## **SIEMENS**

## **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%

Product type designation HW functional status Usable BasseUnits From FS07 Usable BasseUnits From FS07 BU type A0, A1 Color code for module-specific color identification plate Product function  • (8M data • (800 to 18M3) No Output range scalable No Engineering with • STEP 7 TIA Portal configurable/integrated from version • STEP 7 TO configurable/integrated from version • PCS 7 configurable/integrated from version • PCS 7 configurable/integrated from version • PROFIBUS from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PROFINET from GSD version/GSD revision • No Colorating mode • Oversampling No • MSO Oir - Configuration in RUN Reparameterization possible in RUN Xo Supply voltage Rated value (DC) permissible range, upper limit (DC) Permissible range,	General information		
usable BaseUnits  Color code for module-specific color identification plate  Product function  • I&M data  • Ischronous mode  • Output range scalable  Engineering with  • STEP 7 ThA Portal configurable/integrated from version  • STEP 7 configurable/integrated from version  • STEP 7 configurable/integrated from version  • STEP 7 configurable/integrated from version  • PCS 7 configurable/integrated from version  • PROFIBUS from GSD version/GSD revision  • PROFIBUS from GSD version/GSD revision  Operating mode  • Oversampling  • MSO  CIR - Configuration in RUN  Reparameterization possible in RUN  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  Power loss, typ.  Address space per module  • Address space per module  • Address space per module, max.  Bu Lype A  Analog outputs  BU type A0, A1  CC00  CC00  CC00  CC00  CC00  Vess, I&M0 to I&M3  No  V11 SP2 / V13  V13 SP2 / V13  V13 SP2 / V13  V13 SP2 / V13  V14 SP2 / V13  V15 SP3 / V15 S	Product type designation	AQ 4xU/I ST	
Color code for module-specific color identification plate Product function  I I I M data I I I I I I I I I I I I I I I I I I I	HW functional status	From FS07	
Product function  • I&M data • Isochronous mode • Output range scalable  Poutput range scalable  Indicate the state of the	usable BaseUnits	BU type A0, A1	
I I I I I I I I I I I I I I I I I I I	Color code for module-specific color identification plate	CC00	
Isochronous mode Output range scalable Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 To configurable/integrated from version PCS 7 configuration in QSD revision PCS 8 configuration in QSD revision PCS 9 configuration in QSD revision PCS 9 configuration in RUN PCS 9 configuration in RUN Reparameterization possible in RUN PCS 1 configuration in RUN Reparameterization possible in RUN Reparameterization possi	Product function		
Output range scalable  Engineering with  STEP 7 TIA Portal configurable/integrated from version  STEP 7 configurable/integrated from version  PCS 8 SP3 /-  V8.1 SP1  One GSD file each, Revision 3 and 5 and higher  PCS 7 configuration GSD version/GSD revision  PCS MSO  Oversampling  No  No  CIR - Configuration in RUN  Reparameterization possible in RUN  No  Supply voltage  Rated value (DC)  Permissible range, lower limit (DC)  Permissible range, upper limit (DC)  Permissible range, upper limit (DC)  Permissible range pupper li	<ul><li>I&amp;M data</li></ul>	Yes; I&M0 to I&M3	
Engineering with  STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PCS 8 SP3 / -  W8.1 SP1 One GSD file each, Revision 3 and 5 and higher SDML V2.3  OPERATING MSD PCS 8 SDML V2.3  OPERATING MSD NO  CIR - Configuration in RUN Reparameterization possible in RUN NO  Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, lower limit (DC) PERSIBLE PCS NO PERSIBLE PCS NO POWER LOSS POWER LOSS POWER LOSS POWER LOSS POWER LOSS Address space per module Address space per module, max.  8 byte; + 1 byte for QI information  Automatic encoding Type A  Analog outputs	<ul> <li>Isochronous mode</li> </ul>	No	
STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PCS 8 SP3 /- PCS 7 configurable/integrated from version PCS 9 Version GSD Version GSD file each, Revision 3 and 5 and higher SCDML V2.3  Operating mode Oversampling No No SUBJECT OF STEP 7 VERSION NO  CIR - Configuration in RUN Reparameterization possible in RUN No Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) PReverse polarity protection PCS VERSION NO  Input current Current consumption, max.  150 mA  Power loss Power loss Power loss, typ. Address space per module Address space per module Address space per module Address space per module, max.  B byte; + 1 byte for QI information  Automatic encoding Type of mechanical coding element Type A  Analog outputs	Output range scalable	No	
version  • STEP 7 configurable/integrated from version  • PCS 7 configurable/integrated from version  • PCS 7 configurable/integrated from version  • PROFIBUS from GSD version/GSD revision  • PROFINET from GSD version/GSD revision  One GSD file each, Revision 3 and 5 and higher  GSDML V2.3  Operating mode  • Oversampling  • MSO  No  CIR - Configuration in RUN  Reparameterization possible in RUN  Reparameterization possible in RUN  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Input current  Current consumption, max.  Power loss  Power loss, typ.  Address space per module  • Address space per module, max.  B byte; + 1 byte for QI information  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Engineering with		
