

# TX65X RADIO TRANSMITTER



## 1. OVERVIEW

The FSK TX65X is a synthesised long-range alarm transmitter operating in the VHF (135 to 175MHz) band.

The TX65X radio has an output power of 10W.

There are two antenna connections available, one for use with a folded dipole antenna with connector (for superior transmitter range) and the other for use with a whip antenna with connector.

The TX65X has 6 dedicated hard-wired alarm inputs which can be programmed to trigger on high levels, low levels or on both levels.

One alarm input (zone 3) can be given a delay time from activation to the transmitter generating an alarm message. This is used for elimination of false/accidental alarms or for connection to alarm panels which have siren annunciation.

Each of the 6 alarm inputs has the option of a (jumper selectable) internal pull-up for use with negative trigger alarm panels or sensors.

There is a dedicated AC fail input (with its own rectification diode) to sense the AC supply.

The TX65X has a built-in battery voltage monitor with a programmable low battery reporting delay.

There is a serial port interface which can be used in conjunction with selected alarm panels

The serial port input provides for up to 32 alarm zones and 20 users, as well as a variety of other signals available over the panel's serial interface.

The TX65X can be fitted with a remote control receiver which is used in conjunction with the FSK rolling-code remote controls. The remote control will generate a Panic Alarm. The remote control does not occupy any of the 6 alarm inputs. Up to ten remote controls can be taught into the TX65X.

The TX65X is programmable via a PC using the TX65X programming cable and Dongle

Programmable features include

- The alarm type to be sent per input on high activation and/or low activation of the input.
- Zone activation delay (zone 3 only).
- Automatic test interval (1 to 72 Hours)
- AC fail delay (Off or 1 to 120 minutes)
- AC Restore delay (Off or 1 to 30 minutes)
- Low Battery Delay (Off or 1 to 30 minutes)
- Power-up Signal

## **2. OPERATION**

### **Hard-wired zones**

The TX65X monitors all of its 6 inputs continuously. When an input has changed for more than 100mS (to stop false alarms), the TX65X checks if an alarm is to be sent on that input, for that input state (high or low)

If an alarm is to be sent, it is put into a queue. The number of times the alarm is to be sent depends on the severity of the alarm, e.g. Panic Alarms are sent four times, Burglaries three times and lesser alarms twice.

The TX65X checks the queue continuously and sends the alarms, with a delay between alarms, until all pending alarms have been sent.

The delay between alarms is based on the TX65X account code and is designed for transmitters to 'miss' each-other on the network.

The alarms are prioritized according to the input number, input 1 is the highest priority and input 6 the lowest priority.

Higher priority inputs are sent first,

e.g. If input 3 is triggered followed by input 1

- Input 1 is sent first
- If it has already sent one or more alarms for input 3, the alarm is interrupted

- All attempts from input 1 are sent
- The remaining attempts from input 3 are sent.

Each of the seven hard-wired inputs has a pull-up resistor which is put in-circuit by means of a jumper. When the jumper is installed on that input, the input is pulled to the high condition and must be pulled low by the alarm panel or an external sensor.

Normally, inputs which have the pull-up jumper installed are programmed to send an alarm on the low condition (negative trip).

### **AC Fail**

The TX65X has a dedicated AC fail input (CAC) . The CAC input can be connected to an AC signal (10 to 20V rms) or a DC signal (10 to 20V). Normally, the CAC input is connected to one of the secondary terminals on the transformer used as the alarm panel's power supply.

The AC fail can be programmed to have a delay of anywhere between 1 and 120 minutes. The TX65X can also be programmed not to report an AC fail.

If the AC has failed for the delay period, an AC fail alarm will be transmitted by the TX65X. The AC fail alarm will not be re-transmitted until the AC has been restored and has failed again (AC fail alarm is latched)

If the AC has been restored for the AC restore delay period, an AC restored alarm will be transmitted. The AC restored alarm will not be re-transmitted unless the AC fails again (AC restore alarm is latched).

