

Compressing the air, expanding the ideas.

DE-GTS

Refrigeration compressed air and gas dryers
Airflow capacity from 0.3 to 37.5 m³/min FAD 20°C

R134a



GTS technology inside



Love is in the air



Cooling, drying and caring.

GTS technology



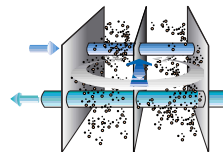
Thermal mass and direct expansion systems in a single unit

GTS technology for heat transfer from compressed air to refrigerant is exclusive to MTA. Thanks to the special design of the evaporator: a finned coil nestling in a bed of silica, heat is transferred from the compressed air to the refrigerant both directly, through the fins, and indirectly, through the silica thermal mass. The heat exchanger geometry was optimised to obtain maximum efficiency and consistent high performance.

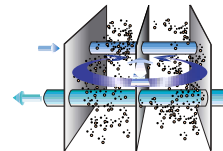


The GTS principle

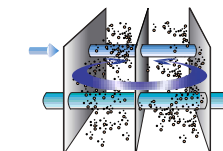
- 1 In full load operation (100% air flow and summer conditions) cooling takes place directly through the aluminium fins:

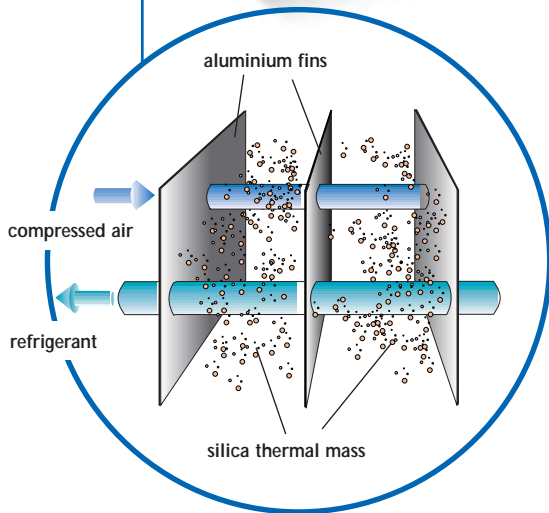
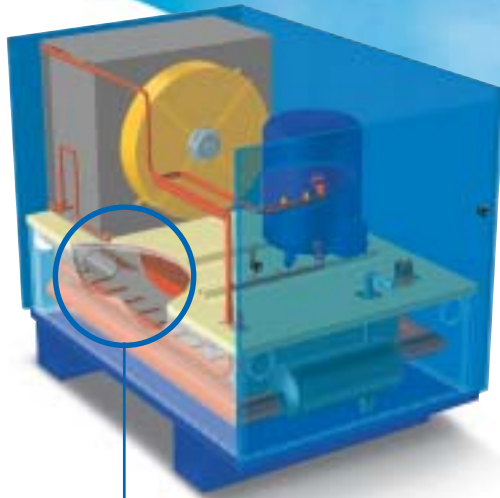


- 2 In part-load operation the refrigerant transfers part of its cooling energy to the silica:



- 3 With the refrigerant compressor stopped (energy saving phase) heat is transferred from the compressed air to the previously cooled silica:





The main advantages of GTS

- Energy saving: the refrigerant compressor only works when it needs to, thereby offering energy savings of up to 80% in normal operating conditions.
- Extremely simple and reliable cooling circuit, like a domestic refrigerator.
- Constant dewpoint, even during sudden variations in load.
- The unit does not need the pre-start period of traditional thermal mass dryers.
- The dryer can be left permanently switched on without wasting energy.
- Constant performance over time: there is no hot gas valve that may need adjustment.
- Longer working life: refrigerant compressor motor runs cooler and less hours

Other advantages

- There is no water and glycol tank for storing cooling energy: no risk of leakage.
- Lower delta-t between evaporating temperature and dewpoint than traditional thermal mass dryers.
- No risk of contamination of the compressed air circuit by refrigerant or vice-versa in the event of a tube leak.
- Silica sand thermal mass: a totally non-toxic substance that does not require special disposal measures.
- Fewer brazed connections in the refrigerant circuit with consequent reduction in the risk of leaks.

Technical characteristics

Refrigeration compressed air and gas dryers with GTS technology.



