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Data sheet 6ES7331-7TB10-0AB0



Figure similar

********** spare part ********* SIMATIC DP, HART analog input SM 331, 2 AI, 0/4 - 20 mA HART from HART revision 5.0, for ET200M with IM 153-2, 1 x 20-pole

Supply voltage	
Load voltage L+	
● Rated value (DC)	24 V
● Reverse polarity protection	Yes
Input current	
from load voltage L+ (without load), max.	180 mA
from backplane bus 5 V DC, max.	100 mA
Output voltage	
Power supply to the transmitters	
● present	Yes
● Rated value (DC)	15 V; at 22 mA
● short-circuit proof	Yes; approx. 30 mA
● No-load voltage (DC)	29.6 V
Power loss	
Power loss, typ.	4.5 W
Analog inputs	
Number of analog inputs	2
permissible input current for current input (destruction limit), max.	40 mA
Input ranges (rated values), currents	
● 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	50 Ω
● 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 Ω
Cable length	
● shielded, max.	400 m
Analog value generation for the inputs	
Measurement principle	Sigma Delta
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	16 bit; 10 bit to 15 bit + sign
● Integration time, parameterizable	Yes
● Integration time (ms)	2,5 / 16,67 / 20 / 100 ms
● Basic conversion time, including integration time (ms)	2.5 / 16.67 / 20 / 100 (1 channel enabled); 7.5 / 50 / 60 / 300 (2 channels enabled)
● Interference voltage suppression for interference frequency f1 in Hz	10 / 50 / 60 / 400 Hz
Encoder	
Connection of signal encoders	
● for current measurement as 2-wire transducer	Yes

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● for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
● Current, relative to input range, (+/-)	0.45 %; From 0/4 to 20 mA
Basic error limit (operational limit at 25 °C)	
● Current, relative to input range, (+/-)	0.1 %; From 0/4 to 20 mA
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable
● Limit value alarm	Yes; Parameterizable, channels 0 and 1
Diagnoses	
● Overrange	Yes; red LED, signal
● Wire-break in signal transmitter cable	Yes; red LED, signal
● Short-circuit of the signal encoder cable	Yes; red LED, signal
● HART communication active	Yes; green LED (H)
Diagnostics indication LED	
● Group error SF (red)	Yes
● Channel fault indicator F (red)	Yes
Ex(i) characteristics	
Module for Ex(i) protection	Yes
maximum values for connecting terminals for gas group IIC	
● Uo (no-load voltage), max.	26 V
● Io (short-circuit current), max.	96.1 mA
● Po (power output), max.	511 mW
● Co (permissible external capacity), max.	62 nF
● Lo (permissible external inductivity), max.	3 mH
● Um (voltage at non-intrinsically safe connecting terminals), max.	250 V; DC
Potential separation	
Potential separation analog inputs	
● between the channels	Yes
● between the channels and backplane bus	Yes
Permissible potential difference	
between the inputs (UCM)	60 V DC/30 V AC permitted potential difference (Viso) of signals from hazardous areas
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
● ATEX marking	ATEX II 3 G (2) GD Ex nA [ib Gb] [ib IIIC Db] IIC T4 Gc
● ATEX certificate	DEKRA 14 ATEX 0052X
● FM marking	Class I, Division 2, Group A, B, C, D T4; Class I, Zone 2, Group IIC T4
Ambient conditions	
Ambient temperature during operation	
● min.	0 °C
● max.	60 °C
Connection method	
required front connector	1x 20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	260 g

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Classifications

	Version	Classification
eClass	16	27-24-26-01
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	10	EC001596
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



Miscellaneous



Manufacturer Declaration





General Product Approval





Manufacturer Declaration

China RoHS

Miscellaneous

For use in hazardous locations



For use in hazardous locations



FM



CCC-Ex



Maritime application



Maritime application

NK / Nippon Kaiji Kyokai



last modified: 4/7/2025

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