

# H701



# Hawkeye® 701

## Solid-Core Current Switch, Adjustable Trip Point

### Installer's Specifications

Sensor Power	Induced from monitored conductor
Insulation Class	600VAC RMS (UL), 300VAC RMS (CE)
Frequency Range	50/60 Hz
Temperature Range	-15° to 60°C (5° to 140°F)
Humidity Range	10-90% RH, non-condensing
Hysteresis	10% (typical)
Terminal Block Maximum Wire Size	14 AWG (16 AWG for H308)
Terminal Block Torque (nominal)	4 in-lbs (7 in-lbs for H308)
Agency Approvals	UL 508 open device listing CE: EN61010-1:2001-02, CAT III, deg. 2, basic insulation

Do not use the LED status indicators as evidence of applied voltage.  
For applications requiring double or reinforced insulation, please contact the factory.  
The product design provides for basic insulation only.

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Read, understand and follow the instructions before installing this product.
- Turn off all power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm power is off.  
**DO NOT DEPEND ON THIS PRODUCT FOR VOLTAGE INDICATION**
- Only install this product on insulated conductors.

**Failure to follow these instructions will result in death or serious injury.**

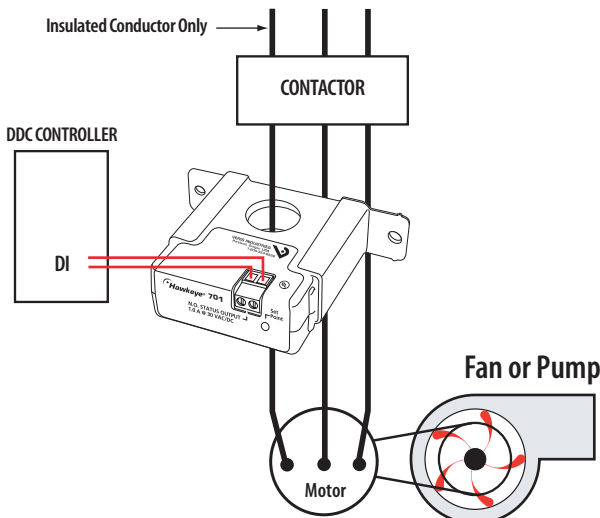
## NOTICE

- This product is not intended for life or safety applications.
- Do not install this product in hazardous or classified locations.
- The installer is responsible for conformance to all applicable codes.
- Mount this product inside a suitable fire and electrical enclosure.

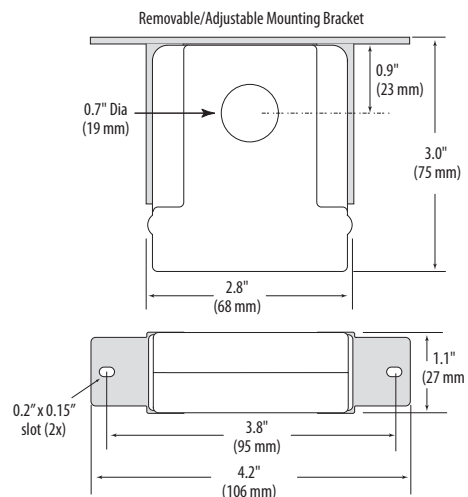
## QUICK INSTALL

- Disconnect and lock out power.
- Install the mounting bracket to the back of the electrical enclosure, no closer than 1/2" (12mm) to an uninsulated conductor.
- Slide the conductor to be monitored through the sensing hole of the current switch. Terminate the conductor. See Notes (page 2) for currents under 1 Amp or above 135 Amps.
- Wire the output connections to the DDC controller or switched load. Note: Contacts are solid state and work like dry contacts. When the switch is closed, less than 1 Ω is present. When the switch is open, more than 1 MΩ are present.
- Reconnect power.
- Calibrate the sensor (see Calibration section).

## WIRING EXAMPLE



## DIMENSIONS



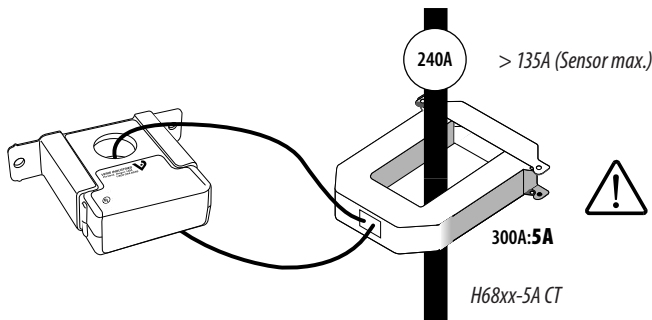
**OPERATION**

The H701 is a current-sensitive switching device that monitors current (amperage) in the conductor passing through it. A change in amperage in the monitored conductor that crosses the switch (setpoint) threshold plus the hysteresis value will cause the resistance of the FET status output to change state, similar to the action of a mechanical switch. In this model, the setpoint is adjustable through the action of a twenty (20) turn potentiometer (see the CALIBRATION section). The status output is suitable for connection to building controllers or other appropriate data acquisition equipment operating at up to 30 volts. The H701 requires no external power supply to generate its output.

