

# VFD Switches and Current Sensors



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**Hawkeye™**



U.S. Patent No. 5,705,989

## DESCRIPTION

Hawkeye 904, 934, and 720 microprocessor-based current status switches provide a unique solution for accurately monitoring status of motors controlled by variable frequency drives.

The H904 and H934 store the sensed amperage values for normal operation at various frequency ranges in non-volatile memory. This information allows the device to distinguish between a reduced amp draw due to normal changes in the frequency and an abnormal amp drop due to belt loss or other mechanical failures. The relay on the H934 is isolated from the current switch, and all relay connections are externally accessible on the device.

The H720 analog output corresponds to current in the monitored conductor from 10 to 80 Hz.

## APPLICATIONS

- Monitoring positive status on motors controlled by variable frequency drives
- Replacing pressure switches
- Measuring current and load trending

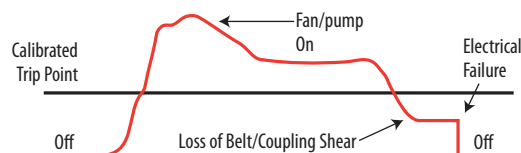
## FEATURES (H720)

- Superior to Hall effect and metal core sensors...frequency tolerant 10-80 Hz
- Accurate to 0.5% of full scale
- Suitable for load side monitoring of VFDs
- Adjustable zero and span for precise scaling
- Adjustable mounting bracket for easy placement

## FEATURES (H904 and H934)

- Microprocessor-based...real labor saver...No need to calibrate to detect belt loss on VFDs
- Self-adjusting trip point...factory programmed to detect belt loss undercurrent conditions
- Provides accurate status for VFD loads...prevents costly long-term failures
- Automatically compensates for the effects of frequency and amperage changes associated with VFDs
- Nuisance Reduction feature...provides a secondary setpoint option of 50% of the originally measured current
- LED indicates normal and alarm conditions...rapid troubleshooting
- Huge labor savings...no need to calibrate in live starter enclosures...install and go
- Available with a relay (H934)...status and control in one package, saving time and space
- Bracket can be installed in three different configurations...added flexibility
- Monitors both frequency and amperage...distinguishes normal drops in amperage due to frequency changes from abnormal drops due to mechanical failure
- Split-core design is ideal for retrofits...no need to remove conductor
- 5-year warranty

## DETECTS BELT LOSS/COUPLING SHEAR!



Now you can easily detect when drive belts slip, break, or pump couplings shear. In fact, a typical HVAC motor that loses its load has a reduction of current draw of up to 50%. That's why our sensors are the industry standard for status.



## SPECIFICATIONS



### Sensor Power

### Insulation Class

### Frequency Range

### Temperature Range

### Humidity Range

### Off Delay

### Terminal Block Maximum Wire Size

### Terminal Block Torque (nominal)

H904/H934: Induced from monitored conductor

H720: 12-30VDC

600VAC RMS

34 to 75 Hz (belt loss indication); 20 to 34 Hz (on/off status)

-15° to 60°C (5° to 140°F)

10-90% RH non-condensing

0 sec to 2 min.

14 AWG

4 in-lbs (0.45 N-m)

UL 508 open device listing

Do not use the LED status indicators as evidence of applied voltage.

800.354.8556

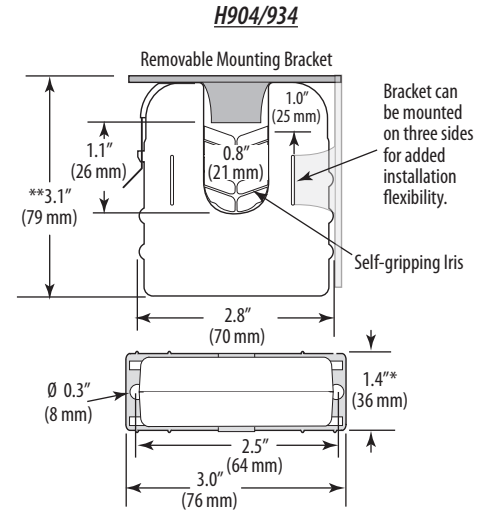
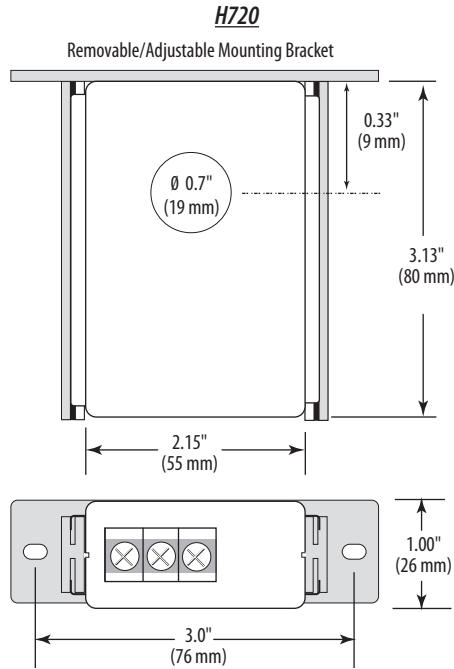
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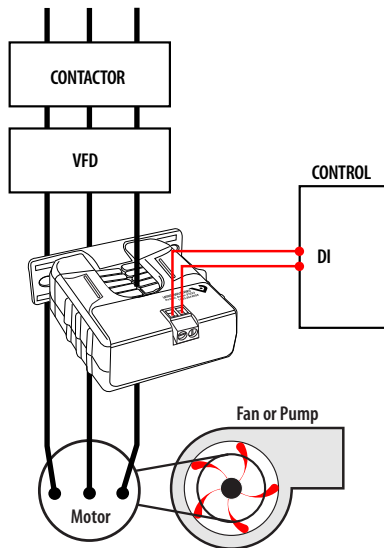
## DIMENSIONAL DRAWINGS



\* Terminal block may extend up to 1/8" over the height dimensions shown.

## APPLICATION/WIRING DIAGRAM (H904)

*Monitoring Fan / Pump Motors for Positive Proof of Flow*



NOTE: The H904 is not intended for use in staged pump or variable inlet vane applications.



## ORDERING INFORMATION

MODEL	AMPERAGE RANGE	STATUS OUTPUT	MIN. TRIP POINT	RELAY TYPE	HOUSING	STATUS LED	RELAY POWER LED	UL
H720	200A, 10-80 Hz	4-20mA	n/a	none	Solid-core			●
H904	3.5 - 135A, 20 - 75 Hz	Max. N.O. 0.1A@30VAC/DC	3.5A or less	none	Split-core	●		●
H934				SPST, N.O.		●	●	●

## ACCESSORIES

DIN Rail Clip Set (AH01, AH27)

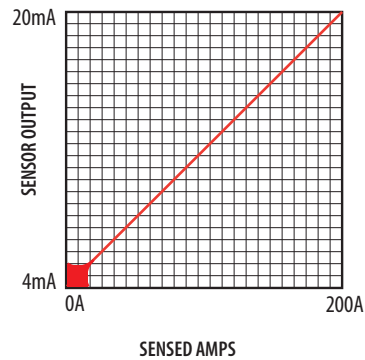
DIN Rail (AV01) and DIN Stop Clip (AV02)



## EXAMPLE LINEAR OUTPUT (H720)

Scale software as shown

Requires 12-30VDC for sensor power



## H934 RELAY CONTACT RATINGS

Resistive.....5A@250VAC, 30VDC

## TYPICAL COIL PERFORMANCE

Voltage	AC	DC
24V.....	10mA	10mA