



The MSI is designed to control access to rotating machinery that has a run-down time. The MSI relies on the detection of motion via two sensors. Only when both sensors detect zero movement can the key be released. The MSI has been designed to provide high level of safety when installed as part of an access control system for dangerous machinery.

## OPERATION

The MSI Motion Sensing Interlock is typically used for machine isolation in applications in order to protect the hazardous area from access while power is on.

### MSI Movement Sensing Interlock

- 1** Power is on, key is trapped. Red LED is illuminated.



While the power is on and a motor is running, the key is trapped in the MSI motor sensing interlock. A red LED is illuminated.

- 2** It will only be possible for the key to turn to OFF position once the zero movement ceases from the motor flywheel has been detected from the proximity sensors. A signal is then sent to the unit which energises the solenoid and the green LED illuminates. The key may then be released by pushing the green button.



Turn the key to OFF position to switch the power off. A movement sensor in the MSI unit gives a signal to the solenoid once zero movement has been detected. This will illuminate a green LED. The key can now be released by pushing the green button. This key can be taken to unlock the access lock on the motor unit.

- 3** Key is released, power is off and the motor stands still.



The motor stands still and power is off until the key is replaced in the MSI motor sensing unit.

## USAGE

The MSI movement sensing interlock is designed to be part of a safety system and is used to switch off the power and detect zero motor movements before releasing a key which is then used to gain access to a hazardous area via an access interlock such as the AI.

 The MSI movement sensing interlock is not designed for security purposes.

## INSTALLATION

The MSI movement sensing interlock should be mounted to a surface using suitable fasteners (please refer to drawing on page 4 for more details). The lock face should be sealed to the panel for ingress protection.

Cables should be connected to the switch in accordance with the applicable wiring diagrams. Ensure that the unit is bonded for earth continuity (please refer to drawing on page 5 for more installation details).

 **IMPORTANT:** The interlock should be mounted using anti-tamper fasteners to prevent unauthorised removal.

 The MSI range of movement sensing interlocks must be installed by a competent and qualified person who has read and understood these instructions. Please retain this document in your technical file.

 The manufacturer should be consulted when use in a corrosive environment is planned.

## MAINTENANCE

Periodic visual checks should be carried out by the site manager / safety officer.

Do not lubricate lock barrel with oil or grease, use dry powder graphite if necessary.

In case of defects being detected please contact KIRK Key Interlock. Please see contact section for contact details.

 The interlock must be inspected every 6 months. Safety checks should include ensuring the keys can only be removed in the correct safety operating conditions (see page 1).

## TECHNICAL DATA

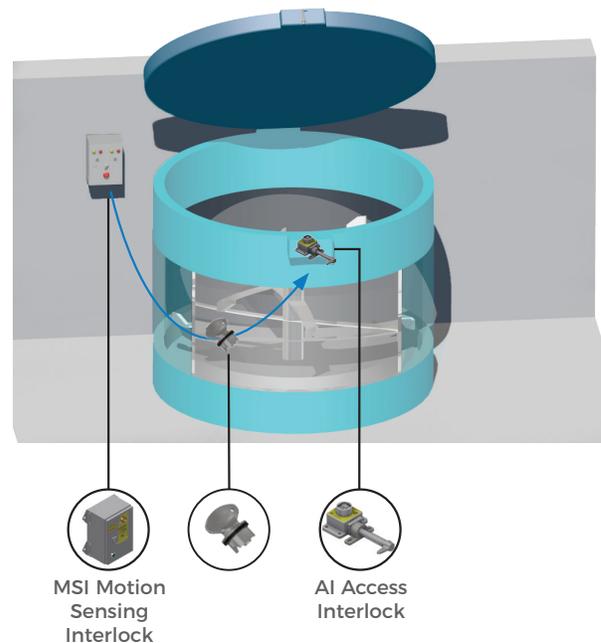
<b>Temperature</b>	Minimum: 23°F
	Maximum: 131°F
<b>Type of mounting</b>	Surface mount using suitable fasteners (please refer to drawing on page 4 for more details)
<b>Attachment</b>	Inches: 9.45”(H) x 5.51”(W)
<b>Weight</b>	11.lbs
<b>Material</b>	Brass or Stainless steel lock portions, powder coated mild steel enclosure
<b>Cable Size</b>	M20 Gland x 2
<b>IP Rating</b>	IP65, NEMA 4 enclosure
<b>Standards</b>	Standstill detection components to UL (US, Canada)
<b>Contact Rating</b>	Continuous, unattended, remote
<b>Use</b>	Motor switch, circuit-breaker or control switch
<b>Voltage</b>	24 VDC and 240 VAC, 120 VAC
<b>Max motor voltage</b>	600 V
<b>Max power consumption</b>	20 VA / 18 W
<b>B10d</b>	2,000,000
<b>PL rating</b>	PLe

