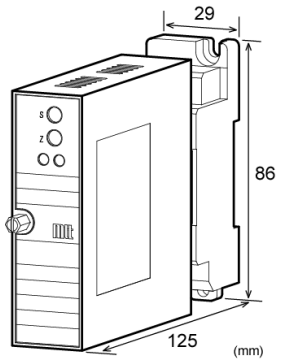
Product Specification Sheet Model: MS3782

Slim Plug-In PWM Converter with Isolated Single/Dual Output

DESCRIPTION

The MS3782 is a slim, plug-in PWM converter that converts DC current or voltage input signals into PWM signals and provides isolated single or dual output.



ORDERING CODE

MS3782 - □ - □ □ □

Model

Power Supply

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

Input

A: 4 to 20mA DC
B: 2 to 10mA DC
C: 1 to 5mA DC
D: 0 to 20mA DC
E: 4 to 20mA DC*1
H: 10 to 50mA DC
Z: Other DC current signals
3: 0 to 1V DC
4: 0 to 10V DC
5: 0 to 5V DC
6: 1 to 5V DC
4W: ±10V DC
5W: ±5V DC
0: Other DC voltage signals

* 1: Shunt resistor 50Ω

Output 1

1: TTL level
2: Open collector
3: Voltage pulse 10V±10%
4: Voltage pulse 12V±10%

Output 2

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

Note: When a combination of TTL level or voltage pulse is selected for Ouputs 1 amd 2, the voltage levels for both outputs should be the same.

Options

No code: None
/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 above. Also specify an output frequency.
(e.g.) MS3782-A-44 (500Hz)

Other Ordering Examples:
For an input code of "Z": MS3782-A-Z44 (Input: 8 to 20mA / 500Hz)
For an input code of "0": MS3782-A-011 (Input: 0 to 8V/ 500Hz)

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	6.0VA max	1.8W max	2.0W max
Dual Output	6.5VA max	2.0W max	2.5W max

●INPUT SECTION

Input Resistance

Voltage Input (DC)	With or without power: 1MΩ min.	
Current Input (DC)	4 to 20mA (std.)	250Ω
	2 to 10mA	250Ω
	1 to 5 mA	100Ω
	0 to 20mA	250Ω
	10 to 50mA	10Ω

Allowable Input Voltage

Voltage Input Model	30V DC max., continuous. (Standard for a span up to 10V)
Current Input Model	40mA DC max., continuous. (Standard for 4 to 20mA)

Ranges Available

	Current Signal	Voltage Signal
Input Range (DC)	-100 to 100mA	-10 to 10V
Input Span (DC)	100μA*1 to 200mA	200mV*2 to 20V
Input Bias	-100 to 100%	-100 to 100%

Note: For any input range including negative input signals, the input spans for current and voltage signals range from (*1)200μA to 200mA and (*2)400mV to 20V, respectively.
Input Spec. Ex.1: For 3 to 8V input, the input span is 5V and the bias +60%.
Input Spec. Ex. 2: For -5 to 0V input, the input span is 5V and the bias -100%.

●OUTPUT SECTION

Output Signal	PWM output ON duty 80 to 0% 0% input: Output duty 80% 100% input: Output duty 0% (Example 1) Voltage pulse 12V: ON = 12V±10% OFF = 0V±1V (Example 2) Open collector: ON = Low OFF = High Note: For any input less than 0%, the output duty will be 80%, and for any input more than 100%, it will be 0%.
Maximum Output Load	
TTL Level	Maximum output 10mA @ 3.5V
Voltage Pulse 10V	Maximum output 7mA @ ±10%
Voltage Pulse 12V	Single output model: Maximum output 15mA @ ±10% Dual output model: Maximum output 7mA @ ±10%
Maximum Rating	Open collector: 30V, 100mA
Output Frequency	Customer-specified value ±30% Specify between 10Hz and 1kHz.
Zero Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)
Span Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)

●PERFORMANCE

Accuracy Rating	Better than ±1.5% of span (at 25°C±5°C).
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient.
Response Time	1s max. (0 to 90%) with a step input at 100%.
Isolation	4-way isolation between input, output 1, output 2, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output 1, output 2, power, and ground.
Dielectric Strength	Input / [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

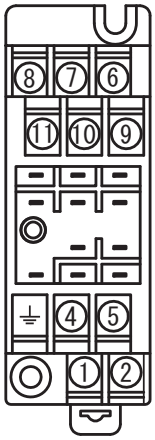
●PHYSICAL

Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-proof screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125 mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

●MATERIAL

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)

TERMINAL ASSIGNMENTS



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

BLOCK DIAGRAM