





# SUBMITTAL RECORD

**JOB NAME:** B-887 AHU **JOB NO:** M19890(N5280)  
**CUSTOMER:** DAIKIN APPLIED CANADA INC **ENGINEER:** CNL  
**EngA MODEL:** DJE40/C **QTY:** 1 **TAG:** AHU

### SHIPPING AND APPROVAL INFORMATION

<b>MOUNTING</b> <u>Indoor Base Mounted</u>	<b>ACCESS</b> <u>As Per Drawing</u>
<b>SHIPPING WEIGHT</b> <u>2740 lb (1245 kg)</u>	<b>OPERATING WEIGHT</b> <u>2680 lb (1218 kg)</u>
<b>NO. OF PIECES</b> <u>Unit in 2 sections</u>	
<ul style="list-style-type: none"> <li>• Intertek cETL approval.</li> <li>• Refer to mechanical drawing for detailed split unit section weights.</li> <li>• Unit will be shrink wrapped for transportation.</li> </ul>	

### SUPPLY AIR DATA

<b>AIR FLOW</b> <u>4,000 CFM (1,888 l/s)</u>	<b>FAN SIZE</b> <u>(1) 122 BAE-DIDW</u>	<b>TSP</b> <u>3.7 in w.c. (921 Pa)</u>	<b>RPM</b> <u>3578</u>
<b>MOTOR SIZE</b> <u>5 HP (3.73 kW)</u>	<b>TYPE (RPM)</b> <u>Super 'E' ODP (3450)</u>	<b>ESP</b> <u>1.0 in w.c. (249 Pa)</u>	<b>BHP</b> <u>3.9 BHP (2.91 kW)</u>
<ul style="list-style-type: none"> <li>• Supply air fan/motor c/w spring vibration isolation and pillow block bearings.</li> </ul>			

### RETURN AIR DATA

<b>AIR FLOW</b> <u>4,000 CFM (1,888 l/s)</u>	<b>FAN SIZE</b> <u>(1) 12/12 FC DIDW</u>	<b>TSP</b> <u>1.8 in w.c. (448 Pa)</u>	<b>RPM</b> <u>1106</u>
<b>MOTOR SIZE</b> <u>3 HP (2.24 kW)</u>	<b>TYPE (RPM)</b> <u>Super 'E' ODP (1750)</u>	<b>ESP</b> <u>0.95 in w.c. (237 Pa)</u>	<b>BHP</b> <u>2.29 BHP (1.71 kW)</u>
<ul style="list-style-type: none"> <li>• Return air fan/motor c/w rubber in shear vibration isolation and pillow block bearings.</li> </ul>			

### AIR OPENING DATA

AIR OPENING	LOCATION	DAMPER TYPE	OPERATION
SUPPLY AIR	See Below [1]		
RETURN AIR	See Below [1]	See Below [2]	Modulating
OUTSIDE AIR	See Below [1]	See Below [2]	Modulating
EXHAUST AIR	See Below [1]	See Below [2]	Modulating
<ul style="list-style-type: none"> <li>• [1] - See Mechanical Drawing</li> <li>• [2] - TAMCO Series 1000 Low Leakage Aluminum Air-foil Parallel Blade</li> </ul>			

### CONSTRUCTION DATA

<b>UNIT CABINET</b>	<u>18 gauge satin coat galvanized sheet metal c/w 1" (25 mm) 1.5 lb/ft<sup>3</sup> (24 kg/m<sup>3</sup>) insulation on entire unit casing.</u>
<b>UNIT FLOOR</b>	<u>18 gauge satin coat galvanized sheet metal on entire unit floor.</u>
<b>EXTERIOR PAINT</b>	<u>Electrostatically applied Alkyd Enamel in Aluminum Gray color on all exterior surface but not including unit underside.</u>
<b>AIRSIDE DOOR</b>	<u>All access - hinged c/w lever type door handles</u>
<b>SERVICE DOOR</b>	<u>All access - hinged c/w lever type door handles</u>
<b>DRAIN PAN</b>	<u>18 gauge 304L stainless steel drain pan c/w drain connection through casing on DX coil section.</u>
<ul style="list-style-type: none"> <li>• Unit split into 2 Sections. Field wiring is required upon unit assembly. Refer to IOM for details.</li> </ul>	

### ELECTRICAL DATA

POWER SUPPLY	MINIMUM CIRCUIT AMPACITY	MAXIMUM FUSE(D.E.)	MAXIMUM BREAKER
<u>575 / 3 / 60</u>	<u>10.5 AMPS</u>	<u>15 AMPS</u>	<u>15 AMPS</u>
<ul style="list-style-type: none"> <li>• See Electrical Data Sheet for details.</li> <li>• Unit mounted non fused disconnect switch.</li> </ul>			



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EngA MODEL: DJE40/C QTY: 1 TAG: AHU

### PRE-FILTER SECTION DATA - Side Loaded

FILTER TYPE <u>Pleated Filter with MERV 8 rating</u>	
QTY/SIZE <u>2 - 24 x 24 x 2" (610 x 610 x 51 mm)</u>	QTY/SIZE _____
TOTAL GROSS AREA <u>8.00 SQ.FT. (0.74 SQ. MTRS)</u>	FACE VELOCITY <u>500 FPM (2.54 m/s)</u>
<ul style="list-style-type: none"> <li>Filters may be shipped loose or mounted in the tracks</li> </ul>	

### FINAL FILTER SECTION DATA - Side Loaded

FILTER TYPE <u>Dafco Pleated Filter with MERV 13 rating</u>	
QTY/SIZE <u>2 - 24 x 24 x 4" (610 x 610 x 102 mm)</u>	QTY/SIZE _____
TOTAL GROSS AREA <u>8.00 SQ.FT. (0.74 SQ. MTRS)</u>	FACE VELOCITY <u>500 FPM (2.54 m/s)</u>
<ul style="list-style-type: none"> <li>Filters may be shipped loose or mounted in the tracks</li> </ul>	

