

User's Manual

VersaGuard Advance

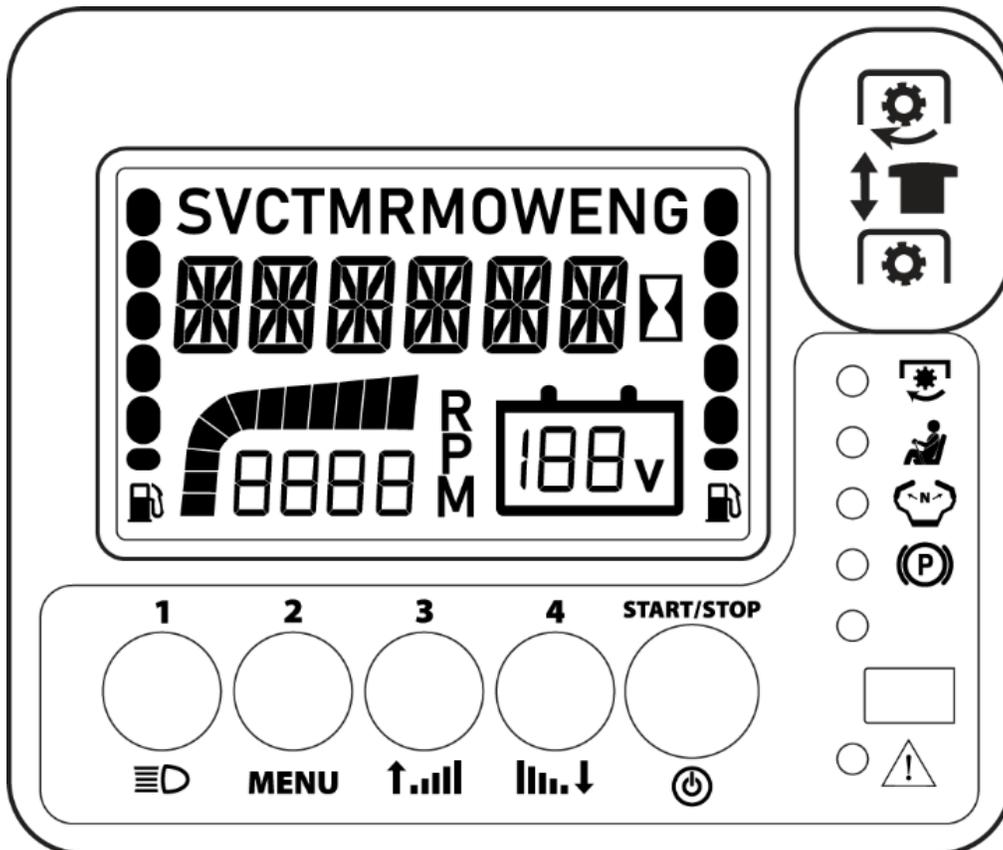
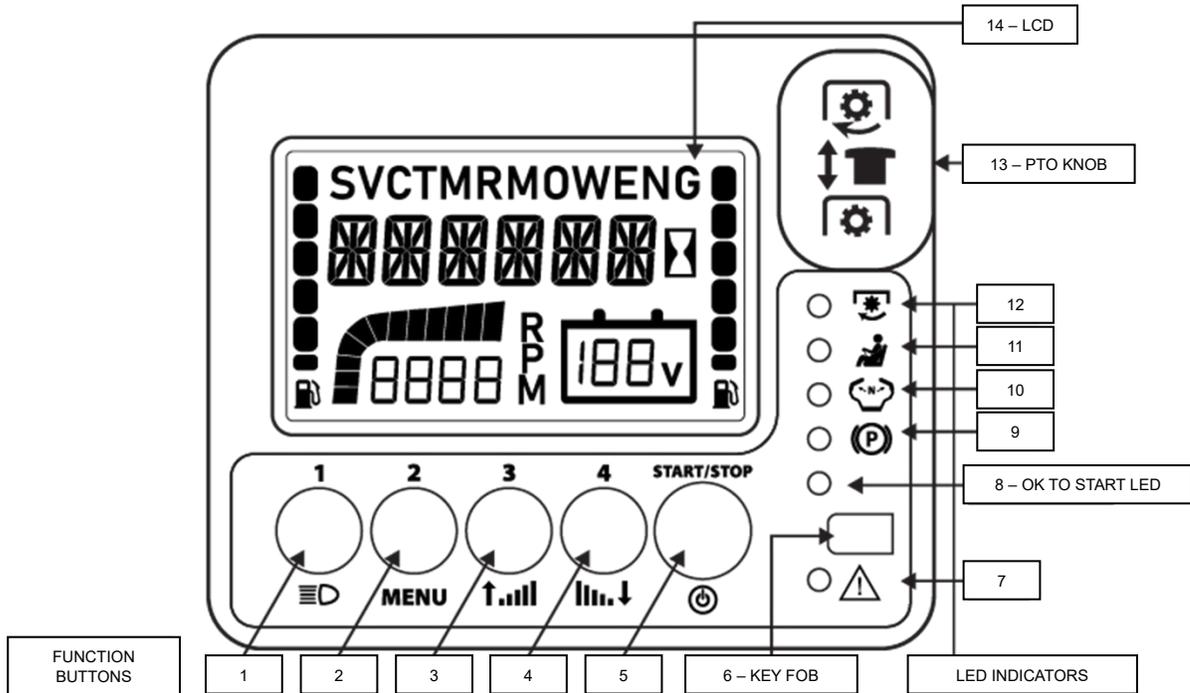


