

# **SOCKET & SEE™**

User Manual 01/08



# **FUSE FINDER**

FFCB 100 series

FFCB 200 series

FFCB 1140 series

# 1. Safety Warning

The Socket & See Fuse Finder is designed for use by suitably qualified personnel familiar with electrical supply systems.

Before using your Fuse Finder please read these instructions and safety warnings. Failure to comply with the safety warnings or use of the unit in a manner not specified by Kew Technik may result in serious injury or damage to equipment.

When testing at light fittings or bare wires (only possible with fused test lead set):

If at all possible switch off the power.

Take care not to touch unshielded contacts when using the test lead adaptor.

Connect Red or Brown lead to live and Black or Blue lead to neutral.

Switch the power back on and test.

**USE EXTREME CAUTION.**

Only use in dry conditions (see specification section).

Always prove that the transmitter and receiver are functioning before use (see pre-use check).

## 2. Battery installation

The Fuse Finder receiver is powered by a 9V Alkaline battery (not supplied) type PP3/MN 1604/6F22 or equivalent.

To install a battery remove the screw (take care not to lose it!) and the battery compartment cover on the rear of the receiver enabling access to the battery compartment.

Fit the 9V battery observing correct polarity.

Replace the cover and screw.

The transmitter is mains powered and does not require a battery.

When fitted with a new battery and turned on the RECEIVER ON LED will be solidly lit Green.

When the battery power becomes low the RECEIVER ON LED will flash. The battery will have approximately 20% of its capacity left at this stage and will shortly require replacement. When in use in this almost discharged state all of the signal strength LEDs will also flash rather than being solidly lit as they are with a fresh battery.

### 3. Principles of use

The Socket & See Fuse Finder enables the speedy identification of which breaker or fuse is protecting a circuit. The transmitter uses the mains supply to generate a modified high frequency signal into the live conductor that can be detected by the Fuse Finder receiver. The signal will not adversely affect other equipment but is powerful enough to work over cable runs of several hundred metres.

The scanning head uses a ferrite transducer to detect the signal and when placed on breakers that are connected to the live supply under test will indicate the presence of the signal.

To obtain the best results from your Fuse Finder it is helpful to understand that the signal strength indicator is comparative rather than absolute. This means that each press of the ON/RESET button resets the sensitivity to maximum and the receiver will respond when placed in close proximity to any breaker or cable carrying the signal. During a test the receiver will auto tune its sensitivity to the strongest signal encountered since the reset button was last pushed. It is therefore necessary to ensure that all of the breakers that could be protecting a circuit are scanned at least twice and that you do not stop as soon as a maximum strength signal is indicated.

## **4. Switch functions**

### **Transmitter**

There is no switch for the transmitter. It will automatically start the injection of the test signal upon connection to a mains supply.

### **Receiver**

The membrane switch on the receiver has 3 functions – On/Reset/Off.

Push and immediately release the switch when the receiver is off – this will turn the unit on with a steady beeping and Green RECEIVER ON LED indicating that the scanning function is in progress.

Push and immediately release the switch when the receiver is on – this will reset all scanning function memories to zero, ready to start again, with a steady beeping and RECEIVER ON LED. Always use the reset function away from the distribution board so that no signal is present during reset.

Push and hold switch down for over 1 second – this will turn the receiver off.

Note: To maximize battery life an auto-power off function is incorporated in the receiver which will turn the receiver off after three minutes of inactivity. To resume testing after this period just turn the unit on as described above.

## **5. Pre-use check**

Before each use of your Fuse Finder you should prove that the unit is functioning correctly. To do this switch the receiver on and firstly check that the bottom LED is Green and a steady beeping tone is emitted. If either of these functions is not present replace the battery in the receiver before proceeding.

Connect the transmitter to the mains and move the receiver scanning head over the face label of the transmitter. There will be 'hotspots' on the transmitter label where the frequency of the beeping will become very rapid or change to a continuous tone and all 5 of the signal strength LEDs will light.

If this indication can not be obtained the unit should be withdrawn from service and returned to Kew Technik for examination.

## 6. Fuse finding process

Plug the transmitter into the socket under test and switch the socket on. The red LED on the transmitter should light.

Go to the consumer unit or fuse box. Turn on the receiver. A steady beeping tone will be emitted and the RECEIVER ON LED on the receiver will light Green to indicate automatic scanning mode.

Place the scanning head in contact with the face of the circuit breakers or fuses at a right angle to the direction of the breaker body and run the scanning head steadily along the row(s) of circuit breakers. When the receiver detects a stronger signal the frequency of the beeping will increase to a very rapid or continuous tone, the pitch of the beeper will increase and the signal strength LEDs will light, climbing the bar graph. Ensure that you place the scanning tip on the circuit side rather than the supply side of the breaker switch.

**Important:** Because the scanning technology used is comparative, on the first scan of breakers or fuses on a board the MAX SIGNAL/CORRECT FUSE FOUND LED will often light for several different breakers. This is indicating that the signal detected is the strongest found so far. Do not stop scanning at this point as it may not be the strongest signal there is. It is essential to continue scanning all of the breakers that may protect the outlet under test.

Repeat the scan of the row of breakers without pressing the reset button. With each sweep the receiver will automatically adjust its sensitivity and disregard weaker signals.

Continue scanning until the MAX SIGNAL/CORRECT FUSE FOUND LED is lit only when the scanning head is over one breaker or fuse. This is the breaker protecting the circuit that the transmitter is plugged into.

Turn the circuit in question off and the signal strength LEDs will extinguish leaving only the RECEIVER ON LED lit and slow steady beeping tone.

Confirm the correct breaker has been selected by checking that the red LED on the transmitter is no longer lit.

## 7. Advice for best performance

The scanning head uses a ferrite transducer to detect the signal and, like a portable radio, varying the angle at which the receiver is held in relation to the breaker will affect the strength of the signal received. As the receiver works by comparing the strength of signal received from one breaker with another it is essential to compare like with like. Observe the following for best results.

Do not let the scanning head wander around. To operate well the automatic scanning memory needs a consistent signal so keep it in touch with the breakers as you scan and keep the position of the scanning head a similar distance from the breaker switch .

Keep the black scanning head at the same angle relative to the breakers or fuses for the duration of the test.

Due to the differing designs of circuit breakers it may sometimes be unclear from the above procedure which of two breakers the strongest signal comes from, particularly if the maximum strength signal appears to come from a boundary area between two adjacent breakers. In the event of this occurring one of the following variations should enable clear identification.

- a) Rotate the receiver (without resetting) through 360° to identify the orientation in which the strongest signal is found. Reset and re-scan the row of breakers.
- b) Reset the receiver and test at the opposite (to the common boundary) edge of each breaker. The strongest signal should come from the correct breaker.

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Socket & See Industrial  
Unit 4, Century Road  
High Carr Business Park  
Newcastle, Staffordshire, UK  
Tel: 01782 567096 Fax: 01782 567095