



SIMATIC ET 200SP HA, ET 200SP, digital ex-i output module, Ex-DQ 2x23,1VDC/20mA suitable for BaseUnit type X1, channel diagnostics

General information	
Product type designation	Ex-DQ 2x23.1VDC/20mA
Firmware version	V1.0
<ul style="list-style-type: none"> FW update possible 	Yes
usable BaseUnits	BU type X1
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	No
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	V16
<ul style="list-style-type: none"> PCS 7 configurable/integrated from version 	V9.1
<ul style="list-style-type: none"> PCS neo can be configured/integrated from version 	V3.1
<ul style="list-style-type: none"> PROFINET from GSD version/GSD revision 	GSDML V2.35
Operating mode	
<ul style="list-style-type: none"> DQ 	Yes
<ul style="list-style-type: none"> MSO 	Yes
Redundancy	
<ul style="list-style-type: none"> Redundancy capability 	No
Input current	
Current consumption (rated value)	80 mA; At 20 mA per channel
Current consumption, max.	80 mA; At 20 mA per channel
output voltage / header	
Rated value (DC)	23.1 V; See output characteristic in manual
Power loss	
Power loss, typ.	1.3 W
Address area	
Address space per module	
<ul style="list-style-type: none"> Address space per module, max. 	1 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	
<ul style="list-style-type: none"> Mechanical coding element 	Yes
Selection of BaseUnit for connection variants	
<ul style="list-style-type: none"> 2-wire connection 	BU type X1
Digital outputs	
Number of digital outputs	2
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
Open-circuit detection	Yes; capacitive loads can cause wire-break diagnostics when the channel is

	switched off
Overload protection	Yes
Limitation of inductive shutdown voltage to	DQ.n- (-1 V)
Switching capacity of the outputs	
• with resistive load, max.	20 mA; See output characteristic in manual
• with inductive load, max.	20 mA; See output characteristic in manual
Load resistance range	
• lower limit	872 Ω; See output characteristic in manual
• upper limit	10 kΩ; See output characteristic in manual
Output current	
• for signal "1" rated value	20 mA
• for signal "0" residual current, max.	100 μA; 250 μA test current for wire break diagnostics
Output delay with resistive load	
• "0" to "1", typ.	50 μs
• "1" to "0", typ.	100 μs
Parallel switching of two outputs	
• for uprating	No
Switching frequency	
• with resistive load, max.	500 Hz
• with inductive load, max.	500 Hz
Total current of the outputs	
• Current per channel, max.	20 mA
• Current per module, max.	40 mA
Total current of the outputs (per module)	
horizontal installation	
— up to 70 °C, max.	40 mA
vertical installation	
— up to 60 °C, max.	40 mA
Cable length	
• shielded, max.	500 m; Ex characteristic values must be observed
• unshielded, max.	500 m; Ex characteristic values must be observed
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
— parameterizable	Yes
• Wire-break	Yes; channel by channel
• Short-circuit	Yes; channel by channel
• Group error	Yes
Diagnostics indication LED	
• MAINT LED	Yes; Yellow 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
Ex(I) characteristics	
maximum values for connecting terminals for gas group IIC	
• U _o (no-load voltage), max.	24.8 V
• I _o (short-circuit current), max.	99 mA
• P _o (power output), max.	614 mW
• C _o (permissible external capacity), max.	100 nF
• L _o (permissible external inductivity), max.	3.5 mH
• U _m (voltage at non-intrinsically safe connecting terminals), max.	60 V
Potential separation	
Potential separation channels	

- between the channels
- between the channels and backplane bus
- between the channels and the power supply of the electronics

No
 Yes
 Yes; Electrical isolation between the channels and input voltage PME

Isolation

Isolation tested with further information on insulation can be found in the "ET 200SP HA / ET 200SP modules for devices in hazardous areas" System Manual

insulation of the field circuits to local ground acc. to IEC/EN 60079-11 tested with 707 V DC (type test)

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

Altitude during operation relating to sea level

- Installation altitude above sea level, max. 2 000 m

Dimensions

Width 20 mm
 Height 73 mm
 Depth 58 mm

Weights

Weight, approx. 55 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



[KC](#)



For use in hazardous locations

Maritime application



[Miscellaneous](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



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



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