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IMPORTANT

This manual contains information and instructions for all VersaGuard Advance console functions and features.



LCD Information Center

DESCRIPTION	DISPLAY
Large Digits	Clock, Warnings, Service Alerts, Timer, Mower Hours, and Engine Hours
SVC	Service Alerts
TMR	Erasable Job Timer
MOW	Mower Hour Meter
ENG	Engine Hour Meter
Left Fuel Bars	Left Fuel Tank Level (The last bar flashes when the tank is empty. An auto-hide feature is activated when a sender is not installed.)
Right Fuel Bars	Right Fuel Tank Level (The last bar flashes when the tank is empty. An auto-hide feature is activated when a sender is not installed.)
RPM	Bar Graph with a Numerical Readout of the Tachometer
Battery Icon	Battery Icon with a Numerical Readout of the Voltage

Function Buttons/PTO Knob/Key Fob

DESIGNATION	DESCRIPTION	FUNCTION/OPERATION
1	Button 1	Press and release to toggle the headlight on/off.
2	Button 2	Press and release to toggle between Clock, SVC, TMR, MOW, and ENG. In SVC or TMR, press and hold for 6 seconds to clear/reset. (The LCD (14) displays "000000" after a reset.)
3	Button 3	Press and hold to raise the deck. Release when the deck reaches the desired level.
4	Button 4	Press and hold to lower the deck. Release when the deck reaches the desired level.
5	Start/Stop Button	Press and hold to crank the engine. Release when the engine starts. Press and release to turn off the engine.
6	Key Fob	Insert into the slot to unlock/power up the console. Remove from the slot to lock/power down the console and turn off the engine.
13	PTO Knob	Pull up to engage the PTO. Push down to disengage the PTO.

LED Indicators

DESIGNATION	DESCRIPTION	FUNCTION/OPERATION
7	Warning Indicator	Flashing Red – Low Oil, High Voltage, Low Voltage (See the LCD (14) for more information.)
8	OK to Start	Solid Green – Engine Is Safe to Start Solid Red – Engine Is Unsafe to Start
9	Parking Brake	Flashing Red – Interlock Safety Switch for Parking Brake Is Bypassed or Failed Solid Red – Parking Brake Is Not Engaged
10	Motion-Control Levers	Flashing Red – Interlock Safety Switch for Motion-Control Levers Is Bypassed or Failed Solid Red – Motion-Control Levers Are Not in the NEUTRAL-LOCK Position
11	Operator Presence	Flashing Red – Interlock Safety Switch for Operator Presence Is Bypassed or Failed Solid Red – Operator Is Not in the Seat
12	PTO Status	Flashing Red – Interlock Safety Switch for PTO Status Is Bypassed or Failed Solid Red – PTO Is Engaged

Unlocking/Powering Up the Console – Key Fob Only

Insert the key fob (6) all the way down into the console to unlock/power up the console and allow access to the buttons' functionalities and the mower's operations. If the key fob (6) is already inserted, press any button (1-5) to produce the same response.

Note: If the key fob (6) is not inserted and any button (1-4) is pressed, the LCD (14) displays the corresponding number. If the key fob (6) is inserted and any button (1-4) is pressed, the LCD (14) displays the corresponding functionality.

