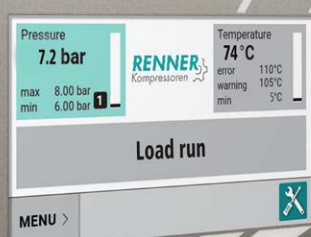


Compressed air management systems

Control systems

for compressors and compressed air stations



Efficient and reliable!



RENNERtronic Touch



RENNERtronic Plus Touch



RENNERcontrol Touch



RENNERconnect

RENNER compressor control systems

Compressed air supply must work reliably and economically. RENNER intelligent control systems ensure that for as well single compressors as compressed air stations.

RENNERlogic – RENNER's standard control system

RENNERlogic – a control that is both functional and simple with many features and benefits!



Features:

- Start button: for starting the compressor.
- Stop button: the compressor switches to run-on time.
- Emergency stop: in dangerous situations the compressor is switched off immediately.
- LED display: the compressor status is displayed by various flashing patterns.
- Remote-indicating thermostat monitoring the temperature of the system.
- Timer to easily monitor operating hours.
- Pressure gauge and switch to check and control pressure.
- DIP switch to easily set the shut off delay and start up period.
- Modbus RTU: connection of a superordinate control system or a network control system.

Advantages:

- Standard: terminals in the switching cabinet to connect an external on/off switch.
- Standardised: potential free signals, fault and stand by messages.
- Simplified: automatic restart after power failure by connecting an additional board (90 seconds time delay).
- Option: the compressor can be turned off via an external signal.

Standard equipment:

- RENNER screw compressors from 2.2 – 55.0 kW

NEW!

RENNERtronic Touch



Smartphone-like operation:

Intuitively operable touchscreen on state-of-the-art technology.



Events history:

The last 50 messages are displayed including date and time.



Pressure and temperature diagram:

Extensive statistics on pressure and temperature diagrams with hourly scaling.



Timer with six channels:

This can be used to switch the four pressure bands, four potential-free relay contacts or the compressor.



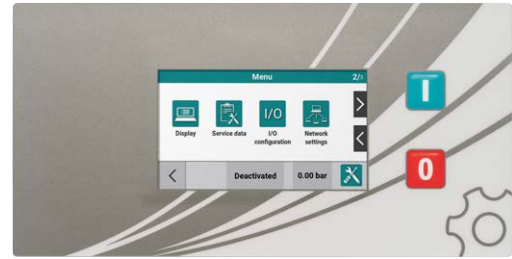
USB port:

Updates can be easily uploaded using a USB stick.



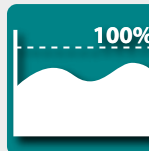
Replacing the control:

RENNERtronic Touch (4,3" touchscreen) and RENNERtronic Plus Touch (7" touchscreen) are easily interchangeable.



Service indicator:

Maintenance message will be shown when the set operating hour intervals is reached or at the latest after one year.



Display of compressor utilisation:

Recording of operating and load hours as well as the percentage load for compressors with variable speed control.



Different code levels:

Parameter access is restricted depending on the code level and the compressor is thus protected against unauthorised access.



Flexible inputs and outputs:

Freely assignable and inscribable digital inputs as well as four potential-free outputs.



Control of frequency converters:

The direct connection via RS485 bus interface eliminates the need for a separate converter display. Exchange of information in **plain text**.

Advantages:

- Saves energy
- Safe operation of the compressor
- Controls and monitors the system
- Easy to use
- Greater reliability of operation
- Can be exchanged according to specific customer requirements
- Optional compressor monitoring 

Options:

- Profibus connection

Standard equipment:

- Starting with RS 75 in different versions
- RS-PRO 2-30.0 – 55.0 D
- Booster (RS-M)
- For all compressors with variable speed control

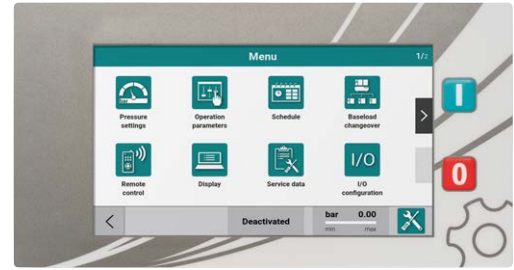
Optionally available for:

- RENNER screw compressors from 2.2 – 55.0 kW

NEW!

RENNERtronic Plus Touch with additional functions

The RENNERtronic Plus Touch fulfils **all the functions of the RENNERtronic Touch**. But it can do even more!



