MEDICAL Adsorption dryers FOR BREATHING AIR
ADEC Heatless adsorption dryers for breathing medical air compressor systems (MACS series CE 0653)

The ADEC dryers, are used to remove moisture from compressed air for medical use as well as for industrial use. After air pre-treatment the dryer removes water vapor down to very low residual concentration of water. The ADEC dryers operate completely automatically and are designed for continuous duty.

**Features of the control panel**
- Built in LCD screen (2×16 characters) for displaying all measurements (user interface)
- Three push buttons for viewing selection and other monitoring operation (user interface)
- Dew point monitor
- Audible signal for High/Low alarm
- Remote monitoring
- Remote start/stop
- Alarm/event report and log file (up to 200 records)
- Power led indicator and additional three status led indicators
- Built in RJ45 for Ethernet connection (1 port, 10/100 Base-T) for web interface (as standard)
- MODBUS TCP/IP supported for connection to BMS systems (as standard)
- On site firmware upgrade capability
- Real time clock capability
- Remote alarm signal (dry contact)
- CO and CO₂ indications
- Pressure monitor for each bed

**Product highlights:**
- Full electronic control panel
- Top operational reliability
- Minimum operation cost
- Long life time
- Easy maintenance
- User friendly
- Low installation cost
- Easy and quick installation

**Features:**
- Economizer function, dew point dependent mode (options of -20°C, -40°C, -50°C, -70°C or user defined)
- Fix mode of pressure dew points (options of -20°C, -40°C, -50°C, -70°C or user defined)
- Auto restart mode
- Remote control
- Low pressure drop
- Desiccant of high quality
- Single or double configuration according to EN 7396-1 and HTM 02-01
- Multi-bed option with active carbon or CO₂ reduction bed
- Cyclic operation supported (up to 4 as optional)
- Desiccant bed of 2 layer (water resistant)
- Long life desiccant service (15 years)
- High quality pressure vessels made in EU
- Vessels galvanized internally and painted externally
- Top quality, extra durable coating
- Ecomode system
- Embedded filter station

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**Correlation Factor T for inlet air temperature**

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**Correlation Factor P for inlet air pressure**

| Inlet Air Pressure (barg) | 0.5 | 0.74 | 1.00 | 1.08 | 1.15 | 1.23 | 1.30 | 1.35 | 1.40 | 1.45 | 1.50 | 1.55 |
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**ADEC dryers operate completely automatically and are designed for continuous duty.**
The high quality of the output breathing air is ensured through the following five (5) stages of purification/filtration.

Pre-filters (upstream the dryers):
1. WR grade:
   - Min / max temp.: +1/100°C
   - Initial ΔP: 30 mbar
2. RM grade:
   - Filtration: 10 μ
   - Residual oil: 15 ppm
   - Filtration efficiency: 90%
   - Min / max temp.: +1/80°C
   - Initial ΔP<50 mbar
   - Initial saturated ΔP<120 mbar
3. RB grade:
   - Filtration: 1 μ
   - Residual oil: 0.1 ppm / 0.1 mg/m³
   - Filtration efficiency: 99.95%
   - Min / max temp.: +1/80°C
   - Initial ΔP<60 mbar
   - Initial saturated ΔP<140 mbar
4. RA grade:
   - Filtration: 0.01 μ
   - Residual oil: 0.01 ppm / 0.01 mg/m³
   - Filtration efficiency: 99.9999%
   - Min / max temp.: +1/80°C
   - Initial ΔP<80 mbar
   - Initial saturated ΔP<200 mbar

After-filters (downstream the dryers):
5. RF grade:
   - Filtration: 1 μ
   - Filtration efficiency: 99.95%
   - Min / max temp.: +1/100°C
   - Initial ΔP<60 mbar
6. CA grade:
   - Residual oil: 0.003 ppm/0.003 mg/m³
   - Min / max temp.: +1/50°C
   - Initial ΔP<250 mbar
   - Substitution: coal saturated
7. Sterile filter:
   - Bacteriological stainless steel filters of sterilization.

