RENNER Kompressoren

Screw compressors

RS 2-75 D – 109 D
RSF 87 D – 127 D

with direct drive

Made in Germany

Motor size: 75 – 127 kW

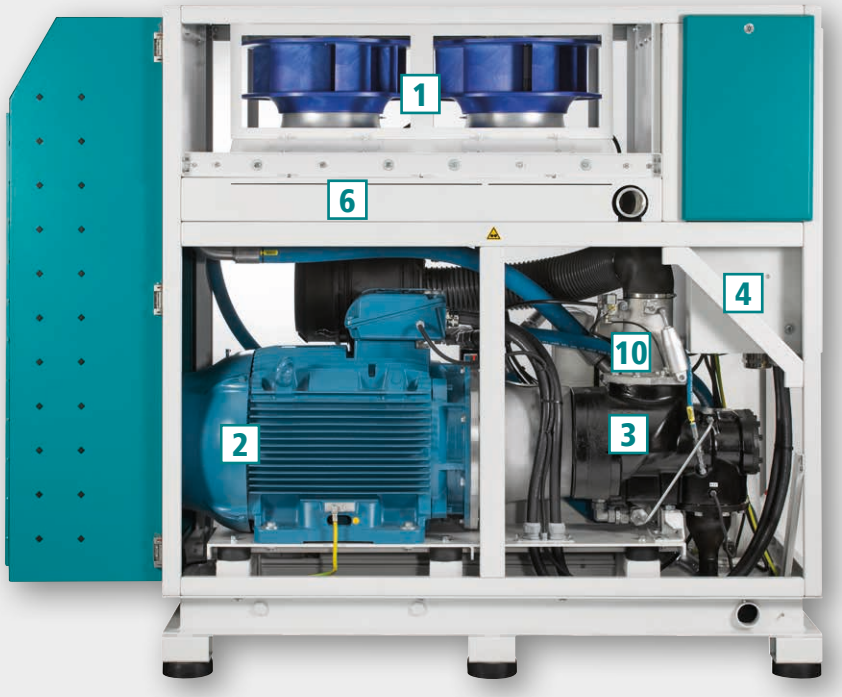
RENNER GmbH Kompressoren – Success Rooted in Tradition.

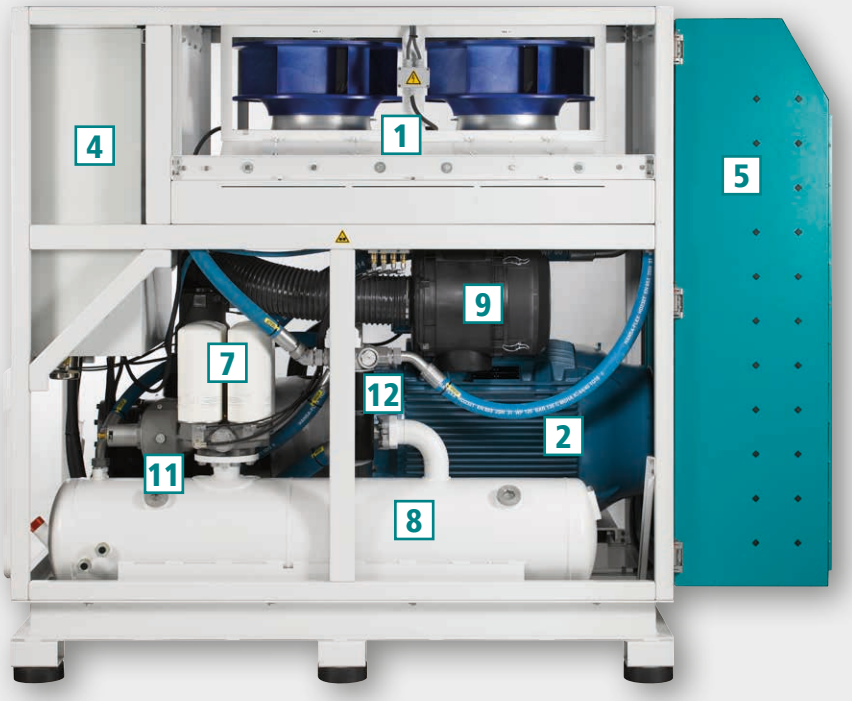
RENNER GmbH Kompressoren have been known for reliable compressed air for more than 20 years. As a family owned business with fast decision-making processes, we set the benchmarks in developing, manufacturing and selling efficient screw compressors.

RENNER has more than one hundred 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.