If the AC fail alarm has been enabled, the TX65X will report the condition of the AC input by means of a an AC fail or AC restore alarm 5 minutes after it has been powered-up. This is done to aid with the installation of the unit.

### **Battery Low**

The TX65X has an on-board battery voltage monitor. The battery voltage monitor has a threshold of 10,5V.

Should the battery voltage fall below the threshold for more than the battery low delay time, the TX65X will transmit a low battery alarm.

Should the battery voltage remain below the low battery threshold, the low battery alarm will be transmitted every hour.

The low battery alarm can be disabled.

## **Power Restored**

The TX65X can be programmed to send a Power Restored alarm after power has been applied to the unit.

## **Automatic Test Message**

The TX65X can be programmed to transmit a periodic test message. The periodic test interval is programmable between 1 and 72 hours.

The actual periodic test interval will be slightly shorter than the programmed interval.

The periodic test interval is suppressed if the TX65X has sent another alarm before the periodic test time has expired.

## **Serial Port Alarms**

Some alarm panels have a suitable serial port connection for the relaying of alarms to the radio.

The TX65X has to be ordered with the correct software version for the transmission of these alarms over the radio network

A serial cable for that alarm panel will be supplied with the TX65X. The serial cable has the following connections:

- Data from Alarm Panel to TX65X
- Data from TX65X to Alarm Panel (not used with all alarm panels)
- Ground (common) connection

The data is sent via TTL (0V and 5V) levels using an asynchronous UART format. The BAUD rate and protocol depend on the alarm panel being used.

### **How Serial Alarms Work**

When the alarm panel has an alarm to send, it transmits it via the serial connection to the TX65X.

Some alarm panels require an acknowledgement signal to be sent back. This signal is generated by the TX65X

Once the alarm has been received by the TX65X, it will be converted into an FSK alarm code ready for transmission over the radio network

Not all serial alarms have a valid over-the-air code and these alarms will be ignored by the TX65X

Valid alarms will be placed in a queue and will be transmitted, in the order in which they were sent by the panel.

The number of attempts sent for each alarm depends on the severity of the alarm. Alarms are sent in the same way as those sent for hard-wired zones.

### **Remote Control Receiver**

The TX65X can be supplied with a remote control receiver built on board. The remote control receiver is used for remote Panic Alarms. The remote control receiver operates in addition to the seven hard-wired inputs, contact ID alarms and serial alarms.

The remote control receiver responds to the FSK rolling-code remote controls. Up to ten remote controls can be programmed into each TX65X fitted with a remote control receiver.

How the remote control receiver works

To program a remote control into the receiver,

- Put the jumper on the 'L'earn plug
- Press the Red button on the remote control twice (until the red lamp on the receiver flashes twice)
- Remove the jumper after all the required remotes have been taught into the remote receiver

To forget all remote controls

Should a remote control get lost or have to be replaced, all of the remote controls can be 'forgotten' from the remote control receiver's memory.

To forget all remote controls

- Put the jumper on the 'F'orget plug.
- The Red lamp flashes five times
- Remove the jumper

The other remote controls will now have to be re-taught to the receiver.

