

AC 200-2120 VSD REFRIGERANT DRYERS



AC VSD: A revolution in dryer efficiency

The Pneumatech AC VSD refrigerant dryers are making top quality air at previously unimaginable energy savings a reality. Their variable speed drive ensures that your dryer will only use the energy needed to match your compressed air demand. In addition to their unparalleled efficiency, they also deliver stable, high air purity and a small carbon footprint.

1. Higher production quality and reliability

- Increase your operational reliability by safeguarding downstream equipment, such as piping, receiver and machinery.
- Boost your output thanks to higher uptime and process optimization results by connecting to your compressor room communication protocol.
- Advanced controller and ICONS remote connectivity give you production insights, flexibility, efficiency and reliability.

2. Unmatched energy savings

- Lower operational cost due to lower electricity bills and maintenance costs.
- Quick return on investment (ROI), as low as 1.5 year.

3. Environmentally friendly

- Contribute to a CO₂-neutral production process.
- Achieve your goals.
- GWP gas regulation compliant.

4. Smart, compact design

- Small footprint to fit on your production floor or in your utility room.
- Easy to move and to access for service.

AC VSD: strength in numbers

- Variable speed drive delivers up to **60% in energy savings**.
- Best in class microchannel refrigerant condenser **lowers gas charge** and therefore your carbon footprint.
- ISO 8573-1:2010 **air purity Class 4** guaranteed, even in high ambient (**46° C**) temperatures.
- **Up to 65% less CO₂ emissions** in TEWI (Total Equivalent Warming Impact) compared to fixed speed dryers, up to **55%** less than thermal mass dryers currently on the market.
- Up to **33% smaller size** than thermal mass dryers.
- Available in **several sizes** from **360 to 3600 m³/hr**.



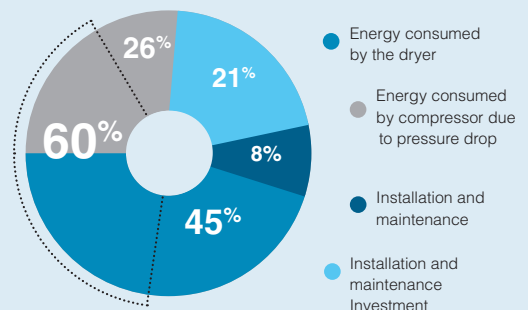
Exceptional dryer performance & quality air

Improve your operational reliability and quality

Installing an air dryer is the smart choice, as compressed air contains moisture that can damage your air system, your pneumatic equipment and your products. Unfortunately, not all refrigerant dryers give you reliable performance and air quality. With a guaranteed ISO 8573-1:2010 Class 4 air purity, the Pneumatech AC VSD gives you protection and peace of mind. What is more, with the advanced Purelogic™ Touch controller, you can monitor and control your AC VSD to enhance its efficiency and reliability. And with an ICONS remote monitoring plan, you can optimize its operation even further.

VSD: Reduce your total cost of ownership

By matching its power usage to your air demand, the AC VSD can decrease your dryer energy consumption by up to 60%. In addition, the new Pneumatech dryer also delivers indirect savings: Its patented heat exchanger reduces the pressure drop and therefore results in even lower operating costs. By drastically lowering your total cost of dryer ownership on these two fronts, the AC VSD offers you a return on investment as quick as 1.5 year.



Achieve your goals

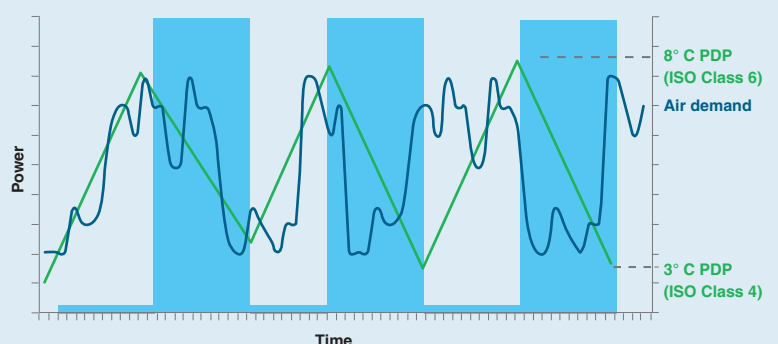
The AC VSD delivers a measurable contribution to your emission objectives with a low TEWI score (Total Equivalent Warming Impact). The dryer features the R513A refrigerant, which is GWP gas regulation compliant and has a zero-ozone depletion potential.

