

## Overview

The ZCT Series are compact molded-type, zero-phase current transformers, ideal for improving the sensitivity, compactness, and lightweight 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



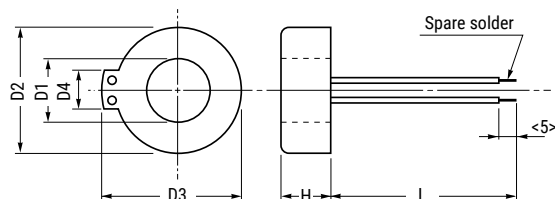
MR Type



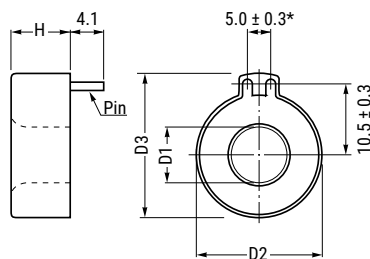
MR/C Type

## Dimensions in mm

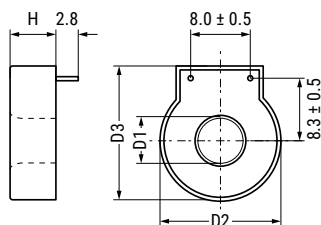
MR-1, 2, 3, 4



MR-1-P5



MR/C-01



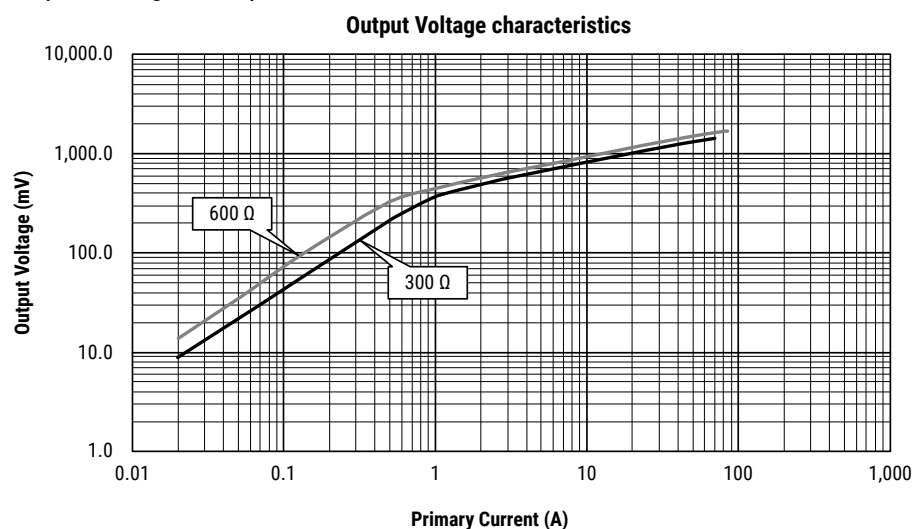
Part Number	D1 (Minimum)	D2 (Maximum)	D3 (Maximum)	D4	H (Maximum)	L (±3.0)
MR-1	7.2	19.3	22.4	(5.0)	8.3	45.0
MR-2	8.9	21.8	24.7	(5.0)	8.3	80.0
MR-3	11.0	28.0	30.5	(6.0)	10.5	67.0
MR-4	16.5	32.0	34.5	(7.0)	10.8	67.0
MR-1-P5	7.4	19.3	21.8	(8.0)	8.5	—
MR/C-01	6.0	17.5	19.0	-	6.7	-

Pin:  $\varnothing 0.8$  mm Pin connectors.

\* Pin root diameter.

## AC Output Characteristics

### Output Voltage Example MR-1



## Environmental Compliance

All ZCT 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 ( $\Omega$ )	Frequency (Hz)	Load Resistance ( $\Omega$ )	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

## 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

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		

## Handling Precautions

### Precautions for product storage

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

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

For optimized solderability, Current Sensor's stock should be used preferably within 12 months of receipt.

### Before using zero-phase current transformers

- Do NOT drop or apply any other mechanical stress as it may change the performance characteristics.
- Preliminary study is required when heating by current conduction.
- Do NOT use the Low Alternating Current Sensors opened between secondary output terminals. Heat build-up in the magnetic core may occur, resulting in damages to the parts by melting of the coil.
- If the ZCT Series will be used as a current transformer, please contact KEMET for more information.

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## Export Control

### For customers in Japan

For products that 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.

### For customers outside Japan

Sensors should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.

## KEMET Electronics Corporation Sales Offices

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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 the 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.

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