Opera model 6000 Installation Guidelines

All wiring must conform to local building codes, regulations and laws.

1. Use ½ in EMT conduit for all wiring.
2. Install enclosed 120/24 vac transformer, 5 va per sensor or controller, using 18 to 20 AUG two conductor wire. Do not tie the secondary to ground. Connect multiple sensors. Ensure that the polarity of the connections are the same at each sensor or controller.
3. Connect relay contacts (usually relay 1) to ventilation system. Use a magnetic starter so that the sensor contacts energize the starter coil (either 24 Vac or 120 Vac) and not the fan motor directly.
4. For multiple sensors, chain a shielded twisted pair cable 20 to 22 AUG from screw 6 and 7 on one sensor, to the next and continue chain to the last sensor. Maintain the same polarity on each unit. Do not use star configuration. T connections should be less than 3 meters (10 feet) from the chain. Best to make all chain connections at the sensors to avoid T connection.
5. Move the end-of-line jumper (the third one) to the on position (UP) on the first sensor/controller on the chain and the last sensor/controller on the chain. The controller can be located anywhere on the chain. Ensure its EOL jumper is off if it is in the middle. The addresses assigned to sensor/controllers can be in any location on chain.
6. Power on the units. They will display the gas reading. To verify if the sensors are communicating correctly, change setting no. 56 from 0 to 1 to turn on the network display. Press ↑ and ← simultaneously to save. The unit will display each sensor connected. If the sensor does not display the other sensors scrolling by, check the following ;
    - each unit has a unique address, setting 39, with no duplicates
    - the end-of-line jumpers are set on units at end of chain only
    - the polarity of the communication cable and the 24 vac
    - wire connections for shorts etc.
7. To test communication, press and hold the up button on sensors for 5 seconds to start manual mode (5 minutes). This will close the relay 1 on the unit and all of the other units on the network.

Opera series 6000, Configuration Guidelines for CAN network

Use a Central Controller or Go Controller-less

A basic model 6000 controller serves as the central connection point for the ventilation system. 60XX sensors transmit alarm messages to the controller. The controller will display up to 32 sensors on the network (x2 for double units), their gas types, gas concentration, and alarm status for each. The three relays on board can be configured for different levels of gas or to operate different ventilation systems/zones/groups.

Or

One of the 60XX series gas sensors can perform these same function as the controller. It can activate the ventilation for all the sensors, or a group. Like a master/slave set up. The use of a dedicated controller is optional, - to add a display in some specific location or interface with several starters which are located in one place. The wiring and setup is the same for both methods.

Defaults

Sensors are shipped preloaded with a default settings which can be changed in the field to suit the desired sequence with simple keypad input. Using the default settings, when one sensor goes into alarm level 1, 2 or 3 it activates its relays and transmits a message to all other sensoras to activate their relays also. The ventilation system can be connected to any of the relays (usually level 1). This is essentially a one zone configuration.

Addresses

Set each sensor and controller to a different address (setting 39). 1, 2, 3, 4 etc. It is important to have no duplicates. The address has nothing to do with groupings.

Creating Zones or groups

To control multiple zones, change the transmit message on sensors to different messages in different zones.

The default transmit messages are 1, 2, 3 for alarm level 1, 2, 3 for zone 1

Set zone 2 transmit messages to 4, 5, 6

Set zone 3 to transmit 7, 8, 9 and so on.

Output Relays

A 60XX sensor relay number 1 and 2 will activate if the gas on that sensor goes into alarm level 1, or 2. It will also activate when it sees it's receive code fly by (setting 36, 37), sent by other sensors. The 6000 basic controller has no sensors on board so the relays will only activate if it sees it's receive codes. So for master/slave operation the master needs to be a member of the group it is controlling. The independent basic 6000 controller could control two zones via its two relays.