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BIRD 4410A Multipower Meter



Elements sold separately.

The 4410A high-sensitivity wattmeter is a solid choice for field-service applications where the greater dynamic range of the plug-in elements substantially reduce the number of elements needed to cover multiple power and frequency ranges. It is also well-suited to laboratory work where power levels as low as 2 milliwatts must be measured with high accuracy.

Each 4410A wattmeter plug-in element is capable of reading seven different power ranges cover 0.002* to 10,000 watts. The power ranges of

the different elements overlap and include: 0.002–10 W, 0.02–100 W, 0.2–1000 W and 2–10,000 W. All ranges are in frequency bands from 200 KHz to 2300 MHz. Any one of the seven power ranges is selected by a rotary switch located on the front of the wattmeter. Forward and reflected power measurements are accomplished by rotating the element.

Exceptional $\pm 5\%$ of reading accuracy is achieved via a built-in temperature compensation circuit. This stated accuracy applies from 100% of full scale down to 20% of full scale across all seven ranges.

Specifications:

Power Range: 2 mW to 10 W, 20 mW to 100 W, 200 mW to 1 kW or 2 W to 10 kW full scale in one single Plug-in Element. Any Bird Series 4410-Element may be used.

(This meter is not compatible with elements for the Bird 43.)

Frequency Range: 200 kHz to 2.3 GHz CW or FM

Insertion VSWR: with N Connectors 1.25 max to 2300 MHz

Accuracy: $\pm 5\%$ of reading for any reading above 20% of the Power Range selected for FM or CW signals without AM. This accuracy is maintained for a full 37 dB dynamic range with each 4410

Element (except No. 4410-1 200 kHz–535 kHz which is accurate to $\pm 10\%$ of reading, and 4410-15 1.0–1.8 GHz and 4410-16 1.8–2.3 GHz which are accurate to $\pm 8\%$ of reading.)

Ambient Temp Range: Elements 4410-1 through -8 and -10 through -16 are temperature compensated for rated accuracy from 0°C to 50°C (32° to 122°F), and 4410-20 through 27 from 20°C to 30°C (68° to 86°F).

Over-Range Protection: To 120% of nominal full scale (i.e. 12 W, 120 W, 1,000 W, or 12,000 W). No damage or degradation to the unit will result, regardless of the Range Selector Switch position.

Battery Life: 24 hours min. with standard 9V Alkaline “transistor” battery (NEDA No. 1604A supplied)

Connectors: QC Type (Female N normally supplied)

Nominal Size (includes connectors): 6 7/8” H x 5 1/8” W x 3 5/8” D

Weight: 3 lbs.

Part #: 4410A · Price: \$805.00 ea.

4410 Series Elements

Table 9 - \$205.00 each

Full Scale Power and Frequency Ranges 0-10, 30, 100, 300 Milliwatts, 1, 3, 10 Watt

| MHz | Model | MHz | Model | MHz | Model |
|--------|---------|---------|---------|----------|---------|
| 30-50 | 4410-20 | 100-152 | 4410-22 | 400-800 | 4410-25 |
| 50-88 | 4410-21 | 150-250 | 4410-23 | 800-900 | 4410-26 |
| 88-108 | 4410-27 | 225-400 | 4410-24 | 900-1000 | 4410-28 |

Table 9A - \$205.00 each

Full Scale Power and Frequency Ranges 0-10, 30, 100, 300 Milliwatts, 1, 3, 10, 30 Watts

| MHz | Model | Accuracy |
|---------|---------|--|
| 864-868 | 4410-38 | $\pm 10\%$ of reading accuracy on 100 mW, 300mW and 1 W, $\pm 5\%$ on all other scales |
| 917-970 | 4410-29 | $\pm 5\%$ 10 mW to 1 W only |

Table 10 -

Full Scale Power and Frequency Ranges 0-100, 300 Milliwatts, 1, 3, 10, 30 Watts

| MHz | Model | Price Ea. | MHz | Model | Price Ea. |
|---------|---------|-----------|-----------|----------|-----------|
| 25-80 | 4410-10 | \$205.00 | 400-1000 | 4410-14 | 205.00 |
| 50-125 | 4410-11 | 205.00 | 1000-1800 | 4410-15* | 287.00 |
| 100-250 | 4410-12 | 205.00 | 1800-2300 | 4410-16* | 287.00 |
| 200-500 | 4410-13 | 205.00 | | | |

* Accuracy is $\pm 8\%$ of reading

Table 11 -

Full-Scale Power and Frequency Ranges 0-1, 3, 10, 30, 100, 300, 1000 Watts MHz

| MHz | Model | Price Ea. |
|----------|--------|-----------|
| 2-30 | 4410-3 | \$287.00 |
| 25-80 | 4410-5 | 205.00 |
| 50-200 | 4410-6 | 205.00 |
| 144-520 | 4410-7 | 205.00 |
| 200-1000 | 4410-8 | 205.00 |

Table 12 -

Full-Scale Power and Frequency Ranges 0-10, 30, 100, 300, 1000, 3000, 10,000 Watts MHz

| MHz | Model | Price Ea. | 2-30 | 4410-4 | 287.00 |
|-----------|--------|-----------|------|--------|--------|
| 0.2-0.535 | 4410.1 | \$287.00 | | | |
| 0.45-2.5 | 4410-2 | 287.00 | | | |

Ask about our reconditioned Bird 4410 & 4410A meters.

Power/SWR Meters

DIAMOND ANTENNA POWER/SWR METERS



RF Parts Company 1101-2012



SX-Series

Installs between transmitter and antenna for measurement of forward and reflected average (CW) and SSB (P.E.P.) RF power, and SWR. Accuracy is approximately that of the Bird 43; carrier measurements $\pm 5\%$ (typical) of full scale depending on frequency and power. Illuminated meter, sensor switch and LED indicator. Power ratings listed below are for intermittent operation. For continuous mode (CW, FM, etc.) maximum ratings vary with frequency and are listed in the instructions. (SX100 requires 20W minimum power for VSWR measurement.) All models have SO-239 connectors except SX-1100 with Type-N. SX-600 & SX-1100 have dual directional couplers. Requires 12V DC if you wish to light meter.

6" w x 2 1/2" h x 4" d, 2 lbs.

| Model | Power | Range | Display | Price |
|--------|-------|-----------------------------|--------------|----------|
| SX100 | 3KW | 1.6-60MHz | 30W/300W/3KW | \$144.95 |
| SX200 | 200W | 1.8-200MHz | 5W/20W/200W | 99.95 |
| SX400 | 200W | 140-525MHz | 5W/20W/200W | 114.95 |
| SX600 | 200W | 1.0-160Mz + 140-525MHz | 5W/20W/200W | 184.95 |
| SX1100 | 200W | 1.8-160MHz + 430-1300MHz | 5W/20W/200W | 234.95 |



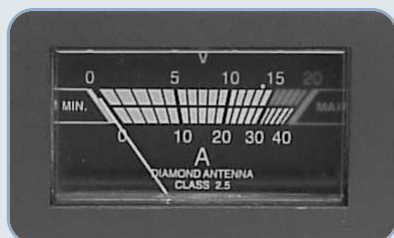
POWER SUPPLY, MULTIMETERS & ANTENNAS: Diamond Antenna Power/SWR Meter

POWER SUPPLY

Power Supply by Diamond Antenna

Very Low Noise – Ideal for HF & VHF Transceivers

- Voltage Control Knob has center detent at 13.5 VDC.
- Over Temperature Protection.
- Meter Selector allows monitoring of voltage & current.
- Access to front panel DC Terminals and Cigarette Lighter jack. Standard 40A terminals on rear panel.
- Built in Speaker.
- Circuitry yields high RFI protection from external sources.
- AC line filter for EMI protection.
- Standard 3-wire Heavy Duty line cord.
- Power Indicator & Overload Indicator.
- Accepts 120 VAC \pm 20% 50-60 cps.
- Ripple & Noise less than 8 mV r.m.s.



**DIAMOND
ANTENNA**

GZV4000

- **40 Amp** Continuous Rating, 100% Duty Cycle.
- Variable Voltage Control 5–15 VDC.
- Overload & short-circuit protection with Current Foldback at approximately 42 Amp.
- Size: 8.25" x 4.5" x 13" Weight: 8 lbs.

Part #: GZV4000 • Price \$179.95

GZV6000

- **60 Amp** Continuous Rating, 100% Duty Cycle.
- Variable Voltage Control 1–15 VDC.
- Overload & short-circuit protection with Current Foldback at approximately 62 Amp.
- Size: 8.25" x 4.5" x 16" Weight: 12.8 lbs.

