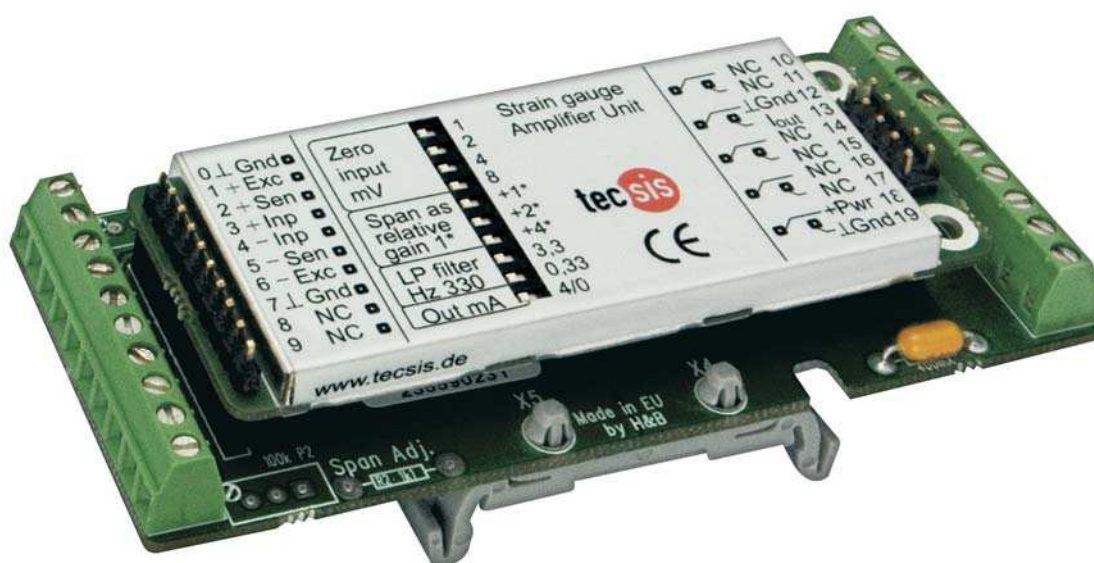


Operating manual



EZE10X005

Analogue amplifier

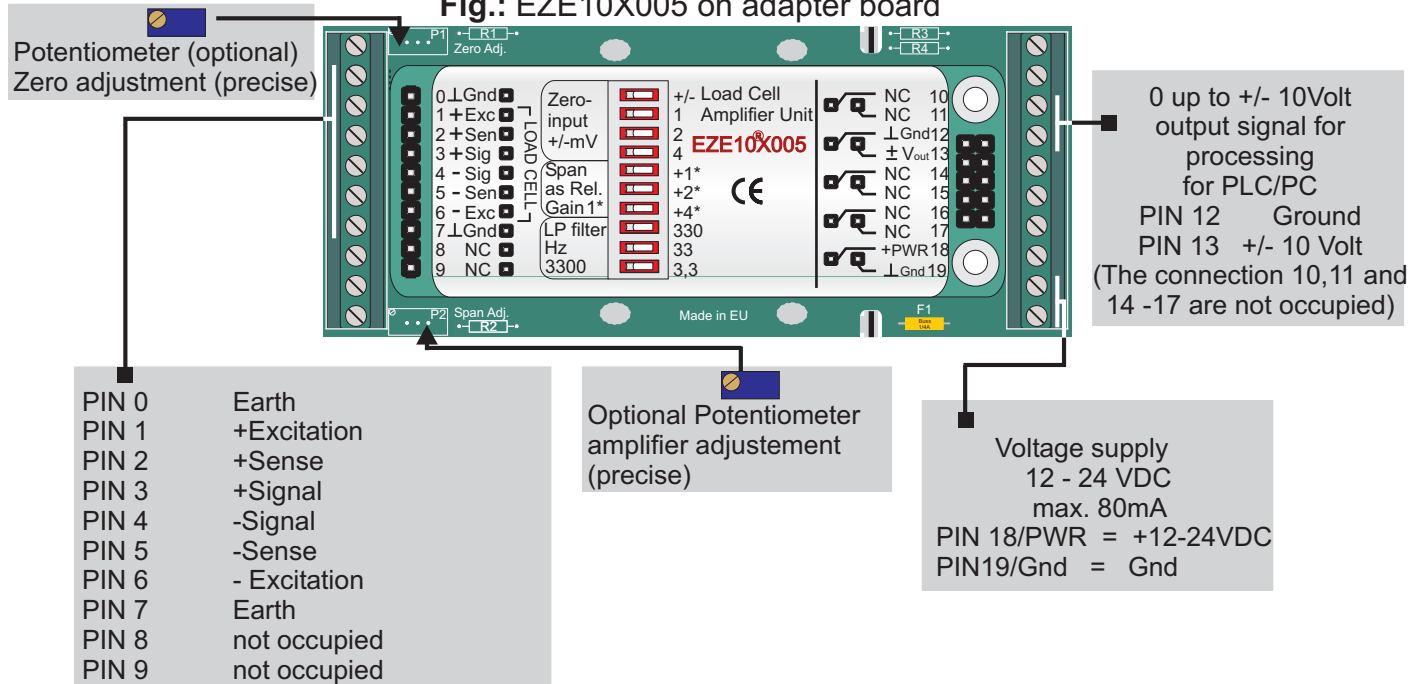
EZE10X005

Analogue amplifier



Scope: The EZE10X005 is a highly reliable device which can link an analogue strain-gauge transducer to a wide range of analogue equipment. The EZE10X005 produces a bipolar voltage output. Switches are provided to give a wide range of filter, off-set and gain settings to suit many force measurement applications, and the compact configuration provides for versatility of mounting.

