

TECHNICAL DESCRIPTION – AIR COMPRESSOR AE 7RE

Screw-type air compressor, air-cooled, oil-lubricated, sound-insulated, model **AE 7RE**, manufactured by **PARAMINA**, fitted with a **7.5 kW / 10 Hp** motor, belt-driven.

Technical Specifications			
Air Compressor Type	AE 7R		
Maximum Operating Pressure	7.5 bar	10 bar	13 bar
Nominal Operating Pressure	7 bar	9 bar	12 bar
Air Output FAD per ISO 1217 at nominal operating pressure	1.23 m³/min	0.95 m³/min	0.84 m³/min
Electric Motor (F. IP 55)	7.5 kW / 50 Hz / 400 V		
Cooling motor power	0.2 kW		
Outlet air temperature	5 – 8 °C above ambient temperature		
Noise level	67 dB(A) 1m (±2)		
Weight	256 Kg		

Reference Conditions			
Absolute inlet air pressure	1 bar		
Inlet temperature	20 °C		
Relative humidity	0 %		
Nominal Operating Pressure	7 bar	9 bar	12 bar

Limits			
Maximum Operating Pressure	7.5 bar	10 bar	13 bar
Minimum Operating Pressure	4 bar		
Maximum Ambient Temperature	45 °C		
Minimum Ambient Temperature at initial start-up	0 °C		

COMPRESSOR HEAD

The compressor head (screw block) is manufactured by **ROTORCOMP/BAUER, Germany**. Its single-piece cast-iron construction, free of unnecessary piping and thus of potential leak points, incorporates:

- **The compression element (air-end)** with latest-technology rotors supported on **HEAVY-DUTY bearings**, maximum operating pressure 15 bar, delivering high efficiency and an exceptionally long service life.
- **The intake of the compression element**, comprising:
 - A high-efficiency dry-type air filter.
 - The automatic intake-air regulation system with inlet/non-return valve for loaded / unloaded operation.

The compressor operates within a pre-set pressure band (ON LOAD – OFF LOAD). At start-up the inlet valve is closed to minimise inrush current. It then opens and the compressor begins producing compressed air. Once pressure reaches the upper limit (max pressure), the inlet valve closes and the compressor runs OFF LOAD at minimum power consumption. During OFF LOAD operation the machine temperature drops because there is no compression, while oil continues to circulate normally.

If, after a (adjustable) period of time, the pressure does not fall below the lower set-point, the machine stops completely and remains on standby. As soon as pressure drops below the lower limit, the compressor restarts and begins producing air (ON LOAD).

- **Oil/air separation system**: initial centrifugal separation followed by the separator element (externally mounted for easy replacement). *Residual oil carry-over after the separator does not exceed 2 mg/m³.*
- **Oil filter** (external, for easy replacement)
- **Thermostatic valve**
- **Cast-iron oil tank** with internal anti-corrosion treatment
- **Oil level indicator**
- **Safety valve**
- **Combined minimum-pressure / non-return valve**

Power transmission from motor to head is via belts, with a pioneering automatic tensioning system.

COMPRESSOR COOLING

- **Aluminium oil cooler**, ensuring continuous comfortable operation even at ambient temperatures up to 45 °C.
- **Air after-cooler**, to cool compressed air and condense the majority of its moisture content.
- **Cooling fan with a dedicated electric motor.**
- **Centrifugal condensate separator**, for automatic collection and removal of condensate.

INSTRUMENT PANEL (PARAMINA Controller)

■ **Digital instrument / operating panel** (electronic control of the unit and its operation)

■ **Display readings:**

- Operating pressure (upper limit, lower limit)
- Operating temperature
- Pressure before the separator
- Differential pressure across the separator
- Total and loaded running hours
- Remaining hours until oil change, oil filter, air filter, separator element replacement
- Selection of pressure and temperature units
- Automatic restart after voltage dip
- Condensate separator drain valve activation (W.S.)
- Drain duration
- Emergency stop activation
- Remote start / stop control
- Remote pressure control
- Number of starts per hour

■ **Alarms:**

- Oil filter
- Air filter
- Oil change
- Separator element
- Motor overload

■ **Fault indications:**

- Pressure overrun
- Temperature limit exceeded
- Motor fault
- Voltage fault
- The last fifteen (15) fault indications are stored in chronological order, together with the running hours at the time each fault occurred.

* **Note:** The PARAMINA Controller is also compatible with variable-speed (inverter) compressors.

ELECTRICAL SYSTEM

- Main switch
- Star-Delta starting system
- Thermal motor protection switch
- Voltage and phase-rotation monitor
- DIN rail fuses
- Transformer 380 / 24 V
- Emergency stop button
- Electrical components by **TELEMECANIQUE**

SOUND INSULATION

The compressor is enclosed in sound-insulating covers with large access doors for easy inspection and maintenance.

The machine is supplied with an instruction, operation, maintenance and spare-parts manual in Greek.