

## **TPF Series Ozone Generators**



### **Introduction**

The model TPF is modular series of medium frequency ozone generators employing the latest electronics. The generators are manufactured by Ozono Elettronica Internazionale (OEI) of Milan Italy. OEI has been manufacturing ozone generators for over 30 years and has installed over 400 units during that time.

The model TPF can operate with air or oxygen feed. The ozone generator consists of a cylindrical vessel in which stainless tubes are welded between two fixed plates, similar in construction to a shell and tube heat exchanger. A coolant flows around the outside of these steel tubes to take away the heat produced in the generation of ozone.

The steel tubes serve as receptacles for high voltage electrodes. The steel tubes' inside diameter and the high voltage electrode's outside diameter correspond closely so that a small gap exists between them. Ozone is formed in this gap from the continuously flowing feed gas and exits the ozone generator in the required concentration.

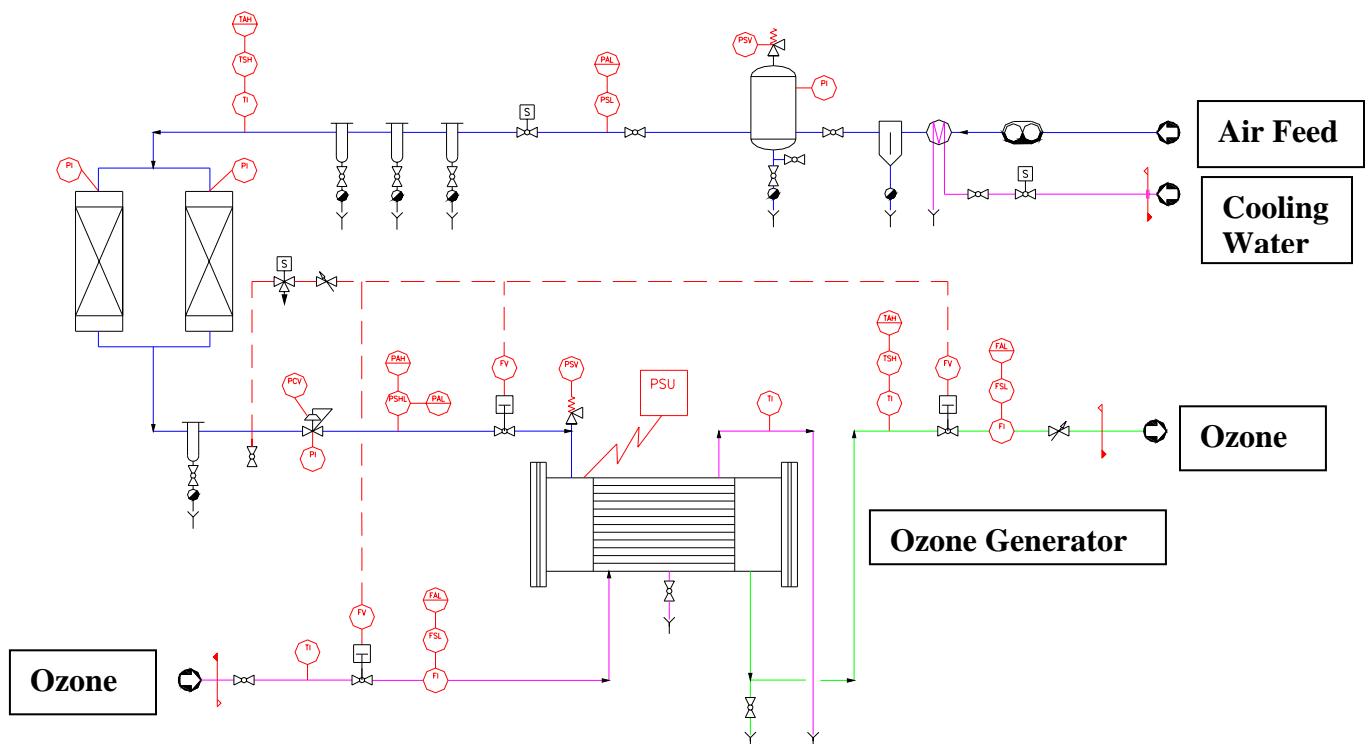
Each electrode in the system has its own fuse which ensures the selective disconnection of a defective electrode from the others without any interruption in the process. The main power unit consists of one or more rack power modules. This modular design permits easy maintenance since power modules can be quickly replaced with standard modules. The power supply unit (PSU) and electronic circuits are constructed with advanced semiconductor technology (IGBT).

