## SIEMENS

## Data sheet

## 6ES7532-5ND00-0AB0



SIMATIC S7-1500, analog output module AQ 4xU/I HF, 16-bit resolution accuracy 0.1%, 4 channels in groups of 1, common mode voltage: 30 V AC/60 V DC, diagnostics; substitute value, isochronous mode; the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 3 / PL d 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 HF
HW functional status	From FS01
Firmware version	V1.1.0
FW update possible	Yes
Product function	
I&M data	Yes; I&M0 to I&M3
Isochronous mode	Yes
Prioritized startup	Yes
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V14 / -
<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	V1.0 / V5.1
<ul> <li>PROFINET from GSD version/GSD revision</li> </ul>	V2.3 / -
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, max.	160 mA
Power	
Power available from the backplane bus	0.95 W
Power loss	
Power loss, typ.	5 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.	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 VYesOtoput ranges, currentVes• 0 to 20 mAYes• 20 mA to +20 mAYes• 4 mA to 20 mAYes• 6 nor voltage output tow-wire connectionYes• for voltage output, som.1 LQ: 0.5 kOhm at 1 to 5 V• with voltage outputs, som.1 µF• with voltage outputs, som.1 µF• with voltage outputs, som.10 mH• add to generation for the outputs260 m; for current, 200 m for voltage• with ourse operange (bi including sign), max.16 bit• additional description in the resolution per channel125 µs; independent of number of activated channels• for capacitive load1 B m; see additional description in the manual• for capacitive load1 B m; see additional description in the manual• for capacitive load1 B m; see additional description in the manual• for inductive load02 m; see additional description in the manual• for capacitive load1 00 002 %K• for capacitive load state 25 °C (relative to output range, (+/)0.002 %k• for relative to output range, (+/)0.002 %k• for capacitive load state 25 °C (relative to output range, (+/)0.002 %k• for capacitive load state 25 °C (relative to output range, (+/)0.002 %k• for capacitive load state 25 °C (relative to output range, (+/) <th>• -5 V to +5 V</th> <th>No</th>	• -5 V to +5 V	No
Opportunes 0 to 20 mAVes ves ves to 20 mAVes ves ves ves to 20 mAVes ves ves to 20 mAVes ves to 20 mAVes 		
• 0 D2 DA AVes• 0 DA A IS 20 DAVes• 0 DA IS 20 DAVes• 0 DA IS 20 DAVes• 16 video cipit los wie connectionYes• wie connection the inferenceYes• wie connection the inferenceYes• Convesion to log cipit los wie connectionYes• Convesion to log cipit los wie connection in the manualYes• Convesion to log cipit los with video YesYes• Co		
• • 0 mA is 20 mAVes• • • or visings output for were connectionYes• • or visings output for were connectionYes• • for visings output for were connectionYes• • or visings output for were connectionYes• • or visings outputs, mail1 k0, 0.5 k0/h m1 t0.5 V• • of were output for were connectionYes• • of were outputs, inductive load, max.10 mH• • of were outputs, inductive load, max.10 mH• of were outputs, inductive load10 k1• of were outputs, inductive load10 k1• of were outputs, inductive load22 kys, independent of number of activated channels• of concent were outputs, inductive load22 kys, independent of activated channels• of were outputs, inductive load22 kys, independent of activated channels• of concent were outputs, inductive load22 kys, independent of activated channels• or visitive load0 k2 kys, independent of activated channels• or visitive load0 k2 kys, independent of activated channels• or visitive load0 kys, independent of activated channels• or visitive load0 kys, independent of activated channels		Yes
Convention of institutes	• -20 mA to +20 mA	Yes
• (in vibiage output now-wire connectionVis• (in vibiage output now-wire connectionYes• (in vibiage outputs, now, connectionYes• with vibiage outputs, inductive load, max.1, UP• with vibiage outputs, inductive load, max.10 mH• with outputs, inductive load, max.10 mH• with outputs, inductive load, max.10 mH• shields (max.800 m; for current. 200 mf or voltage• with output outputs, inductive load, max.10 mH• shields (max.800 m; for current. 200 mf or voltage• Shields (max.10 mH• Shields (max.10 mH• Shields (max.10 mH• Carbistive load2 m; see additional description in the manual• Conversion time (stresshields per channel)2 m; see additional description in the manual• Conversion time (stresshield (	• 4 mA to 20 mA	Yes
• (v rollage output two wire connectionYes• (b) current output two wire connectionYes• (b) v rollage outputs, and, in (c) v roll	Connection of actuators	
• (or current output owner connectionYesLaad insection (an india range of output)1000000000000000000000000000000000000	<ul> <li>for voltage output two-wire connection</li> </ul>	Yes
Lead impedance (in rade range of output)	<ul> <li>for voltage output four-wire connection</li> </ul>	Yes
