

MASTER-TROL



CPT Handheld Programmer User Manual



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INTRODUCTION

Master-Trol Handheld Programmer (CPT) can be used to program a single Master-Trol Controller, or all controllers connected to a Versa-Link. The Handheld Programmer is portable which allows you to connect to any controller directly. It is small and light weight but capable of programming a majority of the system's features.

FEATURES



- Overall Dimensions: 6.75" x 4.75" x 1.5" (172mm x 121mm x 38mm)
- Weight: 14.4oz (408g)
- 20 Character x 2 line LCD display
- Auto Shutoff feature will automatically power down the programmer if it remains idle for 5 minutes to conserve battery life.
- Included with Handheld Programmer: 9V Battery, Versa-Link Interface Cable, and User Manual.



KEYPAD DEFINITIONS

ON TIME

The “ON TIME” button is used to program the valve’s runtime. The runtime can be set up to one hour using minute, second, and “tenths of a second” increments.

LOCKOUT TIME

The “LOCKOUT TIME” button is used to program Lockouts. A Lockout is a specified amount of time a fixture user must wait between actuations. A Lockout can be programmed up to one hour using minute and second increments.

GLOBAL ENABLE

The “GLOBAL ENABLE” button is used to enable all valves that are disabled on a controller. If the programmer is connected to multiple controllers on a Versa-Link, then the “GLOBAL ENABLE” button will enable all valves that are disabled on all connected controllers. Any valves that are already enabled will remain enabled.

GLOBAL DISABLE

The “GLOBAL DISABLE” button is used to disable all valves that are enabled on a controller. If the programmer is connected to multiple controllers on a Versa-Link, then the “GLOBAL DISABLE” button will disable all valves that are enabled on all connected controllers. Any valves that are already disabled will remain disabled.

STATION ENABLE

The “STATION ENABLE” button is used to enable a single valve that is disabled on a controller.

STATION DISABLE

The “STATION DISABLE” button is used to disable a single valve that is enabled on a controller.

ACTUATOR MODE

The “ACTUATOR MODE” button is used to configure the fixture’s pushbutton to one of the following modes:

(SC) Single Cycle - Mode The valve runs for the programmed “ON TIME.” If a lockout is programmed, then the valve will disable until the lockout has elapsed. Once the lockout has elapsed, the valve will automatically return to standby mode and wait for the next activation.

(CI) Cycle Interrupt - Mode When the valve is cycled, the cycle can be interrupted by actuating the fixture button a second time to turn the water off. If the cycle is not interrupted, then the valve will run until the “ON TIME” has elapsed. If a lockout is programmed, then the valve will disable until the lockout has elapsed. Once the lockout has elapsed, the valve will automatically return to standby mode and wait for the next activation.

(AM) Accumulator - Mode This mode is used for accumulators on an AcornVac vacuum plumbing system. When an input signal from the accumulator is present, the valve will open. The “ON TIME” will not begin until the input signal is no longer present. Once the input signal is no longer present, the valve will continue to operate until the “ON TIME” has elapsed. Then the valve will return to standby mode.



(TM) Terminate - Cycle Mode - When the valve is cycled, the cycle can be interrupted by actuating the fixture button a second time to turn the water off. Even though the water is turned off, the "ON TIME" will continue to count down. The valve cannot be actuated again until the "ON TIME" has elapsed.

VALVE MODE

The "VALVE MODE" button is used to configure the fixture's valve to one of the following modes. (**WARNING** - These modes will remain active until they are turned off using the handheld programmer):

(SS) Simultaneous - Shutoff Mode - When this feature is on, the valve will be paired with the valve numerically before it on the controller. When the valve is actuated, it will run until the "ON TIME" has elapsed. When the valve cycle ends, the valve numerically before it will also end its cycle if it is running, regardless of its "ON TIME".

WARNING: This feature can only be turned off with the handheld programmer.

(PO) Paired Operation Mode - When this feature is on, the valve will be paired with the valve numerically before it on the controller. When that valve is actuated, both valves will turn on at the same time. The "ON TIME" for the valve that is set for "Paired Operation Mode" will not begin until the "ON TIME" for the valve numerically before it has elapsed and shut off. This valve will then continue to run until its "ON TIME" has elapsed, then shutoff.

