

FELDER RL160 MAGSWITCH INSTALLATION GUIDE

Felder RL160 MagSwitch Installation Guide

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PRODUCT OVERVIEW

The **GRIT MagSwitch Collector** (GA-CO2000) lets a GRIT Hub start and stop a Felder RL160 through the collector's factory external automatic-control input. This procedure uses the RL160's potential-free input at X2:8 and X2:9, monitors motor current with the supplied CT, and leaves the collector's factory starter and protections in place.

Applies to the drawing reviewed: Felder RL160 project drawing 430031-814E, dated January 27, 2022. Felder revisions and regional voltage configurations can differ. Verify the terminal labels and incoming voltage on the exact machine before wiring.

WHAT'S INCLUDED

 1. MagSwitch Collector	 2. AC power harness (red / black)	 3. Current Transformer (CT)	 4. Four-wire control harness (two green / two black)
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- GRIT MagSwitch Collector with red/green status LED.
- AC power harness: one red lead and one black lead.
- Current Transformer (CT) harness.
- Four-wire control harness: two green wires and two black wires.
- Provided flathead screwdriver and wire nut, as listed in the current MagSwitch installation guide.

SPECIFICATIONS

SPECIFICATION	VALUE
Product / SKU	GRIT MagSwitch Collector / GA-CO2000

Device input power	110–240 VAC. For this RL160 installation, connect across two incoming hot legs only after measuring the selected leg-to-leg voltage.
RL160 control interface	Normally-open, potential-free external contact on X2:8 and X2:9; the RL160 drawing shows an internal 24 VAC control circuit.
RL160 app mode	Relay Operation Type: Latching
Current sensing	Toroidal CT around one individual motor-load conductor downstream of the starter/overload.
Connectivity	GRIT Mesh Network; requires a GRIT Hub and at least one associated GRIT Trigger.
Mounting	Inside the RL160 control cabinet if clearances permit, or in a suitable external enclosure. Use a knockout of at least 5/8 in. when passing harnesses through a cabinet wall.
Environment	Indoor installation. Product IP rating, dimensions, and weight are not stated in the current published guide.
LED behavior	Flashes red/green when ready to bind; flashes green after an On command and red after an Off command.

BEFORE YOU BEGIN

Danger: hazardous voltage. Lock out the RL160 at its upstream disconnect, verify the breaker is off, and prove absence of voltage before opening the control cabinet or touching conductors. Recheck before every wiring step.

Licensed electrician required: This installation enters the RL160 starter cabinet and connects to incoming AC power. Have a licensed electrician perform and verify the work.

- **Tools:** properly rated meter, lockout/tagout equipment, Phillips screwdriver, provided flathead screwdriver, and a step bit if an external enclosure or cable pass-through is required.
- **Materials:** provided wire nut, suitable strain relief, enclosure if the MagSwitch cannot be mounted inside the cabinet, and conductor protection appropriate to the installation.
- **System requirements:** installed GRIT Hub, at least one GRIT Trigger, access to the GRIT App, and the Felder drawing supplied with the exact RL160.

INSTALLATION

1. Lock out and verify.

Disconnect the RL160 at the upstream breaker/disconnect. Apply lockout/tagout and verify absence of voltage with a properly rated meter.

2. Identify the incoming hot legs.

Locate the RL160's inbound/line-side power conductors. Select two different hot legs and measure line-to-line voltage. Continue only when the measured voltage is within the MagSwitch's 110–240 VAC input range.

3. Connect MagSwitch power.

Connect the MagSwitch red AC lead to one selected inbound hot leg and the black AC lead to the other. Red/black polarity does not matter. Do not connect the MagSwitch across any source above 240 VAC.

4. Connect the external-contact input.

On terminal strip X2, locate terminals 8 and 9 near the right end of the strip, immediately before PE. From the MagSwitch's four-wire control harness, connect one green wire to X2:8 and the other green wire to X2:9. Green-wire polarity does not matter.

5. Terminate the unused black control pair.

Twist the two black control wires together and secure them with the provided wire nut. Do not land either black wire on the RL160 terminal strip for this latching installation.

6. Install the CT on the motor load side.

Locate motor cable -1W1 leaving terminal strip X1 terminals 1, 2, and 3 toward motor -1M2. Pass exactly one individual motor conductor through the CT. Any one of X1:1, X1:2, or X1:3 is acceptable. Do not pass the entire cable or more than one conductor through the CT.

7. Mount and secure the device.

Mount the MagSwitch where the cabinet door and moving parts cannot pinch the harnesses. Keep wiring clear of terminals, contactors, heat sources, and sharp edges; use strain relief when passing through a cabinet wall.

