Vertiv™ CoolPhase Row

Submittals Addendum

Submittals and Electrical Diagrams for CRD030 and CRD040

The information contained in this document is subject to change without notice and may not be suitable for all applications. While every precaution has been taken to ensure the accuracy and completeness of this document, Vertiv assumes no responsibility and disclaims all liability for damages result from use of this information or for any errors or omissions.

Refer to local regulations and building codes relating to the application, installation, and operation of this product. The consulting engineer, installer, and/or end user is responsible for compliance with all applicable laws and regulations relation to the application, installation, and operation of this product.

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

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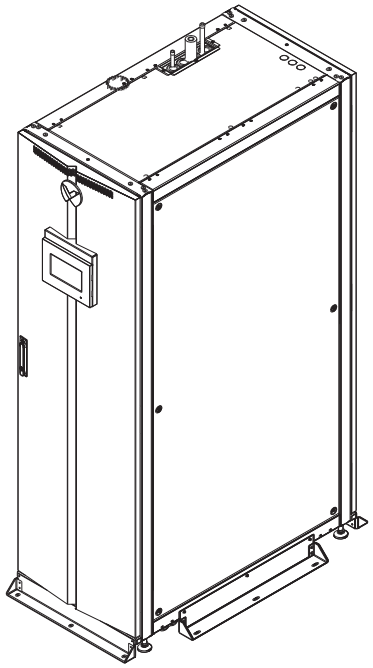
VERTIV COOLPHASE ROW

STANDARD FEATURES
600mm (24in) AIR COOLED MODELS



STANDARD FEATURES (Refer to product data sheet for options supplied)

DX COOLING COIL. The evaporator coil has 11.39 ft2 (1.05 m2) face area, 6 rows deep. It is constructed of copper tubes and hydrophilic coated aluminium fins. The hydrophilic coating provides superior water carryover resistance. Two stainless steel condensate drain pans are provided.

REFRIGERATION SYSTEM. Single refrigeration circuit includes a liquid line filter drier, a refrigerant sight glass with moisture indicator
an adjustable externally equalized expansion valve, and a liquid line solenoid valve.

FAN. The unit is equipped with eight plug fans: direct driven centrifugal fans with backward curved blades and Electronically Commutated DC motors; commonly referred to as EC plug fans. The fan speed is variable and automatically regulated by the Liebert® iCOM control through all modes of operation. Each fan has a dedicated motor and speed controller which provides a level of redundancy. The fans pull air through the coil and are located in front of the unit.

SUPPLY AIR BAFFLE A field adjustable, modular supply air baffle is located in the discharge air stream. It can be quickly and easily reconfigured to redirect airflow. The angles of the vanes have been optimized to effectively distribute air to heat generating equipment in a wide variety of applications.

LIEBERT® iCOM™CONTROL SYSTEM. The Vertiv CoolPhase Row is controlled by the Liebert® iCOM™ Control System. The standard user interface is a 7 inch color HMI touch screen which presents system information and allows all parameters to be viewed and adjusted. It features a 3-level password protection system. Unit-to-Unit communication with other Vertiv CoolPhase Row´s and a Liebert® IntelliSlot communication are included as standard.

VERTIV COOLPHASE ROW

STANDARD FEATURES
600mm (24in) AIR COOLED MODELS

REMOTE SHUTDOWN TERMINAL. Provides the customer with a location to remotely shut down the unit.

COMMON ALARM CONTACT. Provides the customer with one normally open (n/o) contact for remote alarm indication of the unit.

CABINET. The exterior steel panels are custom powder coated to protect against corrosion.
The double wall constructed side panels separate the ½ inch, 2.0 lb/ft3 insulation from the airstream. The unit is mounted on casters for quick installation and provided with levelling feet. The perforated inlet and outlet panels have 81% open area, and the rear door utilizes a Swing Handle and hinges.

SERVICE ACCESS. All service and maintenance is performed through the front and rear of the unit; including any component removal. No side access is required. All electrical and piping connections are made through the top and/or bottom of the unit. All units are provided with a Superior Service Access Panel to provide additional access.

FILTER. The unit is equipped with two deep pleated 2inch filters rated MERV8 (based on ASHRAE 52.2-2012), located within the cabinet, and accessible from the rear of the unit. A filter clog alarm is included.

LOCKING DISCONNECT SWITCH. A moulded case circuit interrupter disrupts the flow of power to the unit. The electric panel high voltage compartment can only be accessed with the switch in the ‘off’ position. Conveniently located behind the rear service door for quick access.

65,000 AMP SHORT CIRCUIT CURRENT RATING (SCCR). The electrical panel provides a 65k amp SCCR.

DUAL-FLOAT CONDENSATE PUMP. It has a capacity of 2.64 GPM (10 L/min) at 6m head. Pump is complete with integral primary and secondary float switches, pump, brushless motor assembly, and reservoir. The secondary float shall send a signal to the local alarm and shut down the unit upon high water condition.

VERTIV COOLPHASE ROW

OPTIONAL FEATURES
600mm (24in) AIR COOLED MODELS

OPTIONAL FEATURES (Refer to product data sheet for options supplied)

HUMIDIFIER. A steam generating canister humidifier is factory-installed in the cooling unit and is operated by the Liebert® iCOM™ control system. It is complete with disposable cylinder, all supply and drain valves, steam distributor and electronic controls. The need to change the canister is indicated on the Liebert® iCOM™ display. The humidifier is designed to operate with water conductivity from 350-1250 µS/cm. System automatically fills and drains as well as maintains the required water level based on conductivity. An air-gap within the humidifier assembly shall prevent backflow of the humidifier supply water. The humidifier is removable from the rear of the cabinet.

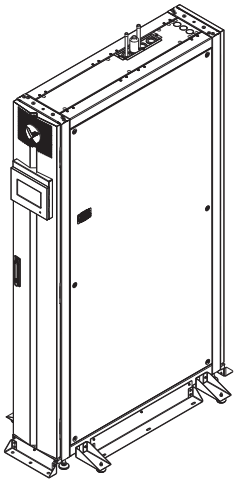
ELECTRIC REHEAT. The electric reheat coils are low watt density, 304 stainless steel fin-tubular construction, protected by thermal safety switches and controlled in one stage.

REHEAT / HUMIDIFIER LOCKOUT. Includes the necessary relays to disable the reheat and humidifier from an external 24 volt signal.

REMOTE TEMPERATURE SENSORS. The unit can be connected up to ten 10 temperature sensors. The sensors provide real-time, direct feedback to the cooling unit to optimize the amount of cooling and airflow required; increasing energy efficiency and ensuring proper rack inlet air temperatures. The sensor data can also be reported to remote monitoring systems. The sensor network consists of one CAN wire leaving the cooling unit and connecting to a 2T sensor.

VERTIV COOLPHASE ROW

STANDARD FEATURES
300mm (12in) AIR COOLED MODELS



STANDARD FEATURES
(Refer to product data sheet for options supplied)

DX COOLING COIL. The evaporator has a V-shaped Coil with (1.8m) 5.9ft of height, 3 rows deep. It is constructed of copper tubes and hydrophilic coated aluminium fins. The hydrophilic coating provides superior water carryover resistance. Two stainless steel condensate drain pans are provided.

REFRIGERATION SYSTEM. Single refrigeration circuit includes a liquid line filter drier, a refrigerant sight glass with moisture indicator an adjustable externally equalized expansion valve, and a liquid line solenoid valve.

FAN. The unit is equipped with six plug fans: direct driven centrifugal fans with backward curved blades and Electronically Commutated DC motors; commonly referred to as EC plug fans. The fan speed is variable and automatically regulated by the Liebert® iCOM control through all modes of operation. Each fan has a dedicated motor and speed controller which provides a level of redundancy. The fans pull air through the coil and are located in front of the unit.

SUPPLY AIR BAFFLE A field adjustable, modular supply air baffle is located in the discharge air stream. It can be quickly and easily reconfigured to redirect airflow. The angles of the vanes have been optimized to effectively distribute air to heat generating equipment in a wide variety of applications.

LIEBERT® iCOM™CONTROL SYSTEM. The Vertiv CoolPhase Row is controlled by the Liebert® iCOM™ Control System. The standard user interface is a 7 inch color HMI touch screen which presents system information and allows all parameters to be viewed and adjusted. It features a 3-level password protection system. Unit-to-Unit communication with other Vertiv CoolPhase Row´s and a Liebert® IntelliSlot communication are included as standard.

VERTIV COOLPHASE ROW

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300mm (12in) AIR COOLED MODELS

REMOTE SHUTDOWN TERMINAL. Provides the customer with a location to remotely shut down the unit.

COMMON ALARM CONTACT. Provides the customer with one normally open (n/o) contact for remote alarm indication of the unit.

CABINET. The exterior steel panels are custom powder coated to protect against corrosion.
The double wall constructed side panels separate the ½ inch, 2.0 lb/ft3 insulation from the airstream. The unit is mounted on casters for quick installation and provided with levelling feet. The perforated inlet and outlet panels have 81% open area, and the rear door utilizes a Swing Handle and hinges.

SERVICE ACCESS. All service and maintenance is performed through the front and rear of the unit; including any component removal. No side access is required. All electrical and piping connections are made through the top and/or bottom of the unit. All units are provided with a Superior Service Access Panel to provide additional access.

FILTER. The unit is equipped with two deep pleated 2 inch filters rated MERV8 (based on ASHRAE 52.2-2012), located within the cabinet, and accessible from the rear of the unit. A filter clog alarm is included.

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VERTIV COOLPHASE ROW

OPTIONAL FEATURES
300mm (12in) AIR COOLED MODELS

OPTIONAL FEATURES (Refer to product sheet for options supplied)

HUMIDIFIER. A steam generating canister humidifier is factory-installed in the cooling unit and is operated by the Liebert® iCOM™ control system. It is complete with disposable cylinder, all supply and drain valves, steam distributor and electronic controls. The need to change the canister is indicated on the Liebert® iCOM™ display. The humidifier is designed to operate with water conductivity from 350-1250 µS/cm. System automatically fills and drains as well as maintains the required water level based on conductivity. An air-gap within the humidifier assembly shall prevent backflow of the humidifier supply water. The humidifier is removable from the rear of the cabinet.

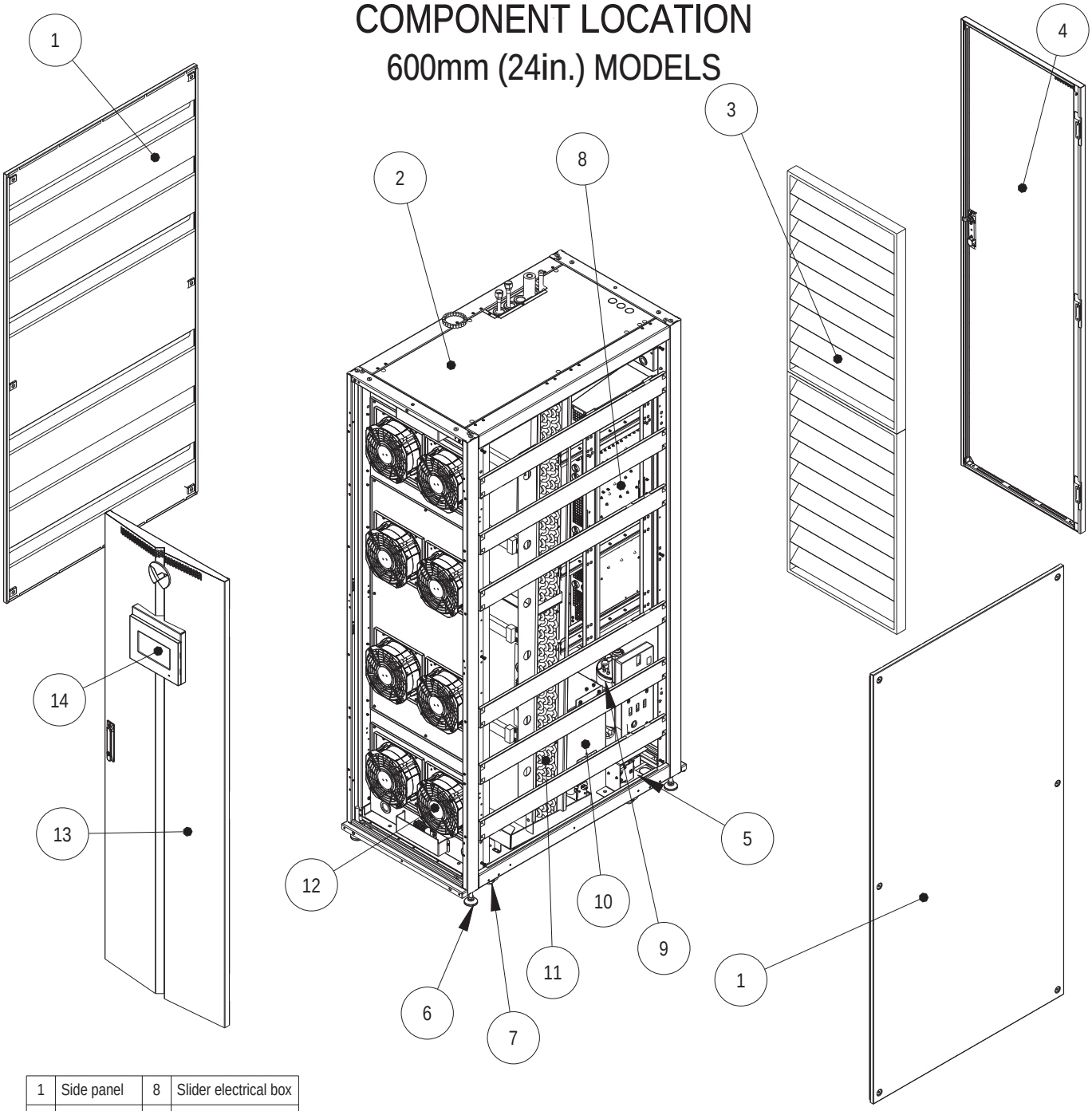
ELECTRIC REHEAT. The electric reheat coils are low watt density, 304 stainless steel fin-tubular construction, protected by thermal safety switches and controlled in one stage.

REHEAT / HUMIDIFIER LOCKOUT. Includes the necessary relays to disable the reheat and humidifier from an external 24 volt signal.

REMOTE TEMPERATURE SENSORS. The unit can be connected up to ten 10 temperature sensors. The sensors provide real-time, direct feedback to the cooling unit to optimize the amount of cooling and airflow required; increasing energy efficiency and ensuring proper rack inlet air temperatures. The sensor data can also be reported to remote monitoring systems. The sensor network consists of one CAN wire leaving the cooling unit and connecting to a 2T sensor.

VERTIV COOLPHASE ROW

COMPONENT LOCATION
600mm (24in.) MODELS

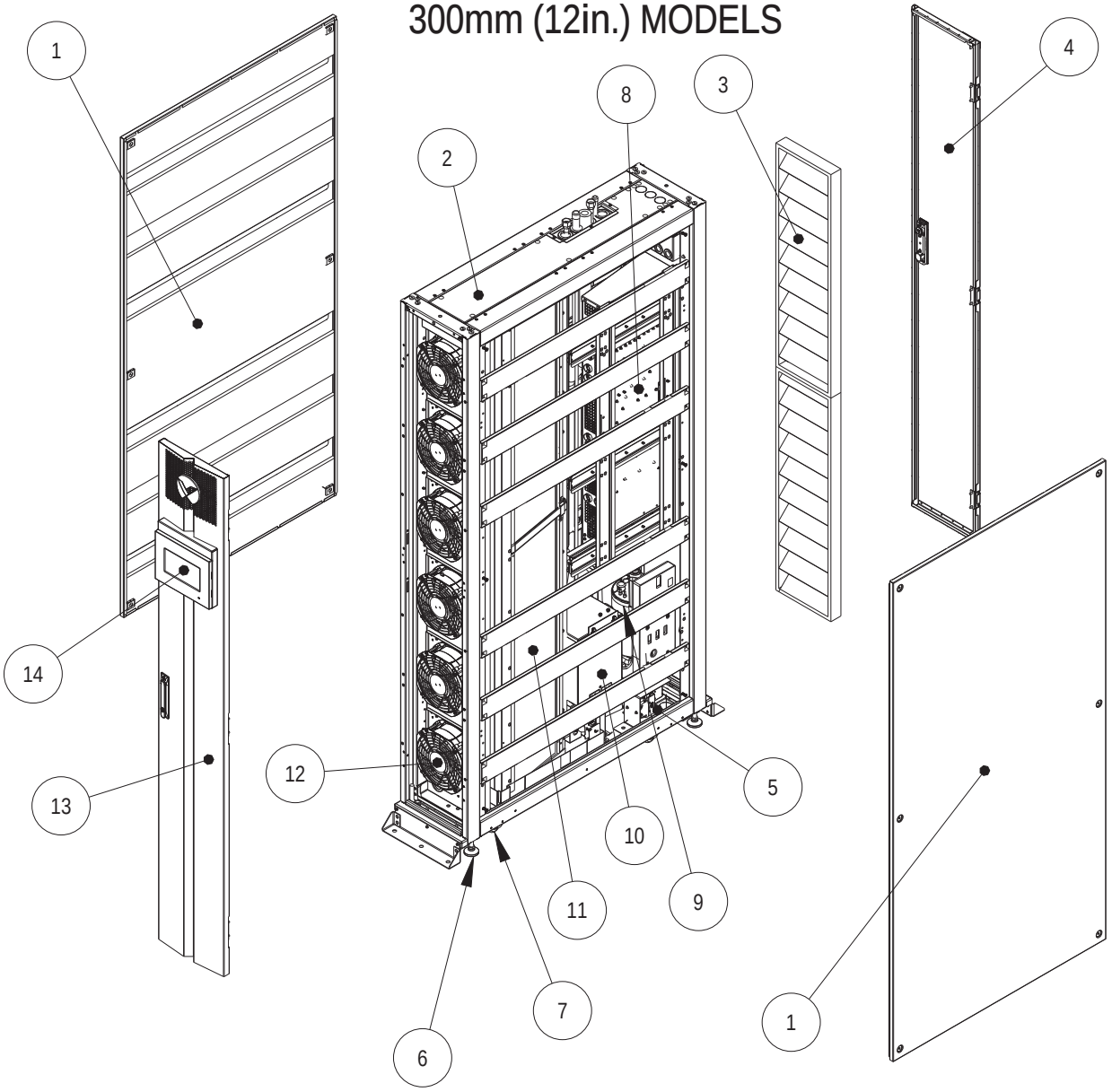


1	Side panel	8	Slider electrical box
2	Top panel	9	Humidifier (optional)
3	Filter	10	Transformer
4	Rear door	11	Heat exchanger
5	Bottom panel	12	EC fans
6	Leveling feet	13	Front door
7	Casters	14	iCOM display

VERTIV COOLPHASE ROW

COMPONENT LOCATION

300mm (12in.) MODELS



1	Side panel	8	Slider electrical box
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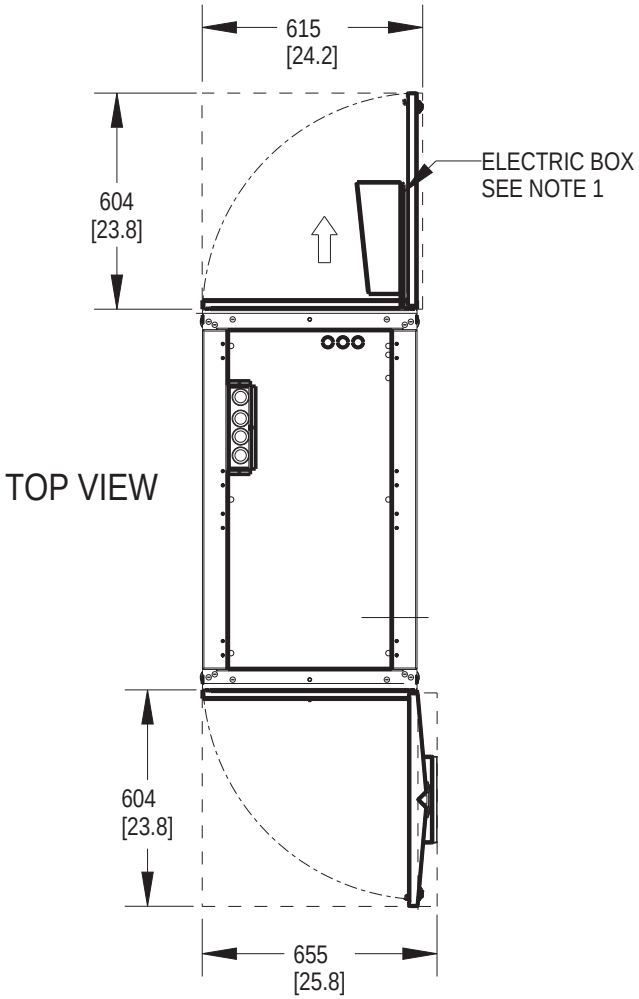
3	Filter	10	Transformer
4	Rear door	11	Heat exchanger
5	Bottom panel	12	EC fans
6	Leveling feet	13	Front door
7	Casters	14	iCOM display

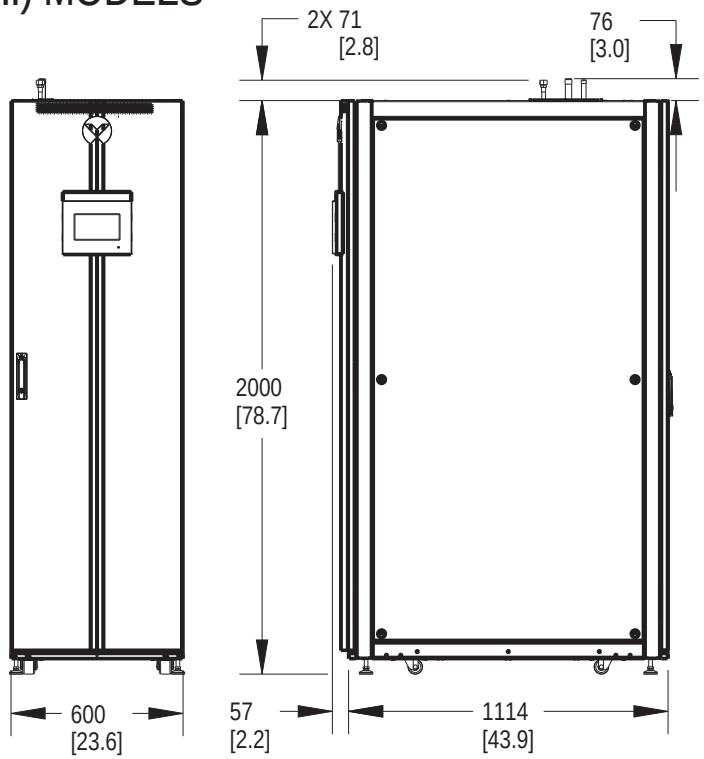
VERTIV COOLPHASE ROW

CABINET DIMENSIONAL DATA

600mm (24in.) MODELS

ACCESS REQUIRED FOR SERVICE THE UNIT WITHIN THE ROW

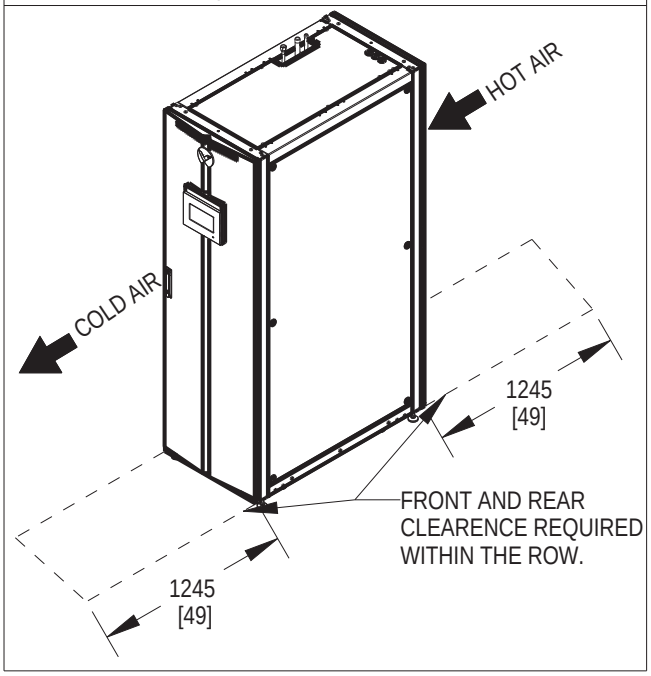




Cooling System	Dry Weight, +/- 5% lbs (kg)
AIR	703 (319)

NOTES:
1. ELECTRIC BOX IS IN REAR OF UNIT (SHOWN FULLY EXTENDED). FOR SERVICE ACCESS TO ELECTRIC BOX REMOVE REAR DOOR. SLIDE ELECTRIC BOX REARWARD IN DIRECTION OF ARROW. ELECTRIC BOX DOOR SWINGS OPEN AS SHOWN. REAR EDGE OF UNIT MUST BE FLUSH WITH ADJACENT CABINET WITH REAR DOOR INSTALLED.

ACCESS REQUIRED FOR INSTALLATION

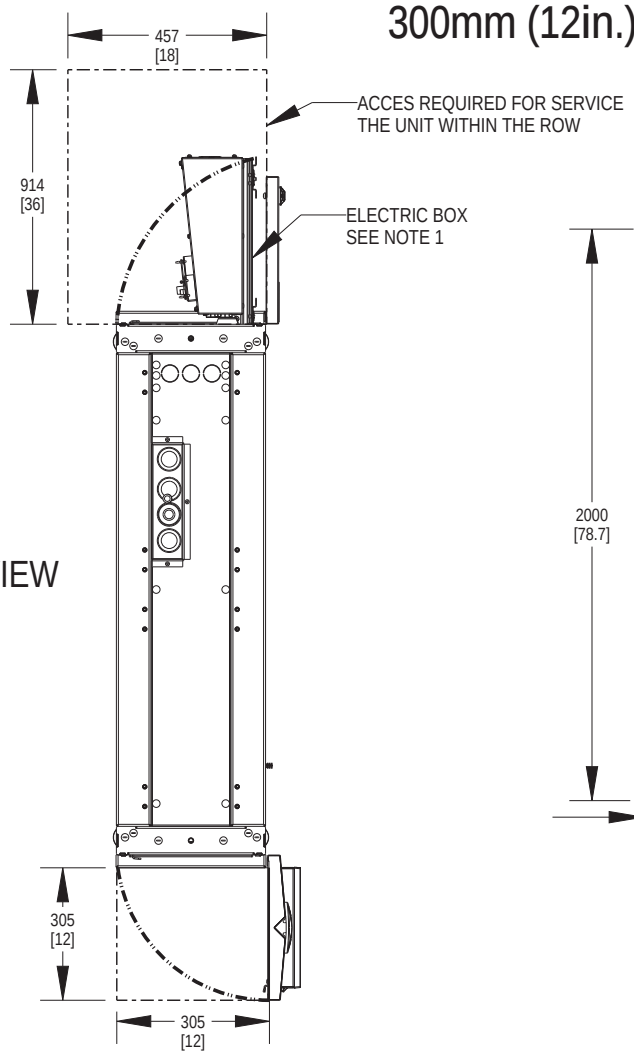


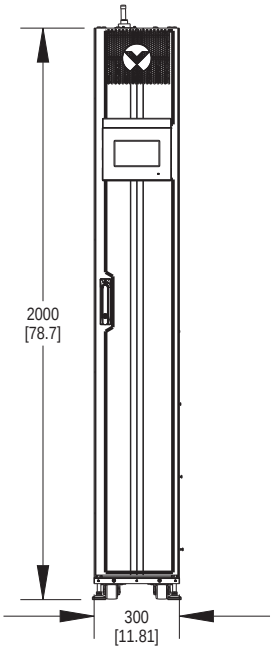
VERTIV COOLPHASE ROW

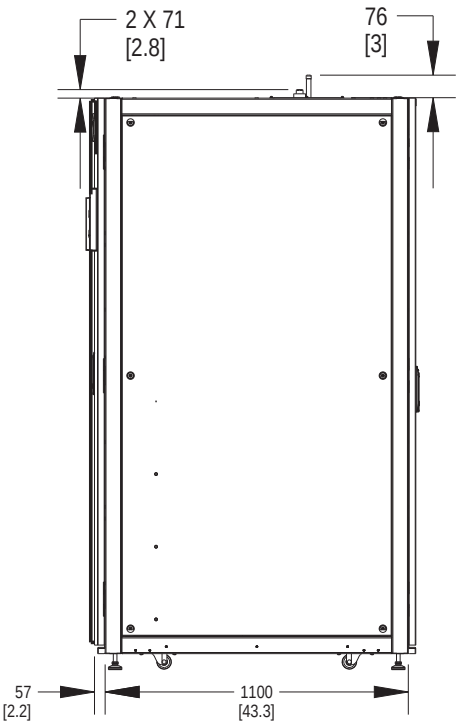
CABINET DIMENSIONAL DATA

300mm (12in.) MODELS

TOP VIEW

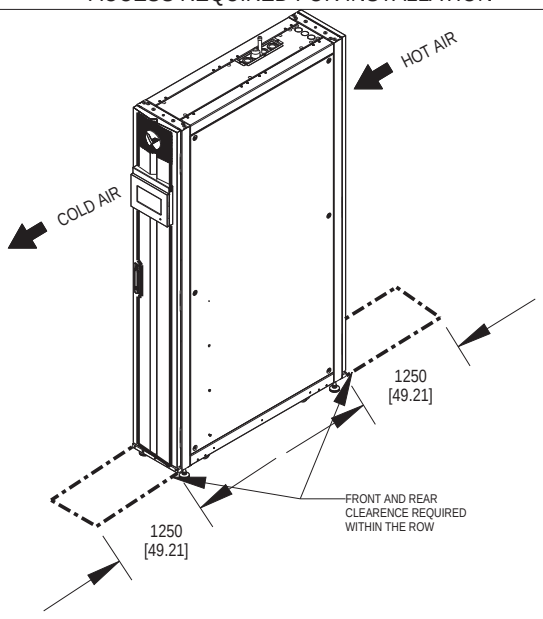






Cooling System	Dry Weight, +/- 5% lbs (kg)
AIR	507 (230)

ACCESS REQUIRED FOR INSTALLATION



NOTES:
1. ELECTRIC BOX IS IN REAR OF UNIT (SHOWN FULLY EXTENDED).
FOR SERVICE ACCESS TO ELECTRIC BOX REMOVE REAR DOOR.
SLIDE ELECTRIC BOX REARWARD IN DIRECTION OF ARROW.
ELECTRIC BOX DOOR SWINGS OPEN AS SHOWN.
REAR EDGE OF UNIT MUST BE FLUSH WITH ADJACENT CABINET
WITH REAR DOOR INSTALLED.

