VERIS INDUSTRIES™

Hawkeye™

ECM Series: H6ECM

Split-Core Current Switch, Proof of Rotation (Flow) for ECM Systems

c UL us LISTED RoHS Compliant

⚠ 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.
- Product may use multiple voltage/power sources. Disconnect ALL sources before servicing.
- Use a properly rated voltage sensing device to confirm that power is off. DO NOT DEPEND ON THIS PRODUCT FOR VOLTAGE INDICATION.
- Current transformer secondaries must be shorted or connected to a burden at all times.
- Products rated only for basic insulation must be installed on insulated conductors.
- Replace all doors, covers and protective devices before powering the equipment.

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

A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved. NEC Article 100

No responsibility is assumed by Veris Industries for any consequences arising out of the use of this material.

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.

Product Overview

The H6ECM 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 threshold causes the resistance of the FET status output to change state, similar to the action of a mechanical switch. The status output is suitable for connection to building controllers or other appropriate data acquisition equipment operating at up to 30 volts. The product requires no external power supply to generate its output.

Electrically Commutated Motors (ECMs) are increasingly common as more energy conservation measures are implemented. The ECM is a brushless DC motor that is supplied AC power, converts that power to DC current and uses electronic switching to control the motor rotation. The ECM shaft speed can be reduced to save energy, resulting in lower cost and less component wear. The H6ECM is optimized to provide meaningful proof of rotation which verifies that the ECM motor is operating as expected.

Product Identification

Sensor Type

H6ECM [05]

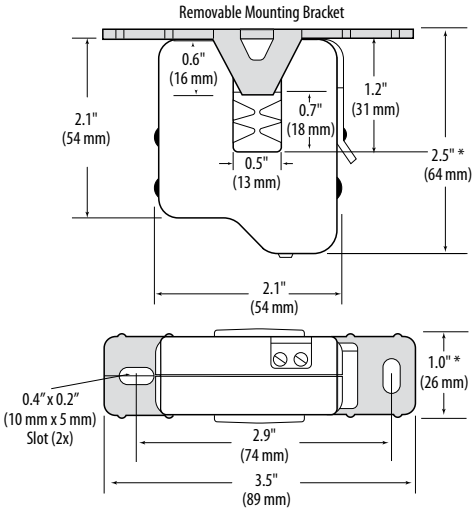
05 = 0.5A threshold (tenths of amps)

Specifications

Sensor Power	Induced from the monitored conductor
Amperage Range	0.5 to 175A continuous
Status Output Ratings	N.O. 1.0A @ 30VAC/DC, not polarity sensitive
Insulation Class	600VAC RMS (UL)
Threshold	0.5A
Frequency Range	60Hz only
Accuracy	±10%
Temperature Range	-15° to 60°C (5° to 140°F)
Humidity Range	10-90% RH non-condensing
Hysteresis	10% typical
Off State Resistance	Open switch represents > 1MΩ
On State Resistance	Closed switch represents < 200mΩ
Terminal Block Max. Wire Size	24 to 14AWG (0.2 to 2.1mm²)
Terminal Block Torque	3.5 to 4.4 in-lbs (0.4 to 0.5N-m)
COMPLIANCE INFORMATION	
Agency Approvals	UL508 open device listing
Installation Category	Cat. III, pollution degree 2

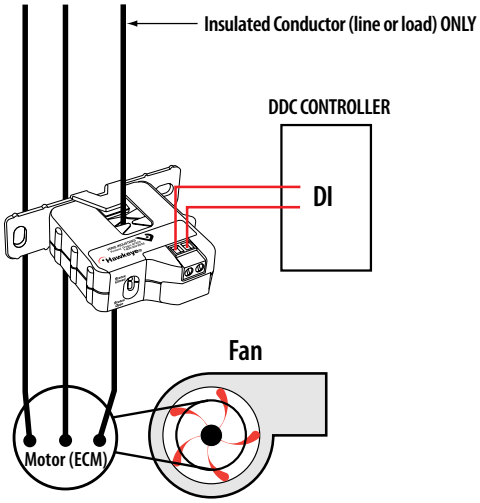
For applications requiring double or reinforced insulation, please contact the factory.
The product design provides basic insulation only.
Do not use the LED indicators as evidence of applied voltage.

Dimensions



Installation

Disconnect and lock out power to the enclosure containing the conductor to be monitored.



1. Locate a mounting surface for the removable mounting bracket that will allow the monitored conductor to pass through the center window when it is installed and that will keep the product at least 1" (13 mm) from any uninsulated conductors. Determine cable routing for the controller connection, allowing the wiring to reach the mounting location.
2. Drill holes to mount the bracket to the chosen surface using the included screws.
3. Wire the output connections from the sensor to the controller (solid-state contact).
4. Snap the sensor over the conductor and clip the assembly to the mounting bracket.
5. Secure the enclosure and reconnect power.
6. Confirm the operation of the sensor with the load running normally.

Operation Check

1. Issue a command to the ECM to rotate at normal operation speed and confirm that the motor shaft is rotating.
2. The status output of the H6ECM series product should be CLOSED (conductivity exists between terminals).
3. Issue a command to the ECM to stop rotation and confirm that the motor shaft is not rotating.
4. The status of the H6ECM series product should be OPEN (no conductivity exists between terminals).

Troubleshooting

Problem	Solution
No reading at controller	• Check operation (see above) • Check for control voltage at sensor (<30V, <1A) • Check for amperage in monitored conductor (> threshold) • Assure that sensor core mating surfaces are clean and that the core clamp is completely closed
Status outputs incorrect	If the status outputs are not seen as described above, the ECM may have "keep alive current" greater than the current sensor threshold. Record the actual AC supply current flow to the ECM when the motor is not rotating (a current measurement device may be needed). This is called the "keep alive current". For most ECM products, this is less than 0.5A. If the current seen is greater than the threshold, contact Veris Customer Support. A higher setpoint current monitoring switch product may be needed.