• with vallage outputs, max.1 kD, 0.5 kOhm at 1 to 5 V• with vallage outputs, max.1 µF• with current outputs, max.1 bml• bielded, max.80 m, for current, 200 m for voltage• bielded, max.80 m, for current, 200 m for voltage• cable length155 µs; independent of number of advated channels• for resistive load, max.152 µs; independent of number of advated channels• for resistive load0.2 ms; see additional description in the manual• for resistive load0.2 ms; see additional description in the manual• for resistive load1.3 ms; see additional description in the manual• for resistive load0.2 ms; see additional description in the manual• for resistive load0.2 ms; see additional description in the manual• for resistive load1.3 ms; see additional description in the manual• for resistive load0.02 %• for resistive load0.000 %• Crosstatic Heaven the output; maps, (+/)0.003 %• Crosstatic Heaven the output; maps, (+/)0.000 %• for residue load output range, (+/)0.000 %• output; retailve to output range, (+/)0.000 % <td><ul> <li>for current output two-wire connection</li> </ul></td> <td>Yes</td>	<ul> <li>for current output two-wire connection</li> </ul>	Yes
• with valiage outputs, max.1 µF• with current outputs, max.750 G• with current outputs, inductive load, max.750 G• anticurrent outputs, inductive load, max.800 m; for current, 200 m for voltage• Analog surrent of the solutputs800 m; for current, 200 m for voltage• Analog surrent of the solutputs16 bit• Resolution with overrange [0th including sign], max.16 bit• Convension time [cer channe]125 µs; independent of number of activated channels• for resistive load0.2 m; see additional description in the manual• for resistive load0.20 %, see additional description in the manual• for resistive load0.02 %• for resistive load0.02 %• for resistive load0.02 %• for resistive load0.02 %• for resistive load0.002 %• for resistive load output range, (+/-)0.002 %• output resistive load output range, (+/-)0.002 %• output resistive load output range, (+/-)2.00 mA to 20 mA ±0.2%; in to 1%• output resistive load output range, (+/-)0.00 % <t< td=""><td>Load impedance (in rated range of output)</td><td></td></t<>	Load impedance (in rated range of output)	
• with current outputs, max.750 0• with current outputs, inductive load, max.800 m, for current, 200 m for voltage• Acade yatege generation for the outputs• Resolution with overrange (bit including sign), max.16 bit• Corrents inter (or channel)125 µs; independent of number of activated channels• Corrents inter (or channel)0.2 ms; see additional description in the manual• for respective load0.2 ms; see additional description in the manual• for respective load0.2 ms; see additional description in the manual• for respective load0.2 ms; see additional description in the manual• for respective load0.2 ms; see additional description in the manual• for respective load0.20 %• for respective load upt range, (+/-)0.00 %• for respective	• with voltage outputs, min.	1 kΩ; 0.5 kOhm at 1 to 5 V
•• with current outputs, inductive load, max.         10 mH           Cable inquit         ••           •• is hielded, max.         800 m; for current, 200 m for voltage           Analog value generation for the outputs         •           •• Resolution with overrange (bit including sign), max.         16 bit           •• For resistive load         0.2 ms; see additional description in the manual           •• for resistive load         0.2 ms; see additional description in the manual           •• for resistive load         0.2 ms; see additional description in the manual           •• for resistive load         0.02 %.           •• for relative to output range, bendwidth 0 to 50 kHz), (r/c)         0.002 %.           • for inductive load         0.002 %.           • for regarding securesy         0.003 %.           • Interpretature error (relative to output range), (r/c)         0.003 %.           • Constaits between the outputs, max.         -100 dB           • Repeat accuracy         attemperatures below 0 °C, the figures for operating error and temperature error relative to output range, (r/c)           • Voltage, relative to output range, (r/c)         attemperatures below 0 °C, the figures for operating error and temperature error are output area, (r/c)           • Voltage, relative to output range, (r/c)         0.01 %           • Voltage, relative to output range, (r/c)         0.02 %.	<ul> <li>with voltage outputs, capacitive load, max.</li> </ul>	1 µF
Cable length         60% for current, 200 m for voltage           Acatog value generation for the outputs           Integration and conversion time/resolution gen channel         16 bit           - Conversion time (per channel)         125 µs; independent of number of activated channels           Satting time         0.2 ms; see additional description in the manual           - for resistive load         0.2 ms; see additional description in the manual           - for respective load         1.8 ms; see additional description in the manual           - for respective load         0.2 ms; see additional description in the manual           - for respective load         0.2 ms; see additional description in the manual           - for respective load         0.2 ms; see additional description in the manual           - for respective load         0.2 ms; see additional description in the manual           - for respective load         0.2 ms; see additional description in the manual           - for respective load         0.2 ms; see additional description in the manual           - for respective load         0.20 %           - forseconcertime         0.015 %           - forseconcertime         0.016 %           - for respective loadupt range, (+2)         0.006 %           - for respecting accuracy         at temperatures below 0 °C, the figures for operating error and temperature respecting accuracy </td <td><ul> <li>with current outputs, max.</li> </ul></td> <td>750 Ω</td>	<ul> <li>with current outputs, max.</li> </ul>	750 Ω
