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Data sheet 6ES7135-6FB00-0BA1

SIMATIC ET 200SP, Analog output module, AQ 2xU Standard, Pack quantity: 1 unit, suitable for BU type A0, A1, Color code CC00, Module diagnostics, 16 bit

General information	
Product type designation	AQ 2xU ST
HW functional status	from FS21
Firmware version	V1.0.3
● FW update possible	Yes
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	No
● Output range scalable	No
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	No
● MSO	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	No
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, max.	80 mA
Power loss	
Power loss, typ.	1 W
Address area	
Address space per module	
● Address space per module, max.	4 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
● Mechanical coding element	Yes
● Type of mechanical coding element	Type A
Analog outputs	
Number of analog outputs	2
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	1 ms
Analog output with oversampling	No
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
Connection of actuators	
● for voltage output two-wire connection	Yes

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● for voltage output four-wire connection	No
Load impedance (in rated range of output)	
● with voltage outputs, min.	2 kΩ
● with voltage outputs, capacitive load, max.	1 µF
Destruction limits against externally applied voltages and currents	
● Voltages at the outputs	30 V
Cable length	
● shielded, max.	200 m
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	0.1 ms
● for capacitive load	1 ms
Errors/accuracies	
Linearity error (relative to output range), (+/-)	0.03 %
Temperature error (relative to output range), (+/-)	0.005 %/K
Crosstalk between the outputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
Operational error limit in overall temperature range	
● Voltage, relative to output range, (+/-)	0.5 %
● Current, relative to output range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
● Voltage, relative to output range, (+/-)	0.3 %
● Current, relative to output range, (+/-)	0.3 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
● Short-circuit	Yes; Module-wise
● Group error	Yes
● Overflow/underflow	Yes; Module-wise
Diagnostics indication LED	
● Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
● Channel status display	Yes; green LED
● for channel diagnostics	No
● 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 FS03
● horizontal installation, max.	60 °C
● vertical installation, min.	-30 °C; < 0 °C as of FS03
● 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 ET 200SP system manual
Dimensions	
Width	15 mm
Height	73 mm

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Depth	58 mm

Weights

Weight, approx.	31 g

Classifications

	Version	Classification
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

CE EG-Konf. | UKCA | Manufacturer Declaration | UL | KC | Metrological Approval

General Product Approval | For use in hazardous locations

RCM | UL | FM | CCC-Ex | ATEX | IECEx

For use in hazardous locations | Marine / Shipping

Miscellaneous | ABS | BUREAU VERITAS | DNV | LRS | NK / Nippon Kaiji Kyokai

Marine / Shipping

RINA | RMRS | CCS (China Classification Society) | KR

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Data sheet 6ES7135-6GB00-0BA1

SIMATIC ET 200SP, Analog output module, AQ 2xI Standard, Pack quantity: 1 unit, suitable for BU type A0, A1, Color code CC00, Module diagnostics, 16 bit

General information	
Product type designation	AQ 2xI ST
HW functional status	from FS21
Firmware version	V1.0.2
● FW update possible	Yes
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	No
● Output range scalable	No
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	No
● MSO	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	No
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, max.	110 mA
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
● Address space per module, max.	4 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
● Mechanical coding element	Yes
● Type of mechanical coding element	Type A
Analog outputs	
Number of analog outputs	2

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Cycle time (all channels), min.	1 ms
Analog output with oversampling	No
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 current output two-wire connection	Yes
Load impedance (in rated range of output)	
● 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
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	0.1 ms; Typical value
● for inductive load	0.5 ms
Errors/accuracies	
Linearity error (relative to output range), (+/-)	0.03 %
Temperature error (relative to output range), (+/-)	0.005 %/K
Crosstalk between the outputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
Operational error limit in overall temperature range	
● Voltage, relative to output range, (+/-)	0.5 %
● Current, relative to output range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
● Voltage, relative to output range, (+/-)	0.3 %
● Current, relative to output range, (+/-)	0.3 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
● Wire-break	Yes
● Group error	Yes
● Overflow/underflow	Yes; Module-wise
Diagnostics indication LED	
● Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
● Channel status display	Yes; green LED
● for channel diagnostics	No
● 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 FS03
● horizontal installation, max.	60 °C
● vertical installation, min.	-30 °C; < 0 °C as of FS03

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● 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 ET 200SP System Manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g

