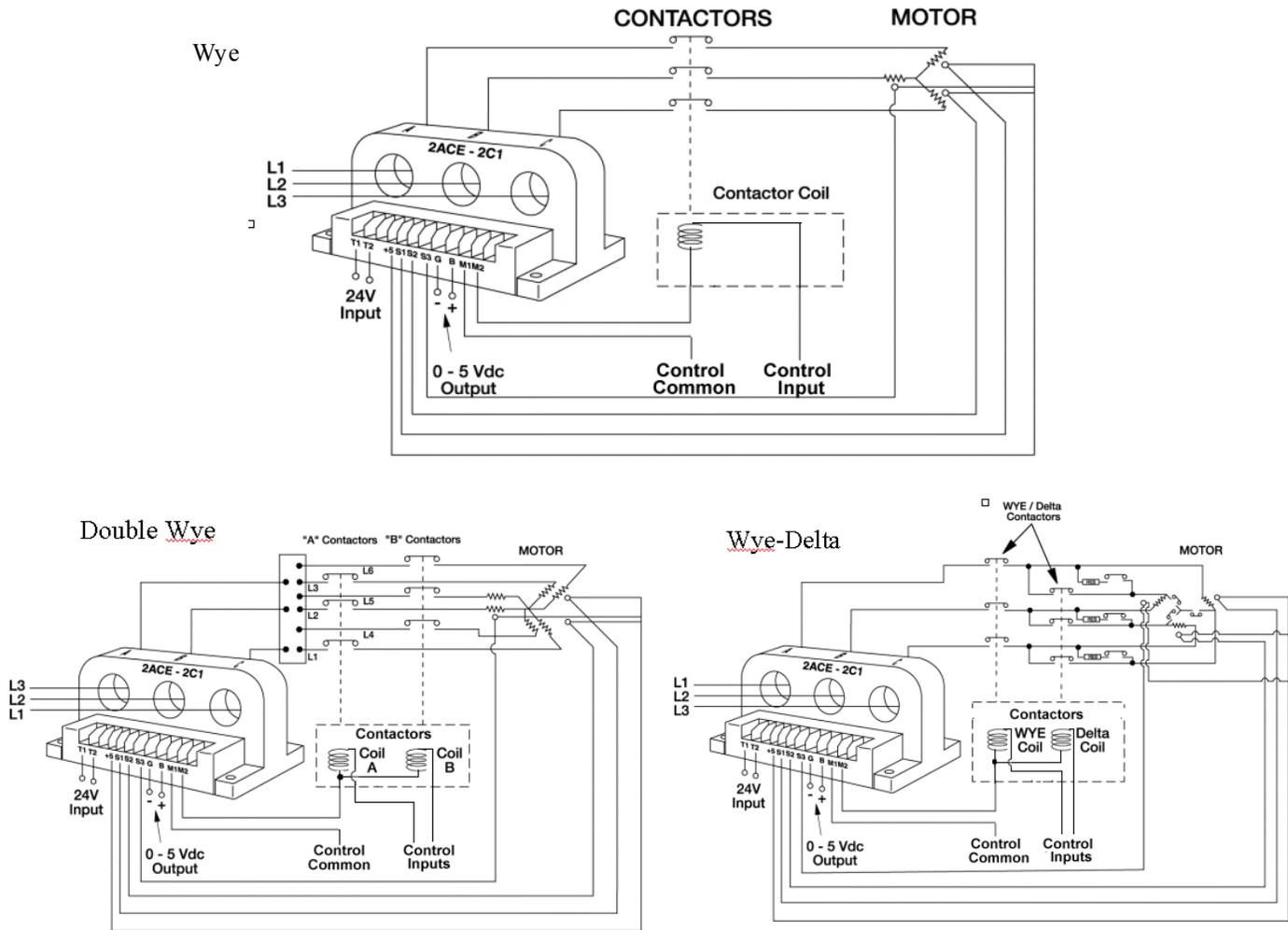


General Safety Information:

- Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
- Lock and tag the power disconnect to prevent unexpected application of power.
- Select the proper size wire, according to the NEC and installation for passing through wire through the 2ACE module.
- Control voltage and frequency must not exceed the 2ACE electrical rating.
- Supply Voltage, 24 VDC or 24VAC. Operating frequency rating is 50/60Hz, only.
- For safety, a lockable disconnect switch should be located near the device being controlled so that the power can be positively disconnected while servicing the units. Do not rely on a time switch's manual lever to disconnect power while servicing the equipment. Do not exceed the 2.5 Amp, 250VAC rating for the control circuit connected to terminals M1 and M2. (See Specifications)
- Remove all voltages before making any connections. The 2ACE may be installed on the line or load side of the compressor or motor contactor.



