

Fibre Optics – Plastic Systems

Polymer Fibre Optic Cable

FIBRE DATA



Single: Dia = 1.0 core, 2.2 overall
Twin: 2 single cable, welded in figure 8 format.

Acrylic optical cable sheathed with special fluorine containing polymer. Being inexpensive it is ideal for the design and development of short distance transmission links and for the demonstration of fibre optic systems.

The cable is matched for visible red light in the region of 400 – 700nm.

The cable has a minimum bend radius of 50mm and may be cut with a hot blade.

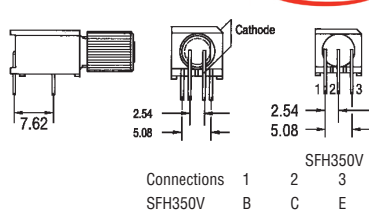
| | | | | |
|-----------------------|-------------------|-----------------|--------|--------|
| Attenuation | 150dB/km @ 600nm. | Mftrs. List No. | Single | EH4001 |
| Operating temperature | -30°C to +80°C | | Twin | EH4002 |
| | | | | OPT520 |

| | Order Code | Price Each | | |
|-------------------|------------|------------|----|-----|
| | | 1+ | 5+ | 10+ |
| 20m Coils | | | | |
| Single | .146-944. | | | |
| Twin | .146-916. | | | |
| 100m Coils | | | | |
| Single | 178-140. | | | |
| Twin | 178-141. | | | |

Emitter and Detector Modules – Plastic 1mm Fibre



H = 9.0, W = 9.2, D = 24.2



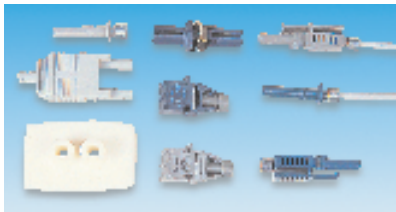
A range of fibre optic emitters and detectors for use in short distance data transmission using 1mm polymer fibre optic cable. The devices are housed in a plastic connector with a mounting screw permanently attached to the thread. This allows easy direct connection to the fibre without stripping the outer sheath. A moulded microlens in each device improves light coupling efficiency to the fibre.

| Emitters | SFH450V | Link Performance of Emitters/Detector Pairs |
|---|------------|---|
| Wavelength | 950nm (IR) | SFH450V + SFH250V 10m @ 200kBit/sec |
| Output launch power into 1mm plastic fibre @ 10mA | 90µW | SFH450V + SFH350V 3m @ 15kBit/sec |
| Switching time tr, tf | 1µs | |

Detectors
SFH250V: PIN photodiode, photocurrent 3µA @ VR = 5V (typ), λ = 950nm.
SFH350V: Phototransistor, photocurrent 0.8mA @ VCE = 5V (typ).

| Mftrs. List No. | Order Code | Price Each | | | | |
|------------------|------------|------------|-----|-----|------|------|
| | | 1+ | 25+ | 50+ | 100+ | 250+ |
| Emitters | | | | | | |
| SFH450V | 212-787. | | | | | |
| Detectors | | | | | | |
| SFH250V | 212-805. | | | | | |
| SFH350V | 212-817. | | | | | |

'Versatile Link' Evaluation Kit



The 'Versatile Link' fibre optic kit contains HFBR1524 transmitter, HFBR2524 receiver, 5 metres of cable connected to HFBR4511 and HFBR4513 connectors, spare connectors, adaptor, polishing kit and literature.

Guaranteed link length 12m @ 5MBd Receiver supply voltage +5V
Transmitter drive current 60mA

| Mftrs List No | Order Code | Price Each |
|---------------|------------|------------|
| HFBR0501 | 327-750. | |

'Versatile Link' Modules — Plastic

1mm fibre



HFBR4501, HFBR4503, HFBR4506

Modules

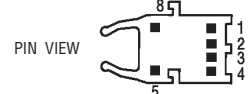
H = 7.7, W = 10.2, D = 19.6.
Pin spacing = 2.5. Row spacing = 7.6.

Body colour coding:
Transmitters Grey, Receivers Blue.

