

LPN-P Rev. 1 Potentiometer Transmitter.

Programmable 3 Wire Potentiometer
Input to 4~20mA Output
Loop Powered Transmitter.

Features.

- Field Programmable Input Ranges.
- High Accuracy.
- 40~200mV Output Test Signal.
- LED Indication of Loop Current.
- Low Cost.
- Easy to Install.
- Compact DIN Rail Mount Enclosure.
- Available Standard or Special Calibration.
- Reverse Polarity Protection.

Ordering Information.

LPN-P Standard 0~100% Input.
Programmable Input Range Calibration.



Standard DIN Rail
Mount Enclosure.



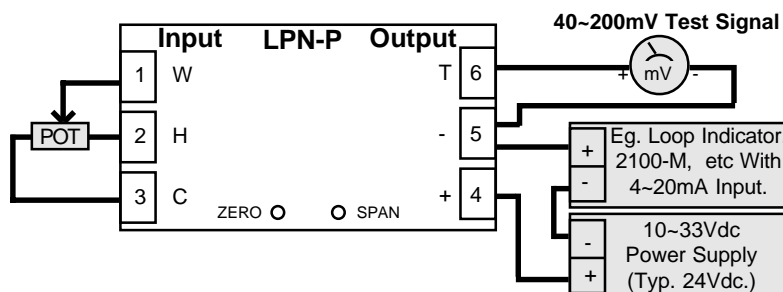
Specifications.

| | | |
|----------------------------------|---|---|
| Potentiometer Input | 3 Wire Potentiometer. Excitation = 2.5V. Minimum Pot Resistance = 1kΩ. Maximum Pot Resistance = 1MΩ. | |
| Output | -mA | 2 wire 4~20mA. (Loop Powered.) |
| | -mV Test | 40~200mV $\pm 1\%$ @ 4~20mA. Other Test Voltages Available. e.g. 1~5V. Note. mV Test Increases Power Supply & Decreases Load Resistance. |
| Power Supply | 10~33Vdc. | |
| Supply Voltage Sensitivity | $< \pm 0.005\%/V$ FSO. | |
| Output Load Resistance | 700Ω @ 24Vdc. (50Ω/V Above 10Vdc.) | |
| Maximum Output Current | Limited to $< 26mA$. | |
| Accurate to | $< \pm 0.1\%$ FSO Typical. | |
| Linearity & Repeatability | $< \pm 0.1\%$ FSO Typical. | |
| Ambient Drift | $< \pm 0.01\%/C$ FSO Typical. | |
| EMC Compliances | Emissions EN 55022-A. Immunity EN 50082-1, $< 1\%$ Effect FSO Typical. | |
| Response Time | 200msec Typical. (10 to 90% 50msec Typical.) | |
| Operating Temperature & Humidity | 0~70C. (Storage Temp. -20~80C.) 5~85% RH Max. Non-Condensing. | |
| Dimensions and Construction | L=79, W=22.5, H=85mm. Polyamide Thermoplastic Rail Mount Enclosure.. | |

Product Liability. This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units at 25C, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.

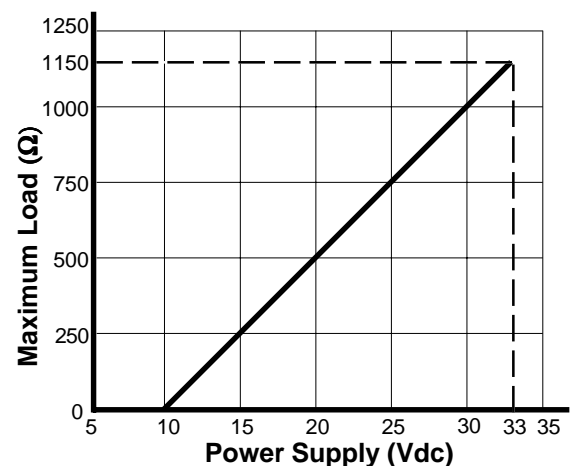
Examples of Input Connection.



Terminations.

| | | | | | |
|-------|---|-------|--------|---|---------|
| Input | 1 | WIPER | Output | 4 | +mA |
| | 2 | HIGH | | 5 | -mA |
| | 3 | COM | | 6 | mV TEST |

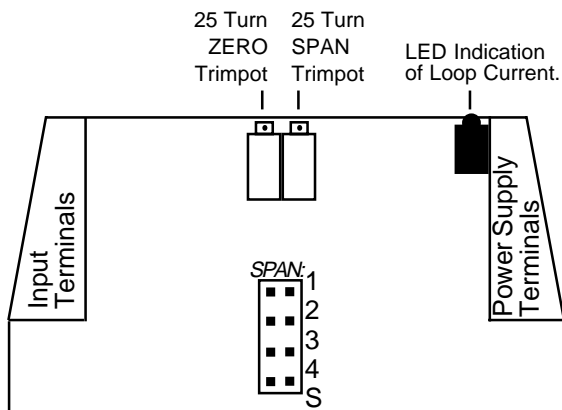
Maximum Load Vs Power Supply.



