

PURESTREAM **ACT DRYERS**

BY FRIULAIR

REFRIGERATED AIR DRYERS
20 - 5000 SCFM



ULTIMATE ENERGY SAVING TECHNOLOGY

ACT REFRIGERATED DRYERS

ENERGY SAVING TECHNOLOGY

Compressed air is an effective and reliable source of power which is used in many operations and processes in industry. However, compressed air does have some inherent problems which, if not treated properly, will create more trouble than it's worth. Use of contaminated compressed air can result in prematurely worn pneumatic machinery, blocked valves and orifices, spoiled spray paint applications and corroded piping systems due to moisture in the compressed air lines.

The solution to these problems is a Purestream refrigerated compressed air dryer. After years of research and development Purestream has introduced the new ACT dryer. This new dryer series incorporates a new aluminum heat exchanger technology designed to provide optimal drying performance and directly reduce energy consumption by lower pressure drop. The new ACT heat exchanger module produces very low pressure drop ratings compared to most of our competitors. The lower pressure drop results in energy savings allowing for a good return on investment. Combined with a new technology hot gas by-pass valve designed to deliver constant dew point, the ACT dryer will provide unmatched performance in the industry.

CONTROL PANEL

The ACT dryer operation is controlled by our own custom design DMC controllers.

The DMC 14 controller incorporates a digital dew point read out selectable in degrees F and C scale. As a standard feature the controller also displays a visual alarm condition with the built in capability to send a remote alarm signal. The DMC 14 is utilized in our ACT 20 thru ACT 400 model dryers.

The DMC 20 version is the most advanced microprocessor controller in the industry and is incorporated as a standard controller for our larger range ACT 500 thru ACT 5000 model dryers.

DMC 14



DMC 20



HOT-GAS BY-PASS VALVE

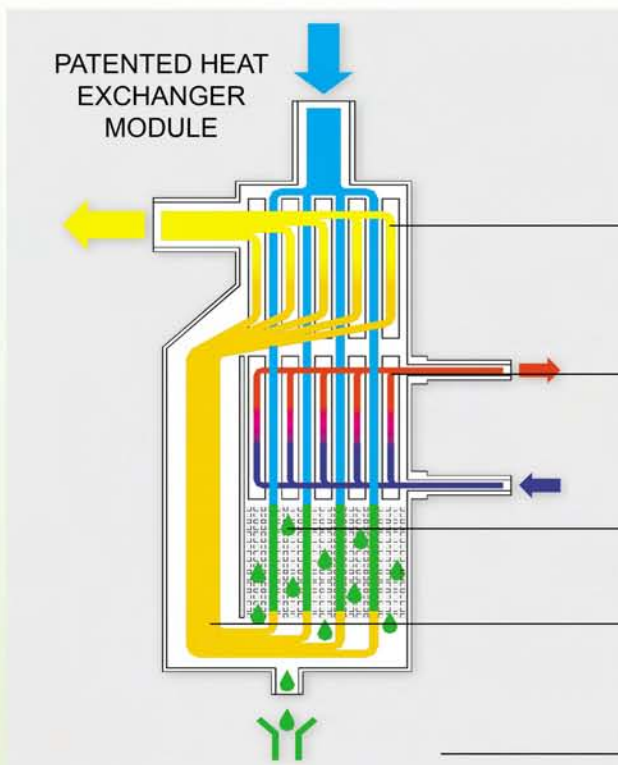
All ACT dryers are fitted with a new stainless steel hot gas by-pass valve that underwent years of development. This valve is designed to prevent freezing and provide a constant dew point. Since this diaphragm valve is controlled by temperature and pressure, the accuracy of operation is unmatched in the industry. The valve is set during final factory testing and no further adjustments are required.



CONDENSATE DRAIN

Dryers are all fitted with the industry leading Bekomat no air loss drains as a standard. This intelligent drain provides energy saving operation which enhances an already energy saving dryer design.