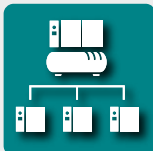
7" touchscreen:

Overview a multitude of information simultaneously and clearly.



Timer with eight channels:

In addition to the above-mentioned functions, priorities for Base Load Change Over can also be assigned via the timer.



Base Load Change Over:

The software is equipped with an extensive Base Load Change Over. This is connected via an additional interface module (Modbus). This allows you to control up to eight additional compressors. The compressors are connected with a network cable.



Pressure and temperature diagram:

Extensive statistics on pressure and temperature diagrams with daily, weekly and monthly scaling.

Optionally available for:

- RENNER screw compressors from 2.2 – 355 kW

Base load change over (BLCO)

Advantages:

- Even workload for all compressors in terms of operating hours.
- Maintenance work can be done during operation.
- All compressors are activated with the same switch on/off pressure.
- High potential for energy savings.
- High efficiency for fluctuating air demand.
- User-friendly configuration.
- Compressors from other manufacturers can be connected.



BLCO Master	BLCO Slave 1	BLCO Slave 2
1	2	3
3	1	2
2	3	1

Master compressor: Is always the same compressor; it controls, which compressors should be switched on and how many are currently being used.

Slave compressor: Works according to the master compressor's specifications and pressure band. One or more compressors are activated as to requirement.

Base load compressor: Is the compressor that switches on first (1).

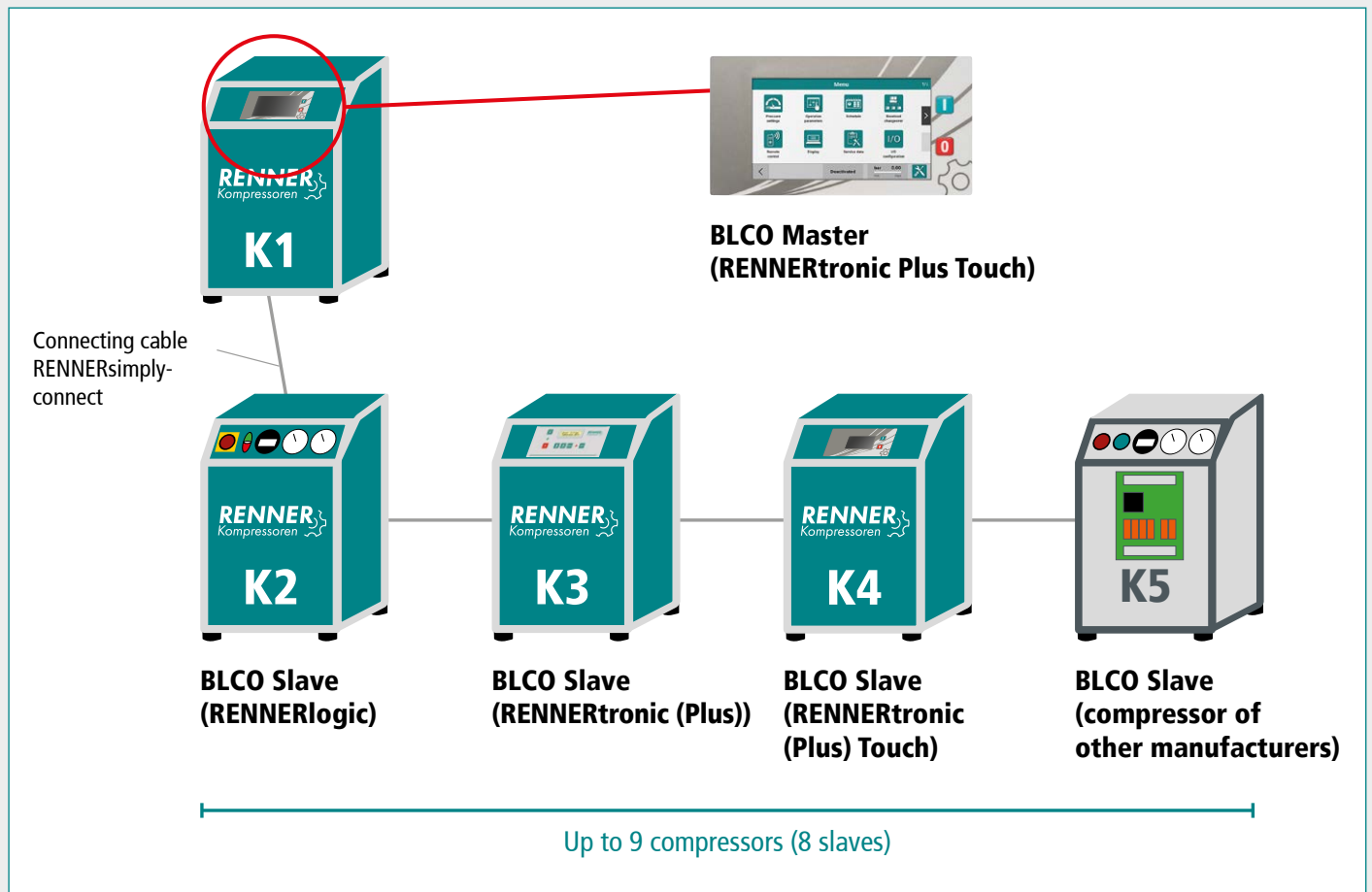
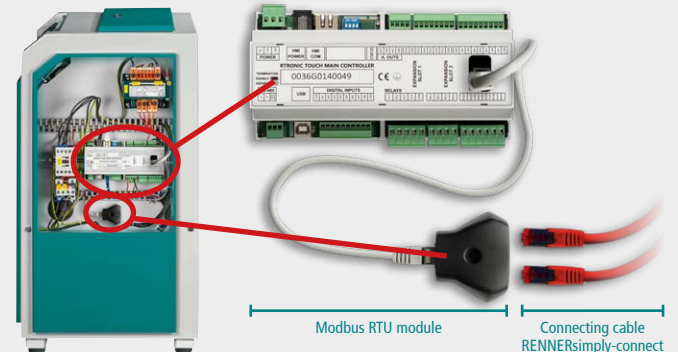
Peak load compressors: Are getting activated by the master compressor if required (2, 3).

