PA11-402FL

4,0kW CW RF AMPLIFIER @ 81,25MHz
LIQUID COOLED

ISM CW AMPLIFIER

General information

The PA11 series belongs to the Very High Power Scientific application product family of fully solid state technology, liquid cooled amplifier.

The **PA11-402FL** is operating at the frequency of 81,25MHz, with 4,0kW CW output power with the capability to operate with pulsed signal, maintaining a very high linearity.

The amplifier have been designed to offer to the customer high performances, high reliability and great simplicity in operation and maintenance procedures, being at the same time extremely compact obtaining the nominal power of 4,0 kw in three 19" racks unit.

The RF section combines 4 RF final amplifiers of 1,2kW, and is driven by a dual stage high gain pre driver, with all the relevant controls section.

Three AC/DC power supplies are enclosed in each module, for a high redundancy in case of failure.

Compact design technology allows 4,0kW output power amplifiers in only 19" drawer three units height combining 4 RF blocks of 1,2 kW CW each , with the relevant pre driver section.

Key Features (referred to 4,0kW output)

- **FULLY SOLID STATE** amplifier modules.
- **81,25MHz** operating frequency.
- **CW and Pulsed Signal** operating mode.
- **50mW** input power (+17dBm) / **1mW** (+0dBm) option
- **>60% Efficiency**
- **LD-MOS** of last generation in order to have ruggedness, reliability, and high efficiency.
- **Redundant 4 x 1,2kW** RF amplifiers modules.
- **Redundant 3 x 3,5kW** AC/DC Power supplies.
- **IEC 215 compliant** with the personnel safety requirements applied
- **Remote Operation** compliant to IEC 864-1 rule (all option are available).
- **PROTECTION AND CONTROL SYSTEMS**
  - Current max.
  - Reflected power
  - Temperature max.
- **High Capacity Liquid cooling system** fully integrated.
- **Ultra Compact design** up to 4,0kW in just three 19" Rack units height.

TECHNICAL SPECIFICATIONS

GENERAL

- Frequency range ..... 81,25 MHz
- Operating mode ..... CW or Pulsed
- Bandwidth @1dB ..... > ±5 MHz
- Output power ..... 4,0kW CW
- Input Power ..... 50mW (other level on request)
- Efficiency ..... 60% typical (cooling system included)
- Harmonic emission ..... ≤ 40 dBc
- Spurious emission ..... ≤ 60 dBc
- Linearity ..... ± 0.5 dB
- Temperature Gain stability (dynamic) ..... ≤ 0,5 dB (5°C ÷ 40°C)
- Temperature Gain stability (static) ..... ≤ 0,1 dB (25°C constant water cooling)
- Phase stability ..... ± 3°
- RF output impedance ..... 50 Ω (7/8" unflanged)
- RF input ..... 50 Ω (N connector)

PULSED OPERATION

- Rise Time ..... ≤ 10µs
- Pulse duration ..... 20µs to 100ms
- Time repetition ..... 10Hz to 1kHz
- Duty Cycle ..... 0.1 to 99% @ 10Hz
- Pulse Ripple ..... ±1% max
- Pulse Slope ..... ±1% max

ENVIRONMENTAL

- Operating temperature ..... 0°C to +45°C (others on request)
- Relative humidity ..... 20% to 90% non-condensing
- Altitude ..... up to 2500 m.

METERING

The following parameters are available on RS485 bus

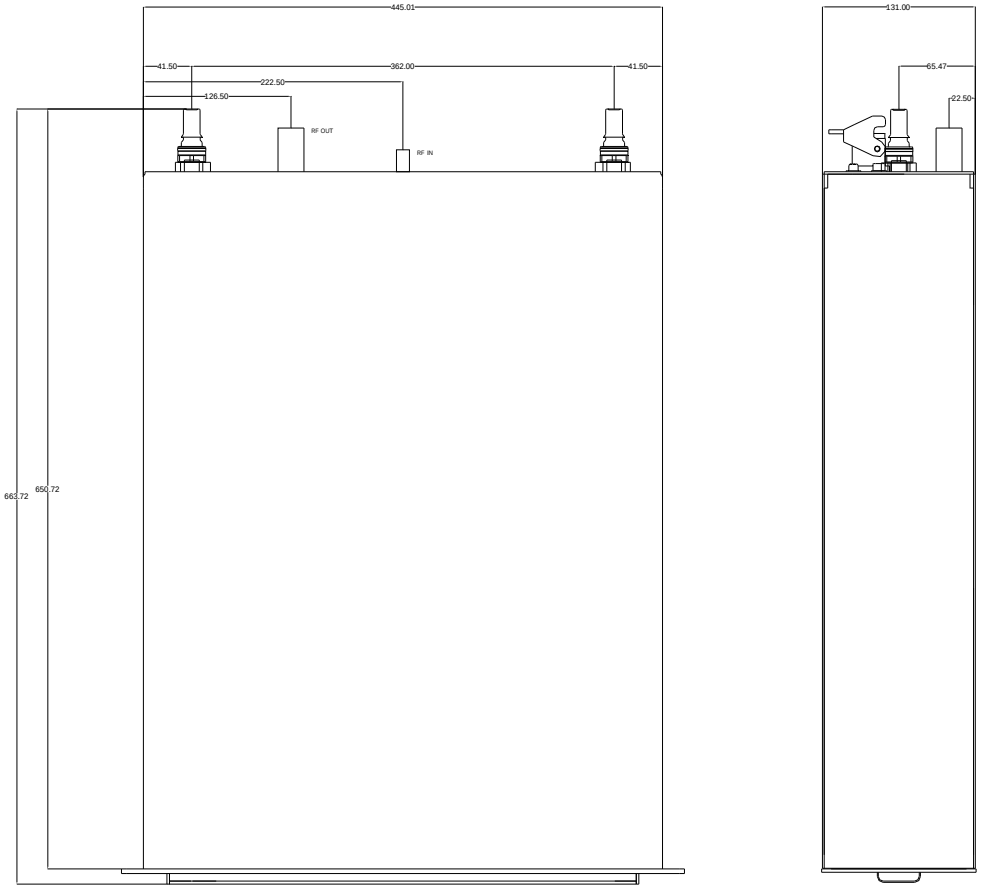
- Forward power (FWD) by means a precision Peak and CW detection
- Reflected power (REF)
- RF amplifier current monitoring
- RF amplifier power monitoring
- Water fluid temperature for each subsystem
- RF subsection temperature
- RF amplifier status
- Amplifier interlock monitoring
- Interlock setting :
  Forward power (FWD);
  Reflected power (REF);
  Water Flow;
  Temperature

REMOTE CONTROL

Parallel interface:	start, stop, standby, alarms, status, interlock, recall memory

GENERAL

Voltage power supply:	3x380/400+N VAC ±20% ; 220/230 VAC ±20% single phase
Frequency:	50-60Hz ±5%
Power consumption:	6.5kW (cooling system included)
Power factor:	≥ 0.95
Cooling:	liquid cooling (10 lt/min)
Dimensions:	660 x 483 x 133h mm
Weight:	38 kg



How to Order:

PA11-402FL – *4,0kW CW Amplifier, liquid cooling (17dBm input)*

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