

Murata Power Solutions' latest

# Digital Panel Meters

LED & LCD Panel Meters

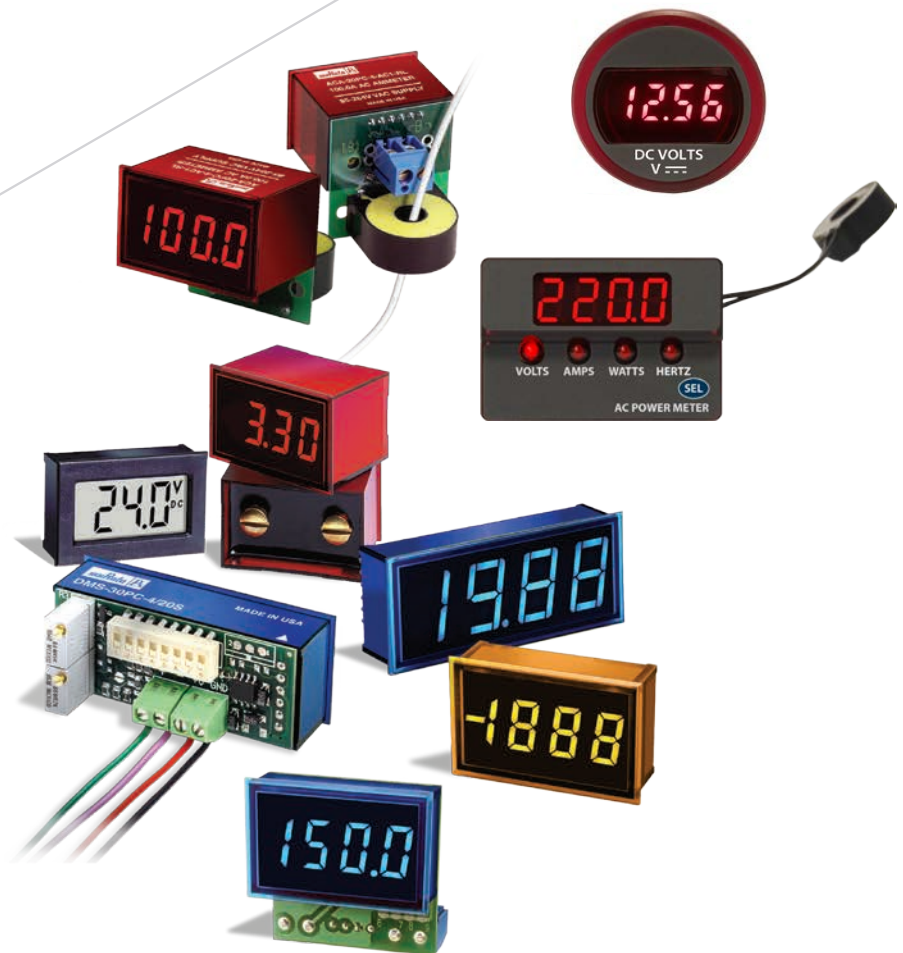
AC & DC Ammeters

2-Wire AC & DC Voltmeters

4-20mA Readouts

Process Monitors

AC Power Meters



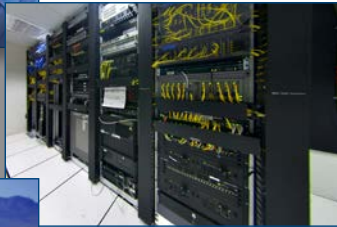
**Murata Power Solutions Digital Panel Meters**

For more than 35 years, the Murata Power Solutions' offering of digital panel meters has been recognized as the industry's most versatile. If a standard product does not meet your requirements, our experienced team of designers can quickly develop a custom solution. Murata Power Solutions digital panel meters are expertly designed for a variety of applications, including:



**Test & Measurement**

**Data Centers**



**Marine**

**Recreational Vehicles**



**About Murata Power Solutions**

Murata Power Solutions was established in September 2007 when Murata Manufacturing Corporation acquired the Power Electronics Division of C&D Technologies. Headquartered in Mansfield, Massachusetts, USA, Murata Power Solutions is a market-leading supplier of DC/DC converters, AC/DC power supplies, magnetics devices, and digital panel meters.

**Our products**

- **The DC/DC converter** product line includes a complete range of high performance isolated board mount power and non-isolated point-of-loads as well as non-isolated dc-dc converters.
- **Standard and custom AC/DC** products include high efficiency and high power density front end modules for distributed power architectures and industry-standard open frame designs.
- **A broad range of magnetics** for power line filtering, isolation, and EMC applications includes inductors, common-mode chokes, and pulse and current sense transformers.


Murata Power Solutions maintains active memberships in various industry organizations as part of its continued commitment to providing customers with innovative quality products. Memberships include DOSA (Distributed-power Open Standards Alliance), PSMA (Power Sources Manufacturers Association), EPSMA (European Power Supply Manufacturers Association), AMP (Architects of Modern Power), the Green Grid, and EMerge Alliance.

Today, various technologies are requiring energy-efficient systems and higher performance in a smaller package. Murata Power Solutions meets and exceeds industry-standard efficiency specifications for both AC/DC and DC/DC power. Using fully integrated component structures, low-profile packaging, and fast response topologies, Murata Power Solutions offers a wide range of functionality and power-dense products.

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# New Digital Panel Meter Products




**DMR20-1-ACV**

**Self-Powered, 85 to 264Vac, LED Display Line Monitor**

- Universal 85 to 264Vac measurement range
- Self-powered directly from the ac supply
- Fits standard 1.2 inch (30.5mm) switch knock outs
- Four-digit LED display with overvoltage indication
- Reads true-rms value to 0.1V resolution
- Knockout punches and tooling available
- Screw-style terminal block simplifies installation
- Self-resetting internal fuse for long-term reliability
- Provides moisture resistance to IP67 / NEMA 6
- Supplied with EPDM rubber gasket and plastic hex nut
- Approvals to UL/cUL/IEC/ 61010-1

The new DMR20-1-ACV self-powered, ac line-voltage monitors are designed to measure and display the true-rms voltage of ac power systems. Simply connect to any 85 to 264Vac 50/60Hz power supply and these meters are fully operational—no additional components or operating power sources are required. The monitor can also measure distorted ac power waveforms, including triangle, square, and the quasi-sine output of many dc-to-ac power inverters.

**Package Dimensions** 1.50" diameter x 1.15" depth (8.1 x 29.2mm) **Datasheet** [www.murata-ps.com/data/meters/dmr20-1-acv.pdf](http://www.murata-ps.com/data/meters/dmr20-1-acv.pdf)




**DMR20-1-FM**

**Self-Powered, LED Display, AC Line Frequency Monitor**

- Self-powered from 85 to 264Vac / 45-65Hz supplies
- 0.01Hz resolution & quartz crystal accuracy and stability
- Fits standard 1.2 inch (30.5mm) switch knock outs
- Four-digit LED display with out-of-range indication
- Self-resetting internal fuse for long-term reliability
- Supplied with EPDM rubber gasket and plastic hex nut
- Provides moisture ingress protection to IP67 / NEMA 6
- Screw-style input terminal block simplifies installation
- Knockout punches and tooling available
- Approvals to UL/cUL/IEC/ 61010-1

The new DMR20-1-FM is the world's smallest, self-powered, ac line frequency monitor. Simply connect 85 to 264Vac (45-65Hz) power and the meter is fully operational—no additional components are required. The unit can also measure distorted 120Vrms power sources with triangle and square waveforms, as well as quasi sine wave outputs of dc-to-ac power inverters.

**Package Dimensions** 1.50" diameter x 1.1" depth (38.1 x 28mm) **Datasheet** [www.murata-ps.com/data/meters/dmr20-1-fm.pdf](http://www.murata-ps.com/data/meters/dmr20-1-fm.pdf)




**DMR20-10-DCM**

**Two-Wire, Self-Powered, Auto-Ranging DC Voltage Monitor**

- Self-powered, requires only two connections
- Auto-ranging 6 to 75Vdc input range
- Fits standard 1.2 inch (30.5mm) switch knock outs
- Reverse polarity protected to -100Vdc
- Four-digit LED display with overvoltage indication
- Screw-style terminal block simplifies installation
- Self-resetting internal fuse for long-term reliability
- Provides moisture resistance to IP67 / NEMA 6
- Supplied with EPDM rubber gasket and plastic hex nut
- Panel knockout punches and tooling available

The new DMR20-10-DCM self-powered, auto-ranging dc voltage monitors are designed to measure and display the outputs the most popular dc power systems. Simply connect any 6 to 75V dc power source and these meters are fully operational— no additional components or power sources are required.

**Package Dimensions** 1.50" diameter x 1.08" depth (38.1 x 27.4mm) **Datasheet** [www.murata-ps.com/data/meters/dmr20-10-dcm.pdf](http://www.murata-ps.com/data/meters/dmr20-10-dcm.pdf)



**DMR20-1-TMP**

**Digital Thermometer with Thermistor Probe**

- -40 to +105°C (-40 to +221°F) measurement range
- °C or °F readings; supplied with thermistor probe
- Fits standard 1.2 inch (30.5mm) switch knock outs
- Operates from 24Vac or 6 to 50Vdc supplies
- Reverse polarity protected to -75Vdc
- Four-digit LED display with °C and °F annunciators
- Over-temperature and open/shorted thermistor indication
- Two display brightness settings: Low (3mA) and Hi (5mA)
- Self-resetting internal fuse for long term reliability
- Front panel moisture resistance to IP67 / NEMA 6
- Supplied with EPDM rubber gasket and plastic hex nut
- Panel knockout punches and tooling available

The new DMR20-1-TMP thermistor-input thermometer modules provide a simple cost-effective way to accurately measure air temperatures from -40 to +221°F (-40 to +105°C). The user can choose between Celsius or Fahrenheit readings via a rear pc-board jumper. Each thermometer is supplied with an epoxy-dipped NTC thermistor probe and is factory-calibrated to a typical accuracy of ±1°F. The probe features 18 inch (46cm) long leads to allow for remote installation.

**Package Dimensions** 1.50" diameter x 1" depth (38.1 x 25.4mm) **Datasheet** [www.murata-ps.com/data/meters/dmr20-1-tmp.pdf](http://www.murata-ps.com/data/meters/dmr20-1-tmp.pdf)

**Ordering Information**

**NanoMeters:**

DMR20-1-ACV-R-C	85 to 264Vac Line Voltage Monitor with Red LED
DMR20-1-FM-R-C	85 to 264Vac Line Frequency Monitor with Red LED
DMR20-10-DCM-R-C	6 to 75Vdc Voltage Monitor with Red LED
DMR20-1-TMP-R-C	Digital Thermometer with Red LED and NTC Thermistor Sensor

**Knockout Punches and Tooling:**

DMR20-1-KP	1.2 inch (30.5mm) Hole Punch
DMR20-2-KP	1.2 inch (30.5mm) Hole Punch with Keying Notches
DMR20-3-KP	Key Notch Nibbler Tool

Note: An M30 x 1.5 nylon hex nut and EPDM sealing gasket are supplied with each meter. The "-C" suffix denotes RoHS compliance.

**All NanoMeters are water-tight!**



Click [here](#) to view the YouTube video.

## 3½ Digit, Subminiature LED Panel Meters



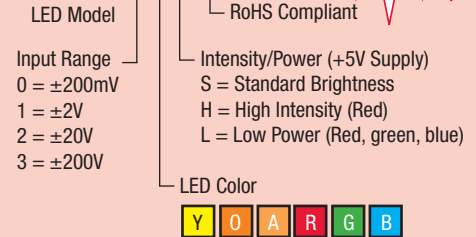
**DMS-20PC Series**

- Large LED displays: 0.37"/9.4mm
- 12-pin DIP packages, panel or board mountable
- Low-current LED models (7mA)
- 4 input ranges:  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$ ,  $\pm 20\text{V}$ ,  $\pm 200\text{V}$
- Built-in color filters and bezels
- Moisture/vibration resistant encapsulated packages
- DISPLAY ENABLE function for "power down" mode
- DISPLAY TEST and HOLD functions (optional)

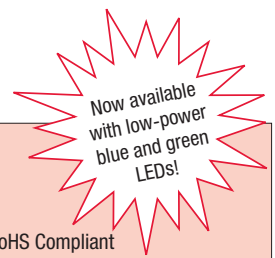
**Package Dimensions** 1.38"W x 0.88"H x 0.475"D  
35.1mm W x 22.4mm H x 12.07mm D

### Ordering Guide

#### DMS-20PC-1-R S-C



**Datasheet** [www.murata-ps.com/dms-20pc](http://www.murata-ps.com/dms-20pc)



## 3½ Digit, Miniature LED Panel Meters



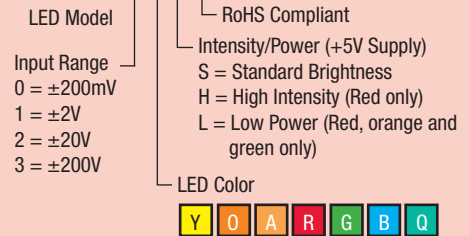
**DMS-30PC Series**

- Large displays: 0.56"/14.2mm
- Low-current LED models (12mA)
- 12-pin DIP packages, panel or board mountable
- 4 input ranges:  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$ ,  $\pm 20\text{V}$ ,  $\pm 200\text{V}$
- Built-in color filters and bezels
- Moisture/vibration resistant encapsulated packages
- Numerous application boards available

**Package Dimensions** 2.17"W x 0.92"H x 0.56"D  
55.1mm W x 23.4mm H x 14.22mm D

### Ordering Guide

#### DMS-30PC-1-R S-C



**Datasheet** [www.murata-ps.com/dms-30pc](http://www.murata-ps.com/dms-30pc)

## 3½ Digit, Daylight Readable Panel Meters



**DMS-30DR Series**

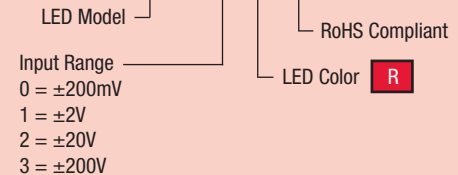
*with Auto-Dimming LED Displays*

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

**Package Dimensions** 2.17"W x 0.92"H x 0.56"D  
55.1mm W x 23.4mm H x 14.22mm D

### Ordering Guide

#### DMS-30DR-1-R-C



**Datasheet** [www.murata-ps.com/dms-30dr](http://www.murata-ps.com/dms-30dr)

## 4½ Digit, Miniature LED Panel Meters



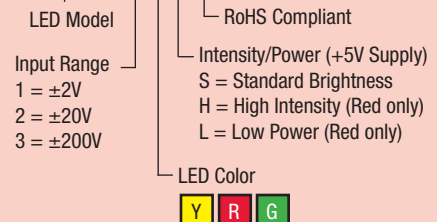
**DMS-40PC Series**

- Scientific-grade accuracy,  $\pm 2$  counts
- Large displays: 0.52"/13.2mm (LED)
- 12-pin DIP packages, panel or board mountable
- Low-current LED models (35mA)
- Display HOLD function standard
- 4 input ranges:  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$ ,  $\pm 20\text{V}$ ,  $\pm 200\text{V}$
- Moisture/vibration resistant encapsulated packages

**Package Dimensions** 2.17"W x 0.92"H x 0.56"D  
55.1mm W x 23.4mm H x 14.22mm D

### Ordering Guide

#### DMS-40PC-1-R S-C



**Datasheet** [www.murata-ps.com/dms-40pc](http://www.murata-ps.com/dms-40pc)

See [www.murata-ps.com/dpm-availability](http://www.murata-ps.com/dpm-availability) for model-specific availability.

## 3½ Digit, Subminiature LCD Panel Meters



### DMS-20LCD Series

- Large LCD displays: 0.37"/9.4mm
- 12-pin DIP packages, panel or board mountable
- 4 input ranges:  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$ ,  $\pm 20\text{V}$ ,  $\pm 200\text{V}$
- Single +5V supply or 9V battery
- Moisture/vibration resistant encapsulated packages
- Low-battery annunciator
- Low power consumption (2mW)

**Package Dimensions** 1.38"W x 0.88"H x 0.425"D  
35.1mm W x 22.4mm H x 10.8mm D

#### Ordering Guide

**DMS-20LCD - 1 - 5 - C**

LCD Model

Input Range  
0 =  $\pm 200\text{mV}$   
1 =  $\pm 2\text{V}$   
2 =  $\pm 20\text{V}$   
3 =  $\pm 200\text{V}$

Power Source:  
5 = +5V  
9 = +9V

RoHS Compliant  
Leave blank for standard models.  
Add -B for backlit models.

**Datasheet** [www.murata-ps.com/dms-20lcd](http://www.murata-ps.com/dms-20lcd)

## 3½ Digit, Miniature LCD Panel Meters



### DMS-30LCD Series

- Large displays: 0.40"/10.2mm
- 12-pin DIP packages, panel or board mountable
- 4 input ranges:  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$ ,  $\pm 20\text{V}$ ,  $\pm 200\text{V}$
- Moisture/vibration resistant encapsulated packages
- Single +5V supply or 9V battery
- Numerous application boards available
- Backlit displays optional

**Package Dimensions** 2.17"W x 0.92"H x 0.43"D  
55.1mm W x 23.4mm H x 10.92mm D

#### Ordering Guide

**DMS-30LCD - 1 - 5 - C**

LCD Model

Input Range  
0 =  $\pm 200\text{mV}$   
1 =  $\pm 2\text{V}$   
2 =  $\pm 20\text{V}$   
3 =  $\pm 200\text{V}$

Power Source:  
5 = +5V  
9 = +9V

RoHS Compliant  
Leave blank for standard models.  
Add -B for backlit models.

**Datasheet** [www.murata-ps.com/dms-30lcd](http://www.murata-ps.com/dms-30lcd)

## 4½ Digit, Miniature LCD Panel Meters



### DMS-40LCD Series

- Scientific-grade accuracy,  $\pm 2$  counts
- Large displays: 0.40"/10.2mm (LCD)
- 12-pin DIP packages, panel or board mountable
- Display HOLD function standard
- 4 input ranges:  $\pm 200\text{mV}$ ,  $\pm 2\text{V}$ ,  $\pm 20\text{V}$ ,  $\pm 200\text{V}$
- Dual input ranges
- Moisture/vibration resistant encapsulated packages
- Backlit displays optional

**Package Dimensions** 2.17"W x 0.92"H x 0.43"D  
55.1mm W x 23.4mm H x 10.92mm D (LCD)

#### Ordering Guide

**DMS-40LCD - 0/1 - 5 - C**

LCD Model

Input Range  
0/1 =  $200\text{mV}/\pm 2\text{V}$   
1/2 =  $\pm 2\text{V}/\pm 20\text{V}$   
2/3 =  $20\text{V}/\pm 200\text{V}$

Power Source:  
5 = +5V  
9 = +9V

RoHS Compliant  
Leave blank for standard models.  
Add -B for backlit models.

**Datasheet** [www.murata-ps.com/dms-40lcd](http://www.murata-ps.com/dms-40lcd)

See [www.murata-ps.com/dpm-availability](http://www.murata-ps.com/dpm-availability) for model-specific availability.

# Ruggedized True-rms AC Voltmeters



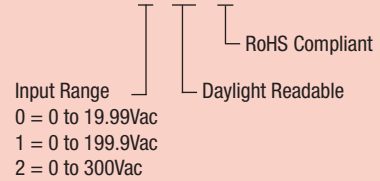
## DMU-30ACV Series

- Measures and displays the true-rms value of complex AC voltages
- Three input ranges: 20Vac, 200Vac and 300Vac
- Daylight-readable LED display with automatic brightness adjustment
- Moisture & impact resistant package offers NEMA-4/IP65 protection
- Operates from universal 85-264Vac or 110-300Vdc supplies
- Input circuit fully isolated from operating AC power source

Measures and displays the true-rms values of complex AC waveforms. Large 0.56" (14.2mm) high super-bright red LED display is readable in full sunlight. An auto-dimming circuit automatically adjusts the display brightness for all viewing conditions. All DMU-30ACV AC voltmeters are designed to meet NEMA-4/IP65 for moisture resistance in outdoor applications.

### Ordering Guide

#### DMU-30ACV-1-DR-C



### Datasheet

[www.murata-ps.com/dmu-30acv](http://www.murata-ps.com/dmu-30acv)

### Package Dimensions

2.85"L x 2.34"H x 1.76"D  
72.4mm L x 59.4mm H x 44.7mm D

# True-rms AC Voltmeters with Isolated Inputs



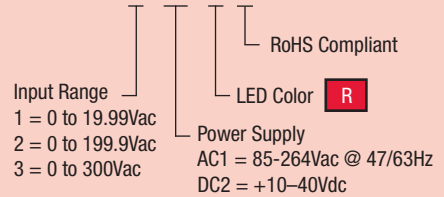
## DMS-20RM Series

- Measures the rms value of complex AC voltages
- Three input ranges: 20Vac, 200Vac and 300Vac
- Two operating-supply options: 85-264Vac, or +10-40Vdc
- Input circuit fully isolated from operating power supply
- Fully encapsulated plastic package measures 1.38" x 0.88" (35mm x 22.4mm)
- Large, easy-to-read, red LED display is visible from 12 feet (4m)

Measures and displays the true-rms value of complex AC waveforms. No external isolation transformers or auxiliary power supplies are required. Simply connect the input signal and a power source to the two rear-mounted terminal blocks and the unit is fully operational.

### Ordering Guide

#### DMS-20RM-1-AC1-R-C



### Datasheet

[www.murata-ps.com/dms-20rm](http://www.murata-ps.com/dms-20rm)

### Package Dimensions

1.38"L x 1.60"H x 2.01"D  
35.1mm L x 40.6mm H x 51.1mm D

# Ruggedized DC Voltmeters



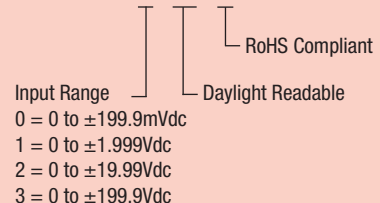
## DMU-30DCV Series

- Measure and accurately display DC voltages in harsh environments
- Four input ranges:  $\pm 200\text{mVdc}$ ,  $\pm 2\text{Vdc}$ ,  $\pm 20\text{Vdc}$ , and  $\pm 200\text{Vdc}$
- Daylight-readable LED display with automatic brightness adjustment
- Moisture & impact resistant package offers NEMA-4/IP65 protection
- Operates from universal 85-264Vac mains, or 110-300Vdc supplies
- Input circuit fully isolated from AC power supply

Measures and displays dc signals as low as  $\pm 200\text{mV}$  and as high as  $\pm 200\text{V}$ . Large 0.56" (14.2mm) high super-bright red LED-display is readable in full sunlight. An auto-dimming circuit automatically adjusts the display brightness for all viewing conditions. All DMU-30DCV dc voltmeters are designed to meet NEMA-4/IP65 for moisture resistance in outdoor applications.

### Ordering Guide

#### DMU-30DCV-1-DR-C



### Datasheet

[www.murata-ps.com/dmu-30dcv](http://www.murata-ps.com/dmu-30dcv)

### Package Dimensions

2.85"L x 2.34"H x 1.76"D  
72.4mm L x 59.4mm H x 44.7mm D

See [www.murata-ps.com/dpm-availability](http://www.murata-ps.com/dpm-availability) for model-specific availability.

# AC Ammeters



**ACA-20PC Series**

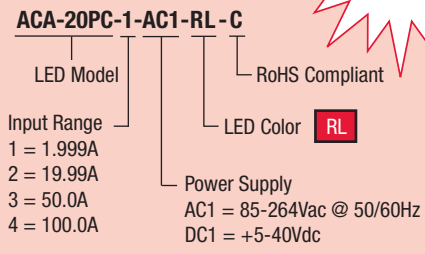
## Built-in CTs for AC currents to 100A

- 4 ranges from 0-2A to 0-100A
- Functionally complete with on-board CTs; 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) power
- UL/CSA recognized; 2000V isolation between load and supply

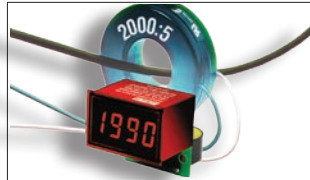
ACA-20PC Series are the first digital AC ammeters to incorporate on-board current transformers. Simply pass the current-carrying load wire through the on-board CT, apply power to the two power supply terminals, and you're instantly measuring AC currents up to 100A. No external shunts or expensive CTs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

<b>Package Dimensions</b>	1.38"W x 1.36"H x 2.01"D 35.1mm W x 34.54mm H x 51.05mm D
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## Ordering Guide



<b>Datasheet</b>	<a href="http://www.murata-ps.com/aca-20pc">www.murata-ps.com/aca-20pc</a>
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**ACA5-20PC Series**

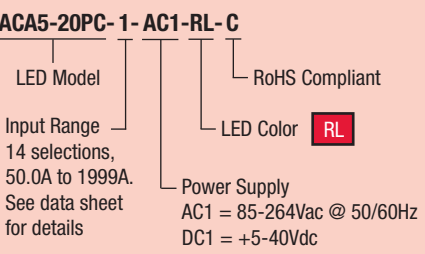
## External CTs for AC currents to 2000A

- 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

Scales and displays the output of 5A current transformers (50:5A, 500:5A, 1000:5A, etc.). Fourteen 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.

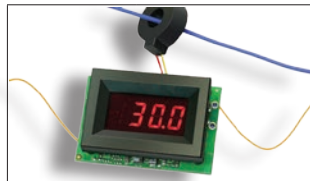
<b>Package Dimensions</b>	1.38"W x 1.36"H x 2.01"D 35.1mm W x 34.54mm H x 51.05mm D
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## Ordering Guide



<b>Datasheet</b>	<a href="http://www.murata-ps.com/aca5-20pc">www.murata-ps.com/aca5-20pc</a>
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# RMS Reading AC Ammeters



**ACA-20RM Series**

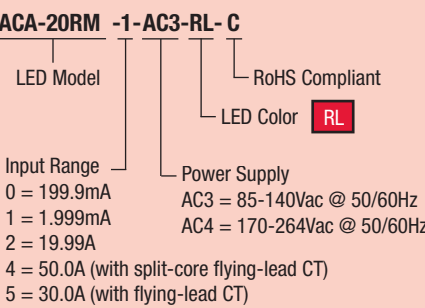
## Built-In CTs for AC currents to 50A

- Accurately measure complex waveforms
- Built-in CTs measure up to 50A
- Self-powered from 120Vac or 220Vac
- Large 0.37"/9.4mm red LED displays
- UL and CSA recognized

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 CTs for easy installation.

<b>Package Dimensions</b>	2.10"W x 1.40"H x 1.25"D 53.3mm W x 35.56mm H x 31.75mm D
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## Ordering Guide



<b>Datasheet</b>	<a href="http://www.murata-ps.com/aca-20rm">www.murata-ps.com/aca-20rm</a>
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**ACM3P Series**

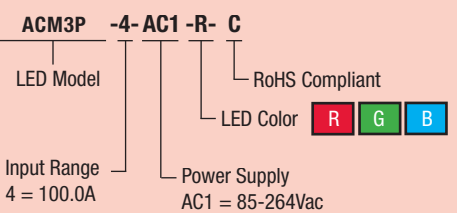
## Three built-in CTs for AC currents to 100A

- Measure and display true-rms current
- Universal 85-264Vac (47-63Hz) operating supply range
- Ideal for PDUs and backup power systems
- Low power consumption
- UL and CSA approvals pending

Measure and display the true-rms values of 2- or 3-phase ac mains current. All ACM3P ammeters are functionally complete, with built-in L1, L2, and L3 current transformers.

<b>Package Dimensions</b>	2.10"L x 1.43"H x 1.10"D 53.3mm L x 36.3mm H x 27.9mm D
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## Ordering Guide



<b>Datasheet</b>	<a href="http://www.murata-ps.com/acm3p">www.murata-ps.com/acm3p</a>
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# AC Ammeters



**ACA5-20RM Series**

## True-rms-AC Ammeters with 5A CT Inputs

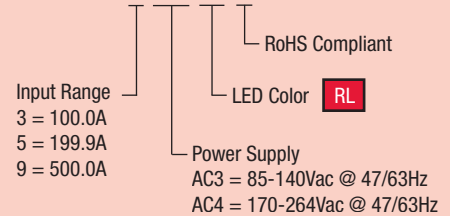
- Scales and displays the true-rms output of 5A current transformers
- Accurately measure complex AC current waveforms
- Available in three input ranges: 0-100A, 0 to 200A, or 0 to 500A
- Functionally complete: On-board, low-burden toroid sensor
- Easy-to-read, red LED display with 0.37"/9.4mm digits
- Two AC power options: 85-140Vac & 170-264Vac (50/60Hz)
- 2000V isolation between AC supply and external CT

Murata's ACA5-20RM Series AC ammeters accept the output of external 5A current transformers (CTs) and accurately display the true-rms value of complex, non-sinusoidal AC currents up to 500A. Operation and setup is straightforward: simply pass the external 5A CTs secondary output leads through the on-board toroid sensor, apply AC power, and the ammeter is fully operational.

**Package Dimensions** 2.1"L x 1.40"H x 0.73"D  
53.3mm L x 35.6mm H x 18.5mm D

## Ordering Guide

### ACA5-20RM-3-AC3-RL-C



**Datasheet** [www.murata-ps.com/aca5-20rm](http://www.murata-ps.com/aca5-20rm)



**ACA-20RM-ALM Series**

## True-rms-AC Ammeters with Alarm Function

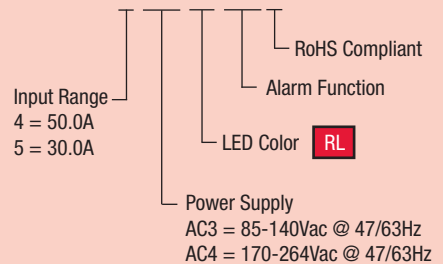
- User-settable, visual alarm function
- Flashing display indicates overcurrent faults
- Measures the true-rms value of complex AC current waveforms
- Includes built-in current transformers
- Available in two input ranges: 0-30.0A, and 0 to 50A
- 50A model features convenient split-core CT
- Easy-to-read, red LED display with 0.37"/9.4mm high digits
- Two AC power options: 85-140Vac & 170-264Vac (50/60Hz)

Displays the true-rms value of non-sinusoidal AC currents and provide a user settable, over current alarm function. When the preset over current level is exceeded, the LED display continuously flashes from high to low intensity. A built-in current transformer greatly simplifies most AC ammeter applications: just pass the load conductor through the built-in current transformer, apply AC power, and the ammeter is fully operational.

**Package Dimensions** 2.1"L x 1.40"H x 0.73"D  
53.3mm L x 35.6mm H x 18.5mm D

## Ordering Guide

### ACA-20RM-4-AC3-RL-ALM-C



**Datasheet** [www.murata-ps.com/aca-20rm-alm](http://www.murata-ps.com/aca-20rm-alm)

## AC 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)
39-3681407*	300:5	±1%	12.5 (0.50)
39-3681408*	400:5	±1%	12.5 (0.50)
39-3681409*	500:5	±1%	20.0 (0.80)
7020-01042-0	600:5	±1%	10.0 (0.40)
7020-01043-0	750:5	±1%	10.0 (0.40)
7020-01044-0	1000:5	±1%	10.0 (0.40)
7020-01045-0	1500:5	±1%	12.5 (0.50)
7020-01046-0	2000:5	±1%	15.0 (0.60)

\*Not available as RoHS compliant.

These 5A output, "donut" style AC current transformers can be used with our ACA5-20PC and ACA5-20RM series AC ammeters to measure currents from 50 to 2000 Amps. All models have 2-foot-long (0.6m) wire leads and are UL recognized components.





# AC Power Meters



## ACM20 Series

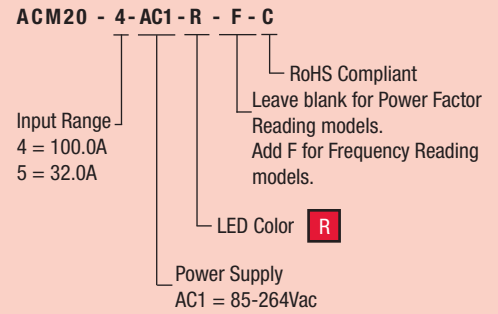
### Four-Function AC Power Meters

- Displays AC Volts, Amps, Watts, and Power Factor
- Two display modes: continuous auto-cycling or fixed reading
- Universal 85-264Vac (47-63Hz) operating range
- Built-in CTs simplify installation; choice of 10A (999.9 Watts max.) 32A (9999 Watts max.) or 100A (26.4kW max.) ranges
- Ideal for power distribution units (PDUs) in IT installations
- True-rms readings of complex voltage and current waveforms
- One-piece polycarbonate housing fits '0U' & '1U' racks
- Bright red LED-display with four annunciators
- Optional Frequency reading models (0.1Hz resolution)

Displays the most critical measurements in mains-powered equipment: voltage, amperage, active power (watts or Kilowatts), and power factor. A front panel selector-switch provides two modes of operation: a fixed reading of any of the four parameters, or a continuous cycling through all four measurements. All ACM20 multi-function power meters include built-in current transformers—no other user-supplied components are required.

**Package Dimensions** 2.10"L x 1.43"H x 1.10"D  
53.3mm L x 36.3mm H x 27.9mm D

### Ordering Guide



**Datasheet** [www.murata-ps.com/acm-20](http://www.murata-ps.com/acm-20)

# DC Ammeters



## DCA-20PC Series

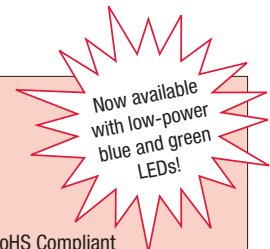
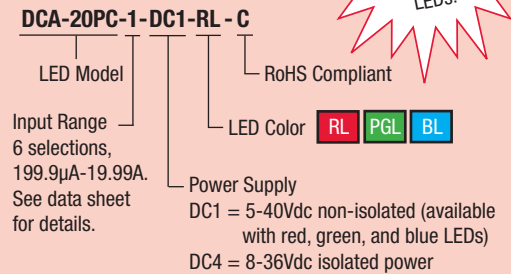
### Built-in shunts for DC currents to 20A

- 6 ranges from 0-200µA to 0-20A; 24 models
- Functionally complete with on-board 20mV 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

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.

**Package Dimensions** 1.38"W x 1.46"H x 1.04"D  
35.1mm W x 37.08mm H x 26.41mm D

### Ordering Guide



**Datasheet** [www.murata-ps.com/dca-20pc](http://www.murata-ps.com/dca-20pc)

# DC Ammeters



## DCA5-20PC Series

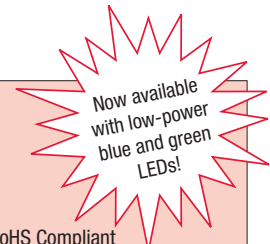
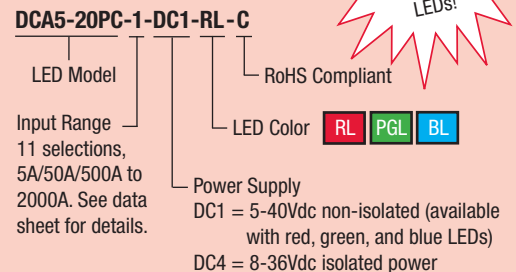
### External shunts for DC currents to 2000A

- 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

Scales and displays the output of 50mV and 100mV DC-shunts. Twenty-five 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.

**Package Dimensions** 1.38"W x 1.46"H x 1"D  
35.1mm W x 37.08mm H x 25.4mm D

### Ordering Guide



**Datasheet** [www.murata-ps.com/dca5-20pc](http://www.murata-ps.com/dca5-20pc)

## 2-Wire AC Voltmeters



### DMS-20 LM Series

- The easiest-to-use products of their type
- 120V model plugs directly into wall outlets
- Screw-terminal inputs simplify panel mounting
- Large, easy-to-read, red, green, or blue LED displays
- 3-digit readouts;  $\pm 1V$  accuracies
- Rugged encapsulated construction

Component-size, self-contained, low-cost, 2-wire AC voltmeters 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.

Display Type	Input Range	Resolution	Accuracy	Maximum Current Drain	Package Dimensions ①②		Model Number (Display Color)	Datasheet Title
					Inches	mm		
LED	85-264Vac @ 47-63Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-LM-C (Red)	DMS-20PC-1-LM
	85-264Vac @ 47-63Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-LM-F-C (Red)	DMS-20PC-1-LM
	85-264Vac @ 47-63Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-LM-B-C (Blue)	DMS-20PC-1-LM
	85-264Vac @ 47-63Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-LM-BF-C (Blue)	DMS-20PC-1-LM
	85-264Vac @ 47-63Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-LM-G-C (Green)	DMS-20PC-1-LM
	85-264Vac @ 47-63Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-LM-GF-C (Green)	DMS-20PC-1-LM
	85-140Vac @ 350-450Hz 240-310Vac @ 47-99Hz	1V	$\pm 1V$	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-2-LM-C (Red)	DMS-20PC-2-LM

① Panel-mount front bezels, with or without sealing gaskets, may be ordered separately (see [www.murata-ps.com/dpm](http://www.murata-ps.com/dpm)).

② AC voltmeters have screw terminals on the back of their packages. DMS-20PC-1-LM-F has "blade" terminals that plug directly into USA-style wall outlets.

For full product data download a datasheet at [www.murata-ps.com](http://www.murata-ps.com)



## 2-Wire Frequency Meters



### DMS-20 FM Series

- Ideal for emergency power-generating equipment
- 50/60Hz or 400Hz versions; 120/220Vac inputs
- 60Hz/120V model plugs directly into wall outlets
- 3-digit readouts accurate to  $\pm 0.1$  Hertz (60Hz models)
- Easy-to-read, large (0.4"/10.2mm), red LED displays
- Rugged encapsulated construction

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 encapsulated construction and an ultra-stable, quartz-crystal-controlled, microcontroller to provide accuracies of  $\pm 0.1$ Hz (50/60Hz models) or  $\pm 1$ Hz (400Hz model) over the entire operating temperature range of  $-25$  to  $+60^{\circ}\text{C}$ .

Display Type	Input Range	Resolution	Accuracy	Maximum Current Drain	Package Dimensions ①②		Model Number	Datasheet Title
					Inches	mm		
LED ③	85-140Vac @ 47-99Hz	0.1Hz	$\pm 0.1$ Hz	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-FM-C	DMS-20PC-FM
	85-140Vac @ 47-99Hz	0.1Hz	$\pm 0.1$ Hz	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-FM-F-C	DMS-20PC-FM
	85-140Vac @ 350-450Hz	1Hz	$\pm 1$ Hz	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-2-FM-C	DMS-20PC-FM
	170-246Vac @ 47-99Hz	0.1Hz	$\pm 0.1$ Hz	50mArms	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-3-FM-C	DMS-20PC-FM

① Panel-mount front bezels, with or without sealing gaskets, may be ordered separately (see [www.murata-ps.com/dpm](http://www.murata-ps.com/dpm)).

② 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.

③ All LED displays are red and have a digit height of 0.4"/10.2mm.

For full product data download a datasheet at [www.murata-ps.com](http://www.murata-ps.com)



# 2-Wire DC Voltmeters



## DMS-20 DCM Series

### 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)
- ±10mV accuracy (12V models); ±0.1V (24V models)
- 13mA/3mA (LED/LCD) maximum current drains
- Built-in "VDC" annunciator (LCD models)
- Reverse polarity protected
- Self-powered, only two connections required
- Reliable encapsulated construction
- Subminiature 1.38" x 0.88" x 1.0" packages
- -25 to +60°C operating temperature range (LED)
- Available in red, blue, or green LEDs

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.)
- Self-powered, only two connections required
- -25 to +60°C operating temperature range
- Withstands -200V input transients
- Reverse polarity protected to +100V
- Subminiature 1.38" x 0.88" x 1.0" plastic package

Designed for monitoring -36 to -75V bus voltages in modern telecom, datacom and computer equipment. Compact size, large LED display, and low power consumption (8mA typ. at -48V) make it the ideal replacement for analog panel meters.

Display Type ①	Input Range	Resolution	Accuracy	Maximum Current Drain	Package Dimensions ②		Model Number (Display Color)	Datasheet Title
					Inches	mm		
LED	+2 to +11.00Vdc	0.01V	±0.01V	50mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-3-DCM-C (Red)	DMS-20PC-3-DCM
	+4.50 to +19.99Vdc	0.01V	±0.01V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-0-DCM-C (Red)	DMS-20PC-0/1/2/8-DCM
	+4.50 to +19.99Vdc	0.01V	±0.01V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-0-DCM-B-C (Blue)	DMS-20PC-0/1/2/8-DCM
	+4.50 to +19.99Vdc	0.01V	±0.01V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-0-DCM-G-C (Green)	DMS-20PC-0/1/2/8-DCM
	+8.0 to +50.0Vdc	0.1V	±0.1V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-DCM-C (Red)	DMS-20PC-0/1/2/8-DCM
	+8.0 to +50.0Vdc	0.1V	±0.1V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-DCM-B-C (Blue)	DMS-20PC-0/1/2/8-DCM
	+8.0 to +50.0Vdc	0.1V	±0.1V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-1-DCM-G-C (Green)	DMS-20PC-0/1/2/8-DCM
	+30.0 to +199.9Vdc	0.1V	±0.1V	7mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-8-DCM-C (Red)	DMS-20PC-0/1/2/8-DCM
	+30 to +264Vdc	1V	±1V	7mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-2-DCM-C (Red)	DMS-20PC-0/1/2/8-DCM
	-4.50 to -19.99Vdc	0.01V	±0.01V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-4-DCM-C (Red)	DMS-20PC-4/5/6-DCM
-18.0 to -50.0Vdc	0.1V	±0.1V	13mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-5-DCM-C (Red)	DMS-20PC-4/5/6-DCM	
-30.0 to -264Vdc	1V	±1V	7mA	1.38 x 0.88 x 1	35.1 x 22.4 x 25.4	DMS-20PC-6-DCM-C (Red)	DMS-20PC-4/5/6-DCM	
LCD	+6.50 to +18.00Vdc	0.01V	±0.01V	3mA	1.38 x 0.88 x 0.66	35.1 x 22.4 x 16.76	DMS-20LCD-0-DCM-C	DMS-20LCD-0/1-DCM
	+8.0 to +50.0Vdc	0.1V	±0.1V	2.5mA	1.38 x 0.88 x 0.66	35.1 x 22.4 x 16.76	DMS-20LCD-1-DCM-C	DMS-20LCD-0/1-DCM

① Both LED and LCD displays have a digit height of 0.37"/9.4mm.

② Panel-mount front bezels, with or without sealing gaskets, may be ordered separately (see [www.murata-ps.com/dpm](http://www.murata-ps.com/dpm)).

For full product data download a datasheet at [www.murata-ps.com](http://www.murata-ps.com)

See [www.murata-ps.com/dpm-availability](http://www.murata-ps.com/dpm-availability) for model-specific availability.

## 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"/9.4mm
- Optional unipolar, bipolar, or "positive" polarities
- DIP-switch selectable span/offset/decimal points

Derives operating power directly from the 4-20mA loop, providing for simple 2-wire operation. Display options include 3½ and 4½ digits; LCD models feature loop burdens as low as 1.8V. All models feature non-interacting, multi-turn trim pots for offset and span adjustments.

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

### Package Dimensions

1.38"W x 0.88"H x 0.95"D (LED) or 0.9"D (LCD)  
35.1mm W x 22.4mm H x 24.13mm D (LED) or 22.86mm D (LCD)

### Datasheets

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

## Locally Powered 4-20mA Readouts



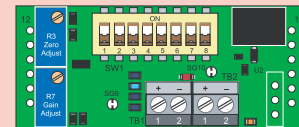
### DMS-30, -40 Series

- 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

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



Back View

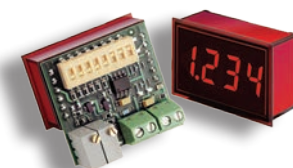
### Package Dimensions

2.17"W x 0.92"H x 1.02"D  
55.1mm W x 23.4mm H x 25.91mm

### Datasheet

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

Provides the ultimate in convenience when you need to convert 0-5V or 0-10V analog signals to common process parameters (temperature, pressure, flow, etc.). Built-in DIP-switch activated attenuators and two trim pots greatly simplify setup to get you up and running quickly. LED colors include, red, blue, green, and high-intensity red.

### Ordering Guide

DMS-20PC-0/5-5RS-C	+5V supply, standard-intensity red LEDs
DMS-20PC-0/5-24RL-C	+5V to +40V supply, low-power red LEDs

### Package Dimensions

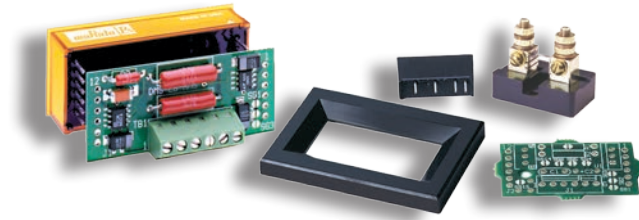
1.38"W x 0.88"H x 0.95"D  
35.1mm W x 22.4mm H x 24.13mm D

### Datasheet

LED: DMS-20PC-0/5 Series

See [www.murata-ps.com/dpm-availability](http://www.murata-ps.com/dpm-availability) for model-specific availability.

# Panel Meter Accessories



## Applications Boards

These application / prototype boards are designed to solder to the back of many of our 12-pin DMS-20 and DMS-30 Series meters. These rugged, low-cost boards can quickly configure DMS meters for a wide variety of popular applications, such as engineering scaling and rms-to-DC conversion. All application boards feature either screw-style terminal blocks or Molex brand crimp connections for connecting signal and power lines. Convenient solder gaps are provided for decimal point selection.

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
DC-DC Converter and Isolation Board for DMS-30PC/LCD	DMS-EB-DC/DC-C
AC-to-RMS Converter Board for DMS-30PC/LCD Meters	DMS-EB-RMS-C

## DC Current Shunts

Thirteen 50mV and 100mV, base-mounted DC shunts are designed to connect directly to the rear-mounted terminal block on DCA5-20PC DC ammeters. All shunts feature ultra-stable manganin shunt elements that have an accuracy of  $\pm 0.25\%$  (max.).

Murata-PS 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	0.0000625
3020-01105-0	1000A/50mV	0.00005
3020-01106-0	1200A/50mV	0.0000417
3020-01107-0	10A/100mV	0.01
3020-01108-0	100A/100mV	0.001

## High-Efficiency Switching Regulators

78xxSR series switching regulators can be used with many of our application boards to enable DMS meters to operate from DC power sources as high as +36Vdc. Unlike conventional linear devices, these switching regulators are so efficient that no heat sinks or fans are required for full-load operation.

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 Current Transformers

These 5A output, "donut" style AC current transformers can be used with our ACA5-20PC and ACA5-20RM series AC ammeters to measure currents from 50 to 2000 Amps. All models have 2-foot-long (0.6m) wire leads and are UL recognized components.

Part No.	Current Ratio	Accuracy	Burden--VA (Ohms)
7020-01036-0	50:5	$\pm 2\%$	1.5 (0.06)
7020-01037-0	75:5	$\pm 2\%$	3.0 (0.12)
7020-01038-0	100:5	$\pm 1\%$	3.0 (0.12)
7020-01039-0	150:5	$\pm 1\%$	6.0 (0.24)
7020-01040-0	200:5	$\pm 1\%$	8.0 (0.32)
7020-01041-0	250:5	$\pm 1\%$	10.0 (0.40)
39-3681407*	300:5	$\pm 1\%$	12.5 (0.50)
39-3681408*	400:5	$\pm 1\%$	12.5 (0.50)
39-3681409*	500:5	$\pm 1\%$	20.0 (0.80)
7020-01042-0	600:5	$\pm 1\%$	10.0 (0.40)
7020-01043-0	750:5	$\pm 1\%$	10.0 (0.40)
7020-01044-0	1000:5	$\pm 1\%$	10.0 (0.40)
7020-01045-0	1500:5	$\pm 1\%$	12.5 (0.50)
7020-01046-0	2000:5	$\pm 1\%$	15.0 (0.60)

\*Not available as RoHS

## Bezels and Panel Cutout Punches

Four ABS plastic bezel assemblies simplify panel mounting of DMS series meters. These bezel assemblies are available with and without EPDM sealing gaskets for applications that demand environmental protection from dust and moisture. Two matching panel cutout punches make accurate mounting holes for prototype or small production runs.

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

## Panel Mount Connectors

Six-position Molex brand connector-housings with matching crimp terminals are available to make power and signal connections to panel mounted DMS series meters. Each typical DMS meter installation requires two housings and 12 crimp terminals. See the individual product data sheet for more information.

Description	Part No.
6-position connector housing. Use with crimp terminal 4400-01032-0.	4320-01069-0
Crimp terminal for connector housing 4320-01069-0. Accepts 22-26 AWG wire.	4400-01032-0

## 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-30 Retaining Clip	5252-01126-0
DMS-30 Red Case	5252-01145-0
DMS-20 Red Case	5252-01130-0
DMS-30 Bezel and Red Filter	5252-01160-0
DMS-20 Bezel and Red Filter	5252-01161-0
DMS-30 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

# 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

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.

## Low Power LED Meters and Accessories

3½ and 4½ Digit DC Voltmeters				
Series	Display Options	Digit Height	Power Consumption	Operating Temp.
DMS-20PC-X-RL	3½ Digit Red LED	0.37in./9.4mm	8mA @ 5Vdc	0 to +60°C
DMS-30PC-X-XL	3½ Digit Red, Green, or Orange LED LED	0.56in./14.2mm	15mA @ 5Vdc	0 to +60°C
DMS-40PC-X-RL	4½ Digit Red LED	0.52in./13.2mm	35mA @ 5Vdc	0 to +50°C

4-20mA Process Monitors				
Series	Display Options	Digit Height	Loop Drop	Operating Temp.
DMS-20PC-4/20	3½ Digit Red LED	0.37in./9.4mm	+4Vdc @ 20mA	0 to +60°C

High-Efficiency Switching Regulators				
Series	Voltage Outputs	Package	Efficiency	Operating Temp.
78XXSR	3.3V, 5V, 12V	LM78XX compatible SIP	To 95%	-40 to +70°C

## Quality Assured

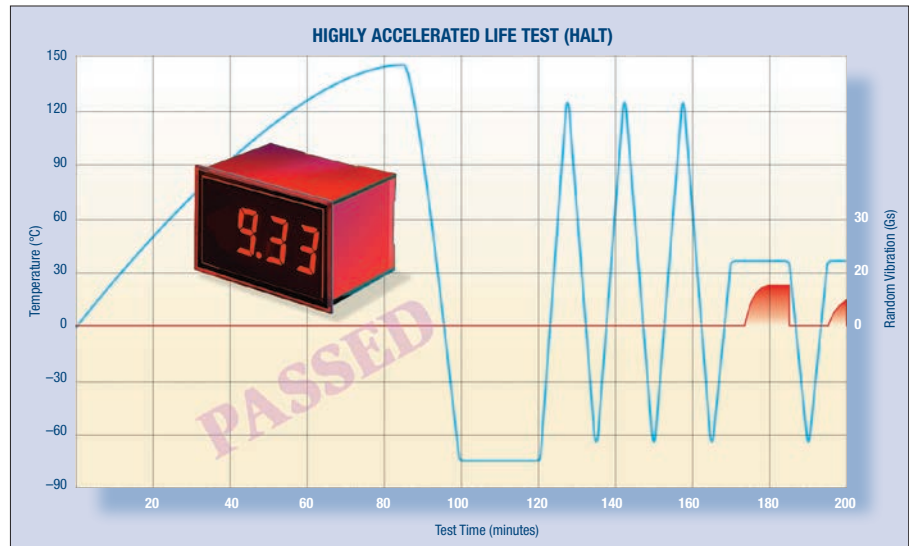
The QA Engineering Team that instituted our Design-for-Reliability Program performed routine HALT (Highly Accelerated Life Testing) on a randomly selected 2-wire meter and the device “passed.” Devices are not supposed to pass HALT. The intent of HALT is to “reveal latent defects or design weaknesses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

The Engineering Team 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 Murata-PS 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 Engineers 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 Engineers’ 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 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.

# DC-DC Converters

Murata Power Solutions is 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, bipolar/dual, and triple output from 0.25 to 450 Watts



- **Point-of-Load Converters**

From 0.6 to 15V outputs (including user-selectable versions) at current levels from 1 to 16A



## Magnetics

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
- Current sense transformers
- Agency approved transformers
- Databus isolators
- Custom designs

## AC-DC Power Supplies

We can develop AC-DC power supplies to meet almost every possible application requirement in terms of power, performance, efficiency, communications, protection, size, approvals compliance and cooling requirements.



- **Front Ends for Distributed Power Architectures**

AC to 12Vdc or 48Vdc ultra compact front end supplies for distributed power architectures with active power factor correction plus industry leading efficiency & density



- **Open Frame**

High-efficiency, single output solutions in 1U chassis, 75W to 400W



- **Custom Solutions**

Custom product solutions from 100W to 5kW Leverage existing product platforms for modifications

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- 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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# Global locations

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## Note

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For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

2 Please contact our sales representatives or product engineers before using the products in this catalog for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.

- ① Aircraft equipment
- ② Undersea equipment
- ③ Medical equipment
- ④ Traffic signal equipment
- ⑤ Data-processing equipment
- ⑥ Aerospace equipment
- ⑦ Power plant equipment
- ⑧ Transportation equipment (vehicles, trains, ships, etc.)
- ⑨ Disaster prevention / crime prevention equipment
- ⑩ Application of similar complexity and/or reliability requirements to the applications listed above

3 Product specifications in this catalog are as of August 2013. They are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.

4 Please read rating and  $\Delta$  CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.

5 This catalog has only typical specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

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