

Operating instructions

***RTS 1000D,
RTS 2600D, RTS 5200D***
Pressurisation systems with Minidisplays



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Important!

It is imperative to read and observe the safety instructions prior to start up!

Technical specifications

Pressurization System Type	RTS 1000D	RTS 2600D	RTS 5200D
Output power (with cable pressure set at 0,5 bar)	1000 NI/h	2700 NI/h	5000 NI/h
Number of consumer load connection point	max. 10	max. 30	max. 50
Intake capacity of flow meters	max. 10 FMA 200C	max. 30 FMA 200C	max. 50 FMA 200C
Compressor set	VD 7/2	VD 28/2	VD 50/4
Number of cylinders	2	2	4
Engine RPM	1425 min ⁻¹		
Operating voltage	230 V, 1 Phase	230/400 V, 3 Phases	230/400 V, 3 Phases
Frequency	50 Hz		
Current consumption of compressor, approx.	4,0 A	2,3 A	3,6 A
Working pressure of compressor	max. 7,0 bar		
Opening pressure safety valve "compressor"	7,0 bar ± 10 %		
Working pressure On-Off	3,0 to 5,5 bar		
Opening pressure safety valve "high-pressure"	7,0 bar		
Output pressure is adjustable (customised)	0 - 1,0 bar		
Opening pressure safety valve "cable pressure"	Cable pressure + 0,2 bar ± 10 %		
Relative humidity output air (typical)	≤ 1,5 %		
Regeneration air mass	270-300 l/h ±10 %	ca. 750 l/h ±10 %	ca. 1500 l/h ±10 %
Regeneration time drying agent container	60 s	60 s	60 s
Content - air storage tank	6 l	40 l	60 l
Content - reserve air storage tank (Option)	-	250 l	250 l
Ambient temperature limit	+1 °C bis +40 °C		
Ambient humidity limit	0 .. 90 % rel. humidity, non condensing		
Signal voltage	48 or 60 V DC		
Signal LEDs (standard)	Operation (DC) Humidity (F) Fault (A) Servicing (W)		
Signal output (floating)	Servicing (W) Fault (Accumulative A) Accumulative A = F, H, M, T		
Workplace-related emission value	68 dB(A)	63 dB(A)	63 dB(A)
Measurement uncertainty dB(A)	± 2,3 dB(A)		
Measuring system	DIN 45635 section 1		
Measuring conditions	in the room		
Measurements: Width x Depth x Height	600 x 400 x 880 mm	600 x 630 x 1330 mm	700 x 630 x 1760 mm
Weight	ca. 66 kg	ca. 135 kg	ca. 170 kg

All pressure specifications are seen as gauge pressure specifications.

Ordering data

Pressurization system RTS 1000D with Minidisplay	Order no. 073241.072
Pressurization system RTS 2600D with Minidisplay	Order no. 049273.172
Pressurization system RTS 5200D with Minidisplay	Order no. 049274.172

Accessories

AC/DC Power supply unit, 230 V AC/60 V DC	Order no. 071662.000
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Scope of supply

- Pressurization system RTS 1000D, RTS 2600D or RTS 5200D, consisting of
 - 1 solid metal cabinet with the following mounting parts:
 - 1 compressor
 - 1 air storage tank
 - 1 air dryer system
 - various control, measuring and display elements
- Condensate surge tank with hose
- Operating instruction
- CE Declaration of Conformity

Marking

The pressurization systems are clearly marked by the content of the name plate including technical specifications and manufacturer's instructions. The name plates are found inside on the bottom right of the housing base (see pages 12/13).

Accordance with the applicable regulations is validated with the enclosed CE Declaration of Conformity (see the back of this operating instruction).

LANCIER
Monitoring

Bezeichnung : Druckluftanlage
 Typ / Bestell-Nr. : RTS 1000 / 073241.072
 Seriennummer : lt. Lieferschein
 Baujahr : 20xx
 Betriebsspannung : 230 V, 50 Hz
 Stromaufnahme : max. 4,0 A

LANCIER Monitoring GmbH,
 Gustav-Stresemann-Weg 11, D-48155 Münster



LANCIER
Monitoring

Bezeichnung : Druckluftanlage
 Typ / Bestell-Nr. : RTS 2600 / 049273.172
 Seriennummer : lt. Lieferschein
 Baujahr : 20xx
 Betriebsspannung : 230/400 V, 50 Hz
 Stromaufnahme : max. 2,3 A

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LANCIER
Monitoring

Bezeichnung : Druckluftanlage
 Typ / Bestell-Nr. : RTS 5200 / 049274.172
 Seriennummer : lt. Lieferschein
 Baujahr : 20xx
 Betriebsspannung : 230/400 V, 50 Hz
 Stromaufnahme : max. 3,6 A

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Symbols used



Attention Danger!

This symbol warns of the health risks up to threatening injuries or death.



Warning Danger of electric voltage!

This symbol warns of the health risks up to threatening injuries or death caused by electric voltage.



Turn power off!

This symbol indicates that electrical components and systems must be disconnected prior to maintenance and repair work and also protected against resetting.



Wear protective gloves!

This symbol indicates that protective gloves must be worn during the works described.



Wear safety glasses!

This symbol indicates that safety glasses must be worn during the works described.



Note for disposal!

This symbol indicates that the resulting waste must be disposed ecologically and not become domestic waste.

Legal provisions

Liability

The information, data and references specified in this operating instruction were up-to-date on the day of print. Claims on systems already supplied can only be asserted conditionally from details, illustrations and descriptions.

LANCIER Monitoring GmbH assume no liability for damages and disruption of operations, which may result from:

- Non compliant use
- Arbitrary change to the equipment
- Improper work on and with the equipment
- Operating and setting error
- Disregarding existing standards, directives and accident prevention regulations
- Disregarding operating instruction

Warranty

- Warranty takes place according to the general terms and conditions of LANCIER Monitoring GmbH.
- Warranty claims must be asserted to LANCIER Monitoring GmbH immediately upon detecting a fault or failure.
- The warranty terminates in all cases where also no liability claims can be asserted.

General

This operating instruction is valid for the pressurization system RTS 1000D, RTS 2600D and RTS 5200D and its variants.

It shall help you to get to know the product and contains important information to operate the system safely, properly and economically, to make use of the range of functions, to lessen repair costs and down times, as well as to increase the reliability and service life of the equipment.

Furthermore, this manual will enable you to carry out maintenance and repair work on the pressurization system yourself for daily use.

It contains safety instructions, which must be observed.

During operation, other instructions must be observed if necessary for components to be installed optionally, such as flow meter, distribution devices etc.

The operating instruction is supplemented with instructions on the basis of current national regulations on accident prevention and environmental protection.

The operating instruction must always be on hand at the point where the equipment is used, complete and in legible condition.



The operating instruction shall be read and applied by anyone assigned to work with/on the system, e.g. during

- **operation, including installation, setting up, fault repair in the production flow, removal of production waste, care, disposal of materials.**
- **Maintenance (servicing, inspection, repair)**
- **Transportation**

Besides the instruction manual and the accident prevention regulations applicable in the country and site of use, the recognised specialised rules for safe and professional work shall also be observed.

This documentation was compiled with the utmost diligence, taking the existing regulations into consideration. However, variations cannot be excluded. LANCIER Monitoring reserves the right to make technical modifications to the pressurization system without prior notification and assumes no legal responsibility or liability for damages, which may arise.

Any necessary changes are promptly incorporated into the current versions of this operating instruction.

Conventional use

Pressurization system RTS 1000D, RTS 2600D and RTS 5200D

- is solely intended for use as a system to compress and dry purified air, to supply cables or cooling water lines.
- is solely fit for compressing and drying purified air to be supplied to cables and cooling water lines.
- shall only be used for the purposes validated by LANCIER Monitoring.
- shall only be operated under the conditions stipulated in this operating instruction.
- shall only be operated with the settings and variants stipulated in this operating instruction.

The automatic operation of the system permits unsupervised, steady use.

Any other use is not classed as conventional. The manufacturer takes no responsibility for any resulting damages. The operator alone bears the risks!

Arbitrary changes in design or system rebuild are prohibited without the written consent of the manufacturer, as are modifications and interventions in the control programme, the compressor and settings of the drying process, as well as the pressures used.

Compliance with the stipulated operating, servicing and repair conditions also form part of conventional use.

Safety instructions



Important!

**It is imperative to read and observe the safety instructions prior to start up.
The operating instruction must always be stored within reach.**

For the safety of persons in charge

Operator

Operator is any natural or legal person, who uses the equipment or on whose instructions the equipment is used.

The operator or his safety officer must guarantee, that

- all relevant regulations, references and laws are adhered to.
- only qualified employees work on and with the equipment
- employees have the operating instruction available during all works and abide by this.
- non-qualified employees are forbidden from working on and with the equipment, as well as installation and servicing. The necessary accident prevention and safety instructions must be adhered to.

Qualified employees

Qualified employees are persons who are authorised by the person in charge for equipment safety based on their training, experience, instruction and knowledge on relevant standards and provisions, accident prevention regulations and operating conditions, to carry out operations required and be able to identify and prevent possible dangers.

Staff qualification

Operations	Briefed person	Briefed person with technical training	Electro specialists
Initial commissioning	-	-	✓
Operation	✓	✓	✓
Fault repair			
- mechanic	-	✓	✓
- electrical	-	-	✓
Cleaning	✓	✓	✓
Servicing	-	✓	✓
Work on the electrics	-	-	✓
Packaging / transportation	✓	✓	✓

General safety instructions

These safety instructions are not exhaustive. For questions and problems please contact the customer service department at LANCIER Monitoring.

- Always store the operating instruction within reach!



Accident prevention! Risk of damage!

- The system is classed as state-of-the-art at the time of start-up and essentially reliable.
- The system must only be operated in technically-sound condition, with the protective devices enabled. The operating instruction should be observed properly, conscious of risks and safety.
- The area surrounding the system shall be kept clean and tidy. Contaminations and obstructions of the equipment's function, as well as restrictions in the freedom of movement of operating personnel, can lead to operational faults and accidents.
- The operating personnel are obliged to check the equipment and its function groups at least once a week for damages and faults. Changes, including those to the operating behaviour, which affect the safety, shall be reported and corrected immediately.
- Risks for persons, the equipment itself and for other material assets emanate from the equipment, if
 - non-qualified personnel work on and with the equipment
 - the equipment is not used conventionally
 - the equipment is set or connected incorrectly
- The equipment must be set and fitted so that it fulfils its function for proper and conventional use in fail-safe operation, representing no danger.
- Suitable measures must be taken so that an equipment breakdown does not result in any damage to persons or property.
- Specific faults which may compromise safety have to be corrected immediately!
- The pressurization system RTS 1000D, RTS 2600D and RTS 5200D must only be installed, operated, serviced and repaired by persons who have been briefed on the potential dangers.
- Refittings, modifications or rebuilds of the equipment are strictly prohibited! Always consult LANCIER Monitoring in any case.
- The electricity supply and other works/repairs to the system's electrical fittings must only be carried out by electric specialists.
- Keep all safety instructions and danger warnings on the system in legible condition!
- Do not undo or open screw connections and tank, before the system is depressurised. Open to bleed the safety valve "high-pressure" (42)
- Do not operate, service or repair the system with wet hands!
- Do not touch the drying agent with wet hands - heat build-up!
- Do not open the drying agent container before it is depressurised!
- Adhere to the terms stipulated or specified in the operating instruction for periodic inspections/maintenance.
- After any maintenance and repair work check all unfastened screw connections.
- Disconnect the operating voltage main switch prior to maintenance and repair works.
- After connecting electricity: Take caution with live components!
- For works on opened system: Take caution with heated components!
- Only use original LANCIER Monitoring replacement parts!



Accident prevention!

- Use personal protective equipment and wear close-fitting work clothes and work safety footwear!
- When using drying agents wear work gloves and safety glasses!
- Always tie back long hair, do not wear loose clothing or jewellery including rings!



Note for disposal!

- Dispose of used drying agents in accordance with the regulations applicable in the country and site of use.

Safety instructions for electrical works



Deadly risk!

The operating voltage necessary for the system can have fatal consequences if live parts are touched!

- If a short circuit occurs there is the risk of sparking and fire.
- The system connection shall be dimensioned adequately to avoid overload.
- The operating voltage supply line must be equipped with a main switch (e. g. according to VDE 0113) and 16 A back-up fuses by the customer.
- In the event of failure in the electrical power supply the system must be disconnected immediately.
- Active live parts of the electrical system must not be worked.



Deadly risk!

Before commencing work with system parts, which are supplied with electrical power, switch system to zero potential on the main control switch and safeguard against unexpected resetting! Otherwise there is danger through electric voltage!

- Only use original fuses with stipulated current.
- The electrical system must be in sound condition and checked regularly. Defects, such as loose connections etc. shall be reported and remedied immediately.
- The switching cabinet as well as all connection and terminal boxes shall always be kept closed. Access for the purpose of inspection and maintenance of electrical equipment is only permitted to authorised personnel (see chapter "qualified personnel")
- The active parts of the electrical equipment must be protected against direct contact according to their voltage, frequency, usage category and place of operation by insulation, position, arrangement or permanent fittings.
- The electrical equipment must feature protection in direct contact according to its voltage, frequency, type of use and place of operation, so that in the case of a fault, there is protection available against dangerous touch voltage.

Safety instructions for works on compressed air lines and pressure tanks



Deadly risk!

The pressures necessary for the equipment can lead to injuries. During repair works on compressed air components, pressure lines and tanks to be opened shall be depressurised.

- The lines to be connected must be marked clearly and permanently, in order to rule out the dangers caused by a mix-up.



The air storage tank must be inspected at regular intervals. This inspection must take place according to customary regulations.

Safety instructions for working with drying agents



Deadly risk!

The pressures necessary for the equipment can lead to injuries. During repair works on compressed air components or drying agent containers, pressure lines to be opened shall be depressurised.



Risk of injury!

- The drying agent has an absorbing effect and can lead to shrinkage after long contact with skin.
- In contact with water the drying agent generates heat, which can lead to mucosa and skin burns.



Risk of injury!

Wear protective gloves when working with drying agents.



Risk of injury!

Wear safety glasses when working with drying agents.

Safety devices



Safety devices are put in place for the health and safety of employees employed on the equipment and protects the equipment against damage. The devices must be inspected regularly.

- The equipment may only be operated with functioning protective devices.
- The electrical components shall be provided with a cover plate. This must be mounted during operation.
- The safety devices must protect all moving and electrical parts and may not be handled or cancelled.



Before starting up equipment, ensure that the safety devices are mounted and functional.

The safety devices may only be removed

- After complete shutdown of equipment
- With safeguarding against warm restart of equipment

Remaining dangers



The dangers emanating from the equipment, occur during work inside the metal cabinet and within the actual boundaries of the equipment, if the equipment has to be started up, e.g. for

- maintenance
- refitting
- fault diagnostics and remedy



In maintenance and refitting work, for which the equipment has to be started up, a second person should always be present to disconnect the equipment in an emergency situation. Always carry out work with greatest care and attention!

Watch out for the following dangers:

- Risk of injury by getting caught in the movement area of the compressor.
- Risk of injury caused by squashing and shutting in upper and lower limbs when assembling and disassembling the equipment.
- Risk of injury caused by squashing and shutting in upper and lower limbs when transporting equipment.

Service conditions

Temperatures

- Ambient temperature limit: +1 °C to + 40 °C
Sound function is guaranteed in this temperature range.
- Temperatures outside of this range do not guarantee the functionality of the equipment.

Ambient conditions

- Environmental media, especially chemically aggressive, can corrode seals, hoses, cables and plastics.
- Ambient media, especially chemically aggressive ones, might affect seals, hoses, cables and other plastic elements.

Installation conditions

- The equipment should be installed in a dry, dust and frost-free room, while adhering to the general guidelines for work places.
- Furthermore, the equipment must be installed on a firm, load-bearing and level ground.

Transportation



Accident prevention!

The equipment may only be transported with sufficient means of transportation. It must be fixed securely during transportation. Avoid knocks to the equipment.

The equipment can be moved on a pallet to in-plant transport via an elevating platform truck or forklift truck. When moving the equipment mind the weight to prevent it from tipping or rolling.

- When moving the equipment keep the lifting height as low as possible.
- When moving the equipment pay attention that all electrical and pneumatic connections (also to the wiring harness and if required, reserve air storage tank) are disconnected.
- Observe the safety regulations for handling the elevating platform truck or forklift truck when moving equipment.

Storage

General information on storage

- If the equipment is not installed and started up immediately, it must be stored under appropriate storage conditions in a dry, dust and frost-free indoor area, protected from sunlight.
- The equipment should be wrapped in plastic or foil packaging.
- The storage time should not exceed one year.

Functionality of pressurization system RTS 1000D, RTS 2600D und RTS 5200D

The compressor draws in external air and compresses this to approx. 7 bar. Then the compressed air is channelled in the air dryer, alternatively by two drying agent containers, in which the air is dehumidified. In doing so, the air is only dried in one drying agent container, while at the same time in another drying agent container the existing drying agent is regenerated by a branch current of the already dried air. The humid regeneration air is collected in the condensate surge tank.

The air dried in this way is stored in the air storage tank with a pressure between 3.0 and 5.5 bar. A pressure monitor ensures sufficient compressed air in the air storage tank, in which it switches the compressor on and off. The existing air pressure in the air storage tank can be read on the "high pressure" manometer.

A built-in air regulator reduces the stored compressed air from the air storage tank to the required cable pressure. This can be read on the "cable pressure" manometer.

This pressure-reduced air reaches the distribution device of the connected cable network via an shut-off valve and an injector. In order to guarantee proper operation the dried compressed air is constantly checked for its humidity content in the humidity monitoring unit. If the relative air humidity rises over 4%, the compressor is switched off. A signal "F" is generated.

The pressure in the air storage tank is constantly monitored. If this rises to 7.0 bar, the pressure is blown off via a safety valve.

Likewise, the pressure conducted to the distribution devices is constantly monitored. If this exceeds the set cable pressure by 0.2 bar, the pressure is blown off via a safety valve. If the pressure drops by 0.2 bar below the set cable pressure, a pressure switch activates the signal "N".

The equipment runs fully automatically after startup. Operational upsets are displayed on the mult functional relay (MFR) and the minidisplay at the display panel. In addition these fault signals are relayed to an external control centre.

The MFR distributes the drying and regenerating processes evenly to both drying containers by means of the solenoid valves. So none of them will be flooded, when only little amounts of air are produced.

The solenoid valves also allow for unpressurised compressor starts.

Product description

Product marking, connection and operation RTS 1000D

0 Product marking

The name plate is found inside on the right bottom (RTS 1000D) or on the center of the intermediate bottom (RTS 2600D and RTS 5200D).

1 Display panel

2 Mounting links

3 Connecting cable AC

4 Equipment output

5 Motor protective switch [Q4]

to manually switch the compressor on and off, features a built-in protective relay to protect the motor from excessive current consumption.

6 Main switch signal voltage DC [Q2]

7 Pressure reducer [12.1]

reduces the high-pressure to the designated output pressure. Preset.

8 Testing valve "cable pressure" [7.1]

is used to check the preset cable pressure. A mobile pressurisation system may be connected here in case of system faults or during maintenance.

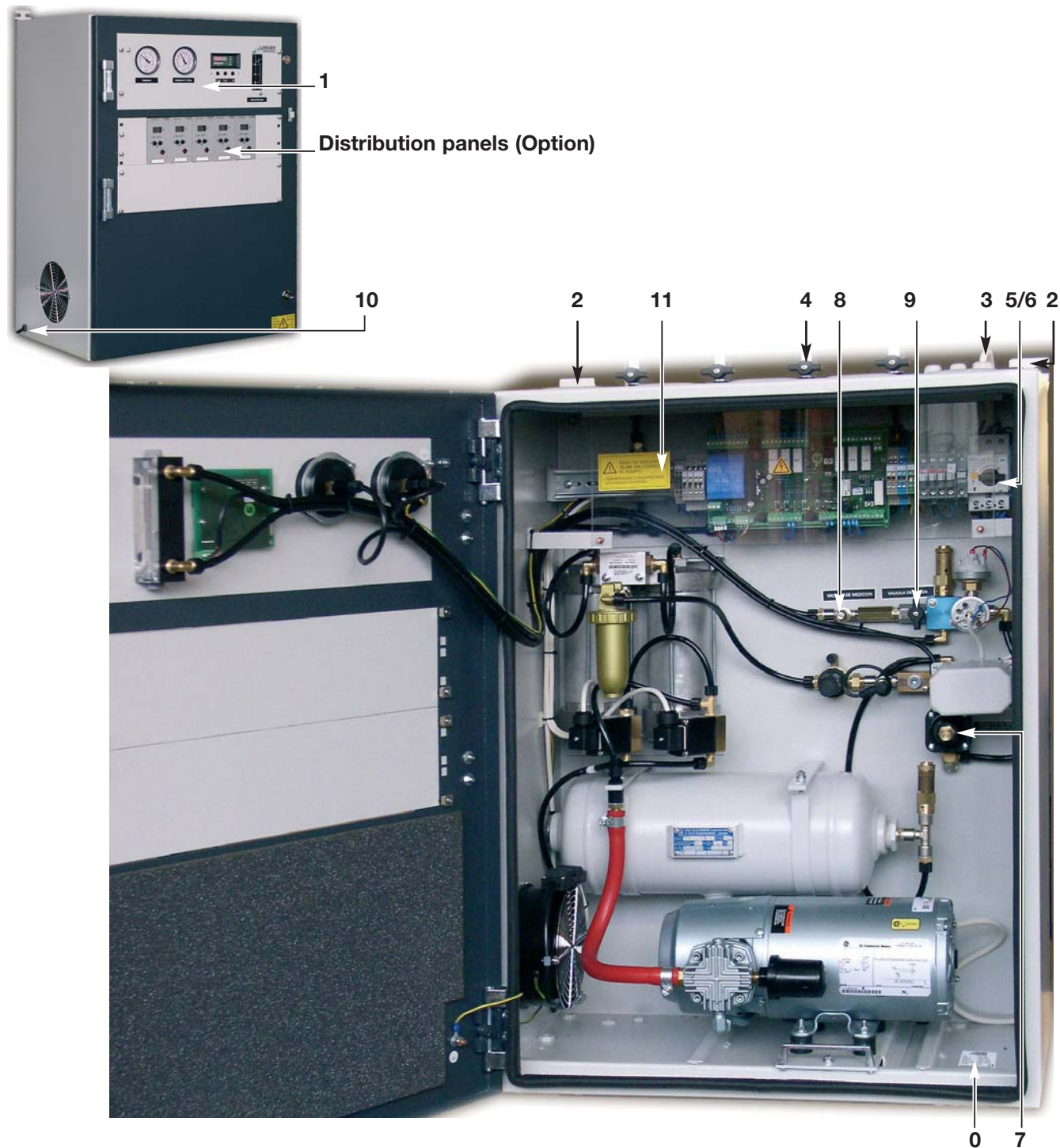
9 Shut-off valve "Cable pressure" [13.1]

is used to open or close the pressurised air flow to the consumers.

10 Condensate discharge hose

11 Connecting block cover

The code designations specified in squared brackets [] correspond to the pneumatic and electrical plans in the annex.