## APPLICATION

The MSI safety component is designed to operate as part of an integrated safety system, controlling access to hazardous areas in motor driven, high risk applications. Two sensors are positioned on the rotating shaft of the flywheel that are wired into the MSI unit.

When the electric motor is running, the key of the MSI interlock cannot be removed, hence preventing access to the hazardous area. To gain access to the area, the electrical motor must be switched off by turning the key to OFF position. This changes the switches of the electrical supply to the machine to a safe condition. A movement sensing detector sends a signal to the MSI unit once a zero movement of the motor flywheel has been electrically confirmed. A green LED illuminates. By pushing the green button, the key can now be removed and taken by the operator to the AI access interlock.

The guard may only be opened when the electrical supply has been switched into a safe condition. The machine cannot be restarted until the door is closed and the key is removed and inserted and trapped into the MSI movement sensing interlock.

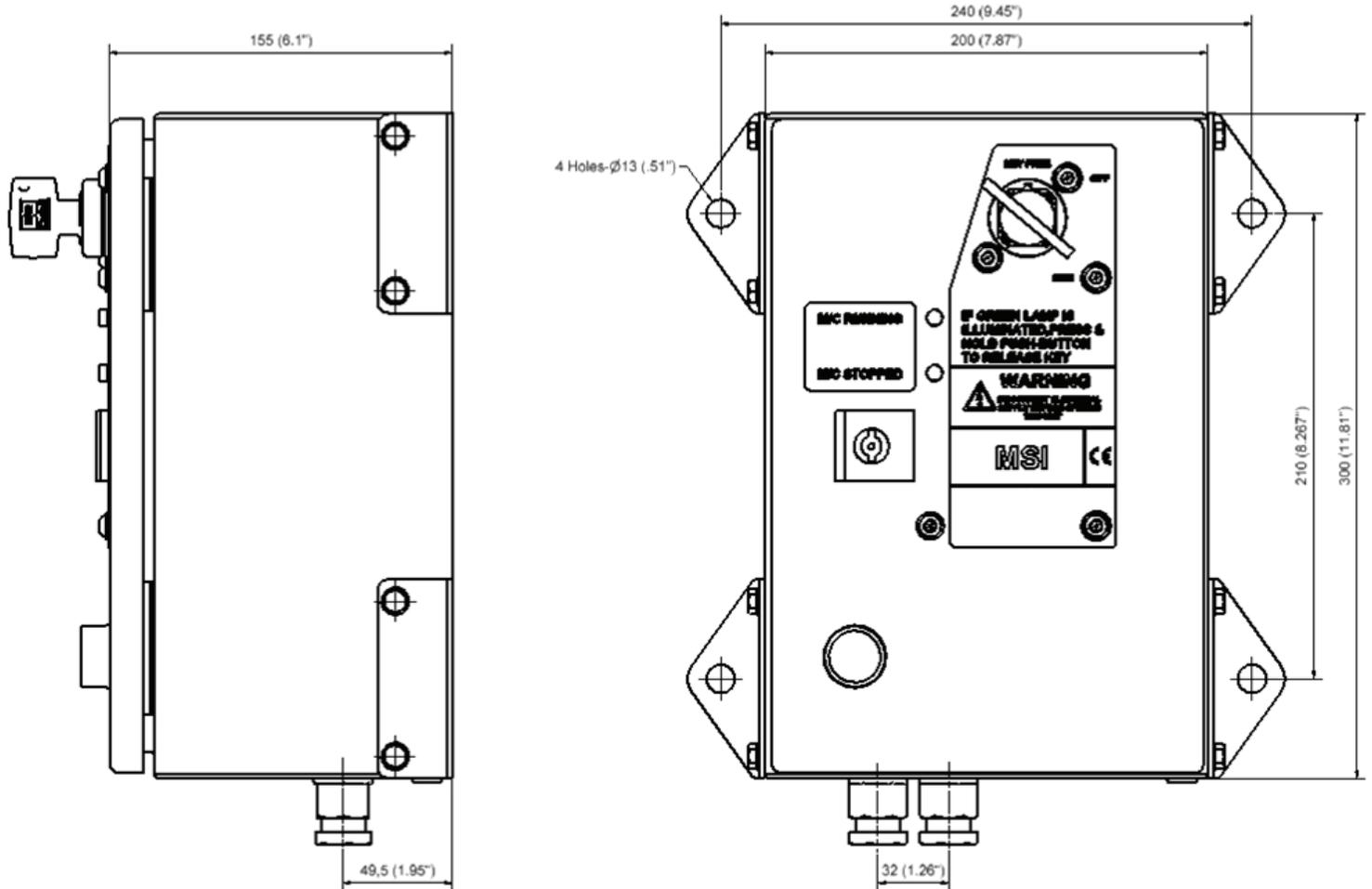


## DRAWING

Dimensions: in inches

*Note: For safe mounting, use security screws*

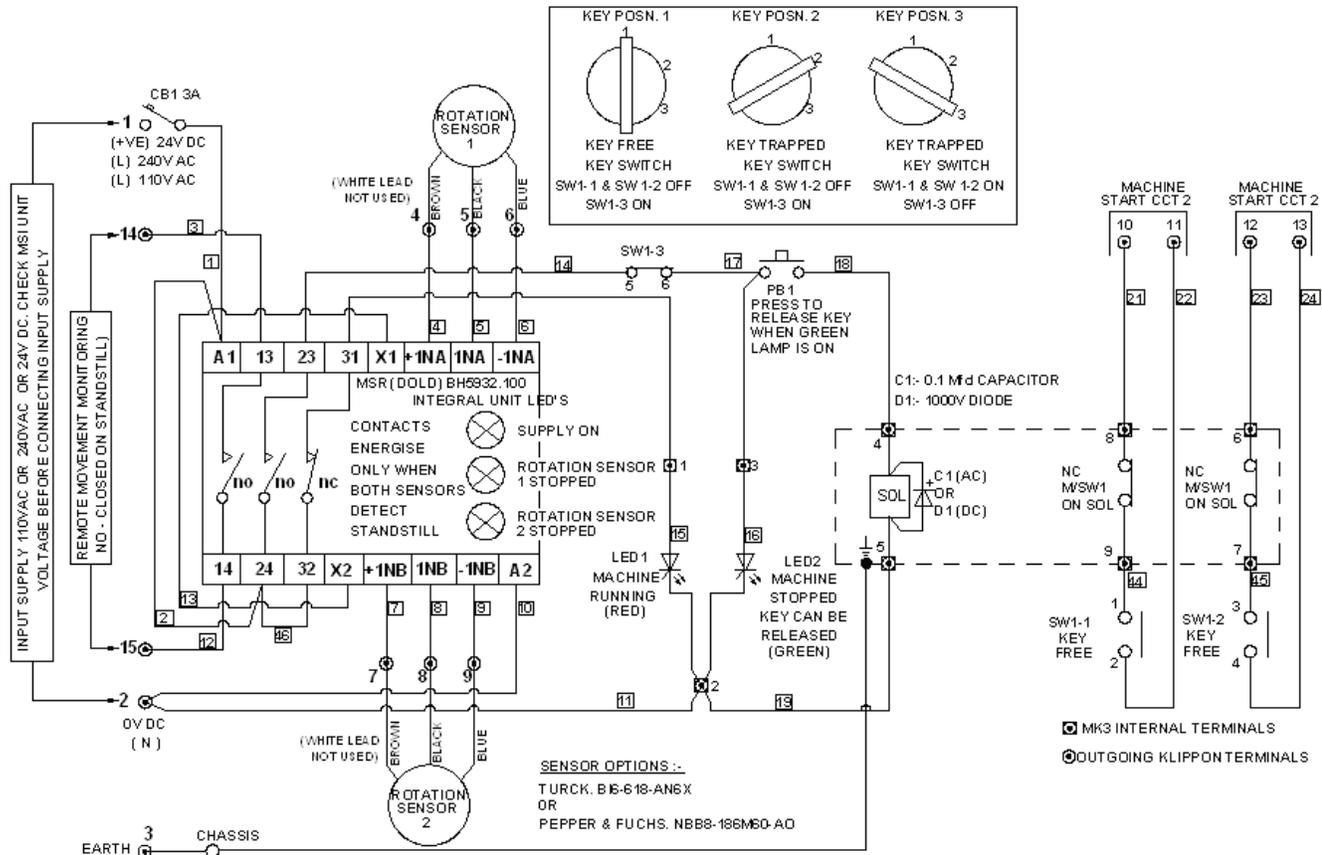
### MSI



## WIRING DIAGRAM

Dimensions: in inches

MSI



- NOTES:**
1. ALL CONTACTS SHOWN DE-ENERGISED.
  2. UNIT OPERATING VOLTAGE OPTIONS:  
110V AC, 240V AC & 24V DC.  
CHECK MSI UNIT VOLTAGE BEFORE  
CONNECTING INPUT SUPPLY VOLTAGE
  3. MSR CONTACTS ENERGISE ONLY WHEN  
BOTH CHANNELS DETECT STANDSTILL.
  4. IN THE EVENT OF ROTATION SENSOR FAILURE  
MSI UNIT FAILS SAFE BUT INPUT SUPPLY  
MUST BE RESET ON SENSOR CHANGE.

## ORDER INFORMATION

1 2 3 4 5 6 7 8

MSI Part number

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<b>1</b>	<b>Lock portion type</b>	<b>FS <sup>(1)</sup> / Q <sup>(1)</sup></b>
<b>2</b>	<b>Material</b>	<b>B = Brass (standard)</b>
<b>3</b>	<b>Mounting</b>	<b>F = Front of board mount, with enclosure (standard)</b>
