

Overview

The MR series are compact, molded-type, zero-phase current transformers. They are ideal for improving the sensitivity, compactness, and weight of electric shock prevention.

Applications

Typical applications include electric shock prevention from earth leakage breakers, short-circuit relays, and ground fault circuit interrupters.

Benefits

- High sensitivity
- Compact and lightweight
- Laminated iron core
- RoHS compliant

Ordering Information

MR	/C	-01
Series	Height	Shape Classification
MR	Blank = Standard /C = Compact	-1 -2 -3 -4 -1-P5 -01 -01B



MR Type

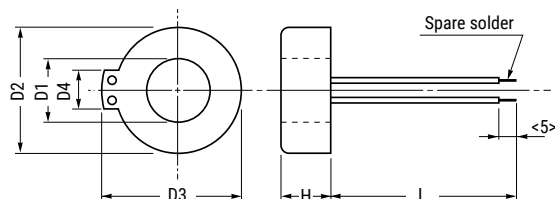


MR/C Types

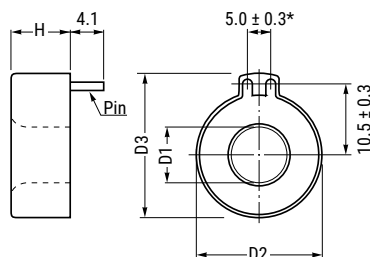


Dimensions in mm

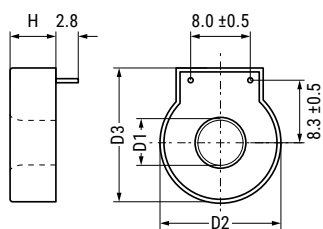
MR-1, 2, 3, 4



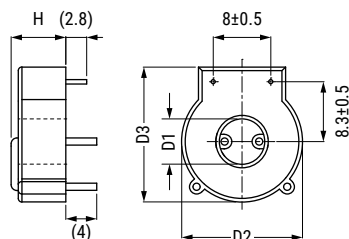
MR-1-P5



MR/C-01



MR/C-01B



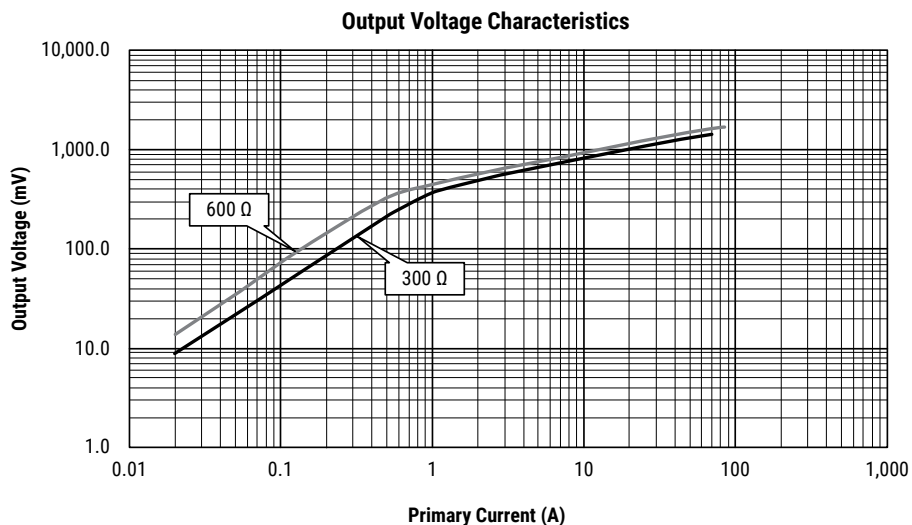
Part Number	D1 (Minimum)	D2 (Maximum)	D3 (Maximum)	D4	H (Maximum)	L (±3.0)
MR-1	7.2	19.3	22.4	(5.0)	8.3	45.0
MR-2	8.9	21.8	24.7	(5.0)	8.3	80.0
MR-3	11.0	28.0	30.5	(6.0)	10.5	67.0
MR-4	16.5	32.0	34.5	(7.0)	10.8	67.0
MR-1-P5	7.4	19.3	21.8	(8.0)	8.5	—
MR/C-01	6.0	17.5	19.0	—	6.7	—
MR/C-01B	6.0	17.5	19.0	—	7.9	—

Pin: $\varnothing 0.8$ mm pin connectors.

