



AMNC

The **AMNC (Automatic Matching Network Controller)** automates the process of adjusting the matching network to minimise reflected power.

It can also be used for manual matching of an automatic matching network via push buttons.

Utilising a robust analogue design powered by a DC power supply with a worldwide input range. Their robust construction using the latest in switch mode and solid-state design techniques ensure a long and trouble free life even in harsh environments.

The controller can be installed alongside a CPS half-rack RFG using a simple mounting kit.

Connection is made to the designated automatic matching network via a single 25-way cable, normally 5m but longer distances are possible.

Basic information

- Robust analogue design.
- Totally Convection-Cooled.
- Compact Rack-mount design as standard.
- 2U Half-Rack (Standard).
- 2U Full-Rack (Optional).
- 110-240V AC (50/60Hz).
- 24V D.C or other voltage D.C (Optional)



Functions

- Displays the current position of the capacitors on the VFD display.
- Parks the capacitors in a predetermined 'base' position when RF is inactive.
- Allows the base position to be adjusted / preset.
- Allows the base positions to be set by external equipment (Useful for automated processes).
- Allows the current positions to be read by external equipment.
- Buffer for bias voltage.
- Configurable polarity on Phase and Magnitude detector inputs.
- Configurable tuning span, defaults to 180 degrees for air and gas type capacitors.

Models

The controller is available in two formats – 2U half-rack and 2U full-rack.

1. AMNC-HR (AMNC 2U Half-rack)

The controller is Half-Rack, 2U high and can be fitted alongside any one of the Coaxial Power Systems range of low power RF generators up to 600 watts.

2. AMNC-FR (AMNC 2U Full-rack)

The controller is Full-rack, 2U high and is sometimes preferable to customers who also require a Full-rack RF Generator to create consistency with the rack layout and removes the need for blanking panels.

AMNC - Physical	
Model Variants	AMNC – HR (Half rack mounting) – Supplied as Standard AMNC – FR (Full rack mounting) – Optional
Dimensions	AMNC-HR - Supplied as Standard 350mm (D) x 205mm (W) x 88mm (H) – Overall width ^ Front panel width is 241mm AMNC-FR – Optional 180mm (D) x 444mm (W) x 88mm (H) – Overall width ^ Front panel width is 482mm
Weight	3Kg (6.6 lb) MAX.
Chassis and Cover Material	Stainless Steel.
Front Panel Material / Colour	Aluminium, RAL7135 Light Grey.
Style	Rack-Mount Other options are available e.g combined with the AMN – Please consult factory for options.
Connector and Cable Specifications	
Control port	25-pin, Sub-Miniature 'D' Female, with 4-40 jack post
Remote Port (Analog user-port)	15-pin, Sub-Miniature 'D' Male, with 8mm 4-40 jack post
AC Power Input Connector / Cable	IEC Socket – Fitted as standard Captive cable with flying lead – Fitted if 24V D.C is required. Other options are available – Please consult factory.
Electrical	
Line Input	110-240V AC (50-60Hz) – Standard 24V D.C – Optional Other voltages are available – Please consult factory for options
RF Power & Frequency handling capability	The AMNC covers our entire range of RF Generators at all power levels and frequencies.
Control Input	Phase, Magnitude, RF Present (RTB)
Control Output	Motor and position drives for matching network. (Dark space bias voltage control – optional)
Capacitor Re-sets	RF Input is automatically detected and switches out re-set positions of capacitors. When re-set is operating (i.e no RF input) the capacitors can be pre-set to stop at any position within their range.
Local Control and Remote Interface	
Local Control	Push-button controls with VFD display indicators for: Manual/Automatic selection push-button for each capacitor Drive push-buttons (max/min) for each capacitor Tuning Capacitor position readout Loading Capacitor position readout Setting of capacitor base positions readout Dark Space Bias voltage readout (if fitted)
Remote Interface	External source indicators for: Tuning Capacitor position Loading Capacitor position Setting of capacitor base positions Dark Space Bias voltage (If fitted)
Environmental	
Operating Temperature	0-40°C (32°F-104°F)
Storage Temperature	-20°C to +65°C (-4 to 149°F)
Cooling Requirements	
Cooling	Convection cooled
Other	
Standards	CE Certification BS EN ISO 9001:2008 EN61000-3-2: 2006 EN6100-3-3/A2: 2005 EN61326-1: 2006 EN61010-1: 2001
D.C Bias voltage measurement & control (Optional)	
<p>For certain plasma processes e.g. sputtering and reactive ion etching, the DC bias voltage across the plasma is an important parameter. A probe to measure this voltage (0-1999 Volts) may be fitted to the network. The probe read-out is displayed on the controller front panel.</p> <p>A multiway cable (optional) may be used to connect the 'remote' connector on the controller to the remote connector on a Coaxial Power Systems RF generator such that the bias voltage rather than the output power is controlled i.e. the output of the generator will vary to keep the bias voltage constant. The bias voltage of a plasma system is almost always negative, and the bias control cable is supplied wired for negative bias.</p> <p>The 15 Way D type connector on the rear panel allows remote control of the generator.</p>	