## **SIEMENS**

## **Data sheet**

## 6ES7135-6HB00-0CA1



SIMATIC ET 200SP, Analog output module, AQ 2x U/I High Feature suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit,  $\pm$ 0.1%

	Q 2xU/I HF
	Q ZAO/ITII
HW functional status fro	om FS04
usable BaseUnits BU	U type A0, A1
Color code for module-specific color identification plate CC	C00
Product function	
• I&M data	es; I&M0 to I&M3
• Isochronous mode Ye	es
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	13 / V13
<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	5.5 SP3 / -
<ul> <li>PCS 7 configurable/integrated from version</li> </ul> V8	8.1 SP1
<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	SD Revision 5
PROFINET from GSD version/GSD revision     GS	SDML V2.3
Operating mode	
Oversampling     No	0
• MSO	0
CiR - Configuration in RUN	
Reparameterization possible in RUN Ye	es
Calibration possible in RUN Ye	es
Supply voltage	
Rated value (DC) 24	4 V
permissible range, lower limit (DC) 19	9.2 V
permissible range, upper limit (DC) 28	3.8 V
Reverse polarity protection Ye	es
Input current	
Current consumption (rated value) 45	5 mA; without load
Current consumption, max. 90	mA; 2 channels current output 20 mA
Power loss	
Power loss, typ. 0.9	9 W
Address area	
Address space per module	
Address space per module, max.     4 t	byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	
Mechanical coding element     Ye	es
-	уре А
Analog outputs	

Vest	Al I C I I I	
Voltage output short circuit current, max         45 mA           Output ranges, voltage         750 μs           0 to 10 V         Yes; 15 bit           - 1 V to 5 V         Yes; 15 bit not, sign           - 5 V to +5 V         Yes; 15 bit not, sign           - 10 V to +10 V         Yes; 15 bit not, sign           - 10 V to +10 V         Yes; 15 bit not, sign           - 2 0 m A         Yes; 15 bit not, sign           - 2 0 m A to +20 mA         Yes; 15 bit not, sign           - 4 m At 0 20 mA         Yes; 15 bit not, sign           - 6 for voltage output bou-wire connection         Yes           - 6 for voltage output bou-wire connection         Yes           - 6 for voltage output, sour-wire connection         Yes           - 8 for current outputs, incutive load, max         1 mH           - 8 for curren	Number of analog outputs	2
Cycle time (all thannels), min.   750 µs		
Variance		
		750 μs
		V 4519
• - 10 V to +10 V         Yes; 16 bit incl. sign           0 10 20 mA         Yes; 16 bit incl. sign           • 20 mA to +20 mA         Yes; 16 bit incl. sign           • 4 mA to 20 mA         Yes; 16 bit incl. sign           • 6 ro voltage output two-wire connection         Yes           • 6 ro voltage output two-wire connection         Yes           • 6 ro voltage output two-wire connection         Yes           • 6 ro urbant output two-wire connection         Yes           • with voltage outputs, min.         2 kΩ           • with outputs, inductive load, max.         1 μF           • with our current outputs, inductive load, max.         1 μF           • Voltages at the outputs         30 V           Cable length         • Voltages at the outputs           • In the state output sequence at the output sequence at		
Output ranges, current		
		Yes; 16 bit incl. sign
	· -	V 4519
• M A to 20 mA         Yes; 14 bit           Connection of actuators         • for voltage output two-wire connection         Yes           • for voltage output four-wire connection         Yes           • for current output two-wire connection         Yes           • with voltage outputs, min.         2 kΩ           • with voltage outputs, max.         1 μF           • with current outputs, inductive load, max.         1 μF           • with current outputs, inductive load, max.         1 mH           • Woltages at the outputs         30 V           Destruction limits against externally applied voltages and currents         • Voltages at the outputs           • Voltages at the outputs         1 000 m; 200 m for voltage output           Analog value generation for the outputs         1 000 m; 200 m for voltage output           Analog value generation for the outputs         1 000 m; 200 m for voltage output           Analog value generation for the output series of the output region in currents (bit including sign), max.         16 bit           Settling firms         • for resistive load         0.05 ms           • for resistive load         0.05 ms         0.05 ms           • for rinductive load         0.05 ms         0.05 ms           * for rinductive load         0.05 ms         0.05 ms           * for rinductive load <td></td> <td></td>		
Connection of actuators   Yes		
• for voltage output four-wire connection • for vortage output four-wire connection • for vortage output four-wire connection • for vortage outputs connection • for vortage outputs, min. • with voltage outputs, min. • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, min. • vith current in output range, (+/-) • voltage, relative to output range, (+/-)		Yes; 14 bit
• for voltage output four-wire connection     • for current output two-wire connection     • for current outputs, min.     • with voltage outputs, min.     • with voltage outputs, min.     • with current outputs, max.     • with current outputs, inductive load, max.     • whith current outputs, inductive load, max.     • Voltages at the outputs      • Service in max.		
• for current output two-wire connection   Yes		
Load impedance (in rated range of output)  • with voltage outputs, min. 2 kΩ  • with current outputs, inductive load, max. 1 μF  • with current outputs, inductive load, max. 500 Ω  • with current outputs, inductive load, max. 1 mH  Destruction limits against externally applied voltages and currents  • Voltages at the outputs 30 V  Cable length • shielded, max. 1 000 m; 200 m for voltage output  Analog value generation for the outputs  Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. 16 bit  Setting time  • for resistive load 0.05 ms; Max. 47 nF and 20 m cable length • for inductive load 0.05		
with voltage outputs, min.     with urrent outputs, anax.     with current outputs, inductive load, max.     with current outputs.     woltages at the outputs     woltages at the outputs     woltages at the outputs     whick in the current outputs are selected in the current outputs     woltages at the outputs     woltage at the outputs     whick in the current outputs are selected in the current outputs     woltage outputs     woltage output     woltage     woltage out		Yes
<ul> <li>with voltage outputs, capacitive load, max.</li> <li>with current outputs, max.</li> <li>with current outputs, max.</li> <li>with current outputs, inductive load, max.</li> <li>1 mH</li> <li>Destruction limits against externally applied voltages and currents</li> <li>Voltages at the outputs</li> <li>shielded, max.</li> <li>1 000 m; 200 m for voltage output</li> <li>Analog value generation for the outputs</li> <li>Integration and conversion time/resolution per channel</li> <li>Resolution with overrange (bit including sign), max.</li> <li>16 bit</li> <li>Setting time</li> <li>of respective load</li> <li>of respective load</li> <li>of respective load</li> <li>of respective load</li> <li>of rinductive load</li> <li>0.05 ms</li> <li>for inductive load</li> <li>of respective load</li> <li>of respect</li></ul>		010
<ul> <li>with current outputs, max.</li> <li>with current outputs, inductive load, max.</li> <li>1 mH</li> <li>Destruction limits against externally applied voltages and currents</li> <li>Voltages at the outputs</li> <li>30 V</li> <li>Cable length</li> <li>sheleded, max.</li> <li>1 000 m; 200 m for voltage output</li> <li>Anatog value generation for the outputs</li> <li>Integration and conversion time/resolution per channel</li> <li>Resolution with overrange (bit including sign), max.</li> <li>16 bit</li> <li>Settling time</li> <li>for resistive load</li> <li>for resistive load</li> <li>for capacitive load</li> <li>for capacitive load</li> <li>for inductive to output range, bandwidth 0 to 50 kHz), (+/-)</li> <li>Unbartly error (relative to output range), (+/-)</li> <li>for osstalk between the outputs, max.</li> <li>for dB</li> <li>Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)</li> <li>Operational error limit in overall temperature range</li> <li>Voltage, relative to output range, (+/-)</li> <li>Q.2 %</li> <li>Current, relative to output range, (+/-)</li> <li>Current, relative to o</li></ul>	•	
• with current outputs, inductive load, max. 1 mH  Destruction limits against externally applied voltages and currents  • Voltages at the outputs  • Shielded, max. 1 000 m; 200 m for voltage output  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 0.05 ms; Max. 47 nF and 20 m cable length • for capacitive load 0.05 ms; Max. 47 nF and 20 m cable length • for inductive load 0.05 ms  Errors/accuracies  Output ripple (relative to output range, bandwidth 0 to 50 k/tz), (+/-) 0.03 %  Linearity error (relative to output range), (+/-) 0.03 %  Repeat accuracy in steady state at 25 °C (relative to output range) • Voltage, relative to output range, (+/-) 0.2 %  Current, relative to output range, (+/-) 0.2 %  • Current, relative to output range, (+/-) 0.2 %  Basic error limit (operational limit at 25 °C) • Voltage, relative to output range, (+/-) 0.1 %  • Current, relative to output range, (+/-) 0.1 %  Soctronous mode  Execution and activation time (TCO), min. 760 us  Jitter, max. 5 µs  Interrupts/diagnostics/status information  Plagnostics function 4 yes  Alarms • Diagnostics function 7 yes  • Monitoring the supply voltage 7 yes		
Destruction limits against externally applied voltages and currents  • Voltages at the outputs  • shielded, max.  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Settling time  • for resistive load  • for for seistive load  • for inductive load  •	•	
Voltages at the outputs     Shelded, max.     Analog value generation for the outputs Integration and conversion time/resolution per channel     Resolution with overrange (bit including sign), max.  Settling time     for resistive load     for capacitive load     for output range, bandwidth 0 to 50 kHz), (t/-) Linearity error (relative to output range, bandwidth 0 to 50 kHz), (t/-) Linearity error (relative to output range), (t/-)  Output ripple (relative to output range), (t/-)  Crosstalk between the outputs, max.  Sod dB Repeat accuracy in steady state at 25 °C (relative to output range), (t/-)  Operational error limit in overall temperature range  Voltage, relative to output range, (t/-)  Current, relative to output range, (t/-)  Output range), (t/-)  Output, relative to output range, (t/-)  Operational error limit (operational limit at 25 °C)  Execution and activation time (TCO), min.  Sochroous mode  Execution and activation time (TCO), min.  Jitter, max.  Operational  Diagnostics function  Ves  Substitute values connectable  Pes  Alarms  O longnostic alarm  Ves  Diagnosse  Monitoring the supply voltage  Yes		
Cable length  • shielded, max.  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Setting time  • for resistive load • for capacitive load • for capacitive load • for inductive load • for inductive load  • for inductive load  • for relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Voltage, relative to output range, (+/-)  • Voltage, relative to output range, (+/-)  • Soo basic error limit (operational limit at 25 °C)  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Unrent, relative to output range, (+/-)  • Unsequence of the output range, (+/-		
• shielded, max.  Analog value generation for the outputs  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  Settling time  • for resistive load • for resistive load • for for apacitive load • for inductive load • for resistive load • for resactive load • for resistive load • for		30 V
Analog value generation for the outputs  Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.  16 bit  Settling time  16 or resistive load 10.05 ms  10.05 ms		
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max. 16 bit  Settling time  • for resistive load • for capacitive load • for capacitive load • for inductive load • for inductive load  O.05 ms  Curport fipple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-) • Toling, relative to output range, (+/-) • Current, relative to output range, (+/-) • Current, relative to output range, (+/-) • Toling, relative to output range, (+/-) • Current, relative to output range, (+/-) • Toling, relative to output range, (+/-) • Toling, relative to output range, (+/-) • Toling, relative to output range,	·	1 000 m; 200 m for voltage output
• Resolution with overrange (bit including sign), max. 16 bit  Settling time  • for resistive load • for capacitive load • for capacitive load • for inductive load  Cuty tripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max. • Costalk between the output range, (+/-) • Current, relative to output range, (+/-) • Current, relative	Analog value generation for the outputs	
Settling time  • for resistive load • for capacitive load • for inductive load • for inductiv	Integration and conversion time/resolution per channel	
• for resistive load     • for capacitive load     • for inductive load  Cross facturacies  Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalik between the outputs, max.  -50 dB  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  ● Voltage, relative to output range, (+/-)  ● Current, relative to output range, (+/-)  ● Voltage, relative to output range, (+/-)  ● Sochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  750 µs  Substitute values connectable  Alarms  ● Diagnostics function  Pes  Diagnostic alarm  Pes  Diagnostic alarm  Pointerrupts/diagnostics/status information  Piagnosses  ● Monitoring the supply voltage  Yes	<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	16 bit
