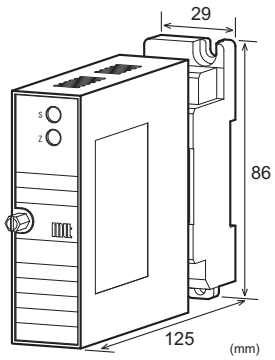
Product Specification Sheet Model: MS3720C

Slim Plug-In CT Transmitter with Isolated Single/Dual Output (Clamp Type CT Input)

DESCRIPTION

The MS3720C is a slim, plug-in CT transmitter that calculates the rms values of AC current signals from a clamp type CT, converts them into commonly used DC signals, and provides isolated single or dual output.



ORDERING CODE

MS3720C - □ - □ □ □

Model

Power Supply

A: 100 to 240V AC (50 to 60Hz)
D: 24V DC **P**: 100 to 240V DC

Input (AC Current Signal)

R5: 0 to 5A AC
01: 0 to 10A AC
02: 0 to 20A AC
03: 0 to 30A AC
04: 0 to 40A AC
00: Other AC current signal
05: 0 to 50A AC
10: 0 to 100A AC
20: 0 to 200A AC
40: 0 to 400A AC
60: 0 to 600A AC

Output 1

A: 4 to 20mA DC
D: 0 to 20mA DC
Z: Other DC current signal
1: 0 to 10mV DC
2: 0 to 100mV DC
3: 0 to 1V DC
4: 0 to 10V DC
5: 0 to 5V DC
6: 1 to 5V DC
3W: ±1V DC
4W: ±10V DC
5W: ±5V DC
0: Other DC voltage signal

Output 2

No code: None
The codes are the same as for Output 1.

Note 1: When a voltage output is selected for Output 1, a current output cannot be selected for Output 2.
Note 2: When the code A (4 to 20mA) is selected for both of the two outputs, the output load will be 550Ω maximum for Output 1 and 350Ω maximum for Output 2.

Options

No code: None
/L: Dual current output with high output load (OUT-1: 750Ω / OUT-2: 550Ω)
/X: Others (Special order)
* For non-standard options, ask MTT for availability.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown on the left.
(e.g.) MS3720C-A-R5A6

Other Ordering Examples:
For an output code of "0": MS3720C-A-0560 (Output: 2 to 5V)
For an option code of "X": MS3720C-A-10A/X (0-90% response time: 500ms max.)
Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /LX).

SPECIFICATIONS

POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC±10% 100 to 240V DC: 85 to 264V DC
Power Sensitivity	Better than ±0.1% of span for each power supply range.
Power Line Fuse	160mA fuse is installed (standard).

Power Consumption

Power	100-240V AC	24V DC	100-240V DC
Single Output	4.5VA max	1.2W max	4.8W max
Dual Output	5.0VA max	1.6W max	6.0W max

INPUT SECTION

Input Signal	Output from the clamp type CT
Crest Factor	3 max.

* The output terminals of the supplied clamp type CT should be connected to the input terminals on the transmitter's terminal block.
* A connecting cable is not included.

OUTPUT SECTION

Allowable Output Load

Voltage Output (DC)	1V span and up	2mA max.
	10mV	10kΩ min.
	100mV	100kΩ min.
Current Output (DC)	4-20mA single output	750Ω max.
	4-20mA dual output	Output 1: 550Ω max. Output 2: 350Ω max.

Zero Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)
Span Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)

Ranges Available

	Current Signal	Voltage Signal
Output Range (DC)	0 to 20mA	-10 to 10V
Output Span (DC)	4 to 20mA	10mV to 20V
Output Bias	0 to 100%	-100 to 100%

* For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.

Output Spec. Ex.1: For 4 to 20mA output, the output span is 16mA and the bias +25%.

Output Spec. Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.

●PERFORMANCE

Accuracy Rating	Better than ±0.4% of span with at least 10% input (at 25°C±5°C).
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient.
Response Time	450ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	4-way isolation between input, output [Output 1/Output 2], power, and ground.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output [Output 1/Output 2], power, and ground.
Dielectric Strength	Input / Output [Output 1/Output 2] / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 5mA) Output 1 / Output 2: 500V AC for 1 minute (Cutoff current: 0.5mA)
Surge Withstand Capability	Tested as per ANSI/IEEE C37.90.1-1989.
Operating Environment	Ambient temperature: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

●PHYSICAL

Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

●MATERIALS

Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2μm gold plating
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Anti-Humidity Coating	HumiSeal® 1A27NS (Polyurethane)

* HumiSeal® is a registered trademark of Chase Corporation.

