



Millennium™
AIR COOLED SCREW LIQUID CHILLERS
(STYLE F)

WIRING DIAGRAM

Supersedes: 201.18-W1 (798)

Form 201.18-W1 (1298)

MODELS YCAS0130 THRU YCAS0230



28971A(r)

WARNING

HIGH VOLTAGE
is used in the operation of this equipment
DEATH OR SERIOUS INJURY
may result if personnel fail to observe precautions.

Work on electronic equipment should not be undertaken unless the individual(s) has (have) been trained in the proper maintenance of the equipment and is (are) familiar with its potential hazards.

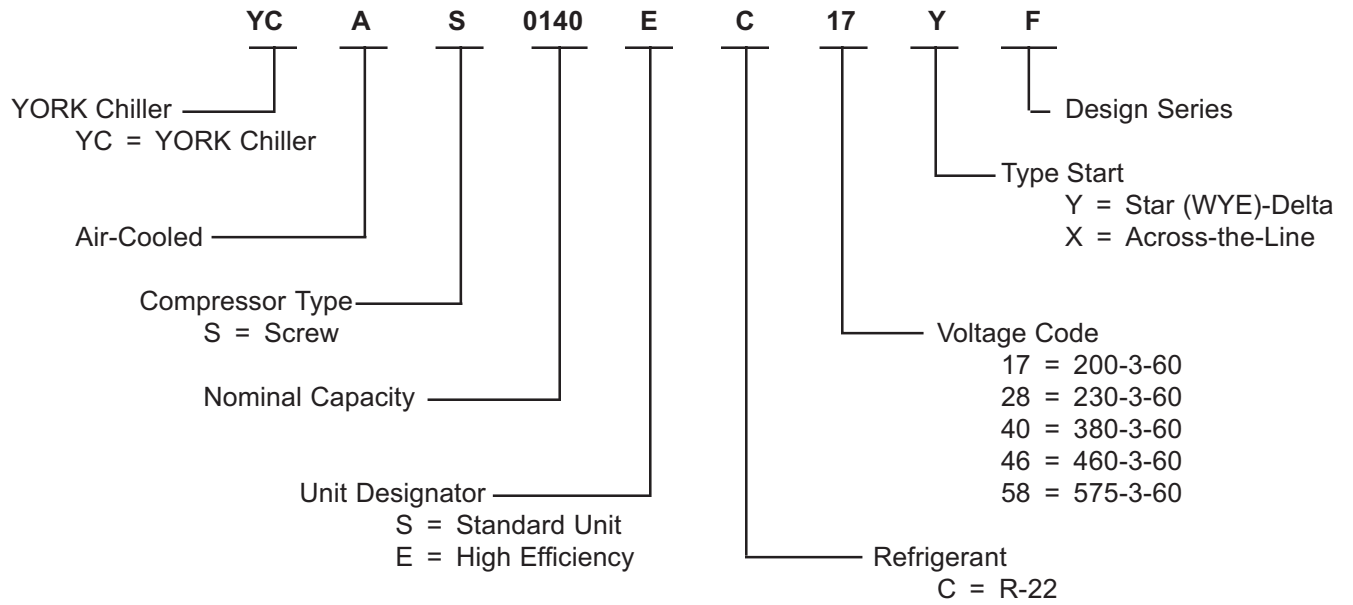
Shut off power supply to equipment before beginning work and follow lockout procedures. When working inside equipment with power off, take special care to discharge every capacitor likely to hold dangerous potential.

Be careful not to contact high voltage connections when installing or operating this equipment.

LOW VOLTAGE
DO NOT be misled by the term "low voltage". Voltages as low as 50 volts
may cause death.

NOMENCLATURE

The Model Number denotes the following characteristics of the unit:



ELECTRICAL DATA

MULTIPLE POINT POWER SUPPLY CONNECTION

(Each of Two Field Provided Power Supply Circuits individually protected with Branch Circuit Protection.

Field Connections to Factory provided Terminal Block (Std), Disconnects (Opt), or Breakers(Opt) in each of the two Motor Control Centers.)

| MODEL YCAS | VOLTS | SYSTEM #1 FIELD-SUPPLIED WIRING | | | | | | | | | | | | | |
|---------------|-------|---------------------------------|--------------------------------|-------------------|-------------------|-------------------|-------------------|---|--------------------------|---------------|------------|-------|-------|----------|--|
| | | MCA ¹ | MIN NF DISC SW ² | D.E. FUSE | | C.B. | | FACTORY PROVIDED (LUGS) WIRE RANGE ⁷ | | | COMPRESSOR | | | FANS | |
| | | | | MIN. ³ | MAX. ⁴ | MIN. ⁵ | MAX. ⁶ | STD. TERMINAL BLOCK | OPT. NF SVC. DISC SW. | OPT. C.B. | RLA | Y-LRA | X-LRA | FLA (EA) | |
| 0130EC | 200 | 340 | 400 | 450 | 600 | 450 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 246 | 444 | 1332 | 8.2 | |
| | 230 | 299 | 400 | 400 | 600 | 400 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (2) 3/0-250 | 214 | 386 | 1158 | 7.8 | |
| | 380 | 181 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 130 | 234 | 701 | 4.8 | |
| | 460 | 150 | 150 | 200 | 300 | 200 | 300 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 107 | 193 | 579 | 4.0 | |
| | 575 | 119 | 150 | 150 | 225 | 150 | 225 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 86 | 154 | 463 | 3.1 | |
| 0140EC | 200 | 366 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 267 | 444 | 1332 | 8.2 | |
| | 230 | 321 | 400 | 400 | 600 | 400 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (2) 3/0-250 | 232 | 386 | 1158 | 7.8 | |
| | 380 | 195 | 200 | 250 | 350 | 250 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 140 | 234 | 701 | 4.8 | |
| | 460 | 161 | 200 | 200 | 300 | 200 | 300 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 116 | 193 | 579 | 4.0 | |
| | 575 | 128 | 150 | 175 | 225 | 175 | 225 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 93 | 154 | 463 | 3.1 | |
| 0150EC | 200 | 402 | 400 | 500 | 700 | 500 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 295 | 656 | 1969 | 8.2 | |
| | 230 | 351 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 256 | 571 | 1712 | 7.8 | |
| | 380 | 213 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 155 | 360 | 1081 | 4.8 | |
| | 460 | 176 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 128 | 285 | 856 | 4.0 | |
| | 575 | 141 | 150 | 175 | 250 | 175 | 250 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 103 | 238 | 715 | 3.1 | |
| 0160EC | 200 | 402 | 400 | 500 | 700 | 500 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 295 | 656 | 1969 | 8.2 | |
| | 230 | 351 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 256 | 571 | 1712 | 7.8 | |
| | 380 | 213 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 155 | 360 | 1081 | 4.8 | |
| | 460 | 176 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 128 | 285 | 856 | 4.0 | |
| | 575 | 141 | 150 | 175 | 250 | 175 | 250 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 103 | 238 | 715 | 3.1 | |
| 0170EC | 200 | 434 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 321 | 656 | 1969 | 8.2 | |
| | 230 | 380 | 400 | 450 | 700 | 450 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 279 | 571 | 1712 | 7.8 | |
| | 380 | 230 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 169 | 360 | 1081 | 4.8 | |
| | 460 | 191 | 200 | 250 | 350 | 250 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 140 | 285 | 856 | 4.0 | |
| | 575 | 152 | 150 | 200 | 300 | 200 | 300 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 112 | 238 | 715 | 3.1 | |
| 0180EC | 200 | 434 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 321 | 656 | 1969 | 8.2 | |
| | 230 | 380 | 400 | 450 | 700 | 450 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 279 | 571 | 1712 | 7.8 | |
| | 380 | 230 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 169 | 360 | 1081 | 4.8 | |
| | 460 | 191 | 200 | 250 | 350 | 250 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 140 | 285 | 856 | 4.0 | |
| | 575 | 152 | 150 | 200 | 300 | 200 | 300 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 112 | 238 | 715 | 3.1 | |
| 0200EC | 200 | 469 | 600 | 600 | 1000 | 600 | 1000 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 342 | 656 | 1969 | 8.2 | |
| | 230 | 412 | 400 | 500 | 800 | 500 | 800 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 298 | 571 | 1712 | 7.8 | |
| | 380 | 250 | 250 | 300 | 450 | 300 | 450 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 181 | 360 | 1081 | 4.8 | |
| | 460 | 206 | 200 | 250 | 400 | 250 | 400 | # 1 - 500 | # 6 AWG - 350 | # 6 AWG - 350 | 149 | 285 | 856 | 4.0 | |
| | 575 | 164 | 200 | 200 | 300 | 200 | 300 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 119 | 238 | 715 | 3.1 | |
| 0210EC | 200 | 509 | 600 | 700 | 1000 | 700 | 1000 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 374 | 656 | 1969 | 8.2 | |
| | 230 | 445 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 325 | 571 | 1712 | 7.8 | |
| | 380 | 270 | 400 | 350 | 500 | 350 | 500 | # 1 - 500 | (2) 3/0-250 | (2) 3/0-250 | 197 | 360 | 1081 | 4.8 | |
| | 460 | 224 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 163 | 285 | 856 | 4.0 | |
| | 575 | 178 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 130 | 238 | 715 | 3.1 | |
| 0230EC | 200 | 509 | 600 | 700 | 1000 | 700 | 1000 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 374 | 656 | 1969 | 8.2 | |
| | 230 | 445 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 325 | 571 | 1712 | 7.8 | |
| | 380 | 270 | 400 | 350 | 500 | 350 | 500 | # 1 - 500 | (2) 3/0-250 | (2) 3/0-250 | 197 | 360 | 1081 | 4.8 | |
| | 460 | 224 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 163 | 285 | 856 | 4.0 | |
| | 575 | 178 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 130 | 238 | 715 | 3.1 | |

See page 6 for notes.

| MODEL YCAS | VOLTS | SYSTEM #2 FIELD-SUPPLIED WIRING | | | | | | | | | | | | | |
|------------|-------|---------------------------------|-----------------------------|-------------------|-------------------|-------------------|-------------------|---|-----------------------|---------------|------------|-------|-------|----------|--|
| | | MCA ¹ | MIN NF DISC SW ² | D.E. FUSE | | C.B. | | FACTORY PROVIDED (LUGS) WIRE RANGE ⁷ | | | COMPRESSOR | | | FANS | |
| | | | | MIN. ³ | MAX. ⁴ | MIN. ³ | MAX. ⁴ | STD. TERMINAL BLOCK | OPT. NF SVC. DISC SW. | OPT. C.B. | RLA | Y-LRA | X-LRA | FLA (EA) | |
| 0130EC | 200 | 340 | 400 | 450 | 600 | 450 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 246 | 444 | 1332 | 8.2 | |
| | 230 | 299 | 400 | 400 | 600 | 400 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (2) 3/0-250 | 214 | 386 | 1158 | 7.8 | |
| | 380 | 181 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 130 | 234 | 701 | 4.8 | |
| | 460 | 150 | 150 | 200 | 300 | 200 | 300 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 107 | 193 | 579 | 4.0 | |
| | 575 | 119 | 150 | 150 | 225 | 150 | 225 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 86 | 154 | 463 | 3.1 | |
| 0140EC | 200 | 366 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 267 | 444 | 1332 | 8.2 | |
| | 230 | 321 | 400 | 400 | 600 | 400 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (2) 3/0-250 | 232 | 386 | 1158 | 7.8 | |
| | 380 | 195 | 200 | 250 | 350 | 250 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 140 | 234 | 701 | 4.8 | |
| | 460 | 161 | 200 | 200 | 300 | 200 | 300 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 116 | 193 | 579 | 4.0 | |
| | 575 | 128 | 150 | 175 | 225 | 175 | 225 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 93 | 154 | 463 | 3.1 | |
| 0150EC | 200 | 363 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 265 | 444 | 1332 | 8.2 | |
| | 230 | 319 | 400 | 400 | 600 | 400 | 600 | (2) # 2 - 300 | (2) 3/0-250 | (2) 3/0-250 | 230 | 386 | 1158 | 7.8 | |
| | 380 | 193 | 200 | 250 | 350 | 250 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 139 | 234 | 701 | 4.8 | |
| | 460 | 160 | 150 | 200 | 300 | 200 | 300 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 115 | 193 | 579 | 4.0 | |
| | 575 | 127 | 150 | 175 | 225 | 175 | 225 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 92 | 154 | 463 | 3.1 | |
| 0160EC | 200 | 402 | 400 | 500 | 700 | 500 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 295 | 656 | 1969 | 8.2 | |
| | 230 | 351 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 256 | 571 | 1712 | 7.8 | |
| | 380 | 213 | 200 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 155 | 360 | 1081 | 4.8 | |
| | 460 | 176 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 128 | 285 | 856 | 4.0 | |
| | 575 | 141 | 150 | 175 | 250 | 175 | 250 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 103 | 238 | 715 | 3.1 | |
| 0170EC | 200 | 402 | 400 | 500 | 700 | 500 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 295 | 656 | 1969 | 8.2 | |
| | 230 | 351 | 400 | 450 | 700 | 450 | 700 | (2) # 2 - 300 | (2) 3/0-250 | (3) 2/0-400 | 256 | 571 | 1712 | 7.8 | |
| | 380 | 213 | 200 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 155 | 360 | 1081 | 4.8 | |
| | 460 | 176 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 128 | 285 | 856 | 4.0 | |
| | 575 | 141 | 150 | 175 | 250 | 175 | 250 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 103 | 238 | 715 | 3.1 | |
| 0180EC | 200 | 434 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 321 | 656 | 1969 | 8.2 | |
| | 230 | 380 | 400 | 450 | 700 | 450 | 700 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 279 | 571 | 1712 | 7.8 | |
| | 380 | 230 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 169 | 360 | 1081 | 4.8 | |
| | 460 | 191 | 200 | 250 | 350 | 250 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 140 | 285 | 856 | 4.0 | |
| | 575 | 152 | 150 | 200 | 300 | 200 | 300 | # 2 - 4/0 | # 6 AWG - 350 | # 6 AWG - 350 | 112 | 238 | 715 | 3.1 | |
| 0200EC | 200 | 469 | 600 | 600 | 1000 | 600 | 1000 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 342 | 656 | 1969 | 8.2 | |
| | 230 | 412 | 400 | 500 | 800 | 500 | 800 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 298 | 571 | 1712 | 7.8 | |
| | 380 | 250 | 250 | 300 | 450 | 300 | 450 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 181 | 360 | 1081 | 4.8 | |
| | 460 | 206 | 200 | 250 | 400 | 250 | 400 | # 1 - 500 | # 6 AWG - 350 | # 6 AWG - 350 | 149 | 285 | 856 | 4.0 | |
| | 575 | 164 | 200 | 200 | 300 | 200 | 300 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 119 | 238 | 715 | 3.1 | |
| 0210EC | 200 | 469 | 600 | 600 | 1000 | 600 | 1000 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 342 | 656 | 1969 | 8.2 | |
| | 230 | 412 | 400 | 500 | 800 | 500 | 800 | (2) # 1 - 500 | (2) 3/0-250 | (3) 2/0-400 | 298 | 571 | 1712 | 7.8 | |
| | 380 | 250 | 250 | 300 | 450 | 300 | 450 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 181 | 360 | 1081 | 4.8 | |
| | 460 | 206 | 200 | 250 | 400 | 250 | 400 | # 1 - 500 | # 6 AWG - 350 | # 6 AWG - 350 | 149 | 285 | 856 | 4.0 | |
| | 575 | 164 | 200 | 200 | 300 | 200 | 300 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 119 | 238 | 715 | 3.1 | |
| 0230EC | 200 | 509 | 600 | 700 | 1000 | 700 | 1000 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 374 | 656 | 1969 | 8.2 | |
| | 230 | 445 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | (3) 2/0-400 | (3) 2/0-400 | 325 | 571 | 1712 | 7.8 | |
| | 380 | 270 | 400 | 350 | 500 | 350 | 500 | # 1 - 500 | (2) 3/0-250 | (2) 3/0-250 | 197 | 360 | 1081 | 4.8 | |
| | 460 | 224 | 250 | 300 | 400 | 300 | 400 | # 1 - 500 | # 6 AWG - 350 | (2) 3/0-250 | 163 | 285 | 856 | 4.0 | |
| | 575 | 178 | 200 | 225 | 350 | 225 | 350 | # 2 - 300 | # 6 AWG - 350 | # 6 AWG - 350 | 130 | 238 | 715 | 3.1 | |

