## Goodrive270 series

VFD for fan and pump









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Goodrive270 series VFD is an optimized VFD special for fan and pump. Simple and easy to use, the VFD can drive the fans and pumps in wastewater treatment, HVAC, chemical, metallurgical, electric power and other industries.

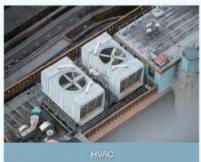
Power range: 1.5~500kW

Voltage class: AC 3PH 380~480V

- Optimized size: Booksize compact, easy to install.
- Motor compatibility: Able to drive both synchronous motors and asynchronous motors.
- Functions special for fans and pumps.
- Energy-saving and efficient.
- Flexible expansion: Support for IO, communication, and IoT add-ons.



## **Applications**











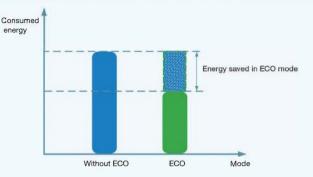




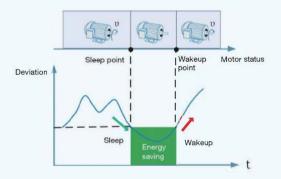


### **Advantages**

ECO mode: ensures the implementation of best performance and minimum loss at low dynamic load to optimize the output power.



• Energy-saving control: implements sleep at night or energy-saving run at extremely light load to avoid frequent startup or stop.



Fire ride-through (special for water pumps): In fire mode for tunnel or building fans in emergency, the fault alarm is screened out to ensure longer running.



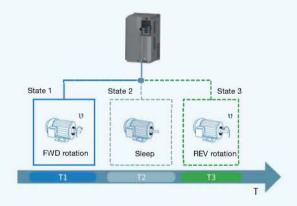
Anti-waterhammer

Prevents water pump damage or water valve damage.

Water level control

When the present water level is lower than the water level lower limit but higher than the water shortage level, the system runs at the backup pressure for exceptional situations. When the present water level is lower than the water shortage level, the system stops running.

Cleaning: implements automatic cleaning for water pumps by means of periodic forward/reverse rotation and sleep to reduce the manual maintenance workload.



◆ Thickened circuit board coating: helps to enhance the PCB protection and adapt to hostile environments to ensure long and reliable run.



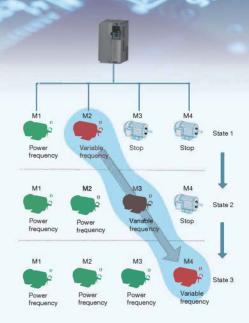


Multi-pump polling and auxiliary pump startup/stop: Support for cyclic and fixed variable-frequency pump water supply, and sleep control.

The VFD does not specify a certain pump as the variable-frequency pump. If the water supply pressure is insufficient, the variable-frequency pump that is running is switched to the power grid, and a next pump is selected as the variable-frequency pump (a maximum of eight variable-frequency pumps can be controlled and only one variable-frequency pump can be used at a time).

• Freezing protection: When the ambient temperature is lower than the specified threshold, the motor automatically rotates to avoid freezing to achieve the protection purpose.





 Motor heating: uses DC energizing to increase the motor surface temperature at intermittent working and avoid motor faults caused by condensation.

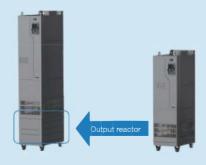


#### **Abundant configuration**

◆ A. 30~355kW VFD models support optional built-in DC reactors. 400~500kW VFD models have been configured with DC reactors.



◆ B. 220kW and higher VFD models support output reactors (Optional -L2/L3 model).