### BURNER HEATING DATA - INDIRECT FIRED (DJE-40)

POWER BURNER <u>EngA 'HT' Series</u>	HEAT EXCH. MATERIAL <u>Stainless Steel</u>		
FUEL <u>Natural Gas</u>	INLET PRESSURE <u>7 in wc. (1743 Pa)</u>	GAS FIELD CONN. <u>0.75" (19 mm)</u>	FLUE DIA <u>5 in. (127 mm)</u>
HEAT INPUT <u>375,000 Btuh (109.87 kW)</u>	HEAT OUTPUT <u>300,000 Btuh (87.90 kW)</u>	TEMP. RISE <u>69.0 °F (38.3 °C)</u>	
<ul style="list-style-type: none"> <li>EngA (15 : 1) high turndown burner</li> <li>Three pass heat exchanger c/w condensate drain connection</li> <li>Heat exchanger section has 1"(25 mm) 1.5 lb/ft(24 kg/m³) insulation with 22 gauge solid liner</li> <li>Modulating combustion air and gas control.</li> <li>Heating is controlled by CTRAC controller.</li> <li>Integral low limit auto bypass; set @ 40°F (4.4°C).</li> <li>Side wall vent size is based on the following information: <ul style="list-style-type: none"> <li>i) Maximum vent: 18 ft(5.5 m) Horizontal run; 8 ft(2.4 m) Vertical run; (0) 45° Elbows; (2) 90° Elbows</li> <li>ii) Power venter, vent motor, vent hood and EngA supplied barometric draft controller is installed and wired by others.</li> <li>iii) Contractor is responsible to ensure venting is installed to the acceptance of the local authority having jurisdiction.</li> <li>iv) Contractor shall supply and install 6"(152 mm) Diameter 'B' gas vent</li> <li>v) Use vent connector for the connection to the unit, an elbow and a tee where the barometric damper is mounted, after that the venting is 'B' gas vent.</li> <li>vi) Mount power venter as close to the wall termination as possible.</li> <li>vii) See enclosed engineered air power venter installation manual for instructions.</li> </ul> </li> </ul>			

### DX COIL DATA

COIL SIZE <u>25 (635) x 46 (1168) x 4R x 12 FPI</u>	VELOCITY <u>503 FPM (2.56 m/s)</u>
CAPACITY <u>118,000 Btuh (34.6 kW)</u>	AIR P.D. <u>0.65 in.wc. (162 Pa)</u>
ENTERING AIR DB / WB <u>81°F (27.2°C) / 68.0°F (20.0°C)</u>	LEAVING AIR DB / WB <u>60.4°F (15.8°C) / 59.0°F (15.0°C)</u>
SST/SCT <u>50°F (10.0°C) / 126.2°F (52.3°C)</u>	REFRIGERANT TYPE <u>R-410A</u>
DISTRIBUTOR TYPE <u>(2)4-3-4</u>	SUCTION SIZE <u>7/8 in (22 mm)</u> QUANTITY <u>2</u>
<ul style="list-style-type: none"> <li>DX cooling coil c/w auxiliary drain pan(1/2"(13 mm) drain connection), alternate tube circuiting and stainless steel drain pan.</li> <li>Unit DX coil is designed to match remote mounted condensing unit CU92/O in job M19890(CU).</li> <li>The hot gas bypass line must be connected to the 5/8"(16 mm) OD spigot provided on the top of the DX coil header.</li> <li>CTRAC discharge air control c/w BACNET MS/TP interface - provides 2 stages of mechanical cooling, modulates economizer for free cooling and interfaces with heating control.</li> <li>Mechanical cooling operates down to 50°F (10.0°C) ambient temperature.</li> </ul>	

### SHIPPED LOOSE ITEMS (See filter sections for filters)



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**QTY:** 1

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**SHIPPED LOOSE ITEMS (CONTINUED)**

- 1 - Engineered Air TE6000-EA3 Discharge Air Sensor
- 1 - Tjernlund Products Inc. HS2 Power Venter
- 1 - Tjernlund Products Inc. VH1-6 Vent Hood
- 1 - Ontor Limited MG1-6 Control Draft



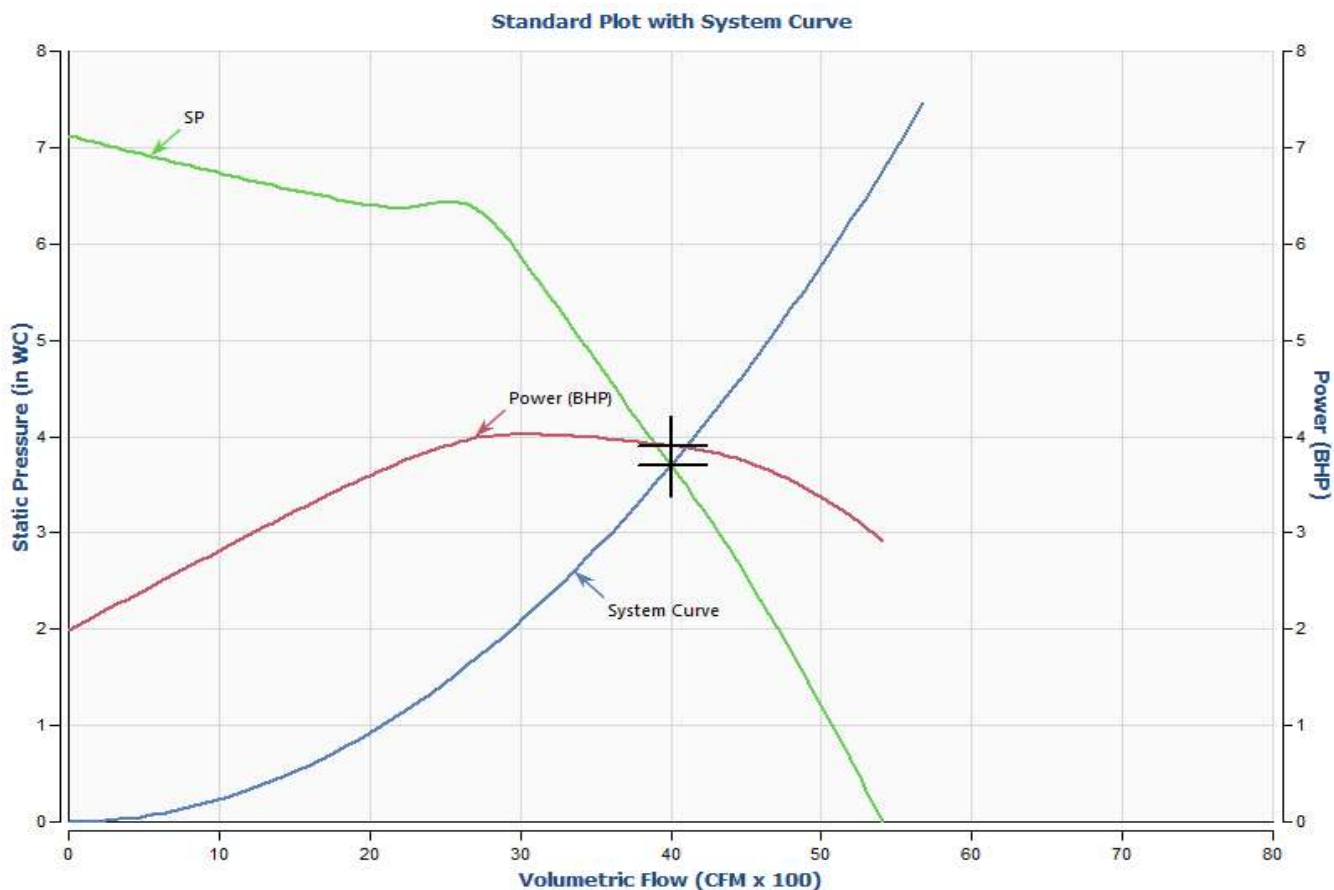
**Customer:**  
**Job ID:** M19890  
**Date:** September 10, 2019