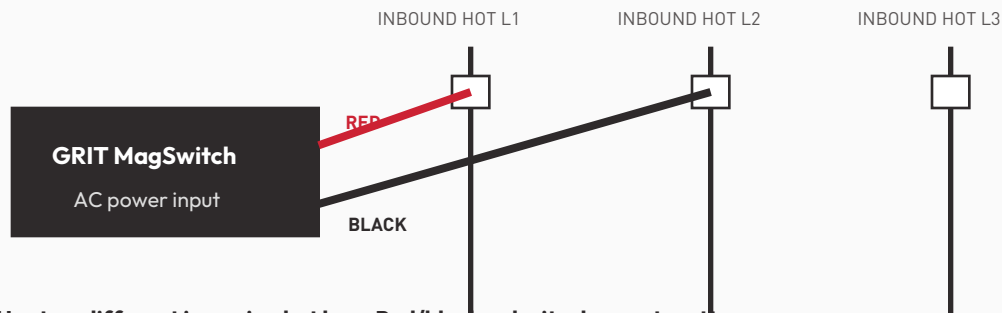
8. Set the RL160 to AUTO.

Close the cabinet, restore power, and place the RL160 selector in AUTO. The external contact at X2:8/X2:9 is active only in automatic operation.

WIRING DIAGRAM

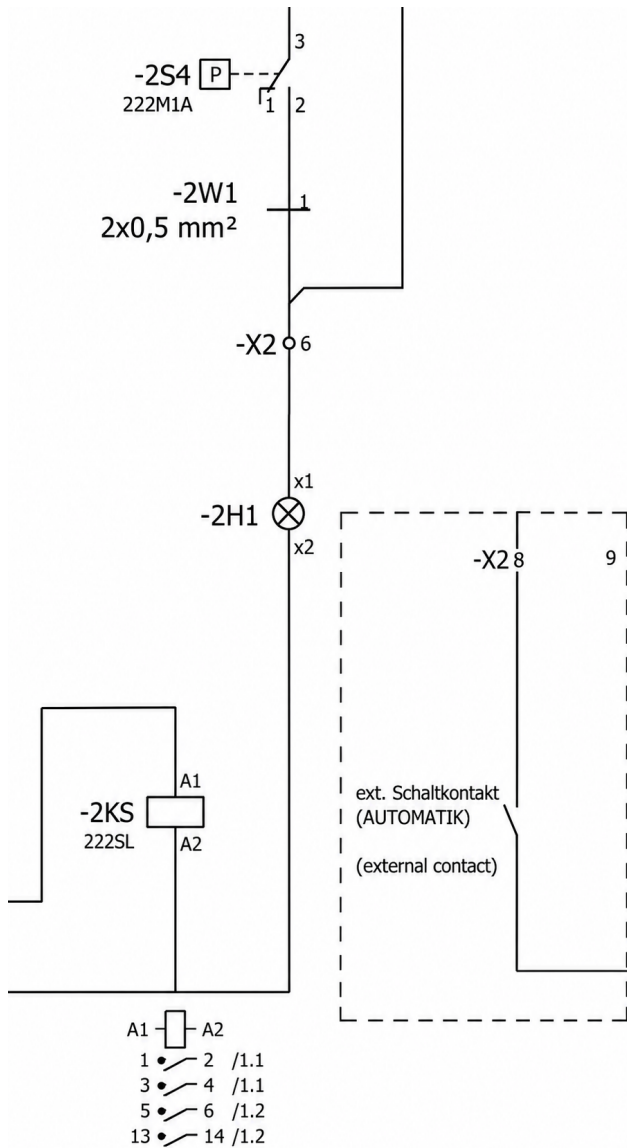
Three separate connections: (1) red/black AC power across two inbound hot legs, (2) one green control wire to X2:8 and the other to X2:9, and (3) the CT around one outgoing motor conductor on -1W1.

MAGSWITCH POWER - LINE SIDE



Use two different incoming hot legs. Red/black polarity does not matter.

Measure first: the selected leg-to-leg voltage must be 110~240 VAC.