CLAMP TYPE CT SPECIFICATIONS

●CTF-5A
Input 0-5A

Rated Primary Current	5A AC (rms)
Maximum Allowable Current	100A (rms), continuous.
Applicable Wire Size	φ7.9mm max.
External Dimensions	W25.3 × H41.3 × D33mm (not including the protrusion)
Weight	Approx. 60g

●CTF-50A
Input (0-10A) to (0-50A)

Rated Primary Current	50A AC (rms)
Maximum Allowable Current	100A (rms), continuous.
Applicable Wire Size	φ9.5mm max.
External Dimensions	W25.5 × H48 × D23mm (not including the protrusion)
Weight	Approx. 45g

●CTF-100A
Input (0-60A) to (0-100A)

Rated Primary Current	100A AC (rms)
Maximum Allowable Current	200A (rms), continuous.
Applicable Wire Size	φ14.5mm max.
External Dimensions	W30.5 × H55 × D29.5mm (not including the protrusion)
Weight	Approx. 80g

●CTF-200A
Input (0-125A) to (0-200A)

Rated Primary Current	200A AC (rms)
Maximum Allowable Current	300A (rms), continuous.
Applicable Wire Size	φ24mm max.
External Dimensions	W35.5 × H76 × D45mm (not including the protrusion)
Weight	Approx. 190g

●CTF-400A
Input (0-225A) to (0-400A)

Rated Primary Current	400A AC (rms)
Maximum Allowable Current	600A (rms), continuous.

Applicable Wire Size	φ35.5mm max.
External Dimensions	W35.5 × H94 × D62.5mm (not including the protrusion)
Weight	Approx. 310g

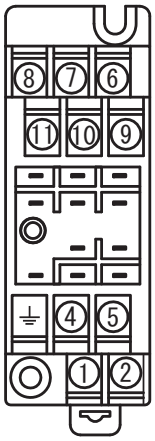
●CTF-600A
Input (0-500A) to (0-600A)

Rated Primary Current	600A AC (rms)
Maximum Allowable Current	800A (rms), continuous.
Applicable Wire Size	φ35.5mm max.
External Dimensions	W35.5 × H94 × D62.5mm (not including the protrusion)
Weight	Approx. 360g

●GENERAL SPECIFICATIONS

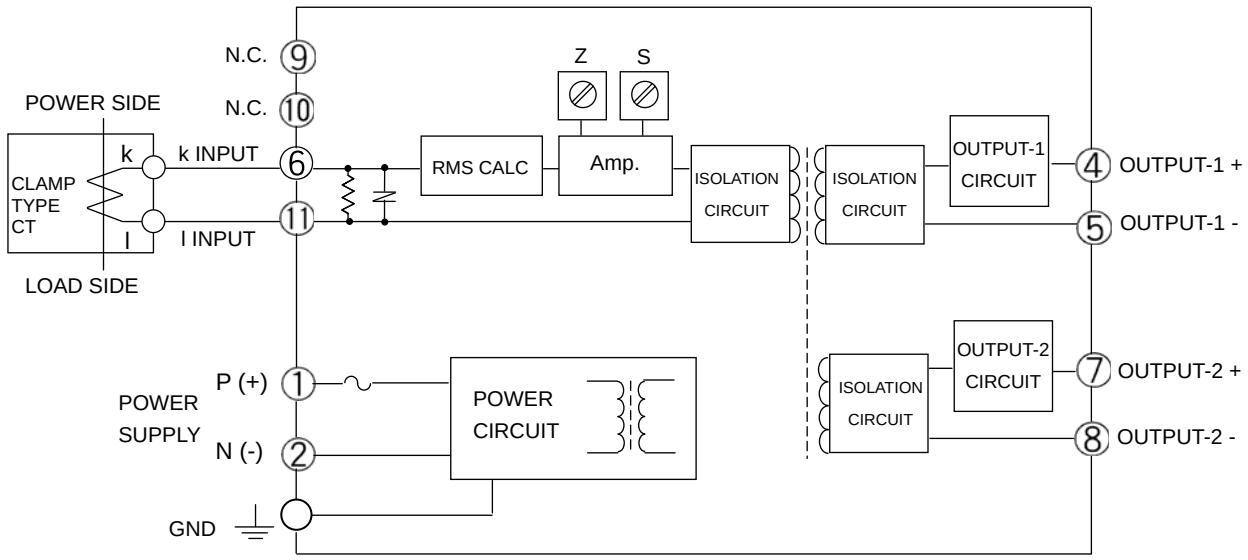
Applicable Frequency	50Hz/60Hz/400Hz
Accuracy	±1%
Open-Circuit Protection	Built-in overvoltage clamping device; clamping voltage 7.5V
Insulation Resistance	100MΩ min. (@ 500V DC) between the housing and output terminals.
Dielectric Strength	2200V AC for 1 minute between the housing and output terminals. (Cutoff current: 0.5mA)
Operating Environment	Ambient temperature: -10 to 60°C Humidity: 5 to 80% RH (non-condensing)
Storage Temperature	-20 to 60°C
Wiring	M3 screw terminal connection
Screwing Torque	0.5 [Nm] * Recommended
CT Output Cable	Shielded cable with a nominal conductor cross-section of 0.5 to 2.0mm^2
Housing Material	PP resin (UL 94V-0)