Connectors

Simplex: L = 25.4, O/D (plug) = 3.8.
Simplex latching: L = 33.0, W = 8.9, H = 8.9, O/D (plug) = 3.8
Duplex: L = 38.1, H = 5.8
O/D (plugs) = 3.8, spaced 10.2
Bulkhead feedthrough: L = 30, Mtng hole = 7.9 dia.

CONNECTIONS: Transmitters:
1–Anode, 2–Cathode, 3, 4, 5, 8–N.C.
Receivers: (excl. HFBR2523)
1–Vo, 2–Gnd, 3–Vcc, 4–RL, 5, 8–N.C.
HFBR2523 Receiver:
1–Vo, 2–Gnd, 4–Vcc, 3, 5, 8–N.C.



The 'Versatile Link' fibre optic system represents a package improvement over the 'Snap-in' modules detailed below, and are compatible with 'Snap-in' connectors. The 'Versatile Link' system features smaller package size, and includes latching connectors. The module housings interlock for use with two-way 'duplex' connector.

Link performance is guaranteed over ambient temperature range 0°C to 70°C. The receivers have logic compatible output levels and have high noise immunity.

The connectors are for terminating 1mm plastic optical cable. A suitable crimp tool is available.

Transmitter drive current 60mA Receiver supply voltage +5V

| Guaranteed link length for transmitter/receiver pairs: | |
|--|--|
| HFBR1521/2521 | 12m @ 5MBd |
| HFBR1522/2522 | 24m @ 1MBd |
| HFBR1523/2523 | 8m @ 40kDb (for low current I _{FPK(T,R)} = 6mA) |
| | 60m @ 40kDb (for extended distance I _{FPK(T)} = 60mA) |
| HFBR1524/2524 | 5m @ 1MBd |

The polishing kit consists of a polishing fixture (which can be used to polish fibres in a 'duplex' connector or two 'simplex' connectors simultaneously), 600 grit abrasive paper and 3µm lapping film.

Mftrs. List No. 249-476 = HFBR-4597 (Hewlett Packard), 264-982 = HTX-LWL (Weidmuller Klippon) OPT532

| | Mftrs. List No. | Order Code | Price Each | | |
|-----------------------------|-----------------|------------|------------|-----|------|
| | | | 1+ | 10+ | 100+ |
| Transmitters | | | | | |
| | HFBR1521 | 327-761. | | | |
| | HFBR1522 | 327-773. | | | |
| | HFBR1523 | 233-596. | | | |
| | HFBR1524 | 327-785. | | | |
| Receivers | | | | | |
| | HFBR2521 | 327-797. | | | |
| | HFBR2522 | 327-803. | | | |
| | HFBR2523 | 233-602. | | | |
| | HFBR2524 | 327-815. | | | |
| Connectors | | | | | |
| Simplex (grey) | HFBR4501 | 327-827. | | | |
| Simplex (blue) | HFBR4511 | 327-839. | | | |
| Simplex, latching (grey) | HFBR4503 | 327-840. | | | |
| Simplex, latching (blue) | HFBR4513 | 327-852. | | | |
| Duplex (white) | HFBR4506 | 327-864. | | | |
| Bulkhead feedthrough (grey) | HFBR4505 | 327-876. | | | |
| Bulkhead feedthrough (blue) | HFBR4515 | 327-888. | | | |
| Polishing Kit | HFBR4593 | 327-890. | | | |
| Crimp Tool | HFBR-4597 | 249-476 | | | |
| Crimp Tool | HTX-LWL | 264-982. | | | |

Optimate™ Connectors and Device Housing



146-134 146-140 Device Housing
L = 29.9 L = 25, Fixing centres = 14

146-134 is a DNP connector which provides a low cost optical termination for polymer fibre optic cable for data links up to 20 metres in length. 146-140 is a TO-18 housing for PCB mounting.

Mftrs. List No. 228087-1 = 146-134, 228043-1 = 146-140

| | Order Code | Price Each | | |
|------------------------|------------|------------|-----|------|
| | | 1+ | 25+ | 100+ |
| DNP plug | 146-134. | | | |
| Device housing (TO-18) | 146-140. | | | |