AGROWTEK
Technology to Help You Grow

Forever Flowering Greenhouse
Suggested Setup Wiring Diagrams

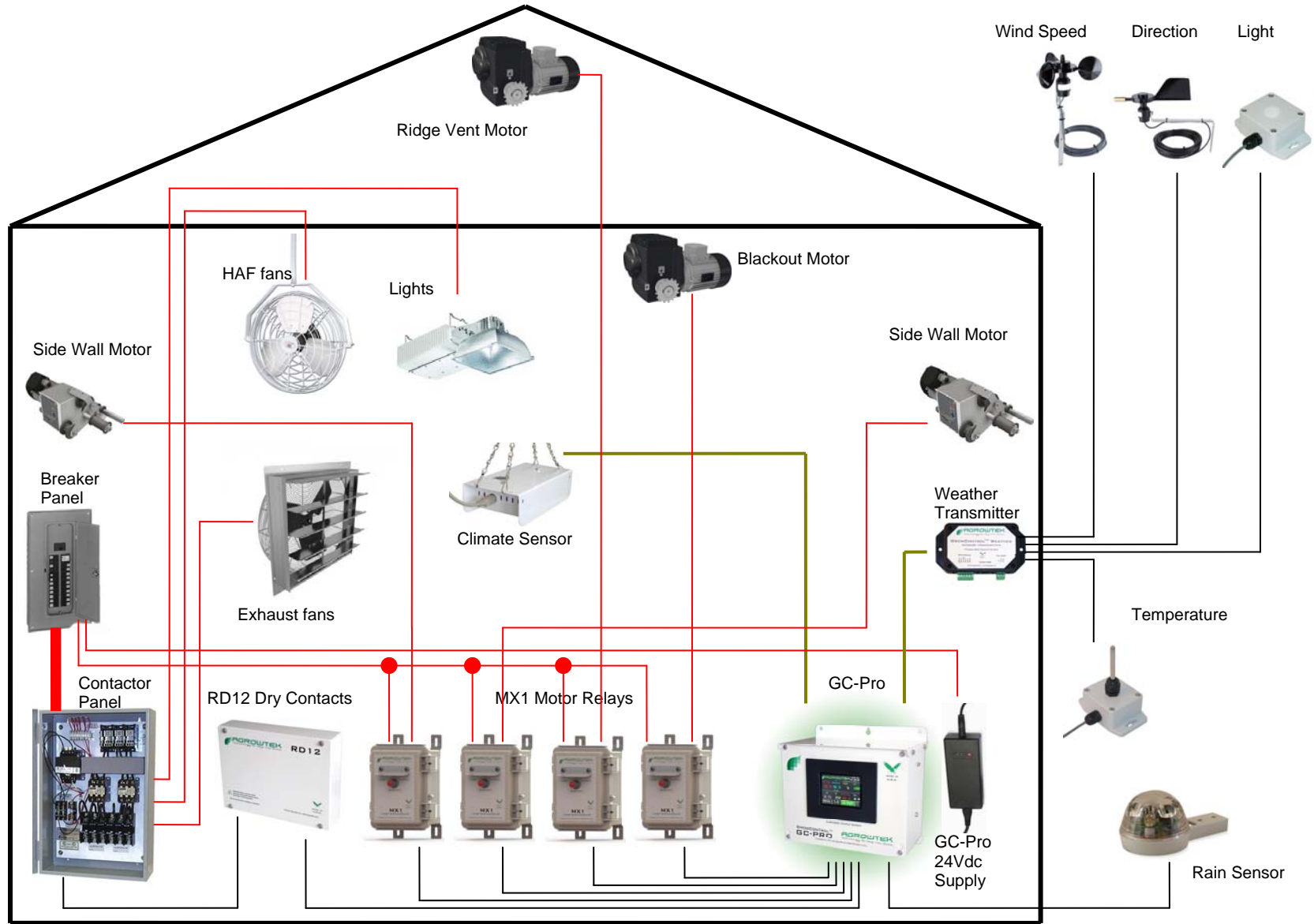⚠ **DANGER**
Electrocution Hazard!
Ensure all power is disconnected before servicing or wiring. Install all electrical equipment and wiring in accordance with national and local electric codes.

