Digital Panel Meters

LED & LCD Panel Meters
AC & DC Ammeters
2-Wire AC & DC Voltmeters
4-20mA Readouts
Process Monitors
About Murata Power Solutions
Murata Power Solutions was established by Murata Manufacturing Corporation in September 2007 with its acquisition of the Power Electronics Division of C&D Technologies, Inc. In addition to C&D’s extensive offering of DC/DC and AC/DC products, the acquisition also brought with it a comprehensive offering of products and capabilities from market leading companies previously acquired by C&D, including:

- DATEL, Inc.
  - Medium to high power DC/DC converters
  - Hybrid technologies
  - Digital panel meters
- Newport Components Ltd.
  - Miniature low power DC/DC
  - Magnetic products
- Power Systems Division of Celestica, Inc.
  - AC/DC front end power supplies
  - Processor power (VRMs)
  - PoL DC/DCs
- Celab Ltd.
  - Power conversion products for harsh environments

Murata Power Solutions is currently the World’s No.1 supplier of DC/DC converters, and the 5th largest supplier of power electronics overall, with global sales, manufacturing, and design teams operating from facilities in the United States, Canada, China, Japan, Singapore, England, France, and Germany. Supported by a global network of the leading electronics distributors, Murata Power Solutions can effectively support your local and global requirements. Manufactured to the highest standards in ISO 9001:2000 Certified facilities, our designs undergo the strictest verification testing, so you can be sure that they perform to, and often beyond, their specifications.
### 3½ Digit, Subminiature LED/LCD Panel Meters

**DMS-20 Series**

- Large (0.37”/9.4mm) LED or LCD displays
- 12-pin DIP packages, panel or board mountable
- Low-current LED models (7mA)
- 4 input ranges: ±200mV, ±2V, ±20V, ±200V
- Built-in color filters and bezels (LED models)
- Single +5V supply or 9V battery (LCD models)
- Moisture/vibration resistant encapsulated packages
- DISPLAY ENABLE function for “power down” mode
- DISPLAY TEST and HOLD functions (optional)

**Package Dimensions**

1.38”L x 0.88”W x 0.475”D (LED) or 0.425”D (LCD)

35.1mm L x 22.4mm W x 12.07mm D (LED) or 10.8mm D (LCD)

**Datasheets**

LED: DMS-20PC Series / LCD: DMS-20LCD Series

### 3½ Digit, Miniature LED/LCD Panel Meters

**DMS-30 Series**

- Large displays: 0.56”/14.2mm (LED)
- 0.40”/10.2mm (LCD)
- Low-current LED models (12mA)
- 12-pin DIP packages, panel or board mountable
- 4 input ranges: ±200mV, ±2V, ±20V, ±200V
- Built-in color filters and bezels (LED models)
- Moisture/vibration resistant encapsulated packages
- Single +5V supply or 9V battery (LCD models)
- Numerous application boards available

**Package Dimensions**

2.17”L x 0.92”W x 0.56”D (LED) or 0.43”D (LCD)

55.1mm L x 23.4mm W x 14.22mm D (LED) or 10.92mm D (LCD)

**Datasheets**

LED: DMS-30PC Series / LCD: DMS-30LCD Series

### 4½ Digit, Miniature LED/LCD Panel Meters

**DMS-40 Series**

- Scientific-grade accuracy, ±2 counts
- Large displays: 0.52”/13.2mm (LED)
- 0.40”/10.2mm (LCD)
- 12-pin DIP packages, panel or board mountable
- Low-current LED models (35mA)
- Display HOLD function standard
- 4 input ranges: ±200mV, ±2V, ±20V, ±200V
- LCD models have dual input ranges
- Moisture/vibration resistant encapsulated packages

**Package Dimensions**

2.17”L x 0.92”W x 0.56”D (LED) or 0.43”D (LCD)

55.1mm L x 23.4mm W x 14.22mm D (LED) or 10.92mm D (LCD)

**Datasheets**

LED: DMS-40PC Series / LCD: DMS-40LCD Series
AC Ammeters

**Built-in CT’s for AC currents to 100A**
- 4 ranges from 0-2A to 0-100A; 12 models
- Functionally complete with on-board CT’s; Red LEDs
- 2A and 20A models include all connections for load and power
- AC (85-264V @ 50/60Hz with “self-power”) or DC (5-40V)
- UL/CSA recognized; 2000V isolation between load and supply

ACA-20PC Series

ACA-20PC Series are the first digital AC ammeters to incorporate on-board current transformers. Simply pass the current-carrying load wire through the on-board CT, apply power to the two power supply terminals, and you’re instantly measuring AC currents up to 100A. No external shunts or expensive CTs are required.