**Tag:** AHU-SA

**Fan information**

Size/Model . . . . .	122/BAE-DW	Class . . . . .	I	Outlet Vel (FPM) . . . . .	2581
Volumetric Flow (CFM) . . . . .	4000	Speed (RPM) . . . . .	3578	Density (lb/ft <sup>3</sup> ) . . . . .	0.0739
SP (in WC) . . . . .	3.7	Max Speed . . . . .	3957 RPM @ 70 °F	FEG . . . . .	FEG85
		Power (BHP) . . . . .	3.9		

Adjusted for                      Altitude: 413 ft



Sound Power Ea.	Octave Bands	1	2	3	4	5	6	7	8	LwA	dBA
	Inlet dB	86	87	89	94	89	86	81	74	95	80
	Outlet dB	93	92	90	90	90	88	82	75	94	80

LwA: The overall (single value) fan sound power level in dB re. 10<sup>-12</sup> Watts, 'A' weighted.  
 dBA: Estimated sound pressure level (re:0.0002 microbar) based on a single ducted installation at 5 ft., using a directivity factor of 1.



# RETURN AIR FAN PERFORMANCE

JOB NAME: B-887 AHU

JOB NO: M19890(N5280)

CUSTOMER: DAIKIN APPLIED CANADA INC

ENGINEER: CNL

EngA MODEL: DJE40/C

QTY: 1

TAG: AHU

AIRFLOW 4000 CFM E.S.P. 0.95 in.w.c.

FAN MANUFACTURER LAU INDUSTRIES

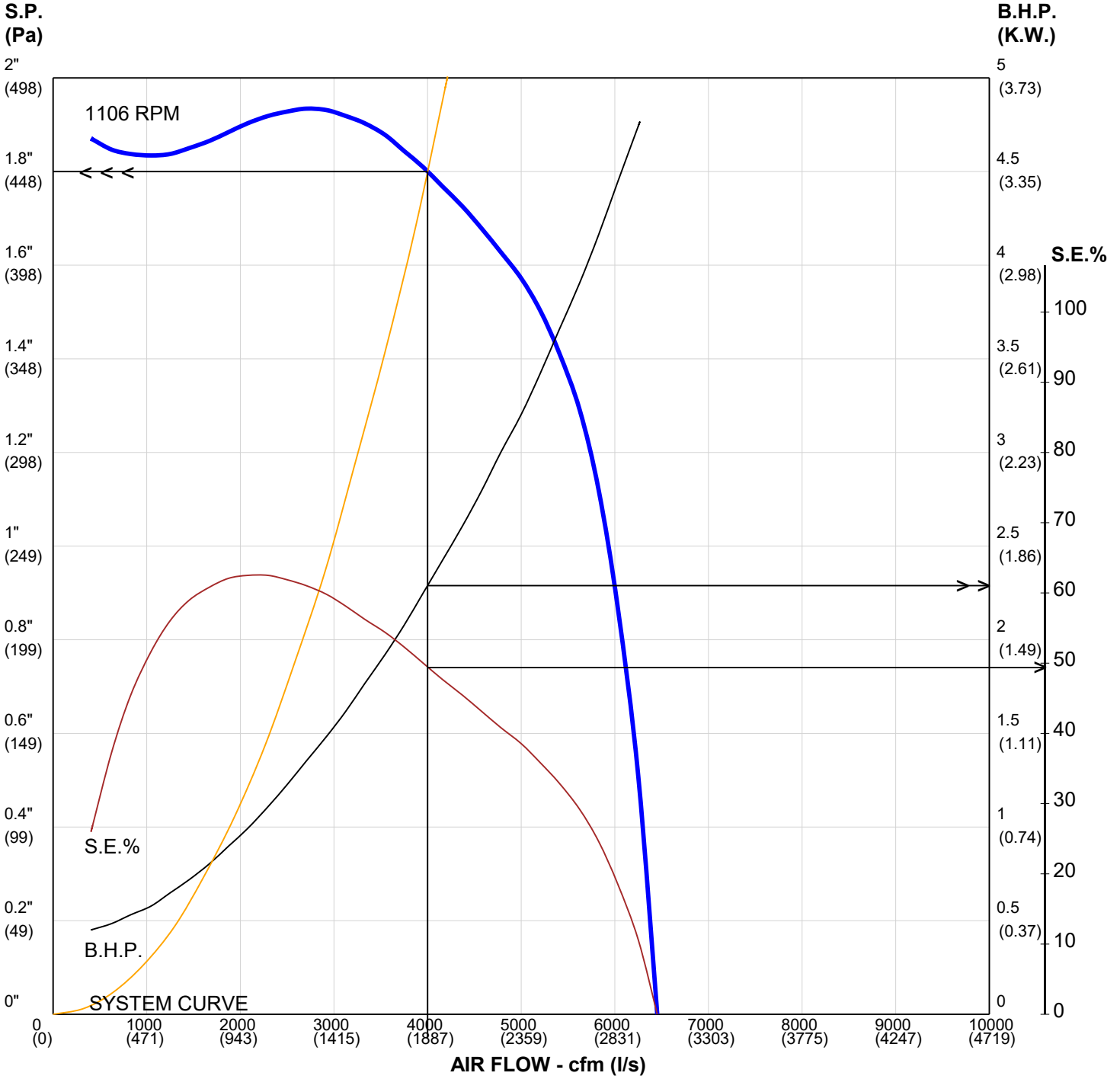
FANSIZE 12/12 FC DIDW QTY. 1

## SOUND POWER DATA

TSP 1.8 in.w.c. RPM 1106 REQ'D POWER 2.29 BHP

Hz	63	125	250	500	1000	2000	4000	8000
db:	88	88	81	80	81	79	76	74

MOTOR SIZE 3 HP Super 'E' ODP (1750)







