

# Thermex Thermatron LP

## Industrial Microwave Systems

### 75kW Industrial Microwave Power Generator



## Model TM75-AI

### Industrial Microwave Generator

75 kW at 915 MHz

The **Thermex** Model TM 75-AI (advanced Industrial) microwave power generator is a complete self-contained microwave source used for industrial heating processes. It is rated at 75 kW continuous power output and operates at 915 MHz.

The output power is controlled by varying the magnetic field around the magnetron using an electromagnet. This provides continuous control of the output power manually using a digital potentiometer or automatically by an **Allen Bradley CompactLogix PLC**.

The Generator is housed in a NEMA 12-type enclosure that measures approximately 4 feet deep, 6 feet wide and 6 ½ feet tall. The generator cabinet is designed for free standing or bolting to the floor.

The major components located in the generator cabinet such as the magnetron, circulator and electromagnet are water cooled in a closed loop distilled water system. The distilled water is cooled by a water to water heat exchanger using plant water. The plant water also cools the water load and the environmentally enclosed cabinet through a Water to Air heat exchanger. The unique **Thermex** cabinet design isolates the water section of the microwave generator from the high voltage section.

The **Allen Bradley HMI** and all necessary controls and indicators are mounted on a control panel located on the front of the cabinet. The cabinet has two large hinged access doors on the front and two on the back that allows complete access to the interior for ease of inspection, installation and maintenance.

All control and signal processing circuits are grouped in individual subassemblies / modules for easy maintenance and troubleshooting. Each module can be bench tested and calibrated prior to installation into the microwave generator.

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## Thermex Model TM75-AI

The following standard controls and indicators are provided with the **TM75-AI PLC-Controlled Microwave Generator:**

**PLC Control for Automatic Operation:** Allen Bradley CompactLogix PLC with HMI provides the following benefits:

- The microwave generator is programmed to operate at maximum efficiency by optimizing all of the generator functions and controlling the power output based on the amount of power reflected by the load. Thus, the generator will automatically adjust the microwave power to the loads ability of absorbing microwave energy.
- On screen calibration of all analog signals complete with help screens with instructions for the operating personnel. These analog signals include the following: reflected power, anode current, anode voltage, filament current, magnet current, output power.
- On Screen Diagnostics and Alarm Messaging to help troubleshooting.
- Recording and storing all Operating Parameters – up to 32 recipes storing capability.
- With automatic power control the TM75-AI Microwave Generator will automatically compensate for line voltage flections, delivering a steady power output.

### Specifications:

Output Power:	PLC-controlled, 5 to 75kW continuous duty
Input Power:	480 VAC, 3-phase, 60 cycle approximately 120 KVA
Operating Frequency:	915 MHz +/- 15 MHz
Magnetron Protection:	A 3-port ferrite circulator with water load to protect the magnetron during periods of high reflected power.
Arc Detection:	Photoelectric Arc Detection for protection of the Magnetron, circulator and waveguide.
Output Fitting:	WR-975 Waveguide with EIA Flange
Cooling:	Plant water 4 gpm min., 70°F maximum
Overall Dimensions:	48 inches deep X 72 inches wide X 78 inches high
Weight:	Approximately 5,000 lbs

**Interlocks:** High reflected power, Water Level, Water Temperature, Water Flow, Air Flow, Cabinet Air Temperature

**Indicator Lamps:** Oven Ready, Generator Ready, System Fault, Heat "ON"

**Push Buttons and Switches:** Start-up, Shut down, Start Heat, Stop Heat, Local/Remote Power Control Switch, Reset, E-Stop

**Panel Meters:** Output Power, Filament Hour

Call For more detailed information about the Thermex TM100AI and the complete line of Thermex Microwave and RF equipment.

**Thermex Thermatron, LP**