

Siemens
EcoTech



SIMATIC DP, electronic module ET 200SP, F-DQ 4x24VDC/2A PM HF, 15 mm width, up to PL e (ISO 13849), up to SIL 3 (IEC 61508)

General information	
Product type designation	F-DQ 4x 24 V DC/2 A PM HF
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type A0
Color code for module-specific color-coded label	CC01
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V20 with HSP 470
• STEP 7 configurable/integrated from version	as 6ES7136-6DB00-0CA0
• PROFINET from GSD version/GSD revision	GSDML V2.45
CiR - Configuration in RUN	
Reparameterization possible in RUN	No
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
power supply according to NEC Class 2 required	No
Input current	
Current consumption (rated value)	30 mA; without load
Current consumption, max.	100 mA; without load
Output voltage	
Rated value (DC)	24 V
Power	
Power consumption from the backplane bus	70 mW
Power loss	
Power loss, typ.	3 W
Address area	
Address space per module	
• Inputs	6 byte; S7-300/400F CPU, 6 byte
• Outputs	6 byte; S7-300/400F CPU, 4 byte
Hardware configuration	
Automatic encoding	Yes
• Electronic coding element type F	Yes

Digital outputs	
Type of digital output	Transistor
Number of digital outputs	4
Digital outputs, parameterizable	Yes
output type acc. to IEC 61131, type 2	Yes
Short-circuit protection	Yes
• Response threshold, typ.	> 3.3 A
Open-circuit detection	Yes
• Response threshold, typ.	8 mA
Overload protection	Yes
• Response threshold, typ.	3 A
Limitation of inductive shutdown voltage to	sourcing output: -39 V DC in relation to 2M, sinking output: +47 V DC in relation to 2M
Controlling a digital input	Yes; digital output, according to IEC 61131-2, type 2
Switching capacity of the outputs	
• with resistive load, max.	2 A
• with inductive load, max.	2 A
• on lamp load, max.	10 W
Load resistance range	
• lower limit	12 Ω
• upper limit	2 000 Ω
Output voltage	
• for signal "1", min.	24 V; L+ (-0.5 V)
Output current	
• for signal "1" rated value	2 A
• for signal "0" residual current, max.	0.5 mA
Switching frequency	
• with resistive load, max.	30 Hz; Symmetrical
• with inductive load, max.	0.1 Hz; according to IEC 60947-5-1, DC-13, symmetrical
• with capacitive load, max.	30 Hz; observe chapter "Switching of capacitive loads" in the manual
• on lamp load, max.	10 Hz; Symmetrical
Total current of the outputs	
• Current per channel, max.	2 A; note derating data in the manual
• Current per module, max.	6 A; note derating data in the manual
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	500 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes; See Chapter "Alarms/diagnostic messages" in the manual
Substitute values connectable	No
Alarms	
• Diagnostic alarm	Yes
• Hardware interrupt	No
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red 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	707 V DC (type test)
Standards, approvals, certificates	

Siemens Eco Profile (SEP)	Siemens EcoTech		
Suitable for safety functions	Yes		
Ecological footprint			
• environmental product declaration	Yes; type II acc. to ISO 14021		
Global warming potential			
— global warming potential, (total) [CO2 eq]	52 kg		
— global warming potential, (during production) [CO2 eq]	6.8 kg		
— global warming potential, (during operation) [CO2 eq]	45.8 kg		
— global warming potential, (after end of life cycle) [CO2 eq]	-0.628 kg		
Highest safety class achievable in safety mode			
• Performance level according to ISO 13849-1	PLe		
• Category according to ISO 13849-1	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 SIL2	< 2.00E-04		
— Low demand mode: PFDavg in accordance with SIL3	< 2.00E-05		
— High demand/continuous mode: PFH in accordance with SIL2	< 1.00E-08 1/h		
— High demand/continuous mode: PFH in accordance with SIL3	< 1.00E-09 1/h		
Ambient conditions			
Ambient temperature during operation			
• horizontal installation, min.	0 °C		
• horizontal installation, max.	60 °C		
• vertical installation, min.	0 °C		
• vertical installation, max.	50 °C		
Altitude during operation relating to sea level			
• Installation altitude above sea level, max.	4 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP system manual		
Dimensions			
Width	15 mm		
Height	73 mm		
Depth	58 mm		
Weights			
Weight, approx.	30 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			

[Manufacturer Declaration](#)

[Miscellaneous](#)



General Product Approval	EMV	For use in hazardous locations
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[China RoHS](#)



[CCC-Ex](#)

[FM](#)

For use in hazardous locations	Functional Safety
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[Miscellaneous](#)

[Type Examination Certificate](#)

[CCC-Ex](#)

[TUEV](#)

Functional Safety	Maritime application
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[NK / Nippon Kaiji Kyokai](#)

Maritime application	other	Environment
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[CCS \(China Classification Society\)](#)

[KR \(Korean Register of Shipping\)](#)

[PROFIsafe](#)



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