	35 mm	
Height	147 mm	
Depth	129 mm	
Weights		
Weight, approx.	310 g	
Classifications		
	Version	Classification
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
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

[Miscellaneous](#)

[Manufacturer Declaration](#)



[Metrological Approval](#)

General Product Approval

For use in hazardous locations



[China RoHS](#)

[Manufacturer Declaration](#)



For use in hazardous locations

[FM](#)



[FM](#)

[CCC-Ex](#)



[Type Examination Certificate](#)

For use in hazardous locations

Maritime application



[Miscellaneous](#)

[CCC-Ex](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



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

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

Environment



last modified:

5/12/2026