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Data sheet 6AG1431-0HH00-4AB0



Figure similar

SIPLUS S7-400 SM 431 16AI based on 6ES7431-0HH00-0AB0 with conformal coating, 0…+60 °C,

General information	
based on	6ES7431-0HH00-0AB0
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 (destruction limit), max.	20 V; 20 V DC permanent, 75 V DC for max. 1 s (duty factor 1:20)
permissible input current for current input (destruction limit), max.	40 mA
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	

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● 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
● Basic execution time of the module (all channels released)	1 040 ms; 880 / 1 040 ms
Encoder	
Connection of signal encoders	
● for voltage measurement	Yes; possible
● for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Temperature error (relative to input range), (+/-)	0.01 %/K
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
● 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 AC/707 V DC, type test
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); *

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— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
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

Classifications

	Version	Classification
eClass	14	27-24-22-01
eClass	12	27-24-22-01
eClass	9.1	27-24-22-01
eClass	9	27-24-22-01
eClass	8	27-24-22-01
eClass	7.1	27-24-22-01
eClass	6	27-24-22-01
ETIM	10	EC001420
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval					EMV
CE EG-Konf.	Manufacturer Declaration	UKCA	China RoHS	Metrological Approval	KC

EMV	For use in hazardous locations		
RCM	CCC-Ex	IECEx	ATEX

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