MEC Pad Plus Control System by Progressive

Caution

① This equipment should not be installed, operated or maintained by any person who has not read all the contents of these instructions.

② Operates on 110-120v AC, 60 Hz current.

③ Before connecting switches, controls, or electrical, make sure **power is off**. Wiring indicated in diagram by dashed lines *must be completed by an electrician.*

④ Locate the Touch Panel so it is within clear view of the equipment being operated; it should also be in a location that will minimize the chance of damage.

Overview

① Mount Relay Boxes in desired location (suggested in a position to minimize high voltage wire runs) and connect circuits as outlined in **Wiring Notes**.

② Connect gym equipment or similar devices and auxiliary devices to relays in Relay Box as outlined in **Wiring Notes**. As connections are completed, fill in a relay assignment worksheet (see page 4). Copy this page as necessary to match your network requirements.

③ Mount Touch Pads in desired location. Touch Pads require a standard 8⅝" x 4½" electrical box (RACO Box #942 or equivalent).

④ Make low voltage connections between Touch Pads and Relay Boxes and Relay Box to Relay Box (if multiple Relay Boxes are in network) as outlined in **Wiring Notes**.

⑤ Set Relay Box address as outlined in **Setting Box Addresses for Relay Boxes**.

⑥ Program User Codes as outlined in **Programming Passwords for MEC Pad Plus Touch Pad**.

⑦ Configure system Relay Boxes as outlined in **Define Relay Box Addresses for MEC Pad Plus Touch Pad**.

⑧ Program desired groups as outlined in **Programming Groups for MEC Pad Plus Touch Pad**.

Wiring Notes

① Connecting Relay Box to 120 Volt Power Source:

a) The 3-position screw terminal strip at the top center of each relay board is to provide power to the relays that is in turn distributed to the connected devices.

b) If using only one board of relays, the relay board with relays 1-4 must be used since the processor pulls power from this circuit.

c) Input circuit size is determined by load ratings of devices connected to each bank of relays Progressive suggests that each bank of relays be connected to a dedicated 30 amp circuit.

d) Wire size will be determined by connected load and distance from power source and distance to farthest device to be operated.

② Connecting gym equipment or other directional devices to Relay Box:

a) There are three screw terminal strips located next to each of the eight relay sets in each Relay Box that are labeled UP, DOWN and NEUTRAL. UP and DOWN are the hot supply lines that become active when the relay is on.

b) Connect backstops, dividers, electric height adjusters or other directional items to be operated to these relay sets.

c) Wire size will be determined by load rating of items connected to source and total distance from power source to the device.

③ Connecting auxiliary devices to Relay Box:

a) The positions labeled AUX 1 and AUX 2 are for auxiliary outputs that have their own power supply (230VAC -30A-max), such as lights, scoreboards, PA system, etc.

b) One connection is to be made to the hot wire of the supply. The other connection becomes hot when the relay for the auxiliary output is on.

The relay is continuous contact, and operates just like a switch opening and closing the hot wire.

④ Wiring the 4-position screw terminal on the Relay Box.

a) Use Two conductor -18 gauge shielded cable for communication, and Two conductor - 20 gauge cable for power (by others)

b) You need to connect to all four terminals (TRX+, TRX-, +12DC and GND) for each touch pad being connected. If you have multiple touch pads, you should connect one touch pad to Relay Box "0". Other touch pads can be connected to this same Relay Box or any other Relay Box on the network,

c) The TRX+ and TRX- lines are for communication. It is only necessary to connect these two lines between relay panels on the network.

⑤ Wiring the 4-position screw terminal on the touch pad.

a) Use minimum 18 gauge shielded cable for all low voltage connections.

b) It is necessary to connect all four terminals (TRX+, TRX-, +12DC and GND) to four conductor cables running from relay panel(s). If you have multiple touch pads, you should connect one touch pad to Relay Box "0". Other touch pads can be connected to this same Relay Box or any other Relay Box on the network. Be careful to keep the same polarity as on the Relay Box.

Setting Box Addresses for Relay Boxes

Up to sixteen Relay Boxes can be controlled by one keypad. This section explains how to set up the relay box address.

The 4-position dipswitch inside the Relay Box sets the box address. The following table shows the state of the dipswitch positions. NOTE: Box addresses are permanently set only after the unit is re-powered.