PCS 7 configurable/integrated from version PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision Operating mode Oversampling No MSO No  CIR - Configuration in RUN Reparameterization possible in RUN Reparameterization possible in RUN Rous Volume Imit (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permitsible range, upper limit (DC) Pe		V11 SP2 / V13	
PROFIBUS from GSD version/GSD revision PROFINET from GSD version/GSD revision  PROFINET from GSD version/GSD revision  Operating mode  Oversampling No MSO No  CIR - Configuration in RUN  Reparameterization possible in RUN  Reparameterization possible in RUN  No  Supply voltage  Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection  Yes  Input current  Current consumption, max.  Power loss Power loss, typ.  Address area  Address space per module Address space per module, max.  By by te; + 1 byte for Ql information  Automatic encoding Type of mechanical coding element  Type A  Analog outputs	<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -	
PROFINET from GSD version/GSD revision Operating mode  Oversampling No MSO No CIR - Configuration in RUN Reparameterization possible in RUN Calibration possible in RUN No Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Pess Input current Current consumption, max. Power loss Power loss, typ. Address area Address space per module Address space per module Address space per module, max. Bype A Analog outputs  No No No Supply voltage Rated value (DC) 24 V Permissible range, lower limit (DC) 28.8 V Reverse polarity protection Yes Input current Current Supply voltage Rated value (DC) 19.2 V Permissible range, lower limit (DC) Reverse polarity protection Yes Input current Current consumption, max. 8 byte; + 1 byte for Ql information Type A Analog outputs	<ul> <li>PCS 7 configurable/integrated from version</li> </ul>	V8.1 SP1	
Operating mode  Oversampling  MSO  No  CIR - Configuration in RUN  Reparameterization possible in RUN  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Yes  Input current  Current consumption, max.  150 mA  Power loss  Power loss  Power loss, typ.  Address area  Address space per module  Address space per module, max.  B byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  Type A  Analog outputs	<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	One GSD file each, Revision 3 and 5 and higher	
Oversampling  MSO  MSO  No  CIR - Configuration in RUN  Reparameterization possible in RUN  Calibration possible in RUN  No  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Tyes  Input current  Current consumption, max.  Power loss  Power loss, typ.  Address area  Address space per module  Address space per module, max.  B byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  Type of mechanical coding element  Type A  Analog outputs	<ul> <li>PROFINET from GSD version/GSD revision</li> </ul>	GSDML V2.3	
MSO  CiR - Configuration in RUN  Reparameterization possible in RUN  Calibration possible in RUN  No  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Input current  Current consumption, max.  Power loss  Power loss, typ.  Address area  Address space per module  Address space per module, max.  B byte; + 1 byte for Ql information  Hardware configuration  Automatic encoding  Type of mechanical coding element  Type A  Analog outputs	Operating mode		
CiR - Configuration in RUN  Reparameterization possible in RUN  Calibration possible in RUN  No  Supply voltage  Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Yes  Input current  Current consumption, max.  150 mA  Power loss  Power loss, typ.  Address area  Address space per module  • Address space per module, max.  B byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	<ul> <li>Oversampling</li> </ul>	No	
Reparameterization possible in RUN Calibration possible in RUN No Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) 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 Ql information Hardware configuration Automatic encoding Type of mechanical coding element Type A Analog outputs	• MSO	No	
Calibration possible in RUN  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 Ql information  Hardware configuration  Automatic encoding  • Type of mechanical coding element Type A  Analog outputs	CiR - Configuration in RUN		
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 • Type of mechanical coding element  Analog outputs	Reparameterization possible in RUN	Yes	
Rated value (DC)  permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Yes  Input current  Current consumption, max.  150 mA  Power loss  Power loss, typ.  Address area  Address space per module  • Address space per module, max.  8 byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Analog outputs	Calibration possible in RUN	No	
