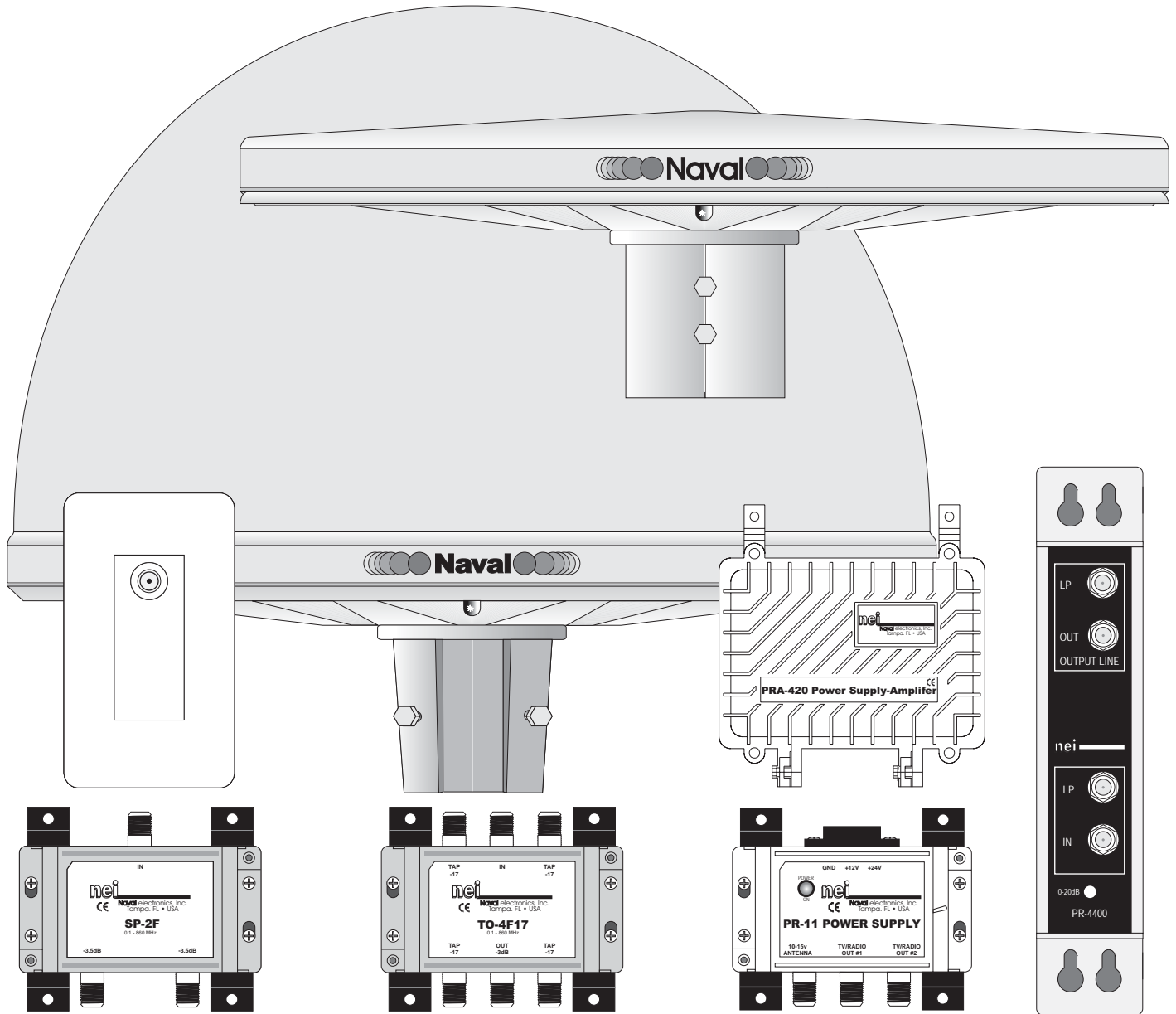




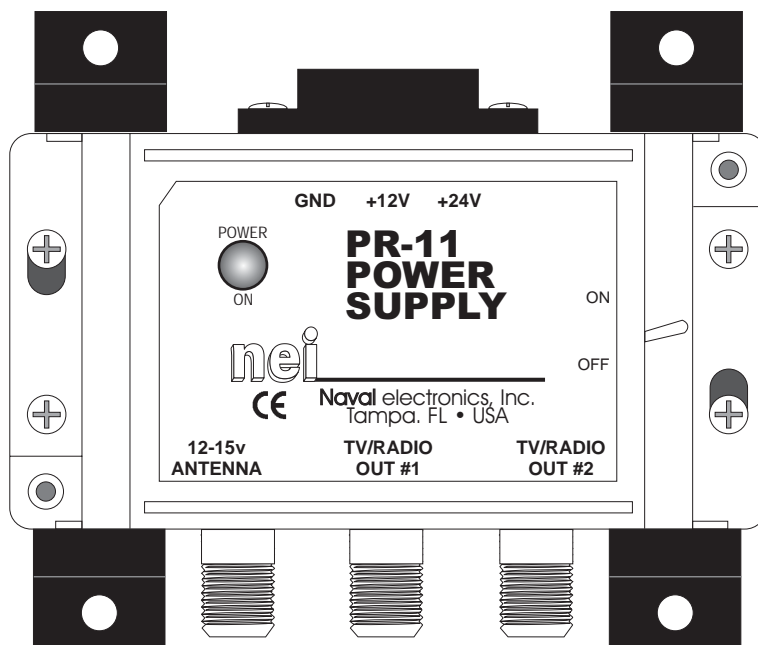
Antenna Systems for Marine Applications



Items shown are not to scale

Naval electronics, inc.

PR-11 DC Antenna Power Supply



The PR-11 power supply provides DC power to all of our 400 Series antennas and decouples the signal from the antenna amplifier while splitting it to supply two Radios or TV sets, or the combination. It incorporates a Voltage Reguator and will work from 12 VDC or 24VDC primary power sources. The attractive cast metal case is plated and well shielded against electro magnetic interference. It has been thoroughly laboratory tested and designed with special line filters to meet CE compliance in Europe.

All "F" type connectors are cast into the metal case and allow the coax cable connectors to be "wrench torqued" without damaging the internal circuitry. An optional "ground isolation" base is available at low cost to eliminate interference caused by ground loops. The base also raises the power supply off the bulkhead for ease in connecting the coax cables.

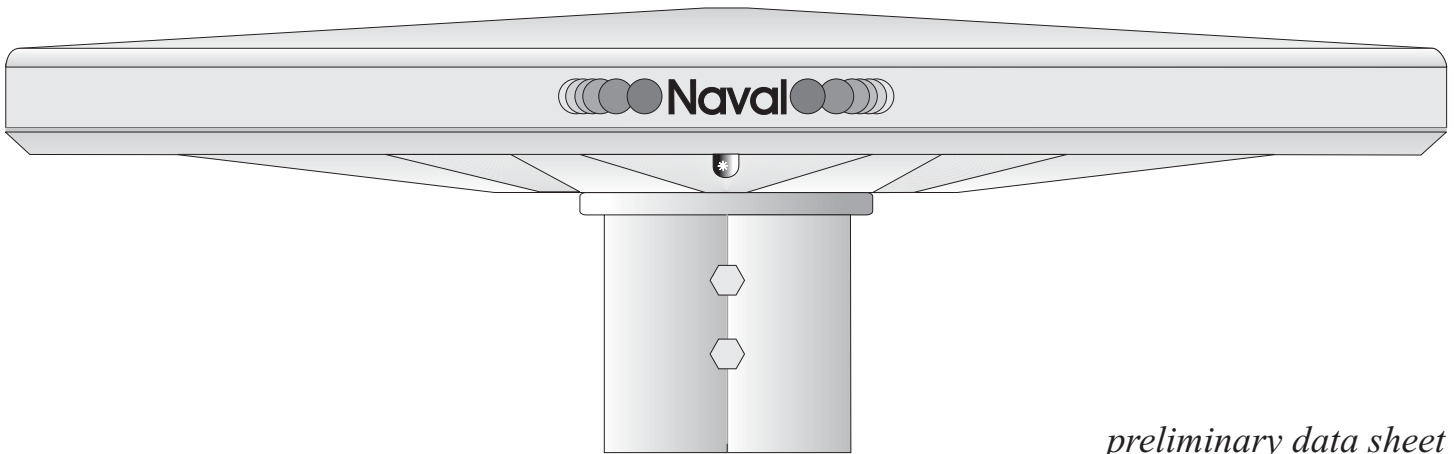
Specifications

PR-11 DC Antenna Power Supply

- Primary Voltage: 12 or 24 VDC
- Current Capability: 150mA continuous
- Frequency Range: 100 kHz - 860 Mhz
- Temperature Range: -40 +55 C
- Impedance in-out: 75 ohm
- Connector type: "F" type female cast in case
- Return loss: 15db typical

Naval electronics, inc.

PR-411 Marine TV FM Antenna for Fine Yachts



preliminary data sheet

For Color VHF, UHF TV and FM Stereo Reception at Sea

The Naval PR-411 is a high performance, omnidirectional, active TV antenna for Maritime use. It is ideal for use on craft equipped with one or two TV sets such as fishing boats, work boats, yachts and tugs.

PERFORMANCE: The PR-411 is an all-channel, wide band, active antenna that brings in beautiful color pictures on both VHF and UHF television and provides for FM stereo reception at sea. A special built-in, filtered low noise amplifier with 5 microwave transistors, boosts signal in all 3 bands. Eleven filters, each hand tuned with an HP spectrum analyzer and tracking generator, reject possible out of band interference.

CONVENIENT AND RELIABLE: The PR-411 is omnidirectional and does not require a rotor which is prone to failure in a marine environment. The PR-411 has no moving parts other than the stainless steel mounting bolts on the alloy base. It never needs adjusting and provides for reception regardless of the vessel's heading.

QUALITY: The PR-411 antenna is designed strictly for marine applications by Naval Electronics, recognized specialists in marine TV antennas and distribution systems. As a result of its rugged and improved design, the PR-411 will easily withstand high winds and ice loading, salt water spray and the continuous shock and vibration that only a marine environment can inflict.

LONG LIFE: The PR-411 is completely weatherproof and is of stable, compact and robust construction. The antenna's exterior is manufactured in thick, tough white UV protected ABS plastic which requires no maintenance. The upper shell is chemically bonded, not glued, to the ribbed bottom shell. All inner parts including the low noise amplifier are imbedded in solid polyurethane foam which is injected during the final manufacturing process in Tampa, Florida. All metal parts including the cast 1.5 inch pipe mount are of special corrosion resistant marine alloys.

SIMPLE INSTALLATION: The PR-411 is supplied complete with 50 ft. of RG-6U industrial grade low loss cable and a power box to supply 2 television sets or FM radios. The universal power supply accepts 12-40VDC or 115/220VAC. An economical DC only supply is also available.

Options:

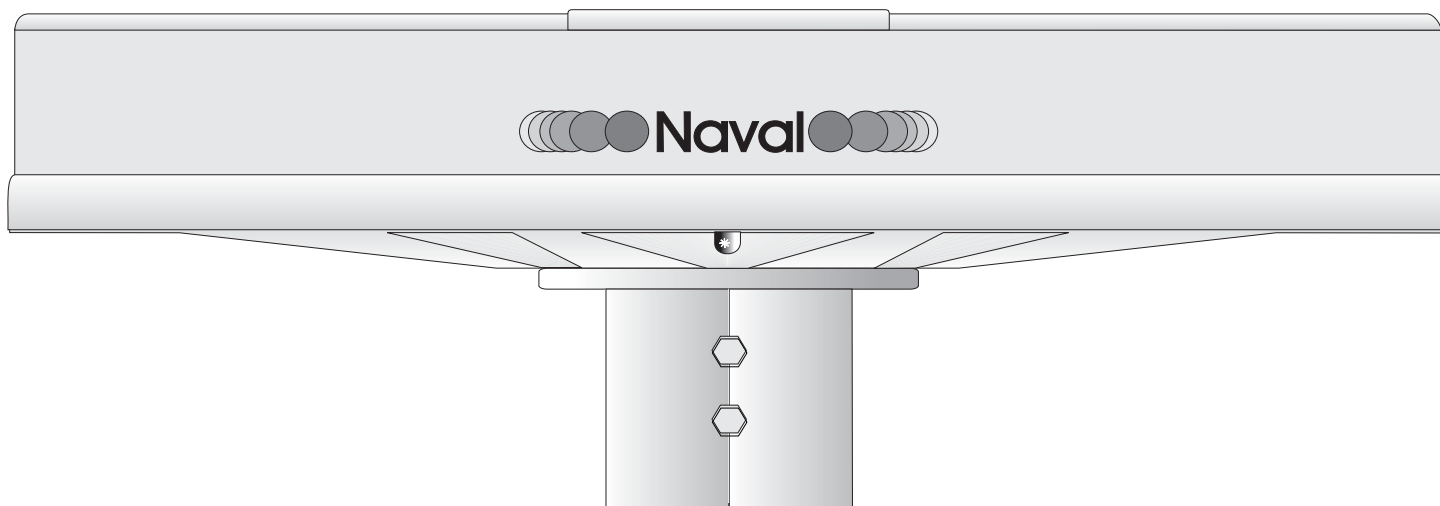
- External gold plate "F" connector with Rubber coax weather boot.
- 50 Ft attached low loss RG-6U coaxial cable or custom lengths
- Polished Stainless Steel mounting Flange.
- Focused LED power indicator on antenna
- 1.5 inch pipe mount
- Economical DC only power supply with Ground Isolation mount.

Specification:

Frequency range: 40-860 Mhz • Average VHF gain: 25 dB (amp) • Average UHF gain: 20 dB (amp) • VHF Noise figure: 3.5 dB (amp) • UHF Noise figure: 3.0 dB (amp) • Max output level: 98 dBuV min (2 signals-60 dBIM) • Third order intermod products: > 18dB IP3 • Antenna factor: $K_a = 0.12 \text{ AM}$ • Filters: Band pass 100 Khz- 30 Mhz., 47-108 MHz., 174-230 MHz., 470-860 MHz.
Broadband rejection filter: 140-165 MHz. • Return loss > 8 dB with optional output connector • Polarization: horizontal • Antenna pattern: omnidirectional • Supply voltage to antenna: 15VDC nominal • Current consumption: approx. 90 mA (with LED) • Operating temperature: -40 to

Naval electronics, inc.

PR-414 Marine AM-SW-FM-TV Antenna



For Color TV-AM-SW-FM Stereo Reception at Sea

The PR414 is an omnidirectional, active, wideband terrestrial AM-SW-FM-TV receiving antenna (0.1-890 MHz) for marine use, specially designed for commercial craft equipped with one or two Radio and TV sets as on Coasters in limited international trade, Fishing Boats, Tugs, Pilot Service Craft and Rescue Cruisers, where extra performance in a robust package is appreciated.

PR414 is a low profile product, based on 3 independent low noise amplifiers integrated directly to the omnidirectional multi-element antenna. The antenna's exterior is made of UV protected thick ABS plastic, which requires no maintenance. All inner parts are embedded in solid polyurethane foam for protection from heavy vibration, moisture and sub zero temperatures. Mounting hardware is made of Marine Grade Almag Aluminum alloy. The integral low noise 3 band 6 transistor amplifier increases the sensitivity of the system as well as compensating for cable losses in the antenna downlead. Separating the amplifiers benefits intermod rejection and allows for more gain with less noise. The PR414 features high performance 5 GHz bipolar microwave transistors, which are protected against static charge.

The PR414 utilizes a "3 offset broadband dipole element configuration" with each element covering a 120 degree view of the surroundings and a much improved omnidirectional antenna pattern when compared with other antennas.

The PR414 is delivered with 16 meters (50 ft) of 75 Ohm RG6U low loss coaxial cable and a power box with two receiver outputs.

Specifications:

- Frequency range: 0.1-860 MHz
- Average MF-HF gain: 10dB (Ka=0.12)
- Average VHF gain: 25 dB
- Average UHF gain: tilt 16-20 dB
- VHF Noise figure: 3.0 dB
- UHF Noise figure: 2.5 dB
- Max output level: 106 dBuV min (2 signals 60 dBIM)
- Third order intermod: > 20 dB IP3
- Filters: Band pass 100 kHz-30 MHz., 47-108 MHz., 174-230 MHz., 470-860 MHz.
- Broadband rejection filter: 140-165 MHz.
- Polarization: horizontal
- Antenna pattern: omnidirectional
- Element material: copper foil
- Element type: Three 120 degree offset broadband dipoles

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PBA-420 and PBA-422 Power Supply-Amplifiers

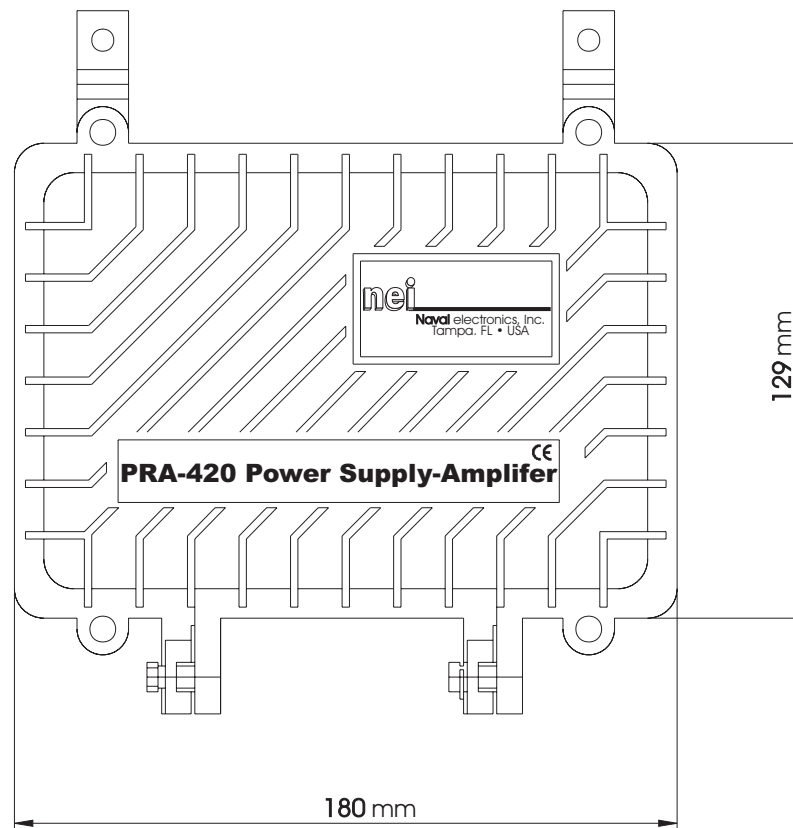
The PBA-420 is an antenna power supply, low noise MMIC amplifier and splitter combination to supply up to 10 Shipboard Radios and/or TV Receivers. It covers all International TV and FM radio frequencies. Amplification is adjustable from +10 dB to +30dB via an onboard attenuator. An internal low loss passive 2-way ferrite splitter is provided. The amplifier will pass AM radio signals without amplification. An input port is provided for an external signal source such as a VCR, Modulator or Cable TV.

The hinged cast metal EMI shielded case is gasket sealed and highly water resistant. External CATV type "F" connectors are provided for the external antenna input and 2 branch line outputs as well as for the external signal source. An "O" ring cable gland is provided for the primary power cable.

PBA-422 is identical to the PBA-420 with the addition of an AM radio amplifier with a 20dB adjustable attenuator. Both devices will power two active antennas such as a PR-420 and the PR-430.