# ELECTRICAL DATA

JOB NAME: B-887 AHU

JOB NO: M19890(N5280)

EngA MODEL: DJE40/C

QTY: 1

TAG: AHU

Power Supply	Minimum Circuit Ampacity	Terminal Block to Accept	Maximum Fuse (Dual Element)	Maximum Breaker
575 / 3 / 60	10.5 AMPS	14 Awg	15 AMPS	15 AMPS

Components	Model	Minimum Conductor Size	Ampacity FLA / LRA
Supply Fan Motor	Super 'E' ODP (3450) 5 HP	14 Awg	4.5
Return Fan Motor	Super 'E' ODP (1750) 3 HP	14 Awg	3.4
Burner Motor(Xfmr)	PSC(Use Xfmr) 1/12 HP	14(14) Awg	1.32 @ 120/1/60
Power Venter Xfmr		14 Awg	.6
Control Xfmr		14 Awg	.4

UNIT CONTROL PANEL(S) SHORT CIRCUIT CURRENT RATING (SCCR)	
Short circuit current	<u>5</u> kA rms symmetrical, <u>575</u> V maximum

WIRING DRAWING LEGEND			
APS	Air Proving Switch	DM	Damper Motor
ASF	Auto Fan Switch	FR	Fan Relay
AUX	Auxiliary Contact	GND	Ground
BM	Burner Motor	GV	Gas Valve
C	Contactora	HL	High Limit
CCH	Compressor Crankcase Heater	HPC	High Pressure Control
CFC	Condenser Fan Control	HR	Heating Relay
CLC	Compressor Loading Control	IGN	Ignition Control
CPM	Compressor Protection Module	ITP	Internal Thermo Protection
CR	Cooling Relay	LPC	Low Pressure Control
CS	Current Sensor	M	Motor
DHSS	Draft Hood Spill Switch	MV	Main Gas Valve
		NFD	Non Fused Disconnect
		OL	Thermal Overload
		PS	Pressure Sensor
		PV	Pilot Gas Valve
		R	Relay
		RevHL	Reverse Airflow High Limit
		TB	Terminal Block
		TDF	Time Delay Fuse
		TDR	Time Delay Relay
		TS	Temperature Sensor
		VFD	Variable Frequency Drive
		XFMR	Transformer





# ELECTRICAL DATA

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EngA MODEL: DJE40/C

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## UNIT FUNCTION

CTRAC-3 Program #11

CRD display or EMS can start/stop CTRAC controller.

CRD or EMS can change discharge air and damper minimum position setpoints.

EMS has full control of setpoints and control modes.

Unit mounted non fused disconnect switch 'on', service switch 'on', fire alarm contact (by others) 'closed' (jumper if not required).

EMS command Unit On/Off = ON, outside air damper opens to minimum position of 20% (adjustable). After time delay, the blowers are enabled and run continuously.

The C-TRAC3 controller, with an adjustable discharge air setpoint from EMS will modulate heating or cooling (and cycle 2 stages of compressors) to maintain the required discharge air temperature.

### Cool Mode Enabled

If the C-TRAC3 is in cooling mode and there is a call for cooling, the C-TRAC3 will begin staging on the mechanical cooling. The discharge air temperature control band is from 55°F (12.8°C) to 95°F (35°C). Mechanical cooling is disabled below 50°F (10°C) ambient temperature.

### Economizer Mode Enabled

In economizer mode, the C-TRAC3 will modulate the mixing dampers to maintain the required discharge air temperature. The outside air damper minimum position is set at 20% outside air (EMS adjustable). Economizer is disabled to minimum position at 20% outside air (EMS adjustable) above 70°F (21.1°C) ambient temperature or when in cooling or heating mode. When in economizer mode the discharge air temperature control band is from 55°F (12.8°C) to 95°F (35°C).

### Heat Mode Enabled

If the C-TRAC3 is in heating mode and there is a call for heat, the C-TRAC3 will close the HE contacts and output a 0 - 10 vdc modulating heating signal directly to the DJM-2 heating controller. Heating is disabled above 90°F (32.2°C) ambient temperature. When in heating mode, the discharge air temperature control band is from 55°F (12.8°C) to 95°F (35°C).

EMS command Unit On/Off = 'OFF', C-TRAC3 begins shutdown cycle, dampers and blowers delay off and then unit shuts down. If non fused disconnect switch 'off', or service switch 'off', or the fire alarm contact 'open', equipment operation is disabled immediately. If the discharge air temperature falls below 40°F (4.4°C), the C-TRAC3 will shut down fans, close dampers and indicate alarm.

Refer to the C-TRAC3 face mounted LED's for mode indication and status.

Note 1. Compressor(s) cycle has minimum run time, minimum off time and interstage timing.

Note 2. Refer to manuals shipped with unit for more detailed explanation of maintenance, components and controls.

Note 3. Go to [www.engineeredair.com/manuals/manuals.asp](http://www.engineeredair.com/manuals/manuals.asp) for online manual details.

