PRODUCT INFORMATION BULLETIN

TAC-SWITCH
Digital Speed Switch
MODEL 220-8000
PA BOTE APPROVAL: 1207-90

DESCRIPTION

BWI Eagle's TAC-SWITCH monitors speed and detects motion in all types of machinery and apparatus. The model 220-8000 can monitor speed ranges of 6 - 3000 RPMs and includes a user-programmable 0-30 second ramp-up timer. The TAC-SWITCH utilizes a non-contacting proximity sensor that may be remotely located up to two miles from the control unit. Enclosed in durable polycarbonate, the control unit conveniently mounts inside an existing electrical panel or O.E.M. control box. The aluminum mounting plate is removable for mounting to DIN rail. The up-front digital display conveniently shows the current RPM in real time. This eliminates setting "guesswork" by constantly showing the actual RPM being monitored. The Tac-Switch is ideal for conveyors, crushers, fans, motors and other rotating apparatus.

INSTALLATION

Disconnect AC power before proceeding with installation

1. Mount the TAC-SWITCH inside an existing control panel or other suitable protective enclosure
2. Make the following connections on the terminal strips:

TERMINAL	CONNECTION
Front	
1	No connection
2	No connection
3	No connection
4	No connection
5	No connection
6	No connection
7	Sensor Input (+)
8	Sensor Input Common (-)
Back	
9	N/C (2)
Note – wire to terminals 10 & 11 if driving a relay	
10	Common (2)
11	N/O (2)
12	N/C (1)
Note – wire to terminals 13 & 14 if driving a PLC input	
13	Common (1)
14	N/O (1)
15	AC Input (N)
16	AC Input (H)

3. Install EAGLE PROXIMITY SENSOR at roller or shaft. See sensor installation sheet.



TRIP POINT SET-UP

Apply power to Tac Switch. If this is the first time powering unit up, the default trip point is 6 RPM or PPM, the built-in ramp-up timer is disabled and the relay is off. (TRIP: 0006 / RAMP: 0S / REL: OFF). Read through the following instructions before starting the set-up procedure.

- Momentarily depress the down arrow button once to highlight "TEST".
- Momentarily depress the down arrow a second time to highlight "TRIP".
- Momentarily depress the SET button to begin setting unit to the trip speed desired, starting with the 4th digit (the 1000s place). When highlighted, use the up/down arrow buttons to change number as needed. When 4th place is set correctly, momentarily depress the SET button to begin setting the 3rd (100s place) digit. Again use the up/down arrow buttons to change the number. When set correctly, momentarily depress the SET button to begin setting the 2nd (10s place) digit. Use up/down arrow buttons as before to change the number, and once set, momentarily depress the SET button to begin setting the 1st and final digit.
- Review your settings for accuracy. If a digit needs to be adjusted, momentarily depress the SET button one or more times to get to the proper digit, then use the up/down arrows to switch number and when satisfied, press **and hold** the SET button – the RPM setting will highlight and then go back to normal. The SET button can then be released. The RPM setting will be maintained in non-volatile memory until changed by the operator.

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RAMP-UP TIMER SET-UP

The default setting for the ramp-up timer is 0 seconds (timer disabled). To set the timer for a 1 to 30 second ramp-up period, follow the procedure below:

- Momentarily depress the down arrow to highlight "RAMP".
- Momentarily depress the SET button to highlight the timer in seconds.
- Use the up/down arrow buttons to increment the timer from 0 seconds up to a max of 30 seconds.
- When satisfied, press **and hold** the SET button – the timer setting will highlight then return to normal.

TESTING PROCEDURE

A test function has been provided to allow the operator to de-energize the internal control relay and stop the monitored equipment. To activate a test shutdown,

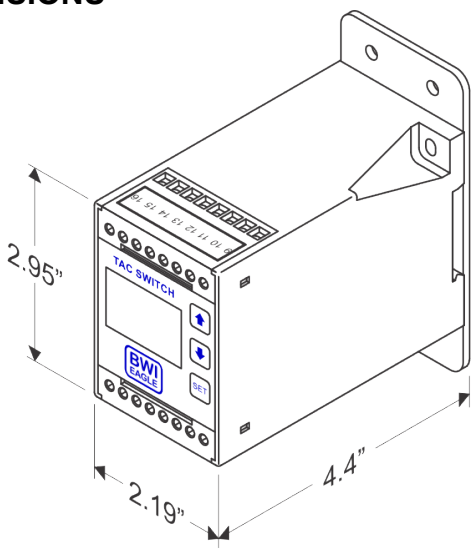
- Momentarily depress the down arrow button once to highlight "TEST".
- Depress and HOLD the SET button for approximately 3 seconds – the control relay will de-energize.
- Release the SET button. There is a safety delay that will keep the control relay off for 10 seconds after it has de-energized. The relay will automatically re-energize after the delay if RPM speed above the programmed trip point is detected.

