# Digital EC Motor Control



**This manual covers the following product(s):**

FSC-1   Fan Speed Control

## Table of Contents

# Overview

The FSC-1 is a digital EC motor control. The control has a simple five button interface with a four digit LED display. All programmable parameters can be accessed through the user menu with the five button interface. There are two ECM connectors with modulating outputs, one RPM feedback, and one 0-10V DC input. The FSC-1 is compatible with both Telco Green and Nidec motors. User parameters are stored in non-volatile memory and are retained even during a power outage. The FSC-1 is powered by 24V AC.

# Normal Operation

### FSC Application

Every ten seconds the FSC-1 display will toggle between the current percent of run speed and the current RPMs. The percent of run speed can be changed by using the **UP▲** and **DN▼** keys followed by the **ENT** key to save your changes. If the remote function is enabled the speed is controlled through the 0-10V input. 0V being 0% and 10V being 100%, unless overridden by the low speed and high speed limits. You can access programming mode by holding the enter key for three seconds.

### 0-10 Application

In the 0-10V application you are provided a programmable 0-10V reference. The display shows the selected voltage. The voltage is easily changed using the **UP▲** and **DN▼** keys followed by the **ENT** key to save your changes.
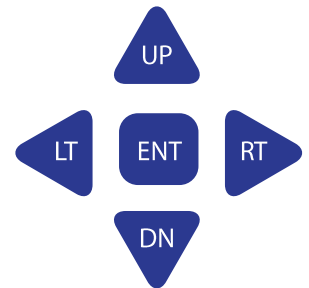


# Programming

Please refer to the "FSC-1 Menu Map" on page 3 for editing parameters within program mode. To enter program mode hold the **ENT** key for three seconds until "LSPD" is displayed. Use the **UP▲** and **DN▼** keys to navigate to the desired menu parameter shown in column 1 of the menu map on page 3. To edit a menu parameter press the **RT▶** key once on the desired parameter. The current value will be displayed in column 2 of the menu map on page 3. Also use the **UP▲** and **DN▼** keys to change values within a parameter. The parameter will blink until the user presses **ENT** to save the changes or the **LT◀** key to cancel without saving. If a key is not pressed for fifteen seconds, the control will return to normal operating mode. Different parameters are as follows:
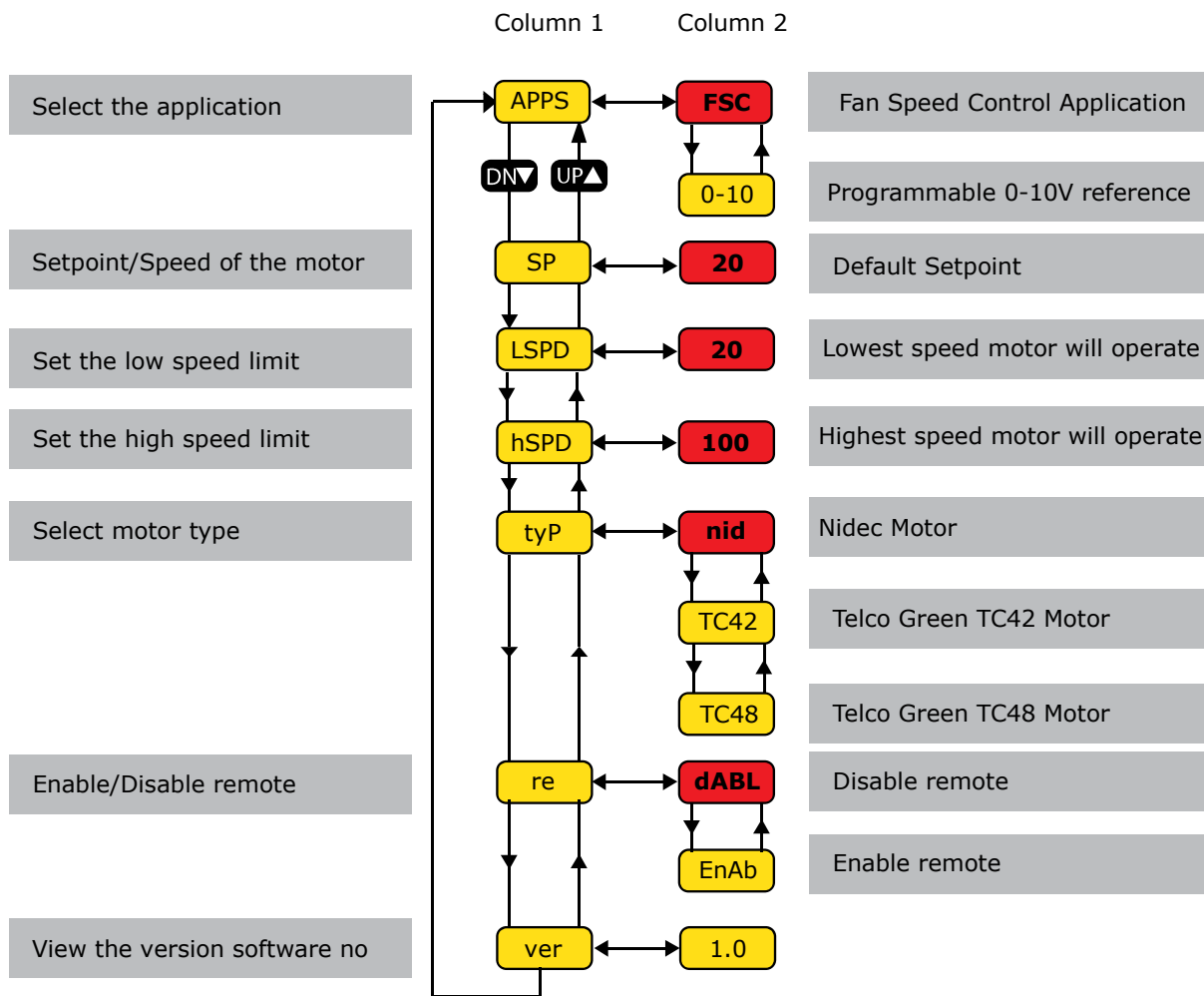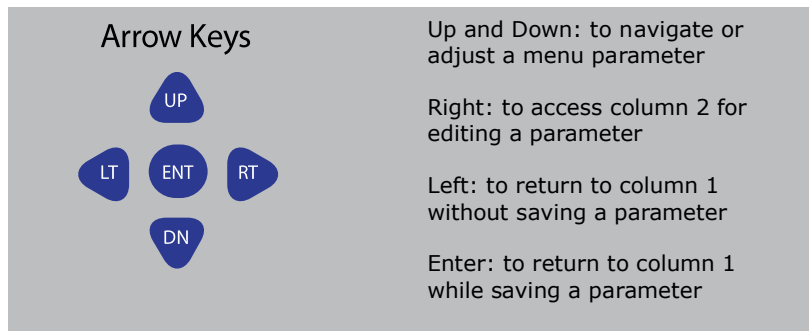
1. "APPS": Prompts the user to select which application to utilize.
2. "SP": Set the speed or the "Setpoint" of the motor.
3. "LSPD": Sets the lowest possible speed the motor will operate at. If the **DN▼** button is pressed one more time passed the "LSPD" limit, the control will turn off.
4. "hSPD": Sets the highest possible speed the motor can operate at.
5. "tyP": Sets the type of motor the control is configured for. The FSC-1 is compatible with Telco Green and Nidec motors.
6. "re": Allows the user to enable or disable the use of an external remote control.
7. "ver": Allows the user to view the current version software number.

