



CASRTU1-I.125-15-7.5T (#1) MAU-01 Weight: 1338 lbs./73 curb

RTU with Indirect Fired Heat and 15" Direct Drive Plenum Fan, 1 Furnace, Electronic Full Modulation, Constant 80% Efficiency, and 6:1 Max Turndown for NG, (5:1 Max Turndown for LP). Stainless Steel Burner and Heat Exchanger. Variable Speed Cooling.

SUPPLY MOTOR

Model DTP0016 • 1.000 HP, 3 Phs, 208 V, 60 Hz, 3.8 FLA, ODP, Premium (E-Plus3) Eff.

SUPPLY PERFORMANCE

Supply Air:	1500 CFM	RPM:	1160
Return Air:	0 CFM	Outside Air:	1500 CFM
Tip Speed:	4555 ft/min	BHP:	0.5920
Static Pressure:	0.840" w.g. (0.500" Ext. + 0.340" Opt.)		
Altitude:	0 ft		

BLOWER

15 Inch Plenum Fan for size 1 RTU. Hub specified to match motor shaft.

TEMPERATURE CONTROL

50-90°F Space Temp Control • Space Sensor Ships Loose • Heating/Cooling Activation Based On Either Intake or Space Set Point • Manual Blower Mode. Use with MUA.

AIRFLOW DIRECTION

- Side Discharge - Air Flow Left -> Right

CURB & SUPPORTS

- ROOF CURB - 41" Width, 71" Length, 12" Supply Height, Insulated.

SUPPLY INSTALLATION INFORMATION

Gas Pressure:	7 in. w.c. - 14 in. w.c.
Insurance Requirements:	No Insurance Requirement (ANSI)
Unit Voltage:	3 phs 208 V 60Hz
Unit Main Input:	32.6 Amps MCA • 35 Amps MOP • 208 V • 8 AWG Wire Min.
SCCR:	10 kAmp

HEATING SCHEDULE

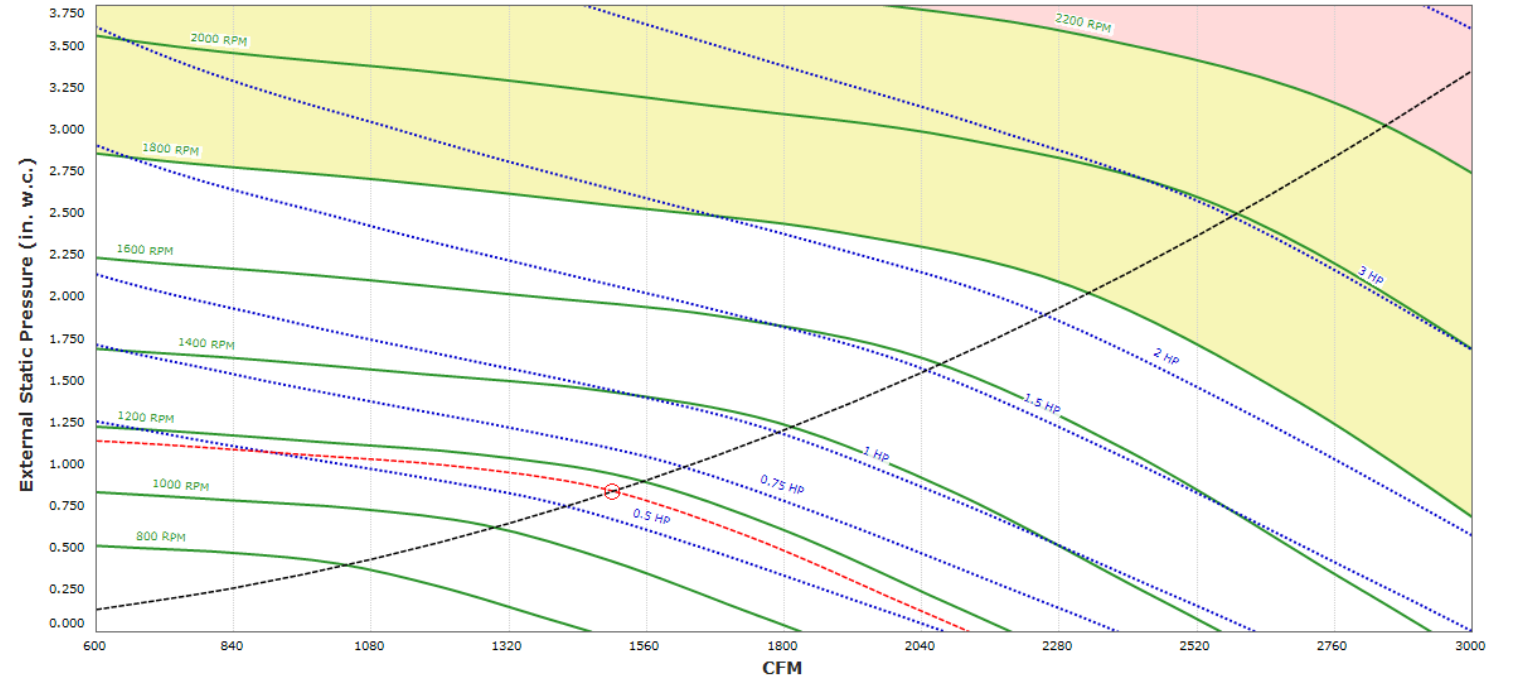
Altitude:	0 ft
Winter Outdoor Air Dry Bulb Temp:	20°F
Temp Rise:	55°F
Output BTU:	89100
Input BTU:	110000
Based Off:	BTUs Standard Air Density
Gas Type:	Natural

