

Gardner
Denver[®]

REFRIGERATED AIR DRYERS | 75-2000 SCFM

RPC

Energy Saving Series



Sustainable Energy Saving Solutions

Gardner Denver is a place where innovation is constant and the real-world needs of our customers are understood. We transform market-inspired ideas into actioned solutions enabling our global customers to meet their sustainability goals and thrive in a complex, ever-changing marketplace.

Utilizing the latest advancements in heat transfer technology, RPC Series refrigerated dryers offer an innovative approach to efficiently remove liquid contamination from compressed air.

The RPC Series with Standard Energy Saving System

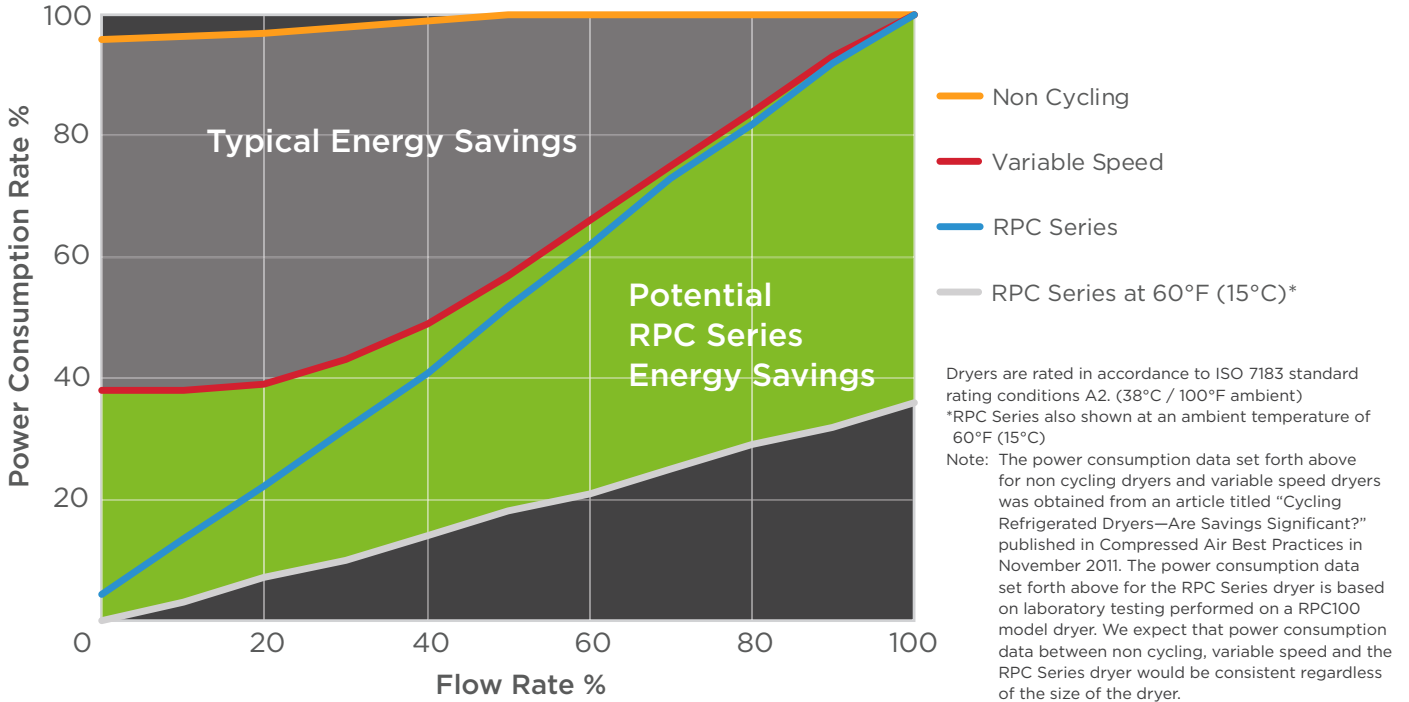
The ESS (Energy Saving System) is capable of transferring heat energy through a change of state. During the thermal change process, the media's temperature remains constant—known as latent heat transfer. Latent heat transfer occurs when the media changes from a solid to liquid or a liquid to solid. The state of the media is monitored by a temperature probe that automatically engages the refrigeration compressor to power on or off according to varying inlet load profiles. Because the ESS is capable of storing and releasing heat energy without a change in temperature, the refrigerant compressor cycles less frequently and saves energy.