Upgrade kit for existing dryers:
1. Electronic control panel with economizer
2. Embedded breathing air purification tower
G. SAMARAS S.A. is an international multi-regional company located in Thessaloniki, Greece. The company is active in the medical gas field since 1968. Having a track record of continuous growth and a gained leadership in the Greek market, in which it holds more than 85% of the share. The company has a strong reputation due to its **professionalism, reliability-solvency and responsibility.** In addition, the **high quality** of the products and the services that is offered, the know-how of medical gas supply systems, the durability of its products and its flexibility, has lead the company to a strong market position. Further, the company holds a very wide range of products and service portfolio which includes everything on medical gas supply systems. From the very start, G. Samaras S.A. has recognized the importance of international growth. As a result, the company has built up a lengthy export’s activity reference list worldwide. The factory, staff offices and the warehouse occupies a building of 4,000 m² in the Industrial Area of Thermi, Thessaloniki (Northern Greece). Company’s skilled personnel consist of electrical and mechanical engineers, graduate and post-graduate economists, licensed welders and electricians. G. SAMARAS S.A. personnel is the driving force of the company. All the staff, beside the exceptional professional skills, is characterized by the following attitudes:

- a bias to act (pro-active behaviour)
- staying close to the customer
- productivity through people
- result orientation
- autonomy and entrepreneurship

G. SAMARAS S.A. is a quality oriented company. In alignment with this aspect the company holds the ISO 9001 and ISO 13485 certifications. All of its products are produced and tested according to European Standards and regulations and they are labeled with CMark. In addition, complying with the requirements some products are labeled in categories IIa and IIb where it is obligatory or necessary.

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**SERVICES**
- Designing - Calculations
- Installations of Medical Gas Systems
- Testing, Commissioning & Certification of Medical Gas Systems
- Maintenance of Medical Gas Systems - After Sales Support
- Training
- GSM/GPRS Remote Monitoring Management

**PRODUCTS**
- Medical Gas Network
  - Racors / Shut-off valves / Nickel brass valves / Non-return valves for medical use / Electromagnetic motorized valves / Safety valves
  - Special Tools for Pipe Network Installations
  - Antistatic Tubes - Plastic flexible tubes - Fittings and nipples
- Medical Gas Central Stations
  - Supply Systems with Cylinders
  - Oxygen Vessels (LOX)
  - Medical Vacuum Systems (MVCS series)
  - Medical Air Compressor Systems (MACS series)
  - Medical Gases Central Stations Container Cabinets
  - Oxygen- Nitrogen Generators
- Medical Gas Terminal Units / Outlets
- Control and Reducer Panels
  - Reducers
  - Second Stage Pressure Regulator Units (Y/S GS N S/D)
  - Area valve service unit (kib GS N)
- Alarm Systems for Medical Gas Panels (IP based)
  - Sensors
  - MGSAP monitoring and alarm systems
  - Local Alarm Panel - Single Station Alarm Panel / MGSAP LS / MGSAP L6
  - Central Alarm Panel for Medical Gases MGSAP C1
  - Remote Management System (Medimote) MGSAP G1
- Bed Head Units
  - Wall mounted BHU
  - ATHOS series - Ceiling suspended BHU
  - Aluminium structural framing - BR profile
  - Power column / Bed-side locator
  - Aegean series Bridge BHU
  - Single BHU - Gas outlet profile
- Ceiling Pendant Arms
  - Ceiling Pendant for OPT
  - Typical ICU lay-out with ceiling pendants Type "Makedonia"
  - Ceiling Pendants Arms accessories for 38 tubes support system
- OPT Equipment - Control Panel
  - Internal monitor OPT control panel
  - X-ray viewer
  - Electrical power distribution systems
  - Hospital timekeeping systems
  - Scrub up (1/2 positions)
- OPT Lighting Systems & Examination Lamps
- Hospital Beds
- Nurse Call Systems
- Secondary Medical Equipment