



SCHÖNN
Medizintechnik GmbH

MEDICAL AIR PLANT



MEDICAL AIR PLANTS

The Schön compressed air systems consist of 2, 3 or 4 separate compressors, with accordingly to calculated plant capacity pressure tanks, filter systems, compressed air compressors, dryer and pressure reducer stations. This enables maintenance and repairs possible without interruption of the air supply, offering additional operational security. Also, the system function is continuously monitored automatically, malfunctions are displayed immediately and can be transmitted to the hospital Building Management System (BMS).

As each installed system consists of many separate components, only proven components of the highest quality are selected which conform to all relevant regulations and standards. The compressed air supply systems built by Schön, not only meets the requirements of the DIN ISO 7396-1, HTM 02-01 and HTM 2022 standards, thanks to its particularly effective pressure conditioning unit with 5 filter phases and an adsorption dryer, the systems also comply with the standards set by the European Pharmacopeia. Each system has been tested and got CE certificated.



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Air Compressors

Atlas Copco Air compressors are used in Medical Air Plants to supply compressed air. The compressor which takes the purified air in, sends it to the Air Receiver at the required pressure. The compressors are generally oil injected type or oil-free type; capacities vary from 126 lpm to 5.184 lpm. Power consumptions are in a range of 1.5 kW to 30 kW, and there are types with or without silencers. Besides the types mentioned above, there are oil-lubricated screw type compressors to be used in hospitals which require high capacity. Their capacities will be in a range of 8 l/sec (480 lpm) to 222 l/sec (13320 lpm) at 10 bar pressure with a power consumption of 7.5 kW to 75 kW.

GA and GA+ (5-500 kW)

GA VSD (37-315 kW)

GA VSD+ (7-75 kW)

Market-leading GA oil-injected rotary screw compressor delivers outstanding performance, high productivity and low cost of ownership - even in the harshest environments.



Highest reliability

GA series is ISO 9001, ISO 14001 and ISO 1217 compliant. Long and trouble-free life at the lowest operating cost.

Advanced design

Latest generation of our innovative oil-injected screw element included.

Reduced energy costs

Reduced lifecycle costs thanks to the use of a superior screw element and a high-efficiency motor. VSD reduces energy costs by 35% on average.

Integrated air system

GA WorkPlace Air System delivered ready for use. No need for a separate compressor room. Low-noise operation, compact size and integrated air treatment equipment. Integrated options significantly reduce pressure drops to save energy.

Air treatment integration

Full Feature GA compressors have an integrated dryer and oil-water separator to protect your compressed air network. The high-quality air extends the life of equipment, increasing efficiency and ensuring quality in your final product.

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Features

- Proven design based on established technology.
- Flexible design allows compact installations in existing and new plant rooms.
- Duplex heatless desiccant air dryer including economy circuit.
- Electronic controls and monitoring ensure reliable plant operation.
- Plant controls are configured to minimise running costs.
- Controls include connections for medical gas alarm system and BMS.
- Oil injected screw compressors for quiet and vibration free operation (Other type compressors are also available)
- Use for patient's breathing - Medical Air, surgical instrument, other medical equipment.
- Medical Air Plant complies with: Medical Device Directive MDD 93/42/EEC, EN ISO 7396-1 and ISO 14971, Health Technical Memorandum HTM 02-01 and HTM 2022

Air Receiver

One or more air receivers will be supplied manufactured and tested in BS EN 286-1:1998 standard. Other standards such as ASME, and third-party designs/inspection are available upon request. The receiver(s) is supplied with inspection access panels and automatic drain with manual by-pass. Each receiver is also supplied with a pressure gauge, safety relief valve and fusible plug, and is complete with lifting lugs and mounting feet.



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Medical Air Dryer

The Schön medical air dryer delivers clean, dry medical air all the time. The unique design ensures effective dryer operation even under heavy duty conditions, dew point performance.