(RO) Remote On Mode - When this feature is on, it will turn the valve on and override the "ON TIME". **WARNING:** This feature will turn the valve on and it will remain on until the feature is turned off, regardless of the "ON TIME".

(RS) Remote Shutoff Mode - When this feature is on, it will disable the valve. This feature overrides the "STATION ENABLE" feature of the handheld programmer and the Master-Trol System Computer.

WARNING: The valve can only be enabled by turning this feature off with the handheld programmer.



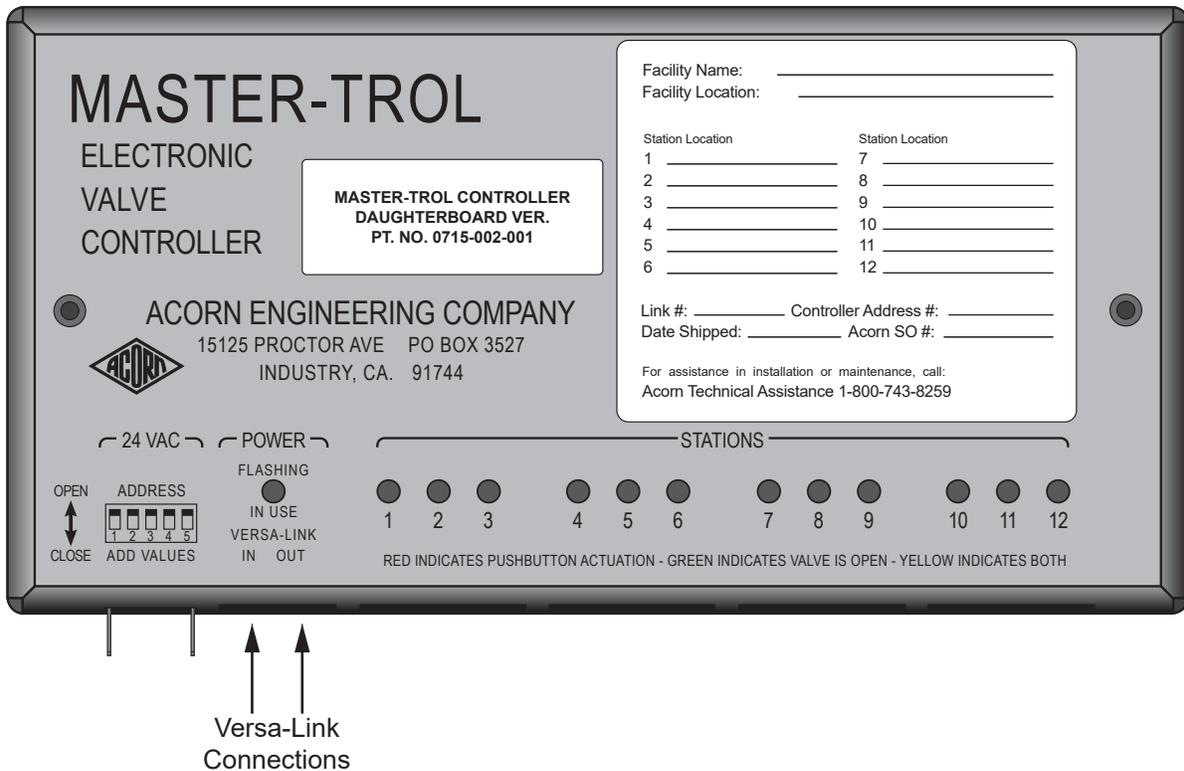
After the "ON TIME" and "LOCKOUT TIME" have been programmed, this button is used to set the valve to Variable Lockout Mode. The Variable Lockout will disable the valve until the "LOCKOUT TIME" has elapsed if the valve is actuated a specified number of times within a specified window of time. This feature is typically used on fixtures with multiple users.

