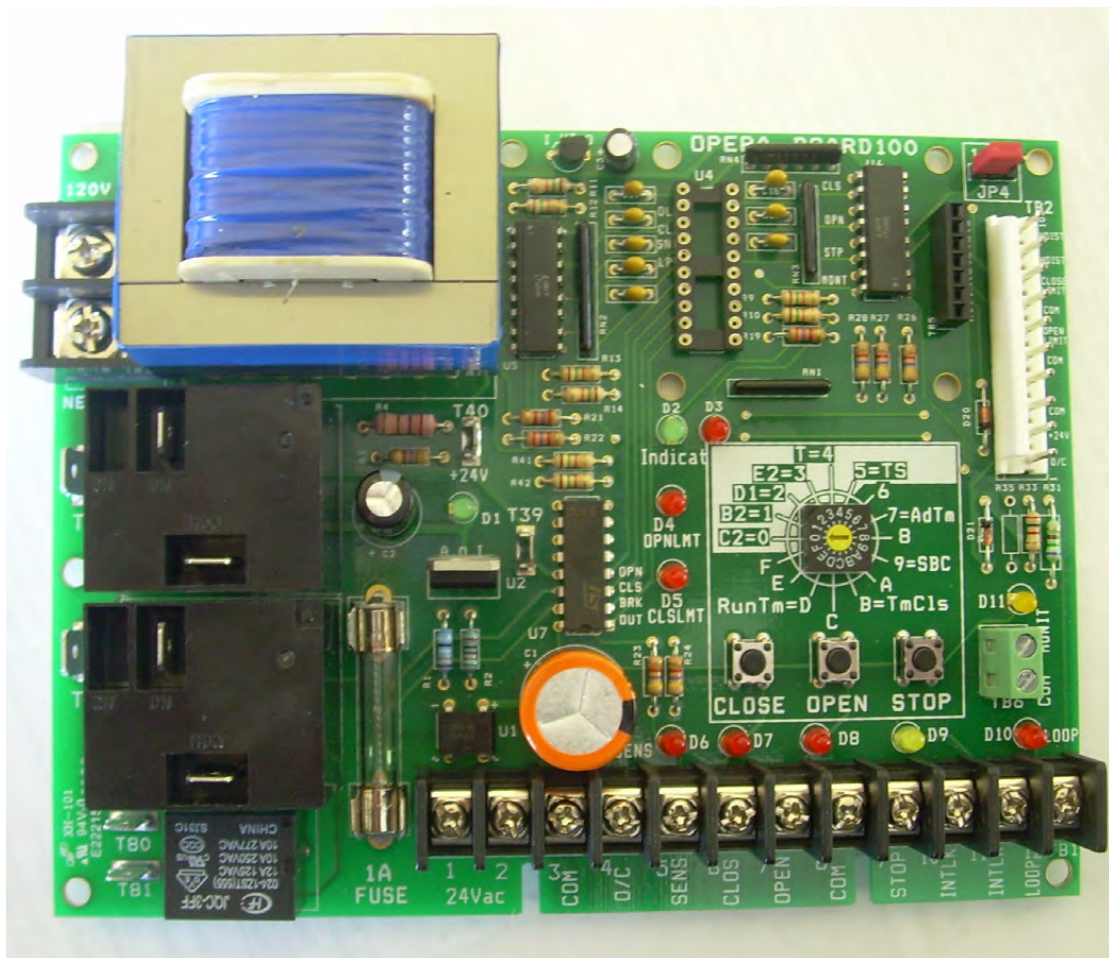


Installation & Instruction Manual



Electrical Control (BOARD 100E)

READ AND FOLLOW ALL INSTRUCTIONS.
SAVE THESE INSTRUCTIONS.
GIVE TO END-USER.

Serial # _____

Model # _____

Wiring Diagram # _____

Project #/Name _____

Door #/Name _____



For technical support, please call 1-800-361-2260 or visit www.manaras.com for more information

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1 *Electrical Wiring*

WARNING

To reduce risk of SEVERE INJURY or DEATH to persons:

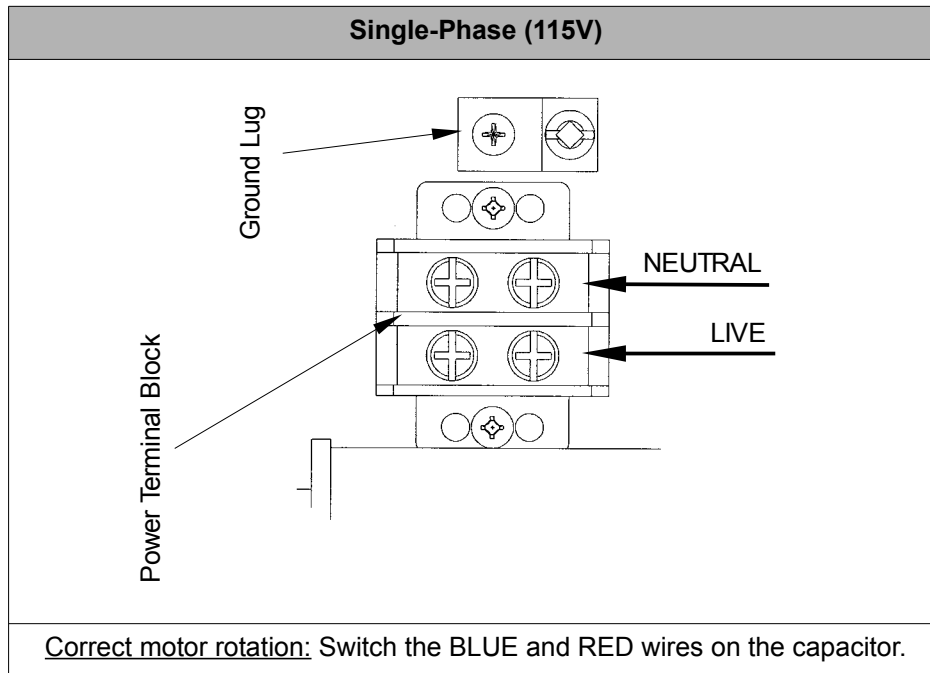
- All electrical wiring should be done by a qualified professional and in accordance to local electrical codes.
- Always shut OFF the main power before performing any electrical intervention.
- Use proper wire gauge for incoming power line and for accessory connections.
- Install operator main circuit breaker next to operator for easy access for power shut-off.
- Use separate knockouts on operator control box for accessories and main power cables.
- Always separate low and high voltage wires.
- Operator should be properly grounded to the building ground and to the main power supply ground lug.
- Always use suitable and appropriate rating circuit breakers for operator protection.
- Compare available power supply voltage to voltage on operator name plate prior to electrical connection. Failure to connect appropriate power supply voltage may cause serious damage to the operator.

NOTICE

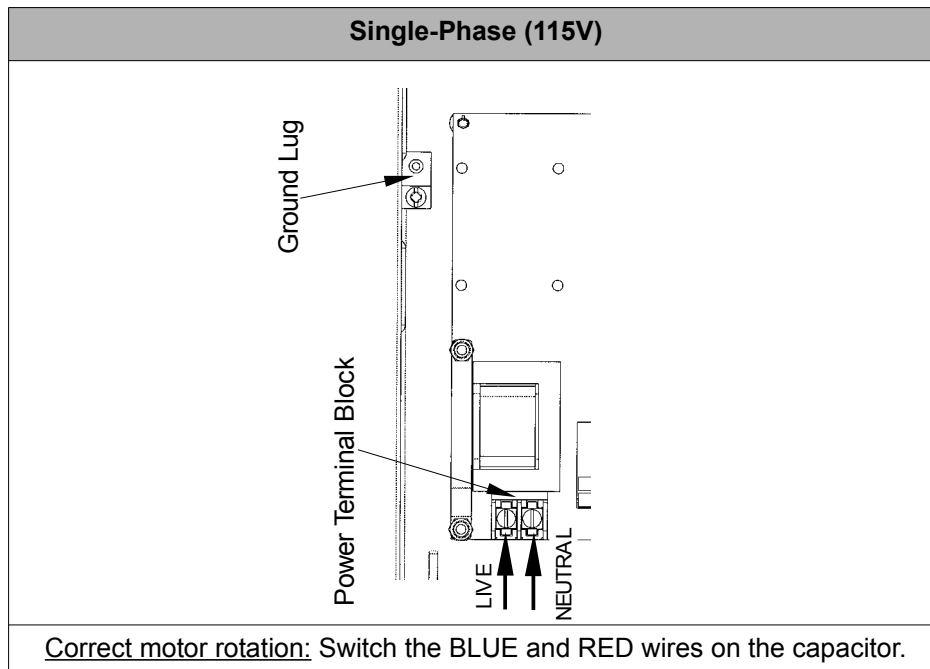
- The installer **MUST** test for proper connection and functionality of the operator and its accessories before leaving the job site.
- The installer should also perform a demonstration for the end-user.

1.1 Main Power Supply Connection

1.1.1 For Opera-MH and Opera-MJ models



1.1.2 For MLT model



1.2 Wall-Button Connection

⚠ WARNING

- Wall controls must be mounted in clear view of the door, far enough from the door, or positioned such that the user is prevented from coming in contact with the door while operating the controls and at least 5 feet (1,5 m) above the standing surface.
- Keep low voltage wires separate from line voltage wires.
- Use copper conductors only.

Push-Button Station (PBS) Connection

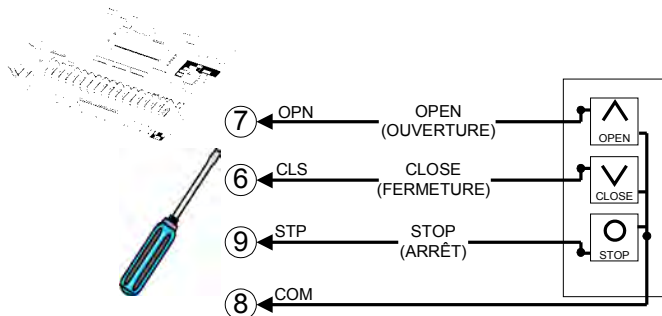


Figure 1 - STATION 020 / 084
3-PBS Open / Close / Stop

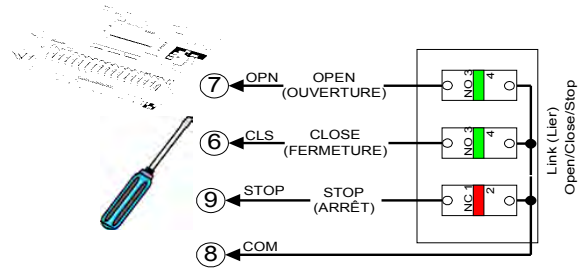


Figure 2 - STATION 041 / 049 / 056 / 076 / 078
3-PBS Open / Close / Stop

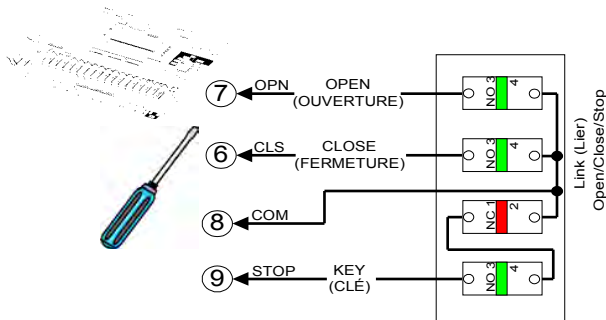


Figure 3 - STATION 079
3-PBS Open / Close / Stop with Key Lock-out

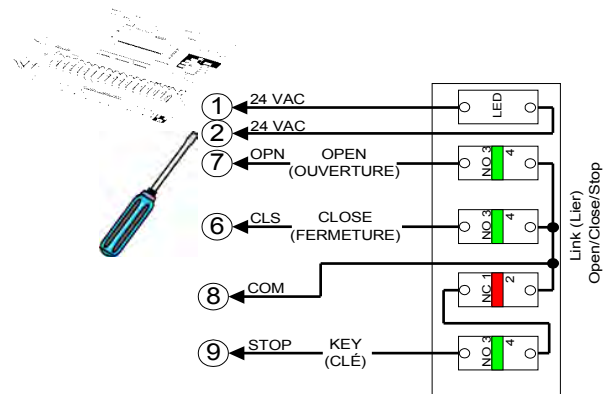


Figure 4 - STATION 080
3-PBS Open / Close / Stop with Key Lock-out and Light

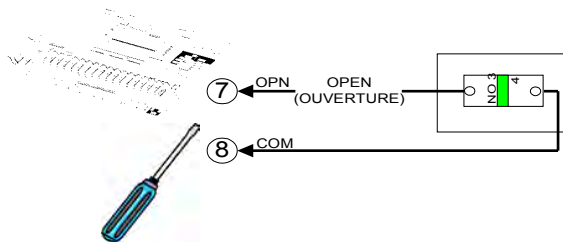


Figure 5 - STATION 001 / 081
1-PBS Open

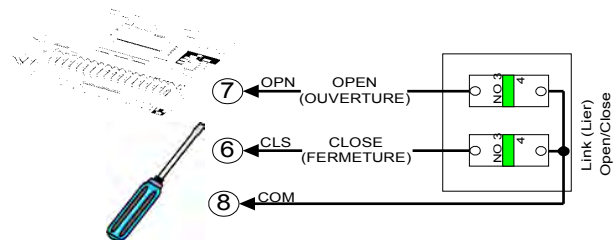


Figure 6 - STATION 010 / 082
2-PBS Open / Close

1.3 Optional Accessory Connections

NOTICE

- Keep low voltage wires separate from line voltage wires.
- Use copper conductors only.