* Pin root diameter.

AC Output Characteristics

Output Voltage Example MR-1



Environmental Compliance

All MR sensors are RoHS compliant.



Specifications

Item	Performance Characteristics
Rated Current	15 – 125 A
Output Voltage	8.0 – 12.5 V Minimum
DC Resistance	25 – 30 Ω
Operating Temperature Range	-20°C to +80°C
Temperature Characteristics	±10%
Storage Temperature Range	-5°C to +40°C

Table 1 – Ratings & Part Number Reference

Part Number	Electrical				Measurement Conditions from Output Voltage			Weight (g)
	Rated Current (A)	Output Voltage (mV) Minimum	Overinput Characteristics (After DC5A Input) Maximum	DC Resistance (Ω)	Frequency (Hz)	Load Resistance (Ω)	Detection Current (mA)	
MR-1	30	8.0	$\pm 10\%$	(30)	60	300	22.5	4.1
MR-2	30	8.0	$\pm 10\%$	(30)	60	300	22.5	5.9
MR-3	60	8.0	$\pm 10\%$	(30)	60	300	22.5	11.9
MR-4	125	8.0	$\pm 10\%$	(30)	60	300	22.5	16.5
MR-1-P5	30	8.0	$\pm 10\%$	(25)	60	300	22.5	4.3
MR/C-01	15	12.5	$\pm 10\%$	(30)	60	1,000	15.0	2.3
MR/C-01B	15	12.5	$\pm 10\%$	(30)	60	1,000	15.0	2.7

Soldering Process

MR-1, MR-2, MR-3, & MR-4

Iron Soldering	Temperature of tip	350°C or lower
	Worktime	within 3 seconds

MR/C-01 & MR/C-01B

Flow Soldering	Preheating temperature	90 – 150°C
	Preheating time	within 90 seconds
	Heating temperature	260°C
	Heating time	within 5 seconds
Iron Soldering	Temperature of tip	350°C or lower
	Worktime	within 3 seconds

Packaging

Part Number	Packaging Type	Pieces Per Box
MR-1	Tray	560
MR-2		480
MR-3		300
MR-4		1,050
MR-1-P5		1,200
MR/C-01		960
MR/C-01B		

Handling Precautions

Precautions for Product Storage

Current sensors should be stored in normal working environments. While the sensors are quite robust in other environments, exposure to high temperatures, high humidity, corrosive atmospheres, and long-term storage degrade solderability.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine and sulfur-bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts. Avoid storage near strong magnetic fields, as they can magnetize the product and cause its characteristics to change.

For optimized solderability, the stock of current sensors should be used within 12 months of receipt.

Before Using Zero-Phase Current Transformers

- Do NOT drop or apply any other mechanical stress, as such stresses may change performance characteristics.
- Do NOT use current transformers opened between secondary output terminals. Heat build-up in the magnetic core may occur, resulting in damage to the parts by coil melting.
- If the MR series is used as a current transformer, contact KEMET for more information.

KEMET Electronics Corporation Sales Offices

For a complete list of our global sales offices, please visit www.kemet.com/sales.

Disclaimer

All product specifications, statements, information and data (collectively, the "Information") in this datasheet are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on KEMET Electronics Corporation's ("KEMET") knowledge of typical operating conditions for such applications, but are not intended to constitute – and KEMET specifically disclaims – any warranty concerning suitability for a specific customer application or use. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by KEMET with reference to the use of KEMET's products is given gratis, and KEMET assumes no obligation or liability for the advice given or results obtained.

Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.

When providing KEMET products and technologies contained herein to other countries, the customer must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the International Traffic in Arms Regulations (ITAR), the US Export Administration Regulations (EAR) and the Japan Foreign Exchange and Foreign Trade Act.

KEMET is a registered trademark of KEMET Electronics Corporation.