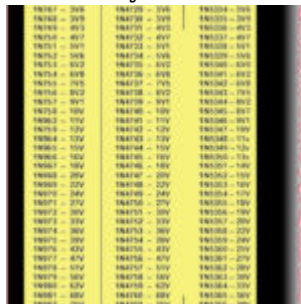


Zener Diode Series 1N746 to 1N5369

Overview

Category: Electronic

written by www.mbsmpro.com | December 22, 2025



1N746 - 3.3V	1N4733 - 33V	1N5324 - 200V
1N747 - 3.6V	1N4734 - 36V	1N5325 - 210V
1N748 - 4.0V	1N4735 - 40V	1N5326 - 220V
1N749 - 4.5V	1N4736 - 45V	1N5327 - 230V
1N750 - 5.1V	1N4737 - 51V	1N5328 - 240V
1N751 - 5.6V	1N4738 - 56V	1N5329 - 250V
1N752 - 6.2V	1N4739 - 62V	1N5330 - 260V
1N753 - 6.8V	1N4740 - 68V	1N5331 - 270V
1N754 - 7.5V	1N4741 - 75V	1N5332 - 280V
1N755 - 8.2V	1N4742 - 82V	1N5333 - 290V
1N756 - 9.1V	1N4743 - 91V	1N5334 - 300V
1N757 - 10V	1N4744 - 100V	1N5335 - 310V
1N758 - 11V	1N4745 - 110V	1N5336 - 320V
1N759 - 12V	1N4746 - 120V	1N5337 - 330V
1N760 - 13V	1N4747 - 130V	1N5338 - 340V
1N761 - 15V	1N4748 - 150V	1N5339 - 350V
1N762 - 16V	1N4749 - 160V	1N5340 - 360V
1N763 - 18V	1N4750 - 180V	1N5341 - 370V
1N764 - 20V	1N4751 - 200V	1N5342 - 380V
1N765 - 22V	1N4752 - 220V	1N5343 - 390V
1N766 - 24V	1N4753 - 240V	1N5344 - 400V
1N767 - 27V	1N4754 - 270V	1N5345 - 410V
1N768 - 30V	1N4755 - 300V	1N5346 - 420V
1N769 - 33V	1N4756 - 330V	1N5347 - 430V
1N770 - 36V	1N4757 - 360V	1N5348 - 440V
1N771 - 40V	1N4758 - 400V	1N5349 - 450V
1N772 - 45V	1N4759 - 450V	1N5350 - 460V
1N773 - 51V	1N4760 - 510V	1N5351 - 470V
1N774 - 56V	1N4761 - 560V	1N5352 - 480V
1N775 - 62V	1N4762 - 620V	1N5353 - 490V
1N776 - 68V	1N4763 - 680V	1N5354 - 500V
1N777 - 75V	1N4764 - 750V	1N5355 - 510V
1N778 - 82V	1N4765 - 820V	1N5356 - 520V
1N779 - 91V	1N4766 - 910V	1N5357 - 530V
1N780 - 100V	1N4767 - 1000V	1N5358 - 540V
1N781 - 110V	1N4768 - 1100V	1N5359 - 550V
1N782 - 120V	1N4769 - 1200V	1N5360 - 560V
1N783 - 130V	1N4770 - 1300V	1N5361 - 570V
1N784 - 150V	1N4771 - 1500V	1N5362 - 580V
1N785 - 160V	1N4772 - 1600V	1N5363 - 590V
1N786 - 180V	1N4773 - 1800V	1N5364 - 600V
1N787 - 200V	1N4774 - 2000V	1N5365 - 610V
1N788 - 220V	1N4775 - 2200V	1N5366 - 620V
1N789 - 240V	1N4776 - 2400V	1N5367 - 630V
1N790 - 270V	1N4777 - 2700V	1N5368 - 640V
1N791 - 300V	1N4778 - 3000V	1N5369 - 650V

Zener diodes are essential components in voltage regulation and protection circuits. This guide provides a detailed overview of three popular power ratings: 0.5W, 1W, and 5W Zener diode series, covering part numbers from 1N746 to 1N5369 and voltage ranges from 3.3V to 100V. Whether you're designing a power supply, voltage reference, or surge protection circuit, having a complete voltage chart at your fingertips is invaluable for selecting the right component.