Note: This unlocking method is the factory default. To change the unlocking method to key fob and key code or key code only, see [Programming Console Unlocking Method and/or Adding a Personalized Key Code](#) on page 2-3.

Unlocking/Powering Up the Console – Key Fob and Key Code

Insert the key fob (6) all the way down into the console and enter the key code using the buttons (1-4). As you enter the key code, the LCD (14) displays it, always showing the 6 most recently entered digits. If the correct key code is entered, the console unlocks/powers up and allows access to the buttons' functionalities and the mower's operations.

Note: If the key fob (6) is not inserted and a key code is entered, the LCD (14) displays "NO KEY". If the key fob (6) is inserted and an incorrect key code is entered, the LCD (14) displays "WRONG CODE" when the start/stop button (5) is pressed. If the key fob (6) is inserted and a key code is not entered, the LCD (14) displays "LOCKED" when the start/stop button (5) is pressed.

Unlocking/Powering Up the Console

– Key Code Only

Enter the key code using the buttons (1-4). As you enter the key code, the LCD (14) displays it, always showing the 6 most recently entered digits. If the correct key code is entered, the console unlocks/powers up and allows access to the buttons' functionalities and the mower's operations.

Note: If an incorrect key code is entered, the LCD (14) displays “WRONG CODE” when the start/stop button (5) is pressed. If a key code is not entered, the LCD (14) displays “LOCKED” when the start/stop button (5) is pressed.

Note: If the operator remains in the seat and the engine is stopped, the console locks/powers down after 15 minutes. If the operator exits the seat and the engine is stopped, the console locks/powers down after 15 seconds. If the operator presses and holds buttons (2) and (3) for 3 seconds and the engine is stopped, the console locks/powers down immediately.

Starting and Stopping the Engine

After the console is unlocked, the following conditions must be met to start the engine:

1. The operator must be in the seat.
2. The parking brake must be engaged.
3. The motion-control levers must be in the NEUTRAL-LOCK position.
4. The PTO knob (13) must be disengaged.

Note: If all of the above conditions are met, the “OK to Start” LED (8) illuminates solid green, indicating the engine is safe to start.

Note: If any of the above conditions are not met, the corresponding LED(s) (9-12) illuminate(s) solid red and the “OK to Start” LED (8) illuminates solid red, indicating the engine is unsafe to start.

Press and hold the start/stop button (5) to crank the engine. Release when the engine starts.

Press and release the start/stop button (5) to turn off the engine.

Note: If the current unlocking method is key fob only or key fob and key code, the engine stops when the key fob (6) is removed.

PTO Operation

To engage the PTO, pull the PTO knob (13) to the up position.

To disengage the PTO, push the PTO knob (13) to the down position.

Programming the Console Unlocking Method and/or Adding a Personalized Key Code

The following methods unlock/power up the console and allow access to the buttons' functionalities and the mower's operations:

1. Key Fob Only (This unlocking method is the factory default.)
2. Key Fob and Key Code
3. Key Code Only

Step 1: Think of a key code (1-8 digits) to enter every time to unlock/power up the console.

Note: Record the key code for safe keeping. If the key code is forgotten, it can only be reset by calling the dealership service center.

Step 2: Ensure the console is unlocked/power up, the engine is stopped, and the PTO knob (13) is disengaged.

Step 3: Press and hold buttons (1) and (2) until the LCD (14) displays "CHANGE CODE".

Step 4: Enter the key code from **Step 1** into the console. If more than 8 digits are entered, the LCD (14) displays "FULL".

Note: The LCD (14) always shows the 6 most recently entered digits.

Note: If the desired unlocking method is key fob only, do not enter any digits.

Note: If the desired unlocking method is key fob only or key fob and key code, the key fob (6) must be inserted into the slot at this time. If the desired unlocking method is key code only, the key fob (6) must be removed from the slot at this time.

Step 5: After the key code is entered, pull the PTO knob (13) to the up position. If the key code is acceptable, the LCD (14) displays "ENTER CODE AGAIN". If the key code is unacceptable, the LCD (14) displays "BAD CODE". If this happens, push the PTO knob (13) to the down position, return to **Step 1**, and use a different key code.

Note: If the key fob (6) is not inserted and a key code is not entered, the LCD (14) displays "EMPTY CODE" when the PTO knob (13) is pulled to the up position.

