SIEMENS

Data sheet

6ES7143-5AH00-0BA0

SIMATIC ET 200AL, DIQ 16x24VDC/0,5A, 8xM12, degree of protection IP67



General information	
Product type designation	DIQ 16x24 V DC/0.5 A
HW functional status	E01
Firmware version	V1.1.x
Product function	
● I&M data	Yes; I&M0 to I&M3
Engineering with	
 STEP 7 TIA Portal configurable/integrated as of 	STEP 7 V14 or higher
version	
 STEP 7 configurable/integrated as of version 	V5.5 SP4 Hotfix 7 or higher
 PROFIBUS as of GSD version/GSD revision 	GSD as of Revision 5
 PROFINET as of GSD version/GSD revision 	GSDML V2.3.1
Operating mode	
• DI	Yes
Counter	Yes
• DQ	Yes
Supply voltage	
Load voltage 1L+	

Rated value (DC)	24 V
 permissible range, lower limit (DC) 	20.4 V
• permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up
Load voltage 2L+	
Rated value (DC)	24 V
 permissible range, lower limit (DC) 	20.4 V
• permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes; Against destruction; encoder power supply outputs applied with reversed polarity, loads pick up
Input current	
Current consumption (rated value)	75 mA; without load
from load voltage 1L+ (unswitched voltage)	4 A; Maximum value
from load voltage 2L+, max.	4 A; Maximum value
Encoder supply	
Number of outputs	8
24 V encoder supply	
Short-circuit protection	Yes; Per load voltage, electronic
Output current, max.	1.4 A; Total current of all encoders, max. 0.7 A per load voltage
Power loss	
Power loss Power loss, typ.	4 W
1 over 1000, typ.	
Digital inputs	
Number of digital inputs	16; Parameterizable as DIQ
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 55 °C, max.	16
Digital input functions, parameterizable	
 Freely usable digital input 	Yes
Counter	Yes
— Number, max.	4
 Counting frequency, max. 	2 kHz
0 1 3,	2 N I Z
— Counting width	32 bit; Incl. sign
— Counting width	32 bit; Incl. sign
Counting width Counting direction up/down	32 bit; Incl. sign
Counting width Counting direction up/down Input voltage	32 bit; Incl. sign Yes
 Counting width Counting direction up/down Input voltage Type of input voltage 	32 bit; Incl. sign Yes DC
 Counting width Counting direction up/down Input voltage Type of input voltage Rated value (DC) 	32 bit; Incl. sign Yes DC 24 V

Input current	
● for signal "1", typ.	3 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes
— at "0" to "1", min.	0.05 ms; 1.6 ms for channels 8 through 15
— at "0" to "1", max.	20 ms
— at "1" to "0", min.	0.05 ms; 1.6 ms for channels 8 through 15
— at "1" to "0", max.	20 ms
for counter/technological functions	
— parameterizable	Yes
Cable length	
• unshielded, max.	30 m
Digital outputs	
Number of digital outputs	16; Parameterizable as DIQ
• in groups of	8; 2 load groups for 8 outputs each
Short-circuit protection	Yes; per channel, electronic
 Response threshold, typ. 	0.7 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Digital output functions, parameterizable	
 Switching tripped by comparison values 	Yes
 Freely usable digital output 	Yes
Switching capacity of the outputs	
● on lamp load, max.	5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	4 kΩ
Output voltage	
● for signal "1", min.	L+ (-0.8 V)
Output current	
● for signal "1" rated value	0.5 A
for signal "0" residual current, max.	0.5 mA
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz
• on lamp load, max.	1 Hz
Total current of the outputs	
Current per group, max.	4 A
Cable length	
• unshielded, max.	30 m
Encoder	