• shielded, max.800 m; for current, 200 m for voltageAnaloy quertation for the outputs• Integration and convenion time(netrosubtion per channel)12 bit• Resolution with overrange (bit including sign), max.12 bit is independent of number of activated channels• Conversion time (per channel)22 m; see additional description in the manual• for resistive load0.2 ms; see additional description in the manual• for resistive load0.20 %• for inductive load0.02 %• for resistive load0.02 %(r/)0.015 %• Conversion time output range), (r/-)0.002 %(r/)0.008 %• Constalk between the output range), (r/-)0.008 %• Constalk between the output range), (r/-)0.008 %• Constalk between the output range), (r/-)0.008 %• Constalk between the output range, (r/-)0.008 %• Constalk between the output range, (r/-)0.008 %• Constalk between the output range, (r/-)0.008 %• Constalk between time int overall temperature rangemore range range rout and temperature range ran	<ul> <li>with current outputs, inductive load, max.</li> </ul>	10 mH
Analog value generation for the outputs         Integration and conversion time/resolution per channel            • Resolution with overrange (bin including sign), max.             • Conversion time (per channel)             • Setting time             • or resistive load             • or relative load             • or relative load             • or relative load             • Output range, (+/-)              • Output range, (+/-	Cable length	
Integration and conversion time/resolution per channel         16 bit           • Resolution with overrange (bit including sign), max.         16 bit           • Conversion time (per channel)         15 bit           • Setting time         0.2 ms; see additional description in the manual           • for resistive load         0.2 ms; see additional description in the manual           • for rinductive load         2 ms; see additional description in the manual           • for inductive load         2 ms; see additional description in the manual           • for inductive load         0.02 %           (r/)         0.015 %           Temperature error (relative to output range), (+/-)         0.015 %           Temperature error (relative to output range), (+/-)         0.003 %           range, (+/-)         0.003 %           range, (+/-)         0.005 %           range, (+/-)         0.005 %           otor regarding accuracy         at temperatures below 0 °C, the figures for operating error and temperature are are doubled           Operational error limit in overal temperature range         +100 v/ 0 V to 10 V: ±0.12%; t V to 5 V: ±0.1%           • Voltage, relative to output range, (+/-)         ±0 v/ 0 V to 10 V: ±0.12%; t V to 5 V: ±0.1%           • Voltage, relative to output range, (+/-)         0.06 %           • Courrert, relative to output range, (+/-)         <	<ul> <li>shielded, max.</li> </ul>	800 m; for current, 200 m for voltage
• Resolution with overange (bit including sign), max.     16 bit       • Conversion time (per channel)     25 is independent of number of activated channels       • For resistive load     0.2 ms; see additional description in the manual       • for rice capacitive load     2.2 ms; see additional description in the manual       • for rice/verb load     2.2 ms; see additional description in the manual       • for rice/verb load     2.2 ms; see additional description in the manual       • for rice/verb load     0.02 %, with one manual       • for resistive load     0.02 %, with one manual       • for resistive rom (relative to output range), (+/-)     0.015 %,       • Temeprature error (relative to output range), (+/-)     0.002 %, WK       • Creasatisk between the output range), (+/-)     0.005 %       • respect accuracy in steady state at 25 °C (relative to output range, (+/-)     0.005 %       • regarding accuracy     at temperatures below 0 °C, the figures for operating error and temperature area or are advoluted       • Overand, relative to output range, (+/-)     0.005 %       • Current, relative to output range, (+/-)     0.05 %       • Current, relative to output range, (+/-)     0.05 %       • Overand, relative to output range, (+/-)     0.05 %       • Current, relative to output range, (+/-)     0.05 %       • Current, relative to output range, (+/-)     0.05 %       • Overandowatiston time (TGO), min.	Analog value generation for the outputs	