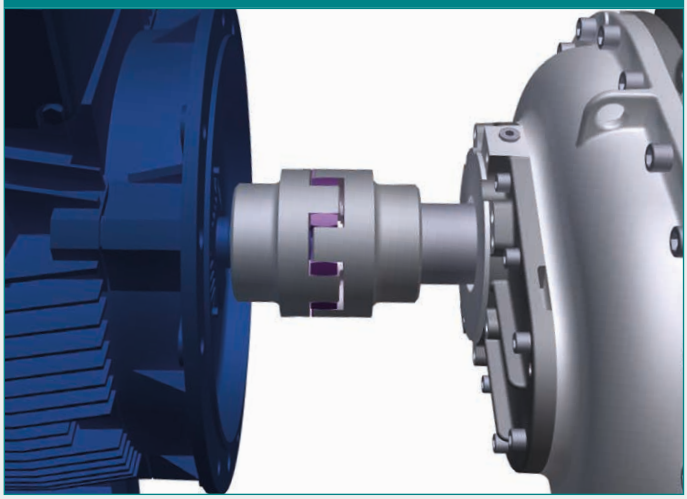




1 Radial fan
2 Motor
3 Air end
4 Switch cabinet
5 Rear duct silencer
6 Cooler
7 Oil separator cartridges
8 Oil tank
9 Air Filter
10 Suction regulator
11 Minimum pressure / check valve
12 Oil filter

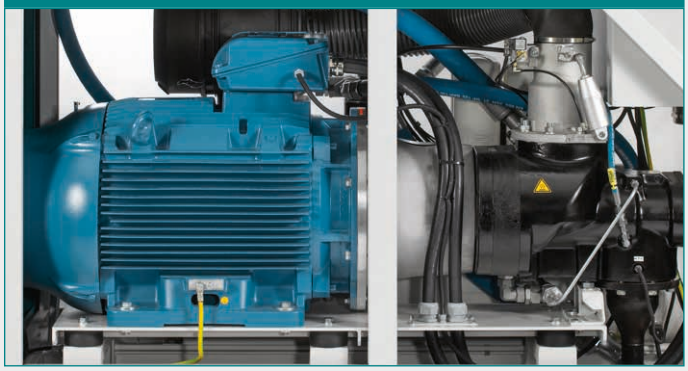
RENNER direct driven compressors in detail

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

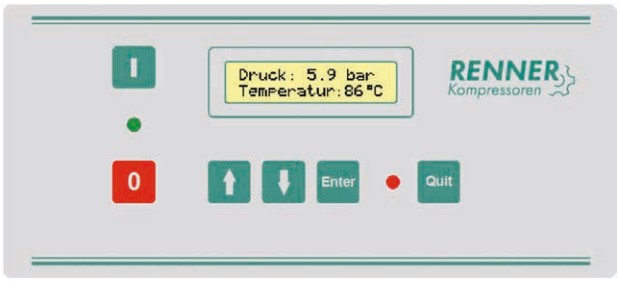


We use only IP55 electric motors made by renowned manufacturers. The drive motors are monitored both thermally (via the thermistor of the motor) as well as electronically (overload protection via the frequency converter) as standard. The load on the motor is reduced on start up and during operation by 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



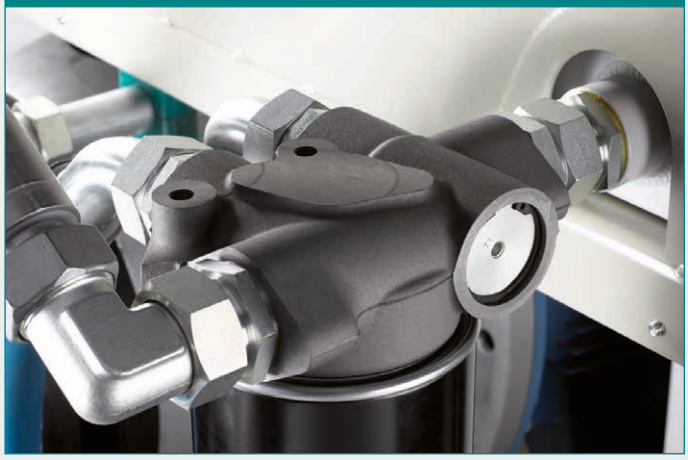
Compressed air supply must be reliable and economical. This is guaranteed by an intelligent control system both for individual compressors and for RENNER compressed air stations. All machines are equipped as standard with the control RENNERtronic or optionally with RENNERtronic Plus. Compressors from 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.

