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Data sheet 6DL1136-6DA00-0PH1

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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 CC02, channel diagnostics

General information	
Product type designation	F-DQ 10x24VDC/2A PP HA
HW functional status	02
Firmware version	V1.0.3
● FW update possible	Yes
Usable terminal block	type H1, M1, N0, H0, M0 (for details see the system manual)
Color code for module-specific color-coded label	CC02
Product function	
● I&M data	Yes; I&M0 to I&M3
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V21
● STEP 7 configurable/integrated from version	V5.6 SP1 HF5 (with S7 F system V6.3)
● PCS 7 configurable/integrated from version	V9.0 SP3 (with S7 F Systems V6.3)
Operating mode	
● DQ	Yes
Redundancy	
● Redundancy capability	Yes; with TB type M0 and 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 consumption 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

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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
Open-circuit detection	Yes
● Response threshold, typ.	7 mA; FS01: 10 mA
Switching capacity of the outputs	
● on lamp load, max.	10 W
Load resistance range	
● lower limit	12 Ω
● upper limit	3 400 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
Total current of the outputs (per module)	
horizontal installation	
— up to 30 °C, max.	9 A; uneven load distribution
— up to 40 °C, max.	7.5 A; uneven load distribution
— up to 50 °C, max.	6.2 A; uneven load distribution
— up to 60 °C, max.	4.5 A; uneven load distribution
— up to 70 °C, max.	2.5 A; uneven load distribution
vertical installation	
— up to 30 °C, max.	7 A; uneven load distribution
— up to 40 °C, max.	6 A; uneven load distribution
— up to 50 °C, max.	4.5 A; uneven load distribution
— up to 60 °C, max.	3 A; uneven load distribution
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 ground	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	

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● 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	
Highest safety class achievable in safety mode	
● Performance level according to ISO 13849-1	Up to PLe
● Category according to ISO 13849-1	Up to Cat. 4
● SIL acc. to IEC 61508	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
● 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

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

Approvals / Certificates

General Product Approval

EG-Konf. UK CA UL RCM EAC

General Product Approval		For use in hazardous locations			
China RoHS	Manufacturer Declaration	Declaration of Conformity	CCC	UL	IECEx

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For use in hazardous locations		Functional Saftey			Maritime application
ATEX	Miscellaneous	TUEV	Type Examination Certificate	TUEV	ABS

Maritime application					
BUREAU VERITAS	DNV	LRS	NK / Nippon Kaiji Kyokai	RINA	CCS (China Classification Society)

Environment		Industrial Communication
EPD	Siemens EcoTech	PROFIsafe

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