The dryer requires fewer components than conventional cycling designs and does not require a cooling media circulation pump, storage tank and glycol to refrigerant heat exchanger. All cooling is accomplished in the 3-in-1 heat exchanger.

The media within the ESS is non-toxic, does not require replacement and maintains its thermal properties regardless of age. In the frozen state the media will not thermally expand, maintaining the long-term integrity of the heat exchanger assembly.



ENERGY SAVINGS COMPARISON



Energy Saving Sustainability

The RPC Series lowers air system power costs and improves productivity by matching power consumption to compressed air demand.

In a typical manufacturing facility, up to 30% of electricity consumed is for generating and treating compressed air. To reduce total cost of operation and qualify for utility company incentive programs, proper air treatment equipment selection and application is required.

Load Matching Performance

Compressed air load profiles in most manufacturing facilities fluctuate. The RPC Series provides cost-effective energy savings by matching electrical power consumed in direct proportion to air demand. Linear load matching is achieved from 0% up to 100% demand.

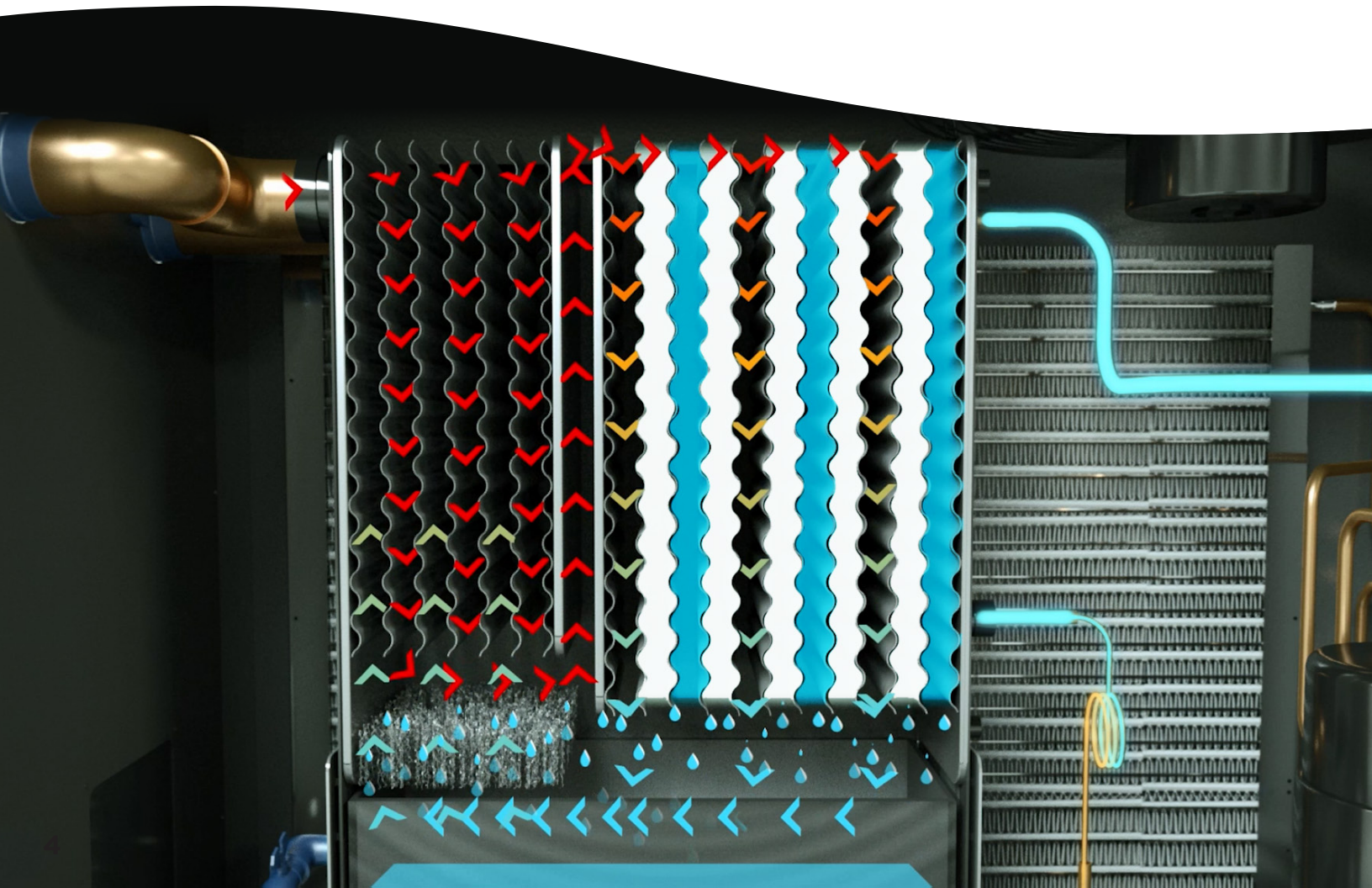
Non-cycling dryers operate with the refrigeration compressor running continuously, regardless of inlet load conditions. Minimal energy savings are realized from 100% down to 0% inlet air load.

Linear Energy Savings

RPC Series dryers automatically power (on/off) the refrigeration compressor in response to inlet load conditions. As the inlet air load is reduced, the power requirement to dry the air is matched in proportion to the demand. For example, at 60% inlet air load, a non-cycling dryer consumes 96% of the full load power consumption, a 4% energy savings. By comparison, at 60% inlet air load, the RPC Series consumes only 60% of the full load power, a 40% energy savings.

How It Works

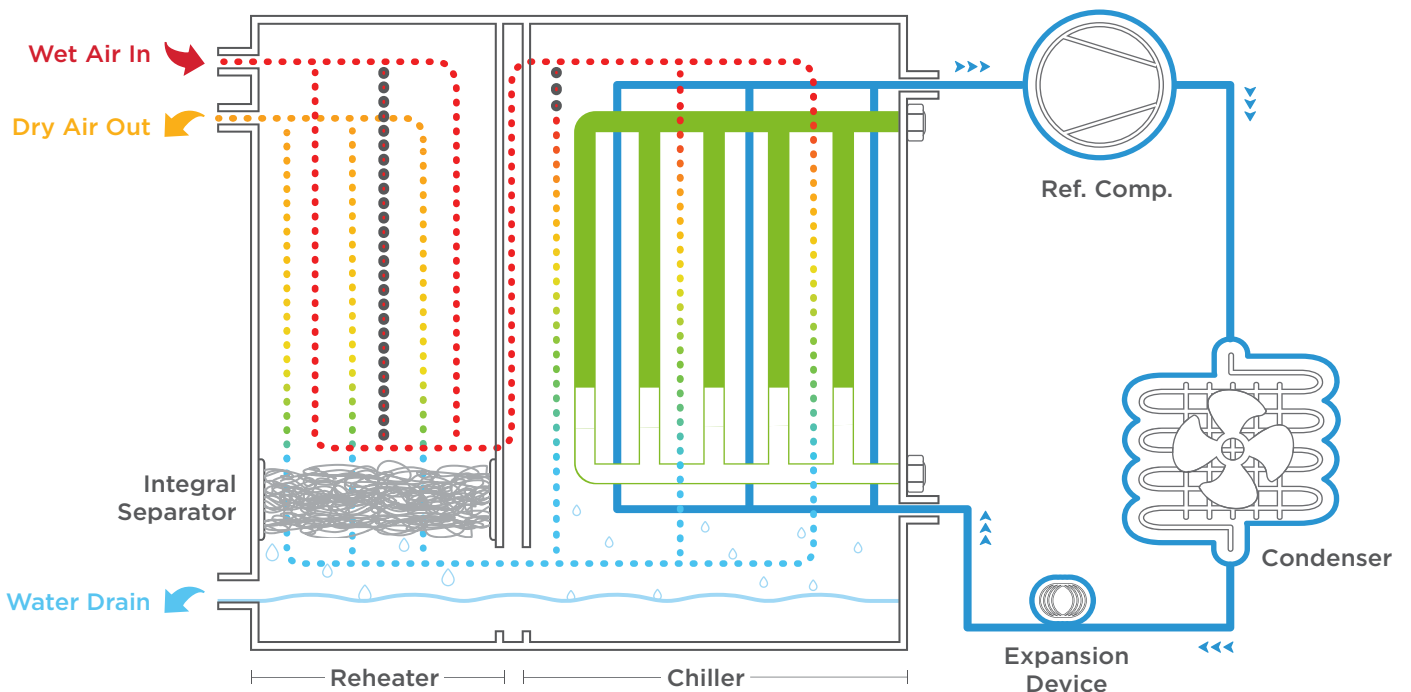
- 1** The RPC Series utilizes an ESS that allows for heat to transfer medium between the refrigeration and compressed air circuits that serves as a reservoir for thermal storage.
- 2** The thermal reservoir is comprised of a patent-pending heat exchanger filled with a media that efficiently transfers heat energy through a “change of state”.
 - Thermal Change: changing from liquid to solid back to liquid in a continuous cycle.
- 3** The refrigeration circuit operates to cool down the medium until it forms into a solid at which time the refrigeration system powers off.
 - Thermal Change: changing from liquid to solid back to liquid in a continuous cycle.