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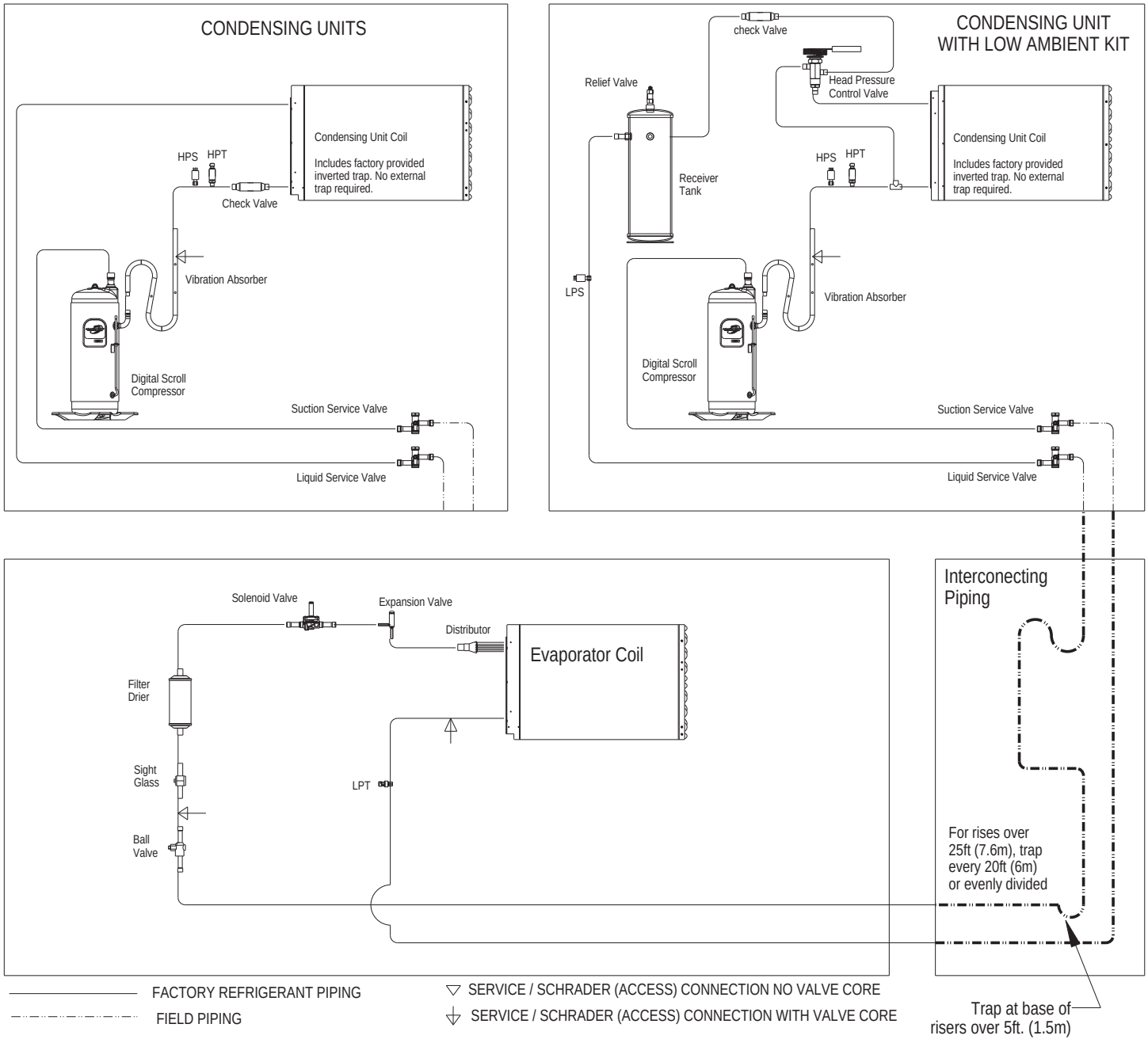
VERTIV COOLPHASE ROW 300/600

GENERAL ARRANGEMENT DIAGRAM
300/600 MM (12/24IN) AIR COOLED MODELS



Notes:
1. Schematic representation shown. Do not use for specific connection locations.
2. Interconnecting Piping are not supplied by Vertiv™, but are required for proper circuit operation and maintenance. Vertiv CoolPhase Row has an internal trap at the base of the unit. For field piping the discharge line vertical rise starts at the base of the unit and not the top of the unit.
3. Do not isolate any refrigerant circuit from over pressurization protection.
4. Traps must be installed and horizontal lines pitched to ensure proper oil return and to reduce liquid floodback to compressor. Pitch horizontal hot gas piping at a minimum of 1/2" per 10 feet (42mm per 10m) so that gravity will aid in moving oil in the direction of the refrigeration flow.

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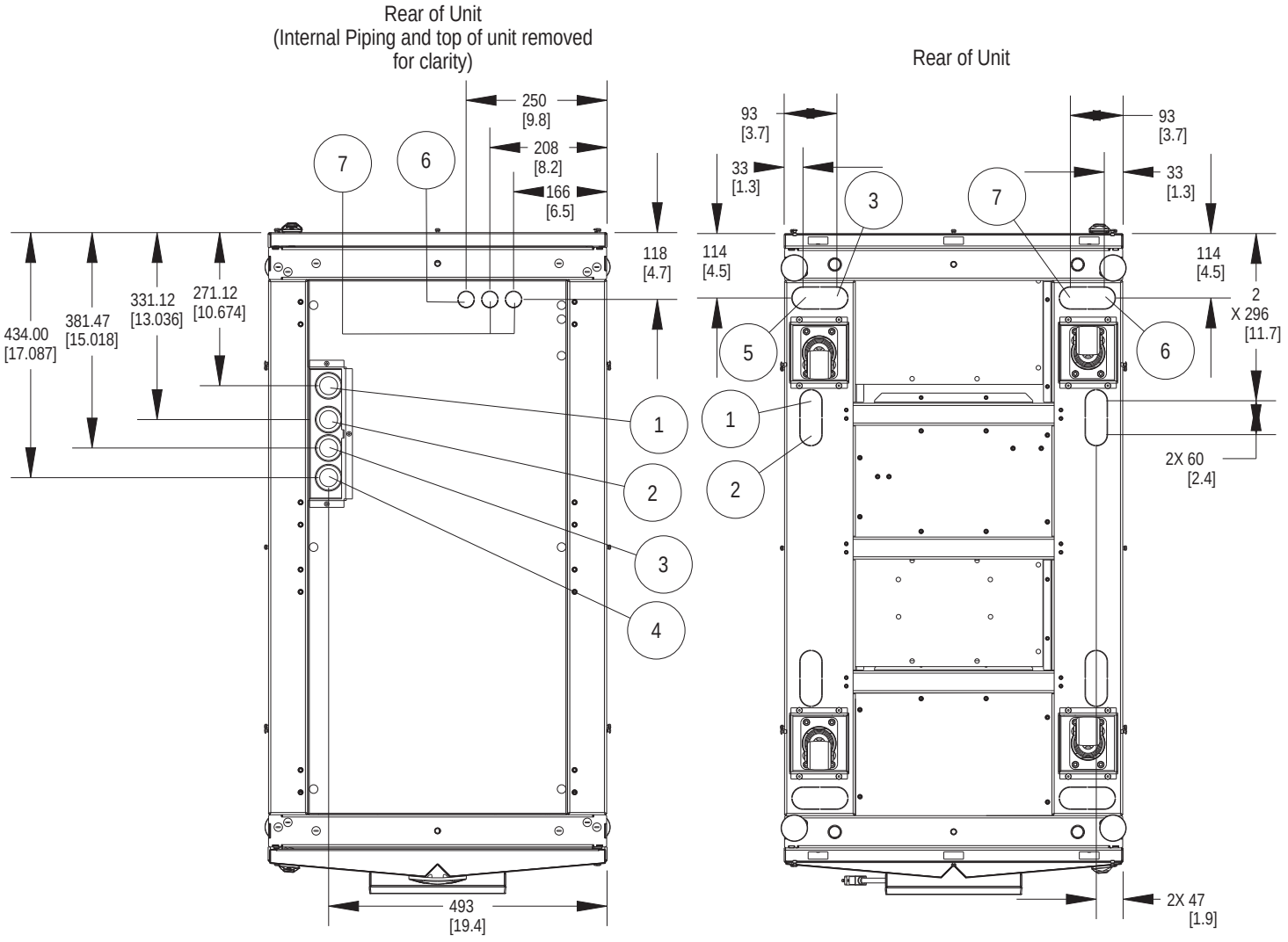
VERTIV COOLPHASE ROW

Primary Connection Locations
600mm (24in.) Air Cooled Models



Top View showing Top Connections

Top View showing Bottom Connections (possible with raised floor)

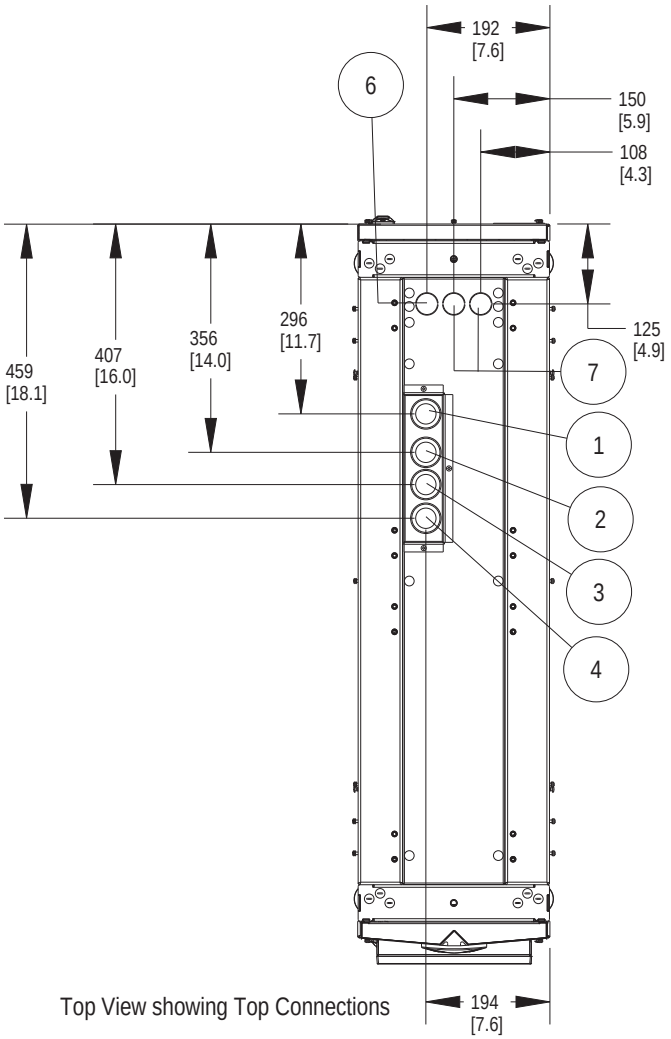
1	RLT	Refrigerant liquid line inlet	5/8 in. O.D. copper sweat
2	RGT	Refrigerant gas line outlet	7/8 in. O.D. copper sweat
3	HF	Humidifier Supply	G 3/4 x Rc 1/2 in.
4	CPT	Condensate pump outlet	Rc 1/2 in. female copper, threaded joint
5	CGT	Condensate gravity outlet	Rc 1/2 in. female copper threaded joint
6	HVT	High Voltage Cable access	Combination knockout: 28 mm (1-1/8 in.)
7	LVT	Low Voltage cable access	Combination knockout: 22 mm (7/8 in.)
NOTE: All dimensions are in mm (in.).			

PIPING AND ELECTRICAL CONNECTIONS AVAILABLE AT THE TOP AND BOTTOM OF UNIT.
ATTENTION, AIR COOLED SYSTEMS MAY REQUIRE ADDITIONAL OIL TO BE ADDED IN THE FIELD IN ORDER TO ALLOW FOR SUFFICIENT COMPRESSOR LUBRICATION. SEE UNIT USER MANUAL FOR DETAILS.

VERTIV COOLPHASE ROW

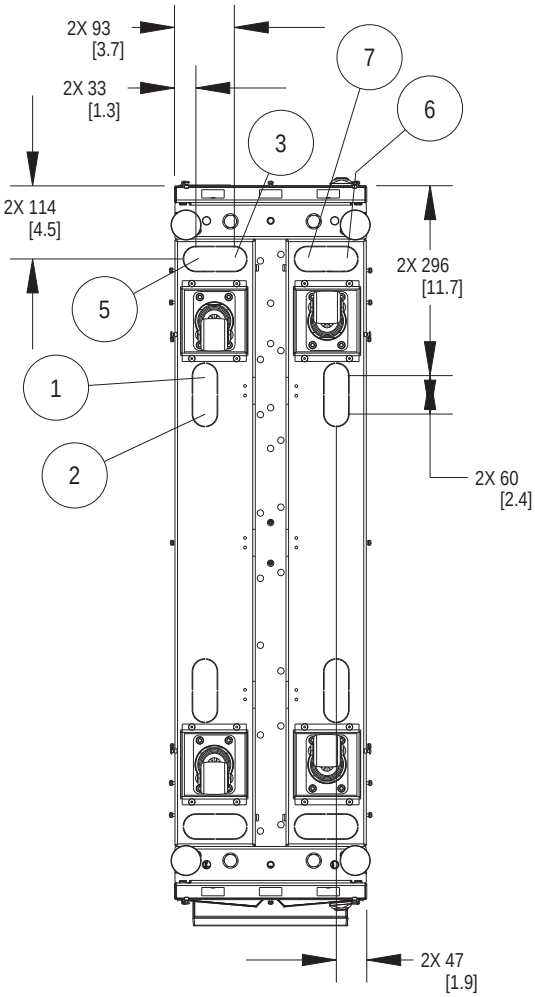
Primary Connection Locations
300mm (12in.) Air Cooled Models

Rear of Unit
(Internal Piping and top of unit removed for clarity)



Top View showing Top Connections

Rear of Unit



Top View showing Bottom Connections
(possible with raised floor)

1	RLT	Refrigerant liquid line inlet	5/8 in. O.D. copper sweat
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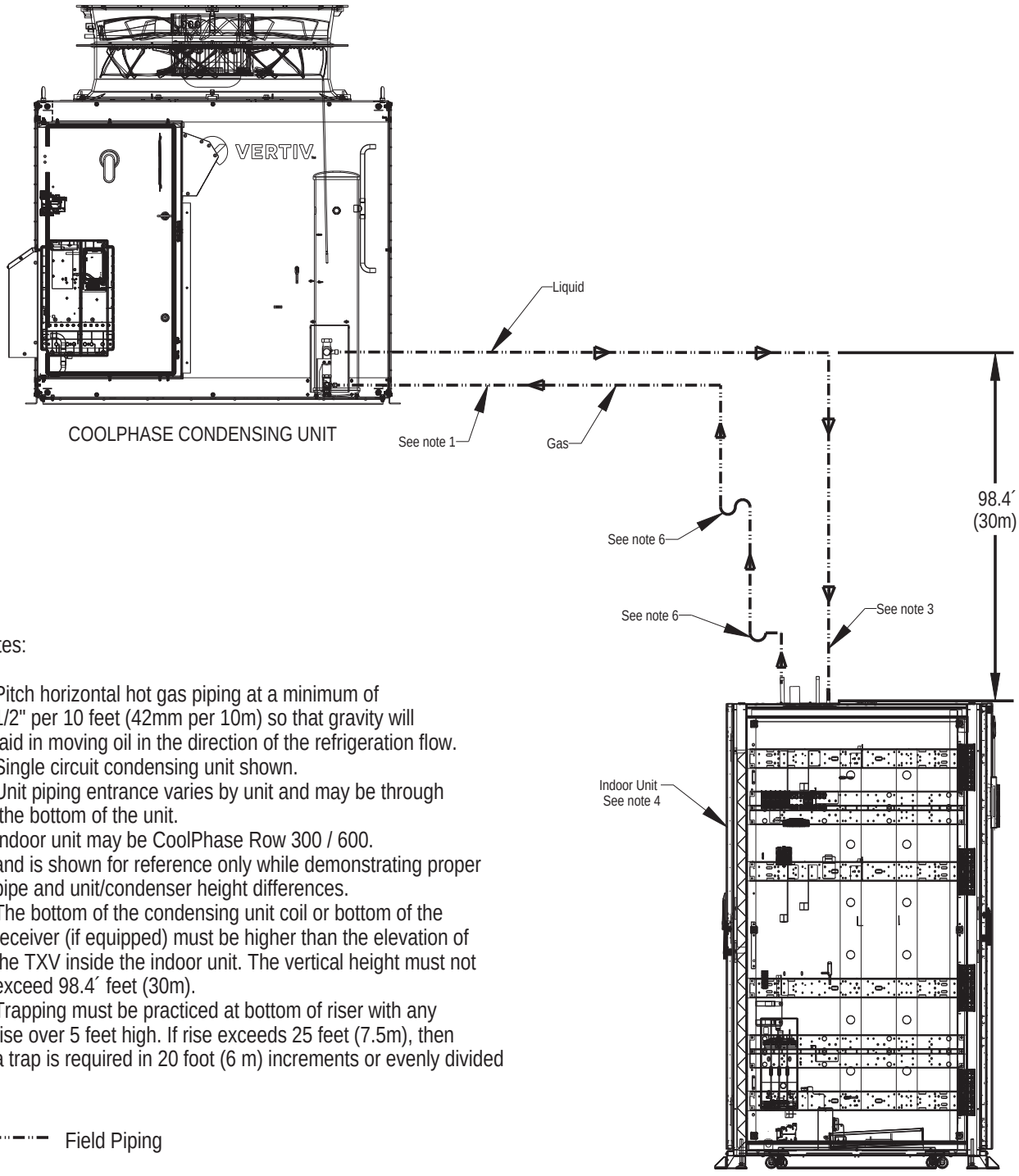
VERTIV COOLPHASE CONDENSING UNIT

PIPING SCHEMATIC

CONDENSING UNIT ABOVE INDOOR UNIT 21 & 28kW



Notes:

1. Pitch horizontal hot gas piping at a minimum of 1/2" per 10 feet (42mm per 10m) so that gravity will aid in moving oil in the direction of the refrigeration flow.
2. Single circuit condensing unit shown.
3. Unit piping entrance varies by unit and may be through the bottom of the unit.
4. Indoor unit may be CoolPhase Row 300 / 600. and is shown for reference only while demonstrating proper pipe and unit/condenser height differences.
5. The bottom of the condensing unit coil or bottom of the receiver (if equipped) must be higher than the elevation of the TXV inside the indoor unit. The vertical height must not exceed 98.4´ feet (30m).
6. Trapping must be practiced at bottom of riser with any rise over 5 feet high. If rise exceeds 25 feet (7.5m), then a trap is required in 20 foot (6 m) increments or evenly divided

Field Piping

VERTIV COOLPHASE CONDENSING UNIT

PIPING SCHEMATIC

CONDENSING UNIT BELOW INDOOR UNIT 21 & 28kW

Notes:

1. Pitch horizontal hot gas piping at a minimum of 1/2" per 10 feet (42mm per 10m) so that gravity will aid in moving oil in the direction of the refrigeration flow.
2. Single circuit condensing unit shown.
3. Unit piping entrance varies by unit and may be through the top of the unit.
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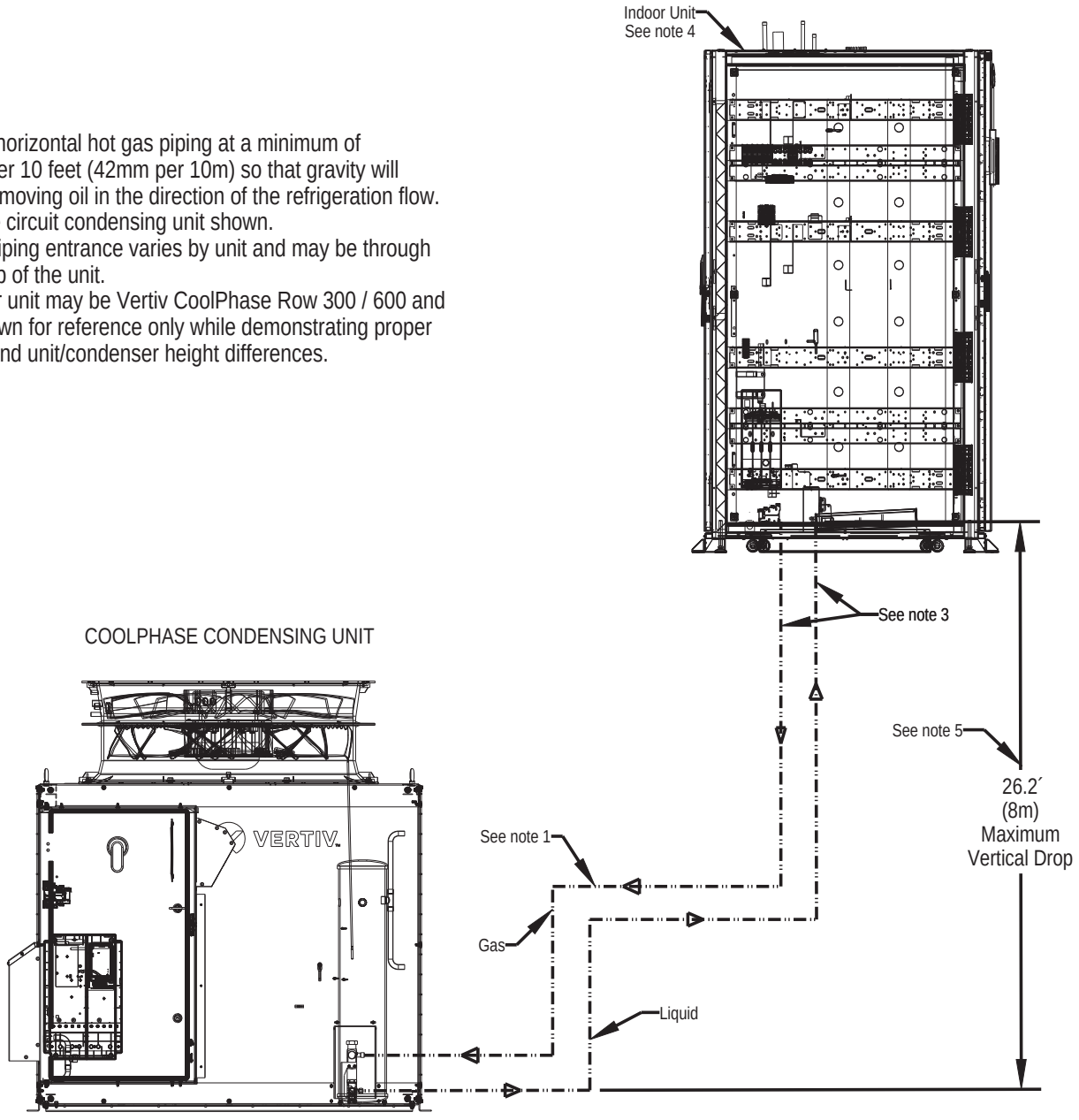


COOLPHASE ROW

ELECTRICAL FIELD CONNECTIONS & TERMINAL BLOCKS CONNECTIONS

STANDARD ELECTRICAL CONNECTIONS

1) High Voltage connection through the top of the CoolPhase Row - 1.37" (35mm) diameter concetric knockout.

2) Comunication connection through the top of the CoolPhase Row - 1.37" (35mm) diameter concetric knockout. connect according diagram in the corresponding ethernet port.

3) Electrical service (hard wired) - refer to serial tag information for unit electrical service requirement

- Three Phase - 208-230V 60HZ / 460 60HZ
- Single Phase - 208-230V 60HZ

Connnect to terminals on disconnect switch. Electrical service not by Vertiv. Use cooper conductors only, Wire per local codes. Refer to specification sheet for total unit full load amps, wire sizeamps and max over current protection device size.

4) Main Power Box

- Factory Installed Dissconect Switch.
- TBK 37-2 and 38-2 Remote Shut Down terminals prepared to customer connections.
- TBK 24-2 and 51-2 Water Under Flow Option prepared to customer connections.
- TBK 75-2 and 76-2 Common Alarm Option prepared to customer connections.

5) Communication Bracket

- Z1 Can communication 1 Connect ICOM2 P74 (Embedded Unity Card Port).
- Z2 (Not Used)
- Z3 TEAMWORK Connect ICOM2 P64.
- Z4 Modbus (RS485) Communication for outdoor unit.

6) Terminal Blocks Control Distribution Voltage / Power Voltage Terminals / Communication RS485

- TBK L1 - L2 - L3 Transformer Connection only for 460VAC Units (X1-X4).
- TBK PE Terminal Ground.
- TBK 242 and G2 Control Distribution Voltage 24VAC 242 (L) G2 (N).
- TBK-G1 and TBK 241 Control Distribution Voltage 24VAC Insulated Voltage from Transformer 1:1.
- TBK A and TBK B RS485 Communication Distribution Terminal Blocks.
- TBK-92 and TBK-93 Control Voltage to activate the Reheat Relay.

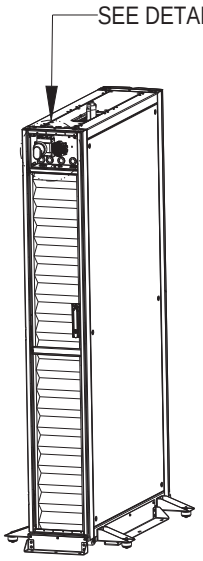
7) Fans Terminal Blocks

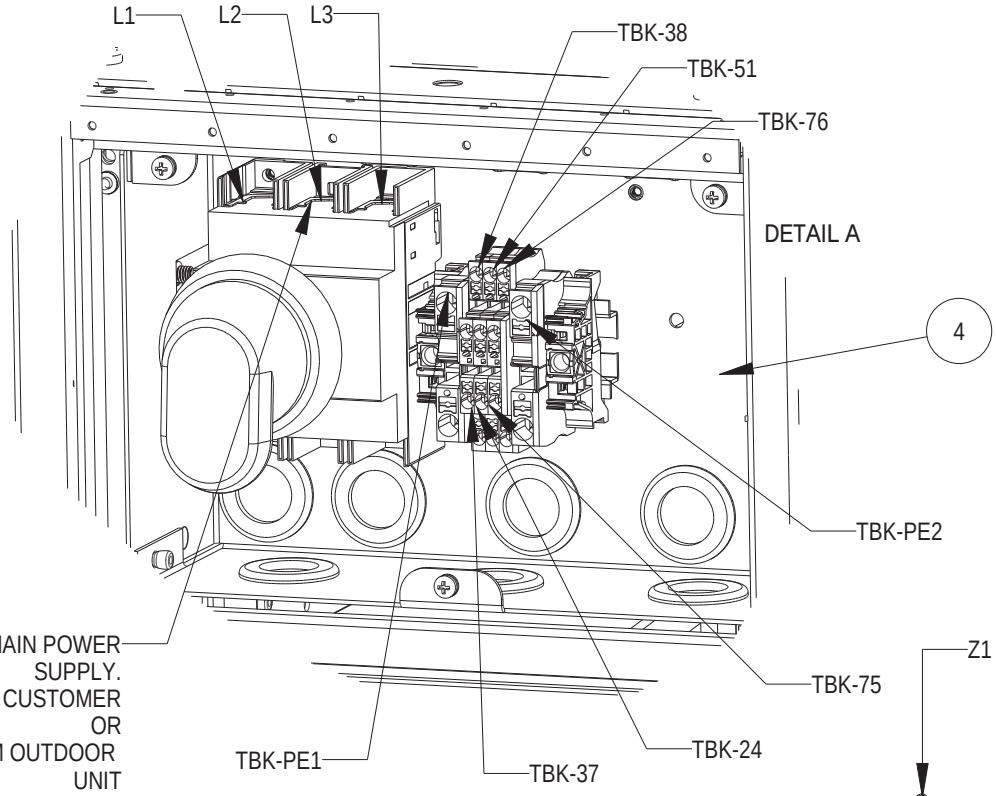
- TBK 48V 48VDC + Distribution.
- TBK GND 48VDC - Distribution.
- TBK- FCTR Fan Control Signal 0-10V Distribution.

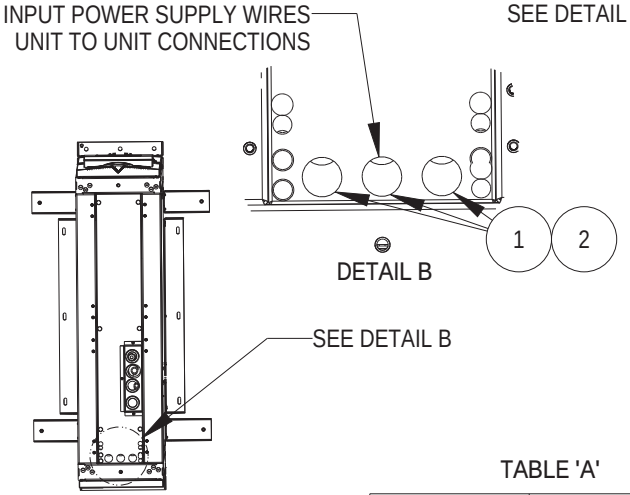
Reference models showed in this document are 300MM units. All connections, terminal block locations and comunication ports also apply for 600MM units.

