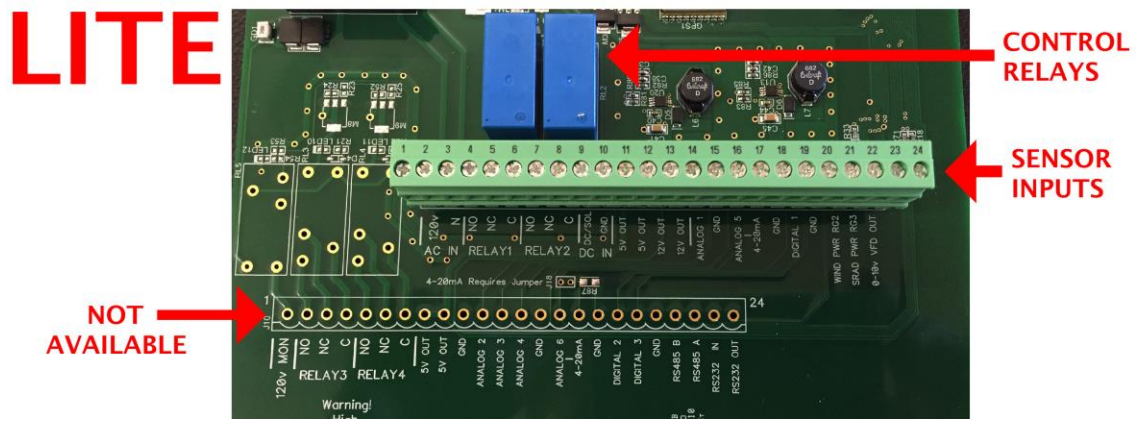
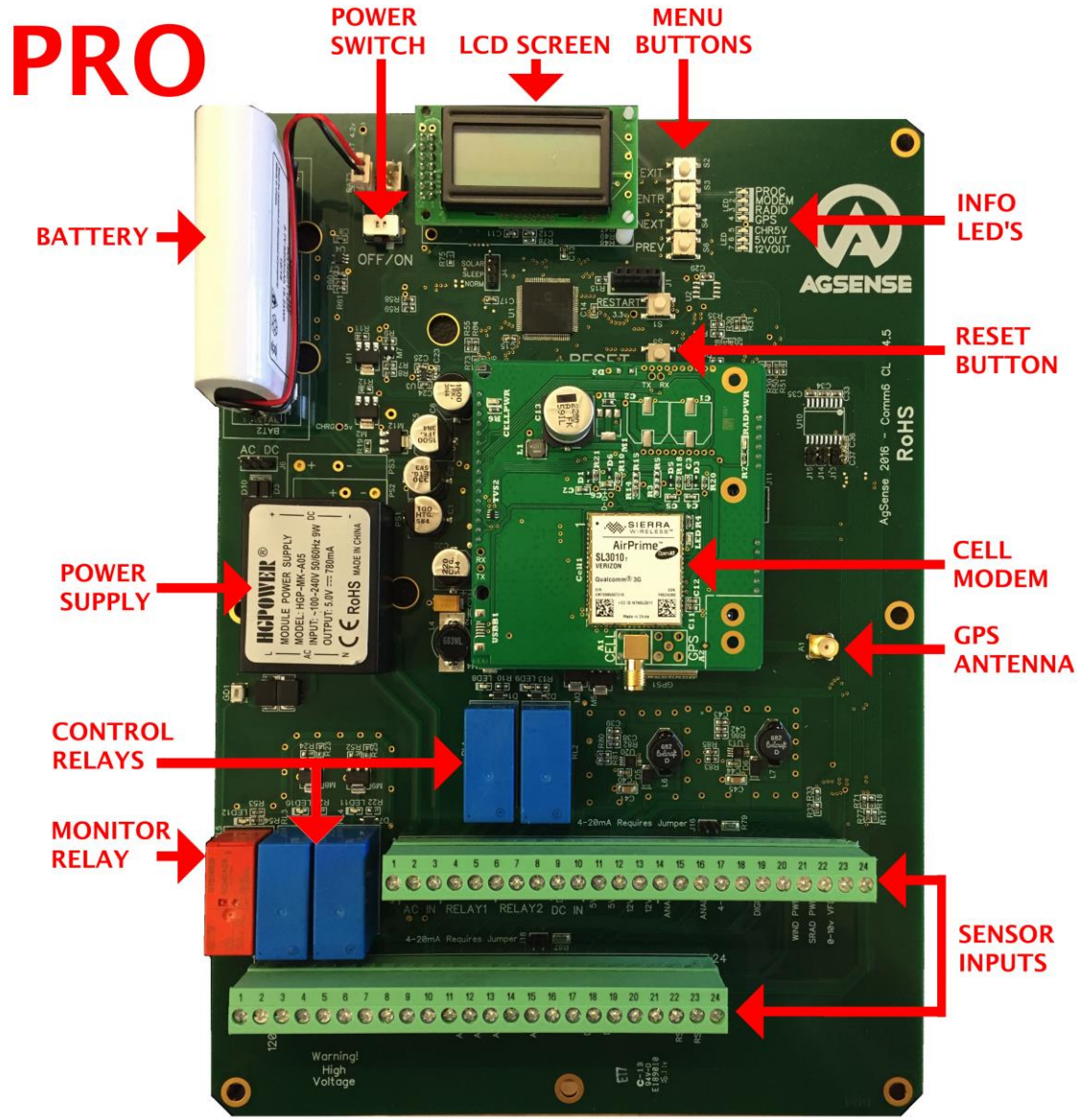