ELECTRICAL DATA (Continued)

OPTIONAL SINGLE-POINT POWER SUPPLY WITH INTERNAL CIRCUIT BREAKERS

(One Field Provided Power Supply Circuit to the chiller. Field connections to Power Terminal Block or Non-Fused Disconnect in 'Option Panel'.
Internal Branch Circuit Protection (Breakers) per Motor Control Center)

| MODEL YCAS | VOLTS | FIELD-SUPPLIED WIRING | | | | | | | | | |
|---------------|-------|-----------------------------|--------------------------------|-------------------|-------------------|-------------------|-------------------|------------------------------------|---------------------|--------------------------------|---------------------|
| | | FIELD PROVIDED POWER SUPPLY | | | | | | FACTORY PROVIDED (LUGS) WIRE RANGE | | | |
| | | MCA ¹ | MIN NF DISC SW ² | D.E. FUSE | | C.B. | | TERMINAL BLOCK | | NF SERVICE DISC SW | |
| | | | | MIN. ³ | MAX. ⁴ | MIN. ³ | MAX. ⁴ | (LUGS) WIRE RANGE ⁷ | RATING ² | (LUGS) WIRE RANGE ⁷ | RATING ² |
| 0130EC | 200 | 619 | 800 | 700 | 1000 | 700 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 230 | 544 | 600 | 600 | 800 | 600 | 800 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 380 | 330 | 400 | 400 | 500 | 400 | 500 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 460 | 273 | 400 | 300 | 400 | 300 | 400 | # 1 - 500 | 380 | (2) 3/0-250 | 400 |
| | 575 | 217 | 250 | 250 | 350 | 250 | 350 | # 1 - 500 | 380 | # 6 AWG - 350 | 250 |
| 0140EC | 200 | 666 | 800 | 800 | 1000 | 800 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 230 | 584 | 800 | 700 | 1000 | 700 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 600 |
| | 380 | 354 | 400 | 400 | 500 | 400 | 500 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 460 | 293 | 400 | 350 | 450 | 350 | 450 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 575 | 234 | 250 | 300 | 350 | 300 | 350 | # 1 - 500 | 380 | # 6 AWG - 350 | 250 |
| 0150EC | 200 | 699 | 800 | 800 | 1000 | 800 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 230 | 612 | 800 | 700 | 1000 | 700 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 380 | 371 | 400 | 450 | 600 | 450 | 600 | (2) # 1 - 500 | 760 | (2) 3/0-250 | 400 |
| | 460 | 307 | 400 | 350 | 450 | 350 | 450 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 575 | 246 | 400 | 300 | 350 | 300 | 350 | # 1 - 500 | 380 | (2) 3/0-250 | 400 |
| 0160EC | 200 | 729 | 800 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 230 | 638 | 800 | 800 | 1000 | 800 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 380 | 387 | 600 | 450 | 600 | 450 | 600 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 460 | 320 | 400 | 400 | 450 | 400 | 450 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 575 | 257 | 400 | 300 | 400 | 300 | 400 | # 1 - 500 | 380 | (2) 3/0-250 | 400 |
| 0170EC | 200 | 762 | 800 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 230 | 667 | 800 | 800 | 1000 | 800 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 380 | 405 | 600 | 450 | 600 | 450 | 600 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 460 | 335 | 400 | 400 | 500 | 400 | 500 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 575 | 268 | 400 | 300 | 400 | 300 | 400 | # 1 - 500 | 380 | (2) 3/0-250 | 400 |
| 0180EC | 200 | 788 | 1000 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (4) 4/0-500 | 1000 |
| | 230 | 690 | 800 | 800 | 1000 | 800 | 1000 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 380 | 419 | 600 | 500 | 600 | 500 | 600 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 460 | 347 | 400 | 400 | 500 | 400 | 500 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| | 575 | 277 | 400 | 350 | 400 | 350 | 400 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| 0200EC | 200 | 852 | 1000 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (4) 4/0-500 | 1000 |
| | 230 | 749 | 800 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (3) 2/0-400 | 800 |
| | 380 | 455 | 600 | 600 | 700 | 600 | 700 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 460 | 375 | 400 | 450 | 600 | 450 | 600 | (2) # 1 - 500 | 760 | (2) 3/0-250 | 400 |
| | 575 | 299 | 400 | 350 | 450 | 350 | 450 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| 0210EC | 200 | 892 | 1000 | 1000 | 1600 | 1000 | 1600 | (3) # 1 - 500 | 1140 | (4) 4/0-500 | 1000 |
| | 230 | 782 | 1000 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (4) 4/0-500 | 1000 |
| | 380 | 475 | 600 | 600 | 700 | 600 | 700 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 460 | 393 | 600 | 450 | 600 | 450 | 600 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 575 | 313 | 400 | 350 | 450 | 350 | 450 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |
| 0230EC | 200 | 924 | 1000 | 1200 | 1600 | 1200 | 1600 | (3) # 1 - 500 | 1140 | (4) 4/0-500 | 1000 |
| | 230 | 809 | 1000 | 1000 | 1200 | 1000 | 1200 | (3) # 1 - 500 | 1140 | (4) 4/0-500 | 1000 |
| | 380 | 491 | 600 | 600 | 700 | 600 | 700 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 460 | 407 | 600 | 450 | 600 | 450 | 600 | (2) # 1 - 500 | 760 | (3) 2/0-400 | 600 |
| | 575 | 324 | 400 | 400 | 500 | 400 | 500 | (2) # 2 - 300 | 550 | (2) 3/0-250 | 400 |

See page 6 for notes.

| MODEL YCAS | VOLTS | SYSTEM #1 | | | | | SYSTEM #2 | | | | |
|---------------|-------|-----------------|-----------------|-------|-------|----------|-----------------|-----------------|-------|-------|----------|
| | | FACTORY C.B. | COMPRESSOR DATA | | | FAN DATA | FACTORY C.B. | COMPRESSOR DATA | | | FAN DATA |
| | | | RLA | Y-LRA | X-LRA | FLA (EA) | | RLA | Y-LRA | X-LRA | FLA (EA) |
| 0130EC | 200 | 600 | 246 | 444 | 1332 | 8.2 | 600 | 246 | 444 | 1332 | 8.2 |
| | 230 | 400 | 214 | 386 | 1158 | 7.8 | 400 | 214 | 386 | 1158 | 7.8 |
| | 380 | 250 | 130 | 234 | 701 | 4.8 | 250 | 130 | 234 | 701 | 4.8 |
| | 460 | 250 | 107 | 193 | 579 | 4.0 | 250 | 107 | 193 | 579 | 4.0 |
| | 575 | 160 | 86 | 154 | 463 | 3.1 | 160 | 86 | 154 | 463 | 3.1 |
| 0140EC | 200 | 600 | 267 | 444 | 1332 | 8.2 | 600 | 267 | 444 | 1332 | 8.2 |
| | 230 | 400 | 232 | 386 | 1158 | 7.8 | 400 | 232 | 386 | 1158 | 7.8 |
| | 380 | 250 | 140 | 234 | 701 | 4.8 | 250 | 140 | 234 | 701 | 4.8 |
| | 460 | 250 | 116 | 193 | 579 | 4.0 | 250 | 116 | 193 | 579 | 4.0 |
| | 575 | 160 | 93 | 154 | 463 | 3.1 | 160 | 93 | 154 | 463 | 3.1 |
| 0150EC | 200 | 600 | 295 | 656 | 1969 | 8.2 | 600 | 265 | 444 | 1332 | 8.2 |
| | 230 | 600 | 256 | 571 | 1712 | 7.8 | 400 | 230 | 386 | 1158 | 7.8 |
| | 380 | 400 | 155 | 360 | 1081 | 4.8 | 250 | 139 | 234 | 701 | 4.8 |
| | 460 | 250 | 128 | 285 | 856 | 4.0 | 250 | 115 | 193 | 579 | 4.0 |
| | 575 | 250 | 103 | 238 | 715 | 3.1 | 160 | 92 | 154 | 463 | 3.1 |
| 0160EC | 200 | 600 | 295 | 656 | 1969 | 8.2 | 600 | 295 | 656 | 1969 | 8.2 |
| | 230 | 600 | 256 | 571 | 1712 | 7.8 | 600 | 256 | 571 | 1712 | 7.8 |
| | 380 | 400 | 155 | 360 | 1081 | 4.8 | 400 | 155 | 360 | 1081 | 4.8 |
| | 460 | 250 | 128 | 285 | 856 | 4.0 | 250 | 128 | 285 | 856 | 4.0 |
| | 575 | 250 | 103 | 238 | 715 | 3.1 | 250 | 103 | 238 | 715 | 3.1 |
| 0170EC | 200 | 600 | 321 | 656 | 1969 | 8.2 | 600 | 295 | 656 | 1969 | 8.2 |
| | 230 | 600 | 279 | 571 | 1712 | 7.8 | 600 | 256 | 571 | 1712 | 7.8 |
| | 380 | 400 | 169 | 360 | 1081 | 4.8 | 400 | 155 | 360 | 1081 | 4.8 |
| | 460 | 250 | 140 | 285 | 856 | 4.0 | 250 | 128 | 285 | 856 | 4.0 |
| | 575 | 250 | 112 | 238 | 715 | 3.1 | 250 | 103 | 238 | 715 | 3.1 |
| 0180EC | 200 | 600 | 321 | 656 | 1969 | 8.2 | 600 | 321 | 656 | 1969 | 8.2 |
| | 230 | 600 | 279 | 571 | 1712 | 7.8 | 600 | 279 | 571 | 1712 | 7.8 |
| | 380 | 400 | 169 | 360 | 1081 | 4.8 | 400 | 169 | 360 | 1081 | 4.8 |
| | 460 | 250 | 140 | 285 | 856 | 4.0 | 250 | 140 | 285 | 856 | 4.0 |
| | 575 | 250 | 112 | 238 | 715 | 3.1 | 250 | 112 | 238 | 715 | 3.1 |
| 0200EC | 200 | 600 | 342 | 656 | 1969 | 8.2 | 600 | 342 | 656 | 1969 | 8.2 |
| | 230 | 600 | 298 | 571 | 1712 | 7.8 | 600 | 298 | 571 | 1712 | 7.8 |
| | 380 | 400 | 181 | 360 | 1081 | 4.8 | 400 | 181 | 360 | 1081 | 4.8 |
| | 460 | 250 | 149 | 285 | 856 | 4.0 | 250 | 149 | 285 | 856 | 4.0 |
| | 575 | 250 | 119 | 238 | 715 | 3.1 | 250 | 119 | 238 | 715 | 3.1 |
| 0210EC | 200 | 600 | 374 | 656 | 1969 | 8.2 | 600 | 342 | 656 | 1969 | 8.2 |
| | 230 | 600 | 325 | 571 | 1712 | 7.8 | 600 | 298 | 571 | 1712 | 7.8 |
| | 380 | 400 | 197 | 360 | 1081 | 4.8 | 400 | 181 | 360 | 1081 | 4.8 |
| | 460 | 400 | 163 | 285 | 856 | 4.0 | 250 | 149 | 285 | 856 | 4.0 |
| | 575 | 250 | 130 | 238 | 715 | 3.1 | 250 | 119 | 238 | 715 | 3.1 |
| 0230EC | 200 | 600 | 374 | 656 | 1969 | 8.2 | 600 | 374 | 656 | 1969 | 8.2 |
| | 230 | 600 | 325 | 571 | 1712 | 7.8 | 600 | 325 | 571 | 1712 | 7.8 |
| | 380 | 400 | 197 | 360 | 1081 | 4.8 | 400 | 197 | 360 | 1081 | 4.8 |
| | 460 | 400 | 163 | 285 | 856 | 4.0 | 400 | 163 | 285 | 856 | 4.0 |
| | 575 | 250 | 130 | 238 | 715 | 3.1 | 250 | 130 | 238 | 715 | 3.1 |

ELECTRICAL DATA (Continued)

OPTIONAL SINGLE POINT POWER SUPPLY CONNECTION TO FACTORY CIRCUIT BREAKER

(One Field Provided Power Supply Circuit to the chiller. Field Connection to Circuit Breaker in 'Option Panel'.
No internal Branch Circuit Protection per Motor Control Center.)

| MODEL YCAS | VOLTS | FIELD SUPPLIED WIRING | | | SYSTEM #1 | | | SYSTEM #2 | | |
|---------------|-------|-----------------------|--------------------------|--------------------------------|------------|-------|----------|------------|-------|----------|
| | | MCA ¹ | FACTORY SUPPLIED BREAKER | | COMPRESSOR | | FANS | COMPRESSOR | | FANS |
| | | | RATING ² | WIRE RANGE ⁷ (LUGS) | RLA | X-LRA | FLA (EA) | RLA | X-LRA | FLA (EA) |
| 0130EC | 460 | 273 | 400 | (2) 3/0-250 | 107 | 579 | 4.0 | 107 | 579 | 4.0 |
| | 575 | 217 | 250 | # 6 AWG - 350 | 86 | 463 | 3.1 | 86 | 463 | 3.1 |
| 0140EC | 460 | 293 | 400 | (2) 3/0-250 | 116 | 579 | 4.0 | 116 | 579 | 4.0 |
| | 575 | 234 | 400 | (2) 3/0-250 | 93 | 463 | 3.1 | 93 | 463 | 3.1 |
| 0150EC | 460 | 307 | 400 | (2) 3/0-250 | 128 | 856 | 4.0 | 115 | 579 | 4.0 |
| | 575 | 246 | 400 | (2) 3/0-250 | 103 | 715 | 3.1 | 92 | 463 | 3.1 |
| 0160EC | 460 | 320 | 400 | (2) 3/0-250 | 128 | 856 | 4.0 | 128 | 856 | 4.0 |
| | 575 | 257 | 400 | (2) 3/0-250 | 103 | 715 | 3.1 | 103 | 715 | 3.1 |
| 0170EC | 460 | 335 | 400 | (2) 3/0-250 | 140 | 856 | 4.0 | 128 | 856 | 4.0 |
| | 575 | 268 | 400 | (2) 3/0-250 | 112 | 715 | 3.1 | 103 | 715 | 3.1 |
| 0180EC | 460 | 347 | 400 | (2) 3/0-250 | 140 | 856 | 4.0 | 140 | 856 | 4.0 |
| | 575 | 277 | 400 | (2) 3/0-250 | 112 | 715 | 3.1 | 112 | 715 | 3.1 |
| 0200EC | 460 | 375 | 630 | (3) 2/0-400 | 149 | 856 | 4.0 | 149 | 856 | 4.0 |
| | 575 | 299 | 400 | (2) 3/0-250 | 119 | 715 | 3.1 | 119 | 715 | 3.1 |
| 0210EC | 460 | 393 | 630 | (3) 2/0-400 | 163 | 856 | 4.0 | 149 | 856 | 4.0 |
| | 575 | 313 | 400 | (2) 3/0-250 | 130 | 715 | 3.1 | 119 | 715 | 3.1 |
| 0230EC | 460 | 407 | 630 | (3) 2/0-400 | 163 | 856 | 4.0 | 163 | 856 | 4.0 |
| | 575 | 324 | 400 | (2) 3/0-250 | 130 | 715 | 3.1 | 130 | 715 | 3.1 |

NOTE: Wye-Delta Compressor Start not available with this option.

NOTES (pages 2 - 7)

- Minimum circuit ampacity (MCA) is based on 125% of the rated load amps for the largest motor plus 100% of the rated load amps for all other loads included in the circuit, per N.E.C. Article 430-24. If a Factory Mounted Control Transformer is provided, add the following to the system #2 MCA values in the YCAS Tables: -17, add 10 amps; -28, add 9 amps; -40, add 5 amps; -46, add 4 amps; -58, add 3 amps.
- The recommendation disconnect switch is based on a minimum of 115% of the summation rated load amps of all the loads included in the circuit, per N.E.C. 440 - 12A1.
- Minimum fuse size is based on 150% of the largest motor RLA plus 100% of the remaining RLAs (U.L. Standard 1995, Section 36.1). Minimum fuse rating = (1.5 x largest compressor RLA) + other compressor RLAs + (# fans x each fan motor FLA).
- Maximum dual element fuse size is based on 225% maximum plus 100% of the rated load amps for all other loads included in the circuit, per N.E.C. 440-22. Maximum fuse rating = (2.25 x largest compressor RLA) + other compressor RLAs + (# fans x each fan motor FLA).
- Minimum circuit breaker is 150% maximum plus 100% of rated load amps included in the circuit, per circuit per U.L. 1995 Fig. 36.2. Minimum circuit breaker rating = (1.5 x largest compressor RLA) + other compressor RLAs + (# fans x each fan motor FLA).
- Maximum circuit breaker is based on 225% maximum plus 100% of the rated load amps for all loads included in the circuit, per circuit, per U.L. 1995 Fig. 36.2. Maximum circuit breaker rating = (2.25 x largest compressor RLA) + other compressor RLAs + (# fans x each fan motor FLA).
- The Incoming Wire Range is the minimum and maximum wire size that can be accommodated by unit wiring lugs. The (1), (2), or (3) indicate the number of termination points or lugs which are available per phase. Actual wire size and number of wires per phase must be determined based on ampacity and job requirements using N.E.C. wire sizing information. The above recommendations are based on the National Electric Code and using copper connectors only. Field wiring must also comply with local codes.
- A ground lug is provided for each compressor system to accommodate field grounding conductor per N.E.C. Article 250-54. A control circuit grounding lug is also supplied. Incoming ground wire range is #6 - 350 MCM.
- The field supplied disconnect is a "Disconnecting Means" as defined in N.E.C. 100.B, and is intended for isolating the unit from the available power supply to perform maintenance and troubleshooting. This disconnect is not intended to be a Load Break Device.
- Units equipped with Star-Delta compressor motor start must also include Factory provided circuit breakers in each motor control center.
- The wiring recommendations are based on the National Electrical Code using copper connectors only. Field wiring must also comply with local codes.

OPTIONAL SINGLE POINT POWER SUPPLY CONNECTION WITH FIELD SUPPLIED CIRCUIT PROTECTION

(One Field Provided Power Supply Circuit to the chiller. Field Connection to Power Terminal Block or Disconnect Switch in the 'Option Panel'.
No internal Branch Circuit Protection per Motor Control Center.)

| MODEL YCAS | VOLTS | FIELD SUPPLIED WIRING | | | | | | | SYSTEM #1 | | | SYSTEM #2 | | |
|------------|-------|-----------------------------|-----------------------------|---|------------------------------------|---------------------|--|---------------|-----------------|----------|-----------|-----------------|----------|-----------|
| | | FIELD PROVIDED POWER SUPPLY | | | FACTORY PROVIDED (LUGS) WIRE RANGE | | | | COMPRESSOR DATA | | FANS DATA | COMPRESSOR DATA | | FANS DATA |
| | | MCA ¹ | MIN NF DISC SW ² | D.E. FUSE MIN ³ MAX ⁴ | TERMINAL BLOCK (LUGS) WIRE RANGE | RATING ² | NF SERV DISC SW (LUGS) WIRE RANGE ⁷ | RLA | X-LRA | FLA (EA) | RLA | X-LRA | FLA (EA) | |
| 0130EC | 460 | 273 | 400 | 300 | 400 | # 1 - 500 | 400 | (2) 3/0-250 | 107 | 579 | 4.0 | 107 | 579 | 4.0 |
| | 575 | 217 | 250 | 250 | 350 | # 1 - 500 | 250 | # 6 AWG - 350 | 86 | 463.2 | 3.1 | 86 | 463 | 3.1 |
| 0140EC | 460 | 293 | 400 | 350 | 450 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 116 | 579 | 4.0 | 116 | 579 | 4.0 |
| | 575 | 234 | 250 | 300 | 350 | # 1 - 500 | 250 | # 6 AWG - 350 | 93 | 463.2 | 3.1 | 93 | 463 | 3.1 |
| 0150EC | 460 | 307 | 400 | 350 | 450 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 128 | 856 | 4.0 | 115 | 579 | 4.0 |
| | 575 | 246 | 400 | 300 | 350 | # 1 - 500 | 250 | # 6 AWG - 350 | 103 | 715 | 3.1 | 92 | 463 | 3.1 |
| 0160EC | 460 | 320 | 400 | 400 | 450 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 128 | 856 | 4.0 | 128 | 856 | 4.0 |
| | 575 | 257 | 400 | 300 | 400 | # 1 - 500 | 400 | (2) 3/0-250 | 103 | 715 | 3.1 | 103 | 715 | 3.1 |
| 0170EC | 460 | 335 | 400 | 400 | 500 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 140 | 856 | 4.0 | 128 | 856 | 4.0 |
| | 575 | 268 | 400 | 300 | 400 | # 1 - 500 | 400 | (2) 3/0-250 | 112 | 715 | 3.1 | 103 | 715 | 3.1 |
| 0180EC | 460 | 347 | 400 | 400 | 500 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 140 | 856 | 4.0 | 140 | 856 | 4.0 |
| | 575 | 277 | 400 | 350 | 400 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 112 | 715 | 3.1 | 112 | 715 | 3.1 |
| 0200EC | 460 | 375 | 400 | 450 | 600 | (2) # 1 - 500 | 400 | (2) 3/0-250 | 149 | 856 | 4.0 | 149 | 856 | 4.0 |
| | 575 | 299 | 400 | 350 | 450 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 119 | 715 | 3.1 | 119 | 715 | 3.1 |
| 0210EC | 460 | 393 | 600 | 450 | 600 | (2) # 1 - 500 | 400 | (2) 3/0-250 | 163 | 856 | 4.0 | 149 | 856 | 4.0 |
| | 575 | 313 | 400 | 350 | 450 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 130 | 715 | 3.1 | 119 | 715 | 3.1 |
| 0230EC | 460 | 407 | 600 | 450 | 600 | (2) # 1 - 500 | 630 | (3) 2/0-400 | 163 | 856 | 4.0 | 163 | 856 | 4.0 |
| | 575 | 324 | 400 | 400 | 500 | (2) # 2 - 300 | 400 | (2) 3/0-250 | 130 | 715 | 3.1 | 130 | 715 | 3.1 |

LEGEND

| | |
|------------------|--|
| ACR-LINE | ACROSS THE LINE START |
| C.B. | CIRCUIT BREAKER |
| D.E. | DUAL ELEMENT FUSE |
| DISC SW | DISCONNECT SWITCH |
| FACT MOUNT CB | FACTORY-MOUNTED CIRCUIT BREAKER |
| FLA | FULL LOAD AMPS |
| HZ | HERTZ |
| MAX | MAXIMUM |
| MCA | MINIMUM CIRCUIT AMPACITY |
| MIN | MINIMUM |
| MIN NF | MINIMUM NON-FUSED |
| RLA | RUNNING LOAD AMPS |
| S.P. WIRE | SINGLE-POINT WIRING |
| UNIT MTD SERV SW | UNIT-MOUNTED SERVICE (NON-FUSED DISCONNECT SWITCH) |
| WYE-DELTA | WYE-DELTA START |
| X-LRA | ACROSS-THE-LINE INRUSH LOCKED ROTOR AMPS |
| Y-LRA | WYE-DELTA INRUSH LOCKED ROTOR AMPS |

CONTROL POWER SUPPLY

| UNIT VOLTAGE | CONTROL POWER SUPPLY | MIN CIRCUIT AMPACITY | MAX DUAL ELEMENT FUSE SIZE | NON-FUSED DISC. SW. SIZE |
|----------------------------------|----------------------|----------------------|----------------------------|--------------------------|
| Standard Models w/o Transformers | 115-1-60 | 20A | 20A | 30A |

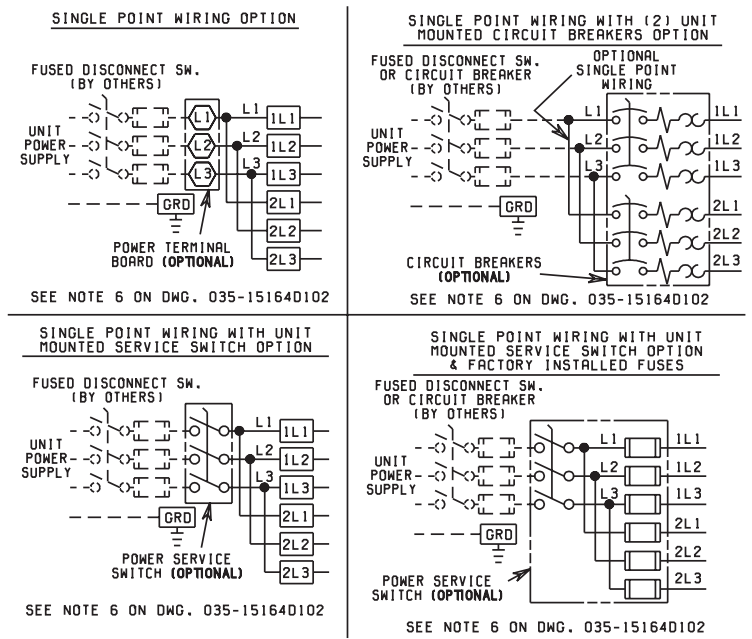
VOLTAGE CODE

- 17 = 200-3-60
- 28 = 230-3-60
- 40 = 380-3-60
- 46 = 460-3-60
- 58 = 575-3-60

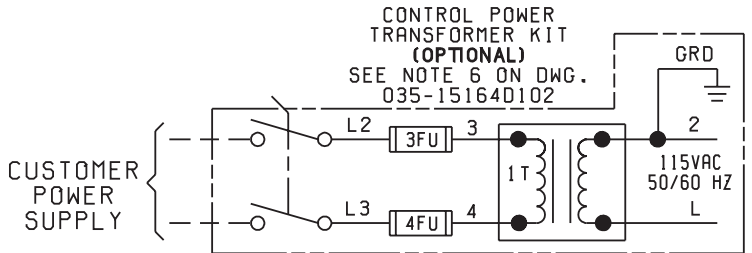
WIRING DIAGRAM ACROSS-THE-LINE START

NOTES:

1. Field wiring to be in accordance with the current edition of the National Electrical Code as well as all other applicable codes and specifications.
2. Numbers along the right side of a diagram are line identification numbers. The numbers at each line indicate the line number location of relay contacts. An unlined contact location signifies a normally closed contact. Numbers adjacent to circuit lines are the circuit identification numbers.
3. Any customer supplied contacts must be suitable for switching 24VDC. (Gold contacts recommended.) Control Wiring must not be run in the same conduit with any line voltage wiring.
4. To cycle unit on and off automatically with contact shown, install a cycling device in series with the flow switch (FSLW). See Note 3 for contact rating and wiring specifications. Also refer to cautions on the following page.
5. To stop unit (Emergency Stop) with contacts other than those shown, install the stop contact between 5 and 1. If a stop device is not installed, a jumper must be connected between terminals 5 and 1. Device must have a minimum contact rating of 100VA at 115 volts A.C.
6. Alarm contacts are for annunciating alarm/unit malfunction. Contacts are rated at 115V, 100VA, resistive load only, and must be suppressed at load by user.
7. See Installation, Operation and Maintenance Manual when optional equipment is used.
8. Control panel to be securely connected to earth ground.
9. Us 2KVA transformer in optional transformer kit unless there are optional oil separator sump heaters which necessitates using a 3KVA transformer.



LD03226



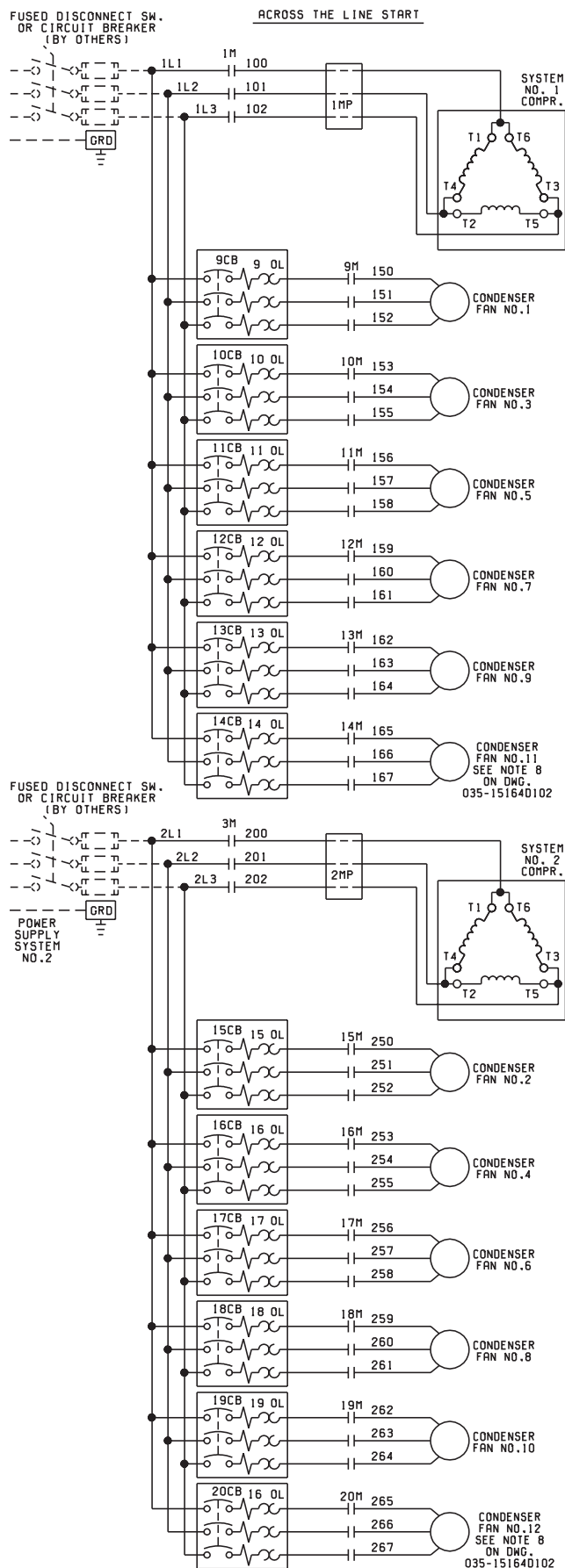
LD03227

LEGEND

- TS** Transient Voltage Suppression
- Terminal Block for Customer Connections
- Terminal Block for Customer Low Voltage (Class 2) Connections. See Note 2
- Terminal Block for YORK Connections Only
- Wiring and Components by YORK
- Optional Equipment
- Wiring and/or Components by Others

