ADSORPTION DRYERS

These devices are used everywhere the compressed air plants are subjected to freezing or where in critical applications the use of very dry air is required.

The adsorption dryers provide the highest quality compressed air - free of moisture, solid particles and oil. They consist of two columns, filled with activated carbon and operated alternately in the determined time intervals. Adsorption takes place under pressure in the first column while the second column regenerates (adsorption drying).

Depending on the way of the bed regeneration, there are cold and heated regenerative adsorption dryers.

ADSORPTION DRYER
is the complete compressed air treatment station equipped as standard in a set of two filters: coalescing filter of inlet air and dust filter of outlet air

- High quality air with very low relative humidity to effectively prevent water condensation.
- Small compressed air pressure drops thanks to large capacity adsorbent-filled tanks, as well as large diameter supply and receiving collectors. This ensures low speed of compressed air, and thus a small pressure drop.
- Simple design and easy operation.
- High energy efficiency of dehumidifiers equipped with a dew point temperature sensor which allows you to automatically adjust the frequency of dehumidifier cycles to actual conditions, and thus reduce the consumption of compressed air for bed regeneration.

Airpol

HEAT REGENERATED ADSORPTION DRYERS

Regeneration of the bed in theses devices takes place by blowing it with heated ambient air. The use of the blower and air heater eliminates losses of compressed air that in quantity of only 3% is also used for sorbent regeneration.

In these devices, bed regeneration is done by purging with the heated air taken from the environment. The blower with the air heater eliminates losses of compressed air which, in an amount of just 3%, is used to regenerate the adsorbent.

HEATED REGENERATION means elimination of compressed air losses

Energy saving

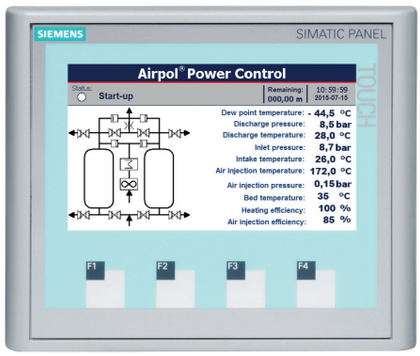
- minimal consumption of compressed air for adsorbent regeneration (as compared to other dehumidifier types)
- adjusting the frequency of adsorption and regeneration waveforms according to measurement of the pressure dew point temperature. The system automatically controls the cycles of the dehumidifier work for minimal use of compressed air, in an amount necessary to recover the bed and also to maintain the constant pressure dew point temperature set in the controller.

Constant pressure dew point and maximum dehumidification accuracy

The pressure dew point temperature sensor allows the measurement and visualization of its actual value. By automatically adjusting the dehumidifier, (frequency of adsorption and regeneration phases) the pressure dew point temperature is consistently maintained at a constant preset level to ensure desired compressed air quality.

Microprocessor controller in the heat regenerated adsorption dryers

The controller optimizes the drying process and ensures high energy efficiency by regulating the dryer operation depending on the measurement of the pressure dew point value at the dryer compressed air outlet. Owing to that loss of dried air is limited, and the entire adsorption cycle is adapted to the changing operation conditions.



Pressure dew point, Compressed air purity class according to ISO 8573.1

at 100% load

- -40°C, class 1.2.1 - SGR dryers (standard version)
- -70°C, class 1.1.1 – SGR dryers (special version)

Complete control of the dryer operation

The dryer controller enables the user to:

- monitor the present dryer condition,
- read present values of the process parameters including monitoring of their changes in the diagram,
- modify different settings,
- view the list of events,
- read present state of the counters of operating time, cycles, energy consumption, time to next service etc.

Web Server

The dryer controller is equipped with an option for remote monitoring of its condition by the implemented function of web server. It means that the user is able to view the dryer condition with the web browser when the controller is connected to the local network.

Type	Flow*	Installed power	Power supply	Connection	Overall dimensions			Weight
	m^3/h	kW	V/Hz/Ph		L mm	W mm	H mm	kg
SGR 0300	300	6,6	400/50/3	G $1^1/_2$	1200	1440	2190	600
SGR 0375	375	6,6	400/50/3	G $1^1/_2$	1200	1440	2190	600
SGR 0550	550	13,2	400/50/3	G 2	1350	1260	2290	1200
SGR 0650	650	13,2	400/50/3	G 2	1350	1260	2290	1200
SGR 0850	850	20,0	400/50/3	G 2	1600	1350	2200	1600
SGR 1000	1000	20,0	400/50/3	G $2^1/_2$	1600	1350	2200	1600
SGR 1350	1350	22,5	400/50/3	G $2^1/_2$	1900	1590	2300	2200
SGR 1650	1650	22,5	400/50/3	G 3	1900	1590	2300	2200
SGR 1950	1950	46,0	400/50/3	DN 80	2250	1660	2690	3500
SGR 2250	2250	46,0	400/50/3	DN 80	2250	1660	2690	3500
SGR 2750	2750	46,0	400/50/3	DN 100	2250	1870	2870	3700
SGR 3500	3500	49,0	400/50/3	DN 150	3000	2200	3200	4500
SGR 4000	4000	49,0	400/50/3	DN 150	3000	2200	3200	4500

***Reference conditions:**

Operating pressure	7 bar
Compressed air temperature	35°C
Ambient temperature	20°C
Pressure dew point	-40°C +/- 1 at 100% load

Limit conditions:

Min/max operating pressure	6 bar/10 bar
Max compressed air temp. on the inlet	+45°C
Min/max ambient temperature	+5°C/+40°C
Max oil content on the inlet	3 mg/m^3

Correction factors for operating conditions other than the declared reference conditions							
Compressed air temperature [°C]	Compressed air temperature [bar]						
	4	5	6	7	8	9	10
30	0,72	0,92	1,09	1,25	1,36	1,45	1,51
35	0,55	0,70	0,86	1,00	1,12	1,25	1,37
40	0,33	0,45	0,58	0,71	0,82	0,92	1,03

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