COOLING SCHEDULE

Outdoor Air Dry Bulb Temperature:	83.4°F
Outdoor Air Wet Bulb Temperature:	76.1°F
Max Outdoor Air %:	100%
Mixed Air Dry Bulb Temperature:	83.4°F
Mixed Air Wet Bulb Temperature:	76.1°F
Mixed Air Dew Point:	73.4°F
Leaving Dry Bulb Temperature:	56.4°F
Leaving Wet Bulb Temperature:	56.4°F
Leaving Dew Point:	56.5°F
Moisture Removal Rate:	51.5 Lb/Hr
Total Capacity:	101.6 MBH
Sensible Capacity:	44.1 MBH
Latent Capacity:	57.5 MBH
Reheat Coil Capacity:	60.0 MBH
Reheat Coil Leaving Dry Bulb Temperature:	70.0°F
Reheat Coil Leaving Wet Bulb Temperature:	61.5°F
Reheat Coil Leaving Relative Humidity:	62%
IEER:	18.6
ISMRE:	12.2

CONFIGURED OPTIONS

- Gas Pressure Gauge, 0-35", 2.5" Diameter, 1/4" Thread Size
 - Gas Pressure Gauge, 0 to +10 Inches Wc., 2.5" Diameter, 1/8" Thread Size, Rear Thread
 - CFM monitoring for MUA units. Uses rivet nuts, 1/4" airflow tubing and push to connect fittings.
 - Ship Loose Gas Strainer. To be installed upstream of unit connection. 3/4" Connection
 - Single Point Electrical Connection for RTU. QNTY 1 750va Transformer Used. If a Non-DCV Prewire controls this unit, the #28, #47, "MA", or "E2" Option Prewire must be selected. Do not provide supply starter in prewire.
 - CASLink building monitoring system communications module. Requires internet & field wired ethernet connection or 3G cellular service. Includes Rev 3 Comm Module, RJ45 to modbus converter, 3 FT cat5 cable, and 1 FT of shielded twisted pair.
 - 2" Merv 13 Filters for Size 1 RTU. QTY 4, 16 x 16 x 2 Merv 13 Filters
 - 2" Merv 8 Filters for Size 1 RTU. QTY 4, 16 x 16 x 2 Merv 8 Filters
 - Overheat Stat factory set at 80°F and 10 minutes. Prevents unit from overheating the space when cooling.
 - VFD factory mounted and wired in unit control vestibule.
 - 7.5 Ton Modulating Cooling Option, 208/230V. R410A Refrigerant, Variable Speed Inverter Duty Compressor, ECM Condensing Fan(s).
- RTU Compressor Oil Sensor Factory Installed.
 - 7.5 Ton Cooling Only Modulating Reheat Option for Space Control
 - VAV (Variable-Air-Volume) Wiring Package for Commercial Fans. Manual Speed Control Variable Frequency Drive Included
 - Supply Variable Frequency Drive - 1 HP Max., 200/240 V, Single or Three Phase Input, 4.2 A Max., NEMA 1 Enclosure, with 2RJ-45 FOR MODBUS
 - RTU Size 1 Hail Guard for outdoor coil. Includes magnets and washers for installation.
 - RTU Fixed 100% Outdoor Air Intake.
 - RTU Size 1 No Return
 - Remote Room Sensor Option. Wall Mountable 10k Temp and Humidity Room Sensor Included.
 - Clogged Filter Switch with Notification on HMI
 - RTU Size 1 Side Discharge
 - GFCI 15 amp Convenience Outlet For RTU1 Enclosure. 120V power supply by others. Includes receptacle, jbox & cover.
 - Duct Mounted Smoke Detector For Commercial Direct Fired Heater. Complete with detector (D4120) and sampling tube (DST-1.5). Ships Loose
 - Size 1 RTU Curb Duct Hanger - Adjustable Duct Hanger Support Brackets installed for both return and discharge duct.



