

## MK 34 TRANSMITTER UNIT TECHNICAL DESCRIPTION

DATED 09 JUNE 1999

### INTRODUCTION

1. The Mk 34 transmitter unit is a programmable remote temperature sensor. The product is designed for use in a domestic/light industry zoned heating application and has a temperature range of 5-30°C. The function of the transmitter is to:

1. Monitor the ambient temperature of the zone it is controlling.
2. Compare it with the programmed requirement.
3. Inform a central control unit if heating is required within the controlled zone.

The product is compatible with all types of gas, oil fired and electrical heating systems. The basic system can control from one to three zones.

2. The trade name allocated to the Mk 34 is TP75 RF
3. The receiver/control unit that is used in conjunction with this product is from an already approved system and as such is not part of this technical description

### APPLICABLE STANDARDS

4. The following European standards are applicable to this product:
  - a. EN 60730-2-9. Automatic electrical controls for household and similar use: Thermostats
  - b. EN 300-220-1. Short range devices technical characteristics and test methods for radio equipment to be used in the 25 to 1000 Mhz frequency range for power levels less than 500mW; Parameters intended for regulatory purposes.
  - c. ETS 300 683. Radio equipment and systems ; Electromagnetic compatibility standards for short range devices operating between 9 kHz and 25GHz,

### PROGRAM OPTIONS

5. The following software options are available for each of the listed transmitter types:
  1. Pre selectable 2/5 or 7 day program.
  2. Six programmable time and temperature events for each programmable period.
  3. Selectable On/Off, Chrono 3 or Chrono six operational running mode options.
  4. Selectable 1,2 or 3 hour extension to current programmed event.
  5. Selectable start up control [OSC].

### INSTALLATION

6. The Mk 34 transmitter units are designed to be wall mounted on a flat service by use of a wall plate.

A plattress or installation box is not required.

### **PHYSICAL CONSTRUCTION**

7. The Product is of class II construction and comprises of three main sub assemblies, which are:

- a. Front assembly moulding. [Material plastic Cyclic S157CS]
- b. Rear assembly moulding. [Material plastic Cyclic S157CS]
- c. PCB assembly [Material F2]

Note. All plastic material used in the product conform to the requirements for heat, fire and tracking detailed in clause 21 of EN 60730-1 1995.

8. The physical dimensions of the unit are as follows:

- a. Length 135mm
- b. Width 88mm
- c. Depth 31 mm
- d. Weight 200g

### **ELECTRONIC CONSTRUCTION**

9. The product is powered by 2 AA batteries, mounted in series, producing 3V dc.

10. The electronic construction consists of the following three sub assemblies:

- a. **THERMOSTAT MODULE.** This is a programmable circuit that, once a minute, samples the room temperature and compares this with a programmed setting. Depending on the results of the temperature comparison the module will send a demand/no demand signal to the encoder module.
- b. **ENCODER MODULE.** This unit has a unique identification code that is installed during the production process. The encoder receives the demand/no demand signal from the thermostat module and combines it with the unique identification number to form a data stream. The unit will transfer the data stream to the transmitter module for transmission when:
  1. There is a change in the demand/no demand information from the thermostat module.
  2. Every 5 minutes if there is no change in the demand/no demand data.
- c. **TRANSMITTER MODULE.** This unit receives the data stream from the encoder and changes it to a FSK signal for transmission to the central control unit. The transmission specifications of the transmitter module are as follows:
  1. Frequency 433.920 MHz
  2. Modulation FM
  3. Measured output 0.25mW
  4. Channel width 25 kHz
  5. Number of channels 1

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