

## Specifications

### Input:

- Ranges: see below
- Impedance:
  - ≥100K ohms (voltage inputs)
  - ≤ 20 ohms (20mA Inputs),
- Protection: withstands up to 24VDC (current input), 120VAC (voltage input) without damage

### Output Range:

4-20mA

### Supply Voltage Range:

12 to 35VDC, each channel

### Output Accuracy:

≤ 0.1% of full-scale input typical, ≤ 0.2% max. @23°C including linearity, repeatability and hysteresis

### Adjustability:

Front accessed 10 turn, ± 5% of span for zero and span, typical

### Stability:

≤ 0.025%/°C of full-scale maximum  
Meets IEC 801-2 level 2 (4kV)

### ESD Susceptibility:

Meets IEC 801-2 level 2 (4kV)

### Isolation:

1800VDC or peak AC between input and output and channel to channel

### Response Time:

100mSec typical (10 to 90%)

### Temperature:

Operating: -40 to 80°C (-40 to 176°F)  
Storage: -40 to 80°C (-40 to 176°F)

### Humidity (non-condensing):

Operating: 15 to 90% (@45°C)

DRI-LPO-MA: 1 Channel; 4-20mA input; 4-20mA outputs  
DRI-LPO-V: 1 Channel; 0-10Vdc input; 4-20mA output  
DRI-LPO-2MA: 2 Channel; 4-20mA inputs; 4-20mA outputs

### Wire Terminals:

Socketed screw terminals for 12-22 AWG

### Weight :

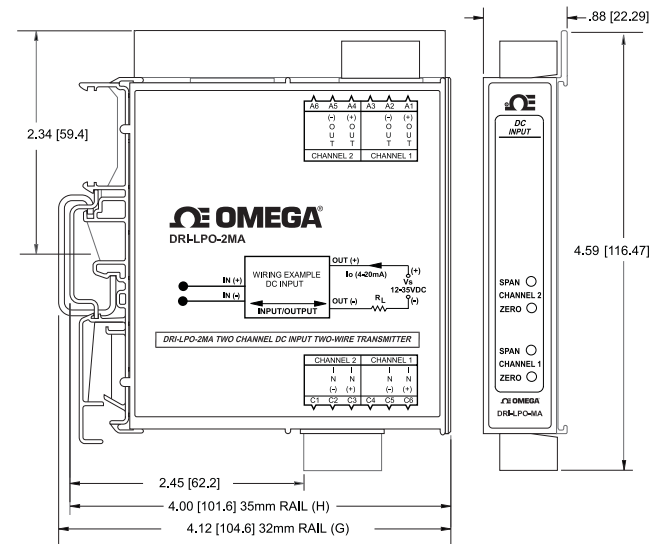
0.34lbs

### Agency Approvals:

UL recognized per standard UL508 (File No. E99775).  
CE conformance per EMC directive 89/336/EEC and low voltage 73/23/ EEC (Input <75VDC)

Terminal	Connection	Terminal	Connection
A1	Channel 1 Power & Output (+)	C1	Not Connected
A2	Channel 1 Power & Output (-)	C2	Channel 2 DC Input (-)
A3	Not Connected	C3	Channel 2 DC Input (+)
A4	Channel 2 Power & Output (+)	C4	Not Connected
A5	Channel 2 Power & Output (-)	C5	Channel 1 DC Input (-)
A6	Not Connected	C6	Channel 1 DC Input (+)

### Dimensions



## DRI-LPO SERIES

### Output Loop Powered DIN Rail Multi-Channel DC Input Isolating, 2-Wire Transmitter

INSTRUCTION SHEET

M5480/0815

Shop online at [omega.com](http://omega.com) e-mail: [info@omega.com](mailto:info@omega.com)  
For latest product manuals: [www.omegamanual.info](http://www.omegamanual.info)

Provides One or Two Isolated 4-20mA Output Current Loops in Proportion to One or Two DC Inputs

- Multi-Channel Design
- Prevents Ground Loops
- Standard Input Ranges
- High Density DIN Rail Mounting
- Plug-in Terminals
- Output Loop Powered from 12 to 35VDC

### Description

The DRI-LPO Series is a DIN rail mount, DC input, single or dual channel, two-wire transmitter. Each channel accepts a DC voltage or current input and provides an isolated 4-20mA output. Each channel is fully isolated (1800VDC) from input to output and channel to channel.