**DATE: 17-SEP-2019**

**SUBMITTED BY: MICHAEL CATION (O) / HMC**

**Network Control Variable List - C-TRAC3 BACnet**

Variable	Description (Revision 6.6 Sept 15)	Note
BV36	Air Flow Problem	R
BV26	Ambient Sensor Alarm	R
AV11	Ambient Temperature	R
BV10	Blower Status	R
BV13	Cooling Lockout - Low Ambient Temperature	R
BV5	Cooling Mode - A	R
AV18	Cooling Modulated Output	R
AV17	Cooling Stages % On	R
BV50	Cooling Status - Mechanical Cooling On/Off	R
AV19	Damper % Open	R
BV16	Damper Contact DM closed	R
AV7	Damper Minimum Position	R
BV11	Damper Override Low Discharge Temperature	R
BV19	Discharge Air Low Limit Lockout	R
BV24	Discharge Air Sensor Alarm	R
AV12	Discharge Air Temperature	R
AV14	Discharge Air Temperature Setpoint	R
BV22	DJ or DG Flame Failure Alarm	R
BV21	DJ or DG Prepurge Alarm	R
BV17	Economizer At Minimum Due to High Ambient	R
BV15	Economizer Mode	R
BV6	Economizer Mode - E	R
BV47	EMS Cooling Enabled	R/W
AV0066	EMS Damper Minimum Position Setpoint	R/W
BV43	EMS Dehumidification Enabled	R/W
AV25	EMS Discharge Air Setpoint	W
AV26	EMS Discharge Air Setpoint	R
BV45	EMS Economizer Enabled	R/W
BV48	EMS Heating Enabled	R/W
AV27	EMS Secondary Discharge Air Setpoint	W
AV28	EMS Secondary Discharge Air Setpoint	R
BV42	EMS Unit Command On/Off	R/W
BV14	External Cooling Lockout - A	R
BV41	Heat Fail Lockout	R
BV20	Heat Failure Lockout	R
BV40	Heating Lockout High Ambient Temperature	R
BV7	Heating Mode - HS	R
AV20	Heating Modulating % Output	R
BV39	Heating Status	R
BV23	LMK or HE Failure Alarm	R
BV4	Occupied Mode - FS	R
BV25	Secondary Discharge Air Sensor Alarm	R
AV13	Secondary Discharge Air Temperature	R
BV35	Sensor Failure Alarm	R

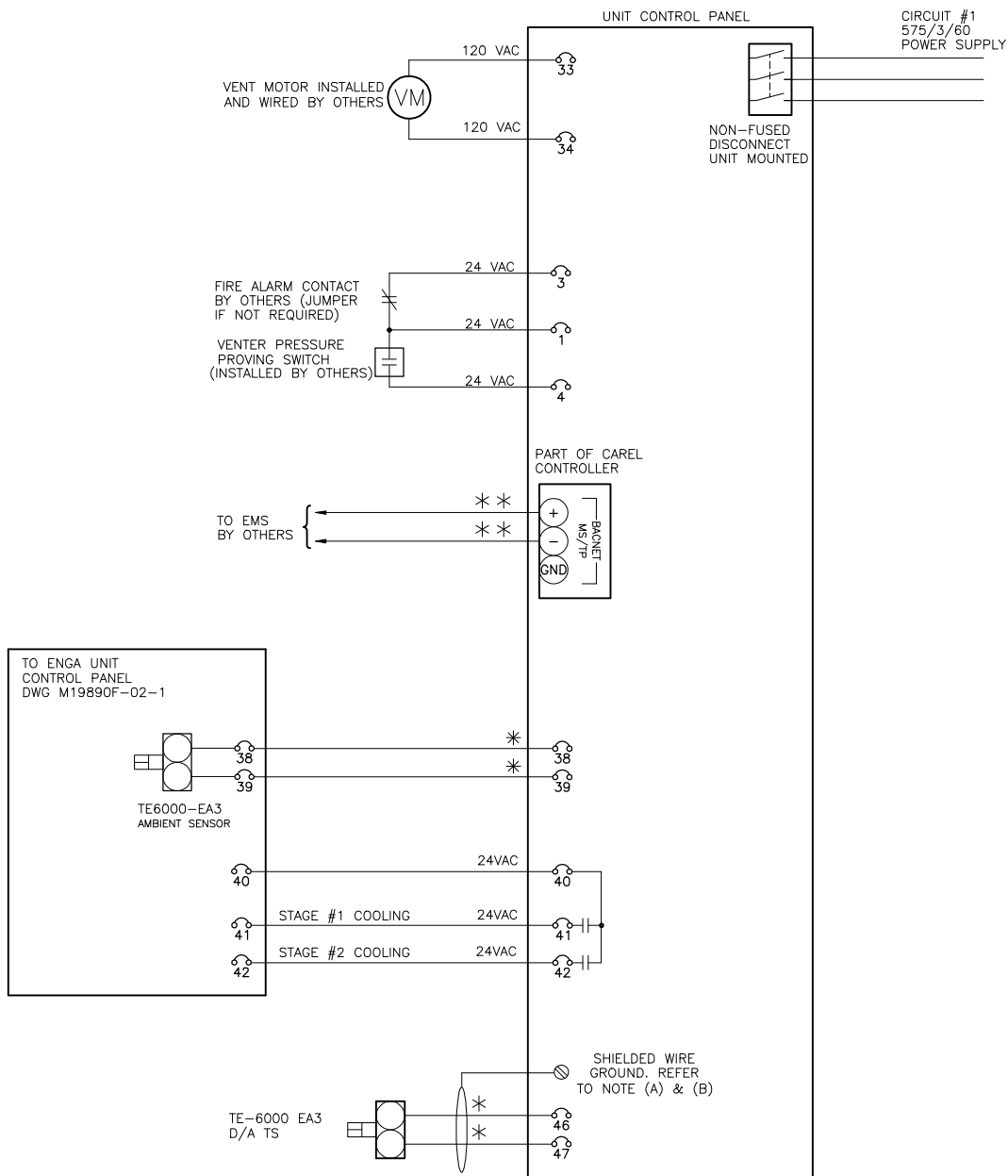


Job No: M19890 (N5280)

Tag No: AHU

### Network Control Variable List - C-TRAC3 BACnet

Variable	Description (Revision 6.6 Sept 15)	Note
AV1044	Unit On/Off Status	R
BV8	Unoccupied Mode - K	R
Bv18	VFD Cooling Lockout - Limit Stages due to Low Air Volume	R
AV10	VFD Speed Feedback	R
BV49	Write to Flash	R/W



MAXIMUM CONTROL CIRCUIT AMPACITY 10.4 AMPS AT 24 VAC  
 MAXIMUM CONTROL CIRCUIT AMPACITY 2.9 AMPS AT 120 VAC

\* SHIELDED WIRE IS REQUIRED WITH ELECTRONIC COMPONENTS.

\*\* SHIELDED WIRE IS REQUIRED WITH BMS ANALOG SIGNALS.  
 TAPE THE GROUND WIRE AND SHIELD TO PREVENT GROUNDING.  
 TAPE THE ENDS OF ALL UNUSED WIRES.

(A) SHIELDED WIRE TO BE GROUNDED AT MAIN ENG A CONTROL CABINET END ONLY.  
 TAPE OTHER END OF GROUND WIRE AND SHIELDING TO PREVENT GROUNDING.  
 TAPE THE ENDS OF ALL UNUSED WIRES.