Wiring Diagram:



Installation:

- 1). Before you begin installation measure the line & control voltages to ensure they are correct for the equipment to be operated. See Specifications and Wiring Diagram for reference.
- 2). The **control** terminal M1 should be connected to the common side of each contactor coil. M2 should be connected to the actual common of the contactor control supply. Consider all terminals to present a **shock hazard** if the line voltage is used for the control voltage. **Do not exceed** the 2.5 Amp, 250VAC rating for the control circuit connected to terminals M1 and M2.
- 3). Connect the motor winding thermistor wiring to the corresponding terminals designated as C, S1, S2, S3. Terminal “C” is **not common** and is +5 volt rail for thermistor interface.
- 4). If applicable, connect the current transducer output to terminals designated as “B” and “G”. Terminal “G” is electrically at the same potential as T1. The label shows the hidden line connections between these two terminals.
- 5). Connect the control voltage wiring to the terminals designated at T1 and T2. **Please note** that T1 is the lower electrical potential with respect to terminal T2. **Keep power off** until the 2ACE is properly calibrated and connected to all wiring. Control Voltage rating is 24VDC or 24VAC.
- 6). Pass phase “A” through 2ACE orifice designated on top label as “A”. Repeat for phases “B” and “C”. Operating frequency is limited to 50/60Hz.

7). Adjust the Must Hold (MH) amperes by selecting the corresponding DIP switches such that they add together to equal the MH ratings for the leads passing through the module. **Consult compressor/motor manufacturer** for MH hold calibration setting. These may vary with motor wiring selections.

8). Apply power to supply voltage at T1 and T2. (24VDC or 24VAC)

Units Minimum Typical Maximum

Operating Temperature Range	°C	-40	-	+70
Supply Voltage				
(Rated 24 VAC at 0.240 A Lo:	V			
Rated Line Frequency	Hz	45	50/60	62
Low Voltage Cut-Out Trip	Vac	15	16	17
Low Voltage Cut-In Reset	Vac			18
Low Voltage Response Time				
(Supply 100% to 50%)				

Operation:

1). While compressor/motor is off, and no current is being sensed, the 7-segment display will slowly flash the format HAxxx, where xxx= MH rating. For example, HA125 = Must Hold. Please see step 7 of the installation section for information on setting the calibration for current overload.

2). When the compressor/motor is on and current is being sensed, the 7-segment display will flash a rotating “0” to indicate the 2ACE has detected motor current greater than 10 Amp and the motor temperature and current being monitored are within normal operating conditions.

3). If mis-wired, the phase reversal protection will de-energize the control circuit output within the one second of operation. (Caution: phase reversal is not provided when motor current is below 10Amp)

4). When the 2ACE protector recognizes a trip condition, its control relay (M1, M2) will open. Following a trip condition, power must be maintained on T1, T2. Automatic power off will result in the elimination of the fault codes indicated on the fault display.

5). The 2ACE series has low voltage protection, but it will automatically reset when rated voltage is present.

6). All overloads which result from current measurement or temperature sensor inputs require a power off reset.

7). Refer to the table at the right if a fault condition is indicated by the 2ACE module that cannot be confirmed in the compressor/motor.

7-segment Display Code	Fault information	Troubleshooting Information
1	Current overload	1) Check MH calibration setting
2,3,7	Current Unbalance	1) Possible high resistance connection caused by an open circuit condition for a motor phase.
4	Phase reversal	1) Phase wiring is installed wrong. 2) Operating frequency for phase current is below 35Hz.
5	Over Temperature	1) Open or loose connection on sensor wiring. 2) “C” terminal mis-wired to one of the sensor channels.
6	Calibration Error	1) Calibration setting is either <25A or > 225A setting. 2) Calibration setting was changed after power was applied to supply voltage.
8	Phase Loss	1) Possible high resistance connection caused by an open circuit condition for a motor phase.