

英威腾低压通用变频器快速使用指南

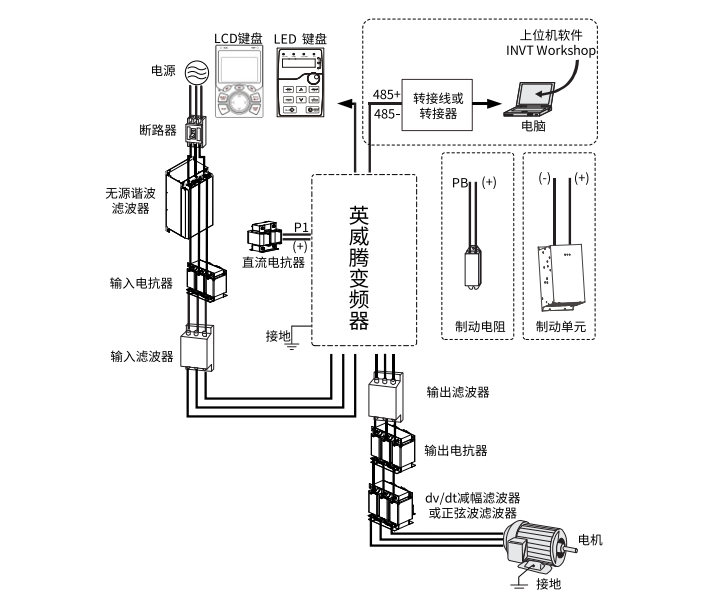
本指南简要介绍了英威腾低压通用变频器（包括 GD10/GD20/GD30/GD100/GD200A/GD270 等系列）的外围接线、端子、键盘、快速运行、常用功能参数设置、常见故障及对策。

拨打服务热线 400-700-9997 或访问 www.invt.com.cn 获取更多信息及资源下载。保修条款详见完整版电子说明书。

警告
本指南仅包含基本的安装调试信息。若不遵守相关文档中的安全说明和安装调试说明，可能导致设备损坏、人身伤害、甚至人员死亡等事故。只有培训合格的专业人员才允许进行相关操作。

危险	变频器
禁止在电源接通的情况下进行接线、检查或更换零件等作业。进行这些作业时，须确认所有输入电源已断开，并等待短于变频器上标注的时间或者确认直流母线电压低于 36V。	
至少等待时间	变频器
5 分钟	1PH 220V 0.2~2.2kW; 3PH 220V 0.2~2.2kW; 3PH 380V 0.75~110kW
15 分钟	3PH 380V 132~315kW
20 分钟	3PH 380V 355kW 以上

1 外围接线



INVT Low-Voltage General-Purpose VFD

Quick Start Guide

This guide briefly describes the external wiring, terminals, keypad, quick running, common function parameter settings, and common faults and solutions of INVT low-voltage general-purpose variable-frequency drives (including GD10/GD20/GD30/GD100/GD200A/GD270). Visit www.invt.com for information and source download.



Warning

This guide only provides the basic installation and commissioning information. Failure to comply with the safety instructions and installation and commissioning instructions in the relevant documentation may result in accidents such as equipment damage, personal injury, or even death. Only trained and qualified professionals are allowed to carry out related operations.

Danger

Do not perform any operations including wiring, inspection, or component replacement when power supply is applied. Before performing these operations, ensure all the input power supplies have been disconnected, and wait for at least the time designated on the VFD or until the DC bus voltage is less than 36V.