• Conversion time (per channel)         125 µs; independent of number of activated channels           Stetting time         0.2 ms; see additional description in the manual           • for capacitive load         1.8 ms; see additional description in the manual           • for inductive load         2 ms; see additional description in the manual           • for inductive load         0.02 %           • for inductive load         0.005 %           • foreside load         0.005 %           • foresiding accuracy         at temperatures below 0 °C, the figures for operating error and temperature area           • forefadenal error limit in overall temperature range         + Voltage, relative to output range, (+/-)           • Voltage, relative to output range, (+/-)         0.06 %           • Current, relative to output range, (+/-)         0.06 %           • Sold poration time (TCO), min.	Integration and conversion time/resolution per channel	
Setting time       0.2 ms; see additional description in the manual         • for resistive load       1.8 ms; see additional description in the manual         • for inductive load       2 ms; see additional description in the manual <b>Errors/accuracies</b> 0.02 %         Output ripple (relative to output range, bandwidth 0 to 50 kHz),       0.02 %         (+/)       0.015 %         Emperature error (relative to output range), (+/)       0.002 %K         Crossialk between the outputs, max.       -100 dB         Repeat accuracy in steady state at 25 °C (relative to output range), (+/)       0.005 %         note regarding accuracy       at temperatures below 0 °C, the figures for operating error and temperature range error are doubled         Optage, relative to output range, (+/-)       ±10 V; 0 V to 10 V; ±0.12%; 1 V to 5 V; ±0.1%         • Current, relative to output range, (+/-)       ±20 mA; 0 mA to 20 mA; ±0.12%;         • Votage, relative to output range, (+/-)       ±10 V; 0 V to 10 V; ±0.12%; 1 V to 5 V; ±0.1%         • Current, relative to output range, (+/-)       ±20 mA; 0 mA to 20 mA; ±0.12%         • Votage, relative to output range, (+/-)       0.06 %         • Current, relative to output range, (+/-)       0.1%         Basic error lime (OPP), min.       250 µs         Basic error lime (OPD), min.       250 µs         Disporostic alarm	<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	16 bit
• for resistive load0.2 ms; see additional description in the manual• for inductive load2 ms; see additional description in the manual• for inductive load2 ms; see additional description in the manualEncretation0.02 %Churt ripple (relative to output range, (+/-)0.015 %• for inductive to output range), (+/-)0.002 %/K• Corstaik between the outputs, max000 dB• Corstaik between the outputs, max000 dB• Corstaik between the outputs may000 S%• Corstaik between the output range, (+/-)0.000 %/K• Robrady state at 25 °C (relative to output mage). (+/-)-000 S%• Ootage, relative to output range, (+/-)-000 S%• Ootage, relative to output range, (+/-)-000 S%• Ootage, relative to output range, (+/-)-10 V to 10 V: ±0.1%, to 5 V: ±0.1%• Overtand, relative to output range, (+/-)-200 mA: 0 mA to 20 mA: ±0.2%, it mA to 20 mA: ±0.12%• Outge, relative to output range, (+/-)-000 S%• Outge, relative to output range, (+/-)-000	Conversion time (per channel)	125 µs; independent of number of activated channels
• for capacitive load       1.8 m; see additional description in the manual         • for inductive load       2 m; see additional description in the manual         Forts/accuracies       0.02 %         • Cuput ripple (relative to output range, bandwidth 0 to 50 kHz), (r/)       0.015 %         • Inemiry error (relative to output range), (r/-)       0.002 %/K         • Constail between the outputs, max       -100 dB         Repeat accuracy in steady state at 25 °C (relative to output range, (r/-)       0.003 %         • 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       +10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%         • Voltage, relative to output range, (r/-)       ±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%         • Voltage, relative to output range, (r/-)       0.06 %         • Current, relative to output range, (r/-)       0.06 %         • Current, relative to output range, (r/-)       0.06 %         • Current, relative to output range, (r/-)       0.06 %         • Current, relative to output range, (r/-)       0.06 %         • Sochorous mode       Image:	Settling time	
<ul> <li>for inductive load</li> <li>2 m; see additional description in the manual</li> <li>Fronsecuracies</li> <li>Uppit rippie (relative to output range, bandwidth 0 to 50 kH2), (r/)</li> <li>2 0.02 %</li> <li>Constalk between the output range), (r/-)</li> <li>0.002 %/K</li> <li>Crosstalk between the output range), (r/-)</li> <li>0.002 %/K</li> <li>Crosstalk between the output range), (r/-)</li> <li>0.002 %/K</li> <li>Crosstalk between the output range), (r/-)</li> <li>0.000 %</li> <li>Crosstalk between the output range, (r/-)</li> <li>0.000 %</li> <li>Current, relative to output range, (r/-)</li> <li>20 m/s 0 mA to 20 mA: ±0.12%, 1 V to 5 V: ±0.1%</li> <li>Current, relative to output range, (r/-)</li> <li>20 m/s 0 mA to 20 mA: ±0.12%, 1 V to 5 V: ±0.1%</li> <li>Current, relative to output range, (r/-)</li> <li>0.06 %</li> <li>Current, relative to output range, (r/-)</li> <li>20 µs</li> <li>Current, relative to output range, (r/-)</li> <li>0.06 %</li> <li>Current, relative to output range, (r/-)</li> <li>0.06 %</li> <li>Current, relative to output range, (r/-)</li> <li>0.06 %</li> <li>Current, relative to output range, (r/-)</li> <li>Solot routi time (TCO), min.</li> <li>100 µs</li> <li>Substitut values connectable</li> <li>Yes (relative relation time (TCO), min.</li> <li>Solot caram</li> <li>Solot caram</li> <li>Yes (relative relative relative relat</li></ul>	for resistive load	0.2 ms; see additional description in the manual
