

Measuring amplifier GSV-4BT LD

Item number: 3684



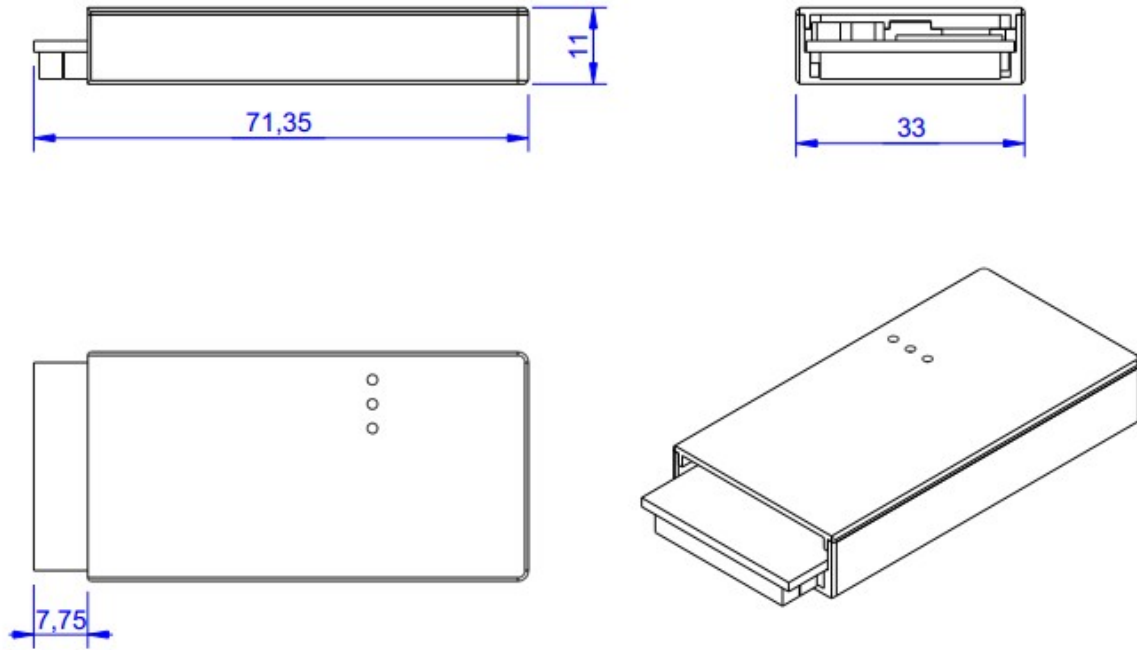
Highlights

- Long Distance Bluetooth interface
- 4 channels
- Inputs for DMS / 0 - 5 V / PT1000
- Measuring ranges 2 mV / V / 10 mV / V
- DMS quarter- / half- / full bridges
- 4 digital inputs / outputs
- Data rate 0 Hz - 900 Hz
- Range up to 1000m

The measuring amplifier GSV-4BT is equipped with 4 independent channels for sensors with strain gauges, such as Force sensors, torque sensors, acceleration sensors or strain sensors.

Data rates from 0.6 Hz to 900 Hz are possible. The power consumption is less than 150 mA. At rest, the power consumption is less than 10 mA.

Technical Drawing



Technical Data

Basic Data		Unit
Housing	Verguss	
Connection	Soldering connection	
Number of channels	4-channel	

Input analog		Unit
Input sensitivity-steps	2.0 10	mV/V
Input resistance strain-gauge-half- /quarter-bridge	120 350 1000	Ohm
Input voltage from	0	V
Input voltage to	10	V
Input resistance-voltage	10	kOhm

Output analog		Unit
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Accuracy data		Unit
Accuracy class	0,05%	
Relative linearity error	0.02	%FS
Temperature effect on the zero point	0.05	%FS/10°C
Temperature effect on the measuring sensitivity	0.01	%RD/10°C
Resolution	16	Bit

Measuring frequency		Unit
Data frequency from	0	Hz
Data frequency to	500	Hz
Sampling frequency	1.92	MHz
Limit frequency (analog)	450	Hz

Supply		Unit
Supply voltage from	3.3	V
Supply voltage to	4.2	V
Current consumption from	100	mA
Strain gauge bridge supply	2.5	V

Interface		Unit
Type of the interface	Bluetooth	
Quantity of the interface	1	
Version of the interface	Bluetooth 2.0+EDR	

