

Disclaimer

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Fire Transmitter Model 345(TS)

Description:

The model 345(TS) fire transmitter is a UL864 and UL1730 listed device designed for connection to a normally open dry contact output. The transmitter can be configured to transmit an alarm or trouble* signal when the input is shorted and can also be configured as a remote reset module which will transmit a reset signal to a compatible CWSI control panel. The transmitter input is selectable for two types of supervised wiring configurations referred to as Style 1 or Style 2 in this manual. The 345(TS) is fully supervised for tamper, low battery, RF signal integrity and wiring faults. The transmitter is powered by a single 3 volt lithium battery as listed under the specifications section of this manual and the label on the product. The Model 345TS contains a tamper switch to monitor opening of the case instead of the tilt switch in the Model 345. The model 345(TS) is intended to be used with CWSI Fire Alarm Control panels. Refer to the control panel manual for compatibility details. ***The trouble input configuration is only available on control panel which support this feature.**

Programming:

The 345(TS) must be enrolled into the control panel before installing the device. **The Model 345(TS) will not report Alarms, Supervisory or trouble signals unless it is enrolled into a compatible CWSI control panel.** The model 345(TS) can be enrolled at the control panel or any enrolled repeater. Place the control panel in enrollment mode then install the battery in the model 345(TS) transmitter observing polarity marked on the battery holder. The model 345(TS) serial number will be displayed on the FACP LCD. Refer to the control panel installation instructions for further details on enrollment and transmitter programming options. After the model 345(TS) is enrolled, remove the battery and reinstall it only at the transmitter's mounting location. Be sure to select the J2 jumper position for Alarm or Trouble operation prior to installing the battery. **Note: Battery life will be shortened if the battery remains installed and the transmitter is not within communication range of an enrolled repeater or control panel.**

Installation:

Select an accessible location that is not prone to tampering or accidental damage. The mounting surface should be relatively flat and capable of accepting screws or anchors. The 345(TS) must be installed in an indoor dry location. Exposure to weather or corrosive conditions may damage the unit. The Model 345 must be mounted vertically so that the arrow printed on the inside product label is pointing up (figure 1). The Model 345TS may be mounted in any position. On this model the arrow on the product label does not have to point up. **Conduct the signal test described in this manual prior to and after permanently mounting the unit.** An 18 gage copper wire pair should be used to connect the 345(TS) to the dry contacts to be monitored. Wire runs must be kept to a maximum of 3 feet, contained within one room and not routed near fluorescent lighting or equipment generating electrical noise such as generators, air conditioners, etc. The wires should enter the 345(TS) through the holes provided near the screw terminal block. Under no circumstances are the wires to be run near or draped over the 345(TS) printed circuit board. Style 1 or Style 2 wiring can be selected with SW2 on the board. Refer to figure 3 for proper wiring connection. When Style 2 wiring is selected, the Model TR-3 EOL resistor



provided must be connected either as recommended by the manufacturer of the device being monitored or directly across the dry contact terminals of the of the monitored device. Multiple sets of contacts on the monitored equipment may be wired in parallel and connected to a single 345(TS). **Caution: only one monitored device may be connected to a single Model 345(TS).** After connecting the wires to the terminal block, install the battery, mount the enclosure back on the wall using the keyholes then push the front portion of the enclosure onto the back until the case snaps closed. Be careful not to bend the transmitter's antenna. After installation or service perform the **Alarm or Trouble Test** as outlined in this manual.

Alarm/Trouble input selection

The 345(TS) can be configured via a jumper on J2 to transmit either an Alarm or Trouble signal when the TB1 input is shorted. Use the shorting jumper to short either the T or A pin to the middle pin of the J2 connector (figure 2). The jumper position must be selected prior to installing the battery. To change the desired operation first remove the battery, change the jumper position then reinstall the battery. The wiring from TB1 is supervised in either Alarm or Trouble configurations. **Note: The trouble input configuration is only compatible with control panels which support this feature. Place the jumper in the A position when used with control panels which do not support he feature.** After installation, be sure to perform the **Alarm or Trouble Test** described in this manual.

