

LS1000 Switching Amplifier

Applications

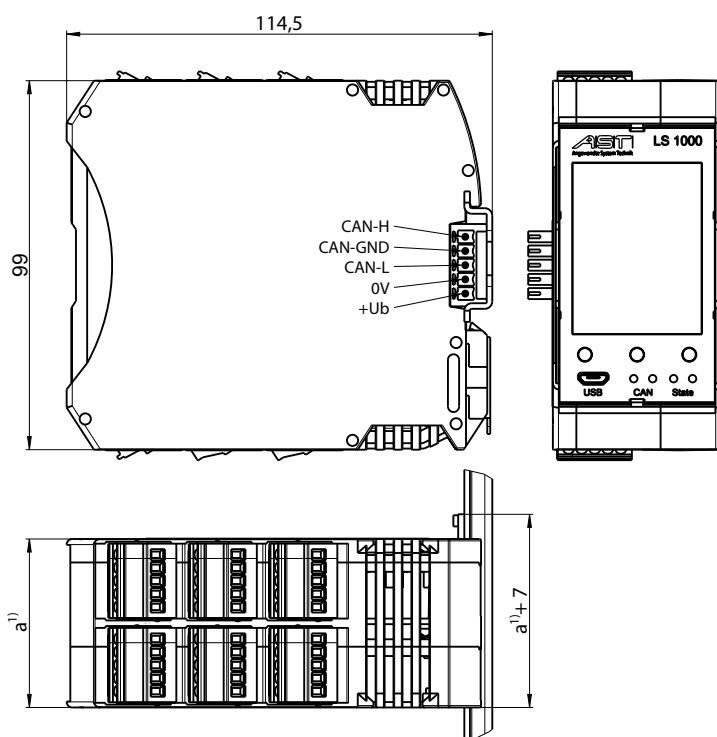
- Overload devices
- Complete system solutions by networking of devices via **CANopen**
- Test and inspection machines

Features

- Universal digital strain gauge amplifier with up to 4 measuring channels
- Colored 2,2" TFT display
- Digital switching inputs
- Switching outputs
- Standard signal outputs
- Adjustment by **ASTAS**^{®2} -Software or **CANopen**
- CANopen and power supply 24V via TBus



Dimensions (mm)/ Connections



1) - see type code

Connection	Description
n.u.	not used
+EX n	Excitation voltage +
- EX n	Excitation voltage -
+SE n	with 6-wire technology sense signal +
- SE n	with 6-wire technology sense signal -
+SI n	Signal +
- SI n	Signal -
SH n	Shield
+Ub	Power voltage +
0V	Power voltage -
CAN-H	CAN-Bus +
CAN-L	CAN-Bus -
CAN-GND	CAN-Bus GND, internal ground potential
Kn-11	Relay Common
Kn-12	Relay normal closed
Kn-14	Relay normal open
AN n	Analog output
GND n	Analog output return line
IN n	Digital switching input
R n	Digital switching input return line
IN+	Supply voltage of digital switching input +
IN-	Supply voltage of digital switching input -
+PT n	Temperature sensor PT1000 +
- PT n	Temperature sensor PT1000 -

n ... running Index

Specifications

Type		Type A	Type B
Device profile		CiA 404: sensors and controller	
Input strain gauge sensor			
Number of strain gauge input channels		1	2/ 4
Connectin equipment		4- or 6-wire system, configurable	4-wire system
Input signal range (+Si/-Si)	mV/V	0.5/ 1.0/ 2.0 ²⁾ / 4.0	
Internal resistance of strain gauges bridge per channel	Ω	50 ... 1000	100 ... 1000
Power supply for strain gauge gridge (+EX/-EX)	VDC	± 2.5 (5.0)	
EMI- Filter cut-off frequency (-3dB))	Hz	approx. 2700	
Resolution ADU	Bit	24	
Conversion rate ADU	Sps	up to 3200	up to 510
Input temperature sensor PT1000			
Number		1 per channel, maximum 4	none
Temperature measuring range	°C	-40 ... 125	-
Input digital switching signal			
Number of switching inputs		2 ... 6 ¹⁾	
Type of switching inputs		potential free, optically isolated	
Input voltage switching inputs	VDC	low: ≤2.0 - high: ≥ 4.5	
Galvanic isolation	VDC	1000	
Output digital CAN			
Data transfer rate (adjustable)	kBits/ s	125 ²⁾ / 250/ 500	
Protocol		CANopen CiA 404	
Number of PDO's - adjustable		4	
Modul adress - adjustable		1 ... 126, 127 reserviert	
Status indicator		2 LEDs	
Filter - configurable		Moving average, Repeating average, Average over last n values	
Accuracy class digital CAN		2 mV/V Input signal = 100 % f. R.	
Non-linearity	%f. R.	0.0025	
Noise (depending on conversion rate)	%f. R.	<0.001 at 3200 Sps	<0.015 at 220 Sps
Temperature coefficient amplification	%f. R./10K	<0.01	
Temperature coefficient zero point	%f. R./10K	<0.01	
Output standard signal analog			
Standard signal output		0/4...20 mA, 0...24 mA, 0...5 V, 0...10 V, -5...5 V or -10...10 V	
Load resistance (burden)	Ω	≤ 500	
Load at voltage output	kΩ	≥ 10	
Datarate DAC approx.	1/s	3200	520
Accuracy class standard signal analog		2 mV/V Input signal = 100 % f. R.	
Linearity	%f. R.	0.1	
Temperature coefficient amplification	%f. R./10K	0.1	
Temperature coefficient zero point	%f. R./10K	0.1	
Noise Current output, typical	μA _{RMS}	≤ 25	
Noise Voltage output, typical	mV _{RMS}	≤ 5	
Switching Outputs			
Switch contacts	VAC	potential free changeover 230 VAC	
Switching voltage/ contact current	VAC	230	
Switching power	VA	1000	
Datarate	1/s	50	
Electrical lifetime	cycles	100.000	
Mechanical lifetime	cycles	> 10 ⁶	
Power supply			
Supply voltage	VDC	18 ... 24 ...36	
Power consumption	W/channel	6	3
Galvanic isolation	VDC	1000	
Environmental Conditions			
Working temperature range	°C	-20 ... +60	
Storage temperature range	°C	-30 ... +70	
Interference resistance		DIN EN 61000-6-2	
Interference emissions		DIN EN 55011-B	
Construction			
Dimensions (H x T)	mm	114.5 x 99	
Width	mm	a ¹⁾	

1) - see type code

2) - factory settings

Type code

Type code	Description	Cannel	Input	Digital inputs	Analog outputs	Switching relays	Type	a (mm)
LS1101-A100	Switching amplifier for DIN rail	1	1 x mV/V	2	1	2	A	45
LS1102-B200	Switching amplifier for DIN rail	2	2 x mV/V	5	2	6	B	45
LS1104-B400	Switching amplifier for DIN rail	4	4 x mV/V	6	4	8	B	67,5