



AIR-COOLED SCREW LIQUID CHILLERS

WIRING DIAGRAM

New Release

Form 201.19-W3 (1104)

YCAS AIR-COOLED LIQUID CHILLERS YCAS0373 THROUGH YCAS0653 STYLE G (R22) (50 Hz)

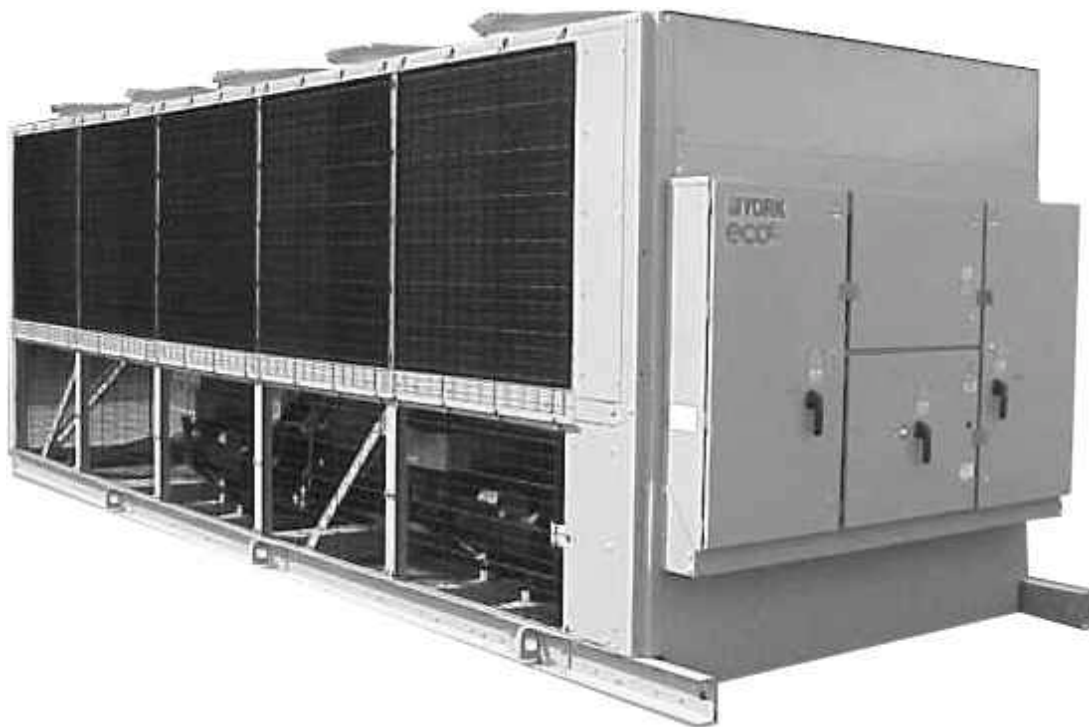


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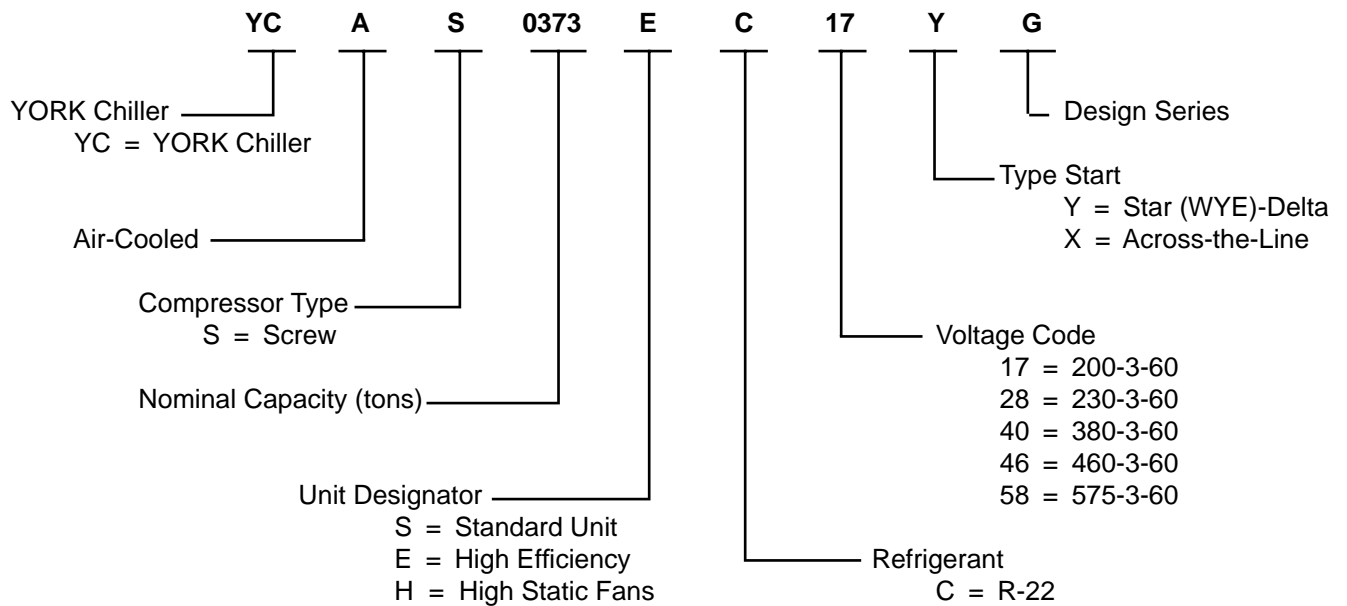
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NOMENCLATURE

The Model Number denotes the following characteristics of the unit:



WARNING

HIGH VOLTAGE

is used in the operation of this equipment.

DEATH OR SERIOUS INJURY

may result if personnel fail to observe safety precautions.

Work on electronic equipment should not be undertaken unless the individual(s) have been trained in the proper maintenance of 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 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.

ELECTRICAL NOTES

NOTES & LEGEND

LEGEND

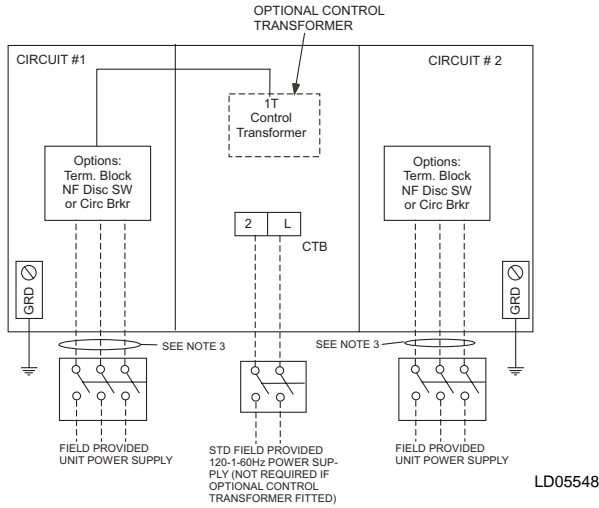
ACR-LINE	ACROSS THE LINE START	
C.B.	CIRCUIT BREAKER	VOLTAGE CODE
D.E.	DUAL ELEMENT FUSE	-50 = 380-3-50
DISC SW	DISCONNECT SWITCH	
FACT CB	FACTORY-MOUNTED CIRCUIT BREAKER	
FLA	FULL LOAD AMPS	
HZ	HERTZ	
MAX	MAXIMUM	
MCA	MINIMUM CIRCUIT AMPACITY	
MIN	MINIMUM	
MIN NF	MINIMUM NON-FUSED	
RLA	RUNNING LOAD AMPS	
S.P. WIRE	SINGLE-POINT WIRING	
Y-Δ	WYE-DELTA START	
X-LRA	ACROSS-THE-LINE INRUSH LOCKED ROTOR AMPS	
Y-LRA	WYE-DELTA INRUSH LOCKED ROTOR AMPS	

NOTES

1. MRA is Maximum Running Amps, the maximum continuous current at any operating point in the rating range. Also referred to as MCA, or Minimum Circuit Ampacity to be provided by the installer. If a Factory Mounted Control Transformer is provided, add 3 amps to the system #1 MCA values in the YCAS Tables.
2. The recommended 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.
3. Minimum recommended fuse size is based on 150% of the largest motor RLA plus 100% of the remaining RLAs. Minimum fuse rating = $(1.5 \times \text{largest compressor RLA}) + \text{other compressor RLAs} + (\# \text{ fans} \times \text{each fan motor FLA})$.
4. 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 = $(2.25 \times \text{largest compressor RLA}) + \text{other compressor RLAs} + (\# \text{ fans} \times \text{each fan motor FLA})$.
5. Minimum recommended circuit breaker is 150% maximum plus 100% of rated load amps included in the circuit. Minimum circuit breaker rating = $(1.5 \times \text{largest compressor RLA}) + \text{other compressor RLAs} + (\# \text{ fans} \times \text{each fan motor FLA})$.
6. 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 = $(2.25 \times \text{largest compressor RLA}) + \text{other compressor RLAs} + (\# \text{ fans} \times \text{each fan motor FLA})$.
7. 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 Electrical Code and using **copper connectors** only. Field wiring must also comply with local codes.
8. 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.
9. 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.
10. Two-compressor machines with single-point power connection, and equipped with Star-Delta compressor motor start must also include Factory provided circuit breakers in each motor control center.
11. Consult factory for Electrical Data on units equipped with "High Static Fan" option. 50Hz High Static Fans are 3.5kW each.
12. FLA for each "Low Noise Fan" motor: $380v/50Hz = 4.1A$.

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ELECTRICAL DATA



MULTIPLE POINT POWER SUPPLY CONNECTION

Suitable for:
**Y - Δ Start and
 Across-The-Line-Start**

Two field provided power supply circuits to the unit. Field Power Wiring connections to factory provided, Non-Fused Disconnect Switches (Opt), Circuit Breakers (Opt) or Terminal Blocks (Opt).

See page 4 for notes.

LD05548

MULTIPLE POINT POWER SUPPLY CONNECTION - 2 COMPRESSOR UNITS

(Two Field Provided Power Supply Circuits To The Chiller. Field Connections to Factory Provided Terminal Block (Std), Disconnects (Opt), or Individual System Circuit Breakers (Opt) in each of the two Motor Control Centers.)

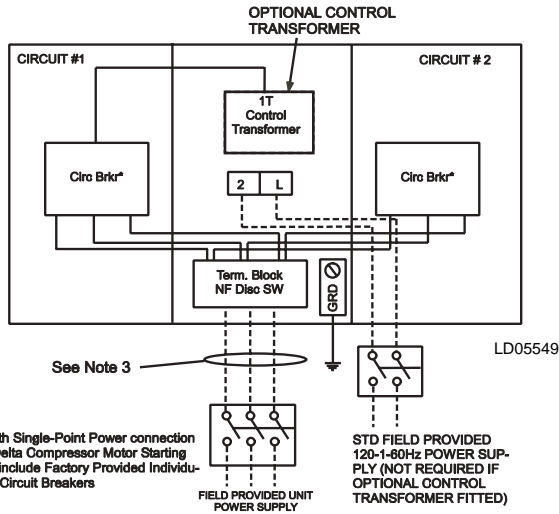
Model YCAS	Volts	SYSTEM #1 FIELD SUPPLIED WIRING												
		MRA ¹ (MCA)	Min. NF Disc. Sw. ^{2,9}	Overcurrent Protection ¹³		Factory Provided (Lugs) Wire Range ⁷			Compressor			Fans ^{11,12}		
				Min. ^{3,5}	Max. ^{4,6}	*Standard Terminal Block	*Optional NF. Disc Switch	Optional Circuit Breaker	RLA	Y-LRA	X-LRA	Qty.	FLA (Ea.)	LRA (Ea.)
0373	380	148	150	200	250	# 2 - 4/0	# 4 - 300	# 6 - 350	108	241	761	3	4.4	17.1
0403	380	160	200	200	250	# 2 - 4/0	# 4 - 300	# 6 - 350	118	241	761	3	4.4	17.1
0453	380	188	200	225	300	1/0 - 300	# 6 - 350	# 6 - 350	140	309	979	3	4.4	17.1
0503	380	215	250	300	350	1/0 - 300	# 6 - 350	(2) 3/0-250	161	309	979	3	4.4	17.1
0543	380	193	200	250	300	1/0 - 300	# 6 - 350	# 6 - 350	141	309	979	4	4.4	17.1
0573	380	227	250	300	350	2/0 - 500	# 6 - 350	(2) 3/0-250	168	309	979	4	4.4	17.1
0623	380	247	250	300	400	2/0 - 500	# 6 - 350	(2) 3/0-250	183	309	979	4	4.4	17.1
0653	380	232	250	300	350	2/0 - 500	# 6 - 350	(2) 3/0-250	168	309	979	5	4.4	17.1

* "Optional" Circuit Breakers are REQUIRED for units with CE mark.
 See page 4 for Electrical Data Notes.

