Inspection Certificate 3.1 acc. EN 10 204

This certificate is valid for our **AIR- / GASPURIFICATION SYSTEMS** listed below:

P21	**P31**
P40/41	**P60/61**
P80/81	**P100/101**
P120/121	**P140/141**

The quality of the breathing air produced conforms to the national and international standards:

- DIN EN 12021:1998
- US CGA Spec. G.7.1'97
- STANAG 1079 MW:1981
- British Standard 4001:1998

Our purification systems achieve the following performance data:

	reached values	max. permissible values acc. to EN 12021	max. permissible values acc. CGA Grade E
Water vapor (from compressor)	≤ - 57 °C (-70°F) ≤ 34 ppm ≤ 10 mg/m³	≤ 25 mg/m³	≤ - 46 °C (-50°F) ≤ 67 ppm -
CO	≤ 5 ppm	≤ 15 ppm	≤ 10 ppm
CO_2 *	≤ 500 ppm	500 ppm	1000 ppm
Odor	odourless	odourless	odourless
Taste	tasteless	tasteless	Tasteless
Oxygen	21 ± 1 %	21 ± 1 %	20 – 22 %
Methan	≈ 2 ppm	-	25 ppm
Oil (droplets/mist)	≤ 0,1 mg/m³	≤ 0,5 mg/m³	≤ 5 mg/m³

* equal to intake contamination

Above mentioned performance figures may be obtained only if operation of unit is strictly based on recommendations given in our service / operation- and maintenance manual and the corresponding filter type.

Munich, 2006-02-01

TÜV Industrie Service GmbH
TÜV SÜD Gruppe

Expert

BAUER KOMPRESSOREN GmbH
Quality Assurance

Expert

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1. General

Unlike other filter systems the SECURUS filter system ensures a continuous monitoring of the purification parameters of the air while it is still in the regeneration process. The influences of

- ambient temperature
- temperatures of the compressor and regeneration system are taken into consideration.

The SECURUS cartridges are designed for
Drying of air

- Adsorption of aromatic components (aerosols)
- Partial conversion of CO into CO_2
- Partial adsorption of CO_2.

It is impossible to exceed the cartridge utilization time since a preliminary warning signal indicates the approaching saturation of the cartridge. Depending on the size of compressor used, the prewarning signal will appear between 1 and 7 hours prior to cartridge saturation.

If the cartridge is not replaced after illumination of the preliminary warning signal, the SECURUS filter system will automatically shut down the compressor as soon as the cartridge has been exhausted.

The compressor cannot be turned on as long as no cartridge has been inserted.
The SECURUS filter system operates in the FAIL-SAFE mode: the compressor will be shut down if the circuit between the control unit and the sensor is interrupted.

2. Filter assemblies

The assembly consists of an anodized aluminium alloy pipe with 100 mm or 175 mm external diameter. Both ends are provided with fine threads on the inside. The screw–in filter bottom contains air intake and outlet.

The filter head or – on filter systems P120 to P141 – the filter base, contains a pressure resistant bushing for the electrical connection. The coaxial cable which leads from the sensor to the control unit is connected to the BNC connector located there.

3. Securus indicator unit

The SECURUS indicator unit receives signals concerning the condition of the drying agent inside the filter cartridge form the attached sensors and furnishes appropriate control signals whenever the preset threshold values have been reached.

The annular sensor inside the filter cartridge head senses changes in capacitance caused by the saturation within the surrounding drying agent. The signal path from the sensor leads through a spring pin contact, which forms the connection between cartridge and filter head, to the pressure resistant bushing in the filter head and continues through the centre conductor of the coaxial cable to the indicator unit. The signal return is effected through the cable shield to the cartridge housing.

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The four operating conditions of the SECURUS system are reported by three relays (normally open contacts). Simultaneously with the closing of the relay contacts, built-in luminescent diodes illuminate:

1. Continuous green: Unit in operation
2. Flashing yellow: Cartridge change pre-warning
3. Flashing red: Compressor shut-down because cartridge is used up
4. Continuous red: Compressor shut-down because of missing cartridge or cable failure

If yellow diode is flashing, the green diode will continue to illuminate because unit is still operational with the yellow light on. If no lamp is on, which means that no relay contact is closed, the SECURUS indicator unit is not receiving operating voltage or the electronics within the unit have failed.

After applying operating voltage to the unit it will take about 0.5 second to close the respective relay contact and to light the applicable diode. During this time the status of the cartridge is being checked.

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