



High performance canned pumps for a wide variety of uses

NRD Series new control signal type of DC brushless motor drive canned centrifugal pumps have been added. Tachometer feedback (rotation speed pulse output ^{Note 1}) is possible at the same time as the pump variable input signal. It is compact, lightweight, low noise, and sealless, so there is no liquid leakage.



Compact, lightweight, Seal-less design

The pumps are equipped with a small, lightweight canned motor encapsulated in resin. This construction requires less space than magnet pumps, while the seal-less design prevents liquid leakage.



Long life

A Brushless DC motor is employed as the pump drive. This motor design eliminates pump/motor failures due to brush wear, ensuring a service life equal to AC motors.



Flow adjustment feature and built-in drive technology

An external input signal (400 Hz \pm 10% of PWM, Duty 0 - 100%) ^{Note 2} can be used to vary the flow rate. In addition, the pump can be operated without a PWM signal. (Max operation fixed) With this circuit, the power can be connected to variable external input to operate the pump.



Multiple connection types

There are three different port connection options available, Hose, NPT Thread, R Thread. Select the option that best fits your location and installation.



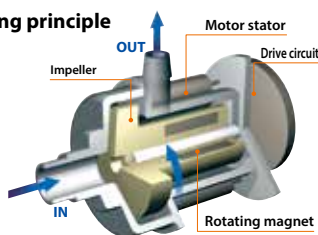
Readily compliant with global safety standards

The NRD series power voltage is classified as safety voltage (50V or less), which allows the user to easily comply with global safety standards such as UL, CSA and CE. The DC power supply does not have a region-specific voltage or frequency, allowing for unified usage.

Note1 : Open collector method Outputs at 1 pulse / rotation.

Note2 : Connect the PWM control signal with an open collector (drain).

Operating principle

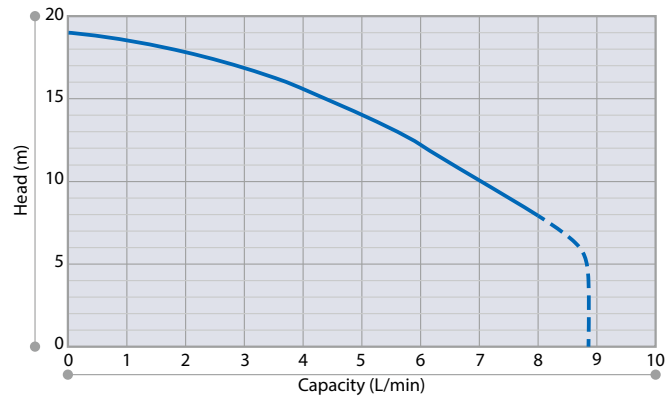


Canned motor centrifugal pumps directly drive the rotor magnet that is coupled to the impeller. The pump chamber is completely sealed from the exterior by a static o-ring. The impeller is driven by a rotating magnetic field that doesn't require a shaft seal. In addition, these products have a simpler and more compact structure than pumps which have external drive magnets.

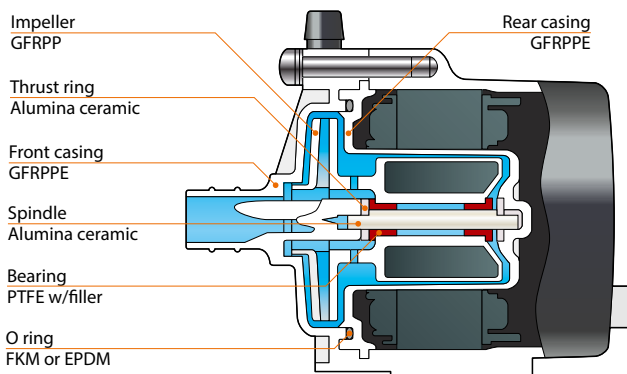
● Typical applications

- Fuel cells** Cogeneration systems (cooling and circulation)
- Medical** Biochemical analysis, Cooling systems, Patient temperature management medical equipment, Cooling for laser treatment
- Physical/chemical analysis** Thermostats, Pure water equipment, Different types of analyzers
- Vending machines** Dispensers
- Photo** Automatic film developing machines, X-ray film developing machines
- Semiconductors** Semiconductor cooling systems
- Surface treatment** Small plating machines
- Solar power systems** Electric water heaters, Solar battery heat collectors

● Performance curves



● Wet end materials



● Pump identification

NRD - **08Z** **T** **V** **24** **P4** - **R** **S**

1 2 3 4 5 6 7 8

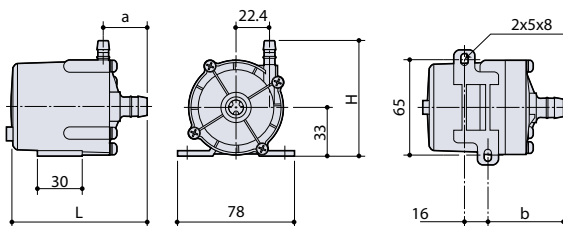
- 1 Series **NRD**
- 2 Pump size **08Z**
- 3 Material of bearing **T** : PTFE w/filler
- 4 Material of Oring **V** : FKM
- E** : EPDM
- 5 Power voltage **24** : 24V
- 6 Control method **P4** : PWM input
- 7 Pump connection port No code : Hose
- R** : R Thread
- N** : NPT Thread
- 8 Base type No code : Left and right direction type
(Left-to-right direction when viewed from pump front)
- S** : Custom type

● Specifications

Model	Connection size		Max. Capacity ^{Note1} L/min	Max. Head ^{Note1} m	Noise ^{Note2} dB	Limit of specific gravity	Motor		Mass kg	
	IN mm	OUT mm					Power voltage V	Output W		
NRD-08Z	Hose	14	8.0	19	up to 45	1.07	DC24	33	0.4	
	R Thread	R3/8								R1/8
	NPT Thread	NPT3/8								NPT1/8

Note1: The numerical values listed in the table represent the average performance values for when NRD series models are shipped from the factory. The individual differences between models may result in an error discrepancy of ±10%.
 Note2: Noise was measured at a location 1 meter away from pump front, using the A scale.
 • Test performance using clear water at room temperature. • The viscosity limit of the working fluid is up to 1.0 mPa·s (with specific gravity of 1.07).
 • Specifications/Environmental conditions Ambient temperature: 0°C to 40°C, Working liquid temperature: 0°C to 50°C, Relative humidity: 35% to 85% RH
 Please note that the above conditions vary depending on working liquid and heat cycle specifications.

● Dimensions (mm)



Connection	H	L	a	b
Hose	78	91	29.5	50.5
R Thread	75.5	90.5	29	50
NPT Thread	75.5	90.5	29	50

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Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly. Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.

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