**External CT’s for AC currents to 2000A**
- 14 ranges from 0-50A to 0-2000A; 42 models
- Functionally complete; Bright red LED readouts
- Scales/digitizes/displays the signal from 5A current transformers
- UL/CSA recognized; Zero-burden inputs with 2000V isolation
- AC (120/220V @ 50/60Hz ) or DC (5-40V) power

ACA-20PC Series

ACA5-20PC Series scale and display the output of 5A current transformers (50:5A, 500:5A, 1000:5A, etc.). 14 input ranges measure AC currents from 0-50A to 0-2000A. They accept outputs from previously installed high-current CTs to instantly bring digital precision to older AC ammeter installations.

**RMS Reading AC Ammeters**

**External CT’s for AC currents to 2000A**
- Accurately measure complex waveforms
- Built-in CTs measure up to 50A
- Self-powered from 120Vac or 220Vac
- Large 0.37 inch red LED displays
- UL and CSA recognized

ACA-20RM Series

World’s first digital AC-ammeters with built-in CTs to directly measure the true-RMS value of complex non-sinusoidal AC currents. Now available with split-core CT’s for easy installation.
DC Ammeters

**Built-in shunts for DC currents to 20A**

- 6 ranges from 0-200µA to 0-20A; 24 models
- Functionally complete with on-board shunts
- On-board load/supply connections for 3-wire operation
- 8-36Vdc isolated supplies for high-side shunts
- 5-40Vdc supplies for 5/12/24V, 48V telecom option

DCA-20PC Series are the first digital DC ammeters to include built-in low loss shunts for measuring currents up to 20A. Six ranges provide for precision measurement of DC currents from 200µA to 20A. These ammeters are 100% self-contained, so no calibration or user-supplied components are required.

**External shunts for DC currents to 2000A**

- 11 ranges from 0-1A to 0-2000A; 44 models
- Functionally complete with on-board interface circuitry
- Scales/digitizes/displays the output of 50/100mV shunts
- Wide-range, isolated/non-isolated power; 48V telecom option
- Subminiature packages with screw-style terminal blocks

DCA5-20PC Series DC ammeters scale and display the output of 50mV and 100mV DC-shunts. 25 ranges provide for measurement of DC currents from 1A to 2000A. With the exception of an external shunt, the unit is 100% self-contained—no calibration or additional components are required.

**NEW! Daylight Readable Panel Meter**

DMS-30DR Series

Daylight Readable, 3½ Digit Panel Meters with Auto-Dimming LED Displays.

- Super-bright LED displays are readable in direct sunlight
- Automatic display-brightness adjustment
- Includes provision for external brightness adjustment
- Power consumption: Less than 1 Watt at max. brightness
  Less than 0.1 Watt at normal brightness
## 2-Wire AC Voltmeters

**DMS-20 LM Series**

- Large, easy-to-read, red, green, or blue LED displays
- 3-digit readouts; ±1V accuracies
- Rugged, epoxy-encapsulated construction

DMS-20PC-LM Series AC voltmeters are component-size, self-contained, low-cost, 2-wire AC voltmeters. They require no additional components or auxiliary power. Just connect an AC voltage to their two rear terminals and you are instantly reading AC voltages with one-volt resolution. The large (0.37”/9.4mm), bright red, blue, or green LED display makes DMS-20PC-LM voltmeters easily readable under any lighting conditions.

<table>
<thead>
<tr>
<th>Display Type</th>
<th>Input Range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Maximum Current Drain</th>
<th>Package Dimensions</th>
<th>Model Number (Display Color)</th>
<th>Datasheet Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>85-264Vac @ 47-63Hz</td>
<td>±1V</td>
<td>±1V</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-LM-C (Red)</td>
</tr>
<tr>
<td></td>
<td>85-264Vac @ 47-63Hz</td>
<td>±1V</td>
<td>±1V</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-LM-F-C (Red)</td>
</tr>
<tr>
<td></td>
<td>85-264Vac @ 47-63Hz</td>
<td>±1V</td>
<td>±1V</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-LM-B-C (Blue)</td>
</tr>
<tr>
<td></td>
<td>85-264Vac @ 47-63Hz</td>
<td>±1V</td>
<td>±1V</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-LM-BF-C (Blue)</td>
</tr>
<tr>
<td></td>
<td>85-264Vac @ 47-63Hz</td>
<td>±1V</td>
<td>±1V</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-LM-G-C (Green)</td>
</tr>
<tr>
<td></td>
<td>85-264Vac @ 47-63Hz</td>
<td>±1V</td>
<td>±1V</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-LM-GF-C (Green)</td>
</tr>
<tr>
<td></td>
<td>85-140Vac @ 350-450Hz</td>
<td>±0.1Hz</td>
<td>±0.1Hz</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-2-LM-C (Red)</td>
</tr>
<tr>
<td></td>
<td>85-140Vac @ 350-450Hz</td>
<td>±0.1Hz</td>
<td>±0.1Hz</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-3-LM-C (Red)</td>
</tr>
</tbody>
</table>

Panel-mount front bezels, with or without sealing gaskets, may be ordered separately. Visit www.murata-ps.com for details.