1.3.1 Electric Photo Cells / Photo Eyes (Non-Monitored)

Through Beam Type

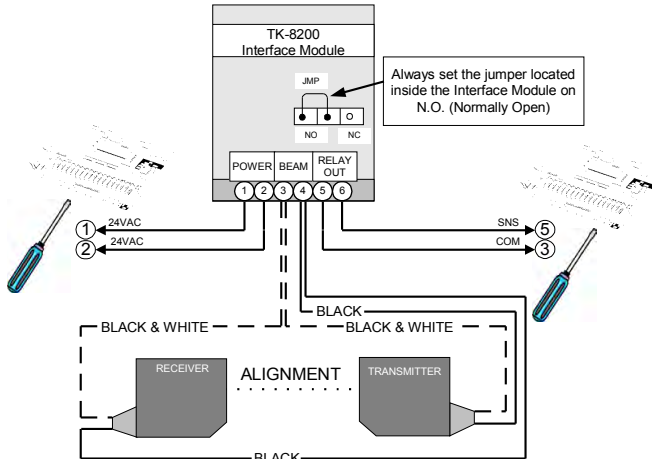


Figure 7 - PHOTO 008

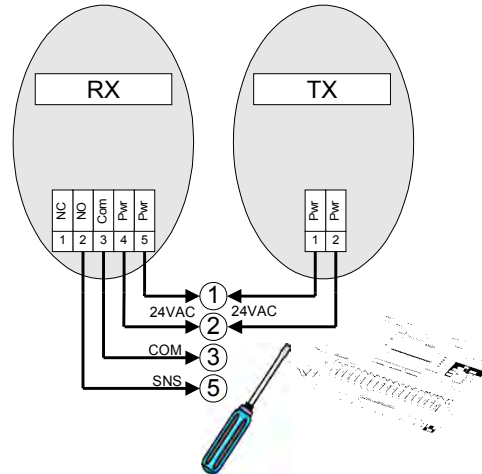


Figure 8 - PHOTO 015 / 016 / 045 / 050 / 051 / 059

Reflective Type

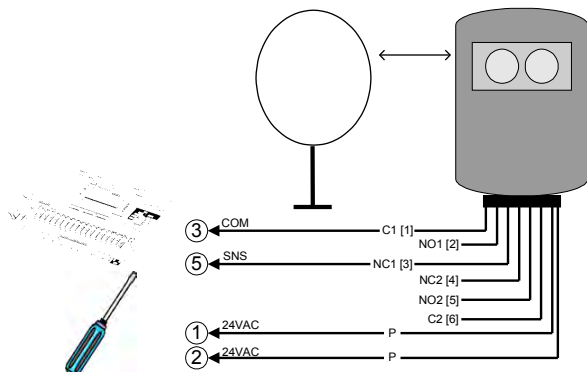


Figure 9 - PHOTO 018

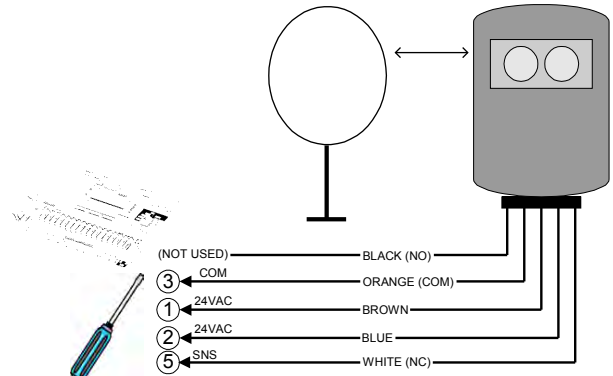


Figure 10 - PHOTO 038

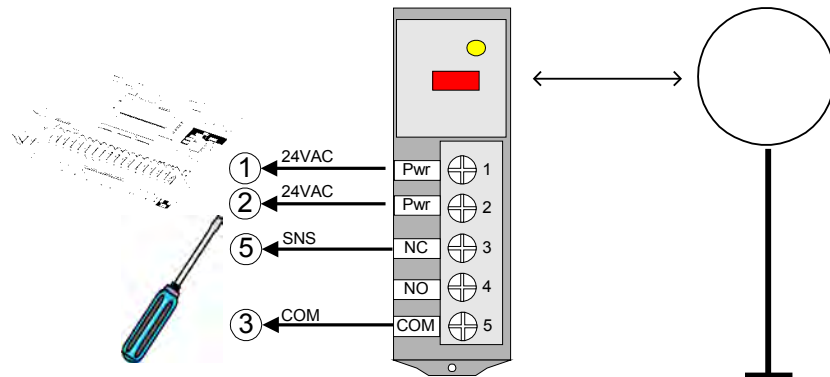


Figure 11 - PHOTO 060

1.3.2 Reversing Edge Device (Non-Monitored)

NOTICE

- If the door is controlled by any device other than a constant pressure push-button station on close, including a timer-to-close, a reversing edge must be connected.

Installation

Pneumatic Sensing Edge

1. Place the air switch in position, refer to Figure 12.
2. Place the air hose in position.
3. Use a coil cord or take-up reel to connect the air switch to the operator terminals. Install electric wires according to Figure 13 or Figure 14.
4. Connect one end of the air hose to the air switch.
5. Place the air plug in the other end of the air hose.

Electric Sensing Edge

1. Place the junction box in position, refer to Figure 12.
2. Place the sensing edge in position.
3. Use a coil cord or take-up reel to connect the sensing edge wires to the operator terminals. Install electric wires according to Figure 15.
4. Connect the sensing edge to the junction box.
5. N/A

