AC 650 - 2100 VSD

Large cycling refrigeration dryers

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pneumatech
Pure air . Pure gas

AC 650-2100 is Pneumatech's premium refrigeration dryer range at higher flows: from 1120 up to 3636 m³/hr (657-2141 cfm).

As in the small AC range, operating costs are significantly reduced thanks to the energy saving and flow switch algorithms, the zero-loss drains, the low pressure drop over the heat exchangers and the combination of rotary compressors and R410A refrigerant. The refrigeration cycle is further optimized in all working conditions by making use of the automatic expansion valve & electronic hot gas bypass valve.

From AC 650 onwards, dedicated variable speed (VSD) variants have been added to the range. The VSD controller incorporated in these dryers matches the energy consumption to the actual compressed air demand. This reduces energy used by as much as 70%, compared to conventional dryers. It works by varying the speed of the compressor, hereby ensuring a stable dew point.

The Purelogic™ is installed as standard on all dryers: it ensures maximum reliability by monitoring the most important parameters of the dryer and offers impressive control and monitoring capabilities, like internet-based visualization.

The entire range is available in both air-cooled and water-cooled versions.

Features & Benefits

- Premium energy efficiency
  - Energy-saving & flow control: adapt energy consumption to the real load
  - Variable speed range: exact match between energy consumption and actual demand (available for AC 1600-2100)
  - Lowest pressure drop over heat exchanger and air piping
  - Zero-loss drains
- Strong performance & reliability
  - Stable pressure dew point as low as 3°C
  - Rotary refrigerant compressors: limited mechanical load & low vibrations
  - Guaranteed drying performance in wide range of ambient temperatures
  - Refrigeration cycle optimized in all conditions thanks to automatic expansion valve & electronic hot gas bypass valve
- Air-cooled as well as water-cooled versions available
- Optimal control and monitoring thanks to the Purelogic™ controller
  - Communication via industrial protocols like Modbus, Profibus or Ethernet/IP
  - Internet-based visualization
- Easy maintenance at low cost
  - Pipe connections on top
  - Long service intervals
  - Easy access to key components

General Specifications

- AC refrigeration dryers: cycling type including VSD option (only for AC 1600-2100)
- Operating Pressure: 4-14 barg/58-189 psig
- Max. temperature: 50°C/122°F
- Flow rate: 1116-3636 m³/hr (657-2141 cfm)[1]
- Pressure dew point: 3°C/37°F
- Power supply: 400V/50Hz; 380V/60Hz; 400-460V/60Hz
- Refrigerant: R410a
- Cooling type: Air-cooled and water-cooled

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP) - 50Hz units

Temperature		°C	25	30	35	40	45	50	55	60
		°F	77	86	95	104	113	122	131	140
PDP	3°C	37°F	1,2	1,1	1	0,85	0,72	0,6	0,49	0,37
	5°C	41°F	1,35	1,23	1,11	0,94	0,8	0,67	0,55	0,42
	7°C	45°F	1,5	1,35	1,22	1,02	0,88	0,75	0,61	0,47
	10°C	50°F	1,72	1,54	1,38	1,15	1	0,86	0,7	0,54
	15°C	59°F	2,11	1,89	1,68	1,43	1,23	1,03	0,83	0,62

1 Flow is measured at reference conditions: ambient pressure of 1 bara and 25°C at operating pressure of 7 barg, inlet temperature 35°C .

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP) - 60Hz units

Temperature		°C	25	30	35	38	45	50	55	60
		°F	77	86	95	100	113	122	131	140
PDP	4°C	39°F	1,14	1,09	1,03	1	0,8	0,67	0,53	0,4
	7°C	45°F	1,27	1,22	1,14	1,09	0,88	0,74	0,59	0,44
	10°C	50°F	1,4	1,35	1,24	1,18	0,96	0,8	0,65	0,49
	15°C	59°F	1,63	1,55	1,41	1,32	1,08	0,91	0,74	0,56

K2 Flow correction factor due to compressed air inlet pressure (g)

Air inlet pressure	barg	4	5	6	7	8	10	12	14
	psig	58	72	87	101	116	145	174	203
		0,74	0,84	0,92	1	1,05	1,15	1,25	1,31

Flow correction factor due to ambient temperature or cooling water temperature - 50Hz units

Temperature	°C	25	30	35	40	45	50
	°F	77	86	95	104	113	122
		1,00	0,95	0,88	0,81	0,74	0,67

Flow correction factor due to ambient temperature or cooling water temperature - 60Hz units

Temperature	°C	25	30	35	38	45	50
	°F	77	86	95	100	113	122
		1,10	1,06	1,02	1,00	0,93	0,88