## **FSK TX75X RADIO SPECIFICATIONS**

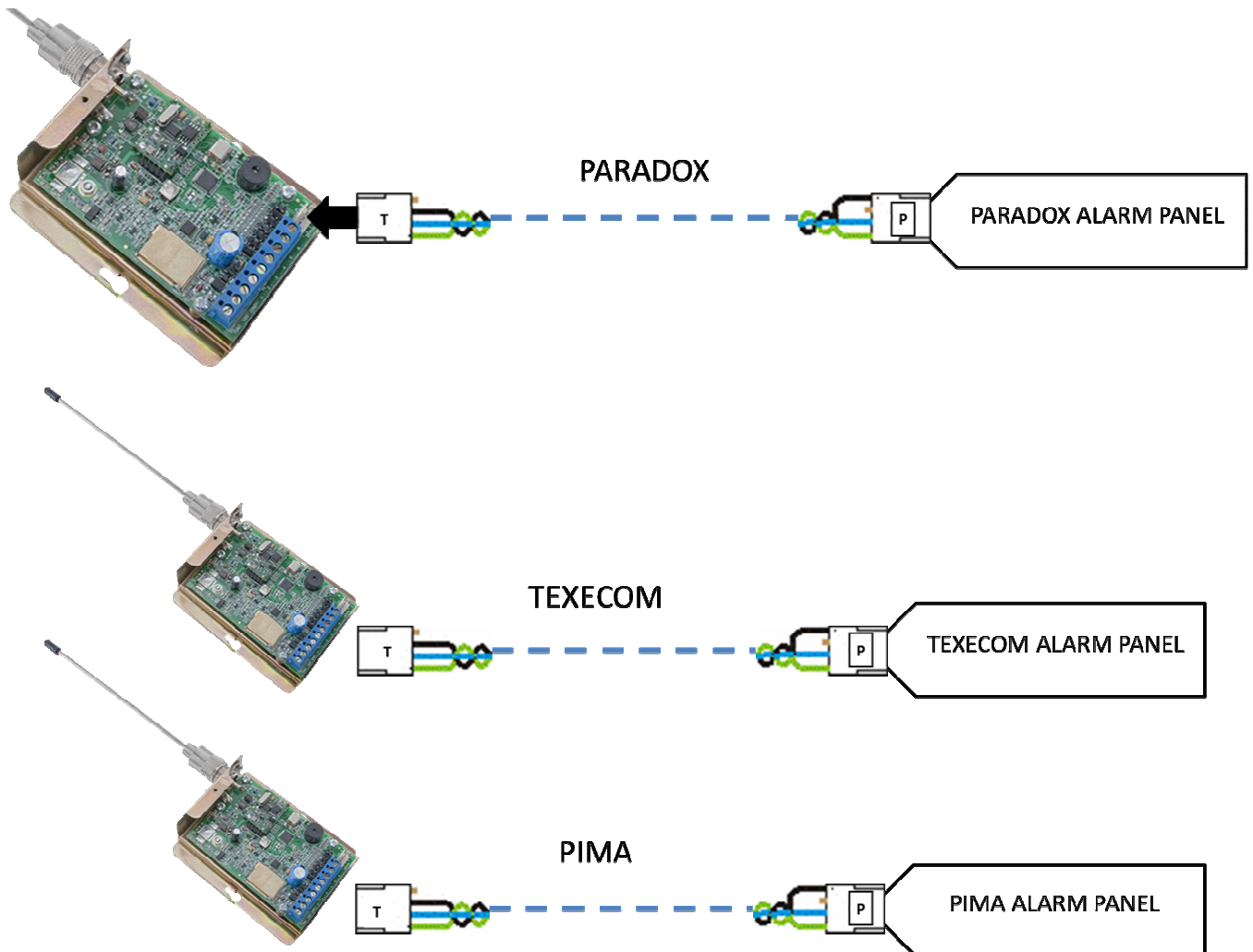
### **Transmitter Radio Specifications**

Radio Performance tested to	:	ETSI 300-086
EMI Tested to	:	ETSI EN 301
Safety to	:	EN 60 950
Mode of Operation	:	FM
Channel Spacing	:	12,5kHz
Power Requirements	:	35mA Standby, < 1.6A Transmitter Active
Frequency of Operation	:	Lowband 135 to 156MHz
	:	Highband 155 to 175MHz
Carrier Power	:	> 8W into 50E (low power version)

### **Alarm Inputs**

Low Trigger Level	:	< 3V
High Trigger Level	:	> 7V
AC Fail (CAC) input sense	:	> 10V rms
Battery Low Threshold	:	10.5V ( $\pm 5\%$ )

**OUR SERIAL RADIO TRANSMITTERS CAN BE CONNECTED TO MOST LEADING CONTROL PANELS**



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**FSK TECHNICAL STANDBY NUMBERS:**

FRANK : 082 657 7852  
RICKUS : 072 595 7700