Change interval: After a preset time, the Compressors change their priority and another compressor becomes base load compressor.

BLCO installed in compressor

Features:

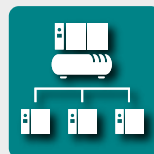
- The master unit must have a RENNERtronic Plus Touch.
- Up to eight slave compressors can be connected.
- All other compressors are connected via a Modbus RTU module.
- Compressor of other manufacturers require a connection module.



Features:



Several frequency-controlled units can be operated with the base load change over in a sensibly coordinated manner.



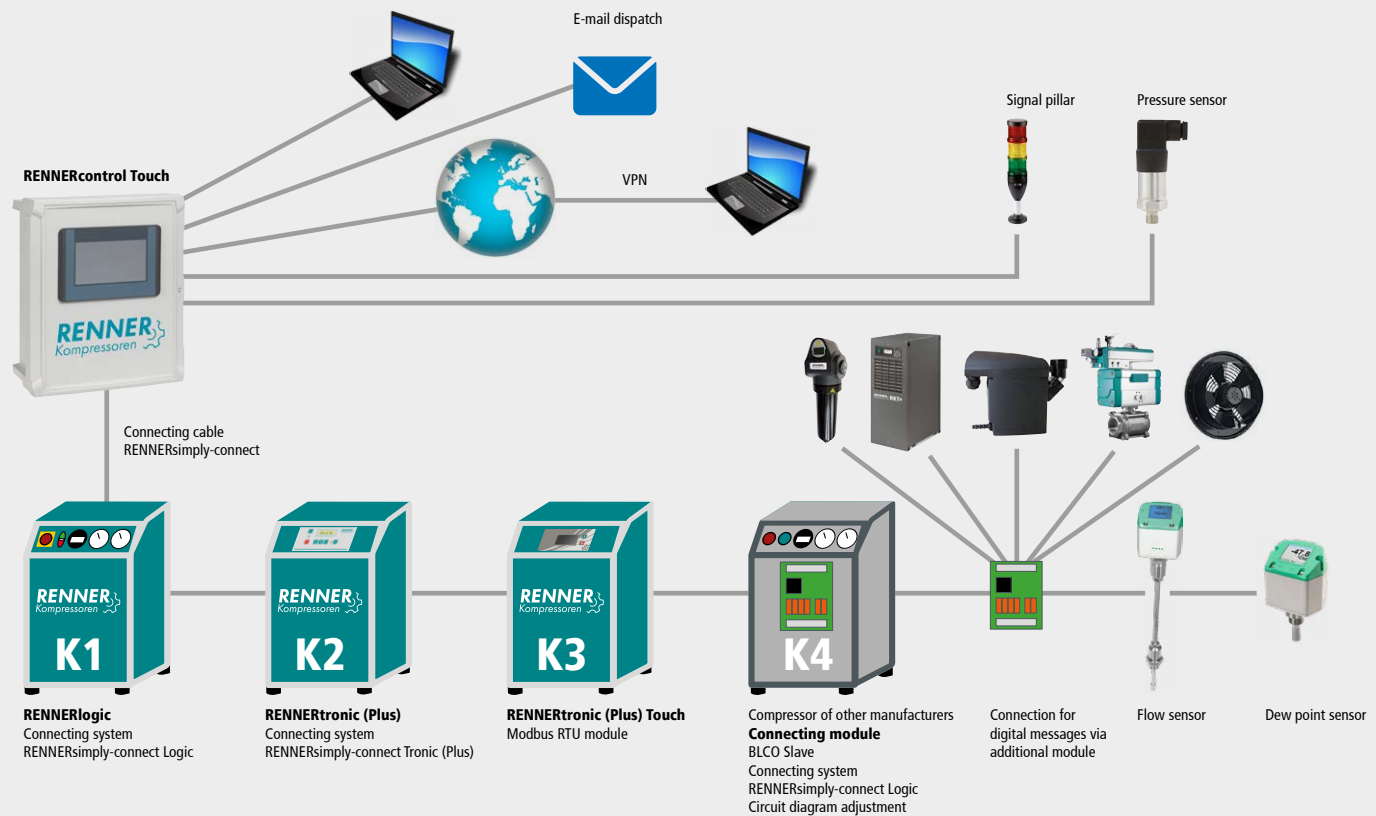
The operating hours are always balanced, as the control is based on the current number of operating hours and always prioritises the compressor with the lowest hours (offset possible).