The process is fully instrumented to insure safe and reliable operation. A programmable logic controller (PLC) checks each operation and instrument. A touch screen control panel allows the operator to interface with the PLC or the unit can be integrated into the plant SCADA through the provided RS 485 serial port.

#### **KEY FEATURES:**

- Compact design with controls, power supply & air preparation on a single skid
- Modular electronics
- Every dielectric element mounted with individual fuse
- Hydraulic connections made with stainless steel
- Unique process instrumentation for reliable operation
- PLC with touch screen control panel

## Air Preparation Unit



# Process Flow Sheet and Instrumentation Diagram (For Informational Purposes Only)

Type	Production lb/day		Air-Oxygen Flow SCFM		Cooling Water gpm		Absorbed Power kW		Dimensions Ft
	Air 2-3%	Oxygen 6-10%	Air 2-3%	Oxygen 6-10%	Air	Oxygen	Air	Oxygen	L x W x H Weight Lb
<b>TPF 19</b>	48-42	95-69	22-12	13-5	7.5	13.5	10.6	10.8	6.6 x 5.1 x 7.1 4,400
<b>TPF 26</b>	69-53	132-90	31-16	18-7	10.2	18.6	16.6	14.8	6.8 x 5.2 x 7.1 4,650
<b>TPF 37</b>	95-79	185-132	44-24	25-11	14.6	26.5	20.1	21.1	6.8 x 5.4 x 7.1 5,148
<b>TPF 61</b>	164-127	306-217	73-39	42-17	24.3	43.3	34.2	34.7	7.2 x 6.1 x 7.1 6,160
<b>TPF 91</b>	243-190	454-322	109-58	62-26	36.2	64.9	51.0	51.8	7.4 x 6.2 x 7.1 7,040
<b>TPF 127</b>	338-269	634-449	151-81	87-36	50.4	90.5	71.1	72.3	7.9 x 6.9 x 7.1 7,700
<b>TPF 158</b>	417-333	792-560	188-100	108-45	62.7	113.1	88.5	90.0	8.2 x 7.4 x 7.3 8,932
<b>TPF 182</b>	480-385	913-644	217-110	125-52	72.4	130.3	102.0	103.6	8.2 x 7.4 x 7.3 11,660

Data is for informational purposes only, contact Spartan for detailed engineering data  
 Compressed Air Feed: 100 psi, <95 Degrees F, filtered to remove oil, hydrocarbons and dust.  
 Ozone Generator must be located in a weather/temperature controlled environment  
 Cooling Water: 15 degrees C

<b>SITE CONDITIONS</b>	
Design Altitude	< 3,280
Ambient Temperature	40-95 °F
Humidity	< 80 %
Particulates	< 0.14 mg/SCF
Pressure	14.7 PSI
Gas and Noxious Vapors	NO

<b>ELECTRICAL DATA</b>	
Mains voltage	400 Vac ± 10 %
Frequency	50 – 60 Hz
Power factory	0.86 – 0.98 (cos φ)
Regulation range	10 – 100 %
Remote control	4 – 20 mA / RS485
Protection class	IP 21
Standards	EN / IEC / ISO
Compliance	CE

<b>CONTROL &amp; SIGNAL</b>	
ON / OFF / RESET	Local / remote
Valves open (purge)	Local / remote
Output control	Local / remote
Production stop	Local / remote
Remote enable	Local / remote
Alarm (collective)	Local / remote

<b>MATERIALS</b>	
In contact with ozone	AISI 316 L, Viton®, PTFE
In contact with water	304 L, 316 L
Enclosure	Mild steel

Viton® is a registered trademark of DuPont Performance Elastomers

TPF Ozone Generators are Available from Spartan Environmental Technologies, LLC.  
 Phone: 800-492-1252, Fax : 440-368-3569, e-mail: [info@SpartanWaterTreatment.com](mailto:info@SpartanWaterTreatment.com)  
 Web : [www.SpartanWaterTreatment.com](http://www.SpartanWaterTreatment.com)