

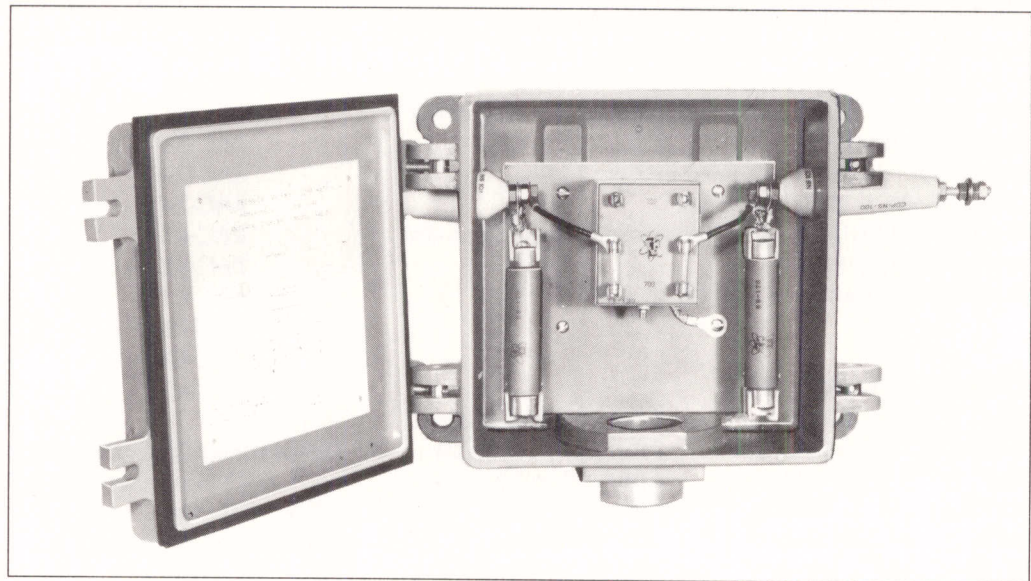


Receiving Antenna Coupler (BALUN)

RAC Series

Product Bulletin 103029

- 90KHz to 30MHz Range
- Broadband - No Tuning
- Flat Response Curve
- Weatherproofed Case
- Facilitates RF Switching
- Balanced/Unbalanced
- Lightning Protected



The RAC Series of Broadband Receiving Antenna Couplers provide low-loss matching between 50-ohm or 70-ohm unbalanced impedances and a variety of balanced impedances. Originally, designed for rhombic antenna systems, the RAC units will provide highly efficient coupling of RF energy for any unbalanced-to-balanced or balanced-to-unbalanced impedances in LF/MF/HF frequency ranges of 90KHz to 30MHz. They are ideally suited to matching the RF outputs of any receiver - whether designed by TMC or not - to any type antenna requiring a balanced coupling. Insertion loss through the RAC units is typically less than 1dB and the frequency response is exceptionally flat.

Users are given added flexibility with these units since unbalanced RF coaxial cables at receiver sites are easier to install and re-route. They can easily be terminated on SPP series switching patch panels or QDP series quick-disconnect patch panels. The appropriate RF path can then be selected either to the antenna, a receiving multicoupler or a receiver.

Essentially, the RAC couplers consist of a passive circuit with broadband auto-transformers that use carefully selected high-Q core materials to transform impedances with minimum insertion loss. Since the devices are totally solid state and require no power supplies, they are linear for all types of signals and are particularly resistant to such disturbances as cross modulation.

This well-engineered TMC product requires minimal maintenance to perform consistently within specification over its service life. A dehydrant is used to reduce moisture build up in the case and requires replacement or reactivation every six months, depending on the operating conditions. The broadband matching transformers are individually sealed and securely anchored in rugged, weatherproof cases that are constructed of cast aluminum alloys to assure protection from punishing outdoor conditions. In case of internal damage, the entire transformer sub-assembly can be replaced in the field. A variety of fittings are available to adapt to any variation in interconnect

or transmission line. Either spark-gap or gas discharge protection is supplied depending on the model.

The antenna couplers are used in a variety of installations. Typically, they are installed in large arrays such as nested rhombic or sloping-V antennas. It is not uncommon to find these units in service for many years in the worst of environments such as the Antarctic or desert regions. They are usually matched with TMC's rhombic terminal units to complete the antenna installation.

As shown on the next page, RAC couplers can be equipped with a wide variety of unbalanced mating connector assemblies to accommodate almost any installation. Additional terminations are available to match virtually any known antenna system. Special mounting can be designed into the case assembly with ease. A universal bracket is provided for pole, bulkhead, mast or wire installation. Fiberglass cases are available in place of the standard cast aluminum case.

TECHNICAL SPECIFICATIONS

Frequency Range 90KHz to 30MHz (See models)
Insertion Loss Less than 1dB
Impedances See Ordering Information
RF Fittings - Unbalanced See Unbalanced Connector Assembly listing (below)
RF Fittings - Balanced Twin ceramic insulators
Mounting Pole mount using four cast flanges. Universal mounting plate assembly is optional.
Safety Feature Spark gap for protection from lightning and/or static discharge
Dimensions 9H x 11W x 5.5D inches, 13 lbs. 22.9H x 27.9W x 14D cm, 5.9Kg.
RAC-[30][32][41][42][43] Hermetically-sealed gas discharge and plug-in fuses.
Operating Temperature -40°C to +75°C

Replacement Transformers

For RAC-1	TMC#	TR001
RAC-7		TR090
RAC-7A		TR069
RAC-9		TR034
RAC-11		TR012
RAC-12		TR112
RAC-13		TR168
RAC-20		TR054
RAC-24		TR032
RAC-30		TR130
RAC-32		TR132
RAC-34		TR088
RAC-41		TR177
RAC-42		TR174
RAC-43		TR065
RAC-46		TR209
RAC-47		TR210
RAC-49		TR211

ORDERING INFORMATION

Model	Range	Balanced-Unbalanced
RAC-1	2-60MHz	700/200 to 70-ohm
RAC-7	2-32MHz	600/200 to 50-ohm
RAC-7A	2-32MHz	600 to 70-ohm
RAC-9	2-30MHz	500 to 50-ohm
RAC-11	2-30MHz	300 to 50-ohm
RAC-12	2-30MHz	800 to 50-ohm
RAC-13	2-30MHz	500 to 70-ohm
RAC-20	2-32MHz	600/200 to 70-ohm
RAC-24	2-32MHz	600 to 50-ohm
RAC-30	2-32MHz	700/200 to 70-ohm
RAC-32	2-32MHz	600/200 to 70-ohm
RAC-34(S)	4-15MHz	516 to 70-ohm
RAC-41	2-30MHz	400 to 70-ohm
RAC-42	5-14MHz	140 to 75-ohm
RAC-43	90-200KHz	600 to 70-ohm
RAC-46	2-32MHz	300/450/600* to 50-ohm
RAC-47	2-32MHz	300/450/600 to 70-ohm
RAC-49	2-32MHz	300/450/600 to 50-ohm

*Unbalanced

Unbalanced Connector Assembly Options:

[All impedance are 50 ohms unless noted.]

/BN	BN type	TMC#	AX283-1
/BNC	BNC type		AX284-1
/C	C type		AX286-1
/HN	HN type		AX285-1
/5LC	LC type		AX287-1
/7LC	LC type/70-ohm		AX287-5
/5N	N type		AX259-1
/7N	N type/70-ohm		AX259-3
/RG85	RG-85/U mounting flange		AX274-1
/QDL	QDL type		AX273-1
/QDS	QDS type		AX289-1
/UHF	UHF type		AX281-1
/UHFT	UHF-Twin type		AX282-1
/UHFL	UHF (L)-type		AX256-1
/5LCA	3-1/8" EIA-LC adapter/50-ohm		AX276-1
/7LCA	3-1/8" EIA-LC adapter/70-ohm		AX277-1
/5ES	7/8" Styroflex End Seal/50-ohm		
/7ES	7/8" Styroflex End Seal/70-ohm		

Specifications are subject to change without notice - Please verify accuracy with TMC Customer Service.

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