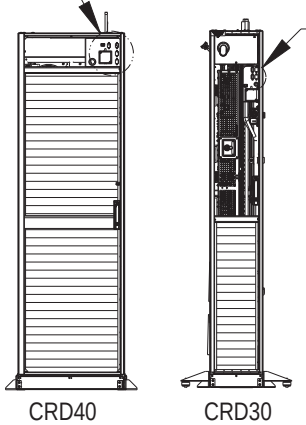
COOLPHASE ROW

ELECTRICAL FIELD CONNECTIONS & TERMINAL BLOCKS CONNECTIONS









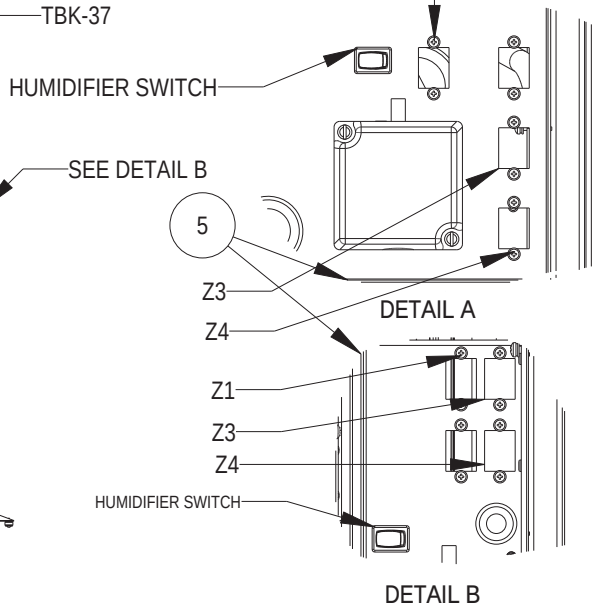


TABLE 'A'

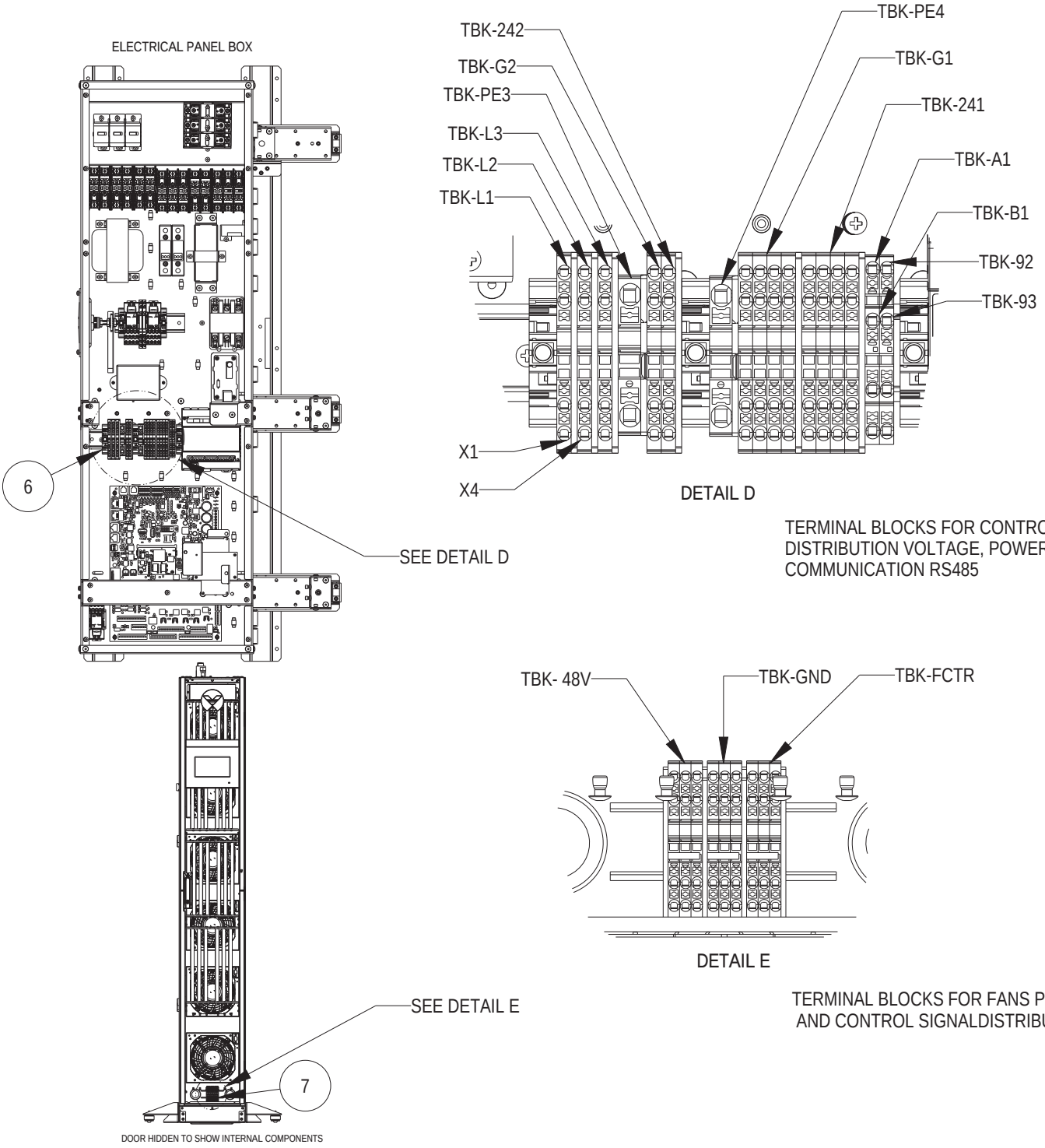
PIN OUT	DESCRIPTION
Z4-1 / Z4-8	MODBUS A / B
Z4-3/Z4-4	24VAC L / 24VAC N

ETHERNET CABLE CONFIGURATION MUST BE STRAIGHT CONFIGURATION.
Z4 PIN OUT (INDOOR - OUTDOOR COMMUNICATION) SEE TABLE 'A'

REV: C
REV DATE: 08-27-25

COOLPHASE ROW

ELECTRICAL FIELD CONNECTIONS & TERMINAL BLOCKS CONNECTIONS

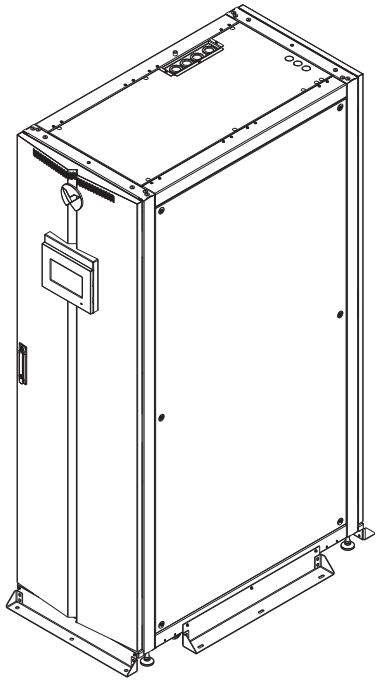


TERMINAL BLOCKS FOR CONTROL DISTRIBUTION VOLTAGE, POWER SUPPLY, COMMUNICATION RS485

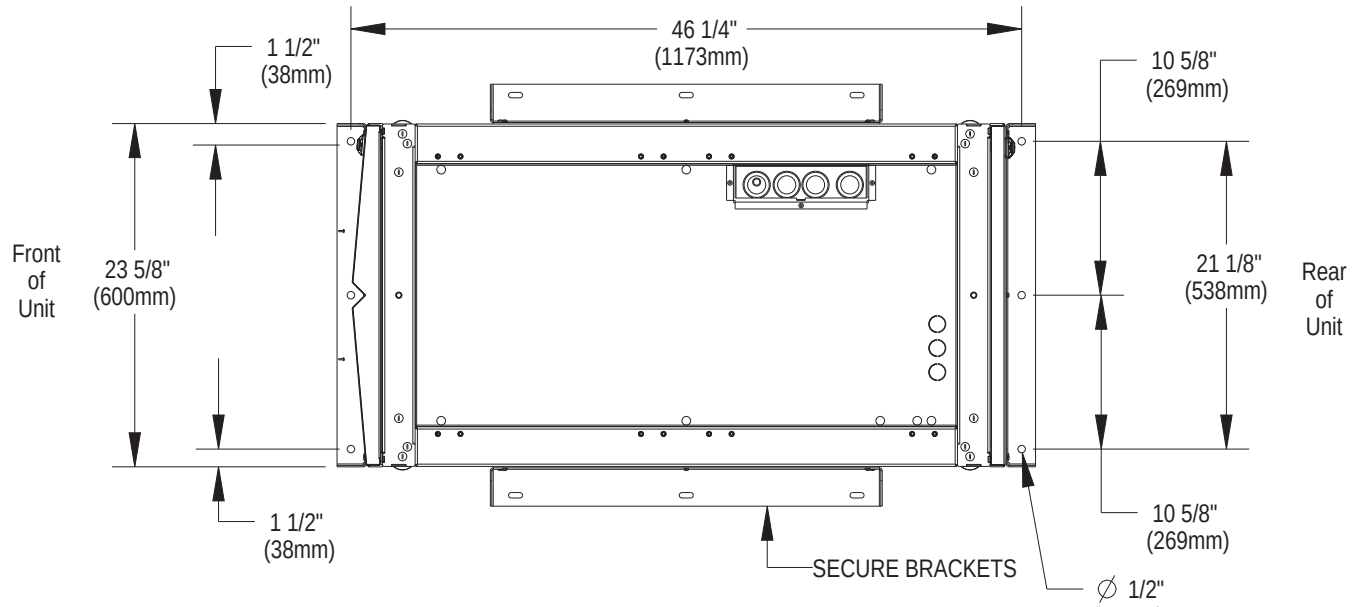
TERMINAL BLOCKS FOR FANS POWER SUPPLY AND CONTROL SIGNALDISTRIBUTION.

VERTIV COOLPHASE ROW

DIMENSIONAL DATA
600mm (24in.) RIGID FLOOR MOUNT BRACKET



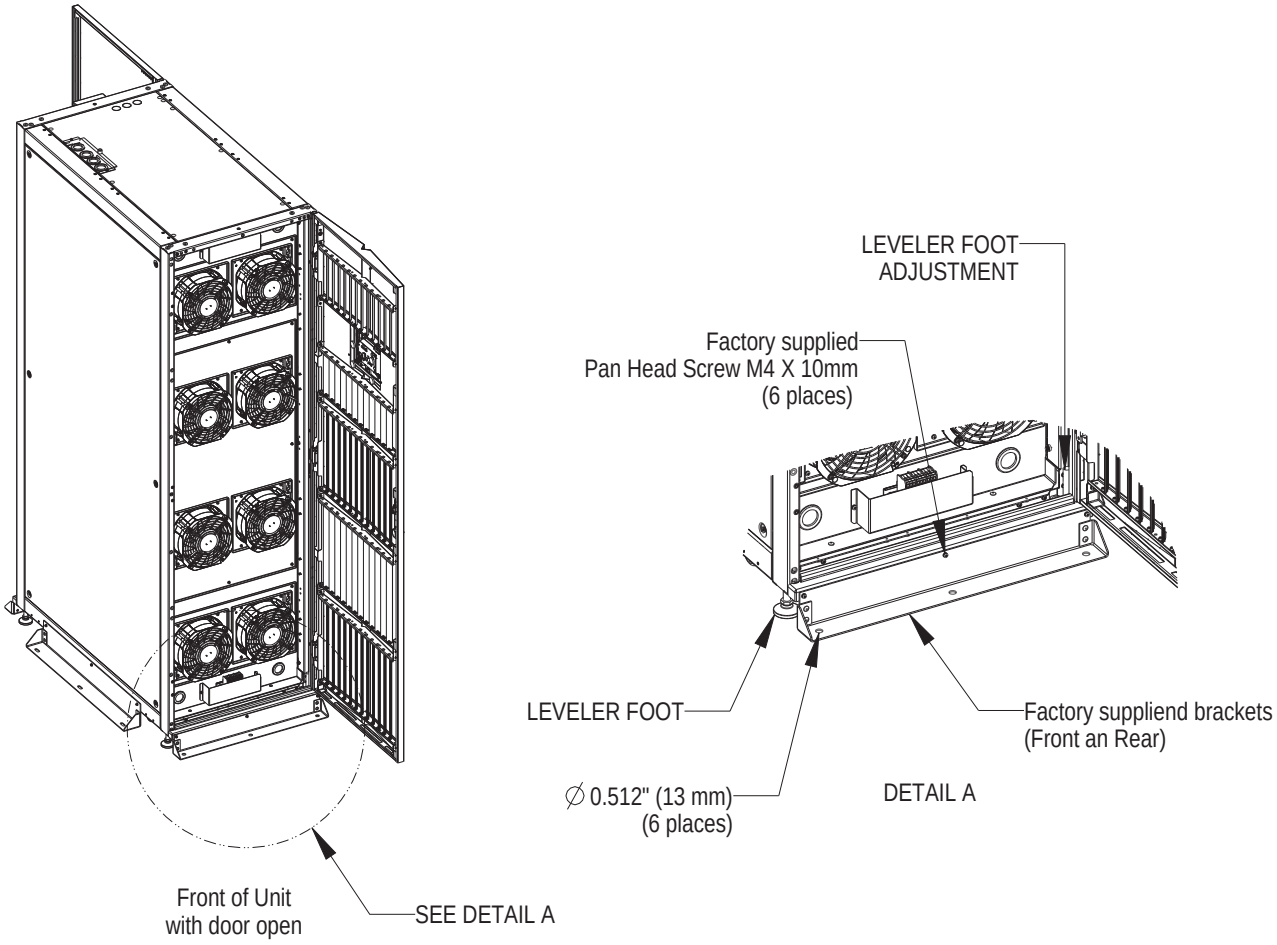
ISO VIEW ON FLOOR



FLOOR ANCHORING DIMENSIONS
VIEW FROM TOP OF UNIT
FRONT & REAR DOOR/PANEL REMOVED FOR CLARITY

VERTIV COOLPHASE ROW

DIMENSIONAL DATA
600mm (24in.) RIGID FLOOR MOUNT BRACKET



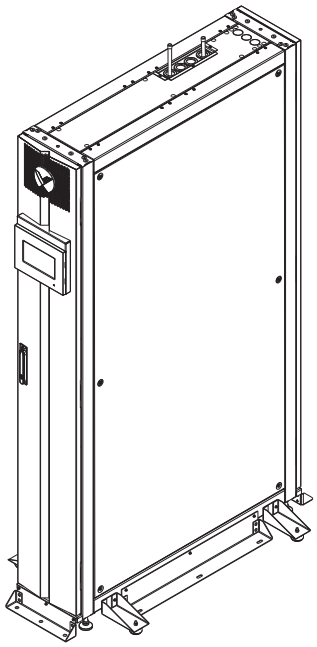
Notes:

1. Prior to mounting brackets, lower the four leveling feet (See Detail "A") until they make contact with the floor. Ensure that the unit is level to avoid corrosion or health hazards caused by condensate accumulation.
2. Anchor the brackets to the unit using the screws that are provided.
3. The brackets are to be secured to the floor using field supplied anchors.
4. The same mounting brackets are used in the front and rear of the unit.
5. This document is not to be used for field installation, see Vertiv™ CoolPhase Row User Manual.

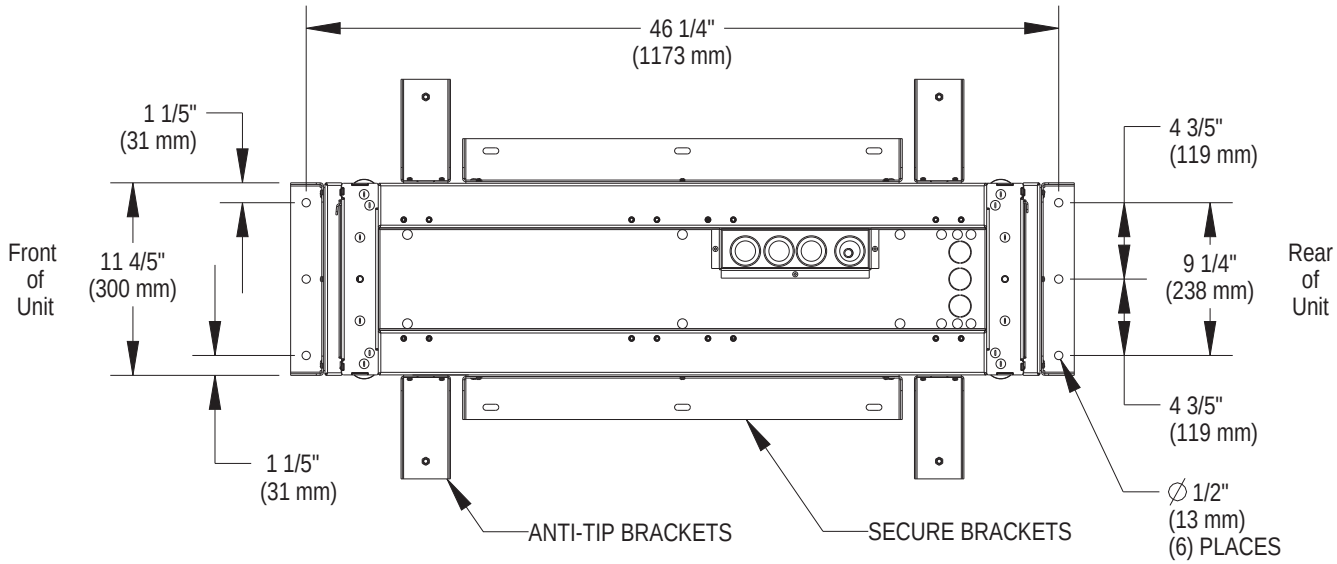
VERTIV COOLPHASE ROW

DIMENSIONAL DATA

300mm (12in) RIGID FLOOR MOUNT BRACKET



ISO VIEW ON FLOOR

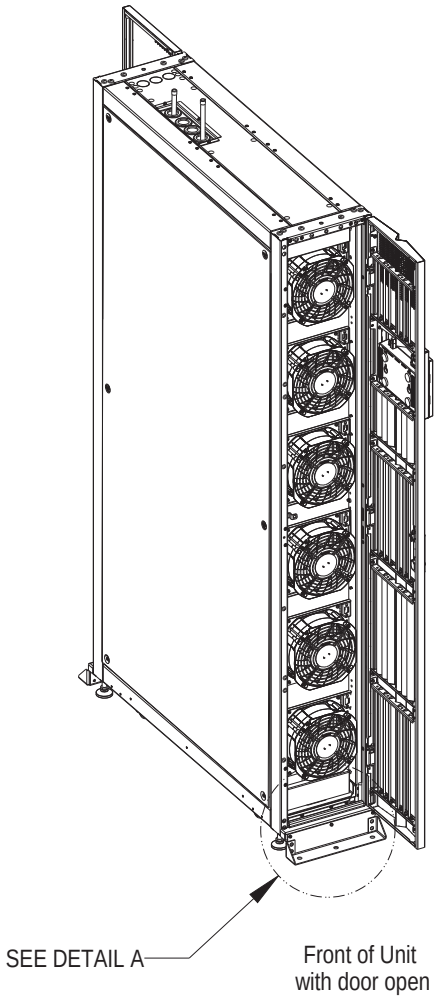


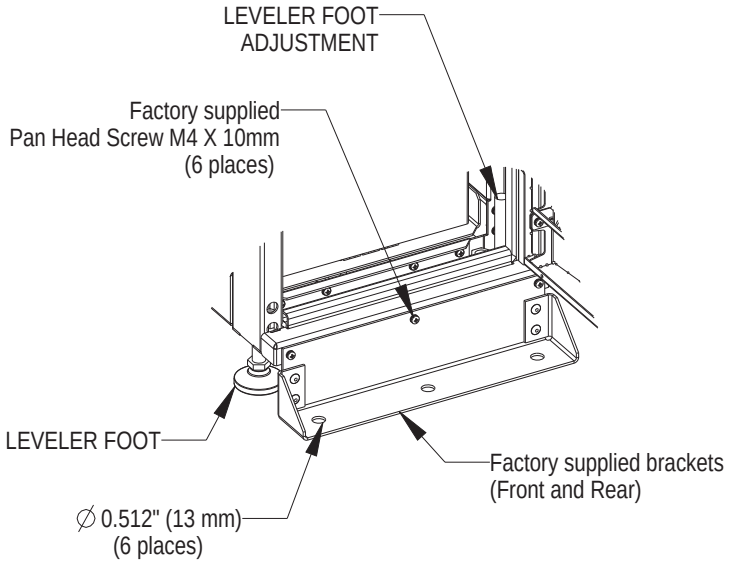
FLOOR ANCHORING DIMENSIONS

VIEW FROM TOP OF UNIT
FRONT & REAR DOOR/PANEL REMOVED FOR CLARITY

VERTIV COOLPHASE ROW

DIMENSIONAL DATA
300mm (12in) RIGID FLOOR MOUNT BRACKET





DETAIL A

Notes:

1. Prior to mounting brackets, lower the four leveling feet (See Detail "A") until they make contact with the floor. Ensure that the unit is level to avoid corrosion or health hazards caused by condensate accumulation.
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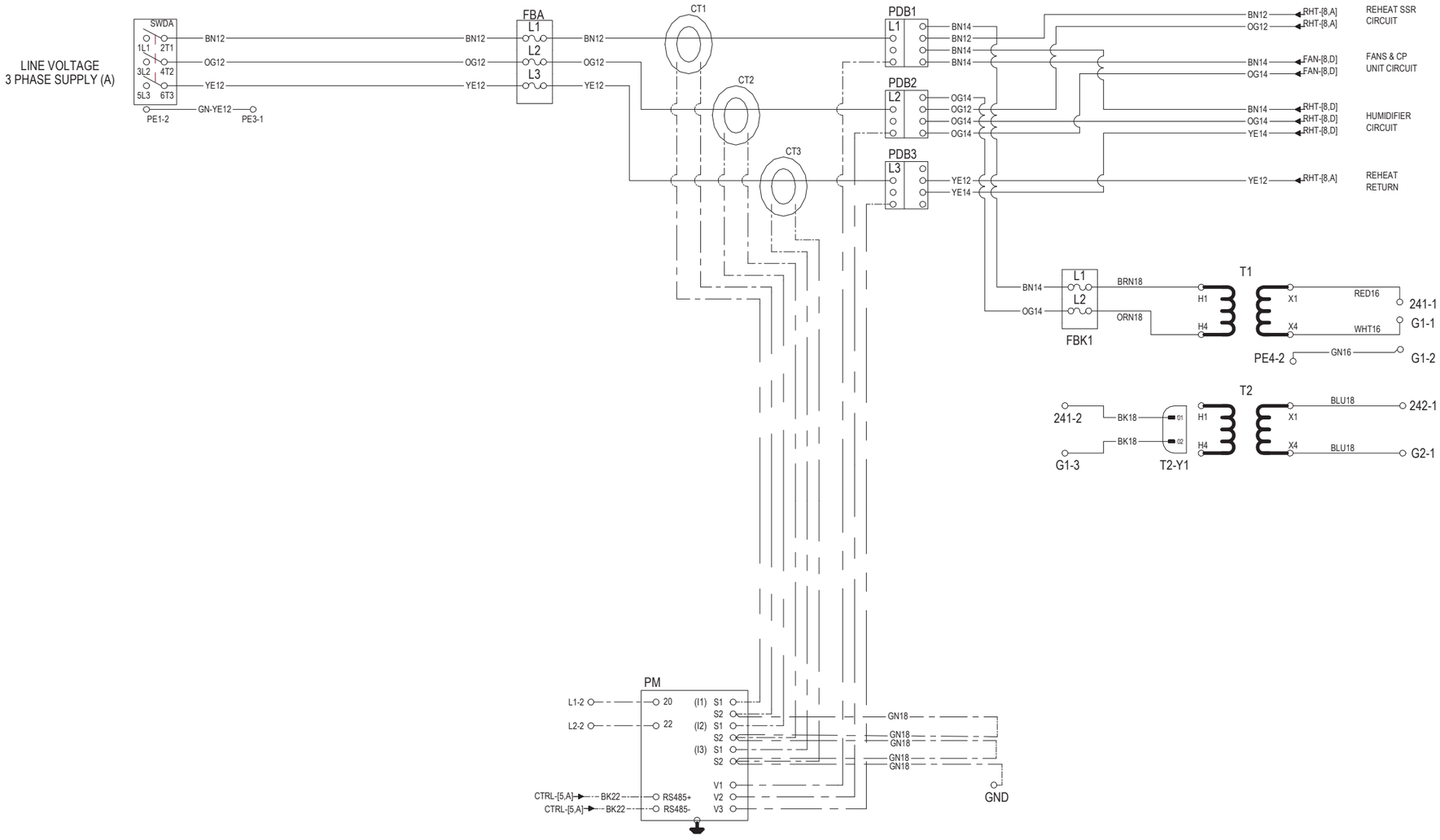

NOTES:
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2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
FBA - FUSE BLOCK A	6,D	CT1 - CURRENT TRANSFORMER 1	5,D
FBB - FUSE BLOCK B	6,D	CT2 - CURRENT TRANSFORMER 2	5,D
FBK1 - FUSE BLOCK 1 CONTROL	4,C	CT3 - CURRENT TRANSFORMER 3	5,D
KAC - CONTACTOR RELAY ATS C	6,C	PM - POWER METER	5,B
KAD - CONTACTOR RELAY ATS D	6,C		
KMA - CONTACTOR ATS A	6,C		
KMB - CONTACTOR ATS B	5,C		
PDB1 - POWER DIST BLOCK L1	5,D		
PDB2 - POWER DIST BLOCK L2	5,D		
PDB3 - POWER DIST BLOCK L3	5,D		
SWDA - SWITCH DISCONNECT A	8,D		
SWDB - SWITCH DISCONNECT B	8,D		
T1 - CONTROL TRANSFORMER	3,C		
T2 - ISOLATION TRANSFORMER	3,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

ELECTRICAL SCHEMATIC

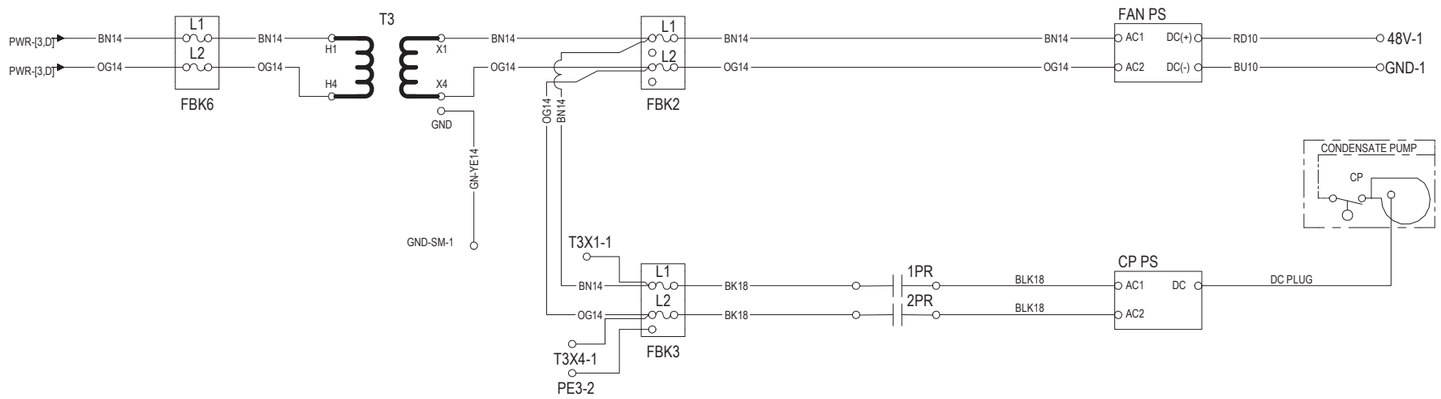
VERTIV® CRV DX 40kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

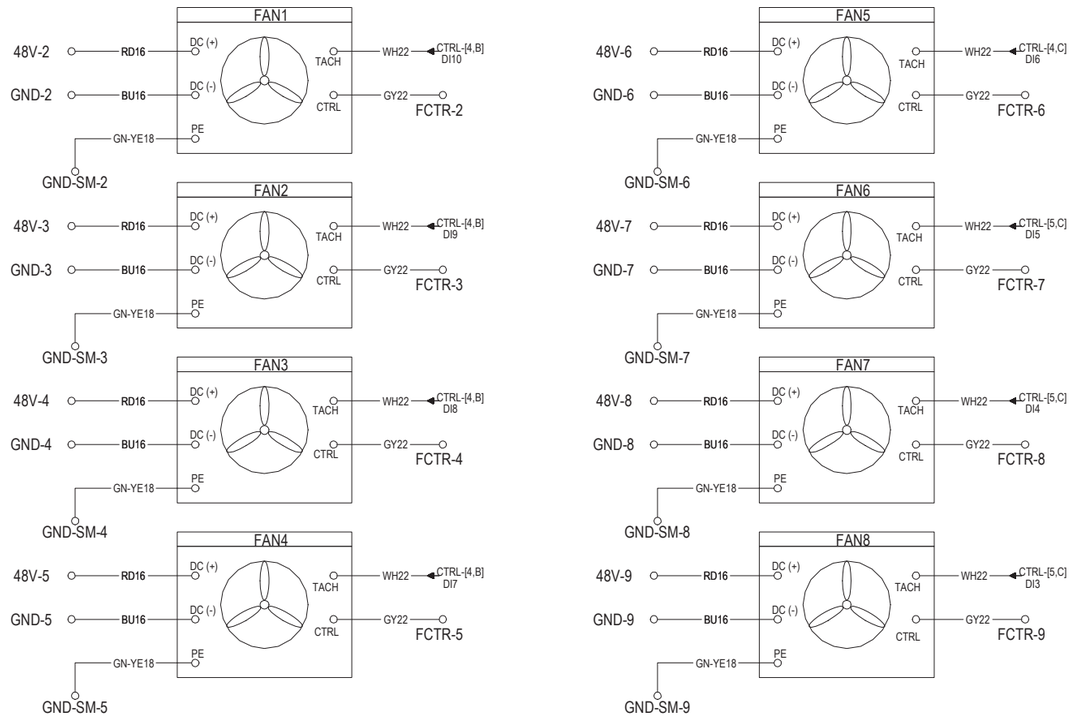
POWER SUPPLY

SHEET 1 OF 4

DRAWN	A. TORRES	DATE	21/02/2025
CHECKED	D. MACIEL	DATE	21/02/2025
ENGR	A. TORRES	DATE	21/02/2025

DRAWING NO. 10080202DRW
REV B





NOTES:
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3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
CPPS - CP POWER SUPPLY 24VDC	5,C		
FANPS - FANS POWER SUPPLY 48VDC	5,D		
FBK2 - FUSE BLOCK 2 FANS	6,D		
FBK3 - FUSE BLOCK 3 CP	6,C		
FBK6 - FUSE BLOCK 6 T3	8,D		
T3 - FAN TRANSFORMER	7,D		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 21/02/2025
CHECKED	D. MACIEL	DATE 21/02/2025
ENGR	A. TORRES	DATE 21/02/2025

ELECTRICAL SCHEMATIC

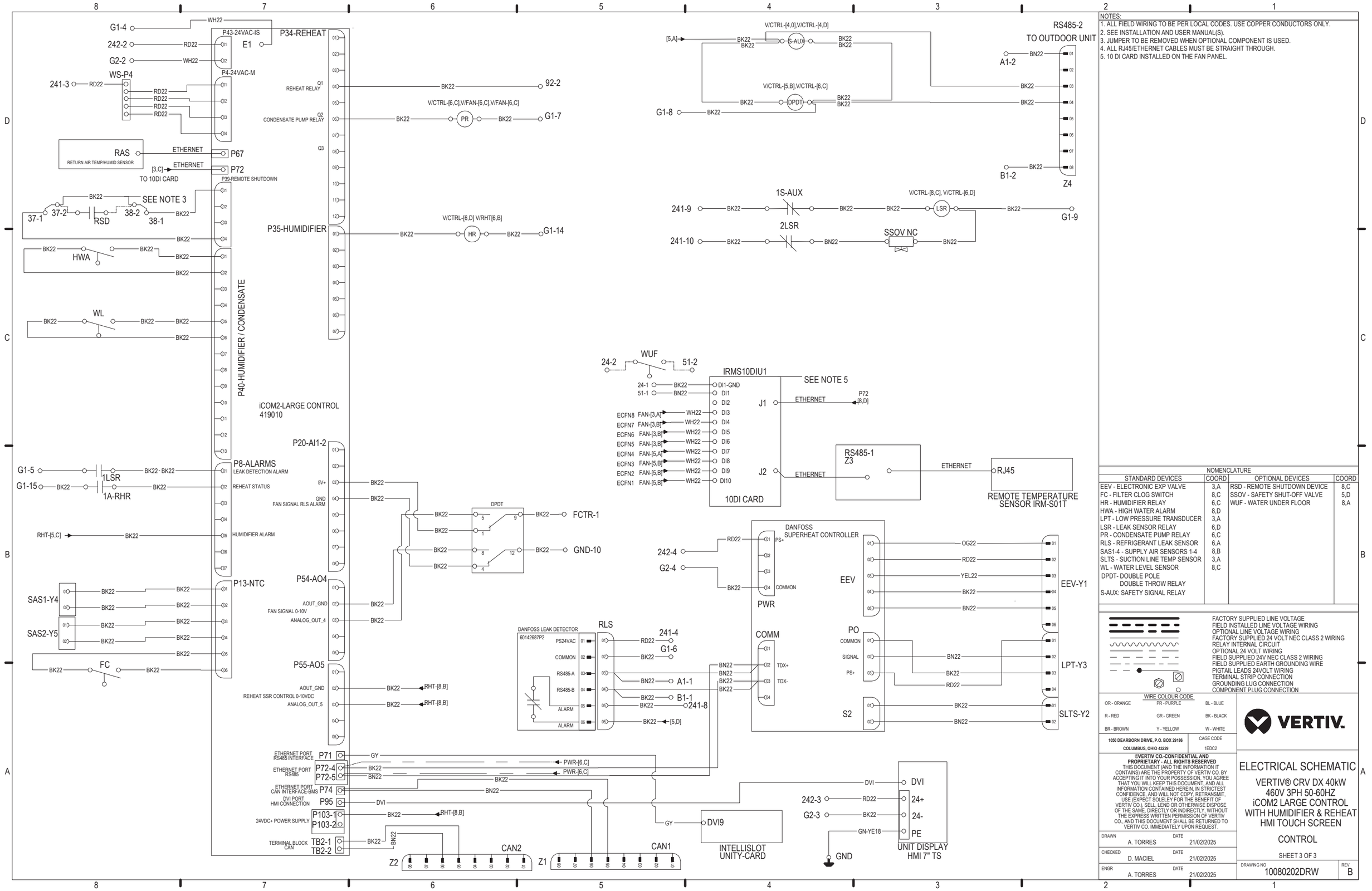
VERTIV® CRV DX 40kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

FANS & CP

SHEET 2 OF 4

DRAWING NO 10080202DRW

REV B



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5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EEV - ELECTRONIC EXP VALVE	3,A	RSD - REMOTE SHUTDOWN DEVICE	8,C
FC - FILTER CLOG SWITCH	8,C	SSOV - SAFETY SHUT-OFF VALVE	5,D
HR - HUMIDIFIER RELAY	6,C	WUF - WATER UNDER FLOOR	8,A
HWA - HIGH WATER ALARM	8,D		
LPT - LOW PRESSURE TRANSDUCER	3,A		
LSR - LEAK SENSOR RELAY	6,D		
PR - CONDENSATE PUMP RELAY	6,C		
RLS - REFRIGERANT LEAK SENSOR	6,A		
SAS1-4 - SUPPLY AIR SENSORS 1-4	8,B		
SLTS - SUCTION LINE TEMP SENSOR	3,A		
WL - WATER LEVEL SENSOR	8,C		
DPDT- DOUBLE POLE DOUBLE THROW RELAY			
S-AUX: SAFETY SIGNAL RELAY			

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

		DATE
DRAWN	A. TORRES	21/02/2025
CHECKED	D. MACIEL	21/02/2025
ENGR	A. TORRES	21/02/2025

ELECTRICAL SCHEMATIC

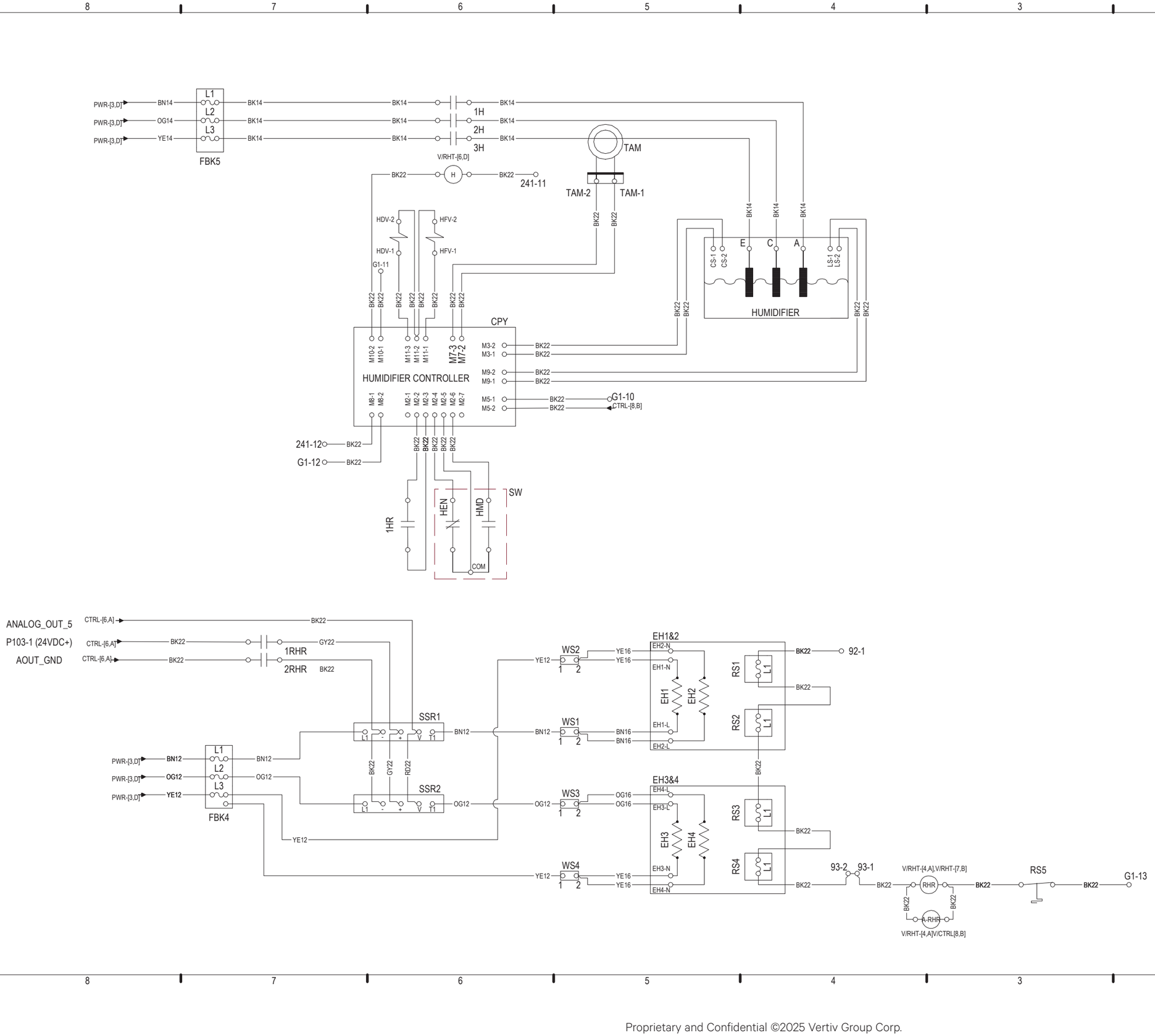
VERTIV® CRV DX 40kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

CONTROL

SHEET 3 OF 3

DRAWING NO 10080202DRW

REV B



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5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EH1-2 - ELECTRICAL REHEAT 1, 2	5,B		
EH3-4 - ELECTRICAL REHEAT 3, 4	5,A		
FBK4 - FUSE BLOCK 4 REHEAT	7,A		
FBK5 - FUSE BLOCK 5 HUMIDIFIER	7,D		
H - HUMIDIFIER CONTACTOR	6,D		
HDV - HUMIDIFIER DRAIN VALVE	6,D		
HFV - HUMIDIFIER FILL VALVE	6,D		
RHR - REHEAT RELAY	7,D		
RS5 - THERMAL CUT-OFF SWITCH	6,D		
SSR1 - SOLID STATE RELAY 1	6,B		
SSR2 - SOLID STATE RELAY 2	6,A		
TAM - HUM CURRENT TRANSFORMER	5,D		
A-RH AUXILIARY CONTACT RHT			

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
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COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

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VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 21/02/2025
CHECKED	D. MACIEL	DATE 21/02/2025
ENGR	A. TORRES	DATE 21/02/2025

ELECTRICAL SCHEMATIC

VERTIV® CRV DX 40kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

REHEAT & HUMIDIFIER

SHEET 4 OF 4

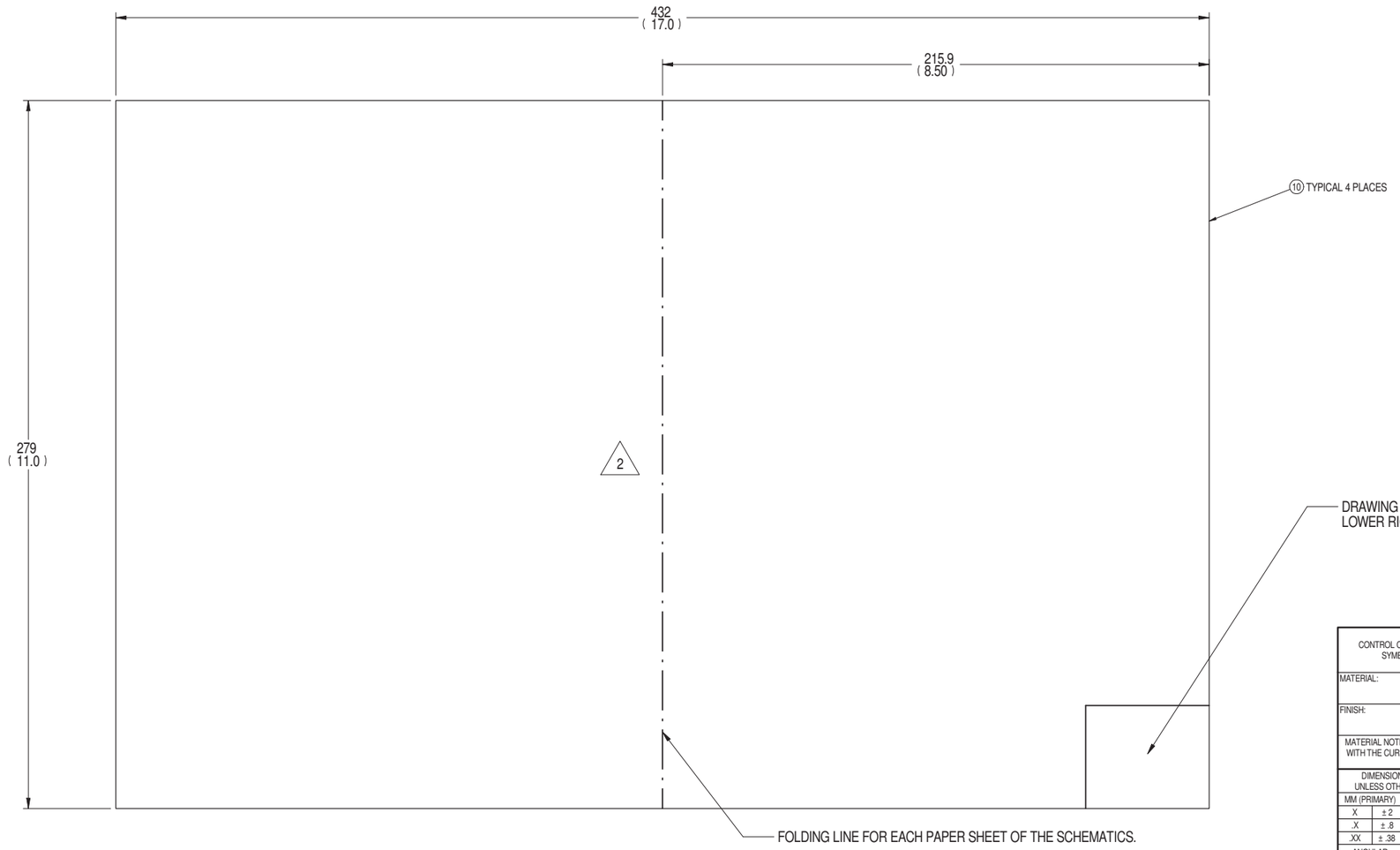
DRAWING NO 10080202DRW
REV B

VERTIV PART NUMBER	INTENDED USAGE		UL / CSA REQUIRED		COLOR	
	INDOOR	OUTDOOR	YES	NO	MATERIAL	LETTERING
10080202P1	X		X		WHITE	BLACK

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PRODUCTION RELEASE.	2/26/25 2/26/25	A. TORRES D. MACIEL

NOTES:

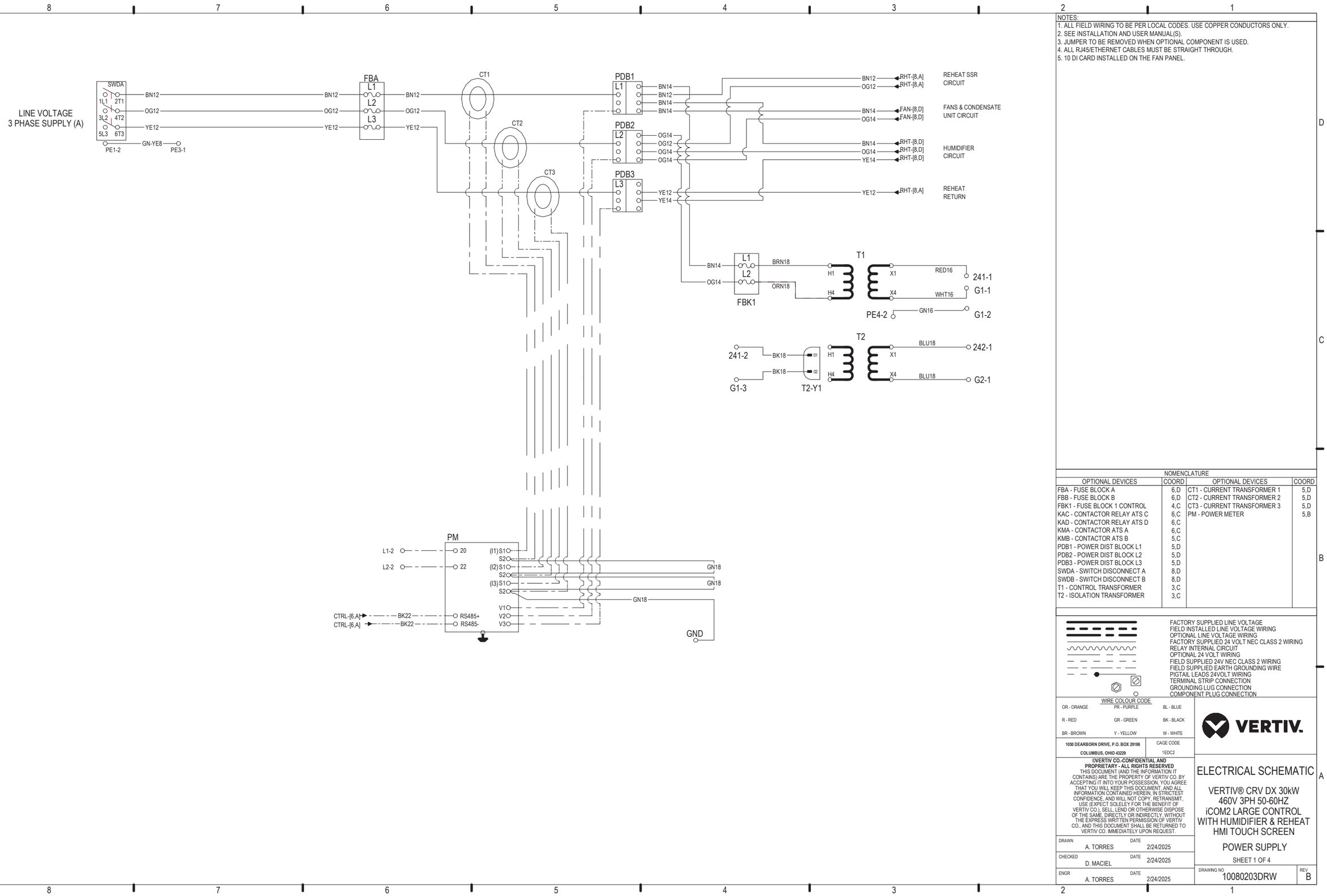
1. SEE VERTIV ENGINEERING SPECIFICATION 168187 FOR LABEL GENERAL DIMENSIONAL TOLERANCES, FONT SPECIFICATIONS, ANSI AND RoHS COMPLIANCE AND SEE SECTION 5.4. FOR LABEL MATERIAL SPECS AND APPROVED SUPPLIERS/MANUFACTURERS.
2. SEE SHEETS 1-4 FOR CURRENT SCHEMATIC. LABEL MANUFACTURER IS TO USE THE MOST CURRENT REVISION OF VERTIV .pdf DOCUMENT 10080202DRW SHEETS 1-4 FROM VERTIV CONTROLLED DOCUMENT DATABASE.
3. REFER TO BOM FOR MATERIAL.



CONTROL CHARACTERISTICS SYMBOL LEGEND	C CONTROL CHARACTERISTIC	10080202P1	PAPER SCHEM DX (A) CRD404-P00A
		PART NUMBER	DESCRIPTION
MATERIAL: SEE TABLE & NOTES		VERTIV.	
FINISH: NONE			
MATERIAL NOTE: FABRICATE FROM THE MATERIAL SPECIFIED IN ACCORDANCE WITH THE CURRENT APPLICABLE VERTIV ENGINEERING SPECIFICATION OR AS OTHERWISE SPECIFIED ON THIS DRAWING.		
DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED MM (PRIMARY): X ± 2, .X ± .8, .XX ± .38, ANGULAR ± 2° INCHES (SECONDARY): (.X) ± .1, (.XX) ± .03, (.XXX) ± .015	THIRD ANGLE PROJECTION	TITLE: PAPER SCHEMATIC CRD404-P00A	
	CORPORATE CAGE CODE: 1EDC2 1050 DEARBORN DRIVE P.O. BOX 29186 COLUMBUS, OHIO 43229		
DRAWN: A.TORRES	DATE: 2/26/2005		
CHECKED: DAVID FLORES	DATE: 2/26/2025		
ENGR: A.TORRES	DATE: 2/26/2025	SIZE: B	DRAWING NUMBER: 10080202DRW; SHEET: 5/5; REV.: B

THIRD ANGLE PROJECTION

FORM NO. 168188 REV 15



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4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

OPTIONAL DEVICES	COORD	OPTIONAL DEVICES	COORD
FBA - FUSE BLOCK A	6,D	CT1 - CURRENT TRANSFORMER 1	5,D
FBB - FUSE BLOCK B	6,D	CT2 - CURRENT TRANSFORMER 2	5,D
FBK1 - FUSE BLOCK 1 CONTROL	4,C	CT3 - CURRENT TRANSFORMER 3	5,D
KAC - CONTACTOR RELAY ATS C	6,C	PM - POWER METER	5,B
KAD - CONTACTOR RELAY ATS D	6,C		
KMA - CONTACTOR ATS A	6,C		
KMB - CONTACTOR ATS B	5,C		
PDB1 - POWER DIST BLOCK L1	5,D		
PDB2 - POWER DIST BLOCK L2	5,D		
PDB3 - POWER DIST BLOCK L3	5,D		
SWDA - SWITCH DISCONNECT A	8,D		
SWDB - SWITCH DISCONNECT B	8,D		
T1 - CONTROL TRANSFORMER	3,C		
T2 - ISOLATION TRANSFORMER	3,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
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1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 2/24/2025
CHECKED	D. MACIEL	DATE 2/24/2025
ENGR	A. TORRES	DATE 2/24/2025

VERTIV.

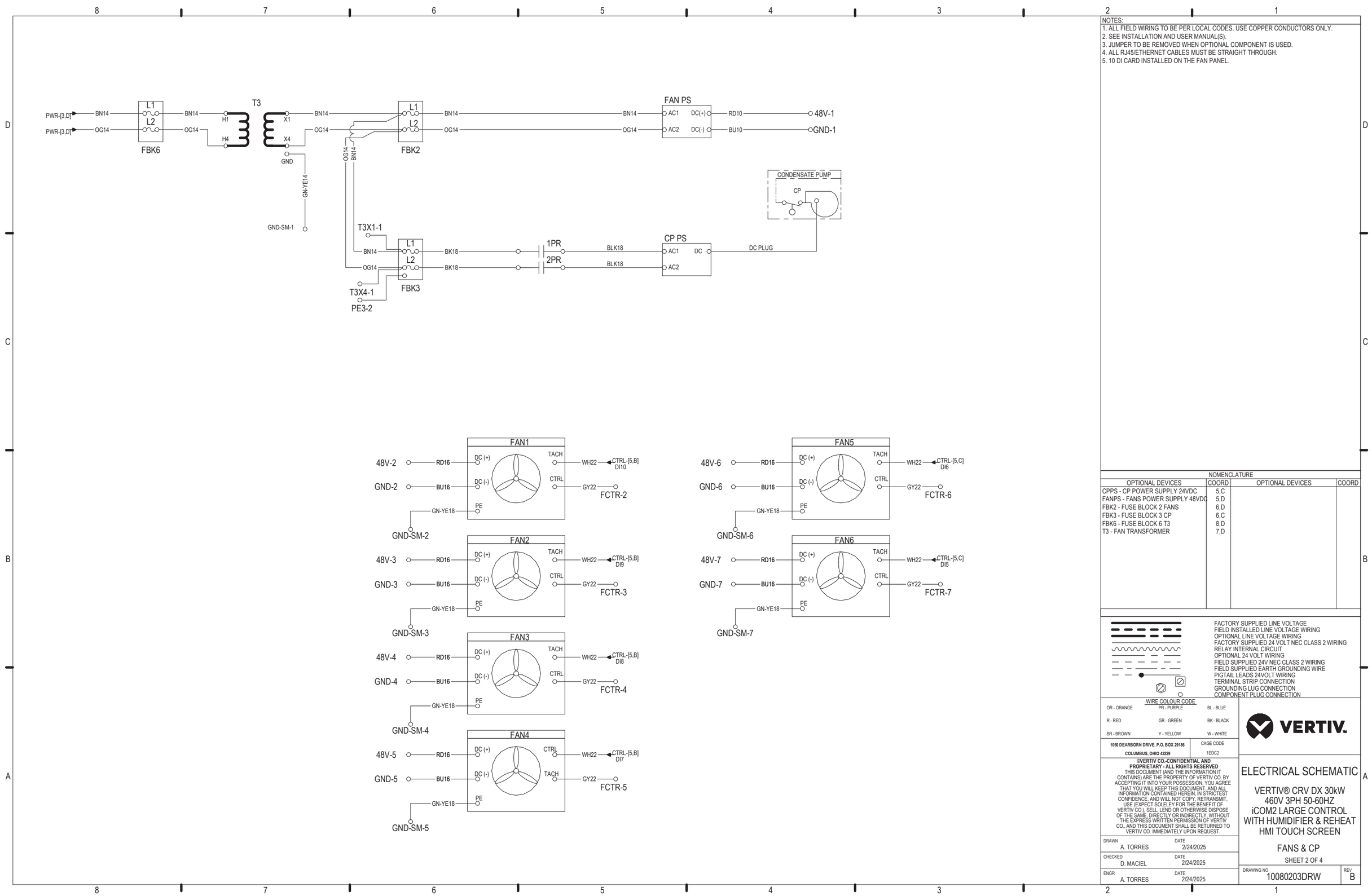
ELECTRICAL SCHEMATIC

VERTIV® CRV DX 30kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

POWER SUPPLY

SHEET 1 OF 4

DRAWING NO 10080203DRW
REV. B



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4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

OPTIONAL DEVICES	COORD	OPTIONAL DEVICES	COORD
CPPS - CP POWER SUPPLY 24VDC	5,C		
FANPS - FANS POWER SUPPLY 48VDC	5,D		
FBK2 - FUSE BLOCK 2 FANS	6,D		
FBK3 - FUSE BLOCK 3 CP	6,C		
FBK6 - FUSE BLOCK 6 T3	8,D		
T3 - FAN TRANSFORMER	7,D		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 2/24/2025
CHECKED	D. MACIEL	DATE 2/24/2025
ENGR	A. TORRES	DATE 2/24/2025

