

Screw compressors

**RS 2-75 – 109 D**

**RSF 87 – 127 D**

with direct drive



Made in  
Germany



**Motor power: 75 – 127 kW**



## RENNER GmbH Kompressoren – success rooted in tradition.

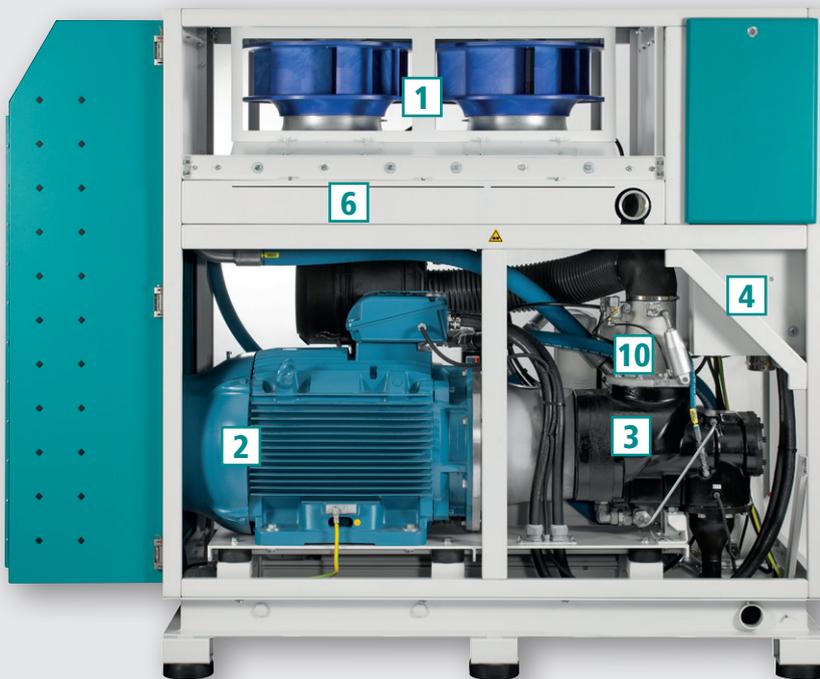
RENNER GmbH Kompressoren have been known for reliable compressed air for more than 25 years. As a family owned business with fast decision-making processes, we set the benchmarks in developing, manufacturing and selling efficient screw compressors.

RENNER has more than 160 employees to provide you with first-class technical support, robust compressor engineering, and reliable service in virtually more than one hundred countries. We offer fast maintenance services in Germany and all over the world through our large distributor network. You can rely on the high quality standards of our oil-injected screw compressors as well as in the fields of oil-free compressed air or piston compressors. We are proud to assist you as a competent sales and service partner worldwide!

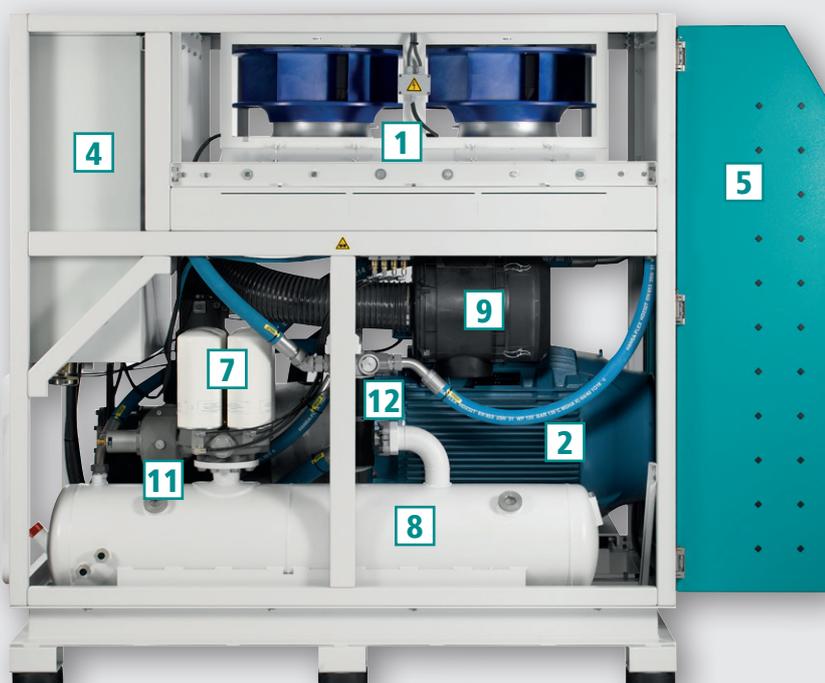


## RENNER – the expert in screw compressors.

Easily removable service panels ensure excellent accessibility to all maintenance-related components.

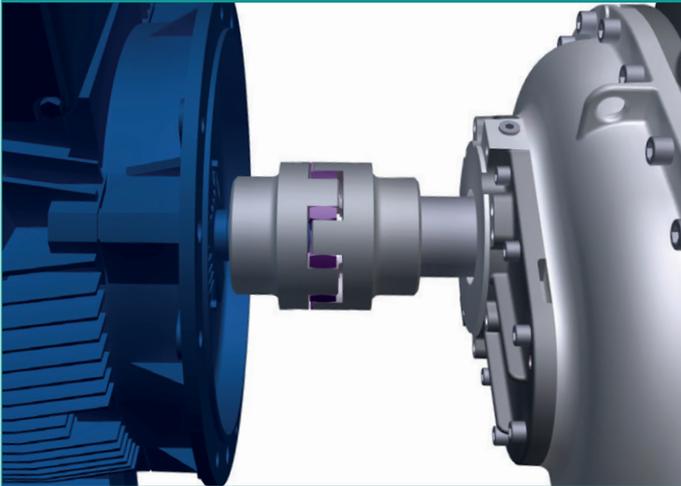


- 1** Radial fan
- 2** Motor
- 3** Air end
- 4** Switch cabinet
- 5** Rear duct silencer
- 6** Cooler
- 7** Oil separator cartridges
- 8** Oil tank
- 9** Air Filter
- 10** Suction regulator
- 11** Minimum pressure / check valve
- 12** Oil filter



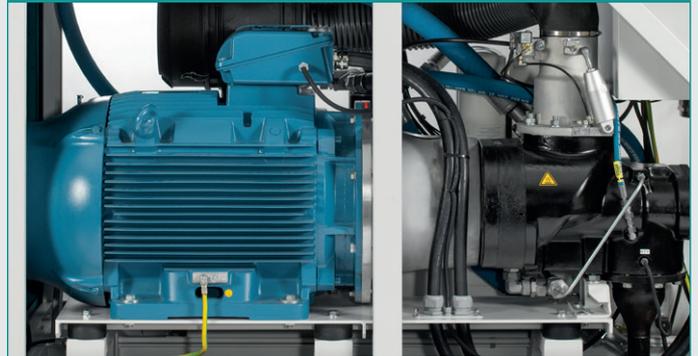
## RENNER direct driven compressors in detail

### Drives



1:1 direct drive connects the air end directly to the motor. The almost loss-free power transmission guarantees reliable, high-performance compressor operation. The regular maintenance requirement is reduced to lubrication of the motor. All the electronic components are branded products of leading manufacturers.

### Electric motor IE 3



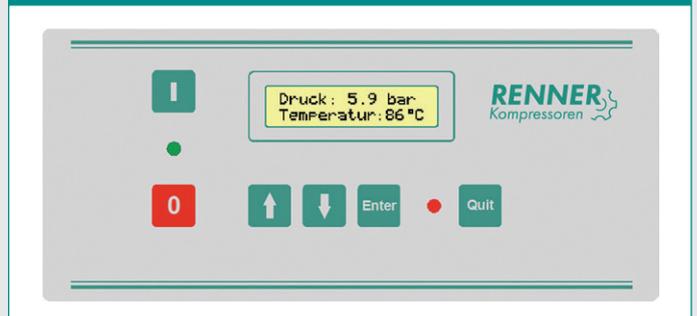
We use only IP55 electric motors made by renowned manufacturers. The drive motors are monitored both thermally (via the thermistor of the motor) as well as electronically (overload protection via the frequency converter) as standard. The load on the motor is reduced on start up and during operation by means of the direct drive combined with a high quality, maintenance-free shaft coupling with a modern isolating element. The drive motors of compressors with variable speed control are equipped with current insulated bearings as standard.

