

TEMPO COMMUNICATIONS

FAST. ACCURATE. RELIABLE.

COMMUNICATIONS | CABLE TV | FIBER TESTING

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NEW FIBER PRODUCTS AT TEMPO



WELCOME TO TEMPO COMMUNICATIONS.

With over 20 years of supply to the Fiber Optic industry, Tempo Communications' fiber test products and tools have been tried and trusted by the following industrial segments: Telecoms (BT, Comcast), Avionics (Airbus, Boeing, Lockheed Martin), Petrochemical, Military (US Navy, NATO), Research and Development, Academia.

With a rich fiber heritage dating back to Rifocs and Opto-Electronics, Tempo Communications has grown into a worldwide supplier of fiber products offering a wide portfolio of tools and test equipment for the installation, maintenance and testing of fiber optic cabling systems.

Our Fiber test products and tools are selected and manufactured to Tempo Communications' rigorous design and performance criteria. Products are produced in house at our manufacturing facility in California or sub-contract manufactured by Tempo approved and vetted quality manufacturers. Our fiber test products pass through a Tempo final check before despatch to ensure that the highest quality standard is maintained and delivered to you.

After sales support is provided out of Vista, California and by Tempo Europe Limited at Tempo's Calibration & Repair Service Centre in Cwmbran, South Wales.





PRODUCT RANGE

Our portfolio covers a range of instruments and solutions for:

Installation

Loss Measurement

Fault Finding

The range of fiber Test Instruments provided by Tempo Communications covers easy to operate and economically priced:

Fusion Splicers & Cleavers Light Sources

Optical Time Domain Reflectometers Live Fiber Identifiers
Optical Power Meters Visual Fault Locators

As can be seen from above our focus is on the Physical Layer, Outside Plant products as opposed to service testing. Our philosophy being "A fully tested physical layer is the foundation for a functional service"!

This is why it is important to us to manufacture products that are easy to use and cost effective.

Included alongside these test sets are fiber stripping and preparation tools and a range of accessory items to enable you to outfit technicians performing fiber optic installation and maintenance on multi-mode and single-mode networks.

These products complete the Tempo promise of delivering quality, professional tools and test products.

Tempo provides a one-year manufacturer's warranty on all products. For complete details visit www.tempocom.com/terms-of-use/

OPTICAL FUSION SPLICERS

Tempo Communications fusion splicers utilize two different splicing technologies in our product offering. The FSP200 is a Core Alignment based splicer and the 915FS is an Active Clad splicer.

The FSP200 Core Alignment splicer incorporates six motor technology and is the most capable splicer when splicing legacy or dissimilar fibers. This is because two motors are used to adjust the objective lenses so that the cameras are able to precisely locate the center of the core of the fiber optic cable. This is especially important with older fibers that have geometry variability such as ovality and concentricity of the core with respect to the fiber cladding. The core alignment technology is also more tolerant of contamination and will yield the lowest splice losses in adverse conditions.

The 915FS fusion splicer is an Active Clad fusion splicer and has four motors to align the fibers. No objective lens focusing is provided which is sufficient when splicing two fibers of the similar geometry. Since singlemode fibers produced in the last two decades are of remarkably consistent geometries, even between cable manufacturers, the splice loss is virtually the same as the Core Alignment splicer.

Both the Active Clad and Core Alignment fusion splicers far surpass the performance of the V-Groove technology splicers that employ only two adjustment motors.





FSP200 CORE ALIGNMENT OPTICAL FUSION SPLICER

The Tempo Communications FSP200 Optical Fiber Fusion Splicer is intended to fuse two fiber optic cables, resulting in low splice loss and long-term stable splices. The FSP200 is a Core Alignment splicer that utilizes six precision motor transports.

The FSP200 fusion splicer uses a CDS (Core Detection System), which is also widely known as PAS (Profile Alignment System). The two focus cameras determine the center of the core of the two fibers, then adjusts each in the X, Y, and Z dimensions to automatically and precisely align the two fiber cores. A fusing arc is applied, which then provides the lowest loss fusion splice.

The FSP200 with PAS technology is designed for splicing singlemode and multimode fibers including DSF, NZDS and BIF.

Splices are completed in as little time as seven seconds while providing low splice losses typically of 0.01dB. The high capacity battery is capable of splicing over 200 fusion splices on one battery charge.

The intuitive user interface and IP52 rating insures that the technician able to quickly become proficient splicing



FEATURES

- True Core Alignment for Low Loss Splices
- IP52 provides resistance to dust and water ingress
- Small and lightweight for the most demanding jobs
- Loose tube fiber compatible
- Auto-Calculation of Estimated Splice Loss
- Adapters for 200/250, 900µm and 3mm fiber

FIBER CATALOG

SPECIFICATIONS:

| Applicable Fibers | SM (G.652); MM (G.651); DS (G.653); NZDS (G.655); BIF (G.657); EDF |
|---|--|
| Fiber Cleaved Length | 10mm |
| Cladding Diameter | 80 to 150 µm |
| Coating Diameter | 100 to 1000 µm |
| Fiber Count: | Single |
| Fiber Aligning Method | Core Alignment |
| Splice Loss (Typical) | 0.02 dB (SM); 0.01 dB (MM); 0.04 dB (DS); 0.04 dB (NZDS & BIF) |
| Splicing Mode | 60 Preset / User Definable Modes |
| Splice Time (Typical) | 7 seconds (1) |
| Boot Time | 5 seconds |
| Number of Splices Per Battery Charge | 200 (including 60mm heat shrink cycle) (2) |
| Splice -On-Connector | SC, LC, FC, ST |
| Arc Calibration Mode | Automatic and Manual |
| Protection Sleeve Length | 60mm, 40mm, Micro Sleeves |
| Ingress Protection(3) | IP5X (Dust); IPX2 (Water) |
| Storage of Splice Results | 5,000 Results, 100 screenshots |
| Drop Test | 76cm on five axis |

| Tension Test | 2N |
|--------------------------------|--|
| Fiber Display Magnification | 200X |
| Tube Heating Mode | 20 Preset / User Definable Modes Adjustable 0-240 seconds |
| Tube Heating Time (Typical) | 18 seconds (4) |
| Attenuator Mode | 0.1 to 15 dB |
| Electrode Life | 5,000 Splices |
| Display: | 3.5" Color, Turn-Over LCD |
| Connectivity | USB |
| Operating Conditions | Pressure: 0 to 16,404 feet (0 to 5,000 meters) above Sea Level Wind Velocity up to 15m/s Humidity: 0 to 95% Temperature: -4 to +131F (-20 to +55C) |
| Storage Conditions | Temperature: -40 to +158F (-40 to +70C) |
| Power Supply | 100 to 240V AC Adapter; Li-ion Battery (4400 mAh) |
| Weight | 3.74lbs (1.7kg) with battery |
| Dimensions (HxWxD) | 4.9" x 4.9" x 5.3" (125 x 125 x 135mm) |
| Vibration Resistance | 10Hz – 500Hz with a spectral density of 0.03g2/Hz |
| Password Protection | Yes |

(1) Fast mode. (2) 90s/cycle splice time and power save functions activated. Number of cycles may vary depending on battery status and ambient operating conditions. (3) Dust resistance and rain resistance test do not guarantee that the product will not be damaged under these conditions. (4) Dependent on splice protector used and ambient conditions. Time quoted is with power mode enabled and assuming that the oven is not cold.

ORDERING INFORMATION:

*Specifications subject to change without notice.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-------------|--|
| 55500052 | FSP200 | Optical Fusion Splicer |
| 55500053 | FSP200-KIT1 | FSP200 Fusion Splicer & Cleaver Kit |
| 55500054 | FSP200-KIT2 | Contractor Fusion Splicer Kit |
| 52063415 | 06811 | 915FS FSP200 Batt |
| 52080896 | 07096 | Power Supply, 915FS FSP200 |
| 52064141 | 01335 | Splice-On-Connector Adapter (SC & LC) |
| 52066481 | 02401 | Splice-On-Connector Adapter (ST & FC) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52063414 | 01329 | Replacement Electrodes |
| 52064143 | 01332 | 200/250µm Adapter (Pair) |
| 52064142 | 01333 | 900µm Adapter (Pair) |
| 52076996 | 05801 | Loose Tube Adapter (Pair) |
| 52081862 | 07388 | Universal Adapter (Pair) |
| 52067851 | 03245 | 3mm Adapter (Pair) |
| 55500059 | NA LC | North American Line cord |
| 52066954 | 02571 | European Line Cord |
| 52066952 | 02570 | UK Line Cord |
| 52066930 | 02568 | 12 V DC Car Adapter |



915FS ACTIVE CLADDING OPTICAL FUSION SPLICER

The Tempo Communications 915FS Optical Fiber Fusion Splicer is intended to fuse two fiber optic cables, resulting in low splice loss and long-term stable splices. The 915FS is an Active Clad fusion splicer the utilizes four precision motor transports.

The 915FS fusion splicer capably aligns the two fibers in the X, Y, and Z dimensions to automatically and precisely align the two fibers. A fusing arc is applied, which then provides the lowest loss fusion splice.

The 915FS is designed for splicing singlemode and multimode fibers including DSF, NZDS and BIF.

Splices are completed in as little time as seven seconds while providing low splice losses typically of 0.01dB. The high capacity battery is capable of splicing over 200 fusion splices on one battery charge.

The intuitive user interface and IP52 rating insures that the technician able to quickly







FEATURES

- Active clad technology for todays fibers
- IP52 provides resistance to dust and water ingress
- Small and lightweight for the most demanding jobs
- Loose tube fiber compatible
- Auto-Calculation of Estimated Splice Loss
- Adapters for 200/250, 900 µm and 3mm fiber

FIBER CATALOG

SPECIFICATIONS:

| Applicable Fibers | SM (G.652); MM (G.651); DS (G.653); NZDS (G.655); BIF (G.657); EDF |
|---|---|
| Fiber Cleaved Length | 10mm |
| Cladding Diameter | 80 to 150µm |
| Coating Diameter | 100 to 1000µm |
| Fiber Count | Single |
| Fiber Aligning Method | Active Clad Alignment |
| Splice Loss (Typical) | 0.02 dB (SM); 0.01 dB (MM); 0.04 dB (DS); 0.04 dB (NZDS & BIF) |
| Splicing Mode | 60 Preset / User Definable Modes |
| Splice Time (Typical) | 7 seconds (1) |
| Boot Time | 5 seconds |
| Number of Splices Per Battery Charge | 200 (including 60mm heat shrink cycle) (2) |
| Splice-On-Connector | SC, LC, FC, ST |
| Arc Calibration Mode | Automatic and Manual |
| Protection Sleeve Length | 60mm, 40mm, Micro Sleeves |
| Ingress Protection | IP5X (Dust); IPX2 (Water) (3) |
| Storage Of Splice Results | 5,000 Results, 100 screenshots |
| Drop Test | 76cm on five axis |

| Vibration Resistance | 10Hz to 500Hz with a spectral density of 0.03g2/Hz |
|-----------------------------|--|
| Tension Test | 2N |
| Fiber Display Magnification | 200X |
| Tube Heating Mode | 20 Preset / User Definable Modes Adjustable 0-240 seconds |
| Tube Heating Time (Typical) | 18 seconds (4) |
| Attenuator Mode | 0.1 to 15 dB |
| Electrode Life | 5,000 Splices |
| Display | 3.5" Color, Turn-Over LCD |
| Connectivity | USB |
| Operating Conditions | Pressure: 0 to 16,404 feet (0 to 5,000 meters) above Sea Level Wind Velocity up to 15m/s Humidity: 0 to 95%Temperature: -13 to 122°F (-25 to 50°C) |
| Storage Conditions | Temperature: -40 to 140°F (-40 to 60°C) |
| Power Supply | 100 to 240V AC Adapter; Li-ion Battery (4400 mAh) |
| Weight | 3.3lbs (1.5kg) with battery 2.6lbs (1.2kg) no battery |
| Dimensions (HxWxD) | 4.9" x 4.9" x 5.3" (125 x 125 x 135mm) |

(1) Fast mode. (2) 90s/cycle splice time and power save functions activated. Number of cycles may vary depending on battery status and ambient operating conditions.(3) Dust resistance and rain resistance test do not guarantee that the product will not be damaged under these conditions. (4) Dependent on splice protector used and ambient conditions. Time quoted is with power mode enabled and assuming that the oven is not cold.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|------------|--|
| 52079876 | 915FS | 915FS Optical Fusion Splicer |
| 52079879 | 915FS-KIT1 | 915FS Fusion Splicer & Cleaver Kit |
| 52079878 | 915FS-KIT2 | 915FS Contractor Fusion Splicer Kit |
| 52063415 | 06811 | 915FS FSP200 Batt |
| 52080896 | 07096 | Power Supply, 915FS FSP200 |
| 52064141 | 01335 | Splice-On-Connector Adapter (SC & LC) |
| 52066481 | 02401 | Splice-On-Connector Adapter (ST & FC) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52063414 | 01329 | Replacement Electrodes |
| 52064143 | 01332 | 200/250µm Adapter (Pair) |
| 52064142 | 01333 | 900µm Adapter (Pair) |
| 52076996 | 05801 | Loose Tube Adapter (Pair) |
| 52081862 | 07388 | Universal Adapter (Pair) |
| 52067851 | 03245 | 3mm Adapter (Pair) |
| 55500059 | NA LC | North American Line cord |
| 52066954 | 02571 | European Line Cord |
| 52066952 | 02570 | UK Line Cord |
| 52066930 | 02568 | 12 V DC Car Adapter |

^{*} Specifications subject to change without notice.

OPTICAL FIBER CLEAVERS

Tempo Communications has a full suite of fiber optic cleavers including the FCL200, FCL100, 915CL and the 920CL. The FCL200 is the most capable cleaver in that it employs auto fiber end cut and auto blade return features. The 915CL has auto blade return with the 920CL providing the most economical alternative in the traditional cleaving footprint. The FCL100 is a low cost cleaver that is typically used in emergency situations or when cleaving field fibers when used in conjunction with mechanical connectors.

FCL200 OPTICAL FIBER CLEAVER

FEATURES

- Accurate Cleaves. Cleave multi-mode and single-mode fiber optic cables.
- Long Life. Blades rotate for longer life over 48,000 cleaves.
- Adaptable. Supports 200um, 250um, 900um fibers, ribbon and loose tube fibers.
- Fast. For use with the 910FS, 915FS or FSP200 Optical Fusion Splicers for maximum speed and efficiency with auto return mechanism.
- Dust bin. Safely and automatically collects end cuts during the cleaving process.
- Fixed Clamp. Allows the technician to use the FCL200 as a standalone cleaver.

SPECIFICATION:

| Applicable Fibers | SM (G.652); MM (G.651); DS (G.653); NZDS (G.655); BIF (G.657) |
|----------------------|--|
| Fiber Cleaved Length | 5mm to 25mm |
| Cladding Diameter | 125µm |
| Coating Diameter | 0.20mm, 0.25mm and 0.9mm |
| Fiber Count | Single and Ribbon (12) |

| Cleaving Angle | <1.5° |
|-----------------------------|--------------------------------------|
| Blade Rotation Positions | 16 |
| Blade Life | 48,000 Cleaves |
| Weight | 0.77lbs (350g) |
| Dimensions | 2.55 x 3.85 x 2.55" (65 x 98 x 65mm) |





FEATURES

- 48,000 cleaves
- Auto return of blade mechanism for fast and easy cleaves
- Cleaves singlemode and multimode fibers
- Integrated dust bin
- Prepares fibers for use in the 910FS, FSP200 and 915FS fusion splicers
- Supports 200um, 250um, 900um fibers, and loose tube fibers.
- Fixed Clamp. Allows the technician to use the 915CL as a standalone cleaver.



SPECIFICATION:

| Applicable Fibers | SM (G.652); MM (G.651); DS (G.653); NZDS (G.655); BIF (G.657) |
|----------------------|---|
| Fiber Cleaved Length | 10mm |
| Cladding Diameter | 125µm |
| Coating Diameter | 0.25mm and 0.9mm |
| Fiber Count | Single |

| Cleaving Angle | < 1.5° |
|--------------------|--------------------------------------|
| Blade Life | 48,000 Cleaves |
| Weight | 0.56lbs (255g) |
| Dimensions (HXWXD) | 2.29 x 2.17 x 1.89" (58 x 55 x 48mm) |

920CL OPTICAL FIBER CLEAVER

FEATURES

- 48,000 cleaves
- Cleaves single-mode and multi-mode fibers
- Integrated dust bin
- Prepares fibers for use in the 910FS, FSP200 and 915FS fusion splicers
- Supports 200um, 250um, 900um fibers, and loose tube fibers.
- Fixed Clamp. Allows the technician to use the 920CL as a standalone cleaver.

SPECIFICATION:

| Fiber Type | SM (G.652); MM (G.651); DS (G.653); NZDS (G.655); BIF (G.657) |
|---------------------|---|
| Fiber Cleave Length | 5mm to 25mm |
| Cladding Diameter | 125µm |
| Coating Diameter | 0.20mm, 0.25mm and 0.9mm |
| Fiber Count | Single |
| | |
| Cleaving Angle | < 0.5° |
| Blade Life | 48,000 Cleaves |
| Weight | 0.68lbs (310g) |
| Dimensions | 2.13 x 2.28 x 2.28" (54 x 58 x 58 mm) |





FCL100 OPTICAL FIBER CLEAVER

FEATURES

- 200, 250 & 900 micron fibers
- Cleaves single-mode and multi-mode fibers
- Prepares fibers for use with mechanical connector, fusion splicers and bare fiber adapters

SPECIFICATION:

| Applicable Fibers: | 125 Micron Fiber (200/250/900) |
|-----------------------|---|
| Fiber Cleaved Length: | 2.0mm to 20.0mm |
| Dimensions: | 4.88" x 0.79" x 1.57" (124mm x 20mm x 40mm) |
| Weight: | 0.13lbs (60g) |
| Operating: | Spring Activated |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 55500055 | FCL200 | FCL200 Optical Fiber Cleaver |
| 52078354 | 915CL | 915CL Optical Fiber Cleaver |
| 52082727 | 920CL | Fiber Optic Cleaver |
| 52087221 | FCL100 | Field Cleaver |
| 52064143 | 01332 | 200/250µm Adapter (PAIR) |
| 52064142 | 01333 | Adapter, 900µm (PAIR) |
| 52076996 | 05801 | Adapter, Loose Tube (PAIR) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 52078357 | 07111 | Fixed Clamp with Screw |
| 52086838 | 04268 | Replacement Screw for Fixed Clamp |
| 52064145 | 01640 | Cleaving Wheel |
| 55500194 | BLD-01 | FCL100 Blade |
| 55500196 | SPR-01 | FCL100 Spring |

FIBER FAULT LOCATORS - OTDR's

OFL100 OTDR OPTICAL TIME-DOMAIN REFLECTOMETER

The OFL100 OTDR enables the front-line fiber technician to quickly locate loss events in the last mile of the FTTx network. The convenient touchscreen provides an intuitive interface for even newly provisioned technicians making it simple to locate loss events such as cut fibers, contaminated or damaged connectors, and excessively bent fibers.



FAST.

- Easy to use one button test function. Start measurements with the push of one button.
- Auto test automatically sets test parameters for optimum test results.

ACCURATE.

- Graphical touchscreen interface is easy to read, even in high ambient light conditions.
- 128,000 data points provides high accuracy results.
- Measure lengths and fiber defects to guickly locate faults

RELIABLE.

- Link Viewer annotates the entire fiber link in an easy to interpret Pass/Fail format.
- Cable acceptance reports generate customized reports that include trace signature and fiber events.
- Long life battery so you can work longer without recharging - up to 12 hour shift capable.

Includes:

- OFL100
- Power Supply with USB cable
- Soft Carry Case with Strap
- SC/APC Adapter

- Certificate of Conformance
- Quick Reference Card
- 8GB SD Card
- AC adapter

- Protective cover
- Carrying case
- Warranty card

Ordering Information:

| CAT. NO. | DESCRIPTION |
|-----------|--|
| OFL100-NA | OFL100 with North American Power Supply |
| OFL100-EU | OFL100 with UK and European Power Supplies |



OFL100 Specifications:

| OTDR | | |
|--------------------------|--|--|
| Wavelength | 1310/1550nm | |
| Dynamic Range | 26/24dB | |
| Event Deadzone | 2.5m | |
| Attenuation Deadzone | 8m | |
| Measurement Ranges | 500m, 1km, 2km, 4km, 8km, 16km, 32km, 64km and 100km | |
| Pulse Widths | 3ns, 5ns, 10ns, 20ns, 30ns, 50ns, 80ns, 160ns, 320ns, 500ns, 800ns, 1µs, 2µs, 3µs, 5µs, 8µs, 10µs and 20µs | |
| Measurement Accuracy | ± (1m+Sample interval+0.005%xTest Distance) | |
| Linearity | ≤0.05dB/dB | |
| Loss Resolution | 0.001dB | |
| Loss Threshold | 0.20dB | |
| Distance Resolution | 0.001m | |
| Refractive Index | 1.00000 to 2.00000 | |
| Reflection Accuracy | ±3dB | |
| File Format | SOR compliant to Telcordia GR196 | |
| Loss Analysis | Four Point & Five Point | |
| Laser Safety | Class 1M | |
| Bulkhead | SC/APC (Optional LC and FC) | |
| Trace Update Rate | 3Hz | |
| Optical Power Meter | | |
| Wavelength Range | 800nm to 1700nm | |
| Calibrated Wavelengths | 850nm, 980nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm and 1650nm | |
| Measurement Range | +26dBm to -50dBm | |
| Measurement Resolution | 0.01dB | |
| Measurement Accuracy | ±5% | |
| Tone Frequencies/Sensing | CW, 270Hz, 330Hz, 1kHz and 2kHz | |
| Bulkhead | 2.5mm Universal | |
| Visual Fault Locator | | |
| Wavelength | 650nm ±20nm | |
| Output Power | <1mW | |
| Mode of Operation | CW, 1Hz and 2Hz | |
| Bulkhead | 2.5mm Universal | |
| Laser Safety | Class 2 | |

| Wavelength 1310/1550nm Output Power ≥ -5dBm; variable Power Stability CW, ±0.5dB/15 minutes after continuous on of 15 minutes Bulkhead SC/APC (Optional LC and FC Available) Tone Frequencies CW, 270Hz, 330Hz, 1kHz and 2kHz Optical Loss Testing Wavelength 1310nm and 1550nm Insertion Loss Testing Integrated OPM and SLS RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3" 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and European | |
|---|--|
| Power Stability CW, ±0.5dB/15 minutes after continuous on of 15 minutes Bulkhead SC/APC (Optional LC and FC Available) Tone Frequencies CW, 270Hz, 330Hz, 1kHz and 2kHz Optical Loss Testing Wavelength 1310nm and 1550nm Insertion Loss Testing Integrated OPM and SLS RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3° 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Bulkhead SC/APC (Optional LC and FC Available) Tone Frequencies CW, 270Hz, 330Hz, 1kHz and 2kHz Optical Loss Testing Wavelength 1310nm and 1550nm Insertion Loss Testing Integrated OPM and SLS RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3" 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Tone Frequencies CW, 270Hz, 330Hz, 1kHz and 2kHz Optical Loss Testing Wavelength Insertion Loss Testing Integrated OPM and SLS RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3" 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Optical Loss Testing Wavelength 1310nm and 1550nm Insertion Loss Testing Integrated OPM and SLS RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3* 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Wavelength 1310nm and 1550nm Insertion Loss Testing Integrated OPM and SLS RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3* 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Insertion Loss Testing RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3" 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| RJ45 Sequence Testing Cable Type Straight and Interleaved (T568) Mechanical Display 4.3* 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz Power Supply Format North America or United Kingdom and | |
| Cable Type Straight and Interleaved (T568) Mechanical Display 4.3* 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Mechanical Display 4.3" 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Display 4.3" 800x400 TFT LCD Touchscreen Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| Power Supply AC to DC 100-240VAC, 50/60Hz North America or United Kingdom and | |
| North America or United Kingdom and | |
| Power Supply Format | |
| | |
| Battery Lifetime >12 Hours Continuous Test | |
| Battery 3.7V, 4Ah Li ION | |
| Weight <1.1lbs (<0.5kg) Including Battery | |
| 5ize 6.8"x 4.3"x 1.8" (173mm x 109mm x 45mm) | |
| Data | |
| Internal Storage 8GB (>200,000 Curves) | |
| Interface USB Type C, 8GB SD Card | |
| Environmental | |
| Operational Temperature -10°C to +50°C | |

^{*}Specifications subject to change without notice

Accessories:

| CAT. NO. | DESCRIPTION |
|--------------|---|
| OFL100-SCAPC | SC/APC Adapter |
| OFL100-LCAPC | LC/APC Adapter |
| OFL100-FCAPC | FC/APC Adapter |
| OFLPS-NA | OFL100 North American Power Supply with USB Cable |
| OFLPS-UK | OFL100 United Kingdom Power Supply with USB Cable |
| OFLPS-EU | OFL100 European Power Supply with USB Cable |
| OFLCC | OFL100 Carry Case with Strap |

FIBER CATALOG

The 930XC OTDR's utilize an easy to learn intuitive user that allows the technician to quickly locate fiber faults in FTT(x) and Point to Point networks. Both singlemode and multimode versions are available which span all of the common wavelengths used in telco and LAN installations. The 930XC-20C OTDR is the basic version that effectively measure and characterize singlemode fiber links at 1310nm and 1550nm. The 930XC-30F measures at 1310nm, 1550nm and 1625nm where the 1625nm wavelength can be used to measure live fibers without interrupting network traffic.

The 930XC-30P measures at 1310nm, 1490nm and 1550nm and is used to characterize fiber networks used in GPON applications. The 930XC-20M is a multimode OTDR that measures at 850nm and 1300nm which are commonly used in LAN. The free Trace Viewer program imports SOR files which provides the tools required to complete a comprehensive report on the fiber measurements. All 930XC OTDR's are GR196 compliant which validates all specifications at an independent lab at temperature extremes, along with drop testing and dust chamber validation.

930XC HANDHELD SINGLEMODE OTDR

FEATURES

- 2 & 3 wavelength options available: 1310/1550nm; 1310/1550/1625nm
- Up to 35dB SWDR on the two wavelength model Up to 38dB SWDR on the three wavelength model
- Optical Power Meter
- Stabilised Light Source
- Visual Fault Locator
- Fiber analysis software for report generation
- Large backlight LCD colour display
- Measure length and defects of coiled fiber
- 1625nm operation for live fiber testing (30F)
- RS-232/USB interface
- NiMH batteries for 8 hours continuous use
- LinkViewer Software analysis
- Macrobend analysis





ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|---------------------------------|----------|---|
| DUAL WAVELENGTH SINGLEMODE OTDR | | |
| 52067083 | 02610 | 930XC-20C Singlemode OTDR, 1310/1550nm FC/UPC |
| 52067082 | 02609 | 930XC-20C Singlemode OTDR, 1310/1550nm SC/UPC |
| 52067084 | 02611 | 930XC-20C Singlemode OTDR, 1310/1550nm ST/UPC |
| 52067086 | 02613 | 930XC-20C Singlemode OTDR, 1310/1550nm FC/APC |
| 52067085 | 02612 | 930XC-20C Singlemode OTDR, 1310/1550nm SC/APC |

| PART NO. | CAT. NO. | DESCRIPTION |
|---------------------------------------|----------|--|
| TRIPLE WAVELENGTH SINGLEMODE PON OTDR | | |
| 52067088 | 02615 | 930XC-30P Singlemode OTDR, 1310/1490/1550nm FC/UPC |
| 52067087 | 02614 | 930XC-30P Singlemode OTDR, 1310/1490/1550nm ST/UPC |
| 52067089 | 02616 | 930XC-30P Singlemode OTDR, 1310/1490/1550nm SC/UPC |
| 52067091 | 02618 | 930XC-30P Singlemode OTDR, 1310/1490/1550nm FC/APC |
| 52067090 | 02617 | 930XC-30P Singlemode OTDR, 1310/1490/1550nm SC/APC |

| 930XC OTDR ACCESSORIES | | | | |
|------------------------|-------------------------|-------------------------------------|--|--|
| PART NO. | CAT. NO. | DESCRIPTION | | |
| 52047065 | AC-ADPT-20-UNI | Universal Power Supply | | |
| 52034549 | AC-CONN-FC-L2 | FC Connector (For UPC & APC) | | |
| 52034550 | AC-CONN-ST-L2 | ST Connector (For UPC) | | |
| 52078401 | AC-CONN-SC-UPC-L2 | SC Connector (For UPC & APC) | | |
| 52067854 | ADAPTER, OPM SC (930XC) | OPM SC Adapter | | |
| 52067855 | ADAPTER, OPM FC (930XC) | OPM FC Adapter | | |
| 52067856 | ADAPTER, OPM ST (930XC) | OPM ST Adapter | | |
| 52039299 | AC-ADPT-V30 | Vehicle Adapter (6FT, 5.5 OD, 2.1M) | | |
| 52034552 | 20999 | NiMH Battery (9.6V) | | |

FIBER CATALOG

SPECIFICATIONS:

| | 930XC-20C | 930XC-30F | 930XC-30P | 93 | 30XC-20M |
|----------------------------------|---|---------------------------------|--------------------------|-----------------------------------|---|
| Wavelength (± 20nm) | 1310/1550nm | 1310/1550/1625nm | 1310/1490/1550 nm | 85 | 50/1300nm |
| Dynamic Range (dB) | 35 dB ^a | 38/37/37 | 38/37/37 | | 21/24 |
| Event Deadzone (m) | 1m ^b | 1.0 | 1.0 | | ≤2.5 |
| Attenuation Deadzone (m) | 4.5m⁵ | 4.5 | 4.5 | | ≤12 |
| Pulsewidth (ns) | 5, 10, 3 | 0, 100, 300, 1µs, 2.5µs, 10µs | s, 20µs | 12, 30, 1 | 00, 275, 1µs, 2µs |
| Selectable Ranges (km) | 0.3, 1.3, | 2.5, 5, 10, 20, 40, 80, 120, 16 | 50, 240 | 0.1, 0.3, 0.5, 1.3, 2.5, 5, 10 | 0.1, 0.3, 0.5, 1.3, 2.5, 5, 10, 20, 40, 80 |
| Sampling Points | | 16,000 (Maximum) | | 16,00 | 00 (Maximum) |
| Average Time | | | 15s/30s/1 min/2 min/ | '3 min | |
| Distance Measurement Accuracy | | ±(1m + | 5 x 10-5 x distance + sa | ampling space) | |
| Connector Type | | PC (| or APC (interchangeable | e FC, SC, ST) | |
| Reflection Detect Accuracy | | | ±4 dB | | |
| Attenuation Detect Accuracy | | | ±0.05 dB/dB | | |
| Measurement Data Storage | 1,000 test curves | | | | |
| Data Transmission | RS-232/USB port | | | | |
| Visual Fault Locator (VFL) | 3mW; 650nm | | | | |
| Optical Power Meter (OPM) | InGaAs | | | | |
| OPM Wavelengths | 850, 1300, 1310, 1490, 1550, 1625nm | | | | |
| OPM Range | +6 to -70dBm (+6 to -60dBm @ 850nm) | | | | |
| OPM Display resolution | 0.01dB | | | | |
| OPM MOD Identification | | | 1kHz, 2kHz | | |
| Stabilized laser Source (SLS) | | Wavelength | n same as selected in O | TDR mode ≤ -7dBm | |
| Power Supply | | NiN | MH chargeable battery/ | AC adapter | |
| Battery Life | Support over 8 hours operating on one charge or over 20 hours standby | | | | |
| Operating Temperature | -10°C to 50°C | | | | |
| Storage Temperature | -20°C to 60°C | | | | |
| Relative Humidity | 0 to 95% (non-condensing) | | | | |
| Weight | 1.9lbs. (0.87kg) | | | | |
| Dimensions | 7.7" H x 3.9" W x 2.4" L (196mm x 100mm x 64mm) | | | | |
| Compliance | BelCore GR196, CE, FCC, UL, RoHS, WEEE | | | | |

^{*}Specifications subject to change without notice

^a Using a pulse width of 20µs

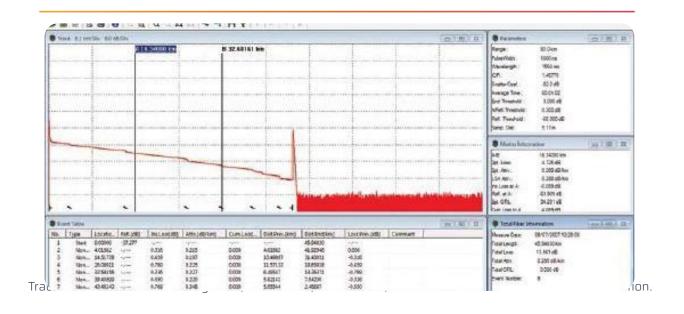
^b Using a pulse width of 5ns measuring a -45dB event

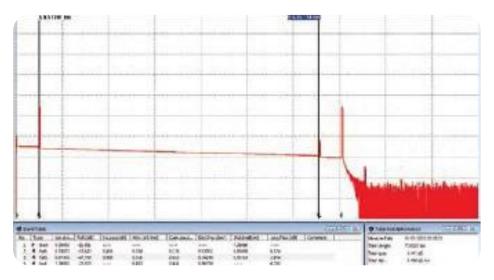




DC ChargerPort Optical Power Meter USB Port Visual Fault Locator **CHOR Port**

OTOR 1625rm live out of band testing port

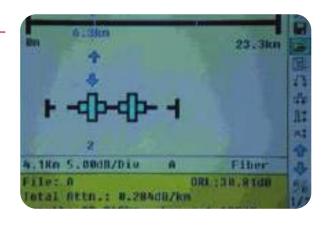




TraceViewer with expanded trace view highlighting the benefit of Launch Cables to examine Near & Far end connectors.

LINK VIEWER SOFTWARE

LinkViewer Software showing optical events that exceed the threshold of the Fiber Under Test.



LAUNCH CABLES

Launch cables are used to reduce the effect deadzones caused by mechanical connection of the OTDR to the Fiber under Test. Constructing a backscatter trace before the Near end connector enables the technician to evaluate the connector for Insertion Loss & return Loss. Also known as a Pulse Suppressor.

FEATURES

- Universal compact design
- Rugged construction

BENEFITS

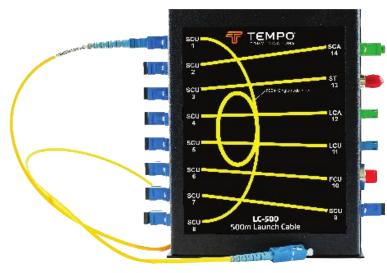
- Troubleshoot the input connector and the initial fiber span that may be masked by the deadzone of an OTDR
- Characterise input and output connectors and the entire fiber link
- Minimise Dead zones
- Eliminate multiple patch cables



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|---------------|---|
| 52076057 | LC-500 | 500M Launch Cable with Patch Panel Matrix |
| 52081881 | LC500SCAPCSM | 500M Launch Cable SC APC Singlemode |
| 52081882 | LC500SCUPCSM | 500M Launch Cable SC UPC Singlemode |
| 52081883 | LC1000SCAPCSM | 1000M Launch Cable SC APC Singlemode |
| 52081884 | LC1000SCUPCSM | 1000M Launch Cable SC UPC Singlemode |
| 52081885 | LC2000SCAPCSM | 2000M Launch Cable SC APC Singlemode |
| 52081886 | LC2000SCUPCSM | 2000M Launch Cable SC UPC Singlemode |
| 52081887 | LC150SCPCMM | 150M Launch Cable SC PC 50/125 Multimode |
| 52081888 | SCLC Adapter | SC TO LC Adapter (Use the SC to LC Adapter to convert the Launch Cable to LC connectors |





LC-500 Patch Panel Matrix with 1m SC/ PC-SC/PC patch cable



180XL VISUAL FAULT LOCATOR

LOCATING BREAKS AND BENDING LOSSES:

The 180XL visual fault finder is an indispensable tool for quickly identifying bending losses and breaks in optical fibers. If a fiber is bent too tightly, red laser light will be seen escaping through the jacket. Likewise, if a fiber is broken, escaping light will be visible where the break is located.

SCAN TO WATCH THE VIDEO

IDENTIFYING BAD CERAMIC CONNECTORS:

Ceramic connectors are easily tested using the 180XL visual fault finder. A fiber broken inside, or past, the ferrule will cause it to glow, as shown below at left. If the whole connector glows, it is definitely defective. If the end face polish of the connector is bad, light will be reflected internally, as shown below right. This will also make the ferrule glow when the 180XL is used.



Fiber broken in ferrule



Poor end face polish

FEATURES

- Continuous wave output mode for steady fault illumination
- Blinking output mode increases viewing contrast
- Easy to use "Quick Connect" interface fits all 2.5mm fiber optic connectors
- Ergonomic switch permits easy one-handed operation
- Simple, versatile, and user-friendly design

- Rugged, compact, and splash proof aluminium housing
- High output 1.0mW (OdBm) 650nm red laser
- Up to 7km range
- Two AA-size alkaline batteries provide 80 hours of continuous operation
- Nylon belt holster included

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|---------------|--------------------------------------|
| 52068671 | 180XL | Visual Fault Locator Kit (2.5mm UCI) |
| 52068673 | 125mm ADAPTER | 1.25mm adapter |

SPECIFICATIONS:

| Wavelength | 650nm +/-10nm |
|-----------------------------------|--------------------------|
| Emitter Type | Fabry Perot |
| Output Power | OdBm |
| Spectral Width (CPR) | <2nm |
| Laser Classification Range | 2 |
| | 7km |
| Modes of Operation | CW and 2Hz Modulation |
| Method of Display Operation | Red/Green LED |
| Fiber Type | Singlemode, Multimode |

| Connector Interface | 2.5mm Universal, Optional 1.25mm adapter |
|--------------------------|--|
| Battery | AA (2) |
| Battery Life | 80 Hours with 3.9Wh batteries |
| Weight | 0.15lbs, (70g) (not including batteries) |
| Dimensions | 7.08" x 0.91" Dia (180mm x 23mm Dia) |
| Operating Temperature | -10 to +45C |
| Storage Temperature | -40 to +70C |
| Certifications | CE, WEEE, CDRH Reach RoHs |



using 180XL





FI-100 LIVE FIBER IDENTIFIER

The Tempo Communications FI-100 fiber identifier is used to measure the approximate core power in FTT(x) and P2P networks without the need to disconnect the fiber under test. The low induced insertion loss when used with the precision adapters insures that the network equipment to go into an alarm condition due to excessive bending of the fiber. The high sensitivity detectors measure the direction of signal transport and are capable of detecting injected tones from laser sources at 270Hz, 330Hz, 1kHz and 2kHz. The FI-100 is also capable of sensing the core power in bend insensitive fiber that is being more commonly used in drop fibers in FTTH installations.