FIG. 1 – ELEMENTARY DIAGRAM – ACROSS-THE-LINE START

WIRING DIAGRAM ACROSS-THE-LINE START



ELEMENTARY DIAGRAM

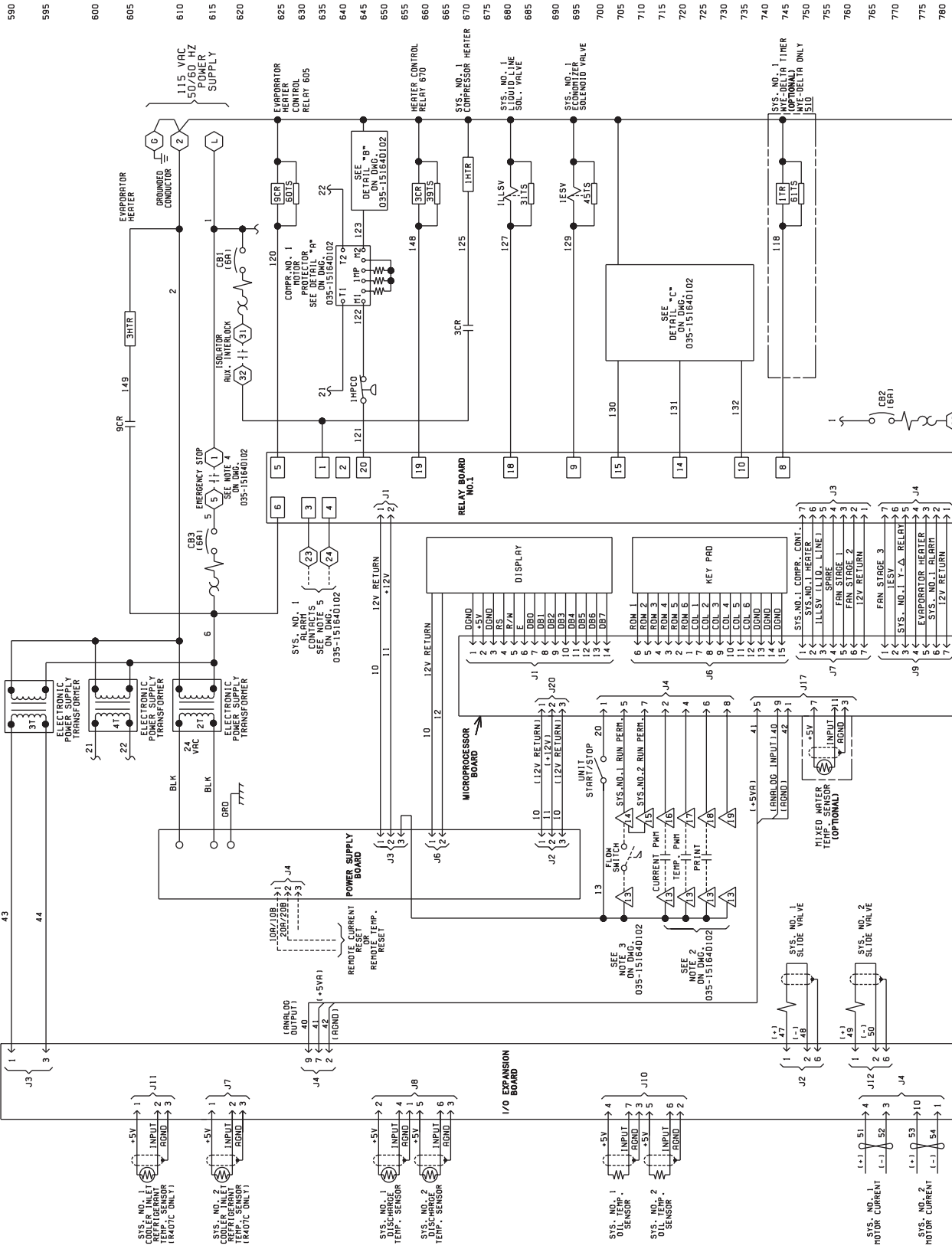
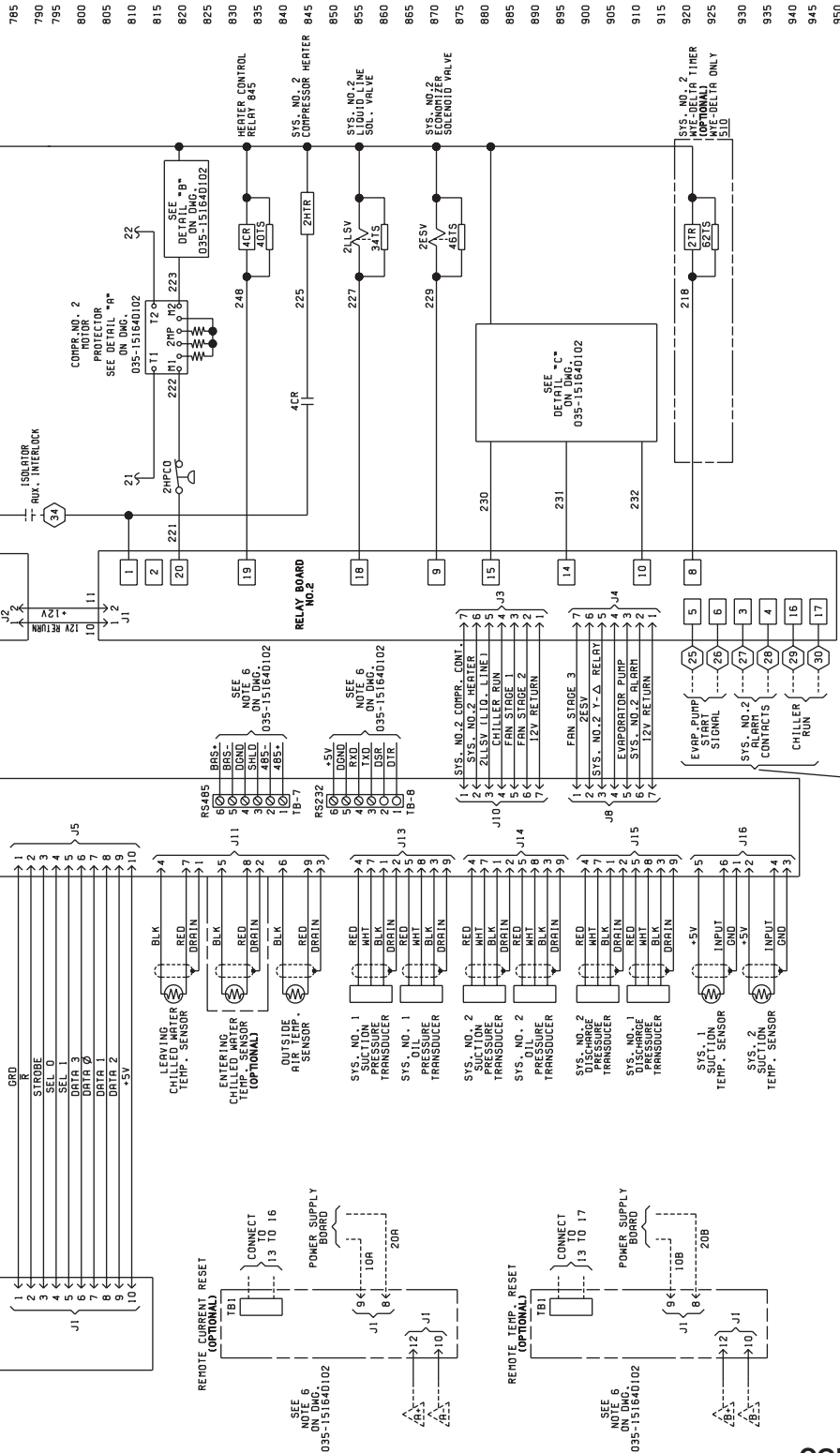


FIG. 1 - CONTINUED

ELEMENTARY DIAGRAM



LD03279

CAUTION:
No Controls (relays, etc.) should be mounted in the Smart Panel enclosure or connected to power supplies in the control panel. Additionally, control wiring not connected to the Smart Panel should not be run through the cabinet. This could result in nuisance faults.

CAUTION:
Any inductive devices (relays) wired in series with the flow switch for start/stop, into the Alarm circuitry, or pilot relays for pump starters wired through motor contactor auxiliary contacts must be suppressed with YORK P/N 031-00808-000 suppressor across the relay/contactor coil.

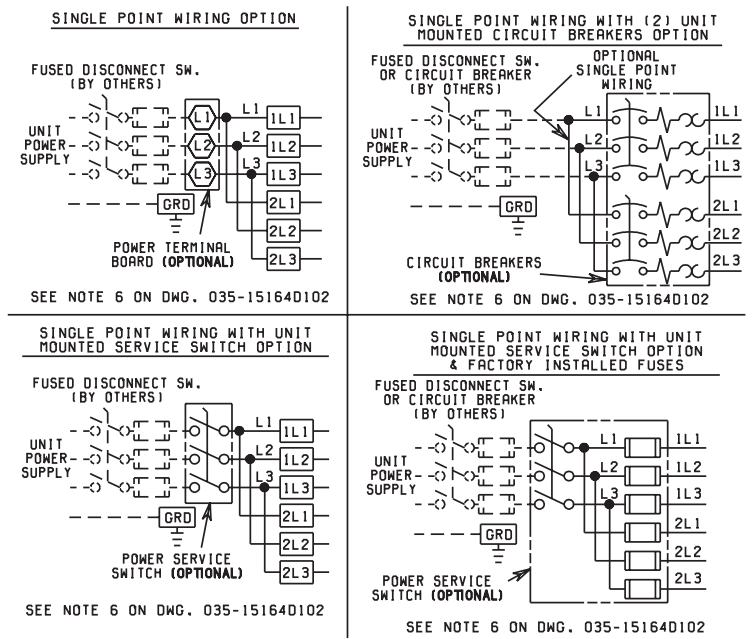
Any contacts connected to flow switch inputs or BAS inputs on terminals 13 - 19 or TB3, or any other terminals, must be suppressed with a YORK P/N 031-00808-000 suppressor across the relay/contactor coil.

CAUTION:
Control wiring connected to the control panel should never be run in the same conduit with power wiring.

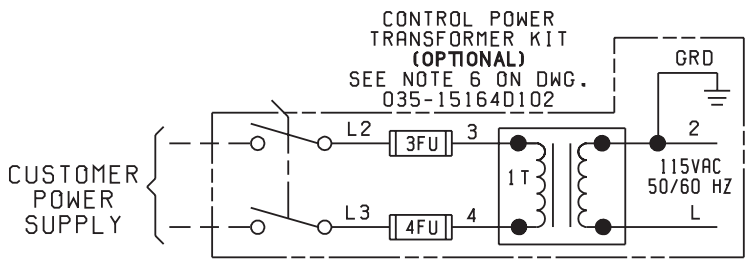
WIRING DIAGRAM WYE-DELTA START

NOTES:

1. Field wiring to be in accordance with the current edition of the National Electrical Code as well as all other applicable codes and specifications.
2. Numbers along the right side of a diagram are line identification numbers. The numbers at each line indicate the line number location of relay contacts. An unlined contact location signifies a normally closed contact. Numbers adjacent to circuit lines are the circuit identification numbers.
3. Any customer supplied contacts must be suitable for switching 24VDC. (Gold contacts recommended.) Control Wiring must not be run in the same conduit with any line voltage wiring.
4. To cycle unit on and off automatically with contact shown, install a cycling device in series with the flow switch (FSLW). See Note 3 for contact rating and wiring specifications. Also refer to cautions on the following page.
5. To stop unit (Emergency Stop) with contacts other than those shown, install the stop contact between 5 and 1. If a stop device is not installed, a jumper must be connected between terminals 5 and 1. Device must have a minimum contact rating of 100VA at 115 volts A.C.
6. Alarm contacts are for annunciating alarm/unit malfunction. Contacts are rated at 115V, 100VA, resistive load only, and must be suppressed at load by user.
7. See Installation, Operation and Maintenance Manual when optional equipment is used.
8. Control panel to be securely connected to earth ground.
9. Us 2KVA transformer in optional transformer kit unless there are optional oil separator sump heaters which necessitates using a 3KVA transformer.



LD03226



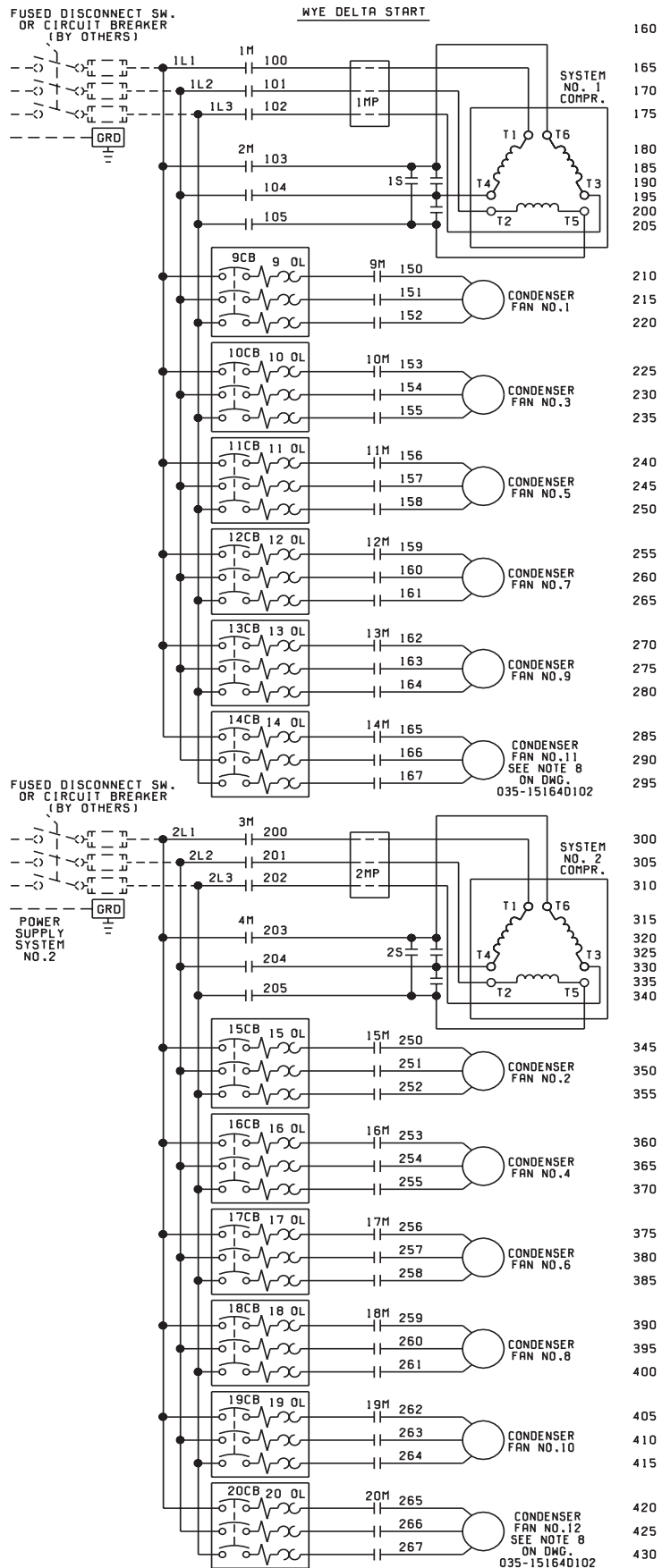
LD03227

LEGEND

- T S** Transient Voltage Suppression
- Terminal Block for Customer Connections
- Terminal Block for Customer Low Voltage (Class 2) Connections. See Note 2
- Terminal Block for YORK Connections Only
- Wiring and Components by YORK
- Optional Equipment
- - - - - Wiring and/or Components by Others

