OMEGA®

A SIGN OF QUALITY PRODUCT

PHYSICS OF FIBER OPTICS TRAINER

OMEGA TYPE FO-008

OMEGA TYPE FO-008 PHYSICS OF FIBER OPTICS TRAINER is designed to learn basic physics of fiber optics including fiber end preparation. Students can also study the construction of transmitter & receiver to form analog & digital link. Ample number of experiments can be performed with this kit by referring to the exhaustive manuals provided with the kit.

OBJECTS:

01 Light traveling around corners in an Optical Fiber
02 Coloured light traveling down an Optical Fiber
03 Photo detector detecting light
04 LED output as a function of a current
05 LED shining light into
06 Transmission of light between two fibers
07 Transmission through a gap between fibers
08 Fiber Optic transmission sensor
09 Fiber Optic reflection sensor
10 Measuring Losses in the fiber
  10.1 Measurement of propagation loss in the Fiber
  10.2 Measurement of connector loss
  10.3 Fiber bending loss
11 Measurement of Numerical Aperture of Optical Fiber
12 Setting up of Fiber Optic Analog Link
13 Setting up of Fiber Optic Digital Link
14 Setting of Fiber Optic Voice Link.
15 Switch Faults Study
  15.1 Effect of switch fault 1 in function generator section
  15.2 Effect of switch fault 2 in audio pre amplifier section
  15.3 Effect of switch fault 3 in signal strength section
  15.4 Effect of switch fault 4 in audio amplifier section

TECHNICAL SPECIFICATIONS

01 Transmitter : 1 No. LED. Peak wavelength of emission 635 nm Red visible.
02 Receiver : 2 Nos. Silicon photo detectors
03 Modulation : Intensity modulation.
04 Driver Circuit : Analog and digital configuration for 635 nm LED.
05 Analog Bandwidth : 35KHz.
06 Digital Bandwidth : 50KHz.
07 On-Board Function Generator :
  Sine Wave & TTL Square Wave
  7.1 Frequency Range:
  1Hz to 10Hz, 10Hz to 100Hz, 100Hz to 1KHz, 1KHz to 10KHz
  7.2 Amplitude :
  0 to 4Vpp. (Except Square)
08 Voice Communication :
  Fiber Optic voice link using dynamic MIC & SPEAKER
09 Signal strength indicator:
  8 LED's provided to measure optical power.
10 Fiber Optic Cable :
  10.1 Type :
  1000 micron Step Index, Multimode Plastic Fiber
  10.2 Fiber Lengths : 1 & 5 Meter.
11 Power Supply :
  GND, +5V, +12V, -12V at 100mA INT.

LIST OF ACCESSORIES: ----------

01 Red Short Links 2mm to 2mm, 25cm Red colour: 10
02 Crocodile Links both side 25cm Red colour : 02
03 Plastic Fiber 1 Meter (with connector) : 01
04 Plastic Fiber 5 Meter (with connector) : 01
05 N.A. Jig & N.A. Scale : 01
06 Mandrel : 01
07 Metallic Connection Sleeves (Splicing unit) : 01
08 Microphone : 01
09 Speaker with box : 01
10 Mirror Glass size 80 x 80 x 3 mm : 01
11 Experimental Manual, Mains lead : 01

OTHER APPARATUS REQUIRED :

01 Cathode Ray Oscilloscope 20MHz
  OMEGA TYPE CRO-20

OMEGA ELECTRONICS

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