ELECTRICAL SCHEMATIC

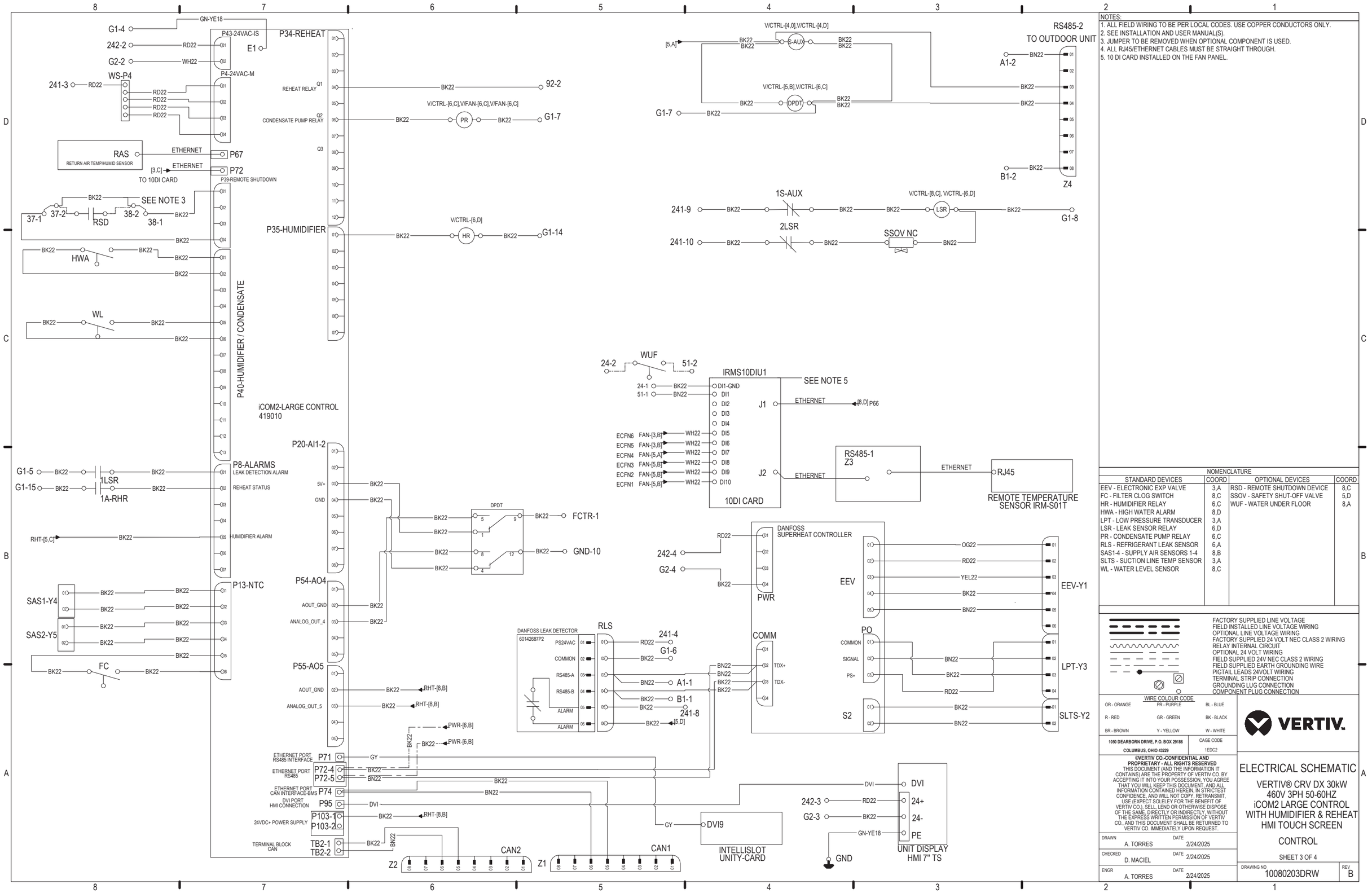
VERTIV® CRV DX 30kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

FANS & CP

SHEET 2 OF 4

DRAWING NO 10080203DRW

REV B



NOTES:
1. ALL FIELD WIRING TO BE PER LOCAL CODES. USE COPPER CONDUCTORS ONLY.
2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EEV - ELECTRONIC EXP VALVE	3,A	RSD - REMOTE SHUTDOWN DEVICE	8,C
FC - FILTER CLOG SWITCH	8,C	SSOV - SAFETY SHUT-OFF VALVE	5,D
HR - HUMIDIFIER RELAY	6,C	WUF - WATER UNDER FLOOR	8,A
HWA - HIGH WATER ALARM	8,D		
LPT - LOW PRESSURE TRANSDUCER	3,A		
LSR - LEAK SENSOR RELAY	6,D		
PR - CONDENSATE PUMP RELAY	6,C		
RLS - REFRIGERANT LEAK SENSOR	6,A		
SAS1-4 - SUPPLY AIR SENSORS 1-4	8,B		
SLTS - SUCTION LINE TEMP SENSOR	3,A		
WL - WATER LEVEL SENSOR	8,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

ELECTRICAL SCHEMATIC

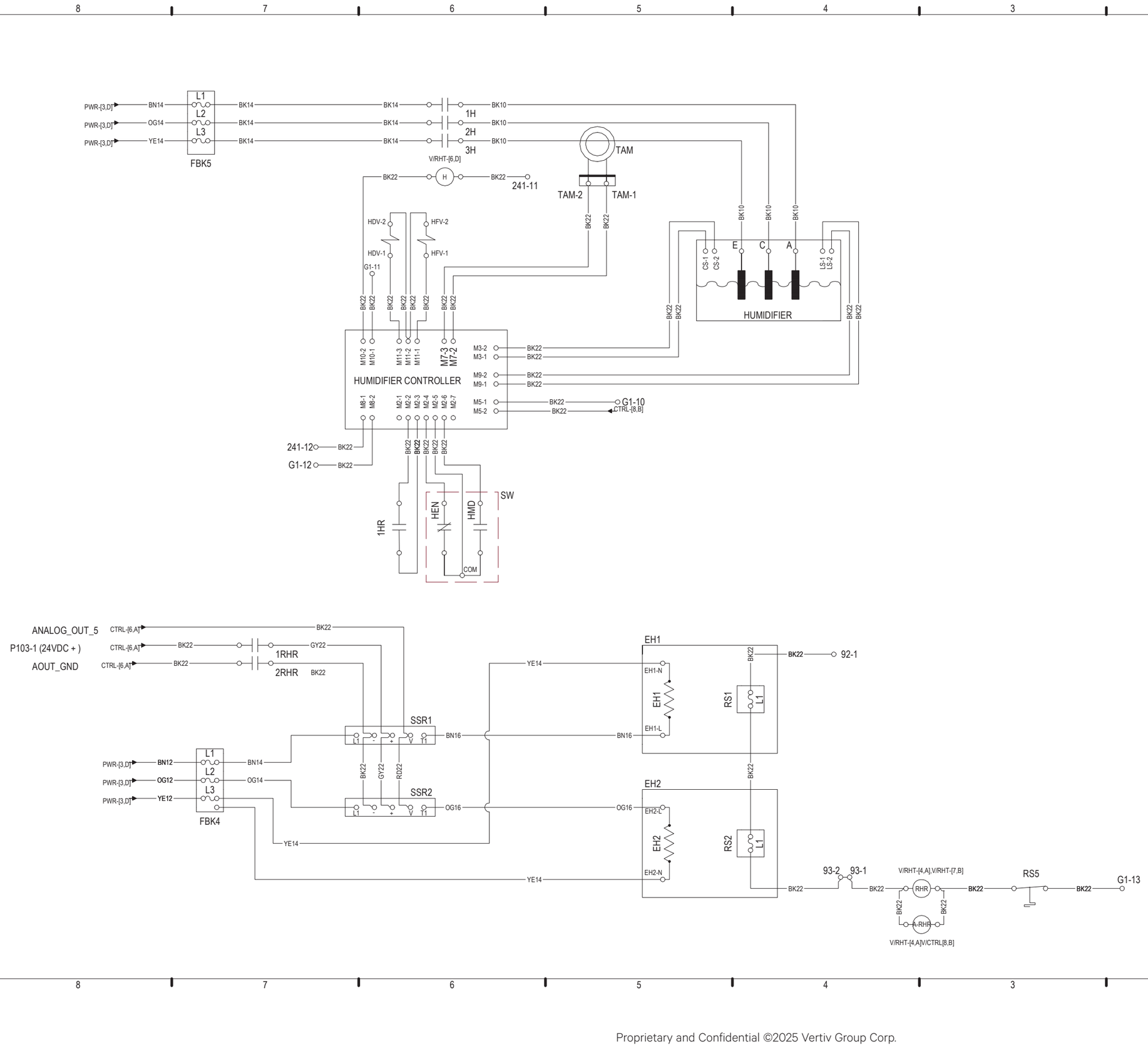
VERTIV® CRV DX 30kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

CONTROL

SHEET 3 OF 4

DRAWN	A. TORRES	DATE 2/24/2025
CHECKED	D. MACIEL	DATE 2/24/2025
ENGR	A. TORRES	DATE 2/24/2025

DRAWING NO 10080203DRW REV B



NOTES:
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2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

OPTIONAL DEVICES	COORD	OPTIONAL DEVICES	COORD
EH1 - ELECTRICAL REHEAT 1	5,B		
EH2 - ELECTRICAL REHEAT 2	5,A		
FBK4 - FUSE BLOCK 4 REHEAT	7,A		
FBK5 - FUSE BLOCK 5 HUMIDIFIER	7,D		
H - HUMIDIFIER CONTACTOR	6,D		
HDV - HUMIDIFIER DRAIN VALVE	6,D		
HFV - HUMIDIFIER FILL VALVE	6,D		
RHR - REHEAT RELAY	7,D		
RS5 - THERMAL CUT-OFF SWITCH	6,D		
SSR1 - SOLID STATE RELAY 1	6,B		
SSR2 - SOLID STATE RELAY 2	6,A		
TAM - HUM CURRENT TRANSFORMER	5,D		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE	2/24/2025
CHECKED	D. MACIEL	DATE	2/24/2025
ENGR	A. TORRES	DATE	2/24/2025

ELECTRICAL SCHEMATIC

VERTIV® CRV DX 30kW
460V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

REHEAT & HUMIDIFIER

SHEET 4 OF 4

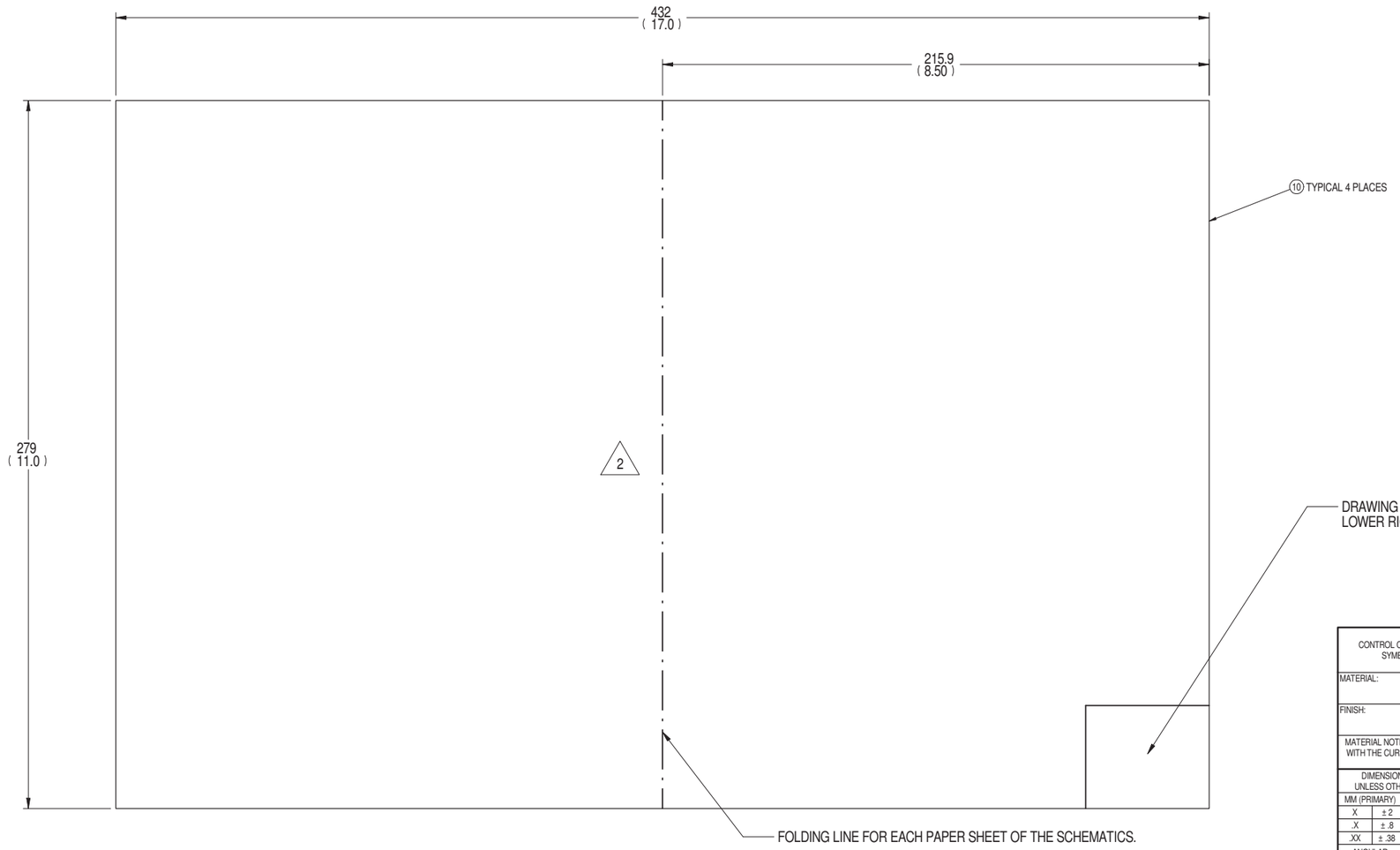
DRAWING NO 10080203DRW
REV. B

VERTIV PART NUMBER	INTENDED USAGE		UL / CSA REQUIRED		COLOR	
	INDOOR	OUTDOOR	YES	NO	MATERIAL	LETTERING
10080203P1	X		X		WHITE	BLACK

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PRODUCTION RELEASE.	2/26/25 2/26/25	A. TORRES D. MACIEL

NOTES:

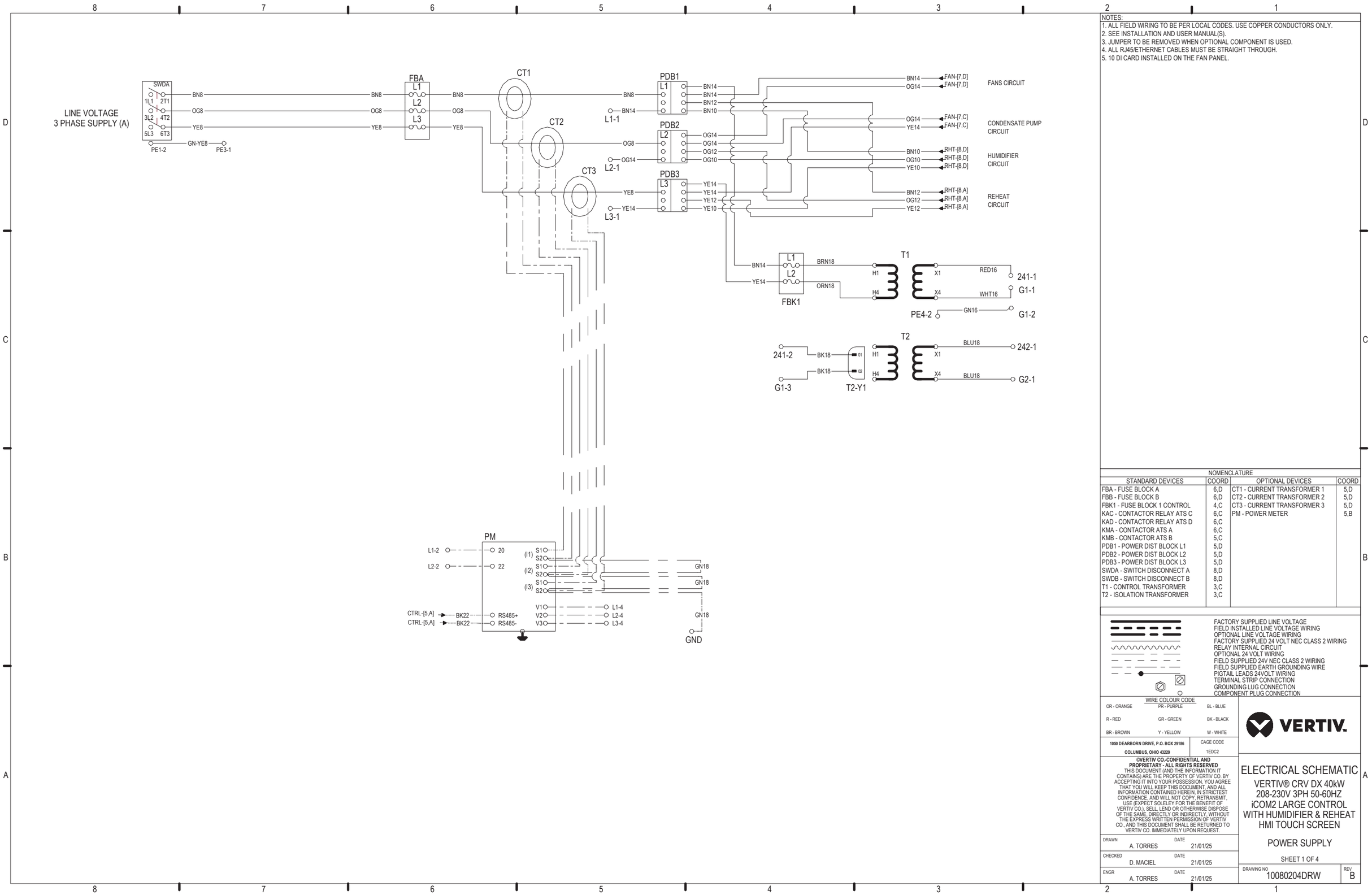
1. SEE VERTIV ENGINEERING SPECIFICATION 168187 FOR LABEL GENERAL DIMENSIONAL TOLERANCES, FONT SPECIFICATIONS, ANSI AND RoHS COMPLIANCE AND SEE SECTION 5.4. FOR LABEL MATERIAL SPECS AND APPROVED SUPPLIERS/MANUFACTURERS.
2. SEE SHEETS 1-4 FOR CURRENT SCHEMATIC. LABEL MANUFACTURER IS TO USE THE MOST CURRENT REVISION OF VERTIV .pdf DOCUMENT 10080202DRW SHEETS 1-4 FROM VERTIV CONTROLLED DOCUMENT DATABASE.
3. REFER TO BOM FOR MATERIAL.



CONTROL CHARACTERISTICS SYMBOL LEGEND	C CONTROL CHARACTERISTIC	10080203P1	PAPER SCHEM DX (A) CRD304-P00A
		PART NUMBER	DESCRIPTION
MATERIAL: SEE TABLE & NOTES		VERTIV.	
FINISH: NONE			
MATERIAL NOTE: FABRICATE FROM THE MATERIAL SPECIFIED IN ACCORDANCE WITH THE CURRENT APPLICABLE VERTIV ENGINEERING SPECIFICATION OR AS OTHERWISE SPECIFIED ON THIS DRAWING.		
DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED MM (PRIMARY): X ± 2, .X ± .8, .XX ± .38, ANGULAR ± 2° INCHES (SECONDARY): (X) ± .1, (.XX) ± .03, (.XXX) ± .015	THIRD ANGLE PROJECTION	TITLE: PAPER SCHEMATIC CRD304-P00A	
	CORPORATE CAGE CODE: 1EDC2 1050 DEARBORN DRIVE P.O. BOX 29186 COLUMBUS, OHIO 43229		
DRAWN: A.TORRES	DATE: 2/26/2005		
CHECKED: DAVID FLORES	DATE: 2/26/2025		
ENGR: A.TORRES	DATE: 2/26/2025	SIZE: B — DRAWING NUMBER: 10080203DRW — SHEET: 5/5 — REV.: B	

THIRD ANGLE PROJECTION

FORM NO. 168188 REV 15



NOTES:
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2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
FBA - FUSE BLOCK A	6,D	CT1 - CURRENT TRANSFORMER 1	5,D
FBB - FUSE BLOCK B	6,D	CT2 - CURRENT TRANSFORMER 2	5,D
FBK1 - FUSE BLOCK 1 CONTROL	4,C	CT3 - CURRENT TRANSFORMER 3	5,D
KAC - CONTACTOR RELAY ATS C	6,C	PM - POWER METER	5,B
KAD - CONTACTOR RELAY ATS D	6,C		
KMA - CONTACTOR ATS A	6,C		
KMB - CONTACTOR ATS B	5,C		
PDB1 - POWER DIST BLOCK L1	5,D		
PDB2 - POWER DIST BLOCK L2	5,D		
PDB3 - POWER DIST BLOCK L3	5,D		
SWDA - SWITCH DISCONNECT A	8,D		
SWDB - SWITCH DISCONNECT B	8,D		
T1 - CONTROL TRANSFORMER	3,C		
T2 - ISOLATION TRANSFORMER	3,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 21/01/25
CHECKED	D. MACIEL	DATE 21/01/25
ENGR	A. TORRES	DATE 21/01/25

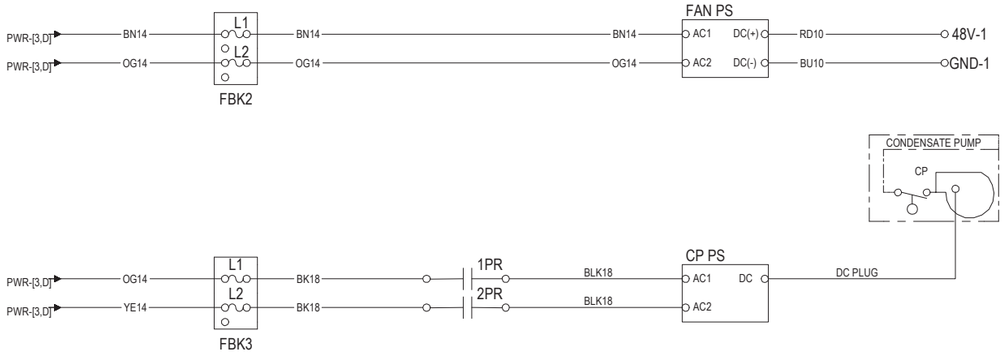
ELECTRICAL SCHEMATIC

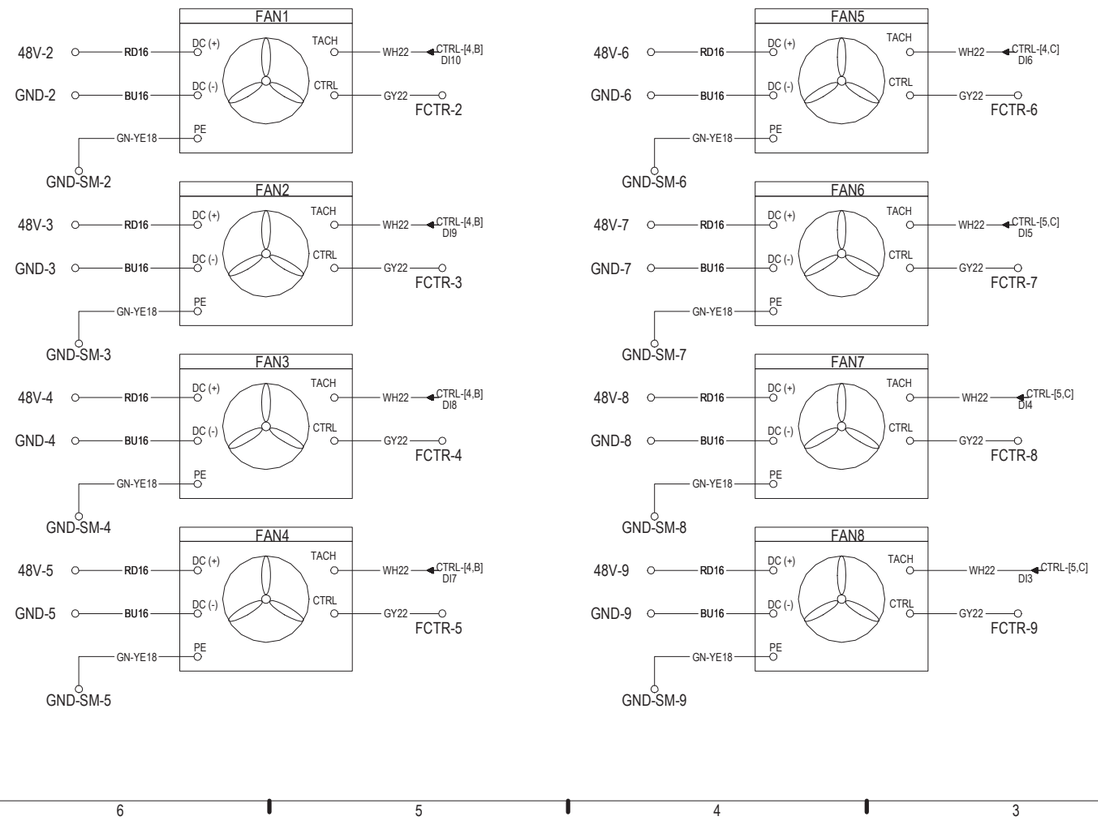
VERTIV® CRV DX 40kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

POWER SUPPLY

SHEET 1 OF 4

DRAWING NO 10080204DRW
REV. B





NOTES:
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2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
CPPS - CP POWER SUPPLY 24VDC	5,C		
FANPS - FANS POWER SUPPLY 48VDC	5,D		
FBK2 - FUSE BLOCK 2 FANS	6,D		
FBK3 - FUSE BLOCK 3 CP	6,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

ELECTRICAL SCHEMATIC

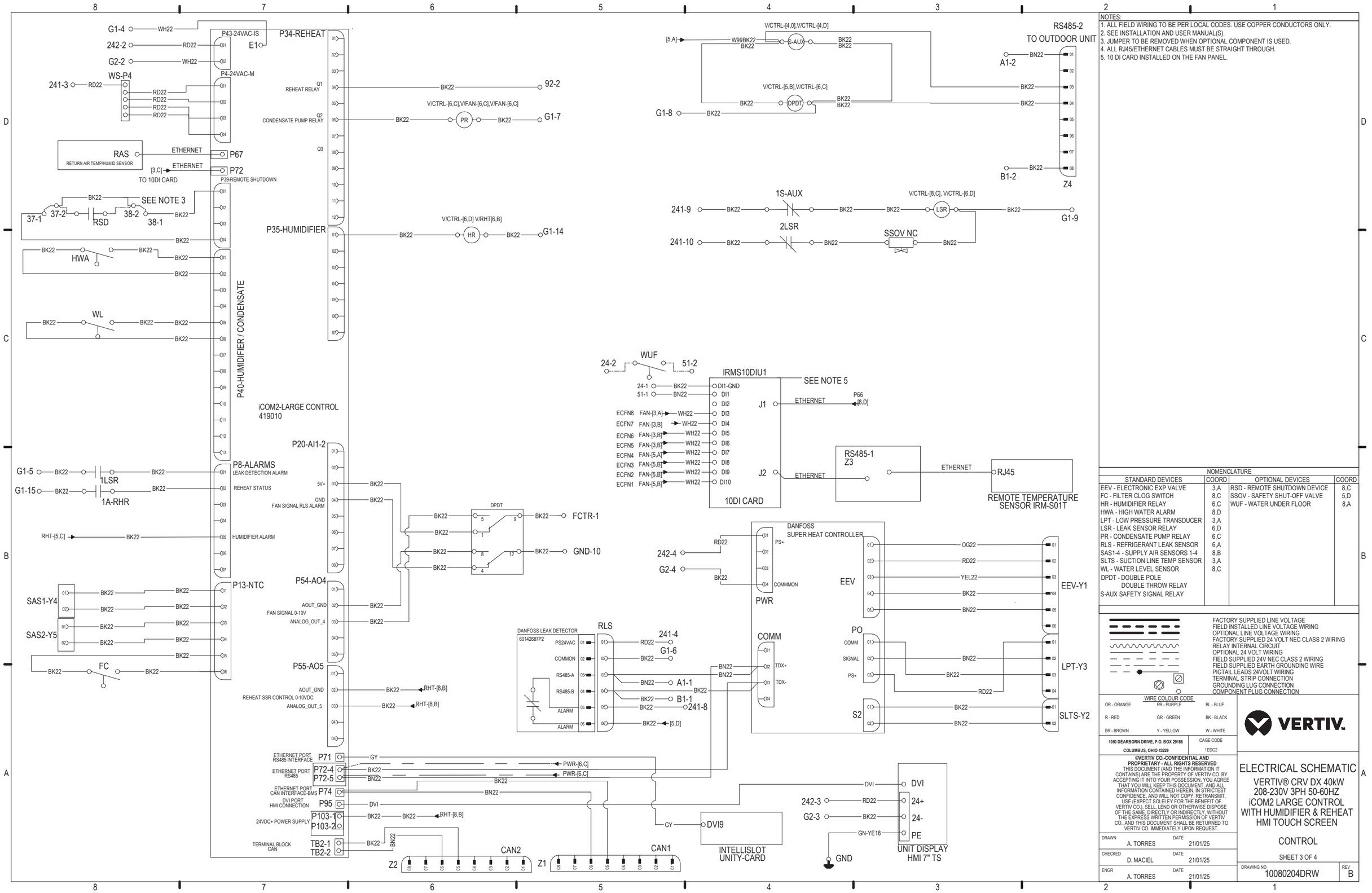
VERTIV® CRV DX 40kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

FANS & CP

SHEET 2 OF 4

DRAWN	A. TORRES	DATE 21/01/25
CHECKED	D. MACIEL	DATE 21/01/25
ENGR	A. TORRES	DATE 21/01/25

DRAWING NO 10080204DRW
REV B



NOTES:
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5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EEV - ELECTRONIC EXP VALVE	3,A	RSD - REMOTE SHUTDOWN DEVICE	8,C
FC - FILTER CLOG SWITCH	8,C	SSOV - SAFETY SHUT-OFF VALVE	5,D
HR - HUMIDIFIER RELAY	6,C	WUF - WATER UNDER FLOOR	8,A
HWA - HIGH WATER ALARM	8,D		
LPT - LOW PRESSURE TRANSDUCER	3,A		
LSR - LEAK SENSOR RELAY	6,D		
PR - CONDENSATE PUMP RELAY	6,C		
RLS - REFRIGERANT LEAK SENSOR	6,A		
SAS1-4 - SUPPLY AIR SENSORS 1-4	8,B		
SLTS - SUCTION LINE TEMP SENSOR	3,A		
WL - WATER LEVEL SENSOR	8,C		
DPDT - DOUBLE POLE DOUBLE THROW RELAY			
S-AUX SAFETY SIGNAL RELAY			

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

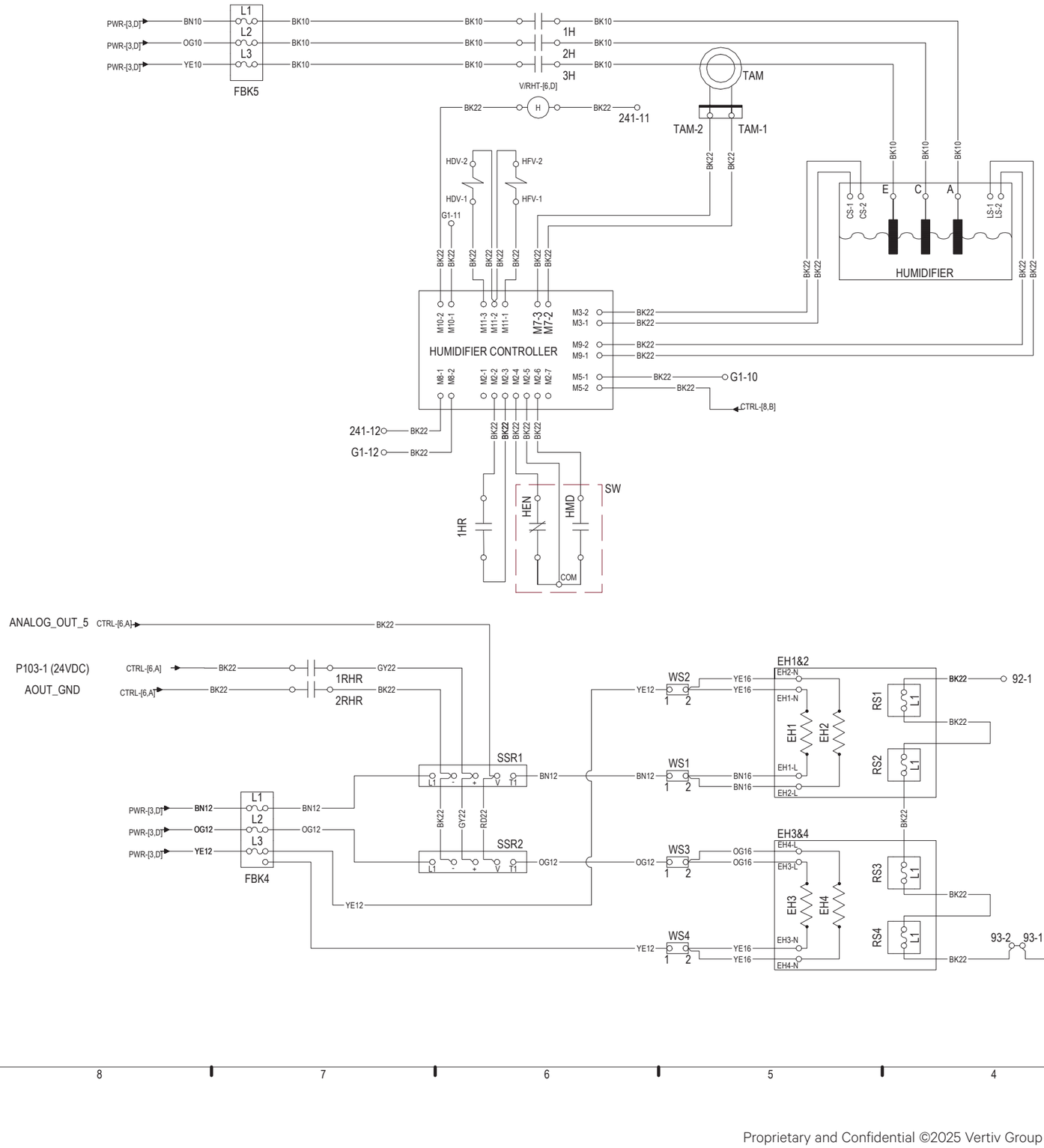
DRAWN	A. TORRES	DATE 21/01/25
CHECKED	D. MACIEL	DATE 21/01/25
ENGR	A. TORRES	DATE 21/01/25

ELECTRICAL SCHEMATIC
VERTIV® CRV DX 40kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

CONTROL

SHEET 3 OF 4

DRAWING NO 10080204DRW REV B



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2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EH1-2 - ELECTRICAL REHEAT 1, 2	5,B		
EH3-4 - ELECTRICAL REHEAT 3, 4	5,A		
FBK4 - FUSE BLOCK 4 REHEAT	7,A		
FBK5 - FUSE BLOCK 5 HUMIDIFIER	7,D		
H - HUMIDIFIER CONTACTOR	6,D		
HDV - HUMIDIFIER DRAIN VALVE	6,D		
HFV - HUMIDIFIER FILL VALVE	6,D		
RHR - REHEAT RELAY	7,D		
RS5 - THERMAL CUT-OFF SWITCH	6,D		
SSR1 - SOLID STATE RELAY 1	6,B		
SSR2 - SOLID STATE RELAY 2	6,A		
TAM - HUM CURRENT TRANSFORMER	5,D		
A-RHR - AUXILIARY CONTACT RHR			

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE	21/01/25
CHECKED	D. MACIEL	DATE	21/01/25
ENGR	A. TORRES	DATE	21/01/25

ELECTRICAL SCHEMATIC
VERTIV® CRV DX 40kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

REHEAT & HUMIDIFIER

SHEET 4 OF 4

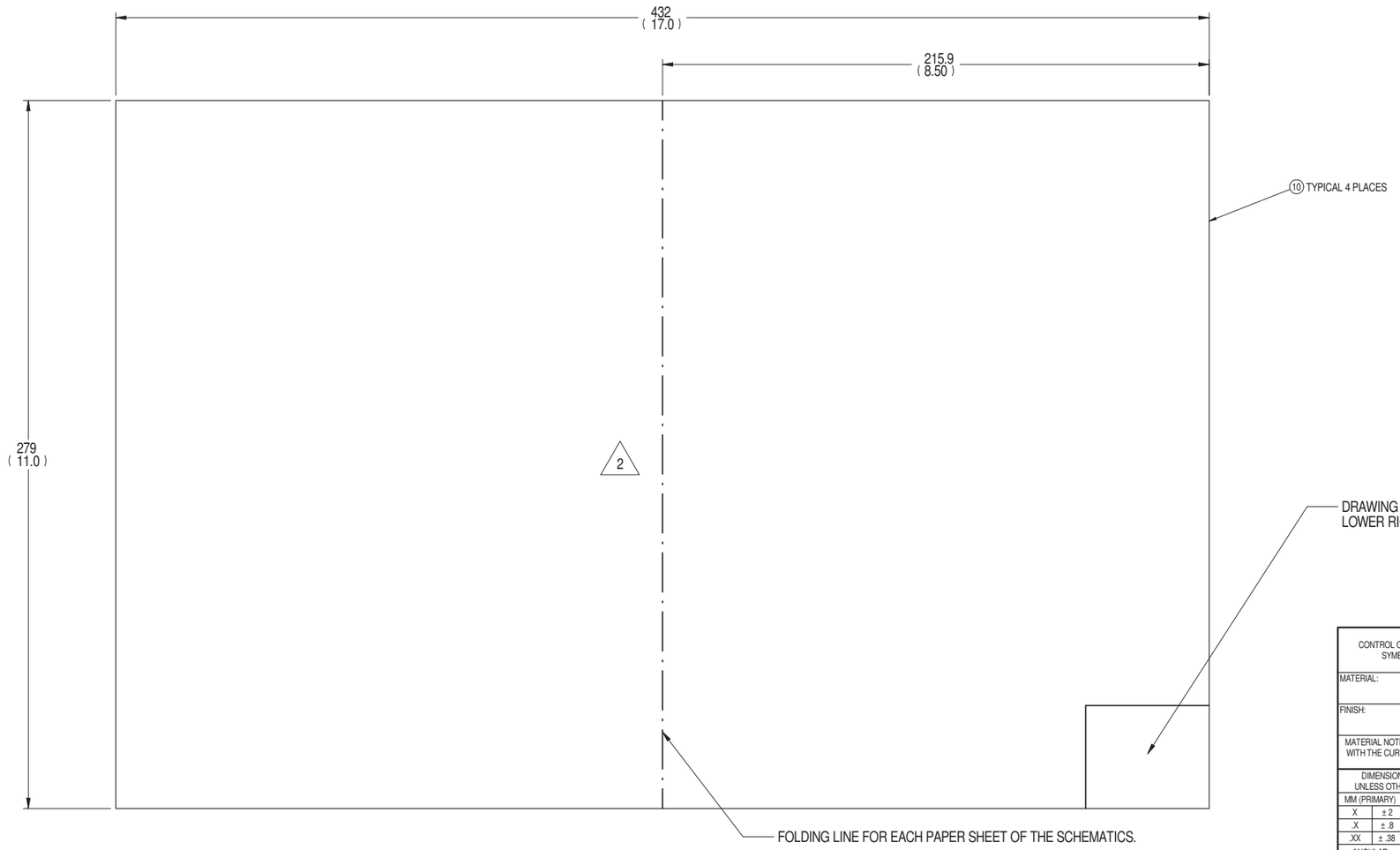
DRAWING NO 10080204DRW
REV. B

VERTIV PART NUMBER	INTENDED USAGE		UL / CSA REQUIRED		COLOR	
	INDOOR	OUTDOOR	YES	NO	MATERIAL	LETTERING
10080204P1	X		X		WHITE	BLACK

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PRODUCTION RELEASE.	2/26/25 2/26/25	A. TORRES D. MACIEL

NOTES:

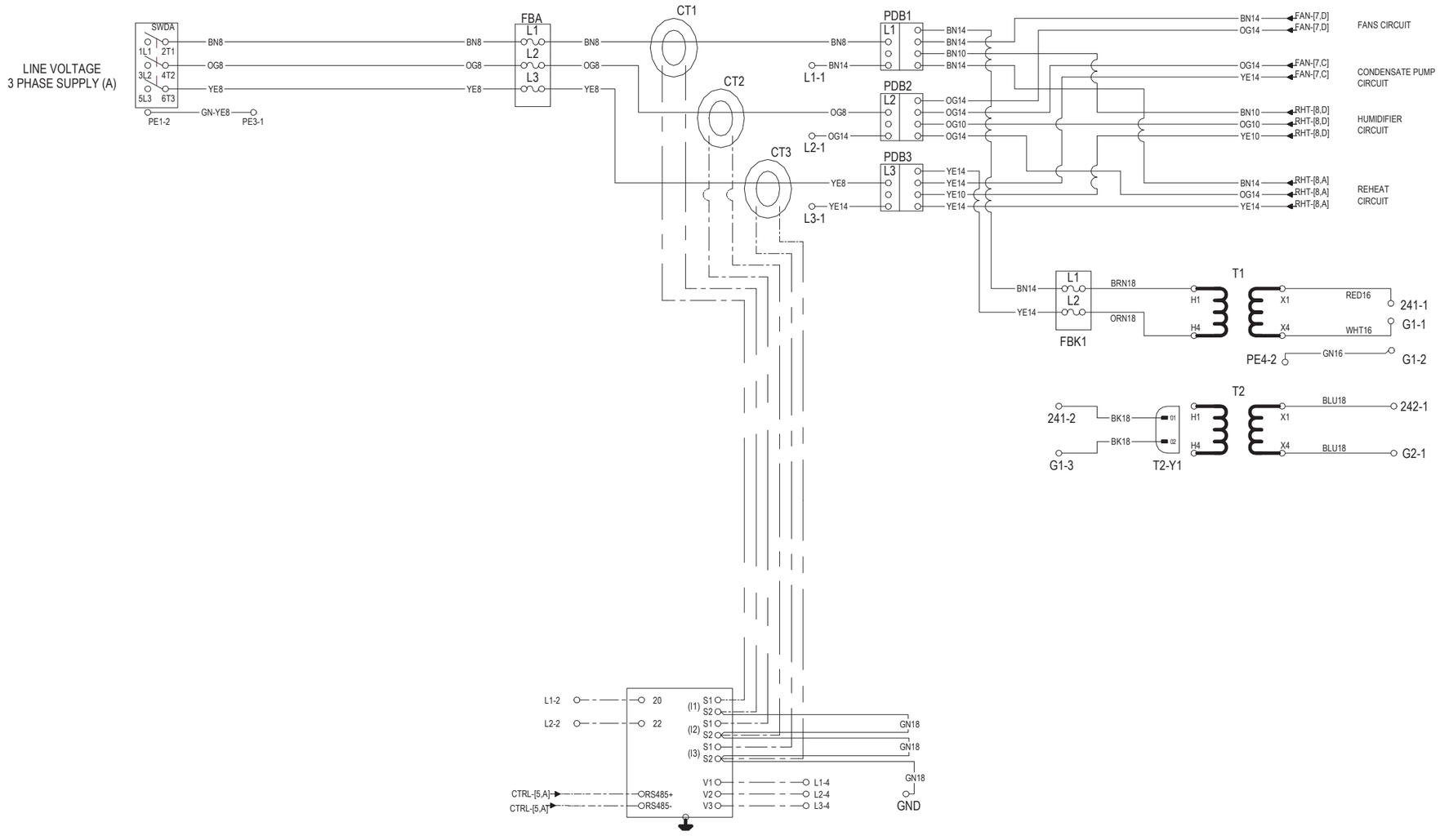
1. SEE VERTIV ENGINEERING SPECIFICATION 168187 FOR LABEL GENERAL DIMENSIONAL TOLERANCES, FONT SPECIFICATIONS, ANSI AND RoHS COMPLIANCE AND SEE SECTION 5.4. FOR LABEL MATERIAL SPECS AND APPROVED SUPPLIERS/MANUFACTURERS.
2. SEE SHEETS 1-4 FOR CURRENT SCHEMATIC. LABEL MANUFACTURER IS TO USE THE MOST CURRENT REVISION OF VERTIV .pdf DOCUMENT 10080202DRW SHEETS 1-4 FROM VERTIV CONTROLLED DOCUMENT DATABASE.
3. REFER TO BOM FOR MATERIAL.



CONTROL CHARACTERISTICS SYMBOL LEGEND	C CONTROL CHARACTERISTIC	10080204P1	PAPER SCHEM DX (A) CRD401-P00A
		PART NUMBER	DESCRIPTION
MATERIAL: SEE TABLE & NOTES		VERTIV.	
FINISH: NONE			
MATERIAL NOTE: FABRICATE FROM THE MATERIAL SPECIFIED IN ACCORDANCE WITH THE CURRENT APPLICABLE VERTIV ENGINEERING SPECIFICATION OR AS OTHERWISE SPECIFIED ON THIS DRAWING.			
DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED MM (PRIMARY): X ± 2, .X ± .8, .XX ± .38, ANGULAR ± 2° INCHES (SECONDARY): (.X) ± .1, (.XX) ± .03, (.XXX) ± .015	THIRD ANGLE PROJECTION	TITLE: PAPER SCHEMATIC CRD401-P00A	
	CORPORATE CAGE CODE: 1EDC2 1050 DEARBORN DRIVE P.O. BOX 29186 COLUMBUS, OHIO 43229		
DRAWN: A.TORRES	DATE: 2/26/2005		
CHECKED: DAVID FLORES	DATE: 2/26/2025		
ENGR: A.TORRES	DATE: 2/26/2025	SIZE: B — DRAWING NUMBER: 10080204DRW — SHEET: 5/5 — REV.: B	

THIRD ANGLE PROJECTION

FORM NO. 168188 REV 15



NOTES:
1. ALL FIELD WIRING TO BE PER LOCAL CODES. USE COPPER CONDUCTORS ONLY.
2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
FBA - FUSE BLOCK A	6,D	CT1 - CURRENT TRANSFORMER 1	5,D
FBB - FUSE BLOCK B	6,D	CT2 - CURRENT TRANSFORMER 2	5,D
FBK1 - FUSE BLOCK 1 CONTROL	4,C	CT3 - CURRENT TRANSFORMER 3	5,D
KAC - CONTACTOR RELAY ATS C	6,C	PM - POWER METER	5,B
KAD - CONTACTOR RELAY ATS D	6,C		
KMA - CONTACTOR ATS A	6,C		
KMB - CONTACTOR ATS B	5,C		
PDB1 - POWER DIST BLOCK L1	5,D		
PDB2 - POWER DIST BLOCK L2	5,D		
PDB3 - POWER DIST BLOCK L3	5,D		
SWDA - SWITCH DISCONNECT A	8,D		
SWDB - SWITCH DISCONNECT B	8,D		
T1 - CONTROL TRANSFORMER	3,C		
T2 - ISOLATION TRANSFORMER	3,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

ELECTRICAL SCHEMATIC

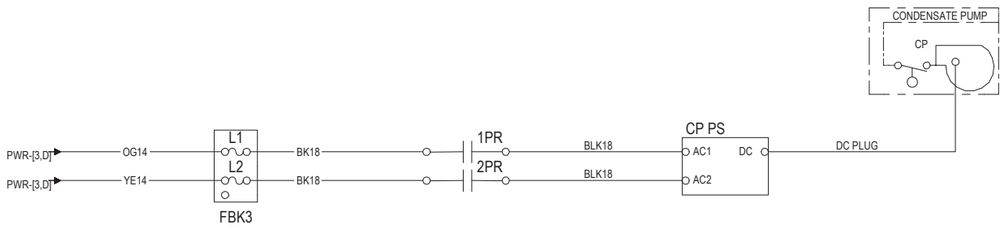
VERTIV® CRV DX 30kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

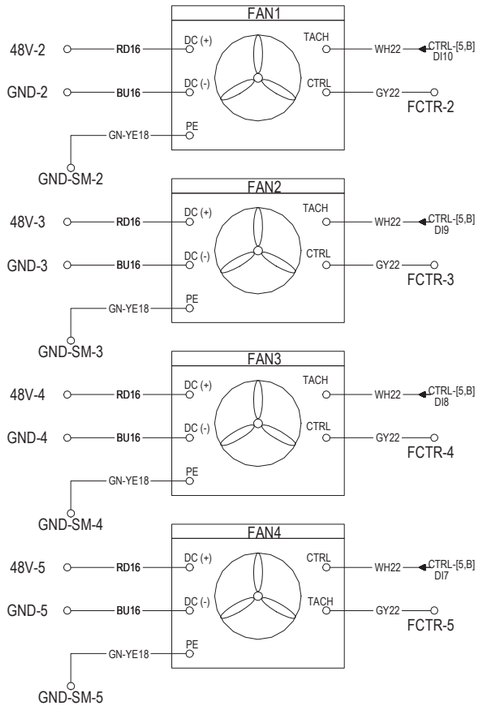
POWER SUPPLY

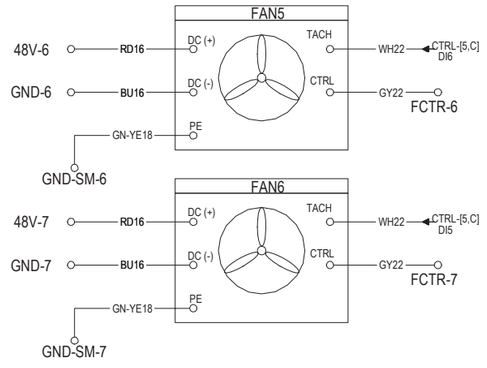
SHEET 1 OF 4

DRAWN	A. TORRES	DATE	21/02/2025
CHECKED	D. MACIEL	DATE	21/02/2025
ENGR	A. TORRES	DATE	21/02/2025

DRAWING NO 10080205DRW
REV B







NOTES:
1. ALL FIELD WIRING TO BE PER LOCAL CODES. USE COPPER CONDUCTORS ONLY.
2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
CPPS - CP POWER SUPPLY 24VDC	5,C		
FANPS - FANS POWER SUPPLY 48VDC	5,D		
FBK2 - FUSE BLOCK 2 FANS	6,D		
FBK3 - FUSE BLOCK 3 CP	6,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

ELECTRICAL SCHEMATIC

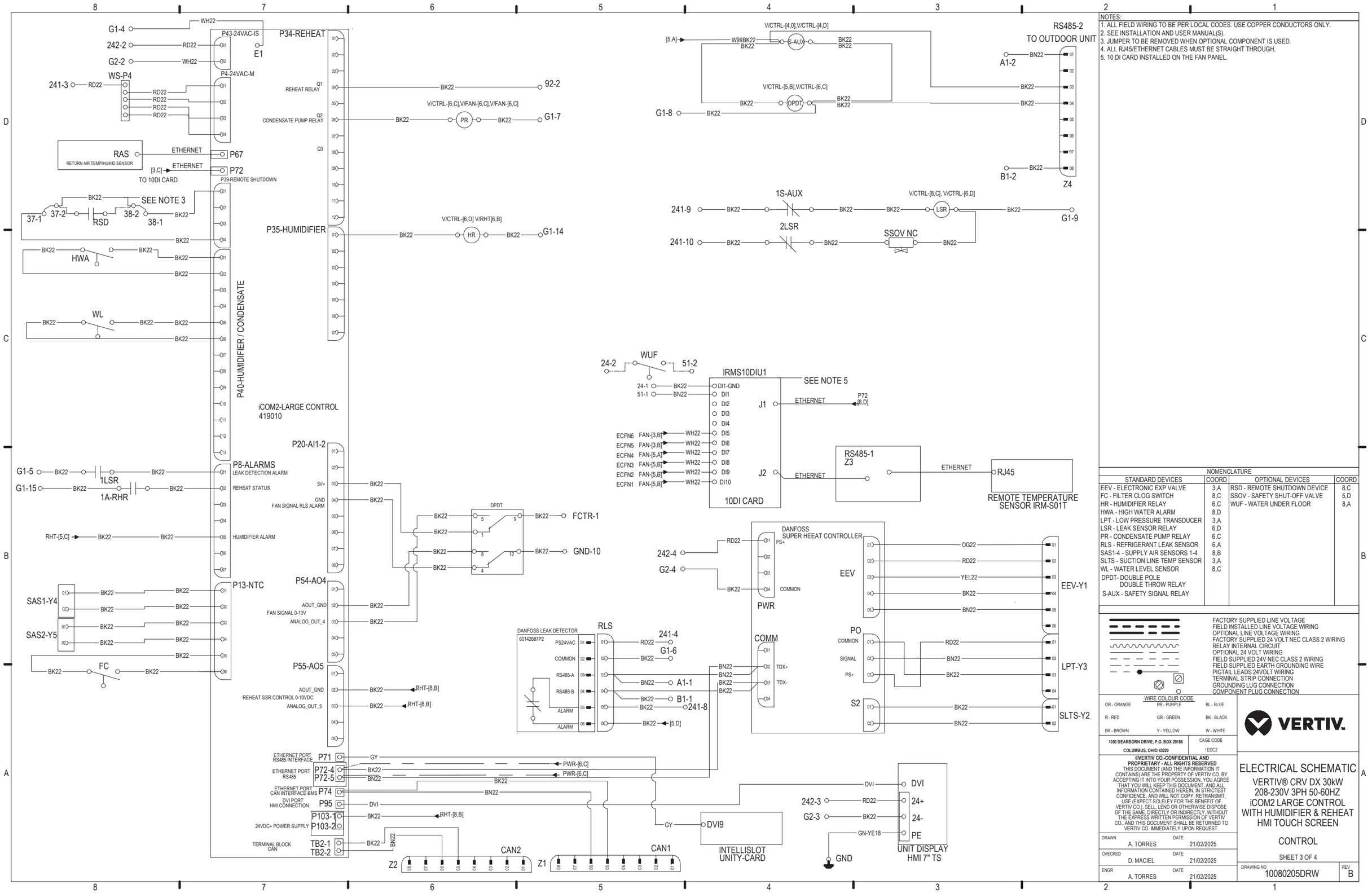
VERTIV® CRV DX 30kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

FANS & CP

SHEET 2 OF 4

DRAWN	A. TORRES	DATE 21/02/2025
CHECKED	D. MACIEL	DATE 21/02/2025
ENGR	A. TORRES	DATE 21/02/2025

DRAWING NO 10080205DRW REV. B



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3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EEV - ELECTRONIC EXP VALVE	3,A	RSD - REMOTE SHUTDOWN DEVICE	8,C
FC - FILTER CLOG SWITCH	8,C	SSOV - SAFETY SHUT-OFF VALVE	5,D
HR - HUMIDIFIER RELAY	6,C	WUF - WATER UNDER FLOOR	8,A
HWA - HIGH WATER ALARM	8,D		
LPT - LOW PRESSURE TRANSDUCER	3,A		
LSR - LEAK SENSOR RELAY	6,D		
PR - CONDENSATE PUMP RELAY	6,C		
RLS - REFRIGERANT LEAK SENSOR	6,A		
SAS1-4 - SUPPLY AIR SENSORS 1-4	8,B		
SLTS - SUCTION LINE TEMP SENSOR	3,A		
WL - WATER LEVEL SENSOR	8,C		
DPDT- DOUBLE POLE DOUBLE THROW RELAY			
S-AUX - SAFETY SIGNAL RELAY			

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

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BR - BROWN	Y - YELLOW	W - WHITE

VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

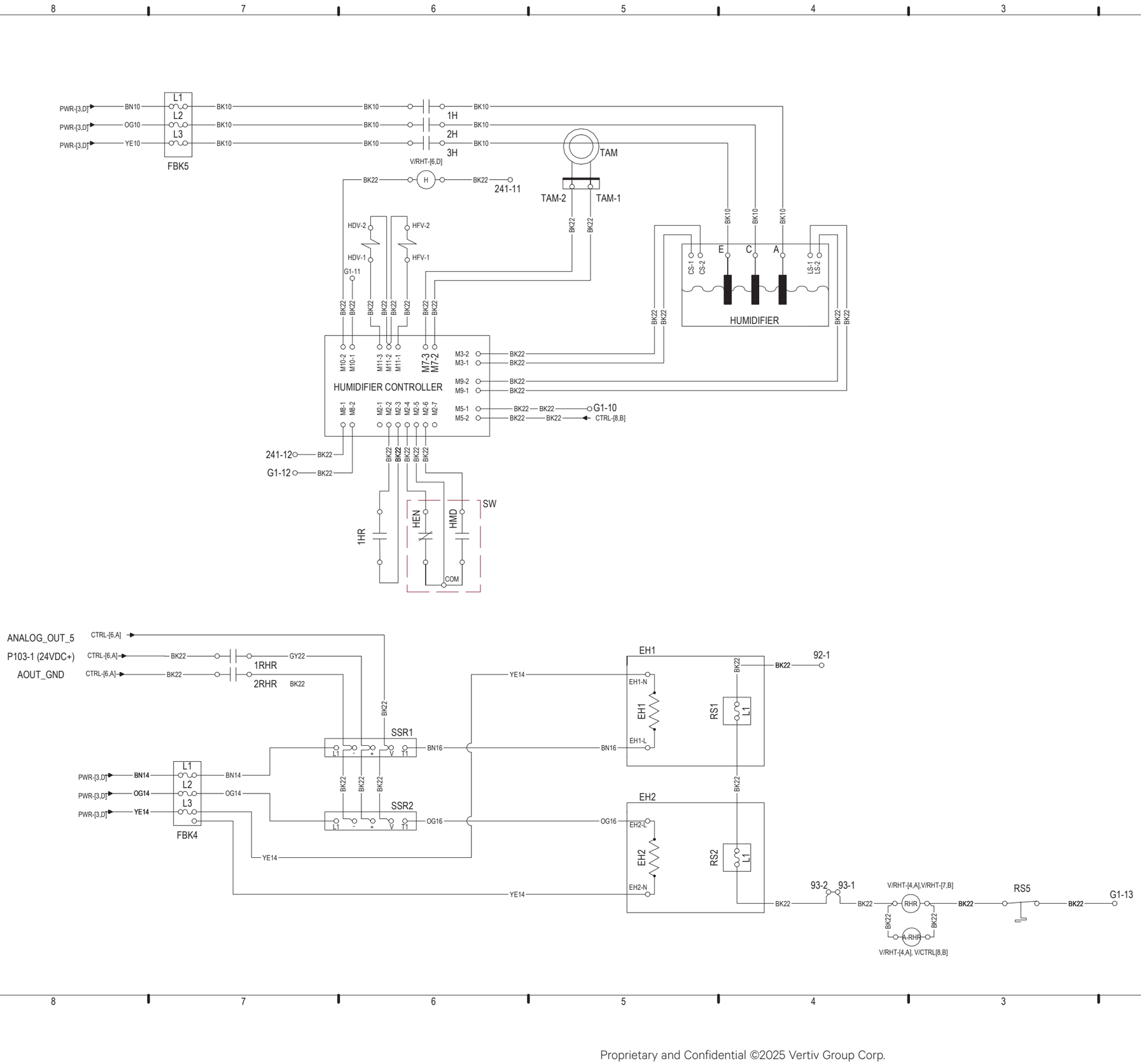
DRAWN	A. TORRES	DATE 21/02/2025
CHECKED	D. MACIEL	DATE 21/02/2025
ENGR	A. TORRES	DATE 21/02/2025

ELECTRICAL SCHEMATIC
VERTIV® CRV DX 30kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

CONTROL

SHEET 3 OF 4

DRAWING NO 10080205DRW REV B



NOTES:
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2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EH1 - ELECTRICAL REHEAT 1	5,B		
EH2 - ELECTRICAL REHEAT 2	5,A		
FBK4 - FUSE BLOCK 4 REHEAT	7,A		
FBK5 - FUSE BLOCK 5 HUMIDIFIER	7,D		
H - HUMIDIFIER CONTACTOR	6,D		
HDV - HUMIDIFIER DRAIN VALVE	6,D		
HFV - HUMIDIFIER FILL VALVE	6,D		
RHR - REHEAT RELAY	7,D		
RS5 - THERMAL CUT-OFF SWITCH	6,D		
SSR1 - SOLID STATE RELAY 1	6,B		
SSR2 - SOLID STATE RELAY 2	6,A		
TAM - HUM CURRENT TRANSFORMER	5,D		
A-RHR - AUXILIARY CONTACT RHR			

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

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VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 21/02/2025
CHECKED	D. MACIEL	DATE 21/02/2025
ENGR	A. TORRES	DATE 21/02/2025