FIG. 1 – ELEMENTARY DIAGRAM – WYE-DELTA START

WIRING DIAGRAM WYE-DELTA START



ELEMENTARY DIAGRAM

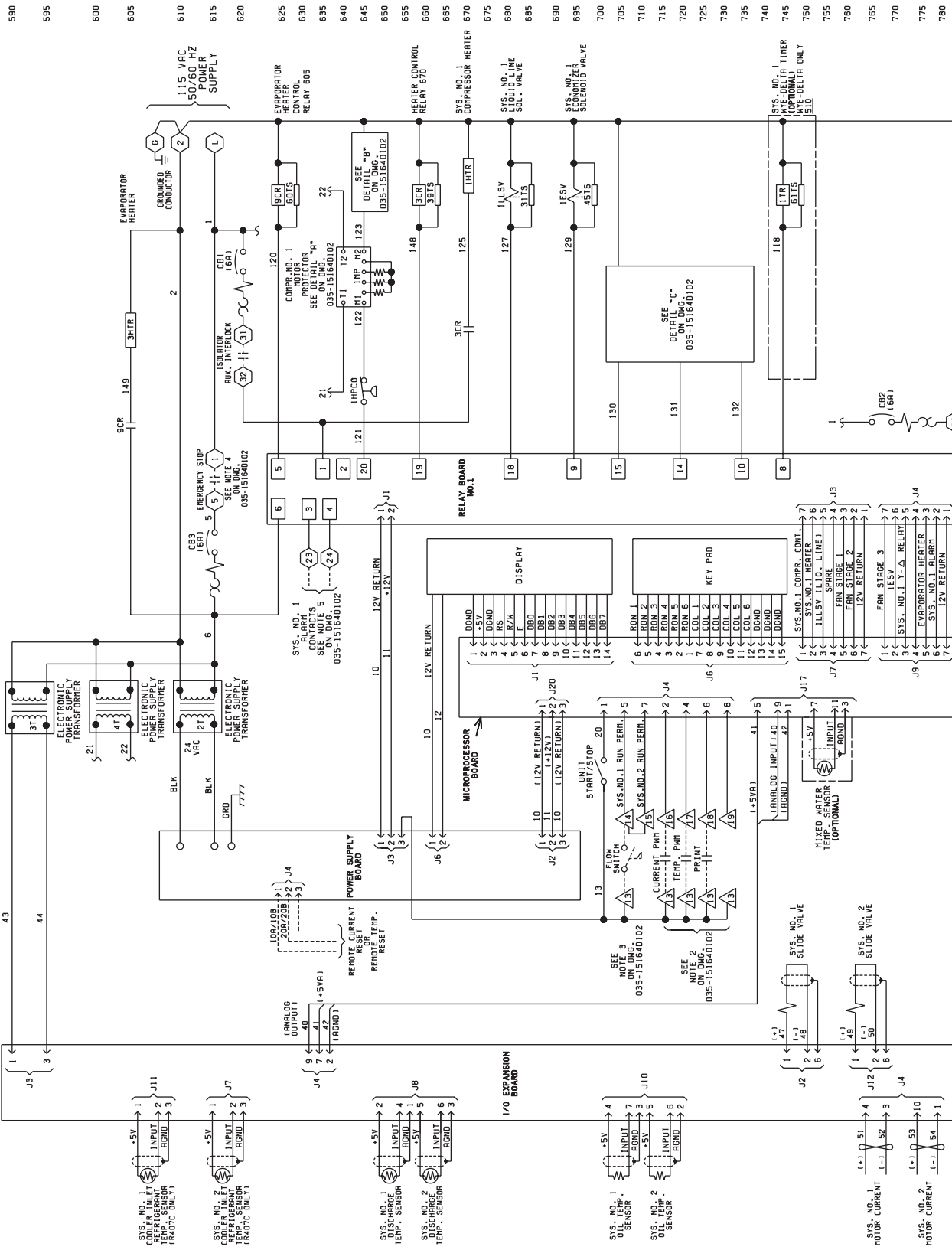
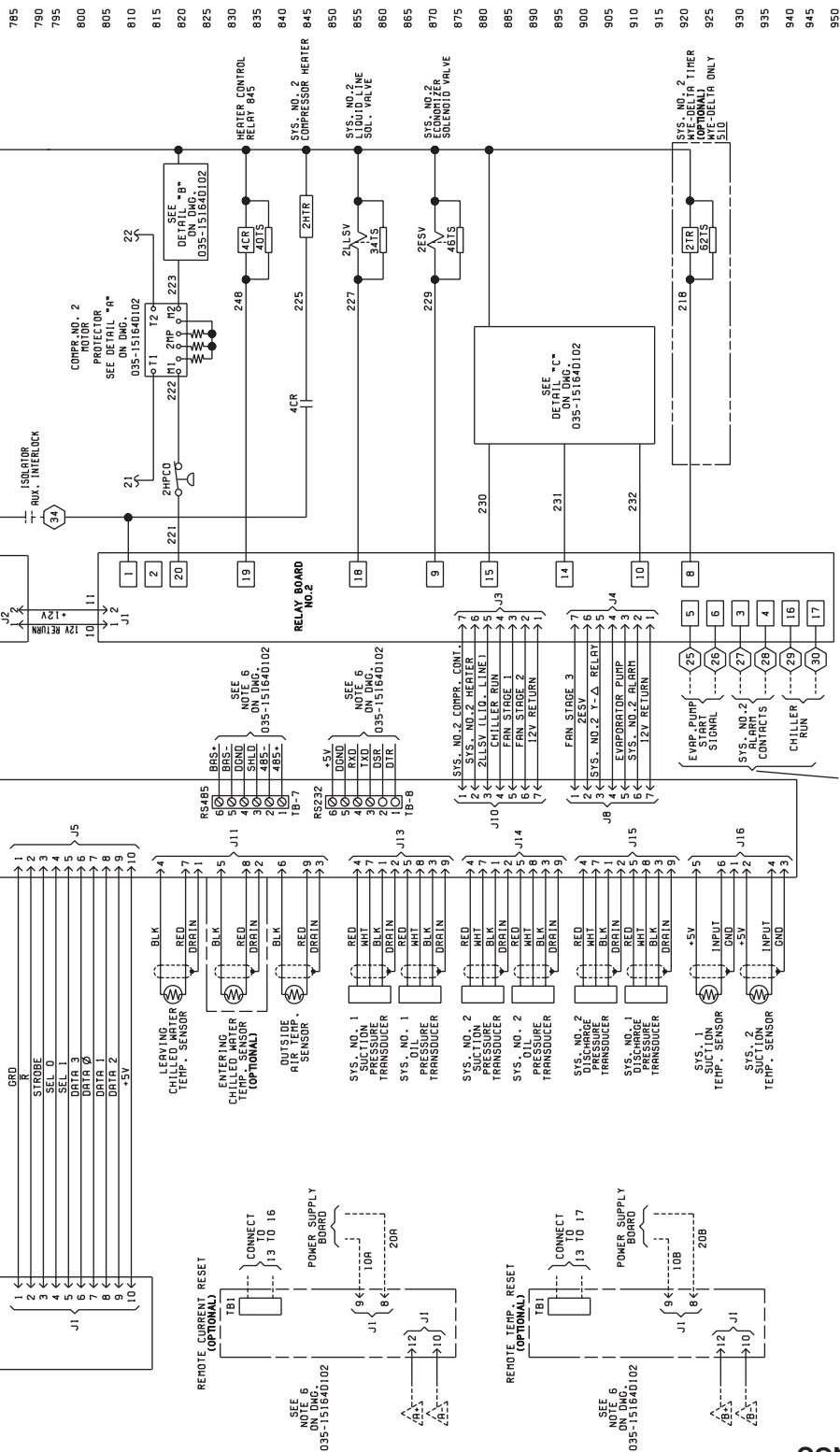


FIG. 1 - CONTINUED

ELEMENTARY DIAGRAM



LD03279

CAUTION:
No Controls (relays, etc.) should be mounted in the Smart Panel enclosure or connected to power supplies in the control panel. Additionally, control wiring not connected to the Smart Panel should not be run through the cabinet. This could result in nuisance faults.

CAUTION:
Any inductive devices (relays) wired in series with the flow switch for start/stop, into the Alarm circuitry, or pilot relays for pump starters wired through motor contactor auxiliary contacts must be suppressed with YORK P/N 031-00808-000 suppressor across the relay/contactor coil.

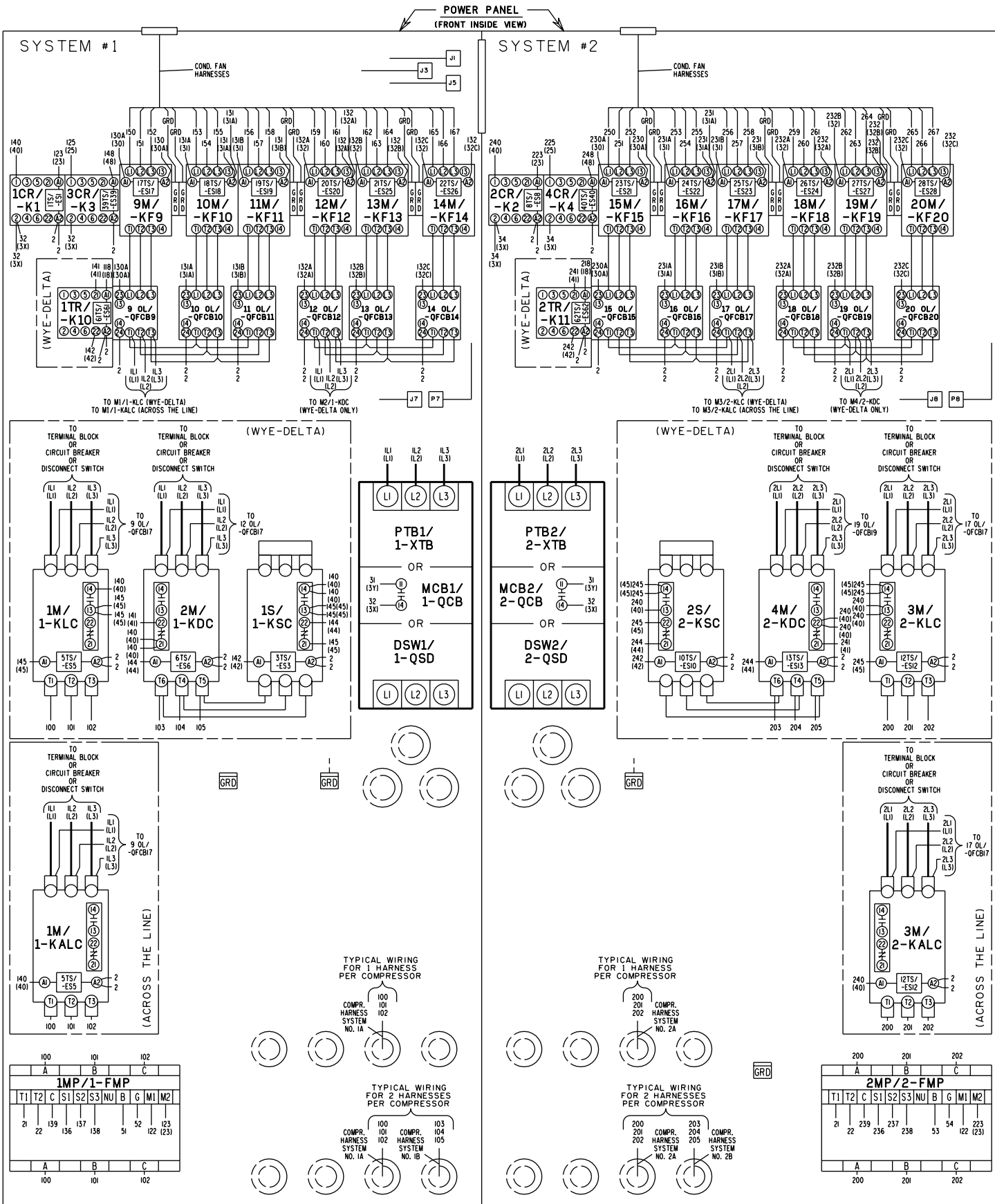
Any contacts connected to flow switch inputs or BAS inputs on terminals 13 - 19 or TB3, or any other terminals, must be suppressed with a YORK P/N 031-00808-000 suppressor across the relay/contactor coil.

CAUTION:
Control wiring connected to the control panel should never be run in the same conduit with power wiring.