## 2-Wire Frequency Meters

**DMS-20 FM Series**

- Ideal for emergency power-generating equipment
- 3-digit readouts accurate to ±0.1 Hertz (60Hz models)
- Easy-to-read, large (0.4”/10.2mm), red LED displays
- Rugged, epoxy-encapsulated construction

DMS-20PC-FM Series are the world’s smallest, self-powered, AC frequency meters. Simply connect the AC line to the two rear terminals, and the unit is fully operational. All models feature epoxy encapsulated construction and an ultra-stable, quartz-crystal-controlled, microcontroller to provide accuracies of ±0.1Hz (50/60Hz models) or ±1Hz (400Hz model) over the entire operating temperature range of –25 to +60°C.

<table>
<thead>
<tr>
<th>Display Type</th>
<th>Input Range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Maximum Current Drain</th>
<th>Package Dimensions</th>
<th>Model Number (Display Color)</th>
<th>Datasheet Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>85-140Vac @ 47-99Hz</td>
<td>±0.1Hz</td>
<td>±0.1Hz</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-FM-C</td>
</tr>
<tr>
<td></td>
<td>85-140Vac @ 47-99Hz</td>
<td>±0.1Hz</td>
<td>±0.1Hz</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-1-FM-F-C</td>
</tr>
<tr>
<td></td>
<td>85-140Vac @ 350-450Hz</td>
<td>±0.1Hz</td>
<td>±0.1Hz</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-2-FM-C</td>
</tr>
<tr>
<td></td>
<td>170-240Vac @ 47-99Hz</td>
<td>±0.1Hz</td>
<td>±0.1Hz</td>
<td>50mAmps</td>
<td>1.38 x 0.88 x 1</td>
<td>35.1 x 22.4 x 25.4</td>
<td>DMS-20PC-3-FM-C</td>
</tr>
</tbody>
</table>

Panel-mount front bezels, with or without sealing gaskets, may be ordered separately. Visit www.murata-ps.com for details.

All AC frequency meters have screw terminals on the back of their packages. The DMS-20PC-1-FM-F has "blade" terminals that plug directly into USA-style wall outlets.

2-Wire DC Voltmeters

12V and 24V Battery Monitors

Ideal replacements for analog panel meters

- Monitor 9/12/24/28/36V batteries or power supplies
- LED or LCD displays with 0.37”/9.4mm digit heights
- Input ranges:
  - 12V models: 4.5–19.99V (LED), 6.5–18V (LCD)
  - 24V models: 8–50.0V (LED and LCD)
- ±0.1mV accuracy (12V models); ±0.1V (24V models)
- 13mA/3mA (LED/LCD) maximum current drains

DMS-20PC-DCM Series of self-powered DC voltage monitors are great replacements for older, hard-to-read, analog panel meters. Simply connect your DC voltage across the two rear terminals and the meters are fully operational—no additional components or power supplies are required. Their large, 0.37” (9.4mm), displays can be easily read from 15 feet away. Built-in reverse polarity protection assures simple, trouble-free installation.

-48V for Distributed Power Systems

- Precision readout for –48Vdc power buses in telecom, datacom and computer/networking equipment
- –36.0 to –75.0Vdc input range
- 0.1V resolution; ±0.1V accuracy
- Negligible power consumption (13mA, max.)

DMS-20PC-7-DCM self-powered digital voltage monitor is designed for monitoring –36 to –75V intermediate bus voltages in modern telecom, datacom and computer equipment. Its compact size, large LED display, and low power consumption (8mA typ. at –48V) make it the ideal replacement for analog panel meters.

<table>
<thead>
<tr>
<th>Display Type</th>
<th>Input Range (Vdc)</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Maximum Current Drain (mA)</th>
<th>Package Dimensions (inches)</th>
<th>Model Number (Display Color)</th>
<th>Datasheet Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>+2 to +11.00</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>50mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-3-DCM-C (Red)</td>
<td>DMS-20PC-3-DCM</td>
</tr>
<tr>
<td></td>
<td>±0.01 to +19.99</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>13mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-0-DCM-C (Red)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td></td>
<td>±0.01 to +19.99</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>13mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-0-DCM-B-C (Blue)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td></td>
<td>±0.01 to +19.99</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>13mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-0-DCM-G-C (Green)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td>LCD</td>
<td>±6.5 to +18.00</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>3mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-6-DCM-C (Red)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td></td>
<td>±6.5 to +18.00</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>3mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-6-DCM-B-C (Blue)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td></td>
<td>±6.5 to +18.00</td>
<td>±0.01V</td>
<td>±0.01V</td>
<td>3mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-6-DCM-G-C (Green)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td></td>
<td>±18.0 to +90.00</td>
<td>±0.1V</td>
<td>±0.1V</td>
<td>7mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-9-DCM-C (Red)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td></td>
<td>±30.0 to +199.99</td>
<td>±0.1V</td>
<td>±0.1V</td>
<td>7mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-9-DCM-C (Red)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
<tr>
<td>LCD</td>
<td>±30.0 to +199.99</td>
<td>±0.1V</td>
<td>±0.1V</td>
<td>7mA</td>
<td>1.38 x 0.88 x 1.0</td>
<td>DMS-20PC-9-DCM-C (Red)</td>
<td>DMS-20PC-0/1/2/8-DCM</td>
</tr>
</tbody>
</table>

- Both LED and LCD displays have a digit height of 0.37”/9.4mm.
- Panel-mount front bezels, with or without sealing gaskets, may be ordered separately. Visit www.cd4power.com for details.

For full product data download a datasheet at www.murata-ps.com
Loop-Powered 4-20mA Readouts

DMS-20 4/20 Series

- Totally loop powered—no external supplies
- 3½ and 4½ digit resolutions; LED/LCD displays
- Industry’s only loop-powered, full-size LED readouts
- Small packages; Large digits: 0.37”/9.4-mm
- Optional unipolar, bipolar, or “positive” polarities
- DIP-switch selectable span/offset/decimal points

DMS-30, -40 Series

DMS-30PC and DMS-40PC 4-20mA current loop displays can be powered from popular 5V, 12V, or 24V supplies and are available with isolated or non-isolated current loop inputs. All models feature a 2V maximum loop burden and large, easy-to-read, digits in a choice of red, blue, or green LEDs.

Ordering Guide

DMS-20PC-4/20 Series
Unipolar, bipolar, and positive reading, loop-powered LED meters
DMS-20LCD-4/20 Series
Unipolar, bipolar, and positive reading, loop-powered LCD meters
DMS-30LC-4/20 Series
Unipolar, bipolar, positive, and inverse reading, loop-powered LCD meters
DMS-40LCD-4/20S
4½ digit loop-powered LCD meter

Datasheets
LED: DMS-20PC-4/20 Series
LCD: DMS-20-, -30-, -40LCD-4/20 Series

Locally Powered 4-20mA Readouts

DMS-30, -40 Series

- 3½ and 4½ digit resolutions; LED/LCD displays
- 4 LED options including low-current & hi-intensity red
- 3 power-supply options: +5V, +24V “I” or 7.5-32V
- 24V “I” models isolate loop inputs from power ground
- DIP-switch selectable span/offset/decimal points
- On-board gain/span and zero/offset trim pots

Ordering Guide

DMS-30PC-4/20S Series
Available in red, green, and blue LEDs
DMS-40PC-4/20S Series
Available in red and green LEDs

Datasheets
LED: DMS-30PC-4/20 & DMS-40PC-4/20 Series

0-5V & 0-10V Process Monitors

DMS-20PC-0/5 Series

- 3½ digit readouts, 0-1V, 0-5V, 1-5V, 0-10V inputs
- 4 connections . . . 2 for signal, 2 for power
- Single +5V or +5-40V supply (9mA drain @24V)
- DIP-switch selectable span/offset/decimal points
- On-board gain/span and zero/offset trim pots

Ordering Guide

DMS-20PC-0/5-5RS-C
+5V supply, standard-intensity red LEDs
DMS-20PC-0/5-5GS-C
+5V supply, standard-intensity green LEDs
DMS-20PC-0/5-5BS-C
+5V supply, bright blue LEDs
DMS-20PC-0/5-5RL-C
+5V supply, low-power red LEDs
DMS-20PC-0/5-5RH-C
+5V supply, high-intensity red LEDs
DMS-20PC-0/5-24RL-C
+5V to +40V supply, low-power red LEDs

Datasheets
LED: DMS-20PC-0/5 Series

Package Dimensions

<table>
<thead>
<tr>
<th>Product</th>
<th>Dimensions</th>
<th>Datasheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-20PC-4/20</td>
<td>1.38&quot; x 0.88&quot; x 0.92&quot;D (LED)</td>
<td>LED: DMS-20PC-4/20 Series</td>
</tr>
<tr>
<td>DMS-20PC-0/5</td>
<td>1.38&quot; x 0.88&quot; x 0.95&quot;D</td>
<td>LED: DMS-20PC-0/5 Series</td>
</tr>
<tr>
<td>DMS-30PC-4/20S</td>
<td>2.17&quot; x 0.92&quot; x 1.02&quot;D (LED)</td>
<td>LED: DMS-30PC-4/20S Series</td>
</tr>
<tr>
<td>DMS-40PC-4/20S</td>
<td>2.17&quot; x 0.92&quot; x 1.02&quot;D (LCD)</td>
<td>LED: DMS-40PC-4/20S Series</td>
</tr>
<tr>
<td>DMS-30PC-0/5-5RS-C</td>
<td>35.1mm x 22.4mm x 24.13mm D (LED)</td>
<td>LED: DMS-30PC-0/5-5RS-C</td>
</tr>
<tr>
<td>DMS-20PC-0/5-5GS-C</td>
<td>35.1mm x 22.4mm x 24.13mm D (LCD)</td>
<td>LED: DMS-20PC-0/5-5GS-C</td>
</tr>
<tr>
<td>DMS-20PC-0/5-5BS-C</td>
<td>35.1mm x 22.4mm x 24.13mm D (LCD)</td>
<td>LED: DMS-20PC-0/5-5BS-C</td>
</tr>
<tr>
<td>DMS-20PC-0/5-5RL-C</td>
<td>35.1mm x 22.4mm x 24.13mm D (LED)</td>
<td>LED: DMS-20PC-0/5-5RL-C</td>
</tr>
<tr>
<td>DMS-20PC-0/5-5RH-C</td>
<td>35.1mm x 22.4mm x 24.13mm D (LCD)</td>
<td>LED: DMS-20PC-0/5-5RH-C</td>
</tr>
<tr>
<td>DMS-20PC-0/5-24RL-C</td>
<td>35.1mm x 22.4mm x 24.13mm D (LED)</td>
<td>LED: DMS-20PC-0/5-24RL-C</td>
</tr>
</tbody>
</table>
Panel and Meter Accessories

Applications Boards

Description | Part No.
--- | ---
Multi-Purpose Application Board for DMS-30 -40 Series | DMS-EB-C
Multi-Purpose Application Board for DMS-20PC/LCD Series | DMS-EB2-C
AC Primary Power Application Board for DMS-30PC X-R and DMS-40L Meters | DMS-EB-AO2C-C
DC/DC Converter and Isolation Board for DMS-30PC/LCD | DMS-EB-DC/DC-C
Temperature (Celsius) Sensor for DMS-30PC/LCD Meters | DMS-EB-HTBC-C
Temperature (Fahrenheit) Sensor for DMS-30PC/LCD Meters | DMS-EB-HTBF-C
AC-to-RMS Converter Board for DMS-30PC/LCD Meters | DMS-EB-RMS-C

Bezels and Panel Cutout Punches

Description | Part No.
--- | ---
Bezel for DMS-30 and DMS-40 | DMS-BZL1-C
Bezel with EPDM sealing gasket for all DMS-30 -40 Meters | DMS-BZL2-C
Bezel for all DMS-20 Meters | DMS-BZL3-C
Bezel with EPDM sealing gasket for all DMS-20 Meters | DMS-BZL4-C
Panel cutout punch for DMS-30 and DMS-40 Meters | DMS-30-CP
Panel cutout punch for DMS-20 Meters | DMS-20-CP

High-Efficiency Switching Regulators

Description | Part No. | Output Voltage | Output Current | Input Voltage
--- | --- | --- | --- | ---
Standard Pin Package | 7803SR-C | +3.3Vdc | 0.5A | +7.5-36Vdc
7805SR-C | +5.0Vdc | 0.5A | +7.5-36Vdc
7812SR-C | +12.0Vdc | 0.4A | +15-36Vdc
78SR-3.3/2-C | +3.3Vdc | 2.0A | +8-32Vdc
78SR-5/2-C | +5.0Vdc | 2.0A | +8-32Vdc
Horizontal Pin Package | 7803SRH-C | +3.3Vdc | 0.5A | +7.5-36Vdc
7805SRH-C | +5.0Vdc | 0.5A | +7.5-36Vdc
7812SRH-C | +12.0Vdc | 0.4A | +15-36Vdc
78SRH-3.3/2-C | +3.3Vdc | 2.0A | +8-32Vdc
78SRH-5/2-C | +5.0Vdc | 2.0A | +8-32Vdc

AC/DC Instrumentation Power Supplies

Description | Part No. | Rated Power (Watts) | V1 Output (Vdc/A) | V2 Output (Vdc/A) | V3 Output (Vdc/A)
--- | --- | --- | --- | --- | ---
DMS-PS1-CM-C | 5 | 5/1 | N/A | N/A
DMS-PS2-CM-C | 5 | 5/0.65 | 4.85/0.2 | 4.85/0.2
DMS-PS3-CM-C | 10 | 24/0.45 | N/A | N/A
DMS-PS4-CM-C | 10 | 24/0.35 | 4.85/0.2 | N/A
DMS-PS5-CM-C | 10 | 24/0.30 | 4.85/0.2 | 4.85/0.2
DMS-PS6-CM-C | 16 | 24/0.70 | N/A | N/A
DMS-PS7-CM-C | 16 | 24/0.60 | 4.85/0.2 | N/A
DMS-PS8-CM-C | 16 | 24/0.55 | 4.85/0.2 | 4.85/0.2
DMS-PS10-CM-C | 16 | 12/1.35 | N/A | N/A

Current Transformers

Part No. | Current Ratio | Accuracy | Burden (VA) (Ohms)
--- | --- | --- | ---
7020-01036-0 | 50.5 | ±2% | 1.5 (0.06)
7020-01037-0 | 75.5 | ±2% | 3.0 (0.12)
7020-01038-0 | 100.5 | ±1% | 3.0 (0.12)
7020-01039-0 | 150.5 | ±1% | 6.0 (0.24)
7020-01040-0 | 200.5 | ±1% | 8.0 (0.32)
7020-01041-0 | 250.5 | ±1% | 10.0 (0.40)
7020-01042-0 | 300.5 | ±1% | 12.5 (0.50)
7020-01043-0 | 400.5 | ±1% | 20.0 (0.80)
7020-01044-0 | 600.5 | ±1% | 10.0 (0.40)
7020-01045-0 | 1000.5 | ±1% | 12.5 (0.50)
7020-01046-0 | 2000.5 | ±1% | 15.0 (0.60)

DC Current Shunts

DATEL Part No | Rated Current/Output | Resistance @ 25°C
--- | --- | ---
3020-01096-0 | 50A/50mV | 0.001
3020-01097-0 | 5A/50mV | 0.01
3020-01098-0 | 20A/50mV | 0.0025
3020-01099-0 | 100A/50mV | 0.0005
3020-01100-0 | 150A/50mV | 0.00033
3020-01101-0 | 200A/50mV | 0.00025
3020-01102-0 | 300A/50mV | 0.000167
3020-01103-0 | 500A/50mV | 0.0001
3020-01104-0 | 800A/50mV | 0.000025
3020-01105-0 | 1000A/50mV | 0.00005
3020-01106-0 | 1200A/50mV | 0.0000417
3020-01107-0 | 1G/100mV | 0.01
3020-01108-0 | 10A/100mV | 0.001

Panel Mount Connectors

Description | Part No.
--- | ---
6-position connector housing. Use with crimp terminal | 4330-01099-0
Crimp terminal for connector housing: 4330-01099-0. Accepts 22-26 AWG wire. | 4400-0132-0
Crimp tool for 4400-0132-0 terminals | 39-20099000

Miscellaneous Items

Description | Part No.
--- | ---
Unpopulated DMS-eb2 PC-Board | 5302-01243-0
Unpopulated DMS-eb PC-Board | 5302-01236-0
DMS-20 Retaining Clip | 5252-01127-0
DMS-20 Retaining Clip | 5252-01126-0
DMS-20 Red Case | 5252-01145-0
DMS-20 Red Case | 5252-01130-0
DMS-20 Bezel and Red Filter | 5252-01160-0
DMS-20 Bezel and Red Filter | 5252-01161-0
DMS-20 Panel Mount Adapter | 4652-01101-0
DMS-20 Panel Mount Adapter | 4652-01100-0
12-position PC-Board Socket | 4320-01072-0
6-position PC-Board Socket | 4320-01074-0

www.murata-ps.com

North America | Tel: +1 800 233 2765 | e-mail: mansfield@murata-ps.com
United Kingdom | Tel: +44 (0)1908 615232 | e-mail: mk@murata-ps.com
Germany | Tel: +49 (0) 89 544334 0 | e-mail: munich@murata-ps.com
France | Tel: +33 (0)1 34 60 01 01 | e-mail: france@murata-ps.com
China (Shanghai) | Tel: +86 21 5027 3678 | e-mail: shanghai@murata-ps.com
China (Guangzhou) | Tel: +86 20 221 8066 | e-mail: guangzhou@murata-ps.com
Japan (Tokyo) | Tel: +81 3 3779 1031 | e-mail: tokyo@murata-ps.com
Japan (Osaka) | Tel: +81 6 6334 2025 | e-mail: osaka@murata-ps.com
Singapore | Tel: 65 6348996 | e-mail: singapore@murata-ps.com
Energy Efficient Products

- Replacements for hard-to-read LCD displays
- Increase battery life in portable applications
- Eliminate the need for fans and heat sinks
- Excellent long-term reliability

All products listed to the right were designed to provide outstanding performance and ultra-low power consumption. These high-efficiency LED display instruments and switching power supplies can significantly reduce long-term energy costs.

Quality Assured

The QA Engineer who instituted our Design-for-Reliability Program performed routine HALT (Highly Accelerated Life Testing) on a randomly selected 2-wire meter and the device “passed.” Devices are not supposed to pass HALT. The intent of HALT is to “reveal latent defects or design weaknesses that may eventually cause field failures” by subjecting devices to progressively higher stress levels, until something breaks.

The Engineer then decided to see how much stress it would take to make a second meter succumb. With the maximum applied input voltage, the meter (mounted in a metal panel using a DATEL bezel assembly) was subjected to the following: operating case-temperature extremes of +145°C and –75°C; non-operating cold soak at –75°C (after which the meter still operated correctly); three temperature cycles (–65 to +125°C) at a transition rate of 30°C per minute; 15 minutes of 3-axis random longitudinal and rotational vibration at 10 to 15Gs; a temperature spike down to –65°C; and lastly, more vibration.

During the last vibration, the meter pulled away from the bezel assembly (which had melted during the +145°C temperature extreme!), and one segment of one LED digit went blank. Upon troubleshooting, the Engineer discovered all meter electronics—including the drive circuit to the failed LED segment—were working fine. The failure was traced to the display itself. The Engineer’s report gave the device a “conditional pass,” pending failure analysis of the LED display.

Now you know why we confidently specify our standard digital panel meters with an operating temperature range of 0 to +60°C and boast about their rugged, vibration and moisture-resistant, epoxy-encapsulated packages.

Custom Designs

For high-volume OEM applications, we can quickly and easily modify any of our standard LED or LCD-display instruments to accommodate your specific needs. For minimal additional cost, you can have a finished product that displays the exact readings you want for the input signal you are monitoring, without the need for any user modifications or external components.

The products shown here are full customs, designed to meet their customers’ unique physical and electro-optical requirements. Both products incorporate user-selectable range settings via 2-position slide switches and precision trimpots. We even designed a completely new LED for the 1-inch round (25.4mm) display. Contact our Applications Engineering Group for complete details.

Energy Efficient Products

Low power LED meters and accessories

<table>
<thead>
<tr>
<th>3½ and 4½ Digit DC Voltmeters</th>
<th>Display Options</th>
<th>Digit Height</th>
<th>Power Consumption</th>
<th>Operating Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-20PC-X-RL</td>
<td>3½ Digit Red LED</td>
<td>0.37in./9.4mm</td>
<td>8mA @ 5Vdc</td>
<td>0 to +60°C</td>
</tr>
<tr>
<td>DMS-30PC-X-RL</td>
<td>3½ Digit Red, Green, or Orange LED</td>
<td>0.56in./14.2mm</td>
<td>15mA @ 5Vdc</td>
<td>0 to +60°C</td>
</tr>
<tr>
<td>DMS-40PC-X-RL</td>
<td>4½ Digit Red LED</td>
<td>0.52in./13.2mm</td>
<td>25mA @ 5Vdc</td>
<td>0 to +50°C</td>
</tr>
</tbody>
</table>

4-20mA Process Monitors

<table>
<thead>
<tr>
<th>Series</th>
<th>Display Options</th>
<th>Digit Height</th>
<th>Loop Drop</th>
<th>Operating Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-20PC-4/20</td>
<td>3½ Digit Red LED</td>
<td>0.37in./9.4mm</td>
<td>+4Vdc @ 20mA</td>
<td>0 to +60°C</td>
</tr>
</tbody>
</table>

High-Efficiency Switching Regulators

<table>
<thead>
<tr>
<th>Series</th>
<th>Voltage Outputs</th>
<th>Package</th>
<th>Efficiency</th>
<th>Operating Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>78XXSR</td>
<td>3.3V, 5V, 12V</td>
<td>LM78XX compatible SIP</td>
<td>To 95%</td>
<td>–40 to +70°C</td>
</tr>
</tbody>
</table>

AC/DC Instrumentation Power Supplies

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated Output</th>
<th>Voltage Outputs</th>
<th>Efficiency</th>
<th>Operating Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS-PSX-CM</td>
<td>5, 10, 16 Watts</td>
<td>Single, Dual, Triple</td>
<td>To 82%</td>
<td>–25 to +70°C</td>
</tr>
</tbody>
</table>
AC/DC Power Supplies

Murata Power Solutions can develop AC/DC power supplies to meet almost every possible application requirement in terms of power, performance, efficiency, protection, size, approvals compliance, and cooling requirements.

- **Front End Modules for DPAs**
  - AC to 12Vdc or 48Vdc ultra compact front end supplies for distributed power architectures with active power factor correction

- **Configurable**
  - 400-1000W, up to 12 Output

- **CATV / Telco**
  - Ultra-reliable, ruggedized power supplies for harsh CATV and Telecommunications

- **High-Rel**
  - Our Celab division has over 30 years’ experience designing and producing custom power supplies.