STATUS

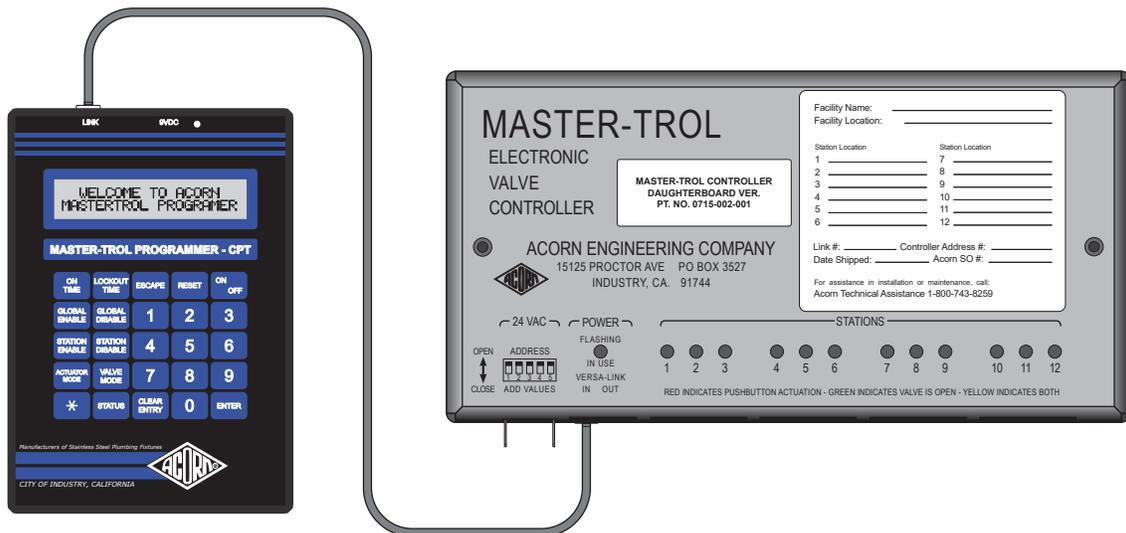
The "STATUS" button allows you to view the current settings of any selected valve on a controller. You can advance to the next valve by pressing the "ENTER" button.



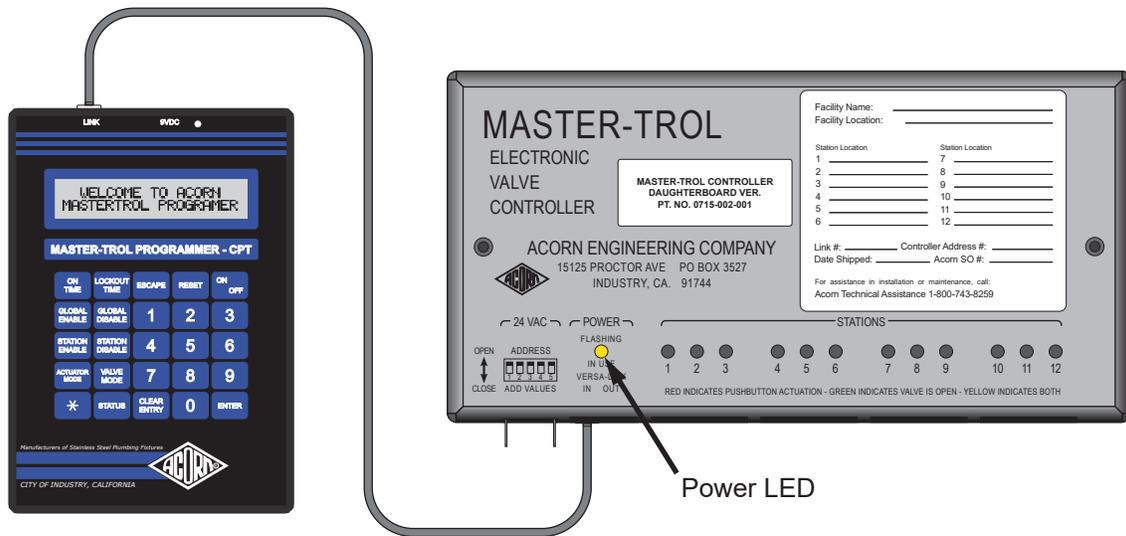
3. Locate the two Versa-Link connections.



4. Unplug all cables from the Versa-Link Connections. Then use one of the empty ports to connect the Versa-Link Interface Cable of the Handheld rogrammer.



5. Make sure the controller is powered before turning on the Handheld Programmer.



6. Press the “ON/OFF” button to turn on the Handheld Programmer.

Once the Handheld Programmer is powered, the Welcome screen will be displayed briefly.



Using the number pad, you will then need to enter the 5-Digit Password, then press “ENTER”.



The Polling screen will be displayed briefly.



While polling the Handheld Programmer will display the addresses of all the connected controllers.



After polling, the handheld programmer will briefly display the total number of controllers that were found.



When the “PRESS YOUR DESIRED FUNCTION KEY” screen appears, you are now ready to select the feature you want to program.



HOW TO PROGRAM CONTROLLERS

The following will provide step-by-step instructions on how to program each feature of the Master-Trol Controller. Each set of instructions will begin from the “PRESS YOUR DESIRED FUNCTION KEY” screen. Please see the “Keypad Definitions” section for descriptions of each feature and mode.

NOTE: If the Handheld Programmer is connected to multiple controllers, then you will be required to enter the controller address and station number when specifying the valve you want to program. If you are connected to one controller, then the Handheld Programmer will only ask for the station number. Controller address numbers should be written on the front of the controller.

How to change the ON-TIME:

1. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “ON-TIME” button.
2. If you are connected to multiple controllers, enter the controller address with the valve you want to program and press “ENTER”. If not, proceed to step #3.
3. Enter the station number of the valve you want to program and press “ENTER”.



4. The old "ON TIME" will be displayed at the top. Enter the "tenths of a second" (0-9) you require, then press "ENTER".

```
OLD OT>> 00:10:0  
TENTH SEC [0-9]:
```

5. Enter the number of seconds (0-59) you require, then press "ENTER".

```
OLD OT>> 00:10:0  
ENTER SEC [ 0-59]:
```

6. Enter the number of minutes (0-59) you require, then press "ENTER".

```
OLD OT>> 00:10:0  
ENTER MIN [ 0-59]:
```

7. The Handheld Programmer will briefly confirm the new "ON TIME".

```
NEW OT>> 00:10:0  
CONFIRMED
```

8. After confirmation, the Handheld Programmer will return to the controller/station screen. You can change the "ON TIME" for a new valve, or press the "ESCAPE" button to change a different feature.

```
CHANGE ON-TIME  
ENTER CONT#[1-32]:
```

How to change the LOCKOUT TIME:

1. From the "PRESS YOUR DESIRED FUNCTION KEY" screen, press the "LOCKOUT TIME" button.

LOCKOUT
TIME

2. If you are connected to multiple controllers, enter the controller address that contains the valve you want to program and press "ENTER". If not, proceed to step #3.

```
CHANGE OFF-TIME  
ENTER CONT#[1-32]:
```

3. Enter the station number of the valve you want to program and press "ENTER".

```
CHANGE OFF-TIME  
ENTER STAT#[1-12]:
```

4. The old "LOCKOUT TIME" will be displayed at the top. Enter the number of seconds (0-59) you require, then press the "ENTER" button.



5. Enter the number of minutes (0-59) you require, then press the "ENTER" button.



6. The Handheld Programmer will briefly confirm the new "LOCKOUT TIME".



8. After confirmation, the Handheld Programmer will return to the controller/station screen. You can change the "LOCKOUT TIME" for a new valve, or press the "ESCAPE" button to change a different feature.



How to GLOBAL ENABLE valves:

1. From the "PRESS YOUR DESIRED FUNCTION KEY" screen, press the "GLOBAL ENABLE" button.



2. The Handheld Programmer will briefly display a confirmation that all valves are enabled. Then it will return to the "PRESS YOUR DESIRED FUNCTION KEY" screen.



