



SIMATIC ET 200SP HA, ET 200SP, digital ex-i input module, DI 4xNAMUR, suitable for BaseUnit type X1, channel diagnostics

Figure similar

General information	
Product type designation	Ex-DI 4xNAMUR
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"> DI 	Yes
<ul style="list-style-type: none"> Counter 	Yes
<ul style="list-style-type: none"> MSI 	Yes
Redundancy	
<ul style="list-style-type: none"> Redundancy capability 	No
Input current	
Current consumption (rated value)	50 mA
Current consumption, max.	55 mA
Encoder supply	
Number of outputs	4
Output voltage (DC)	8.2 V
Short-circuit protection	Yes
Power loss	
Power loss, typ.	1.2 W
Address area	
Address space per module	
<ul style="list-style-type: none"> Inputs 	10 byte; + 1 byte for QI information
<ul style="list-style-type: none"> Outputs 	10 byte
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 inputs	

Number of digital inputs	4; NAMUR
Digital inputs, parameterizable	Yes
Pulse extension	Yes; 0.5 s, 1 s, 2 s
Time stamping	No
Edge evaluation	Yes; Positive edge, negative edge
Signal change flutter	Yes; 2 to 32 signal changes
Flutter observation window	Yes; 0.5 s, 1 s to 100 s in 1-s steps
Digital input functions, parameterizable	
<ul style="list-style-type: none"> • Counter <ul style="list-style-type: none"> — Number, max. — Counting frequency, max. — Counting direction up/down 	<ul style="list-style-type: none"> 2; Channel 0 and 1 5 kHz Yes; Up
Input voltage	
<ul style="list-style-type: none"> • Rated value (DC) 	8.2 V
Input current	
for 10 k switched contact	
— for signal "0"	Max. 1.2 mA
— for signal "1"	Min. 2.1 mA
for unswitched contact	
— for signal "0", max. (permissible quiescent current)	0.5 mA
— for signal "1"	typ. 8 mA
Input delay (for rated value of input voltage)	
for NAMUR inputs	
— at "0" to "1", max.	12 ms
— at "1" to "0", max.	12 ms
Cable length	
<ul style="list-style-type: none"> • shielded, max. • unshielded, max. 	<p>500 m; Ex characteristic values must be observed; without shield applied on both sides and cable lengths of more than 200 m, measured value distortions can occur when using the inputs as counter/ frequency meter</p> <p>300 m; Ex characteristic values must be observed; without shield applied on both sides and cable lengths of more than 200 m, measured value distortions can occur when using the inputs as counter/ frequency meter</p>
Encoder	
Connectable encoders	
<ul style="list-style-type: none"> • NAMUR encoder/changeover contact according to EN 60947 • Single contact / changeover contact unconnected • Single contact / changeover contact connected with 10 kΩ 	<ul style="list-style-type: none"> Yes Yes Yes
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm • Maintenance interrupt • Hardware interrupt 	<ul style="list-style-type: none"> Yes Yes Yes; channel by channel
Diagnoses	
<ul style="list-style-type: none"> • Diagnostic information readable • Monitoring the supply voltage <ul style="list-style-type: none"> — parameterizable • Monitoring of encoder power supply • Wire-break • Short-circuit • Group error 	<ul style="list-style-type: none"> Yes Yes Yes Yes Yes; channel by channel Yes; channel by channel Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Channel status display <ul style="list-style-type: none"> • for channel diagnostics • for module diagnostics 	<ul style="list-style-type: none"> Yes; Yellow LED Yes; green PWR LED Yes; green LED Yes; red LED Yes; green/red DIAG LED

Integrated Functions	
Measuring functions	
Accuracy	
— Frequency measurement	1 %
Ex(i) characteristics	
maximum values for connecting terminals for gas group IIC	
<ul style="list-style-type: none"> • U_o (no-load voltage), max. • I_o (short-circuit current), max. • P_o (power output), max. • C_o (permissible external capacity), max. • L_o (permissible external inductivity), max. • U_m (voltage at non-intrinsically safe connecting terminals), max. 	9.6 V 61 mA; applies for up to four circuits connected in parallel 145 mW; applies for up to four circuits connected in parallel 3.6 µF; applies for up to four circuits connected in parallel 13 mH; applies for up to four circuits connected in parallel 60 V
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. 	-40 °C 70 °C -40 °C 60 °C
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • 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 