

**DESCRIPTION**

The MS3727 is a slim, plug-in signal selector that switches between two input signals by switching input. The selector is available in three input types: DC current input, DC voltage input, and DC current input with a 50Ω shunt resistor. (For the DC current input, the input terminals on the non-selected side will not open.)

**ORDERING CODE**

**Model** \_\_\_\_\_ **MS3727** -  -  /

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

**Input** \_\_\_\_\_  
**A:** DC current signal            **C:** DC voltage signal  
**B:** DC current signal (Shunt resistor 50Ω)

**Options** \_\_\_\_\_  
**No code:** None  
**/X:** 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.  
(e.g.) MS3727-A-A

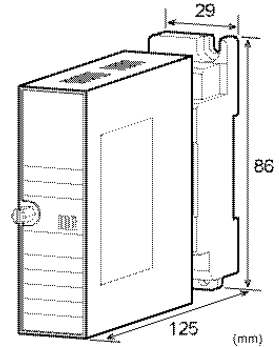
**SPECIFICATIONS**

● **POWER SECTION**

|                           |  |          |             |
|---------------------------|--|----------|-------------|
| <b>Power Requirements</b> | 100 to 240V AC: 85 to 264V AC (47 to 63Hz)<br>24V DC: 24V DC±10%     |          |             |
| <b>Power Line Fuse</b>    | 100 to 240V DC: 85 to 264V DC<br>160mA fuse is installed (standard). |          |             |
| <b>Power Consumption</b>  |  |          |             |
| Power                     | 100-240V AC  | 24V DC   | 100-240V DC |
|                           | 3.5VA max  | 0.6W max | 6.0W max    |

● **INPUT SECTION**

|                              |  |
|------------------------------|--|
| <b>Input Signal</b>          | 2 channels (INPUT-1, INPUT-2)  |
| <b>Shunt Resistor</b>        | For the input code B, a built-in 50Ω shunt resistor is provided.   |
| <b>Allowable Input Range</b> | DC current signal: ±50mA DC max. (Minimum span: 1mA DC)<br>DC voltage signal: ±50V DC max. (Minimum span: 10mV DC) |
| <b>Switching Input</b>       | Dry contact<br>(Internal pull-up: 24V DC at 10mA)  |



● **OUTPUT SECTION**

|                      |  |
|----------------------|--|
| <b>Output Signal</b> | Input code A or C: Equivalent to the input signal level<br>Input code B: Input signal × Shunt resistor (50Ω)<br>Note: Either INPUT-1 or INPUT-2 is output.   |
| <b>Operation</b>     | When the power is ON and the switching input is ON, INPUT-1 is output.<br>When the power is ON and the switching input is OFF, INPUT -2 is output.<br>When the power is OFF, both INPUT-1 and INPUT-2 give no output.<br>* For details, refer to the Switching Configurations. |

● **PERFORMANCE**

|   |   |
|---|---|
| <b>Accuracy Rating</b>                              | Input code B: ±0.1% (shunt resistor's accuracy)   |
| <b>Temperature Effect</b>                           | Input code B: ±0.25ppm/°C   |
| <b>Response Time</b>                                | 5ms max.  |
| <b>Internal Resistance between Input and Output</b> | 50Ω max. per wire<br>(ON resistance of photo MOS relay)   |
| <b>Condition of Non-selected Input Channel</b>      | Input code A: 50Ω max. (due to the ON resistance of photo MOS relay)<br>Input code B: Shunt resistor 50Ω<br>Input code C: Open (leakage current 1μA max.)<br>Note: When the power is OFF, the above-described condition applies to both channels. |
| <b>Isolation</b>                                    | 4-way isolation between [input/output], switching input, power, and ground.   |
| <b>Insulation Resistance</b>                        | 100MΩ min. (@ 500V DC) between [input/output], switching input, power, and ground.  |
| <b>Dielectric Strength</b>                          | [Input/Output] / Switching Input / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA)<br>Power / Ground: 2000V AC for 1 minute (Cutoff current: 5mA)  |

|                       |  |
|-----------------------|--|
| Operating Environment | Ambient temperature: -5 to 55°C        |
|                       | Humidity: 5 to 90% RH (non-condensing) |
| Storage Temperature   | -10 to 60°C                            |

|                       |   |
|-----------------------|---|
| 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.

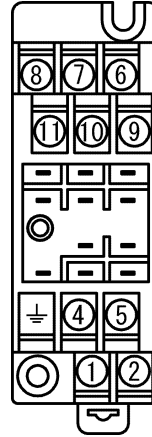
● PHYSICAL

|                     |   |
|---------------------|---|
| 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.<br>Socket: 80g max.  |

● MATERIALS

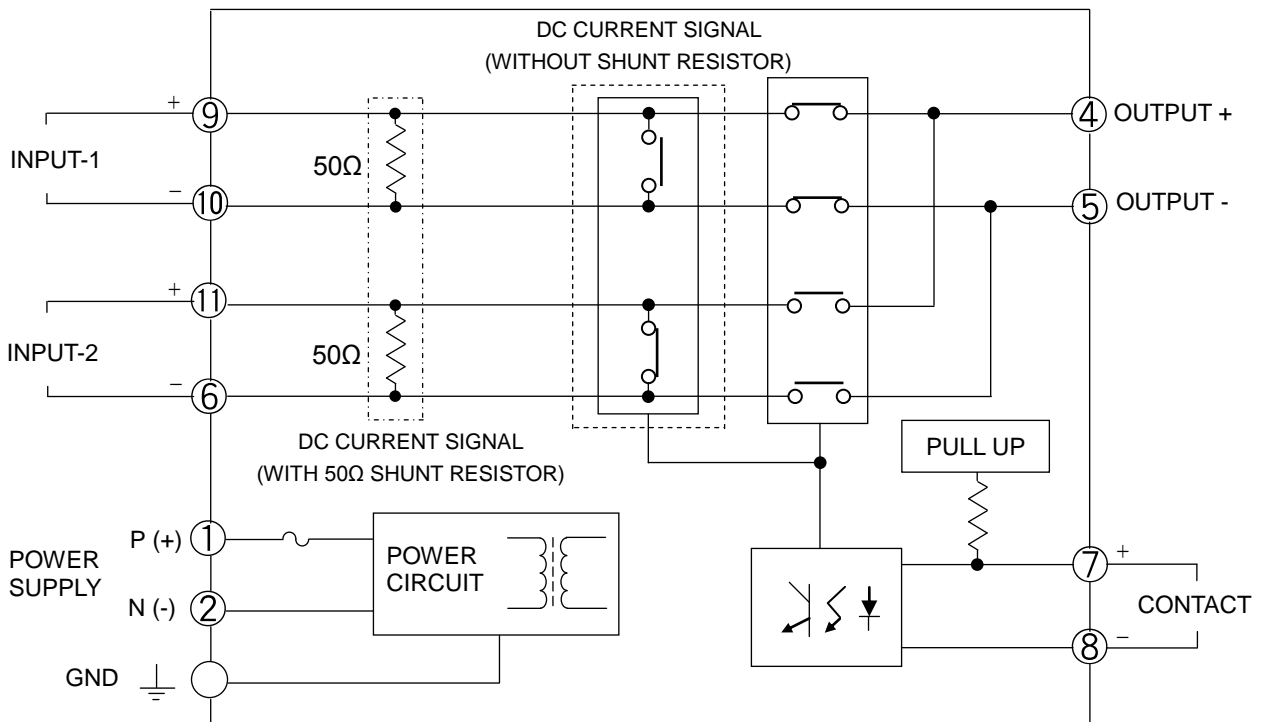
|                              |                               |
|------------------------------|-------------------------------|
| Housing                      | ABS resin (UL 94V-0)          |
| Terminal Block               | PBT resin (UL 94V-0)          |
| Terminal Block Cover         | PC resin (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 |

TERMINAL ASSIGNMENT



|   |           |       |
|---|-----------|-------|
| ① | P (+)     | POWER |
| ② | N (-)     |       |
| ⊥ | GND       |       |
| ④ | + OUTPUT  |       |
| ⑤ | - OUTPUT  |       |
| ⑥ | - INPUT-2 |       |
| ⑦ | + CONTACT |       |
| ⑧ | - CONTACT |       |
| ⑨ | + INPUT-1 |       |
| ⑩ | - INPUT-1 |       |
| ⑪ | + INPUT-2 |       |