4 As the compressed air enters the ESS, the media absorbs heat from the airstream and begins to melt the media at a constant temperature.

5 When most of the media has turned to liquid the refrigeration system powers on to again cool down the media turning it back into a solid.

6 This process repeats as required to meet the corresponding compressed air load on the RPC Series dryer.



Better by Design

RPC Energy Saving Series 75-2000 scfm

The RPC Series is the ideal solution to reliably and economically dry compressed air. The innovative technology does not require a recirculating pump and associated piping. This results in a simpler, more energy efficient design.

- 1** Stainless steel brazed plate 3-in-1 heat exchanger (patent-pending), with Energy Saving System
 - The ESS thermal reservoir operates at a precise temperature to deliver a stable pressure dew point
 - Smooth, non-fouling stainless steel surfaces promote low resistance to flow, optimizing air system efficiency
- 2** No-air-loss, demand drain efficiently removes condensate without loss of compressed air
 - Condensate drain lines terminate at discharge connections conveniently located on the side of the dryer
 - Failure-to-discharge alarm on the operator interface enhances system reliability
- 3** High-efficiency, up-flow aluminum air-cooled condenser
 - Pulls ambient air through the condenser and releases out the top of the dryer condenser
 - Provides cooler condensing air and greater efficiency

- 4** Reliable, semi-hermetic refrigerant compressor
 - Environmentally-friendly, globally-accepted refrigerants
 - Rugged design, for long-term operation
- 5** Controller with LCD display provides ease-of-monitoring and operating status
 - RPC75 & RPC100
 - Energy savings (%), dryer operating time, refrigeration compressor operating time, active fault message and dew point status
 - RPC150 to RPC2000
 - Energy saving (%), dryer operating time, refrigeration compressor operating time, active fault message and dew point status
 - USB connection port to download operating data and upgrade firmware
 - Remote monitoring capability - RS485 communications port



Simple
Reliable
Energy Efficient



International Air Quality Class Standards

ISO 8573-1 Air Quality Standard

ISO 8573-1, the international standard for compressed air quality, defines the amount of contamination permissible in compressed air.

The ISO standard identifies three primary forms of contamination in compressed air systems: solid particles, water and oil. These contaminants are classified and assigned a quality class, ranging from Class 0, the highest purity level, to Class 6, the most relaxed.



RPC Series refrigerated air dryers offer the perfect balance between technology and simplicity to dry compressed air systems to ISO 8573-1 Air Quality Class 4-5 pressure dew points.

Note: Bundle Filtration Option When Purchased with the Dryer (FP)

Option Pre-Filtration

FIL series C grade filtration removes solid and oil contaminants from the air stream before entering the dryer.

ISO Air Quality Class:

- Solids - Class 2
- Remaining oil - Class 4
- Removes solids 1.0 micron and larger
- Remaining oil content < 2.0 mg/m³

Option After-Filtration

FIL series E grade filtration provides high efficiency oil removal protecting downstream equipment.

ISO Air Quality Class:

- Solids - Class 1
- Remaining oil - Class 1
- Removes 99.999+% of solids ≥ 0.01 micron
- Remaining oil content < 0.01 mg/m³



Premium Warranty

2 Years—Standard

3 Years—Extended

5 Years—Total

Parts and labor included.
Contact your local distributor for more details.