• for capacitive load • for inductive load 0.05 ms; Max. 47 nF and 20 m cable length 0.05 ms  Errors/accuracies  Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-)	Settling time	
• for inductive load  Crors/accuracies  Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Substitute values connectable  Execution and activation time (TCO), min.  Diagnostics function  Diagnostics function  • Diagnostic alarm  • Diagnosts  • Monitoring the supply voltage  • Monitoring the supply voltage	for resistive load	
Cutput ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-)  Current, relative to output range, (+/-)  • Subschronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  Jitter, max.  Diagnostics function  Posignostics function  Posignostics function  Posignostics  • Monitoring the supply voltage  • Monitoring the supply voltage  Yes	for capacitive load	
Output ripple (relative to output range, bandwidth 0 to 50 kHz), (+/-)  Linearity error (relative to output range), (+/-)  Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-)  Oz w  • Current, relative to output range, (+/-)  • Sochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  Jitter, max.  5 µs  Interrupts/diagnostics/status information  Diagnostics function  Piagnostics function  Poiagnostic alarm  • Diagnostic alarm  Piagnoses  • Monitoring the supply voltage  Yes	for inductive load	0.05 ms
Linearity error (relative to output range), (+/-)   0.03 %     Temperature error (relative to output range), (+/-)   0.003 %/K     Crosstalk between the outputs, max.   -50 dB     Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)   0.03 %     Operational error limit in overall temperature range     • Voltage, relative to output range, (+/-)   0.2 %     • Current, relative to output range, (+/-)   0.2 %     Basic error limit (operational limit at 25 °C)     • Voltage, relative to output range, (+/-)   0.1 %     • Current, relative to output range, (+/-)   0.1 %     Sochronous mode	Errors/accuracies	
Temperature error (relative to output range), (+/-)  Crosstalk between the outputs, max.  -50 dB  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Voltage, relative to output range, (+/-)  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Tolay to output range, (+/-)  • Current, relative to output range, (+/-)  • Tolay to output range, (+/-)  • Current, relative to output range, (+/-)  • Tolay to output range, (+/-)  • Tolay to output range, (+/-)  Diagnostics function  Test output range, (+/-)  Yes  Diagnostic alarm  Pes  • Diagnostic alarm  Yes  • Monitoring the supply voltage  Yes		0.02 %
Crosstalk between the outputs, max.  Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-)  • Current, relative to output range, (+/-)  • Suchronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  500 µs  Bus cycle time (TDP), min.  750 µs  Jitter, max.  5 µs  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms  • Diagnostic alarm  Yes  Diagnoses  • Monitoring the supply voltage  Yes	Linearity error (relative to output range), (+/-)	0.03 %
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-) • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-) • Sochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  5 µs  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms • Diagnostic alarm  Yes  Diagnoses • Monitoring the supply voltage  Yes	Temperature error (relative to output range), (+/-)	0.003 %/K
output range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-) 0.2 %  Basic error limit (operational limit at 25 °C) • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-) • Current, relative to output range, (+/-) 0.1 %  Isochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  750 µs  Jitter, max.  5 µs  Interrupts/diagnostics/status information  Diagnostics function  Yes  Substitute values connectable  Alarms • Diagnostic alarm  Yes  Diagnoses • Monitoring the supply voltage  Yes	Crosstalk between the outputs, max.	-50 dB
Voltage, relative to output range, (+/-)     Current, relative to output range, (+/-)     Basic error limit (operational limit at 25 °C)     Voltage, relative to output range, (+/-)     Current, relative to output range, (+/-)     Current, relative to output range, (+/-)     O.1 %     Current, relative to output range, (+/-)     Sochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  5 µs  Interrupts/diagnostics/status information  Diagnostics function  Piagnostics function  Yes  Substitute values connectable  Alarms     Diagnostic alarm  Piagnoses     Monitoring the supply voltage  Yes		0.03 %
Current, relative to output range, (+/-)     Basic error limit (operational limit at 25 °C)	·	
Basic error limit (operational limit at 25 °C)  • Voltage, relative to output range, (+/-) • Current, relative to output range, (+/-)  sochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  5 μs  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms • Diagnostic alarm  Yes  Diagnoses • Monitoring the supply voltage  Yes		
Voltage, relative to output range, (+/-)		0.2 %
Current, relative to output range, (+/-)      Isochronous mode  Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  750 μs  Jitter, max.  5 μs  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms  Diagnostic alarm  Piagnostic alarm  Yes  Diagnoses  Monitoring the supply voltage  Yes	, ,	
Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  Jitter, max.  Jitter, max.  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms  Diagnostic alarm  Piagnoses  Monitoring the supply voltage  Yes		
Execution and activation time (TCO), min.  Bus cycle time (TDP), min.  750 μs  Jitter, max.  5 μs  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms  • Diagnostic alarm  Pes  Diagnoses  • Monitoring the supply voltage  Yes		0.1 %
Bus cycle time (TDP), min.  Jitter, max.  5 μs  Interrupts/diagnostics/status information  Diagnostics function  Substitute values connectable  Alarms  • Diagnostic alarm  Piagnoses  • Monitoring the supply voltage  750 μs  750 μs  750 μs  750 μs  750 μs  750 μs  760  Yes  Yes	Isochronous mode	
Jitter, max. 5 μs  Interrupts/diagnostics/status information  Diagnostics function Yes  Substitute values connectable Yes  Alarms  • Diagnostic alarm Yes  Diagnoses  • Monitoring the supply voltage Yes	Execution and activation time (TCO), min.	500 μs
Diagnostics function  Substitute values connectable  Alarms  Diagnostic alarm  Diagnostic alarm  Monitoring the supply voltage  Yes  Yes  Yes	Bus cycle time (TDP), min.	750 µs
Diagnostics function  Substitute values connectable  Alarms  Diagnostic alarm  Yes  Yes  Alarms  Piagnostic alarm  Yes  Monitoring the supply voltage  Yes	Jitter, max.	5 µs
Substitute values connectable  Alarms  Diagnostic alarm  Yes  Diagnoses  Monitoring the supply voltage  Yes	Interrupts/diagnostics/status information	
Alarms  • Diagnostic alarm  Yes  Diagnoses  • Monitoring the supply voltage  Yes	Diagnostics function	Yes
◆ Diagnostic alarm     Yes  Diagnoses      ◆ Monitoring the supply voltage  Yes	Substitute values connectable	Yes
Diagnoses  ● Monitoring the supply voltage  Yes	Alarms	
Monitoring the supply voltage     Yes	Diagnostic alarm	Yes
	Diagnoses	
Was also be a selected as a se	<ul> <li>Monitoring the supply voltage</li> </ul>	Yes
● vviie-break	Wire-break	Yes; channel-by-channel, only for output type "current"
• Short-circuit Yes; channel-by-channel, only for output type "voltage"	Short-circuit	Yes; channel-by-channel, only for output type "voltage"

Group error	Yes
<ul> <li>Overflow/underflow</li> </ul>	Yes
Diagnostics indication LED	
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
<ul> <li>Channel status display</li> </ul>	Yes; green LED
<ul> <li>for channel diagnostics</li> </ul>	Yes; red LED
<ul> <li>for module diagnostics</li> </ul>	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>between the channels and the power supply of the electronics</li> </ul>	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-30 °C; < 0 °C as of FS04
<ul> <li>horizontal installation, max.</li> </ul>	60 °C
<ul> <li>vertical installation, min.</li> </ul>	-30 °C; < 0 °C as of FS04
vertical installation, max.	50 °C
Altitude during operation relating to sea level	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g

1/16/2021

last modified: