



SIMATIC S7-1500, analog output module AQ 2x U/I ST, 16-bit resolution accuracy 0.3%. 2 channels in groups of 2, 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 front connector push-in, infeed element, shielding bracket and shield terminal

General information	
Product type designation	AQ 2xU/I ST
HW functional status	from FS01
Firmware version	V1.0.0
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>	No
<ul style="list-style-type: none"> <li>Prioritized startup</li> </ul>	No
<ul style="list-style-type: none"> <li>Output range scalable</li> </ul>	No
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V13 / V13.0.2
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
<ul style="list-style-type: none"> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	V1.0 / V5.1
<ul style="list-style-type: none"> <li>PROFINET from GSD version/GSD revision</li> </ul>	V2.3 / -
Operating mode	
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	No
<ul style="list-style-type: none"> <li>MSO</li> </ul>	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.	110 mA
Power	
Power consumption from the backplane bus	0.65 W
Power loss	
Power loss, typ.	2.7 W
Analog outputs	
Number of analog outputs	2
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
<b>Output ranges, voltage</b>	
• 0 to 10 V	Yes
• 1 V to 5 V	Yes
• -5 V to +5 V	No
• -10 V to +10 V	Yes
<b>Output ranges, current</b>	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes
• 4 mA to 20 mA	Yes
<b>Connection of actuators</b>	
• for voltage output two-wire connection	Yes
• for voltage output four-wire connection	Yes
• for current output two-wire connection	Yes
<b>Load impedance (in rated range of output)</b>	
• with voltage outputs, min.	1 k $\Omega$ ; 0.5 k $\Omega$ m at 1 to 5 V
• with voltage outputs, capacitive load, max.	1 $\mu$ F
• with current outputs, max.	750 $\Omega$
• with current outputs, inductive load, max.	10 mH
<b>Cable length</b>	
• shielded, max.	800 m; for current, 200 m for voltage
<b>Analog value generation for the outputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit
• Conversion time (per channel)	0.5 ms
<b>Settling time</b>	
• for resistive load	1.5 ms
• for capacitive load	2.5 ms
• for inductive load	2.5 ms
<b>Errors/accuracies</b>	
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 %
<b>Operational error limit in overall temperature range</b>	
• Voltage, relative to output range, (+/-)	0.3 %
• Current, relative to output range, (+/-)	0.3 %
<b>Basic error limit (operational limit at 25 °C)</b>	
• Voltage, relative to output range, (+/-)	0.2 %
• Current, relative to output range, (+/-)	0.2 %
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
Substitute values connectable	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnoses</b>	
• Monitoring the supply voltage	Yes
• Wire break	Yes; Only for output type "current"
• Short-circuit	Yes; Only for output type "voltage"
• Overflow/Underflow	Yes
<b>Diagnostics indication LED</b>	
• 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	
<b>Potential separation</b>		
Potential separation channels		
• between the channels	No	
• between the channels, in groups of	2	
• between the channels and backplane bus	Yes	
• Between the channels and load voltage L+	Yes	
<b>Permissible potential difference</b>		
between S- and MANA (UCM)	8 V DC	
<b>Isolation</b>		
Isolation tested with	707 V DC (type test)	
<b>Standards, approvals, certificates</b>		
Siemens Eco Profile (SEP)	Siemens EcoTech	
Suitable for safety-related tripping of standard modules	Yes; From FS02	
<b>Ecological footprint</b>		
• environmental product declaration	Yes	
<b>Global warming potential</b>		
— 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	
<b>Highest safety class achievable for safety-related tripping of standard modules</b>		
• Performance level according to ISO 13849-1	PL d	
• Category according to ISO 13849-1	Cat. 3	
• SILCL according to IEC 62061	SIL 2	
• remark on safety-oriented shutdown	<a href="https://support.industry.siemens.com/cs/de/en/view/39198632">https://support.industry.siemens.com/cs/de/en/view/39198632</a>	
<b>Security</b>		
signed firmware update	No	
safely removing data	No	
data integrity	No	
<b>Ambient conditions</b>		
Ambient temperature during operation		
• horizontal installation, min.	-30 °C; from FS04	
• horizontal installation, max.	60 °C	
• vertical installation, min.	-30 °C; from FS04	
• 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	
<b>Dimensions</b>		
Width	25 mm	
Height	147 mm	
Depth	129 mm	
<b>Weights</b>		
Weight, approx.	200 g	
<b>Other</b>		
Note:	Supplied incl. 40-pole push-in front connectors	
<b>Classifications</b>		
	<b>Version</b>	<b>Classification</b>
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](#)



**General Product Approval**

[Metrological Approval](#)



[China RoHS](#)

[Manufacturer Declaration](#)

**EMV 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 \(Korean Register of Shipping\)](#)



**Environment**



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5/12/2026