Errors/accuracias         Concernent of the second of	<ul> <li>for capacitive load</li> </ul>	1.8 ms; see additional description in the manual
Output ripple (relative to output range, bandwidth 0 to 50 kHz),       0.02 %         (+/-)       0.015 %         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), (+/-)       0.005 %         note regarding accuracy       at temperatures below 0 °C, the figures for operating error and temperature aero are doubled         Operational error limit in overall temperature range       • Voltage, relative to output range, (+/-)         • Voltage, relative to output range, (+/-)       ±10 V, 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%         • Courrent, relative to output range, (+/-)       ±20 mA; 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%         Basic error limit (operational limit at 25 °C)       • Voltage, relative to output range, (+/-)         • Voltage, relative to output range, (+/-)       0.1 %         Socchronous mode       Execution and activation time (TCO), min.         Bus corte (TDP), min.       250 µs         Interrupts/diagnostic/status information       Yes         Substitute values connectable       Yes         Aiarms       Ves         Diagnostics latar       Yes         Monitoring the supply voltage       Yes; Only for output type "outpat""         Overflowiunderflow       Yes	for inductive load	2 ms; see additional description in the manual
(+2)       Intervention of the output range, (+2)       0.015 %         Linearity error (relative to output range), (+2)       0.002 %/K         Crosstalk between the outputs, max.       -100 dB         Repeat accuracy in steady state at 25 °C (relative to output range), (+2)       0.005 %         nole regarding accuracy       at temperatures below 0 °C, the figures for operating error and temperature range         • Voltage, relative to output range, (+2)       ±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%         • Current, relative to output range, (+2)       ±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%         • Current, relative to output range, (+2)       ±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%         Basic error limit (operational limit at 25 °C)       • Voltage, relative to output range, (+2)         • Voltage, relative to output range, (+2)       0.06 %         • Current, relative to output range, (+2)       0.1 %         Sochronus mode       Execution and activation time (TCO), min.         Bus cycle time (TDP), min.       250 µs         Interrupts/diagnostics/status information       Yes         Diagnostic function       Yes         Diagnostic stand       Yes         Operational the supply voltage       Yes         Operational tell       Yes         Diagnostic stateration       Yes         Opera	Errors/accuracies	
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), (+/-)       0.005 %         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, (+/-)       ±10 V; 0 V to 10 V; ±0.12%; 1 V to 5 V; ±0.1%         • Current, relative to output range, (+/-)       ±20 mA; 0 mA to 20 mA; ±0.2%; 4 mA to 20 mA; ±0.12%         Basic error limit (operational limit at 25 °C)       -         • Voltage, relative to output range, (+/-)       0.06 %         • Current, relative to output range, (+/-)       0.1 %         Scochronous mode       -         Execution and activation time (TCO), min.       100 µs         Bus cycle time (TDP), min.       250 µs         Interrupts/diagnostics/status information       Yes         Diagnostic sinction       Yes         • Diagnostic sinction       Yes         • Diagnostic sinction       Yes         • Wire-break       Yes; Only for output type "current"         • Short-circuit       Yes         • Diagnostic indication LED       Yes; green LED         • RUN		0.02 %
Crosstalk between the outputs, max.       -100 dB         Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)       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, (+/-)       ±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%         • Current, relative to output range, (+/-)       ±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%         Basic error limit (operational limit at 25 °C)       • Voltage, relative to output range, (+/-)         • Voltage, relative to output range, (+/-)       0.06 %         • Current, relative to output range, (+/-)       0.1 %         Isochronous mode	Linearity error (relative to output range), (+/-)	0.015 %
