DIN Rail Load Cell Amplifier with 4-20mA 0-5V 10V Output

BRT RW-GT01A

BRT RW-GT01A DIN Rail-mounted load cell amplifier accepts mV load cell signal input and converts it into 4-20mA, 0-5V, 0-10V output. It can be used with various kinds of full bridge load cell to measure and monitor weight, force, tension, etc signal. That load cell amplifier can filter and amplify mV small electric signal and convert it into standard dc current 4-20mA, voltage 0-5V, 0-10V signal for PLC or other controlling systems data acquisition. The internal embedded active low pass filter can effectively filter electromagnetic interference in industrial site.

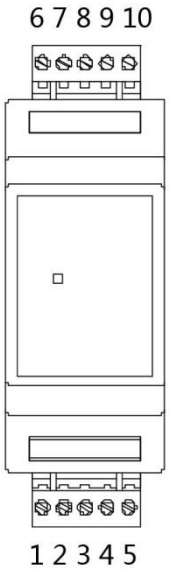
Main Features & Benefits

- 2.0mV/V±10% sensitivity, better than 0.1% F.S. accuracy.
- Internal precision amplifying and conversion circuits.
- Small size standard din rail mounted shell, pluggable wiring terminal blocks.
- 4-20mA current and 0-5V, 0-10V voltage output in one amplifier, output signal is selectable through switch button.
- Can be used with all kinds of strain gauge bridge-type load cells like weighing, tension, compression, torque, etc.

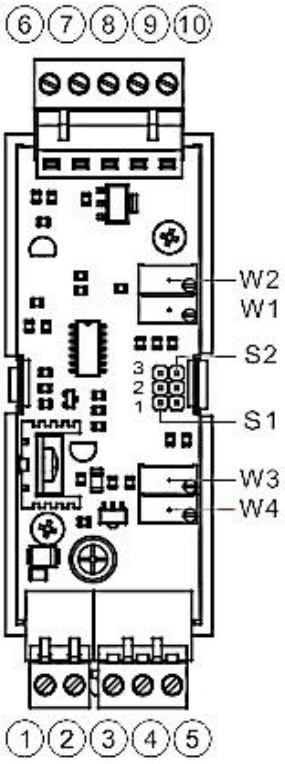
Technical Parameters

Parameters	TYP Value
Accuracy	Better than 0.2% F.S.
Loading Capacity	Parallel Connection 4 load cells of 350Ω at most
Sensitivity	2.0mV/V ±10%
Input Signal	mV Signal
Output Signal	Default 4-20mA output, 0-5(10)V (settable)
Voltage output impedance	>5kΩ
Current output impedance	＜500Ω
Voltage Zero adjustment	Fine: 10% F.S. Rough: 40% F.S.
Voltage Span adjustment	10% F.S.
Current Zero adjustment	10% F.S.
Current Span adjustment	10% F.S.
Power Supply	DC24V (18-27VDC range)
Max. power consumption	4W(4 x 350Ω sensor, output 20mA.)
Load Cell Excitation Voltage	5V+ ±5%(Suitable for 5-12V excitation volt. sensor)
Load Cell Excitation Current	＜60mA
Temperature Coefficient	better than 100ppm
Enclosure Material	ABS
Net Weight	100g
Installation Mode	DIN Rail-mounted Installation
Wiring type	Wiring terminal blocks.
Dimension	115x37x58mm (LxWxH)
Working Temperature	-10-50℃/85%RH, non condensation.
Storage Temperature	-20- +80℃/85%RH, non condensation.

