

Measuring amplifier GSV-6K

Item number: 7274



Highlights

- Compact and lightweight design
- Configurable output

The measurement amplifier GSV-6K includes a strain gauge input via a 5-pin M12 casing bushing and an analogue output via a 5-pin M12 housing connector.

The GSV-6K is used to convert the bridge signal from force, torque or strain sensors to an analogue output signal.

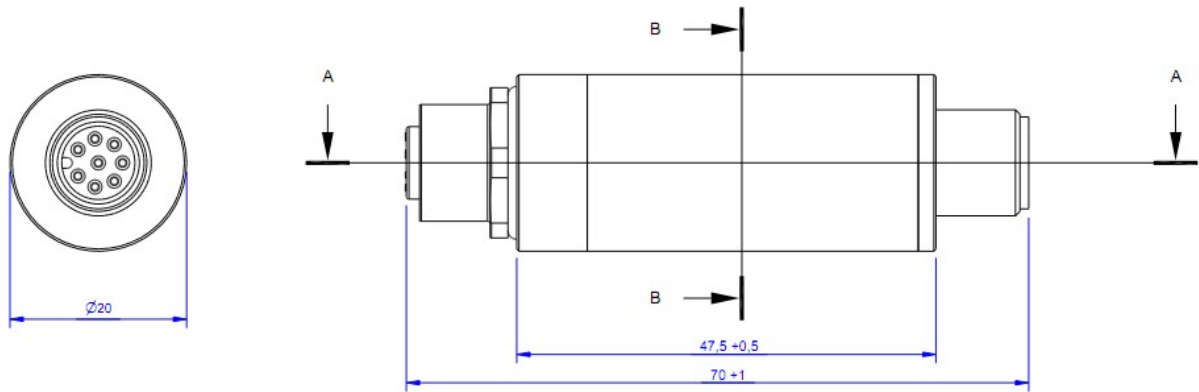
The electronic data sheet of the sensor can be read via a TEDS interface. The measurement amplifier scales the output signal to the end value of the set output signal using the TEDS interface.

The output signal can be set as a voltage output or current output.

The outputs 0...10V, $\pm 10V$, 0...5V, $\pm 5V$, 4...20mA, 0...20mA can be set using the "Tare" and "Scale" control cables.

Similarly, an offset or sampling frequency can also be set.

Technical Drawing



Technical Data

Basic Data		Unit
Dimensions	Ø20 mm x 70 mm	
Connection	Plug connector	
Number of channels	1-channel	
Interface	TEDS	
Functions	Tara, Scale, Offset, Frequency	

Input analog		Unit
Number of analog inputs	1	
input sensitivity-stepsless from	0.1	mV/V
input sensitivity-stepsless to	8	mV/V

Output analog		Unit
Number of analog outputs	1	
Voltage output from	-10	V
Voltage output to	10	V
Output resistance - voltage output	0.12	Ohm
Current output from	0	mA
Current output to	20	mA

Accuracy data		Unit
Accuracy class	0,1%	
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	1	Hz
Data frequency to	25000	Hz
Sampling frequency	50	kHz

Supply		Unit
Supply voltage from	12	V
Supply voltage to	24	V
Current consumption from	22	mA
Strain gauge bridge supply	3	V

Interface		Unit
Type of the interface	TEDS	
Quantity of the interface	1	

Zero Adjustment		Unit
Tolerance	0.1	FS
Time period	1	ms
Debouncing time	1	s
Trigger level from	9	V
Trigger level to	28	V
Trigger edge	rising	

Environmental Data		Unit
Rated temperature range from	-10	°C
Rated temperature range to	70	°C
Operating temperature range from	-25	°C
Operating temperature range to	85	°C
Environmental protection	IP66	
MTTFd	92,7	Jahre
PFHd	1,25 * 10E-6	
PerformanceLevel	C	

Operating instructions

Note on the bridge circuit: The allowable range for + Ud and -Ud is 1.32V to 1.68V. The maximum, unbalanced series resistor (one-sided series resistance in + Us or -Us) must not exceed 26% of the bridge resistance.

The table lists the maximum possible series resistors, which may be unilaterally connected in + Us or -Us.

Strain Gauge bridge circuit	Max. Series resistor unbalanced
350 Ohms	91 Ohms
700 Ohms	182 Ohms
1000 Ohms	260 Ohms
1400 Ohms	364 Ohms

Mounting

Functions

The unit is factory-configured to the desired output signal and with the desired functions. The configuration can be modified using the "Tare" and "Scale" control cables.

Terminal assignment

M12 plug connector with A-coding;

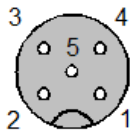


Figure: Contact configuration M12 socket

5-pin socket

Pin No.	Terminal assignment	ME (Type 1)	ME (Type 2)	Phoenix SAC-5P
1	+US Positive bridge excitation	brown	red	brown
2	-US Negative bridge excitation	white	black	white
3	+UD Positive differential input	green	green	blue
4	-UD Negative differential input	yellow	white	black
5	TEDS input	grey		grey



Figure 7: Contact configuration M12 plug

5-pin plug

Pin No.	Terminal assignment	ME (Type 1)	Phoenix SAC-5P
1	Voltage supply 12V / 24V DC	brown	brown
2	Analogue output 4...20mA / $\pm 10V$	white	white
3	Ground	green	blue
4	Tare (Control input for zero adjustment)	yellow	black
5	Scale (Control input for autoscale)	grey	grey

Functions

The functions can be adjusted using the "Tare" and "Scale" control cables.

A simulator to configure the GSV-6 via control cables is also available via

<http://www.me-systeme.de/click/click.php>

Function	Settings
Analog output "type"	0...10V, $\pm 10V$, 0...5V, $\pm 5V$, 4...20mA, 0...20mA
Analog output "Offset"	0%, 10%, 12.5%, 20%, 25%, 30%, 37.5%, 40%, 50% Example: an offset of 50% with an analogue output 0...10V shifts the zero point at 0 mV/V to 5V. With an output of 4...20mA, the zero point is shifted to 12mA with an offset of 50%. The input sensitivity is shown at all times on the remaining "End Value - Offset" area.
Data frequency in Hz (Updating of measurement values at the analogue output or interface)	1, 2, 10, 20, 50, 100, 200, 500, 1k, 2k, 5k, 10k, 20k, 25k; The smallest data frequency at the output is 10Hz. At levels below 10Hz, a second-order IIR filter is used.
input sensitivity in mV/V	0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 8 (standard mode) 0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 8 (high-res. mode) In high-res. mode the physical measuring range is restricted, which means there is less "reserve" available for a zero

	<p>adjustment with the Tare function.</p> <p>Available physical measuring ranges: 8 mV/V, 4 mV/V, 2 mV/V, 1 mV/V</p> <p>The input sensitivity can also be set to 5-digit precision using the Tare and Scale cables in the ClickRClackR menu ("seamless").</p>
Adjust autoscale level	<p>The autoscale level allows the output signal to be defined as a % of the end value, which is shown by implementing "Scale" with the current weight limit. Default setting: 100% (a weight limit of 100% is expected).</p> <p>The autoscale level can be adjusted in stages, from 5% within the range 0 to 100%. When "0%" is set, the autoscale function is deactivated.</p>
Level for threshold value indicator "On"	<p>The switch-on threshold of the threshold value indicator can be adjusted in steps of 5% within the range 0 to 100%. When 0% is set, the threshold value indicator is deactivated.</p>
Level for threshold value indicator "Off"	<p>The switch-off threshold of the threshold value indicator can be adjusted in steps of 5% within the range 3 to 98%. The switch-off threshold should be set lower than the switch-on threshold. If "0%" is set, the switch-off threshold is deactivated.</p>
Operating mode	<p>"Actual value display" (Default), Maximum value display, Inversion of the display,</p>

	Non-volatile Tare setting (default) or volatile when switched off, "Gradient" setting (special function, not included in the standard configuration), TEDS activated (default) / deactivated.
Load pre-setting	Selecting this menu option loads the default settings included on delivery. $\pm 10\text{V}$, 2 mV/V, 100Hz, Actual value display, TEDS active, Non-inverted display,