PRODUCT SPECIFICATIONS

DRYER MODEL	INLET FLOW		PRESSURE DROP PSI	VOLTAGE	IN/OUT CONNECTIONS	POWER CONSUMPTION KW	REFRIGERANT	DIMENSIONS H x W x D		WEIGHT	
	SCFM	NM ³ /H						IN	MM	LBS	KG
AIR-COOLED CONDENSER											
RPC75	75	127	2.9	115/1/60	1" NPT	0.54	R134A	30 x 15 x 24	751 x 381 x 603	120	54.5
RPC100	100	170	3	115/1/60	1" NPT	0.62	R134A	28 x 15 x 31	711 x 381 x 781	147	66.5
RPC150	150	255	1.7	115/1/60	2" NPT	1.04	R407C	30 x 18 x 36	751 x 443 x 911	203	92.0
RPC200	200	340	2.1	460/3/60	2" NPT	1.26	R134A	30 x 18 x 38	751 x 443 x 961	244	111.0
RPC300	300	509	3.6	460/3/60	2" NPT	1.99	R407C	36 x 20 x 44	911 x 494 x 1111	324	147.0
RPC450	450	765	3.0	460/3/60	2" NPT	3.23	R407C	41 x 20 x 50	1032 x 494 x 1253	366	166.0
RPC550	550	935	3.0	460/3/60	2" NPT	3.42	R407C	41 x 20 x 50	1032 x 494 x 1253	396	180.0
RPC800	800	1300	3.70	460/3/60	FLG 3"	4.3	R407C	59 x 32 x 59	1488 x 800 x 1494	1056	479.0
RPC1250	1250	2150	4.60	460/3/60	FLG 4"	7.6	R407C	59 x 39 x 62	1488 x 1000 x 1572	1537	697.0
RPC1500	1500	2550	3.90	460/3/60	FLG 4"	9	R407C	59 x 39 x 62	1488 x 1000 x 1572	1766	801.0
RPC2000	2000	3400	3.10	460/3/60	FLG 4"	10	R407C	59 x 39 x 69	1488 x 1000 x 1742	2028	920.0
WATER-COOLED CONDENSER											
RPC800	800	1360	3.7	460/3/60	FLG 3"	4.2	R407C	59 x 28 x 58	1499 x 712 x 1474	926	421
RPC1000	1000	1700	4.3	460/3/60	FLG 3"	5.4	R407C	59 x 28 x 58	1499 x 712 x 1474	1059	481
RPC1250	1250	2124	4.6	460/3/60	FLG 4"	7.1	R407C	59 x 28 x 64	1499 x 712 x 1626	1204	547
RPC1500	1500	2549	3.9	460/3/60	FLG 4"	7.1	R407C	78 x 32 x 58	1982 x 813 x 1474	1579	717
RPC2000	2000	3398	3.1	460/3/60	FLG 4"	8.5	R407C	78 x 32 x 65	1982 x 813 x 1651	1804	819

Performance data presented in accordance with ISO 7183 (Option A2) conditions: 100°F inlet temperature, 100°F ambient temperature and 100 psig conditions.

CAPACITY CORRECTION FACTORS

To adjust the dryer capacity for non-standard conditions, use the Capacity Correction Factors (multipliers) from Tables 1, 2 & 3.

Table 1: Inlet Air Pressure

INLET AIR PRESSURE	75 PSIG 5.2 BAR	100 PSIG 6.9 BAR	120 PSIG 8.3 BAR	150 PSIG 10.3 BAR	225 PSIG 15.5 BAR
Multiplier	0.86	1.00	1.04	1.09	1.15

Table 2: Inlet Air Temperature

INLET AIR TEMPERATURE	80°F / 27°C	90°F / 32°C	100°F / 38°C	110°F / 43°C	120°F / 49°C
Multiplier	1.12	1.06	1.00	0.83	0.68

Table 3: Ambient Air Temperature

AMBIENT AIR TEMPERATURE	80°F / 27°C	90°F / 32°C	100°F / 38°C	110°F / 43°C	120°F / 49°C
Multiplier	1.46	1.23	1.00	0.82	0.68



The leader in every market we serve
by continuously improving all business processes
with a focus on innovation and velocity

Gardner

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