



SIPLUS S7-1500,
ANALOG INPUT MODULE AI 8 X U/I HS,
16 BITS OF RESOLUTION, ACCURACY 0.3 %;
8 CHANNELS IN GROUPS OF 8;
COMMON MODE VOLTAGE APPR. 10V;
DIAGNOSIS, PROCESSALARMS;
8 CHANNELS IN 0,125 MS INCL. INFEED ELEMENT,
SHIELD CLAMP AND SHIELD TERMINAL -40 ... +70
DEGREE C WITH CONFORMAL COATING BASED ON
6ES7531-7NF10-0AB0

General information	
Hardware product version	E01
Firmware version	V1.0.0
Product function	
I&M data	Yes
Engineering with	
STEP 7 TIA Portal can be configured/integrated as of version	V12 / V12
STEP 7 can be configured/integrated as of version	V5.5 / -
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Input current	
Current consumption, max.	240 mA ; with 24 V DC supply
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 losses	
Power loss, typ.	3.4 W
Analog inputs	
Number of analog inputs	8 ; > +60 °C max. 4x ±20 mA or 4x ±10 V permissible
Number of analog inputs with current measurement	8
Number of analog inputs 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 to 5 V	Yes
Input resistance (1 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 to +20 mA	Yes
Input resistance (-20 to +20 mA)	41 Ω ; Plus approx. 42 ohms for overvoltage protection by PTC
4 to 20 mA	Yes
Input resistance (4 to 20 mA)	41 Ω ; Plus approx. 42 ohms for overvoltage protection by PTC
Cable length	
Cable length, shielded, max.	800 m
Analog value creation	
Integrations and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	16 bit
Basic execution time of the module (all channels released)	62.5 μs
Smoothing of measured values	
Parameterizable	Yes
Step: None	Yes
Step: low	Yes
Step: Medium	Yes
Step: High	Yes
Encoder	

Connection of signal encoders	
for voltage measurement	Yes
for current measurement as 2-wire transducer	Yes
Burden of 2-wire transmitter, max.	820 Ω
for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.02 %
Temperature error (relative to input range), (+/-)	0.0050 %/K
Crosstalk between the inputs, min.	-60 dB
Repeat accuracy in steady state at 25 °C (relative to input area), (+/-)	0.02 %
Operational limit in overall temperature range	
Voltage, relative to input area, (+/-)	0.3 %
Current, relative to input area, (+/-)	0.3 %
Basic error limit (operational limit at 25 °C)	
Voltage, relative to input area, (+/-)	0.2 %
Current, relative to input area, (+/-)	0.2 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
common mode voltage, max.	10 V
Common mode interference, min.	60 dB ; (At 400 Hz: 50 dB)
Isochronous mode	
Isochronous operation (application synchronized up to terminal)	Yes
Filtering and processing time (TCI), min.	80 μ s
Bus cycle time (TDP), min.	250 μ s
Jitter, max.	1 μ s
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes
Limit value alarm	Yes ; two upper and two lower limit values in each case
Diagnostic messages	
Diagnostics	Yes
Monitoring the supply voltage	Yes
Wire break	Yes ; Only for 1 ... 5V and 4 ... 20mA
Overflow/underflow	Yes
Diagnostics indication LED	
Monitoring the supply voltage	Yes ; Green LED
Channel status display	Yes ; Green LED
for channel diagnostics	Yes ; Red LED
for module diagnostics	Yes ; Red LED

Galvanic isolation	
Electrical isolation channels	
between the channels	No
between the channels and the backplane bus	Yes
between the channels and the supply voltage of the electronics	Yes
Permissible potential difference	
between the inputs (UCM)	20 V DC
between inputs and MANA (UCM)	10 V DC
between M internally and the inputs	75 VDC / 60 VAC
Ambient conditions	
Operating temperature	
horizontal installation, min.	-40 °C
horizontal installation, max.	70 °C
vertical installation, min.	-40 °C
vertical installation, max.	40 °C
Extended ambient conditions	
Relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity	
With condensation, tested in accordance with IEC 60068-2-38, maximum	100 % ; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
to biologically active substances/conformity with EN 60721-3-3	Yes ; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
to chemically active substances/conformity with EN 60721-3-3	Yes ; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
to mechanically active substances/conformity with EN 60721-3-3	Yes ; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	200 g
Status	May 9, 2014