How to GLOBAL DISABLE valves:

1. From the "PRESS YOUR DESIRED FUNCTION KEY" screen, press the "GLOBAL DISABLE" button.



2. The Handheld Programmer will briefly display a confirmation that all valves are disabled. Then it will return to the "PRESS YOUR DESIRED FUNCTION KEY" screen.



How to enable a valve using STATION ENABLE:

1. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “STATION ENABLE” button.
2. If you are connected to multiple controllers, enter the controller address with the valve you want to program and press “ENTER”. If not, proceed to step #3.
3. Enter the station number of the valve you want to program and press “ENTER”.
4. After confirmation, the Handheld Programmer will return to the controller/ station screen. You can either enable a new valve, or press the “ESCAPE” button to change a different feature.

STATION
ENABLE

ENABLE STATION
ENTER CONT#[1-32]:

ENABLE STATION
ENTER STAT#[1-12]:

ENABLE STATION
CONFIRMED

How to disable a valve using STATION DISABLE:

1. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “STATION DISABLE” button.
2. If you are connected to multiple controllers, enter the controller address with the valve you want to program and press “ENTER”. If not, proceed to step #3.
3. Enter the station number of the valve you want to program and press “ENTER”.
4. After confirmation, the Handheld Programmer will return to the controller/ station screen. You can either disable a new valve, or press the “ESCAPE” button to change a different feature.

STATION
DISABLE

DISABLE STATION
ENTER CONT#[1-32]:

DISABLE STATION
ENTER STAT#[1-12]:

DISABLE STATION
CONFIRMED



How to change the Actuator Mode:

1. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “ACTUATOR MODE” button.
2. If you are connected to multiple controllers, enter the controller address with the valve you want to program and press “ENTER”. If not, proceed to step #3.
3. Enter the station number of the valve you want to program and press “ENTER”.
4. The Handheld Programmer will briefly display the old mode.
5. Press the numerical value on the keypad for the mode you require. See “Keypad Definitions” for descriptions of each mode.

SC = Single Cycle Mode
CI = Cycle Interrupt Mode
AM = Accumulator Mode
TM = Terminate Cycle Mode

7. The Handheld Programmer will briefly confirm the new “ACTUATOR MODE”.
8. After confirmation, the Handheld Programmer will return to the controller/ station screen. You can change the “ACTUATOR MODE” for a new valve, or press the “ESCAPE” button to change a different feature.

ACTUATOR
MODE

```
SET ACTUATOR MODE  
ENTER CONT#[1-32]:
```

```
SET ACTUATOR MODE  
ENTER STAT#[1-12]:
```

```
OLD ACT. MODE>> SC
```

```
ENTER MODE NUMBER  
1=SC 2=CI 3=AM 4=TM
```

```
NEW ACT. MODE>> CI  
CONFIRMED
```

```
SET ACTUATOR MODE  
ENTER CONT#[1-32]:
```



How to change the Valve Mode:

1. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “VALVE MODE” button.
2. If you are connected to multiple controllers, enter the controller address with the valve you want to program and press “ENTER”. If not, proceed to step #3.
3. Enter the station number of the valve you want to program and press “ENTER”.
4. The Handheld Programmer will briefly display the old mode.
5. Press the numerical value on the keypad for the mode you require. See “Keypad Definitions” for descriptions of each mode.

SS = Simultaneous Shutoff Mode
PO = Paired Operation Mode
RO = Remote On Mode (See Warning and Keypad Definition)
RS = Remote Shutoff Mode
7. The Handheld Programmer will briefly confirm the new “VALVE MODE”.
8. After confirmation, the Handheld Programmer will return to the controller/ station screen. You can change the “VALVE MODE” for a new valve, or press the “ESCAPE” button to change a different feature.

VALVE
MODE

SET VALVE MODE
ENTER CONT#[1-32]:

SET VALVE MODE
ENTER STAT#[1-12]:

OLD V. MODE>> OFF

ENTER VALVE MODE #
1=SS 2=PO 3=RO 4=RS

NEW VAL MODE>> RO
CONFIRMED

SET VALVE MODE
ENTER CONT#[1-32]:

WARNING - These modes will remain active until they are turned off using the handheld programmer. To turn off the mode, repeat steps 1 through 7 and choose the same mode again. This will turn off the mode.



