



Ref.: # i01441



### Introduction

We thank you for purchasing the S.E.M. Coin Timer Model 4500TS. This simple device enables you to gain control over the use of a wide variety of devices and earn profits out of it. For example, when used on a campground shower, you will save on water and heating bills and generate revenues.

The stainless steel cabinet offers an adequate protection against damages caused by water. The electronic timer is of a great simplicity and is also coated with a waterproof coating for improved protection. The coin box was designed so that you do not need to open the entire timer to retrieve the coins.

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

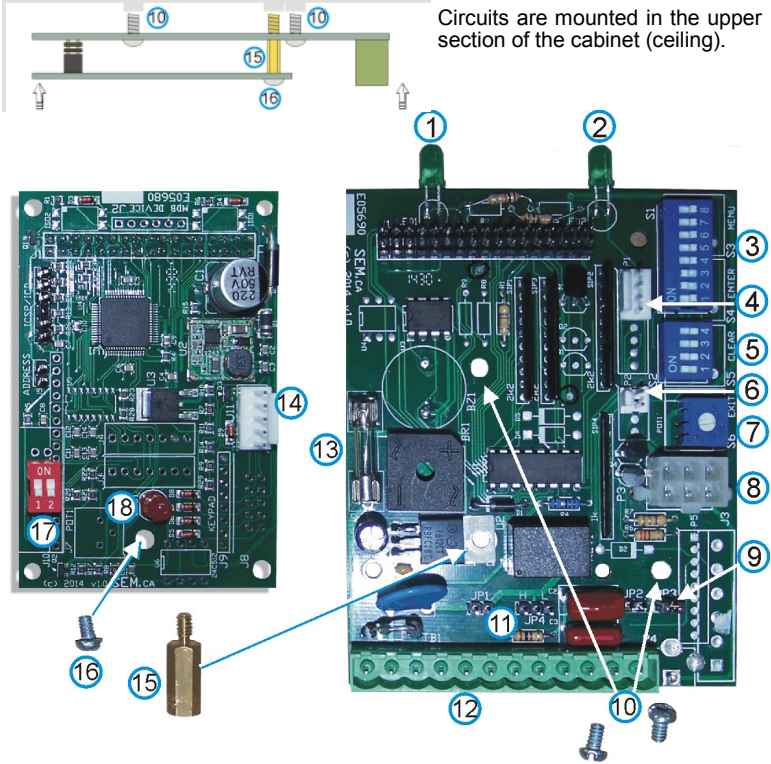
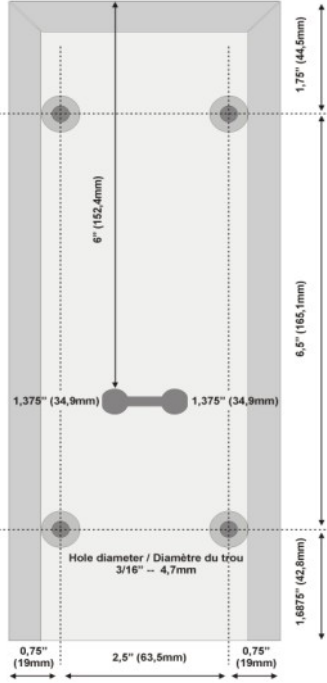
Even though the cabinet is stainless steel made, try to install it so that water does not constantly go on it. Your timer can be installed outdoor if needed. The cabinet is very easy to install,

Remove the coin box to gain access to the locking screws (*Phillips 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.

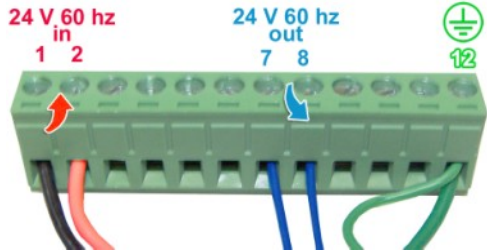


Make sure the cabinet is mounted on a solid perfectly flat wall. Plan the holes by which the cabling will pass (power, valve, start button).



### Circuits description:

- LED power ON, ready to accept coin
- LED time in progress
- Block B Time programming
- Push button connector P1
- Block A Functions programming
- Mechanical coin counter connector P2
- Beeper volume
- Multiple coins acceptor connector
- Jumpers JP2 and JP3
- Anchoring points 6-32 screws
- Jumpers JP1 and JP4
- Terminal block
- Fuse 2A
- Single or double coin acceptor connector J11
- Metal stand-off 6-32
- Anchoring points 6-32 screw
- Block C Coin acceptor settings
- LED OK (flashes quickly)



### Main block terminal pin-out

- 24-volt a.c. Live input \*
- 24-volt a.c. Common input
- Output + 24-volt d.c. 60ma (old style)
- Output - 24-volt d.c. 60ma (old style)
- Vend contact N.C. 2A, 24 V.a.c. max.
- Vend contact common 2A, 24 V.a.c. max.
- Vend contact N.O. 2A, 24 V.a.c. max.
- Output 24 V. a.c. Common 2A 24 V.a.c.
- Input Start button (old style)
- Input Start button (old style)
- Not used
- 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 4500TS 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 is 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.



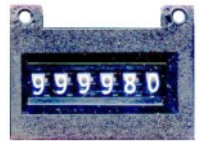
#### Start/Stop button:

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.