The superior alternative to thermal mass

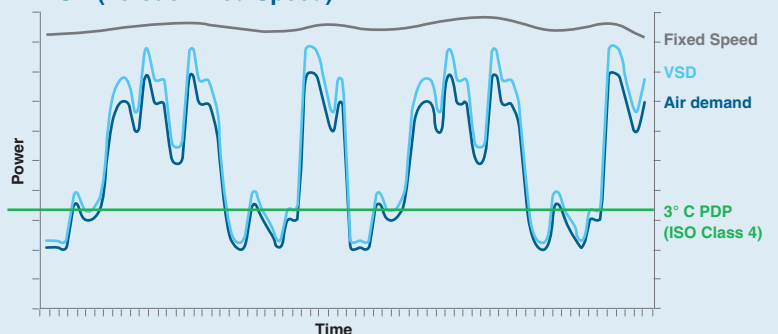
For many years, the most efficient dryers were the so-called thermal mass dryers, which run at full load to cool a thermal mass, then stop and rely on that mass for cooling before repeating the process. However, this process is inefficient as the dryer still needs to run at full load to cool the thermal mass. In addition, thermal mass dryers offer limited or no energy savings in high ambient temperatures.

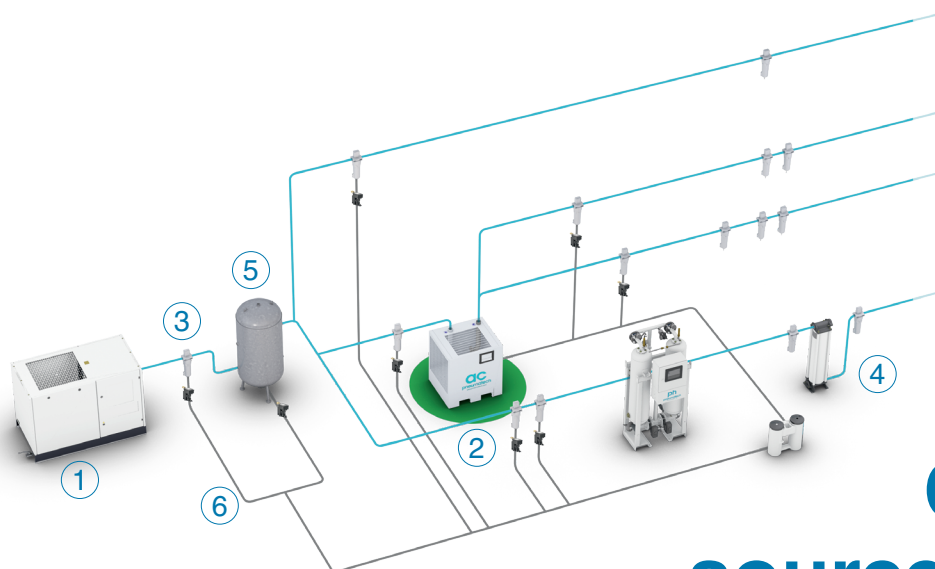
Compared to thermal mass technology, VSD dryers offer real innovation and vastly superior energy savings. It is also important to point out that the dew point of VSD dryers stays consistently low. The result: A constant supply of high-quality air. The dew point of thermal mass compressors, however, rises and falls, which compromises air quality by up to 2 purity classes.

Thermal Mass



VSD (versus Fixed Speed)





One reliable source for all your compressed air needs

Pneumatech stands ready to meet all of your compressed air needs: From the compressor ① itself and the new VSD dryer ② to line filters ③, oil-water separators ④, air receiver buffer storage ⑤, our own easy-to-install AIRnet piping system ⑥. All of these products are available in the proven Pneumatech quality and each of them is built to last.

ICONS

Increased uptime, powered by ICONS

Are you keeping an eye on your dryer's running parameters and service alerts?

With an Intelligent CONnectivity System (ICONS), you get data and insights from your Purelogic™ Touch controller delivered to your computer, tablet or smartphone.

The result: no surprise breakdowns, no unforeseen costs:

- ➔ On-time maintenance to control costs and ensure a longer machine life.
- ➔ Potential problems are recognized before they can pose a threat to the continuity of your production.