How to program Variable Lockout Mode:

1. Program the valve for the required “ON TIME”. (See “How to change On-Time”)



2. Program the valve for the required “LOCKOUT TIME”. (See “How to change Lockout Time”)



3. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “*” button.



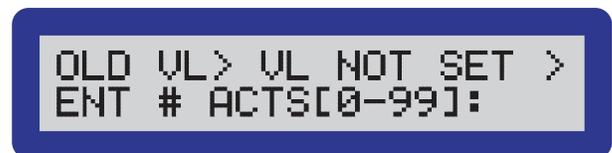
4. If you are connected to multiple controllers, enter the controller address with the valve you want to program and press “ENTER”. If not, proceed to step #4.



5. Enter the station number of the valve you want to program and press “ENTER”.



6. Enter the number of Actuators you require. (When confirmed, “A” will represent “Actuators”)



7. Enter the amount of seconds (0-59) you require for the “Window of Time”, then press “ENTER”.



8. Enter the amount of minutes (0-59) you require for the “Window of Time”, then press “ENTER”. (When confirmed, “W” will represent “Window of Time”)



9. After confirmation, the Handheld Programmer will return to the controller/ station screen. You can change the “Variable Lockout” for a new valve, or press the “ESCAPE” button to change a different feature. See “Keypad Definitions” for a description of “*” (Variable Lockout).



How to view valve Status:

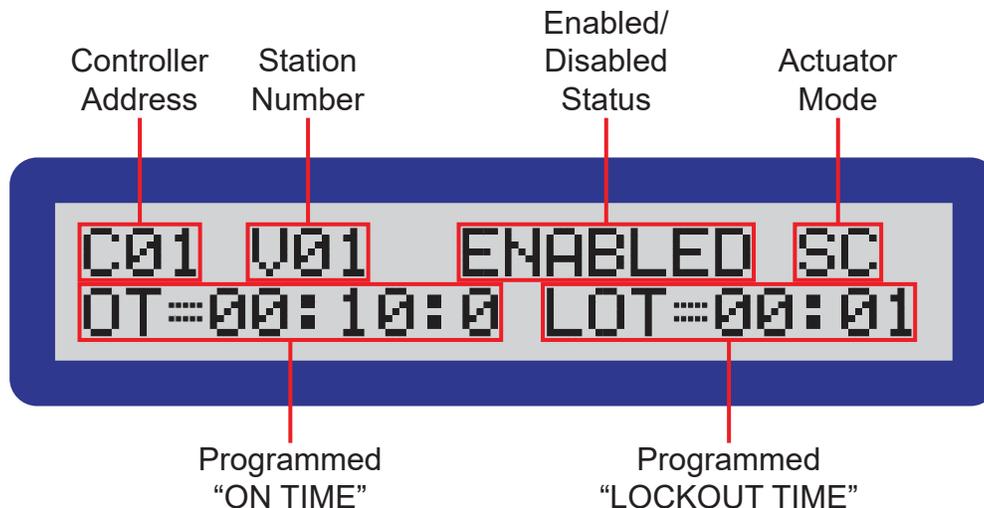
1. From the “PRESS YOUR DESIRED FUNCTION KEY” screen, press the “STATUS” button.
2. If you are connected to multiple controllers, enter the controller address with the valve you want to view and press “ENTER”. If not, proceed to step #3.
3. Enter the station number of the valve you want to view and press “ENTER”.

STATUS

```
SHOW VALVE STATUS
ENTER CONT#[1-32]:
```

```
SHOW VALVE STATUS
ENTER STAT#[1-12]:
```

4. The following screen will display multiple parameters for the chosen valve.



5. Press the “ENTER” button to cycle to the next valve, or press the “ESCAPE” button to change a different feature.

```
C01 V02 ENABLED CI
OT=10:00:0 LOT=00:01
```