2016-18 Crop Link Pump Control Wiring

Revised Jan 1, 2018

Crop Link Pro/Lite Overview



Warning: unused wires must be capped or taped off individually to avoid damage to unit.

Pump Control wire colors:

- AC powered units -

Black = 120v Power Input

Brown/Black stripe = Neutral

- DC powered units -

Red = 7-40v DC + Power Input

Red/black stripe = DC GND

- Relay Connections Pro and Lite -

Relay 1 Common = Blue

Relay 1 Normally Open = Orange

Relay 1 Normally Closed = Yellow

Relay 2 Common = Blue/Black stripe

Relay 2 Normally Open = Orange/Black stripe

Relay 2 Normally Closed = Yellow/Black stripe

- Relay Connections Pro Only -

Relay 3 Common = Installer Supplied Wire

Relay 3 Normally Open = Installer Supplied Wire

Relay 3 Normally Closed = Installer Supplied Wire

Relay 4 Common = Installer Supplied Wire

Relay 4 Normally Open = Installer Supplied Wire

Relay 4 Normally Closed = Installer Supplied Wire

120v Monitor Relay – Installer Supplied Wire

Note: The Brown wire and the Black/Red stripe wire in this wire harness are not used.

-Wiring Examples on Next Page-

120v AC Pump Control system:

Make sure wiring is connected so the Crop Link unit has power all the time.