(B) ENGINEERED AIR STRONGLY RECOMMENDS THAT THE SHIPPED LOOSE DISCHARGE AIR  
 SENSOR BE MOUNTED 5 - 10 FT. DOWN STREAM OF HEAT EXCHANGER OPENING TO  
 AVOID TEMPERATURE SWING CAUSED BY RADIANT HEAT.

1. FIELD WIRING VOLTAGE DROP NOT TO EXCEED 10%.
2. ALL WIRING SHOWN SHALL BE COMPLETED BY INSTALLER.
3. ALL WIRING TO COMPLY WITH THE CANADIAN ELECTRICAL CODE.

**EngA**

**ENGINEERED AIR**

TAG: AHU

FIELD WIRING DIAGRAM

DJ SERIES

REVISION:

DRN.BY: HMC

DWG.NO:

DATE: SEPT 5 2019

CHKD.BY: QVD

M19890F-01-1



# SUBMITTAL RECORD

**JOB NAME:** B-887 AHU **JOB NO:** M19890(N5280)  
**CUSTOMER:** DAIKIN APPLIED CANADA INC **ENGINEER:** CNL  
**EngA MODEL:** CU92/O **QTY:** 1 **TAG:** CU

### SHIPPING AND APPROVAL INFORMATION

<b>MOUNTING</b> <u>Outdoor Base Mounted</u>	<b>ACCESS</b> <u>As Per Drawing</u>
<b>SHIPPING WEIGHT</b> <u>1020 lb (464 kg)</u>	<b>OPERATING WEIGHT</b> <u>1000 lb (455 kg)</u>
<b>NO. OF PIECES</b> <u>1 Unit</u>	
<ul style="list-style-type: none"> <li>• Intertek cETL approval.</li> </ul>	

### CONSTRUCTION DATA

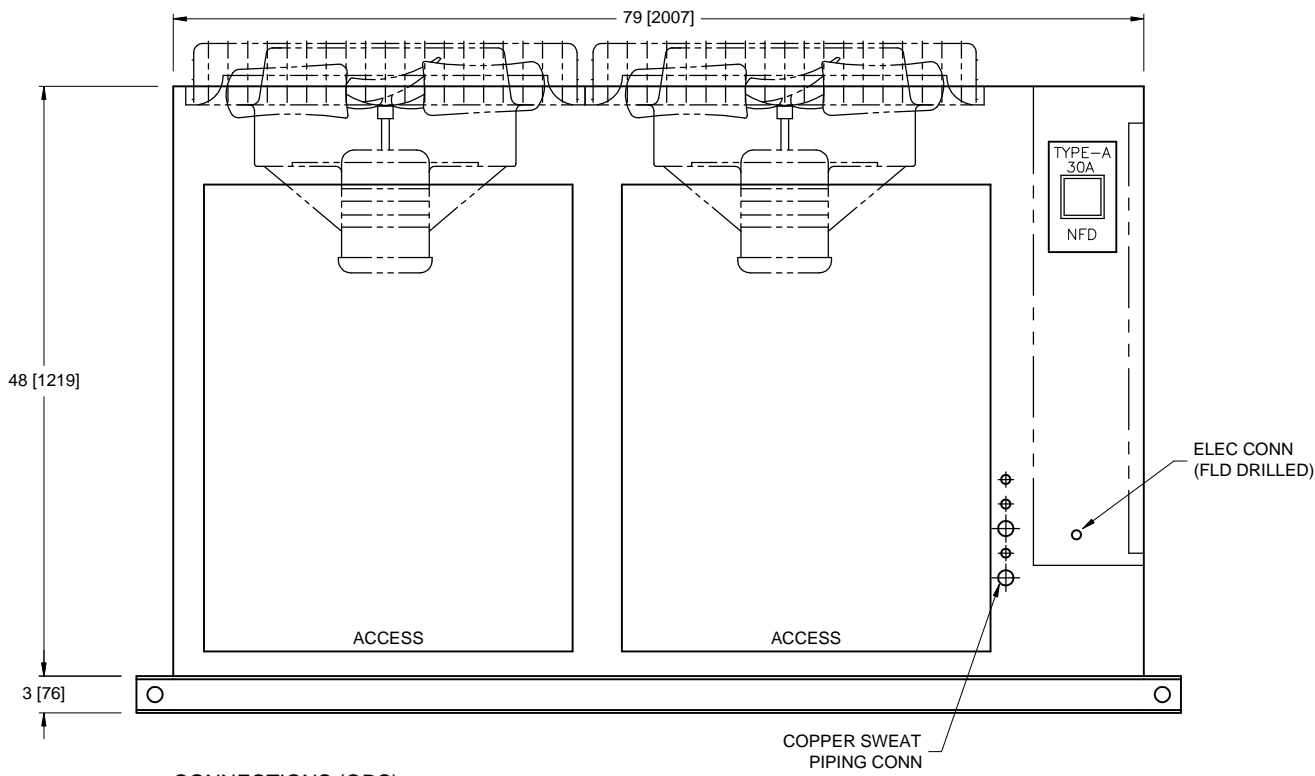
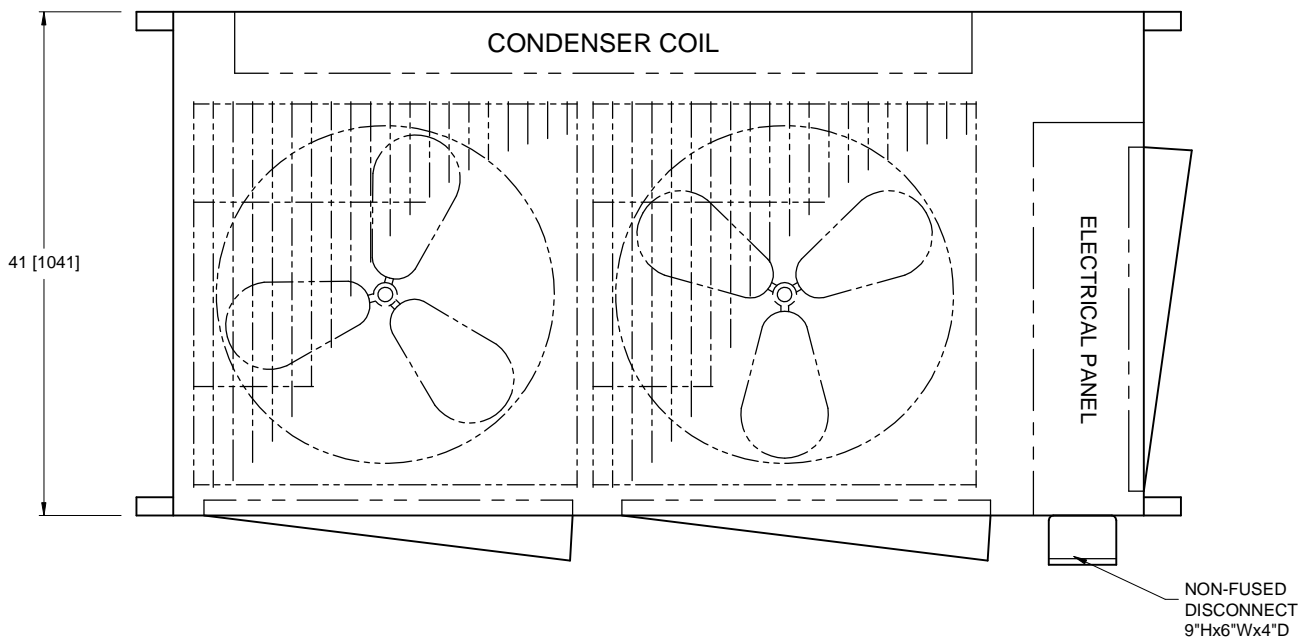
<b>UNIT CABINET</b>	<u>18 gauge satin coat galvanized sheet metal on entire unit casing.</u>
<b>UNIT FLOOR</b>	<u>18 gauge satin coat galvanized sheet metal on entire unit floor.</u>
<b>EXTERIOR PAINT</b>	<u>Electrostatically applied Alkyd Enamel in Aluminum Gray color - Level 1 on all exterior surface but not including unit underside.</u>
<b>SERVICE DOOR</b>	<u>All access - hinged c/w camlock fasteners</u>