Product marking, connection and operation RTS 2600D and RTS 5200D

115 Connector for twin system

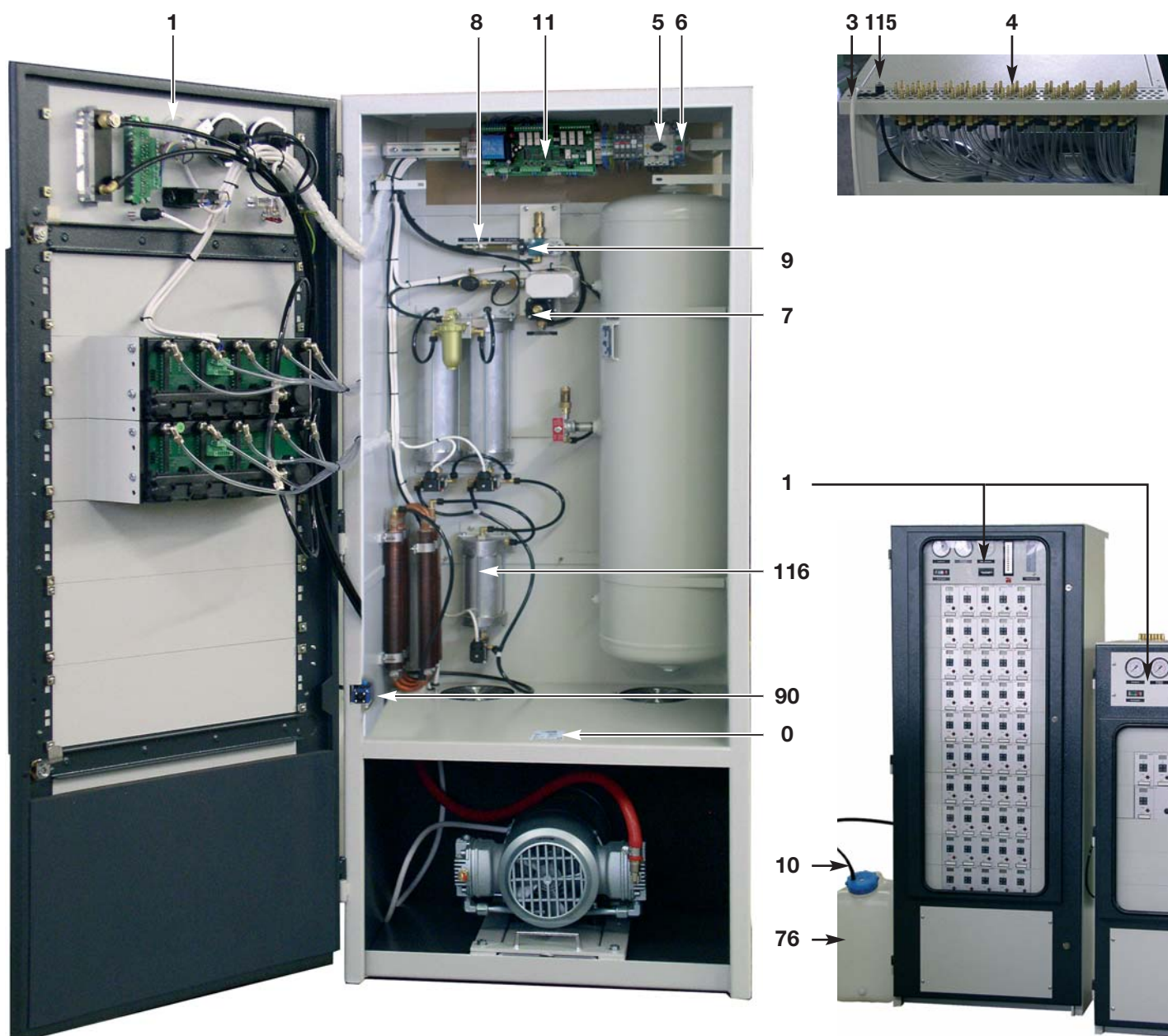
for the connection of a second pressurisation system e. g. for maintenance and repair services.

76 Condensate surge tank

90 Door switch [S8] (Option)

- interrupts the signal output when actuated,
- reactivates the signal output when the door is shut again.

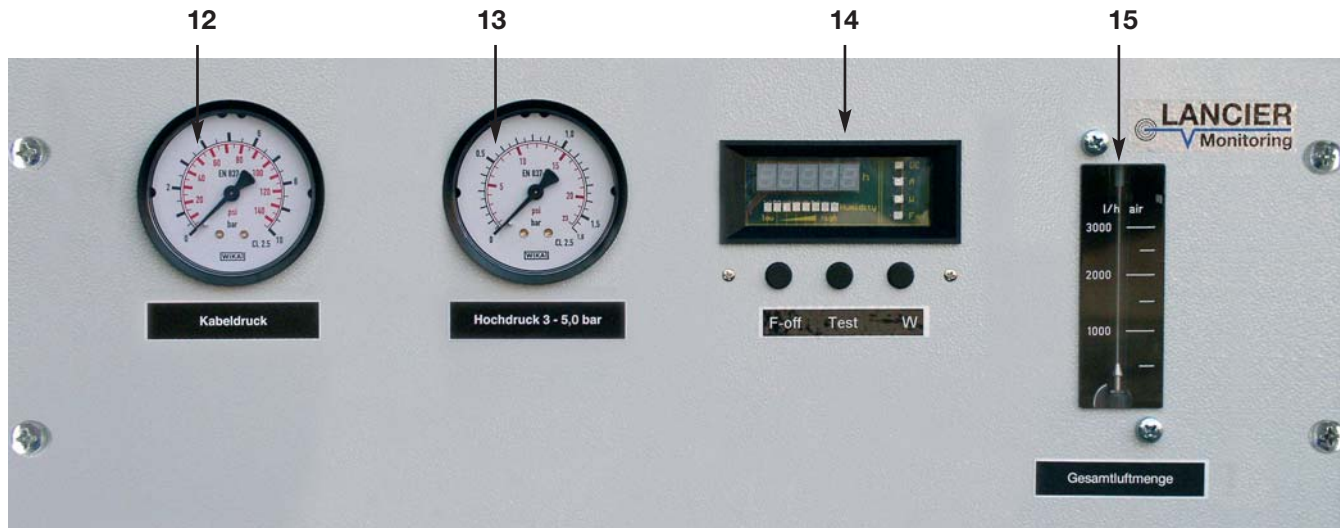
116 Cyclone separator (RTS 5200D only)



Display panel

- 12 "Cable pressure" manometer [11.2] displays the pressure of the air that flows to the outlet.
- 13 "High pressure" manometer [11.1] displays the pressure in the air storage tank [9.1].
- 14 Minidisplay shows the most important system parameters and allows for their manipulation.
- 15 Total air flow meter (15.2) displays the total air flow to the outlets.

The code designations specified in squared brackets [] correspond to the pneumatic and electrical plans in the annex.



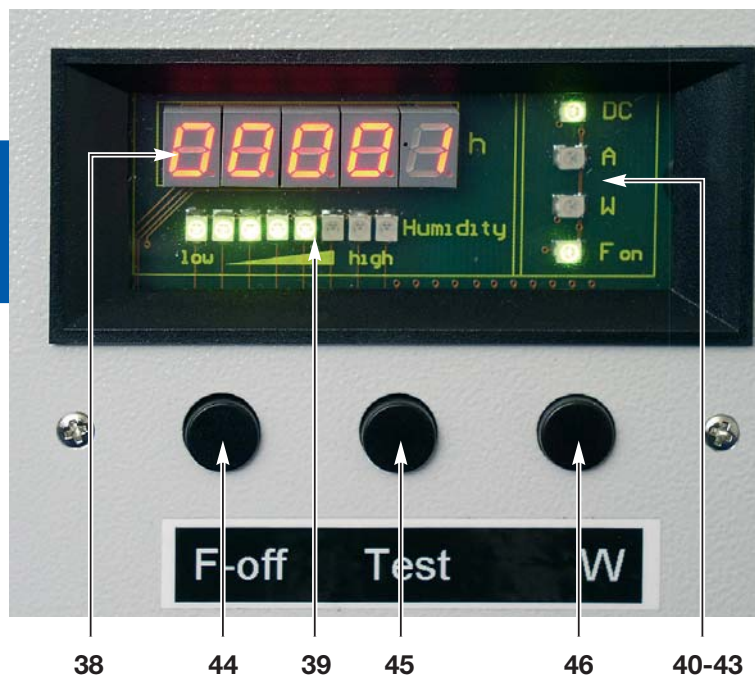
Operation Minidisplay

The Minidisplay (14) displays the most important system parameters and allows for their manipulation.



Warning!

Only press the „F-off“ button (44) when a humidity fault occurs. proper work of the system is not assured (see page 23).



Operation

38 5 digit measured value display

- displays the total operating hours of the system.
- displays the remaining operating hours until next maintenance when key „W“ (46) is held down.

39 8 digit humidity display

- displays the relative humidity of the output air:
 - green range (first 6 LEDs): **admissible** relative humidity of the output air.
 - red range (last 2 LEDs): **inadmissible** relative humidity of the output air.
- shows malfunction of the humidity sensor (37) (defective connection, sensor defect):
 - both red LEDs are flashing alternating (last 2 LEDs).

40 Signal-LED „DC“

- illuminates when signal voltage is pending, the main switch signal voltage DC (6) is on and the fuse „DC“ (B) of the MFR is intact.

41 Signal-LED „A“

- illuminates when the common system signal is pending (runtime fault „T“, humidity fault „F“, high-pressure fault „H“ or compressor fault „M“).

42 Signal-LED „W“

- illuminates when the preset maintenance interval is due (normally 400 hours of operation).

43 Signal-LED „F-on“

- illuminates when humidity monitoring is active.
- turns off when humidity monitoring is deactivated ("running dry") by pressing button „F-off“ (44).

44 Button „F-off“ -Use in case of fault only! See page 23-

- deactivates humidity monitoring, e.g. to run dry system (see page 23).
 - Signal-LED „F-on“ (43) turns off.
- pressing button „F-off“ for 5 seconds reactivates humidity monitoring.
 - Signal-LED „F-on“ (43) illuminates again.

45 Button „Test“

- may be pressed to check an optionally connected external signalisation.
 - Relais „K-W“ activates and Relais „K-A“ deactivates.
 - Signal LEDs „W“ (42) and „A“ (41) illuminate.
 - Alarm „A“ must occur in the remote control center if a signal line is connected.

46 Button „W“

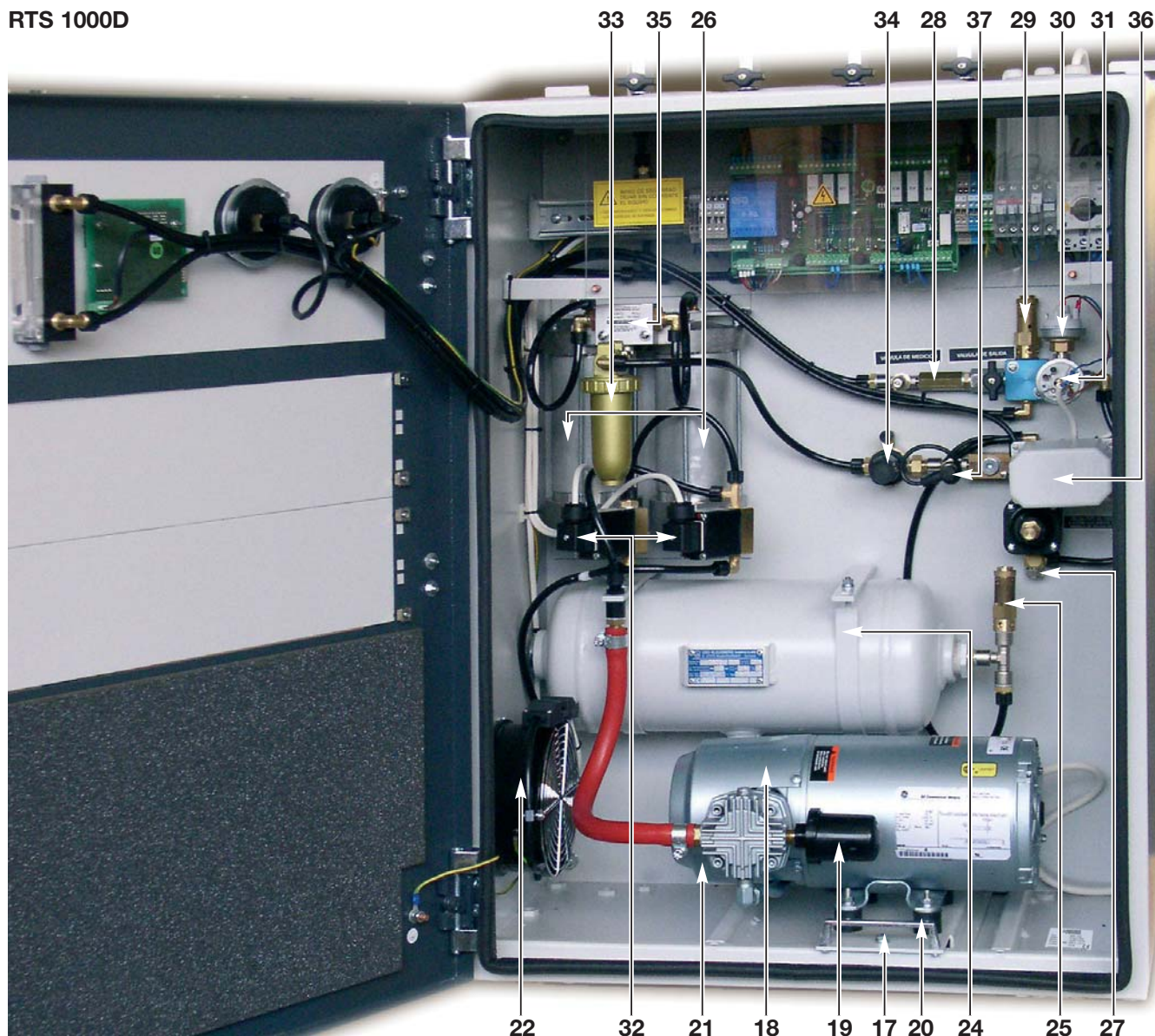
- shows the remaining operating hours until the next maintenance on the display (38).
- pressing buttons „W“ and „Test“ (45) together for 5 seconds resets the operating hour meter to the default value of 400 hours.

This process is irreversible!

Pressurised air supply, storage, drying and monitoring

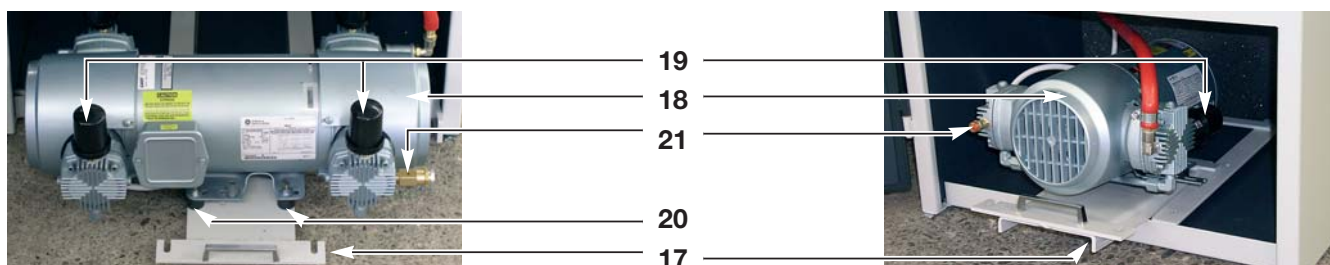
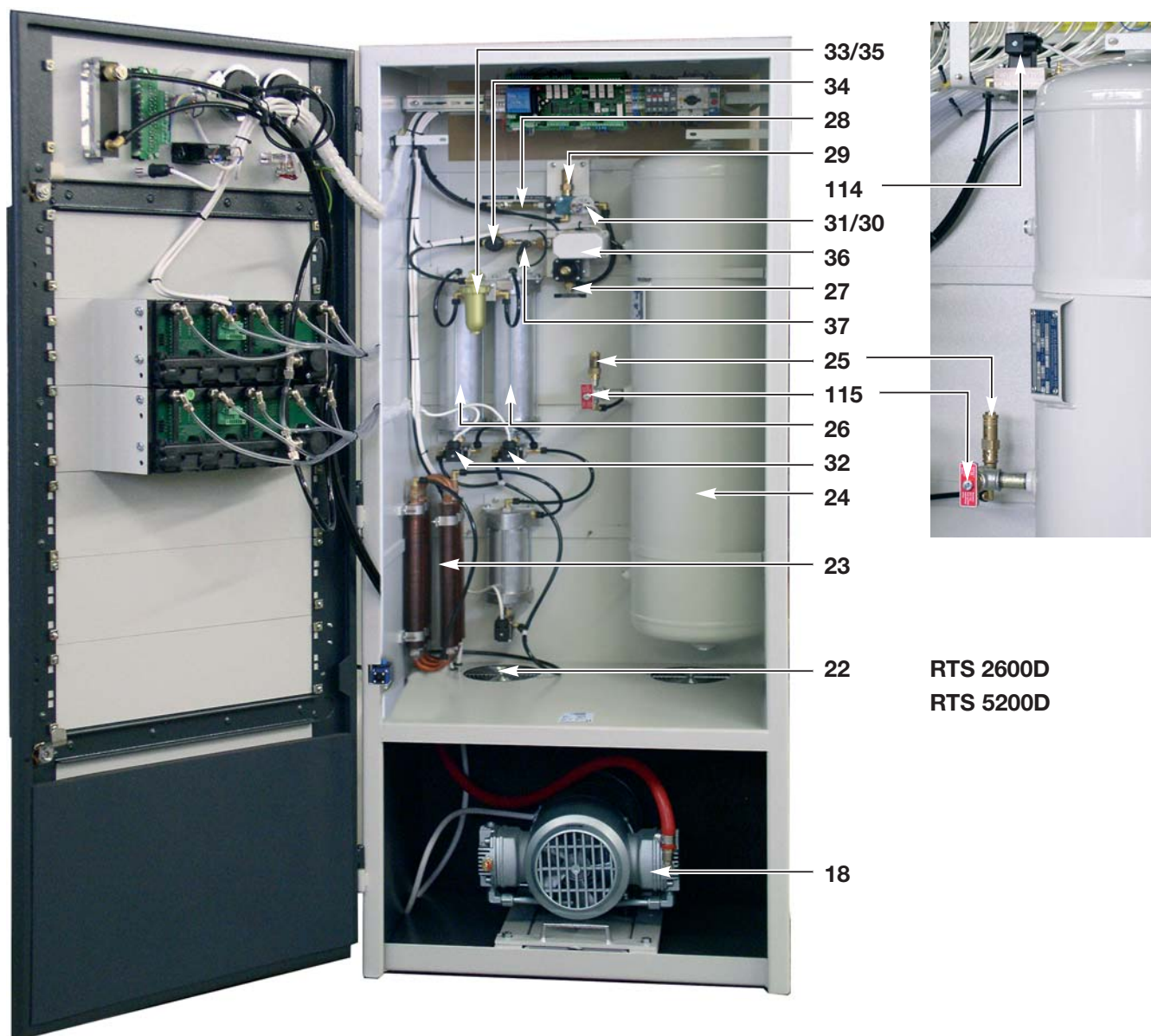
- 17 Compressor carriage
- 18 Compressor [2.1] condenses the air drawn in at approx. 6.0 bar.
- 19 Air intake filter of the compressor [1.1]
- 20 Rubber/metal oscillating buffer
- 21 Safety valve "compressor" [10.1] protects the compressor against excessive pressure.
- 22 Fan [E1] vents the compressor area.
- 23 Cooler [3.1] for the compressor exhaust air.
- 24 Air storage tank [9.1] stores the dried pressurised air.
- 25 Safety valve "high pressure" [10.4] protects the air storage tank (24) [9.1] against excessive pressure.
- 26 Air dryer [5.1] dries the pressurised air alternatively in one of the two containers, while the drying agent is regenerated in the other container.
- 27 Nozzle - output air „cable pressure“ [14.1] restricts the air flow to the outlet, so as to prevent exceeding the maximum quantity delivered to the equipment.
- 28 Non-return valve [4.1] prevents a reversed flow of pressurised air from the distribution device.
- 29 Safety valve "cable pressure" [10.5] protects the pressurised air consumer load against excessive pressure.
- 30 Pressure switch "cable pressure too high" [B3] (Option) (RTS 2600D & RTS 5200D only, no illustration) activates the signal "N" when the preset cable pressure is increased by 0.2 bar.
- 31 Pressure switch "cable pressure too low" [B2] activates the signal "N" when the preset cable pressure is reduced by 0.2 bar.
- 32 Solenoid valves for air dryer [left:Y1, right Y2] control the air flow alternatively by one of the two drying agent containers and lead the regeneration air flow from the passive drying agent container outside (to condensate surge tank).

RTS 1000D



- 33 Micro filter [1.5]** protects the control and measurement devices from contaminations.
- 34 Pressure limiting valve [8.1]**
opens when the air flow has reached a pressure of 5.5 bar after leaving the air dryer (26) [5.1].
- 35 Double non-return valve [6.1]**
routes the dried pressurised air in the active drying agent container to the air storage tank (24) [9.1] and returns a part of the air flow for regeneration of the drying agent into the passive drying agent container.
- 36 Pressure monitor [F6]** monitors the pressure in the air storage container (24) [9.1] and switches the compressor on and off once the upper and lower pressure value is reached.
- 37 Humidity sensor for MFR** monitors the relative humidity of the output air. When reaching the upper limit, the MFR activates fault „F“ and shuts the system down.
- 115 Test flange [7.3]** for air tank inspection (RTS 2600D & RTS 5200D only).
- 114 Non-return solenoid valve block [Y7] withscrewed joint for backup system** (RTS 2600D & RTS 5200D only)
leads compressed air from a backup air storage tank (option) to the system's air storage tank to assure air supply of the connected cable while fault „A“ is pending.
- 79 Pressure switch "high pressure" [B1]** (Option for RTS 2600D & RTS 5200D, no illustration)
activates the signal "A" when the pressure in the air storage tank drops below 2.0.

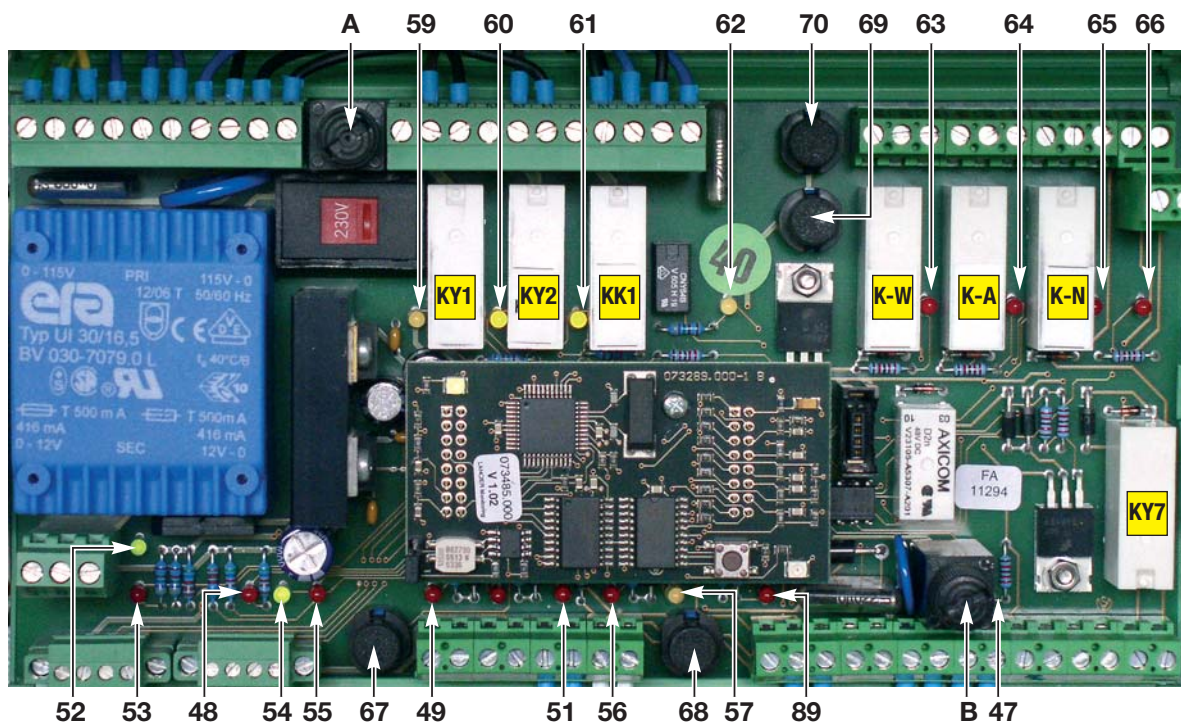
The code designations specified in squared brackets [] correspond to the pneumatic and electrical plans in the annex.



Multifunctional Relay MFR

The MFR controls and monitors the pressurisation system.