Black Wire – 120v AC

Brown/Black stripe - Neutral

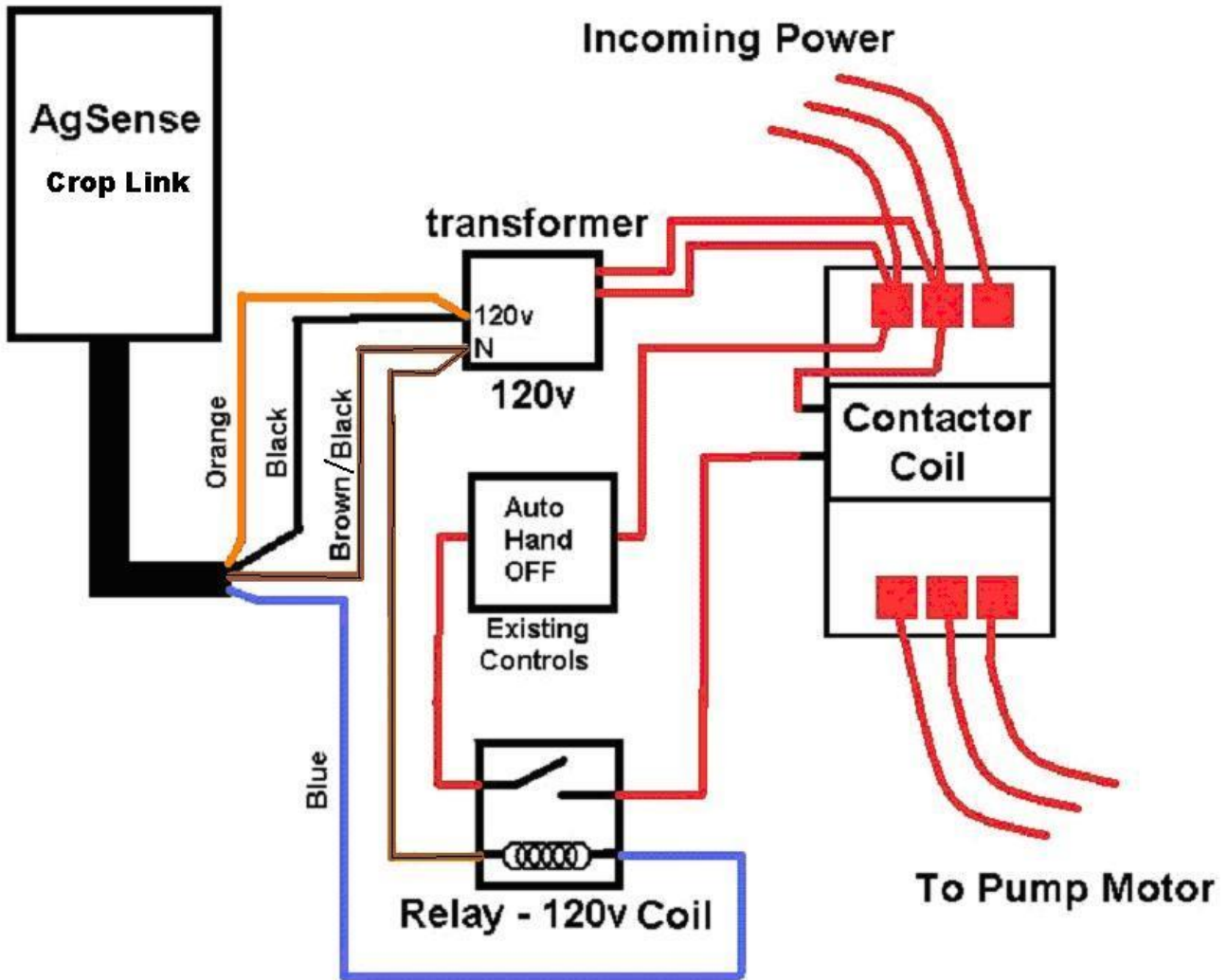
Pump Control Wires From AgSense Crop Link Unit:

Orange – Relay Normally Open

Yellow – Relay Normally Closed

Blue – Relay Common

NOTE: On most AC installs you will need to add a 120v transformer and a 120v coil relay with contacts that can handle 480v – see picture below



7-40v DC Pump Control system:

Typical Install of DC powered Crop Link:

- **Red/Black** and **Blue** wires connect to Ground.
- **Red** wire connects to 12v DC “C” terminal on the Murphy 117, (“NC terminal on Murphy 518)

Only use one of the following two wires, the wire used depends on how you have setup the Crop link config tab for relay action of momentary or constant:

- **Orange** wire (if using Momentary Relay Control) connects to the “S” terminal on the Murphy 117, (“SW2” terminal on Murphy 518)
- **Yellow** wire (if using constant on/off Relay Control) connects to the “S” terminal on the Murphy 117, (“SW2” terminal on Murphy 518)

DC Power Wires From AgSense Crop Link Unit:

Red/Black Stripe Wire – Ground
Red Wire – 7-40v DC

Pump Control Wires From AgSense Crop Link Unit:

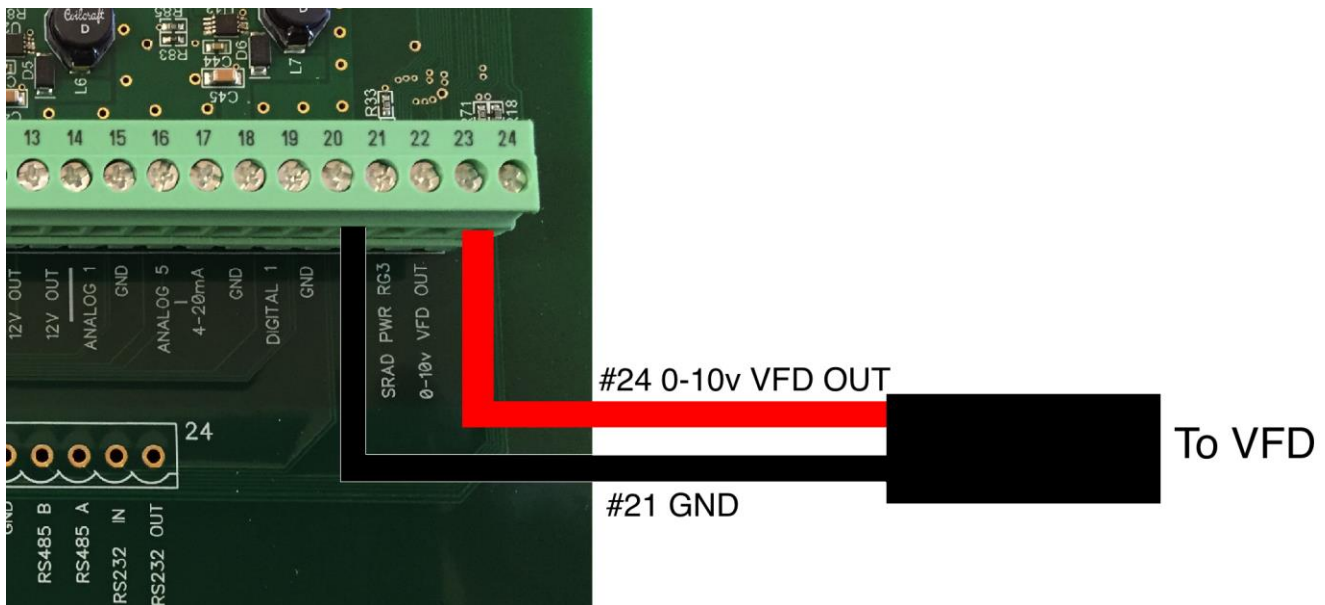
Blue – Relay Common
Yellow – Relay Normally Closed
Orange - Relay Normally Open

Note: On some of these DC setups, it is common for the installer to wire in a toggle switch between the Yellow wire and the “S” terminal of the Murphy switch – this will enable you to turn off the agsense control so you can start and run your engine before the Crop Link unit has been told to be on/off – this toggle switch will then need to be turned on again for our unit to resume control.

To Control Pumps: Go to www.wagnet.net, login. Find the unit you wish to control (via serial number or by name if you have given it an alias) and select on/off (or FULL AUTO if linked through a Field Commander)

VFD Injection Pump Control

The Crop Link Pro/Lite units have a 0-10v Output that can be used to control chemigation pumps that use a VFD (variable frequency drive). This crop link can be used as a standalone control of the VFD where the user can enter a frequency for the VFD to run on the Crop Link web page (manual control) or, when linked through a Field Commander, the user can set up a table of VFD speeds/application rates by angle - so as the pivot moves through the field the VFD will change speeds according to those angles entered into the table on the Field Commander webpage.