### ELECTRICAL DATA

POWER SUPPLY	MINIMUM CIRCUIT AMPACITY	MAXIMUM FUSE(D.E.)	MAXIMUM BREAKER
<u>575 / 3 / 60</u>	<u>15.9 AMPS</u>	<u>20 AMPS</u>	<u>20 AMPS</u>
<ul style="list-style-type: none"> <li>• See Electrical Data Sheet for details.</li> <li>• Unit mounted non fused disconnect switch.</li> </ul>			

### AIR COOLED CONDENSER DATA

<b>CAPACITY</b> <u>118,000 Btuh (34.6 kW)</u>	<b>REFRIGERANT CONN. SIZES</b> <u>Liquid - (2) 1/2" (13 mm), Suction - (2) 1 1/8" (29 mm)</u>
<b>DESIGN AMBIENT TEMP</b> <u>95°F (35.0°C)</u>	<b>SST/SCT</b> <u>50°F (10.0°C) / 126.2°F (52.3°C)</u> <b>REFRIGERANT TYPE</b> <u>R-410A</u>
<b>COMPRESSOR TYPE</b> <u>Hermetic Scroll</u>	<b>MODEL</b> <u>ZP54K5E-TFE-130</u> <b>QUANTITY</b> <u>2</u>
<ul style="list-style-type: none"> <li>• Compressor circuits c/w hot gas bypass tee on lead compressor, discharge line check valve, low pressure control and high pressure control.</li> <li>• Maximum total length of refrigerant piping from condensing unit to DX coil shall not exceed 35 ft(10.7 m).</li> <li>• The hot gas bypass line must be connected to the 5/8"(16 mm) OD spigot provided on the top of the DX coil header.</li> <li>• CTRAC (mounted in Job: M19890 (AHU) Model: DJE40/C) discharge air control - provides 2 stages of mechanical cooling, modulates economizer for free cooling and interfaces with heating control.</li> <li>• Mechanical cooling operates down to 50°F (10.0°C) ambient temperature.</li> <li>• Condensing unit is designed to match remote DX coil mounted in Job: M19890 (AHU) Model: DJE40/C.</li> </ul>	



- CONNECTIONS (ODS)
- LIQUID : (2) 1/2"Ø
  - SUCTION : (2) 1-1/8"Ø
  - HGBP : (1) 3/8"Ø

DOOR SIZES AND INTERNAL COMPONENTS ARE APPROX. VALUES. DIMENSIONS SHOWN IN INCHES & [MM] UNLESS OTHERWISE NOTED.

M19890  
TAG: CU

CU92/O  
**AIR COOLED CONDENSING UNIT**



generated by  
**ProUnit**

REVISIONS:			
DATE: SEP 04 2019	DRWN BY: HMC	CHKD BY: QVD	DRWG NO.: M19890M-02-1



# ELECTRICAL DATA

JOB NAME: B-887 AHU

JOB NO: M19890(N5280)

EngA MODEL: CU92/O

QTY: 1

TAG: CU

Power Supply	Minimum Circuit Ampacity	Terminal Block to Accept	Maximum Fuse (Dual Element)	Maximum Breaker
575 / 3 / 60	15.9 AMPS	12 Awg	20 AMPS	20 AMPS

Components	Model	Minimum Conductor Size	Ampacity FLA / LRA
Compressor #1 and #2	ZP54K5E-TFE-130	14 Awg	5.8 / 38.9
Condenser Fan Motor #1 and #2	OPAO 0.75 HP	14 Awg	1.2
Crankcase Heater (2 total)		14 Awg	.07
Main Control Xfmr		14 Awg	.4

UNIT CONTROL PANEL(S) SHORT CIRCUIT CURRENT RATING (SCCR)	
Short circuit current	<u>5</u> kA rms symmetrical, <u>575</u> V maximum

WIRING DRAWING LEGEND					
APS	Air Proving Switch	DM	Damper Motor	NFD	Non Fused Disconnect
ASF	Auto Fan Switch	FR	Fan Relay	OL	Thermal Overload
AUX	Auxiliary Contact	GND	Ground	PS	Pressure Sensor
BM	Burner Motor	GV	Gas Valve	PV	Pilot Gas Valve
C	Contact	HL	High Limit	R	Relay
CCH	Compressor Crankcase Heater	HPC	High Pressure Control	RevHL	Reverse Airflow High Limit
CFC	Condenser Fan Control	HR	Heating Relay	TB	Terminal Block
CLC	Compressor Loading Control	IGN	Ignition Control	TDF	Time Delay Fuse
CPM	Compressor Protection Module	ITP	Internal Thermo Protection	TDR	Time Delay Relay
CR	Cooling Relay	LPC	Low Pressure Control	TS	Temperature Sensor
CS	Current Sensor	M	Motor	VFD	Variable Frequency Drive
DHSS	Draft Hood Spill Switch	MV	Main Gas Valve	XFMR	Transformer

## UNIT FUNCTION

Unit mounted non-fused disconnect switch 'on', service switch 'on'.

