

OMNI PROCESSOR S200

OVERVIEW

This document provides an overview of the Omni Processor S200 from Janicki Bioenergy, and addresses many of the frequently asked questions received.

WHAT IS THE OMNI PROCESSOR S200?

The Omni Processor S200 is a cutting-edge, stationary combined heat and power plant that can convert dry or wet waste generated from wastewater treatment, industrial or food and beverage refining processes into electricity, thermal energy (steam and heat), pathogen-free reuse water (potable water possible with additional equipment) and ash. It is particularly well suited for consuming large volumes of waste generated in the food and beverage processing, agricultural, the paper and paperboard, and wastewater treatment industries.

S200 Specifications:

- Omni Processor S200 with Single-stage Dryer
 - Boiler Capacity (2.1MW output continuous) – 12 dry tons per day (dtpd)
 - Dryer Capacity (18 – 20% min. solids content) – 67 wet tons per day (wtpd)
- Electrical Generation – up to 250 kW excess
- Water Production – up to 19,500 gallons per day

BASICS ON INPUTS AND OUTPUTS

INPUT: FUEL

After startup and with steam engine(s) configured, the S200 can power itself from the electricity it generates – S200 parasitic electrical load ~50kW. The S200 requires, at a minimum, approximately 10 – 12 dtpd to maintain continuous operation and generate sufficient energy to run the plant at full capacity, and can process through the single-stage dryer as much as 67 wtpd (18% solids content) of material. The S200 works, as well, with sewage sludge, animal byproducts, agricultural byproducts, and municipal solid waste - including most plastics. Dry fuel inputs must be pre-sorted (metal, glass, toxic substances removed) and reduced in size not to exceed 10mm in diameter.

The S200 can accept fuel in dry or wet form, separately or combined, and be configured with the required fuel receptacles:

- A wet fuel feed that accepts sludge or other material that is less than or equal to 80% water
- A dry fuel feed for material that has less than 30% water content

This configuration can be customized to allow for maximum flexibility and versatility in fuel inputs.

OUTPUT: AIR EMISSIONS

The S200 is designed to meet all U.S. EPA air emission regulations, specifically 40 CFR 60 Subpart E *Incineration* and 40 CFR 60 Subpart LLLL *Standards of Performance for New Sewage Sludge Incineration Units*. Due to its unique dryer-fluidized bed boiler configuration, the S200 can transform wet fuel streams into a dry, valuable fuel source containing minimal moisture. Unlike traditional sewage sludge incinerators, this leads to a much cleaner and more efficient combustion of biosolids.

OUTPUT: ELECTRICITY

When configured with steam engine(s), the S200 can produce up to 300 kW of electricity. Since the S200 consumes approximately 50 kW to operate, up to 250 kW of excess electricity is available to power other operations or can be sent to the electric grid. The S200 can be configured to synchronize to grid power or function as a stand-alone power source to electrical loads directly.

OUTPUT: WATER

Depending on the moisture content of the fuel, the S200 can produce up to 19,500 gallons of water per day. In its standard configuration, the water is distilled and purified of volatile organic compounds before discharged as a clean, pathogen-free reclaimed water source. With the Water Purification Unit attached, this water can be further cleaned, filtered and pH adjusted to U.S. EPA and WHO potable water standards.

OUTPUT: FLY ASH

The S200 produces a dry, pathogen-free fly ash. The volume of ash (fly and bottom) produced is a function of the fuel feed into the S200. Anything in the fuel not consumed in the fluidized sand bed boiler will come out in the ash. We typically see 10% - 20% of dry matter going in will come out as ash - approximately 1-2 tons of fly ash per day. In some

locations, fly ash can be sold and used as a concrete or asphalt additive or used as a soil amendment. The S200 produces no secondary wet sludge stream.

DIMENSIONS AND CONFIGURATION

The S200 requires a relatively small concrete pad measuring approximately 38 feet (11.5 m) by 65 feet (20 m) and 8 inches (20 cm) in thickness. Site dimensions and space requirements will differ depending on S200 configuration and additional supporting equipment.

The S200 will also require electrical, natural gas and water connections for operation.

LABOR/OPERATOR REQUIREMENTS

The S200 is 100% computer-controlled and therefore, during most routine operations, one operator onsite is satisfactory. Most federal or state requirements stipulate, at a minimum, one (1) fully trained and qualified operator is required on-site or within 1 hour distance to operate the Omni Processor (40 CFR 60 Subpart LLLL, §60.4810). Due to built-in process automation and simplicity, a trained engineer is not required to operate the S200.

INITIAL STARTUP / HEAT-UP OF SAND BED

The S200 will require auxiliary electricity and natural gas for startup and heat-up of the fluidized bed boiler. If electrical power is not available, a diesel generator can be employed. Once the bed is at temperature and the fuel source has reached its required dryness, the S200 can be operated autogenously – no auxiliary electricity or natural gas required.

REMOTE OPERATIONS CAPABILITY

From its Central Command Center in Washington, Janicki Bioenergy will monitor every S200 remotely and provide 24-hour access as necessary or by request. Furthermore, you can designate key personnel access to real-time status of your S200 anytime/anywhere and view video feeds.

For an additional annual fee, Janicki Bioenergy will also provide remote operation and maintenance support to allow 24/7/365 operation of your process.

ANNUAL MAINTENANCE CONTRACT

In order to maximize your operational efficiency and minimize unexpected maintenance costs, Janicki Bioenergy offers an Annual Maintenance Contract that will replace or upgrade any failed or obsolete part or component over the contract period. This cost effective, fixed annual maintenance cost, is tailored to make your annual maintenance budgeting simple and affordable.

HOW TO ORDER

Pricing for the S200 is based on size and output configuration, and is available upon request. Pricing includes shipping, reassembly and commissioning on-site, and S200 specific operator training. Due to high demand, a 10% deposit may be required at the time of order placement.