- | | |
|------------------------------------|---|
| 47 Signal-LED „DC“ | 62 Signal-LED „State Comp in“ |
| 48 Signal-LED „F“ | 63 Signal output-LED „W“ |
| 49 Signal-LED „H“ | 64 Signal output-LED „A“ |
| 51 Signal-LED „N“ | 65 Signal output-LED „N“ |
| 52 Signal-LED „AC“ | 66 Signal-LED „Option ext. Tank“ |
| 53 Signal-LED „Remote“ | 67 Button „F-Off“ |
| 54 Signal-LED „F-On“ | 68 Button „external Signalization“ [S12] |
| 55 Signal-LED „T-Runtime“ | 69 Button „Reset maintenance“ [S10] |
| 56 Signal-LED „Ext. Signal in“ | 70 Button „Test“ W Signal, A Signal [S9] |
| 57 Signal-LED „Ext. Signalization“ | 89 Signal-LED „Signal interruption“ (Option) |
| 59 Signal-LED „Y1 state“ | A Fuse „AC“ |
| 60 Signal-LED „Y2 state“ | B Fuse „DC“ |
| 61 Signal-LED „Comp OK“ | KY1 Relay with labeling acc. to wiring diagram |



Electrics

5 Motor protective switch [Q4]

to manually switch the compressor on and off, features a built-in protective relay to protect the motor from excessive current consumption.

6 DC main switch signal voltage [Q2]

71 Auxiliary switch of [Q4]

switches the neutral conductor in 3-phase.

72 Motor contactor / switch [K1]

switches the compressor (18) [2.1] on and off after the switching of the pressure monitor (36) [F6].

117 Auxiliary switch of [K1] (Option)

for special purposes.

73 Multifunctional relay MFR

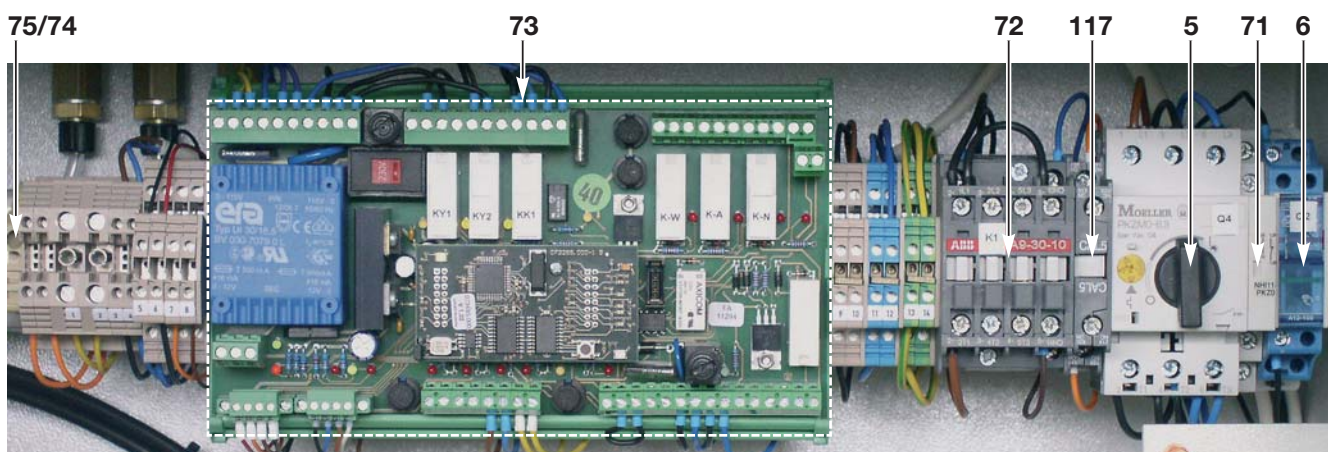
controls all workflows of the pressurisation system, among others:

- redirects the solenoid valve (32) [Y1, Y2] to change the drying agent container in the clock pulse.
- switches off the compressor via the motor contactor / switch (72) [K1] and activates the signal "F" when the humidity content of the dried air is inadmissibly high.
- monitors the running time of the compressor (max. approx. 90 min.) and prevents possible running through.
- activates the signal "T" to signal module and disconnects the compressor after exceeding the preset running time.
- optionally wired, e.g. for flow meter FMA.
- activates the output common signal "A" (fault) in potential free form, when one of the faults "F" or "T" is pending, or if the systems AC power broke down. The individual signals of the output common signal are dependent on equipment.
- activates the connection between an optionally connected backup air storage tank and the consumer by the solenoid valve [Y7].

74 Power pack 230 V AC/60 DC (Option, no illustration)

Essential, if there is no external signal voltage 48/60 V available.

75 Connecting block [X1]



Mounting

Wall mounting RTS 1000D

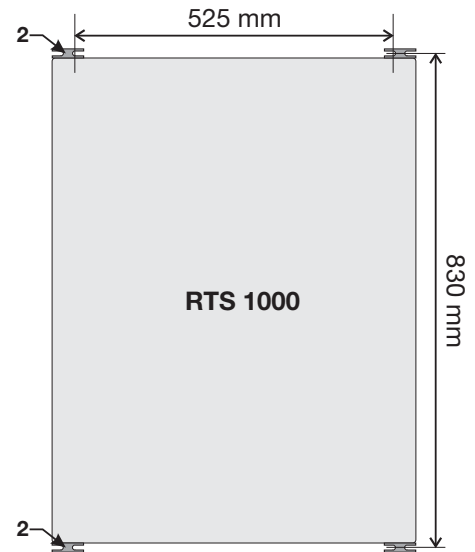
The pressurisation system **RTS 1000D** is designed for wall mounting. For this purpose, 4 mounting links (2) are attached to the back of the equipment.

The wall must be constructed for exposure to dynamic stresses and strains. LANCIER Monitoring assumes no liability whatsoever for wall mounting.

The place of mounting should be dry and swept clean.

Minimum distance to adjacent walls and equipment = 100 mm

- Drill 4 holes into a load-bearing wall.
horizontal distance: 525 mm
vertical distance: 830 mm
- Use suitable fastening for the mounting (wall plug and screws).
- Use appropriate lifting tool for a safe positioning of the system.
- Screw the equipment tightly into the 4 holes (2) without wall clearance.



Setting up the system RTS 2600D and RTS 5200D

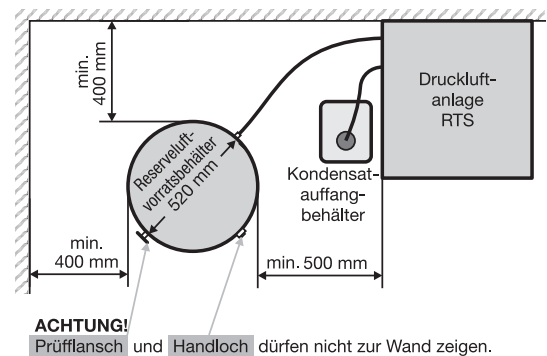
The pressurisation system RTS 2600D und RTS 5200D is designed to be located at floor level. The floor must be constructed for exposure to dynamic stresses and strains. LANCIER Monitoring assumes no liability whatsoever for wall mounting.

The place of mounting should be dry and swept clean.

Minimum distance to adjacent walls and equipment = 400 mm

Setting up and connecting backup air storage tank (Option)

- Screw backup air storage tank with suitable fastening for the mounting (wall plug and screws) to the floor. Mind minimum distances and access to handhole.
- Connect backup air storage tank with pressurisation system by air hose.
- Check all connections for impermeability.

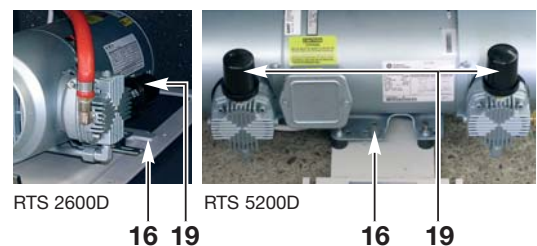


Remove transportation lock and humidity block

- Remove transportation lock (16) from the compressor (RTS 2600D and RTS 5200D only)

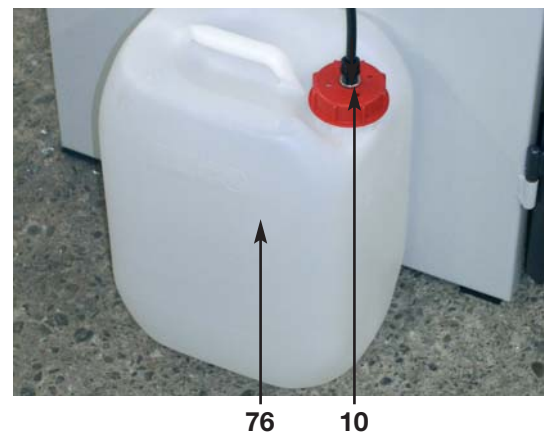
Remove humidity blocks (if provided) from

- condensate discharge hose (10) and
- air intake filter (19) of the compressor.



Connect the condensate surge tank

- Place the surge tank (76) underneath the equipment.
- Guide the condensate discharge hose (10) through the designated opening in the left side panel, insert it on the hose nozzle of the condensate surge tank and tighten it with the connecting nut.
- The venting holes of the cap must stay open!



Electrical connection



Deadly risk!

Electrical connection must only be made by electrical specialists!
After connecting electricity: Take caution with live components!

Operating voltage AC

- Before connection to the mains supply mind that the power supply voltage complies with the operating voltage of the compressor (**18**) (see name plate (**0**))!
 - The following security relevant elements must be supplied for electrical connection:
 - **main switch with emergency stop function** according to IEC/EN60204-1, VDE 0113 Part 1 **3**
 - **nominal voltage** 230 V one phase / 400 V three phases, neutral and grounding conductor
 - **overcurrent protection device** for each phase maximum 16 A (lead fuses or circuit breaker characteristic B)
 - residual-current-operated protective device (**RCD**)
 - Check fuse setting of motor protective switch (**5**) (see page 25)!
 - Connect connecting cable AC (**3**) as follows:
 - 3-core with 1-phase**
 - PE (protective earth) to green/yellow
 - N (neutral) to blue
 - L1 (Phase) to black or brown
 - 5-core with 3-phases**
 - PE (protective earth) to green/yellow
 - N (neutral) to blue
 - L1 (Phase) to black
 - L2 (Phase) to black
 - L3 (Phase) to brown
- (see circuit and wiring diagram pages 65 and following)



Check compressor's rotating direction

(at 3-phase connection only)

- Turn motor protective switch (**5**) to „I“
 - *compressor (**18**) starts.*
- Put a sheet of paper in front of the compressor's (**18**) fan.
 - *fan must aspirate the sheet .*
- Else turn off motor protective switch (**5**), reconnect the phases and check rotating direction again.

Signal voltage DC

- The signal voltage supply line must be secured with a **6 A back-up fuse!**
- Connect the supply line as per the wiring diagram (see page 65) to the connecting block (**45**) [X1].
- If the system is optionally equipped with an power pack 230 V AC/60 DC (**74**) omit this step.

Signal output

- According to requirements connect the signal output line to the connecting block (**75**) [X1] or the connecting block [X3] of the multifunktional relay MFR (**73**) as per the wiring diagram (see page 65).

Start-up



Deadly risk!
Do not operate the equipment with damp hands!
Take caution with live components!



Risk of injury!
Take caution with heated components!

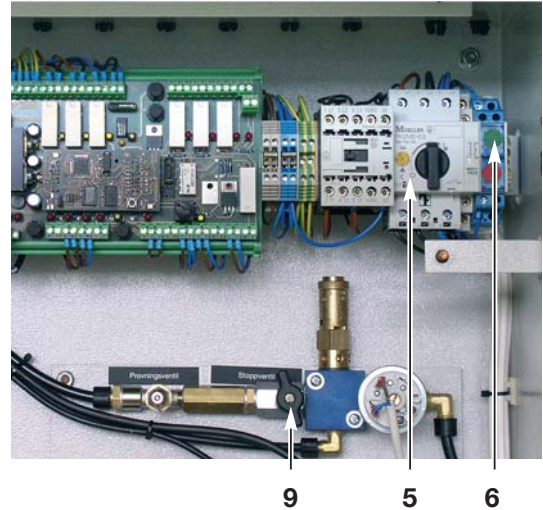
Before start-up

The connecting hose is not yet connected to the consumer load .

- Open cabinet door
- Close shut-off valve "cable pressure" (9).

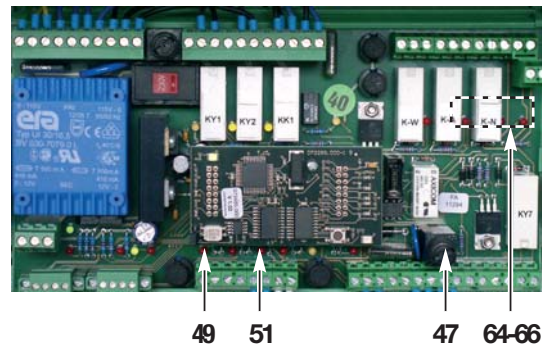
Switch on signal voltage

- Turn on main fuse switch (6) by pressing the green button.



Check indications of MFR (73)

- Green Signal-LED „DC“ (47) illuminates.
- Red Signal-LED „N“ (51) illuminates.
- Red Signal output-LEDs (64 - 66) illuminate.



Set the equipment into operation / charge equipment

Main switch signal voltage DC (6) is switched on

Turn motor protective switch (5) to "I"

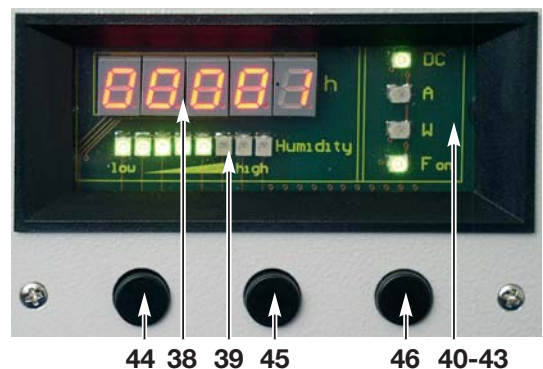
- The compressor starts.

Check indications of Minidisplay (14)

- All LEDs of the 5 digit numeric display (38) flash once (indication 88888).
- All LEDs of the 8 digit humidity display (39) flash once.
- All Signal-LEDs (40-43) flash once.

subsequently:

- The green Signal-LED „DC“ (40) illuminates.
- The green Signal-LED „F-on“ (43) illuminates (humidity monitoring is active).
- The LEDs of the 5 digit numeric display (38) indicate the actual operating hours of the system.
- The LEDs of the 8 digit humidity display (39) indicate the actual humidity value of the pressurised air.

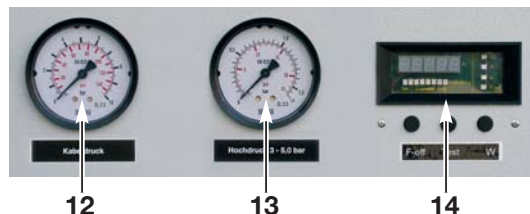


The MFR indicates at the same time

- The yellow Signal-LED „**State Comp in**“ (62) flashes.
- The yellow Signal-LED „**Comp OK**“ (61) illuminates.
- The green Signal-LED „**AC**“ (52) illuminates.
- The green Signal-LED „**DC**“ (47) illuminates.
- The yellow Signal-LEDs (59-62) illuminate, after a short time either LED „**Y1 state**“ (59) or LED „**Y2 state**“ (60) turns off (cylinder-head ventilation of the compressor is completed).
- The green Signal-LED „**F-on**“ (54) illuminates (humidity monitoring is active).

Observe "cable pressure" manometer (12)

- at 0.2 bar below the preset cable pressure the red signal output LED „**N**“ (65) in the MFR turns off.
The maximal admissible cable pressure of the connected cable network must not be exceeded when the shut-off valve "cable pressure" (9) is closed (if necessary set cable pressure - see page 27).

**Observe "high pressure" manometer (13)**

- at 2.0 bar the red signal LED „**H**“ (49) in the MFR turns off (RTS 2600D & RTS 5200D only).
- at 5.5 bar the compressor switches off.
- The yellow Signal-LED „**State Comp in**“ (62) in the MFR turns off.

**Troubleshooting!**

If the compressor does not run, this may be due to hose lines and air dryer becoming damp after long idle period.

- The green LED „**F-on**“ (43) illuminates on the Minidisplay (14).
The green LED „**F-on**“ (54) flashes or illuminates in the MFR (73)
- At least one of the red LEDs of the 8 digit humidity display (39) (7. and 8. digit) illuminate.
- The red LED „**A**“ (41) illuminates on the Minidisplay (13).
The red Signal-LED „**F**“ (48) illuminates in the MFR = pressurised air humidity is unadmissibly high.

In this case leave the equipment to "run dry":

**Deadly risk!**

Electro specialists only are allowed to operate the buttons of the MFR.
Other users must use the Minidisplay to operate the system.

- Unscrew connecting block cover (11).
- Open safety valve "high pressure" (25).
- Press button „**F-Off**“ (44) on the Minidisplay or (67) on the MFR.
- The compressor starts.
- The red LED „**A**“ (41) on the Minidisplay turned off.
- The green Signal-LED „**F-on**“ (43) on the Minidisplay and (54) in the MFR are turned off = no humidity monitoring.
- At least one of the red LEDs of the 8 digit humidity display (39) (7. and 8. digit) illuminate.



RTS 1000D

25

After a while

- The red LEDs of the 8 digit humidity display (39) (7. and 8. digit) and the red Signal-LED „**F**“ (48) on the MFR turn off = the pressurised air is dry.
- The green Signal-LED „**F-on**“ (43) on the Minidisplay and (54) on the MFR are still turned off = no humidity monitoring.



RTS 2600D / 5200D

**Warning!**

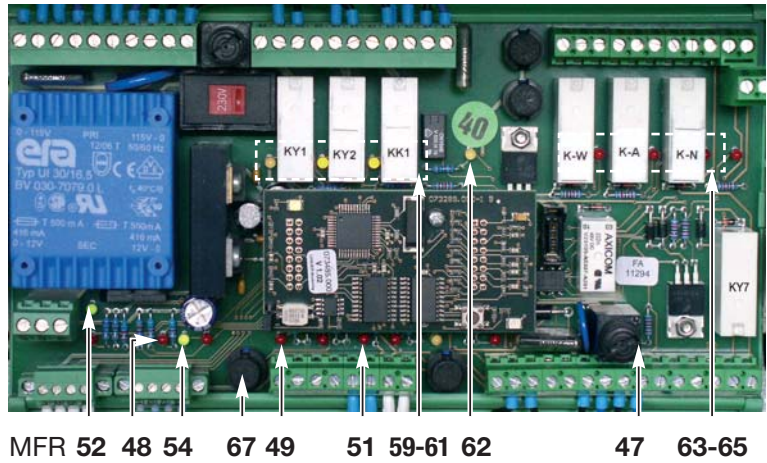
Pressing the button „**F-off**“ overrides the humidity monitoring.

The button must be used only, if a fault occurred, the „high pressure“ safety valve (25) is open and the shut-off valve "cable pressure" (9) is shut.

Humidity monitoring must be reactivated immediatly after trouble-shooting, to assure proper function of the pressurisation system.

In order to get immediate humidity monitoring, the "F-off" operation must be overridden:

- Press button „F-Off“ (44) of the Minidisplay or (67) of the MFR for approx. 5 seconds.
- The green LEDs „F-On“ (43) on the Minidisplay and (54) on the MFR illuminate again.
- Close safety valve "high pressure" (25).
- Then carry out function testing.
- Remount connecting block cover (11).



MFR 52 48 54 67 49 51 59-61 62 47 63-65

The humidity monitoring activates itself automatically after approx. 2 operating hours of the compressor, if the „F-off“ operation is not determined manually.

Switching the motor protective switch (5) off and on again, terminates the „F-off“ operation also. This procedure resets the MFR by breaking its power supply.

Function testing / setting of components

After start-up always test the equipment for correct function!

In the case of function error, in spite of correcting the setting, see pages 48-49 "Causes and remedying of faults".

For function testing or setting, in the case of some components the cabinet door must be open and the connecting block cover plate (11) unscrewed.

The inspections or settings shall partly be carried out when the equipment is on.



Deadly risk!
Do not operate the equipment with damp hands!
Take caution with live components!



Risk of injury!
Take caution with heated components!

Check and set reference value motor protective switch back-up fuse

Check setting

Reference value of setting screw (78):

RTS 1000D: 230 V, 50 Hz: ca. 4,0

RTS 2600D: 230/400 V, 50 Hz: ca. 2.3

RTS 5200D: 230/400 V, 50 Hz: ca. 3.6

Change setting



Deadly risk!
Switch off operating voltage,
Unscrew or disconnect back-up fuse!

- Then with a small screw driver turn the setting screw (78) approximately to the setting indicated above.
- Switch on operating voltage again.



78

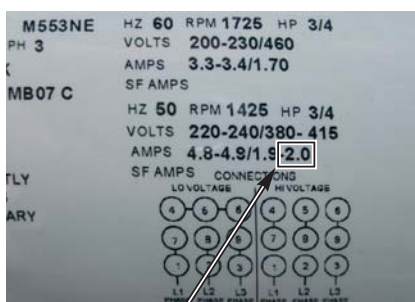


Hint!
The motor protective switch must be set approx. 0.3 A above power consumption of the compressor motor (18) (see compressor name plate).

Samples:



RTS 1000D: 3.7 A + 0.3 A = 4.0 A



RTS 2600D: 2.0 A + 0.3 A = 2.3 A



RTS 5200D: 3.3 A + 0.3 A = 3.6 A

Check and set the pressure switch "cable pressure too low"

Check and set the pressure switch "cable pressure too high" (Option)

Check and set the pressure switch "high pressure" (Option)



Deadly risk!

Working on open, live equipment!

- Do not operate the equipment with damp hands!
- Caution: live components!

Setpoint value switching pressure

- A) Pressure switch "cable pressure too low" (31)
= 0.2 ± 0.1 bar below cable pressure
- B) Pressure switch "cable pressure too high" (30) (no illustr.)
= 0.2 ± 0.1 bar above cable pressure
- C) Pressure switch "high pressure" (79) (no illustration)
= 2.0 ± 0.2 bar

Check switch values

- Switch on operating voltage.

A) Pressure switch "cable pressure too low" (31)

- Close shut-off valve (9).
- **Lower** cable pressure by turning the pressure reducer (7) to the **left**, observe "cable pressure" manometer (12):
 - the pressure drops.
 - on reaching the setpoint value the signal LED "N" (51) in the MFR (73) must illuminate and the signal relay „K-N“ must activate.

B) Pressure switch "cable pressure too high" (30)

- Close shut-off valve (9).
- **Increase** cable pressure by turning the pressure reducer (7) to the **right**, observe "cable pressure" manometer (12):
 - the pressure rises.
 - on reaching the setpoint value the signal LED "N" (51) in the MFR (73) must illuminate, the signal relay „K-N“ must activate and the safety valve „cable pressure“ (29) must start to blow off.

C) Pressure switch "high pressure" (79)

- Close shut-off valve (9).
- Open safety valve "high pressure" (25) and observe manometer "high pressure" (13):
 - the pressure drops.
 - on reaching the setpoint value the signal LED "H" (49) in the MFR (73) must illuminate, the signal relay „K-A“ must release and the switching relay „KY7“ must activate (RTS 2600D & RTS 5200D only).
- Close safety valve "high pressure" (25).

Set the switch values



Deadly risk!

Switch off operating voltage!