“Easycard” electronic control unit

Available in models DE003-DE062;

- Polycarbonate display;
- ON/OFF switch;
- Dew point measurement;
- 1 button for:
 - checking operation of the condensate drain solenoid valve;
 - access to programmable setpoints;
 - programming of setpoints;
- 3 LED's for indicating:
 - control card live;
 - “energy saving” phase in operation;
 - high dewpoint;
 - control card fault;
 - temperature probe fault;
- condensate drain timer function or management of an intelligent drain system;
- programming the following parameters:
 - timed or permanent output to condensate drain;
 - opening time of condensate drain solenoid valve;
- high dewpoint alarm setpoint.



«Total Dry Control -TDC» electronic control unit

Available in models DE080-DE375. ON/OFF isolator. IN/OUT:

- 3 resistant sensors.
 - 5 digital inlets.
 - 3 digital outlets.
- Functions:
- Thermostatic control of the thermal mass temperature.
 - Setting parameters for timed solenoid drain.
 - Setting parameter for power supply of Capacitive Drain option.
 - Management of 14 alarms, such like:
 - 2 pre-alarms on the two temperatures measured by the sensors.
 - 4 alarms on temperatures measured by sensors.
 - High Pressure alarm lit icon and alarm code.
 - Low Pressure alarm lit icon and alarm code.
 - Condensate Drain alarm presented as alarm code.
 - General alarm available presented as alarm code.
 - General alarm contact relay.
 - Remote digital On/Off inlet.
 - Multi-level menu with password access for user, distributor or manufacturer.
 - Serial outlet with protocol MODBUS-RTU RS485.
 - Alarm history:
 - Storing of the last 50 alarms that occur from the unit.
 - Easy checking of the historical data at the bottom on the program menu.
 - Reset of historical alarms, which is password protected.

Model DE	Airflow rate (1) 7 bar g.		Nominal power (2) kW	Max power absorbed (3) kW	Power supply V/ph/Hz	Air connections	Overall dimensions (4)							Weight (5) kg
	m ³ /h	l/min.					A	B	C	D	E	F	G	
003	16.8	280	0.15	0.20	230/1/50	1/2"	530	300	510	104	60	165	41	35
004	24.0	400	0.17	0.32	230/1/50	1/2"	530	300	510	104	60	165	41	36
006	35.4	590	0.21	0.32	230/1/50	1/2"	530	300	510	67	50	175	41	35
009	54.0	900	0.18	0.32	230/1/50	1/2"	530	300	510	67	400	225	41	39
012	73.0	1217	0.29	0.37	230/1/50	1/2"	530	300	510	67	400	225	41	41
018	108	1800	0.39	0.44	230/1/50	3/4"	650	370	750	100	476	360	41	65
025	148	2467	0.53	0.72	230/1/50	3/4"	650	370	750	100	476	360	41	67
032	190	3167	0.55	0.72	230/1/50	1"	650	370	750	100	476	360	41	80
038	228	3800	0.74	0.92	230/1/50	1"	650	370	750	100	476	360	41	80
049	295	4917	0.82	1.10	230/1/50	1"	780	370	850	213	498	360	41	103
062	370	6167	0.84	1.10	230/1/50	1 1/2"	780	735	940	84	608	447	51	167
080	480	8000	1.10	1.60	230/1/50	1 1/2"	780	735	940	84	608	447	51	189
100	600	10000	1.53	2.40	400/3/50	2"	865	1017	1100	102	656	445	51	260
120	720	12000	1.85	3.00	400/3/50	2"	865	1017	1100	102	656	445	51	264
140	840	14000	2.22	3.60	400/3/50	2"	865	1017	1100	102	656	445	51	293
170	1020	17000	2.37	3.60	400/3/50	2 1/2"	865	1317	1100	102	656	445	51	378
195	1170	19500	3.16	5.00	400/3/50	2 1/2"	865	1317	1100	102	656	445	51	393
225	1350	22500	3.55	6.00	400/3/50	PN16 DN80	962	1550	1567	153	656	1100	103	650
275	1650	27500	4.57	6.90	400/3/50	PN16 DN80	962	1550	1567	153	656	1100	103	770
375	2250	37500	6.11	8.20	400/3/50	PN16 DN100	962	1900	1567	153	656	1100	137	930

(1) In compliance with ISO 7183 standard, the airflow rates shown refer to the free air output from the compressor (suction 20°C and 1 bar absolute) and at the following rated operating conditions: operating pressure 7 barg, compressed air inlet temperature 35°C, ambient temperature 25°C and pressure dewpoint 3°C. The refrigerant used is R134a.