### Air end block – reliable centrepiece



The centrepiece of the compressor is the air end, which has been designed and manufactured using the most advanced production technology in Germany. The optimally adjusted air end for each compressor can be defined by modular design. In compressors with variable speed control, in which the pressure can vary, converter adjustments can be made in order to optimally adjust the speed of the compressor to its performance. The machine has been designed to optimally meet your compressed air requirements and works in an energy efficient way.

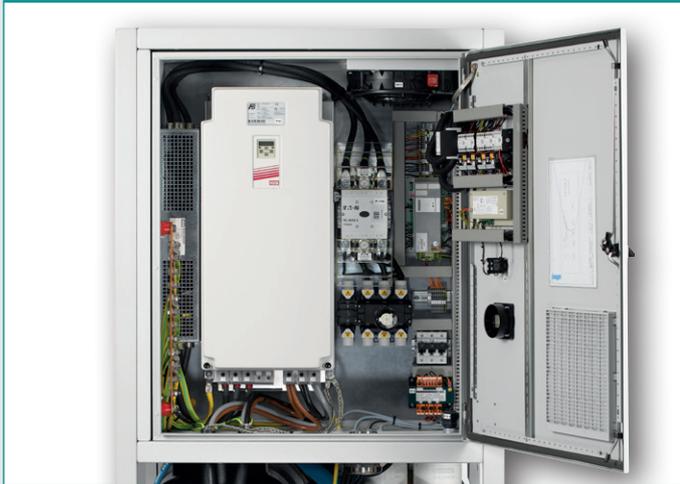
### Control



Compressed air supply must be reliable and economical. This is guaranteed by an intelligent control system both for individual compressors and for RENNER compressed air stations. All machines are equipped as standard with the control RENNERtronic or optionally with RENNERtronic Plus. Compressors from other manufacturers can also be connected to our control systems. Please see page 9 for detailed information on the control systems.

## RENNER direct driven compressors in detail

### Switch cabinet



The switch cabinet has been integrated in the machine and is located in the cooled air current. Due to the separate switch cabinet a protection class of IP 54 has been achieved. The converter of a compressor with variable speed control has been integrated in the switch cabinet. All electrical components are branded products of leading manufacturers.

### Frequency converters

The frequency converter minimises idle times and optimises supply when compressed air requirements fluctuate. Start-up peaks are avoided and the compressor's free air delivery is controlled continuously – which saves electricity cost and reduces on and off cycles of the compressor. The total cost for your compressed air supply are significantly reduced and investment cost will be recovered in a short period of time.

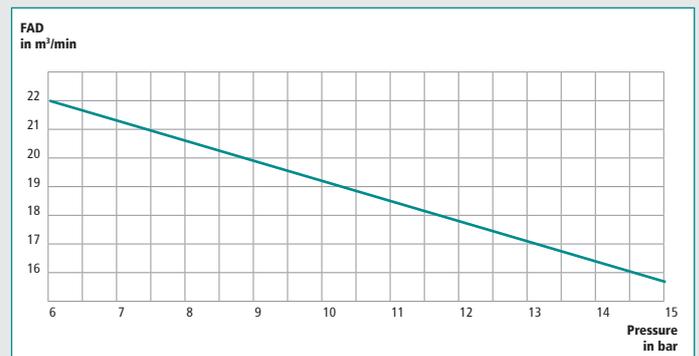
All RENNER compressors with variable speed control adapt flexibly and automatically to current pressure regarding both pressure and free air delivery. Thus the compressor provides at all times the optimally adjusted free air delivery in the set pressure range (6 to 15 bar).

- Free air delivery and control range adjust automatically to current pressure.
- Speed and load limits of the motor are observed.
- If pressure drops due to high air consumption, the Reflex function releases reserves that increase free air delivery.
  - ▶ Reliability of supply
- The pressure range from 6 to 15 bar can be configured variably without changing drive elements.

### Oil circuit



The oil quantities in the compressors are adjusted in a way that ensures that oil exchange intervals can be extended depending on the ambient conditions. An oil level sensor monitored by the control system has been integrated as standard. All the units of this series come with a horizontal oil separation vessel in which the oil is separated from the compressed air highly efficiently at low speeds. The large surface of the oil in a horizontal oil separation vessel contributes to the prevention of foam build-up.