- Low insertion loss
- Easy operation
- Versatile
- Quickly identify fibers



FI-100 KIT contains instruction manual, sun shade, all available mandrels and carrying case.





SPECIFICATIONS:

| Identified Wavelength Range | 800-1700nm | | |
|---|--|---|--|
| Identified Signal Type | 270Hz ±5%, 330Hz ±5%, 1kHz ±5%, 2kHz ±5% | | |
| Detector Type | 1mm InGaAs | | |
| Adapter Types | Ø0.25 (Applicable for Bare Fiber and ribbon cable) Ø0.9 (Applicable for Ø0.9 Cable) Ø2.0 (Applicable for Ø2.0 Cable) Ø3.0 (Applicable for Ø3.0 Cable) | | |
| Signal Indication | Left & Right LED | | |
| Signal Direction Test Range (CW/0.9mm fiber) | -46 to 10dBm (1310nm) -50 to 10dBm (1550nm) | | |
| Signal Power Test Range (CW/0.9mm fiber) | -50 to +10dBm | | |
| Tone Detect Test Range | Ø0.9, Ø2.0, Ø3.0 | -30 to OdBm (270Hz, 1kHz) -25 to OdBm (2kHz) | |
| (Average) | Ø0.25 | -25 to OdBm (1kHz, 2kHz) -20 to OdBm (2kHz) | |
| Insertion Loss (Typical/ Maximum) | 0.3 / 0.8dB at 1310nm 1.5 / 2.5dB at 1550nm | | |
| Battery | AAA Alkaline (2) | | |
| Operating Temperature | -10 to +60°C | | |
| Storage Temperature | -25 to +70°C | | |
| Dimension | 196 X 30.5 X 27mm | | |
| Weight | 195g | | |
| Certifications | CE, FCC, RoHS, EAC | | |
| Number of Activations | 3600 | | |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------------|----------------------|
| 52068188 | FI-100 KIT | Fiber Identifier Kit |
| 52068108 | FI-250µm/RIB | 250µm Adapter |
| 52068110 | FI-100-2mm | 2mm Adapter |
| 52068111 | FI-100-3mm | 3mm Adapter |
| 52068113 | FI-100-Case | Soft Carry Case |
| 52068114 | FI-100-Sunshade | Sun Shade |





OPTICAL POWER METERS & LIGHT SOURCES

The OPM2XX, OPM5XX and SLS5XX provide the technician with a ruggedized tool set to accurately and quickly measure the insertion loss of singlemode and multimode fiber links.

The OPM2XX and OPM5XX measure the absolute fiber power to validate the optical loss budget in FTTX and P2P networks. All common wavelengths are supported and work in harmony with the dual and triple wavelength sources to facilitate insertion loss measurements. Tone injection is supported so that individual fibers can be identified when used with the OPM2XX, OPM5XX or FI-100.

The OPM2XX also incorporates an integrated visual fault locator for safe and quick visual identification of cut or damaged fiber, Macrobends and contaminated or damaged connectors.

The IP54 rating along with industry leading vibration and shock specifications assure the technician will complete their assigned task in even the most demanding environment.





OPM210 / OPM220 MICRO OPTICAL POWER METER

FEATURES

- Wide measurement range (+10 to -70dBm)
- High power CATV range (+26 to -50dBm)
- VFL for safe and effective fault locating
- Singlemode and multimode compatible
- Calibrated wavelengths of 850/1300/1310/1490/1550/1625nm
- 270Hz, 1kHz and 2kHz tone detect
- Auto power off

CONTENTS:

- Micro OPM with VFL
- Lanyard
- Instruction sheet
- Certificate of Conformance





SPECIFICATIONS:

| PARAMETER | SPECIFICATIONS | | |
|-------------------------|--|--|--|
| Model: | OPM210 | OPM220 | |
| Measurement Range: | -70 to +10dBm (1310/1490/1550/1625) | -50 to +26dBm (1310/1490/1550/1625) | |
| Measurement Nange. | -60 to +10dBm (850/1300) | -40 to +26dBm (850/1300) | |
| Calibrated Wavelengths: | 850, 1300, 1310, 1490, 15 | 50, 1625nm | |
| Display Resolution: | 0.01dB | | |
| Accuracy*: | +/-0.25dB | | |
| Linearity*: | +/-0.5dB (+10 to -3dBm) +/-0.1dB (-3 to -50dBm) +/-0.5dB (-50 to -70dBm) | +/-0.5dB +26 to -3dBm +/-0.1dB -3 to -50dBm | |
| Connector: | Universal 2.5mm | | |
| Wavelength Response: | 700 - 1700nm | | |
| Detector: | InGaAs | | |
| Power Supply: | AAA x 2 Alkalii | ne | |
| Battery Lifetime: | >60 Hours (OPM r | mode) | |
| Operating Temperature: | -10 to +50°C (<90% Relati | ive Humidity) | |
| Storage Temperature: | -20 to +60°C (<90% Relative Humidity) | | |
| VFL Wavelength: | 650nm +/-20nm | | |
| VFL Output: | ≤ 1mW/ 2Hz | | |
| VFL Range: | 4km | | |
| Size: | 106 x 58 x 28mm (4.17 x 2.28 x 1.10") | | |
| Weight: | 106g (0.23lbs) | | |
| Auto Power Off: | 10 minutes of no activity | | |
| Certifications: | CE, RoHS, CDRH, WEEE | | |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|---------------|-----------------------------|
| 55500025 | OPM210 | Standard Power OPM with VFL |
| 55500026 | OPM220 | High Power OPM with VFL |
| 52068673 | 125mm ADAPTER | 1.25mm Adapter |
| 52084662 | 08325 | Micro OPM Carry Case |

—— FIBER CATALOG





SPECIFICATIONS:

| PARAMETERS | SPECIFICATIONS | | |
|------------------------|--|--|--|
| MODEL | OPM510 | OPM520 | |
| Cal. Wavelength (nm) | 850, 1300, 1310, 1490, 1550, 1625 | | |
| Measure range (dBm) | -65 ~ +10 ⁽¹⁾ | -50 ~ +27 | |
| Detector type | InGa | aAs | |
| Accuracy (dB) | ±5% ±0.01nW (±0.5dB@850nm) | ±5% ±1nW (±0.5dB@850nm) | |
| Linearity | +/-0.5dB (+10 to -3dBm) +/-0.1dB (-3 to -50dBm) +/-0.5dB (-50 to -65dBm) | +/-0.5dB +27 to -3dBm +/-0.1dB -3 to -50dBm | |
| Resolution (dB) | 0.01 | ldB | |
| Functions | W/mW/µW/dE MOD TONE DETECT | Bm/dB(REF)/ 270Hz, 1kHz, 2kHz | |
| Connector Type | SC (Interchangeable LC, ST, SC) | | |
| Fiber Type | Singlemode & Multimode | | |
| Battery Life | > 100 Hours | | |
| Power Supply | 9V Alkaline or 1000mAh Lithium Battery/ 9V AC adapter | | |
| Operating Temperature | -10°C ~ | 50°C | |
| Storage Temperature | -20°C ~70°C | | |
| Relative Humidity | O TO 95% (NON-CONDENSING) | | |
| Weight | 0.68lbs (300g) | | |
| Dimensions (H × W × T) | 6.1 × 3.5 × 1.3" (155 × 88 × 33mm) | | |
| IP Rating | IP54 | | |
| Vibration | 5Hz to 150Hz, Amplitude+0.15mm | | |
| Shock | Peak acceleration 25g at a pulse duration of 6ms | | |
| Compliance | CE, FCC | | |

| | PART NO. | CAT. NO. | DESCRIPTION |
|---|----------|----------|--------------------------|
| ĺ | 55500023 | OPM510 | InGaAs OPM +10 to -65dBm |
| | 55500024 | OPM520 | InGaAs OPM +27 to -50dBm |

SLS520, SLS525, SLS530, SLS535 and SLS536

STABILIZED LIGHT SOURCE

FEATURES

- Dual and Triple Wavelength Laser Sources at 1310, 1490, 1550, 1625 & 1650nm
- Dual Wavelength LED Source at 850nm & 1300nm
- Accurate Insertion Loss Measurements
- Tone and Probe Fiber Networks at 270Hz, 1kHz and 2kHz
- SC, LC, FC and ST Interchangeable Bulkheads
- Ruggedized Package, IP54 compliant
- Compatible with Singlemode and Multimode Networks
- Auto Off or Continuous On Operation
- Battery or 120/240VAC Operation
- Each source is supplied with one SC/PC adapter for each bulkhead.

CONTENTS:

- Laser or LED
- SC Adapter
- Soft Carry Case
- Certificate of Conformance







SPECIFICATIONS:

| MODEL | SLS520 | SLS525 | SLS530 | SLS535 | SLS536 |
|-----------------------|---|-------------------------------------|------------------|------------------|------------------|
| Wavelength (±20nm) | 1310/1550nm | 850/1300nm | 1310/1490/1550nm | 1310/1550/1625nm | 1310/1550/1650nm |
| Fiber Type | Singlemode | Multimode (62.5/125) | Singlemode | | |
| Emitter Type | FP | LED | FP | | |
| Spectrum Width | ≤ 5nm | ≤ 71nm (850nm), ≤ 160nm (1300nm) | ≤5nm | | |
| Output Power | ≤ OdBm/-1dBm | -20dBm/-21dBm | ≤ OdBm/-1dBm | | |
| Output Power | ±0.05 dB/15min; | ±0.05 dB/15min | | ±0.05 dB/15min; | |
| Stability | ±0.10dB/8hr | ±0.15dB/8hr | | ±0.10dB/8hr | |
| MOD Frequency | 270, 1kHz, 2kHz | | | | |
| Display | LCD | | | | |
| Battery Life | 60 Hours | | | | |
| Connector Type | SC/PC (Interchangeable LC, ST, FC) | | | | |
| Power Supply | 9V Alkaline or 1000mAh Lithium Battery/ 9V AC adapter | | | | |
| Operating Temp. | -10°C to 50°C | | | | |
| Storage Temp. | -20°C to 70°C | | | | |
| Relative Humidity | 0 to 95% (non-condensing) | | | | |
| Weight | 0.71 lbs (300g) | | | | |
| Dimension (H×W×T) | 6.1 × 3.5 × 1.3" (155 × 89 × 33mm) | | | | |
| IP Rating | IP54 | | | | |
| Vibration | 5Hz to 150Hz, Amplitude = 0.15mm | | | | |
| Shock | Peak acceleration 25g at a pulse duration of 6ms | | | | |
| Compliance | CE, FCC, 21 CFR 1040.10 (Laser) | | | | |

Specifications subject to change without notice.

Each source is supplied with one soft carry case (CC-1), one Certificate of Conformance, and one SC/P C adapter for each bulkhead.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 55500018 | SLS520 | 1310/1550nm Dual Laser |
| 55500019 | SLS525 | 850/1300nm Dual LED |
| 55500020 | SLS530 | 1310/1490/1550nm Triple Laser |
| 55500021 | SLS535 | 1310/1550/1625nm Triple Laser |
| 55500022 | SLS536 | 1310/1550/1650nm Triple Laser |

OPTICAL POWER METER & STABILIZED LIGHT SOURCE KITS

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------------|-------------------------|
| 55500027 | SM DUAL KIT | OPM510 & SLS520 |
| 55500028 | SM DUAL KIT HP | OPM520 & SLS520 |
| 55500029 | MM DUAL KIT | OPM510 & SLS525 |
| 55500030 | SM T PON KIT | OPM510 & SLS530 |
| 55500031 | SMT 1625 KIT | SLS535 & OPM510 |
| 55500032 | SMT 1650 KIT | SLS536 & OPM510 |
| 55500033 | SMT PON KIT HP | SLS530 & OPM520 |
| 55500034 | SMT 1625 KIT HP | SLS535 & OPM520 |
| 55500035 | SMT 1650 KIT HP | SLS536 & OPM520 |
| 55500050 | SMMMKIT-T | SLS520, SLS525 & OPM510 |
| 55500051 | SMMMKIT-M | SLS520, SLS525 & OPM520 |



SMMM KIT-M



OPM AND SLS ACCESSORIES:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 55500048 | PS-100 | EXTERNAL POWER SUPPLY |
| 55500036 | CC-1 | CARRY CASE, SOURCE/OPM |
| 55500049 | CC-2-3 | CARRY CASE, DUAL, TRIPLE, SOURCE/OPM |



SPECIAL LAUNCH CONDITIONOPTICAL POWER METERS & SOURCES

INSTRUMENTS DESIGNED FOR POF & FIBER OPTIC CABLE TESTING:

The Special Launch Condition Sources and Optical Power Meter XL fiberTOOLS™ are designed for the professional to perform installation and maintenance measurements on both Plastic & Glass fiber optic networks.

The instrument family consists of standard instruments for routine cable testing, through to Stabilised Light Sources with stringent Launch Conditions for the Avionics and Defence Industries and Research Laboratories.

Tempo's LED Light Sources have been manufactured with specific launch conditions to overcome the inconsistent measurements caused by standard Light Sources.

The Multimode products that have specific launch conditions are designed for greater accuracy and repeatable results.

Tempo also manufacture instruments to test POF links. POF links are being used in a number of industries particularly on short links where optical budgets aren't too tight. The automotive industry is a good example of this.

The XL fiberTOOLS™ are fully featured, general purpose fiber optic instruments and easy to operate to outfit all technicians performing fiber optic installation and maintenance.

Tempo also manufacture a range of Optical Light Sources and Power Meters with enhanced EMI performance, manufactured to Military standards, these offer the ultimate in accuracy.

Tempo's range of Optical Light Sources and Power Meters were designed specifically for: avionics, automotive, defence and research.





567XL SILICON FIBER OPTIC POWER METER (FORMERLY 557B)

FEATURES

• Absolute (dBm) & Referenced (dB) measurements

Long battery life

• User selectable auto shut-off

• SOC interface adapts to all commonly used connectors

Rugged and splash-proof



| OPTICAL SPECIFICATIONS | | | |
|---------------------------|--|--|--|
| Detector Type | 3 x 3.5mm Silicon | | |
| Calibration Wavelengths | 650nm, 780nm, and 850nm | | |
| Power Range | +3dBm to -60dBm | | |
| Accuracy | ±0.25dB | | |
| Linearity at | +3dBm to -3dBm ±0.5db -3dBm to -50dBm ±0.1db -50dBm to -60dBm ±0.5db | | |
| Resolution | 0.01dB | | |
| Power Requirements | Two AA 1.5V batteries (approx. 100 hours continuous operation) | | |
| Connector Interface | SOC | | |
| Operating Temperature | -15° C to +55° C | | |
| Storage Temperature | -35° C to +70° C | | |
| Humidity | 0 to 95% non-condensing | | |
| Dimensions | 7.2 x 14.2 x 3.5 cm (2.8 x 5.6 x 1.4 in.) | | |
| Weight | 241g (8.5 oz.) | | |
| CE | EN61010; EN50081-1:1992; EN55011, Group1, Class A EN50082-1: 1992 IEC 801-2, -3, -4 | | |
| Typical Power Output (μm) | | | |
| 200/230 SI Fiber | -15dBm ±0.5dB | | |
| Modulation Frequencies | 270Hz, 1kHz and 2kHz | | |
| Power Requirements | Two AA 1.5V batteries (approx. 24 hours continuous operation) | | |

573XL & 573XL-UNIV

650NM LED SOURCE FOR LARGE CORE PLASTIC AND GLASS FIBER (FORMERLY 253B-POF)

FEATURES

- Stable Calibrated output Storage
- Continuous wave and modulated output
- Easy to use
- Long battery life
- User selectable auto shut-off
- 650nm wavelength
- Rugged and splash-proof
- Fixed ST and SOC Adapter options are available



FIBER CATALOG

577XL M90 850nm LED SOURCE WITH M90 LAUNCH CONDITIONS (62.5/125µm FIBER)

FEATURES

- Stable calibrated output
- Easy to use
- Continuous wave and modulated output
- Long battery life approx. 24 hours
- User selectable auto shut-off
- Rugged and splash-proof
- Economically priced
- UCI Adapter options are available
- 850nm wavelength



577XL AS100 850NM LED SOURCE WITH AS-100 LAUNCH CONDITION (100/140µM FIBER)

FEATURES -

- Stable calibrated output
- Easy to use
- Continuous wave and modulated output
- Long battery life approx. 24 hours
- User selectable auto shut-off
- Rugged and splash-proof
- Economically priced
- UCI Adapter options are available
- 850nm wavelength

(FORMERLY 257A-AS100)





578XL M90 1300NM LED SOURCE WITH M90 LAUNCH CONDITION (62.5/125µM FIBER)

FEATURES

- Stable Calibrated output Storage
- Continuous wave and modulated output
- Easy to use
- Long battery life
- User selectable auto shut-off
- 1300nm wavelength
- Rugged and splash-proof
- UCI Adapter options available (options are available)



XL SERIES LED SOURCES

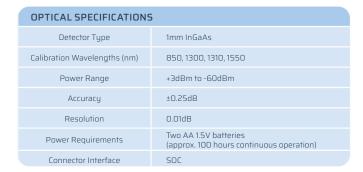
| 573XL | 577XL | 578XL | |
|--|---|---|--|
| 650nm | 850nm | 1300nm | |
| 630 - 670 | 840 - 880 | 1270 - 1345 | |
| 40nm | 55nm | 150nm | |
| ±0.05dB | ±0.05dB | ±0.05dB | |
| | | | |
| -15dBm *** | | - | |
| - | -20dBm**(AS-100) | -20dBm | |
| - | -20dBm** (M90) | -20dBm** (M90) | |
| - | | -21dBm | |
| - | - | -38dBm | |
| ±0.5dB | ±0.5dB | ±0.5dB | |
| SOC or ST Universal connector interface | | | |
| MOD: Modulated output mode (270Hz, 1kHz, 2kHz) CW: Continuous Wave output mode Freq: selectable modulation frequency | | | |
| 270Hz, 1kHz, and 2kHz (±0.5%) using switch inside battery compartment | | | |
| Two AA-size alkaline batteries | | | |
| > 24 hours | | | |
| ENVIRONMENT | | | |
| -15°C to 55°C | | | |
| -35°C to 70°C | | | |
| | -35°C to 70°C | | |
| | -35°C to 70°C 0% to 95% | | |
| | | n) | |
| | 630 - 670 40nm ±0.05dB -15dBm *** ±0.5dB SOC or ST MOD: M | 650nm 850nm 630 - 670 840 - 880 40nm 55nm ±0.05dB -15dBm *** 20dBm**(AS-100) | |

- * Within specified operating environment of 20°C to 25°C
- ** Calibrated launch level, equilibrium modal distribution
- *** Calibrated launch level

560XL-EMI FIBER OPTIC POWER METER WITH ENHANCED EMI PERFORMANCE

FEATURES

- 0.01dB measurement resolution
- Multi-Wavelength Storage
- SOC interface adapts to all commonly used connectors*
- Long battery life
- Absolute (dBm) & Referenced (dB) Power measurements
- User selectable auto shut-off
- Rugged and splash-proof
- Economically priced
- Enhanced EMI performance: MIL-STD-461E, Method RS103, tested to 190 V/m
- Engineered for use in areas with high electrical interference





570XL-AS100-EMI 850/1300NM LED SOURCE WITH ENHANCED EMI PERFORMANCE

FEATURES

- Stable calibrated output
- 850nm / 1300nm wavelength LED Source
- Long battery life approx. 80 hours
- Continuous wave and modulated output
- User selectable auto shut-off
- Supports a wide range of UCI connectors, including FC, SC, and ST
- Economically priced
- Enhanced EMI performance: MIL-STD-461E, Method RS103 tested to 200 V/m
- Configured to meet AS100 launch conditions
- Rugged and splash-proof

| OPTICAL SPECIFICATIONS | |
|------------------------------|--|
| Detector Type | 1mm InGaAs |
| Calibration Wavelengths (nm) | 850nm, 1300nm |
| Power Range | 820nm to 880nm; 1270nm to 1345nm |
| Accuracy | ±0.25dB |
| Resolution | 0.01dB |
| Power Requirements | Two AA size 1.5V batteries (approx. 40 hours continuous operation) |
| Connector Interface | UCI |



580XL-EMI 1310/1550NM LASER SOURCE WITH ENHANCED EMI PERFORMANCE

FEATURES

- Stable calibrated output
- 1310nm / 1550nm wavelength Laser Source
- Long battery life approx. 80 hours
- Continuous wave and modulated output
- User selectable auto shut-off
- Easy to Use

- Enhanced EMI performance: MIL-STD-461E, Method RS103 tested to 200 V/m
- Supports a wide range of UCI connectors, including FC, SC, and ST
- Rugged and splash-proof
- Economically priced

| OPTICAL SPECIFICATIONS | | | |
|--------------------------------|---|------------------|--|
| Centre Wavelength | 1310nm | 1550nm | |
| Range (Typical) | 1280nm to 1340nm | 1520nm to 1580nm | |
| Max. Spectral Width (FWHM) | <5nm | <5nm | |
| Stability (1 hour) | ±0.05dB | ±0.05dB | |
| Typical Power Output (9/125µm) | | | |
| Minimum | -8dBm | -8dBm | |
| Typical | -7dBm | -7dBm | |
| Modulation Frequencies | 270Hz, 1kHz and 2kHz 270Hz, 1kHz and 2kHz | | |
| Power Requirements | Two AA 1.5V batteries (approx. 80 hours continuous operation) | | |
| Connector Interface | UCI | | |





ORDERING INFORMATION- XL fiberTOOLS™ SERIES:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52058723 | 00025 | 567XL Silicon Fiber Optical Power Meter |
| 52058784 | 00023 | 573XL 650nm LED Source with Fixed ST Connector |
| 52061770 | 00598 | 573XL 650nm LED Source with SOC Adapter Interface |
| 52058727 | 00029 | 577XL-AS100, 850nm LED Source with 100/400µm Launch Condition |
| 52058726 | 00027 | 577XL-M90, 850nm LED Source with 62.5/125µm Launch Condition |
| 52061054 | 00753 | 578XL-M90, 1300nm LED Source with 62.5/125µm Launch Condition |
| 52060994 | 00244 | 560XL-EMI HH OPM, INGAAS, EMI SHIELDING |
| 52060995 | 00245 | 570XL-AS100-EMI HH DUAL LED SOURCE, EMI SHIELDING |
| 52060996 | 00246 | 580XL-EMI HH LASER SOURCE, EMI SHIELDING |

SNAP ON CONNECTOR (SOC) FOR XL SERIES INSTRUMENTS

Snap On Connectors (SOC) are used on the XL Fiber Optic Power Meters and 573XL LED light source. The Snap On Connectors configure the instruments for various optical connectors. Contact Tempo Communications for other available adapters.



UNIVERSAL CONNECTOR INTERFACE (UCI) FOR XL SERIES INSTRUMENTS

Users will need to purchase a Universal Connector Interface (UCI) adapter for use with specific light sources. Please specify the desired connector adapter type when ordering.



FEATURES

- Our SOC and UCI adapters provide direct connectivity for Tempo Communications fiberTOOLS® to a wide range of industry-standard fiber optic connectors
- Adapter design ensures maximum accuracy and repeatability when performing critical measurements on fiber optic systems
- Easy to clean and use
- Single-mode and multimode compatible
- SOC adapters are compatible with both PC and APC interfaces
- UCI adapters feature durable phosphor bronze alignment sleeve

| CONNECTOR | SOC Adapter | | | UCI A | Adapter |
|--|-------------|----------|-----------|----------|------------|
| DESCRIPTION | | PART NO. | CAT. NO. | PART NO. | CAT. NO. |
| 1.25 mm Quick-Connect Universal Adapter (LC, MU, etc.) | 1 | 50605881 | T1026 | USE HYE | BRID CABLE |
| FC | | 50605768 | T1020 | 50605720 | APC-108 |
| LC | | 50606000 | T10LC | USE HYE | BRID CABLE |
| MIL-T-29504/4 & /5 Termini | | 50605898 | T1038 | USE HYE | BRID CABLE |
| SC | | 50605751 | T1062 | 52039964 | ASC-108/C |
| ST | | 50605775 | T1030 | 50605737 | ATS-108 |
| Versatile Link – V/Z PIN | | 50606048 | T10ZP | USE HYE | BRID CABLE |
| SMA 905/906 | | 50605966 | T1087 | ı | N/A |
| ST | | 52040191 | T1030-P0F | ı | N/A |

ACCESSORIES

fiberTOOLS™ HARD CARRY CASE

FEATURES

- Designed to hold Tempo handheld instruments and a full range of test accessories.
- Top tray holds up to 3 handheld instruments and a 180XL Visual Fault Finder
- Bottom compartment of both models stores additional instruments and test accessories
- Compact, waterproof and lockable
- Moulded from black structural foam resin

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 50606840 | 900B | Carry Case Ruggedised 3 Unit |

SPECIFICATIONS:

Weight: 500g

Dimensions: 380 x 185 x 180mm



FIBER HAND TOOLS

PROGRIP 5-IN-1 FIBER OPTIC STRIPPER

FEATURES

- Precision ground stripping cavities for:
 - 2.0 2.4mm outer jacket
 - 2.0 3.0mm loose tube
 - 2.8 3.0mm outer jacket
 - 900µm buffer insulation
 - 900/125μm and 250/125μm buffer/acrylate
- Factory calibrated
- Dual-durometer ProGrips for improved comfort and control



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52055935 | PA1171 | Pro-Grip Stripper, 5-in-1 Fiber Optic |

SPECIFICATIONS:

Weight: 140g Dimensions: 173mm





PROGRIP 3-IN-1 FIBER OPTIC STRIPPER

FEATURES

- Precision ground stripping cavities for:
 - 2.0mm outer jacket
 - 900µm buffer insulation
 - 250/125µm buffer/acrylate
- Factory calibrated
- Dual-durometer ProGrips for improved comfort and control

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52055938 | PA1177 | Pro-Grip Stripper, 3-in-1 Fiber Optic |

SPECIFICATIONS:

Weight: 130g

Dimensions: 160mm





MIDSPAN SLITTER

FEATURES

- The Mid Span Slitter is an efficient and indispensable tool for fiber optic cable termination
- The sharp blade is made of super-alloy, suitable for longitudinal stripping of outdoor optical loose tube cable.
- The stripping opens the tube on upper and lower sides for easy access of the fiber.
- The Mid Span Slitter comes with 4 groove diameters. Select the proper groove, put
 in the loose tube, press the blade into the tube coating, close and clamp the two half
 grooves, and move the blade along the tube to strip.



BENEFITS

- Small, light weight design for maximum portability
- Simple operation without any adjustments
- Provides easy access to fiber
- Super-alloy blade ensures precision and continued sharpness after multiple uses
- Four groove diameter options:
 (Ø 1.5~Ø 1.9mm) / (Ø 2.0~Ø 2.4mm) / (Ø 2.5~Ø 2.9mm) / (Ø 3.0~Ø 3.3mm)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------|
| 52076413 | 05712 | Sheath Slitter |

SPECIFICATIONS:

Weight: 30g Dimensions: 50 x 40 x 25mm

ECONOMY KEVLAR® CUTTER

FEATURES

- Cut protective Kevlar® strands in fiber optic cable
- Hard-chromed serrated edges to easily cut through Kevlar[®]
- Comfortable handles with large finger openings

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------|
| 52051283 | PA1511 | Kevlar® Cutter |

SPECIFICATIONS:

Weight: 60g

Dimensions: 197mm



ECONOMY FIBER OPTIC STRIPPER

FEATURES

- Pre-calibrated and factory set to ensure precision
- Rubber dipped handles
- Lock closure for safety and transport
- Strips 2.0 to 3.0mm fiber jacket, 900µm buffer and 125µm acrylate
- Spring loaded closure with distance stops

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52050605 | PA1162 | Stripper Fiber Optic 3-Level |

SPECIFICATIONS:

Weight: 86g Length: 127mm



UNIVERSAL SLITTER

FEATURES

- Strips and slits 4.5-25mm diameter Round Cables
- Precision stripping and slitting of rubber, PVC, nylon and most insulation materials
- Adjustable depth of cut
- Circumferential, longitudinal and spiral cuts
- Cable is supported during use
- Cable support arm edge is used to pry off thick insulation
- Laser-trimmed, stainless-steel blade for long use
- A perfect tool for mid-point taps
- Spare blade included





ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52050604 | PA1822 | Cable Slitter 4.5-25mm Inch Clamshell |
| 52050563 | PA2109 | Replacement Blade (Qty 2) |

SPECIFICATIONS:

Weight 7 oz. (200g) Length 5.7" (145mm)



ROUND CABLE CUTTERS

FEATURES

- To cut fiber outer cable jacket
- Cuts solid or stranded cable up to AWG 6
- Precise and effortless cuts
- Round cutting form minimises cable deformation
- Both are ideal for UTP and Coax, RG58, RG59 and RG6/6Q; Use PA1175 for RG7 and RG11

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52055936 | PA1175 | Pro-Grip Cutter, Contour Cable Cutter |
| 52055940 | PA1179 | Pro-Grip Cutter, Dual Contour Cable Cutter |

POCKET PROBE PICK

FEATURES

Probe pick for pulling wire, slicing, stripping cable and cleaning debris off terminal panels. Small and lightweight. Pen-sized with clip for carrying in pocket.

- Spudger tip
- Wire hook
- Wire stripper and slitting tooth
- Non-conductive scraping tip

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52049188 | PA1915 | Pocket Probe Pick/Blister |

SPECIFICATIONS:

Weight: 3oz. (86g)

Dimensions: 6.5" (166mm)

RING AND SLIT STRIPPER

FEATURES

- Ring and Slit stripping for 1.2mm 6.4mm fiber optic cables
- Easy fast adjustment for various cables diameters
- Ring Blade Kit TCCPS-RING-2 contains one blade, knob
- Slit Blade Kit TCCPS-SLIT-2 contains one blade, lever and screw

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52085475 | TCCPS | Cable Slit and Ring Stripper |



SPECIFICATIONS:

Weight: 0.05lbs (22g)

Dimensions: 2.87" (72.9mm)



FIBER CATALOG

DROP CABLE STRIPPER

FEATURES

- Strips 8.1mm drop cables
- Provides midspan slit operation for 8.1mm drop cables
- Easy secure operation for guick stripping
- Replacement Blade Kit TCDCS-2 contains six individual blades



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------|
| 52086521 | TCDCS | Drop Cable Stripper |

SPECIFICATIONS:

Weight: 0.15lb (68g)

Dimensions: 3.26" (82.8mm)

MULTI BIT DRIVER

FEATURES

- Versatile multi-bit screwdriver, 6 tools in one
- Precision machined, hardened steel bits
- High-grade, rust resistant, chrome-plated finish
- Soft, cushioned grip for extra comfort and torque
- Lifetime limited warranty





ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 52024842 | SD-6-1 | Multi Bit 6-in1 Driver |

SPECIFICATIONS:

Weight: 0.188 kg
Dimensions: Nutdriver 1/4" and 5/16"



PA1180 NEEDLE NOSE PLIERS

FEATURES

- Needle-nose with knurled surface for gripping, wrapping and looping
- Side cutter for AWG 19-26 copper
- Non-slip grips for precision control
- Stripping cavity for AWG 22 wire
- Crimp capacity:
 - UR: AWG 19-26
 - UY: AWG 22-26
 - UG: AWG 19-26

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52055941 | PA1180 | NEEDLE NOSE PLIERS |

LEO SEEN IN THE

SPECIFICATIONS:

Weight: 0.15lb (68g)

Dimensions: 3.26" (82.8mm)



^{**}Note: This is not an insulated tool

TCFXT INSERTION & EXTRACTION TOOL

The Tempo Communications TCEXT is used to remove and connect LC, SC and similar connectors into bulkheads where the technician's fingers may not fit especially as is the case in congested cabinets.



FEATURES

- Secure clamp to insert and remove LC and SC connectors from bulkheads in high density cabinets
- Ergonomic and lightweight design promotes precise alignment of connectors





ORDERING INFORMATION:



BARE FIBER ADAPTER

FEATURES

- Popular SC type connector with PC ferrule
- Easy to clean
- Smooth fiber feed
- Temporarily connect to fiber under test
- 900 micron buffer compatible



SPECIFICATIONS:

| Ferrule diameter | 2.5mm | Buffer diameter | 250-900um |
|--------------------|-----------------------|--------------------|-----------|
| Capillary diameter | Nominal -0 / +10um | Fiber strip length | 40mm |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 52080175 | BFA-1 | Bare fiber Adapter Kit |

FIBER OPTIC SCRIBE

FEATURES

- Pen-type scribe with screw-in non-reversible carbide tip
- Wedge shaped tip
- Pocket-clip
- Stainless steel barrel



SPECIFICATIONS:

| Weight | 2oz (57g) |
|--------|---------------|
| Length | 5.25" (197mm) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 52050965 | PA1922-1 | Fiber Optic Carbide Scribe |

FIBER TOOL KITS

The Tempo Communications Fiber Optic Tool Kits provides four kit options to satisfy varying tasks that the fiber optic technician may encounter. The tool kits contain all the common tools required to effectively and safely complete the job in an efficient manner.

Each tool kit is supplied in a rugged carry case to safely keep all tools organized for easy storage and retrieval for use. Extra pockets are incorporated to hold accessories and other tools. The FTK-B, Basic tool kit provides a variety of cutters, strippers and common handtools that the typical technician would use in their day to day activities. The FTK-P, Pro tool kit adds the 180XL visual fault locator for safe and quick visual identification of cut or damaged fiber, Macrobends and contaminated or damaged connectors.

The FTK-PP, Pro Plus tool kit adds the OPM210 optical power meter/visual fault locator to the FTK-B. This enables the technician to visually locate fiber and connector faults and to measure the absolute power in fiber networks.

The FTK-T, Termination kit provides all of the tools needed to quickly and effectively terminate fiber optic cables. The 915CL and 180XL are the key components along with a fiber stripper, side cutter and Kevlar shear.

FTK-B BASIC TOOLS KITS

A basic tool kit allows the technician cut, strip and prepare fiber optic cables for termination.

INCLUDES

- Kevlar Cutter
- 3-in-1 Fiber Optic Stripper
- Universal Slitter
- 6-in-1 Multi Tool
- Long Nose Pliers
- Fiber Optic Tool Case
- Side cutters
- Drop Cable Stripper
- Mid Span Slitter
- Ring and Slit Stripper



FTK-P PRO TOOLS KIT

Same tools as the FTK-B but with a 180XL Visual Fault Locator (VFL) to visually locate faults and two fiber cleaning pens.

INCLUDES

- Kevlar Cutter
- 3-in-1 Fiber Optic Stripper
- Universal Slitter
- 6-in-1 Multi Tool
- Visual Fault Locator
- Long Nose Pliers
- Fiber Optic Tool Case
- Side cutters
- Drop Cable Stripper
- Mid Span Slitter
- Ring and Slit Stripper
- 2.5mm Fiber Cleaning Pen
- 1.25mm Fiber Cleaning Pen





FTK-PP PRO PLUS TOOLS KIT

Same tools as the FTK-P but with a Micro OPM which has an Optical Power Meter (OPM) and Visual Fault Locator (VFL). The OPM can be used to measure optical power, perform loss testing and to sense tones present on the fiber. The VFL can be used to visually locate faults and to test mechanical connectors.

INCLUDES

- Kevlar Cutter
- 3-in-1 Fiber Optic Stripper
- Universal Slitter
- 6-in-1 Multi Tool
- Micro OPM
- Long Nose Pliers
- Fiber Optic Tool Case
- Side cutters
- Drop Cable Stripper
- Mid Span Slitter
- Ring and Slit Stripper
- 2.5mm Fiber Cleaning Pen
- 1.25mm Fiber Cleaning Pen



FTK-T TERMINATION TOOLS KIT

Contains all of the tools needed to terminate fiber optic cables with a mechanical connector

INCLUDES

- Kevlar Cutter
- 3-in-1 Fiber Optic Stripper
- 915CL Cleaver
- Fiber Optic Tool Case
- Visual Fault Locator
- Side Cutter





| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 52086508 | FTK-B | Basic Fiber Tool Kit |
| 52086509 | FTK-P | Pro Fiber Tool Kit |
| 52086510 | FTK-PP | Pro Plus Fiber Tool Kit |
| 52086866 | FTK-T | Termination Fiber Tool Kit |

INDIVIDUAL TOOL FROM KITS:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-------------|-----------------------------|
| 52051283 | PA1511 | Kevlar Cutter |
| 52055938 | PA1177 | 3-in-1 Fiber Optic Stripper |
| 52050604 | PA1822 | Universal Slitter |
| 52024842 | TCBMD | 6-in1 Multi Tool |
| 55500025 | OPM210 | Standard Power OPM with VFL |
| 52055941 | PA1180 | Long Nose Pliers |
| 52085476 | FIBKIT CASE | Fiber Optic Tool Case |
| 52055936 | PA1175 | Side cutters |
| 52086521 | TCDCS | Drop Cable Stripper |
| 52076413 | M55100 | Mid Span Slitter |
| 52085475 | TCCPS | Ring and Slit Stripper |
| 52068671 | 180XL | Visual Fault Locator |

OTHER TOOLS AVAILABLE:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52087221 | FCL100 | Field Fiber Optic Cleaver |
| 52082727 | 920CL | 920CL Optical Fiber Cleaver |
| 52080175 | BFA-1 | Bare Fiber Adapter |
| 52050560 | PA1820 | AM25 Slitter (0.18" - 1.0") |
| 52050561 | PA1821 | AM35 Slitter (1.0" - 1.4") |
| 52050605 | PA1162 | Economy Stripper |
| 52049188 | PA1915 | Pocket Probe / Pick |
| 52050965 | PA1922-1 | Fiber Optic Carbide Scribe |

REPLACEMENTBLADES FOR STRIPPING TOOLS:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|--------------|--|
| 52086502 | TCDCS-2 | DROP CABLE STRIPPER BLADE KIT (six blades) |
| 52086503 | TCCPS-RING-2 | CPS RING BLADE KIT (one replacement blade with hardware) |
| 52086504 | TCCPS-SLIT-2 | CPS SLIT BLADE KIT (one replacement blade with hardware) |

OPTICAL WAVELENGTH SPLITTER

Wavelength division multiplexing (WDM) is a technology or technique modulating numerous data streams, i.e. optical carrier signals of varying wavelengths (colours) of laser light, onto a single optical fiber.