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)     0.005 %       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     ±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%       • Voltage, relative to output range, (+/-)     ±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%       Basic error limit (operational limit at 25 °C)     • Voltage, relative to output range, (+/-)       • Voltage, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Current, relative to output range, (+/-)     0.06 %       • Diagnostics/status Information     100 µs       Bus cycle time (TDP), min.     250 µs       • Diagnostic alarm     Yes       • Diagnostic alarm     Yes       • Diagnostic alarm     Yes; Only for output type "current"       • Short-circuit     Yes; Only for output type "current"       • Ninciping the supply voltage     Yes	Temperature error (relative to output range), (+/-)	0.002 %/K
range), (+/-)         at temperatures below 0 °C, the figures for operating error and temperature error are doubled           Operational error limit in overall temperature name         ±10 V; 0 V to 10 V; ±0.12%; 1 V to 5 V; ±0.1%           • Voltage, relative to output range, (+/-)         ±10 V; 0 V to 10 V; ±0.12%; 1 V to 5 V; ±0.1%           • Exercition intit (operational limit at 25 °C)         • Voltage, relative to output range, (+/-)         0.06 %           • Current, relative to output range, (+/-)         0.1 %         • Voltage, relative to output range, (+/-)         0.16 %           • Sochronous mode         •         •         •         •         •         •         •         •           Bus cycle time (TDP), min.         100 µs         ±         ±         •         >         •         •         •         •         •         •         •         •         •         •         •         •         •         •         •         •         •	Crosstalk between the outputs, max.	-100 dB
error are doubled           Operational error limit in overall temperature range           • Voltage, relative to output range, (+/-)         ±10 V; 0 V to 10 V; ±0.12%; 1 V to 5 V; ±0.1%           • Current, relative to output range, (+/-)         ±20 mA; 0 mA to 20 mA; ±0.2%; 4 mA to 20 mA; ±0.12%           Basic error limit (operational limit at 25 °C)         • Voltage, relative to output range, (+/-)           • Voltage, relative to output range, (+/-)         0.06 %           • Current, relative to output range, (+/-)         0.1%           scortnous mode         Execution and activation time (TCO), min.           Execution and activation time (TCO), min.         100 µs           Bus cycle time (TDP), min.         250 µs           Interrupts/diagnostics/status information         Yes           • Diagnostic function         Yes           • Diagnostic alarm         Yes           • Diagnostic alarm         Yes           • Monitoring the supply voltage         Yes; Only for output type "current"           • Vire-break         Yes; Only for output type "voltage"           • Overflow/underflow         Yes; green LED           • RUN LED         Yes; green LED           • RUN LED         Yes; green LED           • Nonitoring of the supply voltage (PWR-LED)         Yes; green LED           • Channel status display		0.005 %
• Voltage, relative to output range, (+/-)±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%• Current, relative to output range, (+/-)±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%Basic error limit (operational limit at 25 °C)•• Voltage, relative to output range, (+/-)0.06 %• Current, relative to output range, (+/-)0.01 %Scochronus mode•Execution and activation time (TCO), min.100 µsBus cycle time (TDP), min.250 µs• Diagnostics/status informationYes• Diagnostics functionYes• Diagnostic alarmYes• Diagnostic alarmYes• Nohitoring the supply voltageYes• Wire-breakYes; Only for output type "current"• Short-circuitYes; Only for output type "current"• Short-circuitYes; Only for output type "current"• Nohitoring of the supply voltage (PWR-LED)Yes; green LED• RUN LEDYes; green LED• Konitoring of the supply voltage (PWR-LED)Yes; green LED	note regarding accuracy	
• Current, relative to output range, (+/-)±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%Basic error limit (operational limit at 25 °C)• Voltage, relative to output range, (+/-)0.06 %• Current, relative to output range, (+/-)0.1%scotnous mode0.1 %scotnous mode250 µsInterrupts/diagnostics/status information250 µsDiagnostics functionYes> Diagnostics functionYes> Diagnostic alarmYesDiagnostic alarmYes> Diagnostic alarmYes> Overflow/underflowYes; Only for output type "current"• Nonitoring the supply voltageYes; Only for output type "current"• Overflow/underflowYes; Only for output type "voltage"• Currents indication LEDYes; green LED• RUN LEDYes; green LED• RUN LEDYes; green LED• Nonitoring the supply voltage (PVWR-LED)Yes; green LED• Konitoring of the supply voltage (PVWR-LED)Yes; green LED• Channel status displayYes; green LED• Konitoring of the supply voltage (PVWR-LED)Yes; green LED• Konitoring of the supply vol	Operational error limit in overall temperature range	
