Air Dryer

Refrigerate air dryer - Aluminium Cooling Technologies
MAC series

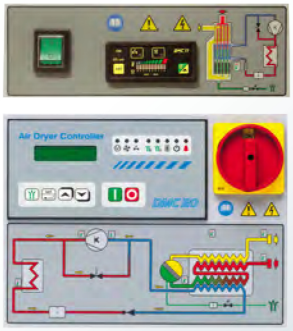
M-PLUS has increased its range of compressed air dryers with the introduction of the new MAC range (Aluminium Cooling Technologies). This high efficiently cooling module has a direct effect on reducing energy consumption and pressure drop.The main advantages are:

- Low perssure drop even with load variances;
- Constant pressure DewPoint with differing load conditions.

The components of the MAC range from refrigerant to materials of construction have been selected with maximum respect for the environment and their ability to be recycled.

Control Panel

Operation of the dryer is monitored by a digital thermometer in the control panel. The DMC20 electronic controller is fitted as standard to models MAC900T - 1500T and as an option to models MAC180T - 720T.



Hot Gas By-Pass Valve

The precise and accurate hot gas by-pass valve, which prevents the formation of ice inside the evaporator at any load condition, is a recent development unavailable in the past. The valve is set during final test and no further adjustments are necessary. There is only one model of valve for each refrigerant used.

Condensate Drain

All models are fitted with a timed electronic drain. Discharge and pause times are adjustable. A zero loss drain is available as an option.

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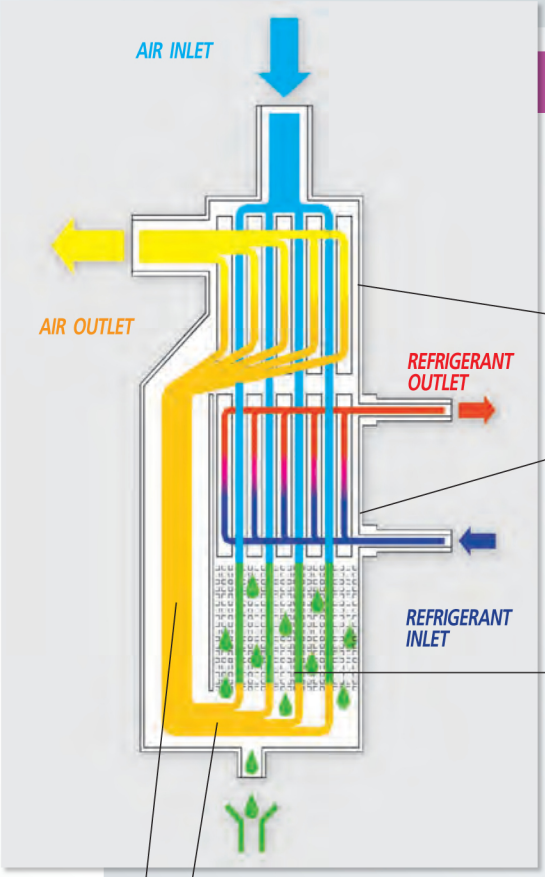


Alu-Dry Module

The air-to-air and the air-to-refrigerant heat exchanger plus the demister type condensate separator are housed in an unique module.

The counter flows of compressed air in the air-to-air heat exchanger ensure maximum heat transfer.

The generous dimensions of the air-to-refrigerant heat exchanger plus the counter flow gas streams allow full and complete evaporation of the refrigerant (preventing liquid returning to the compressor).

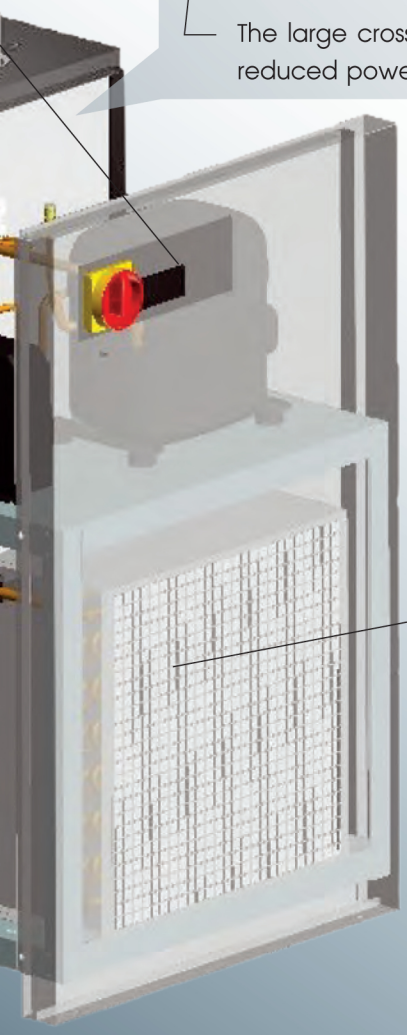
Demister Type Condensate Separator

The high efficiency condensate separator is located within the heat exchanger module.

No maintenance is required and the coalescing effect results in a high degree of moisture separation.

The large capacity separator is designed to hold condensate also at high humidity in compressed inlet air

The large cross section of flow channels within the heat exchanger module leads to low velocities and reduced power requirements.



It is mandatory to install a filter (with filtration grade at least 5 micron) on the dryer inlet side to prevent that rust, scale or other pollutants could clog the Alu-Dry Module and the condensate drain.

Condenser

Generous sizing of the condenser ensures maximum performance of the refrigerant circuit and the ability to operate with changes in ambient conditions. Access to the condenser for cleaning and maintenance is straightforward.