Specifications PBA-420 and PBA422 Power Supply-Amplifiers

• AM frequency range:	0.1 -30MHz	• Hum and ripple:	< 50 mV
• FM TV range:	40-860 MHz	• Primary power:	117/230 VAC , 50/60 Hz
• Max AM gain:	15dB	• Noise:	< 5.5dB
• Max FM-TV gain:	30dB	• VCR input level:	60dBuV nominal
• Antenna current:	250mA Cont.	• Amplifier Output:	105 dBuV



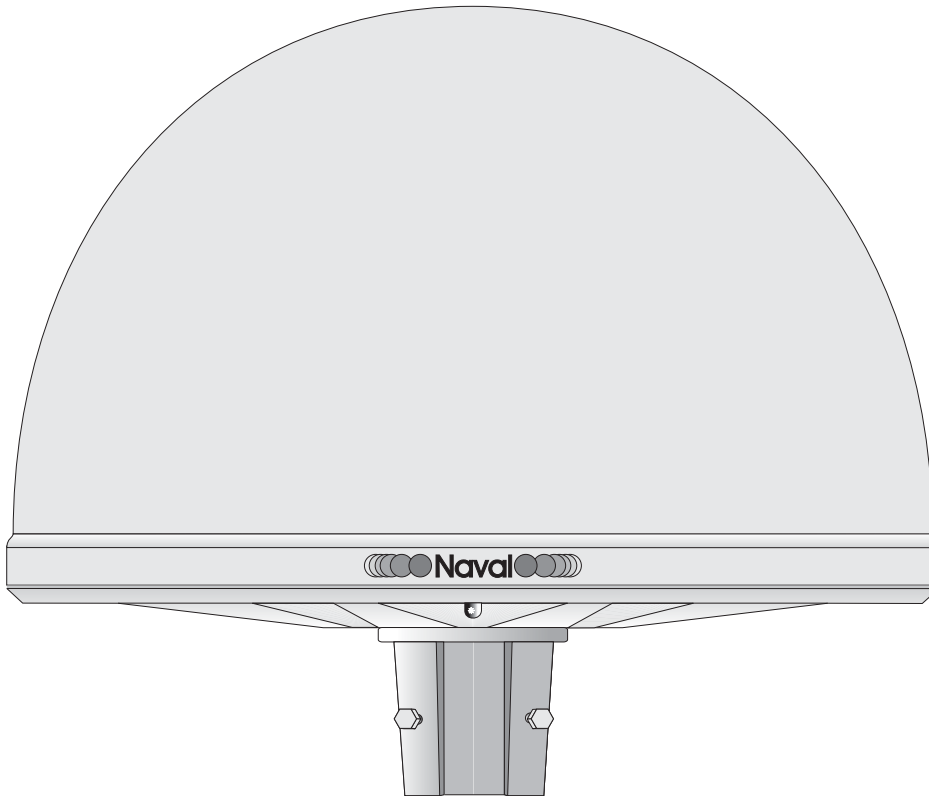
Naval electronics, inc.

PR-422 Marine AM/FM/TV Antenna for Ships

The PR-422 is an Active Extra High Performance Omni-directional wide-band Terrestrial AM-FM-TV Antenna (0.1-30 and 40-860 MHz) designed for Maritime purposes where second rate efficiency is unacceptable.

Constructed for High End Commercial and Military use, this compact and robust antenna shell is made of thick UV protected ABS plastic filled with polyurethane foam which provides both structural support and environmental protection. The mounting base is cast from Almag Marine Aluminum Alloy which is powder coated and then oven baked. Mounting hardware is made of stainless acid-proof steel. The

Specifications: PR-422 antenna



- Frequency range: 0.1-860 MHz
- Average VHF gain: 25 dB (amp)
- Average UHF gain: tilt 16-20 dB (amp)
- VHF Noise figure: 3.0 dB (amp)
- UHF Noise figure: 2.5 dB (amp)
- Max output level: 111 dBuV min (2 signals-60 dBIM)
- Third order intermod products: >20dB IP3
- Antenna factor: $K_a = 0.12$ AM
- Filters: Band pass 100 Khz- 30 MHz., 47-108 MHz., 174-230 MHz.,470-860 MHz.
- Broadband rejection filter:140-165 MHz.
- Polarization: horizontal
- Antenna pattern: omni-directional
- Supply voltage to antenna: 15VDC nominal
- Current consumption: 130 mA Nominal
- Operating temperature: -40 to +55 C.
- Protection circuits: static discharge device fires at 65 volts
- Impedance: 75 ohm nominal
- Connector "F" type Gold electroplate or BNC-75
- Return loss: >10dB with optional output connector.
- Radome material: UV protected ABS
- Flange material: Stainless, Almag or Powder Coated Almag
- Internal stabilization material: Polyurethane foam injection
- Element material: copper foil
- Element type: three looped dipoles with Z match pcb
- Shipping Weight: 9 pounds with 80 ft coax and

The PR-422 is based on a construction of 3 circular dipoles coupled to a low noise amplifier via a broadband filter network. Maximum performance is assured through the extensive use of a Network Analyzer in the initial design and in the final construction and tuning of each unit. Microwave transistors provide needed gain with a minimum of internally generated noise. Careful engineering and the use of very high quality components yields excellent intermod performance and sharp hand tuned filters greatly reduce the chance of interference from outside of the TV bands

The PR-422 is at the head of a new 4000 Series Marine Cassette Amplifier System with distribution passives introduced in 1998. The Series 4000 is the result of painstaking engineering and the use of state of the art components such as high performance GaAs Heterojunction Bipolar Transistors. PR-420 is identical with the omission of AM radio reception.

Naval electronics, inc.

PR-12, PR-12E, PR-20E Antenna Power Supplies

The PR12 is an AC/DC full wave rectifier power supply, antenna power inserter and 2 way signal splitter combination. It can be powered with 110/220 VAC or 12/24 VDC. It provides regulated 15 VDC to the internal gold plated F connector antenna port to power the PR411, PR414 or PR30 active antennas. It provides 90mA of continuous current. The low loss metal ferrite signal splitter feeds two receivers (Radio or TV) via internal gold plated F connectors and covers the frequency range of 100 kHz to 900 MHz. The hinged cast metal EMI shielded case is highly water resistant and "O" ring cable glands are provided for all connecting cables. The package is complete with spare fuses, 3, "F" connectors and instructions for installation. The PR12 is not CE marked.

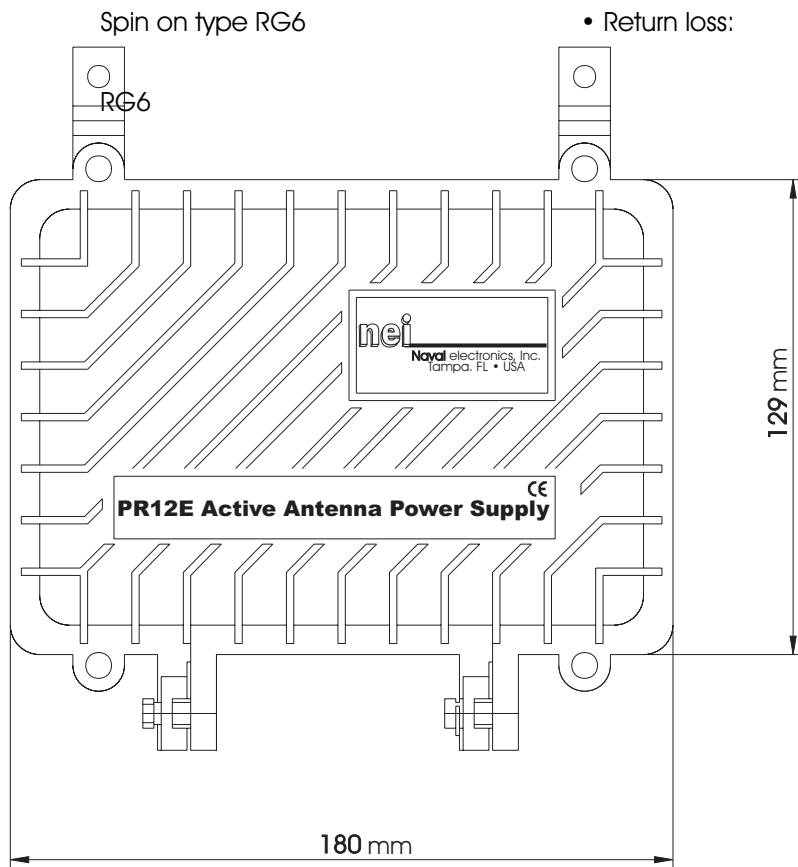
The PR12E is a special CE marked version for Europe. It is supplied with a shrouded transformer and other "shockfree" components and features fuses on both primary and secondary power supply circuits.

The PR20E is also CE marked and it's 300 mA output will supply our larger PR420 and PR422 antennas. A 20dB signal attenuator is included for use in high signal areas.

Specifications

PR12, PR12E and PR20E Active Antenna Power Supplies Low Band VHF TV Amplifier

- Primary Power: 110/220 VAC 12 or 24 VDC
- Frequency Range: 100 kHz 860 Mhz
- Impedance in/out: 75 ohm
- Coax Cable Connector: Spin on type RG6 typical
- Cable glands:
- Current Capability: 90/350mA continuous
- Temperature Range: 40 +60 C
- Internal Connector: "F" type female
- Return loss: 15dB