The priorities of the individual connected compressors can be set with the timer.

BLCO in wall mounting box (RENNERcontrol Touch)

RENNERcontrol Touch is a base load change over in a wall mounting box with web visualization and touchscreen. It is available in different versions.



RENNERcontrol Touch

- Web server with base load change over and 7" touchscreen.
- Visualization and monitoring of compressors via network and at site.
- BLCO for up to 4 compressors.
- Visualization and monitoring via network and display of the data in a web browser.

Advantages:

- Easy to retrofit.
- Visualization of compressors.
- Enhanced fault and maintenance management.
- Analysis of dew point and flow sensors.
- Digital inputs / outputs can be expanded via additional module.

Features and functions:



A ball valve can be controlled by a timer and the net pressure or manually.



The signal pillar indicates operational status, maintenance, warnings and faults.



The room ventilation can be controlled depending on the room temperature.



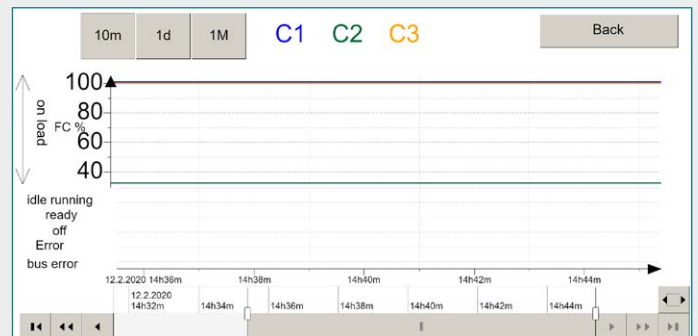
Fault messages from all add-ons such as dryers, filters, condensate drains etc. can be recorded and forwarded as potential-free contacts via optional fieldbuses and e-mail.



Automatic e-mail dispatch to multiple e-mail addresses in case of errors, maintenance and warnings.



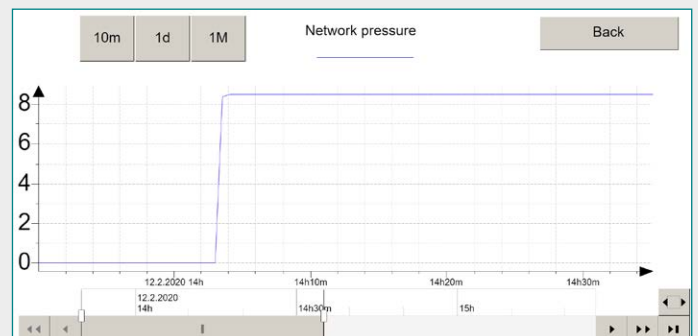
The **basic view** shows the current network pressure, the current state of the compressors as well as date and time. Detailed information can be retrieved by directly selecting the respective data.