SCE SCOOP

Category: Refrigeration

written by www.mbsmpro.com | December 22, 2025



Understanding the inner workings of a Secop SCE hermetic compressor is essential for any refrigeration technician or engineer. This comprehensive guide breaks down the complex internal components—from the crankshaft to the valve plate—providing a detailed exploded view. Whether you are troubleshooting or studying mechanical design, our professional analysis offers the clarity needed for modern cooling systems.

CR20-06 A-F-A-E-HQQE

Category: Equipment

written by www.mbsmpro.com | December 22, 2025







The Grundfos CR20-06 A-F-A-E-HQQE is a vertical multistage centrifugal pump delivering 21 m³/h at 70.4 m head with a 7.5 kW IE3 motor, designed for demanding water boosting and industrial applications.

Its cast-iron base, stainless-steel internals and HQQE mechanical seal make it a durable, energy-efficient solution for process water, HVAC, boiler feed and general pressure boosting systems.

Introduction

In modern industry and building services, stable water pressure is no longer a luxury but a basic requirement. The Grundfos CR20-06 A-F-A-E-HQQE has become one of the quiet workhorses in this field, combining compact vertical design with serious performance for installations where downtime is simply not an option.

Technical profile of the CR20-06

The pump in the photo is clearly identified on its nameplate as a Grundfos CR20-06 A-F-A-E-HQQE with a 7.50 kW motor operating at 50 Hz and about 2919 rpm.

It delivers a nominal flow of 21 m³/h at a rated head of 70.4 m, with a maximum head up to 88.4 m and a maximum operating pressure of 16 bar at liquid temperatures up to 120 °C.

Main nameplate data

Item	Value
Pump type	CR20-06 A-F-A-E-HQQE
Rated power P ₂	7.5 kW
Frequency / speed	50 Hz / ≈2919 rpm
Rated flow Q	21 m ³ /h
Rated head H	70.4 m
Maximum head H _{max}	88.4 m
Maximum pressure / temp.	16 bar / 120 °C
Shaft seal code	HQQE (single mechanical seal)
Pump orientation	Vertical, inline
Efficiency (pump)	≈75.6% (MEI ≥ 0.70)

The pump uses a vertical, inline layout with suction and discharge on the same level (DN 50 flanged connections, PN 25 rating), simplifying installation in compact plant rooms and on rigid pipe manifolds.

Its IE3 motor (size 132SB) offers motor efficiencies above 90% at typical loads, helping operators reduce long-term energy costs.

Construction, materials and seal

The CR20-06 belongs to the widely used CR multistage family, where several impellers are stacked in series to build pressure while maintaining moderate flow.

In this specific model, the base and pump head are in cast iron, while all wetted parts such as impellers and chambers are stainless steel AISI 304, providing a good balance between robustness and corrosion resistance for clean water duties.

The HQQE mechanical seal is a single cartridge seal with silicon carbide/silicon carbide faces, EPDM elastomers and a stainless-steel spring, designed for long service life and easy replacement.

This configuration suits cold and hot water, mildly aggressive media used in HVAC and process plants, and reduces the risk of dry-running damage during commissioning or transient operating conditions.

Typical applications and operating benefits

With its 21 m³/h at 70.4 m operating point, the CR20-06 is well suited to medium-pressure boosting in commercial buildings, industrial wash and rinse systems, boiler feed for small to mid-size boilers, and general process water circulation.

Installers appreciate the inline design, which often allows direct replacement of older horizontal pumps without major changes to the pipework, while plant operators value the quiet operation and low vibration levels of the multistage design.

From an energy perspective, the combination of high hydraulic efficiency and IE3 motor makes this model a strong candidate in projects where life-cycle cost analysis is required or where regulations demand a minimum efficiency index ($MEI \geq 0.70$).

Paired with an external frequency converter, the CR20-06 can be turned into a variable-speed booster, maintaining constant pressure in domestic water systems, process loops or district cooling circuits while cutting energy consumption during partial-load operation.

Practical selection notes for engineers

When selecting a CR20-06 for a project, engineers typically start from the required duty point on the pump curve and verify that 21 m³/h at around 70 m head fits the system's pressure losses, static height and safety margin.

