Data sheet

SIPLUS S7-400 SM 431 16Al for medial exposure based on $6\mbox{ES7431-0HH00-0AB0}$



Figure similar

Supply voltage	
Load voltage L+	
Rated value (DC)	24 V; Only required for supplying 2-wire transmitters
 Reverse polarity protection 	Yes
Input current	
from load voltage L+ (without load), max.	400 mA; for 16 connected, fully controlled 2-wire transmitters
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	2 W
Analog inputs	
Number of analog inputs	16
 For voltage/current measurement 	16
permissible input voltage for voltage input	20 V; 20 V DC permanent, 75 V DC for max. 1 s (duty factor 1:20)
(destruction limit), max.	
permissible input current for current input (destruction	40 mA
limit), max.	

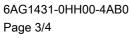
PNAP

	4.07
Constant measurement current for resistance-type transmitter, typ.	1.67 mA
Input ranges	
Voltage	Yes
Current	Yes
Thermocouple	No
Resistance thermometer	No
Resistance	No
Input ranges (rated values), voltages	
• 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	100 kΩ
• -1 V to +1 V	Yes
— Input resistance (-1 V to +1 V)	10 MΩ
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
Input ranges (rated values), currents	
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	50 Ω
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 Ω
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
 Resolution with overrange (bit including sign), max. 	13 bit
 Integration time, parameterizable 	Yes
 Basic conversion time (ms) 	55 / 65 ms
Integration time (ms)	50 / 60 ms
 Interference voltage suppression for interference frequency f1 in Hz 	50 / 60 Hz
Encoder	
Connection of signal encoders	
• for voltage measurement	Yes; possible
• for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
Voltage, relative to input range, (+/-)	0.65 %; 1.0 % at 1 to 5 V; 0.65 % at ±1 V, ±10 V
Current, relative to input range, (+/-)	0.65 %
Basic error limit (operational limit at 25 °C)	
 Voltage, relative to input range, (+/-) 	0.25 %; 0.5% at 1 to 5 V; 0.25% at ±1 V, ±10 V

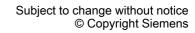


0.25 %: at +20 mA 4 to 20 mA

Current, relative to input range, (+/-)	0.25 %; at ±20 mA, 4 to 20 mA
Interrupts/diagnostics/status information	
Diagnostics function	No
Potential separation	
Potential separation analog inputs	
Potential separation analog inputs	No
• between the channels	No
• between the channels and backplane bus	No
 Between the channels and load voltage L+ 	No
Isolation	
Isolation tested with	500 V DC between bus and local ground
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C; = Tmin
• max.	60 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	5 000 m
 Ambient air temperature-barometric pressure- altitude 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)
Relative humidity	
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Use in stationary industrial systems	
 to biologically active substances according to EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
 to chemically active substances according to EN 60721-3-3 	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
 to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
 to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances	Yes; Class 6S3 incl. sand, dust; *



according to EN 60721-3-6



Usage in industrial process technology	
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
 Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high reliability
 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection
 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Conformal coating, Class A
Dimensions	
Width	25 mm
Height	290 mm
Depth	210 mm
Weights	
Weight, approx.	500 g

10/13/2020





last modified: