



1100 Series Remote Signal Brushless DC Controller

Operation Manual



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Introduction

IMPORTANT

<i>Some illustrations may show guards removed. DO NOT operate equipment without guards.</i>

Upon receipt of shipment:

- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage.
- Accessories may be shipped loose. See accessory instructions for installation.

Dorner's Limited Warranty applies.

Dorner 1100 series conveyors have patents pending.

Dorner reserves the right to make changes at any time without notice or obligation.

Dorner has convenient, pre-configured kits of Key Service Parts for all conveyor products. These time saving kits are easy to order, designed for fast installation, and guarantee you will have what you need when you need it. Key Parts and Kits are marked in the Service Parts section of this manual with the Performance Parts Kits  logo.

Warnings - General Safety

⚠ WARNING

The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.

⚠ DANGER



Climbing, sitting, walking or riding on conveyor will cause severe injury.
KEEP OFF CONVEYORS.

⚠ DANGER



DO NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.

⚠ WARNING



Exposed moving parts can cause severe injury.
LOCK OUT POWER before removing guards or performing maintenance.

⚠ DANGER



Hazardous voltage will cause severe injury or death.
LOCK OUT POWER BEFORE WIRING.

⚠ WARNING



Gearmotors may be **HOT**.
DO NOT TOUCH Gearmotors.

⚠ WARNING



Exposed moving parts can cause severe injury.
REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.

⚠ WARNING



Dorner cannot control the physical installation and application of conveyors. Taking protective measures is the responsibility of the user.
When conveyors are used in conjunction with other equipment or as part of a multiple conveyor system, **CHECK FOR POTENTIAL PINCH POINTS** and other mechanical hazards before system start-up.

Operations

Remote Wired Options

Refer to **Figure 1** for controller components.

1	Customer Interface Terminal Block
2	DC Driver BLH230
3	Motor Connection Terminal
4	Grounding Screw
5	Customer Interface Cable (Input to Enclosure)
6	Motor Cable Input to Enclosure (Cord Grip Included Inside)
7	Fuse
8	Connector CN2
9	Power Supply

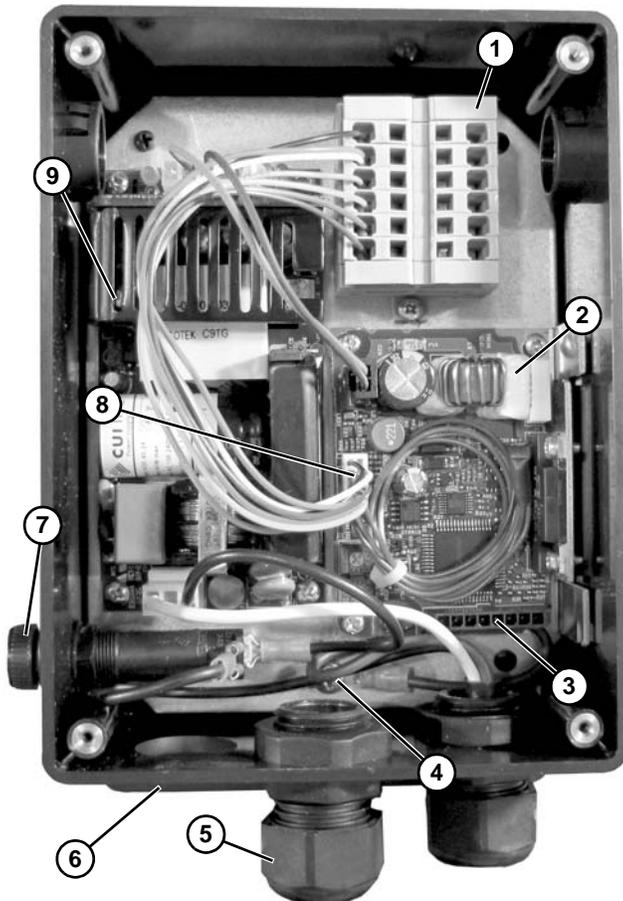


Figure 1

NOTE

For customer supplied wiring:

- Use shielded, multi-conductor cable for input signal.
- Wires to be AWG26 minimum.
- Shield of multi-conductor cable should be grounded to sub panel.

Input Signals

CAUTION

Do not perform the motor's starting and stopping operations by turning the power supply on and off.

Perform them by inputting START/STOP.

Failure to use START/STOP may cause injury or damage to the equipment.

NOTE

- The input signals (START/STOP and CW/CCW) must be ON for at least 10 ms. It may cause malfunction of the motor.
- Do not operate (switch the ON/OFF status) of the START/STOP input, CW/CCW input, and INT.VR/EXT input simultaneously. After switching a given input, wait at least 10 ms before switching another input.

START/STOP Input

START is selected when the input is ON, and motor starts running. The motor accelerates over the time set by the acceleration/deceleration time potentiometer. STOP is selected when the input is OFF, and motor stops. The motor decelerates over the time set by the acceleration/deceleration time potentiometer.

CW/CCW Input

CW is selected when the input is ON. CCW is selected when the input is OFF. The drive direction is the same as that of the motor output shaft when viewed from the motor output side.

NOTE

Depending on the gearhead ratio, the drive direction of the gear output shaft may be opposite of that of the motor.

Setting The Running Speed

Set the operating speed of the motor using the internal speed potentiometer, external speed potentiometer or external DC voltage. The motor speed range is from 100 to 3000 rpm for the case of the motor alone. Dorner speed ranges are 100 to 2500 rpm for constant motor torque.

Setting By Internal Potentiometer

⚠ DANGER



Hazardous voltage will cause severe injury or death.

LOCK OUT POWER BEFORE WIRING.

This potentiometer is used when running speed setting is not frequently changed.

Adjust the potentiometer using an insulated screwdriver. Clockwise rotation will increase the set speed. The speed is set to 0 r/min at time of shipment.

Speed Control with Internal Potentiometer

- | | |
|---|--------------------------------|
| 1 | Accel/Decel Time Potentiometer |
| 2 | Internal Speed Potentiometer |

- Adjust desired accel/decel at driver (**Figure 2, item 1**).

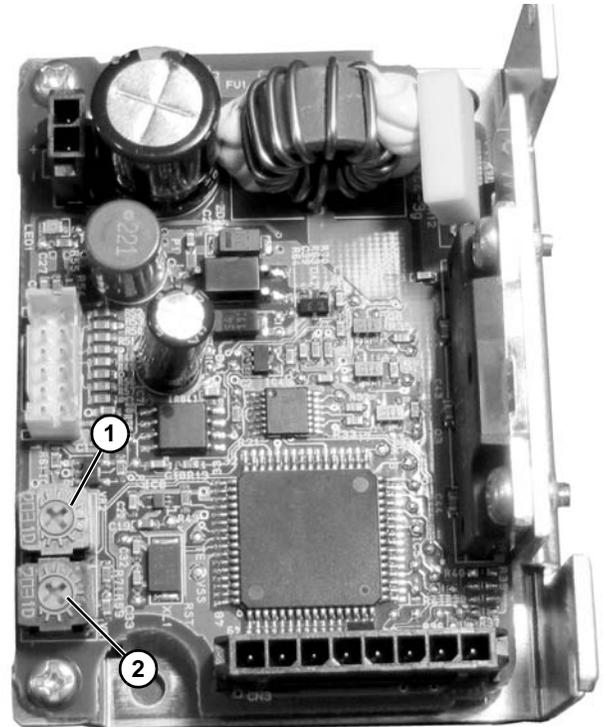


Figure 2

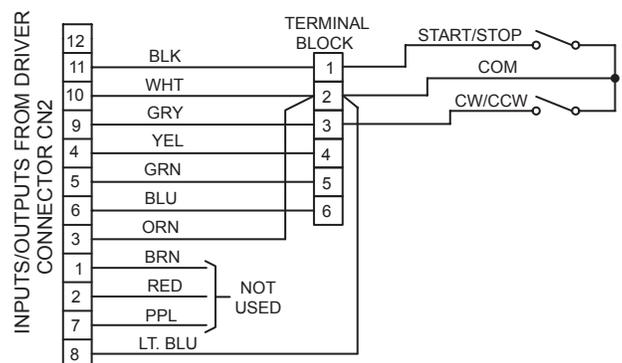


Figure 3

- Connect light blue wire to terminal 2 (COM).

NOTE

The light blue wire from the controller board is ordinarily not used if it is taped off. It must be separated from the harness and connected to terminal 2 (COM) as shown in (Figure 3).

- Adjust desired speed at driver (**Figure 2, item 2**).

Operations

4. Insert multi-conductor cable into cord grip (**Figure 4, item 1**).

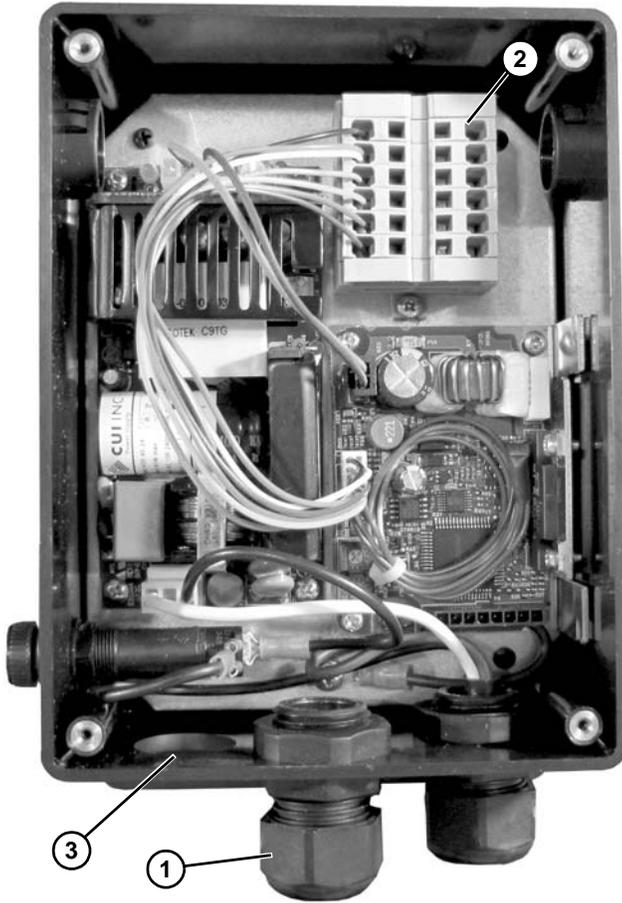


Figure 4

5. Wire START/STOP, COM, and CW/CCW to terminal (**Figure 4, item 2**).
6. Install motor cord through interface location (**Figure 4, item 3**). Refer to Motor Manual 851-748 or 851-749 for details.

Setting By External Potentiometer

This potentiometer is used when the speed is set away from the driver.

Use a 20 Kohm, 1/4 watt, linear resistance vs angle, external potentiometer. Clockwise rotation will increase the set speed.

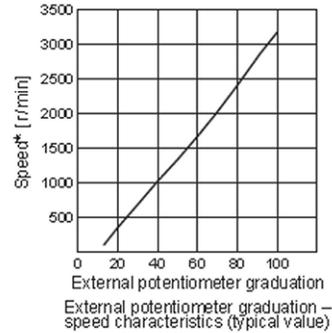


Figure 5

* Indicates the speed of the motor alone. The speed of the gear output shaft of a geared type or combination type is obtained by dividing the motor speed by the gear ratio.

Speed Control with External Potentiometer (customer supplied)

1 Accel/Decel Time Potentiometer

1. Adjust desired accel/decel at driver (**Figure 6, item 1**).

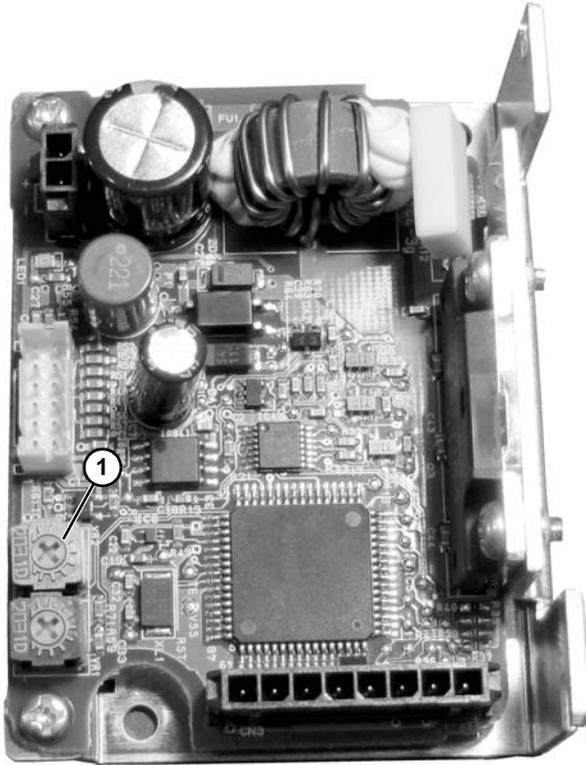


Figure 6

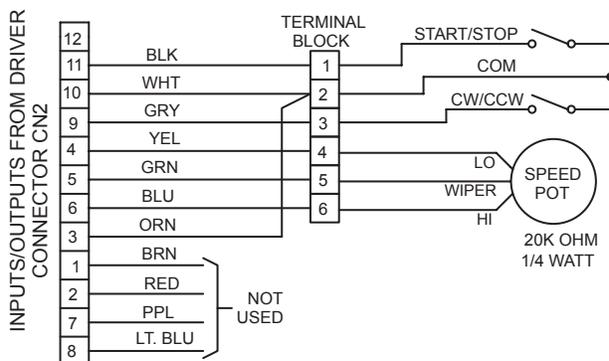


Figure 7

NOTE

Use a shielded cable for connection with the external potentiometer. Connection should be made close to the driver. Connect the shielded wire to the ground.

2. Insert shielded cable for external potentiometer into cord grip (**Figure 8, item 1**). Connect high, med, and low to 6, 5, and 4 as shown in (**Figure 7**).

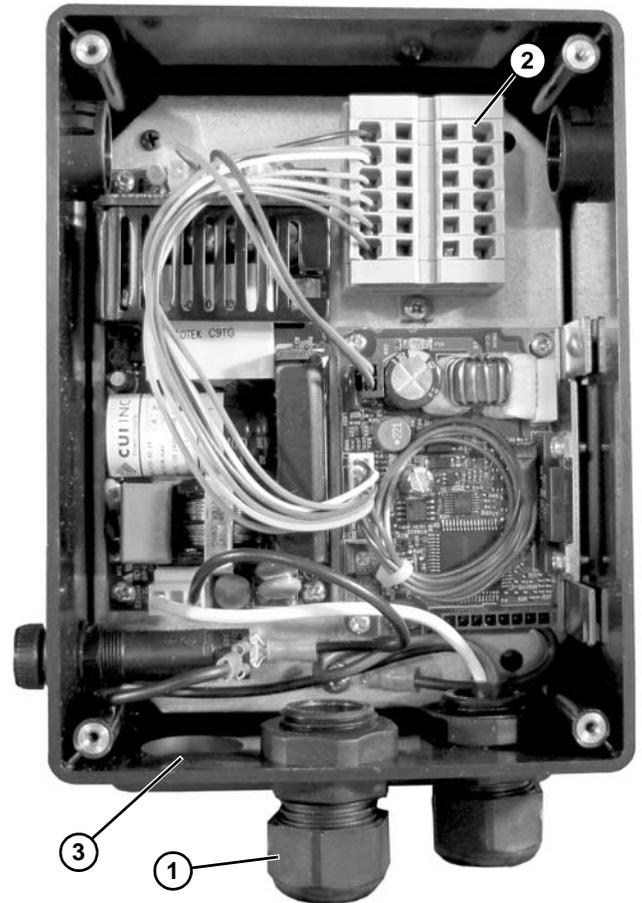


Figure 8

3. Wire START/STOP, COM, and CW/CCW to terminal (**Figure 8, item 2**), as shown in (**Figure 7**).
4. Install motor cord through interface location (**Figure 8, item 3**). Refer to Motor Manual 851-748 or 851-749 for details.

Operations

Setting By External DC Voltage

External DC voltage is used when the speed is set by D/A output from an external control device such as a programmable controller.

For external DC voltage, use DC power supply (0 to 5 VDC, 1 mA or more) where the primary and secondary sides are provided with reinforced insulation.

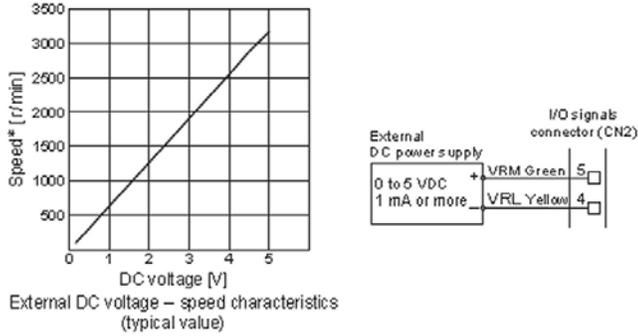


Figure 9

* Indicates the speed of the motor alone. The speed of the gear output shaft of a geared type or combination type is obtained by dividing the motor speed by the gear ratio.

NOTE

- The external DC power supply voltage must not exceed 5 VDC. Otherwise, the driver may be damaged.
- When connecting the external DC power supply, sufficient care must be taken not to mistake power polarity. Connection with incorrect polarity may damage the driver.
- Use a shielded cable for connection with the external DC power supply. Connection should be made close to the driver. Connect the shielded wire to the ground.

1. Adjust desired accel/decel at driver (Figure 11, item 1).

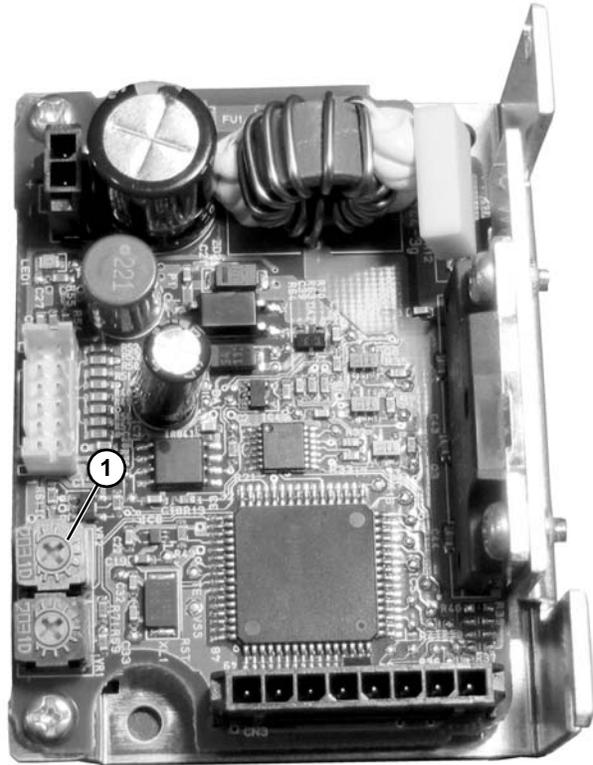


Figure 11

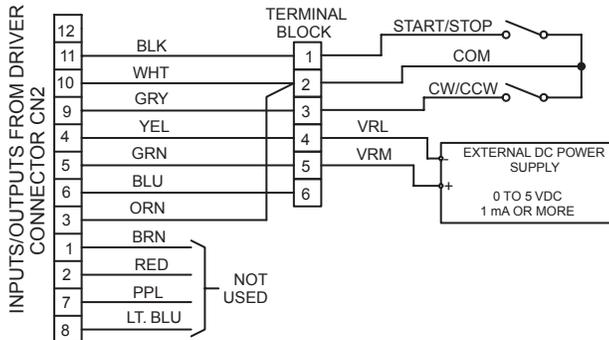


Figure 10

2. Insert multi-conductor cable into cord grip (**Figure 12, item 1**).



Figure 12

3. Wire START/STOP, COM, and CW/CCW to terminal (**Figure 12, item 2**).
4. Wire DC control speed signal negative to location 4 and positive to location 5 as shown in (**Figure 10**).
5. Install motor cord through interface location (**Figure 12, item 3**). Refer to Motor Manual 851-748 or 851-749 for details.

Return Policy

Returns must have prior written factory authorization or they will not be accepted. Items that are returned to Dorner without authorization will not be credited nor returned to the original sender. When calling for authorization, please have the following information ready for the Dorner factory representative or your local distributor:

1. Name and address of customer.
2. Dorner part number(s) of item(s) being returned.
3. Reason for return.
4. Customer's original order number used when ordering the item(s).
5. Dorner or distributor invoice number (if available, part serial number).

A representative will discuss action to be taken on the returned items and provide a Returned Goods Authorization (RMA) number for reference. RMA will automatically close 30 days after being issued. To get credit, items must be new and undamaged. There will be a return charge on all items returned for credit, where Dorner was not at fault. It is the customer's responsibility to prevent damage during return shipping. Damaged or modified items will not be accepted. The customer is responsible for return freight.

Product Type									
Product Line	Standard Products								Engineered to order parts
	Conveyors	Gearmotors & Mounting Packages	Support Stands	Accessories	Spare Parts (non-belt)	Spare Belts - Standard Flat Fabric	Spare Belts - Cleated & Specialty Fabric	Spare Belts - Plastic Chain	All equipment and parts
1100	30% return fee for all products except: 50% return fee for conveyors with modular belt, cleated belt or specialty belts						non-returnable		case-by-case
2200									
2200 Modular Belt									
2200 Precision Move									
2300									
2300 Modular Belt									
3200									
3200 LPZ									
3200 Precision Move									
4100									
5200									
5300									
6200									
Controls									
7200 / 7300	50% return fee for all products								
7350	non-returnable								
7360									
7400									
7600									

Returns will not be accepted after 60 days from original invoice date. The return charge covers inspection, cleaning, disassembly, disposal and reissuing of components to inventory. If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

Dorner has representatives throughout the world. Contact Dorner for the name of your local representative. Our Customer Service Team will gladly help with your questions on Dorner products.

For a copy of Dorner's Warranty, contact factory, distributor, service center or visit our website at www.dorner.com.

For replacement parts, contact an authorized Dorner Service Center or the factory.

 <p>Dorner Mfg. Corp. reserves the right to change or discontinue products without notice. All products and services are covered in accordance with our standard warranty. All rights reserved. © Dorner Mfg. Corp. 2013</p>	<p>DORNER MFG. CORP. 975 Cottonwood Ave., PO Box 20 Hartland, WI 53029-0020 USA TEL 1-800-397-8664 (USA) FAX 1-800-369-2440 (USA) Internet: www.dorner.com</p>	<p>Outside the USA: TEL 1-262-367-7600 FAX 1-262-367-58277</p>
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