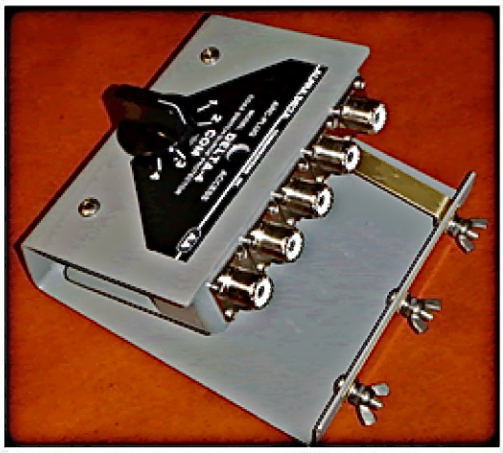
ALPHA DELTA COMMUNICATIONS, INC. AA

The Alpha Delta Model ASC Antenna Selector Console Desk Top Coax Switch Series.



The Alpha Delta Model ASC Antenna Selector Console desk top coax switch series brings a new level of versatility and convenience to your station operation. This series retains all the features and specifications of the precision 4 position DELTA-4B series (see WEB site for DELTA-4B specs, pictures and info), including ARC-PLUG (tm) module surge protection, in a desk top console that will sit on your desk next to your gear. The console does not have to be secured or bolted down!

The console features a powder coated steel housing and a solid brass ground buss, with #10 wire attachment hardware, across the rear of the housing providing a common ground point for all station equipment and accessories. "Non-slip" feet are attached for solid stability.

The Model ASC Console is available in addition to the famous DELTA series surge protected coax switch line. The entire DELTA family features solid mechanical cavity thru-line micro-strip switching, without the use of problematic electronics and microprocessors. The series offers low loss constant impedance performance and best co-channel rejection (typ >60dB) depending on connector type and freq. Rated at 2 kW SSB/CW output. Made in our ISO-9001 certified facility.

You will note the switch is positioned in the housing at a 20 degree angle from the horizontal. If the switch was 90 degrees from horizontal (vertical), the cables would come out at such an angle that there would be large cable "loops" and they would tend to try to pull the switch over backwards or move it back across the desk. A 20 degree angle will provide effective viewing and minimize or prevent the cables and hand pressure from moving the console.

The solid brass ground bus on the housing can be used to provide a single point ground for your equipment and accessories. It also provides a ground point for the operation of the Model D-4 ARC-PLUG (tm) gas tube surge module located in the switch. A proper ground wire must be attached to the bus for the operation of the Model D-4 during surge discharges. Proper grounding techniques are covered in various ARRL and other publication materials.

Alpha Delta Communications, Inc. Phone 606-598-2029. FAX 606-598-4413

DELTA - 4B SERIES

LIGHTNING SURGE PROTECTED 4 POSITION RF COAX SWITCH

WITH FIELD-REPLACEABLE SURGE PROTECTOR PILL

ALPHA DELTA COMMUNICATIONS
Manchester, Kentucky 40962 • (606) 598-2029 • FAX (606) 598-4413

THE MODEL DELTA-4 SWITCH IS A PRECISION RF SWITCHING DEVICE EMPLOYING THE LATEST HIGH TECHNOLOGY DESIGNS

NOTE: SAME DATA APPLIES FOR DELTA-2B TWO POSITION SWITCH

--SPECIFICATIONS--

POWER RATING- 1.5 kW PEP/CW ICAS duty cycle **IMPEDANCE-** 50 OHMS **CONNECTORS-** DELTA-4B, type UHF; DELTA-4B/N, type N

SWITCH POSTIONS Four, two either side of the "common" center, connector.

LIGHTING SURGE PROTECTION Alpha Delta Model D-4 internally mounted, field-replaceable ceramic gas tube Arc-Plug Cartridge Pill.

SPECIAL SWITCHING FUNCTIONS When the knob points to the center (ground) switch position, all antenna circuits are internally disconnected and grounded. When the knob is in an active position, the unused antenna ports are grounded. The active position circuit is continuously protected by the Model D-4 Arc-Plug Cartridge Pill.

GROUNDING REQUIREMENTS A separate, external ground wire must be used from one set of user supplied mounting hardware (through either thru-hole on the base plate) to the station ground system. (Not the equipment chassis.) The Arc-Plug Cartridge Pill will not operate without a good ground. Note: Paint should be removed at point of ground hardware connection to base plate. It is also good practice to ground the coax shield at point of entry to the building.

ELECTRICAL SPECIFICATIONS Nominal (S0-239 CONNECTORS)

	VSWR	dB Loss	dB Isolation
30 MHz	<1.1:1	.1dB	>60dB
150 MHz	<1.3:1	.15dB	>50dB
450 MHz	<1.4:1	.5dB	50dB

PRICES & SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

These devices are not intended to protect equipment, personnel or structures from the effects of a direct lightning strike as these events are unpredictable in strength and vary widely in severity, possibly well above our surge handling specifications. However, these devices are designed to provide effective equipment protection from antenna induced atmospheric surge voltages resulting from electrical static voltage discharges and nearby lightning induced voltage discharges, within the ratings of these devices.

NOTE: Model DELTA-2B/N has NSN 5985-01-551-0890 and number AN/URN-31(V), auto ID system, for MIL users as assigned by the Defense Logistics Agency (DLA). Cage Code 389A5

The Models DELTA-2B/N, DELTA-4B/N and DELTA-2B/TNC have typical loss of 0.5 dB at 1.6 GHz

CAUTION: **Do NOT tighten Model D-4 pill. It is factory adjusted. Finger tight only for replacement**

ARC-PLUG® CARTRIDGE REPLACEMENT

Additional D-4 Arc-Plug® Cartridge Pills are available from Alpha Delta or your dealer at a nominal cost. Replacement in the field is quite easy, and the only tool required is a screwdriver.

Should a severe lightning hit occur, the ceramic gas tube Arc-Plug® Cartridge Pill will short to ground protecting your equipment. The pill will remain shorted however (unlike its recovery to open circuit condition after a less severe hit or transient) and must be removed or replaced in order to continue operation. If replacement pill is not immediately available you can continue operation (without lightning transient protection) by removing the shorted pill from the switch until you obtain its replacement.

To replace the pill, use a screwdriver to remove the front panel access screw by turning it counter clockwise. Then, turn the switch upside down until the Arc-Plug® Cartridge Pill drops out of the access hole. Now, turn the switch right side up, drop the new Arc-Plug® Cartridge Pill into the access hole. (Make sure the Pill is lying with its metal surface up) then, insert the set screw and tighten it in a clockwise direction with the screwdriver until finger tight. (CAUTION-Over tightening of the set screw can damage the Arc-Plug® Pill.)

Note: The Alpha Delta Model D-4 Arc Plug® Cartridge Pill is designed to reduce the hazards of lightning induced, or other high voltage induced surges. This device, however, will not prevent fire or damage caused by direct lightning strike to an antenna, power lines or other structure.

Caution: Do Not change switch positions while RF is applied; or when the back cover is removed. This can cause damage to the switch contacts and such damage will not be covered by our warranty.

APPLICATION INFORMATION

The model Delta-4 switch can be used in several different applications, depending upon the installation configuration.

A. **Multiple Antenna, Single RCVR/XCVR Application -** Connect the "jumper" coax from the RCVR/XCVR to the "common" connector on the switch. Connect antennas/dummy load to your choice of positions 1,2,3, or 4 on the switch.

B. **Multiple RCVR, Single Antenna Application-** Connect the single antenna coax to the "common" position on the switch. Connect RCVR "jumpers" to your choice of positions 1,2,3, or 4 on the switch.

Note: Switch specifications, including co-channel isolation in dB, are guaranteed only when using properly installed 50 ohm coaxial cable. Single wire "jumpers" or antenna feeds do not provide proper isolation or VSWR characteristics. For transmitting, any model must be placed at a point in the coax line where VSWR does not exceed 2:1 to prevent high RF voltages from triggering the Arc-Plug® Pill.

Note: The Models DELTA-( )B series switches, in either type N, SO-239 or TNC connector styles, can be used in Multiple Transceiver/Transmitter, Single Antenna Applications--- Connect the single antenna coax to the "common" position on the switch. Connect XCVR/XMTR "jumpers" to your choice of positions 1, 2, 3 or 4 on the switch.

The 50-60 dB typ. co-channel isolation provided by these switches is more than adequate to prevent equipment damage, assuming equipment and switches are properly installed and grounded, as per the instructions. Note SWR caution above with regard to switch placement.

<u>CAUTION:</u> The Model D-4 gas tube ARC-PLUG cartridge has been installed and carefully adjusted at the factory. It passes surge voltages to ground through the device, but does not pass RF.

<u>DO NOT</u> attempt to tighten or adjust this device as over tightening will damage the switch thru-line circuits. If the Model D-4 cartridge needs replacement, follow the instructions on the previous sheets. When installed, adjust the set screw so it is only JUST FINGER TIGHT! Do NOT screw it down tight with a screw driver.

Unless the switch takes a surge beyond its rating, is operated at high VSWR (over 2:1 at the point of installation) with high power (1500 watts), or "hot switched" while transmitting, the need for replacement is very rare.

The need for replacement is indicated by a "dead" receiver or infinite SWR on tune up. This is because the Model D-4 fails in the "fail safe" mode and shorts itself to ground. The equipment is therefore protected until replaced. This switch can be operated normally without the Model D-4 installed, but without equipment protection.

Over tightening and switch thru-line damage will not be covered by warranty.