* 2-wire sensor — permissible quiescent current (2-wire sensor), max. Interrupts/diagnostics/status information	Connectable encoders	
Interrupts/diagnostics/status information Substitute values connectable Alarms Diagnostic alarm Pes; Parameterizable Diagnostic messages Short-circuit Polagnostics indication LED Channel status display for module diagnostics For load voltage monitoring Potential separation between the load voltages between the channels and backplane bus between the channels and backplane bus between the channels and the power supply of the electronics between the channels and the power supply of the electronics Isolation Isolation tested with Pogree and class of protection Degree and class of protection Degree of protection acc. to EN 60529 IP65	• 2-wire sensor	Yes
Substitute values connectable Alarms Diagnostic alarm Diagnostic messages Short-circuit Yes; Parameterizable Diagnostic messages Short-circuit Yes; Outputs to M; encoder supply to M; module by module Diagnostics indication LED Channel status display For module diagnostics For load voltage monitoring Potential separation between the load voltages Potential separation between the channels, in groups of between the channels and backplane bus between the channels and the power supply of the electronics No; 8 channels are non-isolated and 8 channels are isolated from supply voltage 1L+ Isolation Isolation tested with 707 V DC (type test) Degree and class of protection Degree of protection acc. to EN 60529 IP66 IP67 Ambient conditions Ambient conditions Ambient conditions Ambient emperature during operation max. 55 °C Connection method Design of electrical connection for the inputs and outputs Power supply M8, 4-pole ET-Connection M8, 4-pin, shielded Dimensions Width 45 mm		1.5 mA
Alarms Diagnostic alarm Diagnostic messages Short-circuit Position	Interrupts/diagnostics/status information	
Diagnostic alarm Diagnostic messages Short-circuit Position Yes; Outputs to M; encoder supply to M; module by module Diagnostics indication LED Channel status display for module diagnostics For load voltage monitoring Yes; Green LED Potential separation between the load voltages Potential separation between the channels, in groups of between the channels and backplane bus between the channels and the power supply of the electronics Solation Isolation tested with 707 V DC (type test) Degree and class of protection Degree of protection acc. to EN 60529 i P65 i P67 Ambient conditions Ambient temperature during operation imin. -25 °C 55 °C Connection method Design of electrical connection for the inputs and outputs Power supply M8, 4-pole ET-Connection M8, 4-pole Dimensions Width Wes; Outputs to M; encoder supply to M; module by module Yes; Green LED Yes; Green LED Yes; Green LED Yes; Green LED Yes 8 8 8 8 8 8 8 8 8 8 8 8 8	Substitute values connectable	Yes; channel by channel, parameterizable
Diagnostic messages Short-circuit Posgnostics indication LED Channel status display For module diagnostics For load voltage monitoring Potential separation between the load voltages Potential separation channels between the channels in groups of between the channels and the power supply of the electronics Potential separation channels Detween the channels and the power supply of the electronics Potential separation channels Potential separation Potential	Alarms	
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Potential separation between the load voltages Potential separation channels • between the channels, in groups of • between the channels, in groups of • between the channels and backplane bus • between the channels and the power supply of the electronics Solation	Channel status display	Yes; Green LED
Potential separation between the load vollages Potential separation channels • between the channels, in groups of • between the channels and backplane bus • between the channels and the power supply of the electronics Isolation Isolation tested with Pegree and class of protection Degree of protection acc. to EN 60529 • IP65 • IP67 Ambient conditions Ambient temperature during operation • min. • max. - 25 °C Connection method Design of electrical connection for the inputs and outputs Power supply M8, 4-pole ET-Connection • ET-Connection M8, 4-pin, shielded Dimensions Width Ves Yes No; 8 channels are non-isolated and 8 channels are isolated from supply voltage 1L+ Yes No; 8 channels are non-isolated and 8 channels are isolated from supply voltage 1L+ 8 Yes Yes Yes Yes 4 45 mm	 for module diagnostics 	Yes; Green/red LED
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between the load voltages Potential separation channels • between the channels, in groups of • between the channels and backplane bus • between the channels and the power supply of the electronics No; 8 channels are non-isolated and 8 channels are isolated from supply voltage 1L+ Isolation	Potential separation	
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the electronics Isolation	 between the channels and backplane bus 	Yes
Isolation Isolation tested with Degree and class of protection Degree of protection acc. to EN 60529 IP65 IP67 Yes Ambient conditions Ambient temperature during operation min. Design of electrical connection for the inputs and outputs Power supply ET-Connection M8, 4-pole Dimensions Width Tor V DC (type test) 707 V DC (type test) Top Cot Supplements to the set of the s	• between the channels and the power supply of	No; 8 channels are non-isolated and 8 channels are isolated from
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Degree and class of protection Degree of protection acc. to EN 60529 IP65 Period President conditions Ambient conditions Ambient temperature during operation min. Period President Connection method Design of electrical connection for the inputs and outputs Power supply ET-Connection ET-Connection M8, 4-pole ET-Connection M8, 4-pin, shielded Dimensions Width M5	Isolation	
Degree of protection acc. to EN 60529	Isolation tested with	707 V DC (type test)
Degree of protection acc. to EN 60529	Degree and class of protection	
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Ambient conditions Ambient temperature during operation • min. • max. -25 °C 55 °C Connection method Design of electrical connection for the inputs and outputs Power supply ET-Connection • ET-Connection M8, 4-pole Dimensions Width 45 mm		Yes
Ambient temperature during operation • min. • max. -25 °C 55 °C Connection method Design of electrical connection for the inputs and outputs Power supply ET-Connection • ET-Connection • ET-Connection M8, 4-pin, shielded Dimensions Width 45 mm		
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Design of electrical connection for the inputs and outputs Power supply ET-Connection • ET-Connection M8, 4-pin, shielded Dimensions Width 45 mm		
outputs Power supply M8, 4-pole ET-Connection • ET-Connection M8, 4-pin, shielded Dimensions Width 45 mm		M42 E polo
ET-Connection ● ET-Connection M8, 4-pin, shielded Dimensions Width 45 mm	•	M12, 5-pole
● ET-Connection M8, 4-pin, shielded Dimensions Width 45 mm		M8, 4-pole
Dimensions Width 45 mm	ET-Connection	
Width 45 mm	• ET-Connection	M8, 4-pin, shielded
	Dimensions	
Height 159 mm	Width	45 mm
	Height	159 mm

Depth	40 mm

10/13/2017 last modified: