



RIGOL

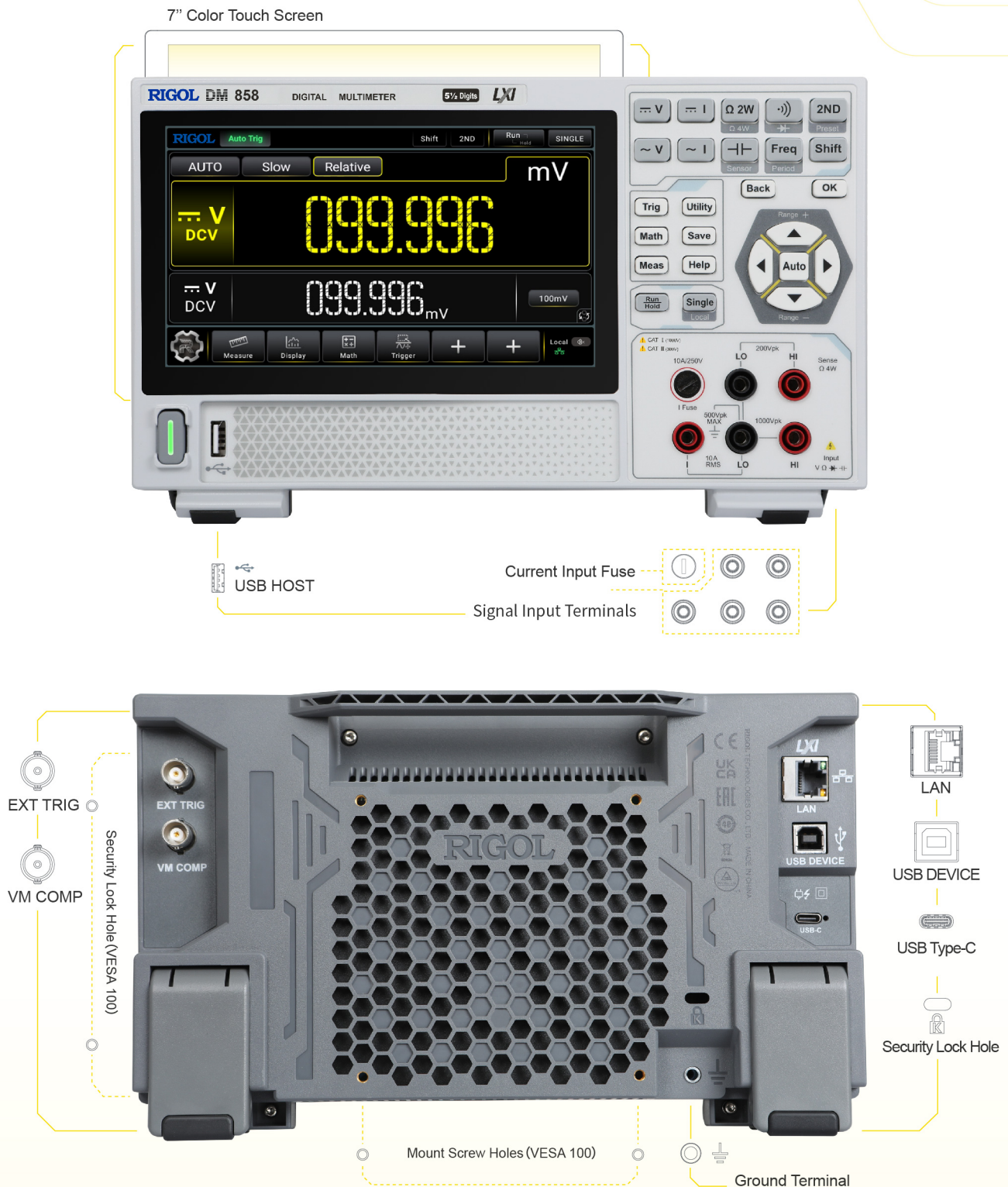
# DM858 Series

## Digital Multimeter

Data Sheet  
DSC11102-1110  
Feb. 2024

# DM858 Series Digital Multimeter

## Delicate Design, Full Functionality



266mm (W) \* 165mm (H) \* 80mm (D)



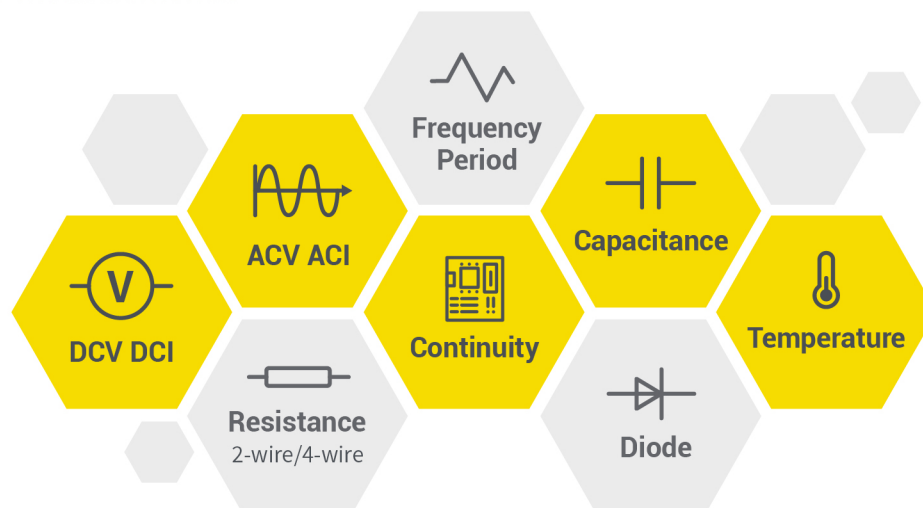
# Product Features

## 5.5-Digit Resolution

This series provides two models with 5½-digit resolution and up to 125 readings/s measuring rate for high-speed tests. Its internal memory allows data logging of up to 500,000 points for recording and analyzing more data.

## Various Measurement Functions

It supports a broad range of measurements: DCV, DCI, ACV, ACI, 2-wire resistance, 4-wire resistance, frequency, period, continuity, diode, capacitance, and any sensor measurements.



## Graphical Display

It visualizes data in a trend plot, histogram, or bar chart.





## ● 7-Inch Color Touch Screen

The 7-inch color touch screen allows you to control the instrument with simple touch-screen gestures. The dual-display measurement capability saves you from switching between measurements, making it easier to observe and analyze data.

## ● Compact in Size, Easy to Carry

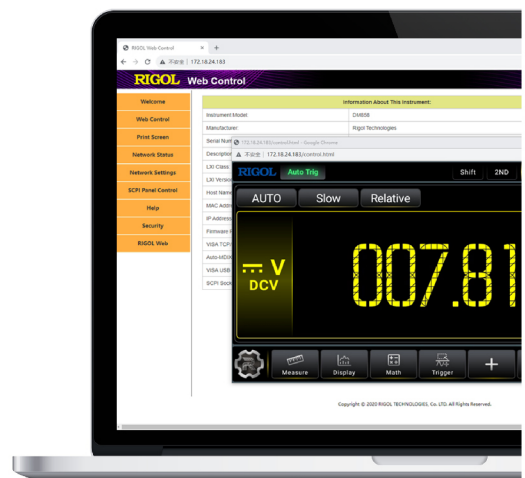
With a compact size, it saves valuable space on your bench.

It can be powered by a mobile power source via its USB Type-C power interface, satisfying your test requirements in the field.

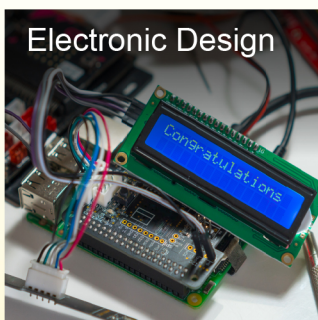


## ● Flexible Control and Operation

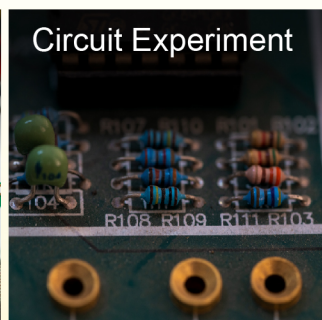
It has standard USB and LAN interfaces for flexible PC connectivity and supports remote control via Web Control.



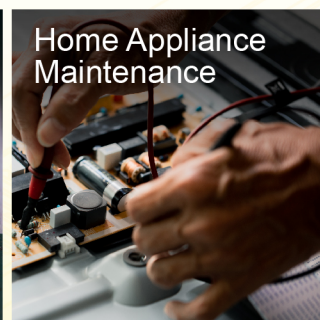
## ● Applications



Electronic Design



Circuit Experiment



Home Appliance Maintenance



Instrument Calibration

# Product Features

## Product Features

- Max. reading rate: 125 readings/s
- Up to 500,000 points logging memory to record and analyze more data
- 5½-digit reading resolution (120,000 counts)
- True-RMS AC Voltage and AC Current measuring
- Built-in 10 groups of data storage and 10 groups of setup storage
- Strong Math functions, supporting various application protocols
- 7" color touch screen, displaying dual-measurement results concurrently
- Type-C interface for power charge; compact in size, freeing up your bench space
- Standard USB and LAN interfaces, supporting Web Control

DM858 series benchtop digital multimeter provides a highly cost-effective test tool for engineers. It features 5.5-digit resolution, max. 125 readings/s, data logging memory of 500,000 points, and 0.03% DCV accuracy (1 year). It provides 11 measurement functions for input signals, 5 Math operations, and 3 graphical display types, satisfying what most experiments and tests require of a multimeter. The 7" touch screen allows a clear view on measurement results. Its provides USB and LAN interfaces (standard) as well as the Web Control function for you to control the instrument directly, bringing smoother interaction. It is equipped with a Type-C interface for power charge. In addition, it has a compact size and supports the attachment to a bracket, saving valuable bench space for engineers.

## Specifications for Different Models

|                                      | DM858          | DM858E        |
|--------------------------------------|----------------|---------------|
| DCV Accuracy (1 year)                | 0.030%         | 0.060%        |
| Reading Rate                         | 125 readings/s | 80 readings/s |
| No. of Points in Data Logging Memory | 500,000        | 20,000        |
| Max. Current Measurement Range       | 10 A           | 3 A           |
| Max. Capacitance Measurement Range   | 10 mF          | 1 mF          |

# Specifications

Unless otherwise noted, all the technical specifications can be guaranteed for 30-minute warm-up, slow measurement mode, and calibration temperature within 18°C and 28°C.

## DC Characteristics

Accuracy  $\pm$  (% of reading + % of range)

| Function                           | Range <sup>[1]</sup>                 | Test Current or Load Voltage | 1 year<br>23°C $\pm$ 5°C                      |
|------------------------------------|--------------------------------------|------------------------------|---|
| DC Voltage<br>(DCV)                | 100.000 mV                           | -                            | 0.03 + 0.004 (DM858)<br>0.06 + 0.004 (DM858E) |
|                                    | 1.00000 V                            | -                            | 0.03 + 0.003 (DM858)<br>0.06 + 0.003 (DM858E) |
|                                    | 10.0000 V                            | -                            | 0.03 + 0.004 (DM858)<br>0.06 + 0.004 (DM858E) |
|                                    | 100.000 V                            | -                            | 0.03 + 0.003 (DM858)<br>0.06 + 0.003 (DM858E) |
|                                    | 1000.00 V <sup>[2]</sup>             | -                            | 0.03 + 0.003 (DM858)<br>0.06 + 0.003 (DM858E) |
| DC Current <sup>[3]</sup><br>(DCI) | 100.000 $\mu$ A                      | <0.05 V                      | 0.055 + 0.005                                 |
|                                    | 1.00000 mA                           | <0.5 V                       | 0.055 + 0.005                                 |
|                                    | 10.0000 mA                           | <0.05 V                      | 0.095 + 0.020                                 |
|                                    | 100.000 mA                           | <0.5 V                       | 0.070 + 0.008                                 |
|                                    | 1.00000 A                            | <0.01 V                      | 0.170 + 0.020                                 |
|                                    | 3.00000 A (for DM858E)               | <0.1 V                       | 0.250 + 0.010                                 |
|                                    | 10.0000 A (for DM858) <sup>[4]</sup> | <0.1 V                       | 0.250 + 0.010                                 |
| Resistance (R) <sup>[5]</sup>      | 100.000 $\Omega$                     | 1 mA                         | 0.050 + 0.020                                 |
|                                    | 1.00000 k $\Omega$                   | 100 $\mu$ A                  | 0.050 + 0.020                                 |
|                                    | 10.0000 k $\Omega$                   | 10 $\mu$ A                   | 0.050 + 0.020                                 |
|                                    | 100.000 k $\Omega$                   | 1 $\mu$ A                    | 0.10 + 0.05                                   |
|                                    | 1.00000 M $\Omega$                   | 1 $\mu$ A                    | 1.00 + 0.05                                   |
|                                    | 10.0000 M $\Omega$                   | 100 nA                       | 1.50 + 0.05                                   |
|                                    | 50.000 M $\Omega$                    | 10 nA                        | 3.00 + 0.05                                   |
| Diode Test                         | 2.0000 V <sup>[6]</sup>              | 350 $\mu$ A                  | 0.050 + 0.15                                  |
| Short-circuit Test                 | 1000 $\Omega$                        | 100 $\mu$ A                  | 0.3 + 0.15                                    |