Our Optical Wavelength Splitter (OWS200) allows any technician, who has a standard OPM (Optical Power Meter) to be able to measure signal levels in WDM networks.

The OWS200 "splits" multiplexed wavelengths, found in NGPON2 networks allowing specific wavelengths to be measured with a conventional optical power meter such as the OPM510.

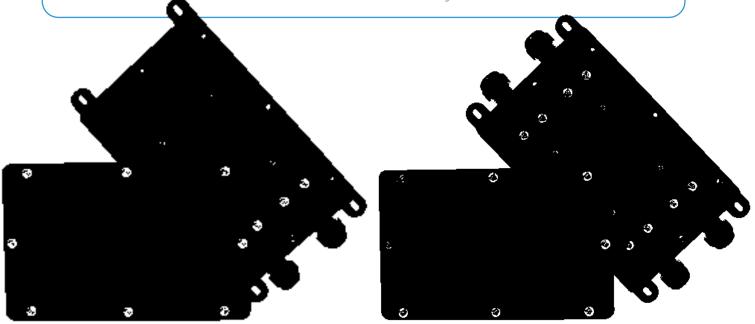


DROP FIBER REPAIR KIT

The Drop Fiber Enclosure Kit can be used as a demarcation point to install fiber optic cable splices and as a repair product to reconnect damaged or severed drop fiber cables. Common fiber sizes of 8.1mm, 5.4mm and 5.1mm rectangular cables and 3.0mm and 5.1mm round cables are accommodated with the supplied sealing gaskets. Both fusion splices (total of 12) and two mechanical splices are securely positioned within the IP68 rated enclosure. The enclosure can be permanently buried or mounted on the side of a building. Two DFE100 enclosures are typically used to repair a drop fiber as there is not enough slack cable to reconnect the fibers.

FEATURES

- Allows technician to repair drop cables in FTTx applications
- Direct bury, wall mount or pole mount
- Fusion splice or mechanical splice
- Up to fourteen fiber capacity
- Two are required due to no slack and damage to cable
- IP68 rated for buried applications and element protection
- Integrated tabs to position and hold fibers in place
- Common fiber sizes of 8.1mm, 5.4mm and 5.1mm rectangular cables and 5.1mm round cables
- Kit contents:
 - -Enclosure
 - -Two mechanical splices
 - -Two gaskets for each of the fiber sizes



INDIVIDUAL GASKET FOR EACH CABLE SIZE:



5.1mm & 5.4mm

Rectangular



Round





3.0mm Round



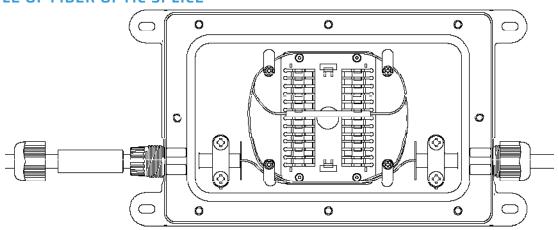
COMPONENT PARTS:

| PART NO. | DESCRIPTION | PRODUCT | QTY (2 PORT) | QTY (4 PORT) |
|------------------|----------------------------|---------|-----------------|-----------------|
| Case Top | ABS plastic, Black | | 1 | 1 |
| Case Bottom | ABS plastic, Black | | 1 | 1 |
| Rubber Gasket | 8.1mm Rectangular | | 2 | 4 |
| Rubber Gasket | 5.1mm/5.4mm Rectangular | • | 2 | 4 |

| PART NO. | DESCRIPTION | PRODUCT | QTY (2 PORT) | QTY (4 PORT) |
|----------------------|--------------------|---------|-----------------|-----------------|
| Rubber Gasket | 5.1mm Round | | 2 | 4 |
| Rubber Gasket | 3.0mm Round | | 2 | 4 |
| Rubber Gasket | No Hole | | 0 | 2 |
| Cable Clamp | 3mm Cable Clamp | • | 2 | 4 |
| Mechanical Splice | L*W: 37*6mm | | 2 | 2 |

STRUCTURE:

EXAMPLE OF FIBER OPTIC SPLICE



SPECIFICATIONS:

| Size | 8.85 x 4.72 x 1.34" (225 x 120 x 34mm) |
|--------------------------------|--|
| Material | ABS with Polycarbonate (UV resistant) |
| Cable Size | 8.1mm rectangular, 5.4mm & 5.1mm rectangular and 3.0mm and 5.1mm round |
| Mechanical Splice Locations | Two |
| Fusion Splice Locations | Twelve (3 x 60mm) |

| IP Rating | IP67 |
|--------------------------|----------------|
| Weight | 0.66lb (0.3kg) |
| Color | Black |
| Operating Temperature | -40 to +80C |
| Storage Temperature | -40 to +80C |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 55500211 | DFE100 | Drop Fiber Enclosure Kit, Two Port in Line |
| 55501030 | DFE101 | Drop Fiber Enclosure Kit, Two Port Stub |
| 55501031 | DFE102 | Drop Fiber Enclosure Kit, Four Port |

OPTI-CLEAN REEL CLEANER

The Opti-Clean reel cleaner is an essential tool to clean fiber optic connectors. It is the best dry method for cleaning fiber optic termini such as SC, LC, FC, ST, E2000 and other common connectors.

FEATURES

- Lint free cleaning tape.
- Cleans the Entire Ferrule End Face.
- Antistatic design.

- Effective and efficient ferrule end face cleaning.
- Easy-to-replace fiber spools available.

PERFORMANCE:







Before (1)

Before (2)

After

SPECIFICATIONS:

| | OPTI-CLEAN REEL CLEANER | REPLACEMENT SPOOL |
|-------------------|-------------------------|-------------------|
| Cleaning Count | > 600 times | > 600 times |
| Size | 130 x 88 x 32mm | 104 x 60 x 30mm |
| Weight | 0.14kg | 0.08kg |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-------------|--|
| 55500007 | REEL-CLN | Opti-Clean Reel Cleaner |
| 55500008 | REEL-CLN-SP | Opti-Clean Reel Cleaner Replacement Spool |



CLEANING SWABS 1.25mm and 2.5mm

These easy-to-use cleaning swabs provide a fast and effective process for cleaning 2.5mm bulkheads and 1.25mm bulkheads. They are easy to use.

FEATURES

- The precision cleaning swabs are used to cleaN bulkhead ferrules and inside mating sleeves.
- Available in 2.5mm and 1.25mm versions.
- Single use.
- Sold in 100 packs.



EML100 ELECTRONIC MARKER LOCATOR

Tempo have introduced the 92 kHz markers, targeted at marking fiber optic cable installations, in response to requests from telecom companies who wish to differentiate their ducts carrying copper communication cables from those carrying fiber optic communication cables. It has also been found in practice that installing metallic tracer wires or tapes alongside or in fiber optic ducts is unreliable; they rarely have proper continuity for the whole duct length, often found corroded or not connected at joints. Tempo Communications' Marker-Mate electronic marker locator along with, OmniMarker and Spike Marker buried electronic markers form a complete solution for marking and locating buried utilities and other devices to depths of at least 1.5m. Ideally suited to marking fiber optic ducts that, without metallic elements, are otherwise difficult to pinpoint.

FEATURES

- Detects up to nine different marker types
- Rapid switching between scan and single modes
- Digital signal processor accuracy
- Bar graph, numeric & audible signal strength indicators
- Headphone jack
- Low battery warning
- Weather resistant

- Scan mode provides simultaneous detection of all marker types
- User-adjustable Detection Threshold
- Large-character display
- Adjustable speaker volume
- Battery level indicator
- Adjustable time out feature
- Rugged construction

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 50607984 | EML100 | Electronic Marker Locator |
| 52085007 | OM-02 | OmniMarker II, CATV |
| 52085016 | OM-04 | OmniMarker II, Fiber Optic |
| 52085015 | OM-07 | OmniMarker II, Europower |

| GENERAL | |
|------------------------------|---|
| Housing Material | High density welded polyethylene |
| Identification | Solid moulded colour and moulded text |
| Detection Range | 1.5m typical for all models (using Tempo EML-100 or RD8000MRX) |
| Detection Offset | 15cm maximum at 1.5m |
| ELECTRICAL | |
| Detection Field | Vertical Dipole (OmniMarker II model) |
| Frequency Tolerance ± 0.35 % | |
| MECHANICAL | |
| Overall Diameter | 100mm max |
| Anchoring | Two "tie down" loops along flange. |
| Length | 128mm |



SACRIFICIAL CONNECTORS

The sacrificial connector is used to protect the optical port of fiber optic test equipment and instruments. The sacrificial connector ensures that repeated mating's have no detrimental effect on the optical port (bulkhead) which can lead to reflectivity and insertion loss issues.

A damaged bulkhead is expensive to repair and will take the instrument out of commission. A sacrificial connector, on the other hand, can be replaced when worn or damaged and a new sacrificial connector installed. With near OdB loss through this connector, there is no impact on the test results.

FEATURES

- Prevents damage to instrument and equipment bulkheads
- Low insertion loss
- Low reflectance
- GR326 / IEC61300-2 compliant
- GR910/UV94-V0 compliant
- RoHS compliant

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 55500159 | ZDBSCA | Zero dB SC/APC |
| 55500160 | ZDBSCU | Zero dB SC/UPC |
| 55500161 | ZDBSCAU | Zero dB SC/APC (M) -SC/UPC (F) |
| 55500163 | ZDBSCUA | Zero dB SC/APC (F) -SC/UPC (M) |

SPECIFICATIONS:

| Fiber Type: | Single | Single Mode | |
|-------------------------|-------------|-------------|--|
| Operating Wavelength: | 1310nm 8 | ; 1550nm | |
| Ferrule Type: | PC | APC | |
| Maximum Insertion Loss: | 0.5dB | | |
| Return Loss: | ≥40dB | ≥55dB | |
| Maximum Optical Power: | ≤500mW | | |
| Operating Temperature: | -40 - +70°C | | |
| Storage Temperature: | -40 - +70°C | | |



MAINTENANCE

OF FSP200, 915FS, FCL200, 915CL AND 920CL

- Turn off splicer.
- Use lint free swabs.
- Do not touch the electrodes.
- Never use compressed air.
- Use the cleaning brush only to clean debris from general working area, never on the lenses, V-grooves or mirrors.

V-GROOVES (RECOMMENDED DAILY). SEE FIGURE 1.

Clean the bottom of the V-groove using 99% pure isopropyl alcohol and a lint free swab.

Fiber Clamps (Recommended Daily)

If contaminants are present on the clamps, proper clamping may not occur resulting in poor quality splices. The fiber clamps should be frequently inspected and periodically cleaned during normal operation. To clean the fiber clamps do the following:

• Clean the surface of the clamps with 99% pure isopropyl alcohol and a lint free swab.

WIND PROTECTOR MIRRORS (RECOMMENDED DAILY ON 910FS). SEE FIGURE 2.

If the wind protector mirrors become dirty, the fiber core position may be incorrect due to decreased optical path clarity, resulting in higher splice loss. To clean the mirror's, do the following:

i. Clean the mirror surface using 99% pure isopropyl alcohol and a lint free swab.

ii. Mirror should look clean with no streaks or smudges.

OBJECTIVE LENSES (RECOMMENDED WEEKLY). SEE FIGURE 3.

If the objective lens' surface becomes dirty, normal observation of the core position may be incorrect, resulting in higher splice loss or poor splicer operation. Therefore, clean both of them at regular intervals. Otherwise, dirt may accumulate and become impossible to remove.

To clean the objective lenses do the following:

- i. Before cleaning the objective lenses, always turn off the splicer.
- **ii.** Gently clean the lenses' (X-axis and Y-axis) surface with a dry lint free swab. Using the swab, start at the centre of the lens and move the swab in a circular motion until you spiral out to the edge of the lens surface.
 - iii. The lens surface should be clean and free of streaks or smudges.
- **iv.** Turn on the power and make sure no smudges or streaks are visible on the monitor screen. Press X/Y key to change the screen and check the state of the lens surface on both the X- and Y-screens.

NOTE:

Do not touch the electrodes when cleaning.

It is recommended to clean the objective lenses when replacing the electrodes.

General Fusion Splicer Cleaning (Recommended Daily)

Use the cleaning brush only to clean debris from general working area, never on the lenses, V-grooves or mirrors. Periodically clean the fiber adapters with 99% isopropyl alcohol and a lint free swab. Never touch the fiber clamping area of the fiber adapters.

GENERAL FUSION SPLICER CLEANING (RECOMMENDED DAILY)

Use the cleaning brush only to clean debris from general working area, never on the lenses, V-grooves or mirrors. Periodically clean the fiber adapters with 99% isopropyl alcohol and a lint free swab.

Never touch the fiber clamping area of the fiber adapters.

CLEANING FIBER CLEAVER (RECOMMENDED DAILY)

If the circular blade or clamp pads of the fiber cleaver become contaminated, the cleaving quality could degrade. This may lead to fiber surface or end-face contamination, resulting in higher splice loss. Clean the edge of the circular cleaving blade and clamp pads with a lint free swab using 99% pure isopropyl alcohol.

FIGURE 1



Clean V-Groove daily

FIGURE 2



Mirror cleaning in lid

FIGURE 3



Objective Lens

^{*}The above procedures are also recommended for the 910FS and 910CL

OPTICAL POWERMETER CALIBRATION GLOSSARY

ABSOLUTE POWER STANDARDS:

The reference photodetectors maintained by the National Institute of Standards and Technology (N.I.S.T.) in Boulder, Colorado. These reference photodetectors are used to transfer optical power calibration to two sets of Secondary Standards maintained by Tempo Communications Ltd.

ACTIVE SET OF SECONDARY STANDARDS/ACTIVE SECONDARY STANDARD:

The most recently calibrated set of Secondary Standards, which are used to calibrate Working Standards used on the production floor. An Active Secondary Standard is one of the photodetectors in the Active Set of Secondary Standards.

ADAPTER:

A mechanical device enabling the coupling and uncoupling of a connector. A bulkhead adapter is used to couple two terminated cable ends. An interface adapter is used to connect a cable to a light source, photodetector, or other device.

AGING OF STANDARDS:

A gradual deviation from specifications due to wear and the deterioration of associated electronic components.

ANSI CERTIFICATE OF CALIBRATION:

A Certificate of Calibration (see below) that includes additional information specified by American National Standards Institute document ANSI/NCSL Z540. In addition to manufacturer, performance, and traceability information, an ANSI Certificate of Calibration must include the name and address of the customer and a detailed description of the methods and Working Standards used to perform the calibration. The calibration status of the Working Standards used must also be documented. Furthermore, an ANSI Certificate of Calibration must include a statement that the certificate or report may not be reproduced, except in full, without written permission from the calibration laboratory.

BACKUP SET OF SECONDARY STANDARDS/BACKUP SECONDARY STANDARD:

The set of Secondary Standards with calibration older than one year, but not exceeding two years. The calibration points of the Backup Set of Secondary Standards are compared to the Active Set at monthly intervals to verify the accuracy of the latter. A Backup Secondary Standard is one of the photodetectors in the Backup Set of Secondary Standards.

CALIBRATION CONDITIONS:

The specific conditions under which a calibration factor is associated with a calibration wavelength. The calibration conditions typically include the centre wavelength and acceptable spectral deviation of the laser source in use; the output power of the laser source; the reference cable type and length; the type of connectors used to terminate the reference cable, including the manufacturer; the interface adapter used; and the ambient temperature and humidity conditions.

CALIBRATION FACTOR:

A number used to correlate the response of a photodetector in a manufactured instrument with the photodetector response of a Secondary Standard or Working Standard. In instruments manufactured by Tempo calibration factors are stored in non-volatile memory, and defined for each calibration wavelength.

CALIBRATION WAVELENGTH:

A specifically defined wavelength used during the point calibration of a manufactured instrument. The absolute accuracy of measurements performed at other than the calibration wavelength may vary, depending on the response linearity of the photodetector incorporated in the instrument at that wavelength. Calibration wavelengths are listed below:

CERTIFICATE OF CALIBRATION:

A document certifying that a manufactured instrument has been calibrated or re-calibrated to conform to published specifications, and that the calibration is traceable to an established standards bureau, i.e., the N.I.S.T. A Certificate of Calibration includes the following: the name and address of the manufacturer; the model number and description of the instrument; the instrument serial number; the condition in which the instrument was received and returned, i.e., within tolerance, out of tolerance, or non-operational; the calibration date, interval, and due date for re-calibration; the conditions under which the instrument was calibrated; the procedures used to perform the calibration; the identity of the calibration technician; and a signature of an authorized representative of the manufacturer.

CONNECTOR:

A mechanical device that allows an optical fiber or cable to be repeatedly coupled or uncoupled from an interface or another cable. An optical fiber fitted with connectors is said to be connectorised or terminated.

CONNECTOR REPEATABILITY:

The ability of a connector to be mated and unmated repeatedly without affecting its attenuation, return loss and other performance specifications. A lack of repeatability is usually attributable to the inability of a connector to maintain accurate and consistent alignment of the cores of the optical fibers.

FIBER OPTIC CABLE:

An optical fiber, multiple fibers, or fiber bundles, which may include a jacket and strength members (kevlar, steel, or other materials), fabricated to meet optical, mechanical, and environmental specifications.

LINEARITY:

The ability of a photodetector to generate electrical current in amounts proportional to the incident wavelength and intensity of light.

PHOTODETECTOR:

A semiconductor device that converts light energy into an electrical current. The conversion of light energy into electrical current is, in principle, proportional and linear with the incident power, which is expressed in Watts. The conversion ratio of a photodetector is dependent on the wavelength of the light received, therefore, this wavelength must be precisely defined for a point calibration (see below) to be valid.

POINT CALIBRATION:

The correlation of electrical current produced by a photodetector, quantified in Amps, with an incident power of light energy, expressed in Watts, at a single defined wavelength. This photodetector response is expressed in Amps-per-Watt (A/W

SECONDARY STANDARDS:

The reference photodetectors maintained by Tempo Secondary Standards are calibrated at regular intervals by the N.I.S.T. using the Absolute Power Standards maintained by the Institute. Tempo maintains two sets of Secondary Standards, each set containing one reference photodetector of Si and InGaAs composition. Each set of Secondary Standards alternates as Active and Backup at one-year intervals.

SPECTRAL DEVIATION:

The difference between the actual output wavelength of a light source and its specified wavelength. Spectral deviation is usually attributable to manufacturing tolerances.

UNCERTAINTY:

The margin of error for a calibration or measurement attributable to external causes, such as connector repeatability, ambient temperature, back-reflections, or spectral deviation from a defined calibration wavelength. Uncertainty will cause slight variations in optical power measurements unless the conditions and equipment used are identical to those employed during the calibration of the instrument. Uncertainty is typically expressed in percent (%).

WORKING STANDARDS:

A set of reference optical power meters incorporating photodetectors of Si or InGaAs composition that are calibrated using an Active Secondary Standard. These reference optical power meters are used to perform a point calibration of manufactured instruments at specified wavelengths.

INSERTION LOSS MEASUREMENT

WHAT IS INSERTION LOSS?

An insertion loss (IL) measurement characterizes the light loss through a component or connection.

There are two accepted methods for measuring insertion loss, both of which may be found in reference document FOTP-171, published by the Electronic Industry Association (EIA).

Insertion loss measurements require a light source, an optical power meter, and a patch cable manufactured to precise tolerances, known as a reference cable.

In general, an insertion loss measurement is a two step process:

- 1) Establish a baseline power level measurement for the light source and reference cable in use. This is referred to as "referencing" or "calibration."
- 2) Connect the device under test and measure the difference between the measured power and the Reference power.

INSERTION LOSS MEASUREMENTS

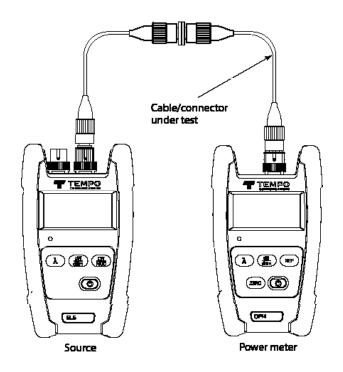
To measure the insertion loss of a connector/cable, do the following:

STEP 1: Connect an appropriate Tempo LED or laser source to the optical power meter using a suitable reference cable. The reference cable should be 2 to 3 meters in length. See the illustration.

STEP 2: Make sure the source is in continuous wave (CW) output mode. Set the optical power meter to the output wavelength of the source using the [λ] key and to dBm units using the [dBm] key. Note that the dBm output from the reference cable should be within acceptable limits.

STEP 3: Store the reference power level by pressing the [Rel] key for a few seconds. The main numerical display should read 00.00 dB.

STEP 4: Disconnect the reference cable from the optical power meter and insert the cable to be tested using an appropriate bulkhead adapter.



ABOUT dB, dBm, and WATTS

Fiber optic measurements are performed using decibel (dB) units.

The decibel is a logarithmic, relative, dimensionless unit it gives no indication of the absolute power level. Loss is always indicated using a minus (-) sign, and a gain is indicated by a plus (+) sign. Because dB units are relative and dimensionless, a correlation with an absolute unit of measure must be established to be useful. To indicate absolute power, logarithmic decibel units are referenced to linear Watt units: OdBm = 1 milliwatt (mW).

To convert Watt units to dBm, the following formula is used:

$$P = 10 \log \left(\frac{Px}{1mW} \right) dBm$$

The table on the right illustrates the relationship between absolute logarithmic dBm units and absolute linear Watt units: Absolute logarithmic dBm [P] Absolute linear Watts [Px]

| dBm (P) | WATTS (Px) |
|---------|------------|
| +10dBm | 10mW |
| +3dBm | 2mW |
| OdBm | 1mW |
| -3dBm | 0.5mW |
| -10dBm | 100µW |
| -20dBm | 10µW |
| -30dBm | 1μW |
| -40dBm | 100nW |
| -50dBm | 10nW |
| -60dBm | 1nW |
| -70dBm | 100pW |
| -80dBm | 10pW |
| -90dBm | 1pW |
| | |

RETURN LOSS MEASUREMENT METHODS

WHAT IS RETURN LOSS?

A return loss measurement characterises the strength of a reflection produced by variations in the refractive index along a fiber optic link, known as a back-reflection or Fresnel reflection. Quantified in decibel (dB) units, return loss is the logarithmic expression of the ratio of the reflected power over the incident power, that is, the intensity of light reflected back to the return loss meter over the intensity of the light injected into the fiber, expressed as a positive number.

If not controlled, back-reflections can degrade the performance of a fiber optic system by interfering with the operation of the laser transmitter, or by generating noise at the receiver.

A common source of back-reflections is the junction where two fiber optic connectors are mated. Because of this, a connector with high return loss, which sends very weak reflections back to the transmitter, is superior to a connector with low return loss that sends back strong reflections. When measuring connectors, extremely low return loss values usually indicate a defect, such as core misalignment, poor fiber end-face contact, scratches, breaks, or end-face contamination.

RETURN LOSS MEASUREMENT METHODS

OPTICAL TIME DOMAIN REFLECTOMETER (OTDR) METHOD

An Optical Time Domain Reflectometer (OTDR) launches a train of light pulses into the device under test and collects backscatter information as well as superimposed Fresnel reflections. The OTDR is optimised to accurately measure loss-per-distance based on the received backscatter level. An OTDR also gives an estimation of the strength of a reflection at a given distance based on its peak height.

RETURN LOSS DEFINED

Reflections—or more specifically Fresnel reflections—occur at the boundary between two media with different refractive indices. The percentage of the light reflected can be calculated if the refractive indices of both media are known.

The most commonly known percentage of reflected power, the 4% reflection, is caused by a glass-to-air boundary. Reflectance in general is the ratio of reflected power to incident power. When knowledge of a reflection at a discrete point is important, the term reflectance is preferred. Reflectance is expressed in negative decibels (dB). Optical return loss (ORL), often referred to as return loss, describes the ratio of reflected power over the incident power of a system as a whole. Similar in concept to reflectance, return loss is also expressed in decibels.

DATASCOUT

The DataScout 10G[™] – The smart tablet that goes beyond testing! This device features a powerful Android-based, rugged-tablet platform available with the industries only 10G Ethernet and more. This enables technicians to carry a single device powerful enough to test legacy DSO-TIMS, 10G ethernet and everything in between while simultaneously removing the need to carry a separate laptop or tablet. Training videos, as well as the user manual, are available directly from the simple to use, fast to learn, touch screen interface.

ADVANCED FEATURES

- Power-up 3X's faster than the competition*
- Test DSO-TIMS up to 10G Ethernet
- Test multiple services simultaneously
- Remote control via Bluetooth® or standard web browser

RUGGED & RELIABLE:

- Plug & Stay No modules to lose!
- Replaces up to 8 handhelds*
- Aluminum case with protective rubber boot
- Designed, manufactured and supported in USA

SIMPLE TO USE, FAST TO LEARN

- Touch screen tablet design
- No confusing menus
- Intuitive test configuration
- Training videos embedded in application

DESIGNED FOR:

- Service Providers
- Utilities & Municipalities
- E911 Communication Networks
- Datacenters





GOES BEYOND TESTING

 Tablet comes loaded with standard applications including web browser, email, document viewer and more.

ව ETHERNET & C37.94

- Dual 10/100/1000BaseT ports
- Dual 100/1000BaseX SFP ports
- Single 10Gbps SFP+ Port (a)
- Single C37.94 SFP Port (b)
- Read/Diagnose SFP data and optical power
- Quick Test (BERT)
- RFC-2544, Y.1564 and C37.94
- Mulitstream (16) test streams

8 4 WIRE DDS

- CSU/DSU emulation
- 56K primary/secondary modes
- 64K clear channel mode
- Real-time received byte display
- Monitor received signal level

6 DATACOMM

- Sync/Async & DTE/DCE modes
- 50bps-250kbps in 1 bps steps
- V.35
- EIA-530(A)

- Onboard user manual & training videos
- Wired, Wi-Fi[®] and Bluetooth[®] remote options
- Print and Export reports to PDF or CSV
- EMIX, VLAN, MPLS & Jumbo frames
- IPv4 and IPv6 included standard
- Loopback & End-to-End test modes
- Discover and loopup/down six remote units
- Automatically respond to loopup/down commands
- Save test profiles
- Easy to read graphical reports

4 DS1 & DS3

- DS3 and Dual T1/E1 interface options
- PRI-ISDN NT/TE interface option
- G.821 PRI-ISDN data logging option
- DSO Voice & Data Testing
- DS3-THRU mode

- Bit Display
- CSU/NIU Emulation Mode
- DDS Latching loopbacks
- Loopup/down repeaters & spans
- Replacement for TBERD 107a, 224, 227, etc.

- RS449 (V.36)
- RS530
- X21 (V.11)
- High Impedance mode
- RS232 (V.28)
- Bi-directional loopback mode
- Displays DTE/DCE signal status

6 SIGNALING - TIMS/DSO

- Comprehensive VF test suite
- TIMS 2/4 wire signal generator up to 2MHz
- Signaling modes: LS, GS,
- DID, E&M
- CO/PBX emulation modes

- Transmit +13dB. Receive -50dB
- Impulse noise measurement
- Dropouts, gain and phase hit measurement
- Replacement for Am5, CXR 704a
- HP4935, etc.

COMPARISON CHART:

| PART NO. | DS-TIMS (TIMS ONLY) | DS-SS- DDS-TIMS (ALL LEGACY) | DS-C-E2- 3-K2 (EVERYTHING) | DS10G-COMBO- ETHERNET |
|------------------------------------|------------------------|------------------------------------|----------------------------------|--------------------------|
| 1G REFLECTOR FED | | | | |
| 10G REFLECTOR FED | | | | |
| ETHERNET 1G SINGLE PORT | | | ✓ | |
| ETHERNET 1G DUAL PORT | | | ✓ | ✓ |
| ETHERNET 10G | | | ✓ | ✓ |
| QUICK TEST (BERT) & RFC-2544 | | | ✓ | ✓ |
| ITU-T Y.1564 & MULTISTREAM (16) | | | ✓ | ✓ |
| IEEE C37.94 | | | ✓ | ✓ |
| DSO (TIMS) | ✓ | | ✓ | |
| DSO EXTENDED TEST RANGE | ✓ | ✓ | ✓ | |
| DS3, T1/E1 | | ✓ | ✓ | |
| T1 CSU/NIU EMULATION | | ✓ | ✓ | |
| DUAL PORT T1/E1 | | ✓ | ✓ | |
| DDS | | ✓ | ✓ | |
| DATACOMM | | | ✓ | |
| SMF & MMF JUMPERS LC & SC | | | ✓ | |
| MMF JUMPER LC/ST | | | ✓ | ✓ |
| SMF & MMF 1G TRANSCEIVERS (2) | | | ✓ | ✓ |
| SMF & MMF 10G TRANSCEIVER | | | ✓ | ✓ |
| MMF C37.94 TRANSCEIVER | | | ✓ | ✓ |
| MMF, SMF, COPPER LOOP PLUGS | | | ✓ | ✓ |
| ETHERNET CAT5 PATCH CABLE | | | ✓ | ✓ |
| BANTAM LEADS RED/BLUE | ✓ | ✓ | ✓ | ✓ |
| BANTAM TO DUAL ALLIGATOR (2) | ✓ | ✓ | ✓ | ✓ |
| RJ48 TO DUAL BANTAM | ✓ | ✓ | ✓ | ✓ |
| BNC LEADS RED/BLUE | | ✓ | ✓ | ✓ |
| DDS RJ-48 TEST LEADS | | ✓ | ✓ | |
| AC CHARGER | ✓ | ✓ | ✓ | ✓ |
| DC VEHICLE CHARGER | ✓ | ✓ | ✓ | ✓ |
| PADDED CASE | ✓ | ✓ | ✓ | ✓ |
| USB OTG CABLE | ✓ | ✓ | ✓ | ✓ |

ETHERNET & Wi-Fi® TESTING CATALOG

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-------------------|--|
| 52068246 | DS-LD-RJ48-BTM | TEST LEAD-RJ48(M)/DUAL BANTAM |
| 52068250 | DS-LD-SMF-SC-LC | TEST LEAD - OPTICAL, SMF SC TO LC, 6FT |
| 52068252 | DS-LD-MMF-SC-LC | TEST LEAD - OPTICAL, MMF SC TO LC, 6FT |
| 52068260 | DS-SFP-MMF-C37 | SFP - 100BASE-X C37.94 850NM MMF XCVR, L |
| 52068590 | DS-LD-MMF-LC-LC | DS-LEAD-MMF-LC-LC-2M |
| 52068621 | DS-LEAD-SMF-LC-LC | DS-LEAD-SMF-LC-LC-2M |
| 52068622 | DS-ADAP-BTM-310B | S-ADAP-BTM-310-BL |
| 52068623 | DS-ADAP-BTM-310R | DS-ADAP-BTM-310-RD |
| 52071039 | DS10G-ACC-SOFT | CASE-PADDED SOFT STORAGE CASE |
| 52071572 | DS-LD-DDS-STR | TEST LEAD - DDS RJ48 STRAIGHT-THRU, 6FT |
| 52071573 | DS-LD-DDS-REV | TEST LEAD - DDS RJ48 REVERSED, 6FT |
| 52071577 | DS10G-ACC-VEH | ACCESSORY - 12VDC VEHICLE CHARGER |
| 52071578 | DS-ACC-OTG | ACCESSORY - USB 2.0 MICRO CABLE ADAPTER |
| 52072140 | DS-LD-BNC-R | TEST LEAD - BNC RED |
| 52072141 | DS-LD-BNC-B | TEST LEAD - BNC BLUE |
| 52073056 | DS-LD-BTM-R | TEST LEAD - BANTAM RED |
| 52073057 | DS-LD-BTM-B | TEST LEAD - BANTAM BLUE |
| 52075915 | DS-ACC-M-LP | ACCESSORY - MMF LOOPBACK |
| 52075916 | DS-ACC-S-LP | ACCESSORY - SMF LOOPBACK |
| 52075917 | DS-ACC-E-LP | ACCESSORY - SUPER LOOPER |
| 52077521 | DS-LD-MMF-ST-LC | TEST LEAD - OPTICAL, MMF ST TO LC |
| 52084727 | DS10G-SW-STRESS | SW OPTION - C37.94 STRESS TEST |

SPECIFICATIONS:

| Display & Input: | 7"WVGA LCD touch screen. 800x600 resolution. |
|-----------------------------------|--|
| Weight (Varies by configuration): | 0.91 kg (2.0 lbs) minimum 1.36 kg (3.0 lbs) maximum |

ENVIRONMENTAL:

| Operating Temperature: | 10°C to 55°C / 14°F to 131°F |
|------------------------|---|
| Operating Humidity: | 0% to 93% RH non-condensing |
| Storage Temperature: | -20°C to 70°C / -4°F to 158°F. |
| Battery Type: | Li Ion battery pack. |
| Run Time: | 2-8 hours (varies by test mode). |
| External Power: | Mains: 110-240VAC, 50-60Hz with adapters. |
| Enclosure: | Shell: Rugged 1.5mm extruded aluminum. Boot: Rubber with Wi-Fi antenna storage slot. Kickstand: Power coated steel. |



WIRELESS & 5G

HAND-HELD SPECTRUM **ANALYZER**

0.3 to 40 GHz Frequency Ranges

Fast, Accurate, RF Spectrum Analysis

for cellular LTE and 5G, satellite and microwave communications.



Superior RF Performance

Industry leading -105 dBm receiver sensitivity, a DANL of -120 dB, and a wide 150 dBm dynamic range.



Rugged, Tough Field-Ready Chassis

Our field-ready chassis is small enough for one hand operation, and rugged for demanding jobs.



Recording and Playback

Record your RF environment and replay offline for further analysis.



Airscout Spectrum can be used for noise floor, interference and signal quality measurements on location.

ETHERNET & Wi-Fi® TESTING CATALOG

Designed for field technicians installing and maintaining wireless networks.

Airscout Spectrum is designed for field engineers and technicians needing to measure RF performance. It has a rugged case, shock absorbing bumpers, and a onehand touch GUI. It also has accuracy to +/- 1 dBm, a -120 dB DANL, and a frequency range up to 40 GHz.

High Frequency Analysis up to 40 GHz

Measure mmWave 5G and high frequency satellite bands.

Fast Boot Up and Easy-to-Use GUI

Save time getting to the RF measurements you need.

Full Range of Accessories Including Horn Antennas

Get the right antenna for your frequency range.

TECHNICAL SPECIFICATIONS:



| MODEL | ASPEC-03 | ASPEC-08 | ASPEC-40 |
|--|----------------------|----------------------|----------------------|
| Frequency Range (GHz) | 0.3 - 3 | 2 - 8 | 24 - 40 |
| Displayed Average Noise Level (dBm) | -128@RBW 10 KHz | -119@RBW 30 kHz | -100@RBW=100kHz |
| Max input power (dBm) | +27 | 0 | 0 |
| RBW (kHz) | 10, 30, 100, 300 | 30, 100, 300, 1000 | 100, 300, 1000 |
| VBW (kHz) | 1, 3, 10, 30 | 1, 3, 10, 30,100 | 1, 3, 10, 30,100 |
| Min. Span (MHz) | 0.5 | 1.5 | 1.5 |
| Max. Span | Full bandwidth | Full bandwidth | Full bandwidth |
| Sweep Speed(s) | 0.15 s @ 15 MHz Span | 0.15 s @ 15 MHz Span | 0.15 s @ 15 MHz Span |
| Accuracy (dB) | +/-1 | +/-1 | +/-1 |
| Input | 50 ohm SMA | 50 ohm SMA | 50 ohm SMA |
| Interface | USB-C | USB-C | USB-C |
| Battery Life (hours) | 4 | 4 | 4 |
| Operating temperature | -1°C to +55°C | -1°C to +55°C | -1°C to +55°C |
| Dimensions (in) | 5.31 x 3.27 x 1.34in | 5.31 x 3.27 x 1.34in | 5.31 x 3.27 x 1.34in |
| Weight (lbs) | 1.25 | 1.25 | 1.25 |

Ordering Information - BASIC KIT:

Includes Analyzer unit, USB cable, USB AC plug, USB-C to USB-A adapter.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|------------------|
| 55501344 | ASPEC03BK | 3 GHz Basic Kit |
| 55501345 | ASPEC08BK | 8 GHz Basic Kit |
| 55501346 | ASPEC40BK | 40 GHz Basic Kit |

Ordering Information - DELUXE KIT:

Includes Basic Kit plus carabiner, RF cable, RF adapters, leatherette case.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|-------------------|
| 55501347 | ASPEC03DK | 3 GHz Deluxe Kit |
| 55501348 | ASPEC08DK | 8 GHz Deluxe Kit |
| 55501349 | ASPEC40DK | 40 GHz Deluxe Kit |

Ordering Information - mmWave Antenna KIT:

Includes 24-40 GHz analyzer.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|----------------------|
| 55501350 | ANTMMWAVE | mmWave Antenna Kit |
| | _ | 6 1 4000 653 3455 60 |

Real-Time Testing. A simple and intuitive tool that delivers immediate results to meet the needs of your customers, all in the palm of your hand.