ELECTRICAL DATA

Model YCAS	Volts	SYSTEM #2 FIELD-SUPPLIED WIRING												
		MRA ¹ (MCA)	Min. NF Disc. Sw. ^{2,9}	Over-current Protection ¹³		Factory Provided (Lugs) Wire Range ⁷			Compressor			Fans ^{11, 12}		
				Min. ^{3, 5}	Max. ^{4, 6}	Std. Terminal Block	Optional NF. Disc. Sw.	Optional Circuit Breaker	RLA	Y-LRA	X-LRA	Qty.	FLA (Ea.)	LRA (Ea.)
0373	380	148	150	200	250	# 2 - 4/0	# 4 - 300	# 6 - 350	108	241	761	3	4.4	17.1
0403	380	160	200	200	250	# 2 - 4/0	# 4 - 300	# 6 - 350	118	241	761	3	4.4	17.1
0453	380	188	200	225	300	1/0 - 300	# 6 - 350	# 6 - 350	140	309	979	3	4.4	17.1
0503	380	215	250	300	350	1/0 - 500	# 6 - 350	(2) 3/0-250	161	309	979	3	4.4	17.1
0543	380	193	200	250	300	1/0 - 300	# 6 - 350	# 6 - 350	141	309	979	4	4.4	17.1
0573	380	227	250	300	350	2/0 - 500	# 6 - 350	(2) 3/0-250	168	309	979	4	4.4	17.1
0623	380	247	250	300	400	2/0 - 500	# 6 - 350	(2) 3/0-250	183	309	979	4	4.4	17.1
0653	380	232	250	300	350	2/0 - 500	# 6 - 350	(2) 3/0-250	168	309	979	5	4.4	17.1

ELECTRICAL DATA (CONT'D)



OPTIONAL SINGLE-POINT POWER SUPPLY CONNECTION AND INDIVIDUAL SYSTEM CIRCUIT BREAKERS

Suitable for:
Y - Δ Start and
Across-The-Line-Start

One field provided power supply circuit to the unit. Field connections to factory provided Non-Fused Disconnect Switch (Opt), or Terminal Block (Opt). Factory connections to Circuit Breakers on Terminal Blocks in each of the two Power Panels.

See page 4 for notes.

* Note: With Single-Point Power connection and Star-Delta Compressor Motor Starting must also include Factory Provided Individual System Circuit Breakers

OPTIONAL SINGLE-POINT POWER SUPPLY WITH INDIVIDUAL SYSTEM CIRCUIT BREAKERS – 2 COMPRESSOR UNITS

(One Field Provided Power Supply Circuit to the chiller. Field connections to Factory Provided Terminal Block (standard) or Non-Fused Disconnect (option). Individual System Circuit Breakers in each Motor Control Center¹⁰)

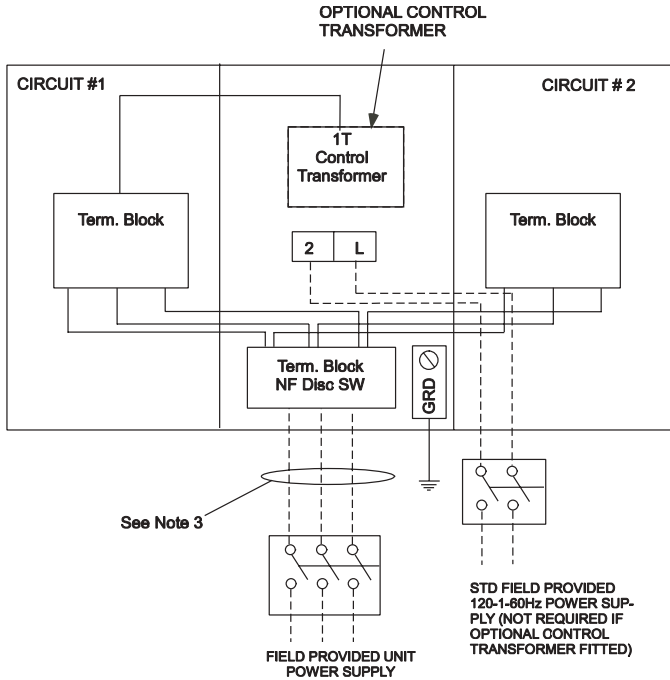
Chiller Model YCAS	Volts	FIELD-SUPPLIED WIRING					
		Field Provided Power Supply				Factory Provided (Lugs) Wire Range ⁷	
		MRA ¹ (MCA)	Min. NF Disc Sw. ^{2,9}	Over-Current Protection ¹³		Standard Terminal Block	Optional NF Disc. Switch
		Min. ^{3,5}	Max. ^{4,6}				
0373	380	296	400	300	350	2/0 - 500	(2) 3/0-250
0403	380	321	400	350	400	(2) 1/0 - 300	(2) 3/0-250
0453	380	375	400	400	450	(2) 1/0 - 300	(2) 3/0-250
0503	380	430	600	450	500	(2) 2/0 - 500	(2) 250-500
0543	380	387	400	400	450	(2) 1/0 - 300	(2) 3/0-250
0573	380	455	600	500	500	(2) 2/0 - 500	(2) 250-500
0623	380	493	600	500	600	(2) 2/0 - 500	(2) 250-500
0653	380	464	600	500	500	(2) 2/0 - 500	(2) 250-500

See page 4 for Electrical Data footnotes.

ELECTRICAL DATA (CONT'D)

Model YCAS	Volts	SYSTEM #1						SYSTEM #2					
		Compressor Data			Fan Data ^{11, 12}			Compressor Data			Fan Data ^{11, 12}		
		RLA	Y-LRA	X-LRA	Qty.	FLA (Ea.)	LRA (Ea.)	RLA	Y-LRA	X-LRA	Qty.	FLA (Ea.)	LRA (Ea.)
0373	380	107.9	241	761	3	4.4	17.1	107.9	241	761	3	4.4	17.1
0403	380	117.7	241	761	3	4.4	17.1	117.7	241	761	3	4.4	17.1
0453	380	139.5	309	979	3	4.4	17.1	139.5	309	979	3	4.4	17.1
0503	380	161.3	309	979	3	4.4	17.1	161.3	309	979	3	4.4	17.1
0543	380	140.6	309	979	4	4.4	17.1	140.6	309	979	4	4.4	17.1
0573	380	167.9	309	979	4	4.4	17.1	167.9	309	979	4	4.4	17.1
0623	380	183.1	309	979	4	4.4	17.1	183.1	309	979	4	4.4	17.1
0653	380	167.9	309	979	5	4.4	17.1	167.9	309	979	5	4.4	17.1

ELECTRICAL DATA (CONT'D)



OPTIONAL SINGLE-POINT POWER SUPPLY CONNECTION WITH FIELD SUPPLIED CIRCUIT PROTECTION

Suitable for:
**Y - Δ Start and
 Across-The-Line-Start**

One field provided power supply circuit to the unit. Field connections to factory provided Non-Fused Disconnect Switch (Opt), or Terminal Block (Opt). Factory connections to Terminal Blocks in each of the two Power Panels.

See page 4 for notes.

LD05550

OPTIONAL SINGLE-POINT POWER SUPPLY CONNECTION – 2 COMPRESSOR UNITS

(One Field Provided Power Supply Circuit to the Chiller. Field connections to Factory Provided Terminal Block (Standard) or Non-Fused Disconnect (option). No Internal Branch Circuit Protection (Breakers) per Motor Control Center¹⁰)

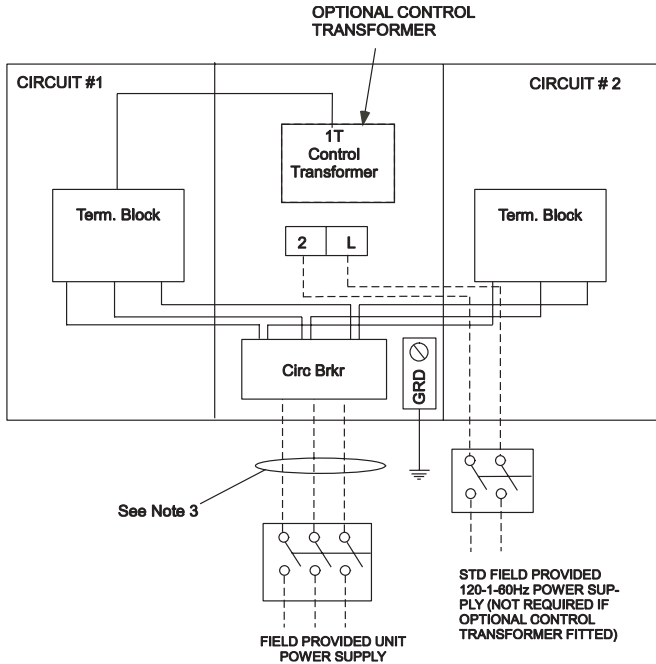
Chiller Model YCAS	Volts	FIELD-SUPPLIED WIRING					
		Field Provided Power Supply			Factory Provided (Lugs) Wire Range ⁷		
		MRA ¹ (MCA)	Min. NF Disc Sw. ^{2,9}	Over-Current Protection		Terminal Block	Optional NF Disc. Switch
		Min. ³	Max. ⁴				
0373	380	269	400	300	350	2/0 - 500	(2) 3/0-250
0403	380	291	400	350	400	(2) 1/0 - 300	(2) 3/0-250
0453	380	340	400	400	450	(2) 1/0 - 300	(2) 3/0-250
0503	380	389	600	450	500	(2) 2/0 - 500	(2) 250-500
0543	380	352	400	400	450	(2) 1/0 - 300	(2) 3/0-250
0573	380	413	600	500	500	(2) 2/0 - 500	(2) 250-500
0623	380	447	600	500	600	(2) 2/0 - 500	(2) 250-500
0653	380	422	600	500	500	(2) 2/0 - 500	(2) 250-500

Option not available for units with CE mark.
 See page 4 for Electrical Data footnotes.