For installation as a remote reset the 345(TS) should be mounted adjacent to the 3rd party FACP being used to reset the CWSI control panel. A minimum of 3 inches should be maintained between the 3rd party FACP and the 345(TS) to allow for easy access when servicing the transmitter. Use style 2 wiring as shown in figure 3 and connect the 345(TS) to the N.O. contacts of a listed relay module which activates **momentarily** and **only** when the 3rd party FACP is reset. The wire run must be kept to a maximum of 3 feet. The momentary activation time must be a minimum of 3 and a maximum of 15 seconds. **Conduct the Signal Test prior to and after permanently mounting the unit.** After installation or service perform the **Remote reset Module Test** as outlined in this manual. Note: The remote reset function is only supported on some model control panels. Refer to the control panel manual for compatibility information.

Cautions:

1. Make sure the battery is firmly installed in the battery clip.
2. The unit must be secured tightly to the wall, so as to not be dislodged.
3. Test the unit after any service or battery change or as often as local or national codes dictate.
4. A momentary closure must be used when the 345(TS) is programmed as a remote reset.

Following the codes:

The Model 345(TS) must be installed and maintained in accordance with the National Fire Protection Association's Standards (NFPA), the National Electrical Code and all local fire and electrical requirements. When connecting to other equipment, follow the instructions and recommendations of that manufacturer.

Alarm Operation (J2 in A position):

When the wires of the model 345(TS) are shorted:

1. An initial alarm signal is transmitted.
2. A 60 second delay occurs. The alarm cycle is ended if during this delay the alarm condition is removed.
3. A continued alarm condition causes a repeat alarm transmission.
4. Another 60 second delay as in step 2 occurs.
5. Step 3 repeats at 60 second intervals until reset.

LED: The LED will flash twice when an alarm signal is transmitted.

Specifications:

- Battery Type: 3 Volt Lithium; Duracell DL123A, Panasonic CR123A.
- Battery Life: 12 Months Minimum
- Battery Replacement: Upon Low battery report and/or during annual maintenance.
- Operating Temperature Range: 32°F to +145°F.
- Operating Humidity Range 0 to 85% RH.
- Testing: Follow this manual and NFPA 72 or local requirements.
- Transmission: In compliance with FCC part 15 for reception on equipment manufactured by Tyco Fire & Security GmbH
- Test Transmission: Every 90 seconds.
- Low Battery: 2.70 volts nominal
- Compatibility: Refer to the CWSI control panel manual.
- Size: 4.75 Inches high, 2.55 Inches wide, 1.58 Inches deep.
- Weight 6.4 oz.
- Standby Current: 33.8 ua.
- Alarm Current: 30ma.
- Initiating loop rating: 3 Vdc, 1ma.