What is more, ICONS allows for truly proactive compressor and production management and optimization, with analyses and reports indicating potential energy savings and other enhancements.



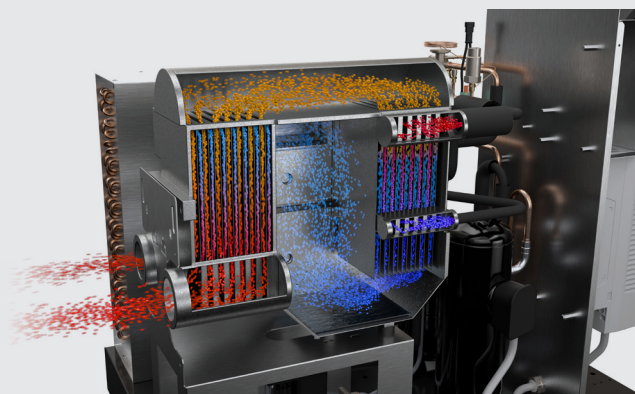
A closer look at the AC VSD

REFRIGERANT COMPRESSOR WITH VSD INVERTER:

Matches its speed to your air demand to save on energy use and costs.

HIGH-EFFICIENCY HEAT EXCHANGER:

Patented design with air-to-air side to reduce pressure drop.



ZERO-LOSS DRAIN:

Features a level sensor to open the drain only when needed to prevent unnecessary loss of compressed air.

SINGLE ELECTRICAL CONNECTION:

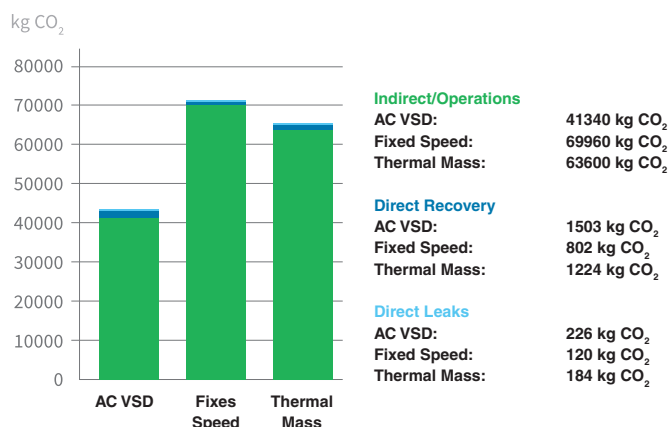
Ensures quick and easy installation.

PURELOGIC™ TOUCH CONTROLLER: with warning indications, dryer shutdown and maintenance scheduling. Also comes with ICONS remote monitoring to maximize your dryer performance and energy efficiency.

A good TEWI score

The AC VSD produces 65% less CO₂ emissions calculated in TEWI compared to fixed speed dryers, up to 55% less than thermal mass dryers currently on the market. But what does this TEWI score mean?

TEWI, short for Total Equivalent Warming Impact, is a measure that reflects the global warming impact of refrigerant equipment based on the emissions of greenhouse gases during the life-time of the equipment and the disposal of the operating fluids at the end. TEWI takes into account direct refrigerant emissions as well as and indirect emissions produced through the energy consumed in operating the equipment.



TEWI = GWP (direct; refrigerant leaks and recovery/recycling) + GWP (indirect; operation)

$$= (GWP \times L_{\text{annual}} \times n) + GWP \times m \times (1 - \alpha_{\text{recovery}}) + (E_{\text{annual}} \times \beta \times n)$$

Where:

- GWP = Global Warming Potential of refrigerant, relative to CO₂ (GWP CO₂ = 1)
- L_{annual} = Leakage rate per year (Units: kg)
- n = System operating life (Units: years)
- m = Refrigerant charge (Units: kg)
- α_{recovery} = Recovery/recycling factor from 0 to 1
- E_{annual} = Energy consumption per year (Units: kWh p.a.)
- β = Indirect emission factor (Units: kg CO₂ per kWh)

