



LIQUID COOLED FM SOLID STATE TRANSMITTERS/AMPLIFIERS

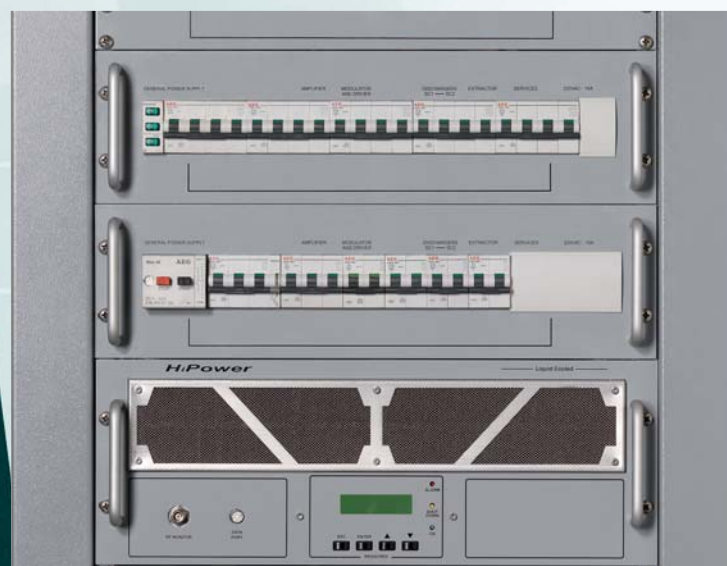
PF/L series & KF/L series



LIQUID COOLED FM SOLID STATE TRANSMITTERS/AMPLIFIERS

PF/L series & KF/L series

- **General.** DB Elettronica PF/L series FM transmitters and KF/L series FM amplifiers are designed to operate in the 87.5 - 108 MHz frequency range for FM radio broadcasting applications. The PF/L Series transmitters are composed of an exciter (various models available), eventually with redundant dual-exciter option, and a KF/L Series amplifier.
- **Frequency agile.** PF/L series instant LCD front panel frequency programmability with 10 KHz steps assures an agile frequency setting without any tuning or adjustment. (Standard for DTS and DPM series exciter, optional for other series exciters).
- **Digital stereo generator (optional).** A high performance built-in digital stereo coder in PF/L series transmitters, with stereo separation >65dB and signal/noise ratio >85dB, assures the highest audio quality.
- **Top quality sound.** The FM signal is characterized by an excellent signal/noise ratio and by negligible residual AM and FM. All this to assure the best broadcasting quality.
- **COLD FET™ technology.** This revolutionary technology, patented Internationally by DB Elettronica, is used in the PF/L series transmitters and KF/L series amplifiers to optimize the output matching of MOS-FET transistors obtaining broadband amplification stages without using RF discrete components. The main advantages of this technology are:
 - High RF efficiency
 - Lower heating
 - Higher devices safety
 - Higher total reliability
 - Lower AC power consumption
- **Uninterrupted service.** An intelligent protection circuit reduces the output power without any on-air interruption, keeping the RF devices always within the safe operating parameters in the event of:
 - Load mismatching
 - Environmental over-temperature
 - Cooling failure
 - Failure in one or more amplification modules
 - Failure in power supply modules
- **Broadband.** No adjustments are required for full power operation in the whole 87.5÷108 MHz band.
- **Switch-mode power supply with power factor control.** Highly efficient and widely over-rated power supply modules insure low heating, low AC power consumption and superior reliability. The power factor control circuitry allows to meet all the international requirements for mains network disturbances.



- **Liquid cooling.** An oversized heat exchanger suitable for outdoor or indoor installation and equipped with single or double (optional) pump system for maximum redundancy, is the main component of the powerful liquid cooling system. A special design of liquid cooled heatsinks inside the amplifier and a low pressure liquid distribution system are some of the main characteristics of the DB liquid cooling system, to assure very high reliability, easy installation and very high cooling efficiency. This system is designed to be perfectly suitable for very hard climatic conditions. Substantial advantages of our liquid cooling technology respect to the air cooling one are:
 - Perfect work in hard ambient conditions
 - Guaranteed operation in very dusty locations, also with high humidity or salinity
 - Acoustic noise almost absent
 - Reduced heat radiation into the environment
 - Longer life for transistors and active elements due to colder continuous operation
- **Reduced maintenance.** Easy accessibility of all parts and very high MTBF for RF and power supply modules, are only some of the characteristics that explain the very high reduction of maintenance costs obtained with these new series of PF/L transmitters and KF/L amplifiers.
- **Full remote control capability (optional).** Power output adjustment, on/off, alarms reset, forward and reflected power output, frequency deviation measurements and alarms status are only some of the parameters and controls available via remote control system.
- **N+1 facility (optional).** N+1 facility control available to modify remotely the frequency and power output for redundant systems.
- **AES/EBU digital interface (optional).** Standard AES/EBU digital stereo audio interface available as option.
- **Meets or exceeds the international standards** for safety and electrical specifications.



