

HF Series Fixed Station Balun Transformers

All CTS Fixed Station Balun Transformers are housed in purpose designed heavy duty aluminium casings with either solid impregnation or silicone oil cooling.

Any combination of power and impedance ratio can be supplied across the frequency spectrum 10 kHz - 32 MHz providing the most comprehensive range available to antenna designers. Further specifications available on request.

General Features:

- Broad Band 10 kHz - 2 MHz/1.5 - 32 MHz
- Power 400 W - 30 kW
- Very high efficiency
- All-weather unprotected operation
- Cast aluminium housing

Select a technical specification for the following models on the left.

HF4 Series 400 Watt HF Wide Band Antenna Matching Transformer

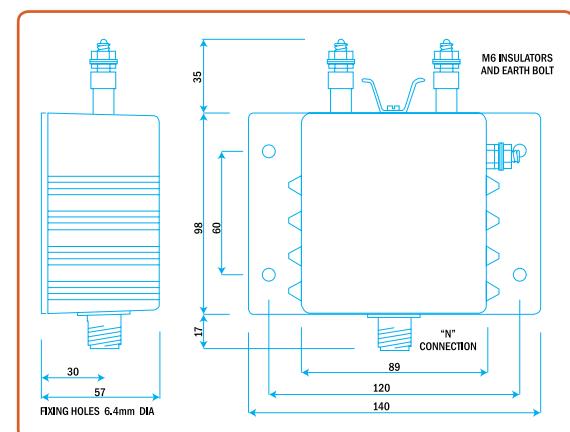
Fixed station HF receiving arrays are often subjected to high voltages not normally associated with RX systems. These voltages can be present due to static build up or by lightning induced EMF's from nearby strikes.

The HF4 series of matching transformers, although designed for 400 Watt average power are ideal for inclusion in receiving arrays. They reduce the possibility of high voltage damage and provide a DC path to the ground which gives added protection to the receiving system.

- Wide band 1.5 to 32 MHz
- Ideal for fixed station receiving arrays
- Internal static drain ground

A wide selection of balanced and unbalanced impedance ratios are available to complement most antenna configurations and non-standard ratios can be supplied on request.

The transformers are housed in cast aluminium cases, fully hermetically sealed for any military or commercial environment. For EMP proof operation no capacitors are incorporated.



Balanced Impedance (ohm)

Unbalanced impedance (ohm)	50	75	200	300	370	450	600
50	HF4-55	HF4-57	HF4-520	HF4-530	HF4-537	HF4-545	HF4-560
75	HF4-75	HF4-77	HF4-720	HF4-730	HF4-737	HF4-745	HF4-760

Technical Specs.

Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	400 Watt average, 1600 Watt peak
Insertion loss:	Less than 0.3 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	'N' type (Others on request)
Balance terminals:	Alumina ceramic M6 thread
Temperature range:	-40°C to +55°C
Weight:	1.2kg gross
High voltage protection:	Arcing horns and internal static drain (NB No internal capacitors fitted.)
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Shipping dimensions:	220 x 150 x 120 mm approx.

All specifications are that of typical performance.

HF Series Fixed Station Balun Transformers cont...

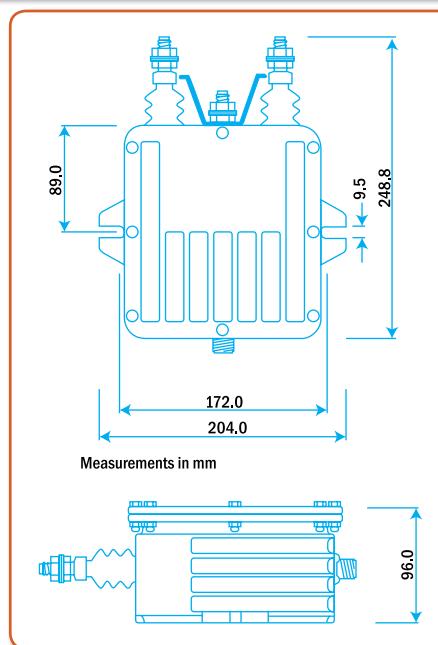
HF10 Series - 1kW HF Wide Band Antenna Matching Transformer

The HF10 series of antenna matching transformers are fully encapsulated heavy duty units designed for the most arduous environmental conditions.