System designers also check NPSH requirements, temperature range from -20 to 120 °C, and maximum ambient temperature up to 60 °C to ensure trouble-free operation in machinery rooms and outdoor installations.

Because the pump offers a maximum operating pressure of 16 bar with PN 25 flanges, it can be integrated into higher-pressure manifolds and ring mains, provided that upstream valves, fittings and vessels share compatible ratings.

For users planning future upgrades, the CR range gives a modular platform: additional models and variants can be combined in parallel booster sets, or replaced one-to-one if system demand

increases.

[Mbsmpro.com, ZB38, 5HP, R404, MBP](#)

Category: Refrigeration

written by www.mbsmpro.com | December 22, 2025



ZB38 5HP R404A MBP scroll compressor has become a reference point in medium-temperature commercial refrigeration, providing a compact, efficient and reliable heart for cold rooms, display cabinets and food service equipment worldwide. This article explores how it works, where it fits best and what technicians should verify before installing or replacing this type of compressor.

[Mbsmpro, Pdf, Convert LRA to Cooling Tons](#)

Category: Pdf

written by www.mbsmpro.com | December 22, 2025



A Practical Guide: Convert LRA to Cooling Tons in HVAC Systems

[R134a compressor, 1/3 HP, LBP, commercial](#)

refrigeration, domestic freezer, cooling capacity, COP, mbsm.pro, mbsmgroup.tn, mbsmgroup, mbsmpro, mbsmpro.com, Siberia, Panasonic, Embraco, Secop, Tecumseh, Donper, Cubigel, Zero, ZMC, Samsung

Category: Refrigeration

written by www.mbsmpro.com | December 22, 2025



A technical comparison of the 10 best LBP R134a compressors (1/3 HP) for professional refrigeration and freezing applications—complete with specs, cooling capacities, and application tips.

Winter Company

Category: Refrigeration

written by www.mbsmpro.com | December 22, 2025



WINTER
REFRIGERATION





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  **WINTERREFRIGERATION**



 **WINTER**
REFRIGERATION



WINTER BLUE
Vertical Liquid Receiver
Model: 10000-1000-10
Refrigerant: R404A
Capacity: 10000 L
Weight: 100 kg
Height: 1000 mm
CE 0020

WINTER BLUE
Vertical Liquid Receiver
Model: 10000-1000-10
Refrigerant: R404A
Capacity: 10000 L
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WINTER
REFRIGERATION



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Winter Company for Refrigeration offers all refrigeration accessories sourced from top international brands including blue. Located in 6th of October City, Industrial Zone 2, Hamada Street, the company welcomes visits to explore their wide range of products. They can be contacted via phone numbers 01060032262, 01022856319, and 0155 522 6348 for inquiries and support.

Winter specializes in supplying high-quality refrigeration compressors, cooling units, and complete refrigeration packages for industrial and commercial use. Their products meet international standards for reliability and energy efficiency. The company has extensive experience servicing refrigeration systems in Egypt, especially within industrial zones.

Customers can rely on Winter for both product supply and technical maintenance support, making it a prominent choice in refrigeration solutions in the region. For detailed product specifications or tailored solutions, direct contact or visits to the company's location are recommended, ensuring personalized service and expert advice.

This company is part of a global network that provides industrial refrigeration solutions, including ammonia and CO2-based systems with a focus on environmental protection and efficient cooling technology. [winter-kaeltetechnik+2](#)

In summary, Winter Company offers trusted refrigeration products and services ideal for various refrigeration needs in Egypt's industrial sectors, backed by internationally certified products and expert technical support.

1. <https://www.fortender.com/vendors/profiles/winter-air-conditioning-refrigeration-llc>
2. <https://ae.linkedin.com/company/winter-refrigeration>
3. <https://www.winter-kaeltetechnik.com/index-en.html>
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Name: Winter Company

Phone: 01060032262, 01022856319, and 0155 522 6348

Address: 6th of October City

Country: Egypt's industrial sectors

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FRIGO TECH ENERGY

Category: Mbsmpro

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Specialists in installation, maintenance, and repair of cooling and freezing rooms, central air conditioning and split systems, control panels of all types, factory chillers of all kinds, and hotel and restaurant equipment. Contact us at 01287772722.



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Category: Mbsmpro

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