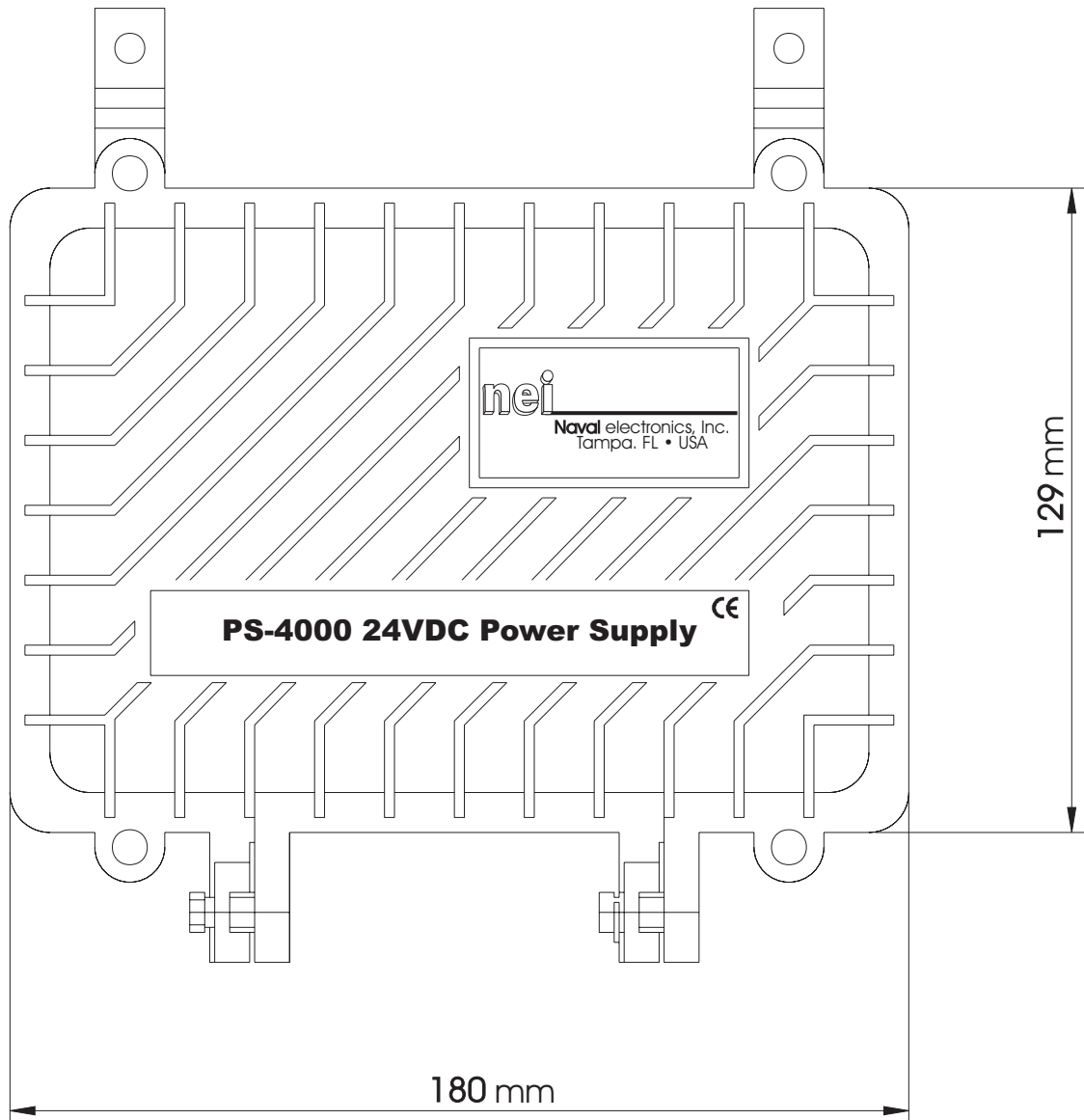
Naval electronics, inc.

PS-4000 24VDC Switch Mode Power Supply

The PS-4000 supplies 24VDC to the 4000 series cassette amplifier system. It will operate from 85-240 VAC inputs. The hinged cast metal EMI shielded case is highly water resistant and "o" ring cable glands are provided for all connecting cables.

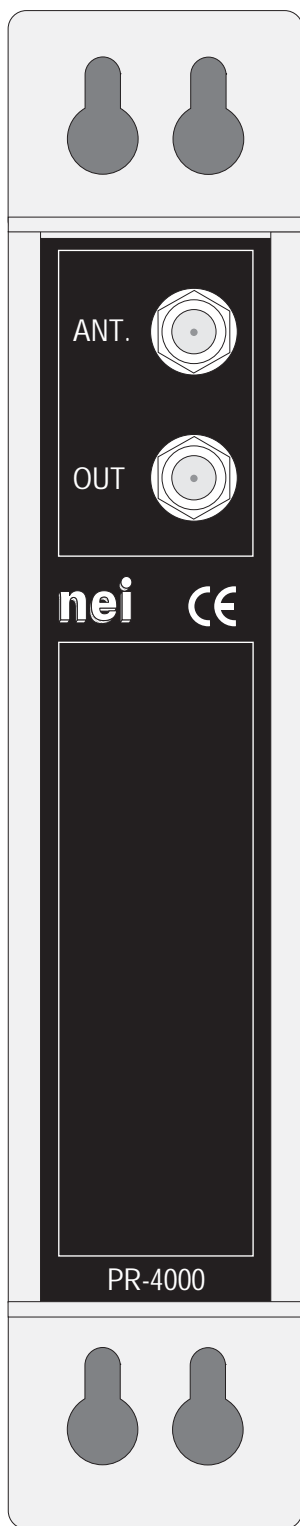
Specifications PS-4000 24VDC Switch Mode Power Supply

- Primary Power: 85-240 VAC
- Current Capability: 1.2 amps
- Temperature Range: -40 +60 C
- Cable glands: RG6



Naval electronics, inc.

PR-4000 Input Cassette and Power Conditioner



The PR-4000 provides 15 VDC power for an active antenna, namely for the PR-430 AM-SW antenna and PR-420 or PR-422 omni TV antennas. It also supplies 24 VDC regulated to the 4000 series amplifiers.

The signal is brought in from the antenna through a DC block and then appears at the "OUT" connector to be passed on to the amplifier system.

Optionally available is an antenna cut out feature with a 3 second time delay to disable the active antennas when the ship's main transmitters are in operation.

The PR-4000 will accept 26 - 30 VDC as primary power. If 110/220 VAC input is required, feed the PR-4000 with our external PS-4000 AC

Specifications

PR-4000 Input Cassette and Power Conditioner

- Antenna RF-input: 100kHz - 860 MHz, unfiltered, (PR-422 antenna).
- Antenna power: 15 VDC regulated, apx 350 mA full load.
- 24 VDC Supply input: 3 pole screw terminal.
- Antenna cut off relay: 2 pole screw terminal
- Temperature Range: -40 +60C
- Return Loss: 15 - 20dB
- Output voltage to CAS: Two DC connectors wired in parallel. 24 VDC regulated.

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

PR-4010 Input Cassette and Power Conditioner



The PR-4010 provides 15 VDC power for several active antennas, including the PR-430 AM-SW antenna and PR-420 or PR-422 omni TV antennas. It also supplies 24 VDC regulated to the 4000 series amplifiers. Inputs are provided for cable TV and an auxiliary input such as a modulator or group of modulators.

The PR-4010 provides a cut out feature with a 3 second time delay to disable the active antennas when the ship's main transmitters are in operation.

The PR-4010 will accept 26 -30 VDC as primary power. If 110 /220 VAC input is required, feed the PR-4010 with our PS-4000 external power

Specifications

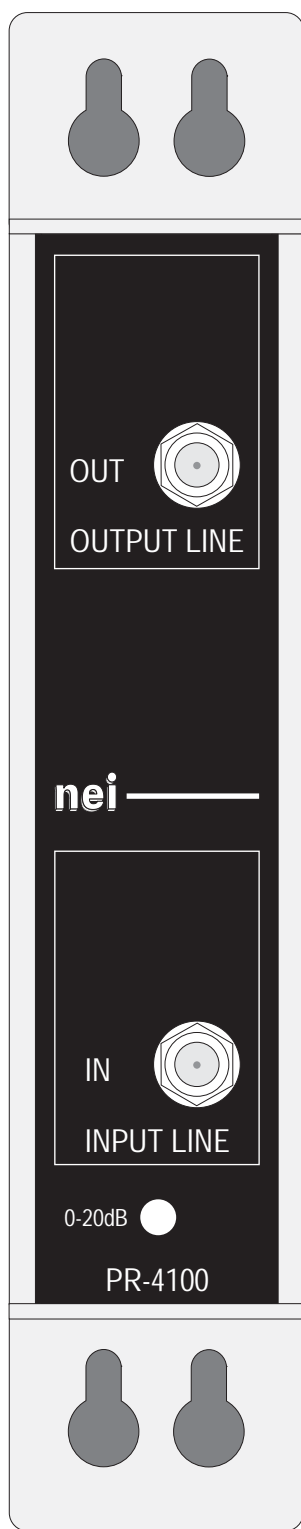
PR-4010 Input Cassette and Power Conditioner

- Antenna RF input : 40-860 MHz, high pass filter, (PR-420 antenna).
- Antenna RF-input : 100kHz - 860 MHz, unfiltered, (PR-422 antenna).
- VCR RF-input : (Option 2: Plug in VCR filter board)
- Antenna power A+B+C: 15 VDC regulated, apx 350 mA full load.
- Antenna voltage ON/OFF: 3 X 2 pole jumpers at PCB level.
- DC Supply input: 3 pole screw terminal
- Antenna cut off relay: 2 pole screw terminal
- Temperature Range: -40 +60C
- Return Loss: 15dB typical
- Output voltage to Amps: Two DC connectors wired in parallel. 24 VDC regulated.

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

PR-4100 AM-SW Band Amplifier



The PR-4100 is an AM-SW band amplifier covering the range 100 KHz to 30 MHz which includes the Low Frequency, Medium Frequency and High Frequency International Short Wave Bands. It is for use in larger Series 4000 systems and provides a high output across it's entire frequency range. The output level is adjustable over a 20 dB range with a convenient front panel Attenuator Control.

