

97300 / 97300T



Shand & Jurs Co.

Waste Gas Burner (Stack-Mounted Ignition)

A COGNESENSE BRAND

The Shand & Jurs Biogas® Model 97300 Waste Gas Burner combusts excess biogas when system production exceeds utilization capacity using a stack-mounted ignition system. Installed downstream of anaerobic digesters, gas storage vessels, or landfill gas headers, the burner prevents pressure buildup and uncontrolled methane release when gas production temporarily exceeds recovery or engine consumption capacity.

The burner incorporates a high-performance stoichiometric pilot maintains the proper air-to-fuel ratio across wide variations in methane concentration, pressure, and saturated moisture typical of wet biogas. The elevated stack positions the ignition source above grade, providing safe flame clearance while dispersing combustion products away from ground-level equipment.

The burner tip incorporates swirl inducers that generate cyclonic air-fuel mixing, while the wind shroud induces sufficient combustion air to maintain stable flame retention across the operating range. Stainless steel components support operation in harsh outdoor environments, including wind speeds up to 150 mph and seismic loading conditions. Shroud of the burner can be provided with a bevel to protect against higher wind speeds.

The 97300T variant adds a touchscreen control interface and PLC integration capability for automated flare monitoring while maintaining identical combustion performance.

For installations requiring ground-level pilot service access, see the Shand & Jurs Biogas Model 97301 Waste Gas Burner series.



Key Features

Stoichiometric pilot assembly

Maintains reliable ignition and proper air-fuel mixture across wide pressure and BTU variations typical of digester gas.

Cyclonic flare tip with swirl inducers

Promotes efficient air-fuel mixing and improves flame retention across variable gas quality.

Wind-shrouded burner stack

Maintains stable combustion in wind conditions up to 150 mph.

Stack-mounted ignition configuration

Positions the flame above process equipment for safe clearance and dispersion.

Continuous or intermittent pilot operation

Supports either constant readiness or fuel-conserving operation.

Touchscreen control option (97300T)

Provides local operator interface and PLC integration capability.



Benefits



CONTROLLED EXCESS GAS COMBUSTION

Prevents overpressure within digesters or gas storage systems.



STABLE COMBUSTION OF WET METHANE

Avoids unburned methane release during fluctuating gas production.



PRESSURE-ACTIVATED FLARE OPERATION

Maintains process stability when gas production exceeds utilization capacity.



RELIABLE OUTDOOR OPERATION

Prevents flare shutdown during severe weather conditions.



INTEGRATED MONITORING OUTPUTS

Provides alarm and flame-proven signals for system control integration.



CONTROLLED METHANE DESTRUCTION

Prevents uncontrolled methane discharge that can equal thousands of pounds per year per vent.

Available Options



Continuous or intermittent pilot

Matches operating philosophy and fuel usage preference.



Remote SCADA or pressure transmitter or pressure switch start

Enables automatic activation from system pressure conditions.



Touchscreen control panel (97300T)

Adds local control and monitoring interface.



Multiple enclosure ratings

Supports hazardous-area electrical installations.



Pilot fuel selection

Natural gas, propane, or dual-fuel capability.



316 stainless steel materials

Improves corrosion resistance in aggressive biogas environments.

