SIEMENS

Data sheet 6DL1131-6TD00-0HX1

Figure similar

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

General information	
Product type designation	Ex-DI 4xNAMUR
Firmware version	V1.0
● FW update possible	Yes
usable BaseUnits	BU type X1
Product function	
● I&M data	Yes; I&M0 to I&M3
● Isochronous mode	No
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V16
● PCS 7 configurable/integrated from version	V9.1
● PCS neo can be configured/integrated from version	V3.1
● PROFINET from GSD version/GSD revision	GSDML V2.35
Operating mode	
● DI	Yes
● Counter	Yes
● MSI	Yes
Redundancy	
● 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	
● Inputs	10 byte; + 1 byte for QI information
● Outputs	10 byte
Hardware configuration	
Automatic encoding	
● Mechanical coding element	Yes
Selection of BaseUnit for connection variants	
● 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	
● Counter	
— Number, max.	2; Channel 0 and 1
— Counting frequency, max.	5 kHz
— Counting direction up/down	Yes; Up
Input voltage	
● 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
for NAMUR encoders	
— for signal "0", min.	0.35 mA
— for signal "0", max.	1.2 mA
— for signal "1", min.	2.1 mA
— for signal "1", max.	6.4 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	
● shielded, max.	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
● unshielded, max.	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
Encoder	
Connectable encoders	
● NAMUR encoder/changeover contact according to EN 60947	Yes
● Single contact / changeover contact unconnected	Yes
● Single contact / changeover contact connected with 10 kΩ	Yes
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
● Diagnostic alarm	Yes
● Maintenance interrupt	Yes
● Hardware interrupt	Yes; channel by channel
Diagnoses	
● Diagnostic information readable	Yes
● Monitoring the supply voltage	Yes
— parameterizable	Yes
● Monitoring of encoder power supply	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
Integrated Functions	
Measuring functions	
Accuracy	
— Frequency measurement	1 %
Ex(i) characteristics	
maximum values for connecting terminals for gas group IIC	
● Uo (no-load voltage), max.	9.6 V
● Io (short-circuit current), max.	61 mA; applies for up to four circuits connected in parallel
● Po (power output), max.	145 mW; applies for up to four circuits connected in parallel
● Co (permissible external capacity), max.	3.6 µF; applies for up to four circuits connected in parallel
● Lo (permissible external inductivity), max.	13 mH; applies for up to four circuits connected in parallel
● 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 electronics	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)

Environment

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