

# DryEnergy Hybrid

refrigeration dryers  
0,3-37,5 m<sup>3</sup>/min.



pure energy



**Purifying your compressed air,  
increasing your efficiency.**



Cooling, conditioning, purifying.

# DRYENERGY HYBRID



MTA INTRODUCES HYBRID DRYING TECHNOLOGY BY COMBINING TWO DRYING PROCESSES INTO A SINGLE DRYER, DIRECT EXCHANGE AND THERMAL STORAGE OPERATION; THE RESULT IS THE VERY LOWEST ENERGY CONSUMPTIONS. THIS PATENTED CONCEPT ALSO OFFERS THE MOST RELIABLE DRYER TECHNOLOGY, ENSURING CONTINUOUS OPERATION IN ALL CONDITIONS. EASE OF USE IS ASSURED: DE HYBRID SWITCHES ITSELF OFF WHEN NOT NEEDED AND REQUIRES ABSOLUTELY NO SEASONAL ADJUSTMENTS. ALL MODELS FEATURE ADVANCED DIGITAL CONTROLS AND THE UNIQUE IDRAIN CONDENSATE DRAIN. DE HYBRID: 2 DRYERS IN 1, MUCH MORE THAN TWICE THE BENEFITS.



## Easy to use

DE Hybrid requires no start-up programming, automatically adapting itself to any operating conditions.

On-off operation means there is never a need to switch the dryer off. Digital controls, standard on all models, offer a User friendly interface.

## Easy to maintain

There is no need for seasonal adjustments, unlike dryers with hot gas valves or traditional drains. The simple refrigeration circuit is easy to maintain, whilst the top mounted condenser reduces fouling. The controller features a user programmable service warning.

## Operates everywhere

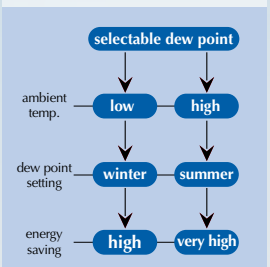
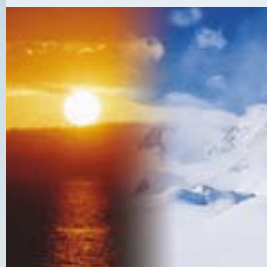
DE Hybrid operates up to class leading air inlet (70°C) and ambient (50°C) temperatures, and pressures of 16barg (50barg also available). Refrigerant R134a offers high overload capacities. There is no hot gas valve so the risk of freezing in winter is avoided.

## Reliable quality

The simple refrigeration circuit, without a hot gas valve, notably increases reliability. The compressor runs cooler and less often, increasing its longevity. Extensive factory testing offers peace of mind, and wide air paths reduce the chance of air-side blockages.

## Highest energy savings

The GTS exchanger's cycling function and unique Hybrid operation save up to 80% of your energy. Choose between 2 dew point settings, permitting further savings when conditions permit it. The iDRAIN condensate drain notably reduces unwanted energy losses.





## ADVANCED DIGITAL CONTROL

DE Hybrid offers the most advanced control technology, with all models fitted with easy to use digital controls.

DE003-062 feature the iDRY electronic controller, whilst DE080-375 are supplied with the tDRY microprocessor.

- Digital LED display showing worded and coded messages, easy to understand even from a distance.
- Digital dew point display (numerical on DE080-375).
- Air inlet temperature display (DE080-375).
- LED informing User that the dryer is in energy saving mode.
- Full programmability of parameters, allowing personalization to User needs.
- Multiple alarms (4 on iDRY, 14 on tDRY) supervise dryer operation, with alarm LED indication.
- Programmable User alarm.
- Alarm history (DE080-375), memorizes previous 50 alarms.
- Service warning, informing User that preventive maintenance should be carried out.
- Possibility to choose between two dew points, allowing even higher energy savings when conditions permit it (eg. summer operation).
- Condensate drain control (iDRAIN or electronic zero loss drain), including manual drain test function.
- Remote on/off function.
- General alarm volt free contact (DE080-375).
- Standard TTL serial interface.
- Possibility to connect the dryer to a supervisor system via RS485 (Modbus and other leading versions).



### Lowest dew points

The stainless steel demister efficiently removes condensed moisture at all airflows (unlike centrifugal separators).

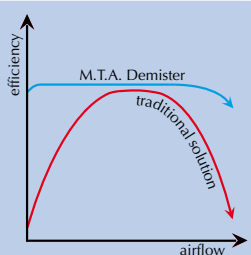
The thermal storage acts as a buffer covering sudden load variations, avoiding the dew point peaks of hot gas by-pass solutions.

### Environmental & safe

DE Hybrid's high energy savings reduce its environmental impact.

Environmentally friendly refrigerant R134a and non-toxic silica mass are standard on all models.

There is no risk of cross contamination between the refrigerant and compressed air.



## iDRAIN CONDENSATE DRAIN

MTA's unique iDRAIN condensate drain (patent pending) automatically adapts its operation according to the load on the dryer, ensuring notable reductions in energy losses.

Furthermore the wide drainage orifice, which permits forced condensate drainage, ensures that the chance of impurities blocking the drain (a frequent danger on typical drains) is all but eliminated, and also reduces maintenance needs.

iDRAIN is fitted as standard on every single DE Hybrid Dryer.

## GTS TECHNOLOGY: THE BENEFITS

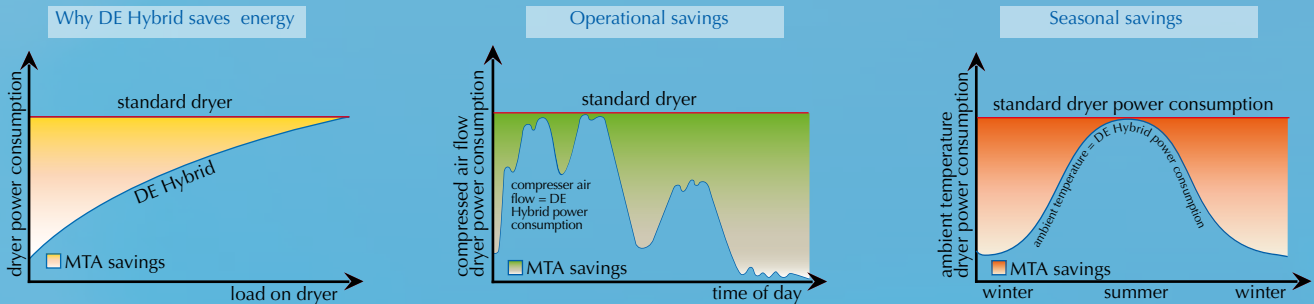


### Energy savings of up to 80%:

GTS continuously matches dryer capacity to the load, providing energy savings of up to 80% in everyday conditions:

**Operational savings** – compressed air systems operate at full load capacity for only a fraction of the time; DE Hybrid's energy consumption is automatically reduced in all partial and zero-load conditions.

**Seasonal savings** – dryers are typically selected to meet the most demanding (summer) loads, but most of the time the actual load is much lower. DE Hybrid adapts dryer operation in mid-season and winter operation.



**Simple and reliable** - Like a household refrigerator, GTS's uncomplicated cooling circuit, provides long-term trouble-free operation.

**No risk of freezing** - GTS avoids the risk of freezing in winter associated with hot gas valve dryers.

**Constant dew-point** - Unlike standard dryers, GTS's thermal storage provides instant extra capacity in the event of sudden load variations, thereby avoiding dew point spikes.

**Quick-start-up** - With GTS's direct heat exchange there is no need for a cool down period at start-up.

**Continuous operation** - There is no need to turn the dryer off, GTS continuously monitors the load and performs accordingly.

**Long service life** - Without the need for a hot-gas bypass to control its capacity, the refrigerant compressor runs cooler and less often, thereby extending the service life of the dryer.

## PATENTED GTS TECHNOLOGY: HOW IT SAVES UP TO 80% OF YOUR ENERGY

DE Hybrid's patented GTS exchanger is the secret to its remarkable energy savings. Featuring the most compact thermal storage unit on the market, this extended surface heat exchanger features an air-to-air freecooler (from DE009) and special insulation to reduce energy loss.

The unique GTS exchanger's compressed air and refrigerant tubes are encased in a bed of silica mass. Aluminium fins connect the air and refrigerant tubes together. Consequently heat transfers from the compressed air to the refrigerant both directly through the fins, and indirectly through the silica.

### Full load (maximum operating conditions)

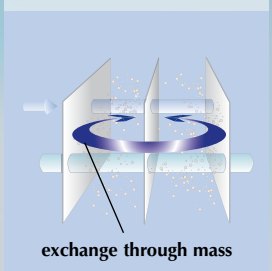
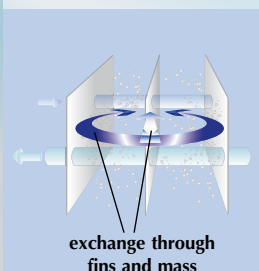
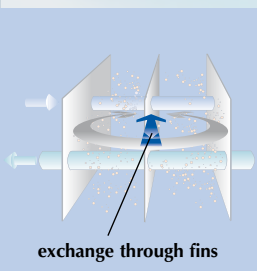
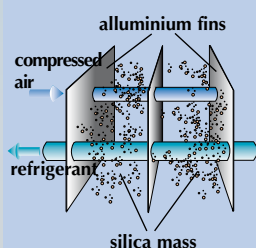
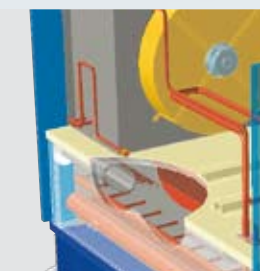
The compressed air is cooled directly through the aluminium fins. In this condition, since heat does not travel through the mass, efficiency is maximized. The silica provides heat insulation from ambient heat gain.

### Partial Load (typical conditions)

Since the refrigeration capacity is greater than the load, the excess capacity cools the silica mass. The compressed air is then cooled by the mass, allowing simple compressor on/off cycling to closely match the load.

### Zero load (stand-by conditions)

Since there is no compressed air load, the dryer's refrigeration system only operates to maintain the mass at design temperature. The result is near-zero power consumption with immediate restart capability.



Model	Airflow		Nominal abs. power kW	Air connections	Overall dimensions (mm)				Weight (Kg)
	m <sup>3</sup> /h	m <sup>3</sup> /min.			A	B	C	D	
DE 003	17	0,28	0,15	1/2"	530	300	510	41	35
DE 004	24	0,40	0,17	1/2"	530	300	510	41	36
DE 006	35	0,58	0,21	1/2"	530	300	510	41	35
DE 009	54	0,90	0,18	1/2"	530	300	510	41	39
DE 012	73	1,22	0,29	1/2"	530	300	510	41	41
DE 018	108	1,80	0,39	3/4"	650	370	750	41	65
DE 025	148	2,47	0,53	3/4"	650	370	750	41	67
DE 032	190	3,17	0,55	1"	650	370	750	41	80
DE 038	228	3,80	0,74	1"	650	370	750	41	80
DE 049	295	4,92	0,82	1"	780	370	850	41	103
DE 062	370	6,17	0,84	1 1/2"	780	735	940	52	167
DE 080	480	8,00	1,10	1 1/2"	780	735	940	51	189
DE 100	600	10,00	1,53	2"	865	1.017	1.100	51	260
DE 120	720	12,0	1,85	2"	865	1.017	1.100	51	264
DE 140	840	14,0	2,22	2"	865	1.017	1.100	51	293
DE 170	1020	17,0	2,37	2 1/2"	865	1.317	1.100	51	378
DE 195	1170	19,5	3,16	2 1/2"	865	1.317	1.100	51	393
DE 225	1350	22,5	3,55	DN 80	962	1.590	1.568	122	650
DE 275	1650	27,5	4,57	DN80	962	1.590	1.568	122	770
DE 375	2250	37,5	6,11	DN100	962	1.810	1.568	122	930

Data refers to the following working conditions: air FAD 20 °C / 1bar A, pressure 7 bar(g), ambient temperature 25 °C, air inlet temperature 35 °C, pressure dew point 3 °C, according to ISO 8573.1 standards.

Dimensions refer to version with iDRAIN. Weights are net (without packing). The refrigerant used is R134a.