Read Product Instruction Manuals for additional Warnings and Cautions

ALL MANUALS CAN BE DOWNLOADED AT WWW.AGROWTEK.COM
CLICK ON DOWNLOADS -> PRODUCT MANUALS

General EquiUUpment Layout and Connections

Ridge Vent Motor

Wind Speed   Direction   Light

HAF fans   Lights

Blackout Motor

Side Wall Motor

Side Wall Motor

Breaker
Panel

Weather
Transmitter

Climate Sensor

Exhaust fans

Temperature

Contactor
Panel

RD12 Dry Contacts

MX1 Motor Relays

GC-Pro

GC-Pro
24Vdc
Supply

Rain Sensor

Agrowtek Inc. | Technology to Help You Grow
www.agrowtek.com
Gurnee, IL 60031 | 847-380-3009

GENERAL INFORMATION

GC-Pro Controller

Agrowtek's GC-Pro control system utilizes data from the indoor climate sensor and outdoor weather sensors in conjunction with time schedules to operate output devices via Agrowtek's interface relays (RD12 dry-contacts & MX1 reversible AC motor controllers.) A touch screen interface is provided to monitor sensors and adjust parameters. (Use caution to prevent breaking the screen with excessive pressure or impact.) A serial port is provided internally which can be used to connect with a PC using the free software available at Agrowtek's website. An Ethernet port is also standard with FFG controllers and can be connected to the client's network router for remote access using the Agrowtek software.

RD12 Relay

RD12 dry-contacts are meant to operate load relays or contactors sized and supplied by the installer for lighting (if installed), ventilation fans and HAF fans. The RD12 has 12 dry-contact relays, however, only 3-4 are typically used in an installation. The balance can be maintained as backup-relays. Relays are swappable on socket bases. *See the RD12 wiring diagram for more information.*

MX1 Motor Controllers

MX1 motor controllers can manually or automatically (when connected to the GC-Pro controller) operate reversible AC motors for ridge vents, side wall vents, black out curtains and more. Each AC motor controller requires two outputs on the controller; one for open and one for close signal. *See the MX1 wiring detail for more information.*

Sensors

The climate sensor and weather sensor transmitter are connected to sensor ports inside of the controller using the supplied sensor cables. Additional 50ft sensor extension cables are available if the 15ft cable provided is not sufficient length.

Suggested Connections

CONTROLLER	DEVICE
SENSOR PORT 1	INDOOR CLIMATE SENSOR
SENSOR PORT 2	OUTDOOR WEATHER STATION
INPUT 1	RAIN SENSOR
OUTPUT 1	MX1 OPEN - RIDGE VENT
OUTPUT 2	MX1 CLOSE - RIDGE VENT
OUTPUT 3	MX1 OPEN - SIDEWALL 1
OUTPUT 4	MX1 CLOSE - SIDEWALL 1
OUTPUT 5	MX1 OPEN - SIDEWALL 2
OUTPUT 6	MX1 CLOSE - SIDEWALL 2
OUTPUT 7	MX1 OPEN - BLACKOUT CURTAIN
OUTPUT 8	MX1 CLOSE - BLACKOUT CURTAIN
OUTPUT 9	RD12 RELAY 1 - LIGHTS
OUTPUT 10	RD12 RELAY 2 - EXHAUST FANS
OUTPUT 11	RD12 RELAY 3 - HAF FANS
OUTPUT 12	RD12 RELAY 4 - (UNUSED)