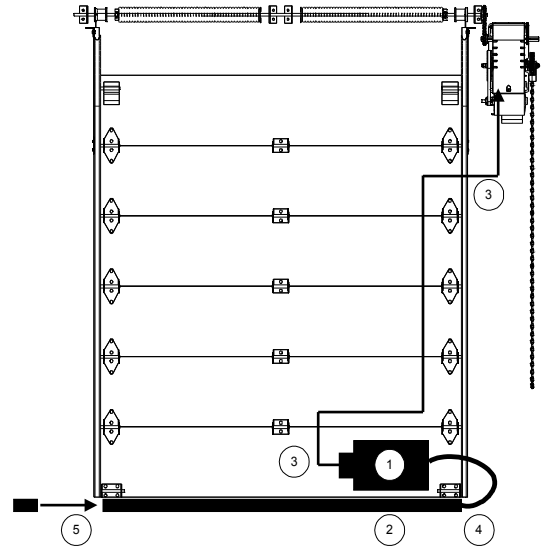


Figure 12 - Reversing Edge

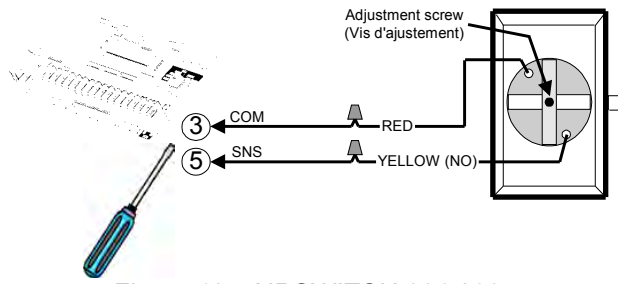


Figure 13 - AIRSWITCH 001 / 007

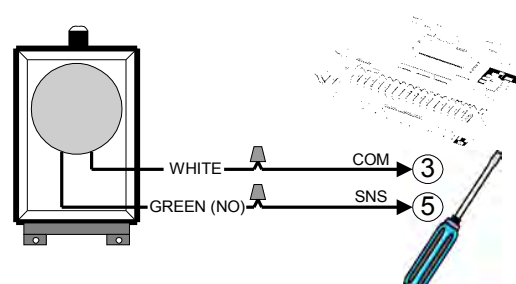


Figure 14 - AIRSWITCH 009

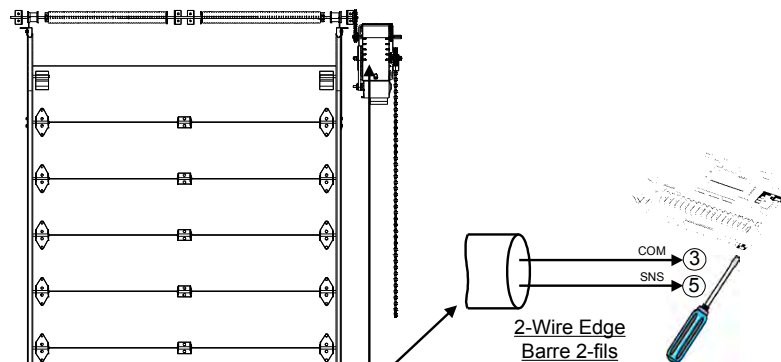


Figure 15 - Electric Reversing Edge

1.3.3 Pull Cord & Key Switch

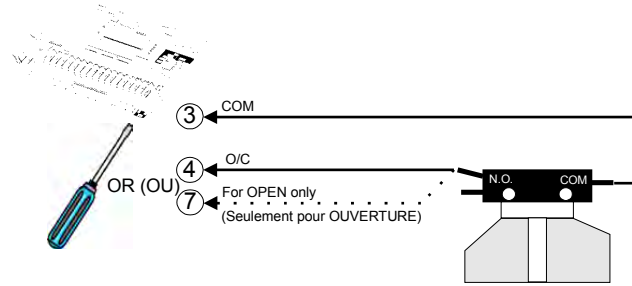


Figure 16 - PULLCORD 001 / 003 / 004 / 007

2-Position Key Switch

Recommendation: Put Control Board on C2 or E2 Mode (constant-pressure-to-close)

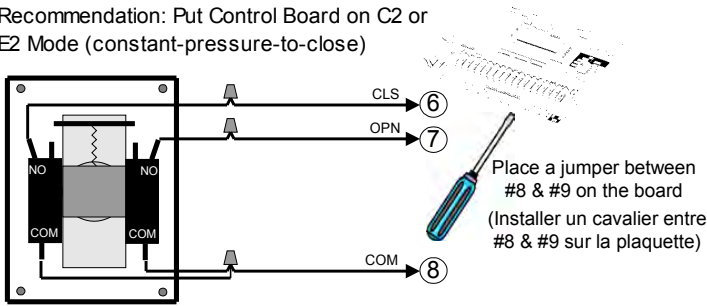


Figure 17 - KEYSWITCH 010 / 015

2-Position Key Switch & Stop Button

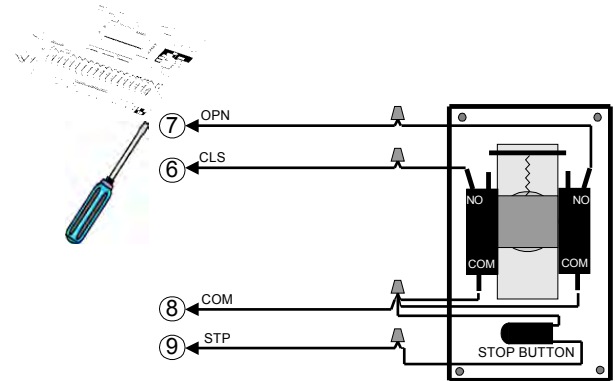


Figure 18 - KEYSWITCH 019

1.3.4 External Single-Button Radio Control Receiver

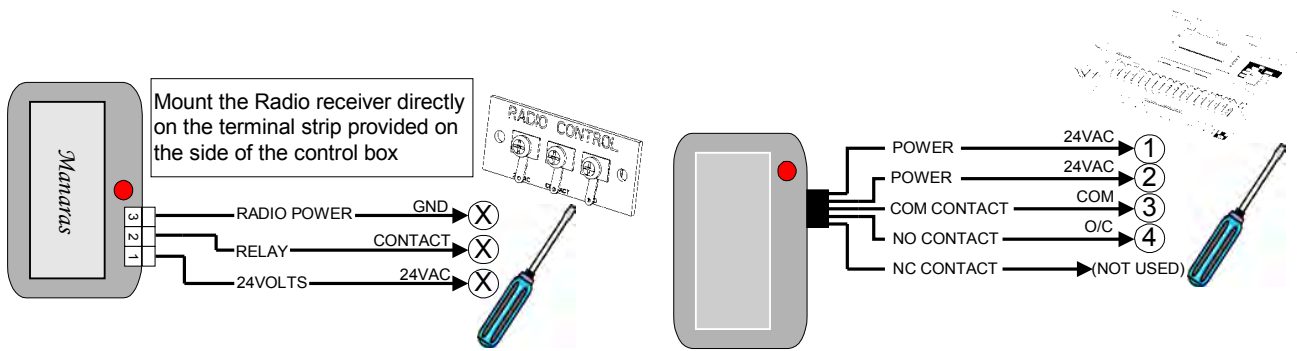


Figure 19 - RADIO 014 or RADIO 015

Figure 20 - Other Radio Receivers with 4 or 5-wires

1.3.5 Vehicle Loop Detector

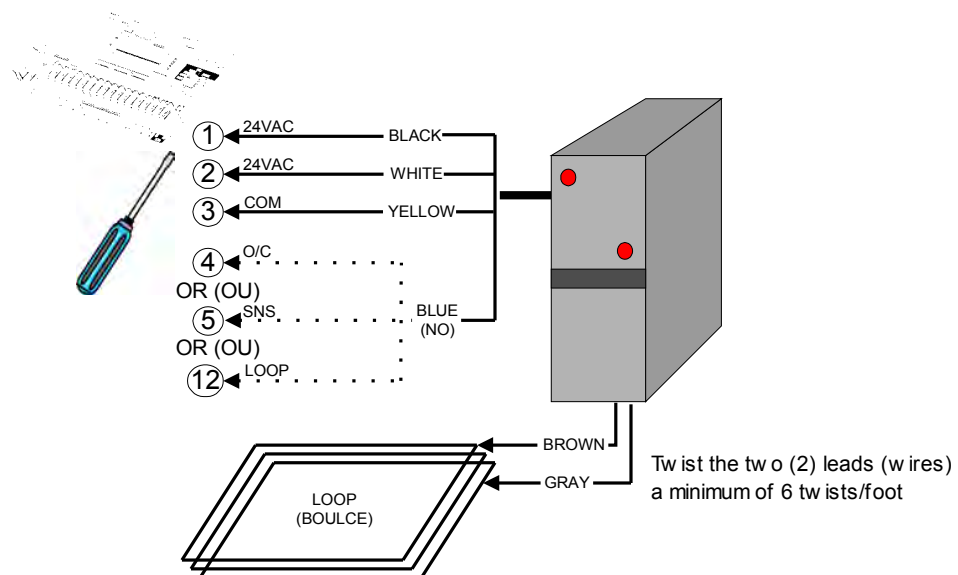


Figure 21 - Vehicle Loop Detector

1.3.6 Other Accessories

Additional accessories are available, such as:

- Plug-In Radio Receiver
- External Mid-Stop Switch

Please contact your dealer or our inside sales department at **1-800-361-2260** for further information.

2 Electrical Drawings

2.1 External Wiring with BOARD 100E

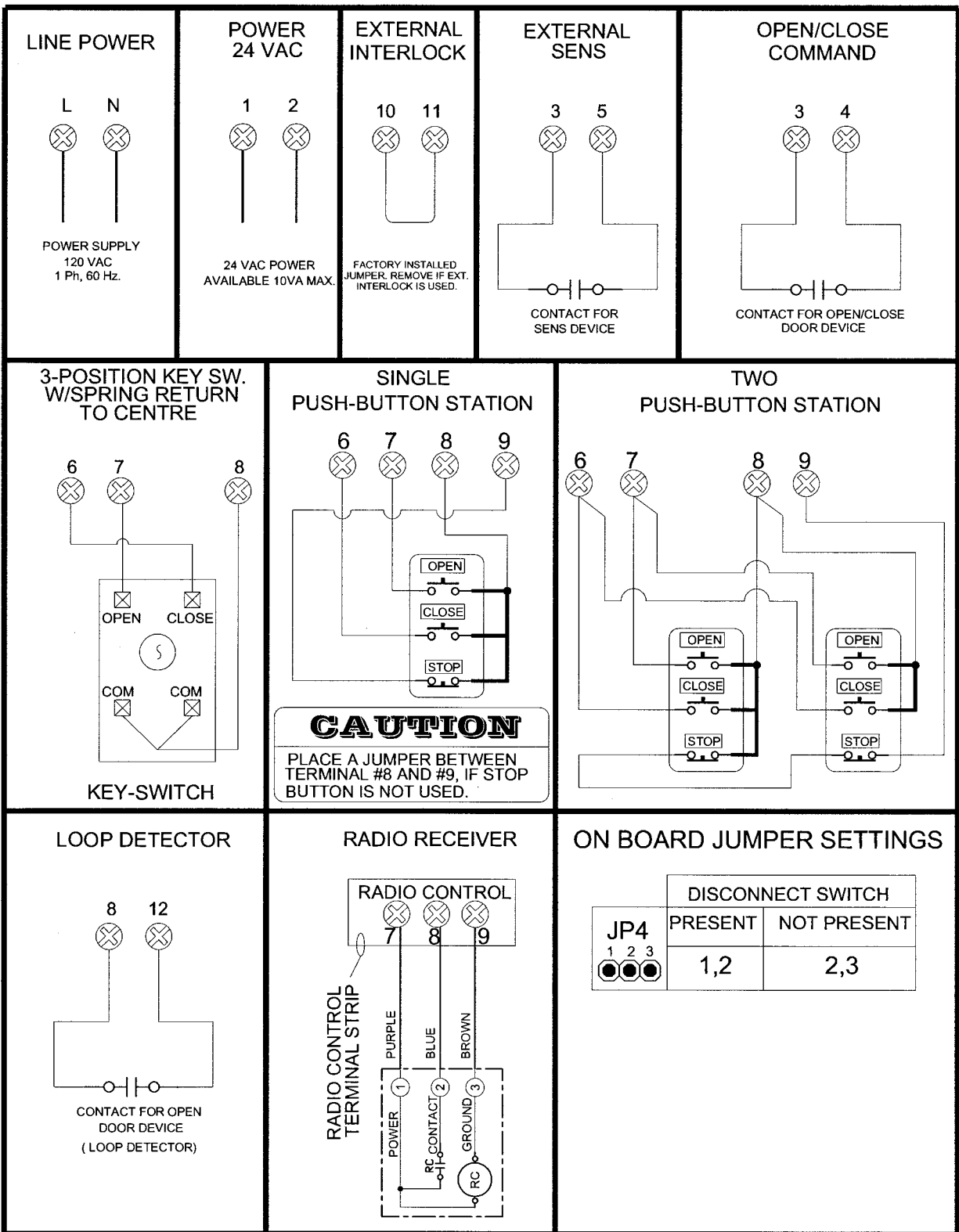


Figure 22 - External Wiring

2.2 Opera-MH and Opera-MJ Operators with BOARD 100E

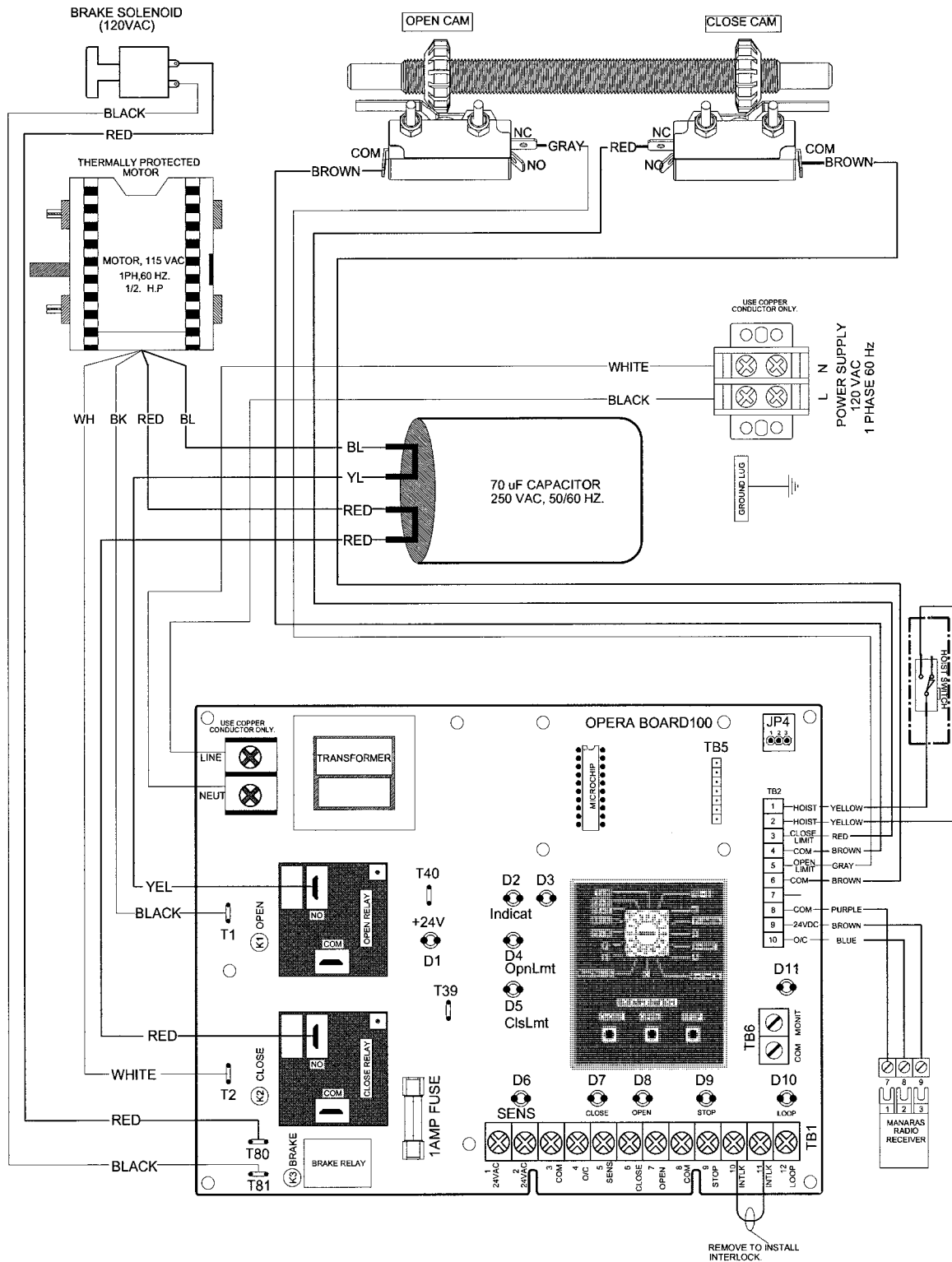


Figure 23 - MECEB11-100-OMH-W

2.3 MLT Operator with BOARD 100E

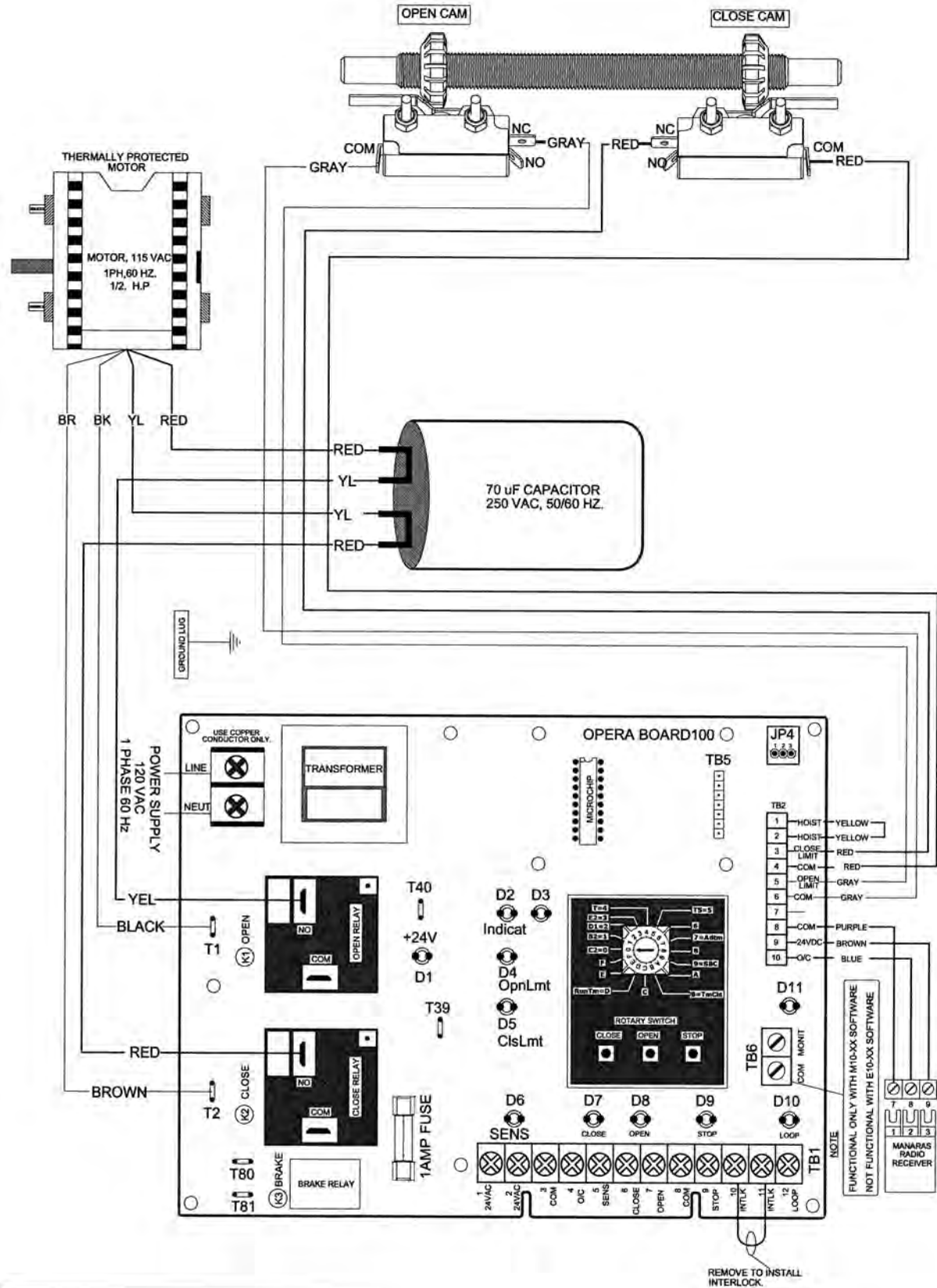


Figure 24 - MECB11-B100-MLT-W

User Instructions

IMPORTANT SAFETY INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF SEVERE INJURY OR DEATH TO PERSONS:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Never let children operate or play with door controls. Keep the remote control (where provided) away from children.
3. Personnel should keep away from a door in motion and keep the moving door in sight until it is completely closed or opened. **NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.**
4. Test the door's safety features at least once a month. After adjusting either the force or the limit of travel, retest the door operator's safety features. Failure to adjust the operator properly may cause severe injury or death.
5. For products having a manual release, if possible, use the manual release only when the door is closed. Use caution when using this release with the door open. Weak or broken springs may cause the door to fall rapidly, causing severe injury or death.
6. **KEEP DOORS PROPERLY OPERATING AND BALANCED.** See Door Manufacturer's Owner Manual. An improperly operating or balanced door could cause severe injury or death. Have trained door systems technician make repairs to cables, spring assemblies and other hardware.
7. **SAVE THESE INSTRUCTIONS.**

IMPORTANT

For more information or for immediate assistance, please contact your local dealer.