Zero Adjustment		Unit
Type	Digital Software	
Tolerance	0.01	%
Time period	1	ms
Debouncing time	4	ms
Trigger level from	3.4	V
Trigger level to	4.2	V
Trigger edge	Pegel	

Environmental Data		Unit
Rated temperature range from	-10	°C
Rated temperature range to	65	°C
Operating temperature range from	-40	°C
Operating temperature range to	85	°C
Environmental protection	IP64	

Mounting

Connection plan

Connection PCB "Adapter GSV-4BT"

Strain gauge full bridge

	ch 1	ch 2	ch 3	ch 4
+Us	2	13	24	35
+Ud	3	14	25	36
-Ud	4	15	26	37
-Us	5	16	27	38
Sch.	1	12	23	34

Strain gauge half bridge

	ch 1	ch 2	ch 3	ch 4
+Us	2	13	24	35

+Ud	3	14	25	36
-Us	5	16	27	38
HBx	8	19	30	41
Sch.	1	12	23	34

The active strain gauges R3 and R4 are connected to the terminals + Us, + Ud and -Us.

HBx: The solder bridge "8", "19", "30" or "41" must be closed in order to activate the internal supplementary resistors R1 and R2 at -Ud.

Strain gauge quarter bridge

	ch 1	ch 2	ch 3	ch 4
+Ud	3	14	25	36
-Us	5	16	27	38
HBx	8	19	30	41
AUX	6	17	28	39
QB 120	11	22	33	44
QB 350	10	21	32	43
QB 1000	9	20	31	42
Sch.	1	12	23	34

The active strain gauge R4 is connected in 3-wire technology to the terminals + Ud, AUX and -Us.

HBx: The soldering bridge "8", "19", "30" or "41" must be closed in order to activate the internal supplementary resistors R1 and R2 at -Ud.

	<p>Depending on strain gauge resistance (120/350/1000 ohms), a solder bridge must be used. e.g. 120 ohms on channel 1: soldering bridge 11 (vertical); 350 ohms on channel 2: soldering bridge 21 (horizontal).</p>
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PT-1000

	ch 1	ch 2	ch 3	ch 4
AUX	6	17	28	39
Ue "0-5V"	7	18	29	40
-Us	5	16	27	38
QB1000	9	20	31	42
HBx	8	19	30	41
Sch.	1	12	23	34

The PT1000 is connected in 3-wire technology to terminals Ue "0-5V", AUX and -Us.

HBx: The soldering bridge "8", "19", "30" or "41" must be closed in order to activate the internal supplementary resistors R1 and R2 at -Ud.

The soldering bridge "9", "20", "31" or "42" (horizontal) must be closed.

Thermo cable Typ K

	ch 1	ch 2	ch 3	ch 4
+Ud	3	14	25	36
-Ud	4	15	26	37
-Us	5	-	-	-
QB 1000	9	-	-	-
Ue "0-5V"	7	-	-	-
HBx	8	19	30	41
Sch.	1	12	23	34
AUX	6	17	28	39

A reference sensor PT1000 must be connected to channel 1, terminal Ue "0-5V", AUX and -Us.
The thermocable is connected to the terminals + Ud and -Ud.

voltage input 0 – 5 V

	ch 1	ch 2	ch 3	ch 4
Ue "0-5V"	7	18	29	40
-Us	5	16	27	38
Sch.	1	12	23	34

voltage input 0 – 10 V

	ch 1	ch 2	ch 3	ch 4
Ue 0-5V"	7	18	29	40
-Us	5	16	27	38
Sch.	1	12	23	34

Switch configuration GSV-4BT M12


Pin assignment for external power supply M8, 4-pin

An external power supply can be connected via the 4-pin circular connector M8.

Pin	Function	Sensor actuator cable

		M8
1	supply voltage 9...28 V DC	brown
2	Akku 4,2V	white
3	GND supply voltage	blue
4	Akku GND	black

Pin assignment GSV-4BT M12

Female side	5-pol.	Description	Colour
	2	-US negative bridge supply	white
	1	+US positive bridge supply	brown
	3	+UD positive differential input	blue
	4	-UD negative differential input	black
	5	AUX in configurable	gray

		input	
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Connection plan for GSV-4BT M12

	half bridge		quarter bridge
Voltage input		potentiometric input	

PT1000	Thermo cable Typ K

Measurement resolution

The achievable signal / noise ratio depends on the ambient conditions (cable length, shielding) and on the set data rate.

The graphic shows the resolution with 1m connection cable, measuring range $\pm 2\text{mV/V}$ and 350 ohm strain gauge simulator on channel 1.