

DI1000 Digital Interface

Applications

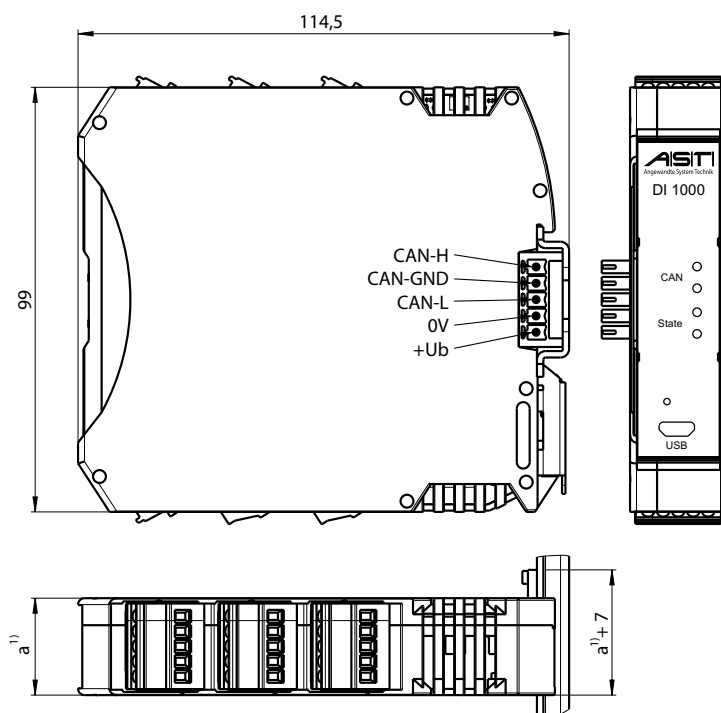
- Universal usable digital strain gauge amplifier with up to 8 measuring channels
- Connecting with different kind of strain gauge sensors
- Complete system solutions through networking of devices via **CANopea**

Features

- 24 bit resolution
- Up to 3200 Sps conversion rate per measuring channel
- Setting by our software **ASTAS**^{®2} or via **CANopea**
- CANopen and power supply 24V via TBUS for simply linking of devices



Dimensions (mm)/ Connections



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
+PT n	Temperature sensor PT1000 +
-PT n	Temperature sensor PT1000 -
IN1 n	Digital switching input
IN1 nR	Digital switching input return line

1) - see type code

n ... running index

Specifications

Type		Type A	Type B
Device profile		CiA 404: sensors and controllers	
Input strain gauge sensor			
Number of strain gauge input channels		1/ 2/ 4	2/ 4/ 8
Connectin equipment		4- or 6-wire system, configurable	
Input signal range (+Si/-Si)	mV/V	0.5/ 1.0/ 2.0 ²⁾ / 4.0	
Internal resistance of strain gauges bridge	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	no measuring point
Input digital switching signal			
Number of switching inputs		2 per channel, maximum 8	1 per channel, maximum 4
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 reserved	
Status indicator		2 LEDs	
Filter - configurable		Moving average, Repeating average Average over last N values	
Accuracy class digital CAN			
regarding strain gauge sensor: 2 mV/V Input signal = 100 % v. E.			
Non-linearity	%v. E.	0.0025	
Noise (depending on conversion rate)	%v. E.	<0.001 at 3200 Sps	<0.015 at 220 Sps
Temperature coefficient amplification	%v. E./10K	<0.01	
Temperature coefficient zero point	%v. E./10K	<0.01	
Power supply			
Supply voltage	VDC	18 ... 24 ... 36	
Power consumption	W/ channel	4	2
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
DI1101-A100-2	Digital Interface for DIN rail mounting, 1-channel, 1 x mV/V- Input, 2 digital-Inputs, Type A, a= 22,5mm
DI1104-A400-8	Digital Interface for DIN rail mounting, 4-channel, 4 x mV/V- Input, 8 digital-Inputs, Type A, a= 90,0mm
DI1102-B200-1	Digital Interface for DIN rail mounting, 2-channel, 2 x mV/V- Input, 1 digital-Input, Type B, a= 22,5mm
DI1104-B400-2	Digital Interface for DIN rail mounting, 4-channel, 4 x mV/V- Input, 2 digital-Inputs, Type B, a= 45,0mm
DI1108-B800-4	Digital Interface for DIN rail mounting, 8-channel, 8 x mV/V- Input, 4 digital-Inputs, Type B, a= 90,0mm

Accessories²⁾ (included in delivery)

	Description
Manual eds-File	Manual Digital Interface DI 1000
Software	electronic data sheet (product-specific eds-file) Software 

(Download: <https://www.ast.de/en/products/force-measurement-technology-sensor-systems/evaluation-electronics/di-1000>)