

DESCRIPTION

The MS5385 continuously monitors the insulation resistance of an inactive motor and indicates the insulation status at three levels: GOOD, ALARM, and FAILURE.

ORDERING CODE

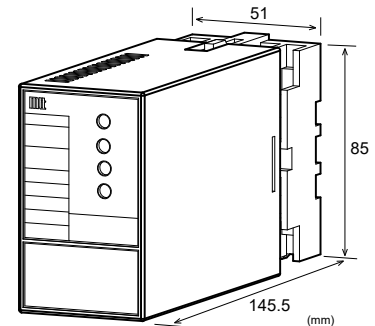
MS5385 - -

Model _____

Power Supply _____
A: 100 to 240V AC (50 to 60Hz)

Operation Detection Signal _____
1: 100/110V AC (50/60Hz)
2: 200/220V AC (50/60Hz)

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.
 (e.g.) MS5385-A-2

SPECIFICATIONS

● **POWER SECTION**

| | |
|---------------------------|--|
| Power Requirement | 100 to 240V AC: 85 to 264V AC (47 to 63Hz) |
| Power Line Fuse | 160mA fuse |
| Power LED | Red Power LED is lit when the power is ON. |
| Maximum Power Consumption | |
| Power | 100-240V AC 5.5VA |

● **OPERATION DETECTION SIGNAL**

| | |
|---------------------|--|
| Rated Input Voltage | 100V/110V AC, 200V/220V AC |
| Tolerance | Rated input voltage $\pm 10\%$ (Frequency: 50/60Hz) |

● **MAINS VOLTAGE**

| | |
|---------------------|-----------------------|
| Rated Input Voltage | 200V/220V AC, 50/60Hz |
|---------------------|-----------------------|

● **OPERATIONS**

| | | | |
|---|---|-------------|--------------------------|
| Insulation Resistance Detection Terminals | Insulation resistance is detected between combined terminals of #1, #2 and #3 and terminal #4. Input of an operation detection signal disconnects the insulation resistance detection circuit. | | |
| Insulation Resistance Detection Points | ALARM | Set point | 1M Ω $\pm 20\%$ |
| | | Reset point | 1.2M Ω $\pm 20\%$ |
| Insulation Resistance Detection Points | FAILURE | Set point | 0.4M Ω $\pm 15\%$ |
| | | Reset point | 0.5M Ω $\pm 15\%$ |
| Output Timer Duration | 60 to 90 seconds (fixed) When insulation resistance falls below each set point and stays there for the timer duration, the relevant relay is activated with the corresponding indication. | | |

| Indications & Contact Output | Insulation Resistance | Indication | Relay Contacts |
|-------------------------------|--|---|---|
| | 1.2MΩ min. | GOOD level; green indicator light | Terminals 5&6 are open. Terminals 6&7 are open. |
| | 1M-0.5MΩ | ALARM level; yellow indicator light | Terminals 5&6 are closed. Terminals 6&7 are open. |
| | 0.4MΩ max. | ALARM level; yellow indicator light FAILURE level; red indicator light | Terminals 5&6 are closed. Terminals 6&7 are closed. |
| Output Relay Contact Capacity | 250V AC 1A, 24V DC 1A (resistive load) | | |

● PERFORMANCE

| | | | |
|-----------------------|---|--|--|
| Dielectric Strength | Input / Power / Output Relay Contact Terminals / Operation Detection Terminals: 1500V AC for 1 minute (Cutoff current: 1mA) | | |
| Insulation Resistance | 100MΩ min. (@ 500V DC) between input, power, output relay contact terminals, and operation detection terminals. | | |
| Storage Temperature | -10 to 60°C | | |

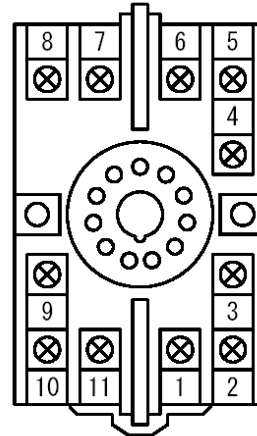
● PHYSICAL

| | | | |
|---------------------|--|--|--|
| Installation | Wall/DIN rail mounting | | |
| Wiring | M3.5 screw terminal connection | | |
| Screwing Torque | 0.78 to 1.18 [Nm] * Recommended | | |
| External Dimensions | W51 × H85 × D145.5 mm | | |
| Weight | Main unit: 250g max. Socket: 80g max. | | |

