



INSTRUCTION SHEET D2-3235 Main Input Circuit Breaker Kit

Model 2CB4020

For use with 1–20 HP, 230, 460 and 575 VAC

Model 2CB4050

**For use with GP2000, 25–40 HP @ 460 VAC, and
VTAC V, 25–50 HP, A-C V★S® Drives**

DANGER

ONLY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THIS EQUIPMENT AND THE HAZARDS INVOLVED SHOULD INSTALL, ADJUST, OPERATE, AND/OR SERVICE THIS EQUIPMENT. READ AND UNDERSTAND THIS MANUAL IN ITS ENTIRETY BEFORE PROCEEDING. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

DESCRIPTION

The products described in this instruction manual are manufactured by Reliance® Electric Industrial Company.

The Main Input Circuit Breaker Kit is an input protection device. This kit can be used with a 1–20 HP GP2000 stand-alone controller, a 1–20 HP GP2000 mounted in an expanded cabinet kit, GP2000 25–40 HP or VTAC V 1–50 HP controllers. Note that the user is required to provide input fuses for branch circuit protection (see I/M D2-3166, GP2000 1–20 HP, I/M D2-3182, GP2000 25–40 HP, and I/M D2-3167, VTAC V 1–50 HP).

RECEIVE AND ACCEPT THE SHIPMENT

Reliance Electric's terms of sale, in all instances, are F.O.B. point of origin. The user is responsible for thoroughly inspecting the equipment before accepting shipment from the transportation company.

If all the items called for on the bill of lading or on the express receipt are not included or if any items are obviously damaged, or do not accept the shipment until the freight or express agent makes an appropriate notation on your freight bill or express receipt. If any concealed loss or damage is discovered later, notify your freight or express agent within 15 days of receipt and request that he make an

inspection of shipment. Keep the entire shipment intact in its original shipping container.

The user is responsible for making claim against the Carrier for any shortage or damage occurring in transit. Claims for loss or damage in shipment must not be deducted from the Reliance Electric Invoice, nor should payment of the invoice be withheld while awaiting adjustment of such claims since the Carrier guarantees safe delivery.

File a Return Request

1. To return equipment, send a written request to Reliance Electric within ten days of receipt.
2. Do not return equipment without a numbered Equipment Return Authorization (ERA) from Reliance Electric.
3. Reliance Electric reserves the right to inspect the equipment on site.

Upon receiving, check the contents of the kit received with the contents as listed in Table 1, or Table 2.

Store the Kit until Installation

After receipt inspections, repack the kit in its original shipping container until installation. If a period of storage is expected, store in the original shipping container with its internal packing.

To ensure satisfactory operation at startup and to maintain warranty coverage, store the equipment:

- in its original shipping container in a clean, dry, safe place.
- within an ambient temperature range of -40°C to 65°C (-40°F to 149°F).
- within a relative humidity range of 5 to 95% without condensation.
- away from a highly corrosive atmosphere. In harsh environments, cover the shipping/storage container.

Table 1. Complete Parts List (Model 2CB4020, 1–20 HP GP2000, or GP2000 Mounted in an Expanded Cabinet)

| Description | Quantity | Part Number |
|----------------------------------|----------|--------------|
| Circuit Breaker (100A) | 1 | 65242-100NSX |
| M4 x 80 SHCS | 4 | 419062-10AGY |
| Circuit Breaker Mounting Bracket | 1 | 611859-86R |
| Wire Harness | 1 | 803432-103R |
| M4 Nut/Washer | 2 | 419063-201SG |
| Line Shield/Insulator | 1 | 708205-64A |

Table 2. Complete Parts List (Model 2CB4050, 25–50 HP GP2000 or 1–50 HP VTAC V Controllers)

| Description | Quantity | Part Number |
|----------------------------------|----------|--------------|
| Circuit Breaker (100A) | 1 | 65242-100NSX |
| M4 x 80 SHCS | 4 | 419062-10AGY |
| Circuit Breaker Mounting Bracket | 1 | 611859-87R |
| Wire Harness | 1 | 803432-103S |
| M5 Nut/Washer | 2 | 419063-201SH |
| Line Shield/Insulator | 1 | 708205-64A |

INSTALLATION: 1–20 HP GP2000 STAND-ALONE CONTROLLER

DANGER

DO NOT INSTALL MODIFICATION KITS WITH POWER APPLIED TO THE UNIT. DISCONNECT AND LOCK OUT INCOMING POWER BEFORE ATTEMPTING SUCH INSTALLATION. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

1. Disconnect all power to the controller before installing this kit.
2. In the selected mounting location, tap four holes as detailed in Figure 1. Mount the circuit breaker with the four (4) M4x80 SHCS screws provided.

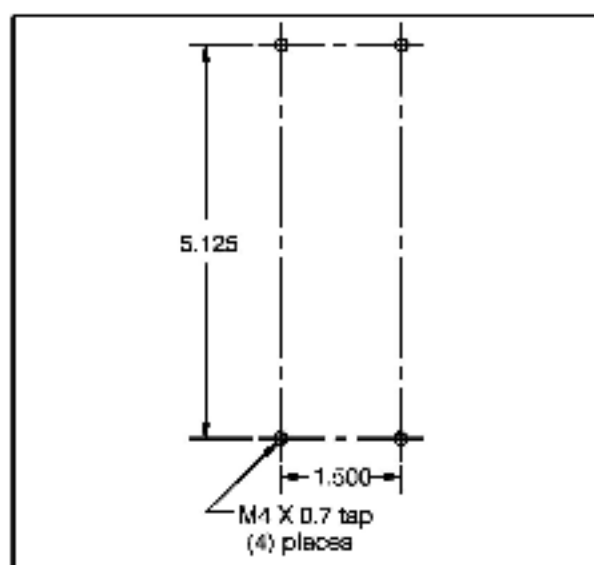


Figure 1. Circuit Breaker Mounting Hole Dimensions.

3. Remove the controller cover and set aside for reassembly.

DANGER

THE USER IS RESPONSIBLE FOR CONFORMING TO THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE LOCAL CODES WITH RESPECT TO WIRING, GROUNDING, DISCONNECTS, AND OVERCURRENT PROTECTION. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

4. Follow the wiring diagrams and instructions in the Controller Instruction Manual D2-3166 (GP2000, 1–20 HP), D2-3182 (GP2000 25–40 HP), D2-3167 (VTAC V 1–50 HP), and/or any appropriate kit instruction manuals (if other kits are installed) for all wires except those wires detailed in this instruction manual.

Note: The wire harnesses provided in this kit are designed for use with an Expanded Cabinet and may not be usable with the stand-alone controller.

5. Disconnect the A-C input leads from the controller input terminals if they are already connected.
6. Connect the A-C input leads to the line side of the circuit breaker. Refer to Figure 2 for wiring detail.
7. Using a wire size selected in accordance with all applicable codes, connect the load side of the circuit breaker to terminals R, S, and T on the controller. Refer to Figure 2 for wiring detail. Refer to Table 3 for wire terminal tightening torques.
8. Replace the controller cover.
9. Turn power ON.

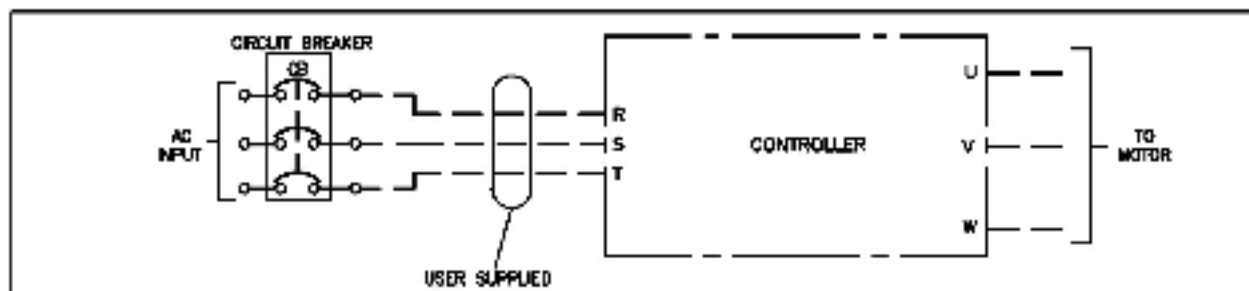


Figure 2. Circuit Breaker Connection Diagram (1–20 HP) without Expanded Cabinet.