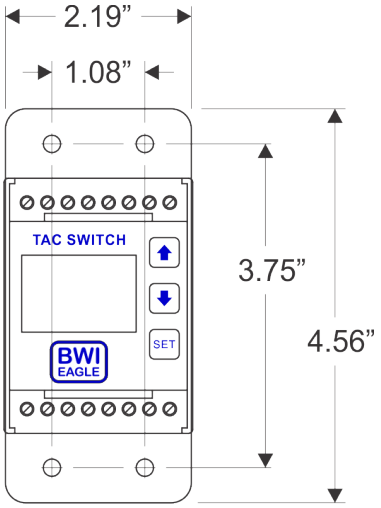
ADJUSTING RAMP-UP TIMER ***AFTER*** TAC SWITCH IS INSTALLED AND WIRED INTO CONTROL CIRCUIT

There may be times when after installation the ramp-up timer is found to be set to too short a period of time. This presents a problem because when the equipment being monitored is shut down, there is also no power going thru the Tac Switch. The following procedure should be performed to allow setting of the ramp-up timer on the next equipment start-up cycle:

- Before starting the monitored equipment, depress **and hold** the SET button until the equipment start-up sequence has been initiated – the display of the Tac Switch will be powered on, "RAMP" will be highlighted and the control relay (REL) will be "ON" (energized).
- Release the SET button then use the up arrow button to increment the ramp-up timer to the desired number of seconds (max of 30).
- Depress and release the SET button to "write" the new ramp-up timer setting in to the Tac Switch. The new setting will be used on the next equipment start-up sequence.

DIMENSIONS





SPECIFICATIONS

AC Input	120VAC 8W
Fuse Protected	1 amp
Speed Range	6 - 3000 RPM
Relay Contacts	DPDT 5 amp @ 120VAC
Safety Delay	1 Second
Response Time	1 Second or Less
Enclosure	Polycarbonate

REPLACEMENT AND OPTIONAL PARTS

Control Module	220-8000
Threaded PVC Proximity Sensor	10-7139
I.S. Threaded PVC Proximity Sensor	10-7039
I.S. Zener Barrier	10-7072

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TYPICAL BELT STARTER
(Ramp-up Timer Disabled (Default))

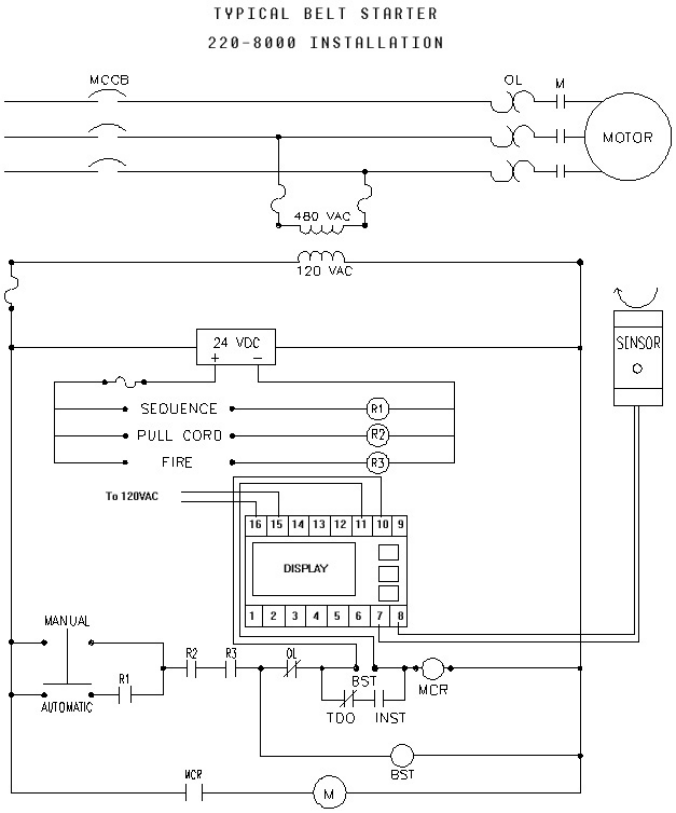


FIGURE 1

TYPICAL BELT STARTER
(Ramp-up Timer Enabled)

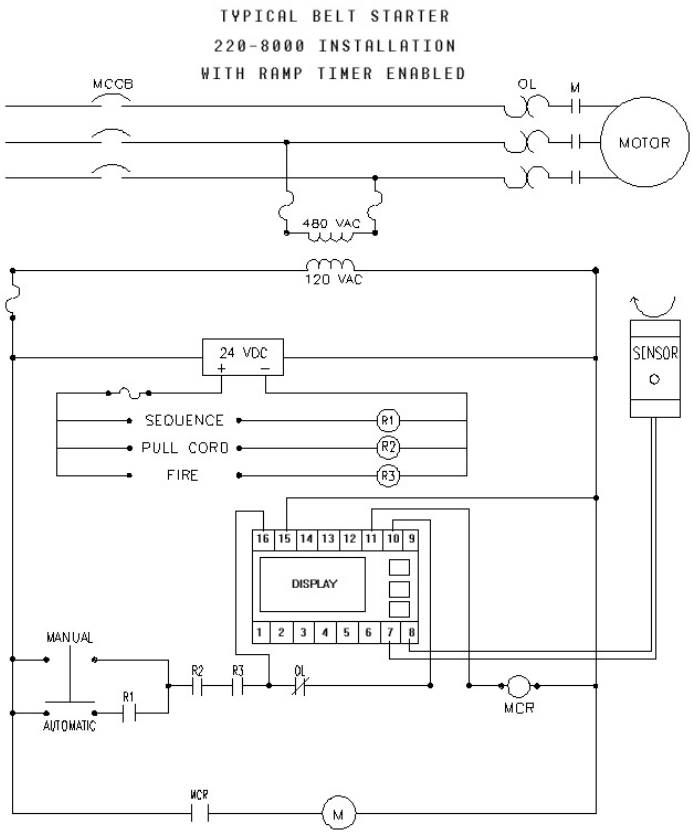


FIGURE 1