permissible range, lower limit (DC)  permissible range, upper limit (DC)  Reverse polarity protection  Yes  Input current  Current consumption, max.  Power loss  Power loss, typ.  Address area  Address space per module  • Address space per module, max.  Automatic encoding  • Type of mechanical coding element  Analog outputs	Supply voltage	<u>,                                      </u>	
permissible range, upper limit (DC)  Reverse polarity protection  Yes  Input current  Current consumption, max.  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  • Type of mechanical coding element  Type A  Analog outputs	Rated value (DC)	24 V	
Reverse polarity protection  Input current  Current consumption, max.  Power loss  Power loss, typ.  Address area  Address space per module  • Address space per module, max.  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Analog outputs  Yes  150 mA  150 mA  1.5 W  8 byte; + 1 byte for Ql information	permissible range, lower limit (DC)	19.2 V	
Input current Current consumption, max.  Power loss Power loss, typ.  Address area  Address space per module  • Address space per module, max.  B byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	permissible range, upper limit (DC)	28.8 V	
Current consumption, max.  Power loss  Power loss, typ.  Address area  Address space per module  • Address space per module, max.  8 byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Reverse polarity protection	Yes	
Power loss Power loss, typ.  Address area  Address space per module  • Address space per module, max.  B byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Input current		
Power loss, typ.  Address area  Address space per module  • Address space per module, max.  8 byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Current consumption, max.	150 mA	
Address area  Address space per module  • Address space per module, max.  8 byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Power loss		
Address space per module  • Address space per module, max.  8 byte; + 1 byte for QI information  Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Power loss, typ.	1.5 W	
Address space per module, max.  Hardware configuration  Automatic encoding      Type of mechanical coding element  Analog outputs  8 byte; + 1 byte for QI information  Type A  Type A	Address area		
Hardware configuration  Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Address space per module		
Automatic encoding  • Type of mechanical coding element  Type A  Analog outputs	Address space per module, max.	8 byte; + 1 byte for QI information	
Type of mechanical coding element     Type A  Analog outputs	Hardware configuration		
Analog outputs	Automatic encoding		
Analog outputs	Type of mechanical coding element	Type A	
	Analog outputs		
	Number of analog outputs	4	

Valtage cute it aboutt	AF ma
Voltage output, short-circuit current, max.	45 mA
Cycle time (all channels), min.	5 ms
Analog output with oversampling	No
Output ranges, voltage	Voc. 15 hit
• 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	Voc. 15 hit
• 0 to 20 mA • -20 mA to +20 mA	Yes; 15 bit
	Yes; 16 bit incl. sign
4 mA to 20 mA  Connection of naturators	Yes; 14 bit
Connection of actuators	Von
for voltage output two-wire connection	Yes
for vultage output four-wire connection     for surrent output two wire connection	Yes
for current output two-wire connection  Load impodupos (in rated range of output)	Yes
Load impedance (in rated range of output)	210
<ul><li>with voltage outputs, min.</li><li>with voltage outputs, capacitive load, max.</li></ul>	2 kΩ
	1 μF 500 Ω
with current outputs, max.      with current outputs, inductive load, max.	
with current outputs, inductive load, max.  Destruction limits against externally applied voltages and cur	1 mH
Voltages at the outputs	30 V
Cable length	30 V
shielded, max.	1 000 m; 200 m for voltage output
Analog value generation for the outputs	- 555 m, 256 m for voltage output
Integration and conversion time/resolution per channel  Resolution with overrange (bit including sign), max.	16 bit
	10 bit
Settling time  • for resistive load	0.1 ms
for capacitive load	1 ms
for inductive load	0.5 ms
Errors/accuracies	0.0 1110
	0.03 %
Linearity error (relative to output range), (+/-)	0.005 %/K
Temperature error (relative to output range), (+/-)	-50 dB
Crosstalk between the outputs, min.	0.05 %
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.00 /0
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)	
<ul> <li>Voltage, relative to output range, (+/-)</li> </ul>	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
Diagnostics indication LED	
Diagnostics indication LED  • Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
9	Yes; green PWR LED Yes; green LED
Monitoring of the supply voltage (PWR-LED)	

Potential separation	
Potential separation channels	
between the channels	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 FS07
<ul> <li>horizontal installation, max.</li> </ul>	60 °C; Observe derating
<ul> <li>vertical installation, min.</li> </ul>	-30 °C; < 0 °C as of FS07
<ul> <li>vertical installation, max.</li> </ul>	50 °C; Observe derating
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: