



Figure similar

SIPLUS S7-1500 AI 8xU/I HS based on 6ES7531-7NF10-0AB0 with conformal coating, -40...+70 °C, analog input module 16-bit resolution, accuracy 0.3%, 8 channels in groups of 8, common mode voltage 10 V; diagnostics; hardware interrupts 8 channels in 0.0625 ms including infeed element, shielding bracket and shield terminal

General information	
Product type designation	AI 8xU/I HS
Product function	
• I&M data	Yes
• Isochronous mode	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	see entry ID: 109746275
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Encoder supply	
24 V encoder supply	
• Short-circuit protection	Yes
• Output current, max.	53 mA
Power	
Power available from the backplane bus	1.2 W
Power loss	
Power loss, typ.	3.4 W
Analog inputs	
Number of analog inputs	8; > +60 °C max. 4x ±20 mA or 4x ±10 V permissible
• For current measurement	8
• For voltage measurement	8
permissible input voltage for voltage input (destruction limit), max.	28.8 V
permissible input current for current input (destruction limit), max.	40 mA
Input ranges (rated values), voltages	
• 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	50 kΩ
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 kΩ
• -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	50 kΩ
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	41 Ω; Plus approx. 42 ohms for overvoltage protection by PTC
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	41 Ω; Plus approx. 42 ohms for overvoltage protection by PTC

<ul style="list-style-type: none"> • 4 mA to 20 mA — Input resistance (4 mA to 20 mA) 	Yes 41 Ω; Plus approx. 42 ohms for overvoltage protection by PTC
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	800 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. 	16 bit
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for voltage measurement • for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer 	Yes Yes 820 Ω Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.02 %
Temperature error (relative to input range), (+/-)	0.005 %/K
Crosstalk between the inputs, min.	-60 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.02 %
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) 	0.4 % 0.4 %
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) 	0.2 % 0.2 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
<ul style="list-style-type: none"> • Common mode voltage, max. • Common mode interference, min. 	10 V 60 dB; at 400 Hz: 50 dB
Isochronous mode	
Filtering and processing time (TCI), min.	80 μs
Bus cycle time (TDP), min.	250 μs
Jitter, max.	1 μs
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm • Limit value alarm 	Yes Yes; two upper and two lower limit values in each case
Diagnoses	
<ul style="list-style-type: none"> • Monitoring the supply voltage • Wire-break • Overflow/underflow 	Yes Yes; only for 1 ... 5 V and 4 ... 20 mA Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics 	Yes; green LED Yes; green LED Yes; red LED Yes; red LED
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics 	No Yes Yes
Permissible potential difference	
between the inputs (UCM)	20 V DC
Between the inputs and MANA (UCM)	10 V DC
between M internally and the inputs	75 V DC/60 V AC
Isolation	
Isolation tested with	707 V DC
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • horizontal installation, min. • horizontal installation, max. 	-40 °C; = Tmin (incl. condensation/frost) 70 °C; = Tmax

<ul style="list-style-type: none"> • vertical installation, min. • vertical installation, max. 	-40 °C; = Tmin 40 °C; = Tmax
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude 	5 000 m 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	
<ul style="list-style-type: none"> • With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
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 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	
<ul style="list-style-type: none"> • Coatings for printed circuit board assemblies acc. to EN 61086 • Protection against fouling acc. to EN 60664-3 • Military testing according to MIL-I-46058C, Amendment 7 • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A 	Yes; Class 2 for high reliability Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	200 g
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