1 Electronic Control Board (ECB) – BOARD 100E

1.1 General Layout

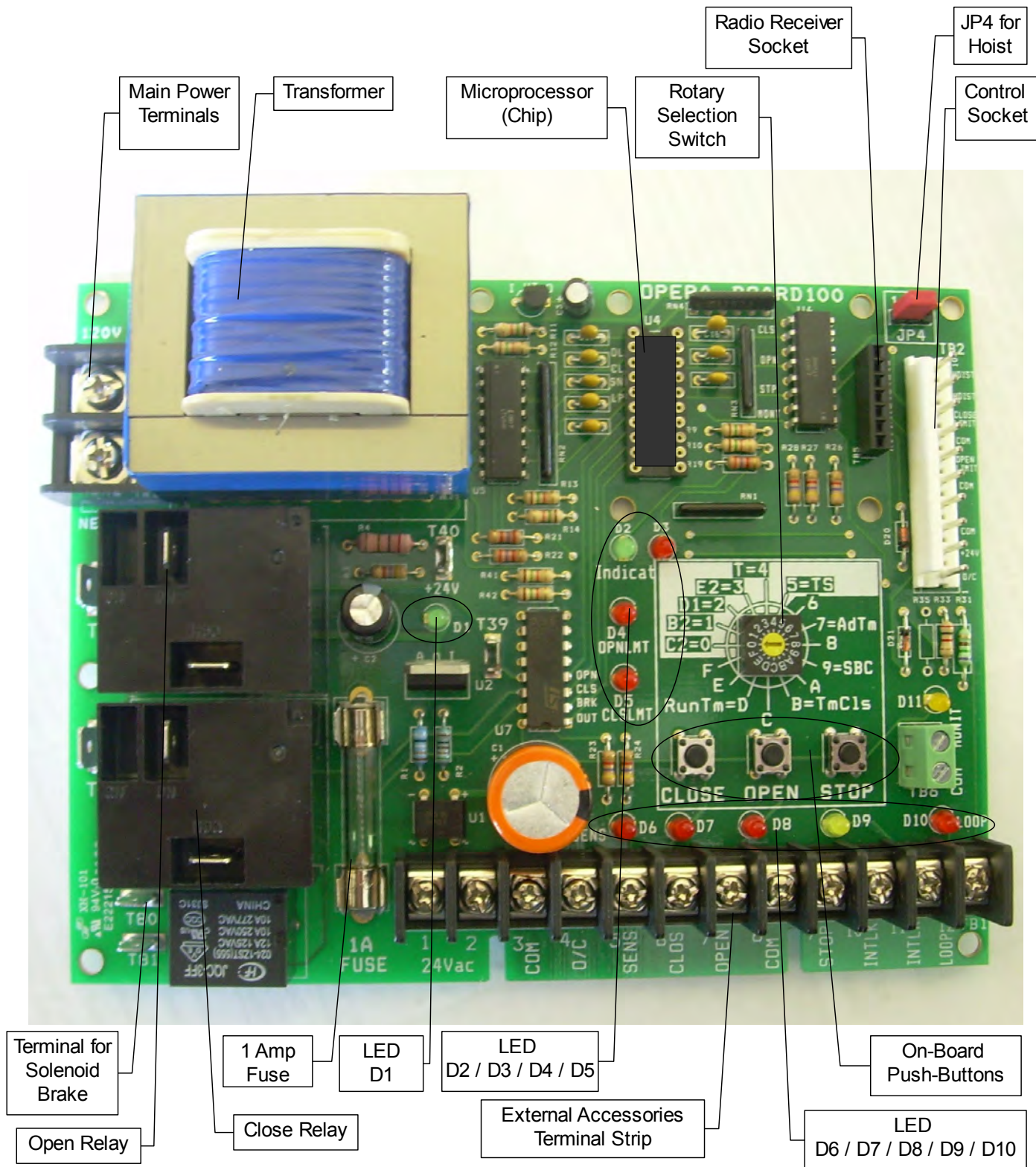










Figure 25 - Electronic Control Board – BOARD 100E

1.2 On-Board LED Monitoring Status















The electronic control board's LEDs help with wiring and troubleshooting diagnostics. Every LED indicates the status of the door. BOARD 100E has a non-volatile memory and the LEDs return to their initial state after a power interruption. Refer to Figure 25, p.14 as reference.

Table 1 - LED Monitoring Status

LED	Color	LED Status	Functions
D1	GREEN	 ON	Indicates presence of 24VDC.
D2/D3	Refer to Table 2, p.16 as reference.		
D4	RED	 ON	When open limit switch is activated.
D5	RED	 ON	When close limit switch is activated.
D6	RED	 ON	When reversing or sensing edge is activated.
D7	RED	 ON	When close command is activated.
D8	RED	 ON	When open command is activated.
D9	YELLOW	 ON	Indicates that the stop button is connected and hoist or disconnect switch is not engaged.
D10	RED	 ON	When inductive loop is activated.

1.2.1 D2 / D3 LED Monitoring Status Combination Scenarios

Table 2 - D2/D3 LED Monitoring Status - Combination Scenarios

Scenario	D2 LED GREEN	D3 LED RED	Functions
1	 OFF	 OFF	Indicates a failure of the 5VDC.
2	 OFF	 Flash	When door is closing.
3	 ON	 OFF	When operator is on standby.
4	 ON	 Flash	Indicates wrong handling feature activation <i>(if open limit switch is not released within 3.6 sec while door starts to close from fully open position)</i> .
5	 Flash	 OFF	When door is opening.
6	 Flash	 Flash	When timer to close is counting before closing the door.
7	 Flash	 Flash	When door is opening during programming of the run timer feature. Refer to section 1.3.2, p.18 as reference.

1.3 Electronic Control Board (ECB) Programming

WARNING

To reduce risk of SEVERE INJURY or DEATH to persons:

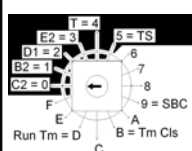
- Manaras-Opera strongly recommends the use of external entrapment protection devices, especially in the case of momentary contact to close (B2 wiring or Timer to Close).

1.3.1 Run Mode Settings

NOTICE

- Always return the door to **fully closed position** before performing any program settings.

C2 Mode

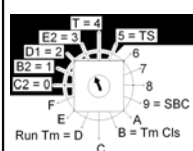


Selector switch position on **0**

SET SELECT SWITCH ON C2 = 0

Function: Momentary contact to open and stop, constant-pressure-to-close with 3-button station. Activation of safety devices will reverse the door while closing. Auxiliary devices function as an Open control and will reverse the door while closing.

E2 Mode

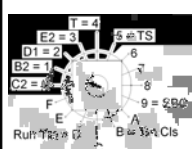


Selector switch position on **3**

SET SELECT SWITCH ON E2 = 3

Function: Momentary contact to open and constant pressure to Close. Release of Close button or activation of safety devices will reverse the door to fully open position.

B2 Mode

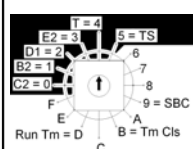


Selector switch position on **1**

SET SELECT SWITCH ON B2 = 1

Function: Momentary contact to Open, Close and Stop with 3-button station. Activation of safety devices will reverse the door during closing. Auxiliary devices function as Open-Close control and will reverse the door while closing.

T Mode

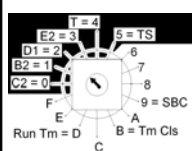


Selector switch position on **4**

SET SELECT SWITCH ON T = 4

Function: Under Mode T=4, if safety devices are activated while door is closing, door will reverse and will not close by Timer to Close (TTC). TTC will also be disabled if the chain hoist is engaged or if the stop is activated before elapsed time. TTC will resume its normal operation only after the door is fully closed.

D1 Mode

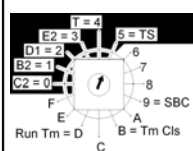


Selector switch position on **2**

SET SELECT SWITCH ON D1 = 2

Function: Constant-pressure-to-open and constant-pressure-to-close. Activation of safety devices will stop the door while closing.