FEATURES -

- Test Ethernet speeds up to 1 Gbps and wireless up to 1.3 Gbps
- Real-time Report Generation and Cloud Access
- Intuitive interface with visual pass/fail indicators
- Controlled via smartphone app
- Powered by industry standard Speedtest® by Ookla®
- Ensure customers get the performance they expect, where they expect it



SPECIFICATIONS:

| Power | 11 to 15 VDC, 1 A |
|-----------------------|--------------------------------|
| Operating Temperature | 0 to +60 °C (+32 to +140 °F) |
| Charging Temperature | -10 to +55 °C (+14 to +131 °F) |
| Operating Humidity | 90% max, non-condensing |
| Storage Temperature | -20 to +70 °C (-4 to +158 °F) |



SCAN TO WATCH THE VIDEO

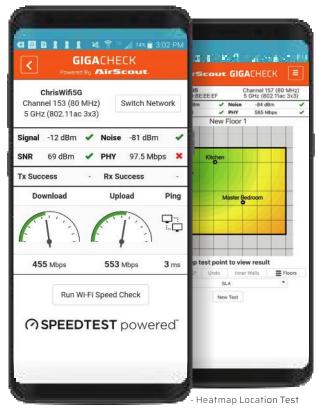
ETHERNET & Wi-Fi® TESTING CATALOG

HOW HEATMAP WORKS:

The AirScout GigaCheck unit, controlled via smartphone app, connects directly to a customer's residential gateway. It then tests WiFi coverage and verifies the upload and download speeds of the wired Ethernet connection in real-time, all the way up to 1 gigabit.

Technicians can also easily test WiFi speeds up to 1.3 Gbps from different areas of the home to ensure the customer is getting the performance they expect, where they expect it. The intuitive user interface of the mobile app and cloud based reporting tool makes it easy to generate, view, and send reports – giving you and your customers and access to the most up to date information.

- "Headless" Unit is Fully Integrated with
- Smartphone App (Android)
- Report Generation and Cloud Access
- Easy to Read Pass/Fail Indicators
- Powered by Industry Standard Speedtest® by Ookla®
- Rechargeable Li-Ion Battery



- Wi-Fi® Test Results

Simplify Your Workflow

Connect the AirScout unit directly to a residential gateway and instantly verify Ethernet upload and download speeds, and WiFi signal strength throughout the home.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52084671 | AGC350 | AirScout GigaCheck Master unit with charger |
| 52084591 | AGC-PWR | Charger, 12V |
| 52076901 | ASB302 | Soft Case |
| 52087669 | AGC-HMP | Heatmap |



Wi-Fi Networks Are Complicated. Now Finding The Problem Is Easy. The only thing more frustrating than experiencing slow or no Wi-Fi is not knowing how to identify and resolve the issue.

The AirScout Live PRO is an easy to use, engineering grade troubleshooting tool that helps you identify Wi-Fi and non-WiFi interference on your network. It also provides a real-time view of how your network is being utilized and by what, down to the client. The simple, easy to use interface means there is no need for expensive training – users can quickly and easily get to the root of the problem without being a Wi-Fi genius.

FEATURES -

- AirTime Analusis
- Spectrum Analysis
- Real-Time Congestion, Interference and Utilization Depiction
- 802.15.4 Optimization
- Reporting and Cloud Access
- Compatible with AirScout Residential

SPECIFICATIONS:

| Standard | 802.11 |
|-----------------------|---|
| Type | Wi-Fi Quality Assurance Tool |
| Battery | Lilon Polymer 15.5 Wh (one in each device) |
| Antenna | 2 x 2 MIMO (both master controller and all clients) |
| Area Network Type | WLAN |
| Enclosure | Molded Plastic |
| Power Supply | 5 ±0.25 V dc, 1A max |
| Operating Temperature | 0 to +60 °C (+32 to +140 °F) |
| Length | 4.88 in (12.4 cm) |
| Width | 4.88 in (12.4 cm) |
| Height | 1.46 in (3.7 cm) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52084672 | ALP330 | AirScout Live Pro (Including Master Client, Charger, dongle and carry case) |
| | CLDSA | 12 Month Cloud Service |
| 52087670 | ALP-DGL | USB WiFi dongle for AirScout Live Pro |

ETHERNET & Wi-Fi® TESTING CATALOG

Real-Time Analysis

Quickly view all in-range AP characteristics, identify common problems such as incorrect channel selection and congestion, optimize 802.15.4 configurations, and more.

802.11

- View all in-range Access point configurations
- Quickly identify common Wi-Fi® problems
- Instantly view channel utilization on 2.4Ghz abd 5Ghz

AIRTIME ANALYSIS

- Live view of chanel utilization
- AP and client level analysis
- MAC address and device identification

802.15.4

- View all in-range Access point configurations
- In-depth view of channel utilization
- Optimize your 802.15.4 configuration to ensure ideal settings

SPECTRUM ANALYSIS

- Detect Wi-fi and Non-Wi-fi interference
- Analyze source of interference
- Identify impact on WLAN channels



The AirScout® Residential Wi-Fi® Tester helps technicians identify the optimum location and settings for the access point of a Wi-Fi® broadband router or access point within a home or small business.

AirScout® provides an automated solution that surveys the residence from Layer 1 all the way through to the application layer. Providing technicians with a tool that makes complex measurements into easy to understand metrics; enabling technicians to convey to consumers whether their applications are supported where they need it.

FEATURES

- The AirScout Client devices are placed around the building that you want to "survey" for Wi-Fi coverage
- Up to 30 can be used with any AirScout Master controller device so you can cover a very large building or have high density of measurements by adding more to your kit
- Purchase this to add to your existing AirScout Kit (ASK306, 304 or 302); needs an AirScout Master controller to operate
- Includes universal AC to USB PSU and USB charging lead

SPECIFICATIONS:

| reciriexilons. | |
|-----------------------|---|
| | |
| Standard | 802.11 |
| Type | Wi-Fi Quality Assurance Tool |
| Battery | Lilon Polymer 15.5 Wh (one in each device) |
| Antenna | 2 x 2 MIMO (both master controller and all clients) |
| Area Network Type | WLAN |
| Enclosure | Molded Plastic |
| Power Supply | 5 ±0.25 V dc, 1A max |
| Operating Temperature | 0 to +60 °C (+32 to +140 °F) |
| Length | 4.88 in (12.4 cm) |
| Width | 4.88 in (12.4 cm) |
| Height | 1.46 in (3.7 cm) |
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ETHERNET & Wi-Fi® TESTING CATALOG



AIRSCOUT® 306 WI-FI® TESTING KIT

- 1 Six Client and 1 Master Carry Case
- 1 AC/DC Universal Power Supply
- 1 12V Vehicle Charging Lead
- 1 Quick Start Guide
- 1 AirScout Master Controller (ASM300)
- 6 AirScout Client Devices (ASC300)

AIRSCOUT® 302 WI-FI® TESTING KIT

- 1 Soft Carry Case
- 1 AC/DC Universal Power Supply
- 1 12V Vehicle Charging Lead
- 1 Quick Start Guide
- 1 AirScout Master Controller (ASM300)
- 2 AirScout Client Devices (ASC300)

AIRSCOUT® 300 CLIENT - TWO PACK

- 1 AC/DC Universal Power Supply
- 2 AirScout Clients (ASC300)

AIRSCOUT® 304 WI-FI® TESTING KIT

- 1 Four Client and 1 Master Carry Case
- 1 AC/DC Universal Power Supply
- 1 12V Vehicle Charging Lead
- 1 Quick Start Guide
- 1 AirScout Master Controller (ASM300)
- 4 AirScout Client Devices (ASC300)

AIRSCOUT® 300 MASTER

- 1 AC/DC Universal Power Supply
- 1 AirScout Master Controller (ASM300)

AIRSCOUT® 300 CLIENT

- 1 AC/DC Universal Power Supply
- 1 AirScout Client (ASC300)

AIRSCOUT® 306 WI-FI® TESTING CASE

• 1 - Six Client and 1 Master Carry Case

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|---------------------------------------|
| 52084672 | ALP330 | AIRSCOUT LIVE PRO |
| 52085896 | ASK302-LP | PRO MASTER W/ LIVE ASK302 |
| 52085897 | ASK304-LP | PRO MASTER W/ LIVE ASK304 |
| 52085898 | ASK306-LP | PRO MASTER W/ LIVE ASK306 |
| 52087670 | ALP-DGL | USB WiFi dongle for AirScout Live Pro |





MOBILE NETWORK PERFORMANCE TESTING

VOICE/DATA QoS FOR 5G, LTE, TETRA, Wi-Fi AND MORE

Airscout Mobility helps network engineers optimize the performance of their wireless networks by providing software that measures RF metrics directly from your mobile phone. The solution provides full data throughput and coverage mapping reports for all 3G/4G/5G wireless networks, as well as Wi-Fi and Bluetooth, so users can validate proper over-the-air network performance.



The software runs on your Android OS based mobile phone. Optionally, one can be included as part of the solution. Multiple devices can share one license, and license terms are flexible from annual licenses down to single-day usage.

PRODUCT OVERVIEW:

AIRSCOUT® MOBILITY



STANDALONE ANALYSIS

Complete performance analysis of the over-the-air protocols in a simple, easy to use interface on your Android phone.

AIRSCOUT® MOBILITY PLUS



TABLET CONTROLLED TEST OF MULTIPLE CARRIERS

Control multiple test devices using a single interface. Configure several protocols and perform simultaneous test on the same walkthrough

AIRSCOUT® MOBILITY STUDIO



CLOUD CONTROL & REPORTING

Produce full reports of all test data including measurements overlaid onto map data. Make data available to all members with full user management functions.

ETHERNET & Wi-Fi® TESTING CATALOG

KEY FEATURES:

- Multiple technologies supported: 5G, LTE/LTE-A, TETRA, P25, WiFi, Bluetooth, GSM, CDMA, EVDO, WCDMA, HSDPA, HSUPA, HSPA+
- Manual and Scripted tests can be created and modified with built-in script editor in AirScout Mobility
- Automatic synchronization of test results to cloud
- Remote control via Cloud for automated/remote test execution
- Android and Harmony OS supported application supporting Android 4.3 and newer, and Harmony OS
- Updated Layer3 RCC decoder for release 15 including full 5G signaling decoding support
- Features for both indoor and outdoor mapping. Including offline mode map data caching
- Indoor floor plans with markers and geodetic coordinates (Support for iBwave format).
- Geocoding indoor floor plans on top of Google Maps

KEY DIFFERENTIATORS:

- The most economical and flexible licensing in the industry
 - Flexible licensing terms license per year, per month, per week, or per day
 - License not tied to any hardware Use one license for different devices
 - Multiple air protocols supported with one license
- No cost upgrades to new handset firmware or technology. (Requires only free App update.)
- Full remote control of testing via a central location, so technicians do not need extensive training
- Customizable test scripts and reports to ensure testing parameters important to you.
- Complete drive test and in-building testing in one device
- Unlimited addition of new handsets to existing license.

FULL IDLE AND ACTIVE TESTING FEATURES:

- Voice call
- Voice quality
- FTP and HTTP data transfers iPerf
- HTML browsing
- YouTube video streaming testing
- Facebook testing
- SMS testing
- Ping testing

Built-in script editor in AirScout Mobility tools and in Cloud enables the creation and editing of manual and scripted tests (automatic sunchronization).



PERSONAL **SAFETY**

WAVEMON

Wavemon personal RF Safety Monitors alert radio equipment contractors of dangerous RF exposure levels. It measures RF emissions up to 60 GHz and provides visual and audible alarms when safe levels are exceeded. The tool is accurate to any global standard, and uses an isotropic antenna for 360 degree measurements.

FEATURES INCLUDE: ___

- 8 GHz and 60 GHz models
- Accurate EMF measurements to +/- 3 xxx
- Response shapes to EU EMF, SC6, FCC and ICNIRP
- ITU-T K.145 standard compliant
- Isotropic antenna
- Records GPS and Altimeter readings
- PC software allows reviw of test offline
- 30 kV/m low frequency immunity

The WaveMon RF-60 is a 5G-ready RF Personal Monitor for the continuous monitoring of workers' exposure to EMF. It monitors E-field up to 60 GHz. Applications include: worker's safety, telecommunications, energy, railway, medical, labs, aeronautical, industry, defense.

- Overexposure Warning: Audible, visual and vibration alarm
- ICNIRP, 2013/35/EU, FCC and SC6 (2015): Weighted response to any standard
- Exposimeter with Datalogger: USB downloading and configuration
- Harness, Belt or Arm Holder: Professional and convenient



ETHERNET & Wi-Fi® TESTING CATALOG



The **WaveMon RF-8** is an RF Personal Monitor for the continuous monitoring of workers' exposure to EMF. It monitors E-field up to 8 GHz and H-field up to 1 GHz. Applications include: worker's safety, telecommunications, energy, railway, medical, labs, aeronautical, industry, defense.

- Overexposure Warning: Audible, visual and vibration alarm
- ICNIRP, 2013/35/EU, FCC and SC6 (2015): Weighted response to any standard
- Exposimeter with Datalogger: USB downloading and configuration
- Harness, Belt or Arm Holder: Professional and convenient



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 55500942 | WMRF60 | WAVEMON RF-60 |
| 55500943 | WMRF8 | WAVEMON RF-8 |
| 55501003 | WMRFSTK | WAVEMON STICK |
| 55501004 | WMRFSAC | WAVEMON SAFETY ATTACHMENT CABLE |
| 55501005 | WMRFLAN | WAVEMON LANYARD |



IRRIGATION AND LOCATION INTRODUCTION

Many utility companies rely on burying their distribution network plant beneath the street and elsewhere for security, safety and aesthetic reasons. However, that plant does not have an infinite life and can be subject to stresses that can cause failure in the future; knowing exactly where that plant is buried can become a challenge later. Some types of buried plant are extremely difficult to locate precisely from above ground; most notably those which are electrically non-conductive, such as gas and water pipes and communication ducts carrying only optical fibres.

We present our system that can be used to aid the marking, surveying, geo-tagging and future precision location of plant, particularly useful with the non-conductive types. Also, various locators and other tools useful for tracing buried cables and ducts and give details of some which are targeted at the "irrigation" market; tracing shallow buried cables and identifying solenoid valves etc.

Many buried utilities that are in use, are well over 40 years old and often as old as 100 years, therefore any records, should they exist are completely out of date; where a pipeline or duct was installed a certain distance from the kerb of a road, that was when the road was just two lanes and no longer relates to the modern four lane highway that may have also changed direction and position relative to the centre line.

The important questions that must be answered before digging in the ground are:

- 1. Where is it?
- 2. What is it?
- 3. Does it tally with the known records?
- 4. Can you see everything?
- 5. Am I safe to dig?

LOCATORSAPPLICATION GUIDE

| FEATURE | BLL-200 | 501 | PE2003 | 5085 | 521A |
|---|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Trace concealed wiring in walls and floors | ✓ | ✓ | | ✓ | ✓ |
| Locate junction box relays and transformers | ✓ | ✓ | | ✓ | ✓ |
| Locate switch gear | ✓ | | | ✓ | |
| Find shorts to ground | | | √ ² | | √ ¹ |
| Trace wires in PVC (nonmetallic conduit) | ✓ | ✓ | | ✓ | ✓ |
| Find opens in a circuit | | | | | ✓ |
| Localize power and lighting panels | ✓ | ✓ | | ✓ | |
| Operate on energized circuits | ✓ | ✓ | | ✓ | |
| Operate on telecom circuits | ✓ | ✓ | ✓ | ✓ | |
| Operate on power circuits (600VAC) | ✓ | | | | |
| Operate on unenergized circuits | ✓ | ✓ | ✓ | ✓ | ✓ |
| Trace shielded cable | ✓ | ✓3 | | ✓³ | ✓³ |
| Trace buried metal conduit | ✓ | ✓ | | | |
| Trace coax cable | ✓ | √ ⁵ | | √ ⁵ | ✓ ⁴ |
| Auto gain control for improved accuracy | ✓ | | | | |
| AC voltage range | 0-600V | 0-240V | 0-240V | 0-240V | 0-120V |
| DC voltage range | 0-300V | 0-500V | 0-400V | 0-500V | 0-250V |
| Distance-receiver from transmitter | 5,000 ft. | ✓ ⁷ | 5,000 ft. | 1,000 ft. | √ ⁶ |
| Transmitter battery | (4) AA | (8) AA | 12V rechargeable | (1) 9V | (8) D |
| Receiver battery | (4) AA | (1) 9V | (1) 9V | (1) 9V | (1) 9V |

- 1. 10,000 ohms and less-both ends isolated from grounds
- 2. Does not locate the cable path which has to be predetermined and only in direct burial applications. 5M ohm and less
- 3. Transmitter connected to metallic shield
- 4. Will trace coax providing the bond is in place at the remote end-will disrupt service
- 5. No sorting (high RF bleeds) can trace coax if transmitter connected to braid
- 6. Low frequency locators need a "path to earth" (dirt), 5000 ft. on an open conductor and 2500 ft. on a metallic pipe at 3 ft. deep
- 7. Direct Connection 4,000 ft at 7 ft deep. Inductive Coupler 1,000 ft at 3 ft deep. Inductive Antenna 700 ft at 3 ft deep

BURIED FACILITY LOCATION AND MARKING

501 TRACKER II

FEATURES

- Traces the path and determines the depth of wires and metallic pipes on active or dead systems without having to deactivate the system
- Lightweight receiver provides audible and visual indications of signal strength
- Transmitter output and receiver sensitivity are fully adjustable for maximum accuracy
- Transmitter offers three methods of connection: direct, inductive coupler and inductive antenna
- Includes transmitter assembly, receiver assembly, inductive coupler (clamp), built-in inductive antenna, two 8' (2.4 m) test leads with heavy-duty alligator clips and durable polyethylene case
- High frequency transmitter provides range up to 4,000' (1,219 m) and depths up to 7' (2 m)
- Receiver is 32" long (813 mm)
- Battery operated (eight AA and one 9V battery is not included)
- Molded carrying case included

SPECIFICATIONS:

| Power Requirements | Transmitter - (8) AA batteries; Receiver - (1) 9V battery |
|-----------------------|--|
| Battery Life | Transmitter - 30 hours nominal; Receiver - 10 hours nominal |
| Transmitter Frequency | 447.5kHz |
| Transmitter Power | 40Vp-p (140mW) maximum |
| Voltage Protection | 240VAC/500VDC |
| Automatic Shut Off | 90 Min. Transmitter and Receiver |
| Construction | Transmitter/Receiver – powder coated aluminum Case – vacuum formed polyethylene |
| Dimensions | Transmitter - 4.25" x 3" x 3.25" (108 x 76.2 x 82.6 mm) Receiver - 32" x 2.75" x 4" (812.8 x 69.9 x 101.6 mm) Case - 33.5" x 8.25" x 3.75" (850.9 x 209.6 x 95.3 mm) |
| Weight | 6.7 lbs. complete kit (3.04 kg) |



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------|
| 50086626 | 501 | Tracker II Kit |
| 50603531 | 501T | Transmitter |
| 50603523 | 501R | Receiver |
| 50603540 | IC1 | Inductive Clamp |
| 50603558 | CS16 | Transmitter Cord Set |
| 50603515 | 500CA | Case with Antenna |



IRRIGATION & LOCATION CATALOG

BLL-200 BURIED LINE LOCATOR

SCAN TO WATCH THE VIDEO

FEATURES -

- LED and LCD signal strength indicators make it quick and easy to find exact line location
- Lightweight and ergonomically balanced
- Automatic signal boost makes it easy to trace lines, even those with very weak signals
- Receiver may be used in active or passive mode
- Receiver locates multiple passive frequencies with a single setting
- Receiver automatically locks out passive range when it detects a transmitter signal, reducing the chance of tracing other lines carrying weaker signals
- Microprocessor-based circuitry delivers increased accuracy and features auto-gain control in all environments
- Traces 20' (6 m) underground and provides depth readings up to 15' (4.57 m)
- Transmitter can be connected to live lines up to 600V
- Molded carrying case included



SPECIFICATIONS:

| TRANSMITTER | | |
|-----------------------|---|--|
| Operating Voltage | 0-600VAC, 0-300 VDC | |
| Current | 13mA (open line) 150mA (live or shorted line) | |
| Frequency | 33.3kHz | |
| Operating Temperature | 0°F to 120°F (-17°C to 50°C) | |
| Size | 7.5" x 4" x 2.1" (190.5 mm x 101.6 mm x 53 mm) | |
| Power | 6 VDC (4 AA batteries) | |
| Weight | 15 oz. (425 g) (with batteries and clamp) | |

| RECEIVER | | |
|-------------------------|---|--|
| Depth Range | Measures: 0-15 ft Traces: 0-20 ft. | |
| Depth Resolution | 0.1 ft. increments | |
| Passive Trace Frequency | 12Hz-24kHz | |
| Operating Temperature | 0°F to 120°F (-17°C to 50°C) | |
| Size | 4.1" x 8.5" x 38" (104.1 mm x 215.9 mm x 965.2 mm) | |
| Power | 6 VDC (4 AA batteries) | |
| Weight | 1 lb. 12 oz. (794 g) | |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------|
| 50077961 | BLL-200 | Buried Line Locator |





PE2003-G PULSER GROUND FAULT LOCATOR

FEATURES -

- Identifies the exact location of even the smallest breaks in insulation by "pulsing" a high-voltage signal that radiates into the earth at the location of the faults.
- With the A-frame mounted receiver, a visual analog meter points the way to the source of the voltage
- Multiple faults on a single wire can be identified indicating the need to replace instead of repair
- Extra-long test leads feature heavy-duty alligator clips for use on multiple cable types
- Includes a rechargeable transmitter, receiver, A-frame, ground stake, 120V charger and a 12V DC (cigarette lighter) adapter

• One rechargeable 12V lead-acid battery for transmitter included, 9V battery required for transmitter

Molded carrying case included

SPECIFICATIONS:

| Power Requirements | Transmitter: (1) 12V rechargeable battery Receiver: (1) 9V battery |
|--------------------|---|
| Battery Life | Transmitter: 23 hours per charge; Receiver: 200 hours |
| Transmitter Power | 2400VDC peak |
| Voltage Protection | 240VAC/400VDC |
| Construction | Transmitter - aluminum housing in polyethylene case Receiver - powder coated aluminum |
| Dimensions | Transmitter – 17" x 8.5" x 6.5" (421 mm x 215 mm x 160 mm) in case Receiver – 33.5" x 21.75" x 3.25" (840 mm x 550 mm x 8 mm) on A-Frame |
| Weight | 12.5 lbs. (5.7 kg) complete |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 52083233 | PE2003 | Pulser |
| 50603574 | 2000H | Transmitter (Includes CH1 & CH2) |
| 50603582 | 2000R | Receiver |
| 50604821 | AF2 | A-Frame |
| 50603604 | CH1 | AC Charger |
| 50603612 | CH2 | DC Charger |
| 52025430 | 59F0002 | Battery, Replacement (12V 2.5 Ah) |



IRRIGATION & LOCATION CATALOG

5085-G WIRE FINDER/ MINI LOCATOR



FEATURES -

- Traces energized or non-energized wires in walls, floors and drop ceilings
- Provides reliable results on buried cables to depths of 3' (1 m) and lengths up to 1000' (308 m)
- Determines the approximate depth of the wire before digging
- Compact design and easy-to-understand operations
- Fully adjustable transmitter and receiver for accurate locating
- Quick change test leads for use in any industry, even international power outlets
- Voltage protection to allow use on live AC circuits
- Automatic shut-off to prevent accidental battery discharge
- Housed in a durable, molded carrying case with a guick reference operation guide on the inside of the lid
- Battery-operated: (2) 9V batteries required

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52082815 | 508S-G | Wire Finder/Mini Locator Kit |
| 52082816 | 508ST-G | Transmitter |
| 52082817 | 508SR-G | Receiver |
| 50603663 | CS14 | Alligator Clip Cord set |

SPECIFICATIONS:

| Power Requirements | (1) 9V each (transmitter and receiver, included) |
|--------------------------|--|
| Battery Life | Transmitter 35 hours nominal; Receiver 20 hours nominal |
| Transmitter Frequency | 447.5kHz |
| Transmitter Power | 9Vp-p (11mW) |

| Voltage Protection | 240VAC/500VDC |
|--------------------|--|
| Construction | Transmitter/ Receiver – high- impact ABS plastic, Case – vacuum- formed polyethylene |
| Dimensions | Transmitter - 4" x 2.3" x 1" (101.6 x 58.4 x 25.4 mm), Receiver - 6" x 2.35" x 1" (152.4 x 59.7 x 25.4 mm), Case â€" 9.5" x 8" x 3"(241.3 x 203.2 x 76.2 mm) |
| Weight | 2.6 lbs. (1.2 kg) |
| | |





FEATURES

- Locate irrigation control cables, solenoid valves and similar shallow and direct buried conductors.
- Adjustable transmit power allows you to select the best signal for maximum performance
- Transmitter's high power output offers extended range and use on higher resistance wire paths that other locators can't touch
- Receiver provides both audible and visual indications of signal strength
- Lightweight receiver wand makes it easy for you to move along quickly
 to least the least wire path.
 - to locate even the longest wire path
- Rugged headphones block ambient noise and improve "feel" for the signal
- Includes transmitter, receiver, headset, ground stake, and complete instructions
- Battery-operated: (8) "D" Cells and (1) 9V

SPECIFICATIONS:

| Power Requirements | Transmitter: (8) "D" Cell; Receiver: (1) 9V battery |
|-----------------------|--|
| Battery Life | Transmitter: 50 hours nominal Receiver: 100 hours nominal |
| Transmitter Frequency | 1748Hz |

| Transmitter Power | 750Vp-p 285Vrms |
|--------------------|---|
| Voltage Protection | 120VAC/250VDC |
| Construction | Powder-coated aluminum housing in polyethylene case |
| Case Dimensions | 33.5" x 8.25" x 3.75" |
| Weight | 12 lbs. complete |

|)25222 521A | Wire and Valve Lo | ocator Kit |
|---------------|-------------------|------------|
|)33346 521A-I | R Receiver | |
| 86952 HS-1 | Headset | 21 |

IRRIGATION & LOCATION CATALOG

EML-100 MARKER-MATE®

FEATURES -

- Designed to locate buried electronic markers, including Omni Marker™ and SPIKE Marker™ electronic markers.
- Five+ foot depth range with standard markers
- Detects up to nine different marker types
- Scan mode provides simultaneous detection of all marker types
- User-adjustable Detection Threshold
- Digital signal processor accuracy
- Large-character display is easy to read
- Bar graph, numeric & audible signal strength indicators
- Speaker volume adjust
- Headphone jack
- Battery level indicator
- Low battery warning
- Adjustable time out feature prolongs battery life (and can be turned off)
- Weather resistant
- Rugged construction

SPECIFICATIONS:

| Electrical | Twelve AA batteries Battery Life: 20 hours typical |
|--|---|
| Environment | |
| Operating Temperature | -4°F to 122°F (-20°C to 50°C) |
| Storage Temperature Weather Resistant | -40°F to 158°F (-40°C to 70°C) |
| Physical | |
| Length | 30.7 in. (780 mm) |
| Width | 7.8 in. (198 mm) |
| Height | 12.8 in. (325 mm) |
| Weight | 4.5 lbs. with batteries (2 kg) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 50607984 | EML-100 | Marker-Mate™ Electronic Marker Locator |



OMNI MARKER-II

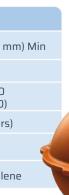
Electronic markers are a low-cost, extremely reliable way to mark buried utilities and other plant, making it easy for contractors to find the exact location of critical components like fittings and splices, while helping to avoid expensive damage and unfortunate accidents. Omni Marker II from Tempo Communications builds upon our three decades of experience with the original Omni Marker, providing the same reliability and range in a more compact package. With no active components or potentially hazardous fluids, Omni Marker II can be located by all compatible marker locators. Dig Safe. Dig Right. Save Time.

USE THE OMNI MARKER II TO MARK AND FIND:

- Buried splices
- Buried service drops
- Pipe ends
- Conduit stubs
- Road crossings
- Cable paths
- Fiber optic facilities
- Snow-covered
- Manholes under pavement or grade changes installations
- Military caches
- Survey points
- Septic installations
- Repair points
- Non-metallic lines

SPECIFICATIONS:

| Size | 4.0 inch diameter (100 mm) Mir |
|------------------|--|
| Weight | 0.3 lb (0.15 kg) |
| Shipping Weight | 11.3 lbs per carton of 30 (5.2 kg per carton of 30) |
| Range | 5 feet typical (1.5 meters) |
| Field Type | Vertical dipole |
| Package Material | High-density polyethylene |





| PART NO. | CAT. NO. | COLOR | DESCRIPTION |
|----------|----------|------------------|----------------------------|
| 52085010 | OM-01 | Purple | OmniMarker II, Non-Potable |
| 52085007 | OM-02 | Orange/ Black | OmniMarker II, CATV |
| 52085008 | OM-03 | Yellow | OmniMarker II, Gas |
| 52085016 | OM-04 | Yellow/ Black | OmniMarker II, Fiber Optic |
| 52085012 | OM-05 | Orange | OmniMarker II, Telephone |
| 52085009 | OM-06 | Green | OmniMarker II, Sanitary |
| 52085015 | OM-07 | Red/Blue | OmniMarker II, Europower |
| 52085013 | OM-08 | Blue | OmniMarker II, Water |
| 52085011 | OM-09 | Red | OmniMarker II, Power |





IRRIGATION & LOCATION CATALOG

STATION MASTER PRO KIT 24BK

FEATURES

- Troubleshoot irrigation systems
- Chatter mode for audible locating of valves
- Activate any 24V AC valve solenoid
- Test solenoids for continuity
- Send tone to identify wires
- Check clock AC voltage
- Low battery indication
- Easy-to-understand LEDs
- Test leads with 'bed-of-nails' and piercing pin clips
- Tracing valve wiring
- Locates underground solenoids

SPECIFICATIONS:

| Minimum voltage for clock LED | 15 VAC |
|--|-----------------------------|
| Minimum Battery while Testing | 10.5 VDC |
| Maximum Input Voltage between Test Leads | 28 VAC |
| Solenoid activate output voltage | 27 to 18 VAC |
| Battery | 2- 9V Alkaline Batteries |
| Operating/storage temp. | 32°F to 122°F (0°C to 50°C) |
| Relative humidity (max.) | 80% |
| | |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 52025221 | 24BK | Station Master Pro Kit |









MULTIMETERS

Meeting today's stringent safety standards is essential.

Tempo's certification of selected instruments to both the most recent IEC and UL requirements brings you assurance of the highest level of protection currently available.

What you should know about Measurement Category ratings.

IEC Category standards specify protection levels that are far above a system's rated capacity. Without this additional protection, transient overvoltages, which are becoming increasingly common, can lead to serious injury or death

Measurement Category I is the signal level for telecommunications and electronic equipment or other circuits that are not directly connected to the utility mains.

Measurement Category II is the local level for fixed or nonfixed powered devices - everything from lighting to appliances to office equipment such as copiers; may also be used in Category I areas.

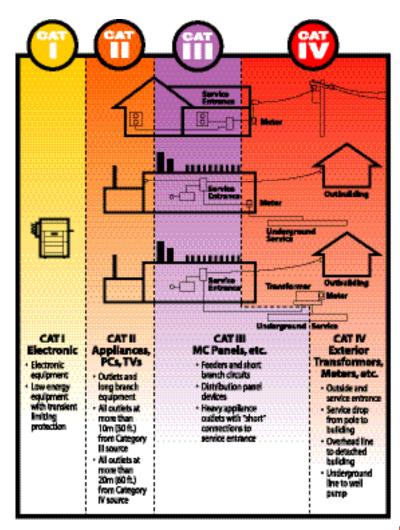
Measurement Category III is the distribution level - fixed primary feeders or branch circuits. These circuits are usually separated from Category IV (whether utility service or other high-voltage source) by a minimum of one level of overvoltage protection; may also be used in Category II and Category I areas.

Measurement Category IV is the primary supply level. Tempo is leading the way in offering protection certified to conform with the highest level of protection as specified by UL & IEC standards; may be used in all Category environments.

Tempo's Instruments - Independently tested and certified to meet the standards. Throughout this catalog, you'll see Category designations for many Tempo's instruments indicating that they comply with UL & IEC Category II, III, IV. All of these designations reflect third-party testing by independent testing organizations such as UL and ETL added assurance for you. While there is no requirement for independent verification, we believe you deserve it.

Get the right protection for the job.

Wherever you need overvoltage protection, choose at least the rating appropriate to the type of work you expect to be doing. If you have any questions on using Tempo's test instruments to help ensure user safety, please contact Tempo Communications.



IRRIGATION & LOCATION CATALOG

| FEATURES | PM100 | MM200 | MM810 |
|-----------------------|-----------------|------------------------------|------------------------------------|
| Size | Pocket | Compact | Full |
| Main Display | 6000 | 6000 | 6000 |
| Disp. Update Rate | 5 per sec | 5 per sec | 5 per sec |
| Aux. Display | | | 9999 |
| Bar-Graph (upd. rate) | | 24 segment (40 Hz) | 41 segment (60 Hz) |
| Autoranging | ✓ | ✓ | ✓ |
| DCV & ACV | 0 to 450 V | 0 to 1000 V | 0 to 1000 V |
| DCA & ACA | | 0 to 10 A | 0 to 10 A |
| True RMS | | | ✓ |
| Frequency Response | 50 to 60 Hz | 50 to 400 Hz 10 to 50 kHz | 50 Hz to 20 kHz 15 Hz to 50 kHz |
| Frequency Meter | 10 Hz to 30 kHz | 5 Hz to 1 MHz logic level | 5 Hz to 1 MHz logic level |
| Duty Cycle % | | | 0 to 100% (5 Hz to 10 kHz) |
| Resistance | Ο Ω το 6 ΜΩ | Ο Ω to 60 ΜΩ | Ο Ω to 60 ΜΩ |
| Continuity Beeper | ✓ | ✓ | ✓ |
| Capacitance | 100 μF | | 25000 µF |
| Diode Check | | ✓ | ✓ |
| Non Contact EF detect | ✓ | ✓ | |
| Beep-Jack | | ✓ | ✓ |
| Auto power off | ✓ | ✓ | ✓ |
| CAT II | 450V | 1 kV | 1 kV |
| CAT III | 300V | 600V | 1 kV |
| CATIV | | 300V | 1 kV |



PM100 POCKET MULTIMETER

FEATURES -

- Auto-select mode for hassle-free use
- Low impedance eliminates stray or "ghost" voltage readings
- AC/DC voltage measurement
- Hassle-free, automatic measurement of voltage and resistance
- Autoranging for quick, convenient measurements
- Non-contact voltage detection for identifying live lines without contacting conductors

- Intelligent Auto-Off for longer battery life
- Low battery indicator
- Resistance measurement
- Audible continuity test
- Frequency measurement in voltage mode
- Capacitance measurement
- 6000-count LCD for high resolution
- Accessories included: (1) 3 V battery (CR2032) and carrying case

SPECIFICATIONS:

| Display | 6000-count LCD |
|------------------------------------|--|
| Polarity | Automatic |
| Display Update Rate | 5 per second |
| Temperature Coefficient | Nominal 0.15 x (specified accuracy) per °C below 18 °C or above 28 °C |
| Intelligent Automatic Power Off | After 3 minutes of inactivity (approximately) |
| Noise Rejection | Common Mode Rejection Ratio: > 60 dB from 0 Hz to 60 Hz when measuring ACV; Common Mode Rejection Ratio: > 100 dB at 0 Hz, 50 Hz, and 60 Hz when measuring DCV; Normal Mode Rejection Ratio: > 30 dB at 50 Hz and 60 Hz when measuring DCV |
| Operating Conditions | Temperature: 0 °C to 40 °C (32 °F to 104 °F) |
| Relative Humidity | 80% maximum for temperatures up to 31 °C (88 °F), decreasing linearly to 50% maximum at 40 °C (104 °F) |
| Altitude | 2000 m (6500') maximum |
| Pollution Degree | 2 |
| Storage Temperature | –20 °C to 60 °C (–4 °F to 140 °F), 0% to 80% relative humidity (non-condensing) |
| Battery | 3 V standard button battery (IEC-CR2032; ANSI- NEDA-54004LC) |
| Low Battery | Below 2.4 VDC |
| Overvoltage Protection | 450 VDC/VAC RMS, 50/60 Hz |
| Measurement Category | Cat II, 450 V Cat III, 300 V |
| | |



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 55500083 | PM100 | PM100 POCKET MULTIMETER |





IRRIGATION & LOCATION CATALOG

MM200 MULTIMETER

FEATURES -

- Testing| Troubleshooting| Accuracy
- Supplied with a zipper case
- high-quality safety test leads
- Fast response 24 segment "bar-graph"
- 6000 Count large digit LCD
- Core accuracy better than 0.5%
- Average responding AC measurements

SPECIFICATIONS:

| Display | LCD (6000) and 24-segment bar graph | |
|-------------------------|--|--|
| Polarity | Automatic | |
| Sampling Rate | Numeric Display: 5 per second Bar Graph Display: 40 per second | |
| Temperature Coefficient | Nominal 0.15 x (specified accuracy) per °C below 18 °C or above 28 °C | |
| Automatic Shut-Off | After 34 minutes of inactivity | |
| Noise Rejection | Normal Mode Rejection Ratio > 60 dB at 50 Hz and 60 Hz when measuring DCV Common Mode Rejection Ratio > 60 dB from 0 Hz to 60 Hz when measuring ACV Common Mode Rejection Ratio > 100 dB at 0 Hz, 50 Hz and 60 Hz when measuring DCV | |
| Operating Conditions | 0 °C to 40 °C (32 °F to 104 °F) | |
| Relative Humidity | 80% maximum for temperatures up to 31 °C (88 °F), decreasing linearly to 50% maximum at 40 °C (104 °F) | |
| Altitude | 2000 m (6500') maximum | |
| Pollution Degree | 2 | |
| Storage Temperature | -20 °C to 60 °C (-4 °F to 140 °F) | |
| Battery | Two 1.5 V batteries (AAA, NEDA 24A or IEC LR03) | |
| Volts & AutoCheck | 1100 V DC/AC rms | |
| mV, O, and Others: | 1000 V DC/AC rms | |
| μA and mA: | 0.4A/1000V DC/AC rms, IR 30kA @ 1000V DC/AC rms; Dimension: 6 x 32 mm | |
| A: | 11A/1000V DC/AC rms, IR 20kA @ 1000V DC/AC rms; Dimension: 10 x 38 mm | |
| V/ohms/mA/A to COM: | Category II 1000V, CAT III 600V and CAT IV 300V AC & DC | |
| E.M.C. | Meets EN61326-1:2013 | |
| | | |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------|
| 55500084 | MM-200 | MM200 MULTIMETER |









MM810 MULTIMETER

FEATURES -

- True RMS response for AC measurements
- Dual display allows, for example AC V and frequency
- Fast response 41 segment "bar-graph" with 60 updates per second
- 9999 or 6000 Count large digit LCD with 5 updates per second
- Core accuracy better than 0.1%
- Millivolt and microampere ranges for precision measurements

SPECIFICATIONS:

| Display | 9999 counts: ACV, DCV, Hz, and nS; 6000 counts: mV, μA, mA, A, ohm, and capacitance |
|-------------------------|--|
| Polarity | Automatic |
| Sampling Rate | Numeric Display: 5 per second; 41-Segment Bar Graph Display: 60 per second |
| Temperature Coefficient | Nominal 0.15 x (specified accuracy) per °C below 18 °C or above 28 °C |
| Automatic Shut-Off | After 30 minutes of inactivity |
| Noise Rejection | Normal Mode Rejection Ratio > 60 dB at 50 Hz and 60 Hz when measuring DCV Common Mode Rejection Ratio > 60 dB from 0 Hz to 60 Hz when measuring ACV Common Mode Rejection Ratio > 120 dB at 0 Hz, 50 Hz and 60 Hz when measuring DCV |
| Operating Conditions | 0 °C to 45 °C (32 °F to 113 °F), 0% to 80% relative humidity (non-condensing) |
| Storage Temperature | -20 °C to 60 °C (-4 °F to 140 °F) |
| Battery | 9-Volt (NEDA 1604, JIS 006P or IEC 6F22) |
| μA and mA: | 0.44 A/1000 V DC/AC rms, interrupting rating 10 kA, F fuse,13/32" x 1-1/2" |
| A: | 11 A/1000 V DC/AC rms, interrupting rating 20 kA, F fuse, 13/32" x 1-1/2" |
| V | 1100 V DC/AC rms |
| mV, O, and Others: | 1000V DC/AC rms |
| Safety | Double insulation per IEC/UL/EN61010-1 Ed. 3.0, IEC/ EN61010-2-030 Ed. 1.0, IEC/ EN61010-2-033 Ed. 1.0, IEC/UL/EN61010-031 Ed. 1.1 and CAN/ CSA-C22.2 No. 61010-1-12 Ed. 3.0 to Category IV 1000 VAC and VDC |
| All Terminals | Category IV 1000 VAC and VDC |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------|
| 55500085 | MM-810 | MM810 MULTIMETER |







COPPER TELECOMMUNICATIONS CATALOG

COPPER TELECOMMUNICATIONS TEST & TOOLS

Telecommunications is moving increasingly to fiber optic transmission, particularly for trunk connections, but copper conductors will be used for the foreseeable future for in-building and shorter links. Tempo Communications continues to invest in "copper" test instruments and tools to support the industry.

