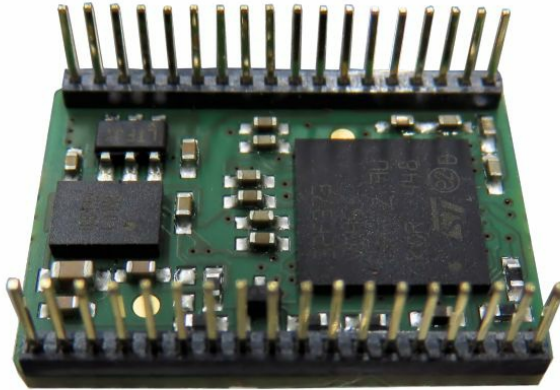


GSV-6CPU GSV-6CPU



Description

GSV-6 product line provides signal processing for strain gauges on the smallest area.

The centerpiece of the GSV-6 is a printed circuit board in the dimensions of 19 x 14 mm.

This "GSV 6CPU" provides all necessary functions for the construction of a 1-6 channel of measurement amplifier is ready.

Two 18-pole pin strips in PCM 1.0 are connecting fields and functions supplements for other applications: UART to Bluetooth, CAN bus driver, GPRS modem etc.

- Strain gauge bridge supply 3V, Max 60mA
- Strain gauge bridge input at channel 1
- Analog output 0.. 2.5V for channel 1
- LED output
- TEDS input
- Digital inputs for the functions "Tare" and "Scale"
- 5 x analog input 0.. 3V
- Interfaces "UART", "CAN"
- 3.6 v to 5 .5V supply voltage
- 3 x threshold-giver 4mA
- 3, 3V voltage output 10mA
- 2.5V reference 100µA

The amplifier module GSV-6CPU is used for integration into devices with 1 to 6 channels. The integration of the GSV-6CPU is preferably via UART or CAN interface (without CANbus-transceiver).

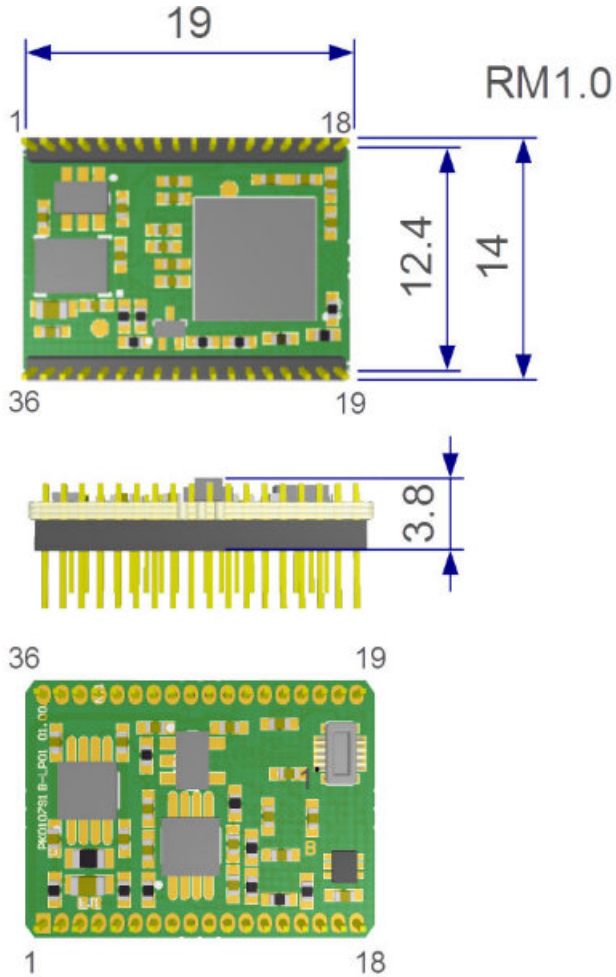
With the TEDS interface electronic data sheets are processed.

The GSV-6 CPU provides 6 input channels (without an additional extension).

Channel 1 is directly suitable for measuring with strain gauge sensors, there is a bridge excitation for strain gauge (3V) and an analog output signal 0 ... 2.5V.

With channels 2 to 5 voltages can be measured in the range from 0 up to 3V.

Dimensions



Technical Data

Input analog

Number of analog inputs	6
Input sensitivity-stepsless f	0.1 ... 8 mV/V
Input resistance strain-gauge-full-bridge	60 ... 5000 Ohm
Input voltage f	0 ... 3 V

Output analog

Number of analog outputs	1
Voltage output f	0.1 ... 2.5 V
Output resistance - voltage	47 Ohm
Zero adjustment to	1.25 V

Measuring frequency

Data frequency f	1 ... 800 Hz
Sampling frequency	16.7 kHz

Supply

Supply voltage f	3.6 ... 5.5 V
Current consumption from	33 mA
Strain gauge bridge supply	3 V

Interface

Type of the interface	teds uart can
Quantity of the interface	5

Zero adjustment

Trigger level f	0.8 ... 3.3 V
Trigger edge	rising

Temperature

Rated temperature range f	-10 ... 85 °C
Operating temperature range f	-40 ... 125 °C
Environmental protection	IP00

Basis Data

Housing	PCB
Connection	pin strip
Number of channels	6-channel

Precision

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

The information on data frequency and sampling frequency refer to the use of 6 channels. By using fewer channels, the data frequency can be set higher than 800/s.