# Alarms

Error messages on the FSC-1 will scroll across the display with a detailed message.  This will help users to resolve issues faster.  Possible errors are as follows:
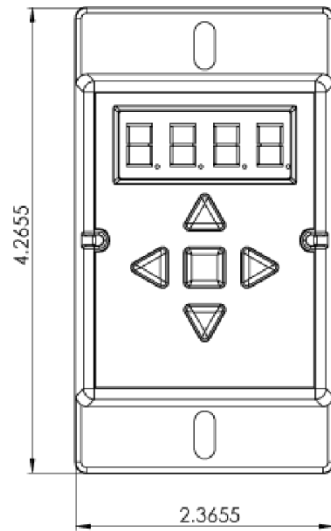
1. "oFF"- The FSC-1 is not receiving RPM feedback.

To resolve an issue, refer to "Installation" on page 3 for proper wiring connections.

## Arrow Keys

Up and Down: to navigate or adjust a menu parameter

Right: to access column 2 for editing a parameter

Left: to return to column 1 without saving a parameter

Enter: to return to column 1 while saving a parameter

| | Column 1 | Column 2 | |
|---|---|---|---|
| Select the application | APPS | **FSC** | Fan Speed Control Application |
| | | 0-10 | Programmable 0-10V reference |
| Setpoint/Speed of the motor | SP | **20** | Default Setpoint |
| Set the low speed limit | LSPD | **20** | Lowest speed motor will operate |
| Set the high speed limit | hSPD | **100** | Highest speed motor will operate |
| Select motor type | tyP | **nid** | Nidec Motor |
| | | TC42 | Telco Green TC42 Motor |
| | | TC48 | Telco Green TC48 Motor |
| Enable/Disable remote | re | **dABL** | Disable remote |
| | | EnAb | Enable remote |
| View the version software no | ver | 1.0 | |

DN▼   UP▲

LT ◀   RT ▶

# FSC-1 Menu Map

(Red indicates default parameter)

# Installation



FSC-1 Front Panel      FSC-1 Side View

4.2655

2.3655

1.0285

24VAC · RPM · GND · 0-10V
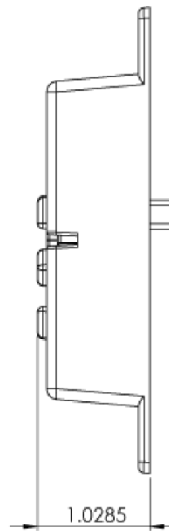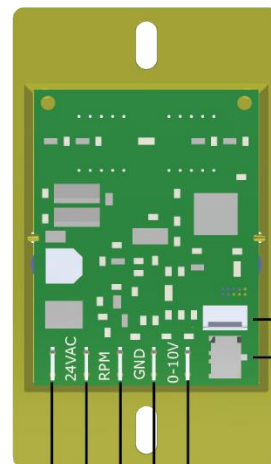
Nidec EC Motor

Telco Green EC Motor

GND

24V

120/240V

0-10VDC IN

0-10VDC OUT
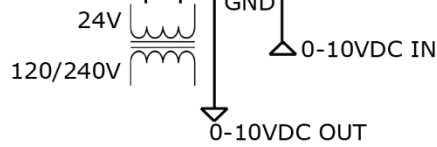
### Specifications

| Power Requirements | 24VAC @ 20VA |
|---|---|
| Ambient Operating Temperature | -40°F-140°F<br>-40°C-60°C |