<b>4</b>	<b>Secondary lock portion(s)</b> Secondary lock portions are provided for personnel keys, primary lock portion for the isolation key	<b>1S / 2S = 1 or 2 secondary lock portions respectively</b>
<b>5</b>	<b>Number of poles Control voltage</b>	<b>3, standard</b>
<b>6</b>	<b>Control voltage</b>	<b>24 / 110 / 240 (standard)</b>
<b>7</b>	<b>AC/DC</b>	<b>AC (use for 110V and 240V) / DC (use for 24V)</b>
<b>8</b>	<b>Lock portion symbol</b>	<b>FS <sup>(1)</sup> up to 3 characters / Q <sup>(1)</sup> up to 6 characters</b>

(1)	<b>FS - Lock type</b> Up to 3 characters	<b>Q - Lock type</b> Up to 6 characters
		

## ACCESSORIES

### Flip Cap



Part number

FLIP-S

## CONTACT INFORMATION

### The Kirk Key Interlock Company LLC

9048 Meridian Circle NW North Canton, OH 44720, USA

Toll Free: +1 800-438-2442 O: +1 234-209-9301 F: +1 330-497-4400

Quotes & Inquiries [sales@kirkkey.com](mailto:sales@kirkkey.com) PO Submission & Orders [orders@kirkkey.com](mailto:orders@kirkkey.com)