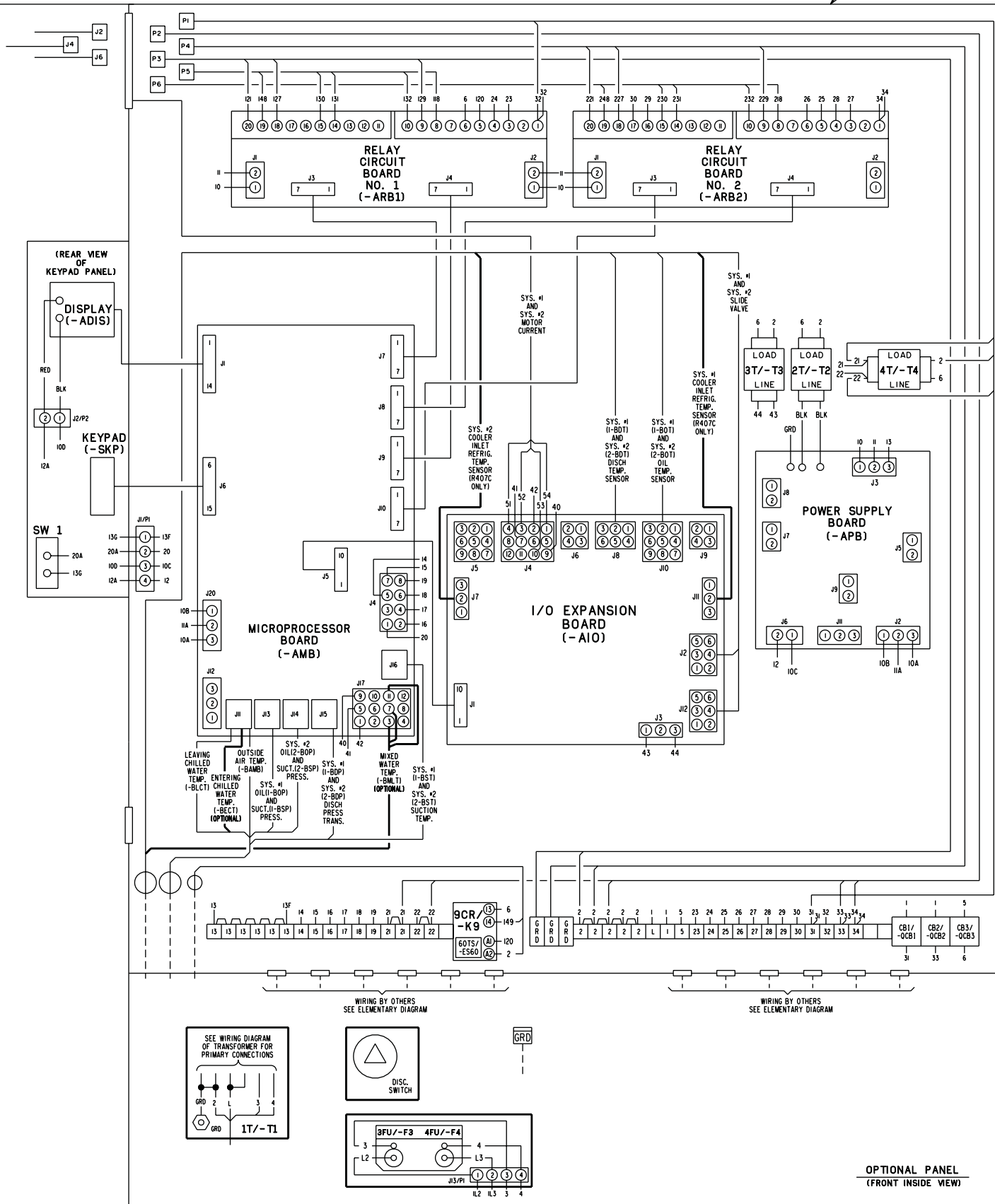
CONTROL POWER SUPPLY

| UNIT VOLTAGE | CONTROL POWER SUPPLY | MIN CIRCUIT AMP. | MAX DUAL ELEMENT FUSE SIZE | NON-FUSED DISC. SWITCH SIZE | |
|-----------------------|----------------------|------------------|----------------------------|-----------------------------|----------|
| ALL MODELS W/O TRANS. | 115-1-50/60 | 20A | 20A 250V | 30A 240V | |
| MODELS WITH TRANS. | -17 | 200-1-60 | 15A | 15A 250V | 30A 240V |
| | -28 | 230-1-60 | 15A | 15A 250V | 30A 240V |
| | -46 | 400-1-60 | 8A | 8A 600V | 30A 480V |
| | -58 | 575-1-60 | 8A | 8A 600V | 30A 600V |

* All primary and secondary wiring between transformer and control panel included.



ELECTRONIC PANEL
(FRONT INSIDE VIEW)



OPTIONAL PANEL
(FRONT INSIDE VIEW)

LEGEND

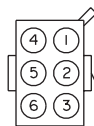
- 1CR THRU 4CR, 9CR/ -CONTROL RELAYS
- K1 THRU -K4, -K9 -CIRCUIT BREAKERS
- CB1, CB2, CB3/ -OVERLOAD CIRCUIT BREAKERS (SYS. #1)
- QCB1, -QBC2, -QCB3 9CB THRU 14CB -OVERLOAD CIRCUIT BREAKERS (SYS. #2)
- 15CB THRU 20CB -MOTOR OVERLOADS (SYS. #1)
- 9 OL THRU 14 OL -MOTOR OVERLOADS (SYS. #2)
- 15 OL THRU 20 OL -MOTOR OVERLOADS W/OVERLOAD CIRCUIT BREAKERS (SYS. #1)
- QFCB9 THRU -QFCB14 -MOTOR OVERLOADS W/OVERLOAD CIRCUIT BREAKERS (SYS. #2)
- QFCB15 THRU -QFCB20 -TRANSFORMER FUSE (OPTIONAL)
- 3FU, 4FU/ -F3, -F4
- 1M, 3M/ -COMPRESSOR CONTACTORS
- 1-KLC OR 1-KALC, 2-KLC OR 2-KALC -COMPRESSOR CONTACTORS
- 2M, 4M/ -COMPRESSOR CONTACTORS
- 1-KDC, 2-KDC -COMPRESSOR CONTACTORS
- 1S, 2S/ -COMPRESSOR CONTACTORS
- 1-KSC, 2-KSC -CONDENSER FAN CONTACTORS
- 9M THRU 14M/ -CONDENSER FAN CONTACTORS (SYS. #1)
- KF9 THRU -KF14 -CONDENSER FAN CONTACTORS (SYS. #2)
- 15M THRU 20M/ -KF15 THRU -KF20 -CONDENSER FAN CONTACTORS (SYS. #2)
- 1MP/1-FMP -MOTOR PROTECTOR (SYS. #1)
- 2MP/2-FMP -MOTOR PROTECTOR (SYS. #2)
- 1T/-T1 -CONTROL TRANSFORMER 2KVA (OPTIONAL)
- 2T, 3T, 4T/ -MICRO PANEL TRANSFORMERS
- T2, -T3, -T4
- 1TR, 2TR/ -TIMER RELAYS
- K10, -K11
- TS/-ES -TRANSIENT SUPPRESSORS
- PTB1, PTB2/ -POWER TERMINAL BLOCK
- 1-XTB, 2-XTB
- MCB1, MCB2/ -MOTOR CIRCUIT BREAKER
- 1-QCB, 2-QCB
- DSW1, DSW2/ -DISCONNECT SERVICE SWITCH
- 1-QSD, 2-QSD
- -WIRING BY YORK
- -WIRING BY OTHERS
- -OPTIONAL WIRING AND/OR COMPONENTS

CONNECTION DIAGRAM, ELEC. BOX DXST DIRECT DRIVE

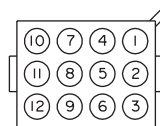
J1, J2, J3, J4, J5, J6, J7, J8, P7 & P8 — POWER PANEL

P1, P2, P3, P4, P5, & P6 — ELECTRONIC (MICRO) PANEL

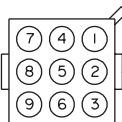
NOTE: WIRE NUMBERS IDENTIFIED IN (PARENTHESES) INDICATE THE ACTUAL HARNESS CODE STAMPED ON THE WIRE.



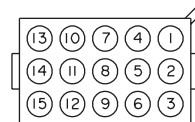
HOUSING - CONNECTOR (J1, J2, J5, & J6) WIRING END



HOUSING - CONNECTOR (J3) WIRING END



HOUSING - CONNECTOR (J7 & J8) WIRING END



HOUSING - CONNECTOR (J4) WIRING END

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P1 | 21 | 1 |
| | 2 | 2 |
| | 22 | 3 |
| | 31 | 4 |
| | 32 | 5 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P2 | 21 | 1 |
| | 2 | 2 |
| | 22 | 3 |
| | 33 | 4 |
| 34 | 5 | |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P3 | 2 | 1 |
| | GRD | 2 |
| | 129 | 5 |
| | 127 | 6 |
| | 121 | 11 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P4 | 2 | 1 |
| | GRD | 2 |
| | 227 | 4 |
| | 229 | 5 |
| | 221 | 11 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P5 | 130 | 1 |
| | 131 | 2 |
| | 132 | 3 |
| | 148 | 4 |
| | 118 | 6 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P6 | 230 | 1 |
| | 231 | 2 |
| | 232 | 3 |
| | 248 | 4 |
| | 218 | 6 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P7 | 125 | 1 |
| | 2 | 2 |
| | 123 | 3 |
| | 140 | 4 |
| | 141 | 5 |
| | 142 | 6 |
| | 32 | 7 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| P8 | 225 | 1 |
| | 2 | 2 |
| | 223 | 3 |
| | 240 | 4 |
| | 241 | 5 |
| | 242 | 6 |
| | 34 | 7 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J1 | 21 | 1 |
| | 2 | 2 |
| | 22 | 3 |
| | 3Y | 4 |
| | 3X | 5 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J2 | 21 | 1 |
| | 2 | 2 |
| | 22 | 3 |
| | 3Y | 4 |
| | 3X | 5 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J3 | 2 | 1 |
| | GRD | 2 |
| | 125 | 4 |
| | 129 | 5 |
| | 127 | 6 |
| | 121 | 11 |
| | 122 | 12 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J4 | 2 | 1 |
| | GRD | 2 |
| | 225 | 3 |
| | 227 | 4 |
| | 229 | 5 |
| | 221 | 11 |
| | 122 | 12 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J5 | 30 | 1 |
| | 31 | 2 |
| | 32 | 3 |
| | 48 | 4 |
| | 18 | 6 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J6 | 30 | 1 |
| | 31 | 2 |
| | 32 | 3 |
| | 48 | 4 |
| | 18 | 6 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J7 | 25 | 1 |
| | 2 | 2 |
| | 23 | 3 |
| | 40 | 4 |
| | 41 | 5 |
| | 42 | 6 |
| | 3X | 7 |

| PLUG NO. | WIRE NO. | PLUG PIN NO. |
|----------|----------|--------------|
| J8 | 25 | 1 |
| | 2 | 2 |
| | 23 | 3 |
| | 40 | 4 |
| | 41 | 5 |
| | 42 | 6 |
| | 3X | 7 |




LD03281

NOTES:

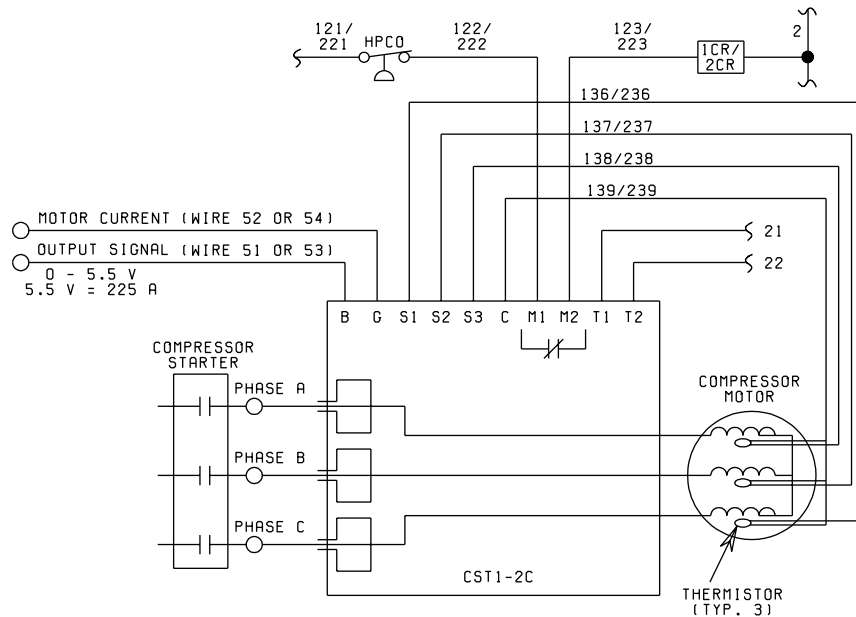
1. FIELD WIRING TO BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL OTHER APPLICABLE CODES AND SPECIFICATIONS.
2. CONTACTS MUST BE SUITABLE FOR SWITCHING 24VDC. (GOLD CONTACTS RECOMMENDED). WIRING SHALL NOT BE RUN IN THE SAME CONDUIT WITH ANY LINE VOLTAGE (CLASS 1) WIRING.
3. TO CYCLE UNIT ON AND OFF AUTOMATICALLY WITH CONTACT SHOWN, INSTALL A CYCLING DEVICE IN SERIES WITH THE FLOW SWITCH. SEE NOTE 2 FOR CONTACT RATING AND WIRING SPECIFICATIONS.
4. TO STOP UNIT (EMERGENCY STOP) WITH CONTACTS OTHER THAN THOSE SHOWN, INSTALL THE STOP CONTACT BETWEEN TERMINALS 5 AND 1. IF A STOP DEVICE IS NOT INSTALLED, A JUMPER MUST BE CONNECTED BETWEEN TERMINALS 5 AND 1. DEVICE MUST HAVE A MINIMUM CONTACT RATING OF 6A AT 115VOLTS A.C.
5. CONTACTS ARE RATED AT 115V, 100VA, RESISTIVE LOAD ONLY, AND MUST BE SUPPRESSED AT LOAD BY USER.
6. SEE INSTALLATION, OPERATION AND MAINTENANCE MANUAL WHEN OPTIONAL EQUIPMENT IS USED.

LD03282

LEGEND

- TS TRANSIENT VOLTAGE SUPPRESSION
-  TERMINAL BLOCK FOR CUSTOMER CONNECTIONS
-  TERMINAL BLOCK FOR CUSTOMER LOW VOLTAGE (CLASS 2) CONNECTIONS. SEE NOTE 2.
-  TERMINAL BLOCK FOR YORK CONNECTIONS ONLY
- WIRING AND COMPONENTS BY YORK
- OPTIONAL EQUIPMENT
- - - - - WIRING AND/OR COMPONENTS BY OTHERS

LD03283

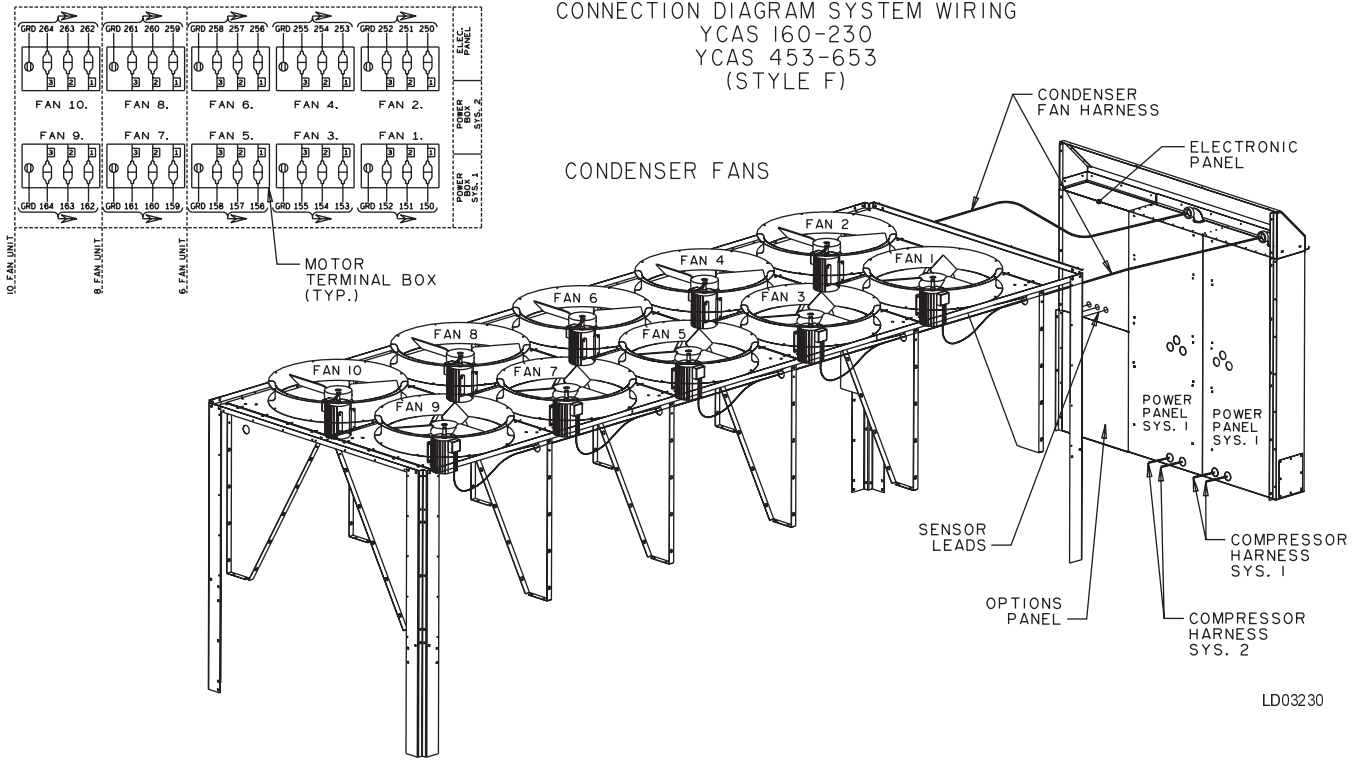


DETAIL "A"