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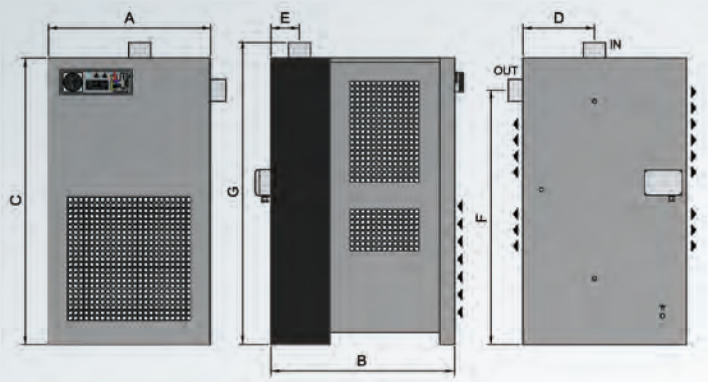
Technical Features

Data refer to the following nominal working condition: Inlet temperature 42°C, Inlet air pressure 7 barg, Ambient temperature 35°C, Pressure DewPoint 3°C (-22°C atmospheric pressure DewPoint).

Max. working condition: Inlet temperature 70°C, Inlet air pressure 14 barg, Ambient temperature 45°C

Upon request water-cooled version from model MAC 180T included (Max. water temperature 30°C).



MODEL	REFRIG.	FLOW-RATE			PRESSURE DROP	DIMENSIONS (mm)							CONN.	POWER SUPPLY	WEIGHT
	(Type)	Nl/min	Nm³/h	SCFM	(bar)	A	B	C	D	E	F	G	Ø	(Ph/V/Hz)	(+Kg)
MAC 8T	R134A	850	51	30	0.04	345	420	740	158	56	700	770	1/2"	1/230-240/50	31
MAC 12T	R134A	1200	72	42	0.06	345	420	740	158	56	700	770	1/2"	1/230-240/50	32
MAC 18T	R134A	1800	108	64	0.07	485	455	826	130	69	745	825	1"	1/230-240/50	39
MAC 23T	R134A	2500	150	88	0.10	485	455	826	130	69	745	825	1"	1/230-240/50	41
MAC 30T	R404A	3400	204	120	0.10	485	455	826	130	69	745	825	1.1/4"	1/230-240/50	46
MAC 40T	R404A	4100	246	145	0.19	485	455	826	130	69	745	825	1.1/4"	1/230-240/50	53
MAC 55T	R404A	6100	366	215	0.13	555	580	885	135	85	800	940	1.1/2"	1/230-240/50	55
MAC 60T	R404A	6800	408	240	0.16	555	580	885	135	85	800	940	1.1/2"	1/230-240/50	63
MAC 80T	R404A	9000	540	318	0.08	555	625	975	245	100	865	1035	2"	1/230-240/50	103
MAC 100T	R404A	10800	648	382	0.13	555	625	975	245	100	865	1035	2"	1/230-240/50	107
MAC 120T	R404A	12500	750	441	0.08	665	725	1105	375	190	930	1155	2.1/2"	1/230-240/50	114
MAC 140T	R404A	14500	870	512	0.11	665	725	1105	375	190	930	1155	2.1/2"	1/230-240/50	116
MAC 180T	R404A	18000	1080	636	0.12	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	232
MAC 210T	R404A	21000	1260	742	0.18	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	242
MAC 250T	R404A	28000	1680	990	0.10	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	267
MAC 300T	R404A	34000	2040	1202	0.17	785	950	1410	500	220	1155	1490	DN80-PN16	3/400-415/50	277
MAC 360T	R404A	39000	2340	1378	0.18	785	1150	1410	500	270	1155	1485	DN80-PN16	3/400-415/50	302
MAC 400T	R404A	42000	2520	1484	0.19	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN100-PN16	3/400-415/50	530
MAC 500T	R404A	52000	3120	1837	0.11	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN100-PN16	3/400-415/50	580
MAC 600T	R404A	63000	3780	2226	0.19	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN100-PN16	3/400-415/50	590
MAC 720T	R404A	78000	4680	2755	0.18	1005	1535	1760	N.A.	N.A.	N.A.	1840	DN125-PN16	3/400-415/50	700
MAC 900T	R404A	90000	5400	3178	0.20	1005	1855	1785	N.A.	N.A.	N.A.	1840	DN150-PN16	3/400-415/50	840
MAC 1100T	R404A	110400	6624	3900	0.26	1005	1900	1785	N.A.	N.A.	N.A.	1840	DN150-PN16	3/400-415/50	1010
MAC 1200T	R404A	120000	7200	4238	0.20	1005	2065	1785	N.A.	N.A.	N.A.	1840	DN150-PN16	3/400-415/50	1020
MAC 1500T	R404A	147200	8832	5200	0.26	1005	2735	1785	N.A.	N.A.	N.A.	1840	DN200-PN16	3/400-415/50	1350

Correction factor for operating pressure changes:

Inlet air pressure	barg	4	5	6	7	8	10	12	14
Correction	factor	0.77	0.86	0.93	1.00	1.05	1.14	1.21	1.30

Correction factor for ambient temperature changes:

Ambient temperature	°c	25	32	35	38	40	43	45
Correction	factor	1.09	1.03	1.00	0.95	0.91	0.85	0.81

Correction factor for inlet air temperature changes:

Inlet air temperature	°c	30	38	42	45	50	55	60	65	70
Correction	factor	1.38	1.11	1.00	0.92	0.80	0.70	0.61	0.53	0.46

Correction factor for dew point changes:

Dewpoint	°c	3	5	7	10
Correction	factor	1.00	1.09	1.19	1.37