ELECTRICAL DATA (CONT'D)

Model YCAS	Volts	SYSTEM #1						SYSTEM #2					
		Compressor Data			Fan Data ^{11,12}			Compressor Data			Fan Data ^{11,12}		
		RLA	Y-LRA	X-LRA	Qty.	FLA (Ea.)	LRA (Ea.)	RLA	Y-LRA	X-LRA	Qty.	FLA (Ea.)	LRA (Ea.)
0373	380	108	N/A	761	3	4.4	17.1	108	N/A	761	3	4.4	17.1
0403	380	118	N/A	761	3	4.4	17.1	118	N/A	761	3	4.4	17.1
0453	380	140	N/A	979	3	4.4	17.1	140	N/A	979	3	4.4	17.1
0503	380	161	N/A	979	3	4.4	17.1	161	N/A	979	3	4.4	17.1
0543	380	141	N/A	979	4	4.4	17.1	141	N/A	979	4	4.4	17.1
0573	380	168	N/A	979	4	4.4	17.1	168	N/A	979	4	4.4	17.1
0623	380	183	N/A	979	4	4.4	17.1	183	N/A	979	4	4.4	17.1
0653	380	168	N/A	979	5	4.4	17.1	168	N/A	979	5	4.4	17.1

ELECTRICAL DATA (CONT'D)



OPTIONAL SINGLE-POINT POWER SUPPLY CONNECTION TO FACTORY CIRCUIT BREAKER

**Suitable for:
Across-The-Line-Start**

One field provided power supply circuit to the unit. Field connections to factory provided Circuit Breaker in the Options Panel. Factory connections to Terminal Blocks in each of the two Power Panels.

See page 4 for notes.

LD05551

OPTIONAL SINGLE-POINT POWER SUPPLY CONNECTION TO FACTORY CIRCUIT BREAKER – 2 COMPRESSOR UNITS

(One Field Provided Power Supply Circuit to the chiller. Field Connections to Factory Provided Circuit Breaker.
No Internal Branch Circuit Protection (Breakers) per Motor Control Center¹⁰.)

Model YCAS	Volts	FIELD SUPPLIED WIRING			SYSTEM #1					SYSTEM #2				
		MRA ¹ (MCA)	Factory Supplied Breaker		Compressor		Fans ^{11, 12}			Compressor		Fans ^{11, 12}		
			Rating ^{2,9}	Wire Range ⁷ (Lugs)	RLA	X-LRA	Qty	FLA(ea)	LRA(ea)	RLA	X-LRA	Qty	FLA(ea)	LRA(ea)
0373	380	269	400	(2) 3/0-250	107.9	761	3	4.4	17.1	107.9	761	3	4.4	17.1
0403	380	291	450	(2) 3/0-250	117.7	761	3	4.4	17.1	117.7	761	3	4.4	17.1
0453	380	340	500	(2) 3/0-250	139.5	979	3	4.4	17.1	139.5	979	3	4.4	17.1
0503	380	389	600	(2) 250-500	161.3	979	3	4.4	17.1	161.3	979	3	4.4	17.1
0543	380	352	500	(2) 3/0-250	140.6	979	4	4.4	17.1	140.6	979	4	4.4	17.1
0573	380	413	600	(2) 250-500	167.9	979	4	4.4	17.1	167.9	979	4	4.4	17.1
0623	380	447	600	(2) 250-500	183.1	979	4	4.4	17.1	183.1	979	4	4.4	17.1
0653	380	422	600	(2) 250-500	167.9	979	5	4.4	17.1	167.9	979	5	4.4	17.1

Option not available for units with CE mark.

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

See page 4 for Electrical Data footnotes.

NOTES:

1. ----- Dashed Line indicates Field Provided Wiring.
2. The above recommendations are based on the National Electric Code and using copper connectors only. Field wiring must also comply with local codes.

ELECTRICAL DATA (CONT'D)**COMPRESSOR DATA**

MAXIMUM KW AND AMPERAGE VALUES FOR DXST COMPRESSORS			
	COMPRESSOR MODEL AND VOLTAGE CODE		
	DXS45LA – MOTOR CODE A (B5N, B5E, B6N, B6E)	DXS36LA – MOTOR CODE A (A5N, A5E, A6N, A6E)	DXS24LA – MOTOR CODE (TBD) (C5N, C5E, C6N, C6E)
VOLTAGE CODE-	50	50	50
MAX KW	113	113	80
MAX AMPS	193	193	135

CONTROL POWER SUPPLY (UNITS WITHOUT STANDARD CONTROL CIRCUIT TRANSFORMERS)

NO. OF COMPRESSORS	CONTROL POWER SUPPLY	MCA (MAX LOAD CURRENT)	MAX DUAL ELEMENT FUSE SIZE	NON-FUSED DISCONNECT SWITCH SIZE
2	115V-1Ø	20A	20A	30A

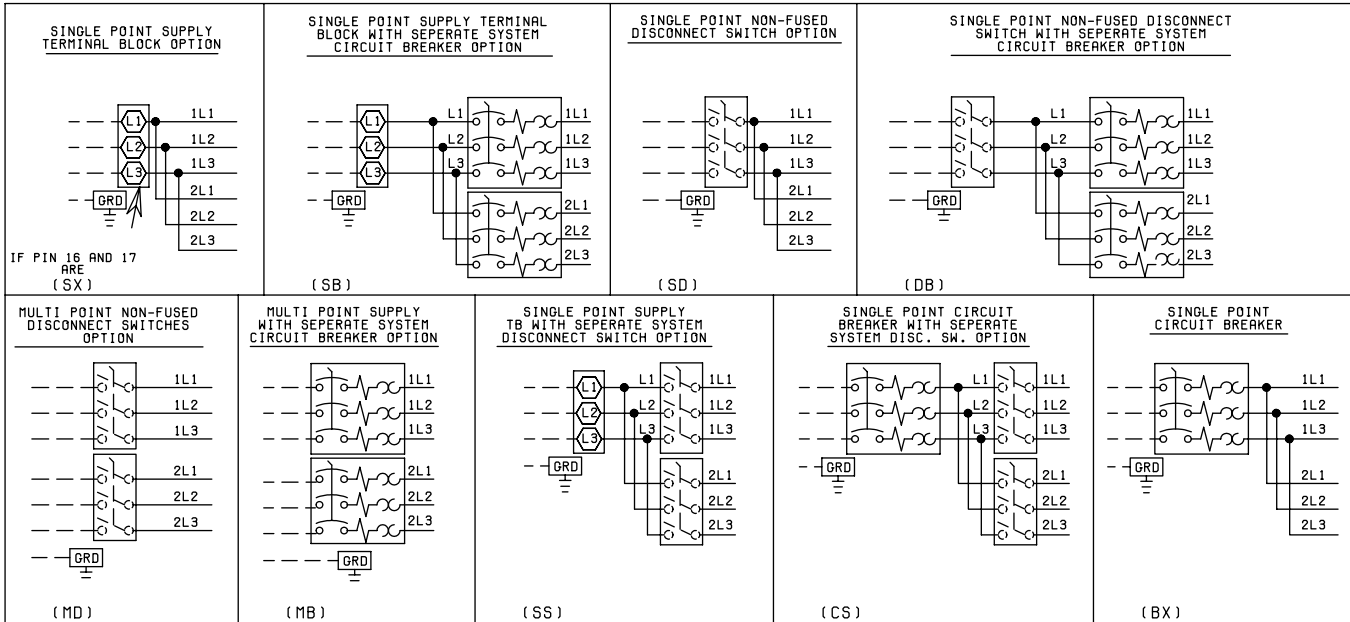
CONTROL POWER SUPPLY (UNITS WITH STANDARD CONTROL CIRCUIT TRANSFORMER)

NO. OF COMPRESSORS	CONTROL POWER SUPPLY	MCA (MAX LOAD CURRENT)	RECOMMENDED DUAL ELEMENT FUSE SIZE	NON-FUSED DISCONNECT SWITCH SIZE
2	400V - 50 HZ	6.3A	15A	—

WIRING DIAGRAM ACROSS-THE-LINE START

OPTIONAL EQUIPMENT SEE NOTE 7.

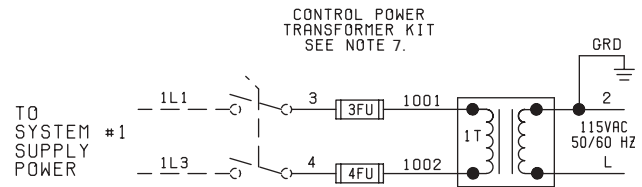
035 15164 103
REV F



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 page 17.
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. Use 2KVA transformer in optional transformer kit unless there are optional oil separator sump heaters which necessitates using a 3KVA transformer.

LD09231



LD09232

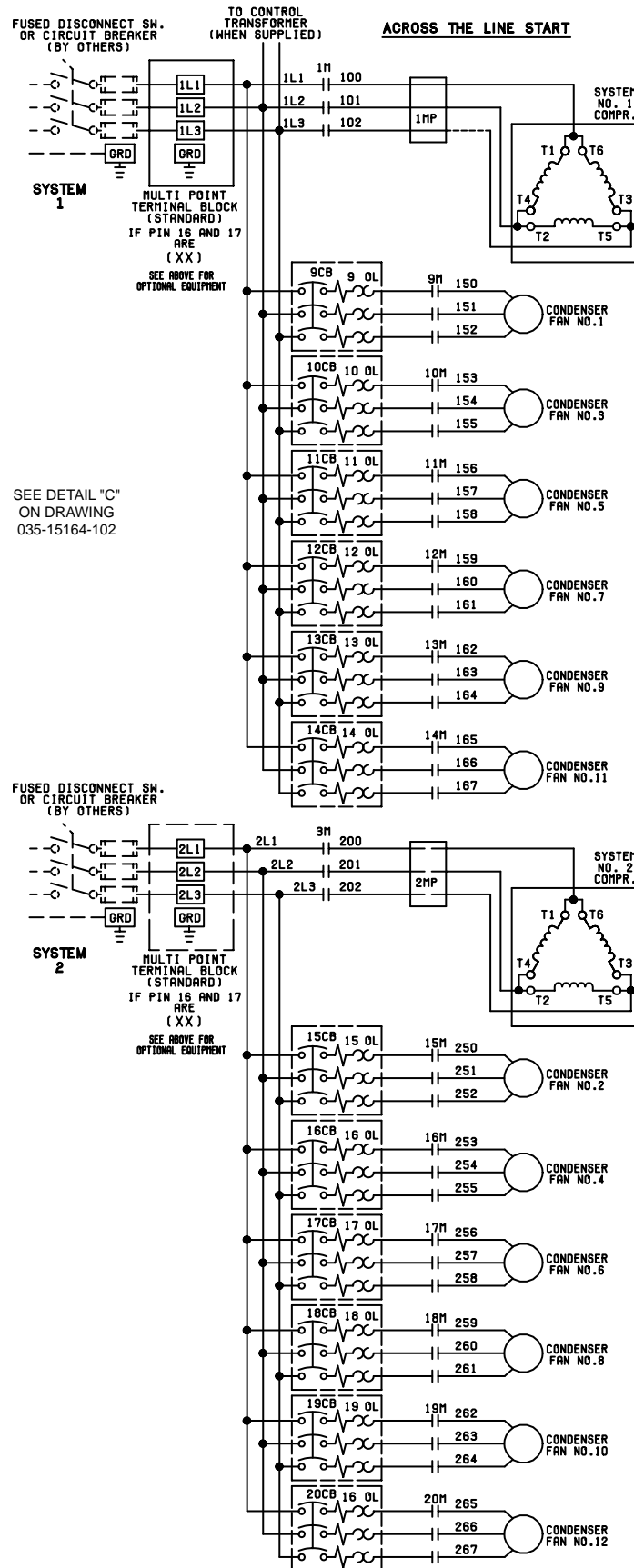
LEGEND

- 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 – WIRING DIAGRAM – ACROSS-THE-LINE START

WIRING DIAGRAM (CONT'D) ACROSS-THE-LINE START

035 15164 103
REV F



LD09233

FIG. 2 – WIRING DIAGRAM – ACROSS-THE-LINE START

ELEMENTARY DIAGRAM

035-18672E101
REV. D

ELEMENTARY DIAGRAM
YCAS 130-230
YCAS 373-653
(STYLE F)

