

## **OMNITERM LPI & LPD Loop Powered Isolators**

Model C2063 LPI (single) & C2462A LPD (dual) 4-20mA Loop Powered Isolators

### DATASHEET

# Features

- Isolate any instrument current loop to 1500Vac
- No external power supply required
- Powered by the current loop
- Load independent no field calibration required
- High load capability (1 kohm)
- Low volt drop <3 Volts at 20 mA (2,5V Typical)</li>
- High Accuracy
- Reverse polarity and overload protection for foolproof installation
- Internal open loop clamp (LPI Model only).
- Easy DIN rail mounting

The OMNITERM LPI and LPD are loop powered isolating current repeaters specifically designed to isolate instrument current loops from circulating ground currents that can cause system inaccuracies, or at worst, instrument failure. Insert in any 4-20mA current loop to isolate the instruments in the loop. The current applied to the input is repeated on the isolated output, and the load present on the output is reflected back to the input. No separate power source is required.

Forming part of OMNIFLEX's extensive OMNITERM range of industrial instrumentation, the OMNITERM LPI and LPD are designed to be DIN rail mounted.

The Omniterm LPI is a single repeater in a 22.5mm wide DIN rail mount housing, while the LPD is a dual repeater that fits two separate loop powered isolators into the same 22.5mm width for high density applications.

Applications		
•	Inter-instrument isolation	
•	Isolation of grounded current loops	
•	Drive multiple grounded instruments with one loop	
•	Isolate RTU's, PLC's, SCADA I/O from the field loop.	
•	Isolate two-wire transmitter loops from local 24Volts	
•	Isolate grounded chart recorders from the field loop	
•	Can be used with two-wire or four-wire transmitters	
•	Isolate grounded control valves	



These second-generation products utilise advanced electronic techniques to achieve high accuracy with minimum loop losses and zero field calibration.

Because of the faithful nature in which the output impedance is reflected back to the input, an open circuit on the output will cause an open circuit on the input. In cases where this is undesirable, an internal clamp is provided in the LPI model which, when connected, ensures that reflected output voltage never rises above 10 volts if the output loop is broken. This clamp is optimised for 2500hm terminated circuits (1-5volts).

For LPI and LPD operate over 0-50mA operation, allowing fault current levels to be repeated.

### **Mechanical Details**











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#### **Connection Diagram**



Terminal Configuration of Omniterm LPI (Model C2063)



Terminal Configuration of Omniterm LPD (Model C2463)

#### **SPECIFICATIONS**

Input			
Operating Current Range	4-20mA		
Absolute maximum current range	0-50mA		
Input voltage	27V maximum		
Maximum volt drop in loop	3 volts at 20mA		
Max. equivalent insertion loop resistance	150Ω at 20mA		
Output			
Output current	Matches input current		
Min. load impedance (externally connected)	100Ω or 2 Volts		
Max. load resistance (without open circuit clamp connected)	$1k\Omega$ at 20 mA for 24Volts Supply		
Performance			
Accuracy at 20°C and 250 $\Omega$ load	< 20uA between 4 and 20mA		
Effect of load impedance	< 0.1%/100Ω 0,05%/100Ω typical		
Response time 10-90% of 20mA into $250\Omega$	20ms typical		
Open Circuit Clamp (when connected) Available on LPI Model only			
Maximum voltage across input when output open circuit	<8 volts		
Maximum working load impedance allowed with clamp connected.	250 ohms		
Temperature			
Storage	-20 to +70°C		
Operating	0 to +60°C		

Effect of Temperature < 100ppm/°C Isolation Isolation Test Voltage 1500Vrms Input to Output Weight LPI Model C2063 LPD Model C2462A Unpacked 115g approx. 160g approx. Packed 140g approx. 185g approx. **Compliance to Standards** Safety EN 60950:1995 EN55011 & EN50081-2:1994 Grp I, Emissions Class A Immunity – ESD IEC 61000-4-2:1995, level 3 Immunity – RF Fields IEC 61000-4-3:1995, level 3 Immunity -IEC 61000-4-4:1995 Fast Transients 1 kV - input/output lines Housing Width 22.5mm (1.18") Height 75mm(2.95") Depth (from panel) 110mm(4.33") Material ABS Flammability Class HB as per UL94 **Ordering Information** Model Order Code LPI C2063 LPD C2462A

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## **Basic Application Examples**



Application 1: Using the LPI or LPD with a powered (four wire) transmitter



Application 2: Using the LPI or LPD with a two-wire transmitter current loop







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## **Further Application Examples**



Application 1: Output from RTU/PLC/DCS with common supply to individually isolated 4-20mA circuits



Application 2: Field mounted two wire transmitters individually isolated from common input power supply.



Application 3: 4-20mA current loop with isolated input to RTU/PLC/DCS with open-circuit protection clamp. If input to RTU/PLC/DCS input is unplugged, current loop will remain unbroken.



Application 4: Isolated field transmitter with open circuit protection. If input to RTU/PLC/DCS input is unplugged, current loop will remain unbroken.