ELECTRICAL SCHEMATIC

VERTIV® CRV DX 30kW
208-230V 3PH 50-60HZ
iCOM2 LARGE CONTROL
WITH HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

REHEAT & HUMIDIFIER

SHEET 4 OF 4

DRAWING NO 10080205DRW

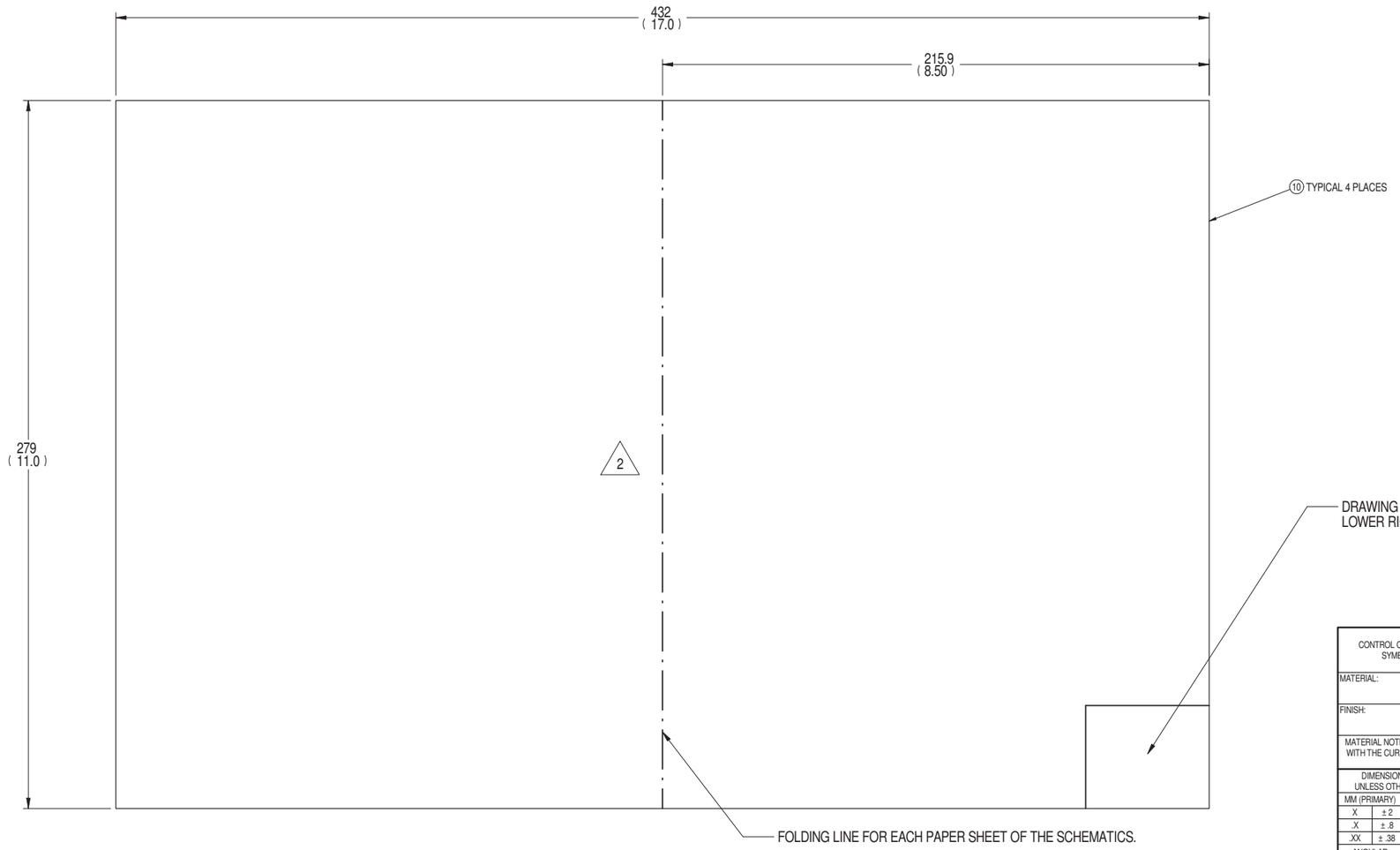
REV. B

VERTIV PART NUMBER	INTENDED USAGE		UL / CSA REQUIRED		COLOR	
	INDOOR	OUTDOOR	YES	NO	MATERIAL	LETTERING
10080205P1	X		X		WHITE	BLACK

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PRODUCTION RELEASE.	2/26/25 2/26/25	A. TORRES D. MACIEL

NOTES:

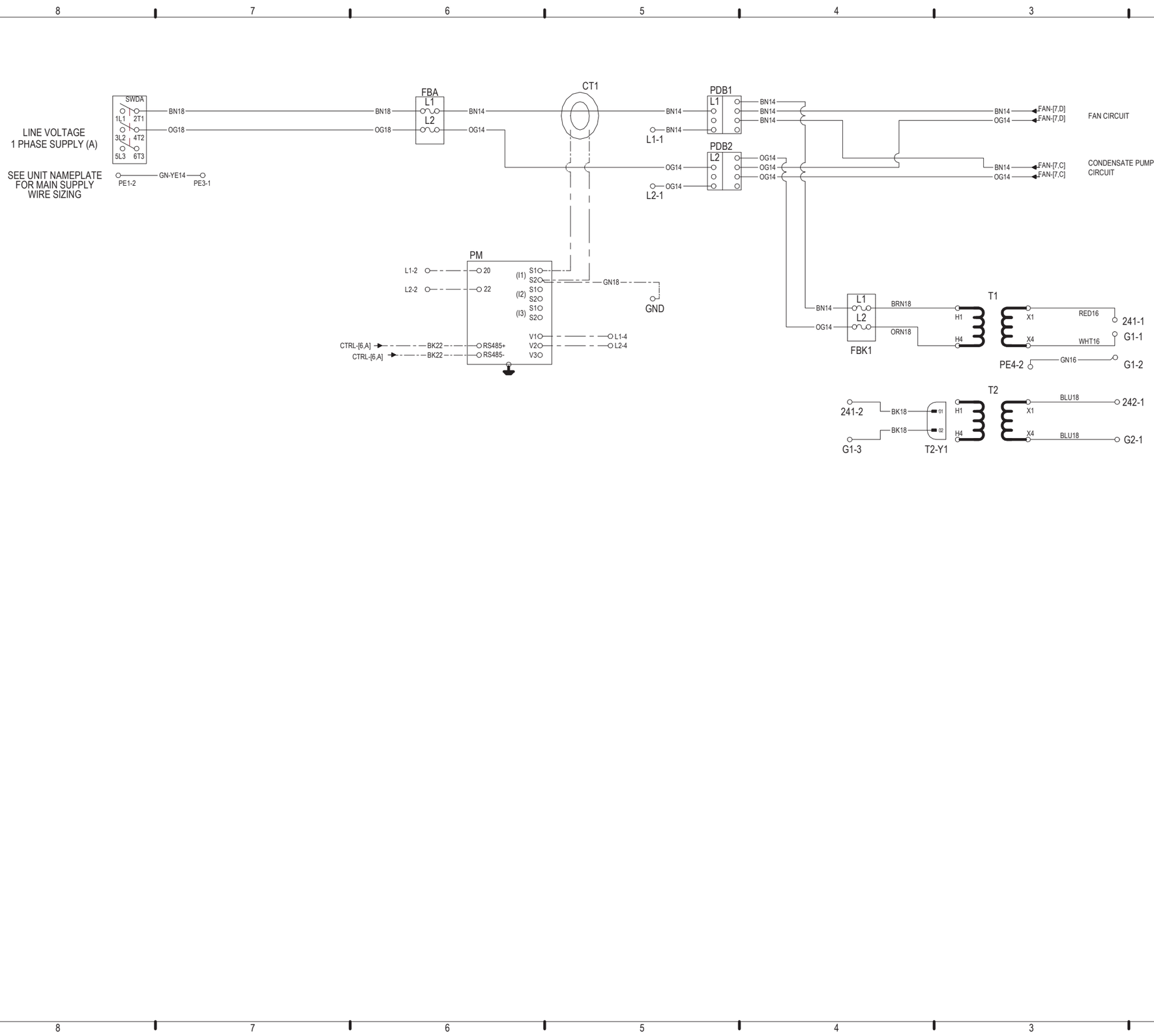
1. SEE VERTIV ENGINEERING SPECIFICATION 168187 FOR LABEL GENERAL DIMENSIONAL TOLERANCES, FONT SPECIFICATIONS, ANSI AND RoHS COMPLIANCE AND SEE SECTION 5.4. FOR LABEL MATERIAL SPECS AND APPROVED SUPPLIERS/MANUFACTURERS.
2. SEE SHEETS 1-4 FOR CURRENT SCHEMATIC. LABEL MANUFACTURER IS TO USE THE MOST CURRENT REVISION OF VERTIV .pdf DOCUMENT 10080202DRW SHEETS 1-4 FROM VERTIV CONTROLLED DOCUMENT DATABASE.
3. REFER TO BOM FOR MATERIAL.



CONTROL CHARACTERISTICS SYMBOL LEGEND	C CONTROL CHARACTERISTIC	10080205P1	PAPER SCHEM DX (A) CRD301-P00A
		PART NUMBER	DESCRIPTION
MATERIAL: SEE TABLE & NOTES		VERTIV.	
FINISH: NONE			
MATERIAL NOTE: FABRICATE FROM THE MATERIAL SPECIFIED IN ACCORDANCE WITH THE CURRENT APPLICABLE VERTIV ENGINEERING SPECIFICATION OR AS OTHERWISE SPECIFIED ON THIS DRAWING.			
DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED MM (PRIMARY): X ± 2, .X ± .8, .XX ± .38, ANGULAR ± 2° INCHES (SECONDARY): (X) ± .1, (.XX) ± .03, (.XXX) ± .015	THIRD ANGLE PROJECTION	
CORPORATE CAGE CODE: 1EDC2	1050 DEARBORN DRIVE P.O. BOX 29186 COLUMBUS, OHIO 43229	TITLE: PAPER SCHEMATIC CRD301-P00A	
DRAWN: A.TORRES	DATE: 2/26/2005		
CHECKED: DAVID FLORES	DATE: 2/26/2025		
ENGR: A.TORRES	DATE: 2/26/2025	SIZE: B — DRAWING NUMBER: 10080205DRW — SHEET: 5/5 — REV.: B	

THIRD ANGLE PROJECTION

FORM NO. 168188 REV 15



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4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
FBA - FUSE BLOCK A	6,D	CT1 - CURRENT TRANSFORMER 1	5,D
FBB - FUSE BLOCK B	6,D	CT2 - CURRENT TRANSFORMER 2	5,D
FBK1 - FUSE BLOCK 1 CONTROL	4,C	PM - POWER METER	6,C
KA1 - RELAY ATS FEEDBACK	7,D		
KMA - CONTACTOR ATS A	7,D		
PDB1 - POWER DIST BLOCK L1	5,D		
PDB2 - POWER DIST BLOCK L2	5,D		
SWDA - SWITCH DISCONNECT A	8,D		
SWDB - SWITCH DISCONNECT B	8,D		
T1 - CONTROL TRANSFORMER	3,C		
T2 - ISOLATION TRANSFORMER	3,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

1059 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

DRAWN	A. TORRES	DATE 2/25/2025
CHECKED	D. MACIEL	DATE 2/25/2025
ENGR	A. TORRES	DATE 2/25/2025

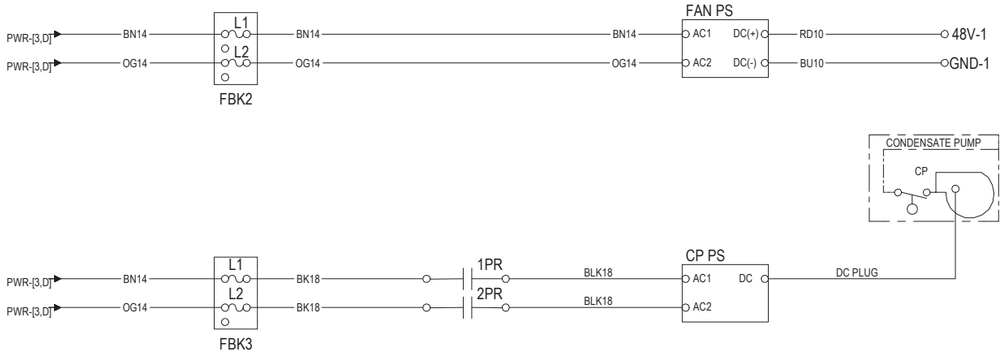
ELECTRICAL SCHEMATIC

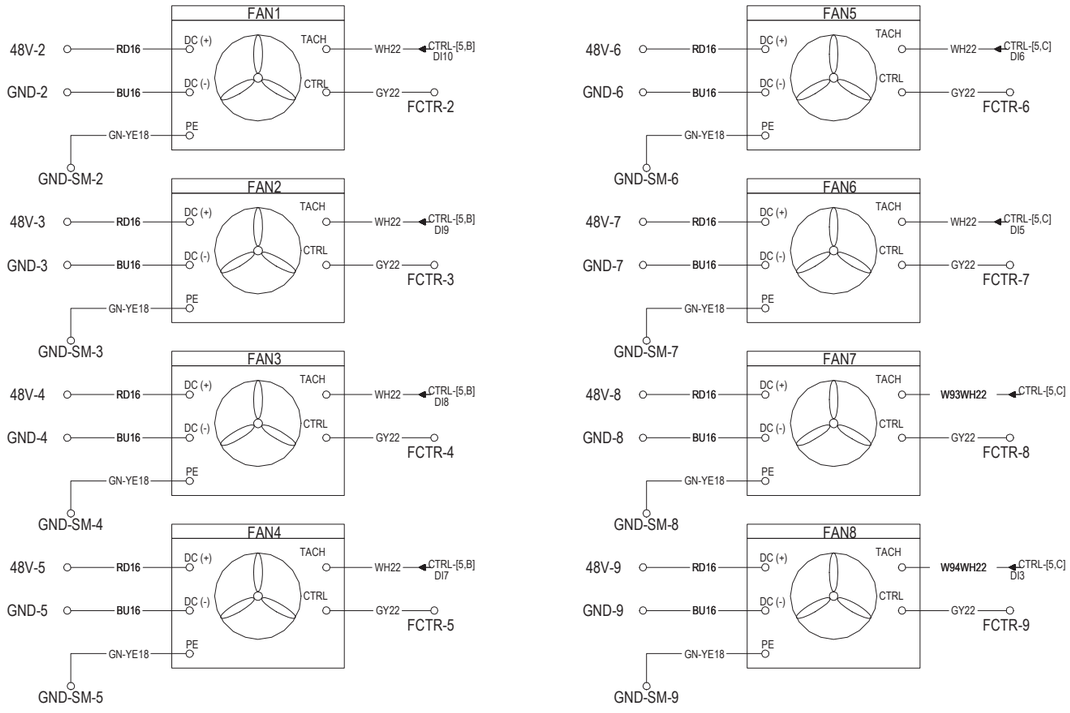
VERTIV® CRV DX 40kW
208-230V 1PH 50-60HZ
iCOM2 LARGE CONTROL
W/O HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

POWER SUPPLY

SHEET 1 OF 3

DRAWING NO	REV
10080206DRW	B





NOTES:
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4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
CPPS - CP POWER SUPPLY 24VDC	5,C		
FANPS - FANS POWER SUPPLY 48VDC	5,D		
FBK2 - FUSE BLOCK 2 FANS	6,D		
FBK3 - FUSE BLOCK 3 CP	6,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
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1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

VERTIV.

ELECTRICAL SCHEMATIC

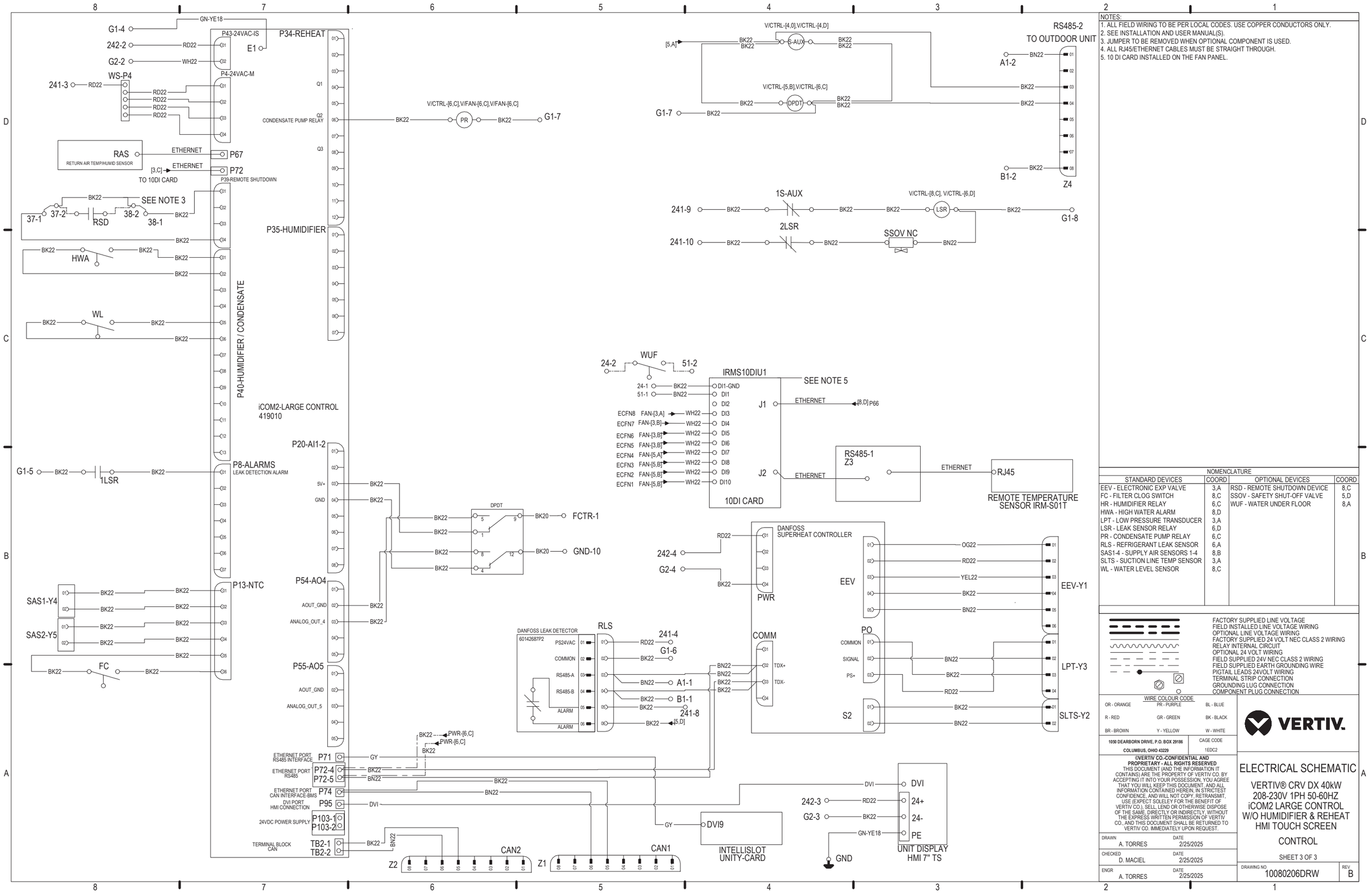
VERTIV® CRV DX 40kW
208-230V 1PH 50-60HZ
iCOM2 LARGE CONTROL
W/O HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

FANS & CP

SHEET 2 OF 3

DRAWN	A. TORRES	DATE 2/25/2025
CHECKED	D. MACIEL	DATE 2/25/2025
ENGR	A. TORRES	DATE 2/25/2025

DRAWING NO 10080206DRW
REV. B


G1-4
GN-YE18
242-2
RD22
G2-2
WH22
P43-24VAC-IS
E1
P34-REHEAT
WS-P4
241-3
P4-24VAC-M
Q1
Q2
CONDENSATE PUMP RELAY
Q3
V/CTRL-[6,C],V/FAN-[6,C],V/FAN-[6,C]
BK22
PR
G1-7
RAS
RETURN AIR TEMP/HUMID SENSOR
ETHERNET
P67
[3,C]
P72
TO 10DI CARD
P39-REMOTE SHUTDOWN
SEE NOTE 3
37-1
37-2
RSD
38-2
38-1
HWA
WL
P35-HUMIDIFIER
P40-HUMIDIFIER / CONDENSATE
iCOM2-LARGE CONTROL
419010
G1-5
1LSR
P8-ALARMS
LEAK DETECTION ALARM
P20-AI1-2
5V+
GND
DPDT
FCTR-1
GND-10
SAS1-Y4
SAS2-Y5
P13-NTC
FC
P54-AO4
AOUT_GND
ANALOG_OUT_4
P55-AO5
ANALOG_OUT_5
DANFOSS LEAK DETECTOR
6042687P2
PS24VAC
COMMON
RS485-A
RS485-B
ALARM
RLS
241-4
G1-6
A1-1
B1-1
241-8
[5,D]
PWR-[6,C]
ETHERNET PORT RS485 INTERFACE
P71
ETHERNET PORT RS485
P72-4
P72-5
ETHERNET PORT CAN INTERFACE-BMS
P74
DVI PORT HMI CONNECTION
P95
24VDC POWER SUPPLY
P103-1
P103-2
TERMINAL BLOCK CAN
TB2-1
TB2-2
Z2
CAN2
Z1
CAN1
DVI9
INTELLISLOT UNITY-CARD
242-3
G2-3
GN-YE18
GND
DVI
24+
24-
PE
UNIT DISPLAY HMI 7" TS
V/CTRL-[4,0],V/CTRL-[4,D]
[5,A]
S-AUX
V/CTRL-[5,B],V/CTRL-[6,C]
DPDT
G1-7
RS485-2
TO OUTDOOR UNIT
A1-2
B1-2
Z4
1S-AUX
V/CTRL-[8,C], V/CTRL-[6,D]
241-9
LSR
G1-8
2LSR
241-10
SSOV NC
WUF
24-2
51-2
IRMS10DIU1
SEE NOTE 5
24-1
51-1
DI1-GND
DI1
DI2
DI3
DI4
DI5
DI6
DI7
DI8
DI9
DI10
ECFN8 FAN-[3,A]
ECFN7 FAN-[3,B]
ECFN6 FAN-[3,B]
ECFN5 FAN-[3,B]
ECFN4 FAN-[5,A]
ECFN3 FAN-[5,B]
ECFN2 FAN-[5,B]
ECFN1 FAN-[5,B]
J1
ETHERNET
[8,D] P66
J2
10DI CARD
RS485-1
Z3
RJ45
REMOTE TEMPERATURE SENSOR IRM-S01T
DANFOSS SUPERHEAT CONTROLLER
242-4
G2-4
PWR
COMM
TDX+
TDX-
EEV
EEV-Y1
PO
COMMON
SIGNAL
PS+
LPT-Y3
S2
SLTS-Y2
NOTES:
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5. 10 DI CARD INSTALLED ON THE FAN PANEL.
NOMENCLATURE
STANDARD DEVICES | COORD | OPTIONAL DEVICES | COORD
EEV - ELECTRONIC EXP VALVE | 3,A | RSD - REMOTE SHUTDOWN DEVICE | 8,C
FC - FILTER CLOG SWITCH | 8,C | SSOV - SAFETY SHUT-OFF VALVE | 5,D
HR - HUMIDIFIER RELAY | 6,C | WUF - WATER UNDER FLOOR | 8,A
HWA - HIGH WATER ALARM | 8,D
LPT - LOW PRESSURE TRANSDUCER | 3,A
LSR - LEAK SENSOR RELAY | 6,D
PR - CONDENSATE PUMP RELAY | 6,C
RLS - REFRIGERANT LEAK SENSOR | 6,A
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SLTS - SUCTION LINE TEMP SENSOR | 3,A
WL - WATER LEVEL SENSOR | 8,C
FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
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GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION
WIRE COLOUR CODE
OR - ORANGE
PR - PURPLE
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VERTIV.
1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE
1EDC2
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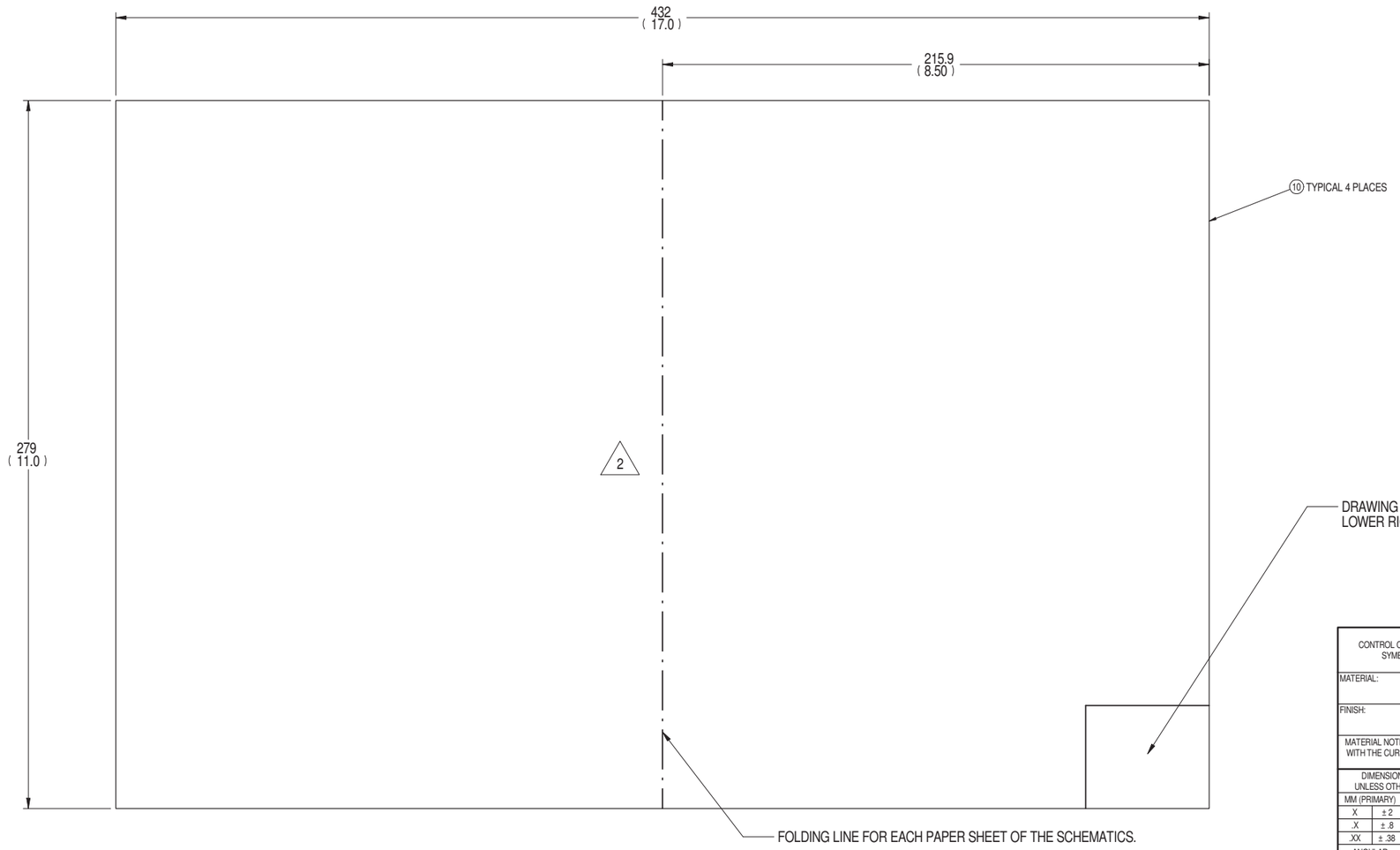
ELECTRICAL SCHEMATIC
VERTIV® CRV DX 40kW
208-230V 1PH 50-60HZ
iCOM2 LARGE CONTROL
W/O HUMIDIFIER & REHEAT
HMI TOUCH SCREEN
CONTROL
SHEET 3 OF 3
DRAWN A. TORRES DATE 2/25/2025
CHECKED D. MACIEL DATE 2/25/2025
ENGR A. TORRES DATE 2/25/2025
DRAWING NO 10080206DRW
REV B

VERTIV PART NUMBER	INTENDED USAGE		UL / CSA REQUIRED		COLOR	
	INDOOR	OUTDOOR	YES	NO	MATERIAL	LETTERING
10080206P1	X		X		WHITE	BLACK

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PRODUCTION RELEASE.	2/26/25 2/26/25	A. TORRES D. MACIEL

NOTES:

1. SEE VERTIV ENGINEERING SPECIFICATION 168187 FOR LABEL GENERAL DIMENSIONAL TOLERANCES, FONT SPECIFICATIONS, ANSI AND RoHS COMPLIANCE AND SEE SECTION 5.4. FOR LABEL MATERIAL SPECS AND APPROVED SUPPLIERS/MANUFACTURERS.
2. SEE SHEETS 1-4 FOR CURRENT SCHEMATIC. LABEL MANUFACTURER IS TO USE THE MOST CURRENT REVISION OF VERTIV .pdf DOCUMENT 10080202DRW SHEETS 1-4 FROM VERTIV CONTROLLED DOCUMENT DATABASE.
3. REFER TO BOM FOR MATERIAL.



