



Introduction

We thank you for purchasing the S.E.M. Coin Timer Model 5500TS. This simple device enables you to gain control over the use of a wide variety of devices and earn profits out of it such as a public shower.

The thicker stainless steel cabinet offers a good protection against damages caused by water. The redesigned electronic circuit is of a great simplicity and coated with a waterproof coating. The coin box was designed so that you do not need to open the entire timer to retrieve the coins. The new "T-Handle" offers a much better protection against vandalism.

We are sure this equipment will last many years with a minimum of maintenance. If you have questions, our support department is available from Monday to Friday, from 8AM till 4:30PM (Eastern time) or by email at support@sem.ca.

Installing your timer

The following instruction refers to a **timer controlling a shower**. Your application may differ but the installation will roughly be the same.

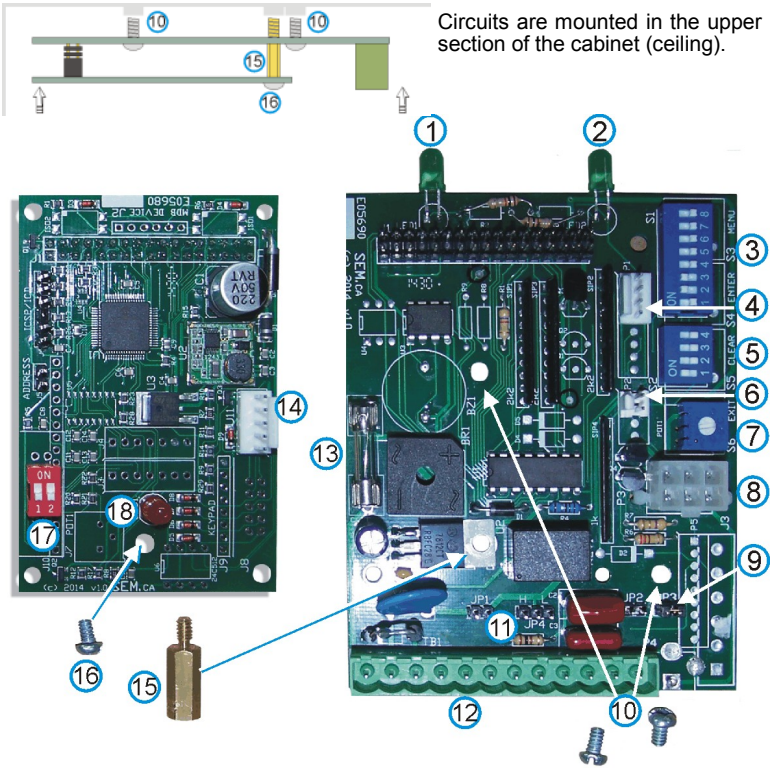
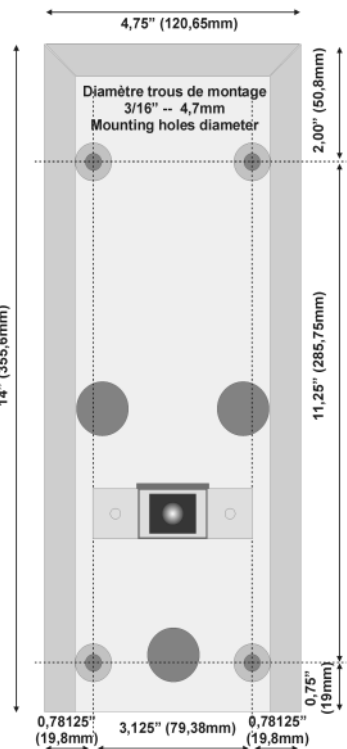
Even though the cabinet is stainless steel made, try to install it so that water does not constantly flow on it. Your timer can be installed outdoor if needed. The cabinet is very easy to install,

Remove the coin box to gain access to the locking screws (*Philips or slot*). Remove but **do not discard**. Lift and pull out the bottom of the faceplate to access the interior of the cabinet. Once removed, notice the coin acceptor harness going to the main circuit board. Unplug it.

With the coin box and faceplate out, you will see the four mounting holes.

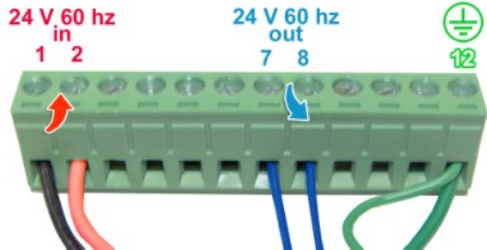


Make sure the cabinet is mounted on a solid perfectly flat wall. Plan the holes by which the cabling will pass (power, valve, start button).



Circuits description:

1. LED power ON, ready to accept ¢
2. LED time in progress
3. Block B Time programming
4. Push button connector P1
5. Block A Functions programming
6. Mechanical coin counter connector P2
7. Beeper volume
8. Multiple coins acceptor connector
9. Jumpers JP2 and JP3
10. Anchoring points 6-32 screws
11. Jumpers JP1 and JP4
12. Terminal block
13. Fuse 2A
14. Single or double coin acceptor connector J11
15. Metal stand-off 6-32
16. Anchoring points 6-32 screw
17. Block C Coin acceptor settings
18. LED OK (flashes quickly)



Main block terminal pin-out

1. 24-volt a.c. Live input *
2. 24-volt a.c. Common input
3. Output + 24-volt d.c. 60ma (old style)
4. Output - 24-volt d.c. 60ma (old style)
5. Vend contact N.C. 2A, 24 V.a.c. max.
6. Vend contact common 2A, 24 V.a.c. max.
7. Vend contact N.O. 2A, 24 V.a.c. max.
8. Output 24 V. a.c. Common 2A 24 V.a.c.
9. Input Start button (old style)
10. Input Start button (old style)
11. Not used
12. Ground

* Wire colours may vary depending the cable you use.

Circuit description and jumper position

Jumpers are important in the timer operation. They are: JP1, JP2, JP3, and JP4.

JP1 enables you to transfer the 24-volt a.c. input to terminals # 7 & 8 when a coin is inserted. If the jumper is OFF, the terminals will then operate as a dry contact relay between #5 (NC), #6 (Common), and #7 (NO). No voltage will be sent to the valve.

JP2 allows the use of a start push button (sold separately). If you have the button, JP2 must be OFF. Without the button, then JP2 must be ON for an automatic start.

JP3 does not apply to your timer. Leave it ON.

JP4 Most of the time, it has to be on H if you are controlling a 24-volt device (valve, relay)

Programming your timer

Programming the timer is achieved by using the small dipswitches located on the circuit board. There are three blocks of switches. Block A Blue has 4 switches while Block B Blue has 8. Block C Red has 2.

Block A blue:

Block A is to set different basic settings.

DIP Sw 4 OFF double-coin acceptor 25¢/\$1; ON \$1/\$2 *Effective only when Sw. #1 Block C Red is ON.*

DIP Sw 3 OFF enables start upon the first coin inserted; ON starts upon the second coin inserted.

DIP Sw 2* OFF enables Start/Stop; ON Start only, no pause.

DIP Sw 1 Time basis — OFF second basis; ON minute basis.

* When using a start button, JP2 MUST be OFF otherwise it will be an automatic start.

Block B blue:

Block B is to program the time for each coin inserted. The value of each switch will depend on the setting of switch #1 on Block A Blue.

DIP Sw 1 on Block A	>>>> OFF	ON
	Second(s)	Minute(s)
DIP Sw 8	Warning signal programming only	
DIP Sw 7	64	32
DIP Sw 6	32	16
DIP Sw 5	16	8
DIP Sw 4	8	4
DIP Sw 3	4	2
DIP Sw 2	2	1
DIP Sw 1	1	0.5

If electronic acceptor, the time programmed applies to the basic coin (25¢). The \$1 and \$2 will simply multiply the basic time programmed for the 25¢.

You can use more than one switch to set your time. For example, switches #4 & #2, when in seconds, will give a total time of 10 seconds per coin. In minutes, it will give 5 minutes.

The maximum time (all switches ON) will give 127 seconds per coin when in second-basis ($64+32+16+8+4+2+1 = 127$) and 63,5 minutes when in minute-basis ($32+16+8+4+2+1+0,5 = 63,5$).

Warning signal programming — if you bought the optional start / stop push button

Switch #8 on Block B is used to set the warning timer at the end of a cycle. When OFF, the warning will start 2 minutes before the end of the time purchased. When ON, it will start 15 seconds before the end. This warning is sent to the push button with integrated beeper. Please note that if the time per coin inserted is less than 2 minutes, the signal will last during the entire cycle if Sw #8 is OFF when only one coin is inserted.

Block C red:

Other settings for coin acceptor.

DIP Sw 1 OFF Single-coin acceptor, ON Dual-coin acceptor

DIP Sw 2 OFF allows adding money while in use; ON does not allow.

Leave to OFF if single or dual coin acceptor.

The coin acceptor

The coin acceptor accepts only ONE or two types of coins. It can be 25¢, \$1, or \$2 or tokens. This coin acceptor does not reject coins when power OFF. Make sure power is always ON and the DIP Sw 2 on Block C red is OFF. Each time a coin is accepted, it passes next to the coin switch activating a small actuator. Each time the coin switch detects a coin, one signal is sent to the timer. One coin = one time cycle. Two coins = two time cycles.

The multiple coin electronic acceptor can accept more than two coins (programmable directly on the coin acceptor).



Mechanical coin acceptor, 1 or 2 coins



Multiple-coin electronic acceptor 25¢-\$1-\$2

Electrical accessories available for the Model 5500TS Timer

The following accessories are available at extra cost. Their presence will influence the way you will program your timer.

Water valve:

The 24-volt a.c. Asco water valve is energized by the circuit board when a coin is inserted. The valve connects to terminals **7 & 8**, and 12 for the ground. Jumper JP1 must be ON so that 24 volts are sent to the valve when money is inserted. The water valve in 1/2" N.P.T. Be sure to respect the water flow direction indicated on the valve itself. if you weld, make sure not to damage the valve or sink tin inside.



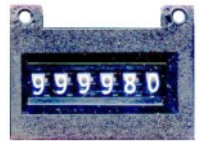
Start/Stop button:

The button generally goes near the shower cabin. The new button includes a blue LED and a beeper. Make sure you place the button so that the beeper is facing down. The new button now has its own connector at position P1. Beeper volume level is adjustable with the potentiometer located just under the blue DIP Sw. blocks. This button enables users to pause the time (see Switch settings on Block A). When using the button, JP2 must be set OFF.



Mechanical coin counter:

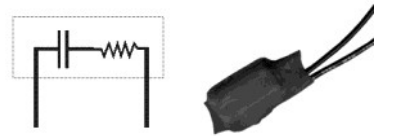
Small mechanical counter located just above the coin box. It connects to the small two-pin plug (P2) near the beeper volume. It goes up by one, each time a coin goes in, notwithstanding the value of that coin. Upon delivery, the coin counter will be short of the zero position as seen below. This allows for some tests.



Snubber filter:

(Does not apply to a conventional pay shower)

Snubbers are used in electrical systems with an inductive load (solenoid, motor) where the sudden interruption of the current flow would lead to a sharp rise in voltage across the device creating the interruption. This sharp rise in voltage might lead to a brief or permanent failure of the controlling device. The snubber prevents this undesired voltage by conducting current around the device. This is especially important if the circuit breaker feeding the controlled device is the same as the timer or if the load is so important that it can induce a voltage in the wiring leading to the timer. The value of the snubber components will vary depending the load (voltage, current, etc.) The snubber will then go in parallel with the load. Snubbers available from S.E.M. are usually made of the following: 33 ohms, 1/2 W in series with a 1µf 275 volts condenser. Consult your electrician for your specific needs.



Wiring example

Below is a wiring example you can use. If you are not familiar with electricity, refer to your local electrician to avoid damages and/or electrical shock.

Timer to control access to a shower

- Your timer controls access to a public shower (campground, fitness center, etc.).
- The coin acceptor is mechanical and accepts only \$1. It gives 2 minutes per coin inserted.
- A Start/Stop button enables the user to start and pause the time.
- Each coin inserted will activate a mechanical counter that increases by one for each coin.
- The water valve is an Asco 24-volt a.c.

You need the following items:

- SEM timer Model 5500TS with its power transformer, accepting \$1 only.
- Optional Start/Stop button with built-in beeper.
- Optional 24-volt a.c. Asco water valve.
- Optional coin counter.
- Low-voltage door-chime style wiring (16 or 18 awg) available from SEM or at your local hardware store.

Jumper position will be:

- JP1 ON
- JP2 OFF
- JP3 n/a
- JP4 H

Switches position will be:

- | Block A Blue | Block B Blue | Block C Red |
|--------------|--------------|-------------|
| 4 OFF | 8 ON | 1 OFF |
| 3 OFF | 7 OFF | 2 OFF |
| 2 OFF | 6 OFF | |
| 1 ON | 5 OFF | |
| | 4 OFF | |
| | 3 ON | |
| | 2 OFF | |
| | 1 OFF | |

Wiring will be:

On the terminal block of the circuit:

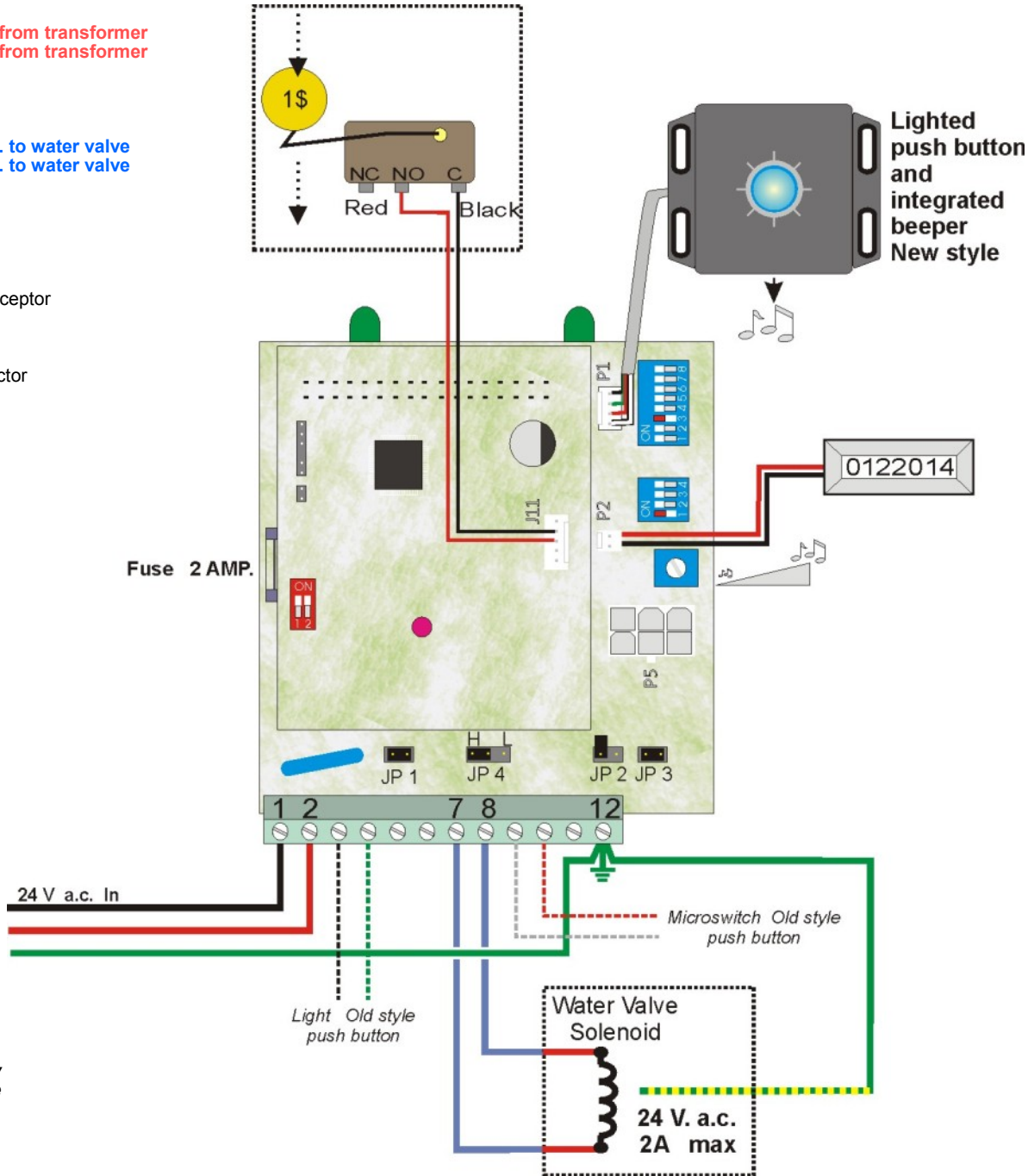
- | | |
|----|--------------------------------------|
| 1 | Input 24-volt. a.c. from transformer |
| 2 | Input 24-volt. a.c. from transformer |
| 3 | n/a |
| 4 | n/a |
| 5 | n/a |
| 6 | n/a |
| 7 | Output 24-volt a.c. to water valve |
| 8 | Output 24-volt a.c. to water valve |
| 9 | n/a |
| 10 | n/a |
| 11 | n/a |
| 12 | Ground |

On the smaller upper circuit:

- | | |
|-----|--------------------------|
| J11 | Mechanical coin acceptor |
|-----|--------------------------|

On the larger lower circuit:

- | | |
|----|-----------------------|
| P1 | Push button connector |
| P2 | Counter connector |



Please note: Wiring colour may vary depending the cable you are using.

Troubleshooting

Here is a quick guide of the most common problems you may encounter with your timer.

My timer rejects all the coins inserted.	<ul style="list-style-type: none">• Wrong type of coin acceptor. Coin acceptor works only with one type of coin. Replace.• Defective coin acceptor. Replace.
Upon insertion of a valid coin, nothing happens, the green LED does not go on.	<ul style="list-style-type: none">• Check to see if the coin activates the small wire on the coin switch located at the base of the coin acceptor. A coin may pass without activating it. Make the adjustment if needed.• Coin acceptor harness unplugged from circuit board at J11 (see pin-out on reverse).• Main fuse 2 Amps burnt. Replace with same value fuse. (see Circuit description on reverse) or no power.• Make sure Sw#3 on Block A blue is OFF. If ON, the timer starts on 2nd coin. (See on reverse)
Upon insertion of a valid coin, green LED on but nothing else happens (i.e. no water coming out of valve).	<ul style="list-style-type: none">• Make sure water valve is properly connected on terminals 7 & 8 on terminal block.• Make sure your water valve is indeed a 24-volt a.c. valve, especially if the valve was there before the timer was installed (i.e. The timer replaced an older one)• Check to see if JP1 is ON. If JP1 is OFF, there will be no transfer of voltage on terminals 7 & 8.• Check the wire between the timer and the water valve.• Check with an ohmmeter if the solenoid of the valve is still good.
Time last shorter or longer than what I programmed.	<ul style="list-style-type: none">• Make sure you are on the proper time basis with Sw#1 on Block A. You may be on second-basis instead of minute-basis or vice-versa.• You may have entered the wrong switch setting. Make sure you understand the principle of the switch on Block B. Each one doubles the value of the preceding to the exception of Sw #8.
Time stops (green LED goes OFF) but water still flows.	<ul style="list-style-type: none">• Unplug the valve. If it stops, the problem originates from the timer board. Replace it.• If it does not, the problem is the water valve itself. The valve is defective. Replace it.
Time stops (green LED goes OFF) at any given time and the water stops as well.	<ul style="list-style-type: none">• Circuit board in timer may have been reset somehow. Check to see if the power transformer of the timer is securely plugged in the wall outlet.• Check that the wires coming from the power transformer and going to terminals 1 & 2 on the terminal block are secured. If power goes off even for a fraction of second, the time will stop.

Lexicon

Some of the terms used on this sheet may be unfamiliar to you. Here is a brief description.

a.c.	Alternative current.
Acceptor	It is the mechanical part designed to discriminate between good and bad coins.
AWG	<i>American Wire Gauge.</i> That is the measurement used in the electrical industry. It refers to the diameter of any given electrical wire. The bigger the number, the smaller the diameter. (e.g. A 18AWG wire is bigger than a 22AWG.)
Circuit board	It is the circuit timer. It has two on piggyback style.
Common	Common contact to N.C. and N.O contacts
d.c.	Direct current.
Dipswitch	Very small switch that must be placed in a specific position to program the settings of the system.
JP	Short for Jumper
Jumper	Small metal part surrounded by plastic. It is used to short two small pins together to let the current to go from one pin to the other.
Load	The device that receives electricity from the timer and that should not be above the specifications.
Ma or ma	Short for milliamps. Ex. 20ma = 20 thousandth of ampere or 0.020 amperes maximum current.
Micro switch	Small electrical switch located under the coin acceptor and activated by the coin when it passes by.
N.C.	Normally Close contact on micro switch.
N.O.	Normally Open contact on micro switch.
Snubber	Please see on reverse for full description.
Solenoid	Electrical coil, usually 24-volt, that activates the plunger inside the water valve. Place on the main connector where the wire will attach under a small screw.

Timer	The entire apparatus including the circuit and the acceptor.
Valve	Water valve usually located on the mixing pipe of a shower just before the shower head.

Personal notes:

S.E.M. INC. – WARRANTY AND LIABILITY CONTRACT

By purchasing a product from S.E.M. Inc., clients are accepting the terms of this Warranty and Liability Contract.

S.E.M. Inc. warrants all parts of new equipment for one (1) year, from date of invoice against DEFECTIVE MATERIAL or WORKMANSHIP, but not against damage caused by vandalism, accident or improper operation and/or installation.

S.E.M. Inc. shall not be liable for any direct, indirect and/or consequential damages or losses, including loss of revenue or any other consequences as a result of the use of the work carried out by S.E.M. Inc. for the client, including any loss resulting from equipment failure or malfunctions, design or programming errors or any other use of the work carried out in this contract.

S.E.M. Inc.'s obligation under this warranty is limited to correcting, or at its option replacing, without charge at its factory any equipment, components or parts thereof which are returned to its factory (transportation charges prepaid) within one year after date of invoice. The part(s) returned under this warranty that are found without any problem after examination may be object of fees not covered under this warranty.

Any changes in design or improvements added to the line of S.E.M. equipments shall not create any obligation to upgrade or modify free of charge equipments previously sold and delivered to the client.

Any unauthorized alteration or wrong use of the equipment voids this warranty.

Equipment or components returned for Warranty repair must be accompanied by a copy of the original invoice as verification of purchase date. Equipment or components returned without a copy of original invoice will be charged to the customer at the regular repair rates.

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