Part #: GZV6000 • Price \$399.95

The GZV4000 & GZV6000 are available in 220-240 VAC.
Add -220 to part number.

* 1 Year Limited Warranty.

Power Supply by Lambda SWS300-24 Power Supply

Mfg: Lambda
Adjustable 20-28.8V
Rated 24VDC @ 13A
Input 100-240VAC 50-60 Hz
L x W x H (In.): 7 13/16 x 4 x 2-1/16

Part #: SWS300-24 • Price: \$49.95 ea.



DC Power Supply

+5V & +12V

UL Listed. Quality computer power supply. Ideal power source for home projects, relay control circuits, QRP Station, etc. Just remove the plug and wire directly. New in box.

Input: 120VAC 60 Hz
Output: +5.1 VDC 600ma
 +12 VDC 1000ma
Net weight: 3.5 lbs.
Connector: 5 pin DIN Male Plug

**Part #: T66R
Special \$4.95 ea.**



Fieldpiece Digital Multimeters HS26 Stick Meter with optional Current Clamp Head



4 Functions – 11 Ranges

- Clamp head snaps on to directly display AC current
- Housing: small size, made of rugged Valox®, "O" ring sealed
- Hi voltage safety indicator – red LED blinks and beeper sounds when probes touch voltage greater than 28V
- Hold button – freezes display on command
- Max hold – holds highest reading
- Continuity beeper
- Protection: input protected by MOVs to 6000V transients, voltage withstand capability to 1000V peak
- Functions: volts, amps, ohms, capacitance

DC Voltage

Ranges: 200mV, 2000mV, 200V
Resolution: 0.1mV on 200mV range
Accuracy: 0.5%±1
Input impedance: 10 MW
Normal mode rejection ratio:
>50 dB @>49Hz
Common mode rejection ratio: >120 dE up to 1000VDC

Resistance

Ranges: 200W, 200KW
Resolution: 0.1W on 200W range
Accuracy: 1%±1
Open circuit voltage: <0.3V,
<3V on 200W range
Test current: <2mA

AC Voltage

Ranges: 200mV, 2000mV, 200V, 750V
Resolution: 1.0 mV on 200mV range
Accuracy: 1.2%±3 @ 50Hz to 500Hz,
2.0%±5 @ 500Hz to 1 KHz, 2.0%±5 @ 50Hz to 500Hz on 750VAC range
Input impedance: 10MW
Conversion type: Average measuring, rms indicating (sine wave).

Capacitance

Range: 200mF
AC Current
0-300A with ACH Clamp Head Accessory

UL Listed

HS26 Digital Multimeter

Regular Price \$79.95 · RF Parts Special \$29.95 ea.

ACH Current Clamp Head

Regular Price \$29.95 · RF Parts Special \$19.95 ea.

Model LT83



The Model LT83 is an excellent meter for testing basic electrical parameters, including current, at a great price. Includes test leads and a rubber holster for added shock protection.

- Full function DMM at a great price: 5 functions, 25 ranges
- Works with all Fieldpiece accessories: 200mV ranges for 0.1 resolution on all accessory heads
- Measures current: from 0.1 microamps to 10 amps

Specifications

Includes: meter with test leads.
Data Hold: "HOLD" button "locks" reading. Any range, any function.
Max Hold: "MAX" button displays the largest reading. Any range.
Continuity beeper: indicated by a continuous "beep"
Overload protection: 600VAC/600VDC for DCV, ACV, and phase indication. 500VAC/500VDC for capacitance, ohms, and diode test. Amps and capacitance ranges are protected.

UL Listed

| LT83 | Ranges | Best Accuracy * | Resolution |
|------------|--|-----------------|------------|
| VAC | 200mV, 2000mV 20V, 200V, 600V | ±(1.2%+4) | 0.1mV |
| VDC | 200mV, 2000mV, 20V, 200V, 600V | ±(0.5%+1) | 0.1mV |
| AAC | 200mA, 200mA, 200mA, 10A, (300A AC clamp optional) | ±(1.5%+4) | 0.1mA |
| ADC | 200mA, 20mA, 200mA, 10A | ±(1.0%+1) | 0.01mA |
| Resistance | 200W, 2KW, 20KW, 200KW, 2MW, 20MW | ±(1.0%+4) | 0.1W |

*percent plus reading

Part # LT83 · Reg. Price \$44.95 · RF Parts Special \$29.95

Digital Multimeters



Model HB74

Heavy Duty construction with high voltage indication for safety. Valox case has tilt stand and fieldhanger on back and is fully gasketed. Functions were selected based on what field service technicians said they needed to do their job.

