FermTroller Design

System Design

Controller Selection

BrewTroller Phoenix

The BrewTroller Phoenix is a good choice for FermTroller systems requiring up to 20 outputs. Like the BX1 this controller must be mounted inside of an enclosure but this unit will snap to a standard DIN Rail (with an extra Din Case) making setup and future changes quicker and easier. Just mount a few strips of DIN rail to the back of your control panel and snap on other DIN mount components to build your system.

OpenTroller EX1 *(No Longer Produced)*

We think the OpenTroller EX1 is perfect for fermentation setups. Since it ships as a complete unit you do not need to worry about mounting an encoder and LCD in a custom enclosure. You have the option of embedded Ethernet for remote monitoring. It comes with an M12 connector for the 1-Wire bus making Temperature Probe connection plug-and-play. All you really need to worry about are relays for controlling your heating and/or cooling devices. If you want to go plug-and-play for 120V AC (US) outputs you can use the PowerSwitch Tails. For anything else we recommend relay boards boards mounted in a small enclosure.

The EX1 provides six sourced 12V DC outputs in a single 8-Pin connector along with a constant 12V DC and ground. You will need to build your own wiring harness using an 8-Pin Female MIC Connector.

The EX1 also includes an RS485 expansion port which will allow for additional outputs and other potential functionality.

OpenTroller BX1 *(No Longer Produced)*

The BX1 must be mounted in an enclosure along with an Encoder, LCD and Power Supply (included in the BX1 Core Package).

Temperature Sensors

FermTroller uses 1-Wire temperature sensors (Maxim DS18B20). FermTroller currently supports a maximum of 32 temperature sensors, one per zone.

You may want to consider adding an extra temperature sensor and assigning it to an Ambient zone to monitor the temperature of the room. You don't need to assign any outputs to this zone. This can be especially helpful for remote (web-based) monitoring.

Wiring for 1-Wire devices should form a linear bus with each device connecting to the network with a short stub or branch no greater than 3 feet (1m). Typically the controller represents one end of the bus with a single cable connecting to the first sensor then branching to the second sensor and so on. OSCSYS offers a line of 1-Wire temperature sensors and cabling using M12 connectors that simplifies the connection of temperature probes.

1-Wire devices can be sensitive to noise that enters the 1-Wire bus. Electronic ignition modules for gas systems are often the source of noise issues on the bus. Maxim support has recommended a filtering circuit consiting of a 1K Ohm resistor and .1uF capacitor be added to the DS18B20 sensor to shield the sensor from disruptions caused by noise on the bus.

Design Example
Single-Stage

The single stage system is the most basic of all the control systems. This would be perfect for controlling fermentation's without the need for any heat or for controlling a kegerator.

With this system only 2 of the 6 outputs of the BX1 are utilized, this means you could add a heater or even add additional freezers and control them with the multiple zones FermTroller provides.