396-001510

Commander II for Tower Electric Pumps Quick Start Card

2022 Software rP G

In Field Operating Instructions

VOLUME: Displays total gallons (liters) of liquid applied. Can be reset to 0 by holding the reset button.

VOLUME/MINUTE: Displays gallons (liters) of liquid applied per minute. Use this to read instant flow in GPM.

TANK: Displays gallons (liters) of liquid remaining

RATE: Displays application rate GPA(LPH)

RUN/HOLD: Turns liquid application on (RUN) or off (HOLD)

3 SECTION SWITCHES: Turns application ON or OFF for each section. If not dividing implement into sections, use Section 1 switch only.

AREA: Displays the area of coverage by the equipment in acres (hectares). May be reset.

DISTANCE: Displays the distance traveled in feet (meters). May be reset.

PRESSURE: Displays the liquid pressure at the location of the optional pressure sensor. In addition to displaying Pressure the console will warn the operator with HiPSI (High Pressure) message when the input pressure exceeds the limit pressure (set in Special Cal)

SPEED: Displays ground speed in miles per hour (Kilometers per hour).

ON/OFF: Commander II power switch. When the console is turned on (except when starting in "SPECIAL" CALIBRATE) the data display will show the **Number of Hours** it has operated for one second, followed by the **Software Part Number (45216)** and the **Software Revision (rP X)** for 1.5 seconds each. Then it will display the **Control Mode (P-FLO or S-FLO)** for 1.5 seconds.

AUTO/MAN: Key which changes operation from automatic control to manual.

CAL: This key is used to enter & exit calibration mode.

RESET/ - : When not in CAL, clears the selected counter when held for two seconds.

+ & - : Plus & Minus keys are use to increase and decrease values

Five Steps for Commander II Setup for Tower Electric Pump Systems

1. **Commander II Special Cal Quick Setup** (Factory defaults are for Tower Electric Pump Systems so skip this step with brand new Commander II)
2. **Standard Calibration**
3. **Initial Operation in Manual Mode**
4. **Test Speed Operation in Automatic Mode**
5. **Speed Signal Verification & Field Operation**

# Commander II Special Cal Quick Setup

Step 1

The Commander II is shipped from the factory set up for PWM driven Tower Electric Pumps. If installing a new Tower system you can skip this procedure. The defaults for EP-E (see below) are already loaded.

The Commander II has a quick setup feature to load the necessary defaults for a SurePoint Tower or PumpRight system. **Follow the steps below BEFORE performing standard calibration on next page.**

To change defaults:

1. Power off Commander II
2. Enter Special Cal by holding both the AUTO/MAN and the CAL button down while turning on the power switch.
3. You should see "SPEC" on the screen, if not repeat steps one and two
4. Ensure "1" displays to indicate Page 1 in Special Cal. Press CAL to change if necessary.
5. Turn dial to point at AREA
6. Select desired defaults from chart below (Press the UP or DOWN arrow to change selection.)
   - Select "EP-E" for Tower Electric Pumps
   - Select "HP-E" for PumpRight or other Hydraulic Pumps
7. Save changes by holding CAL until red light goes out (about 3 seconds)

