



SIMATIC ET 200SP, digital output module, DQ 16x24 V DC/0.5 A SNK BA, sink output (NPN, sourcing) packing unit: 1 unit, suitable for BU type A0, color code CC00, substitute value output, module diagnostics for: supply voltage

General information	
Product type designation	DQ 16x24VDC/0.5A SNK BA
Firmware version	V0.0
• FW update possible	No
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	STEP 7 V19 or higher with HSP0433, integrated as of V21
• PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET from GSD version/GSD revision	GSDML V2.43
Operating mode	
• DQ	Yes
• DQ with energy-saving function	No
• PWM	No
• Oversampling	No
• MSO	No
Redundancy	
• Redundancy capability	Yes
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)	30 mA; rated voltage, all channels active, no load
Current consumption, max.	8 A; worst case voltage, all channels active, max. load, no derating
Output voltage	
Rated value (DC)	24 V
Power loss	
Power loss, typ.	1.5 W; rated voltage, 50 % active channels
Address area	
Address space per module	
• Address space per module, max.	2 byte
• Outputs	2 byte
Hardware configuration	
Automatic encoding	Yes

• Mechanical coding element	Yes
• Type of mechanical coding element	Type A
Selection of BaseUnit for connection variants	
• 1-wire connection	BU type A0
• 2-wire connection	BU type A0 with AUX terminals or potential distributor module
• 3-wire connection	BU type A0 with AUX terminals or potential distributor module
Digital outputs	
Type of digital output	Sink output (NPN)
Number of digital outputs	16
Current-sinking	Yes
Current-sourcing	No
Digital outputs, parameterizable	Yes
output type acc. to IEC 61131, type 0.5	Yes
Short-circuit protection	Yes; Electronic
• Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	Typ. 39 V
Controlling a digital input	Yes
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
• with inductive load, max.	0.5 A; see additional description in the Equipment Manual
• on lamp load, max.	2.5 W
Load resistance range	
• lower limit	48 Ω
• upper limit	12 kΩ
Output current	
• for signal "1" rated value	0.5 A
• for signal "1" permissible range, max.	0.5 A
• for signal "0" residual current, max.	5 μA
Output delay with resistive load	
• "0" to "1", typ.	100 μs
• "1" to "0", typ.	300 μs
Parallel switching of two outputs	
• for uprating	No
• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load (acc. to IEC 60947-5-1, DC13), max.	0.1 Hz; higher frequencies are possible, see Equipment Manual "Maximum permitted switching frequency of inductive loads"
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	0.5 A
• Current per module, max.	8 A; see Equipment Manual "Derating curve"
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	
• Monitoring the supply voltage	Yes
• Wire-break	No
• 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	No
• 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 load voltage L+	No
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	No
Suitable for safety-related tripping of standard modules	No
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	29.3 kg
— global warming potential, (during production) [CO2 eq]	3.98 kg
— global warming potential, (during operation) [CO2 eq]	25.6 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.245 kg
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.	5 000 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	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

Miscellaneous

Manufacturer Declaration


EG-Konf.



[KC](#)

[China RoHS](#)

General Product Approval

EMV

For use in hazardous locations


UL


RCM

[KC](#)


UL

[FM](#)

[CCC-Ex](#)

For use in hazardous locations

Maritime application


IECEX

[Miscellaneous](#)


ATEX

[Type Examination Certificate](#)


ABS


BUREAU VERITAS

Maritime application


DNV


LRS

[NK / Nippon Kaiji Kyokai](#)


RINA

[CCS \(China Classification Society\)](#)


KR

Environment



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