SIEMENS

Data sheet 6ES7142-5AF00-0BA0



SIMATIC ET 200AL, DQ 8x 24 V DC/2 A, 8x M12, Degree of protection IP67

General information	
Product type designation	DQ 8x24VDC/2A
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; load increasing
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; load increasing
Input current	
Current consumption (rated value)	40 mA; 40 mA (1L+) / 35 mA (2L+); without load
from load voltage 1L+ (unswitched voltage)	4 A; Maximum value
from load voltage 2L+, max.	4 A; Maximum value
Power loss	
Power loss, typ.	4 W
Digital outputs	
Number of digital outputs	8
● in groups of	4; 2 load groups for 4 outputs each
Current-sourcing	Yes
output type acc. to IEC 61131, type 2	Yes
Short-circuit protection	Yes; per channel, electronic
● Response threshold, typ.	2.8 A
Limitation of inductive shutdown voltage to	2L+ (-47 V)
Switching capacity of the outputs	
● on lamp load, max.	10 W

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Load resistance range	
● lower limit	12 Ω
● upper limit	4 kΩ
Output voltage	
● for signal "1", min.	L+ (-0.8 V)
Output current	
● for signal "1" rated value	2 A
● for signal "1" permissible range, max.	2 A; with inductive load to IEC 60947-5-1, DC-13 / AC-15
● for signal "0" residual current, max.	0.5 mA
Switching frequency	
● with resistive load, max.	100 Hz
● with inductive load, max.	0.1 Hz; 0.25 Hz at 25 °C
● on lamp load, max.	1 Hz
Total current of the outputs	
● Current per group, max.	4 A; For inductive load max. 2 channels per group
Cable length	
● unshielded, max.	30 m
Interrupts/diagnostics/status information	
Substitute values connectable	Yes; channel by channel, parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable
Diagnoses	
● Short-circuit	Yes; Outputs to ground; module by module
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, in groups of	4
● between the channels and backplane bus	Yes
● between the channels and the power supply of the electronics	No; 4 channels are non-isolated and 4 channels are isolated from supply voltage 1L+
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

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Dimensions	
Width	45 mm
Height	159 mm
Depth	40 mm

Weights	
Weight, approx.	192 g

Classifications

	Version	Classification
eClass	16	27-24-26-04
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 | **Functional Saftey** | **Maritime application**

China RoHS | TUEV

Maritime application

NK / Nippon Kaiji Kyokai | CCS (China Classification Society)

Maritime application | **other**

KR (Korean Register of Shipping)

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