Maximum working pressure 16bar(g) (25, 45 or 50 bar(g) on request); maximum ambient temperature 50 °C; maximum inlet temperature 70 °C.  
Power supply: 230V ±10% / 1Ph / 50Hz (DE003-080); 400V ±10% / 3Ph / 50Hz (DE100 - 375); 60Hz available on request.

The correction factors in the following table should be used as a guide only;  
for accurate selection at conditions differing from the above the selection software should be utilised.

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

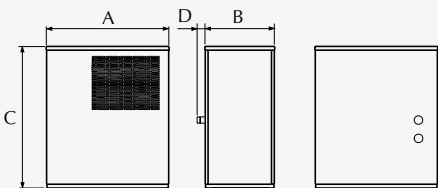
working pressure	bar (g)	3	4	5	6	7	8	9	10	11	12	13	14	15	16
correction factor	K1	0,71	0,82	0,90	0,96	1,00	1,04	1,07	1,09	1,11	1,13	1,15	1,16	1,18	1,19

ambient temperature	°C	20	25	30	35	40	45	50
correction factor	K3	1,05	1,00	0,95	0,89	0,84	0,78	0,72

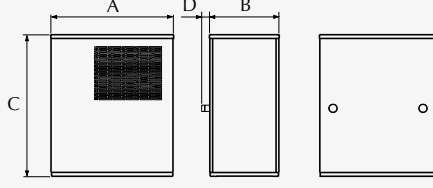
pressure dew point	°C	3	5	7	9
correction factor	K4	1,00	1,24	1,38	1,38

air inlet temperature	°C	30	35	40	45	50	55	60	65	70
correction factor	K2	1,23	1,00	0,81	0,66	0,57	0,52	0,48	0,44	0,40

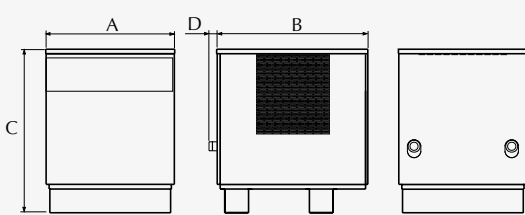
DE 003-006



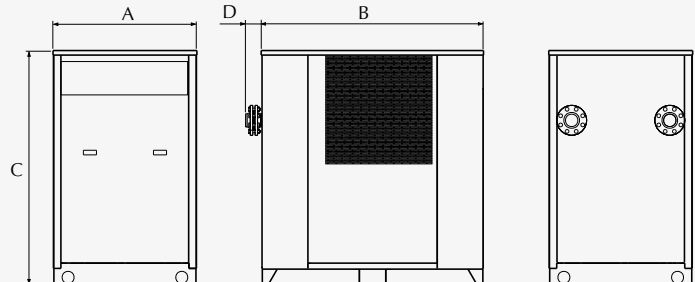
DE 009-049



DE 062-195



DE 225-375



Complete your compressed air treatment system with M.T.A. aftercoolers, separators, filters, adsorption dryers, drains, oil-water separators and chillers.



## ENERGY FOR THE FUTURE

MTA was born over 30 years ago with a clear objective: improving mankind's relationship with two distinct natural resources, air and water, and optimising their transformation into energy sources. And as each application differs, so MTA offers a personalised energy solution perfectly aligned to each individual need. At MTA energy is our business, and improving your relationship with your energy is our aim.

## STRATEGIC DIVERSIFICATION

MTA covers three distinct market segments. As well as Compressed Air & Gas Treatment solutions, MTA offers products for Industrial Process Cooling, as well as Air Conditioning solutions. MTA is renowned for the innovation it brings into each of these three sectors; in fact our strategic diversification offers our Customers unique benefits unseen in their individual fields.

## FAR REACHING BUT ALWAYS CLOSE BY

MTA is present in over 80 countries worldwide. 7 MTA Sales Companies cover 4 continents. Expert knowledge and an accurate attention to application consultancy and service support guarantees that our Customers can look forward to long term peace of mind and an optimized energy solution. We always remain close to our Customers, so wherever you may be, we are close by.

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Cooling, conditioning, purifying.



MTA is ISO9001 certified, a sign of its commitment to complete customer satisfaction.



M.T.A. products comply with European safety directives, as recognised by the CE symbol.

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