Specifications

Display HOLD: range, any function. "HOLD" button "locks" reading. Any frozen display on highest reading.

MAX Hold: LCD blinks and beeper sounds intermittently. (<150W) indicated by a continuous "beep" within 100 msec.

Dangerous voltage indication: LCD blinks and beeper sounds intermittently. (<150W) indicated by a continuous "beep" within 100 msec.

Continuity beeper: in the LCD.

Low battery indicator: Case design of hi-impact, fire retardant yellow Valox, 0"0" ring sealed.

Heavy duty: all volts ranges withstand 1200VDC and 850VAC (30 sec on 200mV ranges). All volts ranges are protected against transient voltages to 6000V/10 microseconds by a MOV (metal oxide varistor). All ohms and frequency ranges protected to 500V AC/DC. Phase rotation to 450VAC. Amps and capacitance ranges are protected by a fast blow 0.5A/500V (6.35mmx32mm) fuse (RFM74) on mA jack, high energy 20A/600V (1.5x.375") fuse (RFL701) on 20A jack.

Overload protection: Approximately 50 minutes.

Auto-power off:

- Phase rotation: for correct connection to 3 phase power.

- Max hold: freezes highest reading.
- Capacitance to 20,000 microfarads: for motor start/run capacitors.
- Microamps: resolution down to 0.01 microamps DC for flame safety diode circuit.
- Heavy duty test lead set.
- Rugged case: fully gasketed Valox housing.
- MOVs: for transient voltage protection.
- Safe: LCD indicator and audible "beep" to warn of high voltage.
- UL Listed

| HB74 | Ranges | Best Accuracy | Resolution |
|----------------|---------------------------------------|------------------------|------------|
| VAC | 200mV, 2000mV 20V, 200V, 850V | ±(1.2%+2 dgts) | 0.1mV |
| VDC | 200mV, 2000mV, 200V, 850V | ±(0.5%+1 dgts) | 0.1mV |
| AAC | 200mA, 200mA, 20A, (30 sec max) | ±(1.5%+3 dgts) | 0.1mA |
| ADC | 20mA, 200mA, 200mA, 20A, (30 sec max) | ±(1.0%+1 dgts) | 0.01mA |
| Resistance | 200W, 2KW, 20KW, 200KW, 20MW | ±(1.0%+1 dgts) | 0.1W |
| Capacitance | 20mA, 200mF, 2000mF, 20KmF | ±(4.0%+10 dgts) | 0.1mF |
| Phase Rotation | 80VAC to 450VAC (3 phase) | "FORWARD" or "REVERSE" | |
| Frequency | 200Hz, 2KHz | ±(0.5%+3 dgts) | 0.1Hz |

Part #: HB74

Reg Price \$119.95 • RF Parts Special \$69.95

Fieldpiece® accessories are available from most Fieldpiece® distributors, including Johnstone Supply which has 245 nationwide stocking locations. Look up Johnstone Supply on the internet at www.johnstonesupply.com.

MULTIMETERS: Fieldpiece HB74 & LT17



Model LT17

HVAC/R Fieldpiece at a Great Price

Measures temperature accurately, even when ambient temperatures are changing fast. Measures amps three ways: 200µA range for flame rectifier diodes; 20mA range for 4-20mA loops; current clamp for currents to 300AAC with up to 0.1A resolution. Use the optional current clamp for

remotely measuring AC current on hard to reach wires. Ideal for electricians, motor and refrigeration servicing technicians.

- * Volts, amps & ohms measurement
- * Microamps: for flame rectifier diodes
- * Temperature: 0.1°F resolution
- * Capacitance: for motor start/motor run capacitors
- * Frequency: for variable frequency motor controls

Includes: meter with rubber holster and test leads. Thermocouple and AC clamp available separately.

Continuity beeper: (<150W) indicated by a continuous "beep" within 100 msec.

Overload protection: 600VAC/600VDC for voltage ranges, 500VDC/350VAC (15 sec max) for 200mV ranges, 500VAC/500VDC for capacitance, ohms and diode test ranges. Current ranges protected by 0.1A/250V (5mm x 20mm fuse) model RF16.