Specifications

PR-4100 AM Amplifier

- Frequency Range: 100kHz-30MHz
- Gain: 40-25 dB
- Noise Figure: < 10 dB
- Max Level out: 126 dBuV
- Impedence in-out: 75 ohms
- Attenuator Range: 20dB
- 3rd Order IM: VO 60dB (DIN 45004B)
- Supply Voltage: 24 VDC regulated
- Current Consumed: 100 mA.
- Temperature Range: -40 +60C
- Return Loss: 15 - 20dB

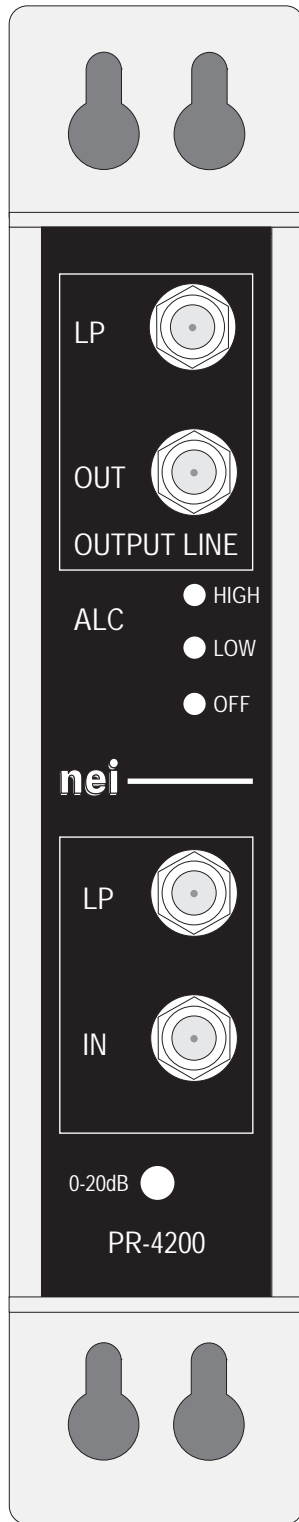
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3265

PR-4200 Low Band VHF TV-FM Amplifier



The PR-4200 is a low noise TV-FM Band Amplifier for use in the 4000 series Marine TV Head End System. The band 40-110MHz is amplified through two stages of High Frequency Transistors and an Automatic Level Control (ALC) protects from overload in high signal areas. A series of front panel LED's indicates signal conditions and ALC action. A 20dB attenuator is provided on the front panel to

Specifications

PR-4200 Low Band VHF TV-FM Amplifier

- Frequency Range: 40-110MHz
- Gain: 38dB
- Noise Figure: <6dB
- Max Output Level: 115dBuV
- ALC Range: 30dB
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 180mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

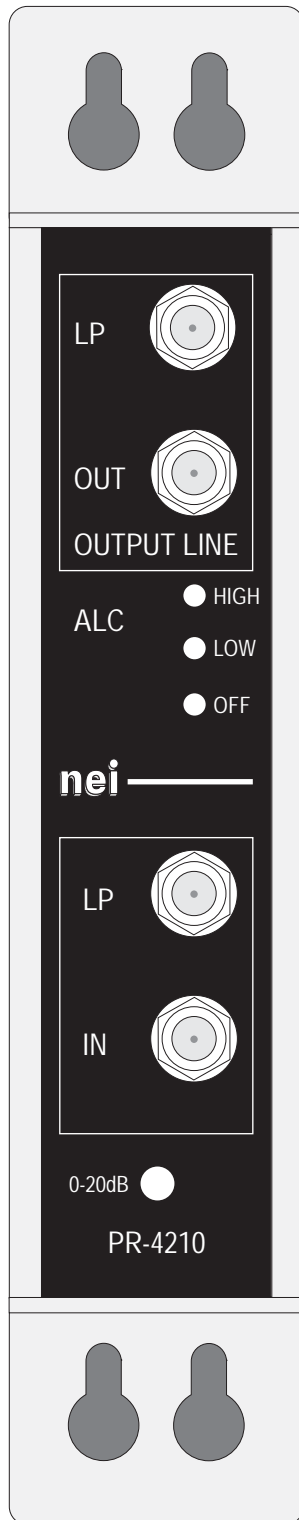
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

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Ref: 3250-0

PR-4210 Low Band TV Amplifier



The PR-4210 is a low noise TV Band Amplifier for use in the 4000 series Marine TV Head End System. The band 40-70MHz is amplified through two stages of High Frequency Transistors and an Automatic Level Control (ALC) protects from overload in high signal areas. A series of front panel LED's indicates signal conditions and ALC action. A 20dB attenuator is provided on the front panel to

Specifications

PR-4210 Low Band TV Amplifier

- Frequency Range: 40-70MHz
- Gain: 38dB
- Noise Figure: typical 6dB
- Max Output Level: 115dBuV
- ALC Range: 30dB
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 180mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3250

PR-4300 FM Radio Amplifier



The PR-4300 is a low noise FM Band Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. The FM band 88-110MHz is amplified through three stages of High Frequency Bi-Polar Transistors and a 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4300 FM Radio Amplifier

- Frequency Range: 88-110MHz
- Gain: 45dB
- Noise Figure: <6dB
- Max Output Level: 115dBuV
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 160mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3266

PR-4400 High Band VHF TV Amplifier



The PR-4400 is a low noise TV Band Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. The Cable TV band 170-470MHz is amplified through three stages of High Frequency Bi-Polar Transistors and a 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4400 High Band VHF TV Amplifier

- Frequency Range: 170-470MHz
- Gain: 45dB
- Noise Figure: <6dB
- Max Output Level: 115dBuV
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 160mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

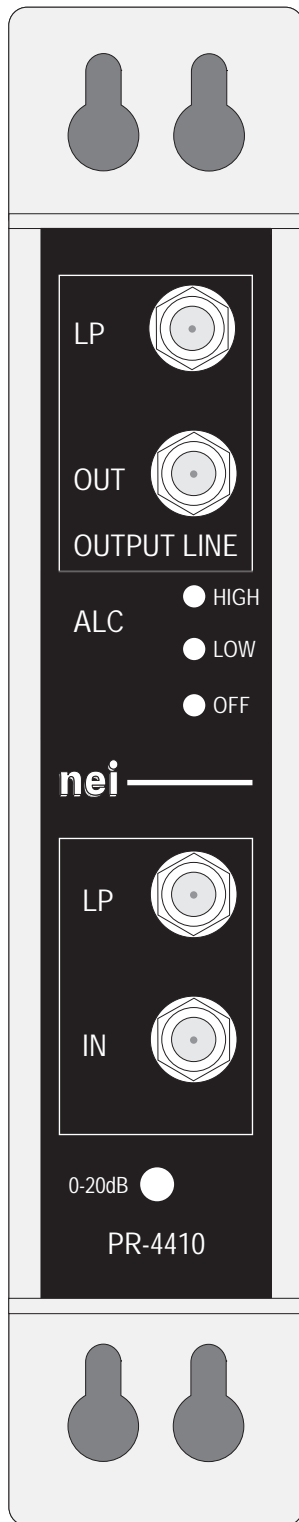
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

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Ref: 3251ss

PR-4410 High Band VHF TV Amplifier



The PR-4410 is a low noise TV Band Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. The TV band 170-230MHz is amplified through three stages of High Frequency Bi-Polar Transistors and a 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4410 High Band VHF TV Amplifier

- Frequency Range: 170-230MHz
- Gain: 38dB
- Noise Figure: <6dB
- Max Output Level: 115dBuV
- ALC Range: 30dB
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 160mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

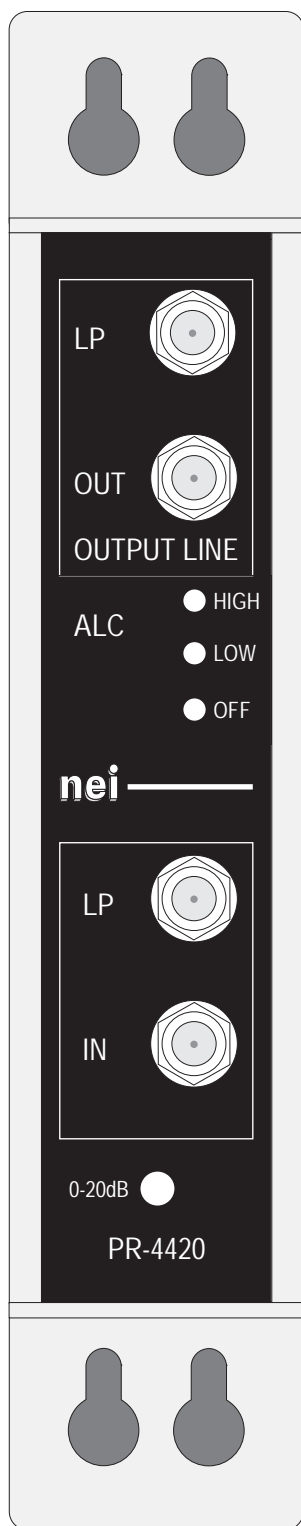
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

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Ref: 3251

PR-4420 High Band VHF TV Amplifier



The PR-4420 is a low noise TV Band Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. The TV band 170-400MHz is amplified through three stages of High Frequency Bi-Polar Transistors and a 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4420 High Band VHF TV Amplifier

- Frequency Range: 170-400MHz (EU Band II)
- Gain: 45dB
- Noise Figure: < 6dB
- Max Output Level: 115dBuV
- Attenuator Range: 20dB
- ALC Range: 30dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 160mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

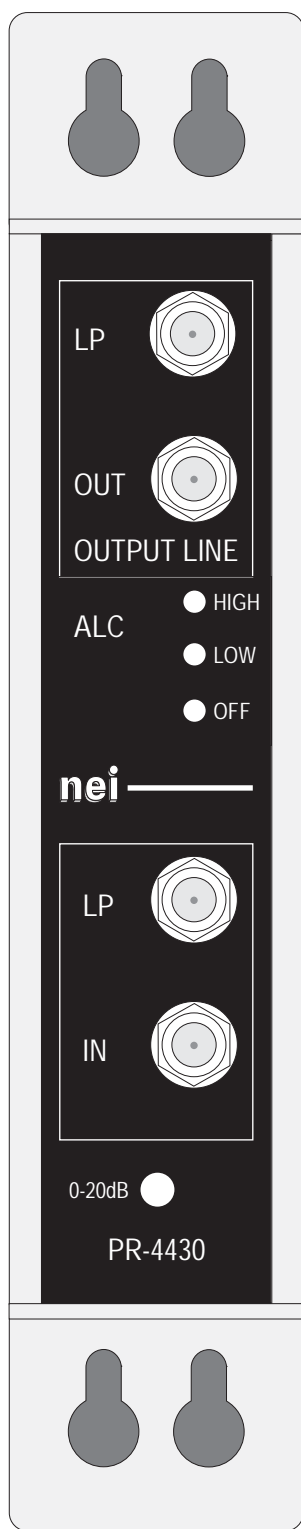
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

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Ref: 3251s

PR-4430 VHF-UHF TV Amplifier



The PR-4430 is a low noise VHF-UHF TV Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. It covers all international TV channels and features a GaAs FET IC driving three low noise bipolar transistors. A 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4430 Three Band TV Amplifier