The transformers are housed in a cast aluminium case, vacuum impregnated with epoxy resin and finished in epoxy paint for added protection. High purity alumina ceramic insulators with arcing horns are fitted as standard and an integral static drain to earth provides additional protection against lightning induced EMF's.

- Wide band 1.5 to 32 MHz
- 1 kW average, 4kW PEP
- All weather solid encapsulated
- Fixed station or transportable antenna arrays

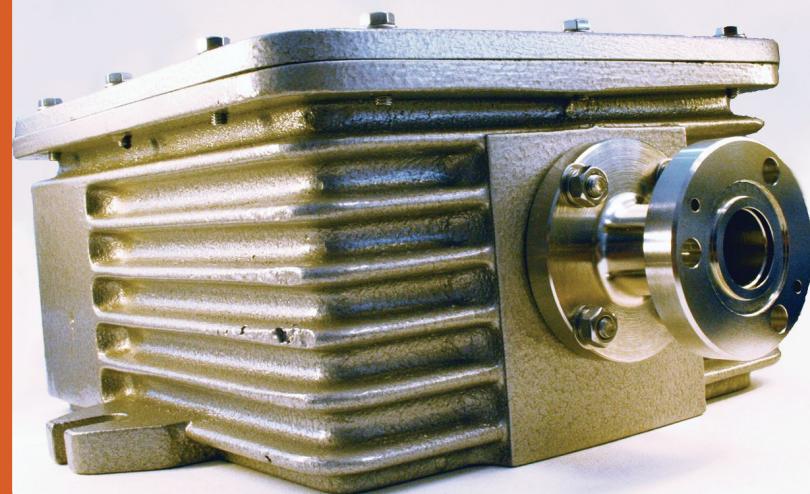
For added EMP proof operation no capacitors are used in the transformer circuit. A wide selection of unbalanced and balanced impedance ratios are available to complement most antenna configurations and enquiries for non-standard arrangements are welcome. No compromise has been made to provide a unit of the highest standard of reliability



Balanced Impedance (ohm)								
Unbalanced impedance (ohm)	50	75	100	200	300	370	450	600
50	HF10-55	HF10-57	HF10-510	HF10-520	HF10-530	HF10-537	HF10-545	HF10-560
75	HF10-75	HF10-77	HF10-710	HF10-720	HF10-730	HF10-737	HF10-745	HF10-760

Technical Specs.	
Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	1kW average, 4kW peak
Insertion loss:	Less than 0.3 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	'N' type (Others on request)
Balance terminals:	Alumina ceramic M10 thread
Temperature range:	-40°C to +55°C
Weight:	5kg gross
High voltage protection:	Arcing horns and internal static drain (NB No internal capacitors fitted.)
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Shipping dimensions:	425 x 300x 150 mm approx.

All specifications are that of typical performance.



HF Series Fixed Station Balun Transformers cont...

HF30 Series - 3kW HF Wide Band Antenna Matching Transformer

The HF30 series of antenna matching transformers are solid encapsulated heavy duty units suitable for the most arduous environmental conditions and designed for installation in any orientation.

The transformers are housed in a cast aluminium case, vacuum impregnated with epoxy resin and finished in epoxy paint for added protection.

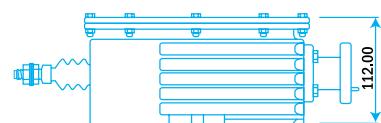
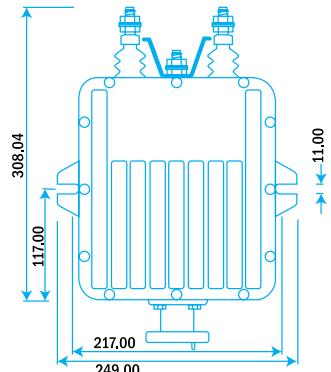
High purity alumina ceramic insulators

with arcing horns are fitted as standard. An internal static drain to earth provides additional protection against lightning induced EMF's.

- Wide band 1.5 to 32 MHz
- 3 kW average, 12kW PEP
- All weather solid encapsulated
- Heavy duty cast aluminium case

For added EMP proof operation, no capacitors are used in the transformer circuit. A wide selection of unbalanced and balanced impedance ratios are available to complement most antenna configurations and enquiries for non-standard arrangements are welcome.

The HF30 is a unit of the highest quality and reliability.



Balanced Impedance (ohm)							
Unbalanced impedance (ohm)	50	75	100	200	300	450	600
50	HF30-55	HF30-57	HF30-510	HF30-520	HF30-530	HF30-545	HF30-560
75	HF30-75	HF30-77	HF30-710	HF30-720	HF30-730	HF30-745	HF30-760

Technical Specs.	
Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	3 kW average, 12kW peak
Insertion loss:	Less than 0.3 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	7/8"EIA (Others on request)
Balance terminals:	Alumina ceramic M10 thread
Temperature range:	-40°C to +55°C
Weight:	14kg gross
High voltage protection:	Arcing horns and internal static drain (NB No internal capacitors fitted.)
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Shipping dimensions:	320 x 300 x 140 mm approx.

All specifications are that of typical performance.

HF Series Fixed Station Balun Transformers cont...

HF50 Series - 5kW HF Wide Band Antenna Matching Transformer

The HF50 5kW series are solid encapsulated and suitable for installation in any orientation.

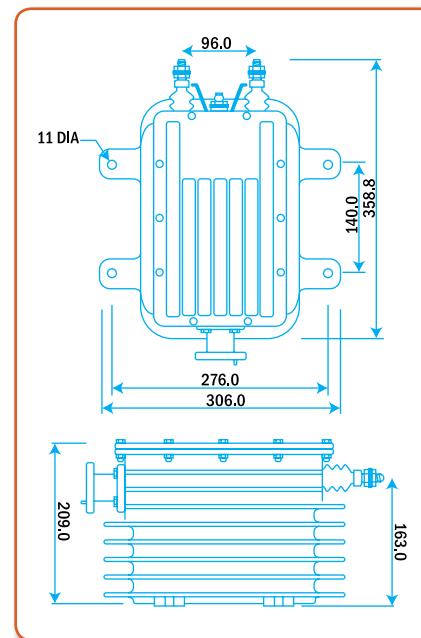
The transformers are housed in a heavy duty cast aluminium case, vacuum impregnated with epoxy resin and fully hermetically sealed for any military or commercial environment.

- Wide band 1.5 to 32 MHz
- 5 kW average, 20kW Peak
- All weather solid encapsulated
- Heavy duty cast aluminium case

High purity alumina ceramic insulators with arcing horns are fitted as standard and an internal static drain to earth provides additional protection against lightning induced EMF's.

A wide selection of unbalanced and balanced impedance ratios are available to complement most antenna configurations and enquiries for non-standard arrangements are welcome.

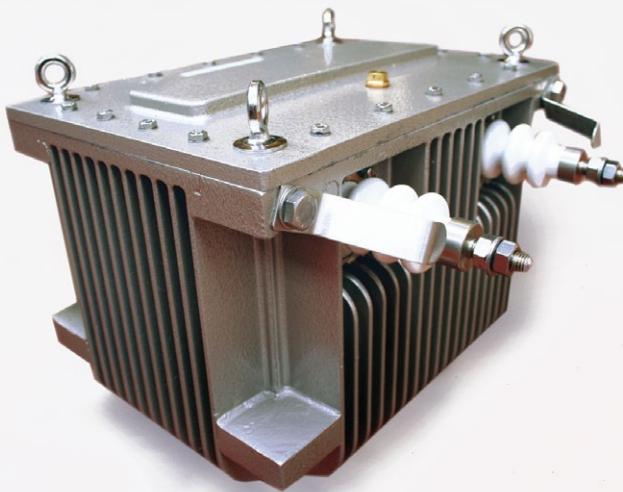
The HF50 is a unit of the highest quality and reliability.



Balanced Impedance (ohm)								
Unbalanced impedance (ohm)	50	75	100	200	300	370	450	600
50	HF50-55	HF50-57	HF50-510	HF50-520	HF50-530	HF50-537	HF50-545	HF50-560
75	HF50-75	HF50-77	HF50-710	HF50-720	HF50-730	HF50-737	HF50-745	HF50-760

Technical Specs.	
Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	5 kW average, 20 kW peak
Insertion loss:	Less than 0.3 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	7/8"EIA (Others on request)
Balance terminals:	Alumina ceramic M10 thread
Temperature range:	-40°C to +55°C
Weight:	38kg gross
High voltage protection:	Arcing horns and internal static drain
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Shipping dimensions:	490 x 410 x 390 mm approx.

All specifications are that of typical performance.



HF Series Fixed Station Balun Transformers cont...

