VFD COLLECTOR INSTALLATION GUIDE

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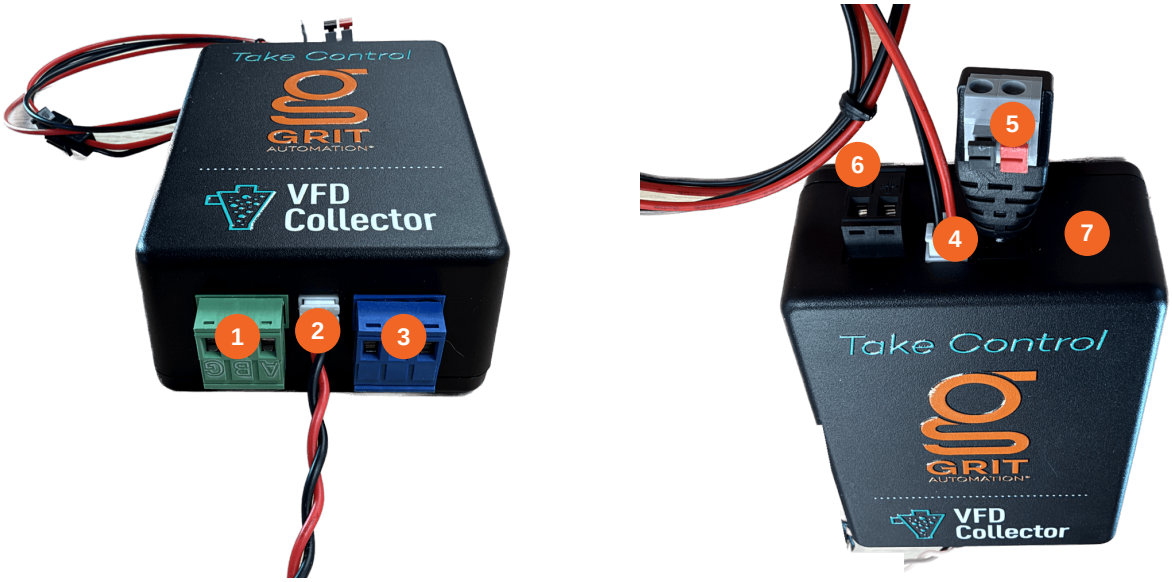
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PRODUCT OVERVIEW

The GRIT VFD Collector connects a compatible variable frequency drive (VFD) to a GRIT Hub. It controls the drive through MODBUS RTU or a 0-10 V speed output with a dry run contact. A GRIT Hub is required.

WHAT'S INCLUDED

- GRIT VFD Collector (GA-CO4000) and CT wire assembly
- AC mains wire with bare or tinned leads; low-voltage barrel connector with two push terminals
- Green MODBUS screw terminal plug; blue dry-relay screw terminal plug; black 0-10 V screw terminal plug
- VHB mounting tape



Control side: 1 MODBUS; 2 CT; 3 run relay. **Power and speed side:** 4 AC; 5 DC barrel; 6 0-10 V output; 7 status light.

SPECIFICATIONS

ITEM	VALUE
AC power input	120-240 V AC through the white locking connector
DC power input	12-24 V DC through the center-positive barrel jack
Control methods	MODBUS RTU over RS-485, or 0-10 V speed plus dry run contact
Current feedback	Supplied CT around one VFD motor-output conductor in 0-10 V mode
Mounting	VHB tape
Network	GRIT Hub mesh

BEFORE YOU BEGIN

Disconnect power before wiring. Work inside a VFD enclosure should be performed by a licensed electrician. Follow the VFD manufacturer's installation and safety instructions.

Use the VFD manual to identify its RS-485 terminals or its analog voltage input, analog common, and digital run input. Provide suitable control wire and, if using DC power, a separate 12-24 V DC supply.

INSTALLATION

1. **Mount the Collector.**
   Use the supplied VHB tape inside or near the VFD enclosure where the connectors remain accessible.

2. **Choose a power source.**
   Use the supplied AC mains wire only with a 120-240 V AC source. Its free ends are bare or tinned. If the available AC source exceeds 240 V, use a separate 12-24 V DC supply and the supplied barrel connector's two push terminals. The barrel center contact is positive.

3. **Connect one control method.**
   For MODBUS, use the green terminal: A and B are the RS-485 pair, and G is an optional shield ground. For analog control, use the black + and - output for the VFD speed input and analog common, and the blue dry relay contacts for the VFD digital run input.

4. **Connect the CT for analog control.**
Put one motor-output conductor through the CT ring and plug the CT into the small white non-locking socket between the green and blue terminals. Do not put multiple motor conductors through the ring. The CT and analog terminals are not needed in MODBUS mode.

5. **Power on and bind.**
The light may pulse red slowly, then alternate red and green while looking for a GRIT Hub. Enable new-device binding on the Hub and confirm the Collector connects; the light becomes steady red.

0-10 V is an output. Observe + and - polarity. Do not feed voltage into this terminal or connect it to a VFD's +10 V reference-output terminal.

WIRING REFERENCE

MODE	COLLECTOR CONNECTION	VFD CONNECTION
MODBUS	Green A/B; G optional shield	RS-485 A/B per VFD manual
0-10 V	Black + and -	Analog voltage input and analog common
0-10 V	Blue NO and COM	Configured digital run input
0-10 V	CT around one motor-output wire	One conductor between VFD and motor

Blue relay terminal order, viewed from the control side: NO nearest the white CT plug, COM in the middle, NC nearest the enclosure edge. The relay contact is dry. Check the VFD manual for its terminal assignments before wiring.

APP CONFIGURATION

On the VFD Collector page in the GRIT app, set **Frequency Control Type** to Modbus or 0-10v. In Modbus mode, select the appropriate VFD model under **Modbus Configuration**, or configure the drive's required register and serial settings. Configure the VFD itself to accept the chosen control method. Other Collector settings depend on the installation.

VERIFY OPERATION

1. **Command on.**
   Turn the Collector on in the GRIT app. Its light turns green when commanded on. Check that the VFD and motor actually start.

2. **Adjust speed.**
   Increase and decrease the requested speed in the app. Check that the VFD responds in the intended direction.

3. **Command off.**
   Turn the Collector off in the app. Check that the VFD and motor stop and the Collector returns to steady red.

A green light reports the Collector's commanded state; it does not by itself prove that the VFD or motor is running.

TROUBLESHOOTING

OBSERVATION	CHECK
No light	Check the selected supply and its wiring.
Alternating red/green continues	Enable Hub binding; check mesh range.
Green but VFD does not run	Check VFD control source, run input, and drive faults.
Speed does not change	Check VFD speed source and control wiring.

REVISION HISTORY

REV	DATE	DESCRIPTION	AUTHOR
1.0	November 13, 2026	Initial release	GRIT Automation

Questions about this document? Contact support@gritautomation.com.