Minimum waiting time	VFD model
5 minutes	1PH 220V 0.2~2.2kW; 3PH 220V 0.2~2.2kW; 3PH 380V 0.75~110kW
15 minutes	3PH 380V 132~315kW
20 minutes	3PH 380V >355kW

1 External wiring

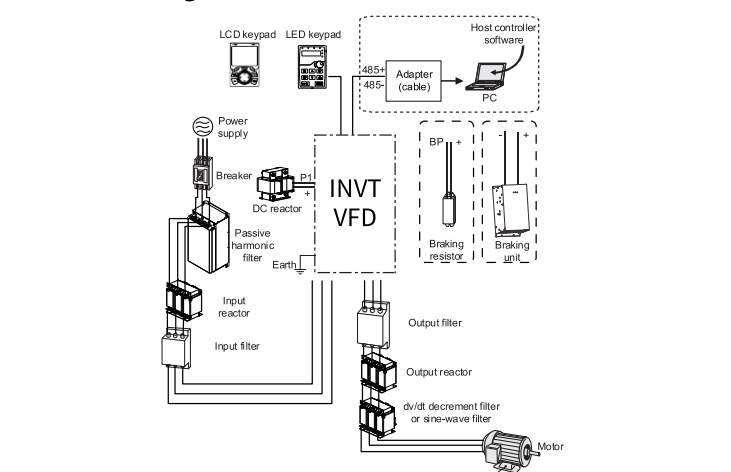
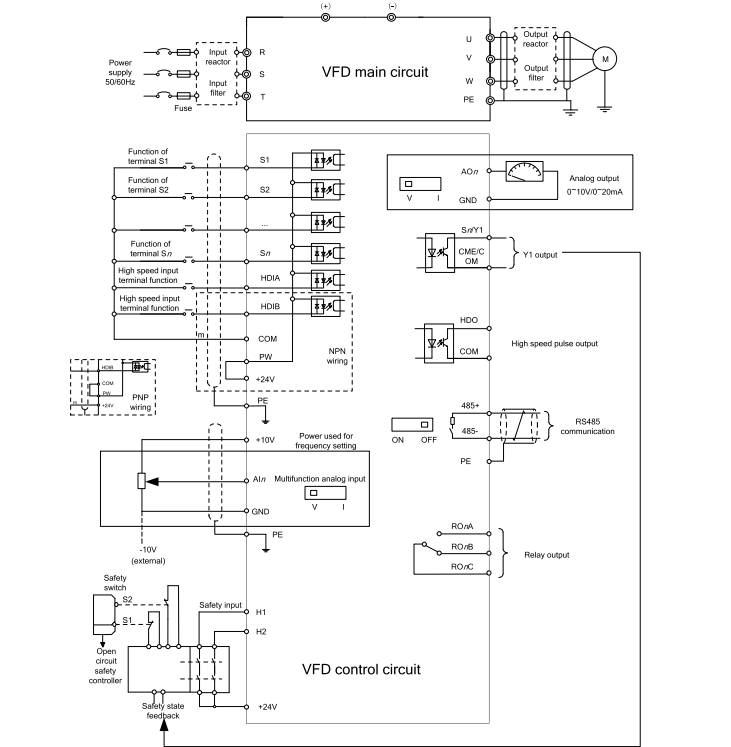