Wiring Terminals Definition

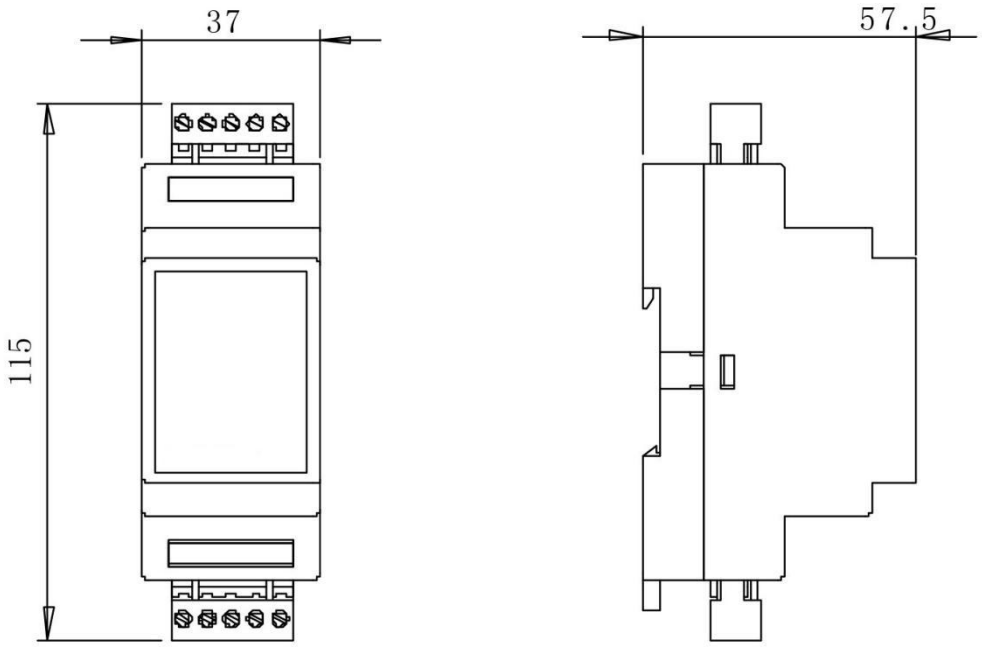


Terminal No	Definition
1	Power supply 24V+
2	Power supply 24V-
3	Current output +
4	Voltage output+
5	Common
6	Load Cell Exc+
7	Load Cell Sig+
8	Load Cell Sig-
9	Load Cell Exc-
10	Shield wire



Potentiometer Code	Function
W1	Voltage output Zero point adjustment
W2	Voltage output Span point adjustment
W3	Current output Zero point adjustment
W4	Current output Span point adjustment
Jumper Code	**Function**
S1	Voltage output switch between 0-5V and 0-10V
S2	Zero adjusting range selection switch (Fine range or rough range)

Dimension



Adjustment methods (Based on rate weighing range 10kg as an example)

1. A well calibrated high precision multi-meter is required.
2. Correctly connect the wire between sensor and the load cell amplifier.
3. Check all the connection to ensure no wrong wiring connection.
4. Connect power supply to the load cell amplifier.
5. Let the load cell amplifier power on, and calibrate it after 15 minutes.

Voltage Output Calibration Steps

1. Set the Jumper **S1** to select the output range 0-5V or 0-10V, connect pin#1 and #2, the output is 0-10V, connect pin#2 and #3, output is 0-5V.
2. Adjust the multi-meter to dc voltage scale and ensure the measuring range and sensing probe are in voltage measurement status.
3. Connect the RED sensing probe to pin#4 voltage output +, BLACK sensing probe to pin#5 output -.
4. Remove the load in the weighing sensor, then adjust zero adjustment potentiometer W1 to get the output 0V (Do not make it output lower than 0V).
5. Add 10kg poise/weight to the weighing sensor, then adjust span adjustment potentiometer W2 to get output 5V or 10V.
6. Remove the load in the weighing sensor again to check the output accuracy. If it cannot meet requirements, repeat the steps above.

Current Output Calibration Steps

1. Adjust the multi-meter to dc current scale and ensure the measuring range and sensing probe are in current measurement status.
2. Connect the RED sensing probe to pin#3 current output +, BLACK sensing probe to pin#5 output -.
3. Remove the load in the weighing sensor, then records the current value displayed in the multimeter,

e.g.:4.152mA.

4. Add 10kg poise/weight to the weighing sensor, then records the current value displayed in the multimeter, e.g.:19.850mA.

5. Calculation: (20-4)/(19.850-4.152)=1.0192 1.0192x19.850=20.232

6. Adjust current span potentiometer W4 to get output 20.232mA in the multimeter.

7. Adjust current zero potentiometer W3 to get output 20.000mA in the multimeter.

8. Remove the load in the weighing sensor again to check the output accuracy. If it cannot meet requirements, repeat the steps above.

Note:

1. Adjusting voltage Zero adjustment potentiometer has influence on the zero point of current output. Recommend calibrate voltage output first, then calibrate current output.

2. If the load is increased, the output signal becomes lower, please check the weighing sensor force directions, otherwise, exchange wire connection between pin#2 and pin#3.

3. Adjusting jumper **S2** and connecting pin#1 and #2 can expand voltage or current output and ZERO adjusting range, but it may have influence on its output stability.

4. Suggest to use it with one load cell.

5. No more than 15m wire from load cell to transmitter.

6.Suitable for single transmitting of several load cells and enable to install in distribution box.

*The specification is subject to change without notice.