PF/L SERIES TRANSMITTERS

MODEL	OUTPUT POWER	OUTPUT CONNECTOR*	POWER CONSUMPTION**	RACK DIMENSIONS	WEIGHT***
PF 5.5k/L	5500 W	EIA 1+5/8"	11900 VA	19" x 41U	290 kg
PF 8k/L	8000 W	EIA 1+5/8"	16600 VA	19" x 41U	590 kg
PF 10k/L	10500 W	EIA 1+5/8"	20100 VA	19" x 41U	680 kg
PF 15k/L	15000 W	EIA 3+1/8"	28800 VA	2x19" x 41U	1010 kg (total)
PF 20k/L	20000 W	EIA 3+1/8"	36800 VA	2x19" x 41U	1125 kg (total)
PF 30k/L	30000 W	EIA 3+1/8"	54200 VA	3x19" x 41U	1870 kg (total)

* Other on request ** At maximum power *** Including the Heat Exchanger

KF/L SERIES AMPLIFIERS

MODEL	OUTPUT POWER	OUTPUT CONNECTOR*	POWER CONSUMPTION**	RACK DIMENSIONS	WEIGHT***
KF 5.5k/L	5500 W	EIA 1+5/8"	11850 VA	19" x 19U	280 kg
KF 8k/L	8000 W	EIA 1+5/8"	16500 VA	19" x 41U	570 kg
KF 10k/L	10500 W	EIA 1+5/8"	19900 VA	19" x 41U	660 kg
KF 15k/L	15000 W	EIA 3+1/8"	28600 VA	2x19" x 41U	1065 kg (total)
KF 20k/L	20000 W	EIA 3+1/8"	36100 VA	2x19" x 41U	1080 kg (total)
KF 30k/L	30000 W	EIA 3+1/8"	53200 VA	3x19" x 41U	1820 kg (total)

* Other on request ** At maximum power *** Including the Heat Exchanger

TECHNICAL CHARACTERISTICS

RF SPECIFICATIONS	Operating frequency range	87.5 ÷ 108 MHz
	Input Impedance (for KF/L series only)	50 Ω
	Output impedance	50 Ω
	Spurious and harmonic suppression (ref. to carrier)	< - 80 dBc
	Synchronous AM (ref. 100% mod.)	< - 58 dB
	Asynchronous AM (ref. 100% mod.)	< - 50 dB
	RF Probe	-50 dBc, 50 Ω, BNC
	Power stability	< 1%
	RF efficiency (before the output filters)	83% typ.
	Overall efficiency	64% typ.
PARAMETERS DISPLAYED ON THE FRONT PANEL LCD	- Output forward and reflected power	
	- DC supply voltage of each power supply board	
	- DC supply current of each power supply board	
	- Heatsink temperatures	
PROTECTIONS	The internal logic circuitry provides intelligent proportional fold-back protection, without on-air interruptions, for:	
	- VSWR	
	- Insufficient cooling	
	- Output combiner unbalancing	
AUTOMATIC POWER CONTROL	- Fault of RF or power supply stages	
	The automatic power control circuitry provides the output power regulation with a stability of 2%.	
MONITORED & CONTROLLED FUNCTIONS (REMOTE CONTROL AVAILABLE AS OPTION)	- Stand-by	
	- Total forward output power	
	- Total reflected output power	
	- DC supply voltage of each RF stage	
	- DC supply current of each RF stage	
AC POWER REQUIREMENTS	- Alarms status	
	Operating Voltage: 110/220/240 Vac ±10%, single-phase or 220/380 Vac ±10% three phases, 50/60 Hz	
OTHER CHARACTERISTICS	Cooling	Liquid cooling system
	Service	Continuous 24/24 h
	Operating temperature	-5°C to +45°C
	Relative humidity	Up to 95%