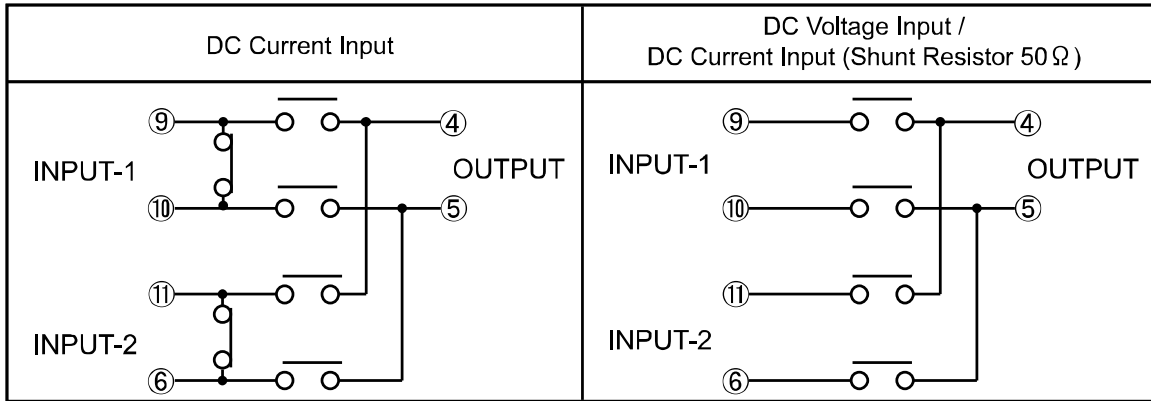
BLOCK DIAGRAM



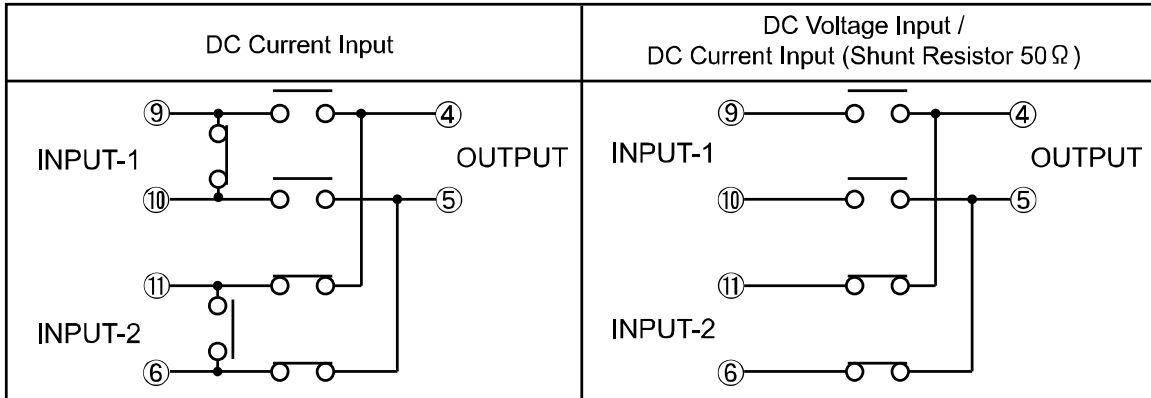
\* For switching configurations, refer to page 3.

**SWITCHING CONFIGURATIONS**

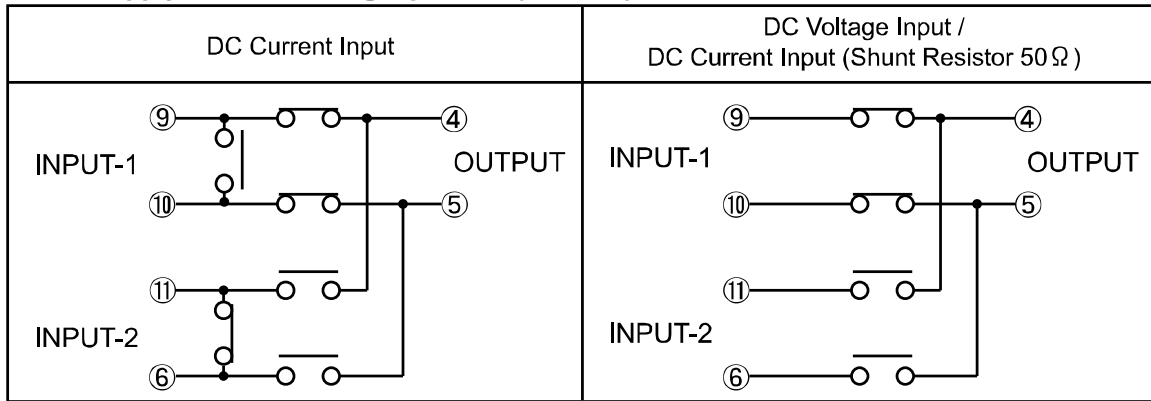
● **Power Supply: OFF**



● **Power Supply: ON; Switching Input: OFF (Open)**



● **Power Supply: ON; Switching Input: ON (Shorted)**



● **Power Supply: ON; Switching Input: Transition (ON to OFF or OFF to ON)**

\* Transition time is included in response time.