Oil circuit



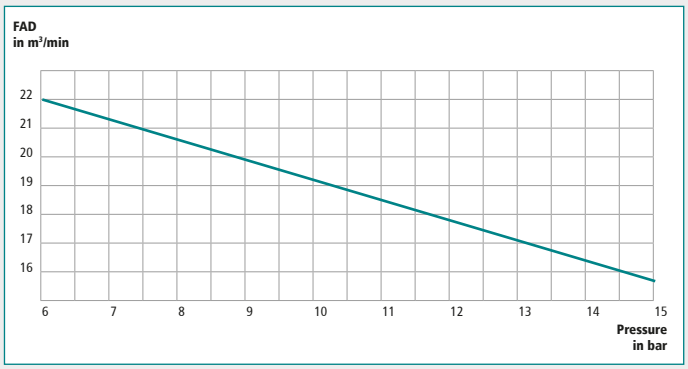
The oil quantities in the compressors are adjusted in a way that ensures that oil exchange intervals can be extended depending on the ambient conditions. An oil level sensor monitored by the control system has been integrated as standard. All the units of this series come with a horizontal oil separation 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.

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 variable speed controlled compressors 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 comsumption, 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.



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

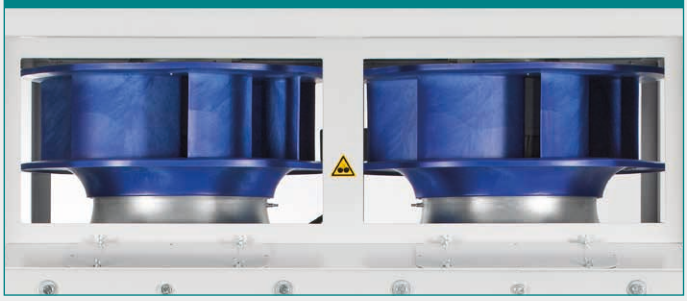
Oil separation system

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 RS 2-75 D to RSF 127 D compressors come with two parallel radial fans with high residual pressure. Compared to a conventional cooling system, the radial fans require less energy and operate quitely and powerfully. RENNER works closely with German fan manufacturers to ensure optimal cooling air flow and low vibration operation. For environments with high dust load, the machines have been equipped with suction filter mats. Optionally, the exhaust air can be discharged latteraly.

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 frequency 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_2 emissions at the same time.

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

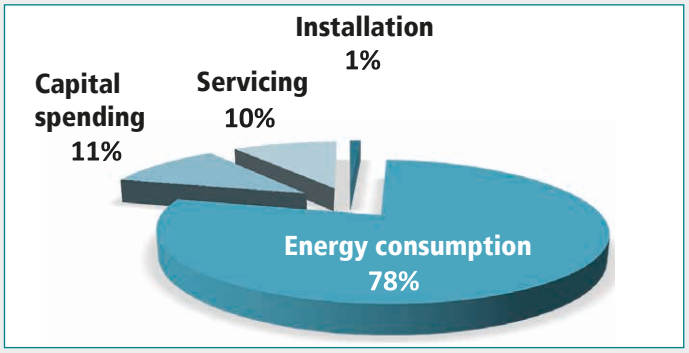
- use of an efficient control system for compressors
- use of heat recovery systems
- use of advanced compressed air piping systems without leakage
- regular service by factory-trained service technicians

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 inverter is integrated and firmly installed in the switch cabinet.

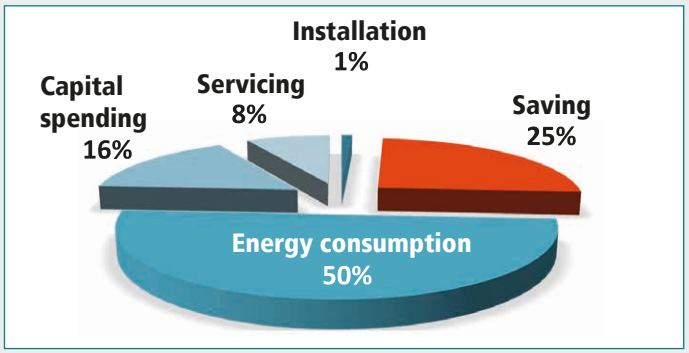
Comparing total cost after 5 years:

Conventional compressor station:



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

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

RS 2-75 D / RS 90 D / RS 109 D

Model	Free air delivery								Motor power		Compressed air outlet	Dimensions L x W x H	Weight
	7.5 bar		10 bar		13 bar		15 bar						
	m³/min	cfm	m³/min	cfm	m³/min	cfm	m³/min	cfm	kW	HP	inch / DIN flange	mm	kg
RS 2-75 D – 7.5 / 10 bar	12.40[2]	438	11.25	397	–	–	–	–	75	100	G2½	2542 x 1048 x 2075[1]	2750
RS 90 D – 7.5 / 10 bar	16.60	586	14.40	509	–	–	–	–	90	120	G2½	2542 x 1048 x 2075[1]	2830
RS 90 D – 13 / 15 bar	–	–	–	–	12.24	432	10.35[2]	366	90	120	G2½	2542 x 1048 x 2075[1]	2830
RS 109 D – 7.5 / 10 / 13 bar	19.10	675	16.50	582	14.31	505	–	–	110	150	G2½	2542 x 1048 x 2075[1]	2880
RS 109 D – 15 bar	–	–	–	–	–	–	12.17	429	110	150	G2½	2542 x 1048 x 2075[1]	2880

RSF 87 D / RSF 97 D / RSF 127 D

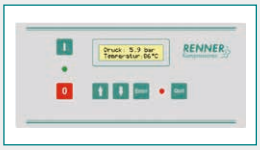
Model	Free air delivery (REflex)						Motor power		Compressed air outlet	Dimensions L x W x H	Weight
	min. m³/min / cfm	max. at 6 bar m³/min/cfm	max. at 8 bar m³/min/cfm	max. at 10 bar m³/min/cfm	max. at 13 bar m³/min/cfm	max. at 15 bar m³/min/cfm	kW	HP	inch / DIN flange	mm	kg
RSF 87 D – 6-15 bar	1.59 / 56	14.3 / 505	13.8 / 487	12.5 / 441	10.5 / 371	9.6 / 339	87	115	G2½	2542 x 1048 x 2075[1]	2950
RSF 97 D – 6-13 bar	2.85 / 101	18.2 / 643	16.3 / 576	14.6 / 516	12.6 / 445	–	97	130	G2½	2542 x 1048 x 2075[1]	3010
RSF 127 D – 6-15 bar	2.85 / 101	21.5 / 759	20.7 / 731	19.4 / 685	16.4 / 579	15.9 / 562	127	170	G2½	2542 x 1048 x 2075[1]	3210

[1] also available without rear duct silencer [2] with gear box

Optioal extras	Part no.
Electronic control RENNERtronic Plus	05591
Standstill heating – additional heating 2,2 kW, 230V / 50 Hz, IP 54, for all types, adjustable	00124
Water cooling RS(F) 2-75 – 127 D	on request
Heat recovery	on reuqest

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 unauthorised 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).

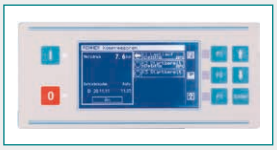
Advantages
- saves energy
- safe operation of the compressor
- controls and monitors the system
- easy to use
- greater reliability of operation
- can be exhanced according to specific customer requirements
- optional compressor monitoring Industry 4.0

Standard equipment
- Starting with RS 75 in different versions
- For all compressors with variable speed control
- RS-PRO 2-30,0 – 55,0 D
- Booster (RSM)

Optionally available for:	Part no.
• RENNER screw compressors from 2,2 – 55,0 kW • SL-S / SL-I 1,5 – 7,5	10869

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

Standard equipment
- SLM-S 7,5 – 30,0
- water injected compressors (RSW)

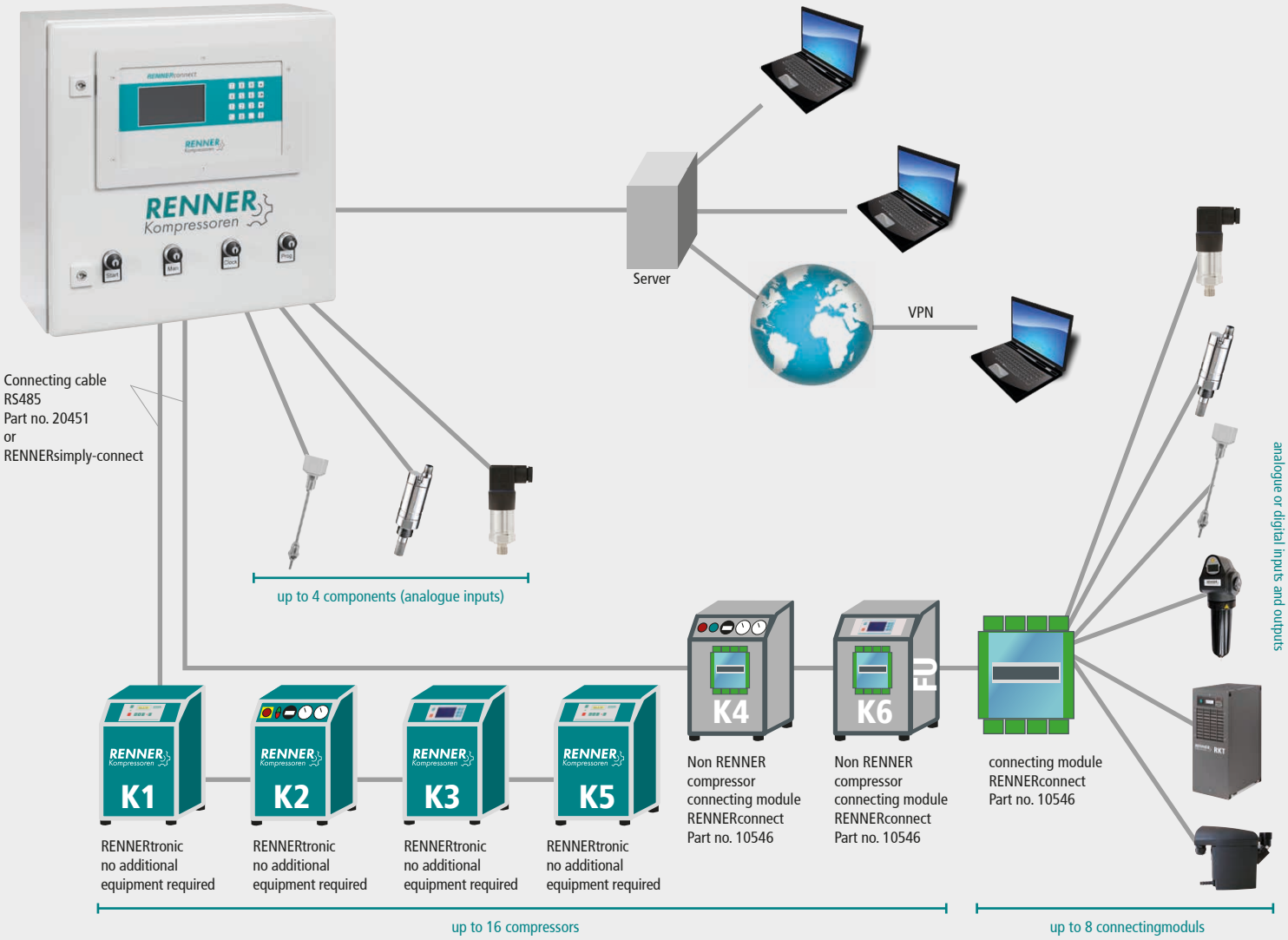
Optionally available for:	Part no.
• starting with RS 75 in different versions • for all compressors with frequency converters • RS-PRO 2-30,0 – 55,0 D • Booster (RSM)	05591
• RENNER screw compressors from 2,2 – 55,0 kW • SL-S 1,5 – 5,5	00829

RENNERconnect

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.

Connectivity:

RENNERconnect
Part no. 04833
04834
04835



Advantages of RENNERconnect

- Compressors using 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 30%) by avoiding expensive idle time and load/unload switching cycles, pressure optimization by four adjustable pressure ranges and by reduction of maximum pressure.
- At least double the service life of suction controller, 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.

Webserver for the RENNERconnect control system

In control of your compressed air station – always and everywhere

- webserver is part of every RENNERconnect control system
- all current measurements are displayed on webserver
- 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 webserver
- optionally: automatic forwarding of daily reports
- calculation of service dates in accordance with operating hours of compressor

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:	0,10744 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

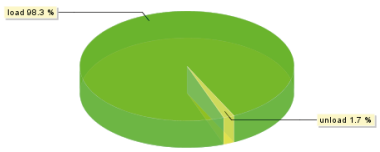
Consumption 'Flowsensor ' : 15.847 m3

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



	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	☑	----
2	RSF 2-110	2953	2941	853	R	853	R	853	R	853	R	☑	----
3	RS 15	3818	3026	956	R	956	R	956	R	956	R	☑	----

RENNER Kompressoren

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

oil-free Made in Germany · SCROLLline Industry · SCROLLline SuperSilent

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

Your RENNER distributor:

RENNER GmbH · Kompressoren

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Reg.-Nr.: Q1 0205013

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