Mbsm.pro, Compressor, P14TY, 3/8 hp, Cooling, hmbp, r12, 1ph220v

Category: compressor
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https://www.mbsm.pro/wp-content/uploads/2025/04/Mbsm_dot_pro_private_PDFMbsm_dot_pro_private_PDF_S26TY.pdf

The **P14TY** is a refrigerant compressor model listed in the provided datasheet, designed for use in refrigeration or air conditioning systems. Below is a summarized technical breakdown of its key specifications:

P14TY Compressor Specifications

Parameter	Value	Notes
Model	P14TY	Part of a series (likely Panasonic or similar brand).
Power (HP)	3/8 HP	~0.375 horsepower.
Displacement	14.00 cm³	Cylinder volume per revolution.
Refrigerant	R12 (CFC)	Older refrigerant (now phased out; check local regulations).
Cooling Capacity	– **W**: 985 W – **kcal/h**: 996 – **BTU/h**: ~3,360	At -25°C evaporating temp (CECOMAF conditions).
COP (Efficiency)	1.73 (W/W)	Coefficient of Performance.
Oil Type/Volume	400 cm³	Mineral or alkylbenzene oil (for R12).
Weight	11.5 kg	
Motor Type	CSIR (Capacitor Start, Induction Run)	Single-phase operation.
Starting Method	Relay (R)	
Voltage/Frequency	220-240V, 50Hz	Single-phase AC.
Expansion Type	Capillary tube (C) or Valve (V)	Configurable based on application.

Key Observations

1. **Refrigerant (R12)**:
   - The P14TY is designed for **R12**, an obsolete CFC refrigerant banned under the Montreal Protocol due to ozone depletion. Modern alternatives (e.g., R134a, R404A) require retrofitting or replacement.
2. **Applications**:
   - Likely used in **medium-temperature refrigeration** (e.g., commercial refrigerators, chillers) given its capacity and COP at -25°C evaporating temperature.
3. **Efficiency (COP 1.73)**:
   - Lower COP compared to modern compressors, indicating higher energy consumption.
4. **Replacement Considerations**:
   - If retrofitting for alternative refrigerants, ensure compatibility with oil type (e.g., POE for HFCs) and system components.
   - Verify electrical specs (voltage, starting torque) for new installations.

Testing Conditions (CECOMAF/ASHRAE)

- **Evaporating Temp**: -25°C (LBP testing for low-temperature applications).
- **Condensing Temp**: 55°C.
- **Ambient Temp**: 32°C.

Actionable Recommendations

- **For Maintenance**:
  - Check oil levels and contamination if still using R12.
  - Inspect capacitors/relays (common failure points in CSIR motors).
- **For Replacement**:
  - Consider modern equivalents (e.g., Panasonic/Copeland models for R404A/R134a).
  - Consult HVAC technician for system compatibility and retrofitting.