## Details RS 2-75 – 109 D / RSF 87 – 127 D

### Oil separation system



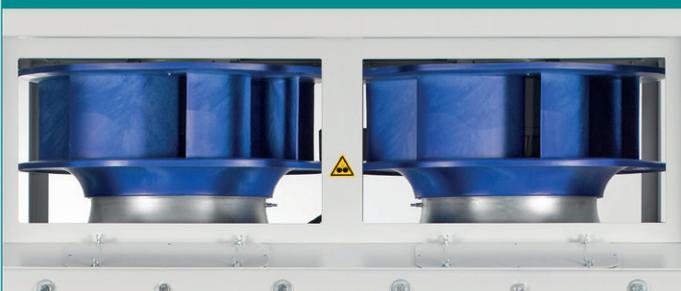
Compressors up to 127 kW are equipped with three or four external separator cartridges which can be changed by a simple spin-off/spin-on procedure. Thanks to the outstanding separation efficiency of the entire system, the compressors can be used in the pressure range from 5,0 to 15,0 bar.

### Cooler unit



The horizontally mounted cooler can be cleaned by cleaning lids. Alternatively the cooler can be pulled out like a drawer for the purpose of cleaning. Thanks to well dimensioned after coolers for oil and compressed air as well as the integrated oil temperature control, the compressors run reliably even at high ambient temperatures.

### Radial fans



The compressors are equipped with radial fans for an optimum operating temperature and high residual pressure. Compared to a conventional cooling system, the radial fan requires less drive energy and operates quietly and powerfully. In the area of design and dimensioning, close cooperation is maintained with German fan manufacturers to achieve optimum cooling air flow and low-vibration operation. For applications with high levels of ambient dust, the systems are equipped with intake air filters as standard. The exhaust air can optionally be discharged to the side.

### Easily accessible maintenance parts



The maintenance parts are easily accessible thanks to removable doors and hinged rear duct silencer. In order to access larger components like motor or air end, the longitudinal bracing can be removed. The separate switch cabinet ensures access to the electrical components.

## Energy savings: compressors with variable speed control. The RSF series is characterized by quality and efficiency.

RENNER screw compressors with variable speed control are designed for tough industrial applications. Additionally the compressors are equipped with the RENNERtronic intelligent control and monitoring system.

### Do you know how much energy your compressed air station requires and how much goes to waste?

About 60,000 compressed air stations in Germany consume 14 billion kWh of electricity annually. This corresponds to 5% of the electricity consumption of all German industrial plants. The energy savings potential of 30% is immense (4.2 billion kWh)! Moreover your commitment can contribute to reducing environmental pollution.

Compressed air stations work in the most efficient and economical way, if the entire system has been fine-tuned. RENNER, the experienced German manufacturer of quality compressor systems, together with its reliable local distributors, can meet these requirements and get the job done for you.

Our partners in distribution are qualified to check your compressed air station in order to determine your savings potential and guarantee long-term economical operation. We can demonstrate to you, how you could benefit by bringing down your operating cost and making an active contribution to reducing CO<sub>2</sub> emissions at the same time.

#### Optimum use of energy: RENNER screw compressors with variable speed control

- use of an efficient control system for compressors
- use of heat recovery systems
- use of advanced compressed air piping systems without leakage
- regular service by factory-trained service technicians

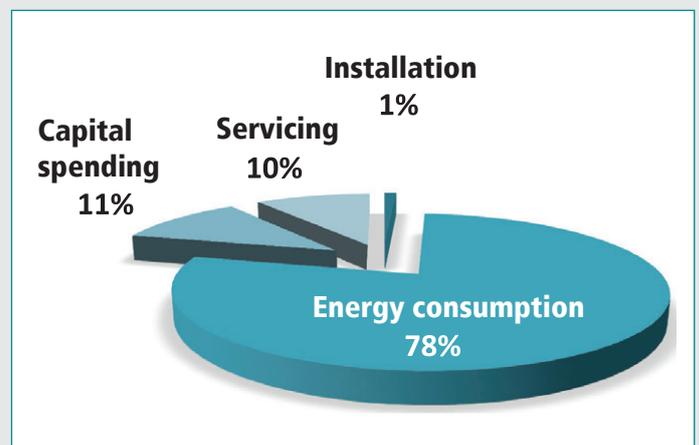
### Variable speed control

Strong fluctuations of compressed air cannot be avoided in many operations. Even in such cases compressed air can be generated economically – RENNER screw compressors with variable speed control guarantee a cost efficient steady flow of compressed air. The compressor speed adapts to the actual need for compressed air with variable speed control. This guarantees economic operation; the frequency converter is integrated and firmly installed in the switch cabinet.



