



SIMATIC ET 200SP HA, ET 200SP, digital ex-i output module, Ex-DQ 2x17.4VDC/27mA suitable for BaseUnit type X1, channel diagnostics

General information	
Product type designation	Ex-DQ 2x17.4VDC/27mA
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 	STEP 7 V16 or higher with HSP
<ul style="list-style-type: none"> STEP 7 configurable/integrated from version 	STEP 7 V5.6 SP2 or higher
<ul style="list-style-type: none"> PCS 7 configurable/integrated from version 	V9.1
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 27 mA per channel
Current consumption, max.	80 mA; at 27 mA per channel
output voltage / header	
Rated value (DC)	17.4 V; See output characteristic in manual
Power loss	
Power loss, typ.	1.2 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.	27 mA; See output characteristic in manual
• with inductive load, max.	27 mA; See output characteristic in manual
Load resistance range	
• lower limit	480 Ω; parallel operation 240 ohm, see output characteristic in manual
• upper limit	10 kΩ; parallel operation 5 kOhm, see output characteristic in manual
Output current	
• for signal "1" rated value	27 mA
• for signal "0" residual current, max.	100 µA; 250 µA test current for wire break diagnostics, parallel operation 500 µA
Output delay with resistive load	
• "0" to "1", typ.	50 µs
• "1" to "0", typ.	100 µs
Parallel switching of two outputs	
• for uprating	Yes
Switching frequency	
• with resistive load, max.	500 Hz
• with inductive load, max.	500 Hz
Total current of the outputs	
• Current per channel, max.	27 mA
• Current per module, max.	54 mA
Total current of the outputs (per module)	
horizontal installation	
— up to 70 °C, max.	54 mA
vertical installation	
— up to 60 °C, max.	54 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	
• Uo (no-load voltage), max.	19.4 V
• Io (short-circuit current), max.	133 mA; parallel operation 266 mA
• Po (power output), max.	645 mW; parallel operation 1 290 mW
• Co (permissible external capacity), max.	232 nF; parallel operation 220 nF
• Lo (permissible external inductivity), max.	1.9 mH; parallel operation 328 uH
• Um (voltage at non-intrinsically safe connecting terminals), max.	60 V
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	Yes; Electrical isolation between the channels and input voltage PME

electronics

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

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
-----------------	------

last modified: 5/20/2021 