

ATEX 4-20mA Load Cell Amplifiers

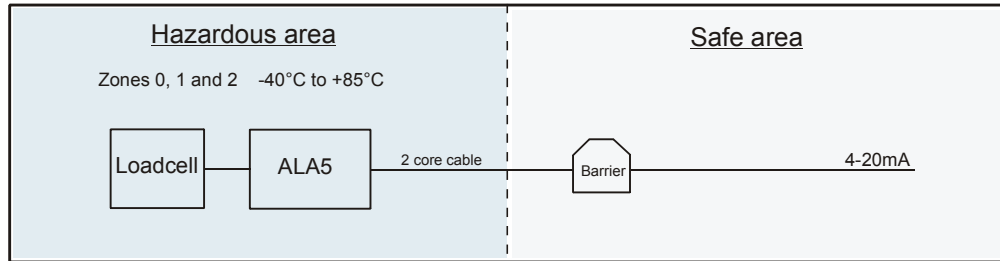
Features

- High performance amplifier certified for ATEX Hazardous Zones 0, 1 & 2
- Designed for fitting in-line to strain gauge sensors such as load cells
- Environmentally sealed to IP67
- Provides 2-wire 4-20mA current loop output
- Input range up to 5 mV/V
- Bridge Impedance min 350 Ohms max 5000 Ohms
- Fast calibration via gain and offset trim
- Wide temperature range -40°C to + 85°C
- Supply Voltage range min 9V max 28V
- Supplied with 1m strain gauge cable and 5m output cable & stainless steel enclosure
- Robust design, reverse polarity & short circuit protected
- OEM option available



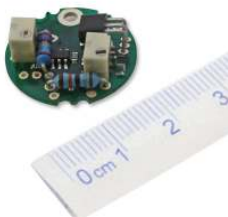
Introduction

The ALA5 is an ATEX approved strain gauge/load cell amplifier designed for operation within hazardous zones 0,1 & 2. The high performance amplifier provides 2-wire 4-20mA current loop output and connects in-line for a range of signal conditioning for strain gauges, load cells, pressure and torque transducers. Intrinsically safe to EN60079-11 (previously EN 50020) standards. The device can be connected to ATEX approved equipment within the hazardous zone or to non-approved ATEX equipment outside the hazardous zone provided that a suitable barrier is used.



OEM Option Available

ICA5ATEX



An OEM option for customers wishing to embed the ATEX amplifier within the sensor. A high performance device with competitive volume discounts available.

Please note, the ICA5ATEX is approved for incorporation into load cells and other enclosures, however installers must comply to ATEX & QAN (Quality Assurance Notification). Please contact us to discuss your requirements.

## ATEX Load Cell Amplifier Marking



II 1 G Ex ia IIC T4  
 T<sub>amb</sub> = -40 °C to +85 °C  
 CE0891 TRAC09ATEX1xxxX

### ATEX Marking details



II Explosion protection  
 1 Equipment group: industrial  
 G Equipment category: very high protection  
 Hazard: gas atmosphere - zones 0, 1 and 2

### Certification Code details

Ex Explosion protection  
 ia Intrinsic safety according to EN60079-11 (previously EN 50020)  
 IIC Hydrogen/Acetylene gas group  
 T4 Temperature Classification - surface temperature <135 °C

## Specifications

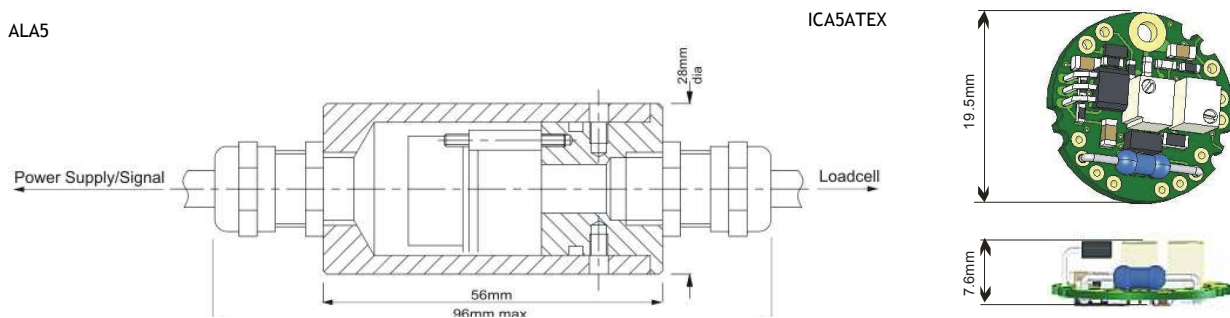
### ALA5 2-wire 4-20mA Amplifier

Parameter	ALA5 2-wire 4-20mA			Units	Notes
	Min	Typ	Max		
<b>Electrical &amp; Environmental</b>					
Supply voltage range	9	24	28	Volts	
Operating current	4	-	20	mA	
Operating temperature range	-40	-	85	°C	
Storage temperature range	-40	-	125	°C	
Reverse polarity protection	-	-	-28	Volts	
<b>Measurement</b>					
Bridge excitation	1.05	1.11	1.16	Volts	1000 Ohms load cell connected.
Bridge Impedance	350	1000	5000	Ohms	Recommended bridge impedance is 1000 Ohms.
Bridge sensitivity	0.5	2.5	55	mV/V	Factory setting is the typical value shown. For other values an alternative calibration resistor can be fitted (see manual).
Output current range	4	-	20	mA	
Output load	-	-	800	Ohms	At 24V supply minimum
Bandwidth	DC	-	1000	Hz	
Zero adjustment	-	±2	-	%FR	
Span adjustment	-	±8	-	%FR	
Linearity	-	0.02	-	%FR	
Zero temp stability	-	0.001	0.005	±%FR/°C	
Span temp stability	-	0.007	0.014	±%FR/°C	

### General Notes

The voltage between either of the power supply connections and the load cell shield should not exceed 50V. Any leakage will be greater than 10M Ohms.  
 FR = Full Range

## Mechanical Dimensions



### Product Order Codes:

ALA5 ATEX approved 4-20mA Load Cell Amplifier  
 ICA5ATEX OEM ATEX approved 4-20mA Load Cell Amplifier

### Evaluation Units:

S173 In-line Stainless Steel Enclosure with Amplifier  
 S174 OEM ICA5ATEX PCB

## Environmental & CE Approvals

Storage temperature -40 to +85°C  
 Operating temperature -40 to +85°C  
 Relative humidity 95% maximum non condensing  
 Sealed to IP67  
 European EMC 2004/108/EC  
 Directive BS EN 61326-1:2006  
 BS EN 61326-2-3:2006



CE In the interest of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice.