



Small 25.4mm 3-Wire Load Cell Amplifier / Strain Gauge Amplifier AS0332B

The AS0332B is a miniature circular board for **3-wire** systems providing a 4mA - 20mA current output, designed to fit inside a load cell or other transducer. The unit has individual multi-turn potentiometers for the precise setting of Zero and Span and is also available with **mid. zero output** (12mA for example) for compression / tension transducers. The inputs provide EMI-/RF-suppression. Transducer wires can be easily soldered onto the board.

Features

- Wide range power supply 10-30V
- 5V stabilised bridge excitation
- Bridge resistance 350 Ohm (or greater)
- Bridge sensitivity 0.3mV/V – 3mV/V
- Size **25.4mm** diameter, 21mm height
- Fast calibration procedure
- Reverse-polarity protection



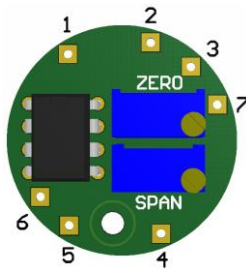
Applications

- Industrial Weighing
- Load Testing & Monitoring
- Overload Protection Systems

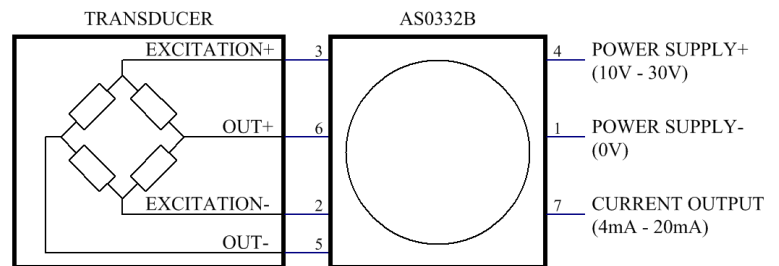
Ordering

Part number:	AS0332B-*
*Please specify required input range, between 0.3mV/V – 3mV/V Default 2.0mV/V: AS0332B-2.0MV	
Customer specific electrical / mechanical changes are possible – please contact us with your individual requirements.	

Board Connections



Schematic Diagram



Specifications

Parameter	Min	Typical	Max	Unit
Supply Voltage	10	24	30	V
Current Output – Zero (adjustable control)		4		mA
Current Output – Span (adjustable control)		20	23	mA
Bridge Sensitivity	0.3		3	mV/V
Bridge Resistance	350			Ohms
Bridge Excitation Voltage		5		V
Current Output Temp. Coefficient – Zero		0.15	1	uV/°C
Current Output Temp. Coefficient – Span		0.1		%/°C
Operating Temperature	-20		50	°C

Installation, Calibration and Sensitivity:

1. Connections:

The unit is provided with 7 pads around its periphery for the soldering of external connections. The holes in the pads are 1mm diameter (Pad size 1,9mm). The mounting hole has a diameter of 2.5mm (Pad size 5mm).

The connecting pads and wire colours, where wire tails are provided, are identified as follows -

Pad Number	Function	Typical Wire Colour
3	Bridge Excitation +ve	Red
2	Bridge Excitation -ve	Blue
6	Bridge Output +ve	Green
5	Bridge Output -ve	Yellow
4	Supply +ve (10-30V)	Red
1	Supply -ve (0V)	Black
7	4-20mA Output.	White/Black

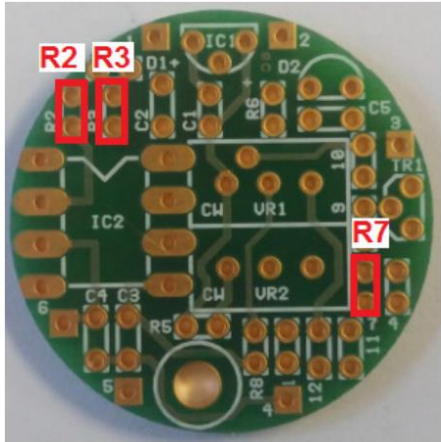
2. Calibration:

At zero load use ZERO potentiometer to set 4.00mA

At full load use SPAN potentiometer to set 20.00mA

Repeat above procedure several times until both settings are reached.

3. Sensitivity („normal“ 4mA – 20mA):

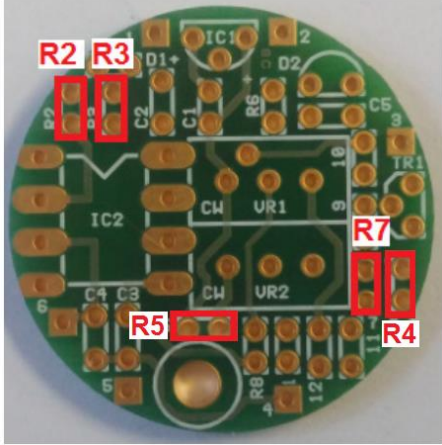
Input mV/V	R2 and R3 ohms	R7 ohms	Range mV/V	Resistors
0.3	33	120	0.25-0.37	
0.4	43	150	0.32-0.47	
0.5	56	180	0.41-0.60	
0.6	68	180	0.46-0.72	
0.7	75	270	0.57-0.79	
0.8	91	300	0.67-0.94	
0.9	100	330	0.73-1.02	
1.0	110	430	0.86-1.12	
1.1	120	560	0.99-1.22	
1.2	130	560	1.04-1.31	
1.4	160	560	1.20-1.56	
1.6	200	560	1.37-1.87	
2.0	270	560	1.62-2.35	
2.5	330	820	2.15-2.83	
3.0	390	1100	2.67-3.32	

4. Sensitivity („mid. zero output“ 12mA):

Resistor R4 must be changed from 27K to 22K3 (ie. 22K+330R in series)

Resistor R5 must be changed from 390K to 100K.

The gain resistors should be changed as shown below.

Input mV/V	R2 and R3 ohms	R7 ohms	Range +/- mV/V	Resistors
0.3	56	220	0.26-0.37	
0.4	56	330	0.34-0.44	
0.5	68	330	0.44-0.62	
0.6	130	330	0.52-0.77	
0.7	150	330	0.56-0.87	
0.8	180	470	0.72-1.02	
0.9	200	470	0.77-1.11	
1.0	220	470	0.81-1.20	
1.2	240	750	1.04-1.33	
1.4	300	750	1.18-1.58	
1.6	330	1000	1.41-1.75	
1.8	390	1000	1.55-1.98	
2.0	470	1000	1.71-2.25	
2.2	560	1000	1.86-2.52	
2.5	620	1200	2.15-2.78	

Resistors R2 and R3 are always equal. They should be 1% 100ppm/C 1/8 watt grade or better.

Use either Top-side THT (1/8 watt) or Bottom-side SMD (0805) resistors.

Example: Top-side THT MF12 series from Farnell Electronics: 100R, Part MF 12 100R, Order code: 9342397.