Classifications

	Version	Classification
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Manufacturer Declaration | UL | KC | Metrological Approval

General Product Approval | **For use in hazardous locations**

RCM | UL | FM | CCC-Ex | ATEX | IECEx

For use in hazardous locations | **Marine / Shipping**

Miscellaneous | ABS | BUREAU VERITAS | DNV | LRS | NK / Nippon Kaiji Kyokai

Marine / Shipping | **Environment**

RINA | RMRS | CCS (China Classification Society) | KR | EPD

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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, +/-0.1%

General information	
Product type designation	AQ 2xU/I HF
HW functional status	from FS21
Firmware version	V1.0.3
● FW update possible	Yes
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 / V13
● STEP 7 configurable/integrated from version	V5.5 SP3 / -
● PCS 7 configurable/integrated from version	V8.1 SP1
● PROFIBUS from GSD version/GSD revision	GSD Revision 5
● PROFINET from GSD version/GSD revision	GSDML V2.3
Operating mode	
● Oversampling	No
● MSO	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	No
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
Hardware configuration	
Automatic encoding	Yes
● Mechanical coding element	Yes
● Type of mechanical coding element	Type A
Analog outputs	

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Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	750 µs
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 %
● Current, relative to output range, (+/-)	0.1 %
Isochronous mode	
Execution and activation time (TCO), min.	500 µs
Bus cycle time (TDP), min.	750 µs
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
● Wire-break	Yes; channel-by-channel, only for output type "current"
● Short-circuit	Yes; channel-by-channel, only for output type "voltage"
● Group error	Yes

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● Overflow/underflow	Yes; channel by channel
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 FS04
● horizontal installation, max.	60 °C
● vertical installation, min.	-30 °C; < 0 °C as of FS04
● 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 ET 200SP System Manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g

Classifications

	Version	Classification
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

EG-Konf. | UKCA | Manufacturer Declaration | UL | KC | Metrological Approval

General Product Approval	For use in hazardous locations

RCM | UL | CCC-Ex | FM | ATEX | IECEx

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For use in hazard-ous locations	Marine / Shipping				
Miscellaneous	ABS	BUREAU VERITAS	DNV	LRS	NK / Nippon Kaiji Ky-okai

Marine / Shipping				Environment
RINA	RMRS	CCS (China Classifica-tion Society)	KR	EPD

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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

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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 %
● Current, relative to output range, (+/-)	0.1 %
Isochronous mode	
Execution and activation time (TCO), min.	70 µs
Bus cycle time (TDP), min.	125 µs
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
● Wire-break	Yes; channel-by-channel, only for output type "current"
● Short-circuit	Yes; channel-by-channel, only for output type "voltage"
● Group error	Yes

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● 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

Classifications

	Version	Classification
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

CE EG-Konf. | UKCA | Manufacturer Declaration | Miscellaneous | UL | KC

General Product Approval		For use in hazardous locations		
Metrological Approval	RCM	UL	FM	CCC-Ex	ATEX

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For use in hazardous locations		Marine / Shipping			
IECEx	Miscellaneous	ABS	BUREAU VERITAS	DNV	LRS

Marine / Shipping					Environment
NK / Nippon Kaiji Kyokai	RINA	RMRS	CCS (China Classification Society)	KR	EPD

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Data sheet 6ES7135-6HD00-0BA1

SIMATIC ET 200SP, Analog output module, AQ 4XU/I Standard, suitable for BU type A0, A1, Color code CC00, Module diagnostics, 16 bit, +/-0.3%

General information	
Product type designation	AQ 4xU/I ST
HW functional status	from FS21
Firmware version	
● FW update possible	Yes
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	No
● Output range scalable	No
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V11 SP2 / V13
● STEP 7 configurable/integrated from version	V5.5 SP3 / -
● PCS 7 configurable/integrated from version	V8.1 SP1
● PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
● PROFINET from GSD version/GSD revision	GSDML V2.3
Operating mode	
● Oversampling	No
● MSO	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	No
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, max.	150 mA
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
● Address space per module, max.	8 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
● Mechanical coding element	Yes
● Type of mechanical coding element	Type A
Analog outputs	

