

Optical Fiber Identifier

KI6151

Introduction



Figure 1

The KI6151 is a handheld, rugged and easy to use maintenance and installation instrument that identifies optical fibers by detecting the optical signals transmitted through a single mode fibre. The KI6151 utilizes non destructive macrobend detection, which eliminates the need to identify a fibre by opening it at the splice point. It applies a controlled bend to the fiber without disrupting traffic, damaging or overstressing the fiber. Thus, the probability of interrupting service is eliminated.

The KI6151 features low insertion loss and high sensitivity. During installation, maintenance or restoration it is often necessary to identify a specific fiber. By clamping onto the fiber, the KI6151 can detect and indicate whether there is signal, a test tone such as 270, 1000 and 2000 Hz, and Traffic direction. When the KI6151 detects traffic on a fiber being tested, one of two Traffic LEDs illuminates to indicate the presence and direction of transmission.

The KI6151 features an integrated ambient light reduction shield to decrease the interference of ambient light during use.

The presence of a test tone is indicated by illumination of one of three test tone LEDs and an audible rapid beep tone (Figure 1). The KI6151 also has an easy to use hands-free feature.

There are various types of adapter heads available: foam covered to accommodate 900µm buffered fiber (Figure 2, a), smooth surfaced with foam perimeter for use with ribbon fibre or 250µm coated fiber (Figure 2, b) and 3mm / 2mm, for pigtail and patchcord (Figure 2, c). The KI6151 Optical Fiber Identifier is powered by a 9V alkaline battery.

Operating the KI6151

Operation of the KI6151 is simple, as outlined in the following steps:

1. Choose the correct adapter head for the type of fiber to be tested. The instrument is supplied with four adaptors:
 - (a) 900 µm
 - (b) 250 µm and ribbon
 - (c) 3mm, slotted
2 mm, slotted (not shown).

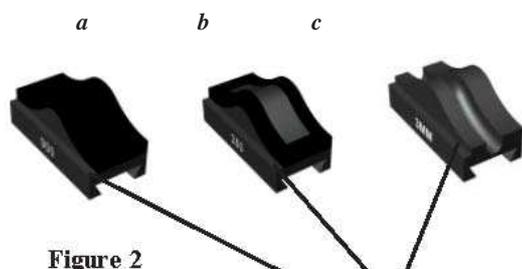


Figure 2

The indexing notch on the adapter heads face to the front of the unit so they can interlock with the built-in ambient light reduction shield

2. Select the appropriate fiber adapter and slide it into the mating slotted channel with slight downward pressure making sure to place the adapter with the indexing notch facing the front of the KI6151.

3. Insert the fiber to be tested between the adapter and the top of the clamp. Slide the thumb switch fully upward and ensure that the fiber is installed properly in the alignment groove so the fiber does not get crimped accidentally.
4. For hands-free operation, slide the thumb lock switch upward and “rock” forward to lock, and the fiber will be held in place “rock” backward to unlock.

Presence of Traffic: Illumination of either Traffic LED indicates the detection and direction of traffic. This is useful in determining whether the fiber is transmitting or receiving at equipment terminal locations. The KI6151 also provides an audible single *beep* tone when traffic is from RIGHT to LEFT, and a audible double beep tone when the Traffic is from LEFT to RIGHT.

Test Tone Detection: Illumination of any one of the test tone LEDs indicates that a test tone is detected which ensures accurate identification of the fiber under test. The unit also provides an audible rapid *beep* tone when one of the test tones is detected. The KI6151 can be used in conjunction with any light source that generates a 270, 1000 or 2000 Hz test tone..

Relative Power Level Display: The relative core power is displayed as dBm value between -58 dBm to +24 dBm. A minus sign LED in front of the display when illuminated indicates a negative value, and when dark indicates a positive value. The unit will operate with relative core powers greater than +24 dBm. Under these conditions the KI6151 displays a “HI” and the Traffic LED indications remain valid. When the relative core power is below the minimum detect level, the KI6151 displays “Lo” and the Traffic LED indications are no longer valid. The signal level is below the range of the instrument.

All brands of fibre identifiers are subject to false traffic identification due to external light ingress. To minimize false traffic detection, avoid using instrument under bright or fluorescent lighting. A stable core power meter reading indicates a positive traffic lock. Gently rock the identifier from side to side in the presence of traffic, the indicated direction should not move on a positive traffic lock.

Self Test: Each time the thumb lock is operated, the KI6151 performs a self test. When this occurs all LEDs will illuminate and then after approximately one-half second turn off and the unit is ready.

Low Battery Indication: When the battery voltage becomes low, “Lb” is displayed after the self test. The unit will continue to operate for some time, but the battery should be replaced with a fresh 9-volt alkaline battery as soon as possible.

Error Codes: The KI6151 has the ability to display error codes when the unit has a technical problem. These error codes begin with the letters **E**, **L** (except for "Lb" and "Lo") and **h**.

Battery Replacement: To replace battery, hold the probe in hand, and with thumb on grip, slide cover downward. Replace battery. To re-install cover, reverse the steps. Gently place cover on probe and align cover keys with probe keyways. Slide cover forward.

Maintenance: It is important that the optical ports remain clean and free of dust, dirt, grease, or other foreign matter. Cleaning with lint-free swabs and isopropyl alcohol is recommended for optimum performance. Remove batteries when instrument is not in use for long periods of time.

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