



SIMATIC ET 200SP, digital output module DQ 4x 24...230V AC/2A HF
 packaging unit: 1 piece, two alternative modes: DQ and power control, fits
 to BU-Type U0, color code CC20, channel diagnosis

General information	
Product type designation	DQ 4x24 ... 230 V AC/2 A HF
HW functional status	From FS03
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type U0
Color code for module-specific color identification plate	CC20
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V14
• STEP 7 configurable/integrated from version	STEP 7 V5.5 or higher
• PROFIBUS from GSD version/GSD revision	GSD as of Revision 5
• PROFINET from GSD version/GSD revision	GSDML V2.3
Operating mode	
• DQ	Yes
• DQ with energy-saving function	Yes
• PWM	No
• Oversampling	No
• MSO	No
• Phase control	Yes; Control area: 8.5 ... 100% of the phase angle
• Trailing-edge phase	No
• Half-wave	Yes
• Full-wave	Yes
Supply voltage	
Rated value (AC)	230 V; 47 ... 63 Hz, max. rate of change of frequency 1 mHz/s
permissible range, lower limit (AC)	20.4 V
permissible range, upper limit (AC)	264 V
Input current	
Current consumption (rated value)	8 mA; without load
Output voltage	
Rated value (AC)	230 V; 24V AC to 230V AC
Power loss	
Power loss, typ.	9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz
Address area	

Address space per module	
• Inputs	+ 1 byte for QI information
• Outputs	8 byte
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
Selection of BaseUnit for connection variants	
• 1-wire connection	BU type U0
• 2-wire connection	BU type U0
• 3-wire connection	BU type U0 + Potential distributor module
Digital outputs	
Number of digital outputs	4
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	No; external fusing necessary
Open-circuit detection	Yes; channel by channel
• Response threshold, typ.	1 mA; 40 V AC or more
Overload protection	No; A miniature fuse with 10 tripping current and tripping characteristic "quick response" must be provided in the module supply
Controlling a digital input	Yes
Switching capacity of the outputs	
• with resistive load, max.	2 A; Max. 4 A, see additional description in manual
• with inductive load, max.	2 A
• on lamp load, max.	100 W; Tungsten rating in accordance with UL; for thermistors with higher power ratings, see the notes in the manual
Output voltage	
• for signal "1", min.	20.4 V
Output current	
• for signal "1" rated value	2 A
• for signal "1" permissible range, min.	10 mA
• for signal "1" permissible range, max.	4 A; note derating data in the manual
• for signal "0" residual current, max.	3 mA
Output delay with resistive load	
• "0" to "1", max.	40 ms; 2 AC cycles
• "1" to "0", max.	20 ms; 1 AC cycle
Parallel switching of two outputs	
• for logic links	No
• for uprating	No
• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	10 Hz; Applies to DQ mode; limited by line frequency in PC mode
• with inductive load (acc. to IEC 60947-5-1, AC15), max.	10 Hz; Applies to DQ mode; limited by line frequency in PC mode
• on lamp load, max.	1 Hz; Applies to DQ mode; limited by line frequency in PC mode
Total current of the outputs	
• Current per channel, max.	2 A; Max. 4 A, see additional description in manual
• Current per module, max.	8 A
Total current of the outputs (per module)	
horizontal installation	
— up to 40 °C, max.	8 A
— up to 50 °C, max.	6 A
— up to 60 °C, max.	4 A
vertical installation	
— up to 30 °C, max.	8 A
— up to 40 °C, max.	6 A
— up to 50 °C, max.	4 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
Diagnoses	
• Diagnostic information readable	Yes
• Monitoring the supply voltage	Yes
• Wire-break	Yes; channel by channel
• Short-circuit	No
• Group error	Yes
Diagnostics indication LED	
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; green LED
• for channel diagnostics	Yes; red Fn 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	2 545 V DC/2 s (routine test)
Standards, approvals, certificates	
Suitable for safety functions	No
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-30 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C
• vertical installation, max.	50 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m; On request: Installation altitudes greater than 2 000 m
Dimensions	
Width	20 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	50 g
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