FCC Statement

Important: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

345(TS) WIRING DIAGRAM

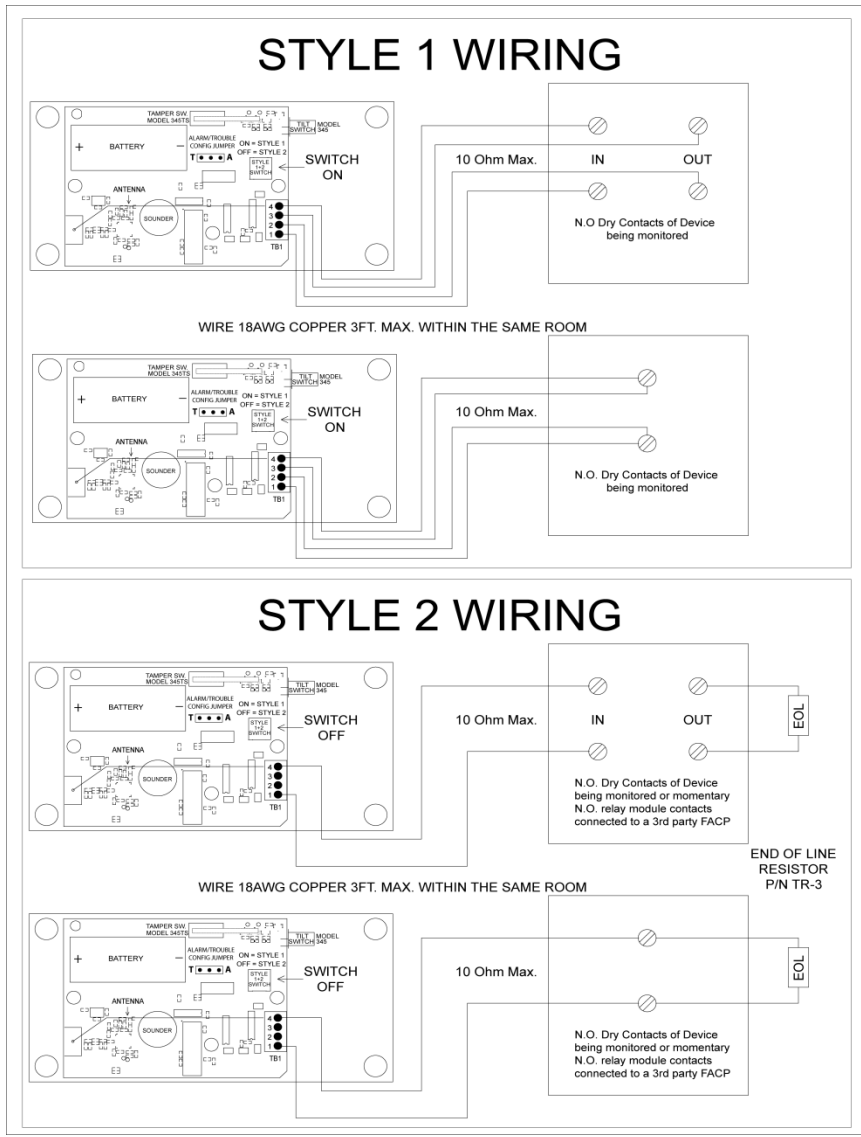


Figure 3

Alarm Test:

Before testing, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Activate the dry contact output being monitored by the Model 345(TS) transmitter or manually short the alarm wires until the led flashes twice. Verify an alarm is received at the control panel.

Trouble Operation (J2 in T position):

When the wires of the model 345(TS) are shorted:

1. A trouble signal is transmitted.
2. A 90 second delay occurs. The trouble cycle is ended if during this delay the trouble condition is removed.
3. A continued trouble condition causes a repeat alarm transmission.
4. Another 90 second delay as in step 2 occurs.
5. Step 3 repeats at 90 second intervals until reset.

LED: The LED will flash twice when a trouble signal is transmitted.

Trouble Test:

Before testing, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Activate the dry contact output being monitored by the Model 345(TS) transmitter or manually short the TB1 wires until the led flashes twice. Verify a trouble is received at the control panel.

Remote reset Module Test:

Before testing, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Initiate a trouble signal on both the CWSI and 3rd party control panels. Let the trouble remain displayed for 90 seconds. Reset the 3rd party panel and the CWSI control panel should also reset. The test should also be conducted with an alarm. Check the wiring or momentary contact activation time if the CWSI control panel resets during the 90 second display period.

Signal Test:

The test must be performed while the transmitter is held in its intended mounting location. Initiate the test by placing a strong magnet along the upper right side of the transmitter case (figure 1). The model 345(TS) piezo sounder will beep once. A delay of up to 15 seconds will occur followed by either one or two beeps. One beep indicates an unacceptable location and two beeps indicate an acceptable location. If only one beep is heard then relocate the model 345(TS) mounting position closer to the nearest repeater or control panel and perform the test again. Continue this procedure until 2 beeps are achieved. **Do not mount the transmitter unless 2 beeps are heard when performing 5 consecutive signal tests.** This test must be performed before and after transmitter installation. Note: A CWSI model AR-3/5 repeater or control panel must be powered up, installed, and enrolled before running this test. Refer to the signal survey section of the control panel manual for more information on performing a signal survey.

Low battery:

The battery voltage is periodically tested under load every 90 seconds. When 10 consecutive low battery readings are detected, a low battery signal will be sent and repeated every 90 seconds for a minimum of seven days. Where more than one type of trouble exists, all will be repeated every 90 seconds. The led will flash once when a low battery is transmitted.

Battery Installation and Replacement:

Warning: Always install a new battery of one of the approved types as listed in the Specifications section of this manual and the product label. When a battery is first inserted, a low battery test is performed. If the battery passes the test, the unit should not send a low battery signal. If the battery does not pass this test, the unit will continue to send

a low battery until a good battery is installed. The transmitter will not power up if the battery is lower than 2.3 volts.

To replace the battery:

1. Place the CWSI control panel in Test mode to prevent any unwanted alarms.
2. Open the transmitter's case by holding and pulling the front of the case away from the mounting surface. The back will remain on the wall. A tamper signal will be transmitted. The battery will now be exposed. Remove the battery retaining clip. Remove the battery and dispose of properly.
3. To insure proper power down sequence, wait a minimum of 20 seconds before installing a new battery.
4. Install a new approved 3 volt lithium battery in the battery compartment and replace the battery clip. Observe the polarity diagram inside the compartment. A power up reset signal should be indicated on the CWSI control panel upon installation of the new battery.
5. Close the transmitter case by pushing the front onto the back. Make sure excess wire does not lie onto the transmitter board. There should be no gaps where the front and back case sections meet.
6. Test the Model 345(TS) as described in **Alarm Testing** section.
7. If the Model 345(TS) does not function for alarm testing as described in item 6 then start over at step 2. If it still doesn't operate correctly then replace the entire unit.
8. Remove the panel from test mode as described in the CWSI FACP manual.

Tamper:

The Model 345 contains an on board tilt sensor which will cause a tamper signal to be transmitted if the 345 case is opened or removed from its mounting position. The Model 345TS contains a tamper switch which will cause a tamper signal to be transmitted if the 345TS case is opened. Upon detection of a tamper, a trouble signal is sent immediately and repeated every 90 seconds until the condition is restored. Where more than one type of trouble exists, all will be repeated within 90 seconds. The led will flash once when a tamper is transmitted. Note: This trouble is self-restoring on control panels supporting this feature.

EOL/Wiring Fault Trouble:

If the wiring from the Model 345(TS) to the monitored device opens preventing the EOL from being detected in Style 2 wiring configuration or if any of the wires in the Style 1 configuration is disconnected, a trouble signal will be sent and repeated every 90 seconds. Where more than one type of trouble exists, all will be repeated within 90 seconds. The led will flash once when an EOL trouble is transmitted.

Power Up Reset Trouble: The model 345(TS) will report this trouble when the battery is installed. This is normal. If a power up reset occurs anytime after the initial indication then the transmitter is malfunctioning. Replace the unit. The led will NOT flash when a power up reset is transmitted.

345 MOUNTING*

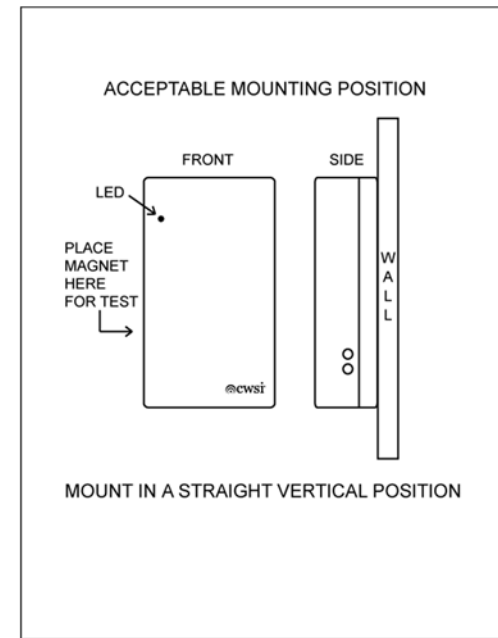


Figure 1

*The model 345TS can be mounted in any position.

ALARM/TROUBLE CONFIGURATION JUMPER

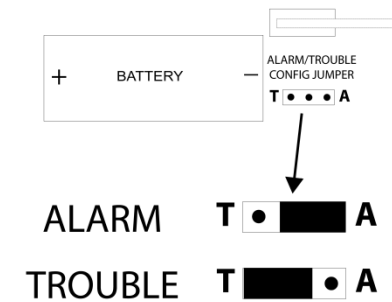


Figure 2