ALU-DRY HEAT EXCHANGER MODULE

The patented air to air and air to refrigerant heat exchangers and the demister type condensate separator are housed in a uniquely designed vertical module

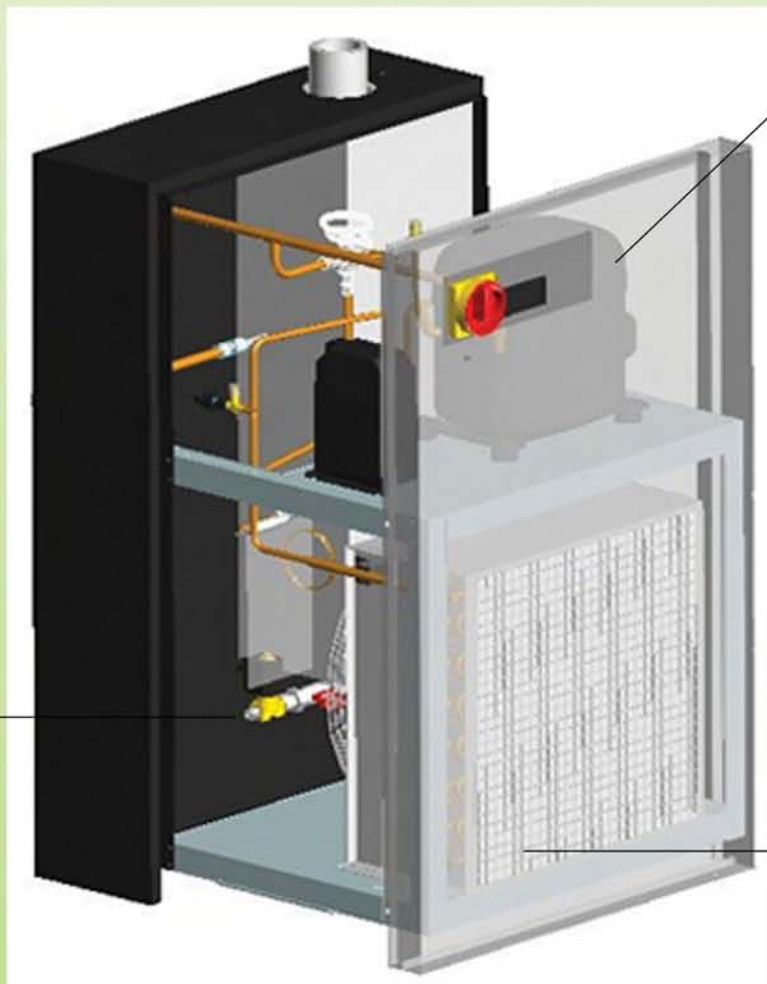
Maximum heat transfer is achieved in the air to air heat exchanger cross flow design.

The large surface areas coupled with the cross flow of the refrigerant exchanger ensure no liquid is returned to the refrigeration compressor.

The maintenance free separator is located in the heat exchanger module. This highly efficient coalescing separator provides superior moisture separation.

The large cross-section flow channel results in low velocities, producing low-pressure drop and reduced energy costs.

**CRN
APPROVED**



ROTARY REFRIGERANT COMPRESSOR

Our mid range ACT dryer models from ACT 125 thru ACT 400, 230/1/60 utilize a rotary compressor. The rotary compressor advantage includes lower operating noise levels, high operating limits, longer life and high efficiency that ensures energy savings. Utilizing the rotary compressors adds to the overall energy saving design of the ACT dryers.



CONDENSER COIL

All ACT dryer condenser coils are generously sized in order to ensure maximum performance in extreme summer ambient conditions found in all compressor rooms.

