INSTRUCTION MANUAL

SPEED CONTROLLED MOTOR CONTROLLER

Version 1.2

SERIAL # _____

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231 B Otto Street - Port Townsend, WA 98368 - (360)385-7707

Preface

Congratulations on your selection of the Thermionics SCC Motor Controller as your motion control solution! This unit is capable of providing many years of service with minimal care and maintenance. This manual is a tool to aid in operation.

Product Description

SCC motors and controllers are an alternative to more costly and complicated stepper motor control where continuous rotation and variable speeds are needed. The motors are coupled to a gearhead. DC voltage is applied to the motor and varied via a rotary control knob and magnetic tachometer. When energized the motor will run at variable RPM in either direction. The motor controller comes in various configurations with different size motors, and either 120V or 240V input power. It can also be supplied with either a constant or a momentary 'on-off-on' switch, which provides bi-directional instantaneous start/stop control. Typically, when supplied with a device used for continuous rotation the constant switch is provided, and alternately a device used for positioning a momentary switch is provided. Changes to the switch type may be requested per application. A hanger bracket is built onto the controller for convenience.

SCC II controllers are identical in basic function however they utilize a 'smart' control module which has several features. In addition to basic switches the SCC II has a 'continuous - standby - momentary' switch that increases flexibility in operation. The digital control module may be programmed for several different parameters, including acceleration-deceleration rates, alarm states and the like. It is programmed for basic functionality at the factory and tested with supplied equipment before shipment.

INTENDED USE

The drive systems described here are products for general use that conform to the state of the art in technology and are designed to prevent any dangers. However, drives and drive controllers that are not specifically designed for safety functions are not approved for applications where the functioning of the drive could endanger people.

The possibility of unexpected or unbraked movements can never be totally excluded without additional safety equipment. For this reason, personnel must never be in the danger zone of the drives unless additional suitable safety equipment prevents any personal danger. This applies to the operation of the machine during production and also to all service and maintenance

work on drives and the machine. The machine design must ensure personal safety.

Suitable measures for the prevention of property damage are also required. In all cases the applicable safety regulations and the specified operating conditions, such as environmental conditions and specified technical data, must be observed.

The drive system must not be commissioned and operated until completion of installation in accordance with the specifications in this manual. To prevent personal injury and damage to property damaged drive systems must not be installed or operated.

Changes and modifications of the drive systems are not permitted and if made no warranty and liability will be accepted. The drive system must be operated only with the specified wiring and approved accessories. In general, use only original accessories and spare parts.

The drive systems must not be operated in an environment subject to explosion hazard (ex area). not avoided, can result in death, serious injury, or equipment damage.

Failure to follow these instructions can result in death or serious injury.

Due care and caution must be observed in the care and placement of the cabling to prevent any damage, pinching, etc.

CAUTION

The controller operates on 120 VAC, OR 240 VAC 60 Hz single-phase power, specified at the time of order. A 3-prong plug (grounding type) is provided and used on 120 units. This **must** be connected to a correctly wired receptacle. If one is not available, one **must** be installed. 240 V controllers that are shipped outside the U.S.A. are provided with bare wire cable and the user must install a suitable plug. We advise only qualified personnel for this task.

Verify the input voltage listed on the nameplate on the supply is the same as is being supplied. DO NOT connect to incorrect voltage.

Motor Connections

The motor has a push and twist-to-lock connector. Make all connections before connecting the controller to the main power.

Different size and voltage motors are utilized on different devices and controllers are configured to match at the time of manufacture. DO NOT connect or try to operate a different device with a controller that was not originally built for it without consulting and confirming suitability with the factory.

Controller and Operation

SCC:
Once connections are finalized, proceed to operate via the rocker switch. The small rotary knob on the controller is utilized to adjust speed. Counterclockwise is slow, clockwise is fast. It is recommended that the control be in the full counterclockwise position (stopped) to begin with, however once speed is known to be satisfactory with the device being driven, the controller may be switched on at any time and direction may also be changed. Unmonitored operation of any device is ill advised; however, this unit is designed to operate at full time duty cycle.

Output fuse (single for 120 V and dual for 240 V) are located adjacent to the power input and motor output cables. There are no user serviceable components inside the controller.

SCC II:
Once connections are finalized, proceed to operate via the 'continuous-standby-momentary' switch. Initial power up requires this switch to be in the standby position. The c-s-m switch MUST be in the 'standby' position when switching the power on. An error will be generated, and the motor will not turn if in the continuous position when powered. In the event of a power failure, this safeguards against unintended motor operation. By switching back to 'standby' then to either 'continuous' or 'momentary' the error will clear, and motion will commence. The small rotary knob on the controller is utilized to adjust speed. Counterclockwise is slow, clockwise is fast. It is recommended that the control be in the full counterclockwise position (stopped) to begin with, however once speed is known to be satisfactory with the device being driven, the motor may be switched on at any time and direction may also be changed. Unmonitored operation of any device is ill advised; however, this unit is designed to operate at full time duty cycle.

Power fault protection is provided by the main power switch which is a circuit breaker. The digital module inside the controller is configurable, however ONLY qualified service personnel should be allowed to open the controller. Detailed instructions for programming the digital control module may be supplied if changes to the running characteristics are desired.

Warranty

This unit is covered under the Thermionics standard warranty for a period of one year from the time of delivery. Please refer to the beginning of our current catalog for the exact terms of the warranty, and how to implement a warranty service if needed.

Maintenance

There are no user serviceable components inside the controller.

We recommend the user utilize the factory for service if such is ever needed. We maintain a supply of components, and testing and calibration facilities. We offer fast and efficient service.

We at Thermionics have a large stake in your new equipment operating up to your expectations. If you experience difficulty with this unit, or any other aspect of your endeavor where our experience might be of value, we want to hear from you. We want to be part of your success.

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