HF100 Series - 10kW HF Wide Band Antenna Matching Transformer

The HF100 series are 10 kW average power silicone cooled transformers suitable for communication or broadcast systems.

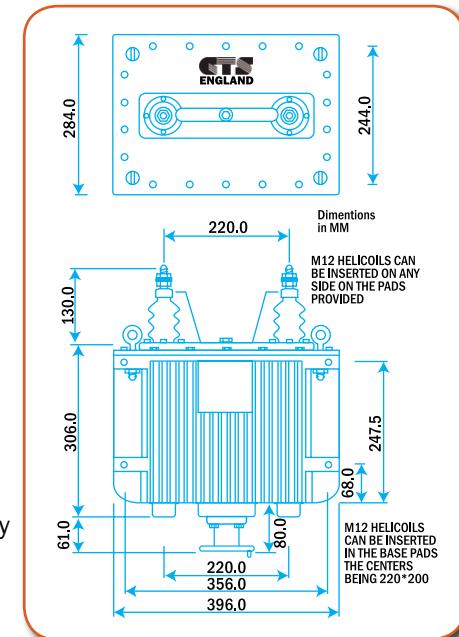
The units are housed in a finned cast aluminium tank which provides excellent natural convection cooling. Each casting is subjected to a double vacuum resin impregnation process which ensures complete sealing for the internal low loss silicone cooling oil.

- Wide band 1.5 to 32 MHz
- 10 kW average + 100% AM modulation
- Suitable for communications or broadcast applications
- Very high efficiency
- All weather unprotected operation

High purity alumina ceramic insulators with arcing horns are fitted as standard and an integral static drain to earth provides additional protection against lightning induced high voltages.

A wide selection of unbalanced and balanced impedance ratios are available to complement most antenna configurations and enquiries for non-standard arrangements are welcome.

The HF100 is a high quality unit suitable for unprotected operation in any environment



Balanced Impedance (ohm)								
Unbalanced impedance (ohm)	50	75	100	200	300	370	450	600
50	HF100-55	HF100-57	HF100-510	HF100-520	HF100-530	HF100-537	HF100-545	HF100-56
75	HF100-75	HF100-77	HF100-710	HF100-720	HF100-730	HF100-737	HF100-745	HF100-76

Technical Specs.	
Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	10 kW average + 100% AM modulation
Insertion loss:	Less than 0.2 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	7/8", 1 5/8", 3 1/8" EIA
Balance terminals:	Alumina ceramic M10 thread
Temperature range:	-40°C to +55°C
Weight:	60kg gross
High voltage protection:	Arcing horns and internal static drain
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Cooling:	Natural convection, silicone transformer oil, pressure relief valve fitted.
Shipping dimensions:	700 x 600 x 500 mm approx.

HF Series Fixed Station Balun Transformers cont...

HF200 Series - 20kW HF Wide Band Antenna Matching Transformer

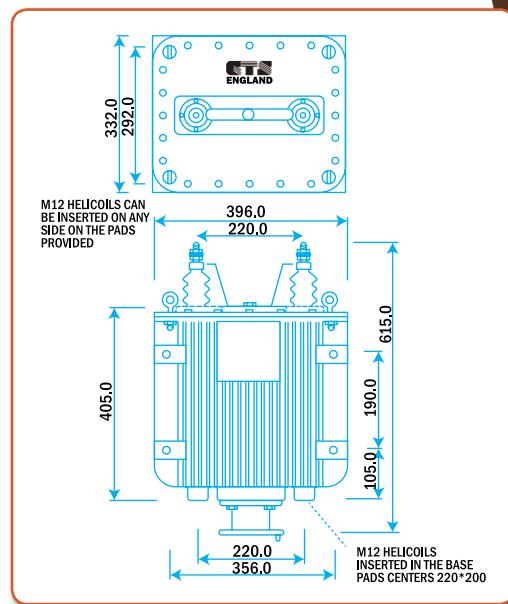
The HF200 series are 20 kW average power transformers suitable for communications or broadcast systems.

The units are housed in a finned cast aluminium tank which provides excellent natural convection cooling. Each casting is subjected to a double vacuum resin impregnation process which ensures complete sealing for the internal low loss silicone cooling oil.

High purity alumina ceramic insulators with arcing horns are fitted as standard and an internal static drain to earth provides additional protection against lightning induced high voltages.