LD03284

CONNECTION DIAGRAM (SYSTEM WIRING)

CONNECTION DIAGRAM SYSTEM WIRING
 YCAS 160-230
 YCAS 453-653
 (STYLE F)

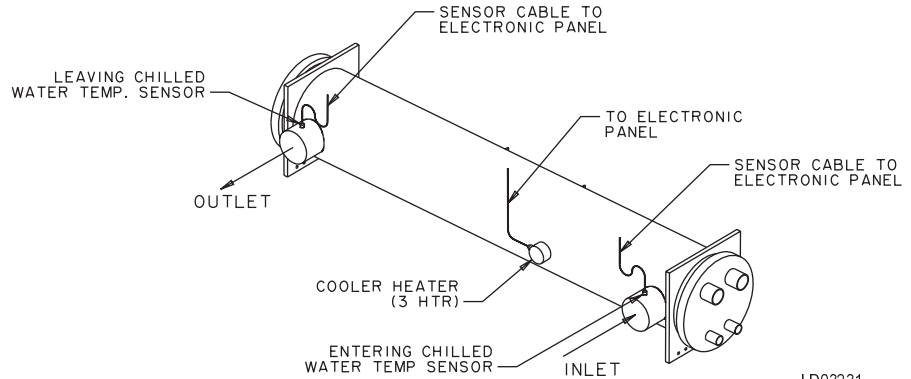


LD03230

LEGEND

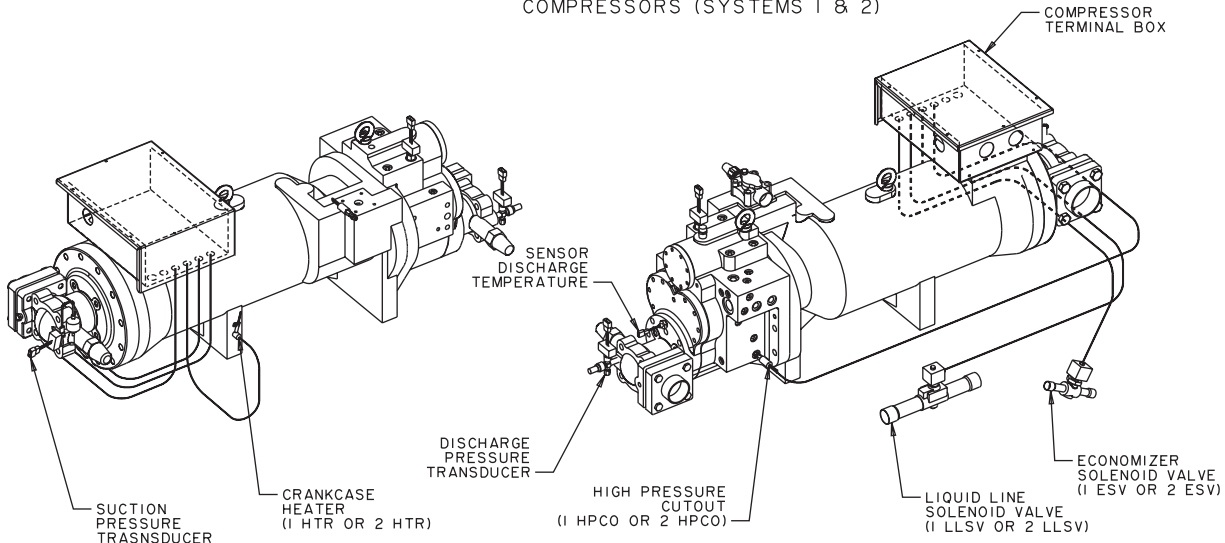
- 1 HPCO SYS. No.1 HIGH PRESS. CUTOUT
- 2 HPCO SYS. No.2 HIGH PRESS. CUTOUT
- 1 HTR SYS. No.1 COMPR. CRANKCASE HEATER
- 2 HTR SYS. No.2 COMPR. CRANKCASE HEATER
- 3 HTR COOLER HEATER
- 1 LLSV SYS. No.1 LIQUID LINE SOLENOID VALVE (UNIT IDENT)
- 2 LLSV SYS. No.2 LIQUID LINE SOLENOID VALVE (UNIT IDENT)
- 1 ESV ECONOMIZER SOLENOID VALVE (UNIT IDENT)
- 2 ESV ECONOMIZER SOLENOID VALVE (UNIT IDENT)
- TXV 1 SYS. No.1 THERMAL EXPANSION VALVE (UNIT IDENT)
- TXV 2 SYS. No.2 THERMAL EXPANSION VALVE (UNIT IDENT)

COOLER



LD03231

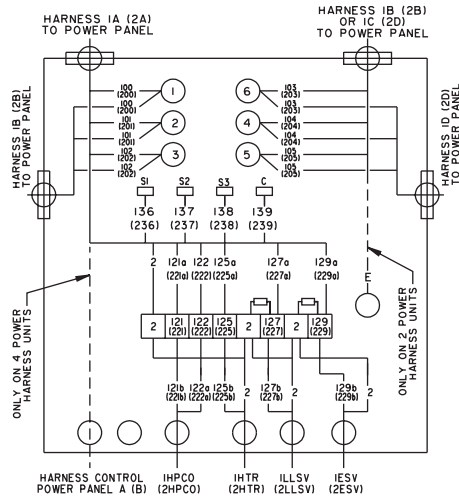
COMPRESSORS (SYSTEMS 1 & 2)



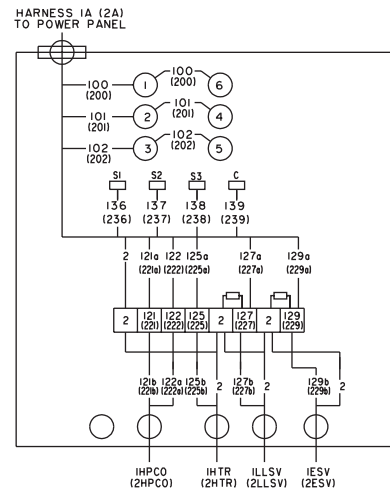
LD03232

COMPRESSOR TERMINAL BOX

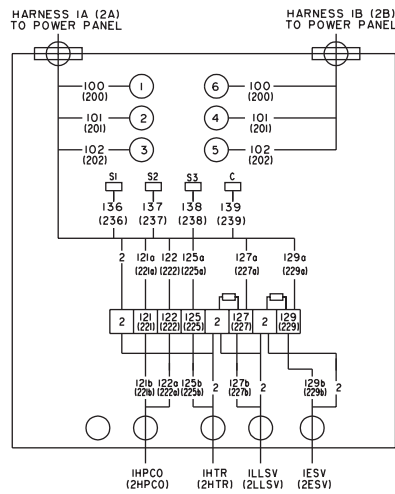
SYSTEM 1 & 2 WYE-DELTA-START
2 & 4 POWER HARNESS UNITS



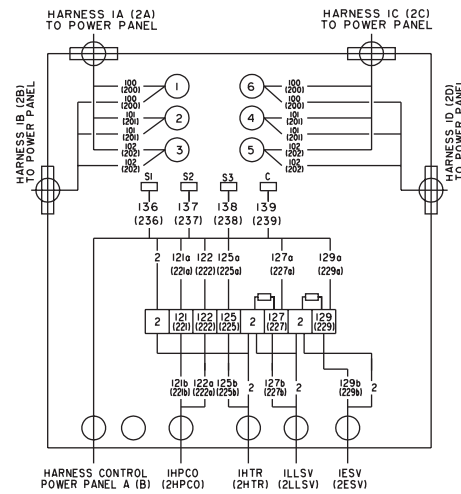
SYSTEM 1 & 2 ACROSS THE LINE
1 POWER HARNESS UNITS