Zero adjustment: internal pullup resistor 10kOhm at tare input available;



Manual

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

The GSV-6 CPU module can be configured via an UART interface.

There is also scope to configure the most important settings using the Tare and Scale cables.

Terminal assignment

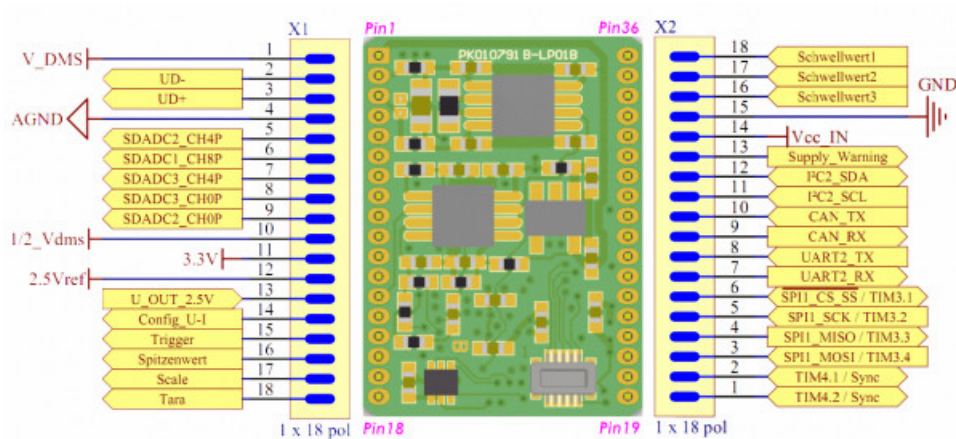


Figure 2: Terminal assignment GSV-6CPU

Configuration interface

A UART interface for testing and development is available via a "BM10B" connector.

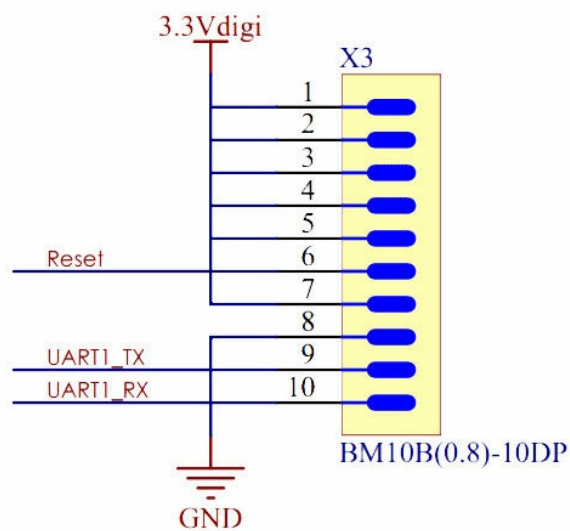


Figure 3: Terminal assignment of the configuration interface

Strain gauges

PIN	Pin strip	Designation	Function	Comment
1	x1	Us+ (V_DMS)	positive bridge supply 3 V	60 mA, short-circuit proof
2	x1	Ud-	negative bridge output	
3	x1	Ud+	positive bridge output	
4	x1	Us- (AGND)	negative bridge supply (AGND)	

Voltage supply

PIN	Pin strip	Designation	Function	Comment
14	x2	Vcc_IN	voltage supply	3,6 V ...5,5 V
15	x2	GND	ground voltage supply	
13	x2	Supply_Warning	For shutting down external hardware	to connect with Vcc_IN

Inputs/outputs



PIN	Pin strip	Designation	Function	Comment
18	x1	Tare	<p>Tare >1s in actual-value mode: Zero adjustment</p> <p>Tare > 100ms in maximum-value mode maximum-value reset</p> <p>Tare > 2s in maximum-value mode: Zero adjustment and maximum-value reset</p> <p>Tare > 100ms in ClickRClackR menu: "Up", goes to next menu entry.</p>	
17	x1	Scale	<p>Scale > 2s: Scaling of the output signal to the currently effective signal at the input. Default: set at 100% of the output signal. The autoscale level can be configured to values other than 100% in the ClickRClackR menu and via the service interface.</p> <p>Scale > 5s when power switched on: Activate the ClickRClackR menu</p> <p>Scale > 100ms in ClickRClackR menu: "Enter", executes the current menu entry.</p>	
16	x1	TEDS (Spitzenwert)	<p>The connection for 1-wire-EEPROMs functions with 3.3V instead of 5V and includes a 1.5 kR pull-up resistor of 3.3V. The EEPROMs (e.g. DS2433+, DS2430A, DS28EC20) of Maxim/Dallas are 3.3V compatible.</p> <p>The software supports TEDS sensors with the Bridge Sensor ID 33 and Strain-Gage ID 35 templates.</p>	
	x1	LED	Status indicator, with signals including "TEDS read", "Parameter active", "Parameter set", "Gradient indicator".	max. 4mA, 200 Ohm series resistor;
	x1	Temperature-sensor	Typ TMP102, -40°C ...+125°C, ±3°C;	