STANDARD AND REMOTE EVAPORATOR UNITS

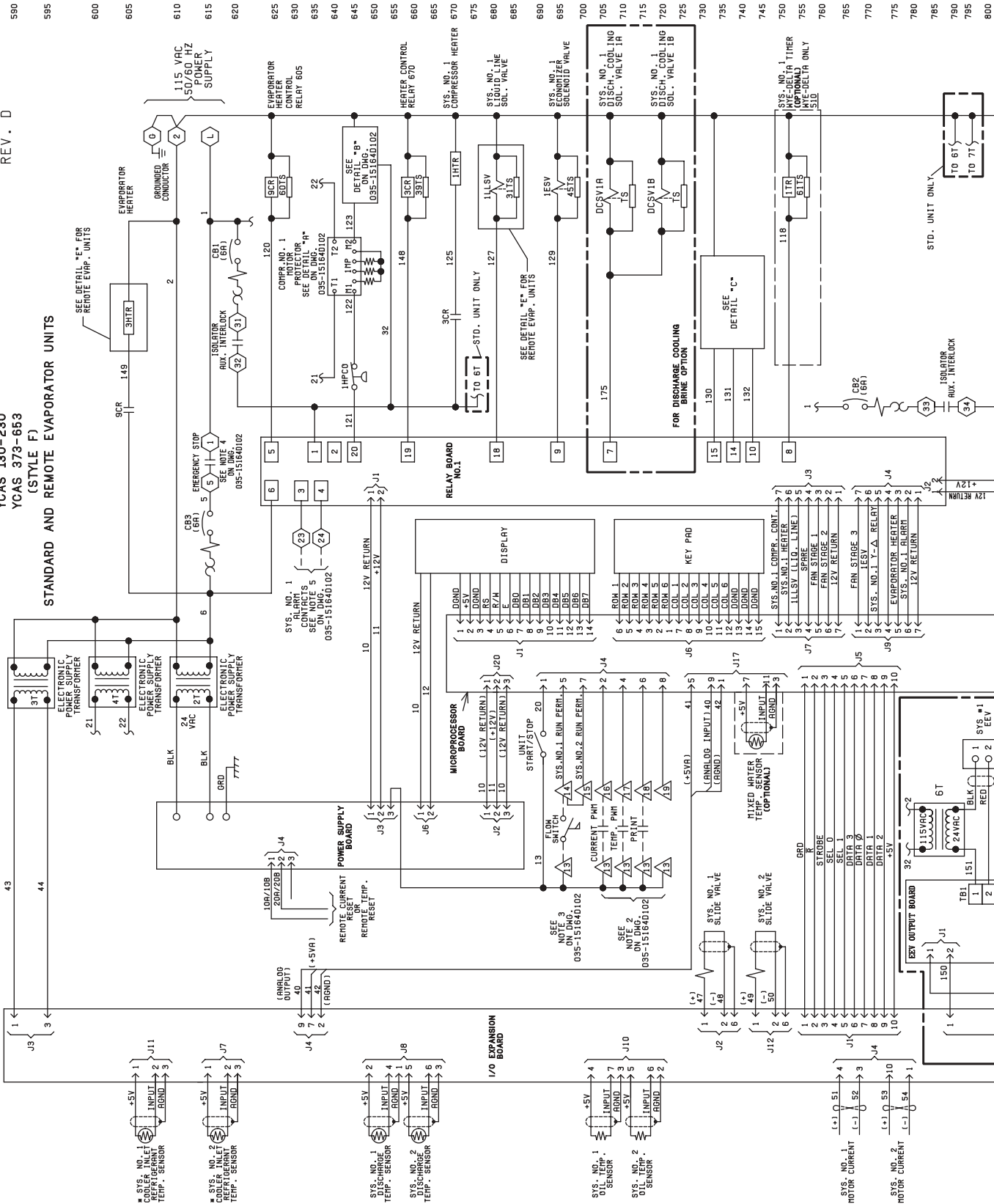
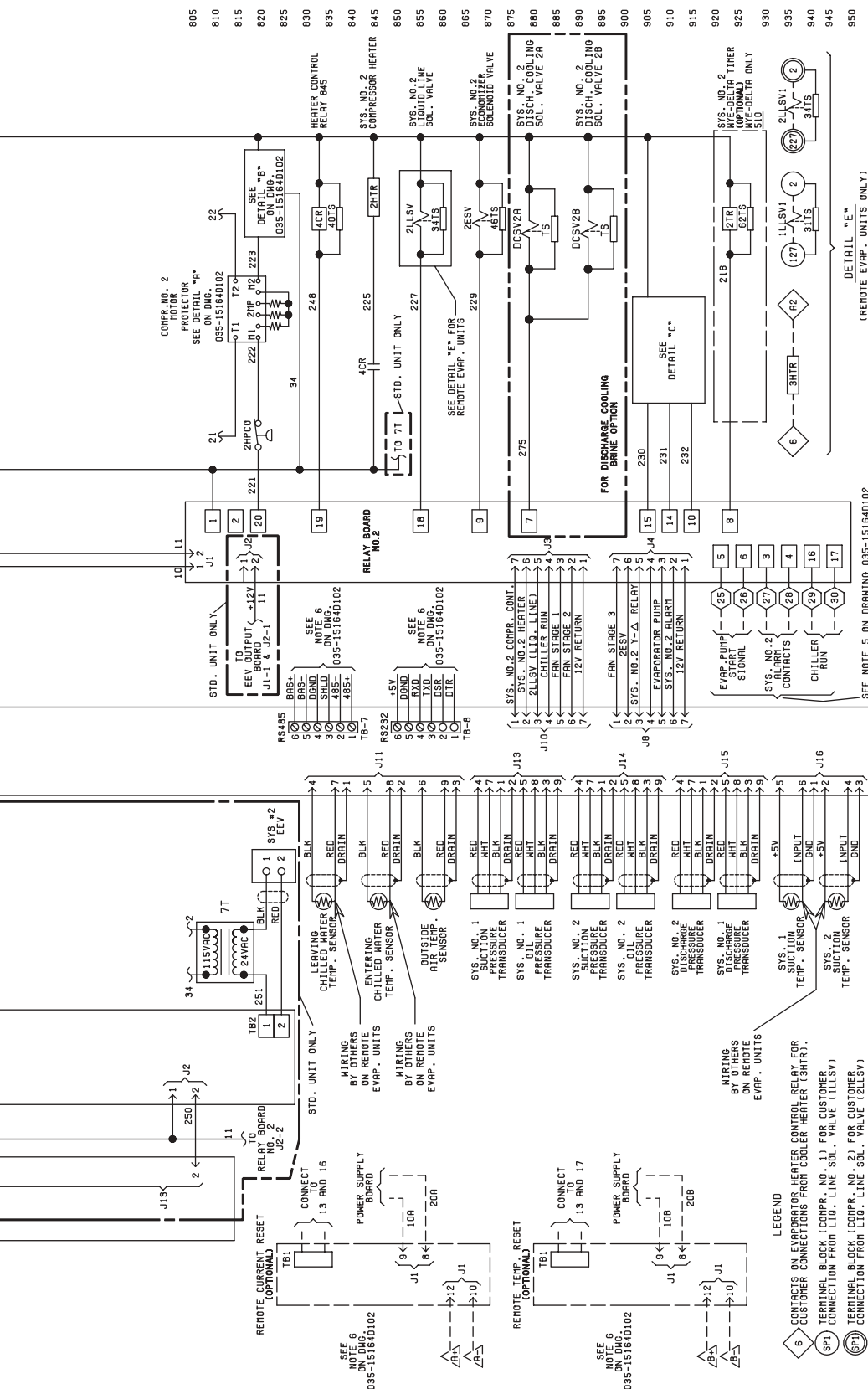


FIG. 3 – ELEMENTARY DIAGRAM – ACROSS-THE-LINE START

ELEMENTARY DIAGRAM (CONT'D)



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

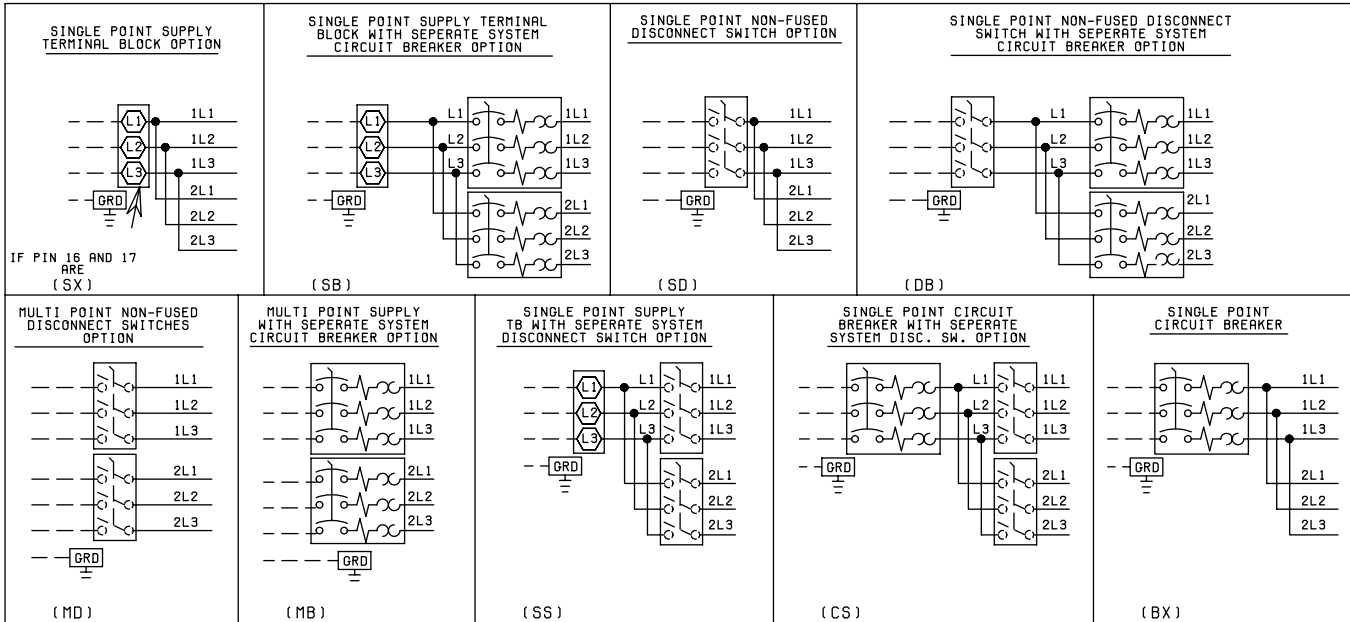
UNIT VOLTAGE	CONTROL POWER SUPPLY	MIN CIRCUIT AMP.	MAX DUAL ELEMENT FUSE SIZE	NON-FUSED DISC. SWITCH SIZE
ALL MODELS W/O TRANS.	115-1-50/60	20A	20A 250V	30A 240V
MODELS WITH TRANS.	200-1-60	15A	15A 250V	30A 240V
	230-1-60	15A	15A 250V	30A 240V
	400-1-60	8A	8A 600V	30A 480V
	575-1-60	8A	8A 600V	30A 600V

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

WIRING DIAGRAM WYE-DELTA START

OPTIONAL EQUIPMENT SEE NOTE 7.

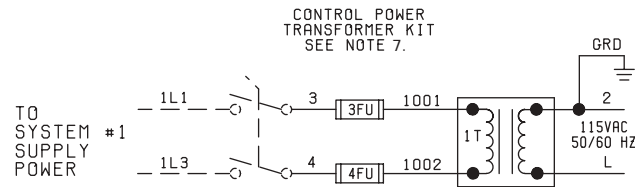
035 15164 103
REV F



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 page 21.
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.

