

DESCRIPTION

The MS3771 is a slim, plug-in programmable thermocouple temperature transmitter that converts input signals from a thermocouple into commonly used DC signals and provides isolated single or dual output. The input and/or output settings of the unit can be easily configured using configuration software running on a personal computer.

ORDERING CODE
MS3771 - -
Model
Power Supply
A: 100 to 240V AC (50 to 60Hz)

D: 24V DC

P: 100 to 240V DC

Input (Measuring Temperature Range)
K: Type K thermocouple (-200 to 1200°C)

E: Type E thermocouple (-200 to 800°C)

J: Type J thermocouple (0 to 750°C)

T: Type T thermocouple (-200 to 350°C)

B: Type B thermocouple (600 to 1700°C)

R: Type R thermocouple (0 to 1600°C)

S: Type S thermocouple (0 to 1600°C)

N: Type N thermocouple (-200 to 1200°C)

W97: W97Re3-W75Re25 (ASTM E988) (0 to 2000°C)

W95: W95Re5-W74Re26 (ASTM E988) (0 to 2000°C)

* For any other special specifications, consult MTT.

Output
Single Output Model
A: 4 to 20mA DC *1

4: 0 to 10V DC *2

5: 0 to 5V DC *2

6: 1 to 5V DC *2

Dual Output Model
A1: 4 to 20mA DC / 1 to 5V DC *1

A2: 4 to 20mA DC / 4 to 20mA DC *1

4W: 0 to 10V DC / 0 to 10V DC *2

5W: 0 to 5V DC / 0 to 5V DC *2

6W: 1 to 5V DC / 1 to 5V DC *2

*1: Fixed output(s). The output range cannot be changed.

*2: The output range can be changed.

Options

No code: None (Upscale burnout protection will apply if no option is specified.)

/U: Upscale burnout protection

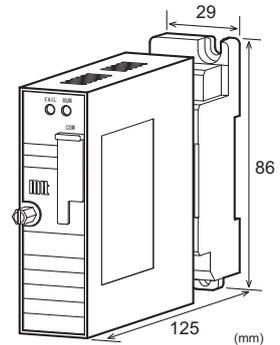
/D: Downscale burnout protection

/L: Dual current output with high output load
(OUT-1: 750Ω / OUT-2: 550Ω)

/H: Polyurethane conformal coating

/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. Also specify a measuring temperature range*.

(e.g.) MS3771-A-K4W (0 to 500°C)

* Note that the temperature range should be specified in °C within the range listed below.

Input Code	Measuring Temperature Range	Code shown on Configuration Window
K	-200 to 1200°C	K
E	-200 to 800°C	E
J	0 to 750°C	J
T	-200 to 350°C	T
B	600 to 1700°C	B
R	0 to 1600°C	R
S	0 to 1600°C	S
N	-200 to 1200°C	N
W97	0 to 2000°C	W3Re/W25Re
W95	0 to 2000°C	W5Re/W26Re

Note: The measuring temperature range should be equivalent to an input span of 3mV or greater.

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).

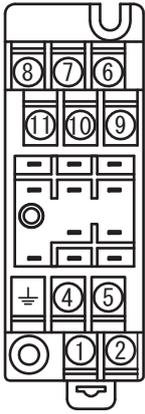
Power Consumption

Power	100-240V AC	24V DC	100-240V DC
Single Output	5.0VA max	1.1W max	4.8W max
Dual Output	5.0VA max	1.5W max	6.0W max

INPUT SECTION

Input Resistance	1MΩ min. (Without power: 1MΩ min. at rated input.)
Burnout Protection	Selectable from upscale, downscale and no burnout protection. (Detection current: Approx. 25nA)

TERMINAL ASSIGNMENTS



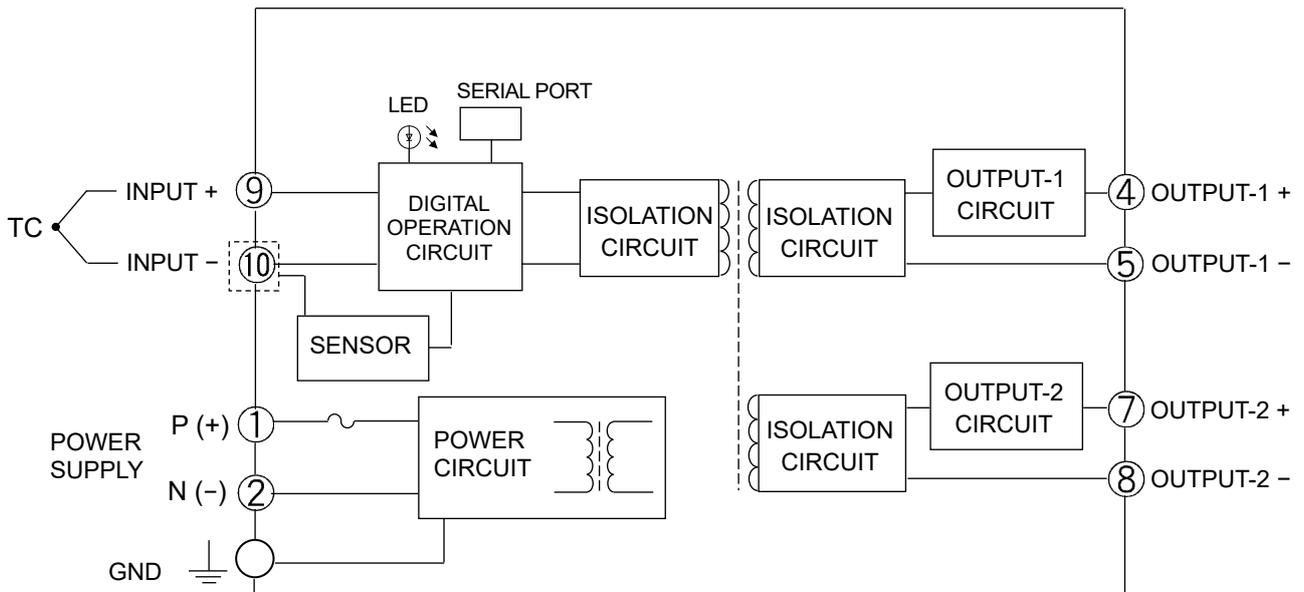
①	P (+)	POWER
②	N (-)	
③	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	N.C.	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	TC +	
⑩	TC -	
⑪	N.C.	