| DC Voltage                         |  |
|------------------------------------|--|
| Input Resistance                   | <p>100 mV, 1 V: 11.2 M<math>\Omega</math> or &gt;10 G<math>\Omega</math> (selectable)</p> <p>(Input signals that exceed <math>\pm 2.5</math> V in these ranges will pass the 1 M<math>\Omega</math> (typical) clamp resistance.)</p> <p>10 V, 100 V, and 1000 V: 11.2 M<math>\Omega \pm 5\%</math></p> |
| Input Bias Current                 | <300 pA, 25°C  |
| Input Protection                   | 1000 V on all ranges   |
| CMRR (Common Mode Rejection Ratio) | 120 dB (for the 1 k $\Omega$ unbalanced resistance in LO lead, max. $\pm 500$ VDC)   |
| NMRR (Normal Mode Rejection Ratio) | 60 dB at "slow" rate   |
| Resistance                         |  |
| Measurement Method                 | <p>4-wire resistance or 2-wire resistance</p> <p>Current source referenced to LO input</p>   |
| Open Circuit Voltage               | Limited to <5 V  |
| Max. Lead Resistance (4-wire)      | <p>10% of range per lead for 100 <math>\Omega</math> and 1 k<math>\Omega</math> ranges</p> <p>1 k<math>\Omega</math> per lead on all other ranges</p>  |
| Input Protection                   | 1000 V on all ranges   |
| DC Current                         |  |
| Shunt Resistor                     | <p>100 <math>\mu</math>A: &lt;0.05 V</p> <p>1 mA: &lt;0.05 V</p> <p>100 <math>\mu</math>A, 1 mA: 330 <math>\Omega</math></p> <p>10 mA, 100 mA: 3.3 <math>\Omega</math></p> <p>1 A, 3 A, 10 A: 0.008 <math>\Omega</math> (3 A only available for DM858E and 10 A only available for DM858)</p>          |
| Input Protection                   | <p>DM858: replaceable 10 A, 250 V fast-blow fuse on the front panel; 12 A, 1000 V fast-blow fuse internal</p> <p>DM858E: replaceable 3.15 A, 250 V fast-blow fuse on the front panel; 3.15 A, 1000 V fast-blow fuse internal</p>   |
| Short Circuit/Diode Test           |  |
| Measurement Method                 | <p>Short circuit test: 100 <math>\mu</math>A <math>\pm 5\%</math> constant current source, &lt;5 V open-circuit voltage</p> <p>Diode test: 350 <math>\mu</math>A <math>\pm 5\%</math> constant current source, &lt;5 V open-circuit voltage</p>  |

### Short Circuit/Diode Test

|                          |   |
|--------------------------|---|
| Response Time            | DM858: 125 samples/s; DM858E: 80 samples/s, with beeper setting |
| Short Circuit Resistance | Adjustable from 1 $\Omega$ to 1000 $\Omega$                     |
| Input Protection         | 1000 V  |

### Setup Time Attentions

The setup time about voltage measurement is affected by source impedance, dielectric characteristics of test cable, and input signal changes.

#### NOTE:

[1]: 20% over range on all ranges except DCV 1000 V, ACV 750 V, DCI 10 A, 3 A, and ACI 10 A, 3 A.

[2]: 0.02 mV additional error per 1 V over the first  $\pm 500$  VDC.

[3]: For 100  $\mu$ A, 1 mA, 10 mA, and 100 mA ranges, the internal current sensing resistor needs to be cooled when measuring  $>1$  A current for more than 15 minutes.

[4]: 10 A is only available for DM858. The max. current range for DM858E is 3 A. For continuous current greater than DC 7 A or AC RMS 7 A, 30 seconds ON and 30 seconds OFF.

[5]: Specifications are for 4-wire resistance measurement or 2-wire resistance measurement using the "Relative" operation.  $\pm 0.2$   $\Omega$  additional errors will be added in performing 2-wire resistance measurement without using the "Relative" operation.

[6]: The accuracy specifications are for the voltage measured at the input terminals only. The typical value of the test current is 350  $\mu$ A. Variation in the current source will cause some variation in the voltage drop across a diode junction.

### AC Characteristics

Accuracy  $\pm$  (% of reading + % of range)



| Function                                    | Range <sup>[1]</sup> | Frequency Range | 1 year<br>23°C ± 5°C |
|---|----------------------|-----------------|----------------------|
| True-RMS AC<br>Voltage (ACV) <sup>[2]</sup> | 100.000 mV           | 20 Hz to 45 Hz  | 1.5 + 0.2            |
|   |                      | 45 Hz to 1 kHz  | 0.2 + 0.1            |
|   |                      | 1 kHz to 5 kHz  | 1.0 + 0.1            |
|   |                      | 5 kHz to 8 kHz  | 3.0 + 0.1            |
|   | 1.00000 V            | 20 Hz to 45 Hz  | 1.5 + 0.2            |
|   |                      | 45 Hz to 1 kHz  | 0.2 + 0.1            |
|   |                      | 1 kHz to 5 kHz  | 1.0 + 0.1            |
|   |                      | 5 kHz to 8 kHz  | 3.0 + 0.1            |
|   | 10.0000 V            | 20 Hz to 45 Hz  | 1.5 + 0.2            |
|   |                      | 45 Hz to 1 kHz  | 0.2 + 0.1            |
|   |                      | 1 kHz to 5 kHz  | 1.0 + 0.1            |
|   |                      | 5 kHz to 8 kHz  | 3.0 + 0.1            |
|   | 100.000 V            | 20 Hz to 45 Hz  | 1.5 + 0.2            |
|   |                      | 45 Hz to 1 kHz  | 0.2 + 0.1            |
|   |                      | 1 kHz to 5 kHz  | 1.0 + 0.1            |
|   |                      | 5 kHz to 8 kHz  | 3.0 + 0.1            |
|   | 750.00 V             | 20 Hz to 45 Hz  | 1.5 + 0.2            |
|   |                      | 45 Hz to 1 kHz  | 0.2 + 0.1            |
|   |                      | 1 kHz to 5 kHz  | 1.0 + 0.1            |
|   |                      | 5 kHz to 8 kHz  | 3.0 + 0.1            |

| Function                                 | Range <sup>[1]</sup>                 | Frequency Range | 1 year<br>23°C ± 5°C |
|--|--------------------------------------|-----------------|----------------------|
| True-RMS AC Current (ACI) <sup>[3]</sup> | 100.000 µA                           | 20 Hz to 45 Hz  | 1.50 + 0.10          |
|  |                                      | 45 Hz to 1 kHz  | 0.50 + 0.10          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |
|  | 1.00000 mA                           | 20 Hz to 45 Hz  | 1.50 + 0.10          |
|  |                                      | 45 Hz to 1 kHz  | 0.50 + 0.10          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |
|  | 10.0000 mA                           | 20 Hz to 45 Hz  | 1.50 + 0.10          |
|  |                                      | 45 Hz to 1 kHz  | 0.50 + 0.10          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |
|  | 100.000 mA                           | 20 Hz to 45 Hz  | 1.50 + 0.10          |
|  |                                      | 45 Hz to 1 kHz  | 0.30 + 0.10          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |
|  | 1.00000 A                            | 20 Hz to 45 Hz  | 1.50 + 0.20          |
|  |                                      | 45 Hz to 1 kHz  | 0.50 + 0.20          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |
|  | 3.00000 A (for DM858E)               | 20 Hz to 45 Hz  | 1.50 + 0.15          |
|  |                                      | 45 Hz to 1 kHz  | 0.50 + 0.15          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |
|  | 10.0000 A (for DM858) <sup>[4]</sup> | 20 Hz to 45 Hz  | 1.50 + 0.15          |
|  |                                      | 45 Hz to 1 kHz  | 0.50 + 0.15          |
|  |                                      | 1 kHz to 8 kHz  | 2.50 + 0.20          |

#### Additional Crest Factor Error (non-sinusoidal waveforms)<sup>[5]</sup>

| Crest Factor | Error (% of range) |
|--------------|--------------------|
| 1 to 2       | 0.05               |
| 2 to 3       | 0.2                |

#### True RMS AC Voltage (ACV)

|                                    |  |
|------------------------------------|--|
| Measurement Method                 | AC-coupled True-RMS - measure the AC component of input with up to 1000 V DC bias on any range |
| Crest Factor                       | ≤3 at full scale   |
| Input Impedance                    | 11.2 MΩ ± 5%, in parallel with <100 pF capacitance on any range                                |
| AC Filter Bandwidth                | 20 Hz to 8 kHz   |
| CMRR (Common Mode Rejection Ratio) | 60 dB (for the 1 kΩ imbalance resistance in LO lead and <60 Hz, max. ±500 VDC)                 |

#### True RMS AC Current (ACI)

|                    |  |
|--------------------|--|
| Measurement Method | Direct coupled to the fuse and shunt; AC-coupled True RMS measurement (measure the AC component) |
| Crest Factor       | ≤3 at full scale   |

## True RMS AC Current (ACI)

|                  |   |
|------------------|---|
| Max. Input       | DC + AC current peak value <300% of range;<br>RMS current with DC current component: DM858: <10 A; DM858E: <3 A   |
| Shunt Resistor   | 100 $\mu$ A, 1 mA: 330 $\Omega$<br>10 mA, 100 mA: 3.3 $\Omega$<br>1 A, 3 A, 10 A: 0.008 $\Omega$ (3 A only available for DM858E and 10 A only available for DM858)  |
| Input Protection | DM858: replaceable 10 A, 250 V fast-blow fuse on the front panel; 12 A, 1000 V fast-blow fuse internal<br>DM858E: replaceable 3.15 A, 250 V fast-blow fuse on the front panel; 3.15 A, 1000 V fast-blow fuse internal |

## Setup Time Attentions

Make sure that the RC return at input terminal has been in a stable state completely (higher than 3 s) before accurate measurement.

Input >300 Vrms (or >5 Arms) will cause the self-heating of the signal conditioning component to generate error which is included in the characteristics of the instrument. Internal temperature variation due to the self-heating will cause an additional error on the lower AC range. The error is smaller than 0.03% of readings and will disappear after a few minutes.

### NOTE:

[1]: 20% over range on all ranges except DCV 1000 V, ACV 750 V, DCI 10 A, 3 A, and ACI 10 A, 3 A.

[2]: Specifications are for sine-wave inputs >5% of the range. For the 750 VAC range, it is limited to  $8 \times 10^7$  Volts-Hz. For 5 kHz to 8 kHz, add 0.13% of range additional error.

[3]: Specifications are for sine-wave inputs >5% of the range. For 100  $\mu$ A, 1 mA, 10 mA, and 100 mA ranges, the internal current sensing resistor needs to be cooled if >1 A current is applied for more than 15 minutes.

[4]: 10 A is only available for DM858. The max. current range for DM858E is 3 A. For continuous current greater than DC 7 A or AC RMS 7 A, 30 seconds ON and 30 seconds OFF.

[5]: For frequency <100 Hz.

## Frequency and Period Characteristics

Accuracy  $\pm$  (% of reading + % of range)

| Function         | Range                                | Frequency Range   | 1 year<br>23°C ± 5°C |
|------------------|--------------------------------------|-------------------|----------------------|
| Frequency/Period | 100 mV to 750 V <sup>[1]</sup>       | 20 Hz to 2 kHz    | 0.01 + 0.003         |
|                  |                                      | 2 kHz to 20 kHz   | 0.01 + 0.003         |
|                  |                                      | 20 kHz to 50 kHz  | 0.01 + 0.003         |
|                  |                                      | 50 kHz to 100 kHz | 0.01 + 0.006         |
|                  | DM858: 100 µA to 10 A <sup>[2]</sup> | 20 Hz to 2 kHz    | 0.01 + 0.003         |
|                  | DM858E: 100 µA to 3 A <sup>[3]</sup> | 2 kHz to 10 kHz   | 0.01 + 0.003         |

### Measurement Attentions

All frequency counters are susceptible to error when measuring low-voltage, low-frequency signals. Shielding inputs is critical for minimizing measurement errors from external noise.

### Setup Time Attentions

Errors will occur when attempting to measure the frequency or period of the signal with a DC offset voltage change. Make sure that the RC return at input terminal has been in a stable state completely (higher than 3 s) before accurate measurement.

### NOTE:

[1]: 100 mV: the specifications are for AC input voltage of 35% to 120% of range in <20 kHz frequency; 1 V, 10 V, 100 V, 750 V: the specifications are for AC input voltage of 35% to 120% of range (750 V range is limited to 750 Vrms).

[2]: 100 µA to 10 A: the specifications are for AC input current of 20% to 120% of range (10 A range is limited to 10 Arms).

[3]: 100 µA to 3 A: the specifications are for AC input current of 20% to 120% of range (3 A range is limited to 3 Arms).

## Capacitance Characteristics

Accuracy ± (% of reading + % of range)<sup>[1]</sup>

| Function    | Range <sup>[2]</sup>                | Max. Testing Current | 1 year<br>23°C ± 5°C |
|-------------|-------------------------------------|----------------------|----------------------|
| Capacitance | 1.000 nF                            | 200 nA               | 5 + 1.5              |
|             | 10.00 nF                            | 200 nA               | 5 + 1.5              |
|             | 100.0 nF                            | 2 µA                 | 1 + 0.5              |
|             | 1.000 µF                            | 10 µA                | 1 + 0.5              |
|             | 10.00 µF                            | 10 µA                | 1 + 0.5              |
|             | 100.0 µF                            | 100 µA               | 1 + 0.5              |
|             | 1.000 mF                            | 0.5 mA               | 2 + 0.5              |
|             | 10.00 mF (for DM858) <sup>[3]</sup> | 1 mA                 | 2 + 0.5              |

### Capacitance Measurement

|                  |  |
|------------------|--|
| Testing Method   | Measure the rate of voltage change generated during the current flowing into the capacitance |
| Connection Type  | 2-wire   |
| Input Protection | 1000 V on all ranges   |

### Measurement Attentions

Due to external noise, measurement errors can occur when measuring small capacitance. Shielding inputs is critical for minimizing such errors.

### NOTE:

[1]: Specifications are guaranteed when the "Relative" operation is enabled. Additional errors may be caused by non-film capacitors.

[2]: Specifications are guaranteed when the capacitance range is between 10% and 120%.

[3]: 10 mF is only available for DM858. The max. measurement range for DM858E is 1 mF.

## Trigger Characteristics

### Trigger Characteristics

|                            |   |
|----------------------------|---|
| Trigger Source             | Auto, Single, External  |
| Samples Per Single Trigger | 1 to 2000   |
| Auto Trigger Interval      | Slow: 400 ms to 2000 ms<br>Medium: 50 ms to 2000 ms<br>Fast: 8 ms to 2000 ms (DM858); 12 ms to 2000 ms (DM858E) |
| Reading Hold Sensitivity   | 0.01%, 0.1%, 1%, or 10% of the reading  |



## Trigger Characteristics

|                        |                    |   |
|------------------------|--------------------|---|
| External Trigger Input | Input Level        | 5 V TTL-compatible  |
|                        | Trigger Condition  | Rising edge/falling edge/high level/low level   |
|                        | Input Impedance    | > 20 k $\Omega$ , in parallel with 400 pF, DC-coupled   |
|                        | Min. Pulse Width   | 500 $\mu$ s   |
| VMC Out                | Level              | 5 V TTL-compatible  |
|                        | Output Polarity    | Positive/negative   |
|                        | Output Impedance   | 200 $\Omega$ , typical  |
|                        | Output Pulse Width | Slow: 1 ms to 399 ms<br>Medium: 1 ms to 49 ms<br>Fast: 1 ms to 7 ms (DM858); 1 ms to 11 ms (DM858E) |

## Other Measurement Characteristics

### Any Sensor

|                     |  |
|---------------------|--|
| Temperature Sensor  | TC: B, E, J, K, N, R, S, T   |
|                     | RTD: 385 (0.00385), 389 (0.00389), 391 (0.00391), 392 (0.00392) temperature coefficient                      |
|                     | Thermal: 2.2 k $\Omega$ , 3 k $\Omega$ , 5 k $\Omega$ , 10 k $\Omega$ , 30 k $\Omega$ resistance coefficient |
| User-defined Sensor | Supports DCV, DCI, 2-wire resistance, 4-wire resistance, and frequency sensors                               |

### History and Storage

|                     |  |
|---------------------|--|
| Volatile Memory     | DM858: 500,000 readings<br>DM858E: 20,000 readings   |
| Non-volatile Memory | 10 groups of history data storage (DM858: 500,000 readings/group; DM858E: 20,000 readings/group)<br>10 groups of any sensor setup storage (DM858: 500,000 readings/group; DM858E: 20,000 readings/group)<br>10 groups of instrument setting storage<br>Supports USB external storage extension |

### Math Operation

dBm, dB, Relative, Statistics (Maximum/Minimum/Average/Standard Deviation), Limit, Histogram, Bar Chart, and Trend

## General Specifications

### Power Supply

|                 |                  |
|-----------------|------------------|
| Power Interface | Type-C interface |
| Power Voltage   | DC, 12 V, 3 A    |
| Consumption     | 10 W (max.)      |

| Mechanical Characteristics |  |
|----------------------------|--|
| Dimensions                 | 266 mm (W) x 165 mm (H) x 80 mm (D)                            |
| Weight                     | Package excluded: <2 kg  |
|                            | Package included: <3 kg  |
| Remote Interface           |  |
| USB Host                   | 1 on the front panel   |
| USB Device                 | 1 on the rear panel  |
| LAN Port                   | 1 on the rear panel, 10/100 Base-T, supporting LXI-C           |
| Others                     |  |
| LCD                        | 7-Inch color touch screen                                      |
| Operating Environment      | Full accuracy: 0°C to 50°C, 80% RH, 40°C, without condensation |
|                            | Storage temperature: -20°C to 60°C                             |
|                            | Altitude: up to 3,000 meters                                   |
| Programming Language       | Standard SCPI commands   |
| Warm-up Time               | 30 minutes   |

## Warranty and Calibration Interval

| Warranty and Calibration Interval |                                     |
|-----------------------------------|-------------------------------------|
| Warranty                          | 3 years (excluding the accessories) |
| Recommended Calibration Interval  | 12 months                           |

## Regulation Standards

| Regulation Standards          |   |  |
|-------------------------------|---|--|
| Electromagnetic Compatibility | Compliant with EMC Directive (2014/30/EU), compliant with or higher than the standards specified in EN 61326-1: 2013, EN 61326-2-1:2013, EN IEC 61000-3-2:2019+A1, EN 61000-3-3:2013+A1:2019                                |  |
|                               | CISPR 11:2009+A1 Class A  |  |
|                               | EN IEC 61000-3-2:2019+A1  | Harmonics, Class A   |
|                               | EN 61000-3-3:2013+A1:2019   | Voltage flicker  |
|                               | EN 61000-4-2:2009   | ±4.0 kV (contact discharge), ±8.0 kV (air discharge)   |
|                               | EN 61000-4-3:2006+A1+A2   | 10 V/m (80 MHz to 1 GHz); 3 V/m (1.4 GHz to 6 GHz)   |
|                               | EN 61000-4-4:2004+A1  | 2 kV power cord  |
|                               | EN 61000-4-5:2006   | 1 kV (phase-to-neutral voltage); 2 kV (phase-to-earth voltage); 2 kV (neutral-to-earth voltage)                                    |
|                               | EN 61000-4-6:2009   | 10 V, 0.15 MHz to 80 MHz   |
|                               | EN 61000-4-11:2004  | Voltage dip: 0% UT during half cycle; 0% UT during 1 cycle; 70% UT during 25 cycles<br>Short interruption: 0% UT during 250 cycles |
| Safety                        | EN 61010-1:2010+A1:2019<br>IEC 61010-1:2010+A1:2016<br>UL 61010-1: 2012 R7.19<br>CAN/CSA-C22.2 NO. 61010-1-12 + GI1 + GI2 (R2017) + A1  |  |
| Vibration                     | Meets GB/T 6587; class 2 random<br>Meets MIL-PRF-28800F and IEC60068-2-6; class 3 random  |  |
| Shock                         | Meets GB/T 6587-2012; class 2 random<br>Meets MIL-PRF-28800F and IEC 60068- 2- 27; class 3 random<br>(in non-operating conditions: 30 g, half sine, 11 ms duration, 3 shocks along the main axis, a total of 18 vibrations) |  |