NOTE: **The above procedure will load all default values in the Commander II. It must be done before standard calibration.** For example, if you entered your implement width, then did the quick setup above, the Commander II would default back to 240 inches.
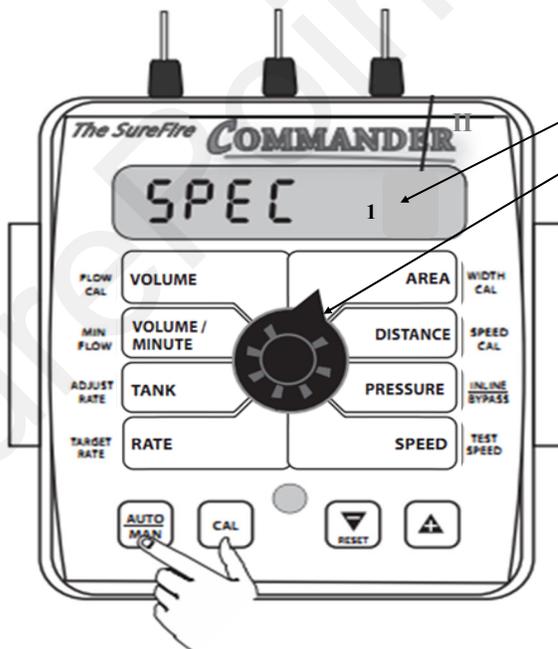
This number tells you which special CAL screen you are on. Pressing the CAL button will change this number. Quick Setup is on Page 1, with dial turned to AREA.

Select "EP-E" for Tower Electric Pumps

Standard Calibration Procedure:

1. Press CAL key for one (1) second to enter calibration mode.
2. Red light will be on steady and CAL will be displayed in CAL mode.
3. Turn the dial to the items listed below and set as instructed.
4. When complete, press CAL for one (1) second to exit CAL mode. Red light should go out and CAL will not be displayed. You **MUST** exit Calibration mode to save your settings.

FLOW CAL: Enter the calibration number for your **flowmeter** here. On electromagnetic flowmeters the calibration number is from the chart below. **(These numbers are for flowmeters sold after 10/15/2012. These meters have a blue label with white text. Earlier flowmeters (white label with black text) use different FLOW CAL numbers.)** On turbine flowmeters, the calibration number is on a metal tag attached to the flowmeter.
Quick Tip: To quickly change the flow cal, press the AUTO/MAN button to allow you to directly change the 2 left digits (thousands). Then press the UP or DOWN arrow to change the number. Press AUTO/MAN again to change the right 3 digits.

Flow Range (GPM)	Pulses/ Gallon	Commander II Flow CAL
0.13 - 2.6	3000	6000
0.3 - 5	3000	6000
0.6 - 13	2000	4000
1.3 - 26	2000	4000
2.6 - 53	2000	4000

P/F Ratio: Not used at this time.

ADJUST RATE: Sets amount of rate change by pressing "+" or "-" button once. Usually set to 1.0. This allows you to change from 8 GPA to 9 GPA to 10 GPA etc.

TARGET RATE: Set to your intended target rate in Gallons per Acre.

NOTE: This indicates you are in CAL mode.

WIDTH CAL: Enter the width of each fertilizer or chemical section of your implement. For a single section system, set Section One to the full implement width in inches. For example, for an 8 row 30" implement, set Section One to 240 inches. To set the section widths the Run/Hold Switch has to be in Run and the Section Switch must be ON. If using a single section implement, set Section 2 and 3 to ZERO.

SPEED CAL: Used in calibration mode to enter the speed calibration number in inches (cm) per pulse. Default is 0.189 for SurePoint Astro GPS speed sensor.

When using the shaft speed sensor on grain drills, this will need calibrated. SurePoint recommends you enter a value of 1.0 as a starting point. See section G for that calibration procedure under "Ground Speed Displayed is not correct".

CONTROL SPEED: Typically –2 for Tower Electric Pumps & -4 for PumpRight Hydraulic Pumps.

Allows adjustment of response to "tune" the system for use with fast or slow valves. For example, if response is too slow, use the "+" button to adjust the valve response number to 1, 2 or 3. The range of adjustment is -8 to +3.

TEST SPEED: Use this mode to verify controller automatic operation only AFTER initial operation in MANUAL mode.
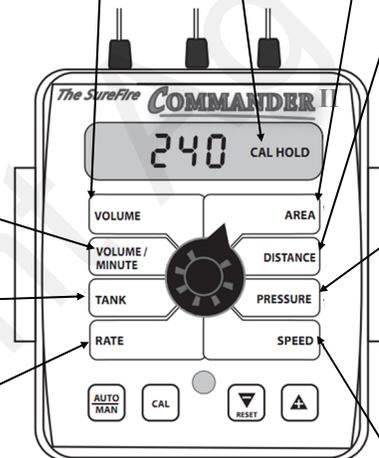
Standard CAL Factory Defaults: (for Software Revision **rP G**)

Software Revision identification displays briefly when Commander II is started.