The **status history** makes it possible to follow the progress of the compressor states in a graphic. A differentiation is made between the following states: load with indication of the frequency converter value, idle, ready, off, fault and bus error.

7.40 BAR	Compressor 1	27 °C
Wartung	Restlaufzeit	Error
Air filter	1646	1
Motor	0	2
Oil filter	1993	3
Oil separator cartridge	1836	4
Oil change	1825	5
operating hours:	354 h	6
loading hours	351 h	
Back	status history	Load 100 %

The current status is displayed, with information about the frequency converter value, the oil temperature and the pressure in the **compressor view**. The maintenance plan lists the components and the corresponding remaining running times. When a fault occurs, it is stored together with the date & time. By clicking on the temperature, you can see the oil temperature curve of all compressors in the network.



Display of the processes: pressure, oil temperature of the compressors, analogue sensors, dew point and flow sensor (Modbus), temperature sensors.

Timer

Switch-on time(s)

h min

0 0

MON TUE WED THU FRI SA SUN

h min

0 0

MON TUE WED THU FRI SA SUN

Timer on

Back Forward

Timers for various functions: switching the compressors on / off, defining base load compressors, switching a digital output, using a second pressure band.

Mail To: ...@...com, ...@...com

w.reifschneider@renner-kompressoren.de

e-mail delivery successful

Back Forward send a "test mail"

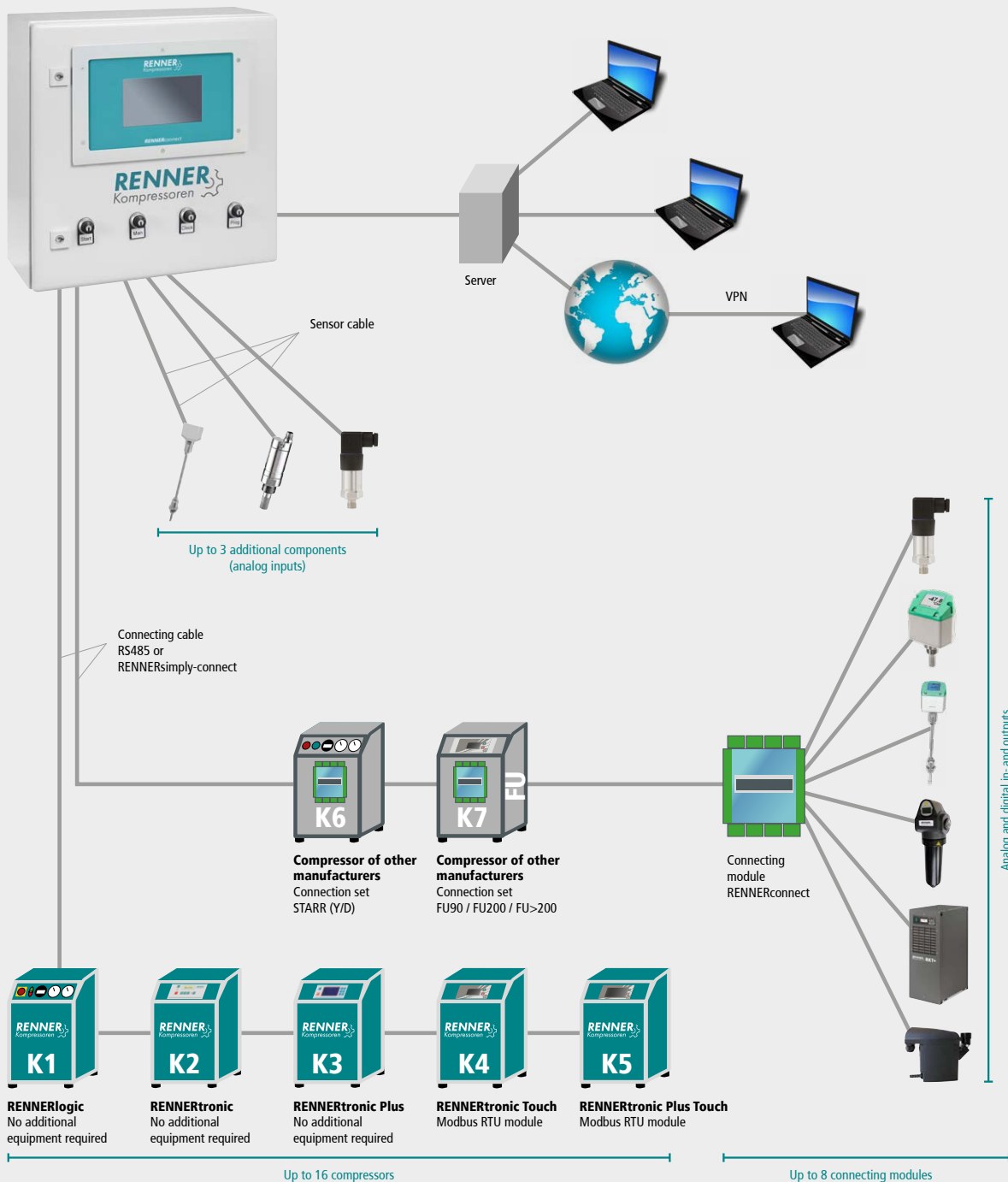
E-mail dispatch (additional option): maintenance and fault on the compressor, fault on the defined digital input of the RENNERcontrol Touch, exceeding / falling below an adjustable pressure value. Use of an own mail server possible.