Table 3. Wire Terminal Tightening Torque Specifications

| HP Range | Torque |
|----------|----------------------|
| ALL | 35 lb-in 3.96 n-m |

INSTALLATION: GP2000 1–20 HP WITH EXPANDED CABINET OR GP2000 25–40 HP, OR 1–50 HP VTAC V

DANGER

DO NOT INSTALL MODIFICATION KITS WITH POWER APPLIED TO THE CONTROLLER. DISCONNECT AND LOCK OUT INCOMING POWER BEFORE ATTEMPTING SUCH INSTALLATION. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

1. Disconnect all power to the controller before installing this kit.
2. Remove the controller cover and set aside for reassembly.

3. Mount the circuit breaker in the expanded cabinet bay. Refer to Figure 3 for mounting location. Use the four (4) M4x80 SHCS screws to mount the circuit breaker and line shield to the mounting bracket. Then attach the mounting bracket to the inner wall of the cabinet using the two (2) M5 nut/washers for 25–40 HP or M4 nut/washers for 7–20 HP.

DANGER

THE USER IS RESPONSIBLE FOR CONFORMING TO THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE LOCAL CODES. WIRING PRACTICES, ENCLOSURES, GROUNDING, DISCONNECTS, AND OVERCURRENT PROTECTION ARE OF PARTICULAR IMPORTANCE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

4. Follow the wiring diagrams and instructions in the Controller Instruction Manual D2-3166 (GP2000 1–20 HP), D2-3182 (GP2000, 25–40 HP), D2-3167 (VTAC V, 1–50 HP), and/

or any appropriate kit instruction manuals (if other kits are installed) for all wires except those wires detailed in this instruction manual.

5. Disconnect the A-G input leads from the terminals R', S', and T' on the terminal board, if they are already connected. Refer to Figure 4 for wiring detail.

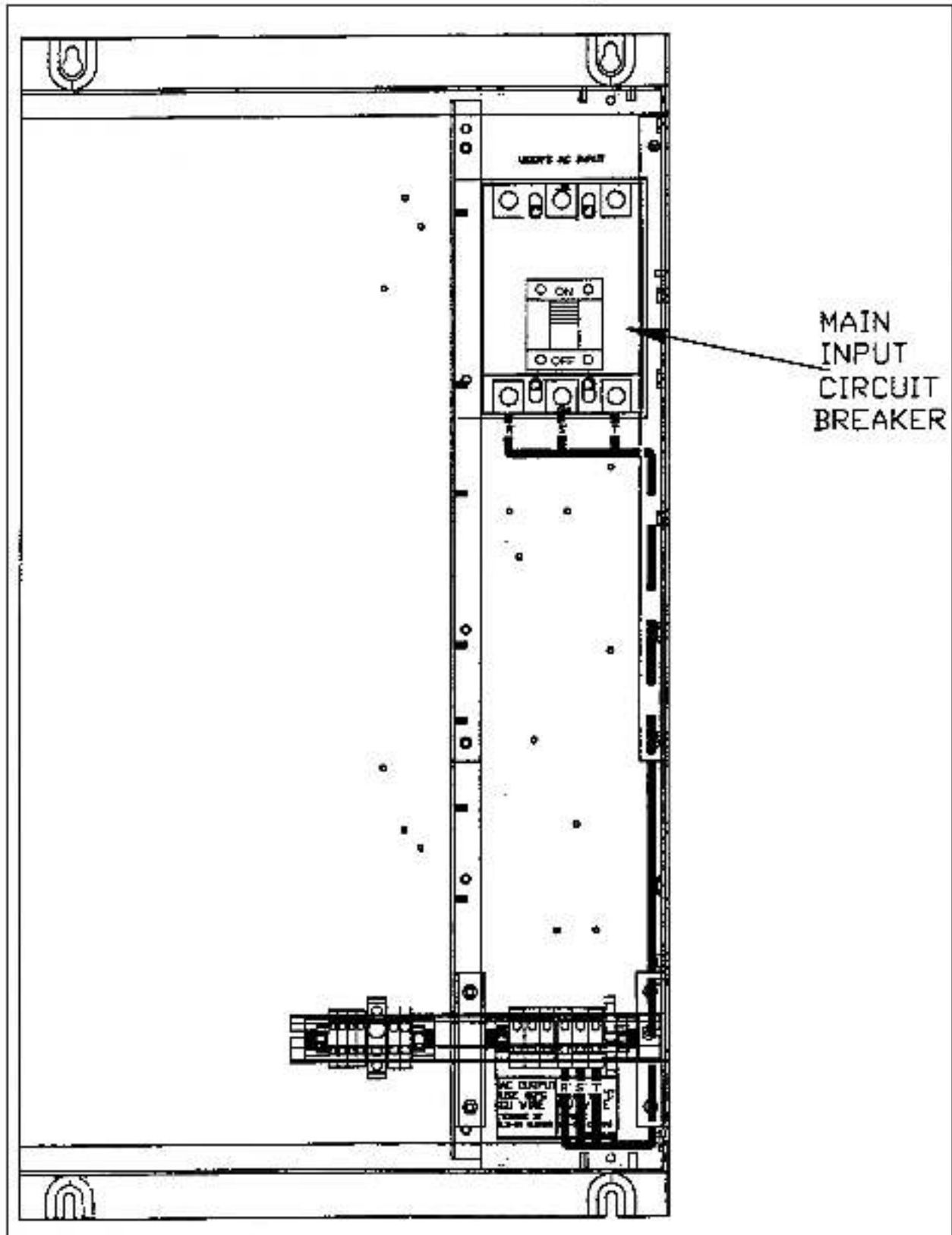


Figure 3. Circuit Breaker Mounting Location (1–20 HP GP2000 Mounted In an Expanded Cabinet Kit, 25–40 HP GP2000, or 1–50 HP VTAC V).

6. Connect the A-C input leads to the line side (TOP) of the circuit breaker. Refer to Figure 4 for wiring detail.
7. Using wire harness 803432-103S, (803432-103R if provided with the 1–20 HP expanded cabinet kit) connect the load side (BOTTOM) of the circuit breaker to terminals R', S', and T' on the terminal board. Refer to Figure 4 for wiring detail. (Refer to Table 3 for wire terminal tightening torques.)
8. Remove the circuit breaker cover plate from the controller cover and replace the controller cover.
9. Turn power ON.

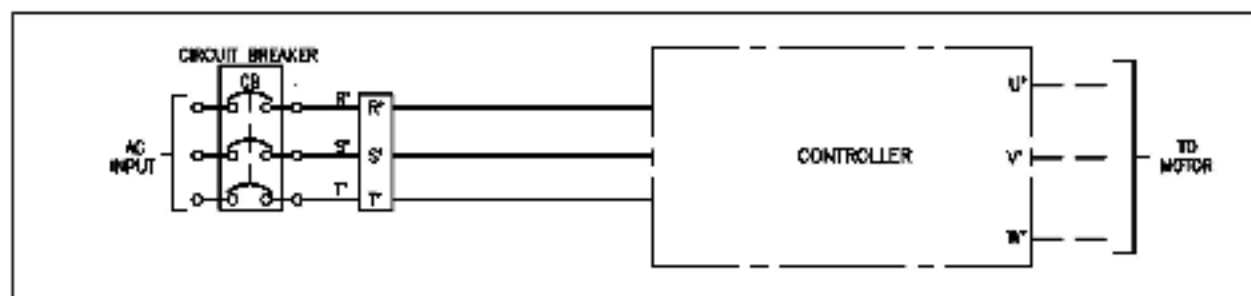


Figure 4. Circuit Breaker Connection Diagram (Controller with the Expanded Cabinet).

DANGER

DO NOT INSTALL MODIFICATION KITS WITH POWER APPLIED TO THE CONTROLLER. DISCONNECT AND LOCK OUT INCOMING POWER BEFORE ATTEMPTING SUCH INSTALLATION. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE BODILY INJURY OR LOSS OF LIFE.

Note: This device is to be used ONLY as an input disconnect. The user is responsible for supplying a properly protected branch circuit to the main input circuit breaker.

ADJUSTMENTS (ALL MODELS)

1. **Adjusting the trip setting.** The circuit breaker supplied has been factory set to the trip setting (position) as shown in Table 4.
2. **Resetting the circuit breaker.** After the circuit breaker trips, move the trip handle to the OFF position and then to the ON position.

Table 4. Factory Trip Setting

| | |
|------------------------------|---------------|
| 1–20 HP All Models | A 300 AMPS |
| 25–40 GP2000 25–50 VTAC V | B 400 AMPS |

Reliance Electric / 24701 Euclid Avenue / Cleveland, Ohio 44117 / (216) 266-7000