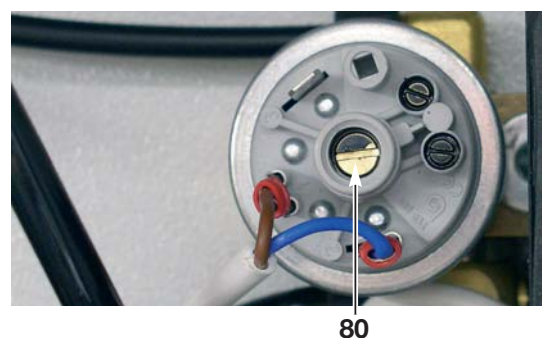
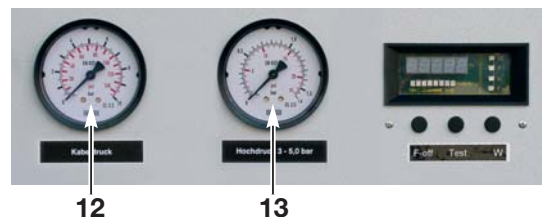
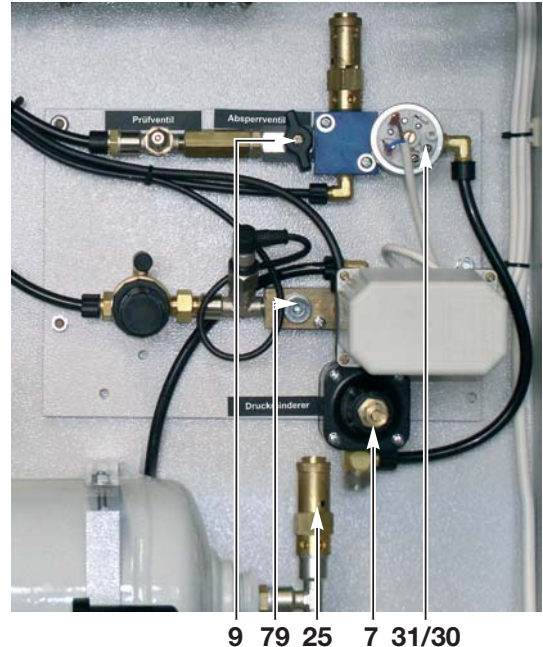
- Turn the setting screw (80) of the corresponding pressure switch in the required direction (see setting options).
- Turn on main switch again.

Setting options of screw (80)

Turn to the **right**: Switchpoint **increases**

Turn to the **left**: Switchpoint **drops**

Changes affect switchpoint and rear switchpoint similarly.



Restore operating status

- Close safety valve "high pressure" (25).
- Set pressure reducer (7) to cable pressure (see the following chapter).

Check and set cable pressure (pressure reducer)

Setpoint value cable pressure

- is set according to the customer order.

Check cable pressure

- Switch on operating voltage.
- Close shut-off valve (9).
- Manometer "cable pressure" (12) must display the required cable pressure.

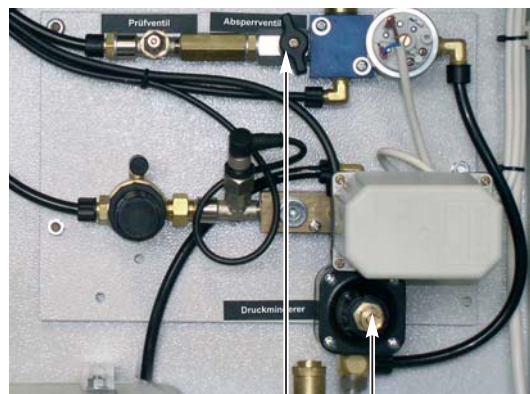
otherwise :

Set cable pressure to the value in keeping with the order

- Operating voltage is switched on.
- shut-off valve (9) is closed.
- Turn the setting screw of pressure reducer (7) with screw driver until the manometer "cable pressure" (12) displays the cable pressure according to the order.



12



9

7



Warning!

The cable pressure setting range is between 0 and 1 bar.
The safety valve "cable pressure" opens independently of the preset cable pressure (0-1 bar) at 0.2 bar over the cable pressure according to the order.

Check and set pressure monitor



Deadly risk!

Working on open, live equipment!

- Do not operate the equipment with damp hands!
- Caution: live components!

Setpoint value switching pressure

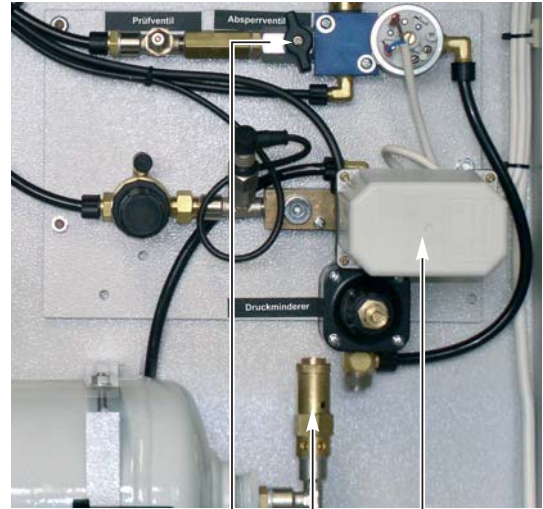
Compressor **On** = 3.0 bar
 Off = 5.5 bar

Check switch values

- Switch on operating voltage.
- Close shut-off valve (9).
- Open safety valve "high pressure" (25) and observe manometer "high pressure" (13).
 - with a pressure drop below **3.0 bar** the compressor must start.
- Close safety valve "high pressure" (25) and observe manometer "high pressure" (13).
 - with a pressure increase to **5.5 bar** and furthermore the compressor must switch off.

To set the switch values note the following:

- **Only set pressure monitor (36) under pressure!**
- **Rotating the hand valve (81) causes approx. 0.6 bar change of switching pressure.**
- **First set the cut-out pressure and then the cut-in pressure, because changing the cut-out pressure leads to a change in the cut-in pressure. This means the difference between cut-out and cut-in pressure stays the same.**
- **Once the hand valve has been pressed down (81) the cut-in pressure can be adjusted separately and the difference between the cut-out and cut-in pressure changed.**



9 25 36

Set the switch values

- Lift up the plastic cover of the pressure monitor after unfastening the four screws.
- Unscrew the lock pin (82) of the hand valve (81).

Set the cut-out pressure:

Raise cut-out pressure

- Turn hand valve (81) clockwise (pressure +)

Lower cut-out pressure

- Turn hand valve (81) anti-clockwise (pressure -)



81 82

Set the cut-in pressure:

Raise cut-in pressure

- Press down hand valve (81) and then turn clockwise (difference -)

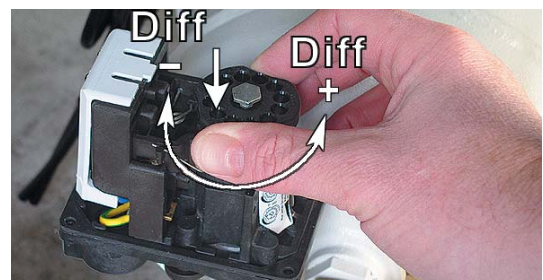
Lower cut-in pressure

- Press down hand valve (81) and then turn anti-clockwise (difference +)



After setting

- Screw in lock pin (82) in one of the two retainers.
- Put on the cover of the pressure monitor again and tighten.



Check and set pressure limiting valve



Deadly risk!

Working on open, live equipment!

- Do not operate the equipment with damp hands!
- Caution: live components!

Setpoint value opening pressure = 5.5 bar



Risk of damage!

Dryer and humidity shut-off work reliably only, if the pressure limiting valve (34) is set properly.

Check opening pressure



Deadly risk!

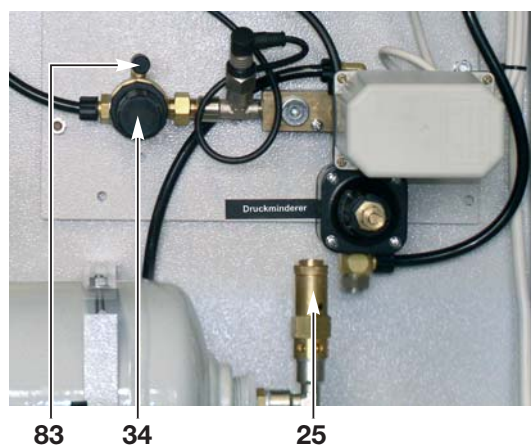
Switch off operating voltage!



Risk of injury!

Prior to operation, depressurise the equipment by opening the safety valve "high pressure" (37)!

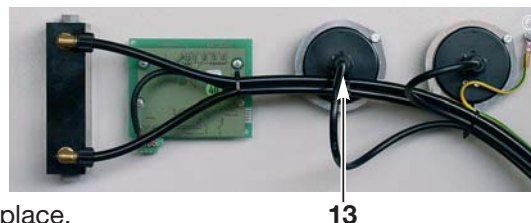
- Unscrew blind cover (83) from the pressure limiting valve (34).
- Unfasten hose connection from the manometer "high pressure" (13):
 - unscrew connecting nut.
 - pull out hose.
- Connect the supplied testing hose to the pressure limiting valve (34) and the manometer "high pressure" (13) (so the manometer "high pressure" (13) can be used as a test gauge).
- Close safety valve "high pressure" (25).
- Switch on operating voltage
 - The manometer "high pressure" (13) must increase by 5.5 ± 0.1 bar.



otherwise:

Set setpoint value opening pressure of pressure limiting valve

- Pull setting knob (84) back and turn until the manometer "high pressure" (13) displays the setpoint value.
- Press on the setting knob (84) again and allow it to lock into place.



Restore operating status

- Switch off operating voltage!
- Depressurise the equipment by opening the safety valve "high pressure" (25)!
- Remove testing hose.
- Insert hose on manometer "high pressure" (13) again and screw in tightly.
- Screw on blind cover (83) on the pressure limiting valve (34).
- Close safety valve "high pressure" (25).
- Switch on operating voltage again
- Check all threaded hose coupling for impermeability.

Check humidity monitoring



Deadly risk!

Working on open, live equipment!

- Do not operate the equipment with damp hands!
- Caution: live components!

Check switching function



Deadly risk!

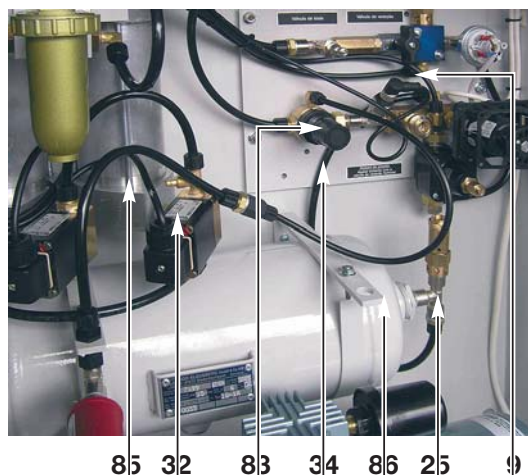
Switch off operating voltage!



Risk of injury!

Prior to operation, depressurise the equipment by opening the safety valve "high pressure" (25)!

- Close shut-off valve (9).
- Unscrew blind cover (83) from the pressure limiting valve (34).
- Undo connecting hose (85) between compressor hose and solenoid valve Y2 at solenoid valve Y2 (32).
- Attach the testing hose supplied (86) to connecting hose (85) and test nipple (83) of the pressure limiting valve (34), in order to bypass the air dryer.
- Open safety valve "high pressure" (25) and discharge tank. Close safety valve "high pressure" (25) after this.
- Switch on operating voltage:
- after a few minutes at least one of the red LEDs of the 8 digit humidity display (39) (7. and 8. digit) illuminates on the Minidisplay (14) as well as the red signal-LED „F“ (48) on the MFR (73) and the system will be shut down and
- the red Signal output-LED „A“ (64) illuminates on the MFR.
- If the humidity shut-down process is not executed, discharge tank again by opening safety valve "high pressure" (25), in order to start a new compressor run.
- Close safety valve "high pressure" (25) again.



Restore operating status



Deadly risk!

Switch off operating voltage!



Risk of injury!

Prior to operation, depressurise the equipment by opening the safety valve "high pressure" (25)!

- Undo and remove test hose (86) from pressure limiting valve (34) and connecting hose (85).
- Screw blind cover (83) on the pressure limiting valve (34) again.
- Screw connecting hose (85) to solenoid valve Y2 (32).
- Switch on operating voltage.

If the compressor fails to start, allow the equipment to "run dry":



Deadly risk!

Electro specialists only are allowed to operate the buttons of the MFR. Other users must use the Minidisplay to operate the system.

- Unscrew connecting block cover (11).
- Open safety valve "high pressure" (25).
- Press button „F-Off“ (44) on the Minidisplay or (67) on the MFR.
- The compressor starts.
- The red LED „A“ (41) on the Minidisplay turned off.
- The green Signal-LED „F-on“ (43) on the Minidisplay and (54) in the MFR are turned off = no humidity monitoring.
- at least one of the red LEDs of the 8 digit humidity display (39) (7. and 8. digit) illuminate.



RTS 1000D

25

After a while

- The red LEDs of the 8 digit humidity display (39) (7. and 8. digit) and the red Signal-LED „F“ (48) on the MFR turn off = the pressurised air is dry.
- The green Signal-LED „F-on“ (43) on the Minidisplay and (54) on the MFR are still turned off = no humidity monitoring.

RTS 2600D / 5200D

**Warning!**

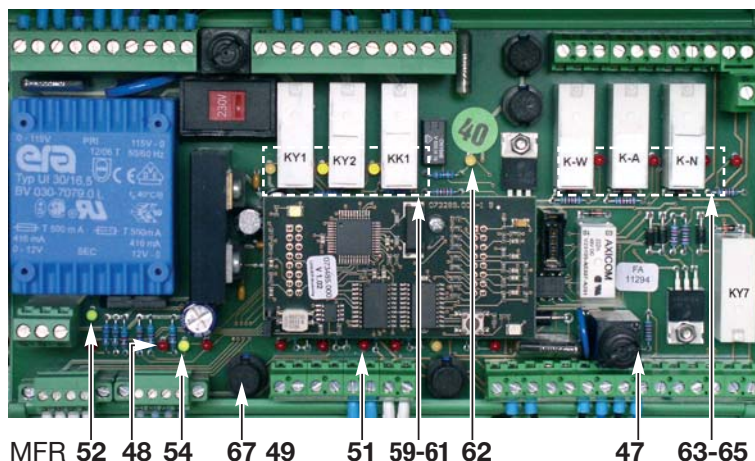
Pressing the button „F-off“ overrides the humidity monitoring.

The button must be used only, if a fault occurred, the „high pressure“ safety valve (25) is open and the shut-off valve "cable pressure" (9) is shut.

Humidity monitoring must be reactivated immediately after trouble-shooting, to assure proper function of the pressurisation system.

In order to get immediate humidity monitoring, the "F-off" operation must be overridden:

- Press button „F-Off“ (44) of the Minidisplay or (67) of the MFR for approx. 5 seconds.
- The green LEDs „F-On“ (43) on the Minidisplay and (54) on the MFR illuminate again.
- Close safety valve "high pressure" (25).
- Then carry out function testing.



The humidity monitoring activates itself automatically after approx. 2 operating hours of the compressor, if the „F-off“ operation is not determined manually.

Switching the motor protective switch (5) off and on again, terminates the „F-off“ operation also. This procedure resets the MFR by breaking its power supply.

After the function testing**Deadly risk!**

Switch off operating voltage!

- Remount connecting block cover (11).

Check clock pulse air dryer change-over



Deadly risk!

Working on open, live equipment!

- Do not operate the equipment with damp hands!
- Caution: live components!

Setpoint value

The clock pulse of the air dryer change-over is system-dependent factory preset in the MFR (73):

- 60 s ± 10 %

Check clock pulse

- Switch on operating voltage.
- Open safety valve "high pressure" (25).
- *The compressor (18) must run.*
- Measure clock pulse.

The MFR (73) controls the solenoid valves of the air dryer in the clock pulse regarding the compressor run time. The change of the valves is visualised by the LEDs „Y1-State“ (59) and „Y2-State“ (60) on the MFR and audible by the sudden escape of regeneration air into the condensate surge tank (76).

Set clock pulse

- The clock pulse is factory preset and can be altered by the manufacturer only.

Check the watchdog timing compressor



Deadly risk!

Working on open, live equipment!

- Do not operate the equipment with damp hands!
- Caution: live components!

Setpoint value

The maximal compressor run time is system-dependent factory preset in the MFR (73):

- 90 min

Set watchdog timing

- The maximal compressor run time is factory preset and can be altered by the manufacturer only.

Check non-return solenoid valve block (Option)

(RTS 2600D & RTS 5200D equipped with backup air storage tank only)

- Switch off operating voltage.
- Close shut-off valve (9).
- Open safety valve "high pressure" (25) and Observe "high pressure" manometer (13)
 - *at pressure drop below 2.0 bar the relay „KY7“ on the MFR (73) activates the solenoid valve of the non-return solenoid valve block (114).*
 - *air flows from the backup air storage tank to the air storage tank of the system.*

Restore operating status

- Close safety valve "high pressure" (25).
- Open shut-off valve (9).
- Switch on operating voltage.



Check maintenance signal

Check external signalisation

- Switch on operating voltage.
- Press button „Test“ (45) at the Minidisplay (14).
 - relay „K-W“ activates and relay „K-A“ deactivates.
 - signal LEDs „W“ (42) and „A“ (41) illuminate.
 - Alarm „A“ must occur in the remote control center if a signal line is connected.



Check door switch (Option)

(RTS 2600D & RTS 5200D only)



Deadly risk!

Working on open, live equipment!

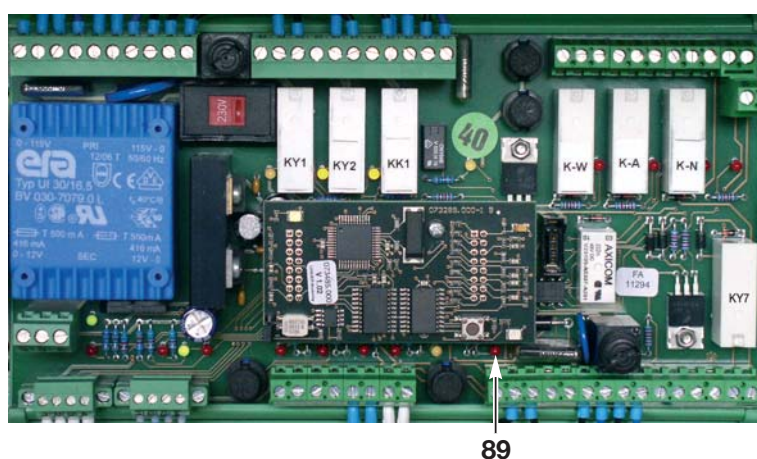
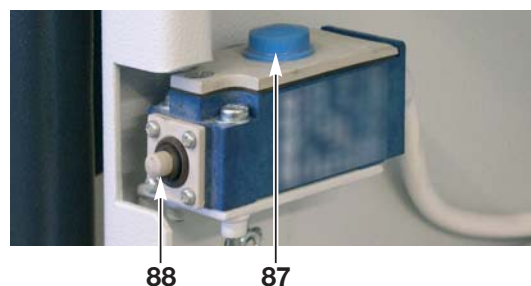
- Do not operate the equipment with damp hands!
- Caution: live components!

Check switching function

- Switch on operating voltage.
- Press button „signal interruption“ (87).
 - pusher (88) emerges,
 - LED „signal interruption“ (89) illuminates in the MFR (73).

Restore operating status

- Press pusher (88).
 - LED „signal interruption“ (89) turns off in the MFR (73).



Operation On - Off



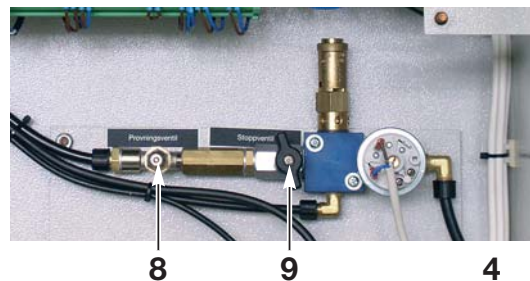
Deadly risk!
Do not operate the equipment with damp hands!
Take caution with live components!



Risk of injury!
Take caution with heated components!

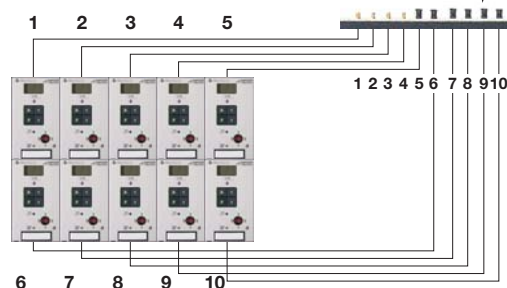
Connection equipment pneumatics

- Switch off operating voltage!,
- Open cabinet door
- Close shut-off valve (9).
- Remove screw cap of the required connection nozzle (4).
- Establish pneumatic connection to pressurised air consumers.



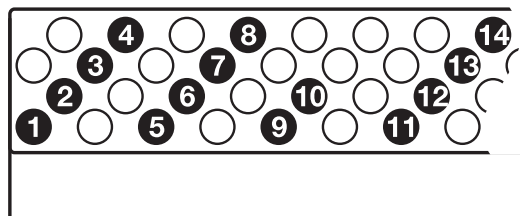
Assignment outputs/flow meters RTS 1000D (Option)

- If flow meters are installed, the assignment to the connection nozzle is as follows:
Flow meters read line-by-line from left to right
= connection nozzle from left to right
- If necessary mark the classification of connection nozzle to the shut-off valves (option) of pressurised air consumers.



Assignment outputs/flow meters RTS 2600D und RTS 5200D

- If flow meters are installed, the assignment to the connection nozzle is as follows:
Flow meters read line-by-line from left to right
= connection nozzle diagonal from left to right
- If necessary mark the classification of connection nozzle to the shut-off valves (option) of pressurised air consumers.



Normal mode

- Switch on operating voltage.
- Wait until the equipment and, if supplied, the backup air storage tank (option) are charged.
 - The Signal-LED „N“ (51) in the MFR (73) turns off, when the preset cable pressure is nearly achieved.
 - The compressor switches off at 5.5 bar.
- Open shut-off valve (9) and if necessary, shut-off valves (option) of pressurised air consumers,
 - the compressor automatically switches on and off when reaching the lower and upper pressure values
- Close cabinet door.

Emergency mode

If, during maintenance or repair works, the connected pressurised air consumer must continue to be supplied with pressurised air, a mobile pressurisation system (e.g. series LAM) can be connected to the testing valve (8) of the RTS pressurisation systems or directly to the pneumatic inlet of the distribution panel.



Risk of damage to property!

If the generated Pressurised air is routed via digital flow meters (FMA) to the consumer loads, it must be pre-filtered with 5 µm and oil-free!

- Switch off operating voltage!
- Attach connecting hose of the mobile system onto the testing valve (8) of the stationary system.
- Close shut-off valve (9) of stationary system.
- Set mobile system into operation while observing the respective instruction manual and safety instructions.

Retrofit kit signalisation for emergency mode

For easy and quick connection of the signalisation wires of mobile pressurisation systems LANCIER Monitoring offers retrofit kits:

Retrofit kit signalisation LAM – RTS 750 up to RTS 5200D

Order no.: 073426.000



We recommend to use the consulting service of LANCIER Monitoring before ordering.

Shut down operation

- Blow out compressor cooler (23) with pressurised air (RTS 2600D & RTS 5200D only).
- Turn off motor protective switch (5).
- Switch off operating voltage!
- Depressurise equipment!
 - Open shut-off valve (9) for this.
- Remove connecting hoses from the connection nozzle (4).
- Close shut-off valve (9) again.
- If necessary, branch off electrical connections.



5



Deadly risk!

Switch off operating voltage!

Operation of multifunctional relay MFR

The MFR controls and monitors the vital functions of the pressurisation system. Several alarm conditions are forwarded to external signal outputs for remote alarming purposes.



Deadly risk!

