

Scott Electronic Service Inc. (SES)

### Scott Electronic Service Inc. (SES)

19 Austin Drive

Brampton, Ontario, L6W 4K4

Phone: 905 459-8919 Direct: 905 866-8419

Fax: 905 459-0055

Email: [hscott@scottelectronicsservice.com](mailto:hscott@scottelectronicsservice.com) Web: [scottelectronicsservice.com](http://scottelectronicsservice.com)

## SES Simple Controller

### Overview

A large variety of industrial and commercial liquid dispensing applications can benefit from cost-effective, user-oriented, advanced control systems solutions such as the Simple Controller, developed by SES. This controller can be integrated into existing machines, with only minor changes to the system layout and wiring.

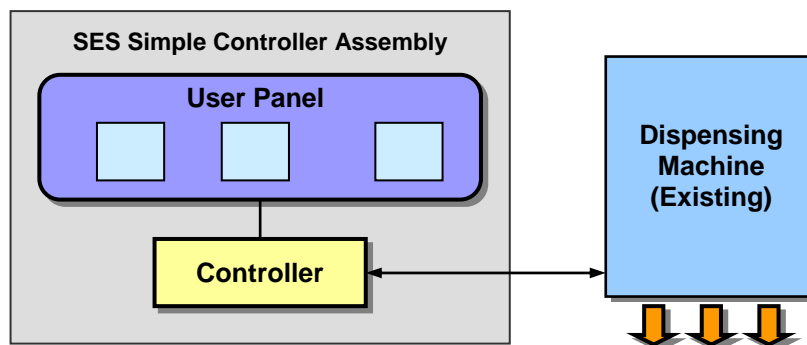
The Simple Controller brings key functional and economical benefits:

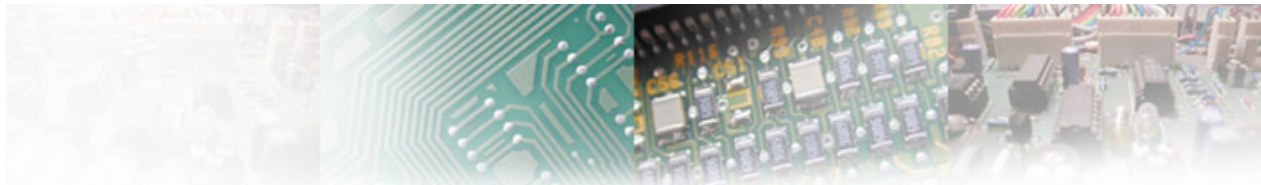
- High performance and reliability, through advanced control
- Ergonomic, attractive and intuitive user interface
- Accurate and repeatable operation
- Easy to install and very simple to use
- Reduced cost of machine maintenance

### The Simple Controller Assembly

The Simple Controller is a microprocessor-based, user programmable control system, dedicated for multi-portion liquid dispensing machines with three channels. The Controller can be used for upgrading various models of machines that were either built originally for manual dispensing only, or have limited automated capabilities.

The Simple Controller assembly consists of: User Panel, Controller, interconnection cables, installation fixtures and User's Guide documentation.





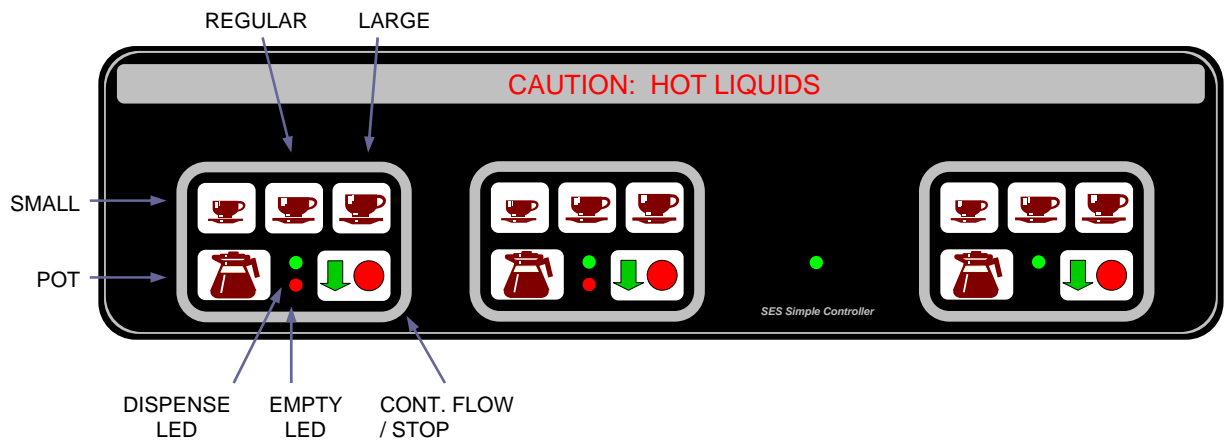
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## The User Panel

The User Panel is a membrane circuit with keys (buttons) and light indicators (LEDs); it includes three Channel Control Pads for programming and operating individual dispensing channels, and a separate indicator for the presence of power supply voltage.

Each Channel Control Pad allows independent programming and control. It has four membrane keys (buttons) for fixed pre-programmed dispensing portions: SMALL, REGULAR, LARGE, POT, and another button for direct dispensing: CONTINUOUS FLOW / STOP.

