**DMD4380**  
**DMD4380-DC**  
**DC-DC Isolated Transmitter**  
M-5001/0818

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMD4380</td>
<td>85-265 VAC, 50/60 Hz or 60-300 VDC</td>
</tr>
<tr>
<td>DMD4380-DC</td>
<td>9-30 VDC or 10-32 VAC</td>
</tr>
</tbody>
</table>

**Description**  
The DMD4380 is a field-rangeable signal isolator/transmitter/converter. It accepts a DC voltage or current input and provides an optically isolated DC voltage or current output that is linearly related to the input. Full 3-way isolation (input, output, power) makes this module useful for ground loop elimination, signal conversion and isolation, common mode signal rejection, or noise pickup reduction.

**Input Ranges**  
Field selectable ranges and offsets via switch settings  
Voltage: 0-10 mVDC to 0-130 VDC  
Bipolar voltage: ±5 mVDC  
Current: 0-200 µA to 0-50 mA  
Input offset: ±100% in 15% increments

**Input Impedance (Voltage)**  
Voltage: 1 mΩ minimum  
Current: 50 Ω typical  
Voltage burden: 1 VDC at 20 mA current input

**Common Mode Rejection**  
100 dB minimum

**Input Loop Power Supply**  
15 VDC ±10%, regulated, 25 mA  
May be selectively wired for sinking or sourcing mA input

**LoopTracker**  
Variable brightness LEDs indicate I/O loop level and status

**DC Output Ranges**  
Field selectable ranges and offsets via switch settings  
Voltage (10 mA max): 0-1 VDC to 0-10 VDC  
Bipolar voltage: ±5 VDC or ±10 VDC  
Current: 0-2 mA to 0-20 mA, 4-20 mA  
20 V compliance, 1000 Ω at 20 mA

**Output Calibration**  
Multi-turn zero and span potentiometers  
±15% of span adjustment range typical

**Output Loop Power Supply**  
20 VDC nominal, regulated, 25 mA  
May be selectively wired for sinking or sourcing mA output

**Output Test/Override**  
Front button sets output to test level when pressed or via external contact closure  
Potentiometer adjustable 0-100% of span

**Output Ripple and Noise**  
Less than 10 mVRMS ripple and noise

**Linearity**  
Better than ±0.1% of span

**Ambient Temperature Range and Stability**  
10°C to +60°C operating ambient  
Better than ±0.02% of span per °C stability

**Response Time**  
70 milliseconds typical  
1 millisecond typical with DF option

**Isolation**  
1200 VRMS minimum  
Full isolation: power to input, power to output, input to output

**Housing and Connectors**  
IP 40, requires installation in panel or enclosure  
For use in Pollution Degree 2 Environment  
Mount vertically to a 35 mm DIN rail  
Four 4-terminal removable connectors, 14 AWG max wire size

**Power**  
85-265 VAC, 50/60 Hz or 60-300 VDC, 2 W maximum  
D versions: 9-30 VDC or 10-32 VAC 50/60 Hz, 2 W maximum

**Description** (Cont.)  
A green input LED and a red output LED vary in intensity with changes in the process input and output signals. These provide a quick visual picture of your process loop at all times.

An output test button provides a fixed output (independent of the input) within ±1% of output. The test output level is potentiometer adjustable from 0 to 100% of output span. The I/O LEDs and the output test button greatly aid in saving time during initial startup and/or troubleshooting.

**Ambient Temperature Range and Stability**  
Better than ±0.1% of span

**Linearity**  
Less than 10 mVRMS ripple and noise

**Output Zero Calibration**  
Current Sinking Output  
Variable Brightness Output Indicator

**Output Span Calibration**  
Output Test Level Adjustment  
Current Sourcing Output  
Variable Brightness Input Indicator

**Output Test/Override**  
Remote Test  
Do not connect anything to unused terminals

**User’s Guide**  
Shop online at omega.com  
e-mail: info@omega.com  
For latest product manuals:  
www.omegamanual.info

**Lifetime Warranty**  
MADE IN USA

**WARNING:** This product can expose you to chemicals including nickel, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**Specifications**  
D versions: 9-30 VDC or 10-32 VAC 50/60 Hz, 2 W maximum

**Power**  
85-265 VAC, 50/60 Hz or 60-300 VDC, 2 W maximum

**DMD4380-DC**  
DC to DC Isolated Transmitter

**Voltage Output**  
Switch E set to “V”  
Voltage Device

**Current Sourcing Output**  
Switch E set to “I”  
4 mA Device

**Current Sinking Output**  
Loop Power  
Device

**External Contact for Test Function**  
Variable Brightness Input Indicator  
Variable Brightness Output Indicator

**Output Zero Calibration**  
Current Sourcing Input  
Voltage Output

**Output Span Calibration**  
Current Sinking Input  
Voltage Input

**Remote Test**

**Do not connect anything to unused terminals**
**Range Selection**

Select the scales to interface with your application. It is generally easier to select ranges before installation. The module label lists common ranges. For ranges that fall between the listed ranges, use the next highest setting and trim the output signal with the zero and span potentiometers.

**Switches and Input Ranges**

- Switches A and B: Input range
- Switch C: Input offset
- Switch D: Output range
- Switch E: “-V” for voltage output or “I” for current output.

**Electrical Connections**

WARNING! All terminal connections should be performed by a qualified electrician or instrumentation engineer. Avoid shock hazards. Turn signal input, output, and power off before connecting or disconnecting wiring, removing, or installing module.

**Device Connected to Output**

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Terminal</th>
<th>Switch E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage input</td>
<td>3 (–)</td>
<td>4 (+)</td>
</tr>
<tr>
<td>Passive mA (current) input</td>
<td>3 (–)</td>
<td>4 (+20 V)</td>
</tr>
<tr>
<td>mA (current) input device that provides loop power</td>
<td>2 (–)</td>
<td>3 (+)</td>
</tr>
</tbody>
</table>

**Device Connected to Input**

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage output</td>
<td>9 (–)</td>
</tr>
<tr>
<td>Passive mA (current) output that provides loop power</td>
<td>9 (–)</td>
</tr>
</tbody>
</table>

**Using the Loop Power Supplies with Current Signals**

Determine if your device ( PLC, display, transmitter, etc.) provides power to the current loop or if the loop must be powered by the DMD4380. Typical voltage may be 9-24 VDC at your device’s terminals if it provides power to the current loop. If your device does not power the current loop, the module can provide power using the appropriate terminals as indicated on the wiring diagram.

**Module Configuration**

Check white model/serial number label for module operating voltage and output wiring connections. If the input and/or output do not function, check switch settings and wiring polarity.

**Operation**

The DMD4380 accepts a DC voltage or current input and provides an optically isolated DC voltage or current output that is linearly related to the input. The green input LED provides a visual indication that a signal is being sensed by the input circuitry of the module. It also indicates the input signal strength by changing in intensity as the process changes from minimum to maximum.

**Using the Loop Power Supplies**

For current outputs, the red LED will only light if the output loop current path is complete. For either current or voltage outputs, failure to illuminate or a failure to change in intensity as the process changes from minimum to maximum indicates a problem with the module power or signal output wiring. Note that it may be difficult to see the LEDs under bright lighting conditions.

**Input Test Function**

When the test button is pressed it will drive the output with a known good signal that can be used as a diagnostic aid during initial start-up or troubleshooting. When released, the output will return to normal. The Test Cal. potentiometer is factory set to approximately 50% output. It can be adjusted to the point from 0 to 100% of the output span. Press and hold the Test button and adjust the Test Cal. potentiometer for the desired output level.
OMEGA’s policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

© Copyright 2017 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.