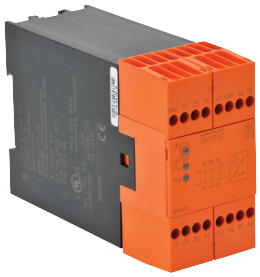
3505 HUTCHINSON ROAD
CUMMING, GA 30040-5860, USA

BH5932 Speed Monitor Supplement

This document is intended to supplement the Operating Instructions insert that ships with the relays.



The BH5932 is designed to monitor two sensor inputs that are detecting rotating targets on a motor shaft. It can be used for Standstill or Overspeed monitoring.

Applications

Use as a Standstill monitor: Set a switch point close to zero speed. The relay will be in a "safe" state when the monitored speed nears zero. If the speed rises above this setting, the relay will open.

Use as an Overspeed monitor: Set a switch point just above the "safe" or normal operating speed. The relay will be in a "safe" state at or below the normal speed. If the speed rises above this setting, the relay will open.

Mounting

The sensors must be activated simultaneously. This can be done by:

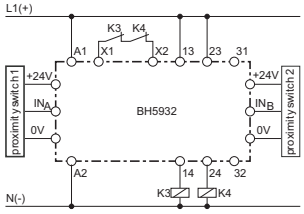
a: Mounting the two sensors next to each other in a parallel axis to rotating center, thus simultaneously detecting the same target.

or

b: Mounting two sensors to detect separate targets, as long as they energize at the same time.

Keep sensing ranges and mounting restrictions in mind. Small tolerances in mounting of the sensors and targets can allow each channel to switch at slightly different times. This dial is used to synchronize the two channels, S1 and S2. Turn the dial until channels S1 and S2 change states simultaneously.

Wiring



Connection with external contactors

Connection Terminals

Terminal designation	Signal designation
A1 (+)	+ / L
A2	- / N
X1, X2	Feedback circuit
+24V	+ supply for proximity sensors 1 e. g. 2
0V	- supply for proximity sensors 1 e. g. 2
INA, INB	measuring output of proximity sensors 1 e. g. 2
13, 14, 23, 24	Positive driven NO contacts for release circuit
31, 32	Positive driven NC contacts for release circuit

Programming

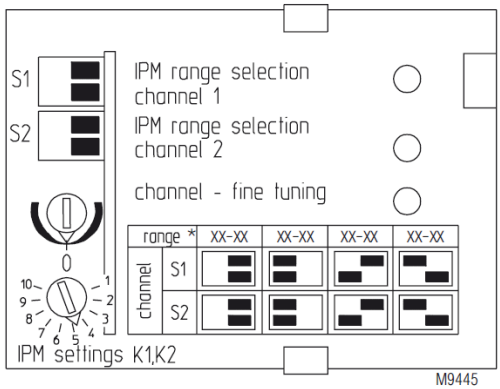
To program the BH5932, you must first do some calculations.

You will need to know the number of targets to be detected and the rotations per minute (RPM) at which the application "safe" speed needs to be set.

Switch Point Calculation

The impulse per minute (IPM) is determined for all applications as follows:

(IPM = RPM @ which to switch off ***x*** number of sensing targets)
Ex. User wants to shut off below 7.5 RPM; there are two targets on the shaft; the sensors are mounted next to each other
15 IPM = 7.5 RPM ***x*** 2



range*: 10-80 / 80-650 / 600-5300 / 2400-20000 Ipm

Once the IPM is calculated, with power off, you can set this value via the DIP switches (S1 and S2) behind the cover. These two channels must be set identically and are course selection ranges. Once set, use the graduated dial (0 to 10) to further adjust the IPM. This 0 to 10 is a general scale within the course range selected.

Example: When set in the first range of 10 to 80, each dial increment is roughly 7 IPM.

It is easier to adjust this more precisely if you can power up and simulate the rotation speed at the set point.

Time delay calculation

There is an inherent delay from when the actual monitored speed matches the set speed to when the relay contact changes states. This is due to several factors including: varying speed, number of targets and IPM setting. However, the maximum delay value can be calculated as follows:

(60s/IPM) + 2.5s = t

Using this calculation, you know the delay will be a value less than "t" in seconds.

Troubleshooting	
Failure	***Cause***
LED "A1/X1, A2/X2" does not light up	Power supply A1/A2 not connected
LED "INA" lights up but "INB" remains off	• Safety relay K1 is welded (replace device) • Standstill only detected on proximity sensor 1 (check Proximity sensor 2 on INB)
LED "INB" lights up but "INA" remains off	• Safety relay K2 is welded (replace device) • Standstill only detected on proximity sensor 2 (check Proximity sensor 1 on INA)
Device cannot be activated	• Safety relay is welded (replace device) • Feedback circuit X1 - X2 not closed • The two proximity sensors did not detect standstill simultaneously (within 2 seconds)

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