SIEMENS

Data sheet

6ES7135-6HB00-0DA1



SIMATIC ET 200SP, Analog output module, AQ 2x U/I High Speed, suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.2%

General information	
Product type designation	AQ 2xU/I HS
HW functional status	From FS06
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
 Isochronous mode 	Yes
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V13 SP1
 STEP 7 configurable/integrated from version 	V5.5 SP3 / -
 PROFIBUS from GSD version/GSD revision 	GSD Revision 5
 PROFINET from GSD version/GSD revision 	GSDML V2.3
Operating mode	
 Oversampling 	Yes; 2 channels per module
• MSO	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No
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)	45 mA; without load
Current consumption, max.	90 mA; 2 channels current output 20 mA
Power loss	
Power loss, typ.	0.9 W
Address area	
Address space per module	
Address space per module, max.	4 byte; + 1 byte for QI information (32 bytes in the oversampling operating mode)
Hardware configuration	
Automatic encoding	
Mechanical coding element	Yes
Type of mechanical coding element	Type A
Analog outputs	
Number of analog outputs	2
Voltage output, short-circuit protection	Yes

Voltage output, about discuit surrent, may	45 mA
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	125 µs
Analog output with oversampling	Yes
Values per cycle, max.	16
Resolution, min.	45 μs; (2 channels), 35 μs (1 channel)
Output ranges, voltage	
• 0 to 10 V	Yes; 15 bit
• 1 V to 5 V	Yes; 13 bit
• -5 V to +5 V	Yes; 15 bit incl. sign
• -10 V to +10 V	Yes; 16 bit incl. sign
Output ranges, current	
• 0 to 20 mA	Yes; 15 bit
• -20 mA to +20 mA	Yes; 16 bit incl. sign
• 4 mA 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
Load impedance (in rated range of output)	
with voltage outputs, min.	2 kΩ
with voltage outputs, capacitive load, max.	1 μF
with current outputs, 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
Settling time	
for resistive load	0.05 ms
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 kHz), (+/-)	0.02 %
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 %
- voltage, relative to output range, (1/-)	
Current, relative to output range, (+/-)	0.1 %
Current, relative to output range, (+/-)	
Current, relative to output range, (+/-) Isochronous mode	0.1 %
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min.	0.1 % 70 μs
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min.	0.1 % 70 μs
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information	0.1 % 70 μs 125 μs
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function	0.1 % 70 μs 125 μs Yes
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable	0.1 % 70 μs 125 μs Yes
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms	0.1 % 70 μs 125 μs Yes Yes
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms Diagnostic alarm	0.1 % 70 μs 125 μs Yes Yes
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms Diagnostic alarm Diagnoses	0.1 % 70 μs 125 μs Yes Yes Yes
Current, relative to output range, (+/-) Isochronous mode Execution and activation time (TCO), min. Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms Diagnostic alarm Diagnoses Monitoring the supply voltage	0.1 % 70 μs 125 μs Yes Yes

Overflow/underflow	Yes
Diagnostics indication LED	
 Monitoring of the supply voltage (PWR-LED) 	Yes; green PWR LED
Channel status display	Yes; green LED
 for channel diagnostics 	Yes; red LED
 for module diagnostics 	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
 between the channels 	No
 between the channels and backplane bus 	Yes
 between the channels and the power supply of the electronics 	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-30 °C; < 0 °C as of FS06
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-30 °C; < 0 °C as of FS06
vertical installation, max.	50 °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
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g
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