DC/DC Converters

Murata Power Solutions are proud to offer the largest range of DC/DC Converters available from a single manufacturer. Our ever-increasing product portfolio includes all the options you’ll ever need, including:

- **Isolated DC/DC Converters**
  - Single, dual, triple, and quad output from 0.25 to 340 Watts

- **Point-of-Load Converters**
  - From 0.75 to 5V outputs (including user-selectable versions) at current levels from 0.5 to 50A

- **Processor & Memory Support**
  - Support for 64 & 32-bit processors and DDR1 & DDR2 memory

- **Bus Converters**
  - Designed to take advantage of the high-efficiency and cost savings of intermediate bus architectures

- **DC/DC Converter Filters**
  - To reduce differential and common mode noise

Magnetic

Two essential elements of the vast majority of power electronics applications are filtering and isolation. Whether you need to reduce noise or protect vital components, Murata Power Solutions can offer a wide range of products to suit your requirements.

- **Inductors & Transformers**
  - Over 800 highly advanced and optimized inductor and transformer solutions with the emphasis on miniaturization, reliability, and ease of handling. These power oriented designs comprise the following through-hole & surface-mount products:
    - Inductors
    - Common-mode chokes
    - Pulse transformers (general purpose/digital audio/silicon support)
    - Current sense transformers
    - Agency approved transformers
    - Datasheet isolators
    - Custom designs

- **Bus Converters**
  - Designed to take advantage of the high-efficiency and cost savings of intermediate bus architectures

- **DC/DC Converter Filters**
  - To reduce differential and common mode noise

Hybrid Technologies

Our leadership status in high-performance data acquisition components is unchallenged in the areas of electrical performance, small packaging, and low-power consumption.

- **Electronic Imaging**
  - Resolution from 8 to 18-bits and sampling rates 20MSPS, low-cost commercial and High-Rel versions

- **A/D Converters**
  - Ideal for high-end applications such as medical or life-science imaging, analytical instrumentation, and military pulse and spread-spectrum applications

- **Digital-to-Analog Converters**
  - Settling times to 20 nanoseconds, update rates to 100MHz

- **Sample/Hold Amplifiers**
  - Accuracies from 0.01% to 0.0008% (12 to 16 bit equivalent resolution)

- **Single-Package Data Acquisition**
  - Multi-channel with differential or single-ended options

- **Multiplexers**

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1 Safety Critical Component means any component whose failure to perform could cause the failure of, or affect the operation of a Life Support Device.

2 Life Support Device means any device, system or ancillary equipment intended for implant into the body or used in relation to supporting or sustaining life.

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www.murata-ps.com
Sales Offices

North America

Headquarters
11 Cabot Boulevard, Mansfield, MA 02048-1151 USA
Tel: +1 800 233 2765  Fax: +1 508 339 6356
e-mail: mansfield@murata-ps.com

Asia

China (Shanghai)
16-17, Lane 912, Bibo Road, Zhangjiang High-Technology Park,
Shanghai, People’s Republic of China
Tel: +86 21 5027 3678   Fax: +86 21 5027 3321  e-mail: shanghai@murata-ps.com

China (Guangzhou)
5th Floor, Building A1, Bei Wei No.1 District,
Guangzhou Economic & Technical Development Zone,
Guangzhou, Guangdong 510730, People’s Republic of China
Tel: +86 208 221 8066   Fax: +86 208 221 5902  e-mail: guangzhou@murata-ps.com

Japan (Tokyo)
Meiji-Yasuda Seimei, Gotanda Building, 2-27-4 Nishigotanda, Shinagawa-Ku,
Tokyo 141-0031 Japan
Tel: +81 3 3779 1031   Fax: +81 3 3779 1030  e-mail: tokyo@murata-ps.com

Japan (Osaka)
Yachiyo Building, Higashikan, 2-Kita 1-21, Tenjinbashi, Kita-Ku, Osaka 530-0041, Japan
Tel: +81 6 6354 2025   Fax: +81 6 6354 2064  e-mail: osaka@murata-ps.com

Singapore
No. 1 Marine Parade Central, #11-09, Parkway Centre, Singapore, 449408
Tel: 65 63489096   Fax: 65 63489097  e-mail: singapore@murata-ps.com

Europe

United Kingdom
Tanners Drive, Blakelands North, Milton Keynes, MK14 5BU, United Kingdom
Tel: +44 (0)1908 615232 Fax: +44 (0)1908 617545  e-mail: mk@murata-ps.com

Germany
PF 15 08 26, D-80045 München / Bavariaring 8, D-80336 München, Germany
Tel: +49 (0) 89 544334 0 Fax: +49 (0) 89 536337  e-mail: munich@murata-ps.com

France
Zone d’Activités du Pas du Lac Nord, 9, rue Michael Faraday,
78180 Montigny Le Bretonneux, France
Tel: +33 (0)1 34 60 01 01 Fax: +33 (0)1 30 58 21 30  e-mail: france@murata-ps.com