SIEMENS

Data sheet 6ES7141-5AH00-0BA0

SIMATIC ET 200AL, DI 16x 24 V DC, 8x M12, Degree of protection IP67

General information	
Product type designation	DI 16x24VDC
HW functional status	FS06
Firmware version	V2.0.x
Product function	
● I&M data	Yes; I&M0 to I&M3
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	STEP 7 V13 SP1 or higher
● STEP 7 configurable/integrated from version	V5.5 SP4 Hotfix 7 or higher
● PROFIBUS from GSD version/GSD revision	GSD as of Revision 5
● PROFINET from GSD version/GSD revision	GSDML V2.3.1
Supply voltage	
power supply according to NEC Class 2 required	No
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
Input current	
Current consumption (rated value)	30 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 module, electronic
● Output current, max.	1.4 A; Total current of all encoders
Power loss	
Power loss, typ.	2.7 W
Digital inputs	
Number of digital inputs	16
Sourcing/sinking input	P-reading
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
Input voltage	
● Rated value (DC)	24 V

● for signal "0"	-30 to +5 V
● for signal "1"	+11 to +30V
Input current	
● for signal "1", typ.	3.2 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", min.	1.2 ms
— at "0" to "1", max.	4.8 ms
— at "1" to "0", min.	1.2 ms
— at "1" to "0", max.	4.8 ms
Cable length	
● unshielded, max.	30 m
Encoder	
Connectable encoders	
● 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interrupts/diagnostics/status information	
Alarms	
● Diagnostic alarm	Yes; Parameterizable
Diagnoses	
● Short-circuit	Yes; Sensor supply to M; module by module
Diagnostics indication LED	
● Channel status display	Yes; green LED
● for module diagnostics	Yes; green/red LED
Potential separation	
between the load voltages	Yes
Potential separation channels	
● between the channels	No
● between the channels and backplane bus	Yes
● between the channels and the power supply of the electronics	No
Isolation	
Isolation tested with	707 V DC (type test)
Degree and class of protection	
IP degree of protection	IP65/67
Standards, approvals, certificates	
Suitable for safety-related tripping of standard modules	Yes; from FS01
Highest safety class achievable for safety-related tripping of standard modules	
● Performance level according to ISO 13849-1	PL d
● Category according to ISO 13849-1	Cat. 3
● SIL acc. to IEC 62061	SIL 2
● remark on safety-oriented shutdown	https://support.industry.siemens.com/cs/de/en/view/39198632
Security	
signed firmware update	Yes
data integrity	Yes
Ambient conditions	
Ambient temperature during operation	
● min.	-30 °C
● max.	55 °C
Altitude during operation relating to sea level	
● Ambient air temperature-barometric pressure-altitude	Up to max. 5 000 m, at installation height > 2 000 m additional restrictions
Connection method	
Design of electrical connection for the inputs and outputs	M12, 5-pole
Design of electrical connection for supply voltage	M8, 4-pole
ET-Connection	
● ET-Connection	M8, 4-pin, shielded
Dimensions	
Width	45 mm
Height	159 mm

Depth	40 mm

Weights

Weight, approx.	184 g

Classifications

	Version	Classification
eClass	14	27-24-26-04
eClass	12	27-24-26-04
eClass	9.1	27-24-26-04
eClass	9	27-24-26-04
eClass	8	27-24-26-04
eClass	7.1	27-24-26-04
eClass	6	27-24-26-04
ETIM	10	EC001599
ETIM	9	EC001599
ETIM	8	EC001599
ETIM	7	EC001599
IDEA	4	3566
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Miscellaneous

Manufacturer Declaration

General Product Approval

China RoHS

EMV

Functional Saftey

TUEV

Maritime application

Maritime application

CCS (China Classification Society)

KR (Korean Register of Shipping)

other

NK / Nippon Kaiji Kyokai

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