Electric Pumps: 6000 **Hydraulic Pumps: 4000**	**FLOW CAL**	**WIDTH**	Boom 1: 240 Inches Boom 2: 0 Inches Boom 3: 0 Inches
Off	**P/F RATIO**	**SPEED CAL**	0.189
1.0 GPA	**ADJUST RATE**	**CONTROL SPEED**	PWM Electric: -2 PWM Hydraulic: -4 Servo Electric: -1 Servo Hydraulic: -2
10.0 GPA	**TARGET RATE**	**TEST SPEED**	Off
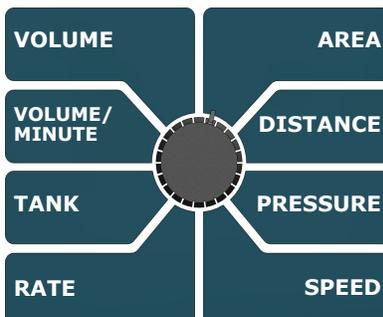
Dial items: VOLUME, AREA, VOLUME/MINUTE, DISTANCE, TANK, PRESSURE, RATE, SPEED

Initial Operation Instructions

SurePoint highly recommends you perform these exact steps with water to verify system is correctly installed and ready for field use.

Test the system in **MANUAL mode**.

Step 3

1. Push the AUTO/MAN button until **MAN** is displayed on the Commander II. You are now in Manual mode.
2. Put the system in **RUN**. Turn the console switch to RUN or lower the implement if using a mercury Run/Hold Switch. When HOLD Is not displayed on the screen the system is in RUN.
3. Turn **Section 1 switch ON**.
4. Open the Air Bleed valve on the Tower. Be prepared to close the valve when water comes out.
5. Turn dial to **VOLUME/MINUTE** position. Is a number displayed? If so push the "+" button. Does the flow increase? Push the "-" button. Does the flow decrease?
6. If no reading in VOLUME/MINUTE, is the pump turning and is there water present at the pump inlet?
    NOTE: **Feel if pump is vibrating to tell if it is running.**
7. If water is being pumped, but no reading on the Commander VOLUME/MINUTE, check the flowmeter connections and the Flow Cal value.

Proceed to STEP 4, ONLY when you can increase and decrease the VOLUME/MINUTE reading using the "+" and "-" keys on the Commander II.

Now, we will operate the Commander II in **Test Speed mode**.

Step 4

1. Enter calibration by pushing and holding the **CAL** button until CAL is displayed on the Commander II and the red light is on.
2. Push the AUTO/MAN button until **AUTO** is displayed, indicating you are in automatic mode.
3. Turn the dial to **Test Speed** in the bottom right corner. Use the + key to adjust to your field operating speed.
4. Turn Run/Hold switch on Commander II to **RUN**.
5. Turn Run/Hold **mercury switch to run** by lowering the implement, unplugging it, or manually tilting the switch.
6. Turn at least **Section 1 switch on**.
7. You should now be dispensing liquid as if you were traveling through the field at the test speed you entered.

Proceed to the next step when liquid application is verified in AUTO mode with Test Speed operation.

Finally, we will verify the Commander II Speed is correct.
Turn the dial to **SPEED**. Drive the tractor. Does the speed reading seem reasonable and correct? The ASTRO II will be a more accurate speed than an un-calibrated tractor speedometer.

Step 5

Proceed to the next step when your Commander II Ground Speed is correct.

You are now ready to verify regular field application.

For more information about the operation of your Commander II system, see the full manual —available at https://support.surepointag.com