ACCURACY RATING

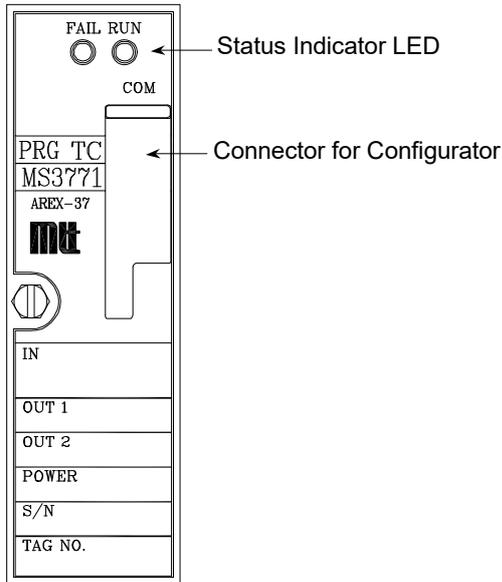
Thermocouple	Input Accuracy	Output Accuracy
K	1400°C (Fixed) / Input span (Measuring temperature range) × ±0.02%	±0.04% max.
E	1000°C (Fixed) / Input span (Measuring temperature range) × ±0.02%	±0.04% max.
J	750°C (Fixed) / Input span (Measuring temperature range) × ±0.02%	±0.04% max.
T	550°C (Fixed) / Input span (Measuring temperature range) × ±0.03%	±0.04% max.
R	1600°C (Fixed) / Input span (Measuring temperature range) × ±0.04%	±0.04% max.
S	1600°C (Fixed) / Input span (Measuring temperature range) × ±0.04%	±0.04% max.
B	1100°C (Fixed) / Input span (Measuring temperature range) × ±0.06%	±0.04% max.
N	1400°C (Fixed) / Input span (Measuring temperature range) × ±0.02%	±0.04% max.
W97Re3-W75Re25	2000°C (Fixed) / Input span (Measuring temperature range) × ±0.03%	±0.04% max.
W95Re5-W74Re26	2000°C (Fixed) / Input span (Measuring temperature range) × ±0.03%	±0.04% max.

Note: The measuring temperature range should be equivalent to an input span of 3mV or greater.

BLOCK DIAGRAM



FRONT VIEW



CONNECTOR

●COM (CONNECTOR FOR CONFIGURATOR)

The COM port is used to connect the transmitter to a personal computer through serial communication (RS-232C).

An optional communication cable, MTT's MS-CBL01 (with a 9-pin D-subminiature female connector for PC connection) is required for the connection.

If the USB port is used, it is recommended that a USB conversion adapter, REX-USB60F (made by RATOC Systems) be used with the MS-CBL01.

Connector Pin Assignments

Pin No.	Signal Name
1	DVdd
2	SHDN
3	N.C.
4	N.C.
5	TX
6	RX
7	ISOCOM
8	ISOCOM

LED STATUS INDICATORS

●INDICATOR PATTERNS

Module Status	Description	LED		Remarks
		Blue (RUN)	Red (FAIL)	
INIT		●	●	
RUN		●	-	
PAUSE	Common to all commands.	◎	-	Blink pattern: ●●●●○○○○
ERROR	ADC error	-	◎	Blink pattern: ●●●●○○○○●●
	DA output error	-	◎	Blink pattern: ●●●●○○○○●●●●
	Burnout	-	◎	Blink pattern: ●●●●○○○○●●●●●●
	Power error	-	◎	Blink pattern: ●●●●○○○○
HALT	WDT	-	●	May fail to turn ON.
	Memory	-	●	May fail to turn ON.
	Power error	-	●	May fail to turn ON.

Notes:

1. OFF: - or ○, ON: ●, Blink: ◎
2. Each of the circle symbols (○, ●) shown in the Remarks column indicates a duration of 0.25 s.