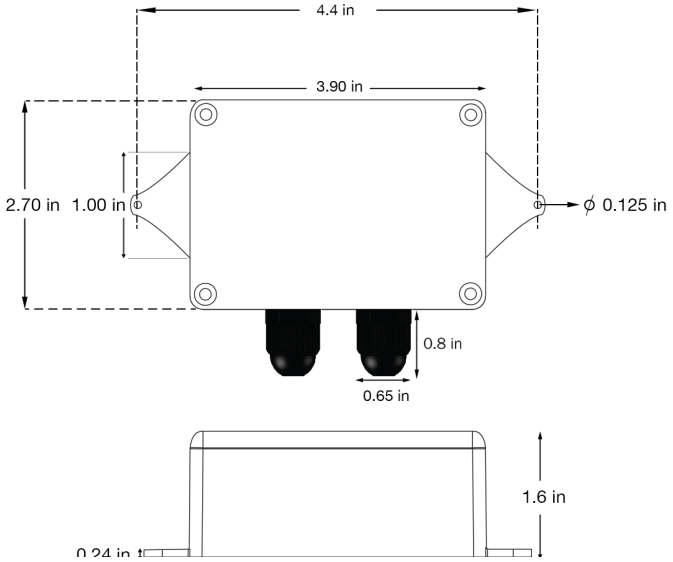
AI-1000-CV Strain Gauge Transducer with voltage (0-5V DC) and/ Or Current (4-20 mA) outputs



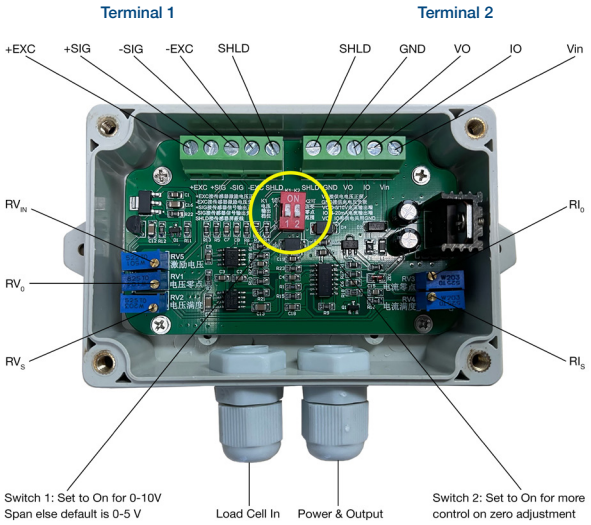
(All dimensions in Inches)

Overview

The Loadstar Sensors' AI-1000-CV Strain gauge transducer is a sensor interface designed to amplify strain gauges arranged in a Wheatstone bridge configuration, and is suitable for many applications where a bridge or differential input amplifier is required. The AI-1000-CV includes bridge offset and circuit gain trimmer potentiometers to set the voltage and current outputs in the 0 to 5 VDC or 4-20 mA current ranges. Whereas the AI-1000 device offers an amplified 0-5V DC output, this device offers either 0-5 V DC or 4-20 mA output (or both). You must specify the calbration needed if you are buying this with a load cell and having us calibrate the load cell with the appropriate output needed.

Need for Current Output

PLCs can be used with either analog voltage inputs or with analog current inputs. If the PLC is far away from the AI-1000-CV then there could be significant voltage drops that affect the output signal. Instead you can work with current outputs from the load cell which remain the same irrespective o the length of the cable and distance from the AI-1000-CV.



Specifications

Model	AI-1000-CV
Device Type	Full bridge strain gauge/Load cell
Input Power	18~26V DC (Recommended 24V DC)
Operating Temperature	0~50°C
Excitation	Adjustable based on RVin (ideally 9V)
Bridge Resistance	<2KΩ
Sensitivity	1 to 3 mV/V
Linearity/Accuracy	0.1% of Full Scale
Weight (of device)	0.3 lb
Inlet Diameter	6.5 mm or 0.25 inch

Wiring Information

	Position	Signal	Color
Load Cell	+EXC	+ Excitation	Red
	+SIG	+ Signal	Green
	-SIG	- Signal	White
	-EXC	- Excitation	Black
	SHLD	Shield	
Power + Output	Vin	+ Power Input	Red
	IO	Current Output	White
	VO	Voltage Output	Green
	GND	Ground	Black
	SHLD	Shield	

RV_{IN} - RV5 to adjust Voltage Offset (voltage at zero load)

RVo - RV1 to adjust Voltage Span (voltage at full scale)

RIo - RV3 to adjust Current Offset (current at zero load)

RVs - RV2 to adjust Current Span (current at full scale)

RIs - RV4 to adjust Current Span (current at full scale)

Setting up AI-1000-CV

Step 1: Connect the load cell into the device (Terminal 1)

Step 2: Connect power and output wires (Terminal 2)

Step 3: Set the Excitation voltage to 9V by adjusting RVin

Step 4: Adjust RVo and/or RIo to set initial voltage/current level without any load or when zero load is applied