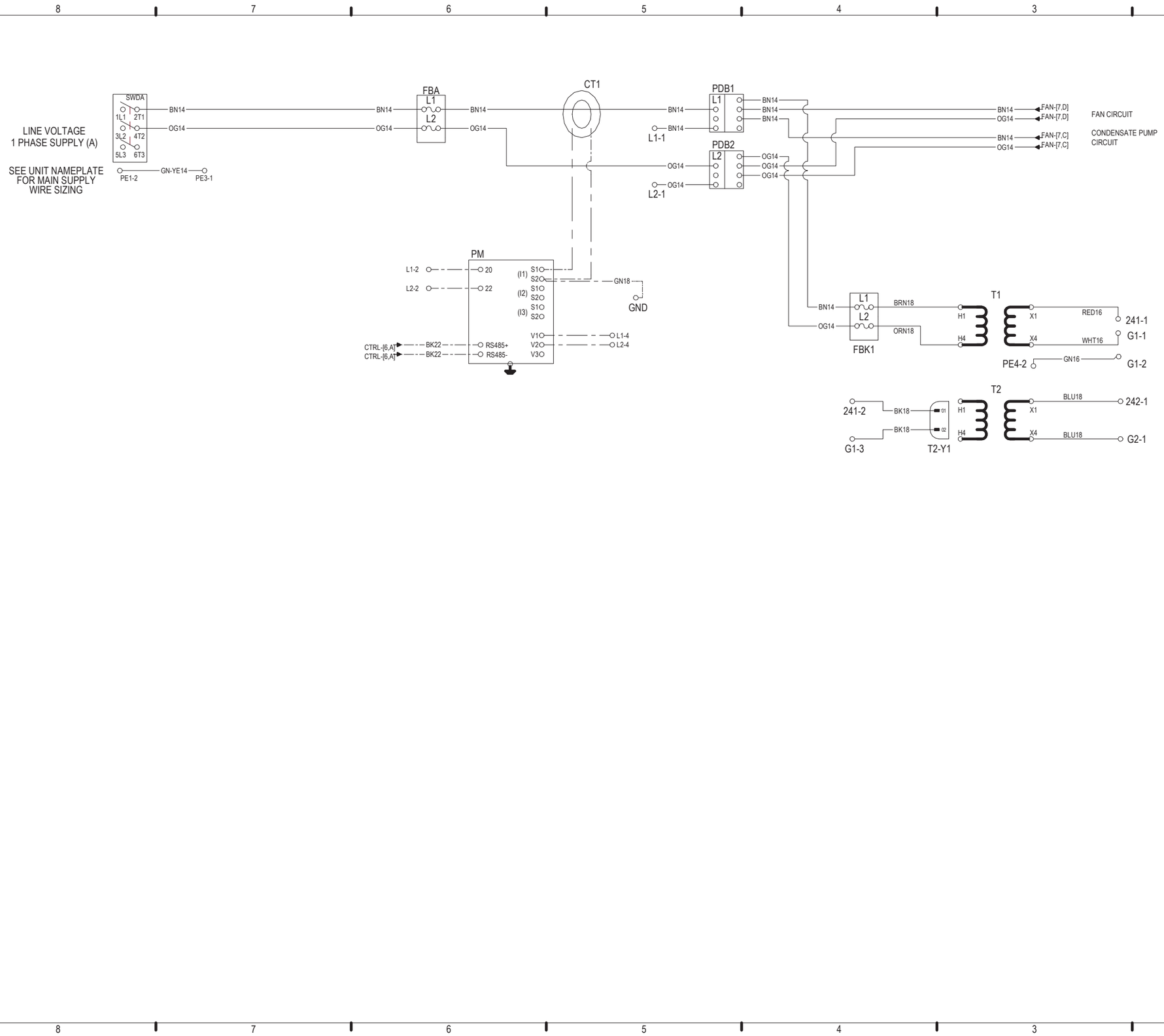
CONTROL CHARACTERISTICS SYMBOL LEGEND	C CONTROL CHARACTERISTIC	10080206P1	PAPER SCHEM DX (A) CRD400-000A
		PART NUMBER	DESCRIPTION
MATERIAL: SEE TABLE & NOTES		VERTIV.	
FINISH: NONE			
MATERIAL NOTE: FABRICATE FROM THE MATERIAL SPECIFIED IN ACCORDANCE WITH THE CURRENT APPLICABLE VERTIV ENGINEERING SPECIFICATION OR AS OTHERWISE SPECIFIED ON THIS DRAWING.			
DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED MM (PRIMARY): X ± 2, .X ± .8, .XX ± .38, ANGULAR ± 2° INCHES (SECONDARY): (.X) ± .1, (.XX) ± .03, (.XXX) ± .015	THIRD ANGLE PROJECTION		
CORPORATE CAGE CODE: 1EDC2	1050 DEARBORN DRIVE P.O. BOX 29186 COLUMBUS, OHIO 43229		
DRAWN: A.TORRES	DATE: 2/26/2005		
CHECKED: DAVID FLORES	DATE: 2/26/2025		
ENGR: A.TORRES	DATE: 2/26/2025		

TITLE: PAPER SCHEMATIC CRD400-000A

SIZE	DRAWING NUMBER	SHEET	REV.
B	10080206DRW	5/5	B

THIRD ANGLE PROJECTION

FORM NO. 168188 REV 15



NOTES:
1. ALL FIELD WIRING TO BE PER LOCAL CODES. USE COPPER CONDUCTORS ONLY.
2. SEE INSTALLATION AND USER MANUAL(S).
3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
FBA - FUSE BLOCK A	6,D	CT1 - CURRENT TRANSFORMER 1	5,D
FBB - FUSE BLOCK B	6,D	CT2 - CURRENT TRANSFORMER 2	5,D
FBK1 - FUSE BLOCK 1 CONTROL	4,C	PM - POWER METER	6,C
KA1 - RELAY ATS FEEDBACK	7,D		
KMA - CONTACTOR ATS A	7,D		
PDB1 - POWER DIST BLOCK L1	5,D		
PDB2 - POWER DIST BLOCK L2	5,D		
SWDA - SWITCH DISCONNECT A	8,D		
SWDB - SWITCH DISCONNECT B	8,D		
T1 - CONTROL TRANSFORMER	3,C		
T2 - ISOLATION TRANSFORMER	3,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

DRAWN	A.TORRES	DATE 2/25/2025
CHECKED	D.MACIEL	DATE 2/25/2025
ENGR	A.TORRES	DATE 2/25/2025

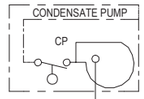
ELECTRICAL SCHEMATIC

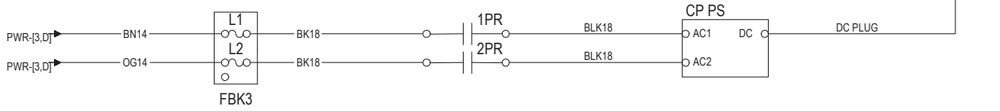
VERTIV® CRV DX 30kW
208-230V 1PH 50-60HZ
iCOM2 LARGE CONTROL
W/O HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

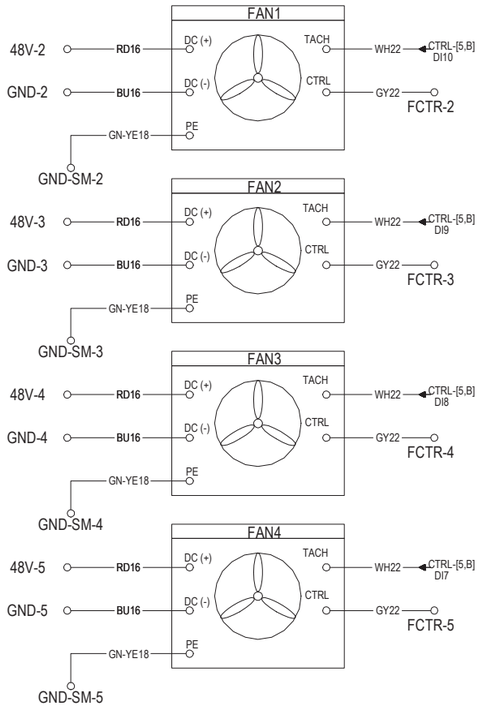
POWER SUPPLY

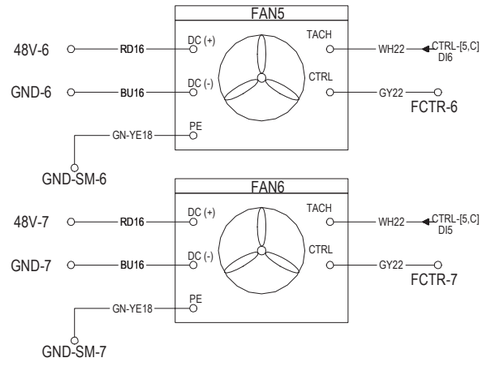
SHEET 1 OF 3

DRAWING NO	REV
10080207DRW	B









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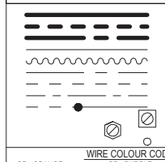
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
CPPS - CP POWER SUPPLY 24VDC	5,C		
FANPS - FANS POWER SUPPLY 48VDC	5,D		
FBK2 - FUSE BLOCK 2 FANS	6,D		
FBK3 - FUSE BLOCK 3 CP	6,C		



FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
OPTIONAL 24 VOLT WIRING
FIELD SUPPLIED 24V NEC CLASS 2 WIRING
FIELD SUPPLIED EARTH GROUNDING WIRE
PIGTAIL LEADS 24VOLT WIRING
TERMINAL STRIP CONNECTION
GROUNDING LUG CONNECTION
COMPONENT PLUG CONNECTION

WIRE COLOUR CODE

OR - ORANGE	PR - PURPLE	BL - BLUE
R - RED	GR - GREEN	BK - BLACK
BR - BROWN	Y - YELLOW	W - WHITE

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229
CAGE CODE 1EDC2

VERTIV.

ELECTRICAL SCHEMATIC

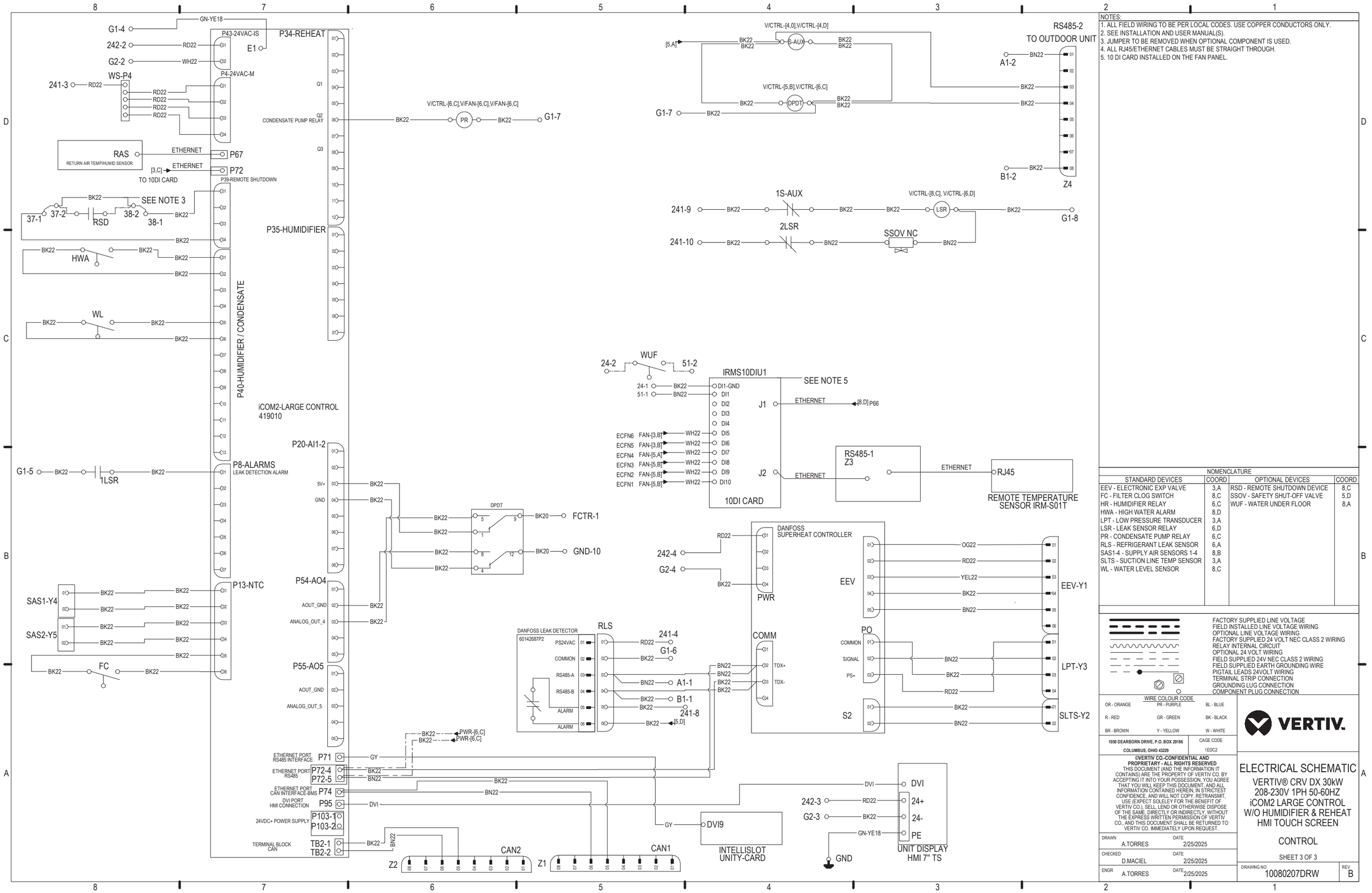
VERTIV® CRV DX 30kW
208-230V 1PH 50-60HZ
iCOM2 LARGE CONTROL
W/O HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

FANS & CP

SHEET 2 OF 3

DRAWN	A.TORRES	DATE	2/25/2025
CHECKED	D.MACIEL	DATE	2/25/2025
ENGR	A.TORRES	DATE	2/25/2025

DRAWING NO 10080207DRW
REV. B



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3. JUMPER TO BE REMOVED WHEN OPTIONAL COMPONENT IS USED.
4. ALL RJ45/ETHERNET CABLES MUST BE STRAIGHT THROUGH.
5. 10 DI CARD INSTALLED ON THE FAN PANEL.

NOMENCLATURE

STANDARD DEVICES	COORD	OPTIONAL DEVICES	COORD
EEV - ELECTRONIC EXP VALVE	3,A	RSD - REMOTE SHUTDOWN DEVICE	8,C
FC - FILTER CLOG SWITCH	8,C	SSOV - SAFETY SHUT-OFF VALVE	5,D
HR - HUMIDIFIER RELAY	6,C	WUF - WATER UNDER FLOOR	8,A
HWA - HIGH WATER ALARM	8,D		
LPT - LOW PRESSURE TRANSDUCER	3,A		
LSR - LEAK SENSOR RELAY	6,D		
PR - CONDENSATE PUMP RELAY	6,C		
RLS - REFRIGERANT LEAK SENSOR	6,A		
SAS1-4 - SUPPLY AIR SENSORS 1-4	8,B		
SLTS - SUCTION LINE TEMP SENSOR	3,A		
WL - WATER LEVEL SENSOR	8,C		

FACTORY SUPPLIED LINE VOLTAGE
FIELD INSTALLED LINE VOLTAGE WIRING
OPTIONAL LINE VOLTAGE WIRING
FACTORY SUPPLIED 24 VOLT NEC CLASS 2 WIRING
RELAY INTERNAL CIRCUIT
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VERTIV.

1050 DEARBORN DRIVE, P.O. BOX 29186
COLUMBUS, OHIO 43229

CAGE CODE 1EDC2

ELECTRICAL SCHEMATIC

VERTIV® CRV DX 30kW
208-230V 1PH 50-60HZ
iCOM2 LARGE CONTROL
W/O HUMIDIFIER & REHEAT
HMI TOUCH SCREEN

CONTROL

SHEET 3 OF 3

DRAWN	A.TORRES	DATE 2/25/2025
CHECKED	D.MACIEL	DATE 2/25/2025
ENGR	A.TORRES	DATE 2/25/2025

DRAWING NO 10080207DRW REV B

VERTIV PART NUMBER	INTENDED USAGE		UL / CSA REQUIRED		COLOR	
	INDOOR	OUTDOOR	YES	NO	MATERIAL	LETTERING
10080207P1	X		X		WHITE	BLACK

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PRODUCTION RELEASE.	2/26/25 2/26/25	A. TORRES D. MACIEL

NOTES:

1. SEE VERTIV ENGINEERING SPECIFICATION 168187 FOR LABEL GENERAL DIMENSIONAL TOLERANCES, FONT SPECIFICATIONS, ANSI AND RoHS COMPLIANCE AND SEE SECTION 5.4. FOR LABEL MATERIAL SPECS AND APPROVED SUPPLIERS/MANUFACTURERS.
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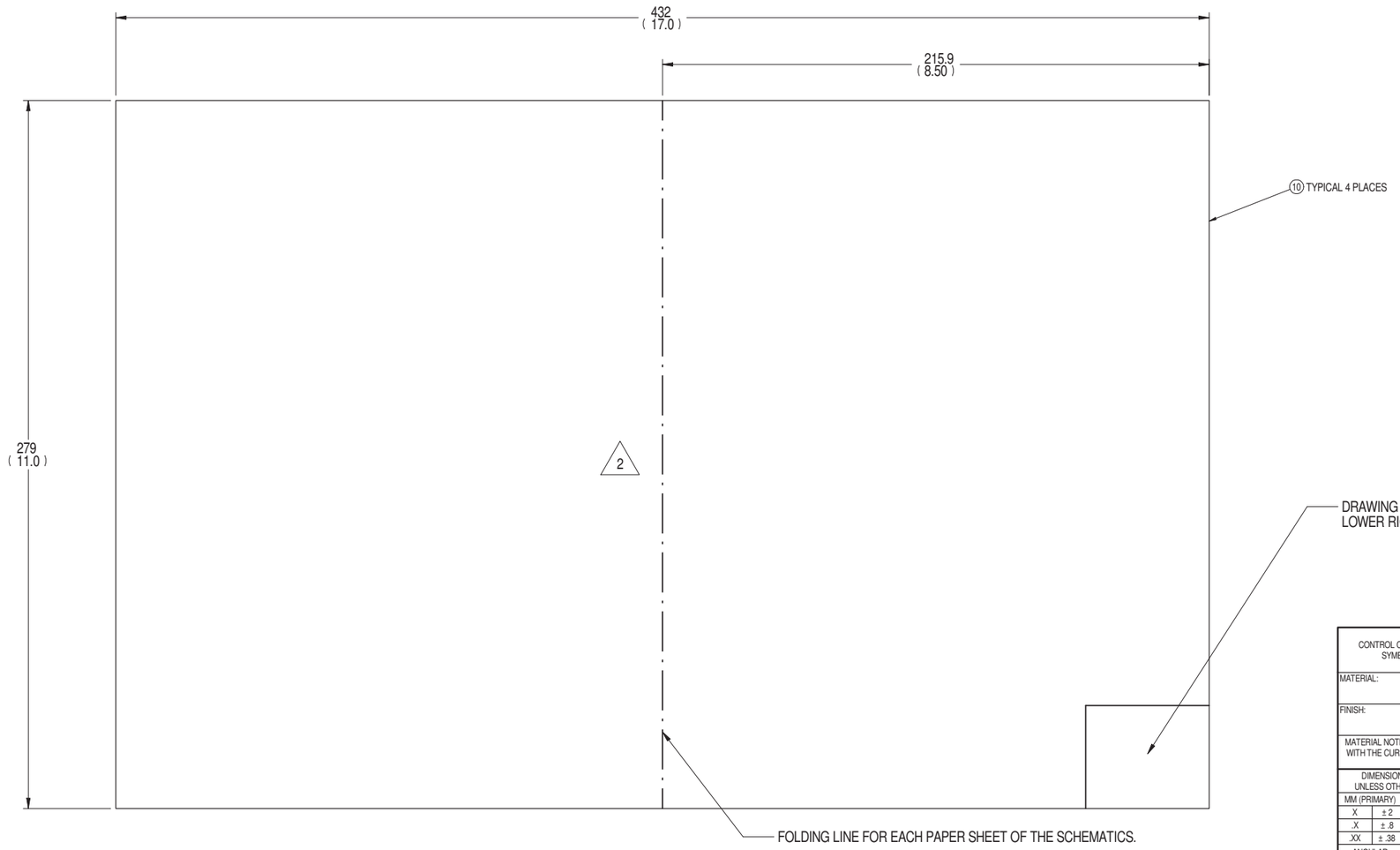


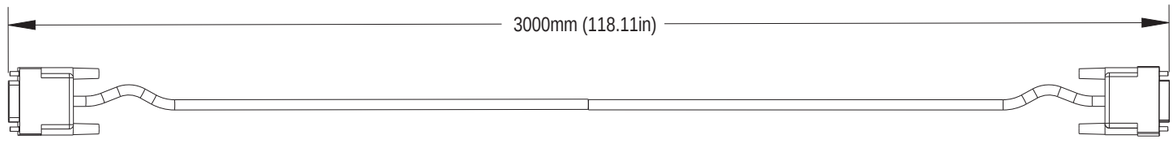
CONTROL CHARACTERISTICS SYMBOL LEGEND	C CONTROL CHARACTERISTIC	10080207P1	PAPER SCHEM DX (A) CRD300-000A
		PART NUMBER	DESCRIPTION
MATERIAL: SEE TABLE & NOTES		VERTIV.	
FINISH: NONE			
MATERIAL NOTE: FABRICATE FROM THE MATERIAL SPECIFIED IN ACCORDANCE WITH THE CURRENT APPLICABLE VERTIV ENGINEERING SPECIFICATION OR AS OTHERWISE SPECIFIED ON THIS DRAWING.			
DIMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED MM (PRIMARY): X ± 2, .X ± .8, .XX ± .38, ANGULAR ± 2° INCHES (SECONDARY): (X) ± .1, (.XX) ± .03, (.XXX) ± .015	THIRD ANGLE PROJECTION		
CORPORATE CAGE CODE: 1EDC2	1050 DEARBORN DRIVE P.O. BOX 29186 COLUMBUS, OHIO 43229		
DRAWN: A.TORRES	DATE: 2/26/2005	TITLE: PAPER SCHEMATIC CRD300-000A	
CHECKED: DAVID FLORES	DATE: 2/26/2025		
ENGR: A.TORRES	DATE: 2/26/2025	SIZE: B	DRAWING NUMBER: 10080207DRW; SHEET: 5/5; REV.: B

THIRD ANGLE PROJECTION

FORM NO. 168188 REV 15

VERTIV PN	LENGTH	MANUFACTURER	MFG PN	DESCRIPTION
10159904	3000mm	TRIPP-LITE	P560-010-DLI	DVI-I DUAL LINK DIGITAL AND ANALOG MONITOR CABLE

CO NO	REV	DESCRIPTION	DRAWN BY: DATE APPROVED BY: DATE
CO-1110833	A	PRODUCTION RELEASE	A.TORRES 03/10/2025 D. MACIEL 03/10/2025



CORPORATE CAGE CODE			
1EDC2	505 N. CLEVELAND AVE WESTERVILLE, OHIO 43082	10159904 PART NUMBER	DVI-I DUAL LINK DIGITAL AND ANALOG MONITOR CABLE DESCRIPTION

MATERIAL:			UNLESS OTHERWISE SPECIFIED TOLERANCE			
NONE			MM (PRIMARY)		INCHES (SECONDARY)	
FINISH:			X	±2	(.X)	± .1
NONE			.X	± .8	(.XX)	± .03
			.XX	± .38	(.XXX)	± .015
			HOLE DIA	±0.13	HOLE DIA	± .005
			ANGULAR		±1.5°	
DESIGNED BY: A.TORRES	DATE: 03/10/2025	WEIGHT: -	C CONTROL CHARACTERISTICS		PART DESCRIPTION DVI-I DUAL LINK DIGITAL AND ANALOG MONITOR CABLE	
DRAWN BY: A.TORRES	DATE: 03/10/2025	SHEET: 1/1	THIRD ANGLE PROJECTION	SIZE: B	SCALE: 1:1	DOCUMENT NUMBER: 10159904DRW / REV: A

FORM NO. DPN004760 REV F

DX PRODUCTS WITH R32

A2L REFRIGERANT DISPERSAL VOLUME CALCULATION R32

Engineer of record to determine the Refrigerant Charge m_c and required minimum Effective Dispersal Volume V_{ED} of the space to which the appliance can be utilized for the cooling of ITE AREAS.

The required minimum EFFECTIVE DISPERSAL VOLUME V_{ED} is a function of the refrigerant charge, m_c and is represented by the following equation:

$V_{ED} = m_c / 0.5 \times LFL$

V_{ED} = the minimum Effective Dispersal Volume in ft^3 (m^3)

m_c = the refrigerant charge of the largest single circuit of a unit in lbs (kg)

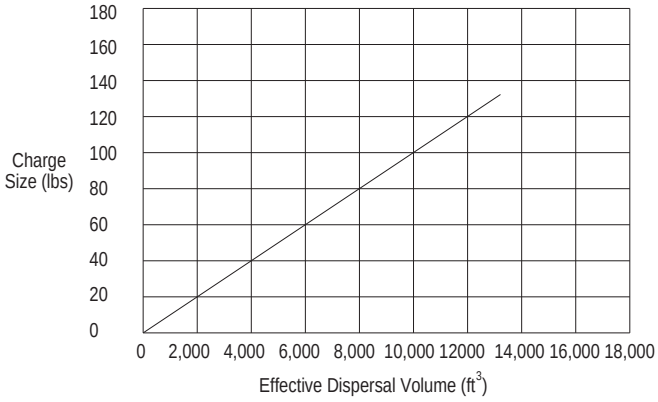
0.5 = the concentration factor

LFL = the Lower Flammability Limit in lbs/1000 ft^3 (kg/m^3)

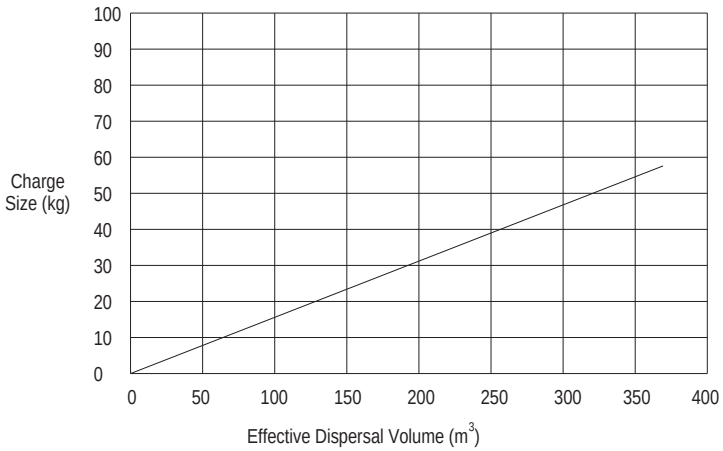
Note: The LFL of R32 is 19.2 lbs/1000 ft^3 (307.0 g/m^3) according to ASHRAE 34-2022.

Minimum Effective Dispersal Volume V_{ED} of the space shall be based on altitude of the installation location. For locations above sea level, the engineer of record will need to adjust the value of LFL in accordance with ANSI/ASHRAE 34 before applying it to the equation for determining the required minimum Effective Dispersal Volume V_{ED}.

Charge Size vs. Effective Dispersal Volume



Charge Size vs. Effective Dispersal Volume



DX PRODUCTS WITH R32

A2L REFRIGERANT DISPERSAL VOLUME CALCULATION R32

How to Determine the Effective Dispersal Volume of an ITE Area

Volume Calculations shall be based on the overall volume of space available to which the refrigerant disperses within the CIRCULATION AIRFLOW in the event of a refrigerant leak. This overall volume shall be modified with the appropriate deductions. For the purposes of determining the EFFECTIVE DISPERSAL VOLUME of an ITE AREA the following shall apply:

a) The EFFECTIVE DISPERSAL VOLUME shall only include the circulated airflow of the system.
b) The EFFECTIVE DISPERSAL VOLUME shall initially include the ITE AREA enclosed by the floor, walls, and ceiling of that space.
c) When the CIRCULATION AIRFLOW includes underfloor spaces, suspended ceiling spaces, or other partitioned spaces, such as equipment galleries, the volume of those spaces may be included.

In general, the volume of equipment, piping, wiring, or other apparatus that consume space within and are isolated from the CIRCULATION AIRFLOW shall be deducted from the EFFECTIVE DISPERSAL VOLUME. The following deductions shall be applied:

a) When the CIRCULATION AIRFLOW has been fully contained on both hot and cold sides of the aisle, via ducts or other apparatus, any room volume outside of that containment shall not be included when calculating the EFFECTIVE DISPERSAL VOLUME.
b) When the overall volume of space available, or a partitioned portion of that volume includes ducted openings from partially ducted systems, some volume of that space may require a deduction. No volume greater than 4 feet away in height from the upper most supply or return duct opening in the space may be included when calculating the EFFECTIVE DISPERSAL VOLUME, unless an analysis of the airflow has been conducted to show that the volume of air has effective movement for the mixing of a leaked refrigerant.
c) Obstructions of tubing, piping, wiring, etc., consuming more than 0.0071 m^3 (0.25 ft^3) of space shall be included in the deductions from the overall volume.
d) The ITE within the circulated airflow shall be evaluated for their deduction from the EFFECTIVE DISPERSAL VOLUME. The deducted volume of the ITE shall be based on the designed maximum capacity or fill of the servers.
e) As a maximum value, no more than 75 % of the ITE's volume shall be included as circulating air space in the EFFECTIVE DISPERSAL VOLUME. The total volume of the ITE shall be defined by the overall dimensions of its ITE ENCLOSURE. Small gaps in between individual server racks shall not be included in the EFFECTIVE DISPERSAL VOLUME.
f) Any other volume within the circulation airflow that is otherwise enclosed or partitioned off from the airflow shall be deducted in the calculation of the EFFECTIVE DISPERSAL VOLUME.

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