# 

Field	Sign	Description	Content
Product series abbreviation	1	Product series abbreviation	GD270: Goodrive270 series VFD for fan and pump.
Rated power	•	power level	160: 160kW
Voltage class	3	Voltage class	◆ 4: AC 3PH 380~480V ◆ Rated voltage: 380V
Management number	•	Optional	<ul> <li>◆ Default: Empty.</li> <li>◆ L1: with built-in DC reactor, applicable to 30~355kW models.</li> <li>◆ L3: with built-in DC reactor and output AC reactor, applicable to 220kW and higher models.</li> <li>Note: DC reactors are standard parts for 400~500kW models.</li> </ul>

### **Product model selection**

VFD model	Output power (kW)	Input current (A)	Output current (A)	Boundary dimension W*H*D (mm)	Package dimensions L*W*H (mm)	Standard weight (kg)	Gross weight (kg)
GD270-030-4	30	75	60	266*371*208	490x315x315	8	10
GD270-037-4	37	90	75	266*371*208	490x315x315	8	10
GD270-045-4	45	108	92	316*430*223	580x395x360	14	16
GD270-055-4	55	142	115	352*580*258	695x440x410	18	21
GD270-075-4	75	177	150	352*580*258	695x440x410	18	21
GD270-090-4	90	200	180	352*580*258	695x440x410	18	21
GD270-110-4	110	240	215	338*554*338.3	725x495x500	34	40
GD270-132-4	132	278	250	338*554*338.3	725x495x500	34	40
GD270-160-4	160	310	305	338*825*398.3	955x480x600	53	64
GD270-185-4	185	335	330	338*825*398.3	955x480x600	53	64
GD270-200-4	200	385	380	338*825*398.3	955x480x600	53	64
GD270-220-4	220	430	425	303*1108*480	1310x630x560	78	99
GD270-250-4	250	465	460	303*1108*480	1310x630x560	78	99
GD270-280-4	280	485	530	330*1288*544	1438*668*531	89	119
GD270-315-4	315	550	600	330*1288*544	1438*668*531	89	119
GD270-355-4	355	600	650	330*1288*544	1438*668*531	90	120
GD270-400-4-L1	400	660	720	330*1398*544	1558*678*530	173	205
GD270-450-4-L1	450	745	820	330*1398*544	1558*678*530	175	207
GD270-500-4-L1	500	800	860	330*1398*544	1558*678*530	175	207

Note: The dimensions and weight of models with L suffix are provided separately by INVT .



### **Optional parts**

Name	Image	Model/Function/Apply to	Name	lmage	Model/Function/Apply to	
LCD keypad		Model: SOP-270 Function: External LCD display and operation panel Apply to: Full series	LED keypad		Model: BOP-270 Function: External LCD display and operation panel Apply to: Any models in the power range 1.5~22kW (Standard configuration for models in the power range 30~500kW)	
Keypad bracket		Model: GD350-JPZJ Function: For fixing LED/LCD keypad outside the electrical cabinet Apply to: Full series	Cabinet rail component		Model: GD270-DGZJ Function: To assist cabinet installation improve installation efficiency and safe Apply to: Any models in the power range 220~500kW	
Flange mounting bracket		Model: Conatct us Functions: For flange mounting Apply to: Any models in the power range				

## **Expansion card model selection**

Category	Model	Name	Specifications		
IO card EC-IO501-00		IO expansion card	<ul> <li>4 digital inputs</li> <li>1 digital output</li> <li>1 analog input</li> <li>1 analog output</li> <li>2 relay outputs: 1 double-contact output, and 1 single-contact output</li> </ul>		
	EC-IO503-00	Relay card	2 digital inputs     6 relay outputs		
	EC-TX503	PROFIBUS-DP communication card	Supporting the PROFIBUS-DP protocol.		
	EC-TX505	CANopen communication card	<ul> <li>Based on the CAN2.0A physical layer.</li> <li>Supporting the CANopen protocol.</li> </ul>		
Communication card	EC-TX511	CAN master/slave control communication card	Based on the CAN2.0B physical layer.     Adopting INVT's master-slave control proprietary protocol.		
	EC-TX509	PROFINET communication card	Supporting the PROFINET protocol.		