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Number of analog outputs	4
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	5 ms
Analog output with oversampling	No
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	0.1 ms
● for capacitive load	1 ms
● for inductive load	0.5 ms
Errors/accuracies	
Linearity error (relative to output range), (+/-)	0.03 %
Temperature error (relative to output range), (+/-)	0.005 %/K
Crosstalk between the outputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
Operational error limit in overall temperature range	
● Voltage, relative to output range, (+/-)	0.5 %
● Current, relative to output range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
● Voltage, relative to output range, (+/-)	0.3 %
● Current, relative to output range, (+/-)	0.3 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
● Wire-break	Yes
● Short-circuit	Yes
● Group error	Yes
● Overflow/underflow	Yes; Module-wise
Diagnostics indication LED	
● Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
● Channel status display	Yes; green LED
● for channel diagnostics	No
● for module diagnostics	Yes; green/red DIAG LED

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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 FS07
● horizontal installation, max.	60 °C; Observe derating
● vertical installation, min.	-30 °C; < 0 °C as of FS07
● vertical installation, max.	50 °C; Observe derating
Altitude during operation relating to sea level	
● Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP system manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g

Classifications

	Version	Classification
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

EG-Konf. | UK CA | Manufacturer Declaration | UL | KC | Metrological Approval

General Product Approval	For use in hazardous locations

RCM | UL | FM | CCC-Ex | Miscellaneous | ATEX

For use in hazardous locations	Marine / Shipping

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IECEx

ABS

BUREAU VERITAS

DNV

LRS

NK / Nippon Kaiji Kyokai

Marine / Shipping

RINA

RMRS

CCS (China Classification Society)

KR

last modified: 4/7/2025

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6ES7135-6TD00-0CA1

SIMATIC ET 200SP, analog HART output module, AQ 4xI HART High Feature, suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.3%

Mandatory Additional Product

› 6ES7193-6BP00-0BA0

SIMATIC ET 200SP, BaseUnit BU15-P16+A0+2B, BU type A0, Push-in terminals, with…

› 6ES7193-6BP00-0BA1

SIMATIC ET 200SP, BaseUnit BU15-P16+A0+2B/T, BU type A1, Push-in terminals,…

› 6ES7193-6BP00-0DA0

SIMATIC ET 200SP, BaseUnit BU15-P16+A0+2D, BU type A0, push-in terminals, witho…

› 6ES7193-6BP00-0DA1

SIMATIC ET 200SP, BaseUnit BU15-P16+A0+2D/T, BU type A1, Push-in terminals,…

Product	
Article Number (Market Facing Number)	6ES7135-6TD00-0CA1
Product Description	SIMATIC ET 200SP, analog HART output module, AQ 4xI HART High Feature, suitable for BU type A0, A1, Color code CC00, channel diagnostics, 16 bit, +/-0.3%
Product family	› Analog output modules
Product Lifecycle (PLM)	PM300:Active Product
Price data	
Region Specific PriceGroup / Headquarter Price Group	280 / 280
List Price	› Show prices
Customer Price	› Show prices
Surcharge for Raw Materials	None
Metal Factor	None
Delivery information	
Export Control Regulations	AL : N / ECCN : 9N9999
Estimated dispatch time (Working Days)	5 Day/Days
Net Weight (kg)	0,042 Kg
Packaging Dimension	6,50 x 7,70 x 2,30
Package size unit of measure	CM
Quantity Unit	1 Piece
Packaging Quantity	1
Additional Product Information	
EAN	4047623410461
UPC	804766911743
Commodity Code	85389091
LKZ_FDB/ CatalogID	STPCS7
Product Group	2488
Group Code	R336
Country of origin	Germany
Compliance with the substance restrictions according to RoHS directive	Since: 29.12.2099
Product class	A: Standard product which is a stock item could be returned within the returns guidelines/period.
WEEE (2012/19/EU) Take-Back Obligation	Yes
REACH Art. 33 Duty to inform according to the current list of candidates	▸ Lead CAS-No. 7439-92-1 > 0, 1 % (w / w) ▸ Lead monoxide (lead ... CAS-No. 1317-36-8 > 0, 1 % (w / w) ▸ 4,4'-isopropylidened... CAS-No. 80-05-7 > 0, 1 % (w / w) ▸ Silicic acid, lead s... CAS-No. 11120-22-2 > 0, 1 % (w / w)
SCIP number	dd416a86-1a9a-4d78-bcba-0ce99c61a067

Classifications

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