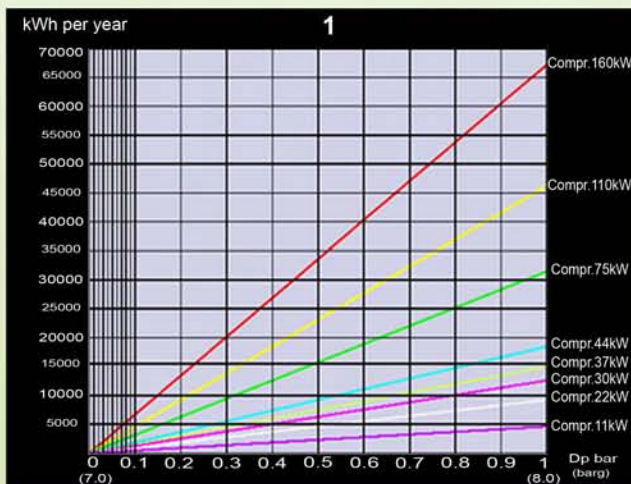
ACT-ENERGY SAVING TECHNOLOGY

Along with the improved drying performance of the ACT dryers we have also dramatically improved the energy saving capabilities of a compressed air dryer via significantly lower pressure drop. Many of our competitors boast energy savings achieved by cycling the refrigerant compressor. The refrigerant compressor represents only 2% to 3% of the total absorbed power of a typical air compressor system. ACT low pressure drop dryers are designed to turn off your air compressor instead; this results in much higher overall energy savings. By utilizing our new technology low pressure drop heat exchangers we can reduce pressure drop by more than 50% on most models versus our competition. This results in dramatic energy savings.

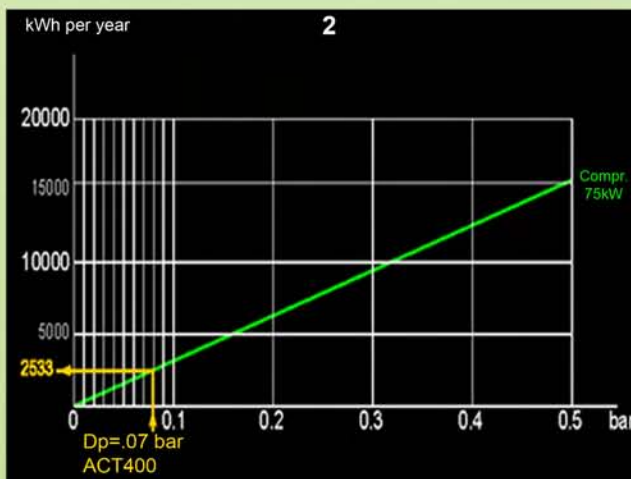
ADDITIONAL ENERGY CONSUMPTION

The pressure drop created by the compressed air treatment system must be considered as an additional load that the air compressor must absorb in order to ensure the required line pressure. If you install a dryer with a pressure drop of 5 psig, the compressor must run at 105 psig in order to deliver a line pressure of 100 psig. Most manufacturers of dryers produce dryers with a pressure drop of 3 to 6 psig at a 100 psi operating pressure. The pressure drop is often undisclosed by our competitors unless requested by the customer. We state our pressure drop in our brochure so you can compare ours against our competition. We have provided graphs below to substantiate our claims.

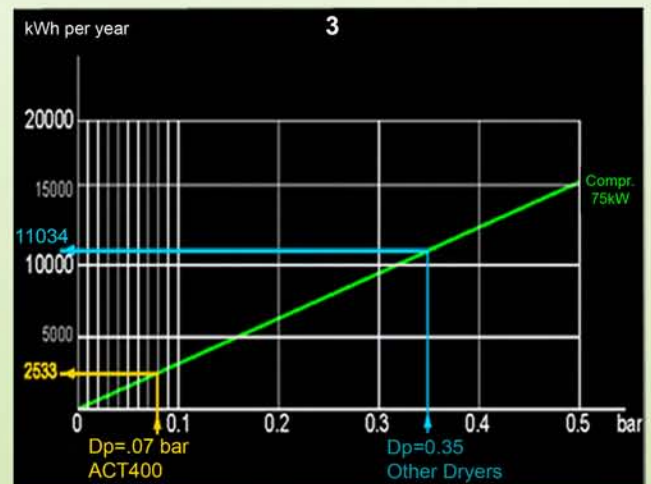
The graph represents the increase in power consumption (kWh per year), of most screw compressors, with the increase in pressure required, in the range from 7 to 8 barg and with 6000 h annual running time.