Step 6: If the key code is acceptable and the LCD (14) displays "ENTER CODE AGAIN", reenter the key code from **Step 4** into the console.

Step 7: After the key code is reentered, push the PTO knob (13) to the down position. If the key codes from **Step 4** and **Step 6** match, the console saves the key code and the LCD (14) displays "SAVED CODE". If the key codes do not match, the LCD (14) displays "NO MATCH". If this happens, return to **Step 1**.

Mechanics Mode

Mechanics mode allows dealerships to unlock/power up the console and operate the mower without the owner's key code.

Enter the mechanic's key code using the buttons (1-4). As you enter the key code, the LCD (14) displays it, always showing the 6 most recently entered digits. If the correct mechanic's key code is entered, the console unlocks/powers up and allows access to the buttons' functionalities and the mower's operations.

Note: The mechanic's key code is determined by the OEM.

Note: The OEM can elect to change the unlocking method to key fob and mechanic's key code.

Note: If the console is unlocked/powered up with the mechanic's key code and the engine is stopped, the console locks/powers down after 15 minutes whether the mechanic is in the seat. If the mechanic presses and holds buttons (2) and (3) for 3 seconds and the engine is stopped, the console locks/powers down immediately. When the console locks/powers down, the LEDs (8-12) turn off and the LCD (14) displays the engine's hours.

Setting the Time-of-Day Clock

Step 1: Ensure the console is unlocked/powered up and the engine is stopped.

Step 2: Press and release button (2) until the LCD (14) displays the time-of-day clock.

Step 3: Press and hold button (2) until the LCD (14) displays "SET" and flashes the set time.

Step 4: Press and release buttons (3) and (4) to move the time forward and backward respectively by 1-minute intervals. Press and hold buttons (3) and (4) to move the time forward and backward respectively by bigger intervals.

Note: The time's rate-of-change accelerates the longer the button is pressed and held.

Step 5: Once the time has been changed to the desired setting, press and release button (2) to save it.

Interlock Safety Logic

The Engine Is Not Running

Starting the Engine

1. The operator must be in the seat.
2. The parking brake must be engaged.
3. The motion-control levers must be in the NEUTRAL-LOCK position.
4. The PTO knob (13) must be disengaged.

The Engine Is Running

Putting the Mower into Drive

1. The operator must be in the seat.

Exiting the Seat and Keeping the Engine Running

1. The parking brake must be engaged.
2. The motion-control levers must be in the NEUTRAL-LOCK position.

Operating the PTO

1. The operator must be in the seat.

Bypassed or Failed Interlock Safety Switch Detection

The console monitors the interlock safety switches and identifies the switches that have been bypassed or have failed. When a switch has been bypassed or has failed, the corresponding LED(s) (9-12) illuminate(s) flashing red and the LCD (14) displays the corresponding message(s) (e.g., “SEAT”, “BRAKE”, or “DRIVE INTLK FAULT”). After a bypassed or failed switch has been detected, the console allows normal mower operation to continue for a short amount of time so the mower may be moved to a service center. After the time expires, the console disables normal mower operation.

Note: The duration of time or number of cycles until the console disables normal mower operation is determined by the OEM.

Note: The cycle’s default configuration is a complete cycle of unlocking/powering up the console, starting the engine, engaging the PTO, disengaging the PTO, stopping the engine, and locking/powering down the console.

Alarms

The console contains multiple alarms for specific applications.

Note: The OEM can elect to change the alarms.

Low Oil Alarm

If the engine is running and the oil pressure switch closes for 10 seconds, the console turns off the engine, the LCD (14) displays "OIL PSI", and the warning indicator LED (7) illuminates flashing red. The alarm resets when the engine restarts or when the console locks/powers down.

High Voltage Alarm

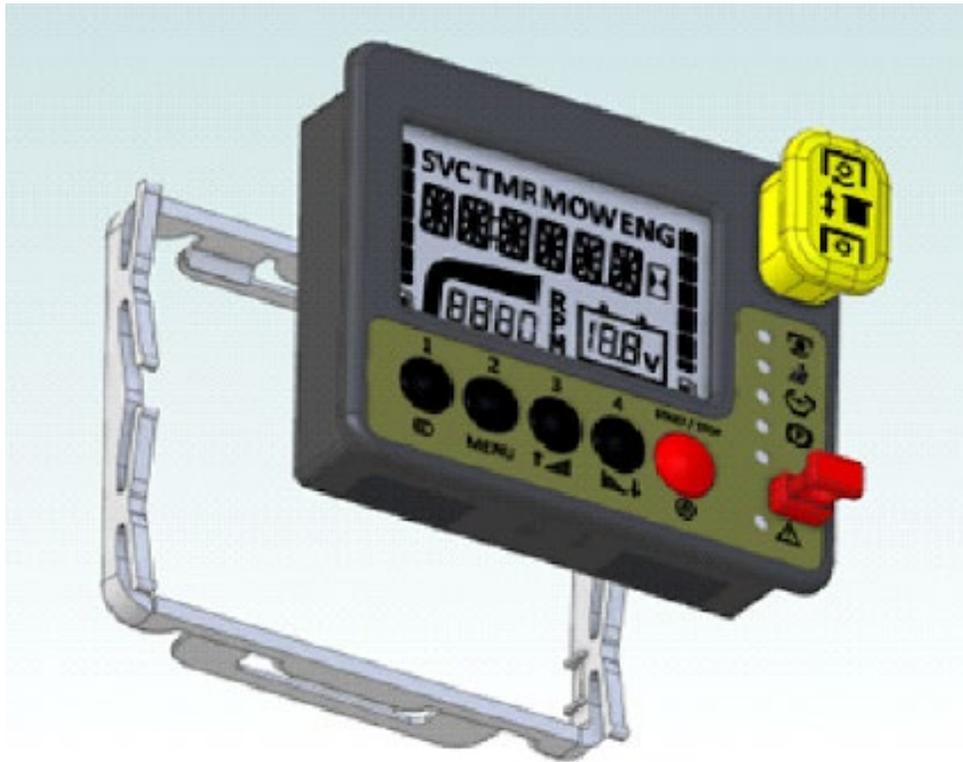
If the console is unlocked/power up and the system's voltage rises above 15.0 volts for greater than 2 seconds, the LCD (14) displays "BATT HIGH" and the system's current voltage and the warning indicator LED (7) illuminates flashing red. The alarm resets when the system's voltage drops below 15.0 volts or when the console locks/powers down.

Low Voltage Alarm

If the console is unlocked/power up and the system's voltage drops below 12.0 volts for greater than 2 seconds, the LCD (14) displays "BATT LOW" and the system's current voltage and the warning indicator LED (7) illuminates flashing red. The alarm resets when the system's voltage rises above 12.0 volts or when the console locks/powers down.

Console Diagnostics

ERROR CODE	DESCRIPTION	RECCOMENDATION
10	The continuous PTO clutch current is too high.	Check the PTO clutch coil resistance.
11	A system overcurrent occurred when turning on the starter.	Check the battery condition and connections. Check the starter solenoid wiring for short circuits.
12	A system overcurrent occurred when turning on the PTO.	Check the battery condition and connections. Check the PTO wiring for short circuits.
13	A system overcurrent occurred when turning on the fuel solenoid.	Check the battery condition and connections. Check the fuel solenoid wiring for short circuits.
14	A system overcurrent occurred when turning on the headlight.	Check the battery condition and connections. Check the headlight wiring for short circuits.
15	A system overcurrent occurred when turning on the AUX/ACC power.	Check the AUX/ACC wiring for short circuits.
17	An overcurrent occurred when turning on multiple outputs.	Check the battery condition and connections. Check the wiring.
18	A system overcurrent occurred when turning on the starter.	Check the battery condition and connections. Check the starter solenoid wiring for short circuits.
19	A system overcurrent occurred when turning on the PTO.	Check the battery condition and connections. Check the PTO wiring for short circuits.
20	A system overcurrent occurred when turning on the fuel solenoid.	Check the battery condition and connections. Check the fuel solenoid wiring for short circuits.
21	A system overcurrent occurred when turning on the headlight.	Check the battery condition and connections. Check the headlight wiring for short circuits.
22	A system overcurrent occurred when turning on the AUX/ACC power.	Check the AUX/ACC wiring for short circuits.
24	An overcurrent occurred when turning on multiple outputs.	Check the battery condition and connections. Check the wiring.
35	An error occurred when turning on the PTO.	Check the PTO wiring.
36	An error occurred when turning on the PTO.	Check the PTO wiring.
37	The PTO current is too low.	Check the PTO wiring for intermittent connections.



