Non-Contact Safety Switches
FF5 Series

DESCRIPTION
Honeywell FF5 Series are magnetically actuated, non-contact, pre-wired safety switches for use in machine guarding applications. These switches are designed to monitor the position of the guard and provide inputs to safety relays. The compact rectangular packaged switch and actuator are available with either an ABS plastic or 316 Series stainless steel housing. The small housing permits installation on machinery where there is limited space. A magnetic actuator is supplied with each switch. The non-contact switch design allows for flexible installations where misalignment of the machine guard may occur. Installed with two M4 or #8 screws, the FF5 Series is sealed to IP67 for wet and dusty environmental applications.

With CE and UL certifications, the switches can be installed on machinery for global applications.

VALUE TO CUSTOMERS
• Non-contact sensing minimizes installation and set-up
• Pre-wired cable with color coded individual lead wires simplifies electrical connection
• Actuator can approach switch from head-on, slide-by, or rotation/hinge for flexible installation

FEATURES
• Non-contact design requires no operating force to actuate switch
• ABS plastic housing or 316 Series stainless steel housing for switch and actuator
• Pre-wired cable length of 3 meters or 10 meters
• Compact size of 52 mm x 28 mm x 14 mm [2.0 in x 1.1 in x 0.55 in]
• IP67 environmentally sealed switch and actuator
• CE and UL 508 certifications

DIFFERENTIATION
• Non-contact sensing requires no mechanical linkage to actuate switch
• Two safety contacts when actuated for inputs to safety relay
• Auxiliary contact closes when actuator moves out of the operating range

POTENTIAL APPLICATIONS
Equipment and machinery guards
• Can forming and filling (aluminum, plastic, and steel)
• Packaging equipment
• Pick and place assembly equipment
• Plastic molding equipment
• Printing machinery
• Semiconductor equipment
• Textile machinery
• Woodworking equipment

PORTFOLIO
Honeywell FF5 Series safety switches are part of a comprehensive line of Honeywell electromechanical and non-contact safety switches. For more details on the extensive line of Honeywell safety switches, click here.
# Non-Contact Safety Switch, FF5 Series

## Table 1. Specifications

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Magnetically actuated non-contact safety switch, FF5 Series</td>
</tr>
<tr>
<td>Certifications</td>
<td>cULus/UL 508; File E37138, Industrial control&lt;br&gt;CE; DOC A347&lt;br&gt;Reference standards:&lt;br&gt;EN60947-5-1; Low voltage switchgear and controlgear&lt;br&gt;EN60947-5-3; Low voltage switchgear and controlgear&lt;br&gt;EN61000-6-2; Electromagnetic compatibility, Immunity&lt;br&gt;EN61000-6-4; Electromagnetic compatibility, Emissions&lt;br&gt;EN60204-1; Safety of machinery, General requirements&lt;br&gt;EN62061; Safety of machinery, Functional safety&lt;br&gt;EN ISO 13849-1; Safety of machinery, Safety-related parts of control systems&lt;br&gt;EN ISO 13850; Safety of machinery, Emergency stop function</td>
</tr>
<tr>
<td>Switch and actuator housing material</td>
<td>FF5; ABS plastic&lt;br&gt;FF5-SS; 316 stainless steel</td>
</tr>
<tr>
<td>Termination</td>
<td>Pre-wired six-conductor color-coded cable Ø 4.55 mm [0.18 in], 3 meters or 10 meters length</td>
</tr>
<tr>
<td>Contacts (when actuator present)</td>
<td>2NC/1NO</td>
</tr>
<tr>
<td>Contact design</td>
<td>Magnetically actuated</td>
</tr>
<tr>
<td>Safety contact rating*</td>
<td>300 mA/24 Vdc</td>
</tr>
<tr>
<td>Safety contact sensing distance**</td>
<td>7 mm [0.28 in] ON/17 mm [0.67 in] OFF</td>
</tr>
<tr>
<td>Auxiliary contact rating*</td>
<td>300 mA/24 Vdc</td>
</tr>
<tr>
<td>Auxiliary contact sensing distance**</td>
<td>7 mm [0.28 in] OFF/17 mm [0.67 in] ON</td>
</tr>
<tr>
<td>External fuse (customer supplied)</td>
<td>0.2 A fast acting</td>
</tr>
<tr>
<td>Environmental sealing</td>
<td>IP67 for switch and actuator</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-25 °C to 55 °C [-13 °F to 131 °F]</td>
</tr>
<tr>
<td>Vibration/shock</td>
<td>10 g, 50 Hz to 100 Hz</td>
</tr>
</tbody>
</table>

* Designed for interfacing to safety relays which has low inrush current to the FF5 Series switch contacts.

** Sensing distance is front surface of switch to front surface of actuator. When actuated the targets on the surface of the switch and actuator are designed to align.

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**Figure 1. FF5 Contact Configuration**

- **Red** to **Blue**
- **Black** to **White**
- **Green** to **Yellow**

Note: Contact configuration shown under closed condition for guard device.

**Figure 2. FF5 Wiring**

0.2 Amp

- **Red** to **Blue**
- **Black** to **White**
- **Green** to **Yellow**

Actuator

Switch

Normally Closed

Normally Open
## Non-Contact Safety Switch, FF5 Series

### Figure 3. FF5 Series Sensing Distance

![Sensing Distance Diagram]

- **Normally closed circuit** is the safety contact/switch and is closed when the actuator is sensed by the switch.
- **Normally open circuit** is an optional auxiliary contact which closes when the actuator is no longer sensed.

### Table 2. FF5 Series Order Guide

<table>
<thead>
<tr>
<th>Catalog Listing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF5-21-DC-03</td>
<td>Switch and actuator, ABS plastic housing and actuator, 2NC/1NO, pre-wired with 3 m cable</td>
</tr>
<tr>
<td>FF5-21-DC-03-SS</td>
<td>Switch and actuator, Stainless steel housing and actuator, 2NC/1NO, pre-wired with 3 m cable</td>
</tr>
<tr>
<td>FF5-21-DC-10</td>
<td>Switch and actuator, ABS plastic housing and actuator, 2NC/1NO, pre-wired with 10 m cable</td>
</tr>
<tr>
<td>FF5-21-DC-10-SS</td>
<td>Switch and actuator, Stainless steel housing and actuator, 2NC/1NO, pre-wired with 3 m cable</td>
</tr>
</tbody>
</table>

### Figure 4. FF5 Series Dimensions

![Dimensions Diagram]

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Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell’s standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective.

The foregoing is buyer’s sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer’s sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

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