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, ±10V, 0...5V, ±5V, 4...20mA, 0...20mA can be set using the "Tare" and "Scale" control cables.

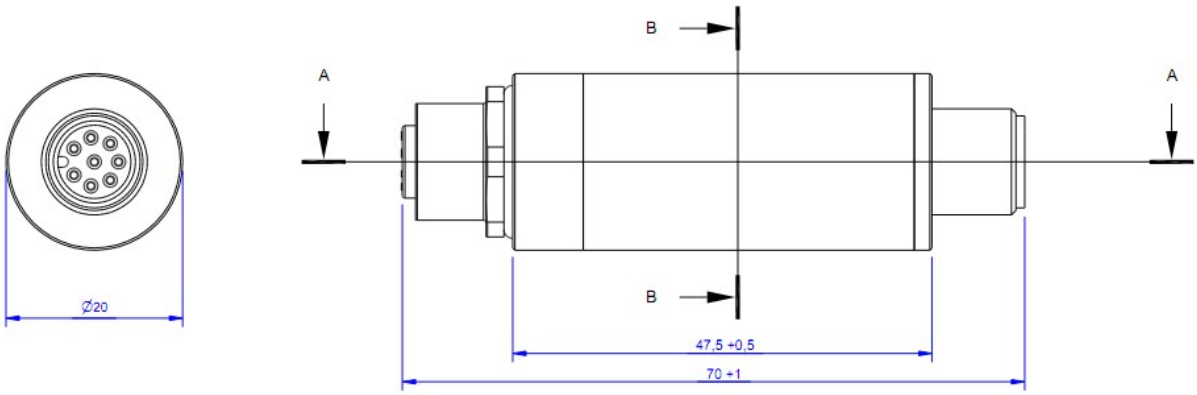
Similarly, an offset or sampling frequency can also be set.

ME-Meßsysteme GmbH
Eduard-Maurer-Str. 9
DE-16761 Hennigsdorf

Tel: +49 (0)3302 8982 4 10
Mail: vertrieb@me-systeme.de
Web: www.me-systeme.de

Stand: 07.01.2025

Technical Drawing



ME-Meßsysteme GmbH
Eduard-Maurer-Str. 9
DE-16761 Hennigsdorf

Tel: +49 (0)3302 8982 4 10
Mail: vertrieb@me-systeme.de
Web: www.me-systeme.de

Stand: 07.01.2025

Technical Data

Basic Data		Unit
Dimensions	Ø20 mm x 70 mm	
Connection	Plug connector	
Number of channels	1-channel	
Schnittstelle	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

ME-Meßsysteme GmbH
Eduard-Maurer-Str. 9
DE-16761 Hennigsdorf

Tel: +49 (0)3302 8982 4 10
Mail: vertrieb@me-systeme.de
Web: www.me-systeme.de

Stand: 07.01.2025

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

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	

ME-Meßsysteme GmbH
Eduard-Maurer-Str. 9
DE-16761 Hennigsdorf

Tel: +49 (0)3302 8982 4 10
Mail: vertrieb@me-systeme.de
Web: www.me-systeme.de

Stand: 07.01.2025

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;

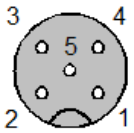


Figure: Contact configuration M12 socket

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

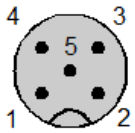


Figure 7: Contact configuration M12 plug

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 / ±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, ±10V, 0...5V, ±5V, 4...20mA, 0...20mA
Analog output "Offset"	0%, 10%, 12.5%, 20%, 25%, 30%, 37.5%, 40%, 5 Example: an offset of 50% with an analogue o 0...10V shifts the zero point at 0 mV/V to 5V. output of 4...20mA, the zero point is shifted to with an offset of 50%. The input sensitivity is all times on the remaining "End Value - Offset
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, 2 The smallest data frequency at the output is levels below 10Hz, a second-order IIR filter is
input sensitivity in mV/V	0.1, 0.2, 0.3. 0.4, 0.5, 1, 2, 3, 4, 5, 8 (standard m 0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 8 (high-res. m In high-res. mode the physical measuring ran restricted, which means there is less "reserve for a zero adjustment with the Tare function. Available physical measuring ranges: 8 mV/V mV/V, 1 mV/V The input sensitivity can also be set to 5-digit using the Tare and Scale cables in the ClickR menu ("seamless").
Adjust autoscale level	The autoscale level allows the output signal t defined as a % of the end value, which is shov

	implementing "Scale" with the current weight Default setting: 100% (a weight limit of 100% expected). The autoscale level can be adjusted in stages within the range 0 to 100%. When "0%" is set, autoscale function is deactivated.
Level for threshold value indicator "On"	The switch-on threshold of the threshold valu can be adjusted in steps of 5% within the ran 100%. When 0% is set, the threshold value inc deactivated.
Level for threshold value indicator "Off"	The switch-off threshold of the threshold valu can be adjusted in steps of 5% within the ran 98%. The switch-off threshold should be set l the switch-on threshold. If "0%" is set, the swi threshold is deactivated.
Operating mode	"Actual value display" (Default), Maximum val Inversion of the display, Non-volatile Tare sett (default) or volatile when switched off, "Gradi (special function, not included in the standard configuration), TEDS activated (default) / dea
Load pre-setting	Selecting this menu option loads the default s included on delivery. ±10V, 2 mV/V, 100Hz, Actual value display, TE Non-inverted display,