High efficiency coalescing filters remove particles and liquids from the air stream to protect the dryers and to protect your medical air delivery. There-pressurization cycle in the dryer adds an additional safeguard against desiccant dusting and valve wear.

The Schön heatless desiccant dryers utilize dew point dependent purge control to guarantee the lowest possible energy losses for desiccant regeneration while delivering a totally stable and reliable dew point. Purge air is minimized with tower switching based on dew point readings, so when the medical air demand is low, so is your energy consumption.



The drying towers are sized specifically for peak calculated demand in medical air applications and capable of producing a -60°C pressure dew point. Unlike industrial dryers applied to medical air applications, the Schön dryers don't waste energy, footprint, or desiccant to achieve unnecessarily low dew points. With smaller towers, less purge air is required to regenerate the drying towers, saving you additional energy dollars.

- Valve for minimization of regeneration air.
- Continuous dew point measurement in the outgoing air on digital control panel.
- Control system with valve monitoring and emergency switching.
- Visual display and collecting malfunction alarm for dew point and system operation.
- Air quality according to the European Pharmacopoeia.
- Space-saving, packaged design
- Simple modification of existing plants without additional control panels.

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All Schön Medical Air Plants are equipped with a duplex set of carefully selected filters, to ensure maximum air quality, and extended service life of the desiccant.

1st Pre-filter - to remove airborne dirt particles, dust and water / oil droplets, from the compressed air.

Activated Carbon filter - to remove by adsorption, hydrocarbon vapours, and odours.

Bacterial Filter - to ensure that the delivered air is free of bacterial contamination

All filters are provided with differential pressure gauges to indicate when a new element is require and due to the full duplex

assembly, elements can be changed without the need for a system shut down.

All filters provide, dirt, dust, oil, water vapor and bacteria free breathable air to Hospital Medical Air System.

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Air Plant Control Panel

Touch Screen Display Control Panel

CONTROL PANEL : SMAPL-3000

Features

- 10" Colourful and easy-to-use display.
- The system has automatic and manual operation feature.
- Adjustable working system up to 4 compressors. Audio-visual status display and fault display.
- Fault alarm statuses are designed according to HTM standards.
- Synchron Aging work system.
- Remote access with Modbus-RTU and connection to Hospital BMS.
- Compressor temperature can be adjusted as PT100 and dry contact.
- Pressure measurement units: mbar, kPa and Psi. The compressor information is displayed both on the touch screen and by the LED signals on the panel: "cut in", "cut out", "defective".
- The compressor transition times are preset at the factory, but these transition times can be adjusted according to the tank reserve, capacity required by the hospital, etc. (While one compressor is running, reserve compressor starts if the running compressor does not meet the required capacity.)
- Compressor start-stop value can be adjusted.
- Display tank pressure and dryer pressure value.
- Display dew point value.
- Display power failure, thermic failure of the compressors.
- The compressor can be deactivated when necessary.
- System detects deactivated compressor(s) and reserve compressor(s) will be activated.
- The operation and failure status of the compressors and dryers are animated on the touch screen.
- Compressor, dryer and alarm status are displayed on the panel by LED signals according to HTM standards.
- The PCB system can operate on its own when any fault condition occurs on the panel.
- The transit times of the dryer can be set by the user.
- The dryer transition times are preset at the factory, but these transition times can be adjusted by user.
- Display dryer status: defective and humid.
- The tube group operates alternately according to interval time.
- Group cylinder transitions automatically switch to higher dew point values. (right group from left group, left group from right group).
- When the cylinder is defective, the other cylinder automatically cut in.
- The system can be operated on touch screen or computer hardware when requested.
- If all the cylinders are defective, automatic flow is provided by the by-pass system.
- By-pass system provides automatic flow even during power cuts.
- Language selection (German-English).
- Authorized person access by password.