On stage #1 cooling call from CTRAC controller (mounted in Job: M19890 (AHU) Model: DJE40/C), condenser fan starts and runs continuously, the liquid line (#1) solenoid valve (by others) & hot gas bypass solenoid valve (by others) 'open', allowing refrigerant pressure to close the low pressure switch, the first compressor starts and runs continuously.

Stages #2 operates the same way as stage #1 with the exception of hot gas bypass.

When cooling is satisfied, liquid line and hot gas bypass solenoid valves 'closed'. Compressor will continue to run until the low pressure switch 'open'. Compressor operates on a one time pump down basis.

Mechanical cooling is locked out when ambient is blow 50°F (10.0°C).

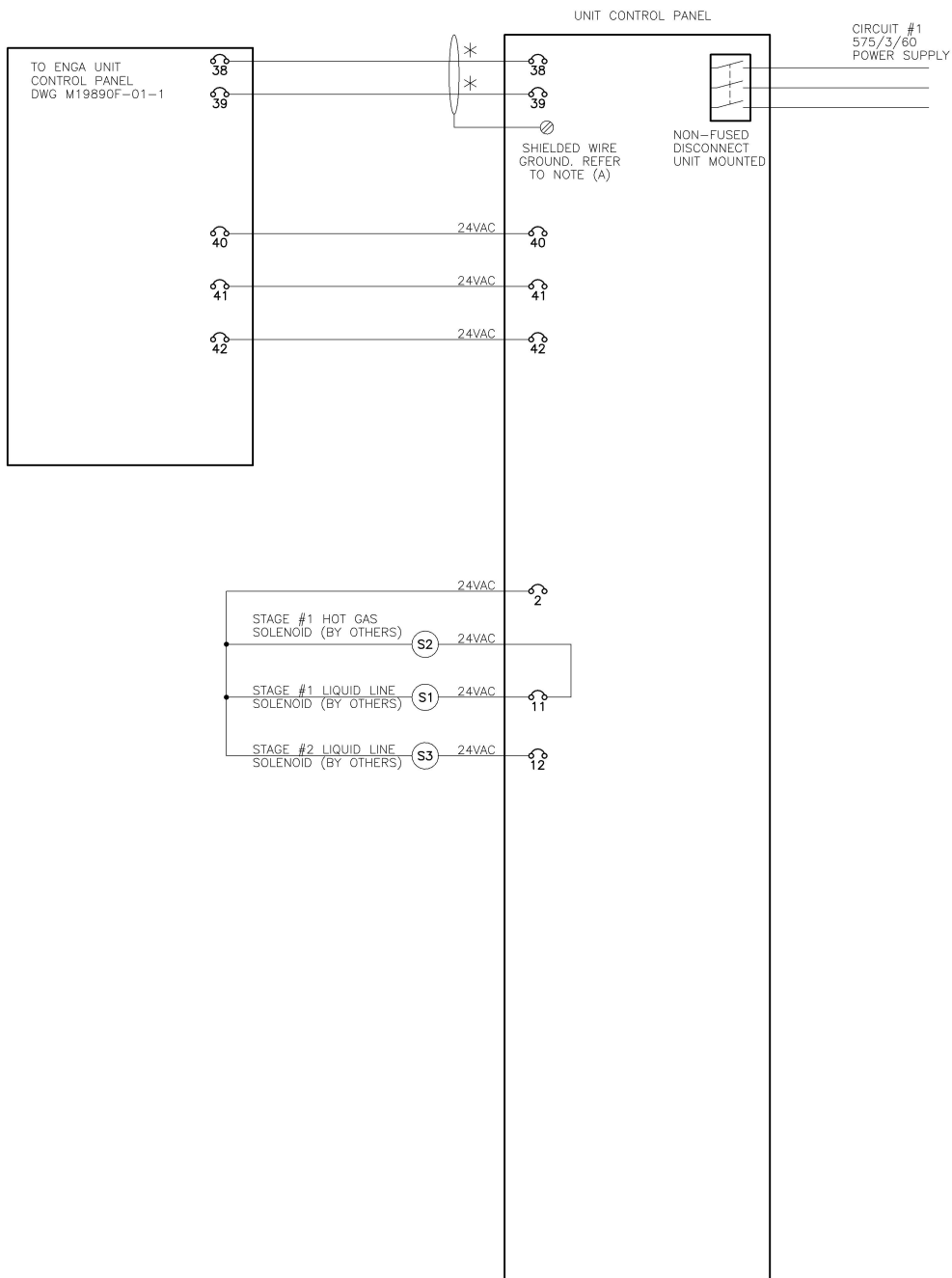
Non-fused disconnect switch 'off', or service switch 'off', unit is off.

Note 1. Compressor(s) cycle(s) with minimum run time, minimum off time and interstage timing.

Note 2. Refer to manuals shipped with unit for a more detailed explanation of maintenance, component(s) and/or controller(s).

DATE: 17-SEP-2019

SUBMITTED BY: MICHAEL CATION (O) / HMC



MAXIMUM CONTROL CIRCUIT AMPACITY 10.4 AMPS AT 24 VAC

\* SHIELDED WIRE IS REQUIRED WITH ELECTRONIC COMPONENTS.

(A) SHIELDED WIRE TO BE GROUNDED AT MAIN ENG A CONTROL CABINET END ONLY. TAPE OTHER END OF GROUND WIRE AND SHIELDING TO PREVENT GROUNDING. TAPE THE ENDS OF ALL UNUSED WIRES.

1. FIELD WIRING VOLTAGE DROP NOT TO EXCEED 10%.
2. ALL WIRING SHOWN SHALL BE COMPLETED BY INSTALLER.
3. ALL WIRING TO COMPLY WITH THE CANADIAN ELECTRICAL CODE.
4. FIELD WIRING TO BE A MINIMUM OF 18GA.



**ENGINEERED AIR**

TAG: CU

FIELD WIRING DIAGRAM  
CU SERIES

REVISION:	DRN.BY: HMC	DWG.NO:
DATE: SEPT 4 2019	CHKD.BY: QVD	

M19890F-02-1