

CompAir

Refrigerant Air Dryers

Why treat Compressed Air?

Modern production systems and production processes require high-quality compressed air. This is defined by the ISO 8573.1:2001 international standard and can only be achieved by filtration, water separation and drying.

Compressed air quality and energy efficiency

Often, attention is only paid to the quality of the air and not the resultant running costs. CompAir not only delivers compressed air of the necessary quality, but also supplies complete energy-efficient compressed air systems consisting of compressors, filters, dryers and air receivers, at minimal running costs.

Mono-Block 3-in-1 Heat Exchanger

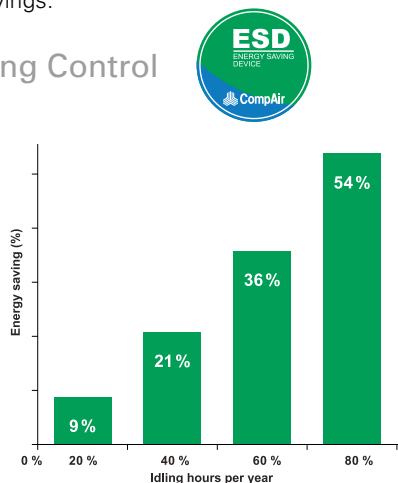
The compact dryers contain a unique Mono-Block 3-in-1 heat exchanger with:

- Air-to-air heat exchanger to pre-cool the incoming warm air with the outgoing cold air and in turn heat and further dry the outgoing compressed air
- Air-to-refrigerant heat exchanger which cools the air to pressure dew point temperature
- Integrated cyclone separator which effectively separates the condensate and collects the condensed water by slowing and reversing the air flow even when the machine is operating at part load

The state-of-the-art design features very low pressure loss, delivering real energy savings.

ESD Energy Saving Control

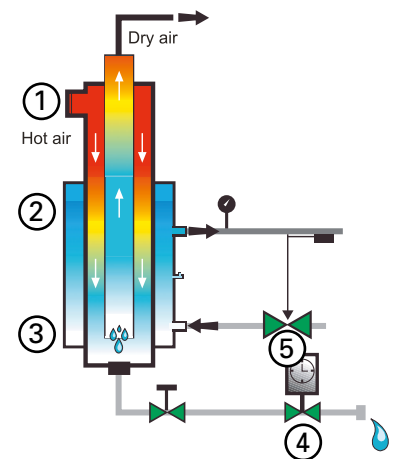
Like speed-regulated compressors, CompAir dryers with ESD control only use energy when the system actually needs compressed air – unlike conventional dryers which continue to consume energy even when the system is off load.



Air Dryer Schematic Diagram

All dryers are equipped with an expansion valve which is working constantly to maintain the correct liquid refrigerant quantity in the heat exchanger to achieve the optimum pressure dew point.

The hot gas bypass valve in the refrigerant circuit and the expansion valve allow a constant dew point temperature of 3°C and a very fast reaction time under varying operating conditions.



- ① Air/air heat exchanger
- ② Air/refrigerant exchanger
- ③ Moisture separator
- ④ Automatic condensate drain
- ⑤ Expansion valve controlled by refrigerant pressure or temperature



With the ESD control if the dryer is off load, the energy consumption/year can be reduced by as much as 54 %. The ESD control is fitted as standard on all 3-phase dryers and is available as an option on all 1-phase dryers. Quite simply a reduction in air demand means a reduction of energy requirement. 3-phase dryers are also available with the optional ESD3 digital plain text display.

Condensate Drain

The F2C to F84C models have a timer-controlled solenoid valve.

NO-LOSS CONDENSATE DRAIN

The 3-phase dryers are equipped with a BEKOMAT® electronic level-controlled condensate drain. Also available as option for 1-phase dryers.



A pre-filter must be fitted upstream of all refrigerant dryers of types F2C to F84C. The models F105C+ to F1200C+ have an integrated 5 µm pre-filter.