"ALL PLANT INFORMATION SHALL BE TRANSFERRED AND SHOWN ON SCHÖNN PLANT MANAGEMENT SYSTEM"

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Compressor Used	Type	Model No	Pressure	Capacity of each Compressor (m3/h)		Capacity of each Compressor (lpm)		Net Plant Output (m3/h) HTM02-01		Net Plant Output (lpm) HTM02-01		kW		dB(A)	
				50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
G2	Duplex	SMAPL-2G2	10 bar	18	17	293	277	17	16	279	263	2,2	2,2	61,0	61,0
	Triplex	SMAPL-3G2						33	32	557	526				
	Quadruplex	SMAPL-4G2													
G3	Duplex	SMAPL-2G3	10 bar	22	-	367	-	21	-	348	-	3,0	-	61,0	-
	Triplex	SMAPL-3G3						44		697					
	Quadruplex	SMAPL-4G3													
G4	Duplex	SMAPL-2G4	10 bar	31	31	517	517	29	29	491	491	4,0	4,0	62,0	62,0
	Triplex	SMAPL-3G4						59	59	982	982				
	Quadruplex	SMAPL-4G4													
G5	Duplex	SMAPL-2G5	10 bar	47	44	780	733	44	42	741	697	5,5	5,5	65,0	65,0
	Triplex	SMAPL-3G5						89	84	1482	1394				
	Quadruplex	SMAPL-4G5													
G7	Duplex	SMAPL-2G7	10 bar	59	58	984	967	56	55	934	919	7,5	7,5	67,0	67,0
	Triplex	SMAPL-3G7						112	110	1869	1837				
	Quadruplex	SMAPL-4G7													
G11	Duplex	SMAPL-2G11	10 bar	87	83	1447	1387	82	79	1375	1318	11,0	11,0	69,0	69,0
	Triplex	SMAPL-3G11						165	158	2749	2635				
	Quadruplex	SMAPL-4G11													
GA15	Duplex	SMAPL-2GA15	10 bar	142	144	2359	2400	134	137	2241	2280	15,0	15,0	67,0	67,0
	Triplex	SMAPL-3GA15						269	274	4482	4561				
	Quadruplex	SMAPL-4GA15													
GA18	Duplex	SMAPL-2GA18	10 bar	179	178	2976	2971	170	169	2827	2822	18,0	18,0	68,0	68,0
	Triplex	SMAPL-3GA18						339	339	5654	5644				
	Quadruplex	SMAPL-4GA18													
GA22	Duplex	SMAPL-2GA22	10 bar	199	217	3319	3612	189	206	3153	3432	22,0	22,0	69,0	69,0
	Triplex	SMAPL-3GA22						378	412	6306	6864				
	Quadruplex	SMAPL-4GA22													
GA26	Duplex	SMAPL-2GA26	10 bar	231	229	3857	3822	220	218	3665	3631	26,0	26,0	70,2	70,3
	Triplex	SMAPL-3GA26						440	436	7329	7263				
	Quadruplex	SMAPL-4GA26													
GA30	Duplex	SMAPL-2GA30	10 bar	311	301	5184	5023	295	286	4925	4772	30,0	30,0	70,0	70,0
	Triplex	SMAPL-3GA30						591	572	9850	9543				
	Quadruplex	SMAPL-4GA30													
GA37	Duplex	SMAPL-2GA37	10 bar	360	353	6001	5885	342	335	5701	5590	37,0	37,0	67,0	67,0
	Triplex	SMAPL-3GA37						684	671	11402	11181				
	Quadruplex	SMAPL-4GA37													
GA45	Duplex	SMAPL-2GA45	10 bar	432	425	7201	7085	410	404	6841	6731	45,0	45,0	68,0	68,0
	Triplex	SMAPL-3GA45						821	808	13683	13461				
	Quadruplex	SMAPL-4GA45													

TECHNICAL DATA

Note: Our production range covers more air plants models. Above models are most preferred models. Our offer may not indicate any models shown here. This does not mean we do not produce. Please indicate net plant output in order to enable us to offer best equipment for you.

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