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Data sheet 6ES7147-5JJ00-0BA0



SIMATIC ET 200AL, CM 8x IO-Link, 8x M12, degree of protection IP67

General information	
Product type designation	CM 8x IO-Link
HW functional status	FS01
Firmware version	V2.0.0
Vendor identification (VendorID)	002AH
Product function	
● I&M data	Yes; I&M0 to I&M4
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	STEP 7 V20 or higher with HSP0462
● STEP 7 configurable/integrated from version	STEP 7 V5.7 or higher SP1 or higher
● PROFINET from GSD version/GSD revision	GSDML V2.4.x
Operating mode	
● IO-Link	Yes
● DI	Yes
● DQ	Yes; max. 100 mA
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
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; actuator power supply outputs applied with reversed polarity
Input current	
Current consumption (rated value)	45 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 channel, electronic
● Output current, max.	4 A; total current of all ports, max. 2 A per channel
Power loss	
Power loss, typ.	3.6 W

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Address area	
Address space per module	
● Inputs	237 byte; including 8 byte for QI information
● Outputs	237 byte
Digital inputs	
Number of digital inputs	6; Parameterizable as DIQ
Digital inputs, parameterizable	Yes
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.	8
Input voltage	
● Rated value (DC)	24 V
● for signal "0"	-3 to +5V
● for signal "1"	+11 to +30V
Input current	
● for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	No
Cable length	
● unshielded, max.	30 m
Digital outputs	
Number of digital outputs	6; Parameterizable as DIQ
Short-circuit protection	Yes; per channel, electronic
● Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	1L+ (-53 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
● on lamp load, max.	5 W
Load resistance range	
● lower limit	48 Ω
● upper limit	4 Ω
Output voltage	
● for signal "1", min.	1L+ (-0.8V)
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 module, max.	4 A
Cable length	
● unshielded, max.	30 m
Encoder	
Connectable encoders	
● 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
IO-Link	
Number of ports	8
● of which simultaneously controllable	8
IO-Link protocol 1.0	Yes
IO-Link protocol 1.1	Yes
Transmission rate	4.8 kBaud (COM1); 38.4 kBaud (COM2), 230 kBaud (COM3)
Cycle time, min.	2 ms
Size of process data, input per port	33 byte

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Size of process data, input per module	237 byte
Size of process data, output per port	32 byte
Size of process data, output per module	237 byte
Memory size for device parameter	2 kbyte
Master backup	possible with LIOLink_Master function block
Configuration without S7-PCT	Possible; autostart/manual function
Cable length unshielded, max.	20 m
Connection of IO-Link devices	
● Port type A	via 3-core cable
● Port type B	Additional device supply: max. 2 A per port, max. 4 A per module
Interrupts/diagnostics/status information	
Alarms	
● Diagnostic alarm	Yes; Parameterizable
Diagnoses	
● Monitoring the supply voltage	Yes
● Wire break	Yes
● short-circuit	Yes
Diagnostics indication LED	
● Channel status display	Yes; green LED
● for module diagnostics	Yes; green/red LED
● For load voltage monitoring	Yes; green 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
Security	
signed firmware update	Yes
data integrity	Yes
Ambient conditions	
Ambient temperature during operation	
● min.	-30 °C
● max.	55 °C
Connection method	
Design of electrical connection for the inputs and outputs	M12, 5-pin, A-coded
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	16	27-24-26-08
eClass	14	27-24-26-08
eClass	12	27-24-26-08
eClass	9.1	27-24-26-08

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eClass	9	27-24-26-08
eClass	8	27-24-26-08
eClass	7.1	27-24-26-08
eClass	6	27-24-26-08
ETIM	10	EC001604
ETIM	9	EC001604
ETIM	8	EC001604
ETIM	7	EC001604

Approvals / Certificates

General Product Approval

Miscellaneous | Manufacturer Declaration | UL | RCM | China RoHS | EG-Konf.

General Product Approval	EMV	Maritime application

UKCA | KC | RCM | KC | ABS | BUREAU VERITAS

Maritime application

DNV | LRS | NK / Nippon Kaiji Kyokai | RINA | CCS (China Classification Society) | KR (Korean Register of Shipping)

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