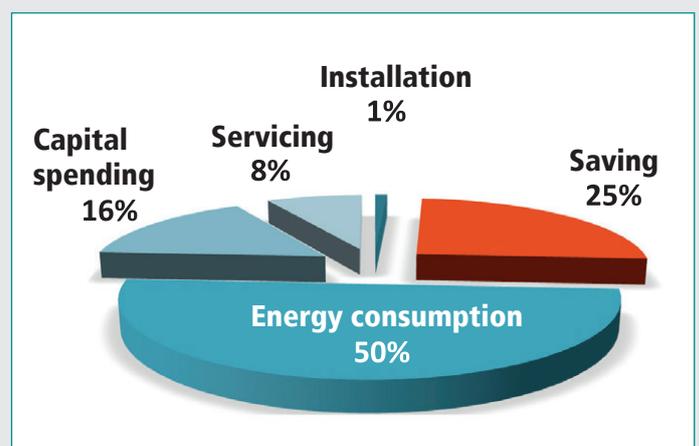
### Comparing total cost after 5 years:

#### Fixed speed compressors:



After 5 years of operation, the energy cost usually amounts to 78% of the total cost of a conventional compressor. The only way to reduce the overall cost is to reduce the cost of energy.

#### RENNER's RSF compressors with variable speed control:



A RENNER RSF compressor can save up to 35% of your energy costs. This yields total savings of 25% of your compressor station and improves your overall energy balance considerably.



## Screw compressors

RS 2-75 – 109 D direct drive  
RSF 87 – 127 D direct drive, with variable speed control

all with electronic control RENNERtronic,  
rear duct silencer and pre-filter frame

### RS 2-75 – 109 D

Model	Free air delivery <sup>(1)</sup>								Motor power		Compressed air outlet	Noise level	Dimensions L x W x H	Weight
	7.5 bar		10 bar		13 bar		15 bar		kW	HP				
	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm			inch	dB(A) <sup>(2)</sup>	mm	kg
RS 2-75 D – 7.5 / 10 bar	12.40 <sup>(3)</sup>	438 <sup>(3)</sup>	11.25	397	–	–	–	–	75	100	G2½	74	2547 x 1048 x 2069 <sup>(4)</sup>	2750
RS 90 D – 7.5 / 10 bar	16.60 <sup>(3)</sup>	586 <sup>(3)</sup>	14.40 <sup>(3)</sup>	509 <sup>(3)</sup>	–	–	–	–	90	120	G2½	74	2547 x 1048 x 2069 <sup>(4)</sup>	2830
RS 90 D – 13 / 15 bar	–	–	–	–	12.24	432	10.35 <sup>(3)</sup>	366 <sup>(3)</sup>	90	120	G2½	74	2547 x 1048 x 2069 <sup>(4)</sup>	2830
RS 109 D – 7.5 / 10 / 13 bar	19.10 <sup>(3)</sup>	675 <sup>(3)</sup>	16.50 <sup>(3)</sup>	582 <sup>(3)</sup>	14.31	505	–	–	110	150	G2½	74	2547 x 1048 x 2069 <sup>(4)</sup>	2880
RS 109 D – 15 bar	–	–	–	–	–	–	12.17	429	110	150	G2½	74	2547 x 1048 x 2069 <sup>(4)</sup>	2880

<sup>(1)</sup> according to ISO 1217 Annex C    <sup>(2)</sup> according to DIN EN ISO 2151:2009    <sup>(3)</sup> with gearbox    <sup>(4)</sup> also available without rear duct silencer