See also our range of hand-tools for manipulating and terminating copper cables...

SIDEKICK® PLUSCOPPER AND DSL TEST SET

SAVES TIME – Easy-to-use mode selection dial and operation - minimizes training needs and saves time on the job

VERSATILE – Combines your copper qualification needs with DSL sync and service testing in one test set

FULLY LOADED – The Sidekick® Plus xDSL comes complete with all you need to perform tests on the copper networks that support DSL services

NO MODULES NEEDED - Advanced cable diagnosis and troubleshooting in a single test set

APPLICATIONS:

Helps technicians diagnose and troubleshoot problems with twisted pair cable Install, qualify, and maintain DSL services

FEATURES

BONDED MODEM WITH XDSL

- Pair bonding
- ADSL2+/VDSL2+
- Vectoring
- Broadcom BCM63168
- Automated test scripts
- USB export/import of test results/profiles
- 35MHz Wideband Noise Spectrum Analysis
- 4.4MHz Loss Measurement Test
- 35MHz Impulse Noise Step
- TDR with auto bridgetap detection (zero dead zone)

ADSL/VDSL MODEM SYNC AND SERVICE TESTS:

- DSL Showtime
- Bits per Tone Graph
- Signal-to-Noise Ratio Graph
- HLOG Graph
- Error Counter
- Upper Layer Testing: Ping, Trace-route, HTTP, FTP

STANDARD FEATURES:

- Advanced Dual Trace Pulse TDR (Zero Dead Zone)
- Resistive Fault Locator (Detects up to $20M\Omega$)
- 1GΩ Leakage Test (Insulation Resistance)
- Longitudinal Balance Test

- Ground Resistance Test
- Stress Test
- AC/DC Voltage
- Resistance
- Circuit Loss
- Open Meter (capacitance) with option for Step TDR
- Loop Current
- Tracing Tone Generator
- Reference Tone

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|--|
| 52064728 | 1155-5001 | Sidekick Plus Kit LCC |
| 52064080 | 1155-5003 | Sidekick Plus Kit SCC |
| 52064131 | 1155-5005 | Kit, Sk Plus, Impulse Noise, Step TDR |
| 52064729 | 1155-5009 | Sidekick Plus With Wideband |
| 52064730 | 1155-5010 | Sidekick Plus With Wideband & Adsl/Vdsl Sync LCC |
| 52066485 | 1155-5011 | Sidekick Plus With Wideband & Adsl/Vdsl Sync SCC |
| 52070010 | 1155-5012 | Sidekick Plus Pair Bonded Modem - Fully Featured |
| 52070321 | 1155-5013 | Sidekick Plus Pair Bonded Modem - Fully Featured SCC |



COPPER TELECOMMUNICATIONS CATALOG

SIDEKICK® PLUS DSL FAR-END DEVICE

For use with the Sidekick® Plus as a complete DSL testing solution

APPLICATIONS:

- Helps technicians diagnose and troubleshoot problems with twisted pairs at the far end of the cable
- Install, qualify, and maintain DSL services

BENEFITS

- Helps qualify pairs for DSL service with ease
- Reduces testing time and increases technician productivity

FEATURES

- K-Test-" Far-End-Device straps the pair under test
- TDR "Far-End-Device can alternately short and open the pair to verify the end-of-line
- Noise "Far-End-Device provides a line termination
- Loss "Far-End-Device provides single or multiple reference tones
- Longitudinal Balance "Far-End-Device provides an IEEE 455-1985 Longitudinal Balanced Termination
- Autotest" The Sidekick® Plus manages the operation of the Far-End-Device during the test sequence
- Short Pair "Verifies loop length
- Short Pair to Ground " Determines pair resistive balance
- Remote activation via Sidekick® Plus
- Ability to connect and disconnect Central Office and Customer Premise equipment
- Supports Second Pair Testing
- Generates tones for pair ID and pair tracing
- Capability to generate tones over a range of frequencies from

KIT INCLUDES:

- Sidekick® DSL Far-End Device Unit
- RJ45 to Telco clip leads
- Canvas carry case

*FOR USE WITH THE SIDEKICK® PLUS MODELS

1155-5009 Sidekick® Plus with Wideband

1155-5010 Sidekick® Plus with Wideband & ADSL/VDSL Sync LCC

1155-5011 Sidekick® Plus with Wideband & ADSL/VDSL Sync SCC

1155-5012 Sidekick® Plus Bonded Modem - Fully Featured

1155-5013 Sidekick® Plus Bonded Modem - Fully Featured

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|-------------------|
| 52070454 | 1157-5001 | Sidekick® FED Kit |



4-6-8 MODULAR ADAPTERS

FEATURES

- Nylon-reinforced ABS plastic body
- Easy-to-read wire layout
- Removable/replaceable patch cord enables using your own special cable types
- Inline adapters allow testing active circuits
- Snagless plugs (where possible)
- Belt clip
- Barbed copper contacts keep alligator clips attached during testing

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52051670 | PA1902 | RJ45 Modular Adapter (8-way) |
| 52051671 | PA1903 | RJ11 Modular Adapter (6-way) |
| 52086505 | PA1921 | UK Modular Adapter (6-way) |







SIDEKICK® T & ND

FEATURES

- Easy-to-read digital LCD display
- Internal Dialer for making Transmission Test connections
- Autotest performs 22 individual tests at the touch of a button
- Determines the stressed noise susceptibility of dry and working pairs
- Measures AC/DC Volts, Leakage, resistance, and loop current
- Performs circuit loss, circuit noise (metallic noise), and power influence tests
- Built-in open meter
- Locates up to 4 load coils
- Single set up for Tip-Ring, Tip-Ground, and Ring-Ground tests
- Field replaceable test leads
- On-screen display of "LOW BATTERY" when batteries are near failure.

SPECIFICATIONS:

| Weight | 2 lbs. |
|------------|-----------------------|
| Dimensions | 10.75" X 4.25" X 2.5" |
| AC Volts | 300 Vrms max. |
| DC Volts | ± 300 Volts max. |
| Resistance | 1 Megohm max. |
| Leakage | 100 Megohm max. |
| Stress | O to 82 dBrnC |

| Opens | 0 to 60 kft. |
|-----------------|-------------------|
| Loop Current | 0 to 100 mA |
| Load Coil | up to 4 |
| Circuit Loss | +1 to -15 dB |
| Power Influence | 40 to 100 dBrnC |
| Circuit Noise | O to 75 dBrnC |
| Power | Four AA Batteries |
| | |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|------------|------------------------|
| 50608530 | 1144-5000 | Sidekick T&ND Test Set |
| 52038822 | 1134-10025 | Case |

SIDEKICK® T&N

FEATURES

- Five transmission and noise tests
- Determines the stressed noise susceptibility of dry and working pairs
- Measures resistance, AC/DC volts, and capacitive kick
- Provides tone for twisted pair or crossed conductor identification
- Single setup for testing Tip-Ring, Tip-Ground, and Ring-Ground
- Minimal drying effect in all ranges
- Field replaceable leads
- Softcase with adjustable strand hook
- Low battery indicator light

SPECIFICATIONS:

| Dimensions | 10.75" x 4.25" x 2.5" |
|------------|---|
| Weight | 2 lbs. |
| Resistance | Rx1: Reads 0 to 2000 Ω Rx1K: Reads 0 to 2 MΩ |
| Leakage | Rx10K: Reads 0 to 20 MΩ |
| DC Voltage | O to 300 volts DC |
| AC Voltage | 0 to 300 Vrms |

| Stress Test | O to 82 dBrnC |
|-----------------|-------------------|
| Loop Current | 0 to 100 mA |
| Circuit Noise | O to 75 dBrnC |
| Circuit Loss | -15 to +1 dB |
| Power Influence | 50 to 100 dBrnC |
| Operating Temp. | -4°F to +140°F |
| Power | Four AA batteries |



SIDEKICK® T&ND

看 Tempo

| PART NO. | CAT. NO. | DESCRIPTION | |
|-----------|------------|--------------|--|
| R50605263 | 1137-5002 | Sidekick T&N | |
| 50607519 | 1131-0202 | Test Leads | |
| 52038822 | 1134-10025 | Case | |



SIDEKICK® 7B

FEATURES -

- Determines the stressed noise susceptibility of dry and working
- Measures resistance, AC/DC volts, and capacitive kick
- Provides tone for twisted pair or crossed conductor identification
- Single setup for testing Tip-Ring, Tip-Ground, and Ring-Ground
- Minimal drying effect in all ranges
- Field replaceable leads
- Softcase with adjustable strand hook
- Low battery indicator light

SPECIFICATIONS:

| Dimensions | 10.75" x 4.25" x 2.5" |
|-------------|---|
| Weight | 2 lbs. |
| Resistance | Rx1: Reads 0 to 2000 Ω ; Rx1K: Reads 0 to 2 M Ω |
| Leakage | Rx10K: Reads 0 to 20 MΩ |
| DC Voltage | O to 100 Volts DC |
| AC Voltage | 0 to 200 Vrms |
| Stress Test | O to 82 dBrnC |



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|------------|-------------|
| 50605256 | 1134-5029 | Sidekick 7B |
| 52038822 | 1134-10025 | Case |
| 50607519 | 1131-0202 | Test Leads |

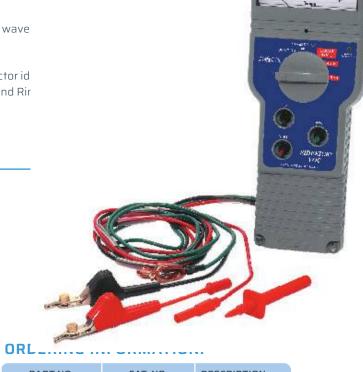
SIDEKICK® V.O.C.

FEATURES —

- Identifies defective inside wire and jacks
- Measures resistance, AC/DC volts, quasi square wave
- Identifies shorts, opens, crosses and grounds
- Replaces the need for other meters
- Provides tone for twisted pair or crossed conductor id
- Single set-up for testing Tip-Ring, Tip-Ground, and Rir connection
- Field replaceable leads
- Softcase with adjustable hook
- Low battery indicator light

SPECIFICATIONS:

| Dimensions | 10.75 x 4.25 x 2.5 inches |
|--------------------|---|
| Weight | 2 lbs. |
| Resistance | Rx1: Reads 0 to 2000 Ω Rx1K: Reads 0 to 2 M Ω |
| Leakage | Rx10K: Reads 0 to 20 MΩ |
| DC Voltage | O to 100 Volts DC |
| AC Voltage | 0 to 200 Vrms |
| Stress Test | O to 82 dBrnC |
| Operating Temp. | -4°F to +140°F |
| Power | Four AA batteries |



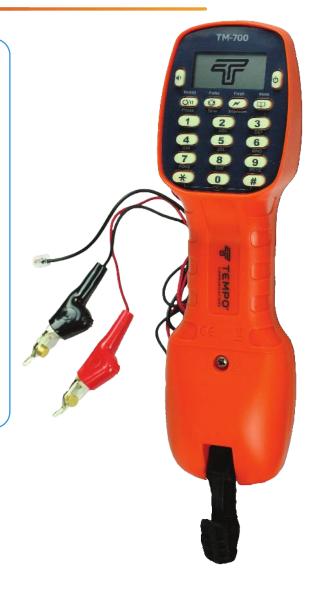
| PART NO. CAT. NO. | | DESCRIPTION |
|-------------------|------------|----------------|
| 50605270 | 1143-5000 | Sidekick V.O.C |
| 52038822 | 1134-10025 | Case |

CABLE & SERVICE TESTING

TM-700 TELE-MATE™ TELEPHONE TEST SET

FEATURES

- Complete telephone set with ringer
- Phone-to-phone intercom, compatible with other SmartIntercom[™] devices
- Modular or alligator clip connection
- Amplified loudspeaker line monitor
- Headset or handset operation
- Tone and pulse dialing
- Large 10-location speed dialing memory
- Multi-memory redial
- DTMF digit detection and measurement
- Pair tracing tone output mode
- Caller ID with name displau
- Call waiting Caller ID
- Missed call indication
- DSL compatible, high impedance monitor and filters
- Glow-in-the-dark keypad
- Line voltage and current display
- High voltage detect and lockout
- High current detect and lockout
- Uses 2 AA/LR6 batteries (not included)
- Quick release belt-clip



SPECIFICATIONS:

| TECHNICAL SPECIFICATIONS | | |
|--------------------------|---------------|--|
| LENGTH | 9.25" (235mm) | |
| WIDTH | 2.5" (64mm) | |
| HEIGHT | 3.25"(83mm) | |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 52061409 | TM-700 | TM-700 Tele-Mate™ TELEPHONE TEST SET |
| 52063087 | TM-700I | BUTT SET (SML CLIPS & BOX) (TM-700I) |
| 52063088 | TM-700UK | BUTT SET (UK PLUG & BOX) (TM-700UK) |



COPPER TELECOMMUNICATIONS CATALOG

TM-500 TELE-MATE™ TELEPHONE TEST SET

FEATURES • Luminescent (glow-in-the-dark) keypad • Line powered, no battery needed • Can be used safely on a DSL enabled line • Polarity test with LED indicator **(3)** High Impedance Monitor for monitoring • 32 digit last number redial and pause line without disrupting existing traffic • 10 number speed dial 6 Over voltage and over current protection Adjustable volume control plus mute 9 Tone and Pulse dialing • Flash to generate a timed break recall • Headset (included) for hands free 0 # operation RJ11 socket Quick release belt-clip **SPECIFICATIONS: TECHNICAL SPECIFICATIONS** LENGTH 9.25" (235mm) WIDTH 2.5" (64mm) 3.25"(83mm) HEIGHT **ORDERING INFORMATION:** PART NO. CAT. NO. DESCRIPTION Telephone Test Set W/ ABN "Bed-Of-Nails" Croc Clips 52061369 TM-500 52062073 TM-500i Telephone Test Set W/ Small Croc Clips (Boxed) 52063086 TM-500UK BUTT SET (TM500 UK PLUG & BOX)

NAUTILUS TEST SETS

Nautilus range products are "real-world hardened" to deliver reductions in Whole Life costs. Each product includes a "shell" designed to breathe and safeguard the functional elements from water, dust, impact and humidity and temperature change.

Water resistant to IP67, they can be used in heavy rain or even dropped in a puddle. Tough and drop resistant, they are designed for years of hard use literally "in the field".

With simple controls, placed in optimal positions for good ergonomics, they are comfortable and easy to use.

Now built for over two decades these are proven "real-world" tough products that have their hardened shells like their namesake the "Nautilus" but their internal functions have been updated over the years to match the changes in the telecommunications networks.



COPPER TELECOMMUNICATIONS CATALOG

FEATURES/SPECIFICATIONS:

| | PE930 | PE945 | PE961 |
|--|-------|-------|-------|
| Digital Services Detection and Lockout | | | ✓ |
| High voltage warning | | ✓ | ✓ |
| Speaker-phone with volume control | | ✓ | ✓ |
| Luminescent keymat | | | ✓ |

ALL THREE INCLUDE:

- Waterproof (IP67, buoyant)
- Ten-number speed dial memory (32 digits)
- Microphone mute
- Unique quick-release belt clip
- Audible and visual mode indicators
- Polarity test in any mode
- Chemical resistant
- Digital safe line monitor

- 3-year warranty
- Last number redial
- Precise hook flash
- Premium cordset with bed-of-nails and piercing pin clips
- Tone or pulse dialing
- Two-tone ringer with adjustable pitch
- Built-in DSL filter
- Luminescent keymat





A340, D350 & D361 SPECIFICATIONS:

| | A340 ETSI | A340 ETSI LCC | D350 90ms | D361 | D361 LCC |
|--------------|-----------|---------------|-----------|------|----------|
| DigAlert 3 | | | ✓ | ✓ | ✓ |
| Loudspeaking | ✓ | ✓ | ✓ | ✓ | ✓ |
| Hands Free | | | | ✓ | ✓ |

ALL FIVE INCLUDE:

- High voltage alarm and lockout
- Waterproof IP67, buoyant
- "ETSI" European telephony setup, with 90 ms TBR (other options available)
- Ten dialing memories (up to 32 digits each)
- Microphone mute
- Polarity test in any mode
- Glass reinforced nylon belt clip

- Audible and visual mode indicators
- Ambidextrous operation of the ergonomically placed controls
- DTMF and pulse dialing (change of mode can be stored in memories)
- Three year warranty
- Options with Angled-nose, bed-of-nails (ABN) large crocodile clips (LCC) or small crocodile clips (SCC)

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 52040076 | M0401/10 | DIGALERT 361 ETSI ADSL SCC |
| 52059247 | M0401/20 | DIGALERT 361 ETSI ADSL LCC |
| 52059241 | M0402/10 | DIGALERT 350 ETSI ADSL SCC |
| 52059242 | M0404/10 | ALERT 340 ETSI ADSL SCC |
| 52059246 | M0404/20 | ALERT 340 ETSI ADSL LCC |

CABLESCOUT™ TV220 TDR Cable Tester For CATV

FEATURES

- Easier-to-use GUI interface requires little or no training
- PC application is compatible with Windows 10*
- Excellent clarity and trace functionality makes it easier to identify faults on-screen and determine noise versus the fault
- High SNR and resolution makes it easier to identify events that were previously difficult or impossible to
- Zero dead zone at the launch allows the user to see faults immediately
- Fast trace update rate allows you to see more dynamic faults (5 times/sec.)
- Light weight and long charge life with the lithium-ion
- Higher capacity to hold 200 traces
- USB interface for trace download
- TestWizard™ one-button cable analysis
- Automatic Return Loss Measurements
- Automatic Multiple Event Marking
- High-Resolution, Short Pulse Width (1 ns)
- Rugged enough to withstand everyday use in the field



*Must be installed in "admin" mode and may require re-installation following updates due to Microsoft enforced changes

** Overvoltage category I, 60V max without use of supplementary isolation device. Contact Tempo if you require such

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|------------|----------------------------|
| 52061155 | TV220 | TDR for CATV Broadband |
| | TV220-0350 | Soft Carrying Case |
| | 1155-1010 | Power Supply, AC-DC |
| | 174173401 | Vehicle DC Adapter/Charger |

SPECIFICATIONS:

| Output | Test Signal Output – 1/2 Sine Amplitude – 4V into 75 Ω Pulse Width – 1 ns, 5 ns, 25 ns Output Impedance – 75 Ω Acquisition System Bandwidth – 400 MHz | |
|--------------------------------|--|--|
| Return Loss | Automatic at cursor location Resolution: ±1 dB **Input Protection: ±400 VDC + peak AC up to 440 Hz, 30-second duration Maximum Distance Range: 12,000 ft. (3,658 m), depending on cable type and condition Gain: 0 to 72 dB Waveform Storage: Minimum of 20 waveforms with notes | |
| Distance Accuracy (Feet) | 0 to 2,000 ft.: ±2 ft. ± uncertainty in Vp 2,001 to 6,000 ft.: ±3 ft. ± uncertainty in Vp 6,001 to 12,000 ft.: ±4 ft. ± uncertainty in Vp Meters: 0 to 610 m: ±0.6 m ± uncertainty in Vp 611 to 1830 m: ±0.9 m ± uncertainty in Vp 1831 to 3658 m: ±1.2 m ± uncertainty in Vp | |
| Display | Resolution: 640 x 440 (281,600 pixels) Size: 7.2 inch Type: High contrast LCD Backlight: Operator switchable Waveform Display Resolution – 0.33% of selected range, 4.5 cm (0.15 ft.) minimum Display Ranges – Twelve display ranges from 6 ft. (1.8 m) to 12,000 ft. (3,658 m), plus single-button zoom window Output Port – USB-8 socket Distance Measurements – Meters, feet, nanoseconds | |

| Power | AC Operation: Voltage Ranges: 110 V, 220 V, or 240 V with appropriate AC to DC adapter Line Frequency: 50 Hz to 60 Hz DC Operation: Voltage Range: 9 to 16 VDC @ 1A (charging and operating) | | |
|----------------------------|---|--------------------|--|
| | Battery Operation: Type: Internal Li-Ion rechargeable battery Operating Time: Typically 12 hours continuous operation (backlight off) Battery Savers (user selectable) Shutoff: 5 to 30 minutes or disabled Backlight: Shutoff 5 to 30 minutes, disabled, or always on | | |
| General Characteristics | Temperature: Operating: -10° C to +40° C (+11° F to +104° F) Non-operating: -20° C to +60° C (-4° F to +140° F) Humidity: 10% to 95% (non-condensing) Field Usage: Shock, water, and dust resistant Durability: Survives drop of 2 meters (6 ft.) to concrete in standard soft case. Drip proof, dust resistant EMI Emissions: EN55011, Class A; EN60555-2 Safety: CE (Low Voltage Directive) | | |
| Physical | Height | 9.5 inches; 24cm | |
| | Width | 11.5 inches; 30 cm | |
| | Depth | 3.5 inches; 9 cm | |
| | Weight (Net) | 6.4 lbs.; 3kg | |

CABLESCOUT CS90/TV90E



THE everyday, every technician, copper network TDR. Aimed squarely at the CATV technician who deals with 75 ohm COAX all day but also suitable for use in 50 ohm COAX or twisted pair fault finding applications. The CS90/TV90E provides a perfect mix of simplicity of use, ergonomics, accuracy and high dynamic range with excellent signal to noise ratio.

FEATURES

- Large, Color, HiRes Backlit Display (Readable Outdoors in Bright Conditions)
- Splash, Dust, and Shock-Resistant Packaging
- Zero Dead Zone
- 1, 5 and 25 ns pulse widths standard
- FastFind™ whole cable overview
- Protected 75 Ω F Connector
- Intermittent Fault Location
- Context-Sensitive Help Available for All Functions
- Save a virtually unlimited number of traces to the SD Card (included) or USB drive
- Small, Portable, Lightweight Package
- Internal Cable Types for Fast, Accurate Testing
- Rechargeable Lithium Ion Battery for 8+ hrs. of use
- Span View Window Shows Entire Cable & Navigation
- Narrow Pulse Width Enables Near-End Fault ID

BENEFITS

- Locate Damage in Drops & Bad Passive Devices
- Find Impedance Mismatches (e.g. corrosion, water or cable type changes)

COPPER TELECOMMUNICATIONS CATALOG

BASE MODEL KIT INCLUDES:

- CS90/TV90E "CableScout®"
- DC charger (12 V socket)
- AC PSU (universal)
- 2 metre COAX patch lead
- F type barrel connectors
- Shoulder Strap
- Basic Carry Bag
- SD Card (included)
- 1 ns pulse width for precision
- Determine Length of Cable

PRO KIT EXTRAS:

- SV-03 Adaptor
- BNC Adaptor
- Alligator clip cord

CS90 SPECIFICATIONS:

| Output Pulse | |
|-----------------|--|
| Test Signal | Pulse |
| Type | ½ Sine Wave |
| Width | 1 ns, 5 ns, 25 ns |
| Impedance | 75 Ohm |
| Voltage | >4V Peak |
| Input | |
| Protection* | +/- 400VDC |
| Filtering | 1, 2, 4, 8, 16, 32 |
| Physical | |
| Size | 262mm x 162mm x 55mm |
| Weight | 900g |
| Operating Temp. | -20 to + 50 (0 to 30 charging) Celcius |
| Storage Temp. | -20 to +60 C |
| | |

| Performance | |
|-----------------------|---|
| Horizontal Resolution | 204 ps (approx. 3"/75 mm) |
| Maximum Distance | 9.5 kft (2.9 km) @ Vp=0.93 |
| Display Resolution | 800 X 480 |
| Display Size | 180mm 7" diagonal |
| Backlight Brightness | 1000nits |
| Test Result Storage | SD card or USB drive |
| Battery Type | Li-lon polymer |
| Battery Capacity | 30 Wh; sufficient for >8 hr use with typical backlight |
| Battery Life | Battery Management System optimizes charging and lifetime |

* Overvoltage category I, 60V max without use of supplementary isolation device. Contact Tempo if you require such.

C590

| PART NO. | CAT. NO. | DESCRIPTION | | | SCAN TH |
|----------|----------|--------------------------------------|--------------|----------|------------|
| 55500017 | CS90 | CableScout CS90 TDI | R (Pro Kit) | | |
| 55501190 | TV90E | CableScout TV90E TI | OR (Pro Kit) | | |
| 55500220 | CS90B | CableScout CS90 TDF | (Base Kit) | | |
| 55501191 | TV90EB | CableScout TV90E TD | R (Base Kit) | | 1 200 |
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WIRE & CABLE IDENTIFICATION

CLASSIC 77 SERIES TONE GENERATORS

FEATURES/SPECIFICATIONS:

| | 77HP-G | 77HP-G/6A | 77M-G |
|---|--------------|--------------|-------|
| Selectable Warble Tone | ✓ | ✓ | ✓ |
| Continuity Testing | LED & Beeper | LED & Beeper | LED |
| Polarity Testing* | ✓ | ✓ | ✓ |
| Talk Battery Supply | ✓ | ✓ | ✓ |
| Two-line Modular Test Lead (RJ-11) | ✓ | ✓ | |
| Three-color LED (identifies AC ring voltage) | ✓ | ✓ | ✓ |
| Weather-Resistant Design | ✓ | ✓ | ✓ |
| Angled Nose Clips with Bed-of-Nails Penetrator | | ✓ | |
| RJ11 plug & RJ45 adapter | ✓ | ✓ | |
| Lanyard | ✓ | ✓ | |
| Battery Operated (9V not included) | ✓ | ✓ | ✓ |

^{*}Dual line on 77HP models, single line on 77M models







CLASSIC 77 SERIES TONE GENERATORS

Permits technicians to identify the conductor within a bundle, at a cross-connect point or at the remote end. Can be used on twisted pair wiring (telecom, datacom, etc.), single conductors, coaxial cables, de-energized AC wiring and most other wiring.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|---|
| 52047488 | 77HP-G | 77H-GP Tone Generator (standard alligator clips) |
| 52047489 | 77HP-G/6A | 77HP-G/6A Tone Generator (ABN Clips) |
| 52047490 | 77M-G | 77M-G Tone Generator (Basic) |
| 50086863 | 77CS | Leather Belt Holster for Classic 77 Series Tone Generators |
| | | |



COPPER TELECOMMUNICATIONS CATALOG

REPLACEMENT PIERCING CLIPS

FEATURES

- These traditional telco-style clips can be used with almost any style cordsets
- Clips feature angled nose design for use on 66 style punchdown blocks and bed-of-nails penetrator for use on insulated wires
- Package of two clips with red and black boots

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------|
| 50087100 | RPC | Piercing Clips |



STATION MASTER PRO 24B

FEATURES

- Troubleshoot irrigation systems
- Activate and cycle solenoids
- Test solenoids for continuity
- Send tone to identify wires
- Measure clock voltage
- Low battery indication
- Easy-to-understand LEDs
- Test leads with Bed-of-Nails and piercing Pin Clips
- 1-year limited warranty

SPECIFICATIONS:

| Minimum Voltage for Clock LED (LED intensity increases as voltage increases) | 15 VAC |
|--|--|
| Minimum Battery while Testing | 10.5 VDC |
| Maximum Input Voltage between Test Leads | 28VAC |
| Solenoid Circuit Recharge Time | 2.5 seconds |
| Maximum Distance Range to Activate one Solenoid | 12 AWG Loop 3000-13000 feet 14 AWG Loop 2000-8500 feet 18 AWG Loop 500-3000 feet |
| Power Source | 2x 9V alkaline batteries |
| Battery Life | 3 hours continuous |
| Operating/Storage Temp. | 32°F - 122°F (0° - 50°C) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52025220 | 24B | Station Master Pro |





STATION MASTER PRO KIT 24BK

FEATURES

- Troubleshoot irrigation systems
- Chatter mode for audible locating of valves
- Activate any 24V AC valve solenoid
- Test solenoids for continuity
- Send tone to identify wires
- Check clock AC voltage
- Low battery indication
- Easy-to-understand LEDs
- Test leads with 'bed-of-nails' and piercing pin plips
- Locates underground solenoids

SPECIFICATIONS:

| Minimum voltage for clock LED | 15 VAC |
|--|-----------------------------|
| Minimum Battery while Testing | 10.5 VDC |
| Maximum Input Voltage between Test Leads | 28 VAC |
| Solenoid activate output voltage | 27 to 18 VAC |
| Battery | 3x 9V Alkaline Batteries |
| Operating/storage temp. | 32°F to 122°F (0°C to 50°C) |
| Relative humidity (max.) | 80% |



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 52025221 | 24BK | Station Master Pro Kit |

PROFESSIONAL GX SERIES

TONE GENERATORS

FEATURES

- Microprocessor controlled precision tone generator
- Two-line polarity indication for fast outlet status check
- Automatic shutoff to prevent battery drain
- Snag-proof boot prevents broken plug tabs
- Convenient wrist/hanging lanyard
- Three distinct, selectable tone signal outputs for multiple line identification
- Two selectable tone power outputs for use on open and shorted pairs
- Independent continuity test function
- Independent talk battery supply with higher output voltage
- Fixed alligator clips and removable modular plug for multiple connection options
- 77GX2 includes premium telco-style angled nose clips with piercing pin and bedof-nails connectors

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 50605560 | 77GX | 77GX Tone Generator with standard alligator clips |
| 52082818 | 77GX2 | 77GX2 Tone Generator with ABN clips |





COPPER TELECOMMUNICATIONS CATALOG

ADAPTONER MODULAR BREAKOUT TONE GNERATOR

FEATURES

- The AT8 Tone Generator makes it simple to test continuity, polarity, send tone and even supply talk battery to any configuration of pairs in 8-position modular jacks and plugs
- Ideal for splitting tone across pairs for easier tracing of CAT5 and higher cables
- Combines the features of our tone generators and a modular breakout adapter
- In-line testing is made simple with both a modular plug and jack on each unit
- 8-position "snag-proof" modular plug
- 8-position jack with protective cover
- Quick reference guide with common wiring configurations
- Selectable solid/warble tone signal
- Tone, continuity and talk battery supply using alligator clips
- Weather-resistant design
- Battery operated (9V not included)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 50086936 | AT8 | AdapToner Modular Breakout Tone Generator |

Note: Not for use on energized AC wiring

LAN TONER WITH HUB BLINK & DETECT

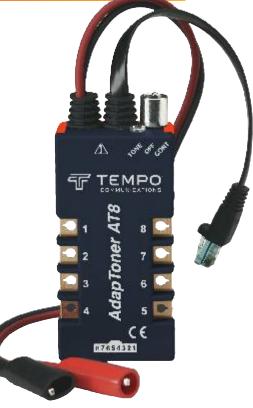
FEATURES

- The LAN Toner is designed for the network installation and maintenance professional and can be used on any wiring system including datacom, telecom, security/alarm, audio and CATV
- Blinks HUB, Switch Port, and PC activity lights for fast identification
- Detect LAN hubs & switches
- Provides tone signaling, continuity testing and telephone line polarity indication combined with a modular breakout adapter
- Selectable tone outputs for identifying multiple cable runs
- Includes multiple connection options

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------|
| 50605836 | AT8L | LAN Toner |

Note: Not for use on energized AC wiring







DATA MATE™ PRECISION TRACING TONE GENERATOR

FEATURES

- Trace wire or cable without interfering with digital two-way cable or ADSL services
- The model 7780 Data Mateâ, & Precision Tone Generator is intended to provide tone for tracing and troubleshooting communication circuits without disrupting digital traffic on the line or adjacent lines
- The high purity of the tracing tones combined with internal isolating filters allows safe tracing on circuits that carry digital services above the baseband (two-way cable and ADSL)
- The high-power differential output of the 7780 makes tones easy to find, even over long distances.
- Useful for continuity testing and polarity, testing, the 7780 provides the standard warble tone and talk battery supply
- Line voltage and polarity indication
- High power tone output
- High purity tone signal
- Low crosstalk
- Low battery indicator
- Filter-isolated circuit ry
- Two-way broadband compatible
- Modular and Telco pro alligator leads
- ADSL service compatible
- Long range
- Popular, standard warble tone frequencies continuity testing
- Compatible with existing tone

SPECIFICATIONS:

| Electrical | |
|-------------------------|---|
| Output Power | +9dBm |
| Output Signal Frequency | 577/982 Hz alternating |
| Output Impedence | 3,500 ohms minimum, 25kHz to 1.1 MHz |
| Mechanical | |
| Length | 5.5" (140 mm) |
| Width | 2.25" (57 mm) |
| Depth | 1.0" (25 mm) |
| Weight | 0.38 lbs. (0.17 kg) |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52082819 | PE7780 | Data Mate™ Tone Generator |

Note: Not for use on energized AC wiring



COPPER TELECOMMUNICATIONS CATALOG

TONE PROBES SELECTION GUIDE

| MODEL NO. | 200B-G | 200EP-G | 200FP | 200XP | 500XP |
|---|--------|---------|-------|-------|------------|
| Powerful 2" Rear-fire Speaker | ✓ | ✓ | ✓ | ✓ | ✓ |
| One-button Operation | ✓ | ✓ | ✓ | ✓ | Two Button |
| Adjustable Gain Control | ✓ | ✓ | ✓ | ✓ | ✓ |
| LED for Visual Signal Strength Indication | | ✓ | ✓ | ✓ | ✓ |
| Recessed Tabs for Telephone Test or Headset Connection | | | ✓ | ✓ | |
| Headset Jack (audio shock protected) | | ✓ | | | ✓ |
| LED Flashlight | | ✓ | | | |
| Noise Filtration | | | ✓ | ✓ | ✓ |
| Replaceable Tip | ✓ | ✓ | ✓ | ✓ | ✓ |
| Five-Minute Auto Shutoff | | | ✓ | ✓ | ✓ |
| Low-battery Indicator | | | ✓ | ✓ | ✓ |
| Battery Operated (9V not included) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Water Resistant | | | | | ✓ |
| "Mains Power" Warning (acAlert® option) | | | | | ✓ |
| Patented | | | | | ✓ |





TOUGH & WATER RESISTANT MULTI-FILTER TONE PROBE

FEATURES

- The tough and water resistant 500XP will help identify signals buried in the worst of noise
- Simple two-button operation with dual signal strength indicating LEDs can work with any tone generator
- Headset allows discrete use in quiet environments and can help in acoustically noisy areas
- Option to enable acAlert®, which helps warn users if brought near hazardous AC power voltages and may be inaudible if using the advanced filtering (note, international models have this enabled by default - can be switched off).