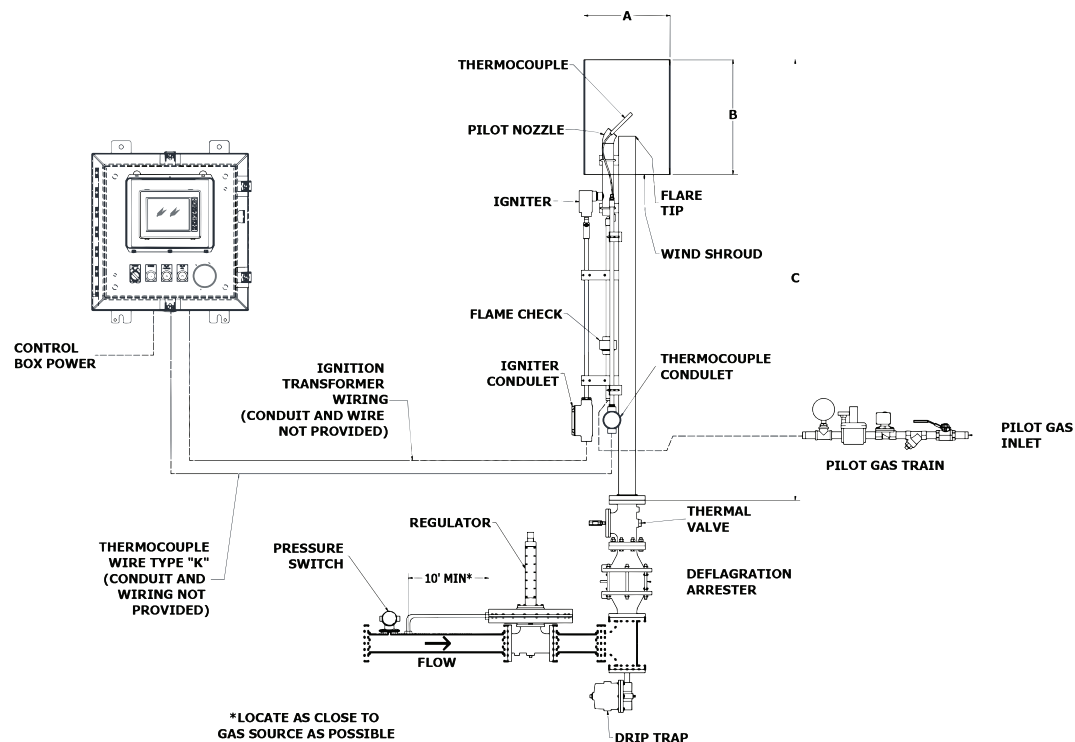


Key Performance Data

Parameter	Value
Sizes	2", 3", 4", 6", 8", 10", 12"
Capacity Range	4,000 – 218,600 ft³/hr
Stack Burner Connection	ANSI 150 lb. Raised Face Flange
Wind Rating	Up to 150 mph
Biogas Composition	50–70% CH ₄ with CO ₂ balance and trace gases
Moisture Content	Saturated (100% humidity)
Pilot Gas	Natural gas or LPG (propane) or waste gas (≥500 BTU/ft³)
Pilot Gas Pressure	12 in. W.C. – 10 PSIG
Power Requirements	120 VAC, 4 A standard or 240 VAC, 2 A optional
Controller Temperature Range	–20°F to 150°F
Contact Outputs	Alarm SPST (120 VAC, 1 A) • Flame Proven SPST (120 VAC, 1 A)
Control Modes	Manual start or Remote start or Pressure Transmitter or Pressure-switch start
Pilot Operation	Continuous while burning, intermittent or 24/7 standing pilot
Thermocouple	Inconel with Type K wiring
Control Box	NEMA 4, NEMA 4X Stainless Steel or NEMA 7 Aluminum - UL508A available.
Turndown	10:1 (Typical)
Materials of Construction	• Stack with Shroud: 304L Stainless Steel (316L optional) • Piping: 304L Stainless Steel (316L optional) • Pilot Components: 304L Stainless Steel (316L optional) • Hardware: Stainless Steel



Dimensions



Stack Dimensions

Dimensions (Inches [mm])			
Size	A	B	C
2 [50]	16 [406]	24 [610]	88 [2235]
3 [75]	18 [457]	24 [610]	92 [2337]
4 [100]	20 [508]	24 [610]	92 [2337]
6 [150]	24 [610]	36 [914]	128 [3251]
8 [200]	24 [610]	48 [1219]	144 [3658]
10 [250]	30 [762]	48 [1219]	176 [4470]
12 [300]	36 [914]	60 [1524]	188 [4775]

Flow specified for gas with 0.8 specific gravity, air at 60o F, and .5” WC pressure drop

Model Number Selection

The model number will have a base number 97300T followed by 8 digit numbers. These digits will represent 8 sets of option tables.

97300T - AB - CD - EF - GH

Table A - Pilot Gas

Option A	Pilot Gas
0	Natural
1	Propane
2	Bio
3	Dual

Table B - Unit Size

Option B	Unit Size
2	2”
3	3”
4	4”
5	6”
7	8”
8	10”
9	12”



Table C - Power / P.E. Certificate

Option C	Description
1	120 VAC, 60HZ
2	220/240 VAC, 50/60HZ
3	120 VAC, 60HZ with P.E.
4	220/240 VAC, 50/60HZ with P.E.

Table E - Control Inputs

Option E	Description
1	1 Dry Contact Input
5	2 Dry Contact Inputs
6	1 4-20MA Analog Input
7	1 4-20MA Analog + 1 Dry Contact Input

Typically Dry Contacts are used for SCADA or pressure switch.
Analog for pressure transmitter.

Table G - Gas Train

Option G	Description
0	Standard*

* Standard regulator pressure is 10 PSIG max

Accessories

PART NUMBER	DESCRIPTION
9730-10124	Pressure Switch - Explosion Proof, 30" W.C. Adjustable Deadband 1/4" NPT
122200	Pressure Transmitter - Explosion Proof, 1/2" NPT, 4-20 Output, 1.5 PSI Max

Summary

The Model 97300 Waste Gas Burner provides controlled combustion of excess biogas when system production exceeds utilization capacity. Its stack-mounted ignition configuration promotes safe flame clearance while the stoichiometric pilot and wind-stabilized flare tip maintain reliable combustion of high-flow, low-BTU wet methane. The 97300T adds touchscreen monitoring and control integration for automated flare system management while maintaining identical combustion performance.

Table D - Enclosure Rating / UL

Option D	Description
0	NEMA 4X - Carbon Steel
2	NEMA 4X - 304 Stainless Steel
3	NEMA 4X - 316 Stainless Steel
4	NEMA 4X - Carbon Steel (UL 508A)
6	NEMA 4X - 304 SS (UL 508A)
7	NEMA 4X - 316 SS (UL 508A)

Table F - Pilot Type

Option F	Description
1	Continuous (ON while flaring)
2	Intermittent (OFF while flaring)
5	Continuous (ON While Flaring) + 4-20MA Temp Out
6	Intermittent (OFF While Flaring) + 4-20MA Temp Out

Pilot is always off when not flaring.

Table H - Materials of Construction

Option H	Stack / Piping
2	304(L) Stainless Steel / 304(L) Stainless Steel
4	316(L) Stainless Steel / 316(L) Stainless Steel

NOTE: Pilot Material 316 Stainless Steel

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This document is for information purposes only. All designs subject to change. Certified dimensions, specifications, and performance data available upon request