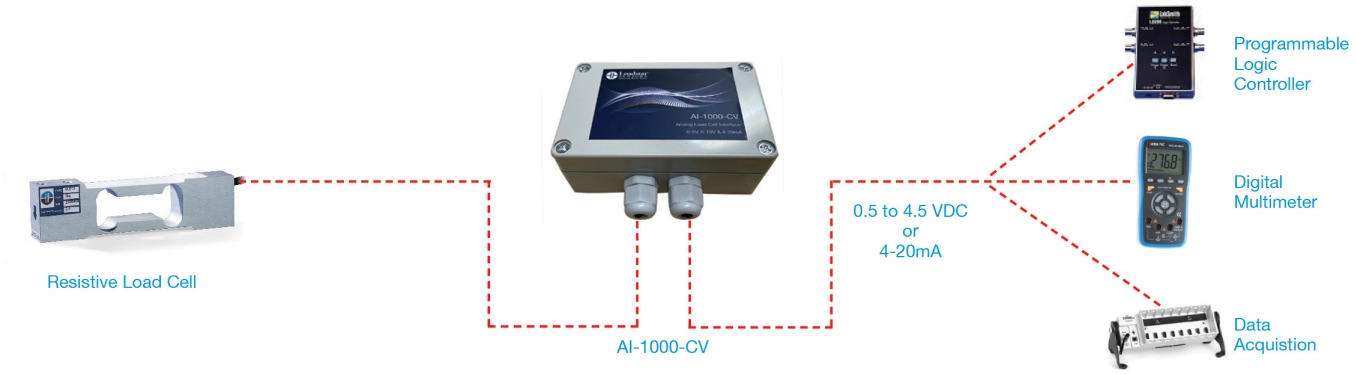
Step 5: Adjust RVs and/or RIs to max voltage (4.5V) or max Current 20 mA when full load is applied

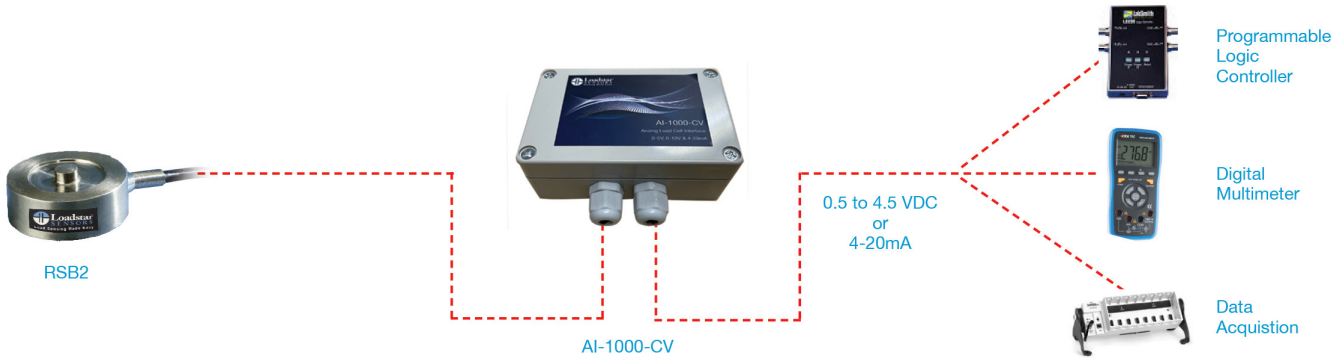
Step 6: Adjust the RVo and RVs or the RIo and RIs iteratively until the output meets your target outputs

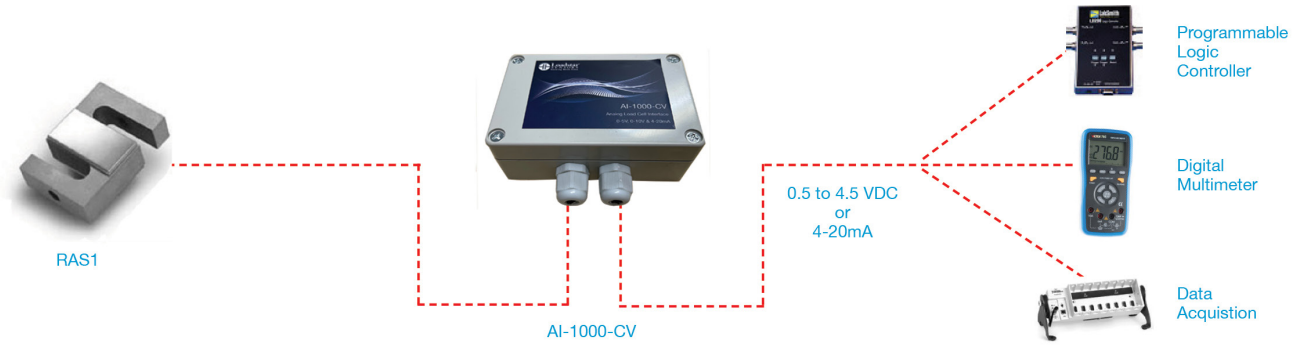
Ordering Information

Available Configurations	
Option	Part No.
Basic	AI-1000-CV

Suggested Configuration







NOTE

The Interface needs to be mated and calibrated with the sensor. Once calibrated, these need to be used as a pair. You can not use the interface(s) interchangeably with other sensors.