

# SUPERHEAT OPTIMIZER SYSTEM (SUPERHEAT SENSOR SYSTEM)

## **FACTORY - OEM INSTRUCTION Low & Medium Temperature Refrigerated Display Cases**

### **A) TXV Sizing**

- 1) Multiply the manufacturer's evaporator BTU rating at the design SST for the specified refrigerant by a factor of 1.8 and select the closest available valve size

### **B) Distributor Orifice Sizing**

- 1) Select the distributor orifice with a BTU rating closest to but not exceeding the BTU value calculated in section A above

### **C) Distributor Line Sizing**

- 1) Distributor lines must be a minimum of 1/4"
- 2) 5 deck low temp cases must use 5/16" lines

### **D) Superheat Sensor Sizing**

- 1) Door cases - one, two and three door cases use 5/8" sensors
- 2) Door cases - four and five door cases use 7/8" sensors
- 3) Tiered and bunker cases less than 6000 BTU use 5/8" sensors
- 4) Sensors for cases with capacities exceeding 6000 BTUs are sized to match the evaporator suction line size of the coil

### **E) Required Components**

- 1) Properly sized superheat sensor, distributor lines and distributor orifice
- 2) A manufactured heat exchanger
- 3) Two 15' type K thermocouples, attach one thermocouple on the TXV bulb on the superheat sensor & attach the other thermocouple to the suction line on the compressor side of the heat exchanger

## **Installation and Insulation**

- 1) Superheat sensors are bi-directional and must be installed on a 45° angle to the horizontal plane with the outlet of the sensor at the top
- 2) The superheat sensor must be mounted so the TXV bulb groove is turned to either 5 o'clock or 8 o'clock positions
- 3) The entire TXV bulb must be attached in the groove provided on the superheat sensor as near the exit of the sensor as the groove allows
- 4) The TXV bulb strap bolts must be on the opposite side of the sensor to the TXV bulb itself
- 5) The heat exchanger is installed in the suction line on the compressor side of the superheat sensor
- 6) One 15' type K thermocouple is attached to the superheat sensor by the TXV bulb strap. The other is attached to the suction line on the compressor side of the manufactured heat exchanger, not on the heat exchanger itself (see diagram on reverse side)
- 7) All liquid lines and liquid line components such as: liquid line filter strainers, hand shut off valves must not be in contact with cold air when the case is operating. They must be insulated completely with 1/2" insulation
- 8) The superheat sensor and manufactured heat exchanger must be insulated with 1/2" insulation

If any questions should arise with the above instructions / specifications, contact:

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