

LT1820

4-20mA Passive Loop Isolator

Datasheet – English 1.00



Introduction

The LT1820 is a galvanically isolated 4-20mA passive loop isolator. A unique feature to this design is that it does not require any external power supply to generate an output current that is equal to the input current.

The LT1820 adopts unique electromagnetism isolation to achieve high accuracy and linearity. It can drive up to 300 ohms and boasts an isolation voltage of >3kV. The main use for a 4-20mA loop isolator is for the elimination of ground loop measurement problems.

The LT1820 is housed in a space saving DIN rail mount enclosure and is very easy to install.

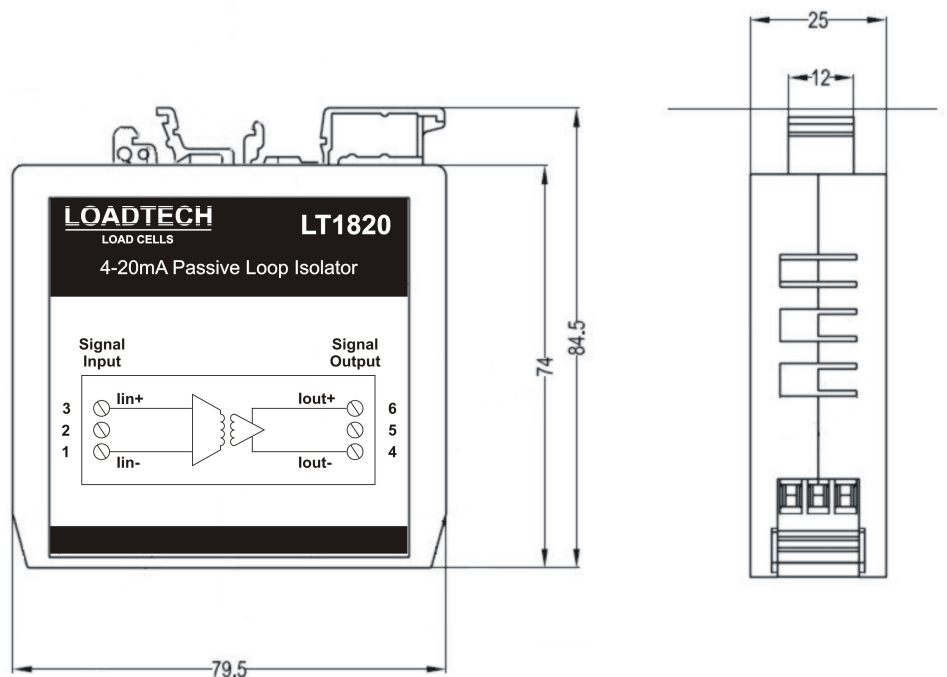
1 Features

- 4-20mA input/output passive isolator
- No additional power supply required
- Eliminate ground loop measurement problems
- Two-port isolation (Between input and output)
- >3kV Isolation Voltage
- Low voltage drop
- High frequency response
- Accuracy and linearity better than 0.1%FS
- Can drive an output load up to 300 Ohms
- Low cost high performance design
- Extremely easy to install
- Space saving DIN rail mount enclosure
- 1 Year Warranty

2 Specifications

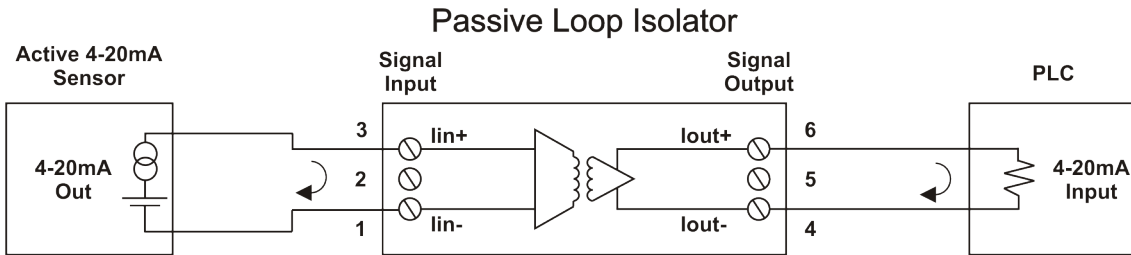
Input Parameters:	
Input Signal	4-20mA
Input Overload	<=50mA
Voltage Drop-out	Typically 3V(@Input=20mA)
Input Protection	36V Overload Protection
Output Parameters:	
Output signal	4-20mA
Load Capacity	<=300Ω (@Output=20mA)
Load Regulation	<0.05% Measured Value / 100Ω
General:	
Zero Offset	0.1%FS
Gain Error	0.1%FS
Temperature Drift	0.0035%FS/°C (-10°C to 50°C)(14°F to 122°F)
Accuracy	0.1%FS
Linearity	0.1%FS
Isolation Characteristics:	
Galvanic isolation	Two-Port Isolation (Between Input and Output)
Isolation Voltage	3kVDC (Tested for 1 minute and leakage current <1mA, humidity<70%)
Environmental:	
Operating temperature	-10°C to 50°C (14°F to 122°F)
Storage temperature	-40°C to 80°C (-40°F to 176°F)
Operating and storage humidity	<85% RH non-condensing
Enclosure:	
Enclosure Dimensions	Din Rail 79.5x74x25mm (LxHxD) (3.13"x2.91"x0.98")
Enclosure Material	Nylon
Enclosure Color	Green

