

Wiring Diagrams

INDEX

UNIT 38AK	ELECTRICAL CHARACTERISTICS (V-Ph-Hz)	SCHEMATIC DIAGRAM AND COMPONENT ARRANGEMENT	LABEL DIAGRAM No. 38AK (On Unit)
007-012 S008, 009	208/230-3-60	1	500254
	460-3-60	2	500270
007 008, 012 S008, 009	575-3-60	3	500253
		4	500269
		5	500271
007-012 S008, 009	220-3-50	6	500680
		7	500682
007-012 S008, 009	400-3-50	8	500681
		9	500683

Sequence of Operation

At start-up, the thermostat calls for cooling, and with all safety devices satisfied, the compressor contactor and fan contactor energize, causing the compressor and outdoor-fan motor to operate. Contacts on TB1 terminals 1 and 2 are also energized, allowing the field-supplied and -installed indoor-fan motor to function. A field-supplied and -installed liquid line valve (connect to TB1 terminals 3 and 4) will also open allowing the system to function in cooling. As cooling demand is satisfied, the thermostat contacts break, deenergizing the contactor and causing the system to shut off. The liquid line solenoid valve closes minimizing the potential for refrigerant migration at this time. The compressor does not

restart until the thermostat again calls for cooling. If a demand for cooling occurs within 5 minutes after the thermostat is satisfied, the system will not restart due to the Time Guard® II control. After the 5-minute time period, the system will restart as normal on thermostat demand. The system is protected with Cycle-LOC™ device so that the compressor will not start if a high-pressure or low-pressure fault occurs. To reset the Cycle-LOC device, set the thermostat to eliminate the cooling demand then return to original set point. This should be done only once, and if system shuts down due to the same fault, determine the problem before attempting to reset the Cycle-LOC device.

LEGEND

AHA	- Adjustable Heat Anticipator
AUTO	- Automatic
C	- Contactor, Compressor
CAP	- Capacitor
CB	- Circuit Breaker
CC	- Cooling Compensator
CH	- Crankcase Heater
CLO	- Compressor Lockout
COMP	- Compressor Motor
COTP	- Compressor Overtemperature Protection
EQUIP	- Equipment
GND	- Ground
HPS	- High-Pressure Switch
IFC	- Indoor-Fan Contactor
LLSV	- Liquid Line Solenoid Valve
LPS	- Low-Pressure Switch
NEUT	- Neutral
OFC	- Outdoor-Fan Contactor
OFM	- Outdoor-Fan Motor
OL	- Overload Relay
QT	- Quadruple Terminal
RC	- Relay, Cooling
RH	- Relay, Heating
TB	- Terminal Block

TC	- Thermostat, Cooling
TDR	- Time Delay Relay
TH	- Thermostat, Heating
TRAN	- Transformer
VA	- Volt-Ampere
	Field Splice
	Terminal (Marked)
	Terminal (Unmarked)
	Terminal Block
	Splice
	Factory Wiring
	Field Control Wiring
	Field Power Wiring
	Accessory or Optional Wiring
	To Indicate Common Potential Only, Not to Represent Wiring

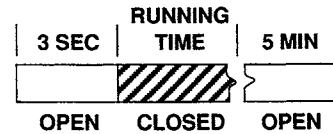
Notes

1. If any of the original wire furnished must be replaced, replace with type 90 C wire or its equivalent.
2. Number(s) indicate the line location of contacts. A bracket over 2 numbers signifies single-pole, double-throw contacts. An underlined number signifies a normally closed contact. A plain number (no lines) signifies a normally open contact.
3. Recommended accessory thermostats and subbase are: thermostat HH07AT170, 172, 174 and P272-2783 subbase; HH93AZ176, 178 and P272-1882, 1883; or HH93AZ177 and 179.
4. Sealed VA for IFC and LLSV is not to exceed 22 (for Fig. 1-5) or 20 (for Fig. 6-9).
5. Use copper, copper-clad aluminum, or aluminum conductors.

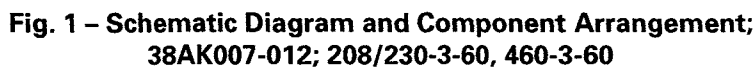
6. The 3-phase motors are protected under primary single-phasing conditions.
7. The following control circuit protection is supplied.