**Electro specialists only are allowed to operate the buttons of the MFR.
Other users must use the Minidisplay to operate the system.**

Meaning of the LEDs

Normal operation

- 47 Signal LED „DC“** illuminates, when signal voltage is on: mainswitch signal voltage DC (6) is switched on, fuse „B“ is intact.
- 52 Signal LED „AC“** illuminates, when supply voltage is on: motor protective switch (5) is switched on, fuse „A“ is intact.
- 54 Signal LED „F-on“** illuminates, when humidity monitoring is on.
Turns off, when humidity monitoring is bypassed (e. g. running dry of the system) by pressing the button „F-off“ (67).
- 59 Signal-LED „Y1 state“** illuminates, when air dryer 1 is active (relay KY1 and solenoid Y1 are activated).
- 60 Signal-LED „Y2 state“** illuminates, when air dryer 2 is active (relay KY2 and solenoid Y2 are activated).
- 61 Signal-LED „Comp OK“** illuminates, when the compressor is ready for use and the system is fault-free.
- 62 Signal-LED „State Comp in“** flashes as soon as the compressor is running.
- 53 Signal-LED „Remote“** flashes during data exchange between MFR (73) and Minidisplay (14).
- 57 Signal-LED „Ext. Signalization“** illuminates when the signalisation line of a mobile pressurisation system is connected to the MFR and the button „external Signalization“ (68) was activated.
- 66 Signal-LED „Option ext. Tank“** illuminates, when signal „A“ was activated an pressurised air is supplied from an optionally connected backup air storage tank.
- 89 Signal-LED „Signal interruption“** illuminates as soon as the button „Signal interruption“ (87) of the optionally provided door switch is pressed.

Alarms

- 48 Signal-LED „F“** illuminates, when the maximal admissible amount of humidity in the output air is exceeded.
- 49 Signal LED „H“** illuminates, when the pressure in the air storage tank [9.1] (24) fell below 2.0 bar (activated by pressure switch „high pressure“ [B1] (79), RTS 2600D and RTS 5200D only).
- 51 Signal-LED „N“** illuminates when the minimum cable pressure is underrun.
- 55 Signal-LED „T-Runtime“** illuminates, when the compressor was switched off by the MFR because of run time overstepping.
- 56 Signal-LED „Ext. Signal in“** illuminates, when the signalisation line of a mobile pressurisation system is connected to the MFR and an alarm is pending.
- 63 Signal output-LED „W“** illuminates, when the preset maintenance interval (normally 400 hrs.) is overrun and the signal relay K-W is activated = external signal.
- 64 Signal output-LED „A“** illuminates, when a system signal is pending (generated by „T“-, „H“- (option) fault respectively breakdown of supply voltage) and the signal relay K-A is activated = external alarm is activated.
- 65 Signal output-LED „N“** illuminates, when cable pressure fell 2.0 bar below preset limit value and the signal relay K-N is activated = external alarm is activated.
Signal output-LED „N“ illuminates also, when the admissible cable pressure is exceeded (if equipped with optional pressure switch „cable pressure too high“ only (30)).

Buttons

67 Button „F-Off“ [S11] switches off humidity monitoring, e.g. to run dry the system (see page 23).

- Signal-LED „F-on“ (54) turns off.

Pressing the button for 5 seconds reactivates the humidity monitoring.

- Signal-LED „F-on“ (54) illuminates again.

68 Button „external Signalization“ [S12] must be activated in order to forward upcoming signals of a mobile emergency pressurisation system. The signalling lines of the mobile system must be connected to clamp 1 and 2 of the terminal strip [X1] of the stationary system. „External Signalization“ can be activated only if a system signal of the stationary system is pending.

- Signal-LED „Ext. Signalization“ (57) illuminates.

The external signalisation of the mobile emergency pressurisation system „Ext. Signal in“ affects the signal relay K-A of the stationary system. Therefore the stationary system should be shut-off by the motor protective switch (Q4) (5).

When the the stationary system is switched on again, the monitoring of the mobile emergency system is shut-down automatically.

- Signal-LED „Ext. Signalization“ (57) turns off.

Then the system signals of the stationary system affect the signal relay K-A.

69 Button „Reset maintenance“ [S10] must be pressed down for 5 seconds to reset the operating hour meter to the default value of 400 hours.

This process is irreversible!

- Signal-LED „W“ (63) turns off, if it has been already activated.

70 Button „Test“ W Signal, A Signal [S9] may be pressed to check an optionally connected external signalisation.

- Relais „K-W“ activates and Relais „K-A“ deactivates.

- Signal LEDs „W“ (63) and „A“ (64) illuminate.

- Alarm „A“ must occur in the remote control center if a signal line is connected.

Fuses

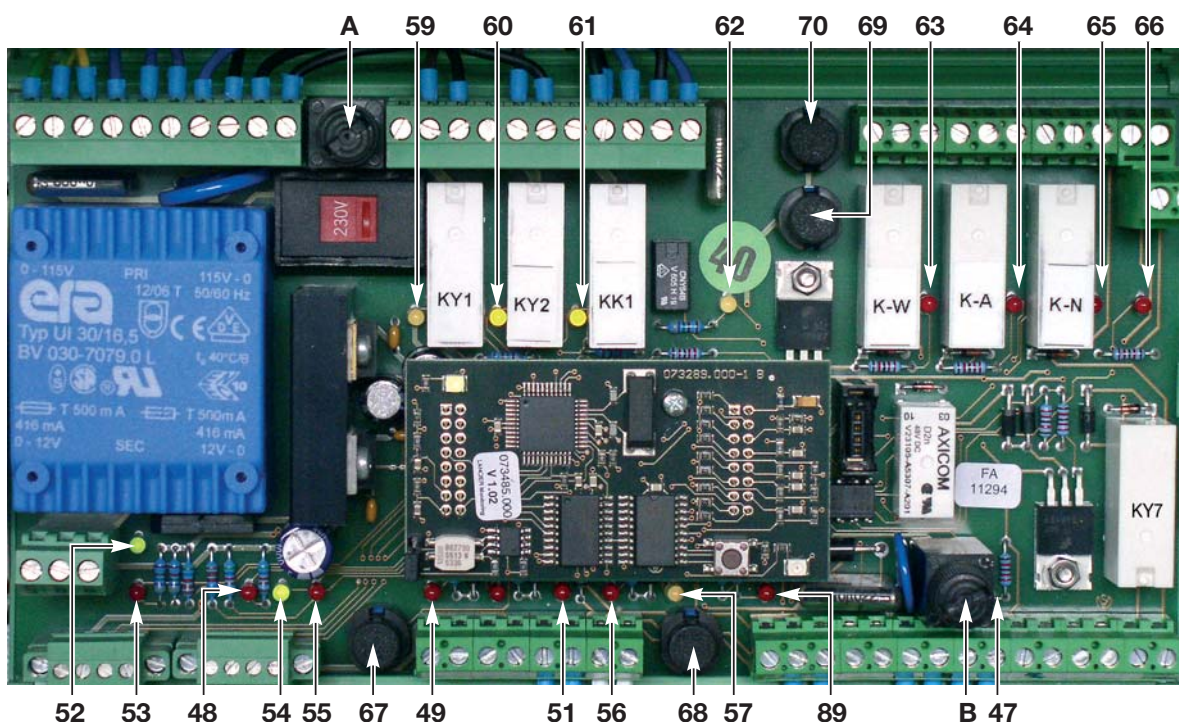
A Fuse „AC“ safeguards the AC circuit (supply voltage).

Type: 0,315 A, medium time lag

B Fuse „DC“ safeguards the DC circuit (signal voltage).

Type: 2 A, medium time lag

KY1 Relay with labeling acc. to wiring diagram



Servicing

General comments

- Follow the maintenance guidelines and intervals accurately, so that the equipment stays in sound operating condition.
- The terms specified for maintenance intervals must be adhered to!
- Maintenance works may only be carried out by skilled personnel!
- Test air storage tank regularly in accordance with the regulation on pressure tanks!
- Allow system testing to be carried out regularly in accordance with DIN/VDE 0701/0702, BGV A2 (this testing can also be commissioned at LANCIER-Monitoring).
- Only use original LANCIER Monitoring replacement parts!
- After maintenance works tighten all loosened screw joints again!
- The individual operating elements (**figures in brackets**) are described in full in the preceding chapters and are no longer illustrated here

Maintenance interval every 400 operating hours



Deadly risk!

Working on open, live equipment!

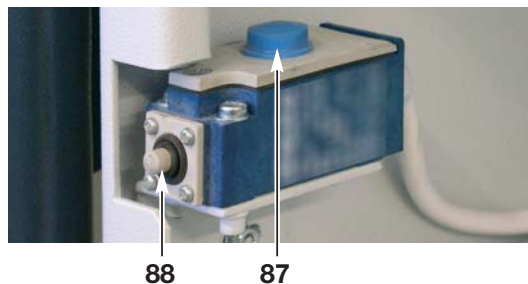
- Do not operate the equipment with damp hands!
- Caution: live components!

1. Before servicing

- Open cabinet door.
- Close shut-off valve (9).

2. Interrupt signal output (RTS 2600D and RTS 5200D equipped with optional door switch (90) only) to avoid the forwarding of fault signalisation effected by servicing works.

- Press button „signal interruption“ (87) of the door switch (90).
 - pusher (88) emerges,
 - LED „signal interruption“ (89) illuminates in the MFR (73).



3. Test and if necessary set cable pressure

- The procedure is described in detail on **page 27**.

4. Test and set if necessary, function pressure monitor (36)

- The procedure is described in detail on **page 28**.

5. Clean air intake filter of the compressor (18)



Deadly risk!

Switch off operating voltage!



Risk of injury!

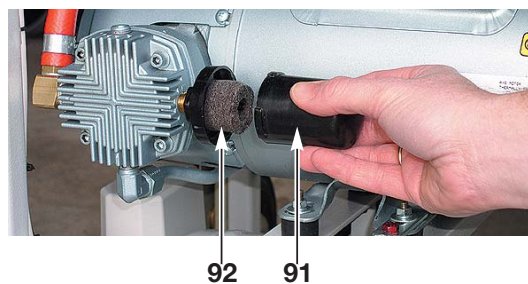
Caution with heated components!



Risk of injury!

Wear protective goggles when blowing out devices.

- Turn and pull filter cap (91) to the left (anti-clockwise).
- Pull out filter cartridge (92) and then blow with pressurised air or beat it and wash out with water.
- Dry filter cartridge (92).
- Renew filter cartridge (92) in the case of heavy contamination.
- Insert filter cartridge (92).
- Put on filter cap (91) and turn right (clockwise).
- Carry out maintenance works on the other air intake filter.



6. Empty condensate surge container (76)

7. RTS 2600D / RTS 5200D only: blow out radiators (23) when they are soiled.

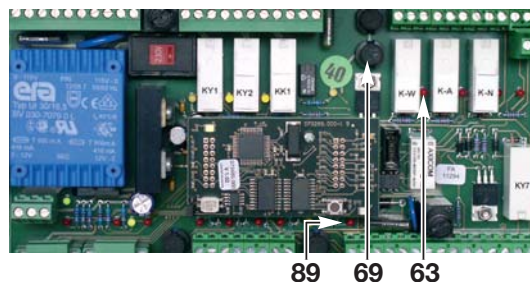


Deadly risk!

Electro specialists only are allowed to operate the buttons of the MFR.
Other users must use the Minidisplay to operate the system.

8. After maintenance

- Reset operating hour meter.
- Press Button „Reset Maintenance“ (69) of the MFR (73) or Button „W“ (46) of the Minidisplay (14) for 5 seconds.
 - The value is reset to „400“.
 - The Signal output-LED „W“ (63) of the MFR (73) turns off.
- The remaining operating hours until the next maintenance are indicated in the Minidisplay (14).



9. Start up equipment again

- Switch on operating voltage.
- Open shut-off valve (9).
- Close cabinet door.
 - The optional signal interruption by the door switch (90) will be retracted*
 - LED „signal interruption“ (89) turns off in the MFR (73).*

10. Measure humidity of air

- e. g. with psychrometer or digital humidity and temperature analyser DFP (order no.:072773.000)



Maintenance interval every 1200 operating hours

1. Carry out maintenance "400 operating hours"

- see page 38, **work step 1. to 7.**
- **Do not** restart equipment.



Deadly risk!
Switch off operating voltage!



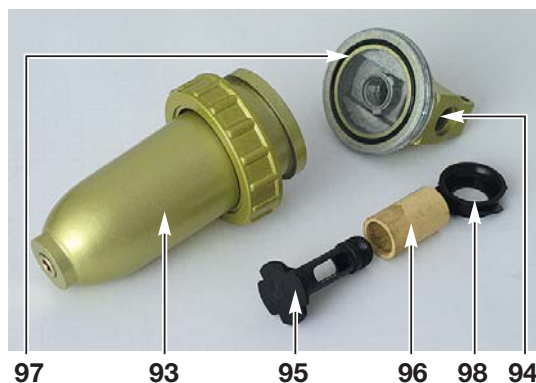
Risk of injury!
Prior to operation, depressurise the equipment by opening the safety valve "high pressure" (25)!

2. Change micro filter element (96) of micro filter (33)

- Detach micro filter:
Remove filter cup (93) by loosening the connecting nut from the filter head (94).
- Unfasten hollow grub screw (95) with micro filter element (96).
- Remove micro filter element (96) and replace with new one.

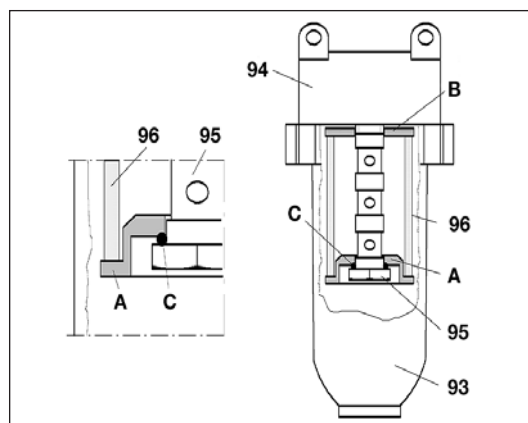
RTS 1000D and RTS 2600D

- Clean seal (97), if necessary replace worn seal.
- Screw hollow grub screw (95) together with new micro filter element (96) and plastic ring (98) again into the filter head (94).
- Clean filter cup (93), keep dust-free.
- Attach filter cup (93) by tightening the connecting nut on the filter head (94).



RTS 5200D

- Clean seals (A), (B) and (C), if necessary replace worn seals.
- Cover hollow grub screw (95) with O-ring (C) and then with seal (A).
- Screw hollow grub screw (95) together with micro filter element (96) and seal (B) again into the filter head (94).
- Clean filter cup (93), keep dust-free.
- Attach filter cup (93) by tightening the connecting nut on the filter head (94).



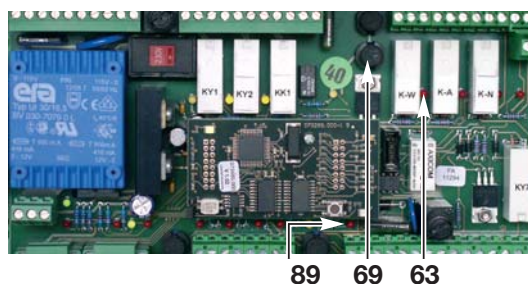
Drying agent of the air dryers (26) has to be replaced, if its dust has gathered in the filter cup (93) (see work step 2 of maintenance interval „4,000 operating hours“, page 42)



Deadly risk!
Electro specialists only are allowed to operate the buttons of the MFR.
Other users must use the Minidisplay to operate the system.

3. After maintenance

- Reset operating hour meter.
- Press Button „Reset Maintenance“ (69) of the MFR (73) or Button „W“ (46) of the Minidisplay (14) for 5 seconds.
 - The value is reset to „400“.
 - The Signal output-LED „W“ (63) of the MFR (73) turns off.
- The remaining operating hours until the next maintenance are indicated in the Minidisplay (14).



4. Start up equipment again

- Switch on operating voltage.
- Open shut-off valve (9).
- Close cabinet door.

The optional signal interruption by the door switch (90) will be retracted LED „signal interruption“ (89) turns off in the MFR (73).

5. Measure humidity of air

- e. g. with psychrometer or digital humidity and temperature analyser DFP (order no.:072773.000)



Maintenance interval every 4,000 operating hours



Deadly risk!
Switch off operating voltage,
Unscrew or disconnect back-up fuse!



Risk of injury!
Prior to operation, depressurise the equipment by opening the safety valve "high pressure" (25)!



Risk of injury!
Caution with heated components!

- Prepare tools: 1 allen screw driver 3/16" (LANCIER Monitoring order no. 020657.000), 1 combination wrench 19 mm and 1 steel ruler
- Open cabinet door.
- Close shut-off valve (9).

The **line item numbers** (*bold, italic*, not in brackets) in chapter "1 Servicing compressor" relate to the exploded drawing of the compressor on opposite page.

1. Servicing compressor VD 7/2 (RTS 1000D) and VD 28/2 (RTS 2600D)

1.1 Dismount compressor

- Detach hose clip from pressurised air hose.
- Remove pressurised air hose.
- Undo fastening screw of compressor.
- Pull compressor out.
- Branch off the electricity from the compressor's junction plate or disconnect coupling (option) of electricity from the compressor.
- Take out compressor.

1.2 Disassemble compressor

- Unscrew fan cap **39**.
- Loosen connecting nut **41** on L-piece **17** of the cylinder head **20**.
- Undo cylinder head screws **18**.
- Remove cylinder head **20**, suction and pressure valves with seals **21-25**.
- Undo fastening screws **18B** of cylinder **26** and remove cylinder from pistons.

1.3 Clean and if necessary replace compressor parts

- Dry clean all parts.
- Replace damaged or worn valves.
- Replace seals for cylinder and cylinder head.

1.4 Assemble compressor

- Replace piston rings **28** and springs **29**.
- Fit both piston rings **28** turned 180°!
- Replace backer strip **31**.
- Put on cylinder **26** and screw tightly (max. 10 Nm)!
The piston must not project out of the cylinder in the top dead centre position. (check with ruler!)
- Place cylinder head, suction and pressure valves with seals **21-25** on cylinder **26**.
Pay attention to the order of suction and pressure valve platess and marking holes.
- Insert and tighten cylinder head screws **18**. Do not tighten screws too much (10 Nm)!
- Fasten connecting nut **41** on L-piece **17** of the cylinder head **20**.
- Screw on fan cap **39**.

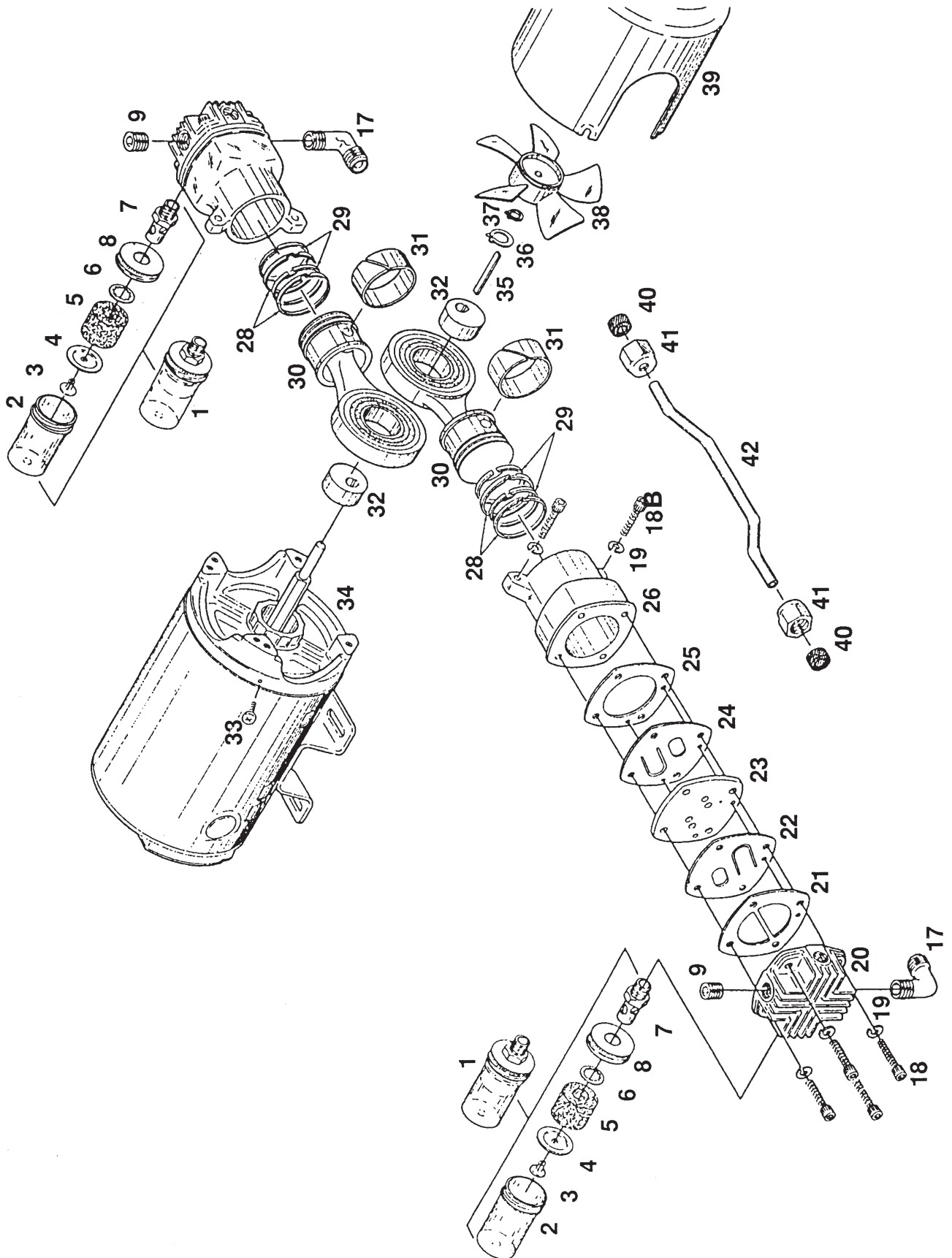
1.5 Change air intake filter (see page 38)

- Turn and pull filter cap to the left.
- Replace filter cartridge **5**.
- Put on filter cap again and tighten.

1.6 Mount compressor

- Place compressor in front of equipment.
- Connect electricity.
- Place compressor into the equipment.
- Turn in and tighten mounting bolts.
- Mount pressurised air hose and tighten with hose clip.

Compressor VD 7/2 (RTS 1000D) and
VD 28/2 (RTS 2600D)



The **line item numbers** (**bold, italic**, not in brackets) in chapter "1 Servicing compressor" relate to the exploded drawing of the compressor on page 41.

1. Servicing compressor VD 50/4 (RTS 5200D)

1.1 Dismount compressor

- Detach hose clip from pressurised air hose.
- Remove pressurised air hose.
- Undo fastening screw of compressor.
- Pull compressor out.
- Branch off the electricity from the compressor's junction plate or disconnect coupling (option) of electricity from the compressor.
- Take out compressor.

1.2 Disassemble compressor

- Unscrew fan cap **35**.
- Loosen connecting nut **37** on L-piece **17** of the cylinder head **19**.
- Undo cylinder head screws **18**.
- Remove cylinder head **19**, suction and pressure valves with seals **20-24**.
- Undo fastening screws of cylinder **25** and remove cylinder from pistons.

1.3 Clean and if necessary replace compressor parts

- Dry clean all parts.
- Replace damaged or worn valves.
- Replace seals for cylinder and cylinder head.

1.4 Assemble compressor

- Fit both piston rings **27** turned 180°!
- Replace backer strip **29** and springs **27**.
- Put on cylinder **25** and screw tightly.
The piston must not project out of the cylinder in the top dead centre position. (check with ruler!)
- Place cylinder head, suction and pressure valves with seals **20-24** on cylinder **25**.
Pay attention to the order of suction and pressure valve plates and marking holes.
- Insert and tighten cylinder head screws **18**. Do not tighten screws too much (10 Nm)!
- Fasten connecting nut **37** on L-piece **17** of the cylinder head **19**.
- Screw on fan cap **35**.

