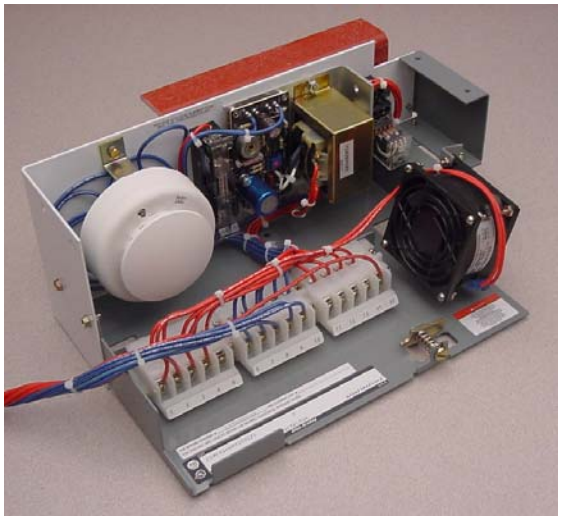
Instructions

CENTERLINE Motor Control Centers Bulletin 2100 Smoke Detector Unit



Catalog Number 2100-SD1

Description

The Bulletin 2100 smoke detector unit is a 0.5 space factor unit for use in Bulletin 2100 CENTERLINE motor control centers. It alerts the user to possible failures in the motor control center, primarily due to insulation breakdown, which is not normally detected by overcurrent devices. Examples of failures include insulation end of life, loose connections, misapplication of overload devices, and overload device malfunctions.

ATTENTION

The smoke detector is a reactive device. Therefore, if the smoke detector is activated, a problem situation is occurring or has occurred. This activation may indicate toxic fumes, high temperatures, possibility of fire, deterioration of insulation, etc. Proper steps should be taken to disconnect power to the motor control center, and extreme care should be exercised when approaching the equipment.

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Location

The location and placement of the smoke detector unit in the motor control center is **important**. The smoke detector unit is to be located in the **bottommost** 0.5 space factor unit location. For motor control center lineups of five (5) sections or less, place one (1) smoke detector unit in the middle of the lineup. For lineups greater than five (5) sections, place one (1) smoke detector in the third section from one end, and evenly space additional smoke detectors (every third section is recommended).

IMPORTANT There never should be more than four adjacent sections without a smoke detector unit (refer to Figure 1).

To assure the most efficient operation, Packaged Control Products recommends the installation of bottom plates in motor control centers containing smoke detector units.

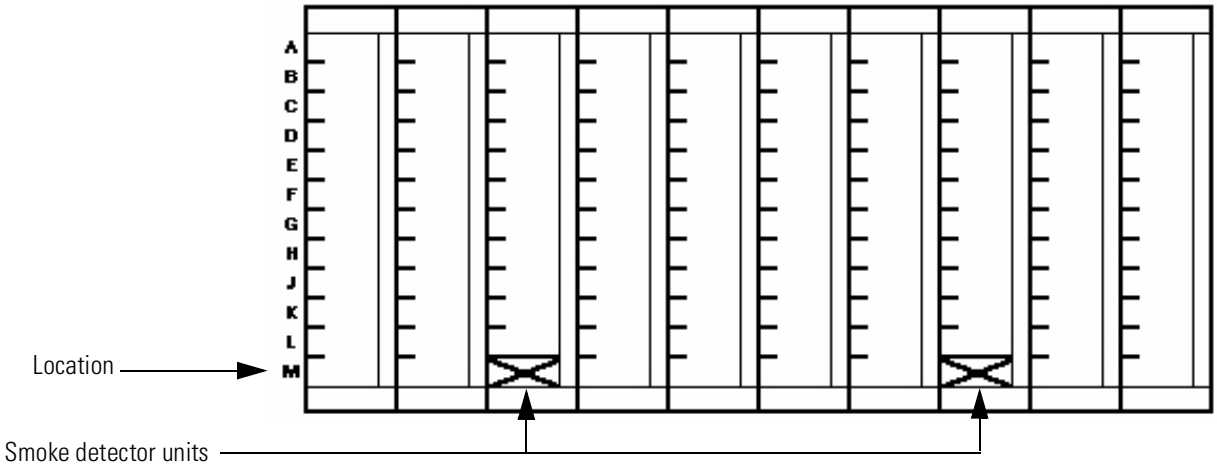


Figure 1 Correct placement of smoke detector units

Operation

A separate 120 volt, 60 Hz, AC power source is required to operate the unit and its requisite fan, which is necessary for positive pressure. The 120 volt, 60 Hz, AC power source should be connected to terminal block points X1 and X2 as shown in the unit wiring diagram (Figure 2).

When the selector switch is in the “ON” position, the control relay (SR) picks up. This causes the normally closed (SR) contact (terminal

block points 2 and 3) to open and prevents the “SMOKE ALARM” pilot light from illuminating.

When the alarm is activated, the control relay (SR) drops out, closes the normally closed contact (terminal block points 2 and 3), and illuminates the “SMOKE ALARM” pilot light.

The circuit provides three (3) auxiliary control relay (SR) contacts: two (2) normally open (N.O.) contacts (terminal block points 2 and 5 and points 9 and 11) and one (1) normally closed (N.C.) contact (terminal block points 9 and 10). These may be used for remote alarm indicators.

Note: If there is a loss of the separate 120 volt, 60 Hz, AC power source, the relay will drop out, the N.C. contact will close, and the N.O. contact will open. However, the “SMOKE ALARM” pilot light will not illuminate. In the remote possibility of internal DC power loss, a fail-safe condition will occur; that is, the N.C. contacts will close, the N.O. contacts will open, and the “SMOKE ALARM” pilot light will illuminate, but the “DC POWER ON” pilot light will not illuminate, thus indicating a loss of DC power.

To activate the smoke detector unit, turn the smoke detector switch clockwise to the “ON” position.

Note: The unit must be in the “OFF -RESET-” position for at least 20 seconds before turning the switch to the “ON” position, or a false alarm may occur.

Testing

To test the smoke detector unit and circuits:

1. Unlatch and open the smoke detector unit door.
2. Turn the selector switch clockwise to the “ON” position.
3. Refer to the smoke detector manufacturer’s installation instructions, supplied with the unit documentation, for testing the “sensitivity level.” Hold a magnet on the “TEST HERE” position on the smoke detector head as described by the manufacturer until the “SMOKE ALARM” pilot light illuminates (approximately 7 to 15 seconds). If the “SMOKE ALARM” pilot light does not illuminate after 30 seconds, a problem may exist, such as a loss of AC or DC voltage, a blown fuse, an improper connection between the smoke detector and the socket, or a defective smoke detector. Repeat the test procedure if the “SMOKE ALARM” pilot light does not illuminate.
4. When finished, turn the selector switch counterclockwise to the “OFF-RESET-” position. Close and latch the unit door. Wait 20 seconds in the “OFF-RESET-” position before turning the unit on.

DC Voltage Adjustment

The DC voltage has been preset at the factory and should not require adjustment. If the supply voltage is too high or too low, then the power supply output can be adjusted.

To check the DC voltage, an external voltmeter with a minimum range of 0-50 Vdc is necessary. Connect the voltmeter between terminal block point 6 (positive) and terminal block point 8 (negative). If the unit has the optional DC voltmeter instead of the "DC POWER ON" pilot light, use this meter for monitoring the voltage. The meter should read in the range of 22-26 volts. If the voltage is out of that range, adjust the DC output of the power supply by turning the "voltage adjustment" potentiometer, as shown in Figure 3.

If the voltage cannot be adjusted to within the 22-26 volt range, a possible overvoltage or undervoltage situation may exist. Be certain that the AC voltage is within the range of 105-125 volts.