# Order Information and Warranty Period

## Order Information

| Order Information  | Order No.           |
|--|---------------------|
| <b>Model</b>   |                     |
| DM858 (5½ Digital Multimeter)  | DM858               |
| DM858E (5½ Digital Multimeter)   | DM858E              |
| <b>Standard Accessories</b>  |                     |
| Power Adaptor Conforming to the Standard of the Destination Country        | — —                 |
| Two Alligator Clips (Black and Red)  | ALLIGATORCLIP-DMM   |
| Two Digital Multimeter Test Pens (Black and Red)                           | LD-DM               |
| Two Backup Fuses:<br>DM858: AC, 250 V, F10 A<br>DM858E: AC, 250 V, F3.15 A | — —                 |
| <b>Optional Accessories</b>  |                     |
| Kelvin Test Clip   | KELVINTTESTCLIP-DMM |
| USB Cable (150 cm)   | CB-USBA-USBB-FF-150 |

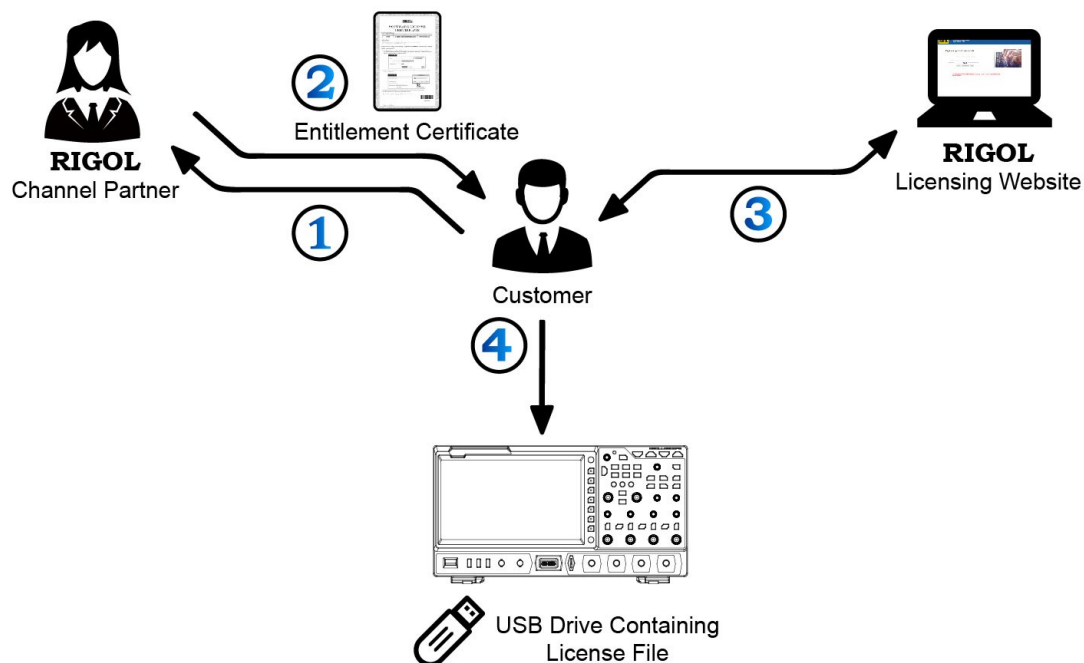
### NOTE:

For all the mainframes, accessories, and options, please contact the local office of RIGOL.

## Warranty Period

Three years for the mainframe, excluding the accessories.

# Option Ordering and Installation Process



1. According to the usage requirements, please purchase the specified function options from **RIGOL Sales Personnel**, and provide the serial number of the instrument that needs to install the option.
2. After receiving the option order, the **RIGOL** factory will mail the paper software product entitlement certificate to the address provided in the order.
3. Log in to **RIGOL** official website for registration. Use the software key and instruments serial number provided in the entitlement certificate to obtain the option license code and the option license file.
4. Download the option license file to the root directory of the USB storage device, and connect the USB storage device to the instrument properly. After the USB storage device is successfully recognized, the **Option install** menu is activated. Press this menu key to start installing the option.



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