In order to quantify the annual power consumption for a ACT400 dryer installation, we use the graph below and read the horizontal axis with the pressure drop (0.07 bar), to obtain the annual consumption (in 6000 h per year), which is 2533 kWh.



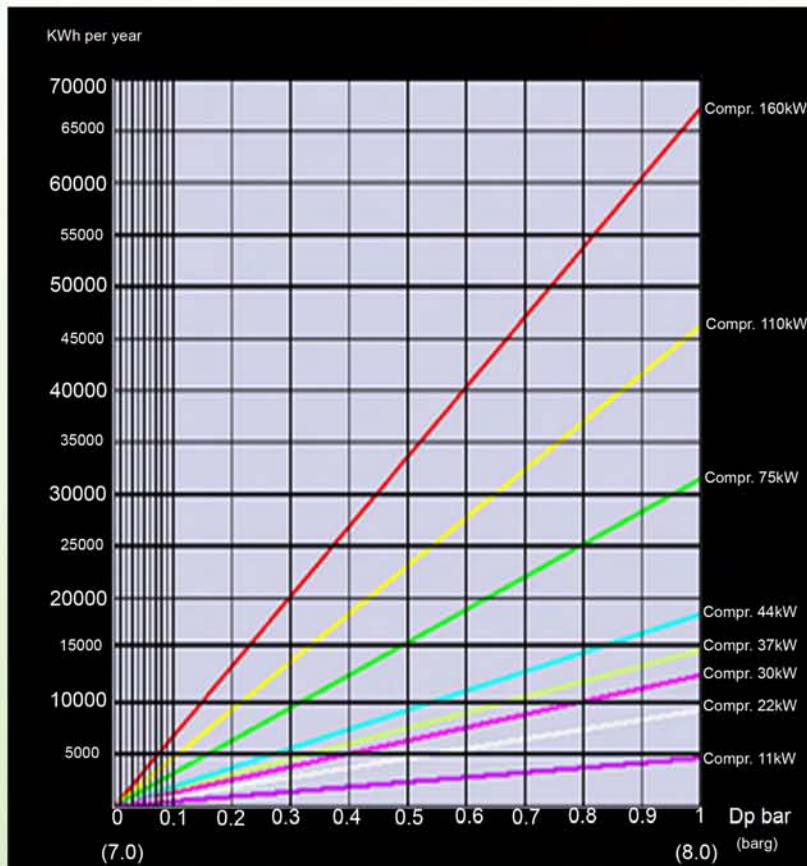
For comparison purposes, we have analyzed the pressure drop of other dryers available on the market with the same flow rate. For this graph we have selected a competitors model with the next lowest pressure drop rating of 0.35 bar. It reveals an annual energy consumption of 11034 kWh.



The difference in energy consumption provides the real overall energy saving :
 $11034 \text{ kWh} - 2533 \text{ kWh} = 8501 \text{ kWh per year}$



COMPARE ACT DRYERS AGAINST OUR COMPETITORS PRESSURE DROP FOR REAL ENERGY SAVINGS



MODEL	Bar/psig
ACT 20	.03/.04 psig
ACT 30	.07/1.0 psig
ACT 50	.15/2.2 psig
ACT 75	.15/2.2 psig
ACT 100	.14/2.0 psig
ACT 125	.18/2.6 psig
ACT 150	.23/3.3 psig
ACT 200	.12/1.7 psig
ACT 250	.25/3.6 psig
ACT 300	.10/1.5 psig
ACT 350	.13/1.9 psig
ACT 400	.07/1.0 psig
ACT 500	.10/1.5 psig
ACT 600	.15/2.2 psig
ACT 800	.20/2.9 psig
ACT 1000	.19/2.8 psig
ACT 1250	.25/3.6 psig
ACT 1500	.19/2.8 psig
ACT 1750	.13/1.9 psig
ACT 2000	.18/2.6 psig
ACT 2500	.25/3.6 psig
ACT 3000	.19/2.8 psig
ACT 4000	.19/2.8 psig
ACT 5000	.26/4.1 psig