Specifications:

| LT17 | Ranges | Best Accuracy | Resolution |
|-------------|------------------------------------|---------------|------------|
| VAC | 200mV, 2000mV, 200V, 600V | ±(1.2%+4) | 100µV |
| VDC | 200mV, 2000mV, 200V, 600V | ±(0.5%+1) | 100µV |
| AAC | 200µA, 20mA, (300A clamp optional) | ±(1.5%+1) | 100nA |
| ADC | 200µA, 20mA | ±(1.0%+1) | 100nA |
| Resistance | 200W, 200KW, 20MW | ±(1.0%+4) | 0.1W |
| Capacitance | 20µF, 200µF, 2KµF, 20KµF | ±(4.0%+10) | 0.01µF |
| Frequency | 10 to 40KHz | ±(0.1%+3) | 1Hz |
| Temperature | -40°F to 750°F | ±(1°F w/cal) | 0.1°F |

Part #: LT17 • Reg. Price \$89.95 • Special Price \$69.95



Model HD110



Heavy Duty construction with high voltage indication for safety. Valox case has tilt stand and fieldhanger on back and is fully gasketed. Functions were selected based on what field service technicians said they needed to do their job.



- Completely sealed and environment-proof meters
- VDC accuracy of 0.1 %
- Large 20mm (0.8") high display
- Continuity test with continuous tone
- Superior 1500-hour battery life

Part #: HD110 • \$179.95
Limited Quantity



Contact our tech help line
and speak with an engineer at

760-744-0500

Bird Antenna Testers

Bird's AT-Series Antenna Testers can test an entire band in a matter of seconds, with accurate results regardless of antenna cable length. Menu driven, software-defined keys and digital keypad quickly select operating mode and enter test parameters. A self-contained RF source precisely sets the test frequency. A built-in adaptable antenna jack mates a wide range of standard RF connectors.

Swept Frequency Measurements – Show VSWR, Match Efficiency or Return Loss across the entire band. A moveable cursor pinpoints scan frequency and digitally displays the corresponding measurement value.

Single-Frequency Mode – Can be used to optimize antenna performance and troubleshoot intermittent problems.

Limit Testing – Quick Pass-Fail indication compares measurements to user-selected.

Audible Indicator – Pitch varies with match condition for easy, hands-on antenna adjustment.

Field-Strength Measurements – Verifies the output of devices such as portable radios and cell phones.

Data Storage – Saves and recalls up to 12 scans in nonvolatile memory for long-term monitoring of antenna performance.

Serial Communication Link – Optional Software uploads data to a personal computer for analysis for storage.

Backlit Liquid Crystal Display – Produces text and high-resolution graphics.

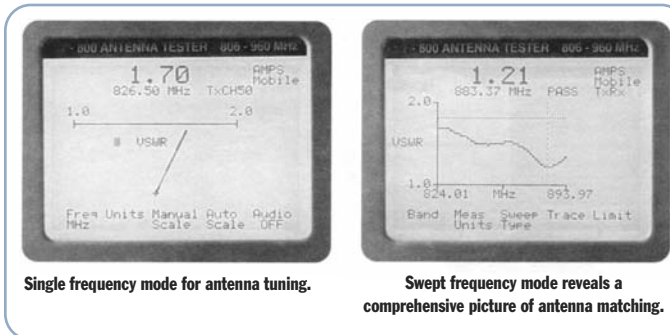
Portable – Lightweight, easy-to-carry, with rechargeable batteries.

Rugged – Designed to meet the harsh environment requirements of MILIT 28800.



Model AT-800

The AT-Series contains a serial interface for downloading and analyzing test data with a personal computer.



Single frequency mode for antenna tuning.

Swept frequency mode reveals a comprehensive picture of antenna matching.