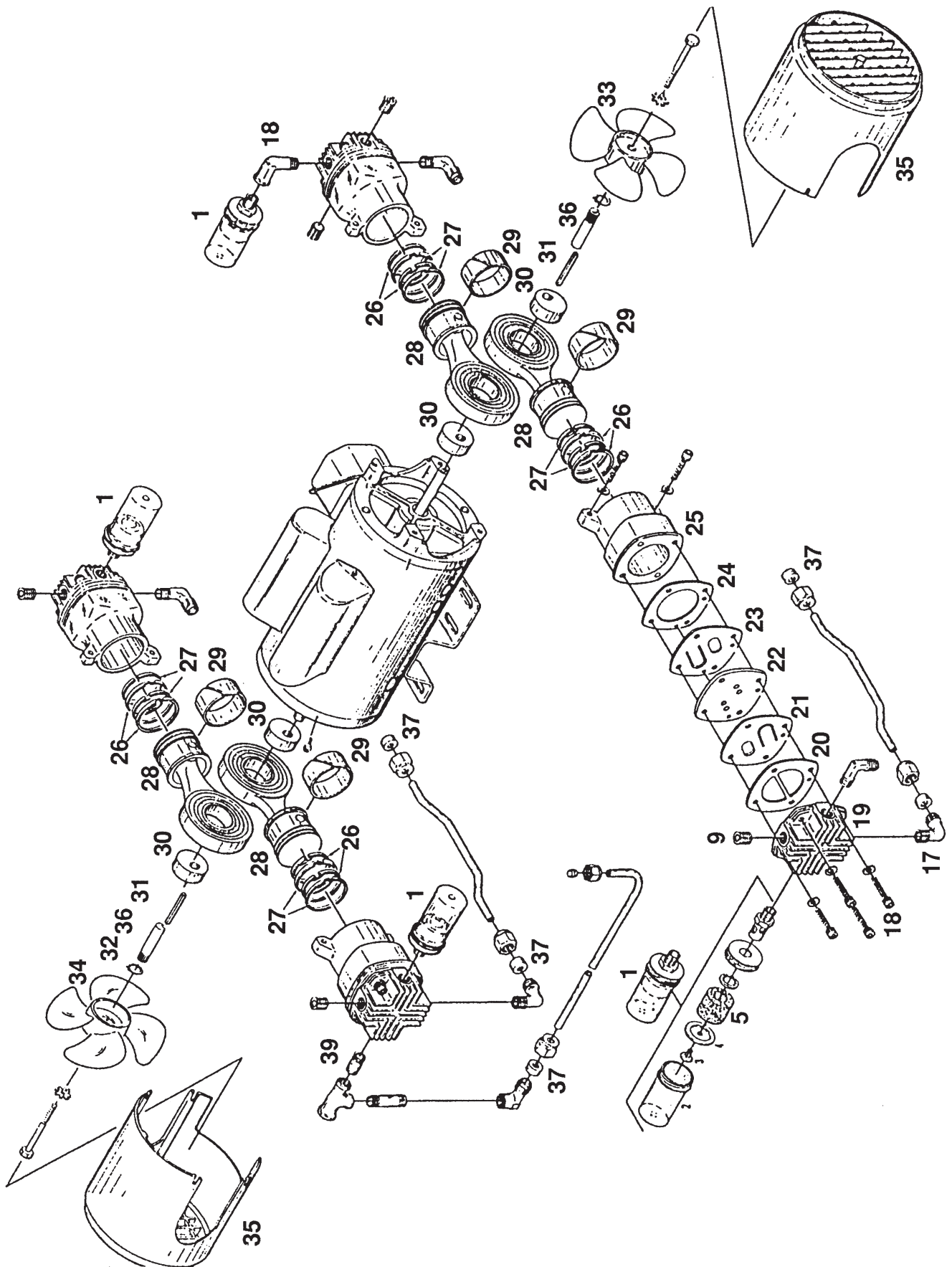
1.5 Change air intake filter (see page 38)

- Turn and pull filter cap to the left.
- Replace filter cartridge **5**.
- Put on filter cap again and tighten.

1.6 Mount compressor

- Place compressor in front of equipment.
 - Connect electricity.
 - Place compressor into the equipment.
 - Turn in and tighten mounting bolts.
 - Mount pressurised air hose and tighten with hose clip.
-

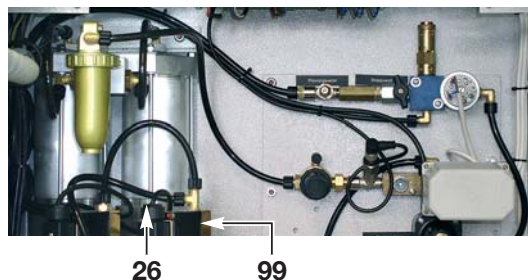
Compressor VD 50/4 (RTS 5200D)



2. Servicing air dryer

2.1 Unscrew drying agent container (26)

- Unscrew all hose lines from the drying agent containers (26).
- Unscrew lower assembly bracket (99) with the drying agent containers (26) and take both out.



2.2 Disassemble drying agent container



Risk of injury!

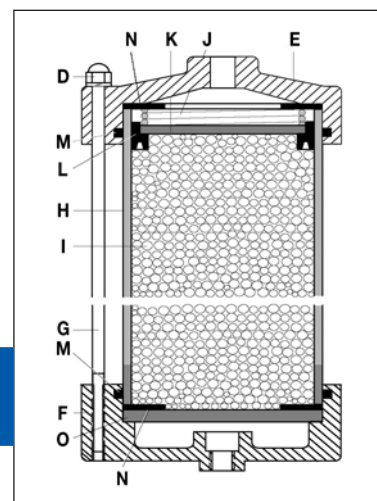
Do not touch drying agent with wet hands, heat build-up!



Risk of injury!

Wear safety glasses when working with drying agents.

- Unscrew nuts (D) of upper cover (E).
- Place drying agent container on the head.
- Remove lower cover (F) with the mounting bolts (G) from the cylinder tube (H).
- Pour out drying agent (I).
- Remove upper cover (E) from the cylinder tube (H) and take out pressure spring (J).
- Press out upper filter disc (K) with sealing ring (L).
- Take out o-rings (M), PE sealing rings (N) and filter disc (O) from the covers.



Note for disposal!

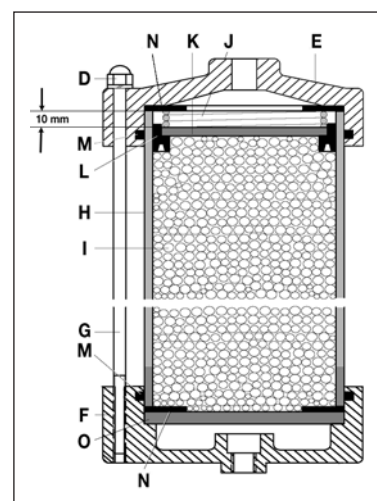
Dispose of used drying agents in accordance with the regulations applicable in the country and site of use.

2.3 Clean drying agent container

- Dry clean all parts
- Replace worn o-rings (M).
- Replace filter discs (L) and (O).
- Replace worn sealing rings (L) and (N).

2.4 Assemble drying agent container

- Insert new filter disc (O), PE sealing rings (N) and O-rings (M) in the lower cover (F).
- Put cylinder tube (H) on the lower cover (F).
- Pour in new drying agent (molecular sieve) (I): approx. 500 g per drying agent container. Tap lightly on the cylinder tube with the shaft of a hammer, to avoid cavity formation.
- Insert new filter disc (K) with lubricated sealing ring (L) in the cylinder tube (H) and stand back from about 10mm (see fig.).
- Place pressure spring (J) on the filter disc (K).
- Place PE sealing ring (N) and O-ring (M) in the upper cover (E).
- Insert upper cover (E) on the cylinder tube (H) and tighten with the nuts (D) as much as possible.



2.5 Check solenoid valves

Check solenoid valves for proper operation and replace them at least after 8000 operational hours.

2.6 Remount drying agent container

- Insert and screw lower assembly bracket (99) with the drying agent containers (26) again on rear panel of equipment.
- Screw all hose lines again onto the drying agent containers (26).

3. Servicing double non-return valve

3.1 Dismantle double non-return valve (35)

- Unscrew all hose lines from double non-return valve (35).
- Unscrew double non-return valve (35) and remove from equipment.

3.2 Disassemble double non-return valve (35)

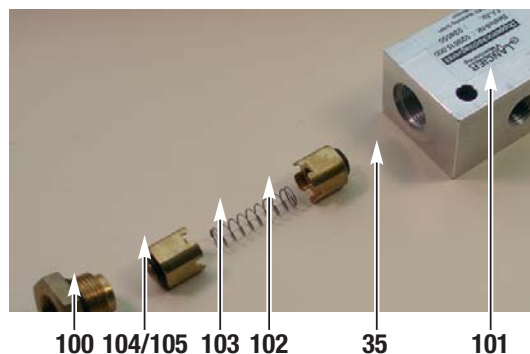
- Unscrew valve seats (100) on both sides.
- Take out both pistons (102) with the inside spring (103).

3.3 Clean double non-return valve (35)

- Dry clean all parts
- Clean injectors (104).
- Replace worn seals (101), (105).

3.4 Assemble double non-return valve (35)

- Screw in a valve seat (100) again.
- Insert pistons (102) and springs (103).
- Screw in second valve seat (100).



3.5 Mount double non-return valve (35)

- Screw double non-return valve (35) again in the equipment.
- Screw all hose lines again onto the double non-return valve.

4. Servicing pressure limiting valve and micro filter

4.1 Remove pressure limiting valve (34)

- Unscrew all hose lines from pressure limiting valve (34).
- Unscrew knurled nut and take out pressure limiting valve (46).

4.2 Disassemble pressure limiting valve (34)

- Pull back plastic cap (106) for release and turn anti-clockwise as far as it will go, to relieve the valve.
- Unscrew upper housing (107) from base part (108).
- Take out setting screw (109), spring (110) and pressure plate (111) from upper housing.
- Remove plastic sealing ring (112) and membrane (113) carefully from the housing base part (108).

Warning: Do not damage membrane with sharp objects when removing.

4.3 Clean pressure limiting valve (34)

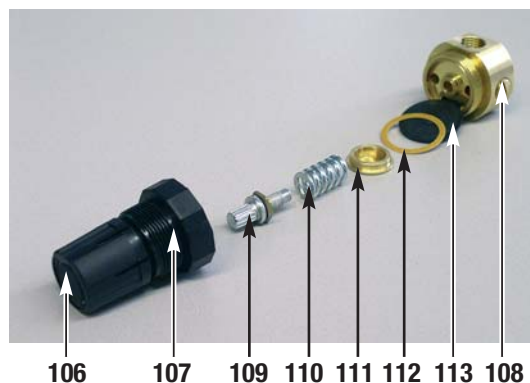
- Dry clean all parts.
- Replace worn membrane (113).

4.4 Assemble pressure limiting valve (34)

- Insert membrane (113) and plastic sealing ring (112) again into housing base (108).
- First insert setting screw (109) into upper housing (107) with the square end and put spring (110) over.
- Place pressure plate (111) with the flange on the spring (110) (the flat side lies on the membrane after mounting).
- Screw together upper (107) and lower housing (108).

4.5 Mount pressure limiting valve (34)

- Reinsert pressure limiting valve (34) and tighten with knurled nut.
- Screw on all hose lines again to pressure limiting valve (34).



5. Servicing micro filter

5.1 Change micro filter element (96) of micro filter (33)

see page 40.



Important!

After mounting, reset pressure limiting valve correctly (see page 29)!



6. Cyclone water separator (RTS 5200D only)

- Remove connecting hoses and solenoid valve (118).
- Dismantle assembly bracket with the cyclone water separator (26) and take both out.
- Disassemble cyclone water separator (116).
- Clean cyclone water separator (116) and check for residues
 - especially at air intake
- Replace O-rings and grease them slightly.
- Re-assemble cyclone water separator(116).
- Re-mount cyclone water separator(116) with assembly bracket into the system.
- Replace worn out braking element if necessary.
- Re-connect connecting hoses and solenoid valve (118) and check for switching ability.



118 116

For the following operation start up the equipment again:

- Connecting hose (4) is disconnected from air consumer.
- Close shut-off valve (9).
- Connect power supply.
- Turn motor protective switch (5) to „I“.

7. Carry out maintenance "400 operating hours"

see page 38.

8. Function testing

Carry out function testing, see pages 25 - 33.

9. Test impermeability

Test all hose connections of the whole system for impermeability.

10. After maintenance

- If necessary, re-establish connection to consumer load and open shut-off valve (9).
- Close door.

Causes and remedy of faults

Signal	Fault	Cause	Remedy
No display at Minidisplay (13).	Equipment does not receive operating voltage.	Operating voltage is not switched on. Input voltage is interrupted. Faulty wiring.	Switch on operating voltage. Test back-up fuse 16 A and connections. Test wiring.
	Motor protective switch (5) has disconnected compressor.	Motor protective switch (5) is set incorrectly. Compressor is becoming too hot. Compressor pressure is too high. Compressor has an electric fault.	Set motor protective switch correctly, see page 25. Check fan and radiator for plugging and clear these components if necessary. Check wiring of fan. Check solenoid valves for proper operation. Check double non-return valve for plugging. Check pressure monitor settings (3-5.5), s. page 28. Check cooler for pneumatical permeability. Replace compressor.
	Primary voltage of MFR (73) is interrupted.	Microfuse „AC“ (A) is defective. Wiring of supply voltage of MFR is defective.	Replace microfuse „AC“ (A): Type M 0,315 A . Check wiring of MFR.

Signal	Fault	Cause	Remedy
Green signal-LED „DC“ (40) of the Minidisplay (13) does not illuminate.	Power supply of signal relays „K-W“, „K-A“ and „K-N“ of MFR (73) is interrupted.	Microfuse „B“ of MFR is defective.	Replace microfuse „B“: M 2,0 A.
Red signal-LED „A“ (41) on the Minidisplay (13) illuminates. Red Signal-LED „F“ (48) on the MFR (73) illuminates. One or both red LEDs of the humidity monitoring (39) on the Minidisplay illuminate.	Humidity fault = relative humidity of output air is unadmissibly high.	Maintenance of air dryers (28) was not carried out. Pressure limiting valve (34) is set incorrectly or defective. Double non-return valve (35) is contaminated. Double non-return valve's (35) piston is blocked. Electric triggering of solenoid valves (32) of air dryers (28) fails or is in wrong clock pulse. Solenoid valves (32) are defective or worn out. RTS 5200D: cyclone water separator (116) is contaminated, solenoid valve (118) of separator works faulty. Humidity sensor (37) of MFR is defective or wiring is faulty.	Carry out maintenance of air dryer, see page 46. Set pressure limiting valve properly, see page 29, replace if necessary. Check amount of regeneration air, clean or replace injectors, see page 47. Carry out maintenance of double non-return valve, see page 47, replace if necessary. Check cycle time, see page 32. Watch relay KY1 u. KY2, check wiring and plugs of solenoid valves. Check solenoid valves and replace if necessary. Clean cyclone water separator, check wiring, plugs and solenoid valve, replace solenoid valve if necessary. Check wiring, replace humidity sensor if necessary.
Both red LEDs of humidity monitoring (39) flash.			
Red signal-LED „A“ (41) on the Minidisplay (13) illuminates. None of the red LEDs of the humidity monitor (39) illuminates or flashes.	Red signal-LED „T-Run-time“ (53) in the MFR (73) illuminates: runtime alarm = compressor runs longer than preset at „Max. compressor runtime“ (90 min.).	System is permeable. Pressure monitor (36) is set incorrectly or defective. Safety valve "compressor" (24) blows off. Safety valve "high pressure" (27) blows off. Solenoid valves (32) do not close properly. Double non-return valve (35) is contaminated or jammed. Compressor is permeable. Thermal protector of compressor motor's electric coil disconnects alternating. (1-phase-compressor-motor only) Electric connection of compressors is faulty.	Check hoses and lines for leaks. Set pressure monitor correctly, see page 28, and replace if necessary. Check opening pressure, replace safety valve if necessary. Check hoses and cooler (26) for plugging. Replace safety valve. Check solenoid valves, replace if necessary. Clean double non-return valve, see page 39. Clean compressor valve plates, see pages 42-45. Compressor gets too hot: check aeration channels. Check compressor pressure. Compressor's roller bearings are defective: replace compressor. Check electric connections of compressor (19) at connecting block (75).
Red signal-LED „W“ (42) on the Minidisplay (13) illuminates.	Red signal-LED „W“ (63) in the MFR (73) illuminates: maintenance interval is overrun.	Maintenance is due.	Carry out maintenance, see page 38 ff.

What to do after "humidity fault"?

The MFR (73) switched off the compressor (18), the humidity of the output air is inadmissibly high.

- The red signal-LED „A“ (41) illuminates on the Minidisplay
- At least one of the red LEDs of the 8 digit humidity display (39) (7. and 8. digit) illuminate.
- If both LEDs of the 8 digit humidity display (39) (7. and 8. digit) flash alternating, there is a fault of the humidity sensor: faulty wiring or defective sensor.

Search for faults, remedy faults

1. Shut down operation

(see page 35).

- Open cabinet door
- Switch off operating voltage.
- Unscrew or disconnect back-up fuses!
- Depressurise equipment!
 - Open safety valve "high pressure" (9) for this.
- Close safety valve "high pressure" (9).

2. Search for and remedy faults

according to charts "Causes and remedying of faults", pages 48 and 49.

3. Restart equipment and allow to run dry

see page 22.



Deadly risk!

**Do not operate the equipment with damp hands!
Caution with live components!**



Risk of injury!

Caution with heated components!

Normal mode

see page 34.

- Switch on operating voltage.
- Wait until the equipment is charged.
 - Signal-LEDs „F“ (48) and „N“ (51) on the MFR (73) turn off.
 - The compressor switches off at 5.5 bar.
- Open shut-off valve (9) and if necessary, shut-off valves (option) of pressurised air consumer,
 - the compressor automatically switches on and off when reaching the lower and upper pressure values.
- Close cabinet door.

If the compressor does not start: allow the equipment to "run dry":



Deadly risk!

Electro specialists only are allowed to operate the buttons of the MFR.
Other users must use the Minidisplay to operate the system.

- Unscrew connecting block cover (11).
- Open safety valve "high pressure" (25).
- Press button „F-Off“ (44) on the Minidisplay or (67) on the MFR.
- The compressor starts.
- The red LED „A“ (41) on the Minidisplay turned off.
- The green Signal-LED „F-on“ (43) on the Minidisplay and (54) in the MFR are turned off = no humidity monitoring.
- at least one of the red LEDs of the 8 digit humidity display (39) (7. and 8. digit) illuminate.



RTS 1000D

25

After a while

- The red LEDs of the 8 digit humidity display (39) (7. and 8. digit) and the red Signal-LED „F“ (48) on the MFR turn off = the pressurised air is dry.
- The green Signal-LED „F-on“ (43) on the Minidisplay and (54) on the MFR are still turned off = no humidity monitoring.

RTS 2600D / 5200D

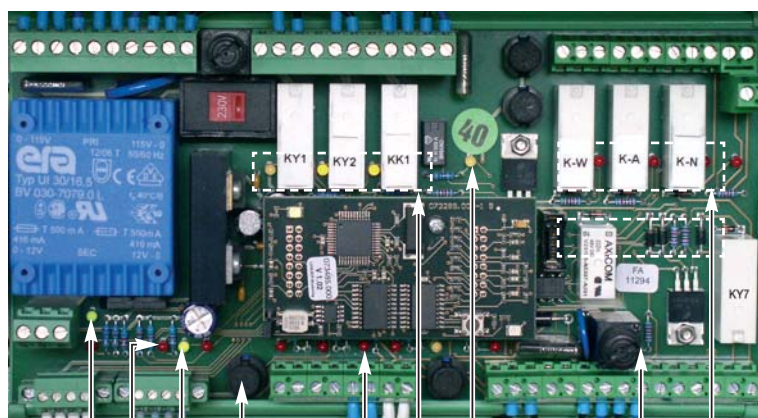


Warning!

Pressing the button „F-off“ overrides the humidity monitoring.
The button must be used only, if a fault occurred, the „high pressure“ safety valve (25) is open and the shut-off valve "cable pressure" (9) is shut.
Humidity monitoring must be reactivated immediately after trouble-shooting, to assure proper function of the pressurisation system.

In order to get immediate humidity monitoring, the "F-off" operation must be overridden:

- Press button „F-Off“ (44) of the Minidisplay or (67) of the MFR for approx. 5 seconds.
- The green LEDs „F-On“ (43) on the Minidisplay and (54) on the MFR illuminate again.
- Close safety valve "high pressure" (25).
- Then carry out function testing.
- Remount connecting block cover (11).



MFR 52 48 54 67 49 51 59-61 62 47 63-65

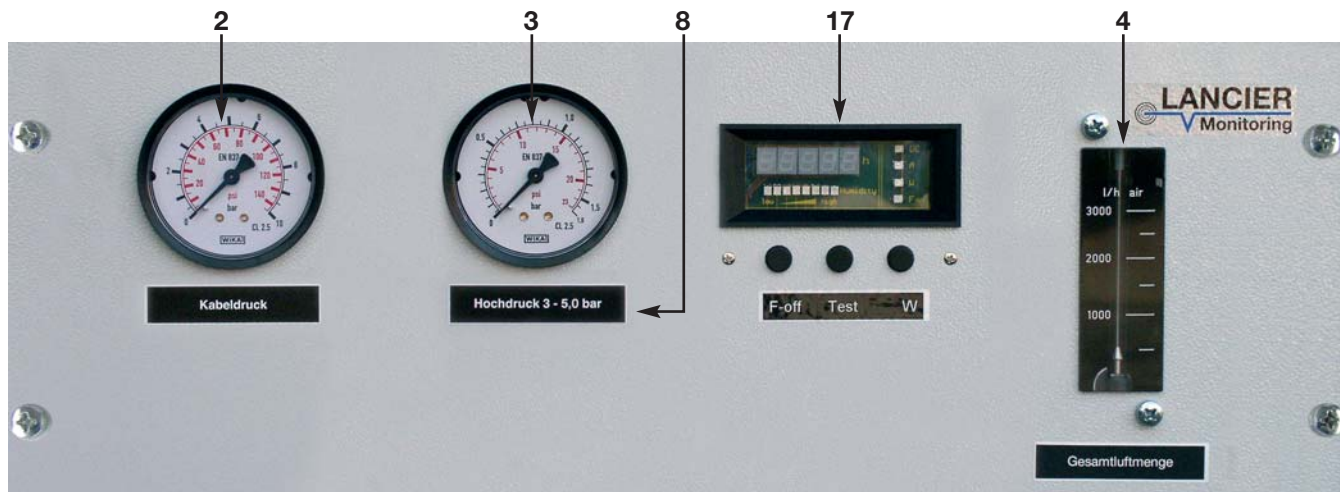
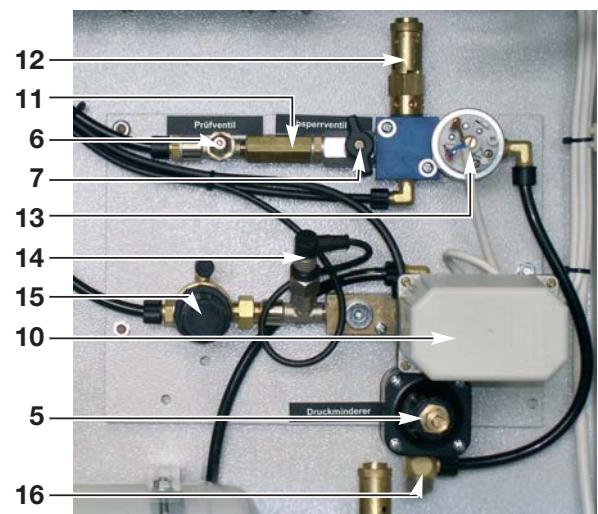
The humidity monitoring activates itself automatically after approx. 2 operating hours of the compressor, if the „F-off“ operation is not determined manually.

Switching the motor protective switch (5) off and on again, terminates the „F-off“ operation also. This procedure resets the MFR by breaking its power supply.