● MATERIAL

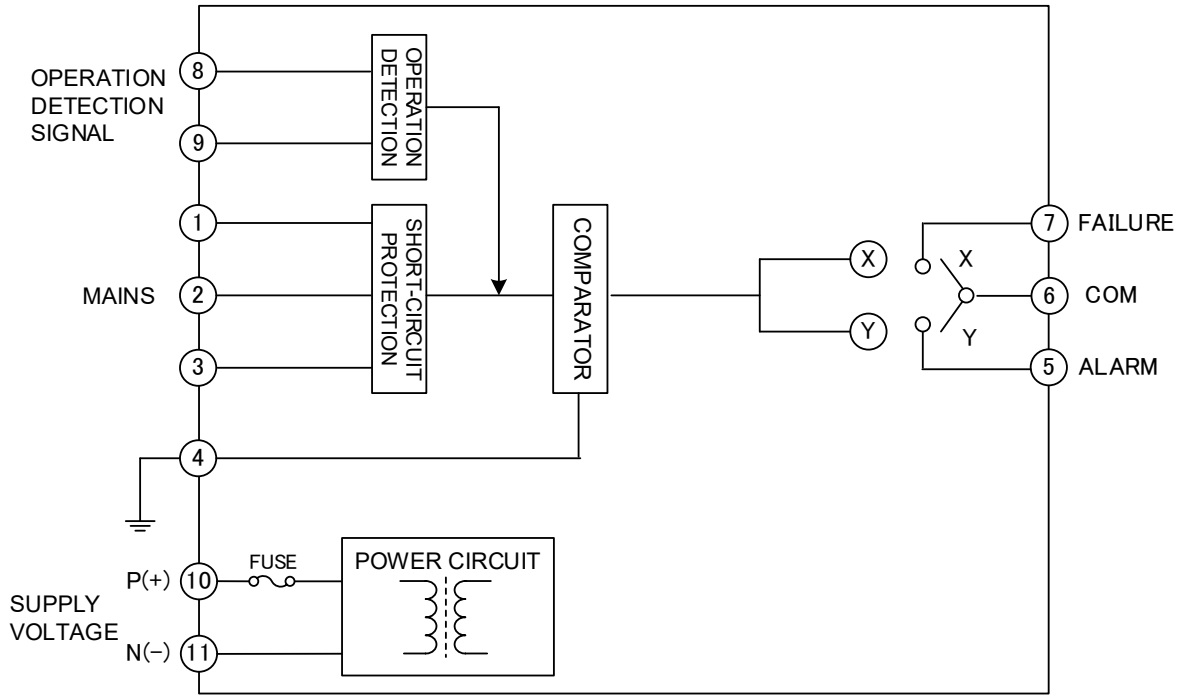
| | |
|-----------------------|---|
| Housing | ABS resin (UL 94V-0) |
| Socket | ABS resin (UL 94V-0) |
| Screw Terminal | Galvanized steel with trivalent chromate finish |
| Printed Circuit Board | Glass fabric, epoxy resin (FR-4: UL 94V-0) |

TERMINAL ASSIGNMENTS



| | | |
|---|-----------|-------|
| ① | U-INPUT | |
| ② | V-INPUT | |
| ③ | W-INPUT | |
| ④ | E-INPUT | |
| ⑤ | ALARM | |
| ⑥ | COM | |
| ⑦ | FAILURE | |
| ⑧ | CONTROL-L | |
| ⑨ | CONTROL-N | |
| ⑩ | P (+) | POWER |
| ⑪ | N (-) | |

BLOCK DIAGRAM



1. When the insulation resistance between combined terminals of #1, #2 and #3 and terminal #4 falls below approx. 1.0MΩ, the ALARM relay will be activated and terminals #5 and #6 will be closed about one minute later.
2. When the resistance further falls below approx. 0.4MΩ, the FAILURE relay will be activated and terminals #7 and #6 will be closed about one minute later.
3. The FAILURE relay will change from ON to OFF when the resistance exceeds approx. 0.5MΩ.
4. The ALARM relay will change from ON to OFF when the resistance exceeds approx. 1.2MΩ.
5. Applying a signal between terminals #8 and #9 will switch off the relays whatever the insulation resistance is.

EXAMPLE OF APPLICATION