Technical specifications

				R454C - 50Hz		R513A - 50Hz		R513A - 60Hz				
Model	Air treatment capacity			Power consumption	Voltage	Power consumption	Voltage	Power consumption	Voltage	Inlet/outlet connections	Dimensions (mm)	Weight up to
	l/min	m³/h	cfm	W	V/Ph/Hz	W	V/Ph/Hz	W	V/Ph/Hz	Gas/DN	B x A x C	kg
AC 200 VSD	6000	360	212		400/50/3	0,60	400/50/3	0,58	460/60/3	G 1 ½" F	805 x 1069 x 962	130
AC 300 VSD	8400	500	297		400/50/3	0,92	400/50/3	0,95	460/60/3	G 2" F	805 x 1069 x 962	134
AC 400 VSD	10800	650	381		400/50/3	1,30	400/50/3	1,33	460/60/3	G 2" F	805 x 1069 x 962	134
AC 450 VSD	13200	790	466		400/50/3	1,92	400/50/3	2,23	460/60/3	G 2 1/2" F	805 x 1069 x 962	143
AC 550 VSD	15600	940	551		400/50/3	2,63	400/50/3	2,83	460/60/3	G 2 1/2" F	805 x 1069 x 962	150
AC 630 VSD	18000	1080	636		400/50/3	3,36	400/50/3	3,56	460/60/3	G 2 1/2" F	805 x 1069 x 962	165
AC 765 VSD	21600	1296	763		400/50/3	2,52	400/50/3	4,81	460/60/3	3" M	1132 x 1012 x 1399	235
AC 975 VSD	27600	1656	975		400/50/3	2,61	400/50/3	5,30	460/60/3	3" M	1121 x 1012 x 1596	330
AC 1125 VSD	31800	1908	1123		400/50/3	3,00	400/50/3	5,83	460/60/3	3" M	1121 x 1012 x 1596	345
AC 1400 VSD	39600	2376	1398		400/50/3	4,55	400/50/3	6,43	460/60/3	DN 100	1121 x 1012 x 1826	405
AC 1865 VSD	52800	3168	1865		400/50/3	5,43	400/50/3	9,80	460/60/3	DN 100	1531 x 1012 x 1826	505
AC 2120 VSD	60000	3600	2119		400/50/3	5,76	400/50/3	10,71	460/60/3	DN 100	1531 x 1012 x 1826	505

Reference conditions:

- **Ambient temperature:** 25°C
- **Compressed air Inlet temperature:** 35°C
- **Working pressure:** 7 bar (g) (100 psi)

Operating limit conditions:

for AC 200-630 VSD

- **Max. ambient temperature:** 46°C
- **Min. ambient temperature:** 5°C
- **Max. air inlet temperature:** 60°C
- **Max. compressed air inlet pressure:** 14,5 bar (g) (210 psi)

for AC 765-2120 VSD

- **Max. ambient temperature:** 46°C
- **Min. ambient temperature:** 5°C
- **Max. air inlet temperature:** 60°C
- **Max. compressed air inlet pressure:** 14 bar (g) (203 psi)

Correction factors to be used for site conditions outside of normal reference conditions stated above = A x B x C

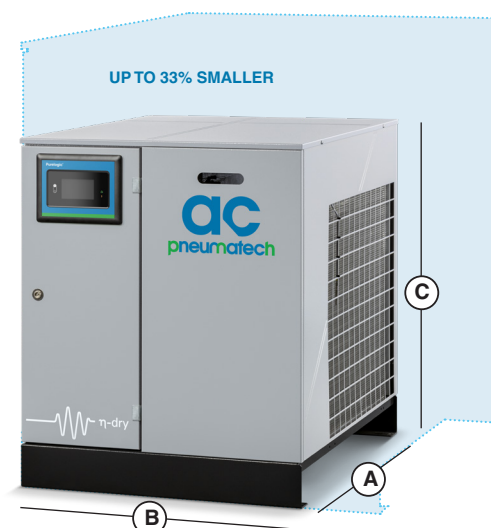
Room temperature	°C	25	30	35	40	43	46
	A	1	0,91	0,81	0,72	0,67	0,62

Inlet temperature	°C	25	30	35	40	46	50	55	60
	B	1,1	1,05	1	0,82	0,69	0,58	0,49	0,42

Operating Pressure	bar	4	5	6	7	8	10	13	14
	C	0,74	0,84	0,97	1	1,03	1,07	1,12	1,15

The new flow rate value can be obtained by dividing the current or real flow rate by the correction related to the real operation conditions.

Thermal Mass Dryers



Contact your local PNEUMATCH representative