Replacement parts

Display, operation

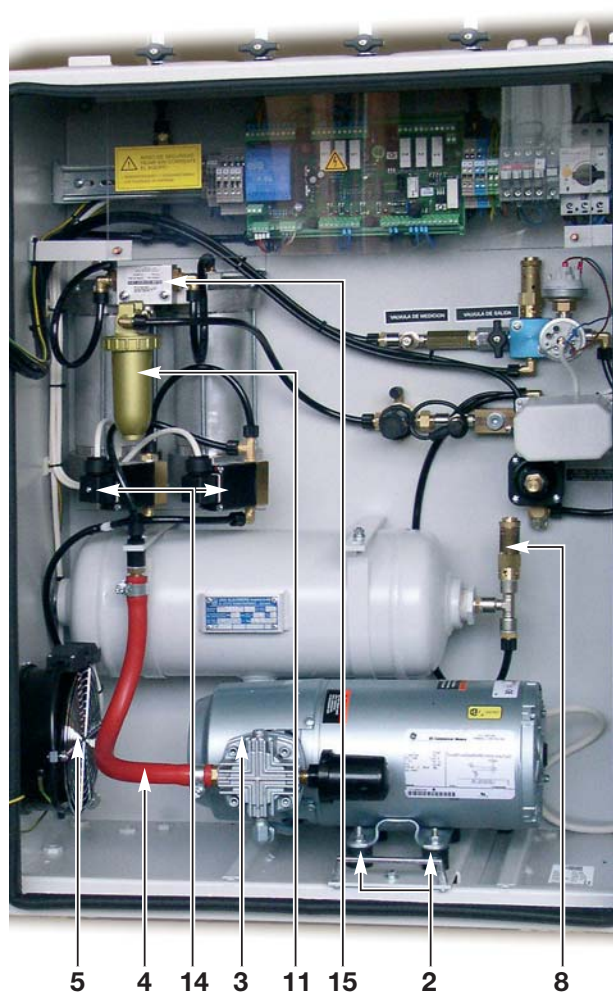
Item	Name		Order no.
1	4000 h-Service packet	RTS 1000D equipped with compressor VD 7/2 RTS 2600D equipped with compressor VD 28/2 RTS 5200D equipped with compressor VD 50/4	050130.000 050132.000 050133.172
2	Manometer 0 - 1,6 bar (12)		040445.000
3	Manometer 0 - 10 bar (13)		048965.000
4	Total air flow meter (20)	RTS 1000D RTS 2600D RTS 5200D	045357.000 044850.000 045348.000
5	Pressure reducer (7)		023385.000
6	Testing valve "cable pressure" (8)		027708.000
7	Shut-off valve (9)		049314.000
8	Label replacement GB compl.		073282.000
9	Pressure switch "high pressure" 2.0 bar (RTS 2600D & RTS 5200D only) (no illustration)		045416.000
10	Pressure monitor (36)		006464.000
11	Non-return valve (28)		053093.000
12	Safety valve "cable pressure" (29) (when ordering replacement part specify cable pressure!)		028856.000
13	Pressure switch "cable pressure too low" (31) (when ordering replacement part specify cable pressure!)		044879.000
14	Humidity sensor MFR (37)		073351.000
15	Pressure limiting valve (34)		029048.000
16	Nozzle - output air „cable pressure“ (27) (when ordering replacement part specify pressurisation system!)		024333.000
17	Minidisplay (14)		073360.000
18	Door switch (14) (RTS 2600D & RTS 5200D only)		052485.000
19	Door lock (no illustration)		040691.000



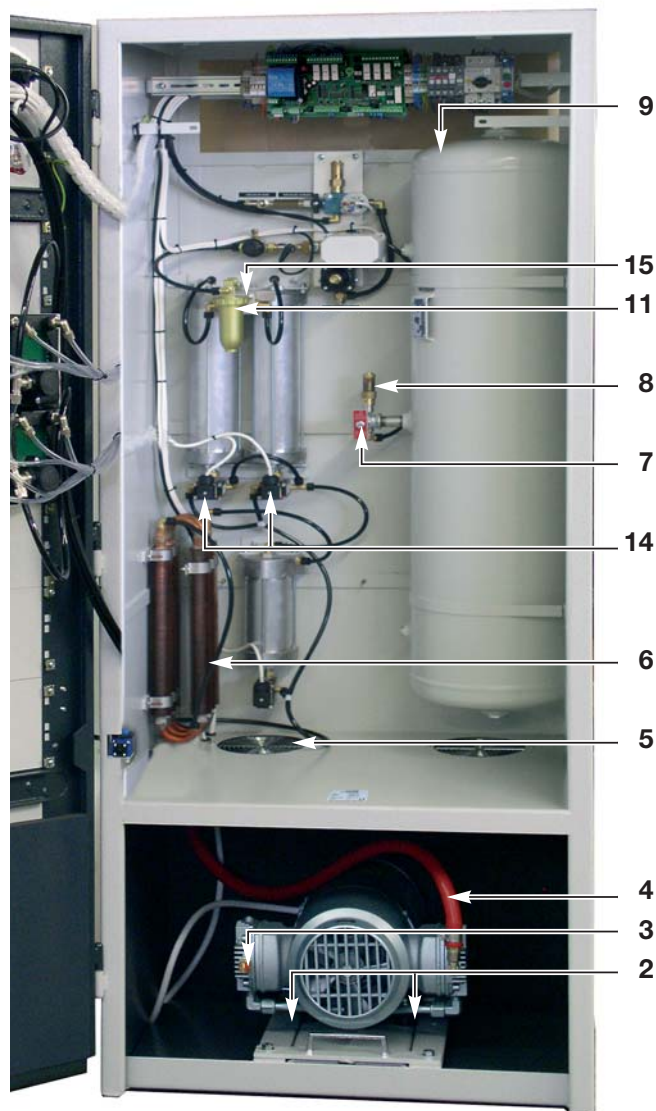
Item	Name	Order no.	
1	Condensate surge tank (no illustration)	019530.000	
2	Rubber/metal oscillating buffer (20)	016356.000	
3	Safety valve "compressor" (21)	023791.000	
4	Compressor hose	040197.000	
5	Fan (22)	022343.000	
6	Cooler for compressor air	RTS 2600D RTS 5200D	024219.000 020076.000
7	Test flange (115)	RTS 2600D, RTS 5200D	002521.000
8	Safety valve "high pressure" 7.0 bar (25)		023791.000
9	Non-return solenoid valve block (114) (no illustration, position only)		021551.000
10*	Membrane pressure limiting valve (113) (no illustration)		030077.030
11	Micro filter compl. (33)		see page 54
14	Solenoid valve 3/2 way (32) (when ordering replacement part specify voltage and frequency!)		031538.000
15	Double non-return valve (35)		see page 54
16	PE hose 6/4		006827.000
17	PA hose 8/6		018499.000

The components on this page marked with "*" are an integral part of the service package named on page 52.

RTS 1000D

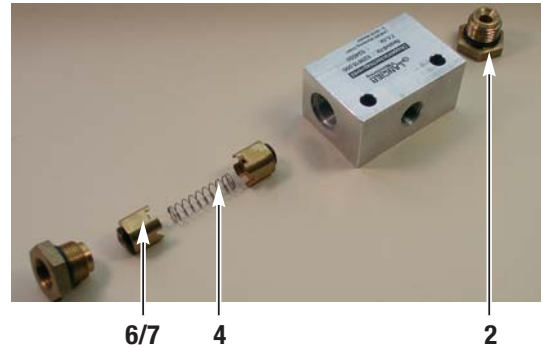


RTS 2600D
RTS 5200D



Double non-return valve

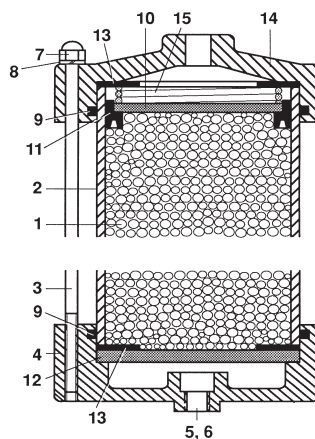
Item	Name		Order no.
	Double non-return valve compl. (35)	RTS 1000D RTS 2600D RTS 5200D	029814.000 029815.000 029816.000
1	Valve seat (100)		
2*	O-Ring (101)		031426.000
3	Valve body		
4	Pressure spring (103)		029100.000
5	Piston (102)		
6	O-Ring (105)		002800.000
7	Injector (104)	RTS 1000D RTS 2600D RTS 5200D	034220.000 034222.000 034223.000



Drying agent container

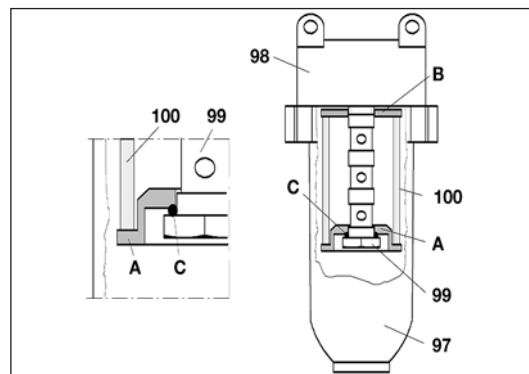
Item	Name		Order no.
	Drying agent container compl. (26)	RTS 1000D u. RTS 2600D	029061.000
	Drying agent container compl. (26)	RTS 5200D	019455.000
1*	Molecular sieve 1,00 kg	RTS 1000D u. RTS 2600D	064786.000
	Molecular sieve 2,25 kg	RTS 5200D	022528.000
2	Cylinder tube	RTS 1000D u. RTS 2600D	004482.000
	Cylinder tube	RTS 5200D	019453.000
3	Mounting bolt	RTS 1000D u. RTS 2600D	004487.000
	Mounting bolt	RTS 5200D	019454.000
4	Bottom cover		004488.000
5	Screw plug R 1/4"		016199.000
6	Sealing ring 13,5 x 18 x 2 mm		023757.000
7	Nut M 6		006897.000
8	Washer 6,4		008845.000
9	O-Ring		002792.000
10*	Upper filter disc		056714.000
11*	Sealing ring for upper filter disc		056715.000
12*	Bottom filterdisc		004445.000
13*	Sealing ring		004173.000
14	Upper cover		004490.000
15	Pressure spring		011293.000

The components on this page marked with "*" are an integral part of the service package named on page 52.



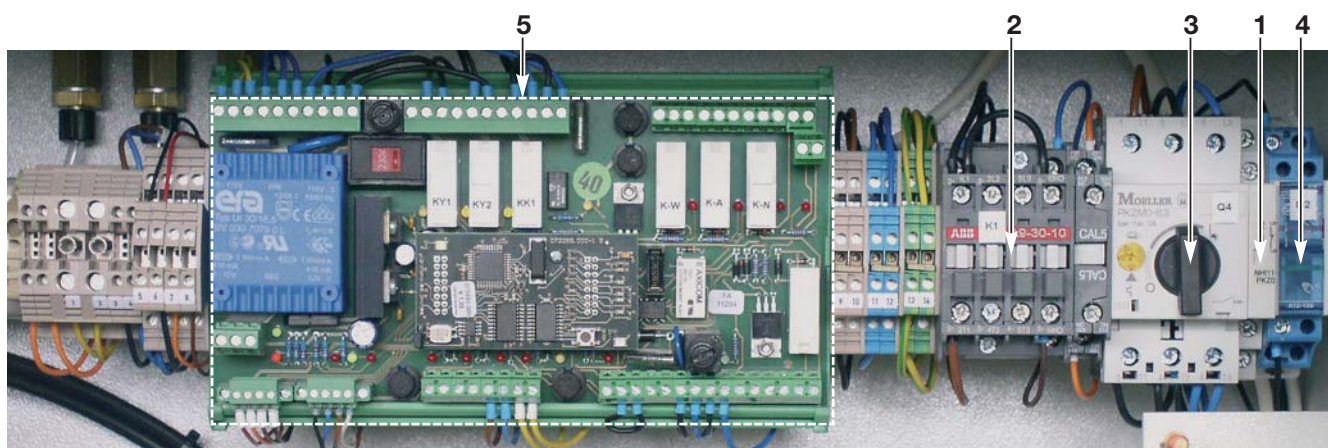
Micro filter

Item	Name	Order no.
	Micro filter compl. (33) RTS 1000D u. RTS 2600D	056358.000
	Micro filter compl. (33) RTS 5200D	057411.000
1*	Micro filter element (96) RTS 1000D u. RTS 2600D	056359.000
	Micro filter element (96) RTS 5200D	057412.000
2	Seal (97) (B)	056360.000
C	O-Ring (RTS 5200D only) (C)	034390.000



Electrics

Item	Name	Order no.
1	Auxiliary switch (42) of motor protective switch [Q4] (5)	067955.000
2	Motor contactor / switch [K1] (56)	073610.000
	Auxiliary switch (42) of motor contactor / switch	073611.000
3	Motor protective switch [Q4] (5) RTS 2600D	067950.000
	Motor protective switch [Q4] (5) RTS 1000D u. RTS 5200D	067951.000
4	Main switch signal voltage DC [Q2] (6)	073370.000
5	Multifunktional relay MFR (73)	073285.000
6	Power pack 230 V AC/60 DC (Option, no illustration)	071662.000

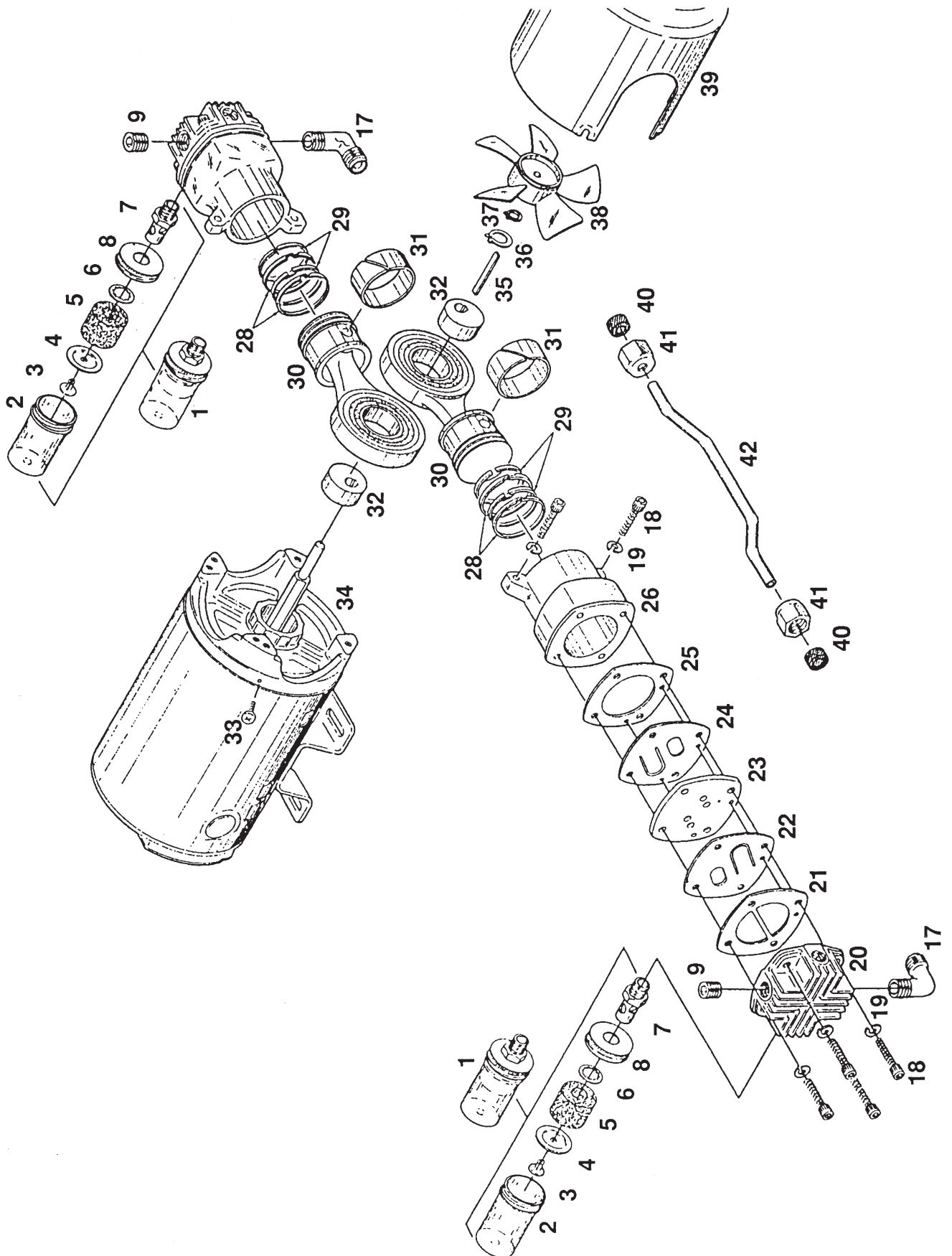


Compressor RTS 1000D, type VD 7/2

Item	Name	Order no.
	Compressor type VD 7/2 compl. (18)	024218.000
1	Intake filter B 300 A	019712.000
5*	Filter cartridge B 344 A	011596.000
18	Cylinder head screws BB 619	019730.000
19	Spring washer BC 115	002070.000
20	Cylinder head AF 508	019732.000
21*	Cylinder head seal A 518	019734.000
22*	Pressure valve AF 531	019736.000
23	Valve plate AF 529	019738.000
24*	Suction valve AF 530	019740.000
25*	Cylinder seal AF 519	019742.000
26	Cylinder AF 510	019744.000
28*	Piston ring AF 527	019747.000
29*	Backer strip AF 526	019748.000
30	Piston rod with pistons AF 560	019750.000
31*	Thrust ring AF 594	019752.000
32	Excentric AF 513 B	030074.000
33	Screw BB 411	019755.000
35	Square end part AF 524	019758.000
36	Retaining ring AF 525	019760.000
38	Fan blade AF 533	019763.000
39	Cap AF 535	019765.000
40*	Olive AF 567 A	019767.000
*	= Service packet K 260	019771.000

Compressor RTS 2600D, type VD 28/2

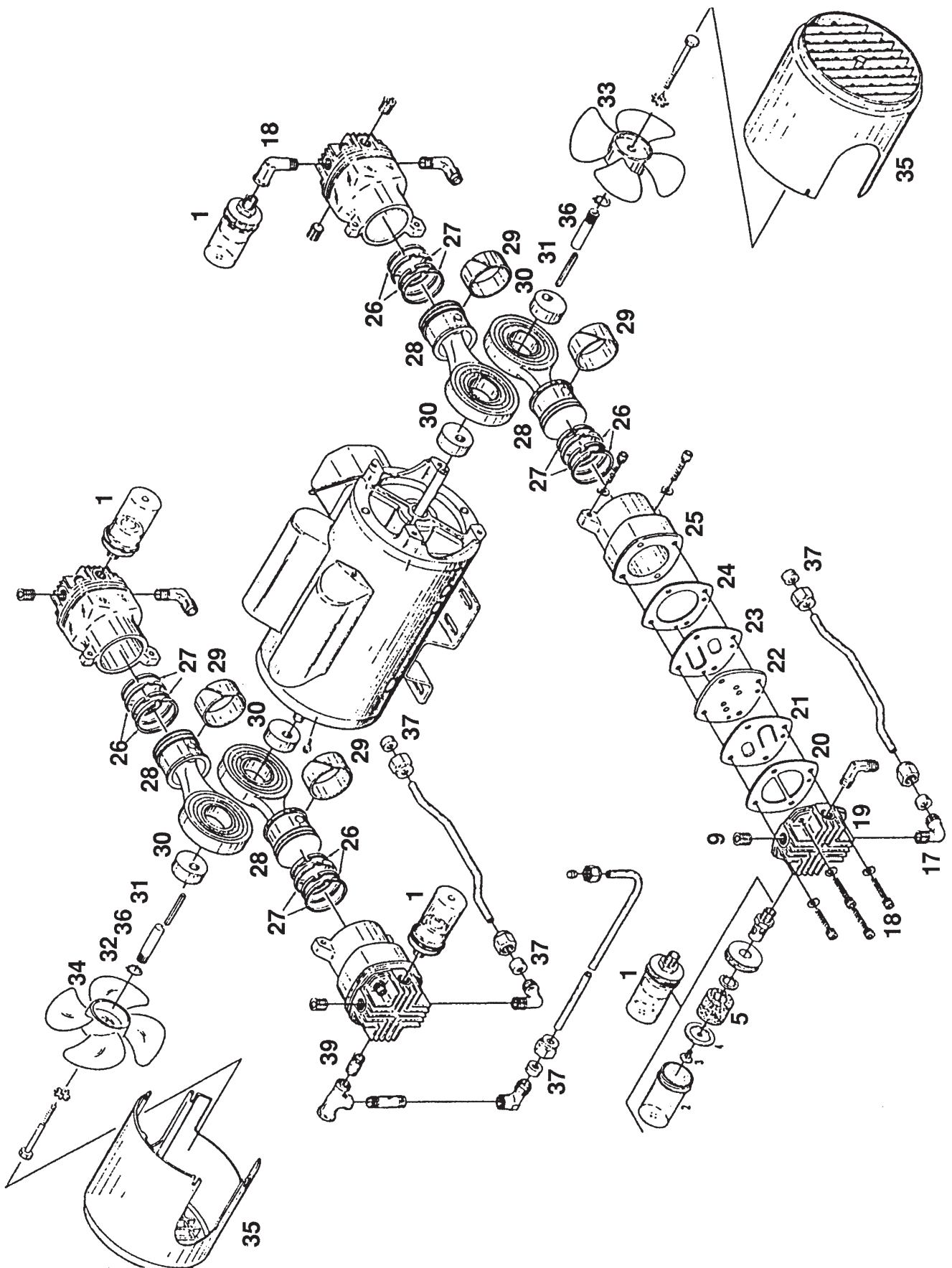
Item	Name	Order no.
	Compressor type VD 28/2 compl. (34)	011595.000
1	Intake filter B 300 A	019712.000
5*	Filter cartridge B 344 A	011596.000
18	Cylinder head screws BB 619	019730.000
19	Spring washer BC 115	002070.000
20	Cylinder head AF 507	019733.000
21*	Cylinder head seal A 520	019735.000
22*	Pressure valve AF 545	019737.000
23	Valve plate AF 543	019739.000
24*	Suction valve AF 544	019741.000
25*	Cylinder seal AF 521	019743.000
26	Cylinder AF 509	019745.000
28*	Piston ring AF 541	011601.000
29*	Backer strip AF 540	019749.000
30	Piston rod with pistons AF 561	019751.000
31*	Thrust ring AF 595	011603.000
32	Excentric AF 515 E	019754.000
33	Screw BB 411	019755.000
35	Square end part AB 136D	019759.000
36	Retaining ring AF 525	019760.000
38	Fan blade AF 547	019764.000
39	Cap AF 549	019766.000
40*	Olive AF 567 A	019767.000
*	= Service packet K 263	019772.000

Compressor VD 7/2
and VD 28/2

Compressor RTS 5200D, type VD 50/4

Item	Name	Order no.
	Compressor type VD 50/4 compl.	020075.000
1	Intake filter B 300 A	019712.000
5*	Filter cartridge B 344 A	011596.000
18	Cylinder head screws BB 619	019730.000
19	Cylinder head AF 507	019733.000
20*	Cylinder head seal AF 520	019735.000
21*	Pressure valve AF 545	019737.000
22	Valve plate AF 543	019739.000
23*	Suction valve AF 544	019741.000
24*	Cylinder seal AF 521	019743.000
25	Cylinder AF 509	019745.000
26*	Piston ring AF 541	011601.000
27*	Backer strip AF 540	019749.000
28	Piston rod with pistons AF 561	019751.000
29*	Thrust ring AF 595	011603.000
30	Excentric AF 515 D	019754.000
31	Square end part AB 136 F	019781.000
32	Retaining ring AF 663	019782.000
33	Fan blade CCW AF 662	019783.000
34	Fan blade CW AF 661	019784.000
35	Cap AF 656	019785.000
37*	Olive AF 567 A	019767.000
* =	Service packet K 303	019794.000

