



COMPRESSED AIR
& GAS TREATMENT

NEW
RANGE



Marco Polo

Refrigeration compressed air dryers with
Energy Saving Impulse Technology and Thermal Mass
Nominal rate flow 0,6 – 39,0 m³/min

MPTECH

IMPULSE
TECHNOLOGY

THERMAL MASS
TECHNOLOGY



LARGE CONDENSER FOR HIGH AMBIENT TEMPERATURES

MICROPROCESSOR BASED CONTROL

MINIMUM PRESSURE DROPS ENSURED BY THE ADVANCED 3-IN-1 HEAT EXCHANGER (<0,2 bar)

NEW IMPULSE TECHNOLOGY FOR IMPORTANT ADVANTAGES IN TERMS OF ENERGY SAVING

POWERFUL PERFORMANCE WITH HEAVY DUTY SPECIFICATION

LOWEST ENVIRONMENTAL IMPACT BY ECO-FRIENDLY REFRIGERANTS

*Purifying your compressed air,
increasing your efficiency.*



Cooling, conditioning, purifying.

Impulse Technology

- Typically refrigerated air dryers are usually sized for the most extreme working conditions (i.e., summer season with the air compressor operating at maximum load), however this condition is rarely achieved;
- Air demand usually fluctuate during the day and average ambient and inlet temperatures throughout the year are much lower than maximum used to size the system, so that the dryer rarely operate at full load;
- Impulse Technology combines the technologies of regulation by impulses of the refrigerant flow (cooling capacity control for medium/high compressed air flow) and thermal storage effect (low compressed air flow) to produce maximum energy savings and the lowest dew point.

Standard features

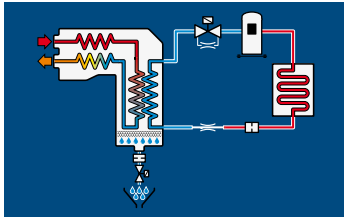
- Large condenser for high ambient temperatures (T_{amb} max +50 °C);
- Eco-friendly refrigerants: R134a mod. 0060-1200; R404A mod. 1400-3900 (ODP=0);
- New advanced heat exchanger: 3-in-1 compact aluminum heat exchanger (counter flow design) including an Air-Air heat exchanger, the evaporator and a demister separator combined in a single module;
- Moisture separator: an high efficiency stainless steel maintenance free demister separator offers perfect condensate separation even at partial air flows;
- Compressors: piston compressors (mod. 0060-2400); scroll compressors (mod. 2800-3900);
- Microprocessor control and energy management system DEC/DEC PRO;
- Electrical panel protection degree IP54 (mod. 2800-3900);
- Potential-free general alarm contact;
- Remote ON/OFF function;
- Phase monitor standard (mod. 2800-3900);
- Microprocessor controlled timed drain including an anti-blockage ball valve and a strainer (with manual drain test button).

How it works

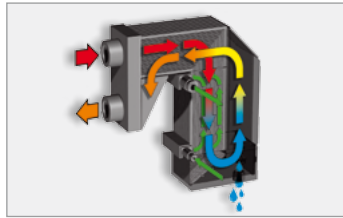
- Hot moist compressed air enters the Air-to-Air heat exchanger where it is precooled by the dry air leaving the dryer;
- The refrigerant compressor compresses the refrigerant gas and push it through the condenser where it is condensed in high pressure liquid;
- The refrigerant liquid then passes through a capillary/calibrated orifice that meters it into the evaporator as a low pressure liquid;
- The microprocessor adapts the working cycle to the real working conditions by controlling through "impulses" the opening and closing of solenoid valve. In partial load conditions only a small portion of the refrigerant flows through a calibrated orifice of the solenoid valve, to the compressor that therefore consumes less energy;
- The precooled air enters the evaporator where it is cooled to the required dew point by the incoming refrigerant liquid that changes phase and becomes a low pressure gas suitable to continue the process as it returns to the suction side of the refrigerant compressor;
- Thanks to this cooling effect, water vapor condenses out of the air and is efficiently separated by the demister, then removed by the condensate drain;
- The exiting cold dry compressed air then returns to the Air-to-Air heat exchanger where it is reheated by the incoming air above the dew point, to prevent sweating in your plant.

