Samsung RT47CB663222 Compressor Specifications R600a 1/5 HP Cooling Capacity Inverter Refrigerator Spare Parts

Category: Refrigeration
written by www.mbsm.pro | 31 January 2026



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Refrigerator & Compressor Technical Specifications

Feature	Details
Model	RT47CB663222
Utilisation	LBP (Low Back Pressure)
Domaine	Freezing / Cooling (Dual Zone)
Cooling Wattage at -23.3°C	Approx. 165 – 175 W
Cubic Feet Capacity	16.8 cu.ft
Litres Capacity	476 L (Brut) / 460 L (Utile)
Kcal/h	~145 Kcal/h
Oil Type and Quantity	POE / 180 – 220 ml
Horsepower (HP)	1/5 HP
Refrigerant Type	R-600a (60g)
Power Supply	220-240V / 50 Hz
Cooling Capacity BTU	~580 – 620 BTU/h
Motor Type	BLDC (Inverter)
Displacement	10.0 to 12.0 cc
Winding Material	Copper
Pressure Charge	Low pressure (Vacuum required)
Capillary	0.028″ or 0.031″
Compatible Models	RT47, RT45, and Bespoke Series
Temperature Function	-24°C to +7°C
Fan Requirement	Static or Forced Air (Internal Fan)
Commercial use	No (Domestic / Residential)
Amperage (Running)	2.0 A (Total system max)
LRA	4.5 – 6.0 A
Relay Type	Inverter Control Board
Capacitor	4µF to 6µF (Run capacitor on board)
Country of Origin	Thailand

Compressor Replacements

Same Gas (R-600a)

1. **Secop** NLE11KK
2. **Embraco** FMXA9C
3. **Jiaxipera** T1116Y
4. **Donper** L118CY
5. **Huayi** HYB96MHU

Different Gas (R-134a Conversion)

Note: Requires complete system flush and oil change.

1. **Embraco** FFI7.5HAK
2. **ZMC** GMCC GL90AA
3. **Secop** TLES7.5KK.3
4. **Tecumseh** THG1365YS
5. **Samsung** NC4AV80 (Inverter)

Focus Keyphrase: Samsung RT47CB663222 Compressor Specifications R600a 1/5 HP Cooling Capacity Inverter Refrigerator Spare Parts
SEO Title: Mbsm.pro, Compressor, RT47CB663222, 1/5 HP, Samsung, Cooling, R600a, 460L, 220-240V 50Hz, LBP, Inverter Refrigerator
Meta Description: Detailed technical analysis of the Samsung RT47CB663222 refrigerator compressor. Includes HP rating, cooling capacity in BTU/Watts, R-600a charge details, and equivalent replacement models for professional technicians.
Slug: samsung-rt47cb663222-compressor-r600a-1-5-hp-specs
Tags: Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, Samsung, RT47CB663222, R600a, Inverter Compressor, 1/5 HP, NLE11KK, FMXA9C, T1116Y, L118CY, Refrigeration Repair, Thailand Made Refrigerator.
Excerpt: This technical guide explores the Samsung RT47CB663222 refrigerator, a high-efficiency 460-liter unit utilizing R-600a refrigerant. Operating on a 220-240V 50Hz supply, this inverter-driven system is designed for Low Back Pressure applications. We break down the motor characteristics, displacement, and provide a comprehensive list of equivalent replacement compressors for modern field service and professional repairs.

Professional Analysis: Samsung RT47CB663222 Inverter Refrigeration System

Modern refrigeration has shifted toward precision and environmental sustainability. The Samsung RT47 series represents a benchmark in this evolution, utilizing the **R-600a (Isobutane)** refrigerant. This natural gas is favored for its low environmental impact and superior thermodynamic properties compared to older HFCs.

Efficiency Metrics (COP) & Performance Data

For technicians and engineers, understanding the performance curve of the compressor is vital for diagnosing cooling issues.

Evaporating Temp (°C)	Cooling Capacity (Watts)	Power Consumption (Watts)	COP (W/W)
-30	115	110	1.05
-25	155	135	1.15
-23.3 (LBP Point)	**172**	**145**	**1.19**
-20	205	160	1.28
-15	260	185	1.41
-10	330	215	1.53

Comparative Analysis: Samsung vs. Industry Standards

When comparing the RT47CB663222 to standard 400L+ refrigerators from a decade

ago, the differences are striking. Traditional systems often used R-134a with a **fixed-speed** 1/4 HP compressor. Samsung's modern 1/5 HP inverter design provides:

1. **Lower Amperage:** The total system draws only 2.0A max, whereas older units frequently exceeded 3.5A.
2. **Precise Temperature Control:** Unlike "On/Off" cycles, this unit modulates speed to maintain a steady thermal mass.
3. **Low Noise:** Operating at lower RPMs once the target temperature is reached.

Engineering Schematics and Board Control

Since this model utilizes an inverter compressor, there is no traditional start relay. Instead, it relies on an **IPM (Intelligent Power Module)** on the control board. If the compressor fails to start, the technician should first check the 3-phase resistance of the windings (U, V, W) which should be balanced within a 10% margin.

Professional Field Advice

- **Vacuuming:** Because this system uses R-600a, a deep vacuum (to 500 microns) is mandatory. The gas charge is only 60g; even a 2g variance can lead to inefficiency.
- **Safety:** Always use a spark-free recovery pump when working with Isobutane.
- **Capillary Maintenance:** In the event of a compressor burnout, always replace the filter drier and check for capillary restrictions.



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