LD09231



LD09232

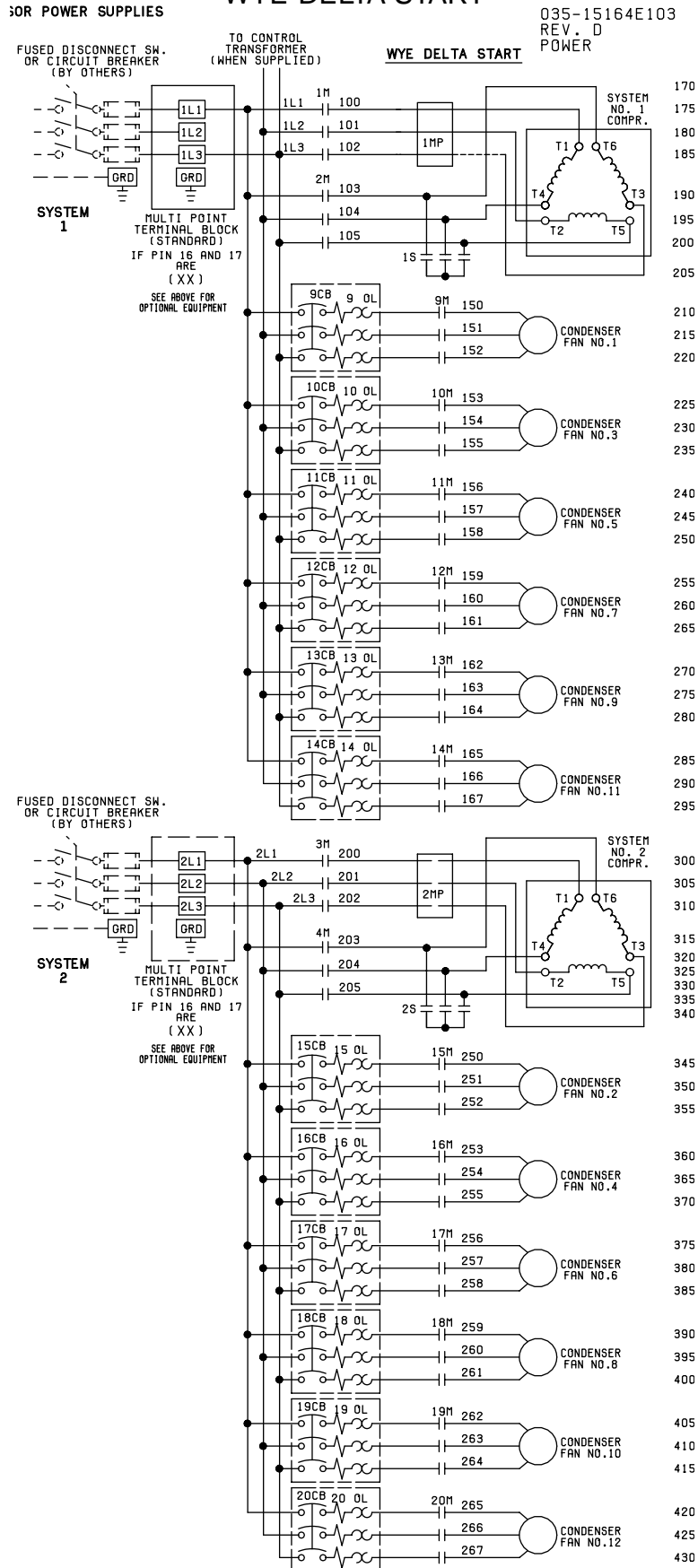
LEGEND

- 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. 4 – WIRING DIAGRAM – WYE-DELTA START

WIRING DIAGRAM (CONT'D)

WYE-DELTA START



LD09236

FIG. 5 – ELEMENTARY DIAGRAM – WYE-DELTA START

ELEMENTARY DIAGRAM

035-18672E101
REV. D

ELEMENTARY DIAGRAM
YCAS 130-230
YCAS 373-653
(STYLE F)

STANDARD AND REMOTE EVAPORATOR UNITS

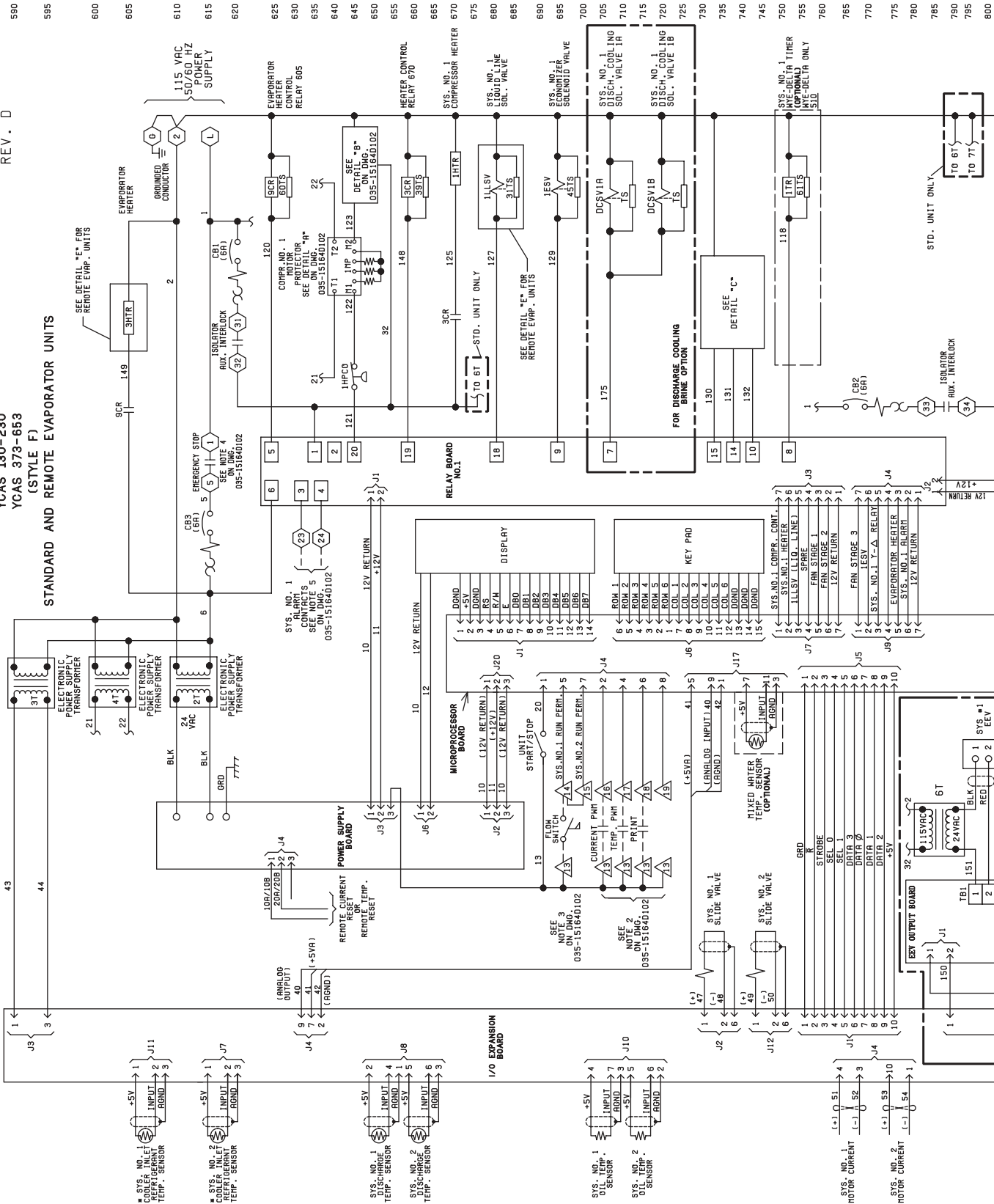
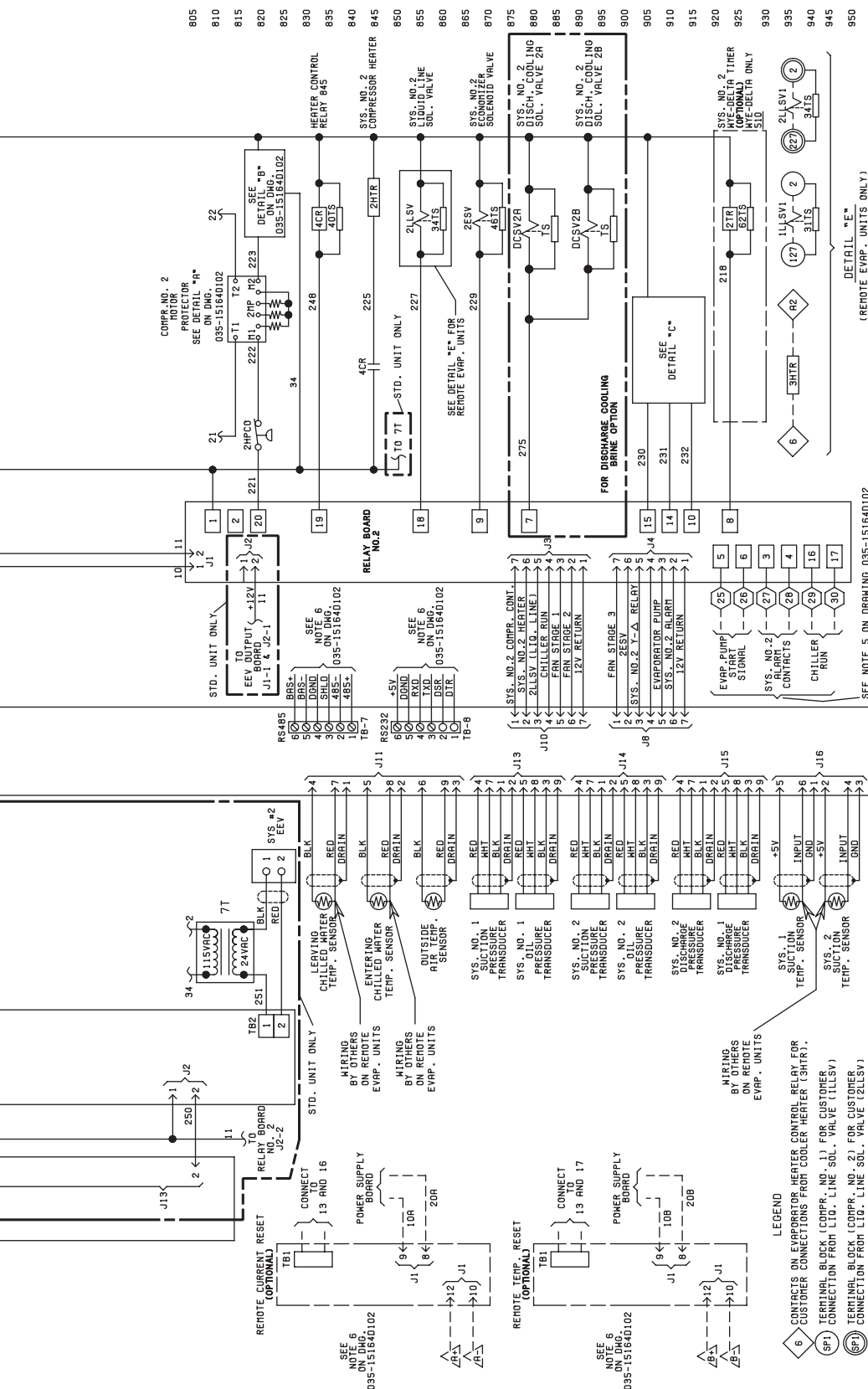


FIG. 6 - ELEMENTARY DIAGRAM - WYE-DELTA START

ELEMENTARY DIAGRAM (CONT'D)



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 PANEL

ELECTRONIC PANEL
(FRONT INSIDE VIEW)

035 18672 104
REV E

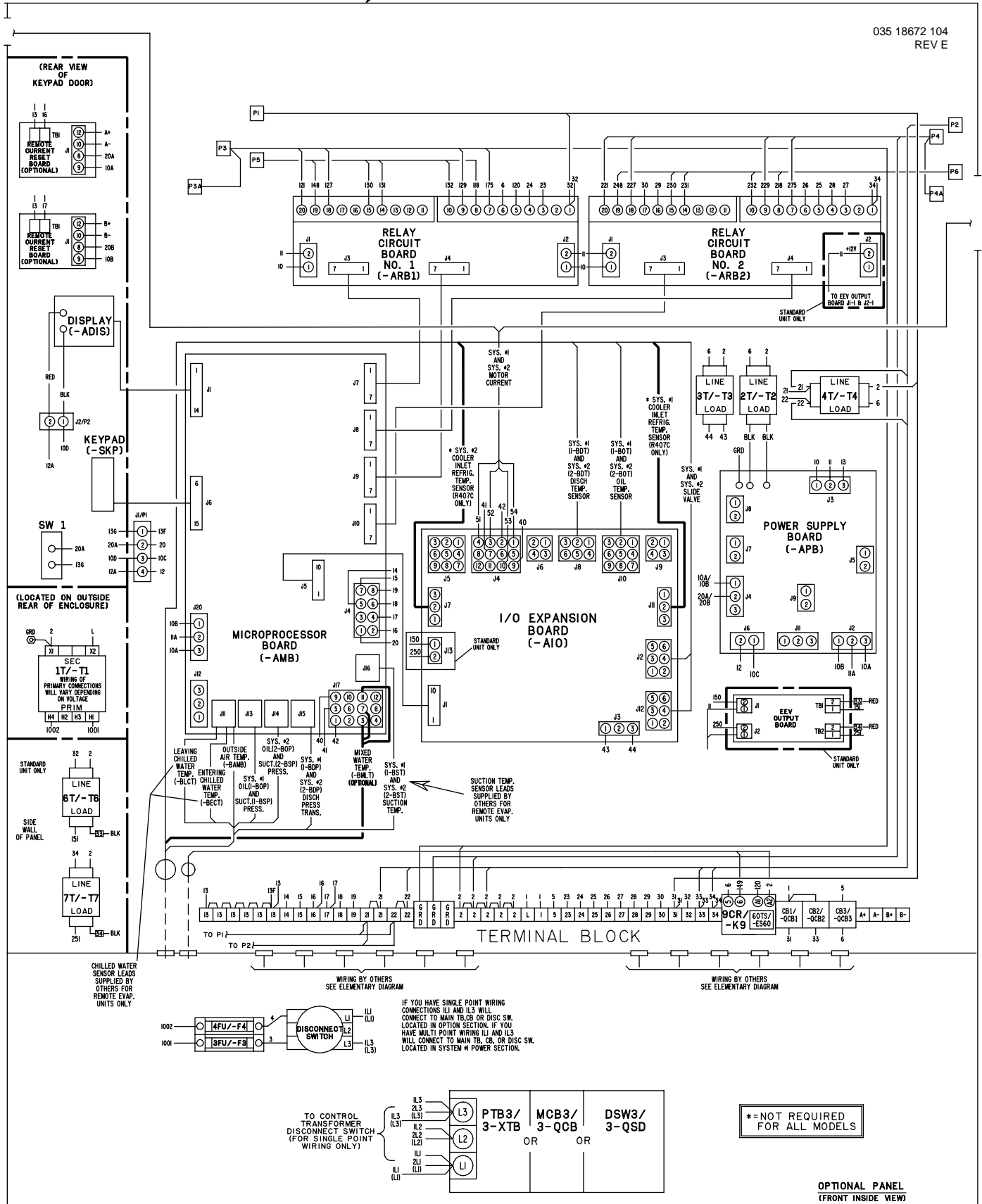


FIG. 8 – CONTROL PANEL COMPONENT LOCATION

POWER PANEL (SYSTEM #2)

POWER PANEL
(FRONT INSIDE VIEW)

035 18672 104
REV E

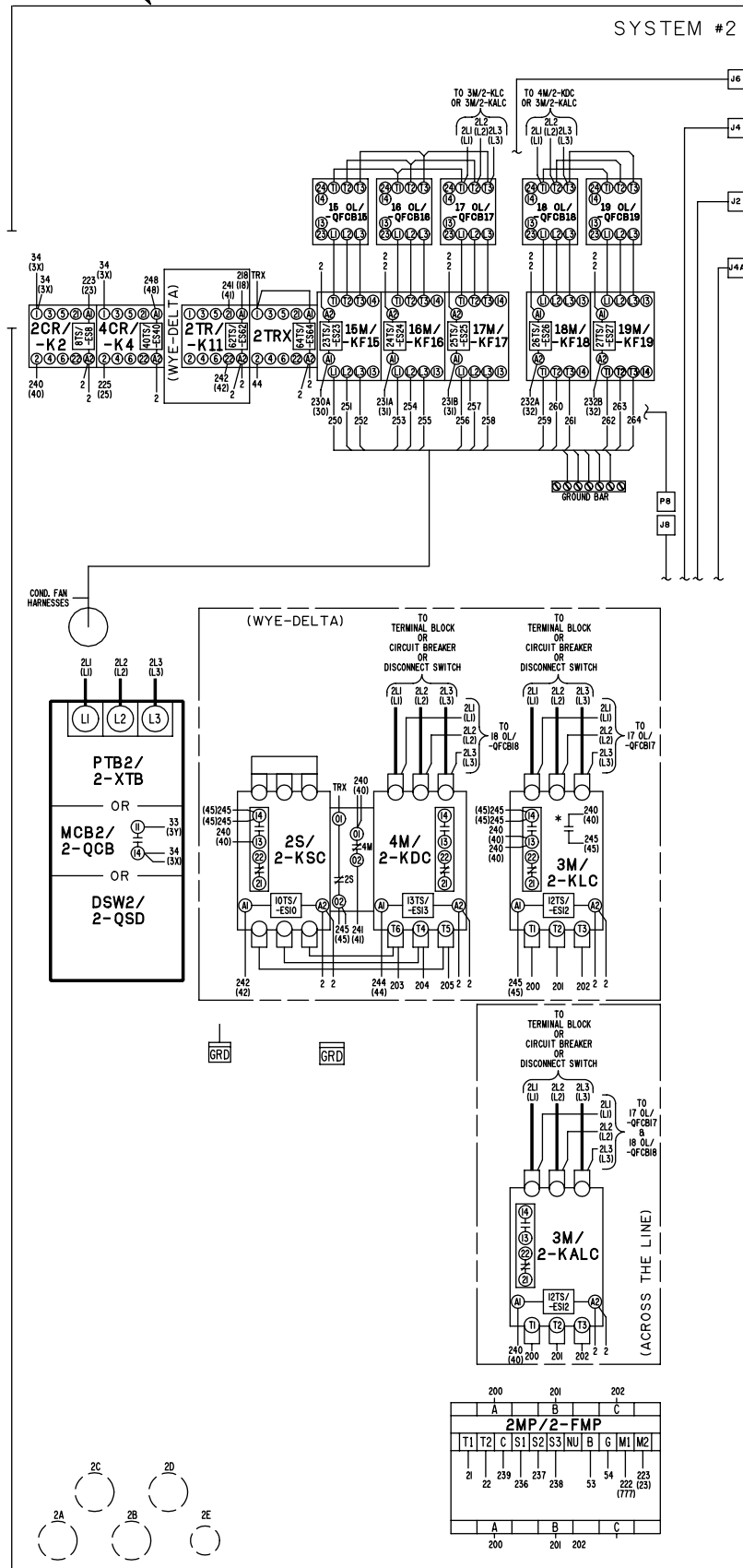


FIG. 9 - POWER PANEL (SYSTEM #2) COMPONENT LOCATIONS

LEGEND

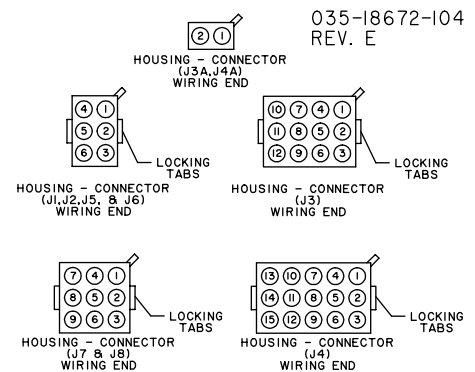
1CR THRU 4CR, 9CR/ -K1 THRU -K4, -K9	-CONTROL RELAYS	1M, 3M/ 1-KLC OR 1-KALC, 2-KLC OR 2-KALC	-COMPRESSOR CONTACTORS	2T, 3T, 4T/ -T2, -T3, -T4	-MICRO PANEL TRANSFORMERS
CB1, CB2, CB3/ -QCB1, -QCB2, -QCB3 9CB THRU 13CB	-CIRCUIT BREAKERS	2M, 4M/ 1-KDC, 2-KDC	-COMPRESSOR CONTACTORS	1TR, 2TR/ -K10, -K11	-TIMER RELAYS
15CB THRU 19CB	-OVERLOAD CIRCUIT BREAKERS (SYS. #1)	1S, 2S/ 1-KSC, 2-KSC	-COMPRESSOR CONTACTORS	TS/-ES	-TRANSIENT SUPPRESSORS
9 OL THRU 13 OL 15 OL THRU 19 OL	-OVERLOAD CIRCUIT BREAKERS (SYS. #2)	9M THRU 13M/ -KF9 THRU -KF13	-CONDENSER FAN CONTACTORS (SYS. #1)	PTB1, PTB2/ 1-XTB, 2-XTB	-POWER TERMINAL BLOCK
-QFCB9 THRU -QFCB13	-MOTOR OVERLOADS (SYS. #1)	15M THRU 19M/ -KF15 THRU -KF19	-CONDENSER FAN CONTACTORS (SYS. #2)	MCB1, MCB2/ 1-QCB, 2-QCB	-MOTOR CIRCUIT BREAKER
-QFCB15 THRU -QFCB19	-MOTOR OVERLOADS W/OVERLOAD CIRCUIT BREAKERS (SYS. #1)	1MP/1-FMP	-MOTOR PROTECTOR (SYS. #1)	DSW1, DSW2/ 1-QSD, 2-QSD	-DISCONNECT SERVICE SWITCH
3FU, 4FU/ -F3, -F4	-MOTOR OVERLOADS W/OVERLOAD CIRCUIT BREAKERS (SYS. #2)	2MP/2-FMP	-MOTOR PROTECTOR (SYS. #2)		-WIRING BY YORK
	-TRANSFORMER FUSE (OPTIONAL)	1T/-T1	-CONTROL TRANSFORMER 2KVA (OPTIONAL)		-WIRING BY OTHERS
					-OPTIONAL WIRING AND/OR COMPONENTS

CONNECTION DIAGRAM, ELEC. BOX YCAS 130-230 YCAS 373-653 (STYLE F) STANDARD AND REMOTE EVAP. UNITS

J1, J2, J3, J3A, J4, J4A, — POWER PANEL
J5, J6, J7, J8, P7 & P8

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

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



PLUG NO.	WIRE NO.	PLUG PIN NO.
P1	2I	I
	2	2
	22	3
	3I	4
	32	5

PLUG NO.	WIRE NO.	PLUG PIN NO.
P2	2I	I
	2	2
	22	3
	33	4
	34	5

PLUG NO.	WIRE NO.	PLUG PIN NO.
P3	2	I
	GRD	2
	I25(25)	4
	I29	5
	I27	6
	I75	7
	I2I	II
	222(777)	I2

PLUG NO.	WIRE NO.	PLUG PIN NO.
P4	2	I
	GRD	2
	225(25)	3
	227	4
	229	5
	275	7
	22I	II
	222(777)	I2

PLUG NO.	WIRE NO.	PLUG PIN NO.
J1	2I	I
	2	2
	22	3
	3Y	4
	3X	5

PLUG NO.	WIRE NO.	PLUG PIN NO.
J2	2I	I
	2	2
	22	3
	3Y	4
	3X	5

PLUG NO.	WIRE NO.	PLUG PIN NO.
J3	2	I
	GRD	2
	I25A	4
	I29A	5
	I27A	6
	I75A	7
	I2IA	II
	I22	I2

PLUG NO.	WIRE NO.	PLUG PIN NO.
J4	2	I
	GRD	2
	225A	3
	227A	4
	229A	5
	275A	7
	22IA	II
	222	I2

PLUG NO.	WIRE NO.	PLUG PIN NO.
P3A	I25	I
	I22	2

PLUG NO.	WIRE NO.	PLUG PIN NO.
P5	I30	I
	I3I	2
	I32	3
	I48	4
	I18	6

PLUG NO.	WIRE NO.	PLUG PIN NO.
P6	230	I
	23I	2
	232	3
	248	4
	2I8	6

PLUG NO.	WIRE NO.	PLUG PIN NO.
P7	I25	I
	2	2
	I23	3
	I40	4
	I4I	5
	I42	6
	32	7
	TRX	8
	44	9

PLUG NO.	WIRE NO.	PLUG PIN NO.
P8	225	I
	2	2
	223	3
	240	4
	24I	5
	242	6
	34	7
	TRX	8
44	9	

PLUG NO.	WIRE NO.	PLUG PIN NO.
P4A	225	I
	225	2

PLUG NO.	WIRE NO.	PLUG PIN NO.
J5	30	I
	3I	2
	32	3
	48	4
	I8	6

PLUG NO.	WIRE NO.	PLUG PIN NO.
J6	30	I
	3I	2
	32	3
	48	4
	I8	6

PLUG NO.	WIRE NO.	PLUG PIN NO.
J7	25	I
	2	2
	23	3
	40	4
	4I	5
	42	6
	3X	7
	TRX	8
	44	9

PLUG NO.	WIRE NO.	PLUG PIN NO.
J8	25	I
	2	2
	23	3
	40	4
	4I	5
	42	6
	3X	7
	TRX	8
44	9	







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.

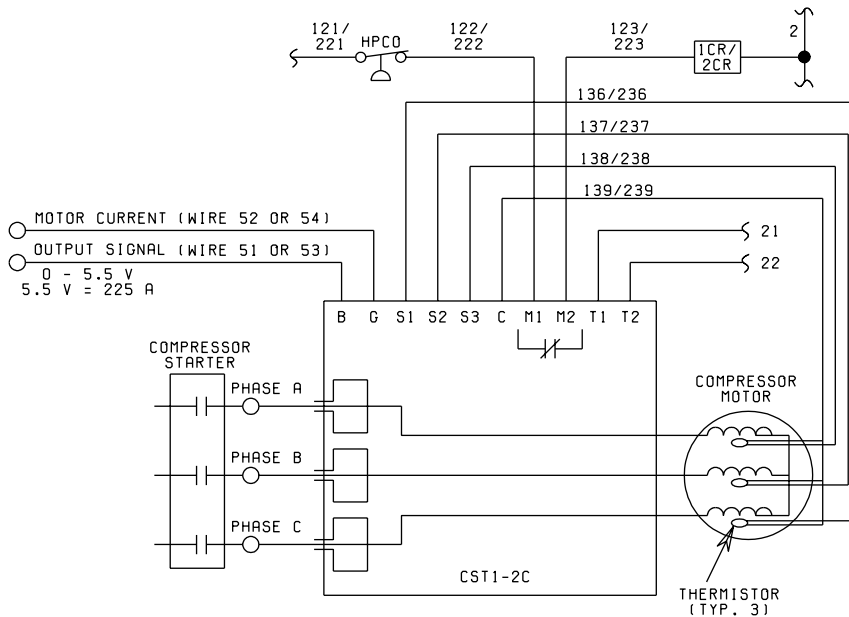
035 15164 102
REV E

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

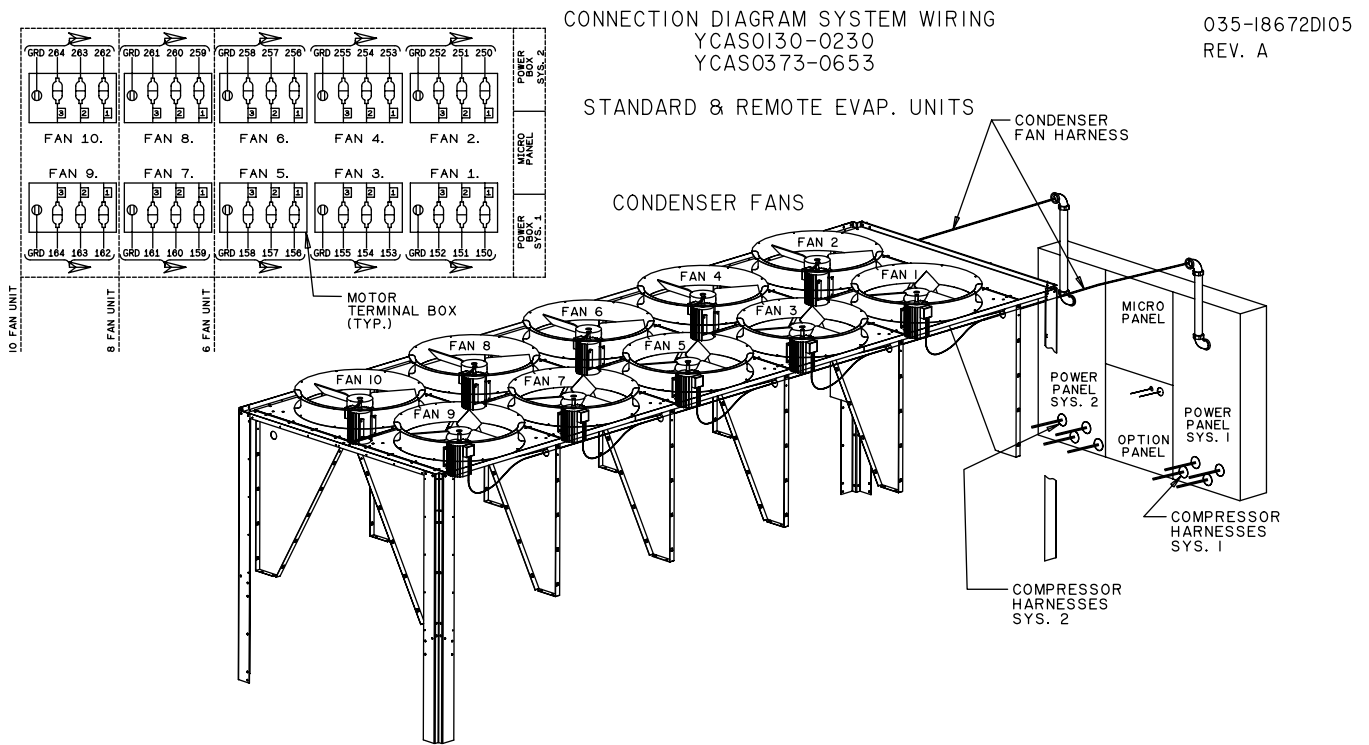
LD03283



DETAIL "A"

LD03284

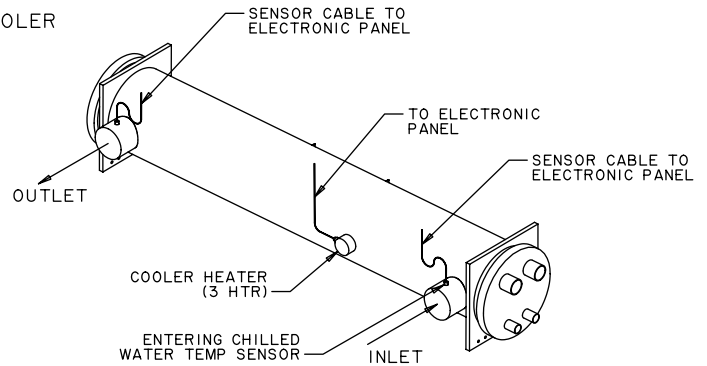
CONNECTION DIAGRAM (SYSTEM WIRING)



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 ELECTRONIC EXPANSION VALVE PILOT SOLENOID (STAN. UNIT ONLY)
- 2 LLSV SYS. No.2 ELECTRONIC EXPANSION VALVE PILOT SOLENOID (STAN. UNIT ONLY)
- 1 LLSV SYS. No.1 LIQUID LINE SOLENOID VALVE (REMOTE UNIT ONLY)
- 2 LLSV SYS. No.2 LIQUID LINE SOLENOID VALVE (REMOTE UNIT ONLY)
- 1 ESV ECONOMIZER SOLENOID VALVE (UNIT IDENT)
- 2 ESV ECONOMIZER SOLENOID VALVE (UNIT IDENT)
- TXV 1 SYS. No.1 THERMAL EXPANSION VALVE (UNIT)
- TXV 2

COOLER



COMPRESSORS (SYSTEMS 1 & 2)

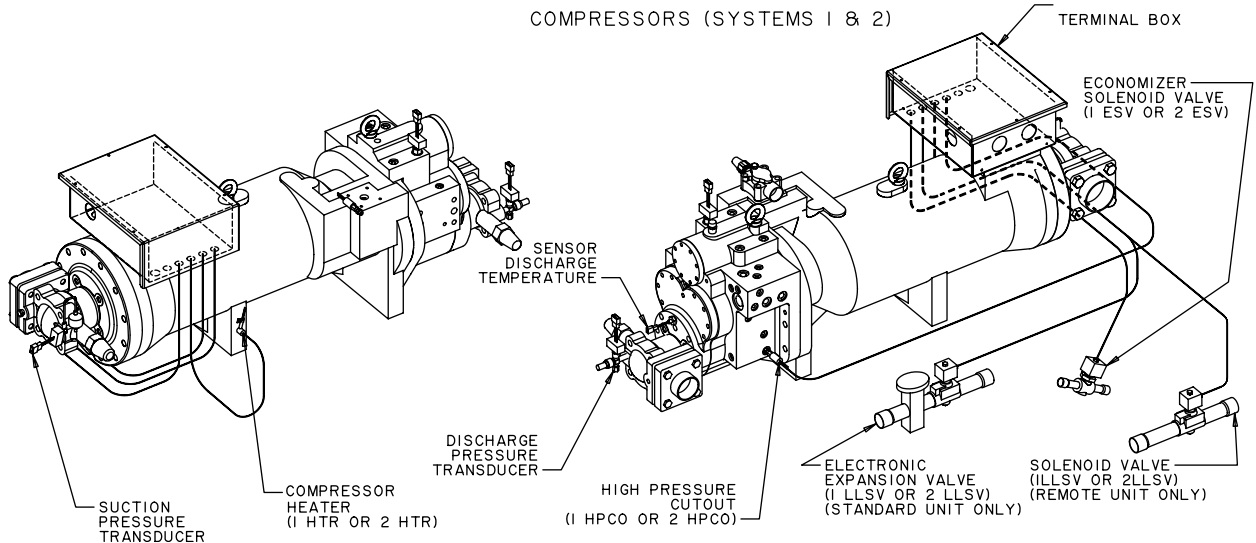


FIG. 10 – CONNECTION DIAGRAM (SYSTEM WIRING)