When the box address is set, this determines the index of the relays in the box. Each box contains 8 pairs of relays for driving motors, one relay for up and one for down. Each pair of relays has an index associated with it.

For example relays 1 and 2 in box address 0 will be Relay Set 1. Relays 1 and 2 in box address 1 will be Relay Set 9 and so on. This is important for programming which relay set will control which apparatus.

Each box also has two auxiliary outputs for driving other gymnasium apparatus such as scoreboards, PA systems, etc. There can be up to 16 outputs, 9 and 10 are in box address 0, and 19 and 20 are in box address 1 and so on (see table below).

Please Note: Installer should complete Relay Assignment Worksheets (see page 4) as assignments are made.

Relay Box X	Dip Switch				Relay Sets	Auxiliary
	1	2	3	4		
0	X	X	X	X	1-8	9-10
1	X	X	X	O	11-18	19-20
2	X	X	O	X	21-28	29-30
4	X	O	X	X	31-38	39-40
8	O	X	X	X	41-48	49-50
3	X	X	O	O	51-58	59-60
5	X	O	X	O	61-68	69-70
6	X	O	O	X	71-78	79-80
7	X	O	O	O	81-88	89-90
9	O	X	X	O	91-98	99-100
10	O	X	O	X	101-108	109-110
11	O	X	O	O	111-118	119-120
12	O	O	X	X	121-128	129-130
13	O	O	X	O	131-138	139-140
14	O	O	O	X	141-148	149-150
15	O	O	O	O	151-158	159-160

X=Off
O=On

Figure 1

If you encounter any difficulty installing or servicing your 503050 MEC Pad by Progressive, call your dealer or Progressive (765) 987-7999 or fax (765) 987-7142.

Programming Passwords for the MEC Pad Plus Touch Pad

Touch Pads are shipped with a default user code of 555555 and a Supervisor's code of 777777. (Passwords should be changed during initial installation and programming. This password should also be changed anytime someone that should not be authorized to operate equipment learns it or if someone leaves the facility.) If codes are forgotten, please contact Progressive for "back door code." Passwords are stored in the touch panel, so passwords will need to be changed on every Touch Pad on network.

Supervisor Code

The following instructions will allow the supervisor to change the user code and make changes in setup at any time. Passwords are stored in the touch panel, so passwords will need to be changed on every Touch Pad on network.

Touch any key to start. At "Enter Password", enter the Supervisor Password Code.

Press the Set Up key. This will show the options of:
1) Config System;
2) Config Group; and
3) Config Device Box.

1) Config System

When "Config System" is chosen, three options will be shown:
1) Set Time out – Adjust Time Out to a minimum of 360 Seconds. Failure to do so could cause operational issues that could affect the warranty.
2) Set Password – Allows the supervisor to change the 6-digit Supervisor Password, Operator Password or Reset the passwords to the original numbers; and
3) Reset Default – Choosing this option resets the entire unit to the original factory settings.

2) Config Group

When "Config Group" is chosen, three options will be shown:
1) Display Group – Displays the saved groups;
2) Add Group – Allows up to 9 groups (1-9) to be added with maximum of 8 devices, per group; and
3) Delete Group – Allows a particular group(s) to be deleted.

3) Config Device Box

When "Config Device Box" is chosen, three options will be shown:
1) Display Device Box – Displays the available device boxes being used in the system;
2) Add Device Box – Allows up to 16 device boxes (0-15) to be added. Each Relay Box number must be entered at each Touch Pad; and
3) Delete Device Box – Allows a particular device box to be deleted.

Operator Code

Touch any key to start. At "Enter Password", enter User Password Code.
Select Mode will be displayed with the options:
1) Device OP Mode.
2) Group Op Mode.

1) Device Op Mode – Enter Device Number To Operate and press Enter (Example: Press 01, Enter to raise or lower device 01).

2) Group Op Mode – Enter Group Number To Operate and press Enter (Example: Press 01, Enter to raise or lower Group 01).

Define Relay Box Addresses for MEC Pad Plus Touch Pad

Touch Pads are shipped without any advance programming, so it is necessary to tell each MEC Pad Plus touch pad what relay box addresses are for your specific network. Relay box definitions are stored in each touch panel, so it will be necessary to define relay box addresses in every Touch Pad.

Touch any key to start. At "Enter Password", enter the supervisor password code then press the Set Up key. This will show the options of:
1) Config System.
2) Config Group.
3) Config Device Box.

Select - 3) Config Device Box. This will show the options of:
1) Display Device Box – Shows already defined relay boxes.
2) Add Device Box – Allows user to define new relay boxes.
3) Delete Device Box – Allows you to delete any currently defined relay box.

Select - 2) Add Device Box then enter the address (0-15) of each relay box on the network. The relay address entered in the Touch Pad must match one of the dip switch address set previously.

Programming Groups for MEC Pad Plus Touch Pads

Touch Pads are shipped without any predefined groups. If a user wants to operate items in any manner other than individually, it is necessary to define desired groups. Group definitions are stored in each touch panel, so it will be necessary to define desired groups in every Touch Pad on network. Groups can be different for each Touch Pad. Groups should only consist of items that can clearly be seen from the Touch Pad location.

Touch any key to start. At "Enter Password", enter the supervisor password code then press the Set Up key. This will show the options of:
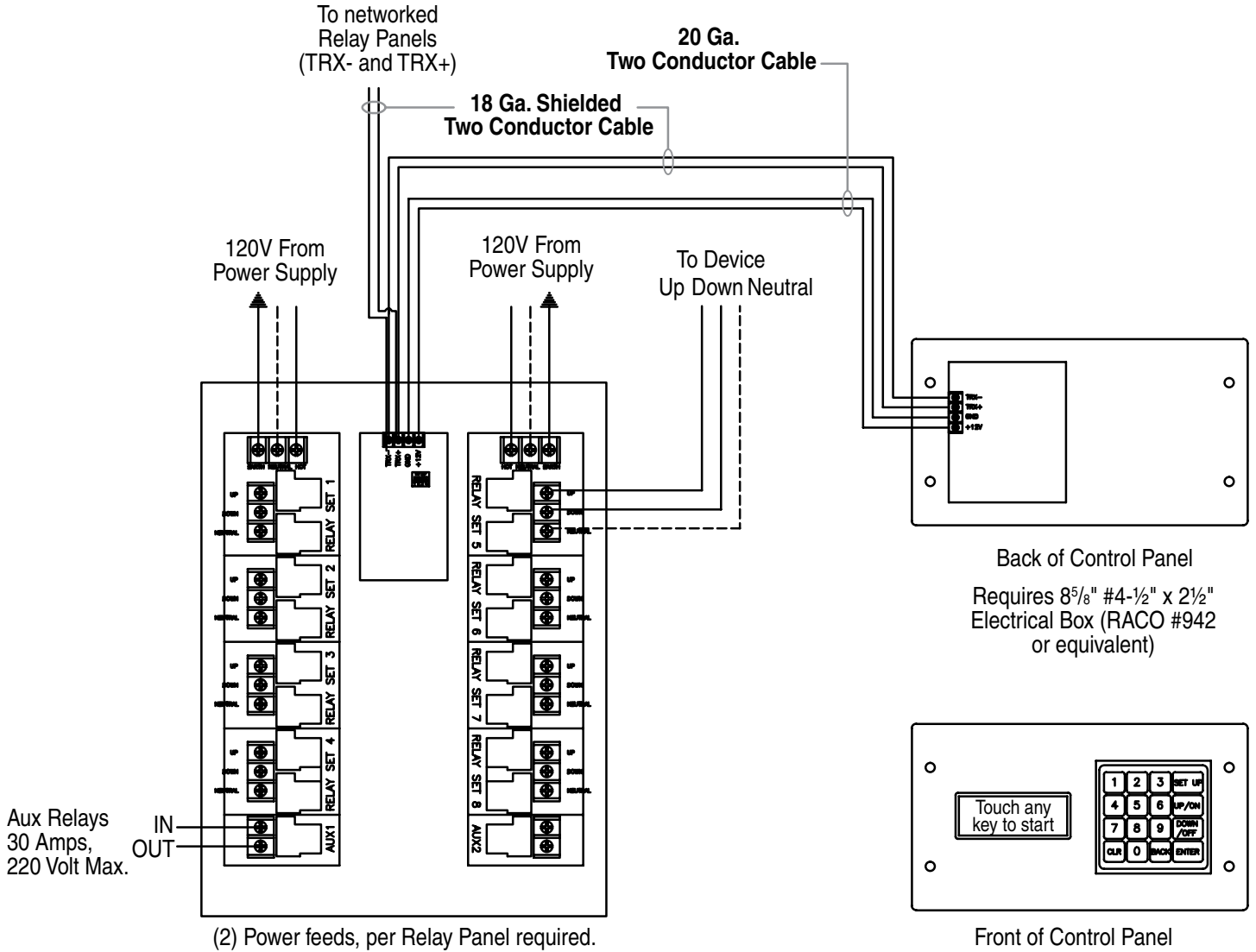1) Config System;
2) Config Group; and
3) Config Device Box.

