

INTERFACE

5 CHANNEL BRIDGE AMPLIFIER



The 5 channel bridge amplifier converts the differential millivolt output of a bridge sensor, such as a strain gauge pressure sensor or accelerometer, to an output in the range of 0 to 5V. It also provides a stabilised supply voltage for sensor excitation. Each channel is set to one of three fixed gains. The positive input must always be higher than the negative input. For example, if a negative load is to be measured, an external offset must be applied to ensure that the differential input is always positive. The sensor is fully screened and encapsulated.

Electrical

- Gain and input @25°C are shown in the order details
- Total thermal shift $\leq 0.4\text{mV}/^\circ\text{C}$
- Supply voltage 7 to 16V DC
- Supply current less than 30mA (excluding sensor loads)
- Excitation voltage for sensors $5 \pm 0.002\text{V}$
- Output impedance less than 50 ohm
- Sensor bridge impedance must be at least 350 ohm
- Insulation resistance greater than 10 Mohm @ 50V DC

Mechanical

- Weight less than 80g
- Aluminium body hard anodised and dyed black

Application

- Amplification of bridge sensor signals

Environmental

- Resistant to standard motorsport fluids
- Maximum humidity 100%
- Operating temperature -50 to 125°C
- Compensated temperature 0 to 125°C
- Vibration 50 to 2500Hz @ 40g 8hrs per axis

Design and manufacture is in-house, so if our existing designs do not suit your application, we can provide cost effective customised parts to suit even the most demanding application. No engineering charges are made for simple modifications. Please contact our technical consultancy service who will be pleased to help.

EMI/RFI Suppression

The circuit is housed in an aluminium shell. The battery supply and amplified outputs each have a 2.2nF in-line suppression filter which is terminated to the housing. For added suppression, the screen should be connected to the star ground point on the vehicle.

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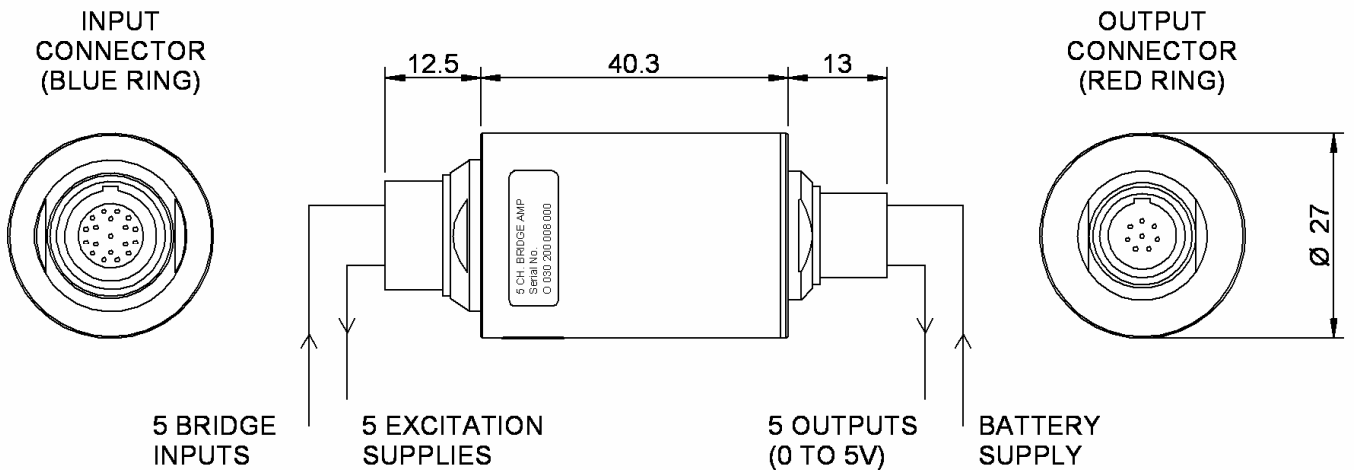
Connection Definition

- Output connection 8 way (pins) HES-1F-308-XLC

Pin 1	Output	Channel 1
Pin 2	Output	Channel 2
Pin 3	Output	Channel 3
Pin 4	Output	Channel 4
Pin 5	Output	Channel 5
Pin 6	Battery Supply	
Pin 7	Ground	
Pin 8	Case Ground	

- Input connection 19 way (socket) EHN-2F-319-XLM

Pin 1	Excitation Supply	Channel 1
Pin 2	Positive Input	Channel 1
Pin 3	Negative Input	Channel 1
Pin 4	Excitation Supply	Channel 2
Pin 5	Positive Input	Channel 2
Pin 6	Negative Input	Channel 2
Pin 7	Excitation Supply	Channel 3
Pin 8	Positive Input	Channel 3
Pin 9	Negative Input	Channel 3
Pin 10	Excitation Supply	Channel 4
Pin 11	Positive Input	Channel 4
Pin 12	Negative Input	Channel 4
Pin 13	Excitation Supply	Channel 5
Pin 14	Positive Input	Channel 5
Pin 15	Negative Input	Channel 5
Pin 16	Ground	
Pin 17	Case Ground	
Pin 18	Populated but N/C	
Pin 19	Populated but N/C	



Channel Characteristics	Channel					Order Code
	1	2	3	4	5	
Gain	200	300	300	400	400	O 030 200 008 000
Input for 1±0.1V Output	5mV	3.33mV	3.33mV	1.5mV	2.5mV	
Input for 4±0.1V Output	20mV	13.33mV	13.33mV	10mV	10mV	
Gain	25	25	25	25	25	O 030 200 008 001
Input for 1±0.1V Output	40mV	40mV	40mV	40mV	40mV	
Input for 4±0.1V Output	160mV	160mV	160mV	160mV	160mV	
Other gain and offset values can be supplied on request						