ACT DRYER FEATURES

- Conforms to TSSA and ASME standards
- CRN approved nationally
- Electrically certified by Entela
- Environmentally friendly refrigerant R134A/R404A
- Energy saving design
- Unique design aluminum heat exchanger with low pressure drop
- New state-of-the-art stainless steel hot gas by-pass valve
- Compact design with easily removable steel panels
- Powder paint coated finish
- Robust inlet/outlet NPT connections flanged on larger models
- Water proof electrical junction box
- Six foot three pronged power cord on 115/1/60 models
- Insulated electrical power wiring
- Digital controller on small models up to ACT 400, LCD on larger models
- No air-loss Bekomat drains on all models
- Illuminated on/off switch on models ACT 20 thru ACT 100
- Disconnect on/off switch on models ACT 125 thru ACT 500
- Disconnect and on/off buttons on larger models
- Compressors include thermal overload protection
- Air to air heat exchanger and evaporator in one module
- Heat exchanger includes a high efficiency moisture separator
- Thermally protected condenser fan
- Generously sized condenser

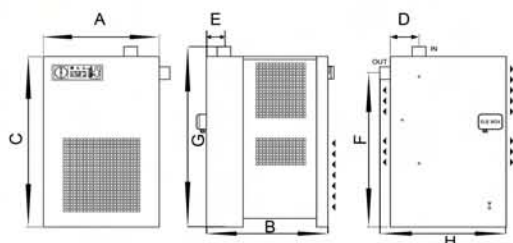
PURESTREAM ACT TECHNICAL DATA

ENVIRONMENTALLY FRIENDLY

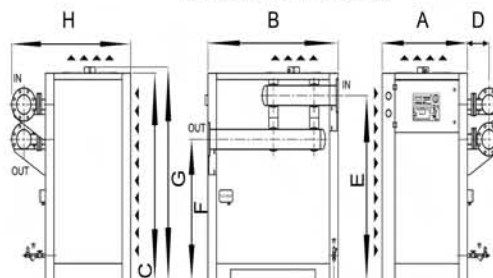
Flow rates are based on the following operating conditions:
100 F inlet compressed air temp. 100 F ambient temp.
100 psig operating pressure and 37.4 F dewpoint.

Maximum operating conditions:
130 F inlet compressed air temp. 115 F ambient temp.
200 psig operating pressure.

