

SIMATIC DP, FAILSAFE ELECT. SUBMODULE FOR ET200ISP, 4F-AI HART EX I, UP TO CATEGORY 4 (EN954-1)/ SIL3 (IEC61508)/PLE (ISO13849), FOR CONNECTION OF (HART) 2-WIRE TRANSDUCER



Input current	
from supply voltage L+, max.	490 mA; int. Powerbus
Output voltage	
Power supply to the transmitters	
• short-circuit proof	Yes
• Supply current, max.	25 mA; Plus 4 mA per channel
Power loss	
Power loss, max.	5.4 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	
• Voltage	No
• Current	Yes

• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
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; 1 x cycle time
• Step: low	Yes; 4 x cycle time
• Step: Medium	Yes; 16 x cycle time
• Step: High	Yes; 64 x 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

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 $f = n \times (f_1 \pm 1 \%)$, f_1 = 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
Diagnostic messages	
• 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	
• Type of protection acc. to EN 50020 (CENELEC)	II 2 G (1) GD Ex ib[ia Ga][ia IIIC Da] IIC T4 GB and I M2 Ex ib[ia Ma] I Mb
• Type of protection acc. to KEMA	10 ATEX 0058
Dimensions	
Width	30 mm
Height	129 mm
Depth	136.5 mm
Weights	
Weight, approx.	299 g
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