SIEMENS

Data sheet

6ES7531-7LH00-0AB0



SIMATIC S7-1500, analog input module AI 16xU BA, 16-bit resolution accuracy 0.5%, 16 channels in groups of 16, common mode voltage 4 V DC, diagnostics, hardware interrupts; delivery including infeed element, shield bracket and shield terminal: front connector (screw terminals or push-in) to be ordered separately

General information	
Product type designation	AI 16xU BA
HW functional status	From FS01
Firmware version	V1.0.0
FW update possible	Yes
Product function	
I&M data	Yes; I&M0 to I&M3
Isochronous mode	No
Prioritized startup	No
 Measuring range scalable 	No
 Scalable measured values 	No
 Adjustment of measuring range 	No
Engineering with	
STEP 7 TIA Portal configurable/integrated from version	V16 with HSP 312 / V17
 STEP 7 configurable/integrated from version 	V5.5 SP3 / -
 PROFIBUS from GSD version/GSD revision 	V1.0 / V5.1
 PROFINET from GSD version/GSD revision 	V2.3 / -
Operating mode	
Oversampling	No
• MSI	Yes
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No
Power	
Power available from the backplane bus	0.85 W
Power loss	
Power loss, typ.	0.75 W
Analog inputs	
Number of analog inputs	16
 For voltage measurement 	16
permissible input voltage for voltage input (destruction limit), max.	12 V; 12 V continuous, 30 V for max. 1 s
Input ranges (rated values), voltages	
• 0 to +5 V	No
• 0 to +10 V	No
• 1 V to 5 V	Yes
— Input resistance (1 V to 5 V)	10 ΜΩ
• -1 V to +1 V	Yes
 Input resistance (-1 V to +1 V) 	10 MΩ

• 25 V br +25 VNo• 25 m V br +25 m VNo• 250 m V br +250 m VNo• 55 V br +5 VYes- Input resistance (-5 V br 5 V)10 MD• 50 m V br +500 m VNo• 50 m V br 90 m VNo• 60 m N br 90 m VYes• 60 m N br 90 m VYes• 10 m Br 90 m VNo• 10 m Br 90 m VNo• 10 m Br 90 m VNo• 10 m Br 90 m VNo		10.110
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•-00 mV to +00 mVNoCable lend:20 m•	• -50 mV to +50 mV	No
Cable length20 mA shelded, max, max, max80 mMeasurement principleIntegratingMeasurement principleIntegration and conversion time/resolution per channel principle• Resolution with oversion time/resolution per channel principle10 bl• Integration and conversion time for wite-brack motion4 m• Integration and conversion time for wite-brack motion4 m• Interference voltage suppression for interference400 / 80 / 50 / 10 / Hz• Interference voltage suppression for interference400 / 80 / 50 / 10 / Hz• Register of 11 in 25 motion• Stop: NomYes• Stop: NomYes• Stop: NomYes• Stop: NomYes• Stop: NomYes• Stop: NomYes• Stop: Nom10 / 15 %• Convection of signal encoders- sol 03• For voltage measurementYes• Convection of signal encoders- sol 03• Lor voltage measurement- sol 04• Convection of signal encoders- sol 03• Convection of signal encoders- sol 04• Convection of signal encoders<	 -500 mV to +500 mV 	No
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• Interference values400 / 60 / 50 / 10 HzSmooting of measured valuesYes• parameterizableYes• Sign: NoneYes• Sign: NoneYes• Sign: NoneYes• Sign: NoneYes• Sign: InterferenceYes• Sign: NoneYes• Sign: NoneYes• Sign: InterferenceYes• Sign: InterferenceYes• Sign: InterferenceYes• For values measurementYes• For values measurementYes• For values row (relative to input range), (+/)0.1 %• Crosstalk between the inputs, max50 dB• Portalge, relative to input range, (+/)0.5 %• Ortalge, relative to input range, (+/)0.6 %• Ortalge, relative to input range, (+/)0.6 % <tr< td=""><td></td><td></td></tr<>		
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• Step: HighYes• Step: HighYesEncoderConnection of signal encoders• for voltage measurementYesEncoral/accuraciasYesEncoral/accuraciasLinearity error (relative to input range), (+/-)0.1%Crosstak between the inputs, max50 dBRepeat accuracy in steady state at 25 °C (relative to input range), (+/-)0.1%Operational error limit in overall temperature range0.1%Operational error limit in overall temperature range0.1%Portalge, relative to input range, (+/-)0.5%Basic error limit (operational limit at 25 °C)S• Voltage, relative to input range, (+/-)0.5%Eastic error limit (operational limit at 25 °C)S• Voltage, relative to input range, (+/-)0.3%• Common mode interference, (nin.0.3%• Common mode voltage, max.4 V• Common mode voltage, max.4 V• Common mode voltage, max.Yes• Diagnostics/status informationYesDiagnostics/status informationYes• Diagnostics/status informationYes• Sont-circuitNo• Overflow/underflowYes; reu LED• CorticuitNo• Overflow/underflowYes; reu LED• CorticuitYes; reu LED• RIN LEDYes; reu LED• RIN LEDYes; reu LED<	•	
• Step: HighYesConnection of signal encodes• for voltage measurementYesEncodesEncodesEncodesEncodesEncodesEncodes %/KConstaik between the input range, (+/)0.008 %/KConstaik between the inputs, max50 dBRepeature ency relative to input range, (+/)0.1 %Operational error limit in overall temperature range• Voltage, relative to input range, (+/)0.3 %Basic error limit (operational init at 25 °C)Encode interference (pak value of interference <• Voltage, relative to input range, (+/)0.3 %Common mode interference (pak value of interference <• Saries mode interference, final.40 dBCommon mode interference, final.Common mode interference, final.Operational enterference, final.Pagnostic sfunctionYes; two upper and two lower limit values in each caseDiagnostic alarmNoNoDiagnostic alarmYes; coll yor 1 5 VNoNoDiagnostic sinciction LEDYes; coll yor 1 5 VDiagnostic sinciction LEDFigure LEDNoNo		

Channel status display	Yes; green LED
 for channel diagnostics 	Yes; red LED
 for module diagnostics 	Yes; red LED
Potential separation	
Potential separation channels	
 between the channels 	No
 between the channels, in groups of 	16
 between the channels and backplane bus 	Yes
Permissible potential difference	
between the inputs (UCM)	8 V DC
Between the inputs and MANA (UCM)	4 V DC
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-30 °C
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-30 °C
 vertical installation, max. 	40 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	250 g
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last modified:	1/10/2021

last modified:

1/19/2021 🖸