Basic error limit (operational limit at 25 °C)         • Voltage, relative to output range, (+/-)       0.06 %         • Current, relative to output range, (+/-)       0.1 %         socchronous mode       100 µs         Execution and activation time (TCO), min.       100 µs         Bus cycle time (TDP), min.       250 µs         Interrupts/diagnostics/status information       Yes         Diagnostics function       Yes         Substitute values connectable       Yes         • Diagnostic alarm       Yes         • Diagnostic alarm       Yes         • Monitoring the supply voltage       Yes; Only for output type "current"         • Nonitoring the supply voltage       Yes; Only for output type "current"         • Overflow/underflow       Yes; Only for output type "voltage"         • Overflow/underflow       Yes; green LED         • ERROR LED       Yes; green LED         • ERROR LED       Yes; green LED         • Monitoring of the supply voltage (PWR-LED)       Yes; green LED         • Monitoring of the supply voltage (PWR-LED)       Yes; green LED         • Channel status display       Yes; green LED         • for channel diagnostics       Yes; red LED	<ul> <li>Voltage, relative to output range, (+/-)</li> </ul>	±10 V; 0 V to 10 V: ±0.12%; 1 V to 5 V: ±0.1%
• Voltage, relative to output range, (+/-)0.06 %• Current, relative to output range, (+/-)0.1 %Isochronous mode100 μsExecution and activation time (TCO), min.100 μsBus cycle time (TDP), min.250 μsInterrupts/dlagnostics/status informationYesDiagnostics/status informationYesAlarmsYes• Diagnostic alarmYes• Monitoring the supply voltageYes• Monitoring the supply voltageYes; Only for output type "current"• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYes; Only for output type "voltage"Diagnostis indication LEDYes; green LED• RUN LEDYes; green LED• RENC LEDYes; green LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• Channel diagnosticsYes; green LED• Channel diagnosticsYes; green LED• For channel diagnosticsYes; reen LED <tr <tr="">•</tr>	<ul> <li>Current, relative to output range, (+/-)</li> </ul>	±20 mA; 0 mA to 20 mA: ±0.2%; 4 mA to 20 mA: ±0.12%
• Current, relative to output range, (+/-)0.1 %Sochronous modeExecution and activation time (TCO), min.100 μsBus cycle time (TDP), min.250 μsDiagnostics/status informationYesDiagnostics/status informationYesDiagnostics functionYesDiagnostic alarmYesO Diagnostic alarmYesDiagnostic alarmYesDiagnostic alarmYesDiagnostic short-circuitYes; Only for output type "current"• Monitoring the supply voltageYes; Only for output type "current"• Overflow/underflowYes; Only for output type "voltage"• Diagnostics indication LEDYes; green LED• RUN LEDYes; green LED• RUN LEDYes; green LED• Channel status displayYes; green LED• Channel diagnosticsYes; green LED• Channel diagnosticsYes; green LED• Channel diagnosticsYes; green LED	Basic error limit (operational limit at 25 °C)	
Sochronous 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       Yes         • Diagnostic alarm       Yes         Diagnostes       Yes         • 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       Yes; green LED         • RUN LED       Yes; green LED         • RUN LED       Yes; green LED         • Channel status display       Yes; green LED         • Channel status display       Yes; green LED         • for channel diagnostics       Yes; red LED	<ul> <li>Voltage, relative to output range, (+/-)</li> </ul>	0.06 %
Execution and activation time (TCO), min.100 μsBus cycle time (TDP), min.250 μsInterrupts/diagnostics/status informationDiagnostics functionYesSubstitute values connectableYesAlarmsYes• Diagnostic alarmYes• Diagnostic alarmYes• Monitoring the supply voltageYes (only on type "current"• Short-circuitYes; Only for output type "current"• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; green LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED	Current, relative to output range, (+/-)	0.1 %
Bus cycle time (TDP), min.250 µsInterrupts/diagnostics/status informationYesDiagnostics functionYesSubstitute values connectableYesAlarmsYes• Diagnostic alarmYesDiagnosesYes• Monitoring the supply voltageYes; Only for output type "current"• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; red LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; red LED• for channel diagnosticsYes; red LED	Isochronous mode	
Interrupts/diagnostics/status information         Diagnostics function       Yes         Substitute values connectable       Yes         Alarms       Yes         • Diagnostic alarm       Yes         Diagnoses       Yes         • Monitoring the supply voltage       Yes; Only for output type "current"         • Short-circuit       Yes; Only for output type "voltage"         • Overflow/underflow       Yes;         Diagnostics indication LED       Yes; green LED         • RUN LED       Yes; green LED         • Monitoring of the supply voltage (PWR-LED)       Yes; green LED         • Monitoring of the supply voltage (PWR-LED)       Yes; green LED         • Monitoring of the supply voltage (PWR-LED)       Yes; green LED         • Channel status display       Yes; green LED         • for channel diagnostics       Yes; red LED	Execution and activation time (TCO), min.	
Diagnostics functionYesSubstitute values connectableYesAlarmsYes• Diagnostic alarmYesDiagnosesYes• Monitoring the supply voltageYes; Only for output type "current"• Short-circuitYes; Only for output type "current"• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; green LED• ERROR LEDYes; green LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED		250 µs
SoYesAlarmsYes• Diagnostic alarmYesDiagnosesYes• Monitoring the supply voltageYes• Wire-breakYes; Only for output type "current"• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; green LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED• for channel diagnosticsYes; red LED	Interrupts/diagnostics/status information	
Alarms• Diagnostic alarmYesDiagnosesYes• Monitoring the supply voltageYes; Only for output type "current"• Wire-breakYes; Only for output type "voltage"• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; green LED• RROR LEDYes; green LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; green LED• for channel diagnosticsYes; green LED	Diagnostics function	Yes
• Diagnostic alarmYesDiagnoses• Monitoring the supply voltageYes• Wire-breakYes; Only for output type "current"• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; green LED• ERROR LEDYes; green LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; green LED• for channel diagnosticsYes; green LED• for channel diagnosticsYes; green LED	Substitute values connectable	Yes
DiagnosesDiagnosesMonitoring the supply voltageYesWire-breakYes; Only for output type "current"Short-circuitYes; Only for output type "voltage"Overflow/underflowYesDiagnostics indication LEDYes; green LEDRUN LEDYes; green LEDERROR LEDYes; red LEDMonitoring of the supply voltage (PWR-LED)Yes; green LEDOther status displayYes; green LEDFor channel diagnosticsYes; red LEDYes; red LEDYes; green LEDYes; red LEDYes		
Monitoring the supply voltageYesWire-breakYes; Only for output type "current"Short-circuitYes; Only for output type "voltage"Overflow/underflowYesDiagnostics indication LEDYes; green LEDRUN LEDYes; red LEDERROR LEDYes; red LEDMonitoring of the supply voltage (PWR-LED)Yes; green LEDOther status displayYes; green LEDYes; red LED <td></td> <td>Yes</td>		Yes
Wire-breakYes; Only for output type "current"• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYes• Overflow/underflowYes• RUN LEDYes; green LED• ERROR LEDYes; red LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED• for channel diagnosticsYes; red LED	Diagnoses	
• Short-circuitYes; Only for output type "voltage"• Overflow/underflowYes; Only for output type "voltage"Diagnostics indication LEDYes;• RUN LEDYes; green LED• ERROR LEDYes; red LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED		
• Overflow/underflowYesDiagnostics indication LEDYes; green LED• RUN LEDYes; green LED• ERROR LEDYes; red LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED		
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		
• RUN LEDYes; green LED• ERROR LEDYes; red LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED		Yes
• ERROR LEDYes; red LED• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED	Diagnostics indication LED	
• Monitoring of the supply voltage (PWR-LED)Yes; green LED• Channel status displayYes; green LED• for channel diagnosticsYes; red LED	• RUN LED	Yes; green LED
• Channel status display     Yes; green LED       • for channel diagnostics     Yes; red LED		Yes; red LED
for channel diagnostics     Yes; red LED	<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green LED
	Channel status display	Yes; green LED
for module diagnostics     Yes; red LED	<ul> <li>for channel diagnostics</li> </ul>	Yes; red LED
	• for module diagnostics	Yes; red LED

Potential separation	
Potential separation channels	
between the channels	Yes
<ul> <li>between the channels, in groups of</li> </ul>	1
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>Between the channels and load voltage L+</li> </ul>	Yes
Permissible potential difference	
between different circuits	60 V DC/30 V AC; insulation rated for 120 V AC basic insulation: between the channels and the supply voltage L+; between the channels and the backplane bus; between the channels
Isolation	
Isolation tested with	2 000 V DC between the channels and the supply voltage L+; 2 000 V DC between the channels and the backplane bus; 2 000 V DC between the channels; 707 V DC (type test) between the supply voltage L+ and the backplane bus
Standards, approvals, certificates	
Suitable for safety-related tripping of standard modules	Yes; From FS03
Highest safety class achievable for safety-related tripping of st	andard modules
<ul> <li>Performance level according to ISO 13849-1</li> </ul>	PL d
<ul> <li>Category according to ISO 13849-1</li> </ul>	Cat. 3
• SIL acc. to IEC 62061	SIL 2
<ul> <li>remark on safety-oriented shutdown</li> </ul>	https://support.industry.siemens.com/cs/de/de/view/39198632
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-25 °C; From FS02
<ul> <li>horizontal installation, max.</li> </ul>	60 °C
<ul> <li>vertical installation, min.</li> </ul>	-25 °C; From FS02
<ul> <li>vertical installation, max.</li> </ul>	40 °C
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	300 g

last modified:

4/27/2022 🖸