Select - 2) Config Group. This will show the options of:
1) Display Group – Shows already defined groups;
2) Add Group – Allows user to define new groups; and
3) Delete Group – Allows you to delete any currently defined group.

Select - 2) Add Group.
- Enter desired group number when prompted. Choose a group number that is not currently in use for that Touch Pad. If a group number that is already in use is entered, a message indicating that group number is already registered will appear.
- Select Device Type – Either UP/DOWN or AUX. A group can only contain one type of device.
- When prompted Enter device number to be included in group. Enter first device number, then press enter; enter second device number then press enter, etc. After all desired devices have been added to the group, press enter again to create group.
- A group can consist of up to 8 devices (if 2 or more relay panels are in use), but can only include a maximum of two devices from each relay board. (i.e. 1-4, 5-8, 11-14, etc) The system will not allow for the creation of a group that may overload a circuit. If an invalid group combination is entered, the error message "Over PCB Limit (2 ea.) will appear. If this message is displayed, press the back key to start over on defining devices for this new group.
- To edit or change a group it is necessary to delete that group number and redefine using above steps.

Wiring Diagram—Keypad

To networked
Relay Panels
(TRX- and TRX+)

**20 Ga.
Two Conductor Cable**

**18 Ga. Shielded
Two Conductor Cable**

120V From
Power Supply

120V From
Power Supply

To Device
Up Down Neutral

RELAY SET 1
RELAY SET 2
RELAY SET 3
RELAY SET 4
AUX1

RELAY SET 5
RELAY SET 6
RELAY SET 7
RELAY SET 8
AUX2

Aux Relays
30 Amps,
220 Volt Max.

IN
OUT

(2) Power feeds, per Relay Panel required.

Note: (2) motors, per circuit, may be
simultaneously operated. Circuit and wire size
to be determined based on motor type and
quantity. Max. 120 volt, 30 amp, single phase.

Back of Control Panel

Requires $8^{5}/_{8}$" #4-½" x 2½"
Electrical Box (RACO #942
or equivalent)

Touch any
key to start

1	2	3	SET UP
4	5	6	UP/ON
7	8	9	DOWN/OFF
CLR	0	BACK	ENTER

Front of Control Panel
Touch Pad should be mounted
in location to allow view of
equipment to be operated.

Relay Assignment Worksheets
(Photocopy as required to match your network requirements)

BOX #_____

Dipswitch Setting (on/off) ds #1_____ ds #2_____ ds #3_____ ds #4_____

Relay Set	Address (1 – 8, 11 -18, 21 – 28, etc)	Component Description (north end main court unit, south-west side court unit, etc)	Component Name (Backstop #1, Curtain #2, etc.)
1			
2			
3			
4			
5			
6			
7			
8			
	Address (9-10, 19-20, 29-30, etc.)	Component Description (north end main court lights, south-west side court lights, etc)	Component Name (Lights, PA System, etc.)
Aux 1			
Aux 2			

BOX #_____

Dipswitch Setting (on/off) ds #1_____ ds #2_____ ds #3_____ ds #4_____

Relay Set	Address (1 – 8, 11 -18, 21 – 28, etc)	Component Description (north end main court unit, south-west side court unit, etc)	Component Name (Backstop #1, Curtain #2, etc.)
1			
2			
3			
4			
5			
6			
7			
8			
	Address (9-10, 19-20, 29-30, etc.)	Component Description (north end main court lights, south-west side court lights, etc)	Component Name (Lights, PA System, etc.)
Aux 1			
Aux 2			