COPPER TELECOMMUNICATIONS CATALOG

TONE PROBE AMPLIFIERS

FEATURES

- Tone Probe Amplifiers permit wire and cable identification without having to make direct metallic contact with the conductor in conjunction with any tone generator
- All models feature high sensitivity and a powerful speaker for noisy environments, recessed on/off button control and high gain for accurate wire identification in congested cable bundles and equipment rooms
- The 200B-G also includes adjustable volume control for precise identification
- The 200EP-G also includes a headset jack (audio shock protected) and an LED Flashlight for working safely behind furniture, inside racks or in dim lighting conditions

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52047483 | 200B-G | Tone Probe Classic, Basic |
| 52047484 | 200EP-G | Tone Probe, Standard, with Headset Jack & Flashlight |
| 50086707 | 2000 | Leather Belt Holster for 200 Series Tone Probe Amplifiers |





FILTER TONE PROBE

FEATURES

- By selectively filtering out 60Hz (or 50Hz) and its harmonics, the 200FP can be used with any tone generator for faster and more accurate cable and wire identification
- Slim and comfortable design for use in limited-space areas
- Recessed on/off push-button control to conserve battery life
- Adjustable sensitivity/volume control to increase accuracy
- Blended carbon/plastic tip to reduce the risk of shorting terminals
- Uses 2 AA batteries

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 50086723 | 200FP | Filter Tone Probe (60Hz mains) |
| 50604678 | 200FP/50 | Filter Tone Probe (50Hz mains) |



FEATURES

- Single button selects between default mode and two kinds of powerful noise filters
- Filtering means faster and more accurate pair tracing
- Digital signal processor for accuracy and sensitivity
- Durable and light weight
- Audible and visible signal detection
- Continuous wide-range volume control
- Butt set terminals
- Field replaceable tip and spare tip included
- Uses 2 AA batteries
- One probe for many applications
- Works with any tone generator
- The narrowband filter mode is especially well suited for 577Hz Telco tone (983 Hz for the international version)

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52024457 | 200XP | Multi-Filter Tone Probe (60Hz mains, 577Hz narrowband) |
| 52025467 | 200XP/50 | Multi-Filter Tone Probe (50Hz mains, 983Hz narrowband) |



REPLACEMENT PLASTIC TIPS FOR 200 SERIES PROBFC

FEATURES

- Plastic tips perform much the same as traditional metal tips while reducing the risk of shorting terminals
- Specially formulated with a carbon powder and carbon fiber blended plastic
- Tips fit 200B, 200EP, 200FP and 200XP probes
- RPT-1 comes with two pencil-style tips and two spade-style tips



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 50087118 | RPT-1 | Plastic Tips for 200B, 200EP, 200FP and 200XP |
| 52066900 | RPT-3 | Replacement tips for 500XP. |



RPT-3

REPLACEMENT METAL TIPS FOR 200B & 200EP PROBES

FEATURES

- Metal tips provide maximum performance when probing insulated wires or making direct metallic contact
- Made of nickel-plated brass
- Tips fit 200B and 200EP probes

RMT-1

| PART NO. 50087096 52066901 | CAT. NO. RMT-1 RMT-3 | DESCRIPTION Metal tips for 200B and 200EP Probes Replacement metal tips for 500XP | |
|----------------------------|------------------------|---|-------|
| | | | RMT-3 |
| | | | |
| | | | |



PRECISION TONE GENERATOR

FEATURES

- Used in the telecommunications industry for pair identification and fault locating
- Supplies a precise 577.5Hz crystal controlled signal frequency
- Variable output allows technicians to adjust signal strength to suit field conditions and improve accuracy
- Designed to work with any common amplifier and exploring coil for aerial fault locating
- The unit supplies talk battery to power two telephone test sets (buttsets) for communications over inactive pairs
- Each of the three test leads is equipped with traditional bent nose piercing clips with "bed-of-nails" insulation piercing pins
- The tone generator and test leads fit neatly in a durable and protective woven polyester carrying case with shoulder strap
- Battery-operated (1 6V lantern included)

SPECIFICATIONS:

| Power Requirements | One 6V lantern battery |
|-----------------------|---|
| Battery Life | 40 hours nominal |
| Transmitter Frequency | 577.5Hz pulsed at 1Hz, crystal controlled |
| Output Voltage | 0.1 to 80Vp-p |
| Output Signal Level | 0 to +30dBm |
| Construction | High impact ABS plastic in woven polyester case |
| Dimensions | 7.25" x 5.5" x 4.5" in case |
| Weight | 3 lbs. with battery |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------|
| 52083234 | 177 | Precision Tone Generator |





TONE PROBES KITS SELECTION GUIDE

| | PRODUCT | CABLE PAIR ID (CPI) | CADENCE CHANGE FOR MULTI USE | TALK BATTERY | CONTINUITY | POLARITY | IP RATING |
|-------------------|--------------|------------------------|------------------------------------|-----------------|------------|----------|-----------|
| | 601K-G | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | 200B-G | | | | | | |
| | 77M-G | | | | | | |
| | 701K-G | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | 200EP-G | | | | | | |
| Z | 77HP-G | | | | | | |
| TELECOMMUNICATION | 711 K | ✓ | ✓ | ✓ | ✓ | ✓ | |
| IAT | 200EP | | | | | | |
| Z | 77GX | | | | | | |
| Σ | 801K | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Σ | 200FP | | | | | | |
| EC (| 77HP | | | | | | |
| Ä | 802K | ✓ | ✓ | ✓ | ✓ | ✓ | |
| - | 200FP | | | | | | |
| | AT8L | | | | | | |
| | 811K | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | 200XP | | | | | | |
| | 77GX | | | | | | |
| | 500/600 | ✓ | ✓ | | ✓ | | IP67 |
| | TP500 | | | | | | |
| | TG600 | | | | | | |

DATA, COAX & ALARM

| | AT8LK | ✓ | ✓ | ✓ | ✓ | ✓ | |
|---|-------|---|---|---|---|---|--|
| | 200EP | | | | | | |
| | AT8L | | | | | | |
| | 402K | | ✓ | | ✓ | | |
| | 402T | | | | | | |
| | 402R | | | | | | |
| ` | 620K | ✓ | | | ✓ | ✓ | |
| | 200EP | | | | | | |
| | 620 | | | | | | |

TONE PROBES KITS SELECTION GUIDE

| PRODUCT | BATTERY LIFE | OUTPUT V PK-PK | DISTANCE RANGE | | ADDITIONAL FEATURES |
|-------------|-----------------|------------------------|-------------------|---------|---|
| 601K-G | | 10.2V | ~13km | 1 year | |
| 200B-G | > 50 hours | | | | Modular test lead and croc clips |
| 77M-G | > 50 hours | | | | 52VDC voltage protection |
| 701K-G | | 6.7V | ~ 15km | 1 year | 150VDC voltage protection |
| 200EP-G | > 50 hours | | | | Headset socket 2.5mm |
| 77HP-G | > 50 hours | | | | LED torch for work in dark closets |
| 711K | | High 21.5V Low 8.8V | ~ 15km | 1 year | |
| 200EP | > 50 hours | | | | Visible and audible signal strength |
| 77GX | > 50 hours | | | | Removable modular jack lead |
| 801K | | 10.2V | ~ 17km | 1 year | 50Hz AC mains filter |
| 200FP | > 50 hours | | | | |
| 77HP | > 50 hours | | | | |
| 802K | | 6.0V | ~ 17km | 1 year | 50Hz AC mains filter |
| 200FP | > 50 hours | | | | Built in Modular adaptor (access all 8 wires in Data cable) |
| AT8L | > 25 hours | | | | Hub/PC link |
| 811K | | High 21.5V Low 8.8V | ~ 15km | 1 year | |
| 200XP | > 50 hours | | | | 1kHz band pass filter (Discriminator mode) |
| 77GX | > 50 hours | | | | 50Hz AC mains filter |
| 500/600 | | 25.7V | ~ 40km | 3 years | |
| TP500 | > 60 hours | | | | Headset option |
| TG600 | > 200 hours | | | | Pure sine wave reducing cross talk |
| AT8LK | | 6.0V | ~ 15km | 1 year | Hub / PC detect |
| 200EP | > 50 hours | | | | Built in Modular adaptor (access all 8 wires in Data cable) |
| AT8L | > 25 hours | | | | Hub / PC blink |
| 402K | | 20.0V | 8km inductive | 1 year | |
| 402T | > 25 hours | 20.0V | 15km direct | | ID terminated & non terminated cables |
| 402R | > 25 hours | 20.0V | 5km magnetic | | 50Hz AC mains filter |
| 620K | | 9.3V | ~ 11.5km | 1 year | |
| 200EP | > 50 hours | | | | Latching facility for intermittent faults |
| 620 | > 100 hours | | | | Test normally open and normally closed switches |

CLASSIC TONE & PROBE KIT

FEATURES

- 701K-G Kits include the 77HP-G High Power Tone Generator and the 200EP Tone Probe Amplifier in a rugged and woven nylon carrying case (700C)
- 601K-G Kit is a more basic version of the 701K-G kit and includes the 77M-G Tone Generator and the 200B-G Tone Probe amplifier in a zippered nylon pouch



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|--|
| 52047486 | 601K-G | Classic Tone and Probe Kit, Basic |
| 52047487 | 701K-G | Classic Tone and Probe Kit, Standard |
| 52047489 | 701K-G/6A | Classic Tone and Probe Kit, Standard with ABN clips |

PREMIUM TONE & PROBE KIT

FEATURES

- Designed for more accurate wire identification
- The 801K virtually eliminates power-related noise from the tone and probe operation
- Kit includes the 77HP/6A High Power Tone Generator and 200 FP Filter Probe in a convenient Cordura® case (700C)

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------------|
| 50086901 | 801K | Premium Tone and Probe Kit |
| 50604660 | 801K/50 | Premium Tone and Probe Kit (50Hz) |





XPERT TONE & PROBE KIT

FEATURES

- Designed for fast and accurate wire identification by combining the features of our tone generators and modular breakout adapter
- Kit includes the AT8 Modular Breakout Tone Generator and 200EP Inductive Amplifier in a convenient carrying case (700C)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52025323 | 811K | Tone and Probe Kit, Xpert |
| 52055997 | 811K/6A | Tone and Probe Kit, Xpert with ABN clips |



AdapToner KIT

FEATURES

- Designed for fast and accurate wire identification by combining the features of our tone generators and modular breakout adapter
- Kit includes the AT8 Modular Breakout Tone Generator and 200EP-G Inductive Amplifier in a convenient carrying case (700C)

| PART | 10. C. | AT. NO. | DESCRIPTION |
|--------|--------|---------|---------------|
| 500869 | 944 | AT8K | AdapToner Kit |



LAN TONER KIT

FEATURES

- Designed for the network installation and maintenance professional, the LAN Toner sends tone and blinks HUB, Switch Port, and PC activity lights for fast identification. This kit can be used on any wiring system including Datacom, Telecom, security/alarm, audio and CATV
- Kit includes the AT8L LAN Toner and the Inductive Amplifier in a rugged and woven nylon carrying case (700C)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------|
| 50605843 | AT8LK | LAN Toner Kit |



CATV CABLE TONE TEST KIT

FEATURES

- Designed specifically for the CATV industry, this kit allows you to tone through splitters, directional couplers and traps
- Simple to use, the 402K provides accurate results and will eliminate long delays trying to figure out non-tagged or mis-tagged cable drops
- Kit includes one transmitter, one receiver, one male F-to-F connector adapter cable, one male F-to-alligator clip adapter cable and a carrying case (700C)
- Transmitter and receiver are equipped with female F-connectors
- Three methods of signal reception: electrostatic pickup for non-terminated cables, electromagnetic pickup for terminated or shorted cables and direct connection when identifying through passive devices such as splitters
- In continuity mode, provides both audible tone and LED display
- Identifies the presence of AC or DC voltage on the cable under test
- Four selectable tone outputs for multiple line identification





ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 50086774 | 402K | CATV Cable Tone Test Set |
| 50603760 | 402T | Transmitter |
| 50603760 | 402R | Receiver |
| 50603744 | CS9 | Male to male F-connector adapter cable |
| 50603787 | CS19 | F-connector to alligator clip |

TONE & PROBE CARRYING CASE

FEATURES -

- Allows you to build your own kit using any tone generator and 200 Series probe
- Durable woven nylon
- Fits belts up to 3" wide

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 50086839 | 700C | Tone & Probe Carrying Case |



STRUCTURED WIRING TESTERS

NETcat® PRO 2 NC-500

FEATURES

- Test and troubleshoot data, telephone and coax wiring
- NETcat Pro 2 Additional Features:
 - Gigabit device capability detection (also detects 10baseT and 100baseT)
 - Cable type, velocity of propagation library, user editable
 - Power over Ethernet (PoE) detection
 - Memo pad
- Detect split pairs, short circuits, broken and crossed wires
- Step TDR technology shows length to open or short of all pairs
- Test shielded twisted-pair (STP), unshielded twisted-pair (UTP) & coaxial cables.
- Test patch cords and remote jacks
- Touch-screen control, included stylus slots into main unit
- Large icons ensure easy use with your finger too
- Large 3" (76mm) backlit high-contrast (user adjustable) monochrome display is highly visible in dark or brightly lit areas
- Remote test and ID unit stores in base of main unit
- Can identify up to 8 remote test ID units (the 7 extra ID units are available in the NC-510 accessory kit along with carrying case)
- Tone generator with four selectable precision frequency tones, compatible with Tempo advanced digital signal processing probes
- Operates on single 9V battery with low battery indication





SPECIFICATIONS:

| Dimensions | 3.3" x 1.4" x 6.7" (8.5 cm x 3.5 cm x 17 cm) |
|--|--|
| Weight | 0.45 lb. (200 g) |
| Power | 9V Alkaline battery (PP3) |
| User Interface | |
| Display LCD | Dot Pixels: 128 x 128 dots |
| Viewing Area | 60.0 x 58.4 |
| Backlight | White LED |
| Buttons | LCD touch-screen, Single momentary contact push button |
| Environmental | |
| Operating Temp | 0°C to 50°C |
| Storage Temp | -20°C to 70°C |
| | |
| | |
| Interface | RJ45 shielded jacks |
| Interface Connections | RJ45 shielded jacks F-type threaded female coaxial connectors |
| | · |
| Connections | F-type threaded female coaxial connectors User selectable based |
| Connections | F-type threaded female coaxial connectors User selectable based on a known cable length. |
| Connections TDR Calibration | F-type threaded female coaxial connectors User selectable based on a known cable length. 40% to 100% in steps of 1% |
| Connections TDR Calibration TDR Range | F-type threaded female coaxial connectors User selectable based on a known cable length. 40% to 100% in steps of 1% O to 2000 ft. |
| Connections TDR Calibration TDR Range Resolution Accuracy to | F-type threaded female coaxial connectors User selectable based on a known cable length. 40% to 100% in steps of 1% O to 2000 ft. 1 ft. (0.3 m) |
| Connections TDR Calibration TDR Range Resolution Accuracy to Open/Short | F-type threaded female coaxial connectors User selectable based on a known cable length. 40% to 100% in steps of 1% O to 2000 ft. 1 ft. (0.3 m) ±4% or 2 ft. (0.6 m) whichever is greater |
| Connections TDR Calibration TDR Range Resolution Accuracy to Open/Short | F-type threaded female coaxial connectors User selectable based on a known cable length. 40% to 100% in steps of 1% O to 2000 ft. 1 ft. (0.3 m) ±4% or 2 ft. (0.6 m) whichever is greater |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52024556 | NC-500 | NETcat Pro 2 Digital VDV Wiring Troubleshooter |
| 52024661 | NC-510 | NETcat Pro 2 Accessory Kit w/carry case |
| 52057701 | NC-520 | Netcat Pro 2 NC-500 Main Unit plus NC-510 accessory set |

NC-500 CONTENTS:

- NETcat Pro 2 main unit with stylus
- Removable remote jack and patch lead test and ID unit
- Twisted-pair (modular RJ45), coax (F) and alligator clip test cords
- 9V alkaline battery

NC-510 NETCAT PRO 2 ACCESSORY **KIT CONTENTS:**

- Seven additional remote jack test and ID units, RJ45 and F (male)
- Carrying case to hold additional remote test ID units and content of NC-500 main kit

NC-520:

- Netcat Pro 2 Main Unit With Stylus
- Removable Remote Jack And Patch Lead Test and Id Unit
- Twisted-Pair (Modular Rj45), Coax (F) And Alligator ClipTest Cords
- Seven additional remote jack test and ID units, RJ45 and F (male)
- Carrying case to hold additional remote test ID units and content of NC-500 main kit
- 9V Alkaline Battery



NETcat® MICRO NC-100

FEATURES

- Tests shielded twisted pair (STP), unshielded twisted pair (UTP) and coaxial cables
- TIA/EIA standard wiring pair verification
- Detects shorts, opens, reversed polarity, crossed and split pairs
- Generates three distinct, selectable digital tone patterns for cable tracing and troubleshooting
- Tracing modes can be adjusted for high performance LAN cables
- Complete set of connector types standard (telephone, LAN and coax)
- Nested remote allows end-to-end testing of all wiring types
- Simple testing of LAN wiring and phone lines
- Detection of common wiring and connector errors
- Warning if connected to voltage source

-10°C to 60°C

• Checks for reversed telephone wires

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52024541 | NC-100 | NETcat® Micro Digital Voice Data & Video Wiring Tester |

SPECIFICATIONS:

Storage Temp

| | | 100 | |
|----------------|--|---------------------------------|---|
| Dimensions | 150 x 70 x 33mm | | |
| Weight | 220g including remote unit and battery | Commentions | RJ45 8 way shielded socket, RJ12 6-way socket |
| Power Source | 9V Alkaline battery (PP3) | Connections | F-type threaded female coaxial connectors |
| User Interface | | Network Split Pair Detection | Minimum detectable length of split cable 2 to 3 meters (5 to 10 ft.) depending on cable type and length |
| Display LCD | Icon and seven segment type | | Alternating frequencies of 577Hz and 983Hz |
| Viewing Area | Green LED | Pair Tracing Tones | are produced at three user selectable rates. Designed for standard tone probes, but compatible with precision digital Tempo tone probes. Can be output on all pairs, individual pairs or individual wires. |
| Backlight | White LED | | |
| Buttons | Four momentary contact push button | | |
| Environmental | | | SCAN TO WATCH THE VIDEO |
| Operating Temp | 0°C to 50°C | | |



Coax

Tone

TEMPO

NETcat® Micro

NC-100



WIREMAP TESTER

FEATURES

- Quickly identifies opens, shorts, reversals and transposed pairs
- Economical tester includes all the basic functions
- Connecting the receiver unit automatically activates the test process
- Sequencing red and green LEDs provide fast, accurate and simple-to- understand results
- Alerts the technician if connected to an active circuit without harming the unit
- Connect any eight-position modular plug to the appropriate jack on the transmitter and a sweeping tone signal is applied to all pairs
- At the far end of the cable, use any Tempo Communications inductive amplifier (probe) to locate the corresponding plug or jack
- Battery operated (9V not included)

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 52082812 | 468 | Wiremap Tester |
| 50603825 | 468C | Carrying Case for the Wiremap Tester |
| 52082813 | 468T | Transmitter |
| 52082814 | 468R | Receiver |
| 50603817 | CSIO | Modular Adapter Cable |



COPPER TELECOMMUNICATIONS CATALOG

LAN CABLE-CHECK™

FEATURES

- Identifies cross-over telephone connections
- Automatically scans when cables connected and unit turned on
- Two scan speeds: fast or slow
- Maps connector and cable pin-out
- Tests cables up to 1,650' or 500m
- Can also test RJ11 connections with an RJ11 adapter (not included)
- 2, RJ45 patch cords and 9V battery included
- Contained in a durable nylon carrying case with belt loop

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52046967 | PA1574 | LAN Cable-Check™ Tester |



LAN & A/V CABLE-CHECK™

FEATURES

- Tests RJ45 patch cords and network installations to identify good connections, opens, shorts or cross-connections
- Identifies data and telephone connection schemes
- Maps cable pin-out and detects split pairs
- Tests continuity of cords and installed cable runs
- Identifies good connections, opens and shorts
- Automatic scanning
- User selectable slow or fast speeds
- Quickly check cable installations and patch cords
- Easy-to-use with clear LED read-outs

INCLUDES:

- 2 RJ45 patch cords
- 75-ohm male terminator
- Cable TV "F" female adapter
- 9V batteru
- Durable, nylon carrying case
- RCA to CATV "F" adapter

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------|
| 52046970 | PA1594 | LAN and A/V Cable-Check™ |











PALADIN TOOLS COMBINE RUGGEDNESS, RELIABILITY AND VERSATILITY.

The Paladin brand is synonymous with quality, reliability, ruggedness and performance. Designed to be the go-to hand tool for communications technicians and complement the tried-and-true Tempo Communications repertoire of test and measurement solutions—Paladin Tools, manufactured by Tempo Communications remian an industry favorite when only the best will do. As always, Paladin Tools are proudly backed by a limited Lifetime Warranty.

RUGGED. Paladin hand tools are built to last, even when tackling the toughest jobs. Tempo Communications is so confident in this that they offer a Lifetime Warranty on all Paladin products.

RELIABLE. Time is money. Today's technician wants to have confidence that their tools are going to perform as promised, time and time again. Paladin proudly delivers this level of optimum reliability!

VERSATILE. By offering a selection of hand tools that tackles virtually any job a communications technician may encounter, Paladin is a one-stop-shop for success.



THE "DO-IT-YOURSELF" LINE OF PRODUCTS FROM TEMPO COMMUNICATIONS.

WHAT IS DATASHARK®?

Datashark® Tools can be found in stores serving the general household, including Home Depot and Menards. DataShark-labeled products are also available on Amazon.

DataShark test equipment and hand tools priced and designed to empower homeowners to ensure their communications devices are installed and working as intended.

Contact us for more information on DataShark hand tools.





FIBER HAND TOOLS

ECONOMY FIBER OPTIC STRIPPER

FEATURES

- Pre-calibrated and factory set to ensure precision
- Bright orange rubber dipped handles
- Lock closure for safety and transport
- Tool is for stripping 2.0-3.0 mm Fiber Optic cable, micron-cladded core
- 5" (127 mm) long







SPECIFICATIONS:

| WEIGHT | LENGTH |
|--------------|-------------|
| 3 oz. (86 g) | 5" (127 mm) |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52050605 | PA1162 | Economy Fiber Optic Stripper |

ECONOMY KEVLAR® CUTTER

FEATURES

- Cut protective Kevlar strands in fiber optic cable
- Hard-chromed serrated edges to easily cut through Kevlar
- Comfortable handles with large finger openings
- 7.75" (197 mm) long

SPECIFICATIONS:

| WEIGHT | LENGTH |
|--------------|----------------|
| 2 oz. (57 g) | 7.75" (197 mm) |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------|
| 52051283 | PA1511 | Economy Kevlar Cutter |

Kevlar is a registered trademark of E.I. du Pont de Nemours and Company

FIBER OPTIC SCRIBE

FEATURES

- Pen-type scribe with screw-in non-reversible carbide tip
- Wedge shaped tip
- Pocket-clip
- Stainless steel barrel
- 5.25" (197 mm)

SPECIFICATIONS:

| WEIGHT | LENGTH |
|--------------|----------------|
| 2 oz. (57 g) | 5.25" (197 mm) |

| ORDERING IN ORMATION. | | | |
|-----------------------|----------|--------------------|--|
| PART NO. | CAT. NO. | DESCRIPTION | |
| 52050965 | PA1922-1 | Fiber Optic Scribe | |











PROGRIP 5-IN-1 FIBER OPTIC STRIPPER

FEATURES —

- Precision ground stripping cavities for:
 - 2.0 2.4mm outer jacket
 - 2.0 3.0mm loose tube
 - 2.8 3.0mm outer jacket
 - 900µm buffer insulation
 - 900/125µm and 250/125µm buffer/acrylate
- Factory calibrated
- Dual-durometer ProGrips for improved comfort and control



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52055935 | PA1171 | Pro-Grip Stripper, 5-in-1 Fiber Optic |

SPECIFICATIONS:

Weight: 140g Dimensions: 173mm

PROGRIP 3-IN-1 FIBER OPTIC STRIPPER

FEATURES

- Precision ground stripping cavities for:
 - 2.0mm outer jacket
 - 900µm buffer insulation
 - 250/125µm buffer/acrylate
- Factory calibrated
- Dual-durometer ProGrips for improved comfort and

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52055938 | PA1177 | Pro-Grip Stripper, 3-in-1 Fiber Optic |

SPECIFICATIONS:

Weight: 130g Dimensions: 160mm









DROP CABLE STRIPPER

FEATURES

- Strips 8.1mm drop cables
- Provides midspan slit operation for 8.1mm drop cables
- Easy secure operation for quick stripping
- Replacement Blade Kit TCDCS-2 contains six individual blades

SPECIFICATIONS:

Weight: 0.15lb (68g)

Dimensions: 3.26" (82.8mm)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------|
| 52086521 | TCDCS | Drop Cable Stripper |

PALADI

RING AND SLIT STRIPPER

FEATURES

- Ring and Slit stripping for 1.2mm 6.4mm fiber optic cables
- Easy fast adjustment for various cables diameters
- Ring Blade Kit TCCPS-RING-2 contains one blade, knob and
- Slit Blade Kit TCCPS-SLIT-2 contains one blade, lever and screw











ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52085475 | TCCPS | Cable Slit and Ring Stripper |

SPECIFICATIONS:

Weight: 0.05lbs (22g)

Dimensions: 2.87" (72.9mm)

MIDSPAN SLITTER

FEATURES

- The Mid Span Slitter is an efficient and indispensable tool for fiber optic cable termination.
- The sharp blade is made of super-alloy, suitable for longitudinal stripping of outdoor optical loose tube cable.
- The stripping opens the tube on upper and lower sides for easy access of the fiber.
- The Mid Span Slitter comes with 4 groove diameters. Select the proper groove, put in the loose tube, press the blade into the tube coating, close and clamp the two half grooves, and move the blade along the tube to strip.







SCAN TO WATCH

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 52076413 | MSS100 | Midspan Slitter, Fiber |

SPECIFICATIONS:

Weight: 30g Dimensions: 50 x 40 x 25mm





TCEXT INSERTION & EXTRACTION TOOL

The Tempo Communications TCEXT is used to remove and connect LC, SC and similar connectors into bulkheads where the technician's fingers may not fit especially as is the case in congested cabinets.

SCAN TO WATCH THE VIDEO



FEATURES

- Secure clamp to insert and remove LC and SC connectors from bulkheads in high density cabinets
- Ergonomic and lightweight design promotes precise alignment of connectors

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 55500944 | TCEXT | LC/SC Connector Extraction Tool |





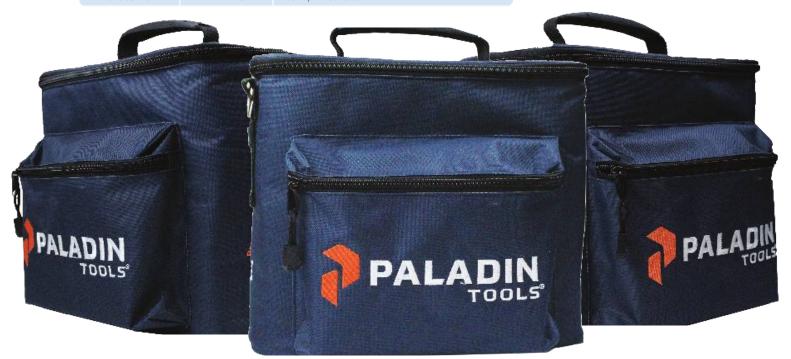


FIBER OPTIC TOOL CASE

FEATURES

- Rugged carry case to safely keep all tools organized
- Extra pockets are incorporated to hold accessories and other tools

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|------------|-----------------------|
| 52085476 | FIBKITCASE | Fiber Optic Tool Case |





COMMUNICATIONS KITS

GripPACK QUICK-RELEASE TOOL HOLSTER

FEATURES

- Easy-on, easy off with new quick-release belt clip
- Belt clip swivels so the holster moves with you and the tools stay out of your way
- Form fitted PVC material ensures that tools don't fall out even if you drop your kit or they are upside down
- Molded specifically to hold the following Tempo Communications Tools: Data SureStrip® UTP/STP & flat satin phone cutter/stripper, Datacomm scissors with serrated blades & ergonomic handles, Punchdown tool- either the ergonomic SurePunch Pro or the original SurePunch PDT®, Mini-MagLite® or SurePunch Pro detachable LED, and a Sharpie® marker



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|---|
| 52046993 | PA4941 | GripPack SurePunch Pro Technician's Kit |
| 52046994 | PA4942 | GripPack SurePunch Pro Installer's Kit |
| 52050958 | PA4943 | GripPack SurePunch Technician's Kit |
| 52055952 | PA4946 | GripPack UTP Essentials |
| 52049537 | PA4940-31 | Replacement Belt Clip |

GRIP PACK KITS:

| DESCRIPTION | MODEL NO. | PA4941 | PA4942 | PA4943 | PA4946 |
|---|-----------|--------|--------|--------|--------|
| GripPack Tool Holster | PA4940 | ✓ | ✓ | ✓ | |
| Data SureStrip® UTP/STP & flat satin cutter/stripper | PA1116 | ✓ | ✓ | ✓ | ✓ |
| Reversible 110/66 blade | PA4571 | ✓ | ✓ | ✓ | ✓ |
| SurePunch Pro PDT punchdown tool handle | PA3589 | ✓ | ✓ | | |
| SurePunch PDT® punchdown tool handle | PA3570 | | | ✓ | ✓ |
| SurePunch Pro detachable LED light & batteries | PA4599 | ✓ | ✓ | | |
| MagLite® with 2 AA batteries | N/A | ✓ | | ✓ | |
| Black Sharpie® pen | N/A | ✓ | | ✓ | |





GripPACK PVC POUCH

FEATURES

- Easy-on, easy off with new quick-release belt clip
- Belt clip swivels so the holster moves with you and the tools stay out of your way
- Form fitted PVC material ensures that tools don't fall out even if you drop your kit or they are upside down
- Molded specifically to hold the following Paladin Tools:Data SureStrip® UTP/STP & flat satin phone cutter/stripper, Datacomm scissors with serrated blades & ergonomic handles, Punchdown tool – either the ergonomic SurePunch® Pro or the original SurePunch® PDT, Mini- MagLite® or SurePunch® Pro detachable LED, and a Sharpie® marker



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52049537 | PA4940 | GRIPPACK PVC POUCH |

PRO COAX TOOL KIT

Designed for the professional CATV cable installer. Offers the convenience in having six essential tools needed for coaxial repair and installation with a unique Grip Pack Pouch.

INCLUDES:

- 0251-08D 8" Diagonal Cutting Pliers, Dipped Grip
- 45591 RG59/6/6Q, RG7/11 Coaxial Cable Stripper
- PA70020 RG59/6/6Q, RG7/11 Coaxial Cable Crimper
- 0153-420 6-in-1 Multi-Tool (Screwdriver/Nut Driver Tool)
- 0354-14 Combo Ratcheting Closed and Open Ended 7/16" Wrench
- PA5000 Custom Grip Pack Pouch with Belt Clip



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------|
| 52063938 | 46601 | PRO COAX TOOL KIT |



ULTIMATE TECHNICIAN KIT



INCLUDES:

- PA1179 KT8 round cable cutter
- PA1116 Data SureStrip® UTP/STP & flat satin cutter/stripper
- PA1257 LC-CST CATV "F" coax stripper
- PA1923 Untwist tool
- PA1927 CATV "F" flaring & attachment tool RG6/RG6 QS
- **PA1559** SealTite® Pro compression crimper
- PA3589 SurePunch Pro punchdown tool
- PA4599 SurePunch Pro detachable LED light
- **PA4572** 110 blade
- PA4591 Double 110 blade
- **PA4573** 66 blade
- PA4574 BIX blade

- PA4575 Krone LSA blade
- PA1543 LAN ProNavigator® tester & remote
- PA1573 Telephone Test Set & LAN Cable-Check™
- **PA1902** RJ45 adapter
- PA1900 Can wrench
- N/A (10) RJ22 handset plugs
- **PA9520** (10) RJ11/12 plugs, stranded, flat cable
- PA9546 (10) RJ45 plugs, Cat5e, solid, round cabl
- PA9644 (10) CATV "F"RG6/RG6 QS connectors
- PA901074 (2) BNC-to-CATV "F" adapters
- CARRY CASE FIBKITCASE (52085476)
- N/A Plano® plastic tackle box

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52046987 | PA4932 | Ultimate Technician Kit |





ULTIMATE PREMISE SERVICE KIT



INCLUDES:

- PA1179 KT8 round cable cutter
- PA1116 Data SureStrip® UTP/STP & flat satin cutter/ stripper
- PA1257 LC-CST CATV "F" coax stripper
- PA8000 CrimpALL® crimp frame with EZI-CHANGE™ thumb screws
- PA3589 SurePunch Pro punchdown tool
- PA4572 110 blade
- **PA4573** 66 blade

- PA1543 LAN ProNavigator® tester & remote
- PA1573 Telephone Test Set & LAN Cable-Check™
- **PA1902** RJ45 adapter
- PA901074 (2) BNC-to-CATV "F" adapters PA4923
- CARRY CASE FIBKITCASE (52085476)
- **PA2062** Die Sets: RJ11/12 WE/SS-style
- PA2687 Die Sets: RJ45 WE/SS-style & RG6/RG6 QS CATV

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52046988 | PA4933 | Ultimate Premise Service Kit |



HAND TOOLS CATALOG

ULTIMATE DATA/VOICE PRO KIT

This complete kit is for data and voice installation and maintenance stored in the new versatile Ultimate Tool Bag.

INCLUDES:

- PA1116 Data SureStrip® UTP/STP & flat satin cutter/ stripper
- PA1923 Untwist tool
- PA1561 All-in-One Phone/Data tool
- PA3589 SurePunch Pro punchdown tool
- PA4572 110 blade
- PA4573 66 blade
- PA4591 Double 110 blade
- PA1573 Telephone Test Set & LAN Cable-Check™
- PA1900 Can wrench
- CARRY CASE FIBKITCASE (52085476)
- N/A Plano® plastic tackle box



| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52046990 | PA4935 | Ultimate Data/Voice Pro Kit |





HAND TOOLS CATALOG

SEALTITE® PRO CABLE TV "F" KIT

Tackle all of your compression crimping jobs with the complete SealTite® Pro Kit. Includes all the tools you need to prepare the cable and terminate any compression connector using RG59, RG6 or RG6 Quad shield cables.

INCLUDES:

- PA1179 KT8 round cable cutter
- PA1257 LC CST CATV "F" coax stripper
- PA1917 RG6/RG6 Quad shield flaring tool
- PA1559 SealTite® Pro compression crimper
- N/A RG6/RG6 Quad SealTite® connectors (10)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------|
| 52046985 | PA4910 | SealTite® Pro Kit |





COAXREADY™ COMPRESSION TOOL KIT

Adding to our CoaxReady™ solutions, this kit has everything you will need to terminate any manufacturers' cable TV "F", RCA or BNC compression connectors using RG6, RG6 Quad or RG59 cable sizes.

- 12 piece kit
- Includes zippered Cordura® portfolio case

INCLUDES:

- **PA1821** AM 35 Slitter
- **PA1179** KT8 Cutter
- PA1119 Data & A/V UTP & Coax Cutter/Stripper
- PA1280 CST Pro Coax tool
- PA2280 CST Pro GRN 3-Level Strip Blade Cartridge
- PA2283 CST Pro OG 3-Level Strip Blade Cartridge
- PA2282 CST Pro BK 3-Level Strip Blade Cartridge
- PA2284 CST Pro Rollers
- PA1927 CATV "F" Flaring & Insertion Tool
- N/A Zippered Cordura® Portfolio Case

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52050429 | PA906033 | KIT COAX COMPRESSION TOOL KIT |

Cordura is a registered trademark of F.I. du Poot de Nemours and Company





COAXREADY™ DELUXE KIT

Perfect for LAN/Ethernet or video & CATV installation. For a wide variety of coaxial connectors including mini-coax and HDTV applications, CoaxReady™ Deluxe combines our most popular tools for a complete coax solution in a handy zipper case.

INCLUDES:

- PA1179 KT8 round cable cutter
- PA1255 LC CST-58/59 coax stripper
- PA1302 1300 crimp tool frame with EZI-CHANGE™ thumb screws

DIE SETS:

- PA2034 BNC/TNC RG58/59/62AU
- PA2649 BNC/TNC CATV "F" RG59/6/Belden 8281/1694A and 1505A
- PA2653 SMA/SMB/Mini 59 BNC & TNC/Mini-UHF

ORDERING INFORMATION:

| PA | ART NO. | CAT. NO. | DESCRIPTION |
|----|---------|----------|-----------------------|
| 57 | 2050391 | PA901081 | CoaxReady™ Deluxe Kit |

COAXREADY™ KIT

With this kit a technician is set to tackle most coaxial cabling challenges Perfect for the LAN/Ethernet or video installation installer. For a wide variety of coaxial connectors including mini-coax applications, CoaxReady™ combines our most popular tools with the new LC CST coax stripper in a handy zippered case.