### RSF 87 – 127 D

Model	Free air delivery (REFlex) <sup>(1)(2)</sup>												Motor power		Compressed air outlet	Noise level	Dimensions L x W x H	Weight
	min.		max. at 6 bar		max. at 8 bar		max. at 10 bar		max. at 13 bar		max. at 15 bar		kW	HP				
	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm			inch	dB(A) <sup>(3)</sup>	mm	kg
RSF 2-75 D – 6-10 bar	4.13	146	14.34	506	12.53	442	11.23	396	–	–	–	–	75	100	G2½	75	2542x1048x2075	2950
RSF 87 D – 6-15 bar	1.59	56	14.33	505	13.88	487	12.45	441	10.51	371	9.6	339	87	115	G2½	75	2542x1048x2075	2950
RSF 2-87 D – 6-13 bar	2.85	101	15.89	561	14.24	503	12.73	449	10.80	381	–	–	87	115	G2½	75	2542x1048x2075	2950
RSF 97 D – 6-13 bar	2.85	101	18.25	643	16.31	576	14.62	516	12.6	445	–	–	97	130	G2½	76	2542x1048x2075	3010
RSF 127 D – 6-15 bar	2.85	101	22.15	759	20.71	731	19.40	685	16.4	579	15.9	562	127	170	G2½	77	2542x1048x2075	3210

<sup>(1)</sup> according to ISO 1217 Annex E    <sup>(2)</sup> Reflex function: pressure range continuously variable    <sup>(3)</sup> according to DIN EN ISO 2151:2009

Options	Part no.
Electronic control RENNERtronic Plus	05591
Ball valve 2½", PN16	10526
Permanent magnet motor (PM-motor)	on request
IE4 motor	on request
Standstill heating – additional heater 2.2 kW, 230 V / 50 Hz, IP54, for all types, controllable	00124
Tropical-modification up to 47°C ambient temperature	on request
Water-cooling system	on request
Heat recovery	on request
Packaging	on request

## Standard control system: RENNERtronic

### The user-friendly basic control



### Performance features

#### Pressure control within two adjustable pressure bands:

Customers can determine two pressure bands within limits set by the factory. Based on these pressure bands the compressor is controlled.

**Capture of operating and load hours:** To identify uneconomical operation where load hours are highly variable.

**Monitoring of adjustable maintenance intervals:** For different compressor components, such as air or oil filters, maintenance intervals can be programmed. A message appears when maintenance is due.

**Fault memory:** The last ten messages stating the current operating hours are displayed on the control for diagnostic purposes.

**Different code levels:** The menu system is protected from unauthorized changes by various code numbers (e.g. factory code, service code, customer code).

**Base load change over function:** The control has a base load change over function that can be activated via the menu (additional module required).

**Control of frequency converters:** A PI control is integrated for controlling compressors with variable speed control. This control determines the rotating speed setpoint depending on the set pressure limit and transmits this to the converter as an analog signal (additional module).

**Modbus RTU:** serves, for instance, for the connection to a higherlevel control system or a building control system (Industry 4.0 Ready).

### Advantages

- saves energy
- safe operation of the compressor
- controls and monitors the system
- easy to use
- greater reliability of operation
- can be enhanced according to specific customer requirements
- optional compressor monitoring 

## Optional control system: RENNERtronic Plus

### The compressor control with additional functions



### Performance features

The RENNERtronic Plus has all the functions of the standard RENNERtronic. And it can do even more!

**Real-time clock:** All functions can be called up on the large display with real-time clock. The internal software has a timer with 7 channels.

**Base load change over function:** This software comes with a base load change over function which will be connected via RS485 interface (modbus) to a maximum of 4 additional compressors.

**Hardware:** The hardware also has additional features: RENNERtronic Plus has 11 digital inputs (the RENNERtronic has 5), 8 digital outputs (instead of 6), 1 analog input for a temperature sensor and 3 for pressure transducers and current transformers. Both analog outputs can be used without an additional module. Easier operation due to a larger display.

**Monitoring of system pressure:** System pressure is monitored via a pressure transducer connected to the air end. The compressor only starts up after full discharge; shut off delay time can be controlled by system pressure. In addition, the controller checks whether the mains pressure is building up, for example to identify a belt break.

