OXYGEN GENERATOR – O-GEN (PSA Oxygen generator)

DESCRIPTION

The O-GEN series oxygen generators extract the available oxygen in the ambient air from the other gases by applying the Pressure Swing Adsorption (PSA) technology. During the PSA process compressed, cleaned ambient air is led to a molecular sieve bed, which allows the oxygen to pass through as a product gas, but adsorbs other gases. The sieve releases the adsorbed gases to the atmosphere, when the outlet valve is closed and the bed pressure returns to ambient pressure. Subsequently the bed will be purged with oxygen before fresh compressed air will enter for a new production cycle. In order to guarantee a constant product flow, O-GEN oxygen generators use modules of two molecular sieve beds, which alternatively switch between the adsorption and the regeneration phase. Under normal operating conditions and with correct maintenance the molecular sieve beds will have an almost indefinite lifetime.

APPLICATIONS

- Aquaculture
- Feed Gas for Ozone Generators
- Glass blowing
- Leaching
- Aquaculture
- NO_x Reduction for Fuel Burners
- Oxygen Lancing
- Welding, Brazing
- Wellness

TECHNICAL SPECIFICATIONS

Operating pressure	5 – 10 barg
Operating temperature (Feed air)	5°C to 35°C (ambient up to 45°C)
Oxygen Dew point (at atmospheric pressure)	-60°C
Voltage, Frequency	110–230 V / 50–60 Hz
Power consumption	<120W
Sound level	<70 dB(A)
Compressed air quality (inlet)	Class 1.4.1 acc. to ISO 8573-1 (0,1um ; 3°C ; <0,01mg/m3/h)
Filters (inlet + outlet)	Included

MATERIALS

Columns, construction, support	Carbon Steel
Column inner protection	/
Column and construction protection	Epoxy powder painted
Valves	Brass, aluminium
Fitting, screws, plugs	INOX, brass, steel (zinc coated)
Outside protection	Epoxy powder painted
Adsorbent	Molecular sieve 13X

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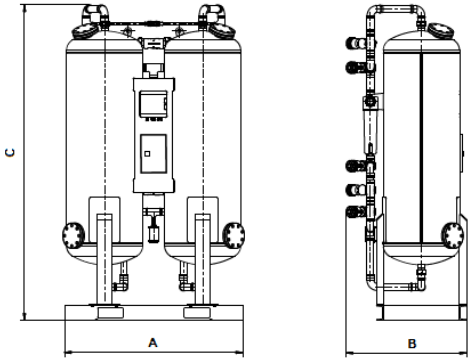
SIZES

Model	Connection [inch]		Length A [mm]	Width B [mm]	Height C [mm]	Mass [kg]	Volume* [l]
	IN	OUT					
O-GEN 1	1/2	1/2	635	530	1650	130	20,8
O-GEN 2	1/2	1/2	685	530	1650	190	35,1
O-GEN 3	1/2	1/2	795	545	1655	230	56,2
O-GEN 4	1/2	1/2	795	585	1920	295	69,5
O-GEN 5	1/2	1/2	845	660	1975	410	99,0
O-GEN 6	1/2	1/2	950	720	2005	500	127,0
O-GEN 8	1/2	1/2	1040	780	2005	585	158,4
O-GEN 10	1	1/2	1100	780	2150	730	195,3
O-GEN 13	1	1/2	1150	795	2335	835	259,5
O-GEN 16	1	1/2	1250	850	2380	980	312,5
O-GEN 20	1	1/2	1330	890	2420	1120	380,9
O-GEN 23	1 1/4	1/2	1425	945	2480	1260	454,7
O-GEN 29	1 1/4	1/2	1550	1030	2520	1350	566,4
O-GEN 35	1 1/2	1/2	1680	1090	2580	1395	683,6
O-GEN 44	1 1/2	1/2	1805	1160	2615	1459	854,8
O-GEN 50	2	1/2	1900	1180	2680	1553	976,6
O-GEN 57	2	1/2	2070	1210	2720	1685	1113,3
O-GEN 64	2	1/2	2180	1250	2750	1810	1250,0
O-GEN 75	2	1/2	2255	1280	2780	1937	1463,2
O-GEN 84	2,5	1	2480	1370	2850	2560	1640,6
O-GEN 100	2,5	1	2720	1470	2880	3640	1941,5

* per column



PERFORMANCE

Model	INLET PRESSURE [barg]	DISCHARGE PRESSURE [barg]	OXYGEN PURITY [%]		
			90	93[1]	95
O-GEN 1; O_2 flow [Nm3/h	7,5	6,1	1,07	1,02	0,97
Feed air consumption [Nm3/h]			11,6	11,4	11,3
O-GEN 2; O_2 flow [Nm3/h	7,5	6,1	1,80	1,71	1,63
Feed air consumption [Nm3/h]			19,6	19,3	19,0
O-GEN 3; O_2 flow [Nm3/h	7,5	6,1	2,88	2,75	2,62
Feed air consumption [Nm3/h]			31,4	30,9	30,4
O-GEN 4; O_2 flow [Nm3/h	7,5	6,1	3,56	3,40	3,24
Feed air consumption [Nm3/h]			38,8	38,2	37,6
O-GEN 5; O_2 flow [Nm3/h	7,5	6,1	5,07	4,84	4,61
Feed air consumption [Nm3/h]			55,2	54,4	53,6

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O-GEN 6; O_2 flow [Nm3/h	7,5	6,1	6,50	6,21	5,92
Feed air consumption [Nm3/h]			70,9	69,8	68,7
O-GEN 8; O_2 flow [Nm3/h	7,5	6,1	8,11	7,74	7,38
Feed air consumption [Nm3/h]			88,4	87,1	85,7
O-GEN 10; O_2 flow [Nm3/h	7,5	6,1	10,00	9,55	9,10
Feed air consumption [Nm3/h]			109,0	107,4	105,7
O-GEN 13; O_2 flow [Nm3/h	7,5	6,1	13,29	12,69	12,09
Feed air consumption [Nm3/h]			144,8	142,7	140,5
O-GEN 16; O_2 flow [Nm3/h	7,5	6,1	16,00	15,28	14,56
Feed air consumption [Nm3/h]			174,4	171,8	169,2
O-GEN 20; O_2 flow [Nm3/h	7,5	6,1	19,50	18,62	17,75
Feed air consumption [Nm3/h]			212,6	209,4	206,2
O-GEN 23; O_2 flow [Nm3/h	7,5	6,1	23,28	22,23	21,19
Feed air consumption [Nm3/h]			253,8	250,0	246,1
O-GEN 29; O_2 flow [Nm3/h	7,5	6,1	29,00	27,70	26,39
Feed air consumption [Nm3/h]			316,1	311,4	306,6
O-GEN 35; O_2 flow [Nm3/h	7,5	6,1	35,00	33,43	31,85
Feed air consumption [Nm3/h]			381,5	375,8	370,1
O-GEN 44; O_2 flow [Nm3/h	7,5	6,1	43,77	41,80	39,83
Feed air consumption [Nm3/h]			477,0	469,9	462,7
O-GEN 50; O_2 flow [Nm3/h	7,5	6,1	50,00	47,75	45,50
Feed air consumption [Nm3/h]			545,0	536,8	528,7
O-GEN 57; O_2 flow [Nm3/h	7,5	6,1	57,00	54,44	51,87
Feed air consumption [Nm3/h]			621,3	612,0	602,7
O-GEN 64; O_2 flow [Nm3/h	7,5	6,1	64,00	61,12	58,24
Feed air consumption [Nm3/h]			697,6	687,1	676,7
O-GEN 75; O_2 flow [Nm3/h	7,5	6,1	74,92	71,54	68,17
Feed air consumption [Nm3/h]			816,6	804,3	792,1
O-GEN 84; O_2 flow [Nm3/h	7,5	6,1	84,00	80,22	76,44
Feed air consumption [Nm3/h]			915,6	901,9	888,1
O-GEN 100; O_2 flow [Nm3/h	7,5	6,1	99,40	94,93	90,46
Feed air consumption [Nm3/h]			1083,5	1067,3	1051,0

(1) Purity according to the Oxygen 93 Monograph of European Pharmacopoeia 7.1 and USP 23 and conform ISO 10083 standard.

Flow rates at standard atmospheric conditions (20 °C / 70 °F, 1013 mbar / 14,7 psi and 60% RH).

Performance +/- 5%.

STANDARD EQUIPMENT

- Set of External Feed Air Filters
- Adsorber Vessel in Carbon Steel
- Long life Pneumatic Valves
- Internal Piping & Fittings in SS316
- Exhaust Mufflers
- Air and Oxygen flow Regulation
- Control System with SIEMENS PLC
- WebControl
- Pressure Transmitter for Automated Idle-Mode

OPTIONAL EQUIPMENT

- Oxygen Analyzer with Zirconium-Oxide Sensor
- Electronic Product Flow Meter
- Feed Air / Product Moisture Analyser
- Oxygen Booster with Cylinder Filling System
- Feed Air / Product Temperature Transmitters
- Touch screen or Semi-Graphical Operator Interface
- Sterile Filters

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