TERMINAL ASSIGNMENT



①	P (+)	POWER
②	N (-)	
⏚	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	k INPUT	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	N.C.	
⑩	N.C.	
⑪	I INPUT	

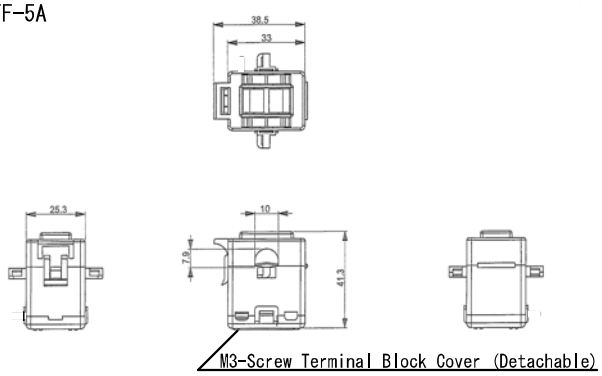
BLOCK DIAGRAM



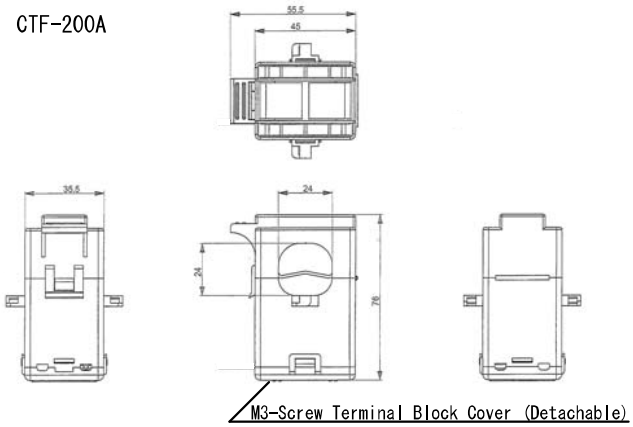
* The output terminals of the supplied clamp type CT should be connected to the input terminals on the transmitter's terminal block.
* A connecting cable is not included.
* A shielded cable not longer than 30 meters should be used to connect the clamp type CT to the transmitter's terminal block.

DIMENSIONAL OUTLINE DRAWINGS

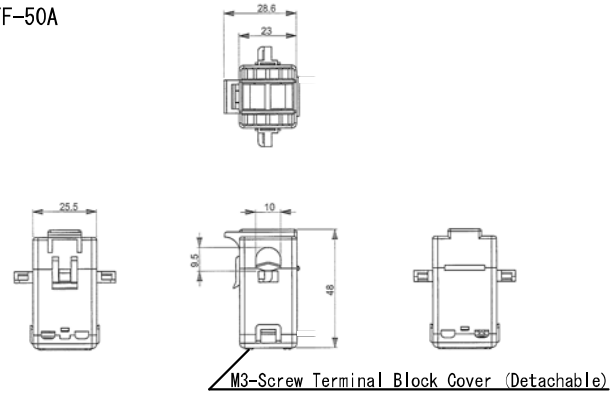
CTF-5A



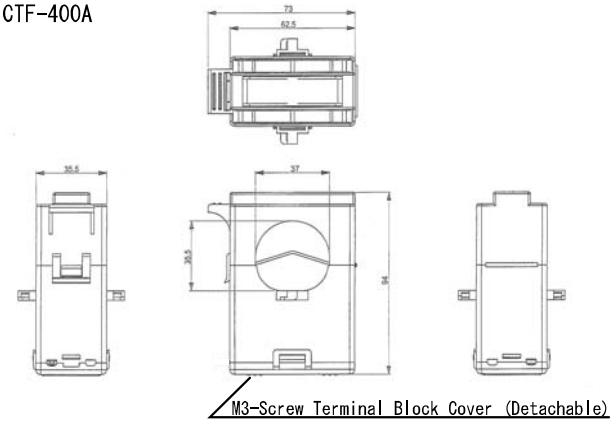
CTF-200A



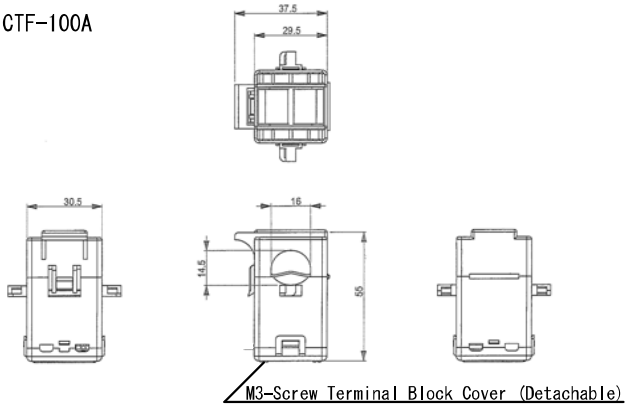
CTF-50A



CTF-400A



CTF-100A



CTF-600A