

TBU 8 Operations Guide

Fault Detection:

The system can detect a number of different faults. When any fault is detected, the corresponding actions are taken based on the selected mode and armed/disarmed status. Following are some of the faults that can be detected:

- Broken wire or disconnected cable
- Shorted port or cable
- Box tamper
- Remote box fault



TBU8 - Single Port Base
for Multipurpose Cable

LED operation:

There are two LEDs on the front of the box. One is yellow, the other red. Other than when adjusting the alarm timeout (see below), this is what they indicate:

Red	Yellow
On – system is not armed, no faults detected	On – system is armed, fault latched (a fault was detected at some time since system was last disarmed)
Blinking – system is armed, no faults detected	
Off – fault detected	Off – system is disarmed, or no fault has been detected since it was last armed.

Modes of Operation:

The TBU8 has two ‘zones’. One is the box (this will be triggered if the lid of the box is removed), the other is the umbilical cable and remote box (this will be triggered if the cable is cut or shorted, or the remote box indicates a fault).

The TBU8 has a time adjust knob. This will adjust how long an alarm condition is active. Time can be adjusted from 0.5 seconds to 5 minutes, or forever. Factory default is five minutes.

Stand-alone mode. In this mode each zone has a dedicated relay. Each relay will close if the system is armed and any fault is detected in the associated zone. When the first fault is detected, the associated relay will close, the yellow light will come on, and the timer will be started. If additional faults are detected, other relays will close, but the timer will not be restarted. When the timer expires, all relays will open. The yellow light will remain on, but new faults will not be detected. If the system is disarmed, all relays will open, the timer (if active) will immediately time out, and the yellow light will go out. The system can then be re-armed and will detect new faults. In this mode the alarm relay is used for the box tamper zone. This mode is selected by removing both J4 and J6.



Remote-access mode. In this mode the ARM signal and the timer adjustment are ignored. The zone relays indicate current zone status at all times. In this mode the alarm relay is used for the box tamper zone. This mode is selected by removing J6 and installing J4.

Alarm-with-indicator mode. In this mode the alarm relay closes and the yellow light comes on when a fault is detected in any zone and the system is armed. After the timeout period, the alarm relay will open and the yellow light will remain on. Additional faults will not turn the alarm relay back on until the system has been disarmed and re-armed. The loop zone relay will indicate fault status at all times. If any fault is detected, the loop zone relay will be closed, otherwise it will be open. This mode is selected by removing J4 and installing J6. This is the factory default setting.

Setting the Alarm Time:

There is a small blue knob on the circuit board that can be turned by hand or with a screwdriver to adjust the time. Possible settings are:

- Half a second (MIN)
- 1 to 10 seconds in 1-second increments
- 10 to 60 seconds in 5 second increments
- 1 to 5 minutes in 30 second increments
- Forever (MAX)

The knob is more sensitive at the low end, so that each step takes about the same amount of movement of the knob, regardless of how much time that step adds. In other words, to adjust from 1 second to 2 seconds takes about as much movement as to adjust from 4:30 to 5:00 minutes. The 'forever' setting is a little larger than the rest.

Whenever the knob is adjusted, the LEDs will turn off if they are not already off. After about two seconds of inactivity on the knob, the LEDs will blink to indicate the new setting. Note that small adjustments to the knob may trigger the blinking indication without changing the time. If the knob is moved during the blink sequence, the blinking immediately stops, and will start over after two seconds of inactivity. The number of blinks will indicate the time as follows:

Yellow - number of minutes. If the setting is less than 1 minute, yellow will not flash.

Red - 10s of seconds. If the setting is less than 10 seconds, red will not flash.

Both together- seconds. If the setting is 10 seconds or more, both will not flash together.

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