Quality Assurance Programme.

The modern technology and strict procedures of the ISO9001 Quality Assurance Programme applied during design, development, production and final inspection grant the long term reliability of the instrument.

Location of LPN-P Jumpers.



LPN-P Programming.

The Span can be set within the following values, as shown in the table. Refer to PCB Layout for position of jumper on the LPN-P.

| Jumper | Span (%) |
|--------|-----------------|
| 1 | Not Used |
| 2 | From 20 to 40% |
| 3 | From 40 to 80% |
| 4 | From 80 to 100% |

E.g. If a range of 0~50% on a Potentiometer is required. Put jumper in position 3.

Note 1. Once the range has been programmed calibrate the LPN-P using the trim pots.
 Calibrate 0% = 4.00mA using the ZERO trimpot.
 Calibrate maximum potentiometer setting = 20.00mA using the SPAN trimpot.
 Repeat Zero and Span calibrations until readings are correct.
 Check midpoint potentiometer setting = 12.00mA \pm 0.016mA (\pm 0.1% linearity).

Note 2. If the range cannot be attained using the jumper shown in the tables above, try the next jumper closest to the value you require.

The Proper Installation & Maintenance of LPN-P.

All power and signals must be de-energised before connecting any wiring, or altering any Jumpers or Dip Switches.

MOUNTING.

- (1) Mount in a clean environment in an electrical cabinet on DIN or EN mounting rail.
- (2) Draft holes must have minimum free air space of 20mm. Foreign matter must not enter or block draft holes.
- (3) Do not subject to vibration or excess temperature or humidity variations.
- (4) Avoid mounting in cabinets with power control equipment.
- (5) To maintain compliance with the EMC Directives the LPN-P is to be mounted in a fully enclosed steel cabinet. The cabinet must be properly earthed, with appropriate input / output entry points, and cabling.

WIRING.

- (1) All cables should be good quality overall screened INSTRUMENTATION CABLE with the screen earthed at one end only.
- (2) Signal cables should be laid a minimum distance of 300mm from any power cables.
- (3) For 2 wire current loops and 2 wire voltage signals or 2 wire current signals, Austral Standard Cables B5102ES is recommended. For 3 wire transmitters, RTDs, resistance probes, and potentiometers Austral Standard Cables B5103ES is recommended.
- (4) It is recommended that you do not ground current loops and use power supplies with ungrounded outputs.
- (5) Lightning arrestors should be used when there is a danger from this source.
- (6) Refer to diagrams for connection information.

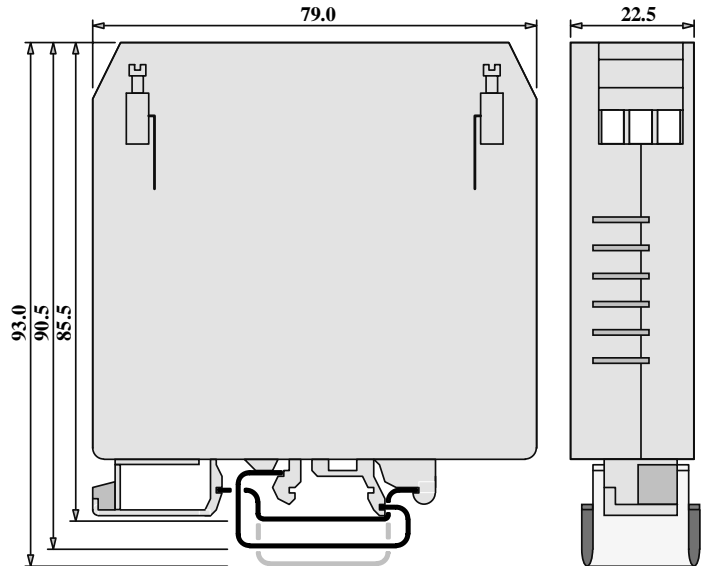
COMMISSIONING.

- (1) Once all the above conditions have been carried out and the wiring checked apply power to the LPN-P loop and allow five minutes for it to stabilize.
- (2) Due to cable resistance and errors within the potentiometer itself a small error may occur (usually less than 1%). To remove this error adjust the Zero and Span Pots in the top of the LPN-P enclosure with a small screwdriver. (Clockwise to increase the output reading & Anticlockwise to decrease the output reading)
- (3) Take a low (approx 10%) and high (approx 90%) reading of the variable being measured by the transducer supplying the signal to the LPN-P, and ensure that this agrees with the level being indicated by the PLC or indicator, etc, that the LPN-P is connected into. Adjust for any difference using the Zero and Span Pots in the top of the LPN-P enclosure.

MAINTENANCE.

- (1) Repeat (3) of Commissioning.
- (2) Do it regularly - at least once every 12 months.

Enclosure Dimensions.



Intech INSTRUMENTS LTD
www.intech.co.nz
 Christchurch Ph: +64 3 343 0646
 Central Ph: 06 876 0034
 Auckland Ph: 09 827 1930
 Email: sales@intech.co.nz