Option & Kit

- Zero loss drain with capacitive sensor (mod. 0280-3900);
- RS485 serial connection to supervisor systems (MODBUS);
- Pneumatic bypass kit;
- Water-cooled version (special unit mod.1400-3900).



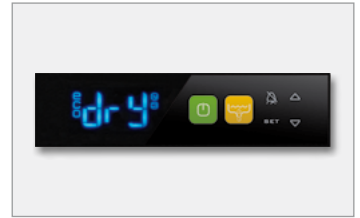
Outstanding technology provides drying capacity control (medium/high compressed airflow) and thermal mass effect (low compressed air flow) to produce maximum energy savings.



New advanced 3-in-1 heat exchanger
Extremely robust aluminum structure including an Air to Air heat exchanger, an evaporator and a water separator specifically engineered to maximize the heat transfer.



Powerful performance
MPiTECH feature piston compressors or high efficiency scroll compressors offering reduced energy consumptions, low vibrations, and high reliability.



Excellent microprocessor control
MPiTECH is controlled and protected through DEC controller. A comprehensive digital display keeps the user fully informed. Remote supervision RS485 can easily be implemented.

Model	Air flow rate (1)		Nominal absorbed power kW	Power supply V/Ph/Hz	Air connections Rp	Overall dimensions (mm)			Weight (Kg)
	m ³ /min FAD 20° C	m ³ /h FAD 20° C				Width	Depth	Height	
MPiT 0060	0,60	36	0,13	230/1/50	3/8"	319	298	390	18
MPiT 0120	1,20	72	0,22	230/1/50	3/8"	319	298	390	19
MPiT 0160	1,60	96	0,22	230/1/50	1/2"	359	298	415	22
MPiT 0210	2,10	126	0,35	230/1/50	1/2"	359	298	415	22
MPiT 0280	2,80	168	0,42	230/1/50	1"	380	514	625	35
MPiT 0440	4,40	264	0,60	230/1/50	1"	380	514	625	39
MPiT 0600	6,00	360	0,91	230/1/50	1"	680	511	860	68
MPiT 0700	7,00	420	0,93	230/1/50	1 1/2"	680	511	860	75
MPiT 0900	9,00	540	0,99	230/1/50	1 1/2"	680	511	860	76
MPiT 1200	12,00	720	1,34	230/1/50	1 1/2"	755	555	995	94
MPiT 1400	14,00	840	1,44	230/1/50	2"	883	721	1107	138
MPiT 1650	16,50	990	1,80	230/1/50	2"	883	721	1107	140
MPiT 2400	24,00	1.440	2,55	230/1/50	2 1/2"	1170	939	1180	247
MPiT 2800	28,00	1.680	2,88	230/1/50	2 1/2"	1170	939	1180	255
MPiT 3400	34,00	2.040	3,37	230/1/50	2 1/2"	1170	939	1180	274
MPiT 3900	39,00	2.340	3,80	230/1/50	2 1/2"	1170	939	1180	276

(1) Air flow rate: data refers to the following conditions: air FAD 20 °C/1 bar(a), pressure 7 bar(g), ambient temperature 30 °C, air inlet temperature 35 °C, according to ISO 8573.1 standards. Pressure Dew Point from 3° C to10 °C.

Weights are net (without packing and for timed drain configuration). Refrigerant fluids: R134a [MPiT 0060-1200], R404A [MPiT 1400-3900]. Protection class IP22.

Maximum working pressure 16 bar(g); maximum ambient temperature 50 °C; maximum inlet temperature +70 °C [MPiT 0060-1200], +60 °C [MPiT 1400-3900].

For differing working conditions please refer to correction factors available on the technical documentation or contact MTA SpA.

Capacity correction factors (indicative values):

CAPACITY = RATED VALUE 7 bar(g) x K1 x K2 x K3

Working pressure	bar(g)	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction factor	K1	0,63	0,76	0,87	0,95	1,00	1,04	1,07	1,09	1,09	1,09	1,09	1,09	1,09	1,09

Air inlet temperature	°C	30	35	40	45	50	55	60	65	70
Correction factor	K2	1,1	1,00	0,79	0,61	0,46	0,38	0,38	0,38	0,38

Ambient temperature	°C	20	25	30	35	40	45	50
Correction factor	K3	1,08	1,04	1	0,95	0,91	0,87	0,83



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



MTA products comply with European safety directives, as recognised by the CE symbol.



EAC Declaration

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