A DEFAULT CONTROLLER SETTINGS FILE CAN BE OBTAINED FROM AGROWTEK IF CONTROLLER CONNECTIONS MATCH THE ABOVE RECOMMENDATIONS.
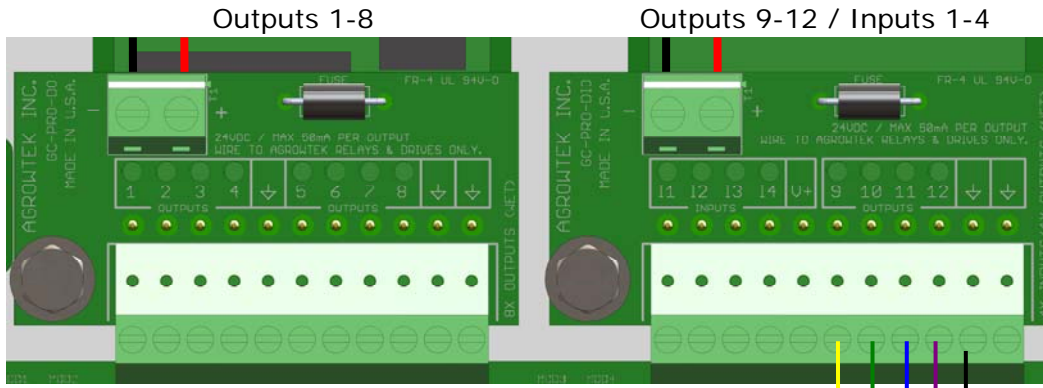
GC-Pro

The basic GC-Pro is equipped with:

- 12 24Vdc outputs standard for connection to Agrowtek Relays **(RD12, MX1)**
- Eight (4) discrete inputs are provided for switch type sensors **(for Rain sensor)**
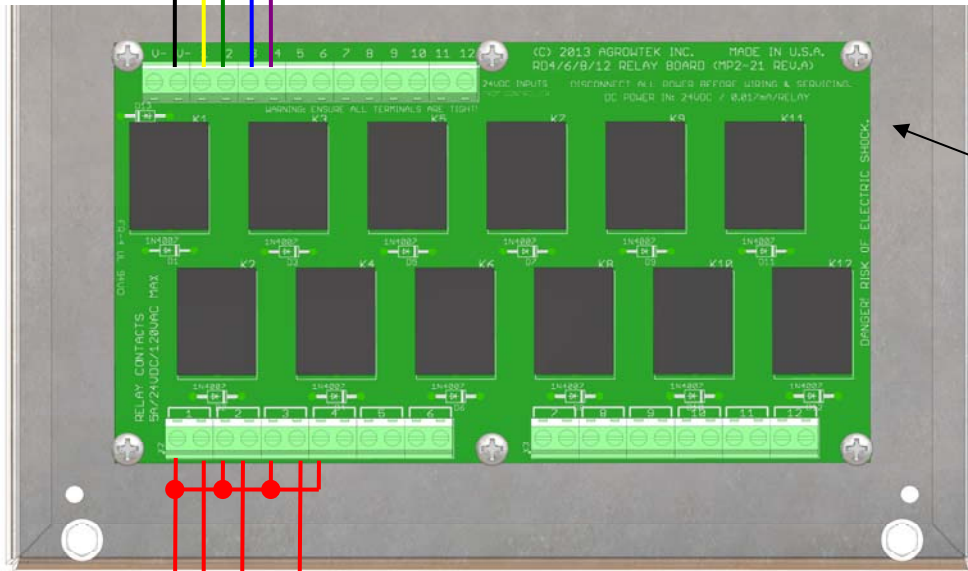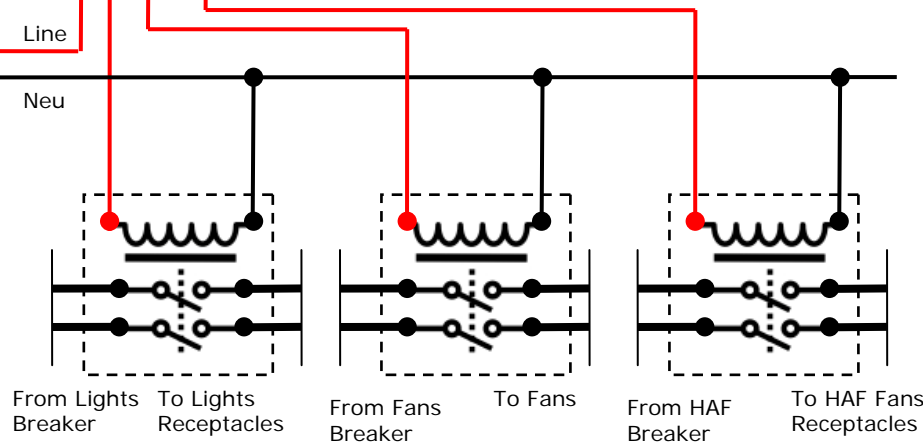- Four (4) analog sensor ports