COMPRESSOR TERMINAL BOX

035 18672 105
REV A

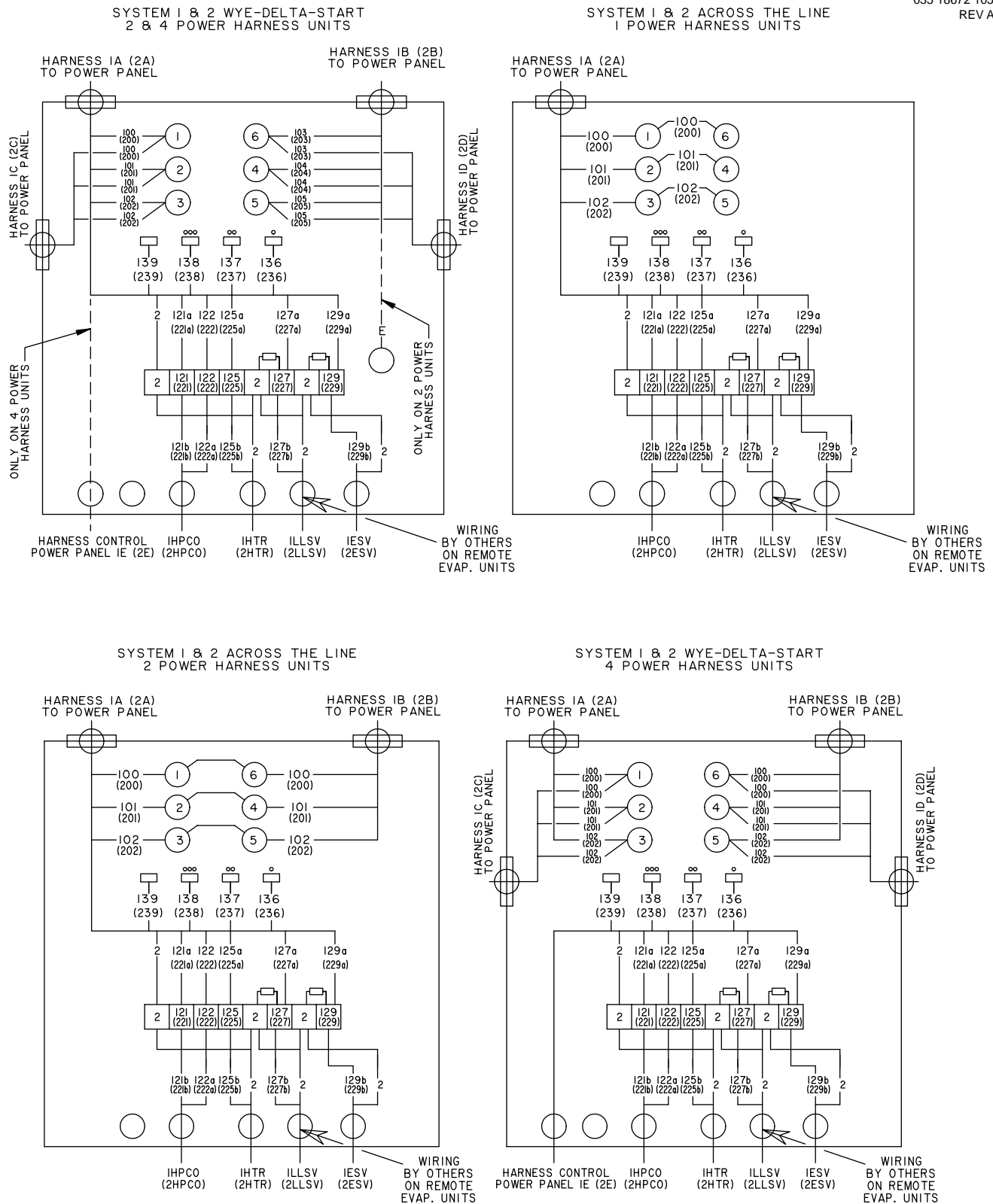
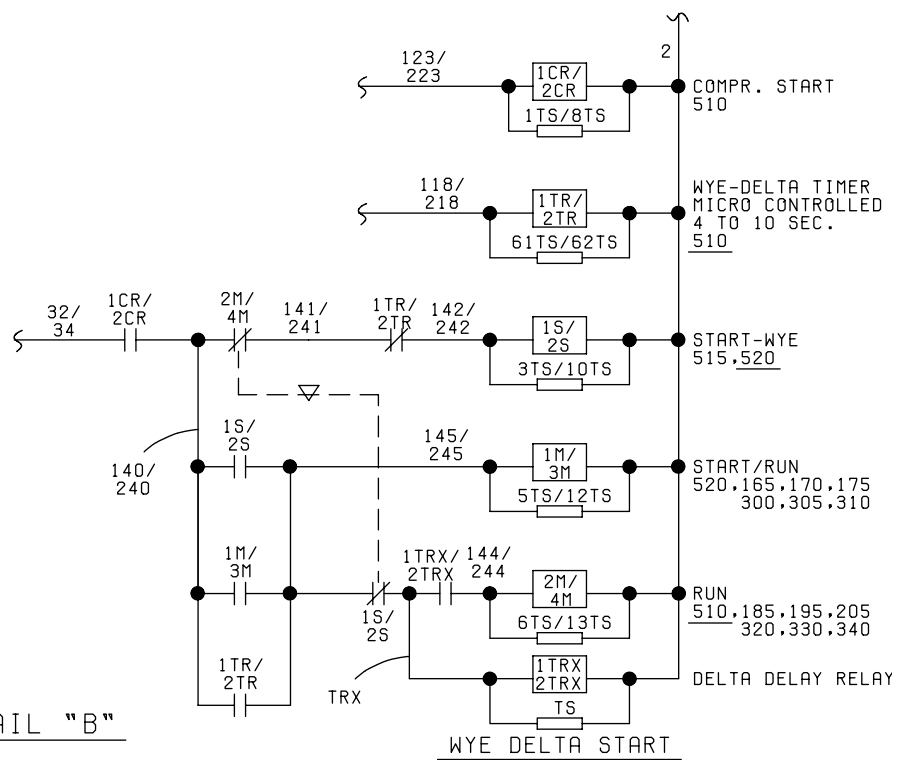
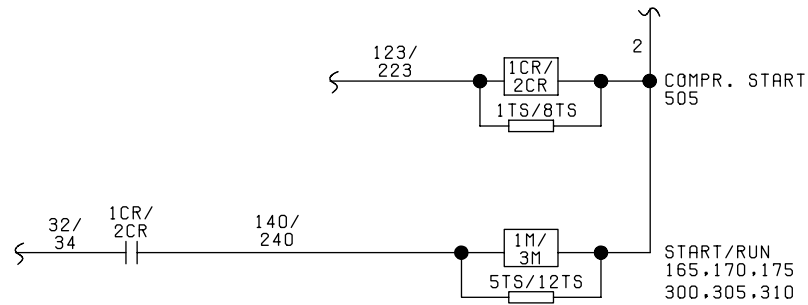


FIG. 11 – COMPRESSOR TERMINAL BOX

LD09243

ELEMENTARY DIAGRAM STARTER CONTROL CIRCUIT

035 15164 102
REV E

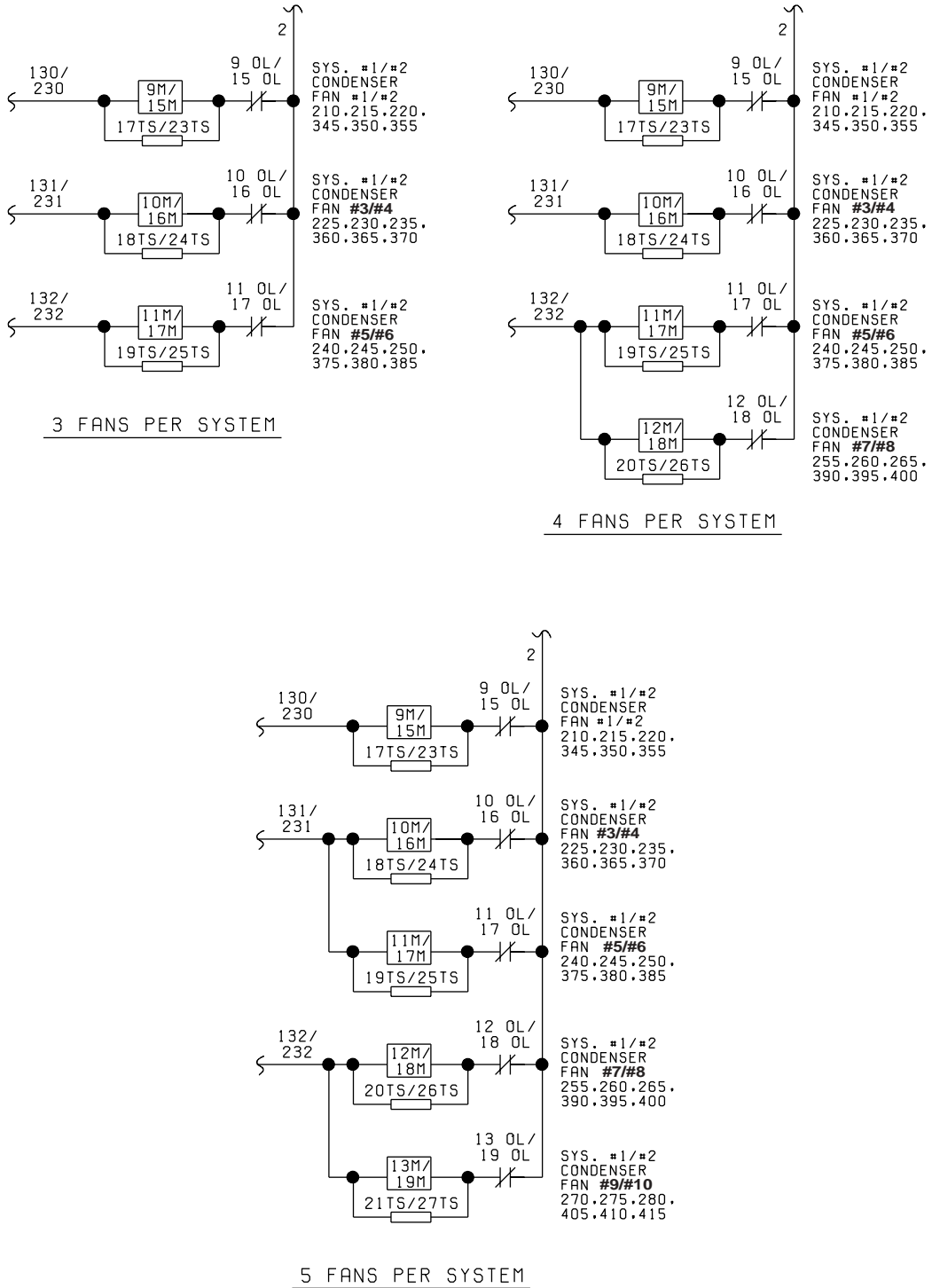


LD010028

FIG. 12 – ELEMENTARY DIAGRAM STARTER CONTROL CIRCUIT

ELEMENTARY DIAGRAM FAN CONTROL

035 15164 102
REV E



DETAIL "C"

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

LD06840

FIG. 13 – ELEMENTARY DIAGRAM FAN CONTROL CIRCUIT

NOTES