- Wide band 1.5 to 32 MHz
- 20 kW average + 100% AM modulation
- Suitable for communication or broadcast application
- Very high efficiency
- All weather unprotected operation

A wide selection of unbalance and balance impedance ratios are available to complement most antenna configurations and enquiries for non-standard arrangements are welcome. The HF200 is a high quality unit suitable for unprotected operation in any environment. The HF200 Series supersedes all Minns "Y" types of 20kW transformers.



Balanced Impedance (ohm)								
Unbalanced impedance (ohm)	50	75	100	200	300	370	450	600
50	HF200-55	HF200-57	HF200-510	HF200-520	HF200-530	HF200-537	HF200-545	HF200-560
75	HF200-75	HF200-77	HF200-710	HF200-720	HF200-730	HF200-737	HF200-745	HF200-76

Technical Specs.	
Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	20 kW average + 100% AM modulation
Insertion loss:	Less than 0.2 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	1 5/8", 3 1/8" EIA
Balance terminals:	Alumina ceramic M12 thread
Temperature range:	-40°C to +55°C
Weight:	110kg gross
High voltage protection:	Arcing horns and internal static drain
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Shipping dimensions:	700 x 600 x 500 mm approx.

All specifications are that of typical performance.

HF Series Fixed Station Balun Transformers cont...

HF300 Series - 30kW HF Wide Band Antenna Matching Transformer

The HF300 series are 30 kW average power silicone cooled transformers suitable for communication or broadcast systems.

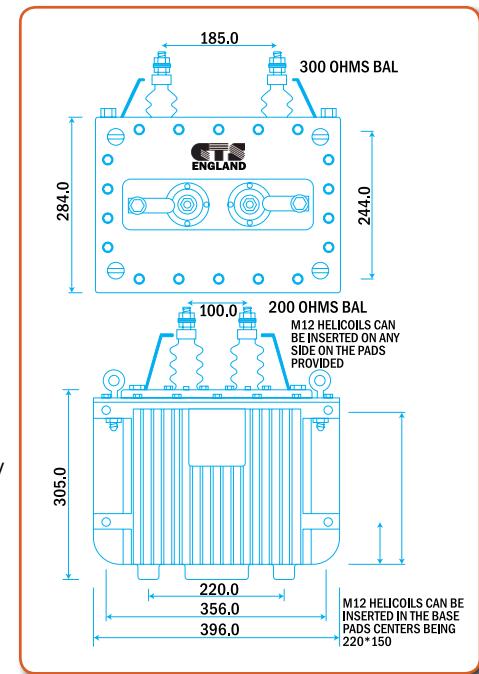
The units are housed in a finned cast aluminium tank which provides excellent natural convection cooling. Each casting is subjected to a double vacuum resin impregnation process which ensures complete sealing for the internal low loss silicone cooling oil.

High purity alumina ceramic insulators with arcing horns are fitted as standard and an integral static drain to earth provides additional protection against lightning induced high voltages.

- Wide band 1.5 to 32 MHz
- 30 kW average + 100% AM modulation
- Suitable for communications or broadcast applications
- Very high efficiency
- All weather unprotected operation

A wide selection of unbalanced and balanced impedance ratios are available to complement most antenna configurations and enquiries for non-standard arrangements are welcome.

The HF300 is a high quality unit suitable for unprotected operation in any environment.



Balanced Impedance (ohm)								
Unbalanced impedance (ohm)	50	75	100	200	300	370	450	600
50	HF300-55	HF300-57	HF300-510	HF300-520	HF300-530	HF300-537	HF300-545	HF300-5
75	HF300-75	HF300-77	HF300-710	HF300-720	HF300-730	HF300-737	HF300-745	HF300-760

Technical Specs.	
Frequency:	1.5 - 32 MHz
Impedance:	See table above
Power:	30 kW average + 100% AM modulation
Insertion loss:	Less than 0.2 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	3 1/8" EIA
Balance terminals:	Alumina ceramic M12 thread
Temperature range:	-40°C to +55°C
Weight:	120kg gross
High voltage protection:	Arcing horns and internal static drain
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Shipping dimensions:	1000 x 700 x 550 mm approx.

All specifications are that of typical performance.

