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Data sheet 6ES7138-7FA00-0AB0



SIMATIC DP, fail-safe electronics module for ET200iSP, 4F-AI HART Ex I, up to Category 4 (EN954-1)/ SIL3 (IEC61508)/PLE (ISO13849), for connecting (HART) 2-wire measuring transducers, supported HART protocol Version 7.0, Ex ib (ia Ga) IIC T4 Gb, Ex ib [ia IIIC Da] IIC T4 Gb, Ex ib [ia] I Mb

General information	
Product type designation	4F-AI I Ex HART
Input current	
Current consumption, typ.	315 mA
from supply voltage L+, max.	490 mA; int. Powerbus
output voltage / header	
supply voltage of the transmitters / header	
● short-circuit proof	Yes
● Supply current, max.	25 mA; Plus 4 mA per channel
Power loss	
Power loss, typ.	3.8 W
Address area	
Address space per module	
● Address space per module, max.	16 byte; 12 bytes in the I area / 4 bytes in the O area
Analog inputs	
Number of analog inputs	4
Cycle time (all channels) max.	See data in manual
Input ranges (rated values), currents	
● 0 to 20 mA	Yes
● 4 mA to 20 mA	Yes
Cable length	
● shielded, max.	500 m
Analog value generation for the inputs	
Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	16 bit
● Integration time, parameterizable	Yes
● Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
Smoothing of measured values	
● parameterizable	Yes; in 4 stages
● Step: None	Yes; 1x cycle time
● Step: low	Yes; 4x cycle time
● Step: Medium	Yes; 16x cycle time
● Step: High	Yes; 64x cycle time
Encoder	
Connection of signal encoders	
● for current measurement as 2-wire transducer	Yes
— Burden of 2-wire transmitter, max.	750 Ω
Errors/accuracies	

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Linearity error (relative to input range), (+/-)	0.015 %
Temperature error (relative to input range), (+/-)	0.005 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.015 %
Operational error limit in overall temperature range	
● Current, relative to input range, (+/-)	0.35 %
Basic error limit (operational limit at 25 °C)	
● Current, relative to input range, (+/-)	0.1 %
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency	
● Series mode interference (peak value of interference < rated value of input range), min.	40 dB
● Common mode interference, min.	50 dB
Interrupts/diagnostics/status information	
Alarms	
● Diagnostic alarm	Yes; Parameterizable
Diagnoses	
● Diagnostic information readable	Yes
● Wire-break	Yes
● Short-circuit	Yes
Diagnostics indication LED	
● Group error SF (red)	Yes
Potential separation	
Potential separation analog inputs	
● between the channels	No
● between the channels and backplane bus	Yes
● Between the channels and load voltage L+	Yes; Power bus
Permissible potential difference	
between different circuits	60 V DC/30 V AC
Standards, approvals, certificates	
CE mark	Yes
Highest safety class achievable in safety mode	
● Performance level according to ISO 13849-1	PLe
● SIL acc. to IEC 61508	SIL 3
Use in hazardous areas	
● ATEX marking	II 2 G (1) GD Ex ib[ia Ga][ia IIIC Da] IIC T4 GB and I M2 Ex ib[ia Ma] I Mb
● ATEX certificate	10 ATEX 0058
Dimensions	
Width	30 mm
Height	129 mm
Depth	136.5 mm
Weights	
Weight, approx.	299 g

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