20 to 1250 SCFM MODELS



1500 to 5000 SCFM MODELS



MODEL	FLOW RATE SCFM	POWER SUPPLY	REFRIG.	PIPE SIZE	WEIGHT (lbs)	DIMENSIONS IN INCHES							
						A	B	C	D	E	F	G	H
ACT20	20	115/1/60	R134a	1/2" NPT	64	13.58	16.54	29.13	6.22	2.20	27.56	30.31	N/A
ACT30	30	115/1/60	R134a	1/2" NPT	68	13.58	16.54	29.13	6.22	2.20	27.56	30.31	N/A
ACT50	50	115/1/60	R134a	1/2" NPT	71	13.58	16.54	29.13	6.22	2.20	27.56	30.31	N/A
ACT75	75	115/1/60	R134a	1" NPT	77	13.58	16.54	29.13	5.12	2.20	25.87	30.51	N/A
ACT100	100	230/1/60	R134a	1 1/4" NPT	101	19.09	17.91	32.48	5.12	2.72	29.33	34.06	N/A
ACT125	125	230/1/60	R404A	1 1/4" NPT	106	19.09	17.91	32.48	5.12	2.72	29.33	34.06	N/A
ACT150	150	230/1/60	R404A	1 1/4" NPT	110	19.09	17.91	32.48	5.12	2.72	29.33	34.06	N/A
ACT200	200	230/1/60	R404A	1 1/2" NPT	121	21.85	22.83	34.84	5.39	3.35	31.50	36.85	N/A
ACT250	250	230/1/60	R404A	1 1/2" NPT	139	21.85	22.83	34.84	5.39	3.35	31.50	36.85	N/A
ACT300	300	230/1/60	R404A	2" NPT	227	21.85	24.61	38.39	9.45	3.94	34.06	40.55	N/A
ACT350	350	230/1/60	R404A	2" NPT	236	21.85	24.61	38.39	9.45	3.94	34.06	40.55	N/A
ACT400	400	230/1/60	R404A	2 1/2" NPT	320	26.18	28.54	43.50	14.76	7.48	37.01	45.47	N/A
ACT500	500	575/3/60	R404A	2 1/2" NPT	362	26.18	28.54	43.50	14.76	7.48	37.01	45.47	N/A
ACT600	600	575/3/60	R404A	3" 150# FL.	487	30.91	37.40	55.51	19.68	8.66	45.47	58.66	N/A
ACT800	800	575/3/60	R404A	3" 150# FL.	498	30.91	37.40	55.51	19.68	8.66	45.47	58.66	N/A
ACT1000	1000	575/3/60	R404A	3" 150# FL.	606	30.91	37.40	55.51	19.68	8.66	45.47	58.66	N/A
ACT1250	1250	575/3/60	R404A	3" 150# FL.	650	30.91	40.94	55.51	19.68	10.43	45.47	58.46	N/A
ACT1500	1500	575/3/60	R404A	4" 150# FL.	1168	39.57	60.43	70.28	6.30	62.40	47.83	72.44	50.20
ACT1750	1750	575/3/60	R404A	4" 150# FL.	1283	39.57	60.43	70.28	6.30	62.40	47.83	72.44	50.20
ACT2000	2000	575/3/60	R404A	4" 150# FL.	1312	39.57	60.43	70.28	6.30	62.40	47.83	72.44	50.20
ACT2500	2500	575/3/60	R404A	4" 150# FL.	1567	39.57	60.43	70.28	6.30	62.40	47.83	72.44	50.20
ACT3000	3000	575/3/60	R404A	6" 150# FL.	2000	39.57	73.03	70.28	7.28	62.20	47.83	72.44	52.56
ACT4000	4000	575/3/60	R404A	6" 150# FL.	2469	39.57	81.30	70.28	7.28	62.20	47.83	72.44	52.56
ACT5000	5000	575/3/60	R404A	6" 150# FL.	3090	39.57	107.68	70.28	8.46	62.20	47.83	72.44	54.72

*Other Voltages Available Upon Request.

CORRECTION FACTORS

Inlet air pressure	psig	60	80	100	120	140	160	180	200
	barg	4	5.5	7	8	10	11	12.5	14
Factor		0.79	0.91	1.00	1.07	1.13	1.18	1.23	1.27

Correction factor for ambient temperature changes (Air-cooled):

Ambient temperature	F	80	90	100	105	110	115
	C	27	32	38	40	43	46
Factor		1.22	1.11	1.00	0.94	0.89	0.83

Correction factor for inlet air temperature changes:

Correction factor for inlet air temperature changes:							
Air temperature	F	90	100	105	110	120	130
	C	32	38	40	43	49	55
Factor		1.16	1.00	0.85	0.85	0.73	0.63

Correction factor for DewPoint changes:

DewPoint	F	38	40	44	48	50
	C	3.3	4.4	6.7	8.9	10.0
Factor		1.00	1.06	1.17	1.29	1.36

* All data is subject to change without notice



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