The DRI-LPO Series features plug-in screw terminals for easy installation and low Mean-Time-To-Repair (MTTR). Two or more modules can slide together and interlock for solid, high density mounting. This is accomplished by removing either the foot, or the adjacent unit's faceplate (for right-hand side or left-hand hand side mounting, respectively). The module to be attached will easily slide on to the side of the mounted unit.

### Application

DC input, two-wire transmitters are used to isolate and convert a DC voltage or current into a proportional 4-20mA signal. Two-wire transmitters are primarily used in remote locations near the sensor since they reduce the probability of signal errors and save wiring costs by utilizing the two power wires to send the 4-20mA signal. The current signal is usually monitored by a control system or displayed for an operator.

Typically, DC voltages or currents from various field instruments (e.g. level, flow, pressure and position sensors) are used to monitor and control a manufacturing process. Voltage signals can only run a short distance to a panel without errors caused by noise or lead resistance in the wires. These sensor (voltage) signal wires are usually terminated at the two-wire transmitter and converted into a 4-20mA signal which is highly immune to noise and not affected by lead resistance, both of which can cause significant errors in voltage signals transmitted over long distances.

The 1800VDC isolation capability of the DRI-LPO Series prevents ground loops from causing errors in DC voltage or current signals and can reduce susceptibility to Radio Frequency Interference (RFI). Isolation also provides protection from high voltages and current spikes which can damage

expensive Supervisory Control And Data Acquisition (SCADA) equipment, such as a PLC or DCS.

### Operation

The DRI-LPO Series operates as a two-wire transmitter; each channel derives its power from a 12-35VDC source connected in series with the 4-20mA output loop. Typically a 24VDC source is used for power, allowing 12VDC (600 ohms @ 20mA) for other devices connected in series in the current loop. The outputs of the DRI-LPO Series are isolated from the inputs and protected from reverse polarity. Zero and span pots are provided for each channel to calibrate the output to the input source (+/-5%).

Standard input ranges (see Table) are calibrated to rated accuracy. One range per module; one or two channels per module.

### Calibration

1. Connect the input to a calibrated DC source. Connect the output in series to a voltage source capable of supplying at least 20mA and a milliamp current meter.

Note: The voltage source ( $V_s$ ) must be sufficient to accommodate all other device loads ( $R_L$ ) in the current loop:

$$V_s \geq 12 + (0.02R_L)$$

2. Set the calibrator to the specified minimum DC input value and adjust the zero potentiometer for 4mA output.

3. Set the calibrator to the specified maximum DC input value and adjust the span potentiometer for 20mA output.

4. Repeat steps 2 and 3, as necessary.



[omega.com](http://omega.com) [info@omega.com](mailto:info@omega.com)

### Servicing North America:

#### U.S.A.:

Omega Engineering, Inc., One Omega Drive,  
P.O. Box 4047, Stamford, CT 06907-0047 USA  
Toll-Free: 1-800-826-6342 (USA & Canada only)  
Customer Service: 1-800-622-2378  
(USA & Canada only)  
Engineering Service: 1-800-872-9436  
(USA & Canada only)  
Tel: (203) 359-1660  
Fax: (203) 359-7700  
e-mail: [info@omega.com](mailto:info@omega.com)

For Other Locations Visit  
[omega.com/worldwide](http://omega.com/worldwide)

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

### WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC., warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

### RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA.

- Purchase order number which the product was PURCHASED,
- Model and serial number of the product under warranty, and
- Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY RETURNS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA.

- Purchase Order number to cover the COST of the repair,
- Model and serial number of the product and
- Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords customers the latest technology and engineering. OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

© COPYRIGHT 2015 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, translated, or reduced to any electronic medium-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.

**PAGE  
INTENTIONALLY  
BLANK**

**PAGE  
INTENTIONALLY  
BLANK**