Specifications

| | | |
|--|---------------------------------------|--|
| Frequency Range: | AT-500 | 2 - 520 MHz |
| | AT-800 | 806 - 960 MHz |
| Frequency Resolution: | AT-500 | 20 kHz |
| | AT-800 | 30 kHz |
| Frequency Accuracy: | AT-500 | ±50 kHz |
| | AT-800 | ±50 kHz |
| Measurement Range: | VSWR: | 1.00 - 99.99 |
| | Match Efficiency: | 00 to 100.0% |
| | Return Loss: | 0.0 to -32.0 dB |
| Measurement Speed (Typical): | Single Frequency: | 5 readings / second |
| | Swept Frequency: | 1 sweep / second |
| Preprogrammed Bands: | AT-800 only AMPS, NADC, GSM, PDC, CT2 | |
| Field Strength: | 0 to 100% (relative) | |
| Sensitivity for full-scale deflection: | AT-500 | 0.22 v / m @ 400 MHz |
| | AT-800 | 0.22 v / m @ 400 MHz |
| Test Port: | Impedance: | 50 ohms, nominal. Standard connector |
| | AT-500 | N (F) |
| | AT-800 | N (F) |
| Interface: | Serial (female DB-9 connector) | |
| Power Requirements: | Batteries: | 6 rechargeable AA |
| | External DC: | 11-16 Vdc |
| | External AC Adapter: | 108-132 VAC @ 57-63 Hz, or 207-253 VAC @ 48-52 Hz |
| Operating Temperature: | 0° to 50°C (32° to 122°F) | |
| Storage Temperature: | -41° to 71°C (-40° to 160°F) | |
| Size: (including connector) | 8" H x 4 5/8" W x 1 3/4" D | |
| Weight: | 2 lbs. | |

Part #'s: AT-500 and AT-800 • Price: \$1407.00 each

ANTENNAS

D130 Series Super Discone Antennas

The most popular ultra-wideband antenna for Scanners and general communications.

- Ideal Service Shop bench antenna.
- Rated 200 watts CW/FM.
- 25-1300 MHz receive, 50-1300 MHz transmit
- Whip tunable for 6m, 50 watts (1.5 MHz BW transmit)

DIAMOND
ANTENNA



Part #: D130J (UHF Connector)
Price: \$99.95 ea.

Part #: D130NJ (Type-N Connector)
Price: \$99.95 ea.

Diamond D220 Mobile Scanner Antenna

Mobile Mini Discone Antenna

100 to 1600MHz receive, 144/430/904/1200MHz transmit
1/2wave(144MHz), 2x5/8wave(430MHz)

| | |
|-------------------|--|
| Bands: | 100-1600 MHz |
| Gain dBi: | 2.15dBi(144/904/1200MHz) 5.5dBi(430MHz) |
| Max Power Rating: | 50W |
| Impedance: | 50ohms |
| VSWR: | Less than 1.5:1 |
| Height: | 35.5" |
| Weight: | 1.2 lbs. |
| Max Diameter: | 8.5" |
| Connector: | UHF |
| Element Phasing: | Wideband Discone. |
| 6m: | 50 Watts |

Part #: D220 • Price: \$99.95 .



DIAMOND
ANTENNA

UHF Vertical Antenna

Special Purchase!

Mfg. Sinclabs (Canada)

UHF Omni-directional Base Antenna.
450-470 MHz, 3dB (<1.5 vswr from 440-480 MHz). Made from durable schedule 80 PVC.

Excellent for fixed station applications or is durable enough to take portable or for Field Day use.

Antenna comes with 30' Belden RG58/U cable, mini-UHF fitting, mounting hardware, U Bolts & weatherproofing.

Part #: SVU4500SP1
Regular Price: \$49.95
RFP Special Price: \$19.95 ea.



GPS Antenna Module

Mfg. Larson

Electrical Specifications:

| | |
|--------------------|--|
| Frequency: | 1575.42 ± 1.023 MHz |
| Nominal Impedance: | 50 Ohms |
| VSWR: | 2:1 Max |
| LNA Gain: | 25 dB ± 2 |
| Polarization: | R.H.C.P |
| Noise Figure: | 2.5 dB Max |
| Current: | 20 dB Max Dc +4.5 ~ 12 V 30 mA Max |
| Connector: | T ype-N Female w/ Male Adapter |

Mechanical Specifications:

| | |
|---------------------|-------------------|
| Weight: | 1 lb. |
| Overall Dimensions: | 4.28" W x 15.8" H |

Environmental Specifications:

| | |
|------------------------|----------------------------|
| Operating Temperature: | -85 / +176 F (-30 / +80 C) |
| Storage Temperature: | -85 / +194 F (-30 / +90 C) |

Comes with mounting bracket and pole.

Part #: GPS0015
List Price: \$272.00
RF Parts Special Price: \$89.95