Fig.: EZE10X005 on adapter board



Analogue input:

Strain-gauge load cell or force transducer, minimum load impedance 320R. A four-wire ratiometric measurement technique is employed. Provision is made for connection of sense wires for 6-wire circuits, these connections being commoned to the load cell excitation terminals on the EZE10X005 pcb.

Output:

The voltage output of up to $\pm 10V$ is produced by load cell signals over the range 0 ± 0.4 mV/V up to 0 ± 3.2 mV/V FS as required.

Power supply:

The power supply can be any regulated source of 12-24 V DC +10/-5%, 70 mA maximum.

Mechanics:

The EZE10X005 comprises a PC board measuring 82 x 31 x 12 mm, inclusive of the terminal pins (2.54 mm spacing) and the complete wrap around EMI-protecting chassis.

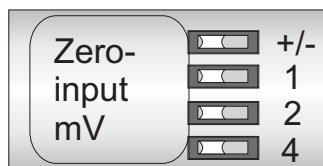
Load cell connections:

The load cell takes its power supply from the +Exc and -Exc terminals. For six-wire systems, the +Sen and -Sen terminals are provided. For four-wire systems, these terminals can be ignored. The output from the load cell connects to the +Inp and -Inp terminals.

Analogue amplifier **EZE10X005**

Zero set:

Provision is made for the compensation of zero offset, up to a limit of $\pm 0.7 \text{mV/V}_{\text{IN}}$. Four DIP-switches (including 1 polarity) are provided, and operate in combination to give 0 to $\pm 0.7 \text{mV/V}_{\text{IN}}$ offsets in 0.1mV/V steps.



Switch in left hand position = OFF

ZERO OFFSET REQUIRED mV/V

Switch	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7
+/-	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	ON	ON
4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Gain set:

Through the use of three DIP-switches, the relative gain factor can be set in steps of 1 over the range 1 to 8. This allows the full output signal range to be obtained from load cells/transducers which provide only 0.40 mV/V output at the applied load

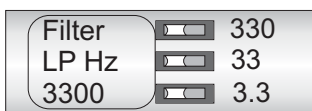


Switch in left hand position = OFF

Span Relative Gain	1*	2*	3*	4*	5*	6*	7*	8*
+1*	OFF	ON	OFF	ON	OFF	ON	OFF	ON
+2*	OFF	OFF	ON	ON	OFF	OFF	ON	ON
+4*	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Input signal(mV/V) to provide 10V out	3.2	1.6	1.1	0.80	0.64	0.53	0.46	0.40

Low pass filter:

By selecting from the three DIP-switches, the low-pass filter can be set to cut-off at 3300, 330, 33 or 3.3 Hz. This will result in a settling time, (when a step input occurs) as detailed in the table below.



Switch in left hand position = OFF

Filter Switch Settings	3300Hz	330Hz	33Hz	3.3Hz
330	OFF	ON	OFF	OFF
33	OFF	OFF	ON	OFF
3.3	OFF	OFF	OFF	ON
Settling time to final value (ms)	0.4	4	40	400

Note that if the 330, 33 & 3.3 switches are ON the cut off frequency is 3.3Hz

Technical data:

The EYE10X005 meets the **CE** regulations regarding EMC in accordance with 89/336/EEC and meets the Low Voltage Directive 73/23/EEC, as amended by 93/68/EEC.

Load cell input:

Excitation voltage : 10 V DC \leq 32 mA
Load cell drive capability: 320 ~ 2000 Ohms
Short circuit protected.
Input offset range for 0 V_{OUT}: 0 - \pm 0.7 mV/V
Standard input gain
range for 10 V_{OUT}: 0.40 - > 3.2 mV/V
Input signal resolution: ~ 200 nV

Analog output:

Bipolar voltage output (V_{OUT}): 0 \pm 10V DC R_L \leq 500R
Short circuit protected.

Linearity:

Max deviation 0 - Full scale: <100 ppm FS. (<0.010% FS)

Temperature:

Drift 5 min. upon power ON: <50 ppm FS.
Operating temperature range: -10°C to +40°C.
Storage temperature range: -20°C to +50°C.
Temperature effect on offset: <50 ppm/°C.
Temperature effect on gain: <50 ppm/°C.

EMC Capability:

Rejects EMI in the range : 26-1000 MHz
@ 10 V/m (level 3)
Burst (Transients) to meet: IEC 801-4 (level 2)
Electrostatic discharge to meet: IEC 801-2 (level 3)

Environmental:

Protected to meet: IP 40 DIN 40 050
Humidity 0-95% RH
non-condensing

Power supply:

Regulated DC source: 12-24 V DC \pm 10/- 5% \leq 70mA
Excess voltage, ESD and
reverse polarity protected

Note that if the 330, 33 & 3.3 switches are ON the cut off frequency is 3.3Hz

tecsis GmbH

Carl-Legien-Straße 40-44
D-63073 Offenbach am Main

Telefon: +49 69 5806-0

Telefax: +49 69 5806-7788

E-Mail: info@tecsis.de

Internet: www.tecsis.de