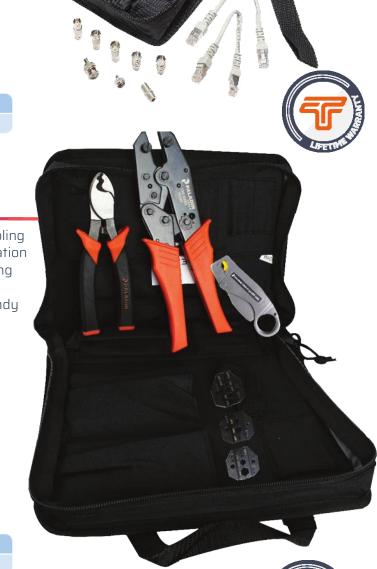
INCLUDES:

- PA1179 KT8 round cable cutter
- PA1255 LC CST-58/59 coax stripper
- PA1302 1300 crimp tool frame with EZI-CHANGE™ thumb screws

DIE SETS:

- PA2034 BNC/TNC RG58/59/62AU
- PA2075 BNC/TNC RG58/59/62AU RG6 Teflon/Plenum
- PA2653 SMA/SMB/Mini 59 BNC & TNC/Mini-UHF

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------|
| 52050387 | PA901054 | CoaxReady™ Kit |



HAND TOOLS CATALOG

DATACOMM PRO STARTER KIT MAX

This kit is also a starter kit for datacomm professionals.

- 66 piece kit
- Includes the complete solution for cutting, crimping, and terminating
- All the tools included come in a compact zipper case

INCLUDES:

- PA1116 Data SureStrip® UTP/STP Cutter/Stripper
- PA3570 SurePunch Pro Punchdown Tool
- PA4528 110 Reversible blade
- PA1561 All-in-One Phone/Data Crimp Tool
- PA9520 (10) RJ45 Cat5e Modular Plugs
- N/A Compact Zipper Case

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------|
| 52046983 | PA4908 | DataComm Pro Starter Kit |

DATACOMM PRO STARTER KIT MAX

A complete data cable installation kit providing everything to support the installer using commonly-available connectors, and punchdown termination blocks. All tools contained in a professional-quality, soft-sided zipper case with heavy-duty wrist strap.

INCLUDES:

- PA1116 Data SureStrip® UTP/STP & flat satin cutter/stripper
- PA1923 Untwist Tool
- PA3589 SurePunch Pro punchdown tool
- PA4599 SurePunch Pro detachable LED light
- PA4591 Double 110 blade
- PA4571 110/66 blade**
- PA1543 LAN ProNavigator® UTP/STP continuity tester & remote
- PA8000 CrimpALL® crimp frame with EZI-CHANGE™ thumb screws

DIE SETS:

- **PA2061** RJ45 WE/SS-style
- PA2062 RJ11/12 WE/SS-style
- PA2063 RJ22 handset
- PA2064 DRJ45 AMP-style
- PA2067 RJ11 DEC-MMJ

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|-----------------------------|
| 52050393 | PA901378 | DataReady™ PRO Kit |
| | PA9013781 | DataReady™ PRO Kit - Krone* |



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TempoCom.com | 1.800.652.2155



DATAREADYTM KIT

The complete Category 5 datacomm tool set in a handy zipper case. Everything needed for a CAT-5 installation except the cable.

INCLUDES:

- PA1116 Data SureStrip® UTP/STP & flat satin cutter/
- PA1561 All-in-One Phone/Data tool*
- PA3570 SurePunch Impact Punchdown Tool
- PA4571 110/66 blade**
- PA1576 Data Link/ID and Cable-Check™ Tester
- N/A (20) RJ45 plugs, Cat5e, solid/stranded; flat/ round cable
- N/A Zipper Case with Carrying Strap

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|-----------|------------------------------|
| 52050388 | PA901053 | DataReady™ Kit |
| 52050414 | PA9010531 | DataReady™ Kit - AMP/Krone*t |



^{*} WE/SS - style replaced with AMP - style #1557 ** Contains 110 & Krone blades PA4575 (only with PA9010531 Kit) † 68 spring- compression blades precisely adjust to the insulation.

PREMISE SERVICE KIT

Our biggest data, voice, and coaxial LAN installation kit provides everything for twisted pair and coaxial cable installation. All tools contained in a professional blow-mold case complete with form-fitting foam.

INCLUDES:

- PA1179 KT8 round cable cutter
- PA1257 LC-CST CATV "F" coax stripper*
- PA1116 Data SureStrip® UTP/STP & flat satin cutter stripper
- PA8000 CrimpALL® crimp frame with EZI-CHANGE™ thumb screws
- PA3589 SurePunch Pro punchdown tool
- PA4599 SurePunch Pro detachable LED light
- PA4573 66 blade***
- PA1543 LAN ProNavigator® UTP/STP continuity tester & remote
- PA1573 Telephone Test Set & LAN Cable-Check™
- PA1902 RJ45 8-way adapter

- PA2062 RJ11/12 WE/SS-style**
- PA2687 RJ45 WE/SS-style & RG6/RG6 QS CATV "F"**

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------|
| 52050389 | PA901039 | Premise Service Kit |









KIT LAN PRO NAVIGATOR



FEATURES

- Simple PASS/FAIL test results in one second allows technicians to quickly move on to the next
- Generates oscillating audio tone for use with tone probes to locate cables
- Tests data and telephone cables up to 320 feet (100 meters) for proper pairing for EIA/TIA-568A, EIA/TIA-568B, Token Ring, 10 Base T, and common Category 5 configurations
- Tests unshielded UTP and shielded STP data cable
- Detects good connections, open connections, crossed wires and split pairs
- Tests common BNC connected 50 and 75 ohm coaxial cables up to 320 feet (100 meters) for
- Tests coaxial cable types RG58, RG59, RG6, RG6 Quad, Belden 8281, RG8, RG11 and more
- Belt clips provided and lanyard holes embedded in case to attach to belt or wrist
- Features low battery test and auto-off function to preserve battery life
- Includes standard 9V battery

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52051666 | PA901066 | KIT LAN PRO - NAVIGATOR |





NETWORK TOOL BUNDLE

This new bundle provides the perfect solution for the doit- yourselfers that want to use professional tools or for small contractors just starting out installing networks. It includes everything you need but the cable to get the job done

INCLUDES:

- PA1116 Data SureStrip® UTP/STP & flat satin cutter/stripper
- PA1561 All-in-One Phone & Data Tool
- PA3580 Non-impact 110 punchdown
- PA9546 10, RJ45 Cat5e plugs
- **PA9520** 10, RJ11 plugs

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------|
| 52046984 | PA4909 | Network Tool Bundle |



PRO-TOOL BACK PACK

Announcing the new professional grade backpack that helps you comfortably carry and protect your tools on and off the jobsite. Tempo®'s Pro-Tool Backpack is designed for comfort and functionality; featuring 40 pockets for optimal tool organization and a separate compartment to safely store your laptop or tablet.

FEATURES

- Functional, rugged, modern design
- 40 pockets for tool and cable storage
- Handle supports over 200 lbs
- Separate pocket protects up to 17" laptop from tools
- Molded bottom protects from elements and holds bag upright
- Opens to lay flat for easy accessibility
- · Ergonomic fit with padded lumbar support
- Durable material with rugged stitching
- Storage for adapters and cables

| CAT. NO. | DESCRIPTION |
|----------|-------------------|
| PA9000 | Pro-Tool Backpack |



HAND TOOLS

TELECOM SPLICE CRIMPERS

FEATURES

- Side cutter for AWG 19-26 copper
- Non-slip grips for precision control
- Limited lifetime warranty
- Crimp capacity
 - UR: AWG 19-26
 - UY: AWG 22-26
 - UG: AWG 19-26

PA1180 ONLY

- Stripping cavity for AWG 22
- Needle-nose with knurled surface for gripping, wrapping and looping



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52055941 | PA1180 | 4-in-1 Telecom Splice Crimper |
| 52055939 | PA1178 | Telecom Splice Crimper |

UY 2-PORT YELLOW CONNECTORS

FEATURES

- Quickly and easily splice wires.
- Butt connector.
- Use with solid copper 22-26 AWG conductors.
- No stripping required

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52051375 | PA9692 | CONN UY 2-PORT YEL TELE SPLICE 25-PACK |

UR3-PORT RED CONNECTORS

FEATURES

- Quickly and easily splice wires
- Butt connector
- Use with solid copper 22-26 AWG conductors
- No stripping required

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52051374 | PA9691 | CONN UR3-PORT RED TELE SPLICE 25-PACK |



ROUND CABLE CUTTERS

FEATURES

- Cuts solid or stranded cable up to AWG 6
- Precise and effortless cuts
- Round cutting form won't deform cables
- Ideal for UTP and Coax, RG58, RG59 and RG6/6Q; RG7 and RG11 with PA1175
- Limited lifetime warranty

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 52055936 | PA1175 | Contour Round Cable Cutter |
| 52055940 | PA1179 | Dual-Contour Round Cable Cutter |



FEATURES

- Cuts cable, telephone wire and strips insulation
- Tough, tempered steel knife blade holds its edge longer
- Full-sized knife handle provides greater comfort
- Knife has a short, coping-type blade made of the finest cutlery steel
- Scissors have an upper blade with two stripping notches to strip most insulations from 19-24 AWG.

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 52056118 | PT-K01A | Scissors and Knife Kit in Pouch |



DATACOMM SNIPS, ELECTRICIAN'S SNIPS

FEATURES

- Cuts, strips and trims data and phone cables
- Ergonomic design nests in hand for comfort and added cutting power
- One fully serrated blade for clean cuts
- "V" stripping notches for 19 and 23 AWG wire
- Manufactured from high-carbon steel, chrome over nickel plate

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------|
| 52046765 | PT-T03 | Snips |



DATACOMM SNIPS, ELECTRICIAN'S SNIPS

FEATURES

- Head of tool and handles designed at optimum 22° angle to prevent awkward wrist bends
- Precision grould blades ensure consistent stripping and cutting
- Features screw cutter and wire loops embedded in frames
- Built-in safety lock
- Gripping jaws on front of tool for pulling wire
- PA1117 will work on Romex household cable
- Note: This is not an insulated tool

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52050609 | PA1117 | GripP 10 cutter/stripper; Solid: 10-22; Stranded: 12-24 |
| 52050610 | PA1118 | GripP 20 cutter/stripper Solid: 20-30; Stranded: 22-24 |
| 52050616 | PA1123 | Wire Stipper Bundle, includes both PA1117 and PA1118 |

MINI-STRIPAX® PLUS

FEATURES

- Strips flexible and solid conductors with PVC, Teflon, silicone and other special insulations
- Strips multiple conductors and thin ribbon-cable conductors simultaneously
- Adjustable wire stop and built-in wire cutter
- 28-18 AWG (0.80-1.0 mm2) PVC blade included
- See replacement blades in next section
- Limited lifetime warranty

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 52050558 | PA1115P | mini-stripax® plus (28-18 AWG) |

BLADE DURO-STRIPAX

FEATURES

• Replacement blade for the stripax tool

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52050568 | PA2143 | BLADE DURO-STRIPAX |





ADJUSTABLE WIRE STRIPPER & CUTTER

FEATURES

- Economical wire stripping tool for multiple cables
- Made of high carbon steel and heat treated for long life
- Adjustable settings for wire sizes from 30-10 AWG

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52050603 | PA1161 | Adjustable wire stripper & cutter (30-10 AWG) |



COMBO UTP/COAX SURESTRIP®

FEATURES

- Professional all-in-one cutter/stripper for coaxial and twisted pair cables
- Cuts and strips multiple cable types:
 - Coax: RG6, RG6 Quad and RG59
 - Twisted Pair (UTP/STP): Cat6, Cat5e and Cat5
- Easy-to-use combination cutter/stripper
- Adjustable stripping blade for UTP/STP; accommodates different insulation thicknesses without damaging conductors
- Self-regulating cassette blade prevents nicks
- Coax blade cassette is removable to adjust stripping depth of both blades with hex key included (Note: Hex key stores securely in bottom of tool)
- Contoured finger grips for cutting power

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52046962 | PA1119 | Combo UTP/Coax SureStrip® |
| 52050614 | PA2119 | Coax Blade Cassette |
| 52050615 | PA2120 | UTP Cut/Strip Blade |





HAND TOOLS CATALOG

DATA SURESTRIP®

FEATURES

- Small, compact tool that cuts and strips multiple cable types:
 - 4-, 6- and 8- conductor flat satin cables
 - 4-, 6- and 8- conductor UTP/STP data cables
 - 25- vpair UTP/STP data and telephone cables
- Multi-conductor round bundled cables with a maximum diameter of .5" (12.7 mm)
- 14-8 AWG (2.5-75mm2) wire
- Nylon reinforced ABS plastic with stainless steel blade
- Fully adjustable with simple thumb screw
- Self-regulating to prevent nicking
- Contoured finger grips for power cutting

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------|
| 52050597 | PA1116 | Data SureStrip® |

STRIPPER AM 12 W/LENGTH GAUGE

FEATURES

- Strips round cables with diameters of 0.08 0.5" (2 12.5 mm)
- Strips outer jacket off UTP and STP data cable and CAT-5 round telephone
- Adjustable stripping blade for different insulation thicknesses prevents damage of shielding and conductors
- Length gauge for repeated cutting/stripping accuracy
- Cuts round, flexible copper cables up to 12 AWG (4 mm²)
- Use left or right handed

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52050589 | PA1112 | STRIPPER AM 12 W/LENGTH GAUGE |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52050589 | PA1112 | STRIPPER AM 12 W/LENGTH GAUGE |

CST VARIO STRIPPER

FEATURES

- Most flexible coax stripping tool on the market
- Easy to set up and adjust
- Two- and three-level stripping
- Minimum center-to-center strip length is 0.13" (3.2 mm)
- Maximum total strip length is 0.67" (17 mm)
- Adjustable blade positioning in 0.04" (1 mm) increments
- Lifetime warranty on frame only

Not recommended for use on LMR or Teflon cables

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52050510 | PA3240 | CST vario stripper |





PUNCHDOWN STRIPPER

FEATURES

- Self-regulating strip depth
- Fast and easy to use
- Great for CAT-5, CAT-5e, and CAT-6 data cable
- Built-in 110 punchdown (punch only)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52051290 | PA1913 | Punchdown stripper |



CST STRIPPER

FEATURES

- Fixed blade system that accommodates 0.1"-0.315" (2.5-8.0mm) cable diameters including RG58/59/62AU, RG6, RG6 Quad, RG174,
- Belden 1505A, 1855A and 8281
- Cam adjustment ensures precise and repeatable hold on cable
- Memory blocks reduce set-up time and are easy to interchange and mark for various applications
- Blades are two-sided for longer use
- No cable jacket distortion during stripping process
- Blade cassettes easy to change
- Lifetime warranty on frame only

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52050503 | PA1240 | CST Green - 3 Level (A=.279, B=.201) |
| 52050570 | PA2240 | Green Blade Cassette only |
| 52050508 | PA1247 | CST Orange - 3 Level (A=.327, B=.146) |
| 52050576 | PA2247 | Orange Blade Cassette only |
| 52050515 | PA1248 | CST Black - 3 Level (A=.344, B=.094) |



HAND TOOLS CATALOG

CST PRO COAX STRIPPER

FEATURES

- Coax stripping system for precision & accuracy
- Works with a wide range of cable diameters from .1" .315" (2.5-8.0mm) including: RG58/59/62AU, RG6/6QS, RG174, Belden 1505A, 1855A & 8281 and mini-coax
- Pre-set for standard 2- and 3- level strip lengths
- Coax stripper designed for pros requiring precision, versatility & ease of use
- Reversible-rollers easily adjust for various cable sizes including mini-coax
- Dual roller mechanism perfectly centers cable & applies equal pressure to eliminate cable distortion

CST Pro Green 3-level (A=.279, B=.201)

- Quick-change pre-set blade cassettes
- Cam adjustment ensures precise hold on cable

CAT. NO.

PA1280

• Fixed blade cassettes pre-set for standard 2- and 3- level strip lengths

DESCRIPTION

• Interchangeable blades reduce set-up time

ORDERING INFORMATION:

PART NO.

52052366

| 22032300 | PAIZOU | C31 P10 d1ee11 3-1eVe1 (A=.273, B=.201) | |
|----------|--------------|---|--------|
| 52050617 | PA2280 | Green Blade Cassette only | |
| 52050521 | PA1281 | CST Pro Orange 3-level (A=.327, B=.146) | |
| 52050618 | PA2281 | Orange Blade Cassette only | |
| 52052367 | PA1282 | CST Pro Black 3-level (A=.344, B=.094) | |
| 52050619 | PA2282 | Black Blade Cassette only | |
| 52050522 | PA1283 | CST Pro Blue 2-level (A=.250) | |
| 52050620 | PA2283 | Blue Blade Cassette only | |
| | CST APALADIN | CST Pro | ST Pro |



LC CST STRIPPERS

FEATURES

- Self-regulating tension
- Adjust cutting depth on each blade for varying cable thicknesses with the included hex key
- Pre-set for common strip lengths
- Blades adjust for strip dimensions other than our standard pre-set units*



.157" (4 mm), .236" (6 mm), .315" (8 mm), .394" (10 mm) and .472" (12 mm) Not recommended for use on LMR or Teflon cables.

Teflon is a registered trademark of E.I. du Pont de Nemours and Company



SPECIFICATIONS:

| | PRESET STRIP LENGTH | CABLE USAGE |
|-----------------|--|---|
| LC CST-58/59 | 0.315" outer jacket 0.157" inner dielectric | RG58, RG59, RG62 AU & RG6 |
| LC CST-11 | 0.315" outer jacket 0.157" inner dielectric | RG8, RG11 & RG213 |
| LC CST CATV "F" | 0.236" outer jacket | RG59, RG6 & RG6 QUAD CATV"F" (preset for RG6 CATV "F") |
| LC CST-Mini | 0.344" outer jacket 0.094" inner dielectric | RG178, RG179, RG188, AT&T 735(A), NT735, Belden 1855A, Belden 8218, RG180, RG187, RG188A, RG405 and more |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52050513 | PA1255 | LC CST-58/59 - 2- & 3-Level, Adjustable |
| 52050514 | PA1256 | LC CST-11 – 2- & 3Level, Adjustable |
| 52050516 | PA1257 | LC CST CATV "F" - 2-Level |
| 52050517 | PA1258 | LC CST-Mini |
| 52050599 | PA2263 | Replacement Blade |

KWIK STRIPPER® TWISTED PAIR STRIPPER

FEATURES

- No tool is better for trimming the jacket from twisted pair cable without damaging the individual conductors
- Blade depth adjustment ensures precise cutting depth
- Blade penetration controlled by tension loop
- Strip length gauge

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 50455796 | 45579 | Kwik Stripper® Twisted Pair Stripper |



AM 25 STRIPPER

FEATURES

- Strips and slits 0.18" to 1.0" (4.5-25mm) diameter Round Cables
- Adjustable cutting depth
- Swivel blade for circular, longitudinal and spiral cuts
- Spare blade in handle
- Cable holding clip with integrated edge for removing slit insulation
- Laser-trimmed, stainless-steel blade for long use
- Slits PVC, Teflon and THHN
- Perfect for armored cable

NOTE: Do not use on live circuits. Not for polyethylene, polypropylene or XLP insulations Teflon is a registered trademark of E.I. du Pont de Nemours and Company

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------|
| 52050560 | PA1820 | AM 25 |
| 52050563 | PA2109 | Replacement Blade |

UNIVERSAL SLITTER

FEATURES

- Strips and slits 0.18" to 1.0" (4.5-25mm) diameter Round Cables
- Precision stripping and slitting of rubber, PVC, nylon and most insulation materials
- Adjustable depth of cut
- Swivel blade for circular, longitudinal and spiral cuts
- Cable is supported during use
- Cable support arm edge is used to pry off thick insulation
- Laser-trimmed, stainless-steel blade for long use
- A perfect tool for mid-point taps
- Spare blade not included

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52050604 | PA1822 | Universal Splitter |
| 52050563 | PA2109 | Replacement Blade |

COAX 3-WAY TOOL

FEATURES

- Flares RG6 and RG6 Quad Cable types
- Flares shield braid back from the dielectric without nicking your fingers
- Attachment tool enables you to hold the connector comfortably to insert connector onto cable
- Extraction tool to assist in coupling connector to port or to assist in uncoupling from port
- Works with CATV "F" connectors

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------|
| 52046973 | PA1928 | Coax 3-Way Tool |







BNC 12" EXTRACTION TOOL

FEATURES

- Chrome finish
- Comfortable driver-style plastic handle

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------|
| 52050484 | PA1916 | BNC 12" (305 mm) |





SEALTITE® ProM COAX CRIMPER

FEATURES

- Crimps weatherproof linear CATV "F", BNC, RCA & right- angle compression-type connectors from all manufacturers
- Works with RG6, RG6 Quad, RG59 & RG62AU coax cables
- Versatile tool accommodates multiple connectors
- The only tool with a single, reversible head eliminating need for adapters
- No additional parts, attachments or other tools required to change from one crimp style to another
- Quickly & easily adjust crimp height
- Once properly set, lock with adjustment lock
- Rated life cycle 30,000 (unloaded)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52055946 | PA1559 | SealTite® ProM Coax Crimper |



PA70020 PRO COAX COMPRESSION TOOL

FEATURES

- Versatile tool crimps RG59, RG6, RG6 Quad, RG 7/11, BNC and RCA **Compression Connectors**
- Cable holder rotates to accommodate different connector sizes
- Adjustable Crimp length accommodates most manufacturers' connectors
- Once adjusted, no additional parts or adapters are needed to change from one crimp style to another

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52057138 | PA70020 | RG59/6Q-7/11 Pro Coax Compression Tool |



CONNECTORS & ADAPTERS

SEALTITE[®] CABLE TV "F" COMPRESSION CONNECTORS

FEATURES

- Large hex nut for easy installations
- Patented design with 360° cable gripping sleeve
- Solid brass construction with nickel plating to prevent UV degradation

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52051371 | PA9643 | RG6 & RG6 QUAD; 10 pack |
| 52051354 | PA9611 | RG6 & RG6 QUAD; 20 pack |
| 52051336 | PA9646 | RG6 & RG6 QUAD; 50 pack |
| 52051372 | PA9644 | RG6 Quad; 10 pack |
| 52051337 | PA9647 | RG6 Quad; 50 pack |



SEALTITE® RCA COMPRESSION CONNECTORS

FEATURES

- Patented design with 360° cable gripping sleeve
- Full gold contacts for low signal loss
- Includes slip-on color bands for easy cable identification
- A set of bands includes 4 red, 2 green, 2 blue, 2 yellow and 2 white per ten connectors
- Constructed from solid brass with nickel plating

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52051390 | PA9714 | RG6 & RG6 Quad; 10 pack |



SEALTITE[®] BNC COMPRESSION CONNECTORS

FEATURES -

- Patented design with 360° cable gripping sleeve
- Full gold contacts for low signal lossIncludes slip-on color bands for easy cable identification
- A set of bands includes 4 red, 2 green, 2 blue, 2 yellow and 2 white per ten connectors
- Constructed from solid brass with nickel plating

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52051395 | PA9730 | RG59; 10 pack |
| 52051391 | PA9715 | RG6 & RG6 Quad; 10 pack |
| 52051397 | PA9740 | RG6 & RG6 Quad; 50 pack |





HEXCRIMP CABLE TV "F" CONNECTORS

FEATURES

- Crimp-on style cable TV "F" connectors
- All-brass with nickel plating for durability
- Designed for indoor use

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------|
| 52051360 | PA9677 | RG6; 10 pack |
| 52051361 | PA9678 | RG6 QUAD; 10 pack |





TWIST-ON CABLE TV "F" CONNECTORS

FEATURES

- Connectors twist onto cable for quick installation
- Sharp threads firmly grip cable for good connections
- EZ-SPIN™ hex nut for easy installation

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------|
| 52051378 | PA9695 | RG6; 10 pack |





PUSH-ON CABLE TV "F" CONNECTORS

FEATURES

- Simply strip cable and push connector onto it requiring no crimping
- Special knurled nut offers superior grip for strong connection
- All brass, nickel-plated for durability and low signal loss
- For indoor usage only

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------|
| 52051366 | PA9683 | RG6; 10 pack |





OTHER COAXIAL CONNECTORS

FEATURES

Connect CATV "F" cables to RCA plugs.

- Eliminate the need for new cabling
- Solid brass with nickel plate
- 75 ohm rating

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52051400 | PA9719 | Adapter, CATV "F" (female) to RCA (male) (Qty. 10) |



FEMALE SPLICE ADAPTER

FEATURES

- Cable TV "F" female-to-female barrel adapter
- Designed for performance up to 3.0 GHz
- Gold-plated contacts
- 2 pack

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52051345 | PA9675 | CATV "F" Terminators (10) |







BNC COAXIAL ADAPTER

FEATURES

• Precision manufactured from machined brass and nickel plated for corrosion resistance

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 50457284 | 45728 | BNC Straight Jack to Jack (1) |





BNC(F) RCA(M) DATASHARK ADAPTER

FEATURES

- Adapt BNC cable to plug into RCA jack without need for new cabling
- Connect CCTV cables to DVRs, entertainment centers, VCRs, DVDs, camcorders and other items
- Solid brass with nickel plate
- 2-pack clamshell

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------------|
| 52051389 | PA70054 | Datashark Adapter BNC(F) RCA (M) |



ADAPTER BNC M TO-CATVF

FEATURES

• Professional grade gold tipped adapters for premium transmission of digital and analog data

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52056791 | PA9751 | ADAPTER BNC M TO-CATVF F 2-PK |





BNC(M) TO RCA(F) ADAPTER

FEATURES

- Convert a BNC jack to accept an RCA plug
- Eliminate need for new cabling
- Nickel-Plated Brass

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52083934 | PA9725 | BNC Male to RCA Female Adapter (2-PK) |





BNC(M) TO RCA(M) ADAPTER

FEATURES

- Connect BNC cables to RCA plugs
- Eliminate need for new cabling
- Solid brass with nickel plate

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52077232 | PA9752 | Adapter, BNC Male to RCA Male |





RG6Q RCA CATVF HEX CONNECTORS

FEATURES

- EZ-SPIN™ hex nut for easy installations.
- Designed for indoor use.
- Requires a standard 0.324" crimp.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52056784 | PA9679 | CONN RG6Q RCA CATVF HEX |





PUNCHDOWN TOOLS

SUREPUNCH PRO PUNCHDOWN TOOL

FEATURES

- Terminate cable in single punch including 23 AWG Cat6
- Detachable light with long-life LED specially designed to focus the light on the panel work area
- Luminous intesity of the LED is 2200 mcd
- Finger grips and non-slip rubber-embedded cushioned handle for comfort
- Multi-use spudger that can be used as a screwdriver or an IDC contact insertion tool
- Hook to feed wires through holes
- Pick to separate bonded twisted-pair cables or to strip insulation and cut wire
- Adjustable HI/LO spring compression for all cable types LO = 27.5 lbs (122 N), HI = 37.5 lbs (167 N)
- Uses twist-and-lock style blades
- Blade storage area in end of handle with comfortable latch cover

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52050824 | PA3588 | SurePunch Pro PDT with 1110/66 combination cut-only |
| 52046976 | PA3596 | SurePunch Pro PDT with 110 reversible cut & punch/punch-only blade and light |
| 52050826 | PA3586 | SurePunch Pro PDT with 110 & 66 reversible cut & punch/punch-only blades |
| | PA4599 | SurePunch Pro PDT detachable light and batteries |





SUREPUNCH PRO PUNCHDOWN TOOL

FEATURES

- Cushion grip, molded to the shape of your hand, for comfort and a sure, non-slip hold
- Increased HI/LO impact force to meet demands of new cable types and AWG sizes: LO= 30 lbs (133 N), HI= 40 lbs (178 N)
- For 28-22 AWG (0.08 0.34 mm2), solid or stranded wire
- Uses twist-and-lock style blades
- Cushioned heel for comfort in the palm of your hand
- New latch cover blade storage area in end of handle
- Lanyard holes in end



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52050800 | PA3570 | SurePunch PDT® handle (no blade) |
| 52050801 | PA3571 | SurePunch PDT [®] with 110/66 combination cut-only blade |
| 52049236 | PA3572 | SurePunch PDT® with 110 reversible cut & punch/punch-only blade |
| 52049269 | PA3579 | SurePunch PDT® with both 110 and 66 reversible cut & punch/punch-only blades |
| 52046977 | PA4571 | SurePunch 110/66 combination cut-only blade |
| 52046978 | PA4572 | SurePunch 110 reversible blade |
| 52046979 | PA4573 | SurePunch 66 reversible blade |
| 52046980 | PA4574 | SurePunch BIX™ cut-only blade |
| 52046981 | PA4575 | SurePunch Krone® LSA cut-only blade |
| 52046982 | PA4591 | SurePunch Double - 110 blade |



PA4591 PA6514 **PA4573** PA4571 PA4574 PA4572 **PA4575**





PROPUNCH™ 110 MULTI-PAIR PUNCHDOWN

FEATURES

Terminates and cuts up to five pairs of data/voice cable at the same time! We designed it to perform over 30,000 cycle punches and to terminate most 23 AWG cable pairs in one punch! This tool delivers more than one and a half times the force of other multi-punchdown tools on the market today. The rugged "no-slip" handle fits comfortably in your hand with the handle end contoured to the heel of your hand.

- Fewer punches saves time
- Smooth operation and rugged, comfortable handle absorbs punch recoil Terminates 28-22 AWG (.08 - .34 mm2) solid or stranded wires with single
- Cut and punch blade cassette or switch blades for punch only
- Designed to work with 23 AWG CAT 6 cable

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52046974 | PA3560 | ProPunch 110 with 5-pair head |
| 52050797 | PA3561 | ProPunch 110 with 4-pair head |
| 52050799 | PA4561 | Replacement 4-pair head |



NON-IMPACT PUNCHDOWN TOOLS WITH FIXED BLADES

FEATURES

- Non-impact, low-cost punchdown tools for 110, 66 & BIX
- Works with 28-22 AWG (.08 .5 mm2)
- Solid or stranded, single insulation wire
- Comfortable rubber handle grip
- Performs both cut and punch functions
- Perfect for small jobs and the do-it-yourself installer
- Fits in the palm of your hand
- Typically lower in cost than replacement blades for punchdown tools

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52050807 | PA3580 | 110 Punchdown Tool |





POCKET PROBE PICK

FEATURES

Probe pick for pulling wire, slicing, stripping cable and cleaning debris off terminal panels. Small and lightweight—pen-sized with clip for carrying in pocket.

- Spudger tip
- Wire hook
- Wire stripper and slitting tooth
- Non-conductive scraping tip

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------|
| 52049188 | PA1915 | Pocket Probe Pick |



CAN WRENCH

FEATURES

- Strips PVC insulation
- Strips outer jacket of AWG 22/4 and 24/4 telephone cable
- Strips insulation of AWG 22 (.34 mm2) and AWG 24 (.20 mm2) wire
- 3/8" (9.5 mm) and 7/16" (11 mm) hex sockets for accessing panels
- Durable shock-resistant design

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------|
| 52049187 | PA1900 | Can Wrench |





JACK TERMINATOR

FEATURES

- High-grade, hardened steel frame offers superior performance and durability
- Ratcheted action to ensure proper, consistent termination
- Adjustment feature for extra leverage applications
- Quick-change punch sets require no tools
- Removable jack cradle allows for alternate lacing option
- Punch heads can be purchased separately
- Rubber-embedded handles provide extra comfort
- For use with Modular Jacks listed below including CommScope® (Systimax®, Uniprise®), Leviton®, OCC®, HellermannTyton®, Hubbell®Premise Wiring and Legrand® (Ortronics®)
- Lifetime Warranty (crimper frame only)

SPECIFICATIONS:

| | PA8100 | GENERAL JACK TERMINATOR™ GENERAL PUNCHDOWN PA8100 WITH PUNCH DOWN HEAD-SET HEAD-SET | | GENERAL PUNCH HEAD ONLY |
|--------|------------------|---|---------------|----------------------------|
| Length | 9.6" (245 mm) | 9.75" (248 mm) | 1.6" (40 mm) | 1" (26 mm) |
| Height | 3.25" (80 mm) | 4" (102 mm) | 4" (102 mm) | 2.1" (55 mm) |
| Width | 1.25" (32 mm) | 1.25" (32 mm) | 1.25" (32 mm) | 1.25" (32 mm) |
| Weight | 1.25 lbs (575 g) | 1.4 lbs (652 g) | 2 oz (54 g) | 0.8 oz (23 g) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52057135 | PA8100 | Jack Terminator™ Crimper Frame Compability: Punchdown Head Set not Included |
| 52057024 | PA8105 | Jack Terminator™ with Punchdown Head-Set Compability: Systimax® - MPS100E, Uniprise® UNJ600/500 |
| 52057026 | PA8106 | Jack Terminator™ with Punchdown Head-Set Systimax® - MGS400, MGS500, MGS600 |
| 52057027 | PA3712 | Replacement Punchdown Head-Set Compability: Systimax® - MGS400, MGS500, MGS600 |
| 52057300 | PA8109 | Jack Terminator™ with Punchdown Head-Set Compability: OCC® - KMJA5E, KMJA6, K6A |
| 52057302 | PA8111 | Jack Terminator™ with Punchdown Head-Set Compability: Hubbell® - HXJ Series |



ALL-IN-ONE UTP SNAGLESS CRIMPER

FEATURES

- Cuts and strips round or flat cable
- All metal construction
- Cushion grips for improved comfort and control
- For standard and "snagless" RJ45 connectors
- Also crimps RJ11/22 and RJ22 WE/SS style plugs

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 52055947 | PA1561 | All-in-One UTP Snagless Crimper |

ALL-IN-ONE ULTRA TELEPHONE TOOLS

FEATURES

- 4 crimp functions with a single tool without changing dies
- Crimps 4- position RJ22 handset
- Crimps 4- and 6- position RJ11/RJ12 connectors
- Crimps 8- position RJ45 (non-keyed)
- Embedded cable cutter and stripper
- Crimps 28-24 AWG (.08 .20 mm2) telephone and data cables
- Advanced ratchet system
- Precision die-cast aluminum head
- Crimps 6- position RJ11-DEC offset type connectors (P/N 901014)

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--|
| 52050012 | PA901014 | All-in-One Ultra Telephone Tool AMP (Tyco) |
| 52050013 | PA901016 | All-in-One Ultra Telephone Tool (WE/SS) |

ALL-IN-ONE PRO TELEPHONE TOOLS

FEATURES

- Crimps 4- position RJ22 connectors
- Crimps 4- and 6- position RJ11/RJ12 connectors
- Crimps 8- position RJ45 (non-keyed) connectors
- Embedded cable cutter and stripper
- Crimps 28-24 AWG (.08 .20 mm2) telephone and data cables
- Comfortable rubber-embedded handles
- Built-in safety ratchet release

| PART NO. | CAT. NO. | DESCRIPTION | | |
|----------|----------|--|--|--|
| 52049987 | PA1540 | All-in-One Pro Telephone Tool AMP (Tyco) | | |
| 52047010 | PA1530R | All-in-One Pro Telephone Tool (WE/SS) | | |





TELEPHONE RATCHET CRIMPER

FEATURES

- Combination tool terminates 8- position, 6- position and 4position (45575 only) modular style plugs
- No need to change crimping dies
- Full-cycle ratchet mechanism provides consistent quality terminations every cycle
- Straight action ensures uniform crimp
- Small, compact design
- Built-in wire cutter and stripper for flat cable
- All-steel frame has rust-resistant, black oxide finish

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 50455532 | 45553 | Telephone Ratchet Crimper |
| 50455753 | 45575 | Telephone Ratchet Crimper |



45553

Typically used for Modular Plug Connectors.



45575

Typically used for Modular Plug Connectors our Telephone Ratchet Crimper was designed with a compact head to fit into tight spaces and ergonomic handles for operator comfort.







MODULAR PLUG CONNECTORS

FEATURES

- RJ45 8-conductor modular plugs
- 50 micron gold plating
- Meets or exceeds EIA/TIA specifications

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------------|
| 52051450 | PA9546 | Cat5e, Solid or Stranded; 10pack |
| 52051443 | PA9655 | Round, Flat or Oval; 50 pack |
| 52051453 | PA9549 | Round, Flat or Oval; 100pack |





ADAPTER RJ11-UK 6-WAY BLISTER

FEATURES

- Nylon-reinforced ABS plastic body
- Easy-to-read wire layout
- Removable/replaceable patch cord
- Inline adapters
- Belt clip
- Notched copper contacts keep alligator clips attached during testing
- With "UK" BS6312 BT631A telephone plug cord as used in UK, Botswana, Cyprus, Eswatini, Gibraltar, Israel, Malta, New Zealand, Oman, Saudi Arabia, UAE, Zimbabwe etc.