**NOTES**

**For load currents greater than sensor maximum rating:**

Use a 5 Amp (H68xx series) Current Transformer (CT) as shown.



**! DANGER: 5A CTs can present hazardous voltages. Install CTs in accordance with manufacturer's instructions. Terminate the CT secondary before applying current.**

**CAUTION**

**RISK OF EQUIPMENT DAMAGE**

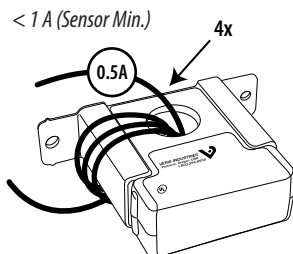
- Derate the product's maximum current for the number of turns through the sensing window using the following formula.  

$$\text{Rated Max. Amps} \div \text{Number of Turns} = \text{Max. monitored Amps}$$
 e.g. :  $100\text{A} \div 4 \text{ Turns} = 25 \text{ Amps max. in monitored conductor}$
- Failure to follow these instructions can result in overheating and permanent equipment damage.

**For load currents less than sensor minimum rating:**

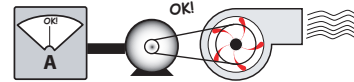
Wrap the monitored conductor through the center hole and around the sensor body to produce multiple turns through the "window." This increases the current measured by the transducer.

Controller must be programmed to account for the extra turns. e.g., if four turns pass through the sensor (as shown) the normal controller reading must be divided by 4.



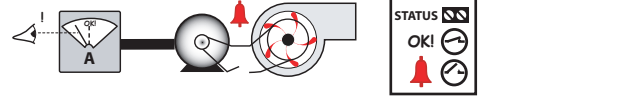
**CALIBRATION**

*Before beginning calibration, establish normal load conditions.*

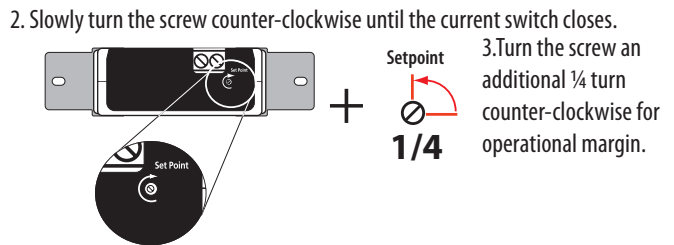


*Then choose either A or B below.*

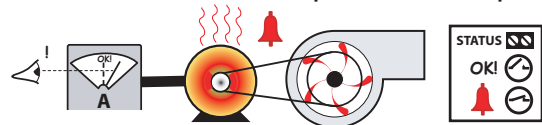
**A. To monitor under-current (belt loss, coupling shear, status)**



1. Use a Volt-Ohm meter to monitor the current switch status. Turn setpoint screw clockwise until current switch opens.

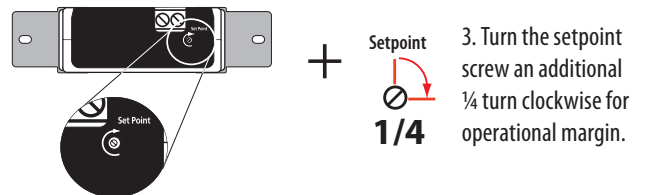


**B. To monitor over-current (mechanical problems, seized impeller)**



1. Use a Volt-Ohm meter to monitor the current switch status. Turn setpoint screw counter-clockwise until current switch closes.

2. Slowly turn the setpoint screw clockwise until the switch opens.



**TROUBLESHOOTING**

Problem	Solution
No Reading at Controller	<ul style="list-style-type: none"> <li>• Check sensor calibration (see above)</li> <li>• Check for control voltage at sensor (&lt;math&gt;&lt; 30\text{V}&lt;/math&gt;)</li> <li>• Check for amperage in monitored conductor (&gt; 1 A)</li> <li>• Assure that sensor core mating surfaces are clean and that the core clamp is completely closed</li> </ul>
Setpoint screw has no stops	The setpoint screw has a slip-clutch at both ends of its travel to avoid damage. Twenty turns CCW will reset the sensor to be most sensitive. Repeat calibration above.