Technical specifications AC 650 - 2100 fixed speed

		Air Cooled							Water Cooled						
Pneumatech Variant Specifications	**Units**	**AC 650**	**AC850**	**AC 1050**	**AC 1250**	**AC 1600**	**AC 1800**	**AC 2100**	**AC 650**	**AC 850**	**AC 1050**	**AC 1250**	**AC 1600**	**AC1800**	**AC2100**
Flow [1]	l/s	310	410	510	610	760	870	1010	310	410	510	610	760	870	1010
	m^3/hr	1116	1476	1836	2196	2736	3132	3636	1116	1476	1836	2196	2736	3132	3636
Power consumption	kW	2.80	3	4.5	4.8	5.3	6.6	7.4	2.00	2.4	4.1	3.1	3.6	4.5	5.1
	hp	3.75	4.02	6.03	6.44	7.11	8.85	9.92	2.68	3.22	5.50	4.16	4.83	6.03	6.84
Pressure drop over dryer	mbar	230	210	200	170	170	140	170	230	210	200	170	170	140	170
	psi	3.3	3.0	2.9	2.5	2.5	2.0	2.5	3.3	3.0	2.9	2.5	2.5	2.0	2.5
Refrigerant type		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Dimensions	L (mm)	1263	1263	1525	1040	1245	1245	1580	1263	1263	1263	1245	1580	1245	1245
	L (inch)	49.7	49.7	60.0	40.9	49.0	49.0	62.2	49,7	49.7	49.7	49.0	62.2	49.0	49.0
	W (mm)	850	850	850	1060	1060	1060	1060	850	850	850	1060	1060	1060	1060
	W (inch)	33.5	33.5	33.5	41.7	41.7	41.7	41.7	33.5	33.5	33.5	41.7	41.7	41.7	41.7
	H (mm)	1190	1375	1580	1580	1580	1580	1580	1190	1375	1375	1580	1580	1580	1580
	H (inch)	46.9	54.1	62.2	62.2	62.2	62.2	62.2	46.9	54.1	54.1	62.2	62.2	62.2	62.2
Inlet and Outlet Connections		G3"	G3"	G3"	DN100	DN100	DN150	DN150	G3"	G3"	G3"	DN100	DN150	DN150	DN150
Weight	kg	200	245	310	320	380	400	460	180	245	265	350	360	370	380
	lbs	441	540	683	705	838	882	1014	397	540	584	772	794	816	838

Technical specifications AC 650 - 2100 VSD

		Air Cooled						Water Cooled					
Pneumatech Variant Specifications	**Units**	**AC 650 VSD**	**AC 850 VSD**	**AC 1050 VSD**	**AC 1600 VSD**	**AC 1800 VSD**	**AC 2100 VSD**	**AC 650 VSD**	**AC 850 VSD**	**AC 1050 VSD**	**AC 1600 VSD**	**AC 1800 VSD**	**AC 2100 VSD**
Flow [1]	l/s	310	410	510	760	870	1010	310	410	510	760	870	1010
	m^3/hr	1116	1476	1836	2736	3132	3636	1116	1476	1836	2736	3132	3636
Power consumption	kW	2.28	3.02	3.38	5.3	5.8	6.6	1.48	2.2	2.78	3.3	4.2	5.6
	hp	3.06	4.05	4.53	7.11	7.78	8.85	1.98	2.95	3.73	4.43	5.63	7.51
Pressure drop over dryer	mbar	230	210	200	170	140	170	230	210	200	90	120	170
	psi	3.3	3.0	2.9	2.5	2.0	2.5	3.3	3.0	2.9	1.3	1.7	2.5
Refrigerant type		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Dimensions	L (mm)	1263	1263	1263	1245	1245	1580	1263	1263	1263	1580	1580	1580
	L (inch)	49.7	49.7	49.7	49.0	49.0	62.2	49.7	49.7	49.7	62.2	62.2	62.2
	W (mm)	850	850	850	1060	1060	1060	850	850	850	1060	1060	1060
	W (inch)	33.5	33.5	33.5	41.7	41.7	41.7	33.5	33.5	33.5	41.7	41.7	41.7
	H (mm)	1190	1375	1375	1580	1580	1580	1190	1375	1375	1580	1580	1580
	H (inch)	46.9	54.1	54.1	62.2	62.2	62.2	46.9	54.1	54.1	62.2	62.2	62.2
Inlet and Outlet Connections		ISO7-R3*	ISO7-R3*	ISO7-R3*	DN100	DN150	DN150	ISO7-R3*	ISO7-R3*	ISO7-R3*	DN150	DN150	DN150
Weight	kg	218	245	265	380	400	460	200	245	265	410	410	410
	lbs	481	540	584	838	882	1014	441	540	584	904	904	904

*3 control modes i.e Economy, lowest dewpoint and maximum saving control offer different power consumptions.

Options

IP 54 protection
(only for 650-1050;
standard on AC1250-2100)