RENNERconnect with 7" touchscreen

Does your compressed air station work economically? RENNERconnect is a higher level, intelligent control system for optimal management and monitoring of your compressed air station. RENNERconnect contributes to efficiency and is highly reliable. Intelligent, air-demand based connection of the compressors provides not only a high energy savings potential, but also ensures increased operational reliability of your compressors. The control can be operated intuitively and safely via the integrated touchscreen.

Connectivity:

RENNERconnect



Features of the RENNERconnect:

- 1) Regardless of the compressor type, up to 16 compressors can be controlled:
 - RENNER compressors
 - Compressors of other manufacturers
 - Standard compressors with load and no-load control
- 2) All compressors operate in a common, narrow pressure band, which means:
 - All compressors are activated at the same switch on/off pressure.
 - Pressure band can be reduced to a minimum.
 - High potential for energy savings, as pressure can be reduced maximally.
 - Older compressor stations can be operated more economically.
- 3) All compressors are connected via RS485-bus-system.
- 4) RENNERconnect can connect to various additional components in your compressor room and monitor them (e.g. dryer, drain, dew point sensor, flow sensor, additional pressure sensors).
- 5) DIN ISO 50001: The control system can be used as energy management tool according to DIN ISO 50001 (section 4.6.1. monitoring, measurement, analysis). Contact us, we gladly provide you with information!
- 6) Extremely low switching frequency (extends the service life of all mechanical components of the compressors).
- 7) Particularly low energy cost due to constant calculation of air consumption which ensures an efficient use of compressor capacity.

Advantages of RENNERconnect:

- Compressors with RENNERtronic, RENNERtronic Touch, RENNERtronic Plus, RENNERtronic Plus Touch or RENNERlogic can be directly connected to RENNERconnect.
- Compressors of other manufacturers can be connected by simply applying a compact connecting module.
- Maximum energy savings (up to 40%) by avoiding expensive idle time and load / unload switching cycles, pressure optimization by 4 adjustable pressure bands and by reduction of maximum pressure.
- The use of the RENNERconnect enables the reduction of switch-on processes and idle times. This reduces maintenance costs and increases the service life of intake controls, compressor air-ends, contactors and motors.
- RENNERconnect matches the use of the compressors automatically with the demand for compressed air in order to generate just the right amount needed for production.

Industry 4.0

Connect your central network control system via modbus with RENNER compressors and benefit from extensive possibilities of network data exchange in real time. Whether you want to focus on status monitoring, look at fault reports, or retrieve service messages, all information is available and ready to be gathered. Communication interfaces of the control systems are used between the individual RENNER compressors and secure full access as well as full control of the compressed air station.

Intelligent interconnectedness of the components enables communication between compressed air production, air treatment as well as their optimal adjustment to achieve maximum efficiency.

Web server for the RENNERconnect control system

In control of your compressed air station – always and everywhere

- Web server software is part of every RENNERconnect control system.
- All current measurements are displayed on web server.
- Up to date online analysis of the operation of the compressors and other equipment.
- Statistical analysis of all parameters in daily, weekly, or monthly reports.
- Compressors and equipment can be set and parameterized via web server.
- Optionally: automatic forwarding of daily reports.
- Calculation of service dates in accordance with operating hours of compressor.
- Remote control of pressure profiles, sequences and timer via web server.