(2) Power input at rated operating conditions.

(3) Power input at maximum limit operating conditions (ambient temperature 50°C and pressure dewpoint 10°C).

(4) The dimensions refer to the version with a timed drain.

(5) Net weight

Maximum operating conditions: maximum operating pressure 16, 25, 45 or 50 bar g. depending on the version; maximum room temperature 50°C; maximum inlet temperature 70°C.

40 bar DE HP available

The MTA selection program should be used for calculating performance in different conditions from the above.

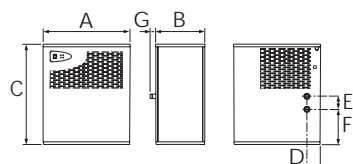
The correction factors in the following table should be used as a guide only:

CAPACITY correction factors (indicative values): CAPACITY = RATED VALUE (7 bar) x K1 x K2 x K3 x K4.

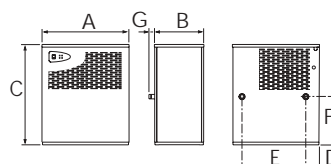
working pressure	bar	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	K1	0.71	0.82	0.90	0.96	1.00	1.04	1.07	1.09	1.11	1.13	1.15	1.16	1.18	1.19

dewpoint	°C	3	5	7	9	ambient temperature	°C	20	25	30	35	40	45	50
	K2	1.00	1.12	1.24	1.38		K3	1.05	1.00	0.95	0.89	0.84	0.78	0.72

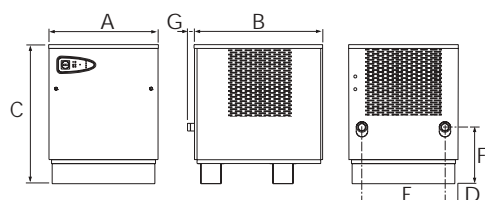
compressed air inlet temperature	°C	30	35	40	45	50	55	60	65	70
	K4	1.23	1.00	0.81	0.66	0.57	0.52	0.48	0.44	0.40



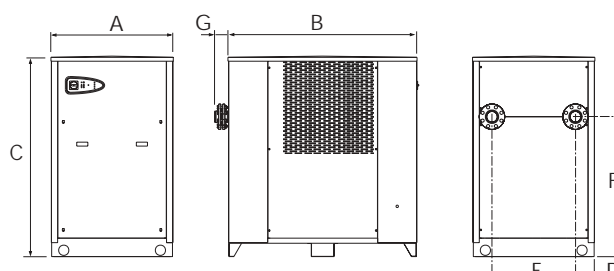
DE 003 - 006



DE 009 - 049



DE 062 - 195



DE 225 - DE 375



50 Hz R134a



Condensate drain system

The condensate is separated in a high efficiency stainless steel mesh "demister". The draining of the condensate occurs through a timed solenoid valve controlled by the electronic panel. On request, it is possible to supply a capacitive drain.



Condenser

Air-cooled by an electric fan fitted with a safety grille. Comprises a painted tubeless steel coil up to model DE 012 and with copper tubes and aluminium fins for the rest of the range. Both the condenser and the fan are generously sized to operate at high ambient temperatures and also to ensure effective cooling of internal electronic components.



Refrigerant compressor

Hermetic, suction gas cooled and protected against thermal and current overloads. The compressor is mounted on anti-vibration rubber supports to ensure quiet running.



Heat exchanger

The evaporator and the air-to-air heat exchanger (model 009 and above) comprise a single coil with copper tubes and aluminium fins. This makes for an extremely compact and rugged construction. The whole assembly is insulated with high density flameproof polystyrene.

Casing

Made from sheet steel panels which have been phosphated, degreased and polyester powder painted. The panels are not structural elements and are easily removable for service.



GTS technology inside

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