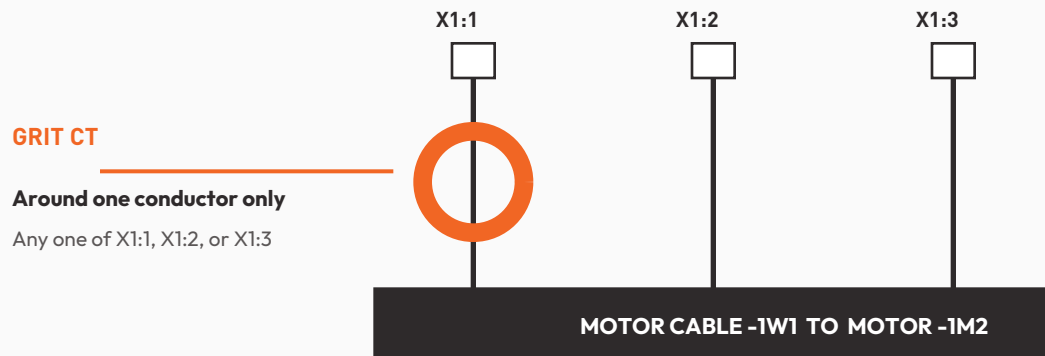


Felder drawing detail: external automatic contact between X2:8 and X2:9.
The GRIT green pair replaces this normally-open contact.

X2 control connection

- Green wire 1 to X2:8
- Green wire 2 to X2:9
- Green polarity does not matter
- Tie the two black control wires together
- Do not apply external voltage to X2:8/X2:9
- RL160 selector must be in AUTO

RL160 CT LOCATION - LOAD SIDE



Do not pass the full motor cable, multiple phases, neutral, or protective earth through the CT.

BIND TO HUB

- 1. Enable binding.**
In the GRIT App, go to Admin > Settings > Allow New Devices and set it to Yes, or press the center blue Bind button on the front of the GRIT Hub.
- 2. Confirm the MagSwitch is ready.**
After power is restored, the MagSwitch LED should flash red/green. Find the new device in Devices > Collector.
- 3. Name and associate it.**
Give the Collector a clear name such as 'Felder RL160' and associate the GRIT Triggers that should start this collector.

APP CONFIGURATION

RL160 required setting: Set **Relay Operation Type** to **Latching**. The MagSwitch must hold the X2:8/X2:9 contact closed while the collector is commanded on.

SETTING	FUNCTION	RL160 GUIDANCE
Collector Name	Name the device Felder RL160 or another site-specific identifier.	Felder RL160
Relay Operation Type	Controls how the green-wire relay behaves.	Latching: required
Associated Triggers	Tools that command this collector to run.	Select all required tools

Delay On Timer	Wait before starting after a Trigger activates; use when gates need time to open.	0 s unless the system requires a gate delay
Delay Off Timer	Run-on time after all associated Triggers stop.	Set for duct clearing
Minimum Run Timer	Minimum number of minutes the collector remains on after starting.	Site-specific; 0 disables
Minimum Gates Open	Maintains the minimum airflow path required by the collector.	Set for the installed duct system
Auxiliary Collector	Marks the unit as a one-tool auxiliary collector instead of a primary collector.	No for a normal central RL160
Dust Bin / Filter Sensor	Associates optional GRIT Dust Bin and Pressure Sensors.	Select installed sensors, if any
Turn On / Turn Off	Manual test command; can override a pending delay-off.	Use for commissioning
Locate / Power Graph	Identifies the device and verifies CT-detected motor current.	Graph should rise while RL160 runs

COMMISSIONING CHECK

1. Command On.

With the cabinet closed and the RL160 in AUTO, use Turn On in the GRIT App. Confirm the collector starts and the MagSwitch LED flashes green.

2. Verify CT feedback.

While the RL160 motor is running, confirm the real-time power graph rises. A flat graph usually means the CT surrounds multiple conductors or the wrong conductor.

3. Command Off.

Use Turn Off and confirm the RL160 stops after the configured delay/minimum-run rules. The MagSwitch LED flashes red when it receives the Off command.

4. Test an associated tool.

Start and stop one associated Trigger-controlled tool. Confirm the RL160 follows the expected gate, delay, and run-time sequence.

TROUBLESHOOTING

SYMPTOM	CHECK / CORRECTION
LED does not flash after power-up	With power locked out, recheck the red/black AC connections. Have the electrician verify 110–240 VAC across the selected two inbound hot legs and confirm protective devices are closed.
RL160 does not start	Confirm the selector is in AUTO, green wires are on X2:8 and X2:9, the two black wires are tied together, and Relay Operation Type is Latching.
RL160 stays on	Check for a short across X2:8/X2:9, a stuck/incorrect green-wire connection, or an active Trigger/delay/minimum-run condition in the GRIT App.
Power graph stays at zero	Move the CT to one individual conductor between X1:1/X1:2/X1:3 and motor cable -1W1. Do not enclose the complete cable or multiple conductors.
Device will not bind	Enable Allow New Devices or press the Hub Bind button, move the MagSwitch within mesh range, and repeat binding.

REVISION HISTORY

REV	DATE	DESCRIPTION	AUTHOR
1.0	August 16, 2026	Initial Felder RL160-specific installation guide	GRIT Automation

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