Note: The table describes expansion card are optional and need to be purchased separately. The SIM card is used with the Internet of Things card,



## **Technical parameters**

Function		Specifications				
Input voltage (V)		◆ AC 3PH 380~480V Rated voltage: 380V				
	Allowed voltage transient fluctuation	<b>♦</b> -15%~+10%				
Technical control performance	Input frequency (Hz)	♦ 50Hz or 60Hz; Allowed range: 47~63Hz				
	Output frequency (Hz)	◆ 0~400Hz				
	Control mode	◆ Space voltage vector control, and sensorless vector control (SVC)				
	Motor type	<ul> <li>Asynchronous motor (AM) and synchronous motor (SM)</li> </ul>				
	Speed ratio	◆ For AMs: 1:200 (SVC), for SMs: 1:20 (SVC)				
	Speed control accuracy	◆ ±0.2% ((SVC)				
	Speed fluctuation	◆ ± 0.3% ((SVC)				
	Torque response	◆ <20ms ((SVC)				
	Torque control accuracy	◆ ±10% ((SVC)				
	Overload capacity	<ul> <li>Able to run at 110% of rated current for 1min, and an overload allowed for every 5mir</li> </ul>				
Running	Frequency setting method	<ul> <li>Settings can be implemented through digital, analog, pulse frequency, multi-step spectrum, simple PLC, PID, and communication.</li> <li>Settings can be combined and the setting channels can be switched.</li> </ul>				
control	Automatic voltage regulation	The output voltage can be kept constant although the grid voltage changes.				
performance	Fault protection	<ul> <li>Many protection functions available, such as protection against overcurrent, overvolta undervoltage, overtemperature, and phase loss</li> </ul>				
	Speed tracking restart	◆ Used to implement impact-free smooth startup for rotating motors				
	Analog input	◆ Two inputs. Al1: 0(2)~10V / 0(4)~20mA; Al2: -10 ~ +10V				
	Analog output	◆ Two outputs. AO0/AO1: 0(2)~10V/0(4)~20mA				
	Digital input	<ul> <li>◆ Five regular inputs. Max. frequency: 1kHz; internal impedance: 3.3kΩ</li> <li>◆ One high-speed input. Max. frequency: 50kHz</li> </ul>				
Peripheral interface	Digital output	One Y terminal open collector output, sharing the terminal with S4. The function can be selected through a jumper.				
	Relay output	<ul> <li>◆ One programmable relay output.</li> <li>◆ RO1A: NO; RO1B: NC; RO10: common</li> <li>◆ Contact capacity: 3A/AC250V, 1A/DC30V</li> </ul>				
	Extended interfaces	Two extended interfaces: SLOT1 and SLOT2 Supporting communication expansion cards, I/O cards and so on				
Other	Installation method	<ul> <li>Supports wall-mounting (1.5kW~250kW)</li> <li>Supports floor-mounting (1.5kW~132kW)</li> <li>Supports flange-mounting (220kW~500kW)</li> </ul>				
	Keypad	<ul> <li>1.5~22kW: with laminated LED keyboard as a standard configuration</li> <li>30~500kW: with a LED keypad that can be used externally</li> </ul>				
	EMC filter	<ul> <li>◆ A built-in C3 filter is optional for1.5~132kW</li> <li>◆ A built-in C3 filter is a standard configuration for 160kW and higher</li> </ul>				
	Temperature of running environment	◆ -10°C ~+50°C; Derating is required when the ambient temperature exceeds 40°C.				
	IP rating	<ul> <li>◆ IP20 for 200kW and lower</li> <li>◆ IP00 for 200kW and higher, supporting the optional part IP20 assembly</li> </ul>				
	Pollution degree	◆ Degree 2				
	Cooling method	1.5kW: Natural cooling     2.2kW and higher: Forced air cooling				



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66003-00251

20220720(V1.1)