Energy balance and cost calculation: The energy and cost calculation is available for each completed day. Several days up to a full month can be merged. The table can be exported in Excel or Word format for further use.

COMPRESSOR DATA AND ENERGY CALCULATION

Wednesday 02.12.2015

efficiency:	6,44649 kW/(m3/min)	€/kWh:	0,16 €/kWh	load costs:	98,31 %
efficiency:	0,10/44 kWh/m3	P-min:	7,2 bar	unload cost:	1,69 %
costs:	0,01719 €/m3	P-max:	7,8 bar	total costs:	291,61 €

channel	compressor	m3/min		load kW		kW	load		unload	average %	cycles		compressed air		total kWh				efficiency kWh/m3	total costs €		
		min	max	min	max	unload	h	min	h	min	load	motor	load	m3	load	unload	total	load		unload	total	
01	RSF 85D	3,5	12,4	21,40	81,60	9,20	9	48	0	7	98,8	11	16	3.815	374,2	2,3	376,6	0,09870	59,88	0,37	60,25	
02	RSF 75D	5,3	12,6	34,40	79,00	20,10	9	13	0	4	99,3	8	8	4.005	413,6	1,7	415,3	0,10371	66,18	0,28	66,45	
03	RSF 75D	5,3	12,6	34,40	79,00	20,10	12	36	0	4	99,5	6	6	5.114	564,8	1,5	566,3	0,11072	90,36	0,24	90,60	
04	RSF 75D	5,3	12,6	34,40	79,00	20,10	8	43	1	8	88,5	7	15	4.029	439,2	25,2	464,4	0,11527	70,27	4,04	74,31	
ZGM											sum total	32	45	16.964	1.791,8	30,8	1.822,6	0,10744	286,69	4,93	291,61	

Consumption 'Flowsensor' :15.847 m3

energy measurement 'RSF 85D' :377 kWh

energy measurement 'RSF 75D' :415 kWh

energy measurement 'RSF 75D' :566 kWh

energy measurement 'RSF 75D' :464 kWh

universal sensor 'Wärmerückgewinnung' :1 052 KW

total costs of compressed air

€ · 291.61

generated compressed air amount

m³ · 16.964

cost per m3

€/m³ 0,01719

load 98.3 %

unload 1.7 %

	debt service €	load kWh €	unload kWh €	service €	parts €	
RSF 85D	0,00	59,88	0,37	0,00	0,00	
RSF 75D	0,00	66,18	0,28	0,00	0,00	
RSF 75D	0,00	90,36	0,24	0,00	0,00	
RSF 75D	0,00	70,27	4,04	0,00	0,00	
sum total:	0,00 €	286,69 €	4,93 €	0,00 €	0,00 €	291,61 €

conditioning:

debt service €	current €	service €	parts €	
0,00	0,00	0,00	0,00	0,00 €

net:

debt service €	current €	service €	parts €	
0,00	0,00	0,00	0,00	0,00 €

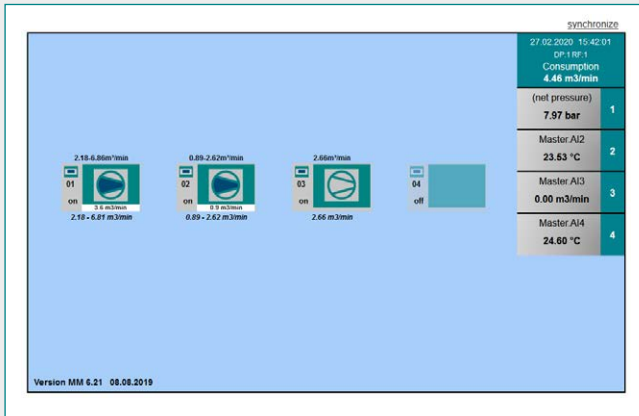
cooling water:

debt service €	current €	service €	parts €	
0,00	0,00	0,00	0,00	0,00 €

Maintenance summary

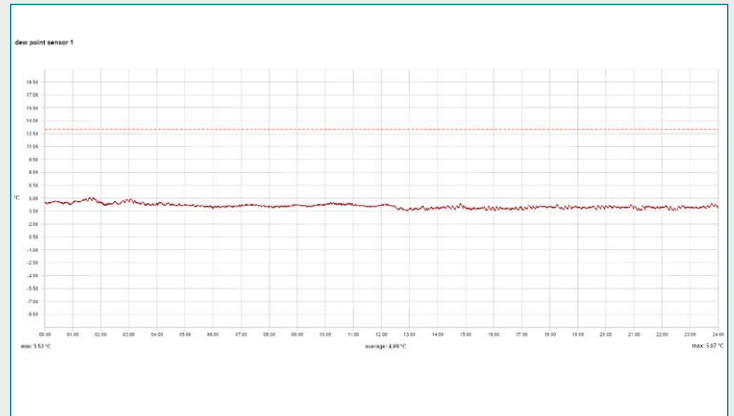
channel	description	total [h]	load [h]	Airfilter intervall	[h]	Oilfilter intervall	[h]	Oil separator	[h]	Oil change	[h]	alert	next service
1	RS 132	1738	1680	262	R	262	R	262	R	262	R	<input checked="" type="checkbox"/>	---
2	RSF 2-110	2953	2941	853	R	853	R	853	R	853	R	<input checked="" type="checkbox"/>	CW 45 2019
3	RS 15	3818	3026	956	R	956	R	956	R	956	R	<input checked="" type="checkbox"/>	CW 48 2019

Main View



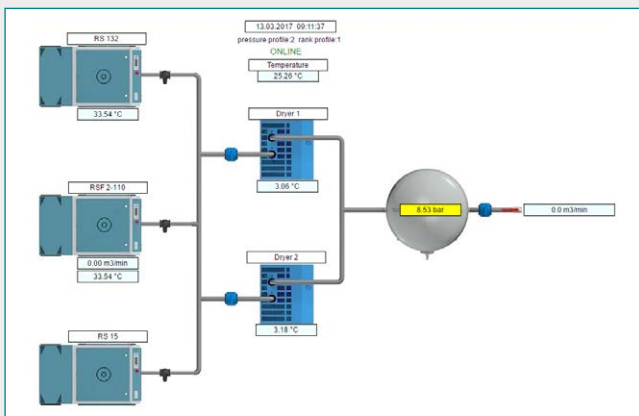
View of all connected compressors and sensors.

Dew-Point-Diagram



All connected sensors can be displayed graphically. Exceeding or under-shooting alarm thresholds triggers selectable alarm responses.

Panel-Designer



With the integrated panel designer, you can create a professional image of your station.

Total diagram



A clear overall diagram shows at a glance the pressure profile, flow rate as well as the operating times of the compressor.

Web server Plus

An integrated service and alarm management will be provided by the option „Web server Plus“:

- Dispatch e-mails in case of faults, warnings and maintenance.
- Message, if limit values of pressure, dew point, and temperature are exceeded fall below minimum.

NEW!

As from 2020:

- New direct web interface with integrated e-mail dispatch via WiFi.
- Integrated USB port for control update.

COMPRESSED AIR FOR ALL APPLICATIONS



RENNER GmbH Kompressoren, a family run business established in 1994, develops and assembles economical and energy-efficient compressors. A broad range of compressed air accessories are also part of the product portfolio. The structure and size of the company ensure flexible decisions and short lead times, thus providing optimal focus on the requirements of the customers.

THE RENNER MANUFACTURING AND SUPPLY PROGRAMME:

We can supply you with the right compressor for any application – guaranteed.

SCREW COMPRESSORS:

- From 2.2 to 355 kW
- Up to 40 bar, e.g. for manufacture of PET bottles
- Compact systems with air receiver, refrigeration dryer, and variable speed control
- Heat exchanger integrated or as an external box
- Special applications: gas compression, operation of drilling devices, rail, and special-purpose vehicles
- Customized models designed to customer specifications

OIL-FREE COMPRESSORS:

- SCROLL compressors for oil-free compressed air from 1.5 to 30.0 kW
- Water-injected screw compressors for oil-free compressed air in breathing air quality from 18.5 to 120 kW



PISTON COMPRESSORS:

- From 1.5 to 11.0 kW
- Stationary or mobile, with or without sound insulation

CONTROL SYSTEMS:

- Compressor control systems
- Superordinate control systems
- State-of-the-art web server monitoring

Industry 4.0

COMPRESSED AIR ACCESSORIES:

- Air filters, air receivers, refrigeration dryers, adsorption dryers, condensate drains, and oil-water-separators

Supplied by your RENNER distributor:

RENNER GmbH · Kompressoren

Emil-Weber-Strasse 32
D-74363 Gueglingen

Phone +49 (0) 7135 93193-0
Fax +49 (0) 7135 93193-50

E-Mail: info@renner-kompressoren.de
www.renner-kompressoren.com



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