3 Dimensions

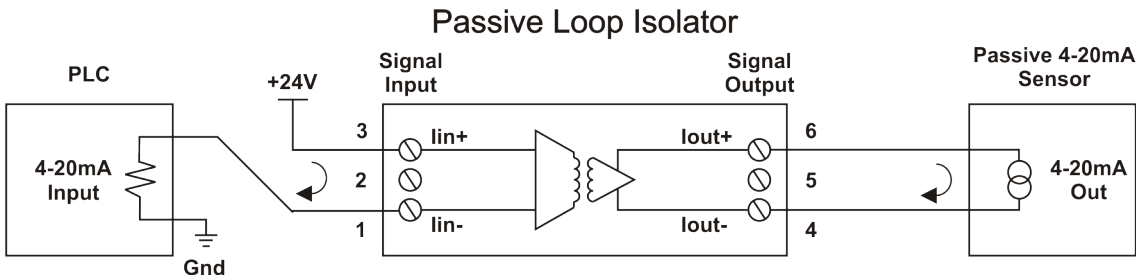


4 Applications

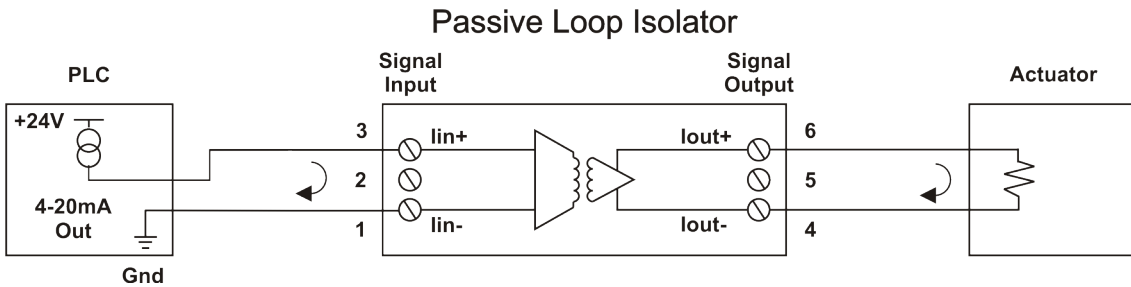
Galvanic isolation of a PLC input connected to an active 4-20mA sensor



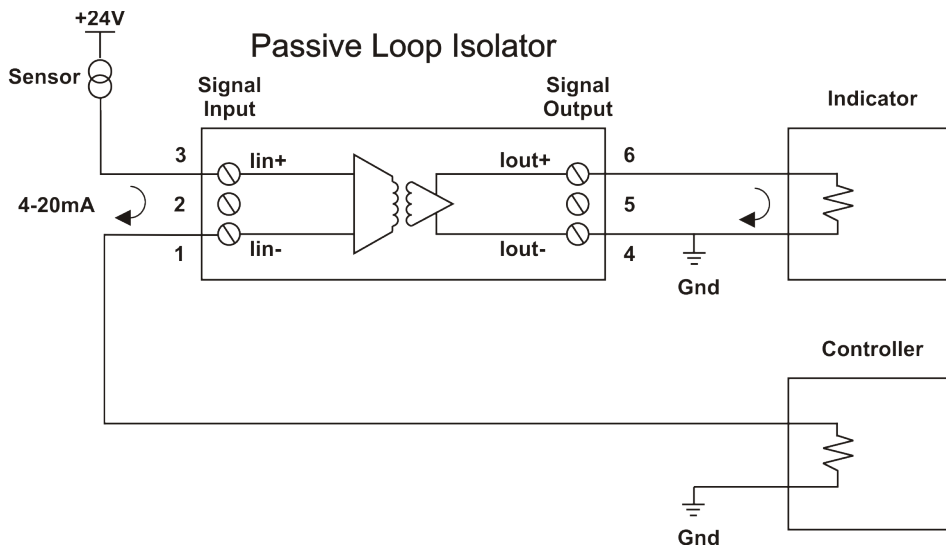
Galvanic isolation of a PLC input connected to a loop fed sensor



Galvanic isolation of a PLC 4-20mA output



Isolation of two common grounded instruments



5 Notice

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6 Warranty

This product carries a warranty for a period of one year from date of purchase against faulty workmanship or defective materials, provided there is no evidence that the unit has been mishandled or misused. Warranty is limited to the replacement of faulty components and includes the cost of labor. Shipping costs are for the account of the purchaser.

Note: Product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies and or sensors, and damage caused by inductive loads.

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