Indoor Climate Sensor Cable   Outdoor Weather Transmitter Cable

Expansion Module Slot
(XA 2-port module standard on FFG systems)

PC serial port (RS-232)

24Vdc Power Jack   Touch Panel Power   Module Power   24VDC "Wet" Outputs   24VDC Discrete Inputs   CPU Power

Note: Pull to remove terminal blocks.

Bottom View

Sliding plate for power, sensor and serial cables.

Chassis Ground Screw

Ethernet port (optional)

RD Dry-Contact Interface Relays

GC-Pro

Outputs 1-8   Outputs 9-12 / Inputs 1-4

22 AWG wire min
Class II Typ.
McMaster-Carr Part#
8278T16

AGROWTEK RD12

120VAC line
15A branch
protected
circuit

Line

Neu

High-Amp Relays/Contactors are
to be sized and specified at the
time of installation by the
installer or owner according to
the electrical loads and per
Nationals and local electrical
codes.

From Lights   To Lights
Breaker   Receptacles

From Fans   To Fans
Breaker

From HAF   To HAF Fans
Breaker   Receptacles

Lights Contactor(s)   **Exhaust Fans
                             Contactor(s)**   **HAF Fans
                                                 Contactor(s)**

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MX1 Reversible AC Motor Controllers
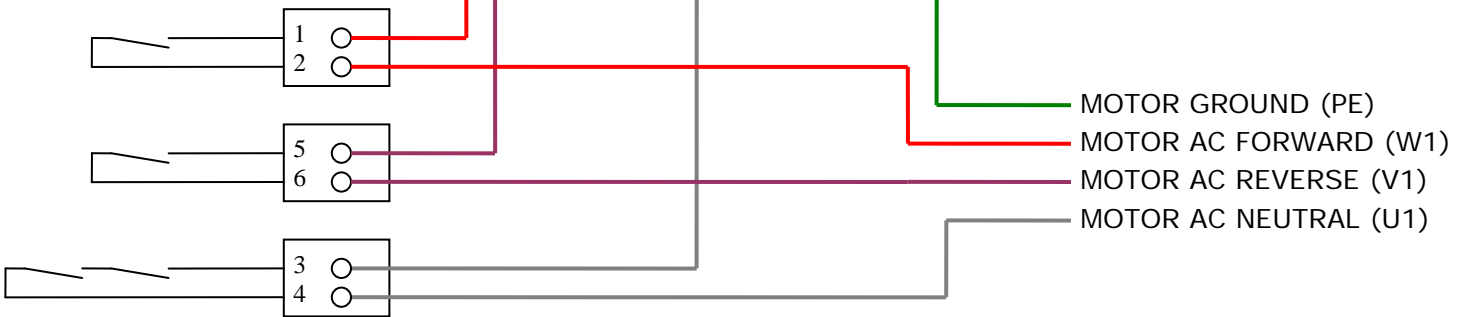
Outputs 1-8