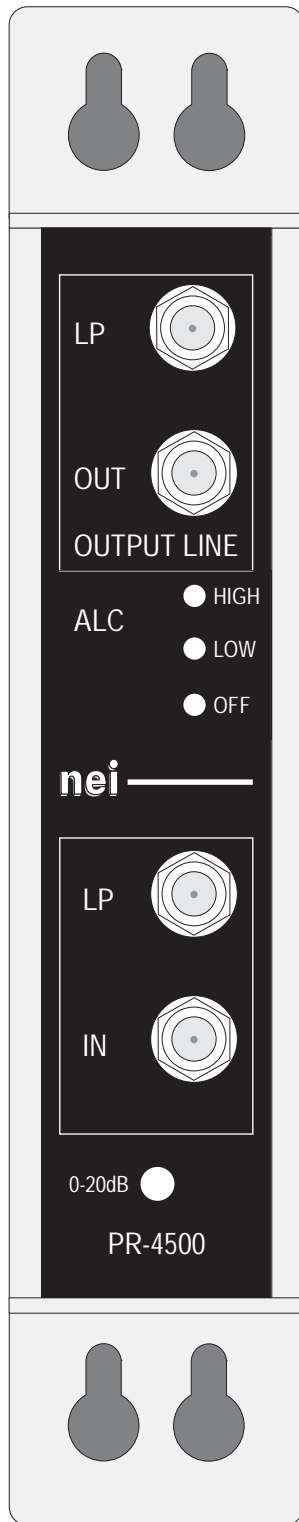
- Frequency Range: 40- 70 MHz
170-230 MHz
470-860 MHz
- Gain: VHF > 38dB
UHF > 45dB
- Noise Figure: < 6dB
- Max Output Level: 116dBuV
- Attenuator Range: 20dB
- ALC Range: 30dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15dB typical
- Supply Voltage: 24 VDC regulated
- Current Consumed: 280mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

Naval electronics, inc.

7028 West Waters Ave#393, Tampa, FL 33634-2292, Ph:(813) 885-6091, Fax:(813) 885-3601, email: sales@naval.com, www.naval.com

PR-4500 UHF-TV Amplifier



The PR-4500 is a low noise UHF-TV Band Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. The TV band 470-860MHz is amplified through a microwave integrated circuit and three stages of High Frequency Bi-Polar Transistors. A 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4500 UHF-VHF TV Amplifier

- Frequency Range: 470-860MHz
- Gain: 45dB
- Noise Figure: <6dB
- Max Output Level: 115dBuV
- Attenuator Range: 20dB
- ALC Range: 30dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 260mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3252

PR-4600 AM-FM Radio Amplifier



The PR-4600 is a low noise AM-FM Radio Amplifier for use in the 4000 series Marine AM-FM-TV Head End System. It covers the AM (100kHz-27MHz) and the FM (88-110MHz) radio bands. A 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications

PR-4600 AM-FM Radio Amplifier

- Frequency Range: 100kHz-27MHz and 88-110MHz
- AM Gain: 40-20dB
- FM Gain: 38dB
- Noise Figure: AM <10dB ; FM <7dB
- Max Output Level: AM 125dBuV ; FM 116dBuV
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 190mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

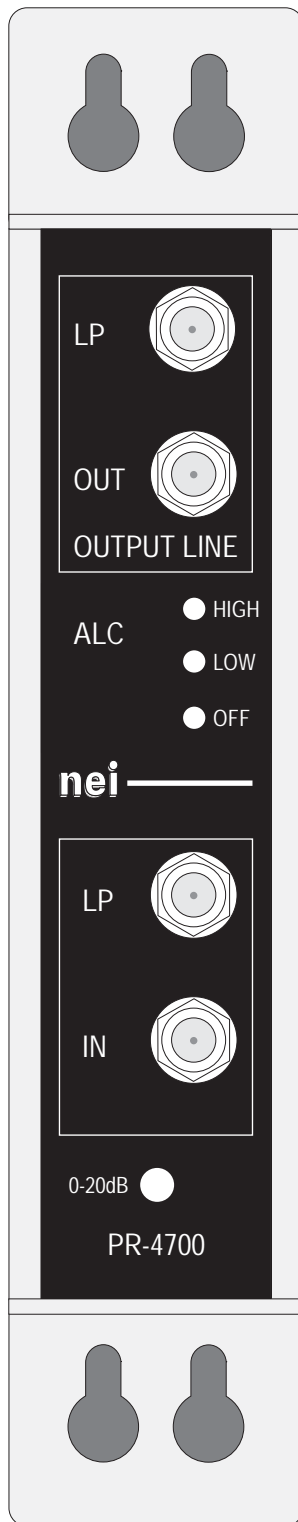
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3260

PR-4700 FM-TV Amplifier



The PR-4700 is a low noise broadband FM-TV Amplifier covering all international TV frequencies as well as the FM Radio Band. A 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications PR-4700 FM-TV Radio Amplifier

- Frequency Range: 40-230MHz and 470-860MHz
- VHF Gain: 38dB
- UHF Gain: 44dB
- Noise Figure: <10dB
- Max Output Level: 116dBuV
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- ALC Range: 30dB
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 300mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3241

PR-4750 CATV Amplifier



The PR-4750 is a low noise broadband CATV Amplifier. A 20dB attenuator is provided on the front panel to adjust the output signal level.

Specifications PR-4750 CATV Amplifier

- Frequency Range: 70-170MHz and 230-470MHz
- VHF Gain: 38dB
- UHF Gain: 44dB
- Noise Figure: <10dB
- Max Output Level: 116dBuV
- Attenuator Range: 20dB
- 3rd Order IM: 060dB VO (DIN 45004B)
- ALC Range: 30dB
- Return Loss: 15-20dB
- Supply Voltage: 24 VDC regulated
- Current Consumed: 300mA
- Connector: "F" type, gold plated
- Temp Range: -40+60 C
- Dimensions: 210mm x 41mm x 96 mm

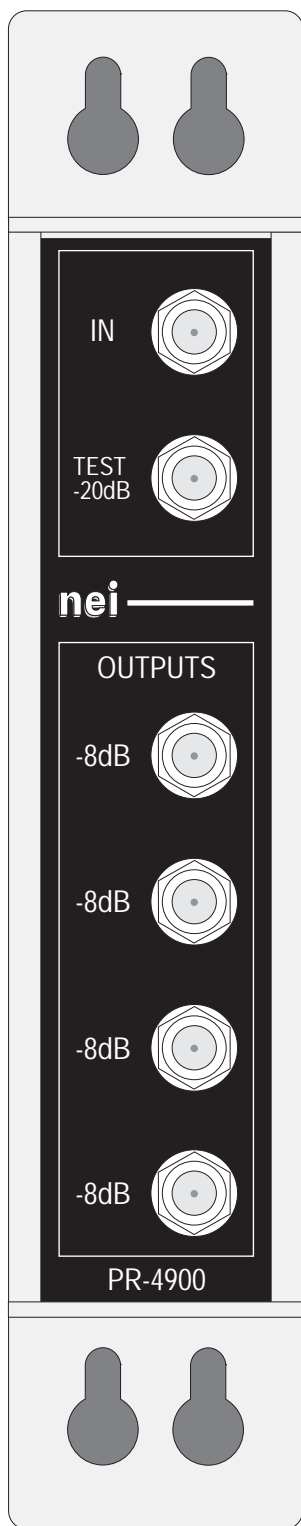
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3241

PR-4900 4-Way Output Filter



The PR-4900 is a low loss ferrite transformer coupled splitter for use in the 4000 series Marine TV Head End System. Four 8 dB outputs are provided for connection to the ship's branch lines. A -20 dB test point is provided for monitoring levels without disturbing system operation.

Specifications

PR-4900 4-Way Output Filter

- Frequency Range: 100 kHz - 860 MHz
- In-Out Impedance: 75 ohm
- Connector: "F" type, gold plated
- Splitter Loss: 8dB
- Return Loss: 15dB typical
- Dimensions: 21mm X 41mm X 97mm

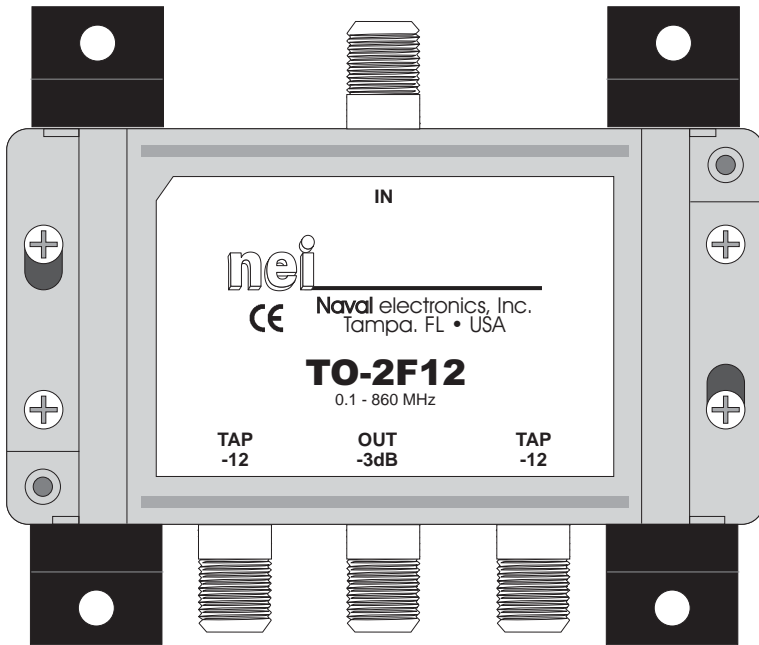
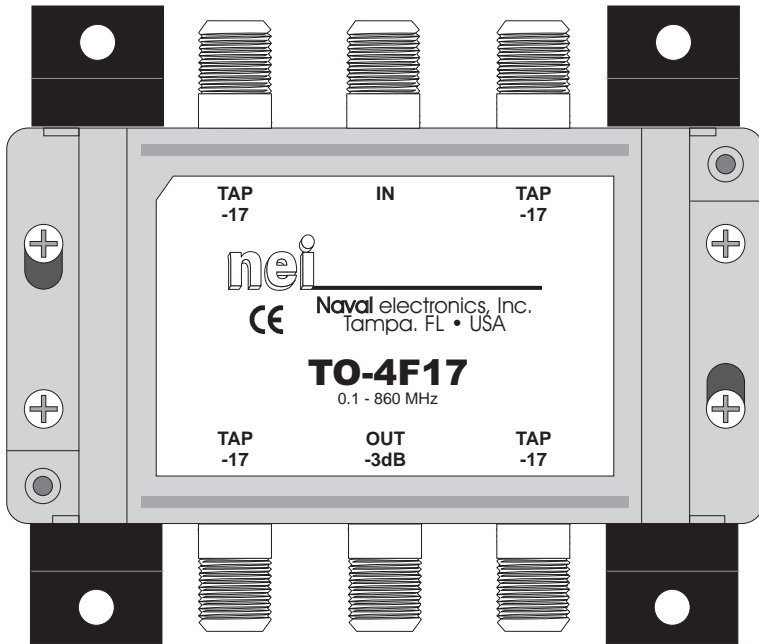
All 4000 Series Cassettes are mounted in a Chromate treated extruded aluminum EMI shielded case with Gold plated "F" connectors. When mounted in the AC-4000 Lockable Cabinet, EMI shielding is further enhanced. BNC connectors are available as an option.