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52086505 | PA1921 | Adapter RJ11-UK 6-way Blister |



ADAPTER RJ45 MODULAR 8-WAY BLISTER

FEATURES

- Nylon-reinforced ABS plastic body
- Easy-to-read wire layout
- Removable/replaceable patch cord
- Inline adapters
- Snagless plugs
- Belt clip
- Notched copper contacts keep alligator clips attached during testing

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------------|
| 52051670 | PA1902 | Adapter RJ45 Modular 8-way Blister |





CRIMPERS & DIESETS

FEATURES

- Fully-ratcheting cycle with built-in safety release
- Interchangeable die sets of heat-treated steel for long life
- Easy to use and maintain
- Available as complete tool with die set inserted or separate tool frame and individual die sets
- Foam-lined case available to hold frame and 6 die sets together
- Lifetime warranty on tool; one-year on die sets
- EZI-Change™ die screws make changing dies quick and easy -no screwdriver required
- Most precise and tightest tolerances on die sets in the industry
- Six ratchet gear settings for optimum crimp performance

SPECIFICATIONS:

Crimpall® Interchangeable die sets for modular plugs

| | CABLE TYPE | CONNECTION | CRIMP SIZE | TOOL/DIE | DIE ONLY | REMARKS |
|------|-----------------------------------|-------------------------------|----------------------------------|------------------|----------|--|
| | RJ45 - 8P8C (8 Pin) | Flat/Round, Solid/Stranded | RJ45 Unkeyed WE and SS | PA8030 PA1307 | PA2061 | Western Electric (WE)/Stewart Connector (SS) |
| | RJ11 & RJ12 - 6P6C, 6P4C, 6P2C | Flat/Round, Solid/Stranded | RJ11 & RJ12 Unkeyed WE and SS | PA8031 PA1340 | PA2062 | Western Electric (WE)/Stewart Connector (SS) |
| '' € | RJ22 Handset - 4P4C (4 Pin) | Flat/Round, Solid/Stranded | 4 Pin Handset WE and SS | PA8032 | | |
| | RJ45 - 8P8C (8 Pin) | Flat/Round, Solid/Stranded | RJ45 Unkeyed AMP | PA8033 PA1342 | PA2064 | AMP (Tyco) Inc Connectors Only |
| | RJ50 - 10P10C (10 Pin) | Flat/Round, Solid/Stranded | RJ50 Unkeyed WE and SS | PA8036 PA1345 | PA2068 | Virgina Plastics |

Crimpall® Interchangeable die sets for coaxial connectors

| | CABLE TYPE | CONNECTION | CRIMP SIZE | TOOL/DIE | DIE ONLY | REMARKS |
|-----|---|--|---|------------------|----------|---|
| 232 | RG58, RG59, RG62AU | BNC/TNC & 3 Piece | 0.256" (6.5mm), 0.213" (5.4mm), 0.068" (1.7mm) HEX | PA8001 PA1317 | PA2034 | COMMON 2-PIECE & 3-PIECE BNC/TNC |
| | RG174, RG59/62, mini-coaxial 75-ohm | HDTV SMA, True 75-ohm BNC/TNC, Mini-UHF | 0.255" (6.5mm), 0.197" (5.0mm), 0.178" (4.5mm), 0.068" (1.7mm) HEX & 0.042" (1.0mm) SQ | PA8002 PA1366 | PA2648 | COMMON 2-PIECE & 3-PIECE BNC/TNC (KINGS, ADC, AMPHENOL, ETC.) |
| | RG59, RG6, Belden 8281, Belden 1694A | HDTV BNC/TNC/CATV "f" True 75-ohm | 0.324" (8.2mm), 0.255" (6.5mm), 0.068" (1.7mm) HEX & 0.052" (1.3mm), 0.042" (1.0mm) SQ | PA8003 PA1367 | PA2649 | COMMON 2-PIECE & 3-PIECE BNC/TNC (KINGS, ADC, AMPHENOL, ETC.) |

HAND TOOLS CATALOG

Crimpall® Interchangeable die sets for coaxial connectors

| | CABLE TYPE | CONNECTION | CRIMP SIZE | TOOL/DIE | DIE ONLY | REMARKS |
|-----|---|---|--|------------------|----------|--|
| | RG6, Belden 1694, Bleden 1694A | HDTV BNC/TNC True 75-ohm | 0.278" (7.0mm), 0.275" (6.9mm), 0.068" (1.7mm) HEX & 0.042" (1.0mm) SQ | PA8004 PA1368 | PA2657 | COMMON 3-PIECE BNC/TNC (KINGS, ADC, AMPHENOL, ETC.) |
| | RG58, Mini-59, RG174, small coaxial | SMA, SMB, Mini-59 BNC/TNC, Mini-UHF | 0.128" (3.2mm), 0.213" (5.4mm), 0.197" (5.0mm), 0.178" (4.5mm), 0.068" (1.7mm) HEX & 0.042"(1.0mm) SQ | PA8005 PA1363 | | |
| | RG58, RG174, AT&T 735, 50 and 75-ohm | Thinnet, BNC/TNC, Mini-UHF | 0.213" (5.4mm), 0.178" (4.5mm) 0.068" (1.7mm) HEX & 0.042" (1.0mm) SQ | PA8006 PA1335 | PA2046 | 50/75 ohm small 2-piece & 3-piece BNC/TNC (Kings, ADC, etc) |
| | RG59, RG62, Belden 8281, 50 and 75-ohm | BNC/TNC and Mini-UHF | 0.315" (8.0mm), 0.252" (6.4mm), 0.068" (1.7mm), HEX 0.042" (1.0mm) SQ | PA8007 PA1336 | | |
| | RG174, RG179 and Small Cable Connection | BNC/TNC | 0.178" (4.5mm), 0.128" (3.2mm), 0.068" (1.7mm) HEX | PA8008 PA1338 | PA2051 | COMMON 2-PIECE & 3-PIECE BNC/TNC/SMA/ SMB |
| | RG6 and RG6 Quad, Belden 1694A | BNC and CATV "F" Type & HDTV | 0.360" (9.1mm), 0.324" (8.2mm), 0.068" (1.7mm) HEX | PA8012 PA1356 | PA2045 | COMMON 2-PIECE & 3-PIECE BNC/ TNC and CATV "F" 2-PIECE |
| | RG59, RG6 Video Cable | CATV "F" Type | 0.346" (8.8mm)m 0.319" (8.2mm), 0.256" (6.5mm) HEX | PA8013 PA1328 | PA2042 | CRIMPS FERRULES OR SLEEVES ONLY |
| | RG8, RG11, RG213 | N-Type | 0.429" (10.9mm), 0.100" (2.54mm), 0.080" (2.03mm) HEX | PA8014 PA1365 | PA2656 | COMMON 2-PIECE & 3-PIECE "N" TYPE (KINGS, ADC, AMPHENOL, ETC.) |
| | RG8, RG11, RG213, RG216 | N-Type, MS39012 Type | 0.415" (10.5mm), 0.095" (2.4mm) HEX | PA8015 PA1319 | PA2039 | CRIMPS PINS AND FERRULES |
| (S) | Belden 1855A, 1865A, 1505A, 1505F, 1694A, 1694F, 179DT | HDYV BNC/TNC True 75-ohm | 0.178" (4.5mm), 0.255" (6.5mm), 0.278" (7.0mm), 0.068" (1.7mm), 0.041" (1.0) HEX | PA8049 PA1389 | PA2699 | KINGS, ADC, B&L TROMPETER, AMPHENOL, SWITCHCRAFT |

Crimpall® Interchangeable die sets for **INSULATED TERMINAL CRIMPERS**

| CABLE TYPE | CONNECTION | CRIMP SIZE | TOOL/DIE | DIE ONLY | REMARKS |
|------------------------------------|---|---|------------------|----------|---|
| Insulated Terminals and Lugs | Solid or Stranded Wire, 22-10 AWG (.34 - 6 mm²) | 12-10 (Yellow), 16-14 (Blue), 22-18 (Red), (6-4 / 2.5 - 1.5 / .3475 mm²) | PA8021 PA1305 | PA2035 | FOR LARGE PROFESSIONAL TERMINALS (PANDUIT, T & B ETC.) |
| Insulated Terminals and Lugs | Solid or Stranded Wire, 22-12 AWG (.34 - 4 mm²) | 12-10 (Yellow), 16-14 (Blue), 22-18 (Red), (4/1.5 - 2.5 / .34 75 mm²) | PA8022 PA1308 | PA2040 | FOR STANDARD COMMERCIAL TERMINALS (HARDWARE STORE BRANDS) |
| Insulated Terminals and Lugs | Solid or Stranded Wire, 26-14 AWG (.10 - 2.5 mm²) | 16-14 (Blue), 22-18 (Red), 22-26 (Yellow) (1.5 - 2.5 / .34 - .75 / .3410 mm²) | PA8023 PA1334 | PA2029 | FOR SMALLER WIRE BARREL TERMINALS |

Crimpall® Interchangeable die sets for **NON-INSULATED TERMINAL CRIMPERS**

| CABLE TYPE | CONNECTION | CRIMP SIZE | TOOL/DIE | DIE ONLY | REMARKS |
|--|--|--|------------------|----------|---|
| Non-Insulated Terminals and Lugs | Solid or Stranded Wire, 22-8 AWG (.3410 mm²) | 10-8/14-12/18-16/22-20 (6-10/2.5-4/.75-1.5/ .3450 mm²) | PA8024 PA1322 | PA2031 | FOR STANDARD COMMERCIAL TERMINALS |

Crimpall® Interchangeable die sets for **OPEN BARREL, BOX & TERMINAL SYSTEMS**

| CABLE TYPE | CONNECTION | CRIMP SIZE | TOOL/DIE | DIE ONLY | REMARKS |
|---|---|---|------------------|----------|---|
| Open Barrel Non- Insulated Terminals, Narrow Lugs and Power Contacts | Solid or Stranded Wire, 22-10 AWG (.34 - 6 mm²), F Type* | 22-18 / 16-14 / 12-10 (.3475 / 1.5 - 2.5 / 4-6 mm²) | PA8026 PA1306 | PA2033 | FOR STANDARD COMMERCIAL TERMINALS |
| Open Barrel Non- Insulated Terminals, Wide Lugs and Power Contacts | Solid or Stranded Wire, 22-14 AWG (.34 - 2.5 mm²), F Type* | 16-14 / 22-18 (1.5 - 2.5 / .34 - .75 mm²) | PA8027 | PA2096 | FOR STANDARD COMMERCIAL TERMINALS |
| Open Barrel D-Sub Contact Pins RS-232 | Solid or Stranded Wire, 28-20 AWG (.0850 mm²), F Type* | 28-24 / 22-20 (.082 / .34 - .5 mm²) | PA8029 PA1359 | | |

DIE BNC/TNC CATV "F"

FEATURES

- Common 2-piece and 3-piece BNC/TNC
- 4140 steel with black-oxide plating
- Use with both 8000 and 1300 series crimp tools

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52051037 | PA2649 | DIE BNC/TNC CATV "F" RG59/Beldon 8281/169A and 1505A |



DIE AMP 2.0/2.5/3.0 SC BLISTER

FEATURES

- Most precise and tightest tolerance
- 4140 steel with black-oxide plating
- Use with both 8000 and 1300 series crimp tools

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 52051060 | PA2695 | DIE AMP 2.0/2.5/3.0 SC BLISTER |







DIE FIBER LC/SC/ST/FC BLISTER

FEATURES

- Most precise and tightest tolerance
- 4140 steel with black-oxide plating
- Use with both 8000 and 1300 series crimp tools

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 52051053 | PA2685 | DIE FIBER - LC/SC/ST/FC BLISTER |





DIE FIBER SMA/SMB/SC FOC-A2

FEATURES

- Most precise and tightest tolerance
- 4140 steel with black-oxide plating
- Use with both 8000 and 1300 series crimp tools

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52051031 | PA2652 | DIE FIBER SMA/SMB/SC FOC-A2 |





DIE KINGS/ADC-1694A BLISTER

FEATURES

- Most precise and tightest tolerance
- 4140 steel with black-oxide plating
- Use with both 8000 and 1300 series crimp tools

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52051038 | PA2657 | DIE KINGS/ADC-1694A BLISTER |







DIE 1300/8000

FEATURES

- Most precise and tightest tolerance
- 4140 steel with black-oxide plating
- Use with both 8000 and 1300 series crimp tools

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------|
| 52051062 | PA3703 | DIE,1300/8000 |





POLISHING PUCK FIBER LC

FEATURES

- Manufactured from aluminum with tungsten coating
- Cleaner than conventional plastic pucks because less debris left behind
- Double the lifetime of conventional plastic pucks

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52051276 | PA1926-1 | POLISHING PUCK FIBER LC |





POLISHING PUCK FIBER SC ST FC

FEATURES

- Manufactured from aluminum with tungsten coating
- Cleaner than conventional plastic pucks because less debris left behind
- Double the lifetime of conventional plastic pucks

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52051275 | PA1920-1 | POLISHING PUCK FIBER SC ST FC |





D-SUB INDENT CRIMPERS

FEATURES

- Adjustable Pin Height Locator
- Cushion Grips for comfort

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------------|
| 52055943 | PA1460 | D-sub 4 Indent Crimper 26-20 AWG |
| 52055944 | PA1461 | D-sub 4 Indent Crimper 20-12 AWG |
| 52055945 | PA1462 | D-sub 8 Indent Crimper 26-20 AWG |



ELECTRICAL TERMINAL CRIMPER

FEATURES

- D-sub Pins & Sockets 26-28 AWG
- Butt-Insulated Connectors 22-26 AWG
- Telephone Piercing Spade Lugs 22-26 AWG
- Open Barrel Connectors 14-18, 20-22 AWG

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52055937 | PA1176 | Multi-Purpose Electrical Terminal Crimper |

EDAC/ELCO CRIMPER

FEATURES

Crimp tool for broadcast professionals terminating loose 28-18 AWG (.08-75 mm2) EDAC and ELCO rack and panel open barrel contacts

- Crimps EDAC pins 516-290-590 & 516-290-591 along with ELCO pins 000-60-8017-03-13
- Embedded pin locators properly align pins to ensure accurate reliable crimping
- Fully-ratcheted to prevent under crimping
- Requires low hand force and provides superior crimp force
- True ergonomic design for extreme comfort and performance
- Non-slip, soft rubber handles
- Double-plated for extended long-life and crimping accuracy
- Factory-calibrated and set for precision

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------|
| 52050102 | PA1670 | EDAC/ELCO Crimper |



OPEN BARREL CONTACT PIN CRIMPER

FEATURES

Professional crimping tool for open-barrel box and round connector contacts with a wire range of 30-18AWG (0.05-.75 mm2).

- Precision fixed dual-plate dies for crimp accuracy
- Crimps non-insulated terminal lugs, cable lugs and parallel and serial splices or "F-Type"
- Works with Molex, Waldom & Leoco-type connectors
- Durable steel construction for long life
- Rubber-embedded ergonomic handles for low-effort operation

SPECIFICATIONS:

| WEIGHT | RANGE |
|----------------|--|
| 14 oz. (400 g) | Small: 30-24 AWG (0.0520 mm2) Medium: 22-18 AWG (.3475 mm2) |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 52049995 | PA1645 | Open Barrel Contact Pin Crimper |

OPEN BARREL CONTACT PIN CRIMPER

FEATURES

Professional crimping tool for open-barrel box and round connector contacts with a wire range of 24-14 AWG (0.2-2.5 mm2)

- Precision fixed dual-plate dies for crimp accuracy
- Built-in locator
- Crimps non-insulated terminal lugs, cable lugs and parallel and serial splices or "F-Type"
- Works with Molex, Waldom & Leoco-type connectors
- Durable steel construction for long life
- Rubber-embedded ergonomic handles for low-effort operation

SPECIFICATIONS:

ORDERING INFORMATION:

PALADIN

| 14 oz. (400 q) Small: 24-22 AWG (0.0520 mm2) | 52049994 | PA1631 | Open Barrel Contact Pin Crimper |
|--|----------|--------|---------------------------------|







PZ6 ROTO CRIMPER

FEATURES

- Professional-quality rotary crimping tool for insulated and non-insulated wire ferrules with a wire range of 24-10 AWG (0.25-6.0 mm2)
- Rotating die for front or side ferrule insertion
- Crimps conform to EN 60947-1 & DIN 46228 Pt. 1 and 4
- Hardened steel die system for long life
- Single tool for entire wire range (no additional dies are required)
- Durable steel construction for long life
- Ergonomic handles for low-effort operation



ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------|
| 52050272 | PA901435 | Crimper PZ6 ROTO |

1300 FIBER CRIMPER

FEATURES

- Fully-ratcheting cycle with built-in safety release
- Interchangeable die sets of heat-treated steel for long life
- Easy to use and maintain
- Available as complete tool with die set inserted or separate tool frame and individual die sets
- Foam-lined case available to hold frame and 6 die sets together
- Lifetime warranty on tool
- EZI-Change™ die screws make changing dies quick and easy no screwdriver required
- Most precise and tightest tolerances on die sets in the industry
- Six ratchet gear setting for optimum crimp performance
- New packaging includes brown box instead of clamshell

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52050014 | PA1362 | Crimper 1300 Fiber SMA/SMB/SC |







ECON AMP/TYCO ALL-IN-ONE CRIMPER

FEATURES

- Crimps multiple AMP (Tyco) size modular plugs:
- RJ45 (8P8C), RJ11/RJ12 (6P4C, 6P6C) & RJ22 handset (4P4C).
- Cuts & strips flat and round cables.
- Comfortable to use with rubber-embedded handles & advanced ratchet.

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------------|
| 52050101 | PA1557 | CRIMPER ALL-IN-ONE ECON AMP/TYCO |

CRIMPER 1600 FRAME ONLY

FEATURES

- Low hand force & superior crimp force.
- Precision calibrated crimp profiles.
- Powerful & precise the tool does the work, not your hand.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------|
| 52049988 | PA1600 | CRIMPER 1600 Frame Onlu |





CRIMPALL BROADCAST KIT

FEATURES -

• Crimp tool and five coax die sets in a rugged nylon pack with outer holster and strap for belt or wrist.

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 52050403 | PA4802 | CrimpALL Broadcast Kit |







CASE ZIPPER

FEATURES

- Versatile pocket and handle design keeps tools organized
- Keep your tools protected and easy to access

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 52049555 | PA4391 | Case Zipper 10x7x3 |

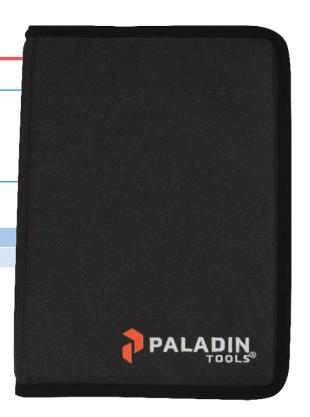


CASE CORDURA

FEATURES

- Crimper case
- Keep your tools protected and easy to access
- Constructed of a double layer of rugged., lightweight Cordur fabric

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------|
| 52049552 | PA901380 | Case Cordura |



HEAT GUN

FEATURES

- Electronic variable heat control ranging from 250-1100° F (120-590° C)
- Two speeds: high & low
- Double insulation safeguards injury from possible electrical failure inside gun
- Comfortable, lightweight design reduces operator fatigue
- Three nozzles included: window nozzle, deflection nozzle and .47" (12 mm) focusing nozzle
- UL listed

SPECIFICATIONS:

| POWER REQS. | CURRENT DRAW | POWER CONS. |
|--------------|--------------|-----------------|
| 120VAC 60 Hz | 7.5 amps max | 1200 watts max. |

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------|
| 52049268 | PA1873 | Heat gun |



DESOLDERING TOOLS

FEATURES

- Removes solder with simple push-button operation
- Standard (regular & anti-static) replacement tips available
- Repair kits come complete with replacement spring and suction rods
- Durable metal frame

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52051260 | PA1700 | Desoldering tool (standard) |









KNIFE PT-T01A

FEATURES

- Full size, no slip textured handle
- Blade designed to stay sharp
- Handle fits comfortably in your hand

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------|
| 52056119 | PT-T01A | KNIFE, PT-T01A |



DIAGONAL 8" DIPPED PLIERS

FEATURES

- Double layered vinyl handles for comfort and slip resistance
- Reduced handle size allows for easy storage of tools in pouches and tool bags

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 52028114 | 0251-08D | Pliers, Diagonal 8" Dipped |





KWIK CYCLE CABLE TIE GUNS

FEATURES

- Tension adjustment allows the user to adapt the tool to the size of the
- Automatic cut-off eliminates sharp edges on ties

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------|
| 50453009 | 45300 | Heavy-Duty Cable Tie Gun |



6-IN-1 MULTI-TOOL

FEATURES

- Versatile multi-bit screwdriver, 6 tools in one
- Precision machined, hardened steel bits
- High-grade, rust resistant, chrome-plated finish
- Cushion grip handle for extra comfort and torque
- Lifetime limited warranty
 - *Note: This is not an insulated tool

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------|
| 55500511 | SD6-in-1 | Multi Bit 6-in1 Driver |



FEATURES

- Identifies cross-over telephone connections
- Automatically scans when cables connected and unit turned on
- Two scan speeds: fast or slow
- Maps connector and cable pin out
- Tests cables up to 1,650' or 500 m
- Also tests RJ11 connections using an RJ11 adapter (not included)
- 2, RJ45 patch cords and 9V battery included
- Contained in a durable nylon carrying case with belt loop
- Patented Patent # 6466885

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------|
| 52046967 | PA1574 | CableCheck-LAN |





PUSHRODS & GLORODS

FEATURES

PUSHROD

- Highly visible green color rods can be easily threaded together and seen when working above ceilings, down walls, or under raised floors
- 1/4" (6.4 mm) diameter fiberglass adds rigidity when connecting multiple sections
- 200 LBS (0.9 kN) maximum pulling strength
- Two different threaded tips accommodate various bundles of wire or cable

GLOROD

- Luminescent fiberglass rods glow in the dark for fishing in dark spaces
- More flexible for fishing in walls through outlet box holes
- Sturdy, steel-threaded connectors are interchangeable with Tempo's 1/4" (6.4 mm) PushRods
- Clear, non-metalic storage tube keeps GloRods charged and ready to use
- 200 LBS (0.9 kN) maximum pulling strength

WHAT SIZE DO YOU NEED?

Flexibility increases as rod diameter decreases:

- 1/4" for long spans requiring greater rigidity
- ³/₁₆" for short spans or in limited space
- 5/32" for making tight turns

Featuring the same size ferrule threads (#8-32), different diameter rods can be used together in any combination for ultimate on-the-job customization.

GLOW ROD

Non-conductive Fiberglass Rods for wiring. These non-conductive rods are perfect for drop ceilings, attics, floors, walls, and crawl spaces. Their high strength and flexible handle turns easily without breaking. Designed for maximum versatility, threaded ferrules make it possible to customize rod length to any job, making it easier to handle any wiring. GloRods provide a handy glow-in-the-dark feature for added convenience in dark spaces.

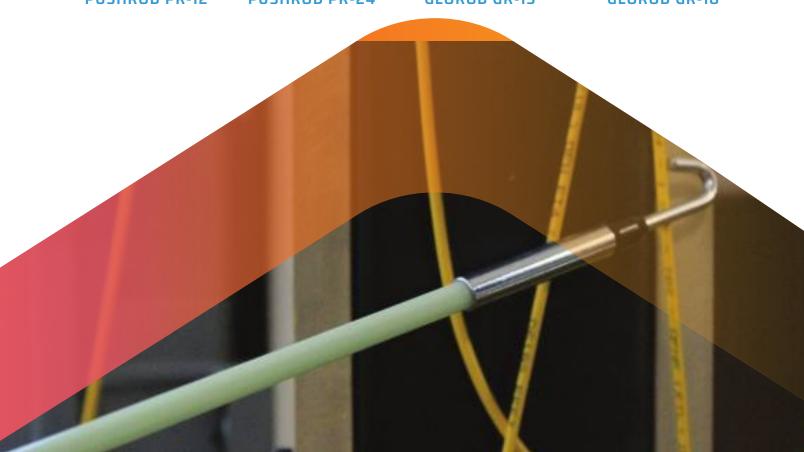
SPECIFICATIONS:

| | PUSHROD LONG | PUSHROD SHORT | GLOROD KIT | GLOROD KIT 18' |
|---------------------------|--|---|--|--|
| Overall Length | 24' (7.3m) | 12' (3.6m) | 15' (4.6m) | 18' (5.5m) |
| Tensile Pull/ strength | 750 lbs | 750 lbs | 500 lbs | 300 lbs |
| Length | Contains 5 easy to connect fiberglass rods: (3) ¼" x 6' (6mm x 1.2m), (1) ¼" x 3' (6mm x .9m) and (1) 3 /16" x 3' (5mm x .9m) | Contains 3 easy to connect fiberglass rods: ¼" x 4' (6mm x 1.2m) | Contains 3 easy to connect fiberglass rods: ³ /16" x 5' (5mm x 1.5m) | Contains 3 easy to connect fiberglass rods: 5/32" x 6' (4mm x 1.8m) |
| Diameter | ¼" (6.4mm) | ¼" (6.4mm) | ³ / ₁₆ " (4.7mm) | ⁵ /32" (4.0mm) |
| Weight | 1.04 lbs (0.5kg) | 1.04 lbs (0.5kg) | 1 lbs (0.5kg) | .8 lbs (0.4 kg) |
| Minimum Bend Radius | 6½" (165mm) | 6½" (165mm) | 4¼" (108mm) | 3½" (89mm) |

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------|
| 55500221 | PR-24 | PUSHROD, LONG (24) |
| 55500223 | GR-15 | GLO ROD KIT |
| 55500222 | PR-12 | PUSHROD, SHORT(12) |
| 55500224 | GR-18 | GLO ROD KIT, 18' |







DataShark®

Wire your home and make connections like a Pro! The DataShark line of tools, testers and connectors provides everything you need to tackle wiring projects like moving TV outlets, upgrading computer wall jacks or building custom-length computer and video cables. The best part is that it is relatively simple, affordable and you can do the job at your own convenience rather than working with someone else's schedule.

There are 3 basic steps to preparing the cable: cut, strip, crimp or terminate. DataShark offers all the tools needed to complete the job virtually hassle-free. You can choose one of our complete kits where we have pre-selected all of your tools and connectors or the products are also sold individually. DataShark completes the line with an assortment of connectors and testers to offer a complete solution.



ROUND CABLE CUTTER SC-CLAM

FEATURES

- Cuts most round cable types except steel conductor cable
- Works well with coaxial & twisted pair cables
- Locking mechanism for safe transport
- Carbon steel construction
- Non-slip handles

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------------|
| 52049901 | PA70001 | DATASHARK ROUND CABLE CUTTER SC-CLAM |



CATV/UTP CUTTER/STRIPPER

FEATURES

- Cuts and strips Cat5, Cat5e and Cat6 twisted pair network cables
- Cuts and strips flat satin phone cables
- Cuts and strips RG6, RG6 Quad, RG59, RG7 and RG11 coaxial cables

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52047005 | PA70029 | Cutter/Stripper - CATV/LITP |

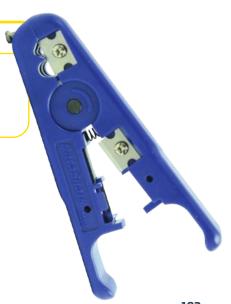


UNIVERSAL STRIPPER SC

FEATURES

- Strips UTP/STP phone & data cable Cat5, Cat5e & Cat6
- Strips flat cables such as telephone, intercom, alarm or speaker wire
- Adjustable blade stripping depth

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------|
| 52049932 | PA70003 | Universal Stripper SC-CLAMSHELL |





DATASHARK STRIPPER CUTTER

FEATURES

- Precision-ground stripping cavities for 22-10 AWG wire prevent scoring
- Also strips internal wires of ROMEX non-metallic building electrical wire. ROMEX is a federally registered trademark owned by Southwire Company
- Gripping jaws on front of tool
- Screw cutter and wire loops made into the frame
- Spring-loaded closure
- Built-in safety lock

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------|
| 52049905 | PA70056 | Datashark Stripper Cutter |

STRIP/CUT STRIP/CUT 30-20 AWG

FEATURES

- Precision-ground stripping cavities for 30-20 AWG wire prevent scoring
- Gripping jaws on front of tool
- Screw cutter and wire loops made into the frame
- Spring-loaded closure
- Built-in safety lock

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------|
| 52049906 | PA70057 | Strip/Cut Strip/Cut 30-20 AWG |

WIRE STRIPPER DATASHARK BUNDLE

FEATURES

- Precision-ground stripping cavities prevent scoring
- Screw cutter and wire loops embedded in frame
- Spring-loaded closure
- Built-in safety lock
- Gripping jaws on front of tool

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------------|
| 52047007 | PA70058 | Wire Stripper Bundle - Datashark |



CRIMPING & PUNCHDOWN TOOLS

RG6 CATV F SC CRIMPER

FEATURES

- Crimps RG6 & RG6 Quad shield cable TV "F" hex-crimp connectors
- Crimp dimensions .068/.324/.360" (1.7/8.3/9.1 mm) HEX
- .324" used on RG6
- .360" used on RG6 Quad
- Fully-ratcheted for easier crimps; built-in safety release

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------|
| 52050081 | PA70006 | Crimper RG6 CATV F S0 |

BNC/TNC RATCHETED CRIMPER

FEATURES

- Crimps RG58, RG59 & RG62AU BNC/TNC connectors used for closed circuit TV cameras
- Crimp dimensions: .256/.213/.068" (6.5/5.4/1.7 mm) HEX
- Fully-ratcheted for easier crimps; built-in safety release

ORDERING INFORMATION:

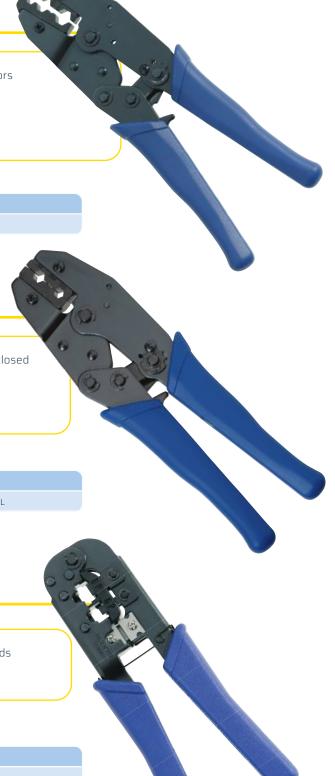
| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-------------------------------------|
| 52050093 | PA70015 | Datashark Crimper RG58/59/62 RETAIL |

ALL-IN-ONE CRIMPER

FEATURES

- Our most popular crimper to assemble computer and phone cords
- Crimps RJ45 computer and RJ11 or RJ12 phone connectors
- Cuts and strips round Cat5, Cat5e or flat satin phone cable

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52046998 | PA70005 | Crimper-Datashark All-In-One |





COAXIAL TOOL CABLE TV

FEATURES

- Make cable TV cords with a single tool
- Cuts and strips RG6 coaxial cable
- Crimps RG6 hex-type cable TV "F" connectors
- Spring-loaded, manual crimper
- Designed for small projects

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52050105 | PA70031 | Coaxial Tool Cable TV CUT/STRIP/CRIMP |
| | | |



FEATURES

- Build custom cables for home theater, security, cable TV and satellite including digital/analog audio, component video, closed circuit TV, digital cable, HDTV and more
- Tool crimps RCA and BNC compression connectors; adapter (included) into tool to also terminate cable TV "F" connectors
- Crimps RG6, RG6 Quad and RG59 coax cable connectors
- Works with DataShark and Paladin Tools connectors

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 52047000 | PA70014 | Crimper - Compression CATV "F" |

F/RCA/BNC COMPRESSION CRIMPER

FEATURES

- Build custom cables for home theater, security, cable TV and satellite including digital/analog audio, component video, closed circuit TV, digital cable, HDTV and
- Tool crimps RCA and BNC compression connectors; adapter (included) snaps into tool to also terminate cable TV "F" connectors
- Crimps RG6, RG6 Quad and RG59 coax cable connectors
- Works with DataShark and Paladin Tools connectors

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---------------------------------------|
| 52050106 | PA70052 | Crimper F/RCA/BNC Compression Crimper |





COMPRESSION UNIV ADJ CRIMPER

FEATURES

- Assemble custom-length cables for home entertainment and
- security systems using compression connectors
- Crimps most common compression RCA, BNC & cable TV "F" connectors
- Fully adjustable to accommodate different sized compression connectors from various manufacturers
- Includes adapter for cable TV "F" connectors that conveniently stores in tool head

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 52047009 | PA70063 | Crimper - Compression Univ ADJ |

PUNCHDOWN NON-IMPACT 110

FEATURES

- Comfortable handle
- Non-impact style punchdown tool
- Works with Cat5, Cat5e and Cat6 UTP/STP cables
- Terminates wire and cuts off excess in one step.
- Good quality tool at an affordable price

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------|
| 52047006 | PA70034 | PUNCHDOWN - NON-IMPACT 110 |

DIGITAL CABLE & SATELLITE TOOL KIT

FEATURES

- Install additional television outlets, move existing ones or add cable modem jacks
- Enhance your favorite movies or TV shows with high-quality audio and video outputs with compression cable TV "F" system
- Compression connectors are watertight and can be used in high moisture environments
- Tools and connectors fit in a blow-molded storage case

KIT INCLUDES:

- PA70001 Round Cable Cutter
- PA70002 Coax Stripper
- PA70014 Cable TV "F" Compression Crimper
- PA70024 (10) compression cable TV "F" connectors for RG6/ RG6 Quad

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 52050420 | PA70019 | DATASHARK CATV F COMP TOOL KIT |





DATASHARK SECURITY TOOL KIT

FEATURES

- Tool also crimps RCA and Cable TV F connectors for your home theater
- Make BNC cables for your surveillance cameras in 3 easy steps
- Includes 4 RG59 BNC compression connectors

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|-----------------------------|
| 52050423 | PA70042 | Datashark Security Tool Kit |



DATASHARK DIY CRIMP BUNDLE

FEATURES

- Complete tool bundle along with modular plugs to make custom RJ45 computer or RJ11 phone cables
- Bundle includes: Part No.
 - Universal Cable Stripper PA70003
 - RJ45 & RJ11/12 Modular Plug Crimper PA70005
 - (10) RJ45 Cat5e Data Plugs for solid or stranded; flat, round or oval cable; available only in kits
 - (10) RJ11 Phone Plugs for solid or stranded; flat, round or oval cable; available only in kits

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|------------------------------|
| 52046999 | PA70009 | Crimp Bundle - Datashark DIY |



FEATURES -

- Install, maintain or make changes to your computer network
- Bundle includes: Part No.
 - Universal Cable Stripper PA70003
 - RJ45 & RJ11/12 Modular Plug Crimper PA70005
 - Non-Impact 110 Punchdown Tool PA70034
 - (10) RJ45 Cat5e Data Plugs for solid or stranded; flat, round or oval cable Available only in kits

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------|
| 52050418 | PA70016 | Datashark Network Bundle |



CATV F COMP TOOL KIT

FEATURES

- Install additional cable TV, satellite outlets or cable modems or moving existing ones with this handy pack of tools and connectors
- RG6 or RG6 Quad Shield Coaxial

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|--------------------------------|
| 52050419 | PA70018 | Datashark CATV F COMP Tool Kit |

DATASHARK CABLE TIE GUN

FEATURES

- Works with plastic cable ties up to .25" in width
- Adjustable tension for changing cable bundle pressure
- Automatically cuts off excess cable tie
- Neatly fastens and cuts in one action

| OKDEKING II | IFORMATION | N: | |
|-------------|------------|--------------------------|--|
| PART NO. | CAT. NO. | DESCRIPTION | |
| 52056991 | PA70076 | Datashark, Cable Tie Gun | |
| | | | |



RJ45 NETWORK TESTER KIT

FEATURES

- Quickly and easily test your computer patch cables or installed cable runs to verify good connections or to troubleshoot problems Identifies good connections, opens, shorts, and cross-connections
- LED clearly lights for each pin and maps the cable as the unit goes through the automatic test cycle
- Cable test begins once the cable is plugged into the unit and the tester's power button is "on"

Choice of fast or slow display speeds

KIT INCLUDES:

- Main unit to transmit signals and to test patch cords
- Remote unit for testing installed cable runs
- (2) RJ45 patch cords to connect tester to wall jack or patch panel
- Convenient carrying case

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|----------------------------------|
| 52047002 | PA70025 | TESTER,CABLE - DATASHARK NETWORK |

PDT NON-IMPACT 110

FEATURES

- Comfortable rubber grip handle
- Uses as twist-and-lock-style blades
- Blade storage in tool handle
- Non-impact tool

ORDERING INFORMATION:

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52050830 | PA70012 | PDT NON-IMPACT 110 TWIST-LOCK STYLE 110 |

RJ45 RJ11 AMP ALL-IN-ONE TOOL

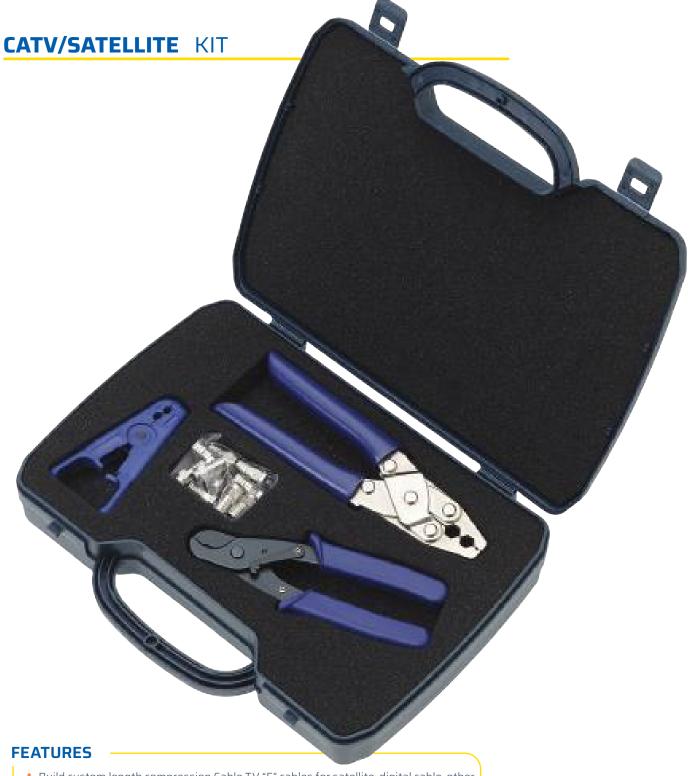
FEATURES

- Crimps AMP-style RJII, RJ12 & RJ45 modular plugs
- Cuts and strips round data & flat telephone cable

| PART NO. | CAT. NO. | DESCRIPTION |
|----------|----------|---|
| 52051438 | PA70021 | DATASHARK RJ45 RJ11 AMP ALL-IN-ONE TOOL |







• Build custom length compression Cable TV "F" cables for satellite, digital cable, other video and cable modems

| PAI | RT NO. | CAT. NO. | DESCRIPTION |
|-----|--------|----------|-------------------|
| 520 | 150409 | PA70008 | CATV/SATELLITEKIT |



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