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Data sheet 6DL1136-6DA00-0PH1



SIMATIC ET 200SP HA, digital output module, safety-oriented F-DQ 10X24VDC/2A HA, SIL3 (IEC 61508), up to PL E (ISO 13849-1) suitable for terminal block H1, M1, color code CC01, channel diagnostics

General information	
Product type designation	F-DQ 10X24VDC/2A PP HA
HW functional status	01
Firmware version	V1.0
● FW update possible	Yes
Usable terminal block	TB type H1, M1, H0 and N0
Color code for module-specific color identification plate	CC02
Product function	
● I&M data	Yes; I&M0 to I&M3
Engineering with	
● PCS 7 configurable/integrated from version	V9.0 SP3
Operating mode	
● DQ	Yes
Redundancy	
● Redundancy capability	Yes; With TB type M1
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 (rated value)	65 mA
Current consumption, max.	130 mA
Power	
Power available from the backplane bus	90 mW
Power loss	
Power loss, typ.	5 W; Total current 5 A at rated voltage and ambient temperature
Address area	
Address space per module	
● Inputs	7 byte
● Outputs	7 byte
Hardware configuration	
Automatic encoding	Yes
● Mechanical coding element	Yes
Digital outputs	
Type of digital output	PP-switching
Number of digital outputs	10
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
● Response threshold, typ.	4.1 A

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Open-circuit detection	Yes
● Response threshold, typ.	10 mA
Switching capacity of the outputs	
● on lamp load, max.	10 W
Load resistance range	
● lower limit	12 Ω
● upper limit	2 000 Ω
Output current	
● for signal "1" rated value	2 A
● for signal "1" permissible range, min.	12 mA
● for signal "1" permissible range, max.	2.4 A
● for signal "0" residual current, max.	0.5 mA
Switching frequency	
● with resistive load, max.	20 Hz
● with inductive load (acc. to IEC 60947-5-1, DC13), max.	0.1 Hz
● on lamp load, max.	10 Hz
Total current of the outputs	
● Current per module, max.	10 A
Cable length	
● shielded, max.	1 000 m
● unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
● Diagnostic alarm	Yes
● Maintenance interrupt	Yes
Diagnoses	
● Diagnostic information readable	Yes
● Monitoring the supply voltage	Yes; Module-wise
● Wire-break	Yes; channel by channel
● Short-circuit to M	Yes; channel by channel
● Short-circuit to L+	Yes; channel by channel
Diagnostics indication LED	
● MAINT LED	Yes; Yellow MT LED
● Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
● Channel status display	Yes; green LED
● for channel diagnostics	Yes; red LED
● for module diagnostics	Yes; green/red DIAG LED
Potential separation	
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	1 500 V DC/1 min, type test
Standards, approvals, certificates	
Suitable for safety functions	Yes
Highest safety class achievable in safety mode	
● Performance level according to ISO 13849-1	Up to PLe
● SIL acc. to IEC 61508	Up to SIL 3
Probability of failure (for service life of 20 years and repair time of 100 hours)	
— Low demand mode: PFDavg in accordance with SIL3	< 7.00E-05
— High demand/continuous mode: PFH in accordance with SIL3	< 2.00E-09 1/h
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	-40 °C
● horizontal installation, max.	70 °C

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● vertical installation, min.	-40 °C
● vertical installation, max.	60 °C
Dimensions	
Width	22.5 mm
Height	115 mm
Depth	138 mm
Weights	
Weight, approx.	230 g

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