### Options

- profibus connection

## 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.

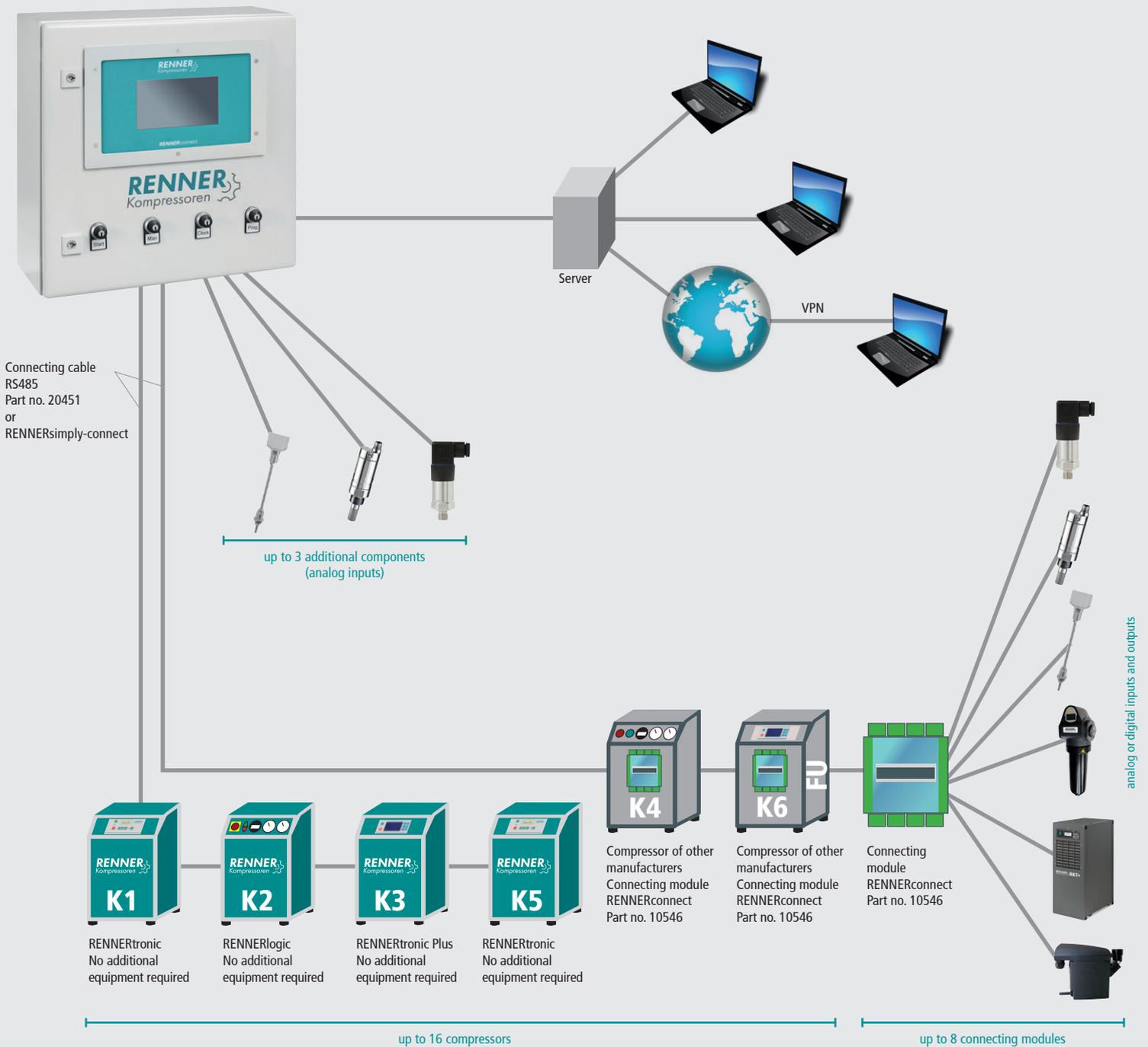
### Connectivity:

#### RENNERconnect

Part no. 14873

17489

14874



## 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!
- extremely low switching frequency (extends the service life of all mechanical components of the compressors)
  - 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 Plus 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.
- At least doubles the service life of suction controls, air ends, contactors and motors! The service cost corresponds to the actual load times.
- 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 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.

## 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 

#### COMPRESSED AIR ACCESSORIES:

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

Your RENNER distributor:

### RENNER GmbH · Kompressoren

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