A green LED indicates DISPENSE mode, and a red one turns on when the product pack is EMPTY.



## The Controller

The main module of the assembly is the microprocessor-based Controller Board, mounted into the Controller Box. The Controller is light and small, can be easily installed inside the machine's enclosure, using the fixtures provided with the installation kit.

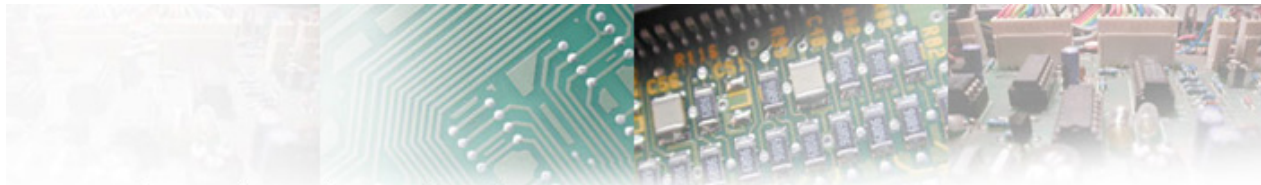
### Power Up Mode

The Power Up, or initialization mode, takes few seconds; during this time all DISPENSE LEDs are flashing continuously.

### Portion Dispensing Mode

The Controller implements a dispense-by-time control. It stores in the memory individual dispensing time settings, one set per each channel (LEFT, MIDDLE, RIGHT). Each set has time settings for fixed portions (SMALL, REGULAR, LARGE, POT).

The dispensing starts by pressing a portion key of the desired channel. During the process, the DISPENSE LED lights continuously. The Portion Dispensing mode stops automatically when the programmed time of the selected portion elapses. The dispensing can be stopped manually by pressing the CONTINUOUS FLOW / STOP key of the corresponding Channel Control Pad.



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## Manual Dispensing Mode

For manual dispensing, the user should press and hold the CONTINUOUS FLOW / STOP key of the desired channel. During dispensing, the DISPENSE LED of the active channel lights continuously.

## Programming the Dispensing Time

Each dispensing time has a default factory value, but the user (preferably a qualified service person) can re-program these settings as desired.

When in the Programming mode, the user can set the timer for each portion (either SMALL, REGULAR, LARGE or POT). The cup portions have very fine resolution, while the POT setting is coarser, but the dispensing time can be much larger.

One or more portions for the selected channel can be programmed, without exiting the Programming mode. Each portion can be re-programmed repeatedly, as the Controller is keeping the last setting only.

The machine does not dispense during programming process, therefore no liquid product is wasted.

On exiting the Programming mode, the Controller saves the last dispensing time settings in non-volatile memory.

An example of dispensing limits is shown below.

Portion	Minimum Time	Maximum Time
SMALL	0.1 second	20 second
REGULAR	0.1 second	20 second
LARGE	0.1 second	20 second
POT	2.0 second	3 min

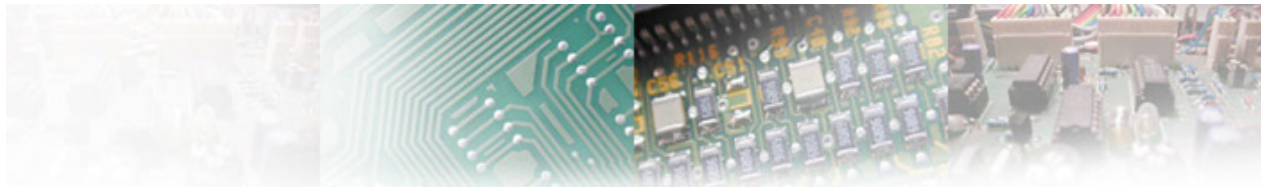
The dispensing precision for each individual channel is 1msec. The dispensing accuracy is better than 5ms.

## Custom Design

The Simple Controller functions (dispensing modes, programming procedure, default settings, etc) can be customized according to client's requirements. The flexibility is achieved through the software loaded in the Controller Board.

## Operating Characteristics

Controller DC Power Supply	24V nominal 18V-30V operating range
Controller current consumption	50mA maximum
Controller current in standby mode	8mA typical
Operating environment temperature	0° ... 40°C 32 ... 104F
Humidity level	60% maximum, non-condensing



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For more technical information and product details please or to discuss custom designed functionality, please contact SES directly.

This product is for commercial use only.

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## SCOTT ELECTRONIC SERVICE INC. (SES)

We provide technical services for industrial and commercial applications, in the fields of electronics, electrical, and machine control.

Our capabilities are based on direct expertise and working with specialized collaborators.

### Design Services

- Electronic boards, from concept stage to end-product release and field support
- Re-engineering existing electronic products – for increased performance, reliability and cost-effectiveness
- Microprocessor based design
- Prototype level products
- Machine control
- Electrical integration
- Technical documentation, operator's and service manuals
- Printed circuit boards layout
- Assembly drawings
- Custom Battery Chargers

### Electronic Repair and Testing

- Repair of electronic boards and assemblies
- Test fixture design
- Retrofits

### Manufacturing Services

- Printed circuits boards assembly and test
- Cable assemblies and electrical integration

### System Analysis

- Product specifications
- Feasibility studies and conceptual design
- System modeling
- Control systems design

### Industry Specific Expertise

- Machine control for food industry
- Converting equipment
- Power electronics
- Motors, drives and motion control
- Battery Chargers