TS Mode



Selector switch position on **5**

SET SELECT SWITCH ON TS = 5

Function: Under Mode TS=5, if safety devices are activated while door is closing, door will reverse and will close by Timer to Close (TTC). TTC will also be refreshed if the chain hoist is engaged, if the stop is activated before elapsed time or in case of a power outage.

T (4) & TS (5) Mode: Only applicable with Timer to Close, refer to Features Programming section, p. 18.

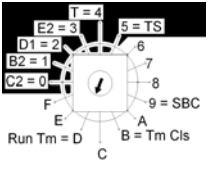
1.3.2 Features Programming

NOTICE

- Always return the door to **fully closed position** before performing any program settings.

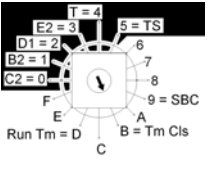
Maximum Run Timer

Maximum run timer is set to 90 seconds by default. When programmed, this feature calculates the total time required for the door to travel from the fully closed to the fully opened position and adds 10 seconds to this time. Therefore, if the door is obstructed while travelling up or down, this feature will stop the operator after the maximum run timer time has elapsed.

Run Timer Programming	Select Switch	Set Run Timer to Default
<ol style="list-style-type: none"> 1. Verify if close limit switch is activated and if close LED is ON. 2. Set select switch on D = Run Tm. 3. Press "Open" button and let the door reach the fully opened position. Result: 10 sec is added to the total travel time. 4. Set select switch on run mode (0, 1, 2, 3, 4 or 5). 		<ol style="list-style-type: none"> 1. Verify if close limit switch is activated and if close LED is ON. 2. Set select switch on D = Run Tm. 3. Press "Stop" button. Result: The max. run timer is set to the default value of 90 sec. 4. Set select switch on run mode (0, 1, 2, 3, 4 or 5).

Timer to Close (TTC)

Timer to Close (T = 4 or TS = 5 Mode), will close the door from the fully opened position after a factory preset time (5 sec.). Timer to Close can be programmed in increments of 1 sec. or 15 sec.

TTC Programming	Select Switch	TTC Deactivation
<ol style="list-style-type: none"> 1. Verify if close limit switch is activated and if close LED is ON. 2. Set select switch on B = Tm Cls. 3. Press the "Stop" button to return the time to 0 sec. or to reprogram. 4. Press "Open" button to add 15 sec. increments, or press "Close" button to add 1 sec. increments. Max. 4 min. 5. Set select switch on T = 4 or TS = 5. Refer to Run Mode Settings section, p. 17 for mode descriptions. 		<ol style="list-style-type: none"> 1. If the TTC is not required, set select switch on run mode (0, 1, 2, or 3).

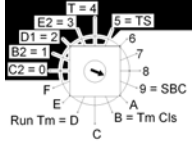
Timer to Close User Suspension Feature

This feature allows the Timer to Close to be enabled/disabled from the floor by using a wall push-button station. This feature allows the user to keep the door opened for ONE CYCLE only.

TTC Deactivation	TTC Activation
While the door is in the closed position, by pressing the "Stop" button 3 times and the "Close" button 3 times consecutively on the push-button station, the TTC is deactivated (<i>TTC is suspended</i>).	The TTC is re-activated (<i>TTC returns to normal function</i>) when the door is closed.

Single-Button Control (SBC)

With this feature, it is possible to use a single-channel transmitter for a Commercial Application, as well as a Single-Button Control (SBC). The SBC provides the user with the possibility to open, stop or close the door by using a single-button radio transmitter (or a single push-button station).

SBC Activation	Select Switch	SBC Deactivation
<ol style="list-style-type: none"> 1. Verify if close limit switch is activated and if the close LED is ON. 2. Set select switch on 9 = SBC. 3. Press "Open" button. 4. Set select switch on run mode (1, 4, or 5). 		<ol style="list-style-type: none"> 1. Verify if the close limit switch is activated and if the close LED is ON. 2. Set select switch on 9 = SBC. 3. Press the "Stop" button. 4. Set select switch on run mode (0, 1, 2, 3, 4 or 5).

Please contact your dealer or our inside sales department at **1-800-361-2260** for further information.

Notes



Notes



Notes



Warranty

Manaras-Opera warrants its operators to be free from defects in material and workmanship under normal and proper use for a period of two years from date of invoice. Mechanical, electrical and electronic accessories are warranted for one year from date of invoice. Wearing parts such as clutch pads, v-belts, and brake bands are excluded from warranty.

Manaras-Opera's only obligation shall be to repair or replace defective equipment which does not conform to the warranty. Manaras-Opera shall not be liable for any injury, loss or damage, direct or consequential, arising out of the inability to use the equipment. Before using, Buyer and/or the ultimate User shall determine the suitability of the product for its intended use, and User assumes all risks and liability in connection therewith. The foregoing may not be changed except by an Agreement signed by an authorized representative of Manaras-Opera.

The articles that are replaced pursuant to the terms of this warranty shall be retained by Manaras-Opera, and the User is responsible for any freight costs relating to repair or replacement.

The foregoing warranty is exclusive and in lieu of all other warranties of quality, whether written, oral or implied (including any other warranty of merchantability or fitness for purpose).

The following are exclusions from warranty:

- If usage, product modification, adaptation or installation are not in accordance with our installation and operating instructions.
- If the product has been opened, dismantled or returned with clear evidence of abuse or other damage.
- If our written specifications are not properly applied by the Buyer when selecting the equipment.
- If our written instructions for installation and wiring of the electrical connections have not been followed.
- If our equipment has been used to perform functions other than the functions it was designed to handle.
- If Manaras-Opera equipment is used with electrical accessories (switches, relays, etc.) that have not been previously approved in writing by the Manaras-Opera Engineering Department.
- If electrical accessories and other components have been used in disregard of the basic wiring diagram for which they were designed.

All costs related to installation and re-installation of the Manaras-Opera equipment covered by this warranty are not the responsibility of Manaras-Opera. Manaras-Opera will not be responsible for any consequential damages following installation procedures performed by the Buyer or End-user. If the Buyer resells any Manaras-Opera products to another Buyer or End-user, it shall include all of the terms and provisions of this warranty in such resale. Manaras-Opera's responsibility to any such Third Party shall be no greater than Manaras-Opera's responsibility under the warranty to the original Buyer.

Returns

No returns will be accepted without prior written authorization by Manaras-Opera. All returns must be accompanied by a Return Authorization Number issued by Manaras-Opera, and all unauthorized returns will be refused. The return shipment is to be freight prepaid by the Buyer, and under no circumstances shall the Buyer deduct the value of the returned merchandise from any remittance due. A restocking fee of 15% of Manaras-Opera sale price will be charged.



Commercial Door OPERATOR



Manaras-Opera is extending their well-known OPERA brand name across its entire line of Commercial Door OPERATORS. Over the years, the OPERA brand name has become synonymous with innovation and reliability. The high quality products you have come to expect from us will now be backed by the OPERA brand name.

**When you think
Commercial Door OPERATORS,
just think OPERA.**

Call us for more information
1-800-361-2260

www.manaras.com