Outputs 9-12 / Inputs 1-4

Next MX1...
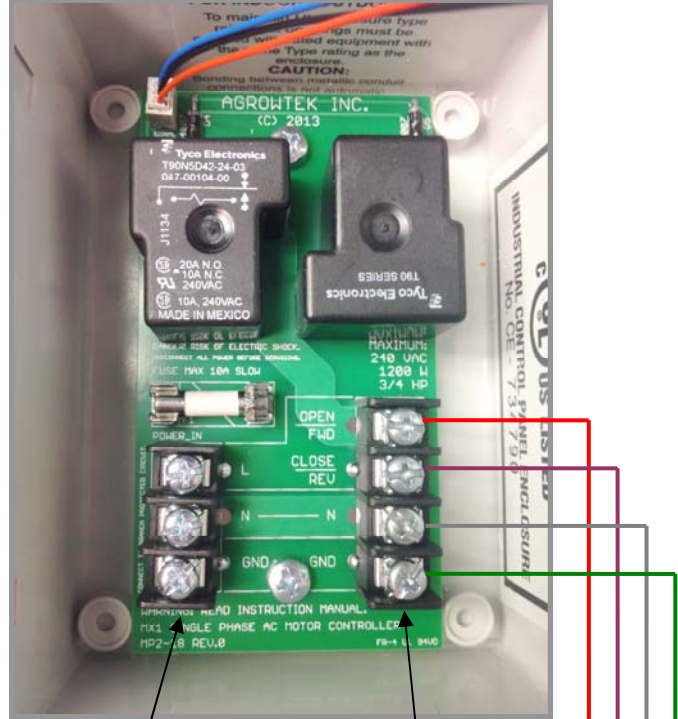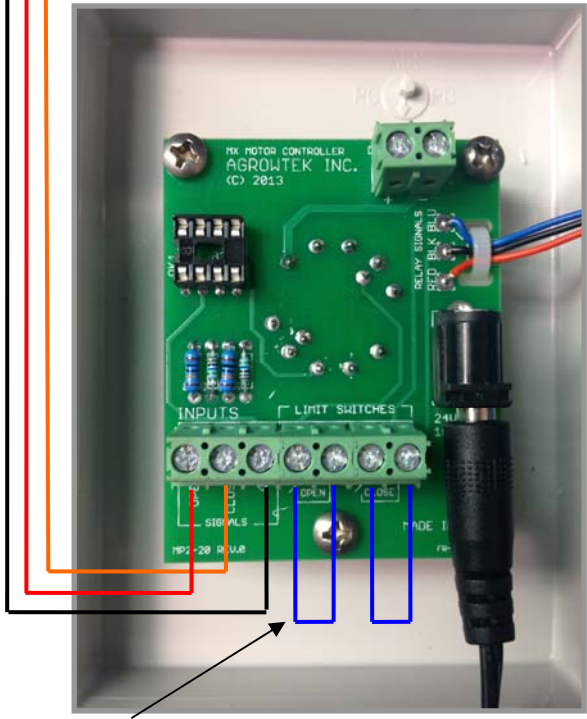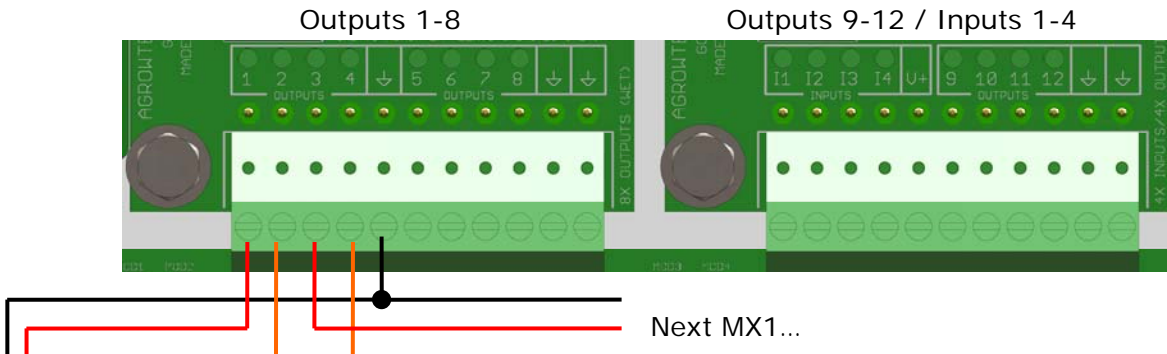
"Limit Switch" loops
must be closed for
MX1 to operate. An
open limit switch will
disable the relay(s).
**ENSURE JUMPERS
ARE IN PLACE.**

24Vdc
Power
Supply

Line Voltage
Supply Input

Line Voltage
Output to Motor

RIDDER LIMIT SWITCHES

1
2

5
6

3
4

MOTOR GROUND (PE)

MOTOR AC FORWARD (W1)

MOTOR AC REVERSE (V1)

MOTOR AC NEUTRAL (U1)

OUTDOOR WEATHER STATION

Agrowtek's weather transmitter connects Agrowtek's anemometer and direction vane to the GrowControl™ controller. The transmitter should be located where the sensor wires enter the building. Mount to a wall in a location where there is adequate air movement and where the transmitter will not get wet.