VOLTAGE RATING	CB	MUST TRIP AMPS
	MFG PT NO.	
24V	Potter & Brumfield W28X-1024-3:2	3.2

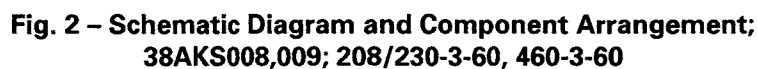
8. The Time Guard® II control timing sequence follows:



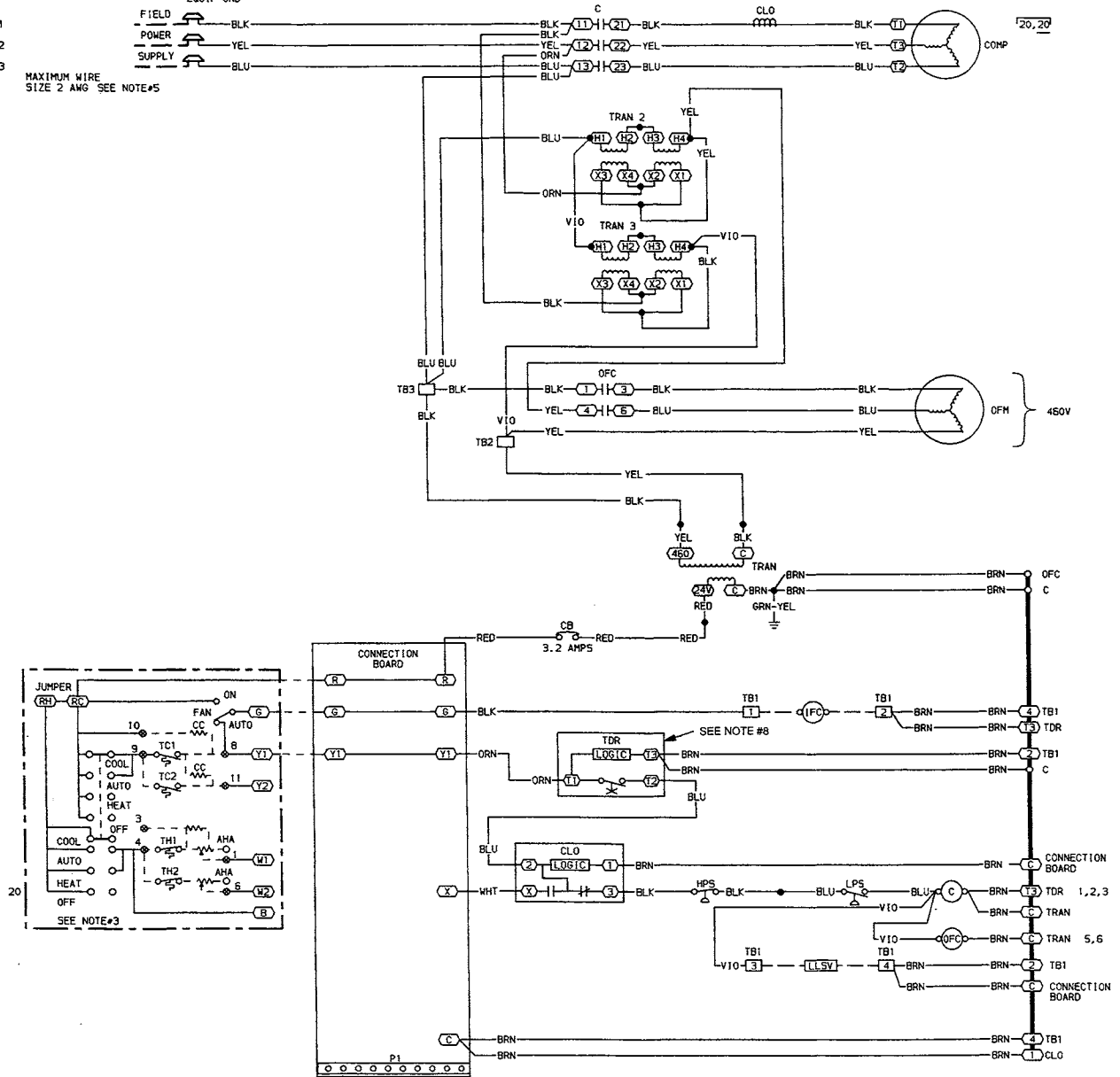
1
2
3



1
2
3



MAXIMUM WIRE
SIZE 2 AWG SEE NOTE#5



COMPONENT ARRANGEMENT

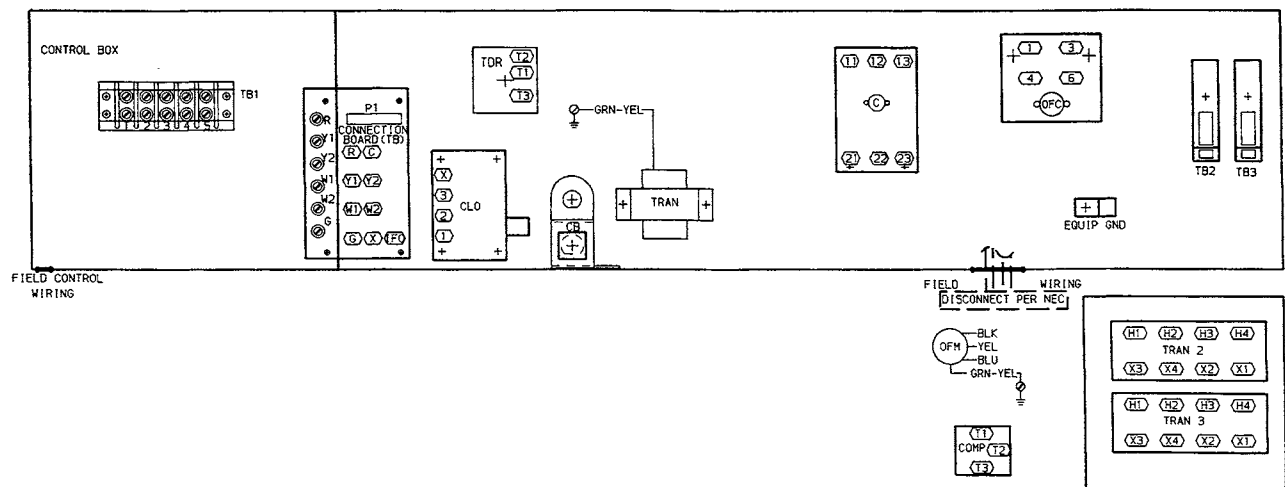