FEATURES AND BENEFITS

- Highly efficient heat exchanger with low pressure loss
- High level of efficiency for maximum energy savings
- Environmentally-friendly R134a and R404a refrigerant
- Pressure dew point reliably low
- Optimum condensate separation
- Minimum space requirements
- Easy installation, operation and maintenance
- ESD energy saving control

REFRIGERANT COMPRESSED AIR DRYER, AIR-COOLED, 1-PHASE CONNECTION

MODEL		F2C	F3C	F5C	F7C	F11C	F16C	F22C	F26C	F36C	F45C	F54C	F72C	F84C	F105C+	F133C+
Volume Flow	m³/min	0.183	0.264	0.48	0.732	1.14	1.62	2.22	2.58	3.6	4.5	5.4	7.2	8.4	10.5	13.3
Total Power 50Hz	kW	0.25	0.25	0.25	0.25	0.28	0.35	0.58	0.66	0.80	1.10	1.30	1.17	1.37	1.48	1.95
Total Power 60Hz	kW	0.28	0.28	0.28	0.36	0.36	0.40	0.63	0.79	0.91	1.14	1.48	1.56	1.56	1.65	2.44
Pressure Drop at Rated Load	mbar	10	10	20	30	20	50	60	80	130	160	225	260	330	180	250
Compressed Air Connection	RP/Flange	1/2"				3/4"				1 1/4"			1 1/2"		2"	
Dimensions (mm)	Length	500				715				715			570		715	
	Width	360				410				490			690		765	
	Height	460				535				750			985		1235	
Weight (in box)	kg	30	30	32	32	53	54	56	59	86	93	93	127	163	214	233
Electrical Connection	(m³/min)	230 / 1 / 50 & 230 / 1 / 60														

REFRIGERANT COMPRESSED AIR DRYER, AIR-COOLED, 3-PHASE CONNECTION

MODEL		F72CT+	F84CT+	F105CT+	F133CT+	F156C+	F183C+	F210C+	F240C+	F285C+	F348C+	F384C+	F444C+	F522C+	F678C+	F780C+	F930C+	F1050C+	F1200C+	
Volume Flow	m³/min	7.20	8.40	10.5	13.3	15.6	18.3	21.0	24.0	28.5	34.8	38.4	44.4	52.2	67.8	78.0	93.0	105.0	120.0	
Total Power 50Hz	kW	1.12	1.42	1.46	1.93	2.47	2.62	2.62	3.08	4.30	5.02	5.64	6.20	6.98	10.12	12.47	12.62	14.21	16.29	
Total Power 60Hz	kW	1.39	1.73	1.77	2.44	3.20	3.29	3.29	3.84	5.56	6.44	6.88	8.14	8.54	13.10	15.30	15.30	17.20	19.69	
Pressure Drop at Rated Load	mbar	260	330	180	250	320	380	280	360	380	380	420	400	380	400	420	400	400	420	
Compressed Air Connection	RP/Flange	1 1/2"	2"			3"						4"			DN150					
Dimensions (mm)	Length	570	715			720			1140			1020		1140			1520			
	Width	690	765			820			1020			1140		1520		1820		2180		
	Height	985	1235			1440			1537			1925		2000			2039			
Weight (in box)	kg	130	166	217	236	278	280	324	433	435	489	491	666	703	897	996	1489	1573	1770	
Electrical Connection	(m³/min)	400 / 3 / 50 & 440 / 3 / 60																		

Volume flow correction factors for different operating conditions

Operating Pressure	bar (g)	5	6	7	8	9	10	11	12	13
	(A)	0.86	0.94	1.00	1.04	1.08	1.11	1.14	1.16	1.19
Inlet Temperature	°C	30	35	40	45	50	55	60		
	(B)	1.18	1.00	0.85	0.72	0.60	0.57	0.48		
Ambient Temperature	°C	22	25	30	35	40	45	50		
	(B)	1.00	1.00	0.90	0.81	0.73	0.66	0.59		