0-10v DC Terminal of the Crop Link unit as shown goes to the VFD 0-10v DC input

Gnd Terminal of the Crop Link unit as shown goes to the VFD DC Gnd terminal

VFD setup – The VFD needs to be programmed to use its 0-10v input to control the speed of the VFD. This sets up the range of VFD speed that the 0-10v will be used for.

Typical cases are setup as follows (examples only):

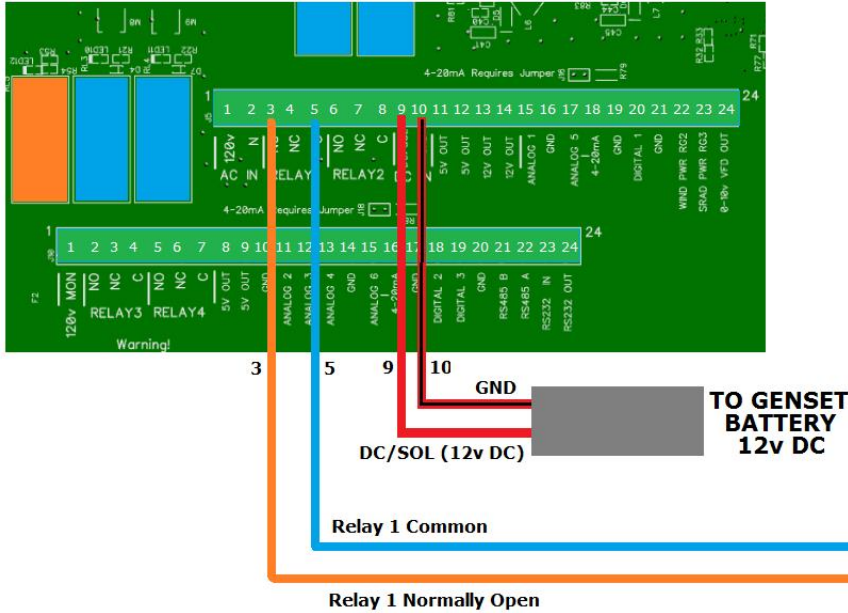
0 volts = VFD off

Anything above 0 volts to 10v = 0-60 hertz, or 30-60 hertz, or 30-90 hertz (whatever the user prefers)

Once the VFD is setup to do 0-10v = 0-60 hertz, or 30-60 hertz, or 30-90 hertz, the user must then input that info into the Crop Link Configuration Tab on the Wagnet webpage, and then click Save Settings.

Starting Engines

Crop Link
(bottom portion of board shown)



Digital Engine Controller
(typical example)



REQUIREMENT: You **MUST** have a digital engine controller that has an input for remotely starting/stopping the engine. When the Crop Link relay connection closes (relay on), the engine controller must handle everything from there. (starting the engine, warmup, RPM ramp-up, monitoring temps, fluid levels, etc and handle emergency shutdowns automatically on its own). When the Crop Link relay connection opens (relay off), the engine must shut down.

Actual connections to the controller will vary depending on brand/model of controller.

Note: Since the Crop Link and Engine Controller will draw power when the engine is not running, you must install a solar panel and charge controller large enough to keep the engine battery full.

120v Monitor Relay (Pro only)

The 120v Mon Terminal of the Crop Link Pro can be used to monitor any 120vAC signal, but it is required that the 120v signal being monitored shares the same Neutral as the Crop Link power (Brown/Black stripe wire). If the 120v being monitored is from a different circuit/panel and does not share the same Neutral as the Crop Link power, damage to the Crop Link will result.

Typical Power Requirements for these Crop Link units:

DC Powered Unit 7-40V DC:

At 12v DC: 1.0A MAX
0.1A - 0.5A during normal operation

120vAC Powered Unit:

At 120v AC: 0.25A MAX
0.05A - 0.15A during normal operation

The above numbers are the current required for our unit to operate. Below is the current the relays in our box can control:

On both AC and DC units, each relay can handle a peak max of 5A, 3A constant (at a max voltage of 120vAC, or 30vDC).