



# VFD Switches and Current Sensors

## H904, H934 & H720

Also see H614.



### Variable Frequency Drive Monitoring and Control

#### FEATURES (H720)

- Analog output
- 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

#### (H904 and H934)

- Microprocessor-based labor savings with no calibration needed 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 in monitored conductor 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
- 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 at four frequencies: 35, 42, 49, and 50
- Split-core design is ideal for retrofits...no need to remove conductor
- 5-year warranty

#### SPECIFICATIONS

**5 Year**  
Warranty

<b>Sensor Power</b>	H904/H934: Induced from monitored conductor; H720: 12-30VDC
<b>Insulation Class</b>	600VAC RMS
<b>Frequency Range</b> H720 H904/H934	10 to 80 Hz; 20 to 34 Hz for on/off status, 34 to 75 Hz for belt loss indication On/Off status for Variable Frequency Drive (VFD) outputs (a)
<b>Temperature Range</b>	-15° to 60°C (5° to 140°F)
<b>Humidity Range</b>	10-90% RH non-condensing
<b>Off Delay (H904/H934)</b>	0 sec to 2 min.
<b>Accuracy (H720)</b>	0.5% of 200A (combined linearity, hysteresis, and repeatability)
<b>Terminal Block Wire Size</b>	24-14 AWG (0.2 to 2.1 mm <sup>2</sup> )
<b>Terminal Block Torque</b>	3.5 to 4.4 in-lbs (0.4 to 0.5 N-m)
<b>Agency Approvals</b>	UL 508 open device listing CAT III, pollution degree 2, basic insulation

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

(a) VFD systems generate fields that can disrupt electrical devices. Ensure that these fields are minimized and are not affecting the sensor.

#### DESCRIPTION

**Hawkeye 904, 934, and 720** current monitoring devices provide unique solutions for accurately monitoring status of motors controlled by variable frequency drives.

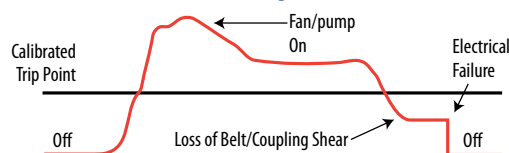
The microprocessor-based H904 & H934 store the sensed amperage values for normal operation at various frequency ranges in non-volatile memory. This information allows the device to distinguish between a reduced amp draw due to normal changes in the frequency and an abnormal amp drop due to belt loss 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

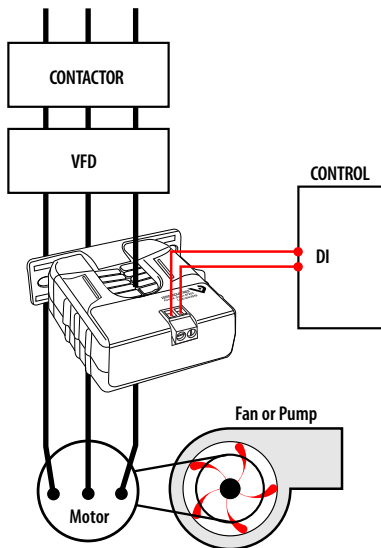
#### DETECTS BELT LOSS/COUPLING SHEAR!



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.

## WIRING DIAGRAM

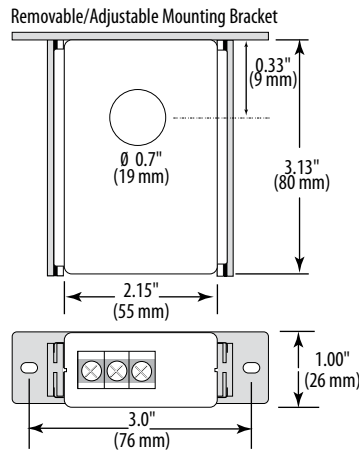
Monitoring Fan /Pump Motors for Positive Proof  
of Flow



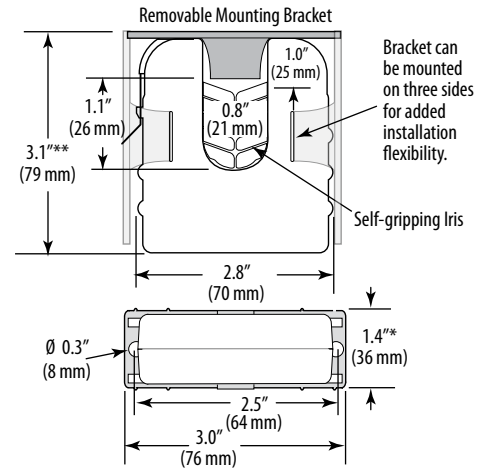
NOTE: The H904 is not intended for use in staged pump or variable inlet vane applications.

## DIMENSIONAL DRAWINGS

H720



H904/934



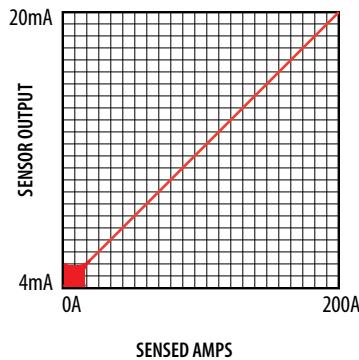
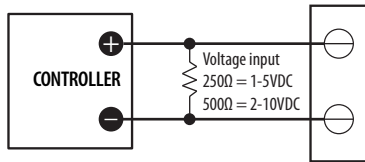
\* Terminal block may extend up to 1/8" over the height dimensions shown.

## Example Linear Output (H720)

Scale software as shown

Requires 12-30VDC for sensor power

## Voltage Output



## H934 RELAY CONTACT RATINGS

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

## TYPICAL COIL PERFORMANCE

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

## ORDERING INFORMATION



MODEL	AMPERAGE RANGE	STATUS OUTPUT	MIN. TRIP POINT	RELAY TYPE	HOUSING	STATUS LED	RELAY POWER LED	UL
H720	Lower limit: 0A Upper limit: 20 to 200A	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.		●	●	●

For auto-calibrating model see H614.

## ACCESSORIES

DIN Rail Clip Set (AH01)

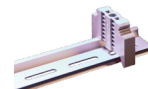
DIN Rail (AV01) and DIN Stop Clip (AV02)



AH01



AV01



AV02