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Ref: 3281

TO-4F and TO-2F Directional Couplers



The new series of directional couplers or “tap-offs” are designed for Marine and MATV applications where the complete Radio and TV spectrum is passed throughout the vessel. They feature a robust insulated plastic mounting base to keep the distribution system isolated from ship’s ground and thus avoid problems associated with ground loops. The stand off base also allows more room for making cable connections. It is not necessary to terminate any unused ports, however the last “tap” on the branch must have a termination on its output port.

Several values of tap isolation are available from 21 to 8 dB for use along branch lines as signal values fall and to help provide a balance of signal levels throughout the network. All “F” connectors are an integral part of the cast casings and allow the connecting cables to be wrench “torqued” without causing damage to the internal circuitry.

Specifications

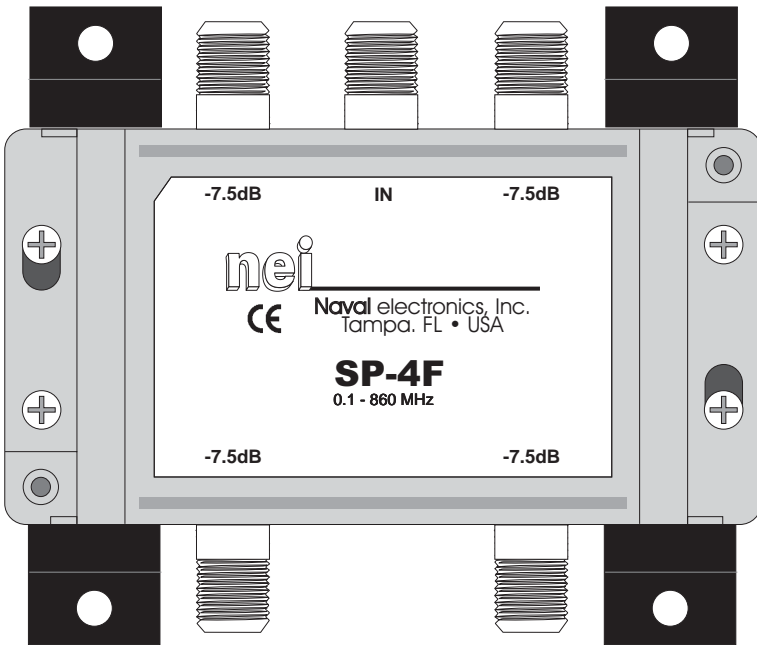
TO-4F and TO-2F Directional Couplers

- Frequency Range: 100 kHz - 860 Mhz
- Tap Isolation: 8 - 21 dB
- Directional Isolation: > 17 dB
- Port to Port Isolation: > 36 dB
- Return Loss: > 20 dB
- Temp Range: -40+60 C
- Screening Factor: > 75 dB
- Impedance: 75 ohm
- Through Loss:

TO-2F8	-3.8dB
TO-2F12	-2.8dB
TO-2F17	-1.2dB
TO-2F21	-1.2dB
TO-4F10	-4.5dB
TO-4F12	-4.0dB
TO-4F17	-2.8dB
TO-4F21	-2.8dB

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Passive Splitters SP-4F and SP-2F

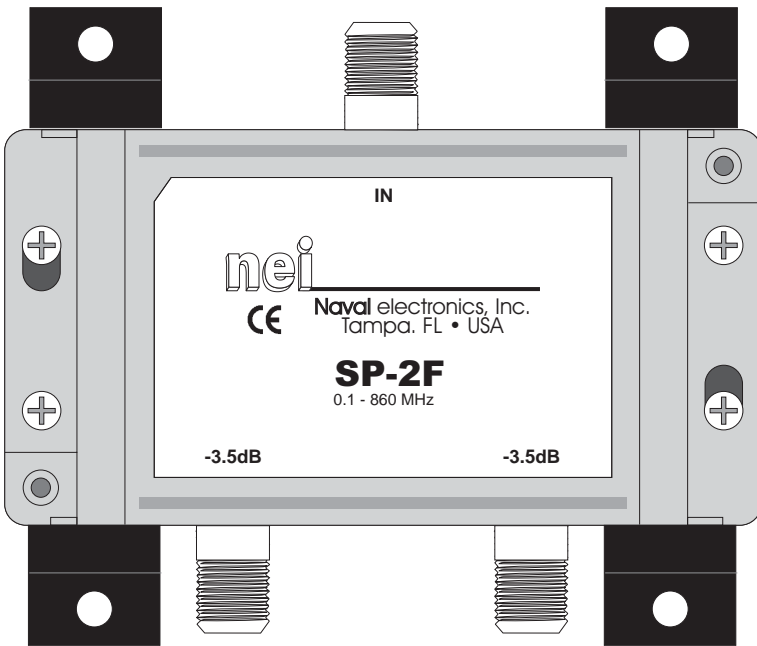


The new series of Passive Splitters are designed for Marine and MATV systems and especially to work with the 4000 series system as they pass both Radio and TV frequencies from 100 kHz to 860 MHz. They feature a robust insulated plastic mounting base to keep the distribution system isolated from Ship's ground and thus avoid problems associated with ground loops. The stand off base also allows more room for making cable connections. All "F" connectors are an integral part of the cast casings and allow the connecting cables to be wrench "torqued" without causing damage to the internal

Specifications

Passive Splitters SP-4F and SP-2F

- Frequency Range: 100 kHz-860 MHz
- Splitter Loss 4-way: 7.5 dB
- Splitter Loss 2-way: 3.5 dB
- Impedence: 75 ohm
- Isolation port to port: >20 dB
- Return Loss: >20 dB
- Temp Range: -40+60 C

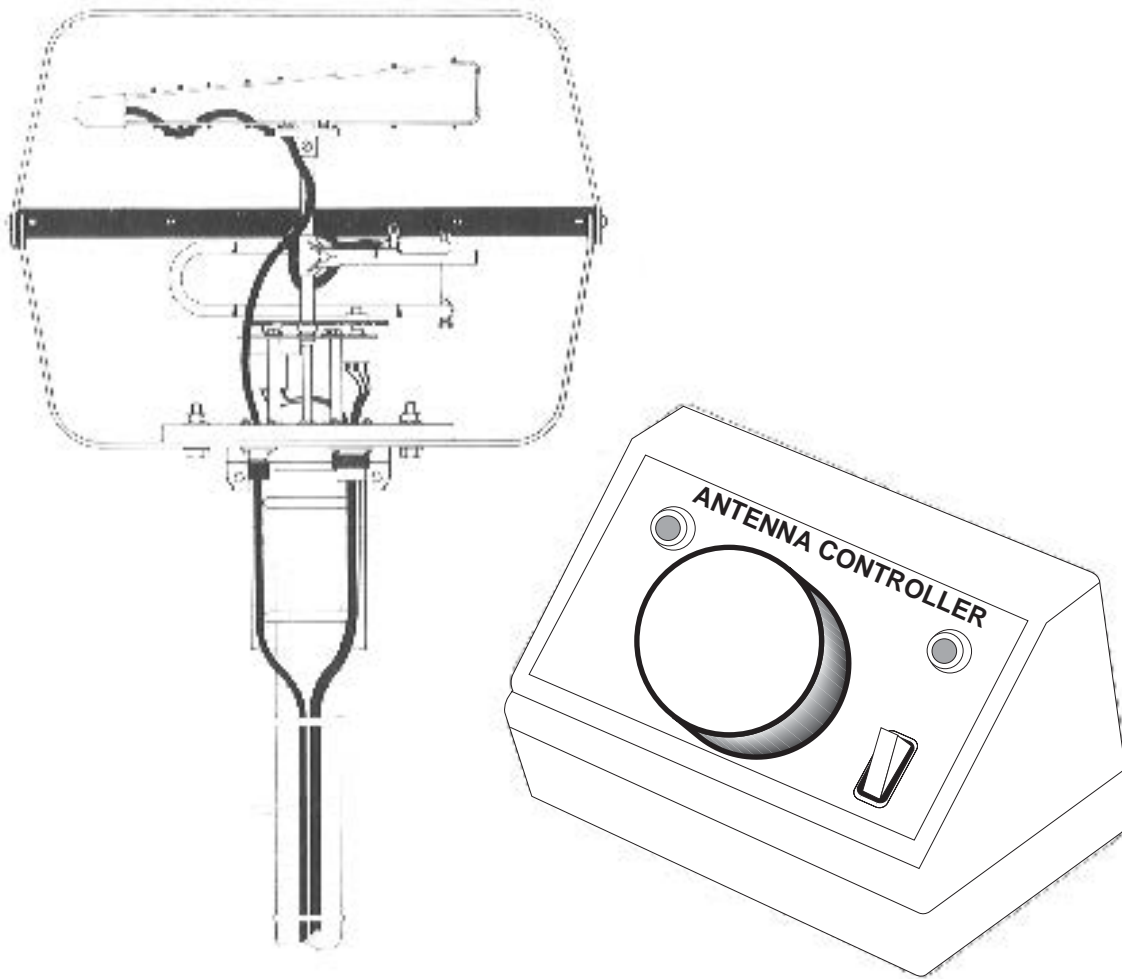


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J7208 Log Periodic Antenna with Rotor

The J7208 Rotating Marine TV Antenna is enclosed in a Marine Cycloc ABS weather proof shroud. It has the advantage, when used in port, of eliminating reflections. When a new heading is selected at the controller, the antenna turns until it is on the new position and then it stops. LED indicators show the rotor status ie: turning right/left/stopped. Several models are available for different supply voltages.