Compressor VD 50/4

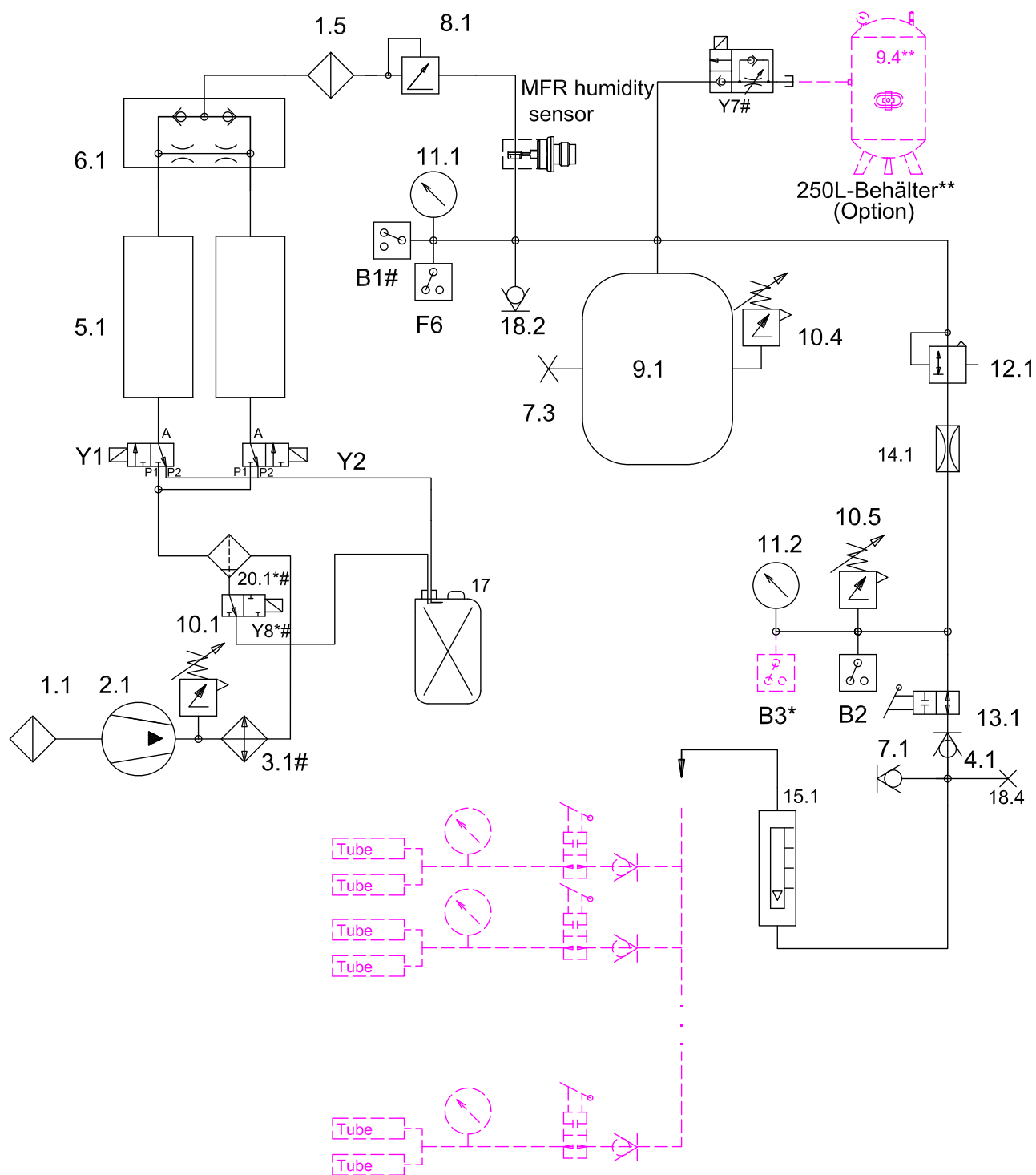


Plans

Equipment lists pneumatics RTS 1000D, RTS 2600D and RTS 5200D

1.1 Intake filter 1	12.1 Pressure reducer "Cable pressure" 1
1.2 Intake filter 2	12.2 Pressure reducer "Cable pressure" 2
1.3 Intake filter 3	12.3 Pressure reducer "Interim pressure"
1.5 Micro filter 1	
1.6 Micro filter 2	13.1 Shut-off valve "Cable pressure" 1
	13.2 Shut-off valve "Cable pressure" 2
2.1 Compressor 1	13.3 Shut-off valve "High-pressure"
2.2 Compressor 2	13.4 Shut-off valve "Kondensat"
2.3 Compressor 3	13.5 3/2 way mini valve 1
2.4 Compressor with I.C.-engine	13.6 3/2 way mini valve 2
	13.7 Shut-off valve "Interim pressure"
	13.8 Shut-off valve of cable connection
3.1 Cooling coil 1	
3.2 Cooling coil 2	14.1 Nozzle - output air „cable pressure“ 1
3.3 Cooling coil 3	14.2 Nozzle - output air „cable pressure“ 2
	14.3 Nozzle - output air „high-pressure“
4.1 Non-return valve 1	14.4 Pneumatic resistor
4.2 Non-return valve 2	14.5 Injector "Aeration"
4.3 Non-return valve 3	
	15.1 Total air flow meter "Cable pressure" (1)
5.1 Drying agent container - Dryer 1	15.2 Air flow meter
5.2 Drying agent container - Dryer 2	15.3 Air flow meter regenerated air
5.3 Drying agent container - Dryer 3	
	16.1 Inspection glass
6.1 Double non-return valve 1	
6.2 Double non-return valve 2	17 Condensate surge tank
6.3 Double non-return valve 3	
	18.1 Hose coupling "Cable pressure"
7.1 Testing valve "cable pressure" 1	18.2 Hose coupling "High-pressure"
7.2 Testing valve "cable pressure" 2	18.3 Connection "Double equipment"
7.3 Flange of test manometer	18.4 Connection "Pressure transducer" 1
	18.5 Connection "Pressure transducer" 2
8.1 Pressure limiting valve 1	18.6 Connection "Test manometer"
8.2 Pressure limiting valve 2	
8.3 Pressure limiting valve 3	19.1 Connecting hose
9.1 Air storage tank 1	20.1 Cyclone separator
9.2 Air storage tank 2	20.2 Cyclone-, water- and oil separator
9.3 Air storage tank 3	
9.4 Reserve air storage tank	21.1 Distributing regulator
10.1 Safety valve "compressor" 1	22.1 Charcoal filter
10.2 Safety valve "compressor" 2	22.2 Adsorber
10.3 Safety valve "compressor" 3	
10.4 Safety valve "high pressure"	
10.5 Safety valve "cable pressure" 1	
10.6 Safety valve "cable pressure" 2	
10.7 Safety valve "Interim pressure"	
11.1 Manometer "High-pressure"	
11.2 Manometer "Cable pressure" 1	
11.3 Manometer "Cable pressure" 2	
11.4 Manometer "Interim pressure"	
11.5 Contact manometer "High-pressure"	
11.6 Contact manometer "Cable pressure"	

Pneumatics diagram RTS 1000D, RTS 2600D and RTS 5200D, no. 073445.072



--- * = option / optionell

** = option / optionell RTS 2700 and RTS 5000 only

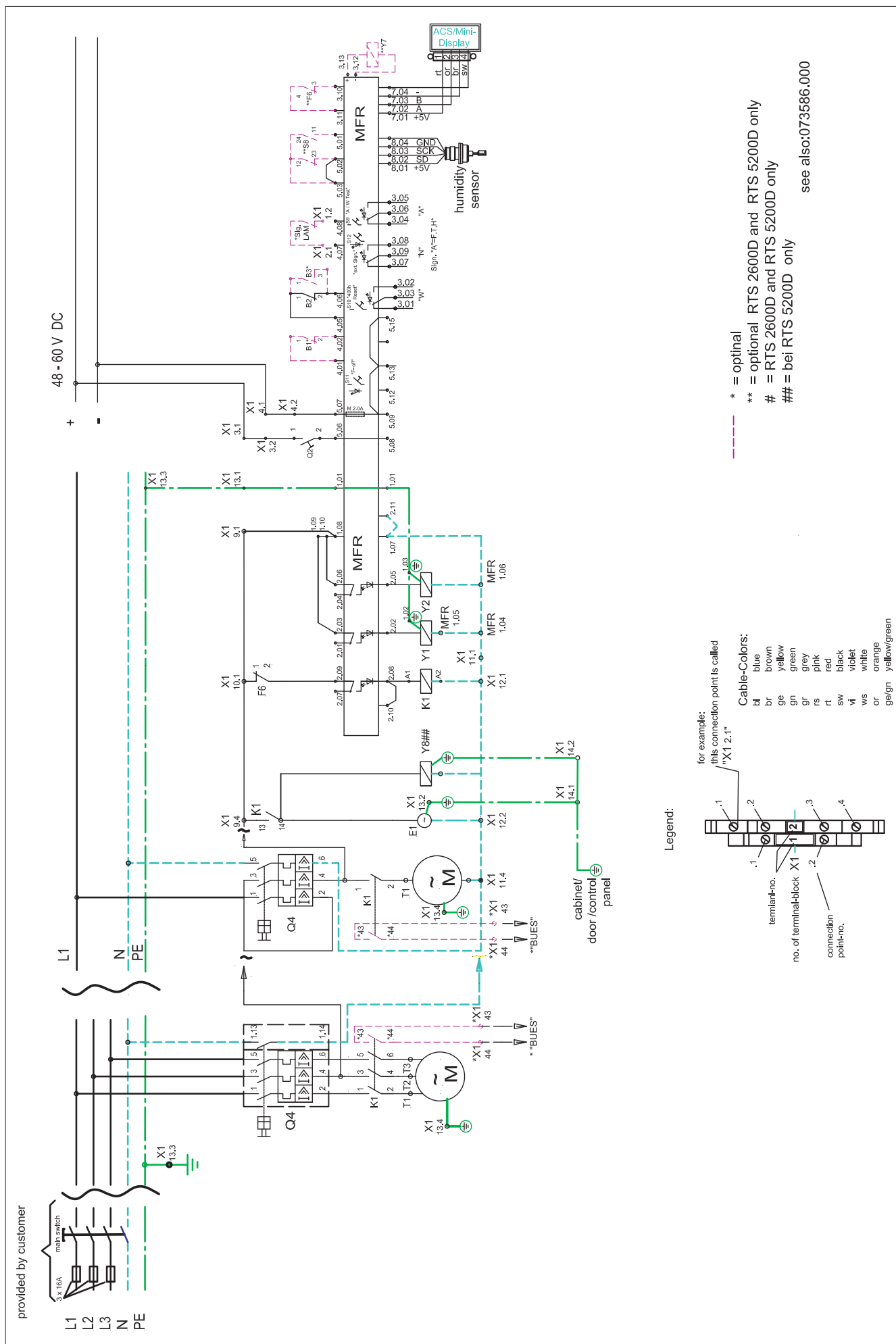
= RTS 2700 and RTS 5000 only

*# = RTS 5000 only

Equipment list electrics RTS 1000D, RTS 2600D and RTS 5200D

A1	Humidity monitoring unit 1	M1	Motor - Compressor 1
A2	Humidity monitoring unit 2	M2	Motor - Compressor 2
A3	Humidity monitoring unit 3	M3	Motor - Compressor 3
A4	Control unit	M4	I.C.-engine
A5	Flow meter - Printed circuit board RTS		
A6	Flow meter - Integral part		
		P1	Counter of operation hours - Compressor 1
B1	Pressure switch "high pressure"	P2	Counter of operation hours - Compressor 2
B2	Pressure switch "Cable pressure (1) too low"	P3	Counter of operation hours - Compressor 3
B3	Pressure switch "Cable pressure (1) too high"	P4	Hygrometer 1
B4	Pressure switch "Cable pressure 2 too low"	P5	Hygrometer 2
B5	Pressure switch "Cable pressure 2 too high"	P6	Hygrometer 3
B6	Pressure switch "Add compressor 2"	P7	Counter of operation hours 1 with maintenance signal
		P8	Counter of operation hours 2 with maintenance signal
C1	Capacitor	P9	Counter of operation hours 3 with maintenance signal
		P10	Voltmeter
E1	Fan 1	Q1	Main switch AC
E2	Fan 2	Q2	Main switch DC
E3	Fan 3	Q3	Fused DC main switch DC
		Q4	Motor protective switch 1
F1	Motor protective relay 1	Q5	motor protective switch 2
F2	Motor protective relay 2	Q6	motor protective switch 3
F3	Motor protective relay 3		
F4	Thermal protection	S1	Programme switch 1
F6	Pressure monitor	S2	Programme switch 2
F7	Fuse	S3	Programme switch 3
F8	Overvoltage suppressor	S4	Switch "F-aus" 1
		S5	Switch "F-aus" 2
G1	Power pack 1	S6	Switch "F-aus" 3
G2	Power pack 2	S7	Change-over switch
G3	Power pack 3	S8	Door switch
G4	Battery	S9	Key "W-Test"
G5	Battery charger		
G6	Bridge rectifier	V	Diode
H1	Signal-LED "AC"	X1	Connecting block 1
H2	Signal-LED "DC"	X2	Connecting block 2
H3	Signal-LED "F"	X3	Connecting block 3
H4	Signal-LED "H"	X4	Connecting block 4
H5	Signal-LED "M"	X5	Connecting block 5
H6	Signal-LED "T"	X6	Power socket
H7	Signal-LED "N" (or "N1")		
H8	Signal-LED "N2"	Y1	3/2 way solenoid valve - Dryer 1
H9	Signal-LED "W"	Y2	3/2 way solenoid valve - Dryer 2
H10	Signal-LED "K" (or "K1")	Y3	4/2 way solenoid valve - Dryer 1
H11	Signal-LED "K2"	Y4	4/2 way solenoid valve - Dryer 2
H12	Signal-LED "G"	Y6	Humidity stop solenoid valve
H13	Signal-LED "A"	Y7	Non-return solenoid valve block
H14	Signal-LED "Fault"	Y8	Solenoid valve - Aeration
H15	Signal-LED "Signal interruption"		
K1	Contactactor - Compressor 1		Short symbol for signals
K2	Contactactor - Compressor 2	AC	= Operation AC
K3	Contactactor - Compressor 3	DC	= Operation DC
K4	Power failure relay AC	F	= Humidity
K5	Signal relay "K"	H	= High-pressure
K6	Humidity detector relay 1	M	= Compressor failure
K7	Humidity detector relay 2	T	= Running time
K8	Humidity detector relay 3	N (or N1)	= Cable pressure (1)
K9	Time relay "Running time"	N2	= Cable pressure 2
K10	Signal relay "T"	W	= Maintenance
K11	Signal relay "A"	A	= Fault
K12	Signal relay "F"	G	= Cable filled
K13	Signal relay "M"	K (or K1)	= Cable fault (1)
K14	Signal relay "H"	K2	= Cable fault 2
K15	Signal relay "N"	S	= Fuse
K16	Time relay "8 min" 1	V	= Power failure AC
K17	Time relay "8 min" 2		
K18	Switch clock		
K19	Switching relay		
K20	Signal relay "W"		
K21	Time relay "Backlash"		
K22	Switching relay		
K23	Signal relay "V"		

Circuit and wiring diagram RTS 1000D, RTS 2600D und RTS 5200D, no. 073659.000

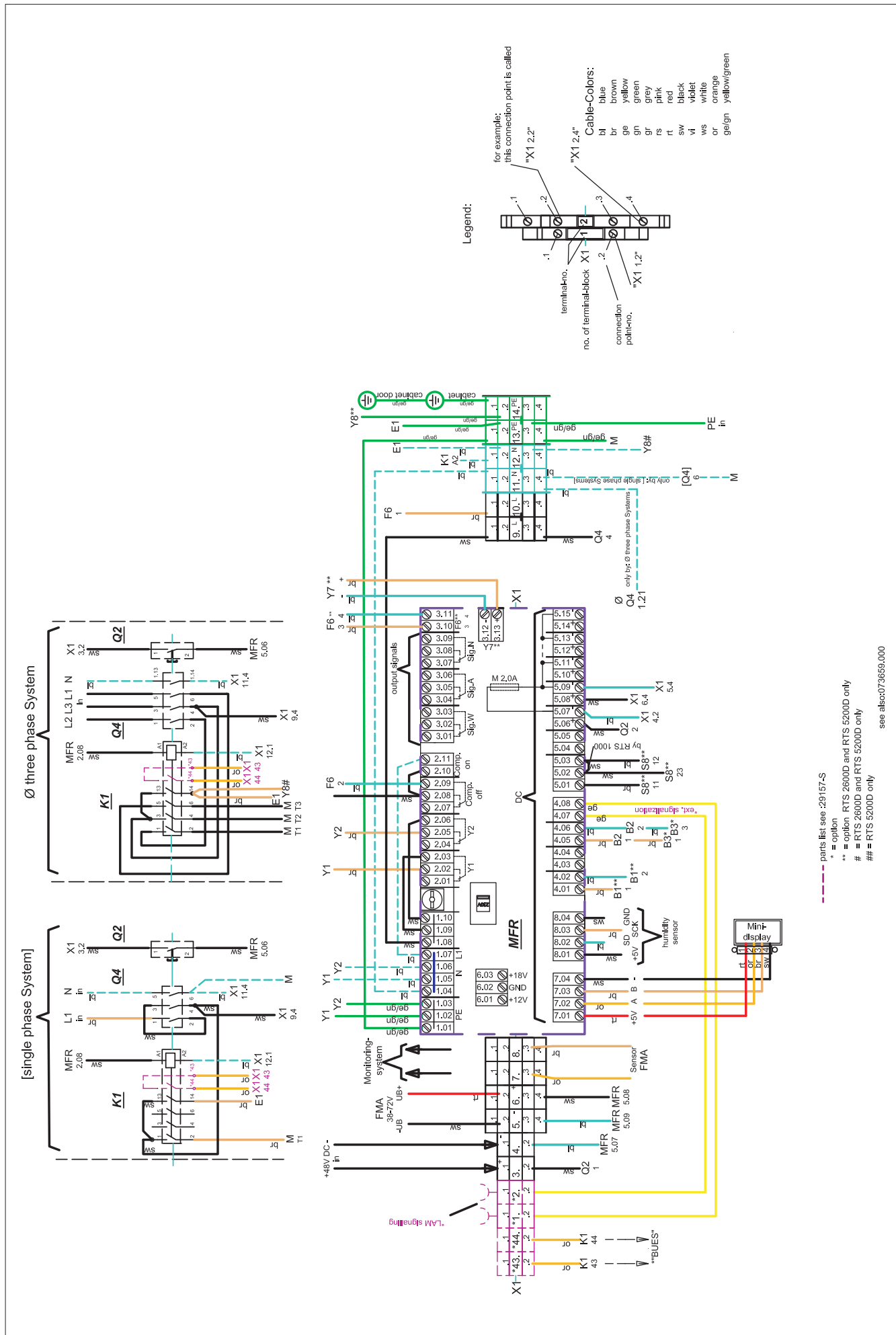


* = optional
 ** = optional RTS 2600D and RTS 5200D only
 # = RTS 2600D and RTS 5200D only
 ## = bei RTS 5200D only
 see also:073586.000

Equipment list electrics RTS 1000D, RTS 2600D and RTS 5200D

A1	Humidity monitoring unit 1	M1	Motor - Compressor 1
A2	Humidity monitoring unit 2	M2	Motor - Compressor 2
A3	Humidity monitoring unit 3	M3	Motor - Compressor 3
A4	Control unit	M4	I.C.-engine
A5	Flow meter - Printed circuit board RTS		
A6	Flow meter - Integral part		
		P1	Counter of operation hours - Compressor 1
B1	Pressure switch "high pressure"	P2	Counter of operation hours - Compressor 2
B2	Pressure switch "Cable pressure (1) too low"	P3	Counter of operation hours - Compressor 3
B3	Pressure switch "Cable pressure (1) too high"	P4	Hygrometer 1
B4	Pressure switch "Cable pressure 2 too low"	P5	Hygrometer 2
B5	Pressure switch "Cable pressure 2 too high"	P6	Hygrometer 3
B6	Pressure switch "Add compressor 2"	P7	Counter of operation hours 1 with maintenance signal
		P8	Counter of operation hours 2 with maintenance signal
C1	Capacitor	P9	Counter of operation hours 3 with maintenance signal
		P10	Voltmeter
E1	Fan 1	Q1	Main switch AC
E2	Fan 2	Q2	Main switch DC
E3	Fan 3	Q3	Fused DC main switch DC
		Q4	Motor protective switch 1
F1	Motor protective relay 1	Q5	motor protective switch 2
F2	Motor protective relay 2	Q6	motor protective switch 3
F3	Motor protective relay 3		
F4	Thermal protection	S1	Programme switch 1
F6	Pressure monitor	S2	Programme switch 2
F7	Fuse	S3	Programme switch 3
F8	Overvoltage suppressor	S4	Switch "F-aus" 1
		S5	Switch "F-aus" 2
G1	Power pack 1	S6	Switch "F-aus" 3
G2	Power pack 2	S7	Change-over switch
G3	Power pack 3	S8	Door switch
G4	Battery	S9	Key "W-Test"
G5	Battery charger		
G6	Bridge rectifier	V	Diode
H1	Signal-LED "AC"	X1	Connecting block 1
H2	Signal-LED "DC"	X2	Connecting block 2
H3	Signal-LED "F"	X3	Connecting block 3
H4	Signal-LED "H"	X4	Connecting block 4
H5	Signal-LED "M"	X5	Connecting block 5
H6	Signal-LED "T"	X6	Power socket
H7	Signal-LED "N" (or "N1")		
H8	Signal-LED "N2"	Y1	3/2 way solenoid valve - Dryer 1
H9	Signal-LED "W"	Y2	3/2 way solenoid valve - Dryer 2
H10	Signal-LED "K" (or "K1")	Y3	4/2 way solenoid valve - Dryer 1
H11	Signal-LED "K2"	Y4	4/2 way solenoid valve - Dryer 2
H12	Signal-LED "G"	Y6	Humidity stop solenoid valve
H13	Signal-LED "A"	Y7	Non-return solenoid valve block
H14	Signal-LED "Fault"	Y8	Solenoid valve - Aeration
H15	Signal-LED "Signal interruption"		
K1	Contactactor - Compressor 1		Short symbol for signals
K2	Contactactor - Compressor 2	AC	= Operation AC
K3	Contactactor - Compressor 3	DC	= Operation DC
K4	Power failure relay AC	F	= Humidity
K5	Signal relay "K"	H	= High-pressure
K6	Humidity detector relay 1	M	= Compressor failure
K7	Humidity detector relay 2	T	= Running time
K8	Humidity detector relay 3	N (or N1)	= Cable pressure (1)
K9	Time relay "Running time"	N2	= Cable pressure 2
K10	Signal relay "T"	W	= Maintenance
K11	Signal relay "A"	A	= Fault
K12	Signal relay "F"	G	= Cable filled
K13	Signal relay "M"	K (or K1)	= Cable fault (1)
K14	Signal relay "H"	K2	= Cable fault 2
K15	Signal relay "N"	S	= Fuse
K16	Time relay "8 min" 1	V	= Power failure AC
K17	Time relay "8 min" 2		
K18	Switch clock		
K19	Switching relay		
K20	Signal relay "W"		
K21	Time relay "Backlash"		
K22	Switching relay		
K23	Signal relay "V"		

Circuit and wiring diagram RTS 1000D, RTS 2600D und RTS 5200D, no. 073586.000



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EC Declaration of Conformity

We declare under our sole responsibility, that the product

Make: LANCIER Monitoring
Type: Pressurization System RTS 1000D, RTS 2600D and RTS 5200D with Minidisplay

to which this declaration refers, meets the relevant health and safety requirements of the following EC directives:

2006/42/EG	Machinery Directive
87/404/EWG	Simple pressure tanks
2006/95/EG	Low voltage directive
2004/108/EG	Electromagnetic compatibility

For proper implementation of the health and safety requirements named in the EC directives the following standard(s) and/or technical specification(s) have been consulted:

EN 12100-1 und 2	Machine safety
EN 286-1	Simple imitation pressure tank for air or nitrogen, part 1
EN 60204-1	Electrical fittings of machines
EN 61000-6-1 and 2	Interference resistance (fault-free operation)
EN 61000-6-3 and 4	Emitted interference

The declaration loses its validity should any change be made to the parts delivered.

The special technical documents may be requested subject to justified requirement on the part of any government office:

Name: Ulrich Siebeneck
Address: see above

Data transmission is either electronic or on paper.

Münster, 20.10.2010


Research and Development


Managing Director