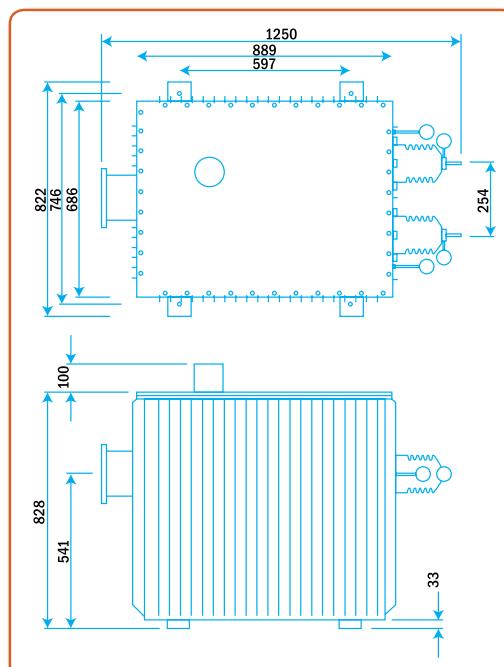
High Power HF Broadcast Antenna Matching Transformer

HF500/HF1000 High Power Series

The 50kW and 100kW series of broadcast antenna matching transformers are suitable for inclusion in systems where 200 ohm or 300 ohm open wire feeds need to be matched to a 50 ohm coaxial feeder. The units are housed in aluminium tanks, silicone oil cooled to minimise losses and a major feature is broad band operation without the use of ferrite material in the transformer design.

- 50kW average, Type HF500
- 100kW average, Type HF1000
- 100 kW Average + 100% AM Mod
- Broad band 3-22 MHz
- Very low loss
- All-weather unprotected operation

These antennas require small size broad band matching networks and CTS offers the HF 1000 range providing 200 or 300 Ohm balanced outputs.



Technical Specs.

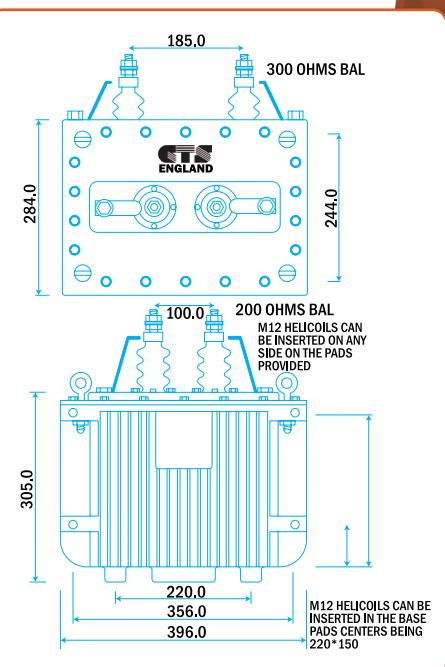
Frequency:	3 - 22 MHz
Input Impedance:	50 ohms unbalanced
Output Impedance:	200 ohm or 300ohm balanced
Power:	HF500 - 50kW average + 100% broadcast mod HF1000 - 100kW average + 100% broadcast mod
Insertion loss:	Less than 0.1 dB
VSWR:	Less than 1.2:1
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Coaxial connectors:	3 1/8" and 6 1/8" EIA
Balance terminals:	Alumina ceramic M12 thread
Temperature range:	-40°C to +55°C shade recommended
Weight:	450kg gross
High voltage protection:	Arching horns and internal static drain
Configuration:	Aluminium tank, silicone oil cooled, pressure relief valve fitted

High Power Balanced/Balanced Matching Transformer

HF100 300/600 High Power Balanced/Balanced Matching Transformer

Technical Specs.

Frequency:	1.5 - 32 MHz
Input Impedance:	300 ohms balance
Output Impedance:	200 ohm or 600 ohm balance
Power:	10 kW average +100% AM modulation
Insertion loss:	Less than 0.2 dB
VSWR:	Less than 1.2:1 (2 - 30 MHz), Less than 1.3:1 (1.5 - 32 MHz)
Balance ratio:	Greater than 26 dB
Load VSWR:	2.5:1 max.
Balance terminals:	Alumina ceramic M12 thread
Temperature range:	-40°C to +55°C
Weight:	60kg gross
High voltage protection:	Arching horns
Configuration:	Cast aluminium case (LM25). Hermetically sealed. Epoxy paint finish.
Cooling:	Natural convection, silicone transformer oil, pressure relief valve fitted.
Shipping dimensions:	700 x 600 x 500 mm approx.



All specifications are that of typical performance.