Console Installation and Removal

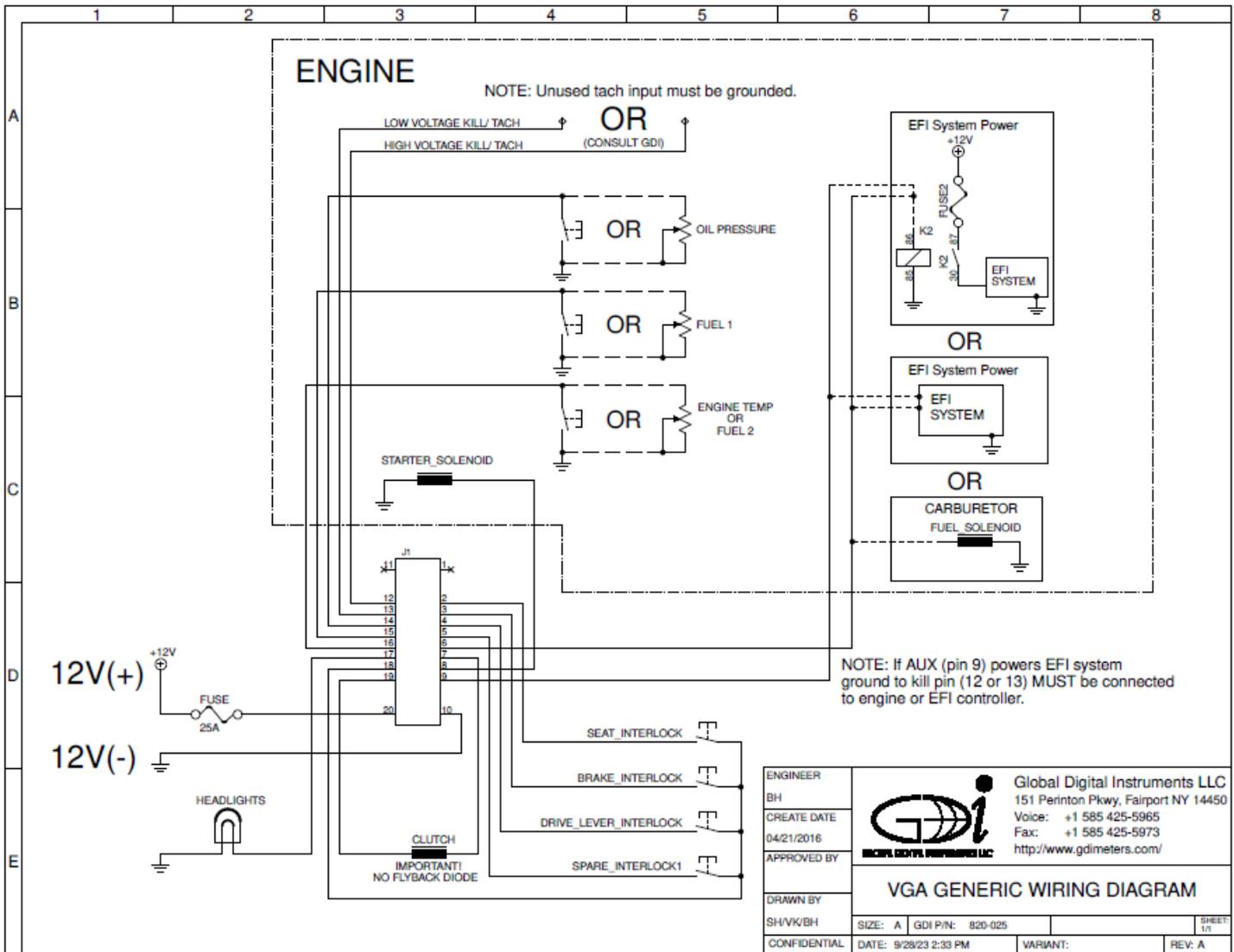
Installing the Console

The console comes with a quick clip bracket. To install the bracket, place the console in the dash panel and place the bracket behind the panel. Align the 4 catch arms of the quick clip bracket with the 4 ratchet steps in the console's housing. Push the bracket onto the housing, compressing the spring arms against the back of the panel.

Removing the Console

To remove the bracket, pull the 4 catch arms of the quick clip bracket out of the 4 ratchet steps in the console's housing. Pull the bracket off of the housing.

CARB and EFI Wiring Diagram



Notes

Notes