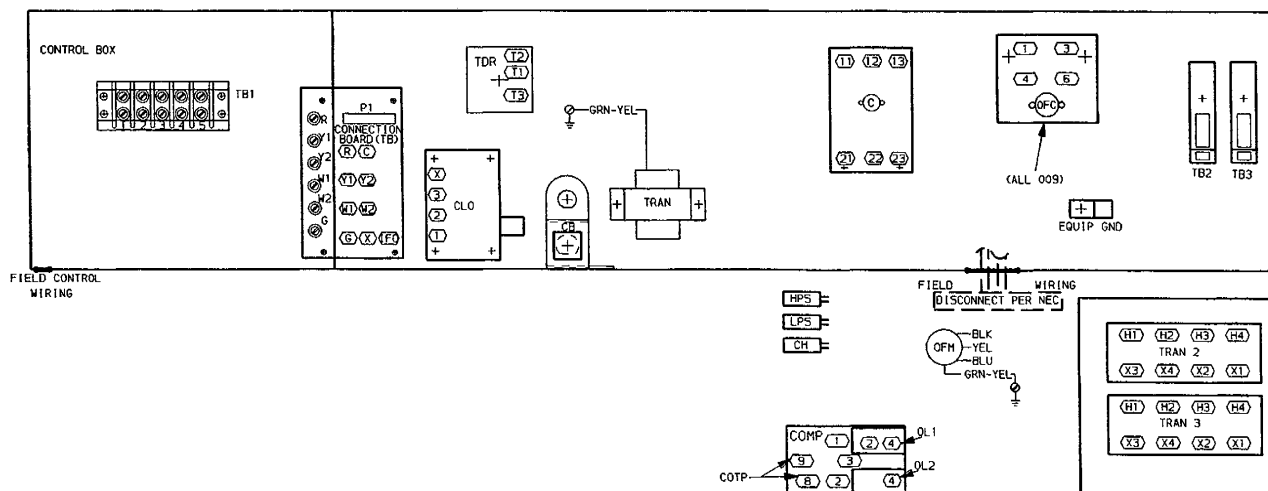


**Fig. 4 – Schematic Diagram and Component Arrangement;
38AK008,012; 575-3-60**

1
2
3

MAXIMUM WIRE
SIZE 2 AWG SEE NOTE#5



7

1
2
3



COMPONENT ARRANGEMENT

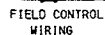


**Fig. 6 – Schematic Diagram and Component Arrangement;
38AK007-012; 220-3-50**

1
2
3