The package includes antenna, radome, mounting flange, rotor controller and connectors. A five core control cable is available by the foot (extra)

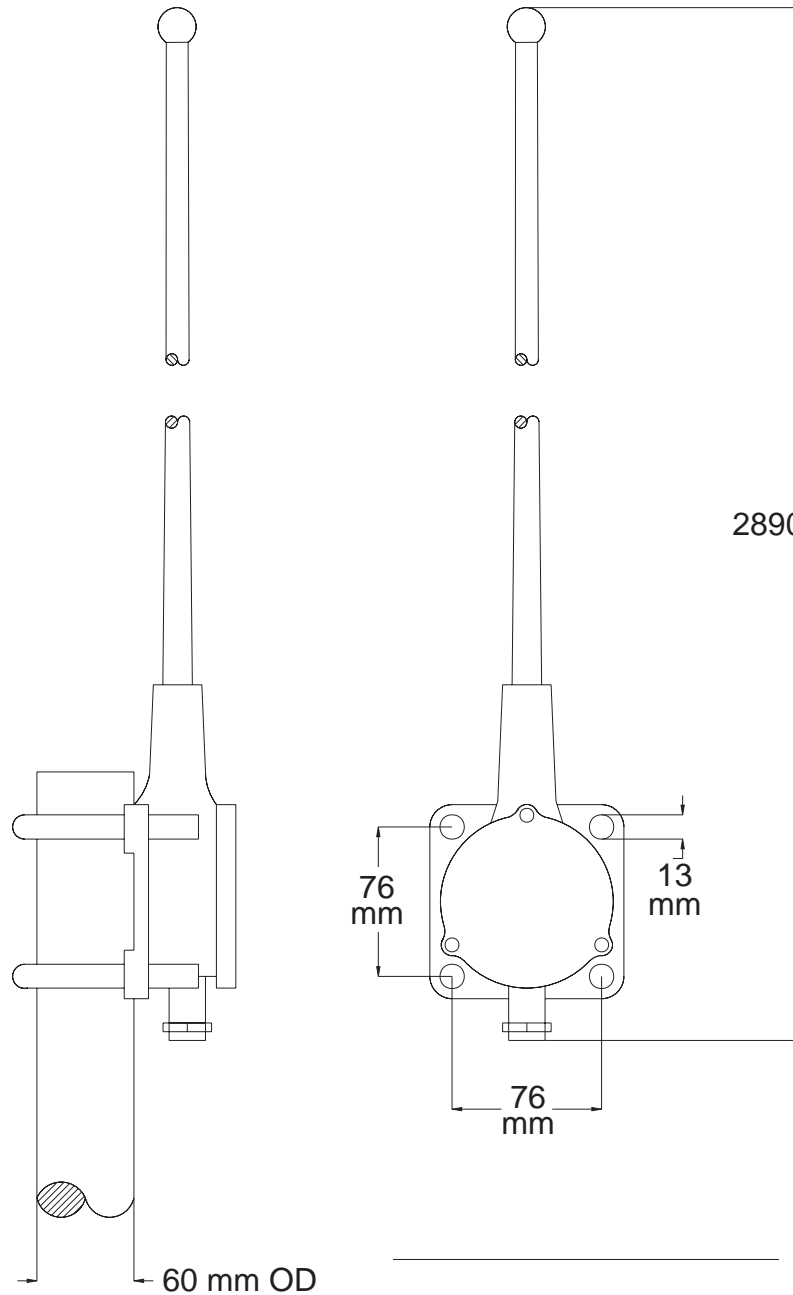


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STA30 and STA50 Passive Ship's Receiving Whip Antenna

The STA30 is a solid fiberglass reinforced polyester rod Receiving Antenna of exceptional strength for use in temperatures ranging from -40 to + 60 C and winds of up to 200km/hr. It is normally used with Autoalarm and Safety Receivers and covers all band reception to 30 MHz. Both antennas are supplied with a wideband symmetrical matching transformer. The transformer primary winding has overload protection and it is isolated from the secondary winding.

Mounting hardware can be supplied for pipe mounting up to a 60mm pipe or for bolting to a steel plate or bulkhead.



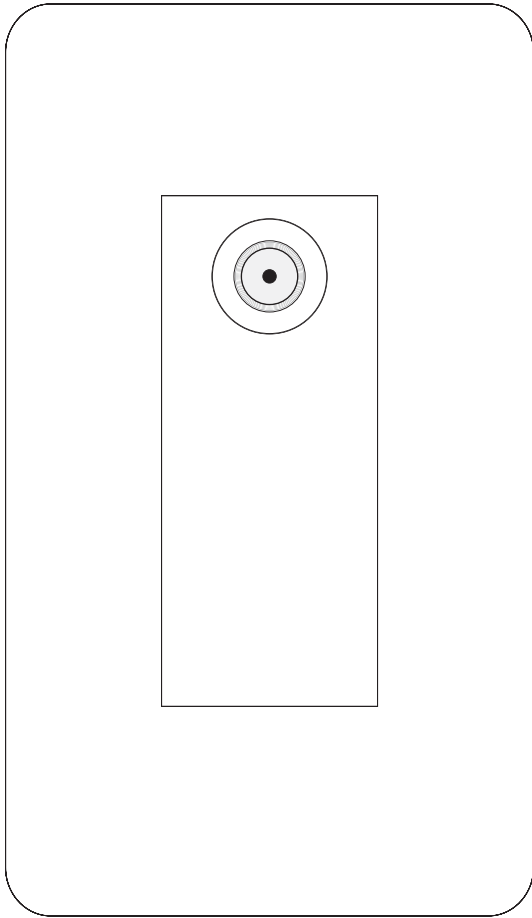
Specifications

STA30 and STA50 Passive Ship's Receiving Whip Antenna

- Length: approx 2.9 Meters and 4.9 Meters
- Insulation Resistance: >10Meg Ohm
- Overload Protection: Gas discharge device at 90Volts
- Polarization: Vertical
- Horizontal Polarization: Omnidirectional
- Cable connection: Screw terminal (PG11)IP65
- Cable diameter: 1011 mm
- Screen diameter: 78 mm

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"WO" Type TV Wall Outlets with Directional Couplers

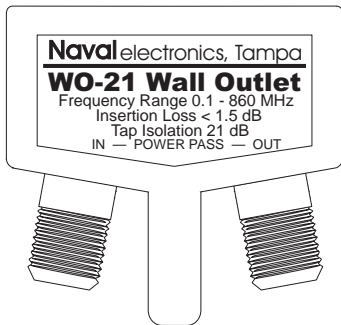


The "WO" series of TV wall outlets feature a built in single drop Directional Coupler (Tap-Off). The Directional Coupler is contained in a plated cast metal housing. The 3 "F" type female connectors are an integral part of the casting so that mating connectors can be "wrench torqued" without damage to the internal circuitry. An attractive plastic mount and face plate provides ground isolation and eliminates problems commonly caused by ground loops on board ship

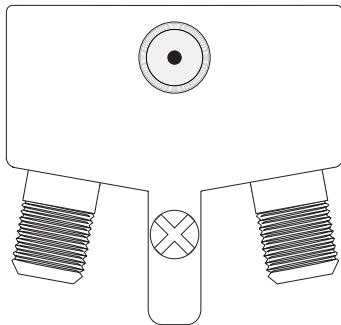
Insertion Loss is less than 1.5 db allowing outlets to be daisy chained for some distance on a branch line. The directional couplers pass AM and FM radio as well as VHF and UHF TV. Tap isolation values of 21, 17, 12 and 7 dB are available to compensate for progressive losses

Specifications

"WO" Type TV Wall Outlets with Directional Couplers



- Operating temperature: -40+60 C
- Impedance: 75 ohm
- Screening factor > 80dB
- Frequency Range 100kHz-860Mhz

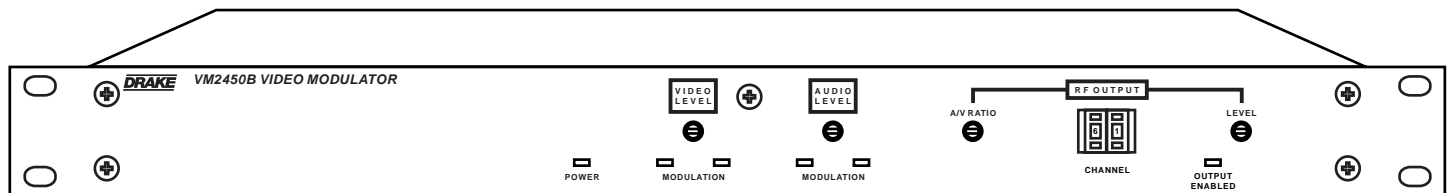


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VM2450B Frequency Agile Modulator

The VM2450B is a high quality, Vestigial Sideband Agile Modulator with synthesized visual and audio carriers. The VM2450B is designed to accept video and audio baseband signals from a VCR, satellite receiver, or similar equipment and provides reliable operation in a densely crowded SMATV or cable environment. The VM2450B is used for site TV on many U.S. Navy and ships and exclusively by Disney Cruise Lines..

- Frequency agility with 65 channel coverage from 54 MHz to 450 MHz.
 - High output power adjustable to +60 dBmV.
 - Emergency Alert System (EAS) ready using composite IF loop.
 - Auto switching from standard programming to EAS status with optional Drake IFM80 EASModulator and IFS80 Switch.
 - IF loop-through connections for scrambling encoders or IF stereo processors.
 - Front panel modulation indicators and level controls to simplify installation and operation.
 - Automatic channel offsets where specified by FCC regulations.
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