The sensors are designed for rugged outdoor use in all seasons. The sensors include a mounting bracket with similar holes. Install the sensors in a location where they have un-obstructed access to wind such as the peak of a roof or atop a poll.

Ensure the sensors are not blocked by:

- Trees
- Buildings
- Stacks, etc.

Sensor Wires

The sensors are equipped with 25ft. of outdoor rated cable. If necessary, the cables may be spliced up to 100 ft. It is recommended to keep the sensor wires as short as possible. Do not run sensor wires with or along power wires or other cables. Install sensor wires into terminal blocks on weather transmitter. Mount the transmitter as close as possible to the sensors and extend the cable between the transmitter and controller if necessary.
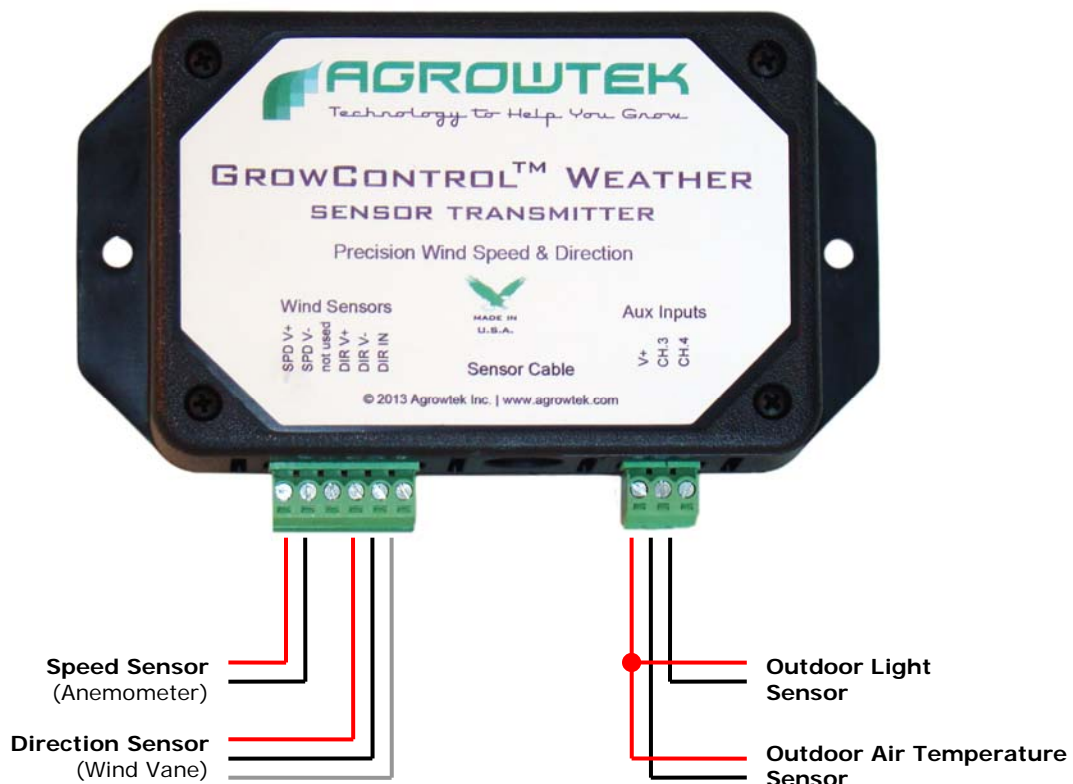
SEE WEATHER SENSOR MANUAL FOR MORE INFORMATION.