Figure 2-1 Typical VFD wiring



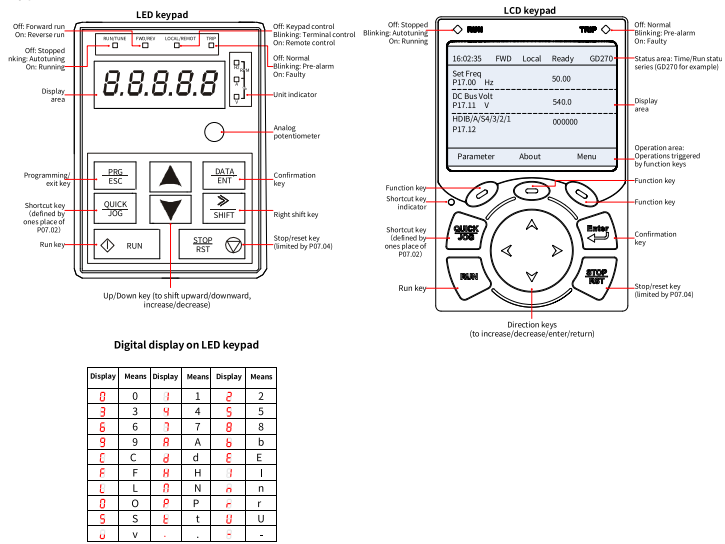
Terminal	Description
Main circuit terminal	
R, S, (or L, N)	3PH (or 1PH) AC input terminals, connected to the grid
U, V, W	3PH (or 1PH) AC output terminals, connected to the motor usually
P1	P1 and (+) connect to external DC reactor terminals.
(+)	(+) and (-) connect to external braking unit terminals or shared DC bus terminals.
PB	PB and (+) connect to external braking resistor terminals.
PE	PE terminal. The PE terminals of each machine must be grounded reliably.
Control circuit terminals	
+10V	Locally provided 10V power supply
AI/n	Analog input. The default input type is voltage, which can be changed through the related jumper cap, DIP switch, or parameter.
GND	Reference ground of +10V
AO/n	Analog output. Range: 0~10V or 0~20mA
RO/A	Relay output. RO/A: NO; RO/B: NC; RO/C: common
RO/B	Contact capacity: 3A/AC 250V, 1A/DC 30V
RO/C	
HDO	Switch capacity: 50mA/30V. Output frequency range: 0~50kHz
COM	Reference ground of +24V
CME	Common terminal of open collector output; short connected to COM by default
Y1~Yn	Switch capacity: 50mA/30V. Output frequency range: 0~1kHz
485+	RS485 differential signal communication port. The standard communication interface should use shielded twisted pair. Determine whether to connect the 120Ω terminal matching resistor of RS485 communication through the DIP switch or jumper.
PE	Grounding terminal
PW	External power input terminal for digital input circuits. In NPN mode, short connect PW and +24V. In PNP mode, short connect PW and COM.
+24V	User power supply provided by the VFD. Max. output current: 200mA
Digital input	
S1~Sn	Internal impedance: 3.3kΩ 12~30V input signal is acceptable Bidirectional input terminals, supporting both NPN and PNP connection methods Max. input frequency: 1kHz Programmable digital input terminals, the functions of which can be set through the related parameters Max. input frequency: 1kHz Support for quadrature encoder input when both HDIA and HDIB are available, with the speed measurement function Safe torque off (STO) inputs STO redundant input, connected to the external NC contact. When the contact opens, STO acts and the VFD stops output. Safety input signal wires use shielded wires whose length is within 25m. The H1 and H2 terminals are short connected to +24V by default. Remove the jumper from the terminals before using the STO function.
HDIA	Channels for both high frequency pulse input and digital input
HDIB	Max. input frequency: 50kHz Duty ratio: 30%~70% Support for quadrature encoder input when both HDIA and HDIB are available, with the speed measurement function
+24V~H1	Safe torque off (STO) inputs
+24V~H2	STO redundant input, connected to the external NC contact. When the contact opens, STO acts and the VFD stops output. Safety input signal wires use shielded wires whose length is within 25m. The H1 and H2 terminals are short connected to +24V by default. Remove the jumper from the terminals before using the STO function.

Note:

- n is a natural number.
- The terminals of different series may be different. For detailed terminal wiring, see the full version of corresponding product e-manual.

3 Keypad

The keypad may vary depending on the product. Some products may support optional LCD keypads.

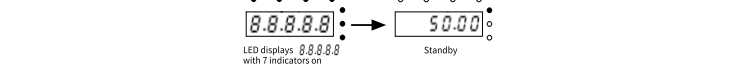


4 Quick running

4.1 Check before power-on

Ensure that all terminals have been securely connected.
Ensure that the motor power matches the VFD power.

4.2 Operating upon first power-on
After confirming the wiring and power are correct, close the air switch of the AC power at the VFD input side to power on the VFD. Using a LED keypad for example, the keypad displays **8.8.8.8** upon power-on and then the set frequency (50.00 in the example), indicating the VFD is initialized and ready to run. (For details about other types of keypad, see the full version of corresponding product e-manual.)



The quick startup flowchart is as follows:

