



Speed Alarm User Guide 2004 Aug 07

Features

The Speed Alarm activates an alarm condition if the signal from a speed sensor falls below a preset minimum or above a preset maximum value. If the speed is between the minimum and maximum values, the alarm will be automatically de-activated.

Relay 1 changes state in the alarm condition. Relay 1 is filtered and will only change state after the filter time period from when the alarm condition changes.

Relay 2 is activated when a high alarm condition is detected, and de-activated by a low alarm. Relay 2 is not filtered, so will change state immediately the alarm state changes.

When the unit is powered up the unit waits for the "start time" number of seconds before checking the speed. This allows the system as a whole to power up without the alarm sounding.

The four LEDs indicate the speed :

below the minimum preset value : two centre LEDs flashing
between minimum and maximum : no LEDs lit
and above the maximum value : two outer LEDs flashing

Setting up

Viewed with the LEDs closest to you, from left to right the buttons are :

Start Time Range Filter SetSpeed

To change a setting, press and hold the button for three seconds.
To view the setting, press and let go.

Start Time

The start time is the delay from powering the unit up before an alarm will be detected.

To set the start time period, hold the “StartTime” button until a beep is heard, then continue to hold for the required time. The LEDs will flash once per second.

The minimum time is one second, and the maximum 60 seconds.
Press the StartTime button (without holding) to show the start time period. During this time the LEDs will all flash once per second, and the beeper will sound for the preset start time.

Range

The maximum and minimum speeds are calculated as a percentage of the nominal set speed.

Press the Range button – the currently selected range number will be indicated by 1 to 8 beeps and flashes of the Range LED.

Press and hold the Range button to count up to the next range value. If the range value is 8, holding the range button will return the value to 1.

The percentage range allowed for each selection is as follows :

<u>Number of beeps</u>	<u>+/- % of set speed</u>
1	10%
2	20%
3	30%
4	40%
5	50%
6	60%
7	70%
8	80%

Filter Time

The filter time is the time that an alarm condition must persist before the relay is activated, and the time that the alarm condition must have gone before the relay is de-activated. This filters out short duration alarm conditions.

To set the filter time period, hold the “FilterTime” button until a beep is heard, then continue to hold for the required time. The LEDs will flash once per second.

The minimum time is zero seconds, and the maximum 60 seconds.
Press the Filter button (without holding) to show the filter time period. During this time the LEDs will all flash once per second, and the beeper will sound for the preset filter time.

SetSpeed

The set speed is the speed that the system should run at.

With the speed input running at the correct operating speed, press and hold the SetSpeed button. The measured speed will be saved as the set speed.

The setting of the speed is indicated by a two tone beep.

Pressing and letting go of the SetSpeed button has no effect.

The Minimum and Maximum speed values (used to switch on the alarm relay if the speed falls below the Minimum or above the Maximum) are calculated as the Set Speed plus or minus the percentage selected by the range value.

Example : if the speed signal is 1000 Hz when the SetSpeed button is held down, and the three beeps/ashes are heard/seen when the Range button is pressed :

the alarm relay will be activated if the speed falls below $1000 - (30\% \text{ of } 1000) = 700 \text{ Hz}$, or above $1000 + (30\% \text{ of } 1000) = 1300 \text{ Hz}$.

The preset values are retained while the unit is switched off.

Restoring Factory Settings

The factory default settings can be restored by holding down all four buttons when the unit is switched on. A rising series of beeps confirms that the default settings have been restored :

The start time is set to 4 seconds, the range to 10% and the filter time to 3 seconds. The set speed is not changed.

Specification

Power :

- 80 – 250 VAC 6 W, or 10 – 36 VDC
- low-voltage switched mode PSU

Speed input :

- 0 – 2.5kHz, averaged over one second,
- 0 and +5V level single ended input ,
- 2.5V +/- 0.6V trigger levels, 1.2V hysteresis
- +5V 100 mA power supply for sensor.

Relay Output :

- 240 VAC 5 A per contact
- Two pole changeover, dry contact.

Alarm levels :

- Minimum and maximum speed presetable to 0 – 2.5 kHz
- Power-up time delay presetable from 0 to 60 seconds
- Filter time presetable from 0 to 60 seconds
- Configuration stored in non-volatile EEPROM

Electrical Connections

Pin Numbers (viewed from the left)

		1	2	3	4	5	6
Plug J2	AC Input 80 - 250 Vac	L	E	N			
Plug J6	Alarm Relay 1	NC	COM	NO	NC	COM	NO
Plug J7	Not Used						
Plug J4	Sensor Input	0v Blue	SIG IN Green	+V Red	Screen		
Plug J5	Not Used						
Plug J3	DC Input 10 - 40 Vdc	+V	0V				
Plug J1	Not Used						



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