



COMPACT FM TRANSMITTER / EXCITER PFS 500/KS



- ° **Generals.** This FM amplifier is designed to operate on 87.5 - 108 MHz frequency range for FM radio broadcasting appliances, giving up to 550 W of output power in continuous service.
- ° **COLD FET™ technology.** This revolutionary technology is used in the KF 500 amplifier to optimize the input matching of MOS-FET transistors in order to obtain broadband amplification stages without any RF component. This means:
 - high RF efficiency > 83%
 - lower heating
 - higher devices safety
 - higher total reliability
 - low AC power consumption
- ° **Extraordinary RF efficiency:** the COLD-FET™ technology allows to obtain from the amplifiers the full power rating reducing of almost 20% the devices recommended operating DC voltage and current.
- ° **Uninterrupted service.** A proportional foldback protection circuit reduces the output power without any on-air interruption, keeping the RF devices always within the safety conditions in case of:
 - load mismatching
 - environmental over-temperature
 - cooling failure
 - failure in the amplifier module
 - failure in power supply modules
- ° **Broadband:** no adjustments are required for the full power operation in the 87.5÷108 MHz band.
- ° **The automatic power control** circuit adjusts and stabilizes with precision ($\pm 1\%$) the maximum output power in the whole band.
- ° **Switch-mode power supply.** High efficiency (> 80 %) and oversized power supply modules grant low heating, low AC power consumption and superior reliability.
- ° **Low overheating.** The high cooling system efficiency limits at only + 10°C the heatsink overheating respect to the environmental temperature. This permits the service even in overheated sites.
- ° **Low consumption.** The high overall efficiency means a reduction of AC power consumption and operating costs.
- ° **Metering.** A complete metering system placed on the front panel permits the precise reading of: all currents and voltages of each MOS-FET stage, forward power, reflected power.
- ° **Remote control.** It is available as option (KFA/RC) a remote control interface for the following parameters: voltages and currents of each RF stage, forward power, reflected power, alarms status, on/off, stand-by.
- **Meets or exceeds** international standards for safety and electrical specifications.



PFS 500/KS TECHNICAL CHARACTERISTICS

RF Specifications:

Operating frequency range	87.5 ÷ 108 MHz
Output power	0 - 550 W adjustable
Output connector	DIN 7/16" (other on request)
Power drain at maximum power	690 VA typ.
Output impedance	50 Ω
Harmonics and spurious emissions (ref. to carrier)	≤ -80 dBc
Synchronous AM (ref. 100% mod.)	< - 50 dB
Asynchronous AM (ref. 100% mod.)	≤ -50 dB
RF probe	-70 dB, 50 Ω, BNC
Power stability	< 1%
RF efficiency	83% typ.
Overall efficiency	69% typ.

A.F. Data (ref. to KE 20 Exciter):

Mono operations:	
Input level	-10÷+12 dBm adj.
Input connectors	XLR female/bal.
Input impedance	600 Ω
Bandwidth (± 0.25 dB)	20 Hz÷15 KHz
Pre-emphasis	50/75 µs
Deviation from pre-emph. curve	± 0.5 dB
FM S/N ratio (±75 kHz deviation at 1 kHz, 50 µs de-emph.)	≥80 dB
THD + N	≤0.1 %
19 kHz attenuation	≥55 dB
AM syncro residual	< -64 dBc
AM asyncro residual	< -68 dBc
Stereo operations (MPX input):	
Input level	-10÷+12 dBm
Input connector	BNC, unbal.
Input impedance	10 kΩ
Bandwidth (± 0.2 dB)	20 Hz÷100 KHz
FM S/N ratio (±75 kHz deviation at 1 kHz, demodul., 50 µs de-emphasis)	≥74 dB
Stereo separation (20 Hz÷15 kHz)	≥60 dB
THD	< 0.2%

Measures (on the Combining and Control unit front panel):

Total output forward power
Total output reflected power
Output forward power of each plug-in 1 kW module
Output reflected power of each plug-in 1 kW module
DC supply voltage of each plug-in 1 kW module
DC supply current of each plug-in 1 kW module



PFS 500/KS TECHNICAL CHARACTERISTICS

Protections:

The internal logic circuitry provides proportional fold-back protection, without on-air interruptions, for:
- VSWR
- air over-temperature or insufficient cooling
- output combiner unbalancing
- fault of RF or power supply stages

Automatic power control:

The automatic power control circuitry provides the output power regulation with a precision of 2% over the whole band.
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Remote control interface:

I/O Connector	DB-25
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Monitored & controlled functions:

- stand-by
- Total forward output power
- Total reflected output power
- DC supply voltage of each plug-in 1 kW module
- DC supply current of each plug-in 1 kW module
- alarms status

AC Power requirements:

Type of DC voltage regulation	switch-mode
Operating Voltage	208/220/380 Vac \pm 10%, 50/60 Hz, three phases 110/220/240 Vac \pm 10% Vac 50/60 Hz, single-phase.

Operating conditions:

Cooling	forced air by internal fans
Service	continuous 24/24 h
Operating temperature	-5° ÷ +45°C
Relative humidity	95%
Max.installation altitude	3000 m a.s.l.

Weight and size:

Weight	80 kg
W x D x H (see options)	540 x 720 x 240 mm - single rack

Options:

KFS/RC	Full remote control interface
Air cooling exit	cabinet top side or rear (to be specified)
Air cooling parts	Chimineys and hardware on request

Features and specifications subject to change without notice.