SYSTEM 1 & 2 ACROSS THE LINE
2 POWER HARNESS UNITS

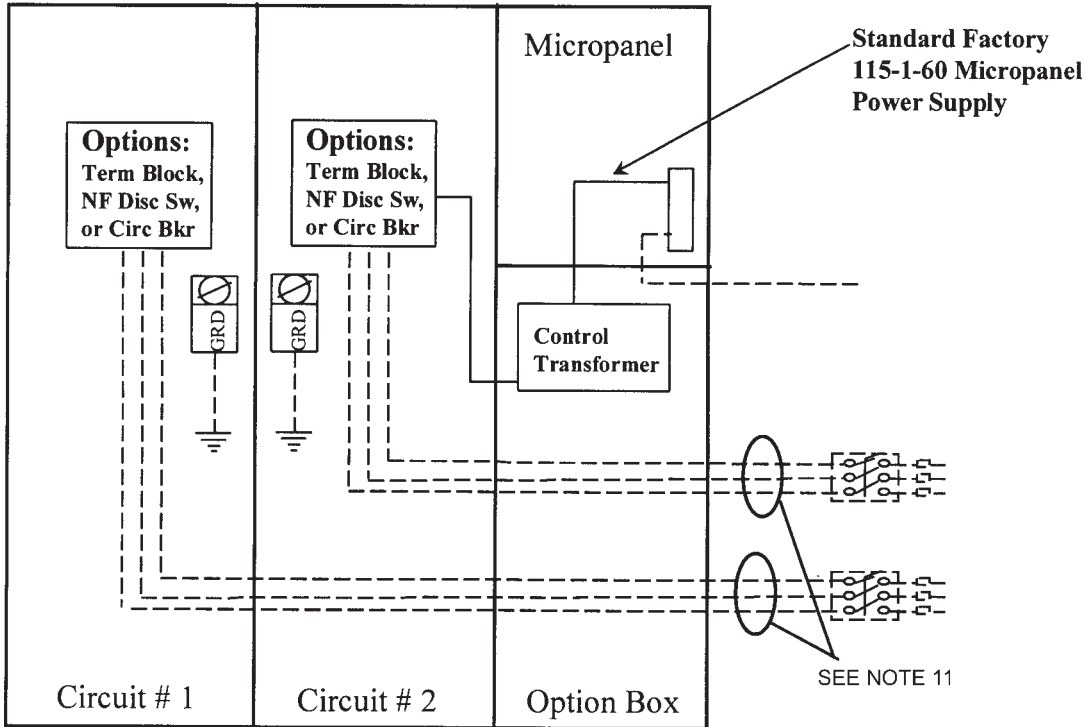


SYSTEM 1 & 2 ACROSS THE LINE
4 POWER HARNESS UNITS



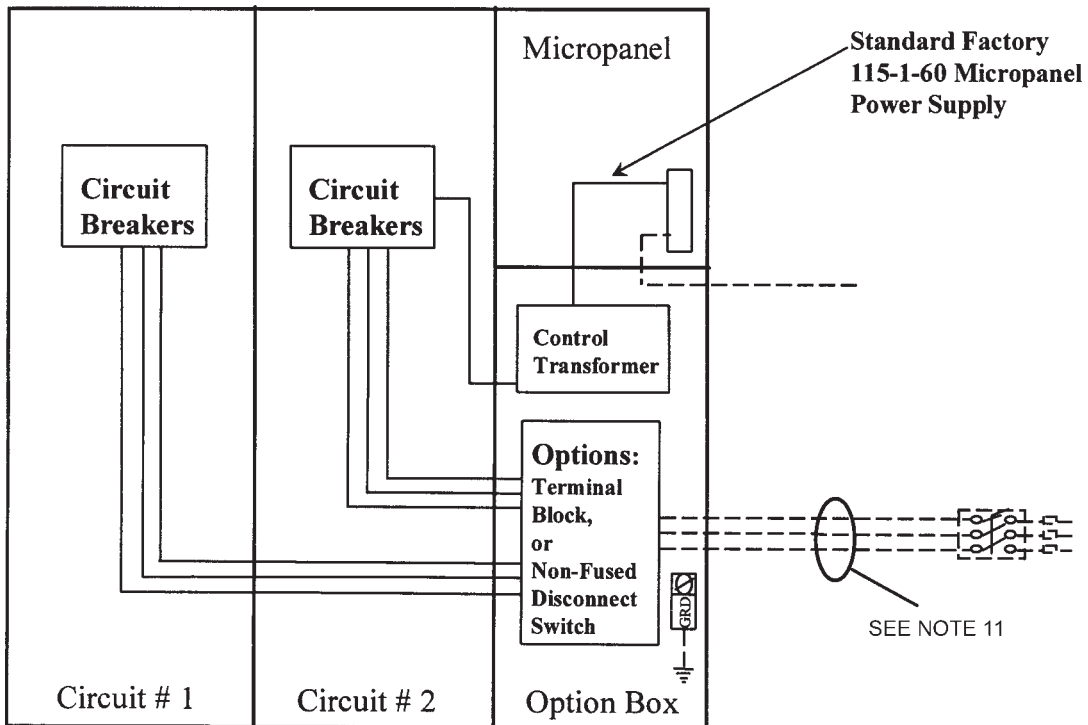
LD03233

MULTI-POINT POWER SUPPLY WIRING – STANDARD UNIT



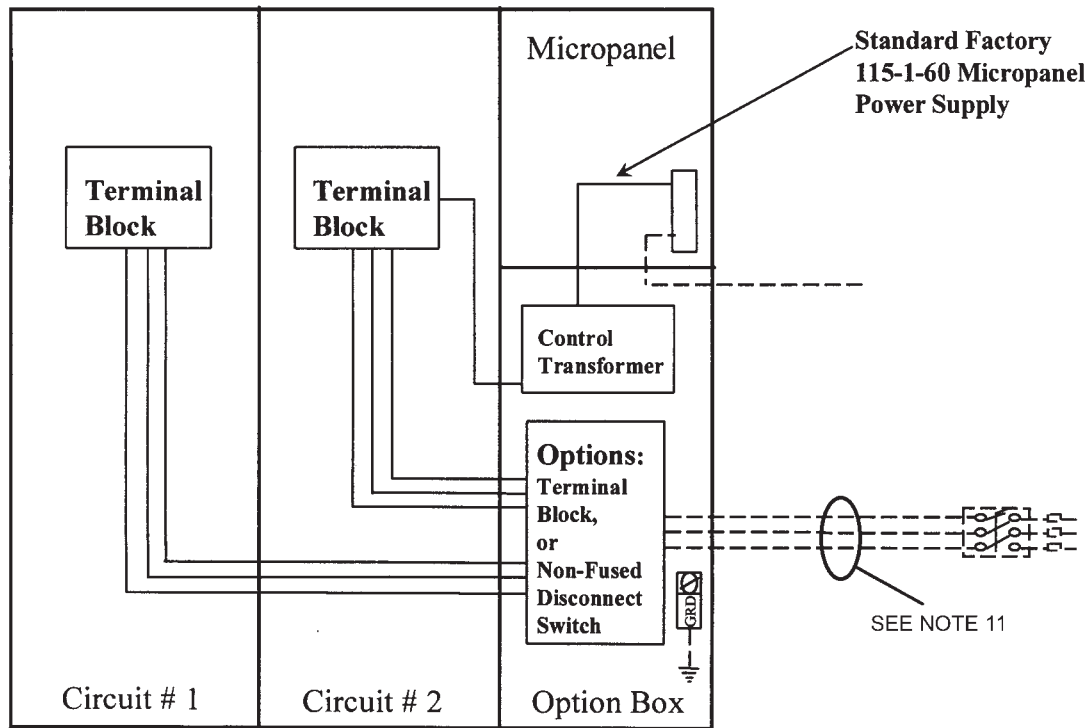
LD03254

SINGLE POINT POWER SUPPLY – WIRING WITH CIRCUIT BREAKERS



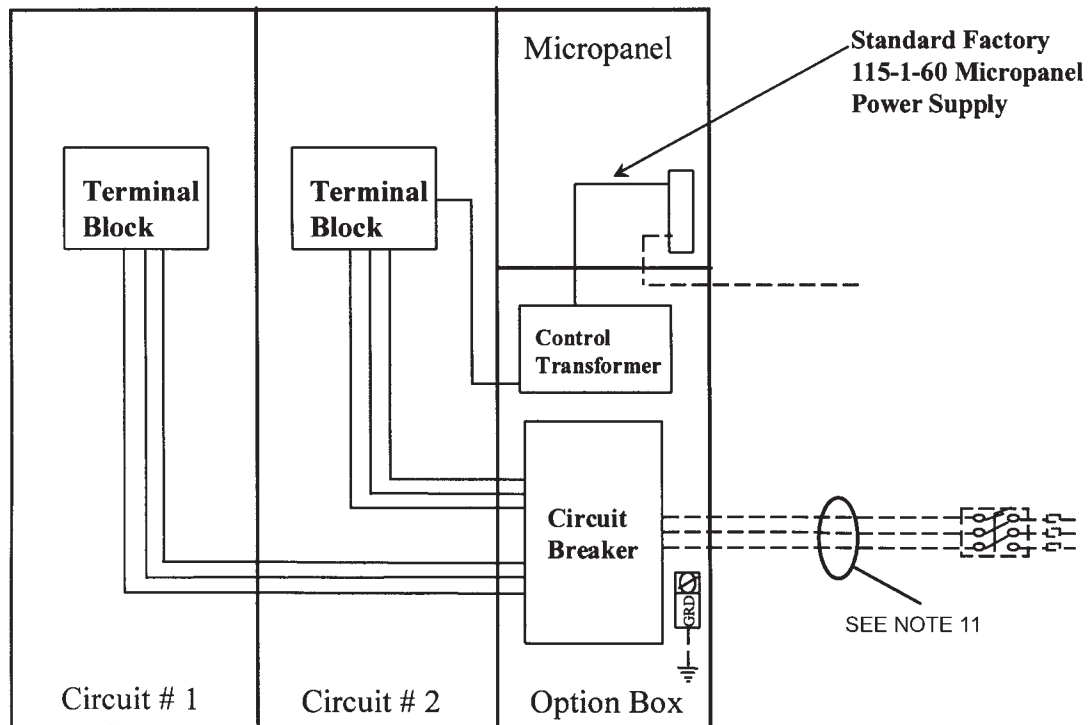
LD03255

SINGLE POINT POWER WIRING WITH FIELD SUPPLIED CIRCUIT PROTECTION



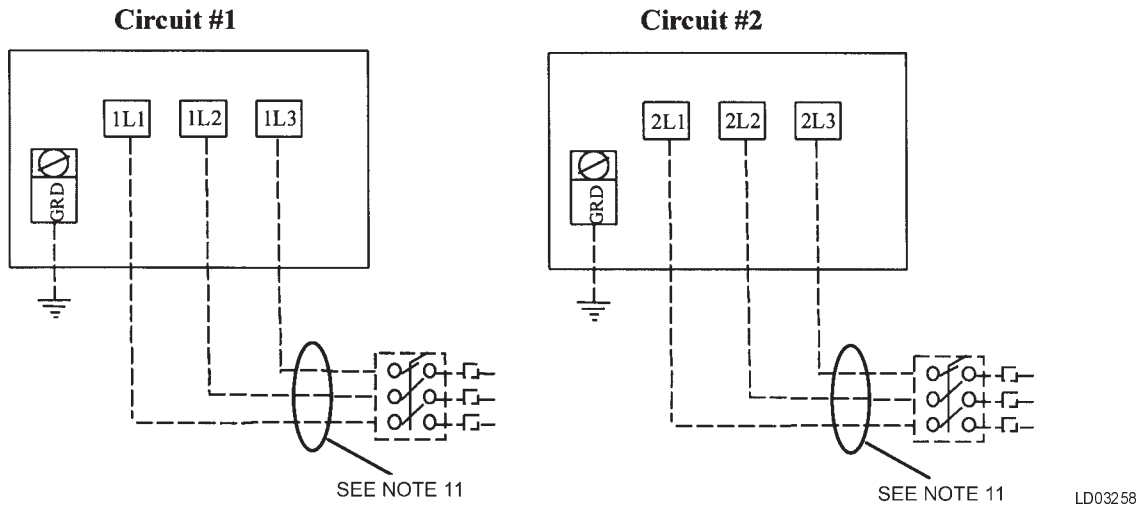
LD03256

SINGLE POINT POWER WIRING WITH CIRCUIT BREAKERS

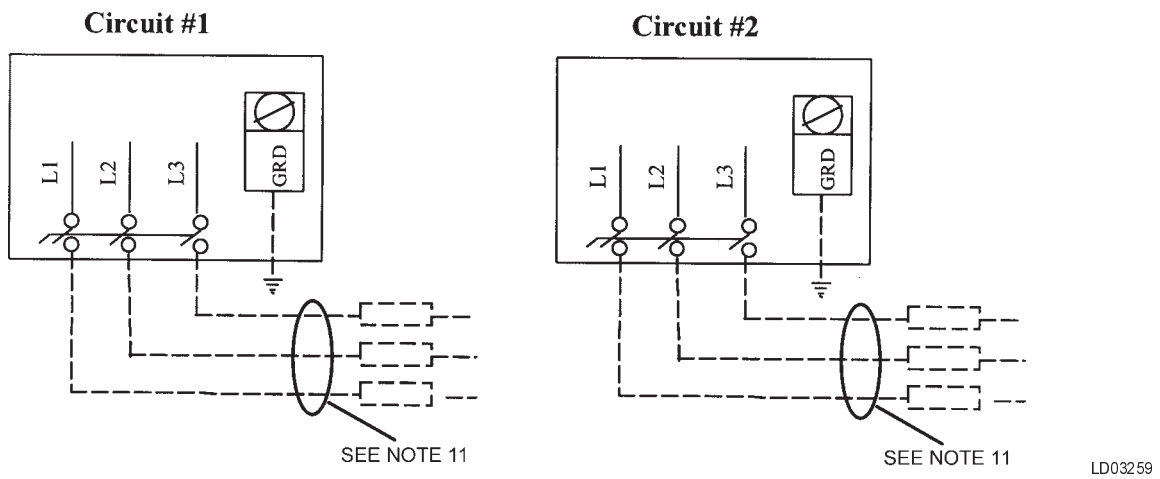


LD03257

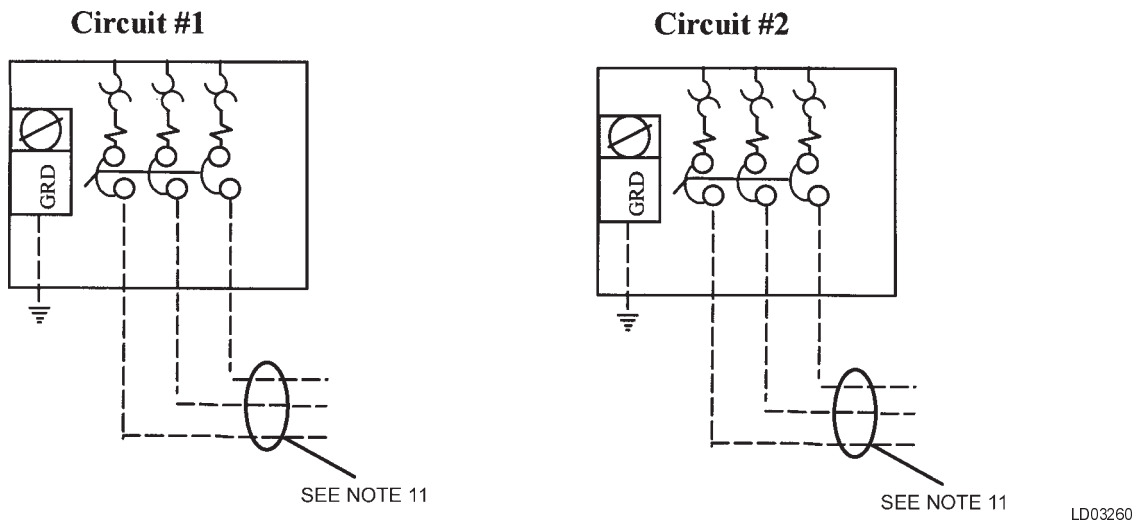
ELECTRICAL POWER WIRING – OPTIONS: TERMINAL BLOCKS

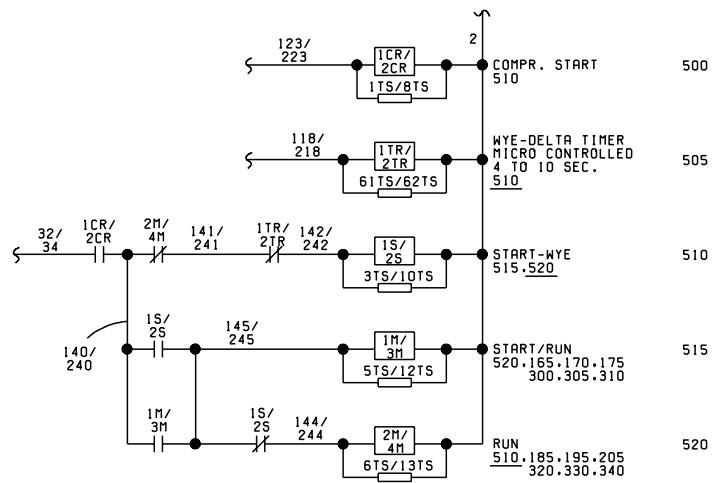
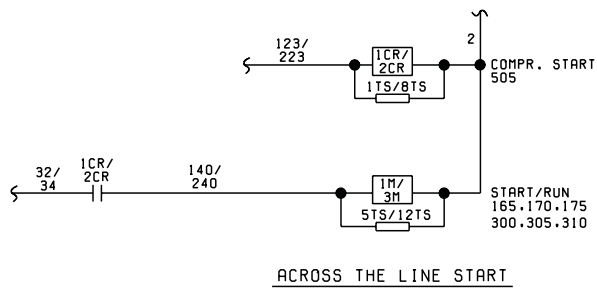


ELECTRICAL POWER WIRING – OPTIONS: NON FUSED DISCONNECT SWITCH



ELECTRICAL POWER WIRING – OPTIONS: TERMINAL BLOCKS

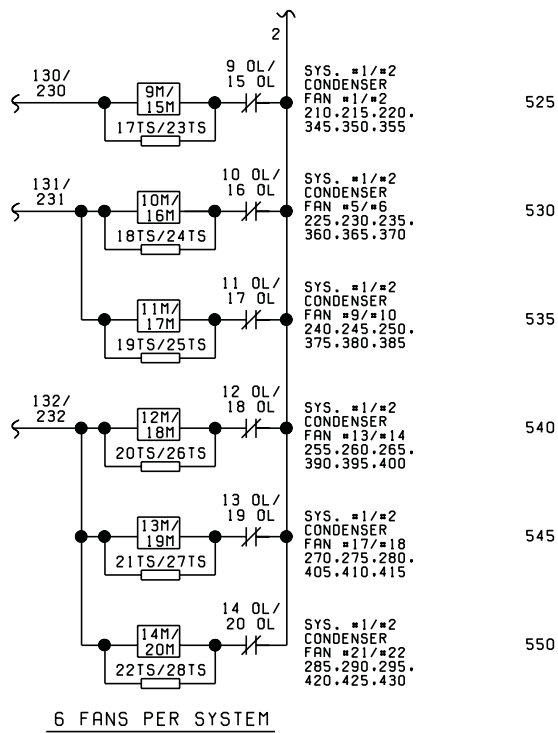
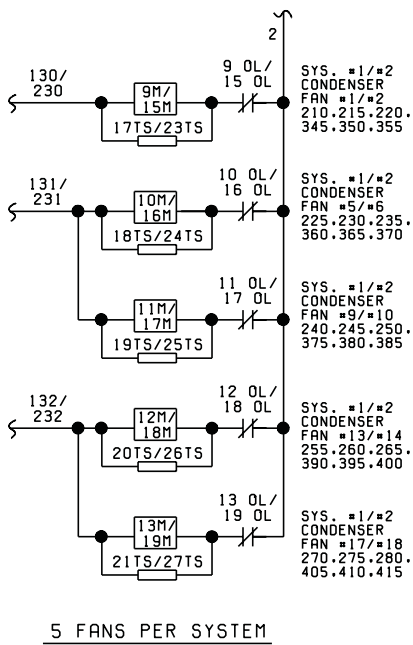
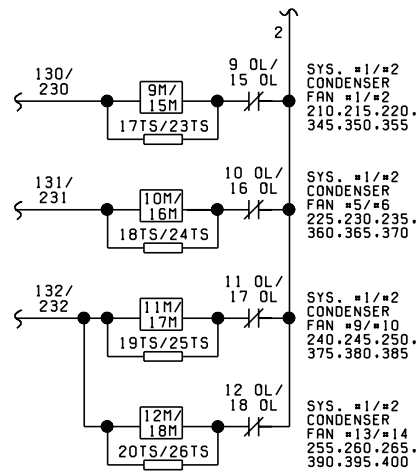
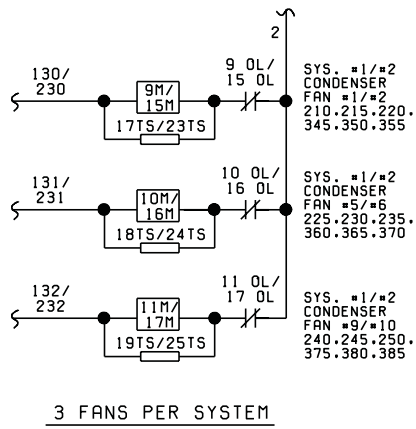




DETAIL "B"

WYE DELTA START

LD03286



DETAIL "C"

SEE ENGINEERING GUIDE OR INSTALLATION, OPERATION AND MAINTENANCE MANUAL FOR NUMBER OF CONDENSER FANS FOR CHILLER MODEL.

LD03286