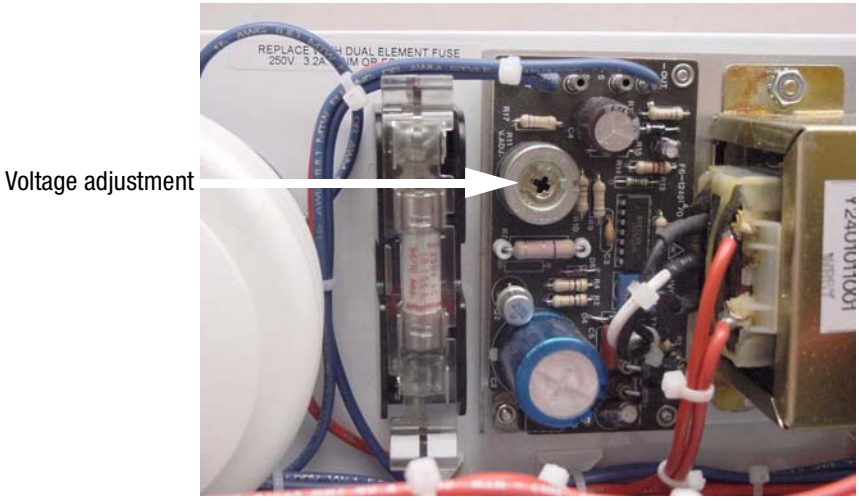
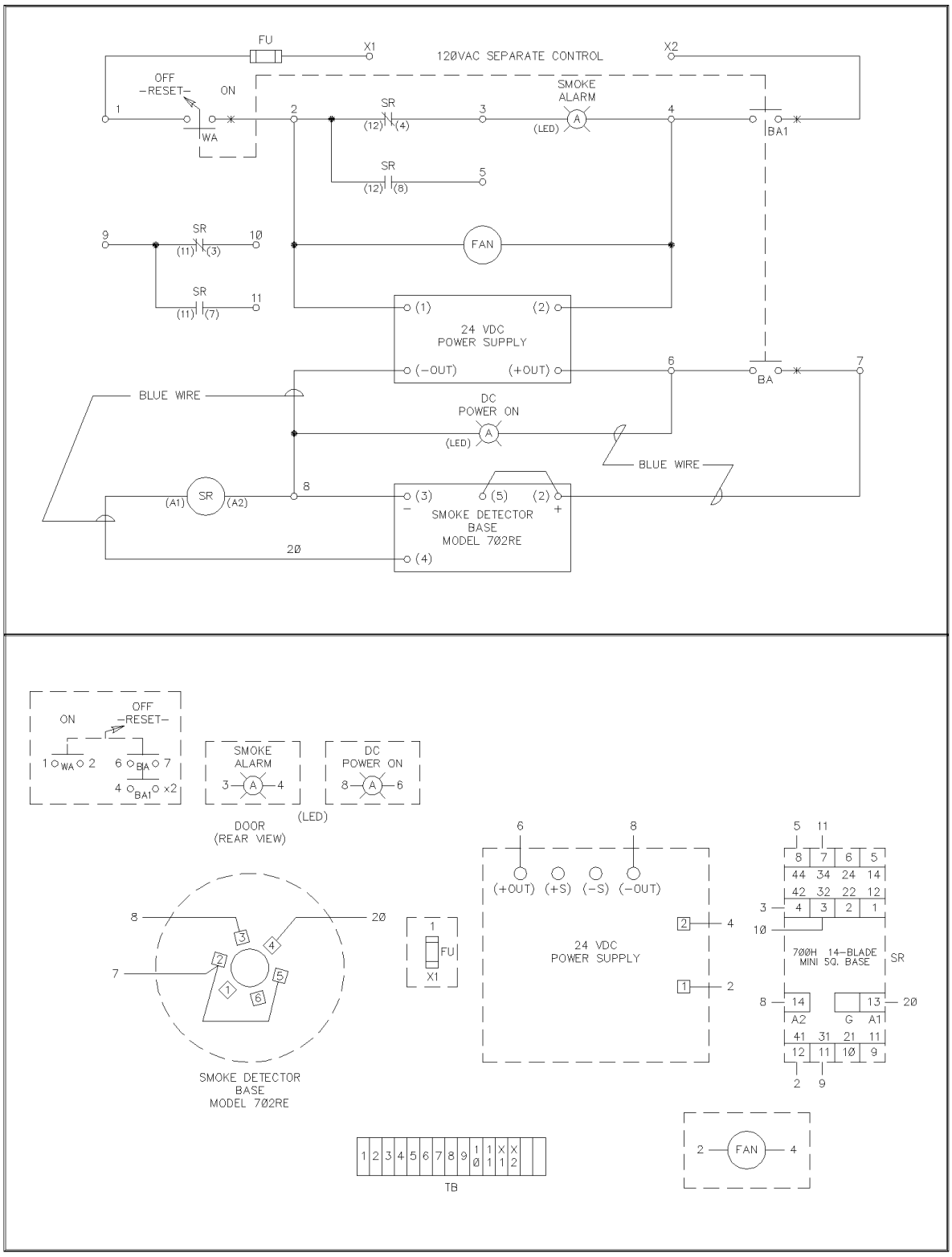


Figure 2 DC voltage adjustment

Schematic Diagram



Connection Diagram

Figure 3 Unit wiring diagram

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