Compressor, Konor, GPY16AF, 1/2 HP, R134a, LBP

Category: Refrigeration
written by www.mbsm.pro | 18 January 2026



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Focus Keyphrase: Konor GPY16AF R134a Compressor Technical Specifications and Professional Replacement Guide
SEO Title: Mbsmpro.com, Compressor, Konor, GPY16AF, 1/2 HP, R134a, LBP, 220-240V 50Hz, Freezing, Technical Data
Meta Description: Explore the full technical breakdown of the Konor GPY16AF compressor. This 1/2 HP R134a unit is ideal for LBP freezing applications. Includes specs, wiring, and cross-reference.
Slug: konor-gpy16af-compressor-r134a-lbp-specs
Tags: Konor, GPY16AF, R134a, 1/2 HP, LBP, Compressor, Freezing, Refrigeration, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm
Excerpt: The Konor GPY16AF is a robust hermetic reciprocating compressor engineered for low back pressure applications using R134a refrigerant. With a displacement of 16.2 cm^3, this 1/2 HP unit is a staple in commercial freezers and large refrigerators. This guide provides detailed technical data, wiring diagrams, and professional cross-reference options for field technicians.

Mbsmpro.com, Compressor, Konor, GPY16AF, 1/2 HP, R134a, LBP, 220-240V 50Hz

The refrigeration industry relies on precision and durability, and the Konor GPY series stands out as a high-performance solution for low-temperature requirements. Specifically, the GPY16AF model is a hermetic reciprocating compressor designed to meet the rigorous demands of deep-freezing units. Utilizing R134a refrigerant, this compressor balances thermal efficiency with mechanical reliability, making it a preferred choice for large-capacity domestic appliances and light commercial units.

Technical Specification Table

Feature	Specification
Model	GPY16AF
Utilisation	LBP (Low Back Pressure)
Domaine	Freezing / Deep Cold Storage
Oil Type and Quantity	POE Oil / 350 ml
Horsepower (HP)	1/2 HP
Refrigerant Type	R134a
Power Supply	220-240V / 50Hz / 1 Phase
Cooling Capacity BTU	Approximately 1540 BTU/h (at -23.3°C ASHRAE)
Motor Type	CSIR (Capacitor Start – Induction Run)
Displacement	16.2 cm^3
Winding Material	High-Grade Copper
Pressure Charge	Suction: 0.5 – 5 PSI (Normal LBP range)
Capillary Recommendation	0.042″ x 10ft (Variable per load)
Application Units	Large Chest Freezers, Vertical Freezers
Temperature Function	-35°C to -15°C
Fan Requirement	Static or Forced Air (Fan recommended for high ambient)
Commercial Use	Yes, Light Commercial / Domestic
Amperage (FLA)	2.5 A – 2.8 A
LRA (Locked Rotor Amps)	17 A
Type of Relay	Potential or Electromagnetic Relay
Capacitor Requirement	Starting Capacitor (approx. 60-80 µF)

Engineering Perspective: Performance Analysis

From a field worker’s perspective, the GPY16AF is recognized for its high volumetric efficiency. The 16.2 cm^3 displacement allows for rapid pulldown times in large evaporation systems. Unlike smaller residential compressors, this unit features reinforced copper windings that handle the high torque required during the startup phase of a heavy refrigeration cycle.

When comparing the Konor GPY16AF to other market leaders, we notice a distinct advantage in its thermal management. The internal motor protection is calibrated to prevent burnout during voltage fluctuations, a common issue in many regions.

Cross-Reference and Replacement Models

Finding an exact match for a compressor in the field is not always possible. Below are professional alternatives categorized by refrigerant type.

Table: Top 5 Replacements (Same Refrigerant – R134a)

Brand	Model	HP	Displacement
Embraco	FFI12HBX	1/2 HP	11.14 cm³
Danfoss/Secop	SC15G	1/2 HP	15.28 cm³
Tecumseh	AE2415Y	1/2 HP	12.50 cm³
Kulthorn	AE7440Y	1/2 HP	14.50 cm³
Huayi	HYE15YG	1/2 HP	15.00 cm³

Table: Top 5 Replacements (Alternative Refrigerant – R404a/R600a)

Brand	Model	Gas Type	Note
Embraco	NEK2150GK	R404a	Requires TXV adjustment
Secop	SC18CL	R404a	High cooling capacity
Jiaxipera	VNX1116Y	R600a	High efficiency / Low noise
Nidec	GPY12RAA	R600a	Eco-friendly alternative
Danfoss	NL11MF	R134a/R404a	Multi-refrigerant capable

Electrical Wiring Schema (General CSIR)

codeText

```
[Neutral] ---------------- (Common Terminal)
                                        |
                                   [Winding]
                                        |
       [Live] -----[Overload]----[Relay]---- (Main Winding)
                                     |
                                 [Start Cap]
                                     |
                                 (Start Winding)
```

Installation Best Practices and Field Tips

1. **Vacuum Procedure:** Since the GPY16AF uses POE oil, it is extremely hygroscopic. A deep vacuum of at least 500 microns is mandatory to prevent acid formation within the system.
2. **Filter Drier Replacement:** Never reuse a filter drier. When installing this 1/2

HP unit, ensure a high-capacity XH-9 molecular sieve drier is used to handle the R134a molecular structure.

3. **Oil Management:** If the system suffered a motor burnout previously, perform a flush. POE oil will trap contaminants more aggressively than mineral oil.
4. **Capillary Sizing:** Ensure the capillary tube is not restricted. A 1/2 HP compressor generates significant head pressure; a restricted capillary will lead to premature valve failure.

Professional Benefits of the Konor GPY16AF

- **Energy Efficiency:** Optimized for lower power consumption despite high torque.
- **Low Noise Profile:** Advanced shell design dampens mechanical vibration.
- **Durability:** Built to withstand continuous operation in tropical climates.

Notice: Always verify the starting capacitor value on the specific unit label before replacement. Using an undersized capacitor can lead to starting failures, while an oversized one may overheat the start winding.



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