CASRTU1-I.125-15-7.5T SOUND (1160 RPM) AT 5 FT. IN OCTAVES:							
1	2	3	4	5	6	7	8
81.8	81.6	78.1	75.4	75.7	72.2	69.6	71.6
LWA:	80.4	Sones:	19.5	DBA:	70.1		

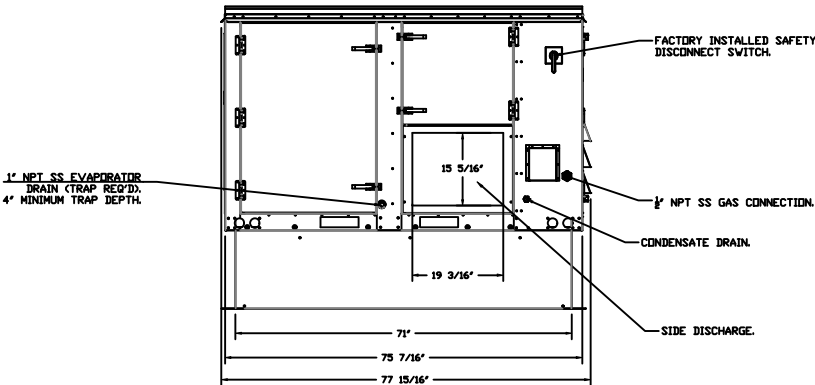
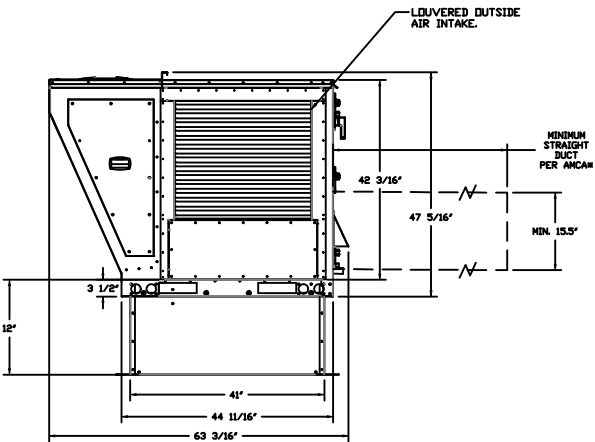
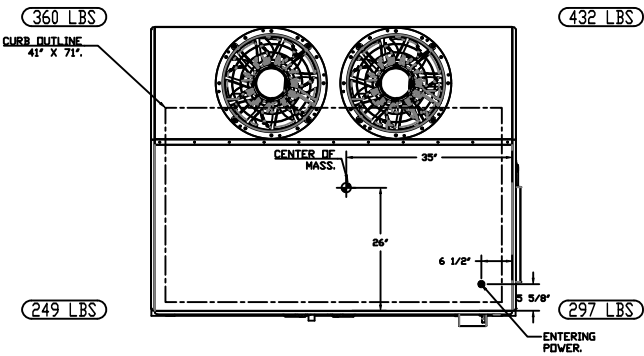
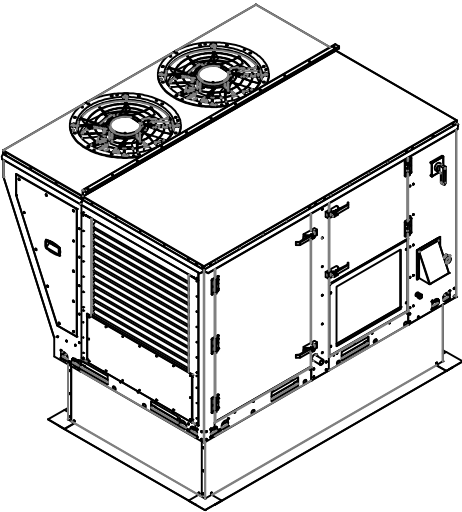
Note: Sound data across operational range. Tested in accordance to AHRI Standard 270/370.

FAN #1 CASRTU1-IJ25-15-7.5T - HEATER (MAU-01)

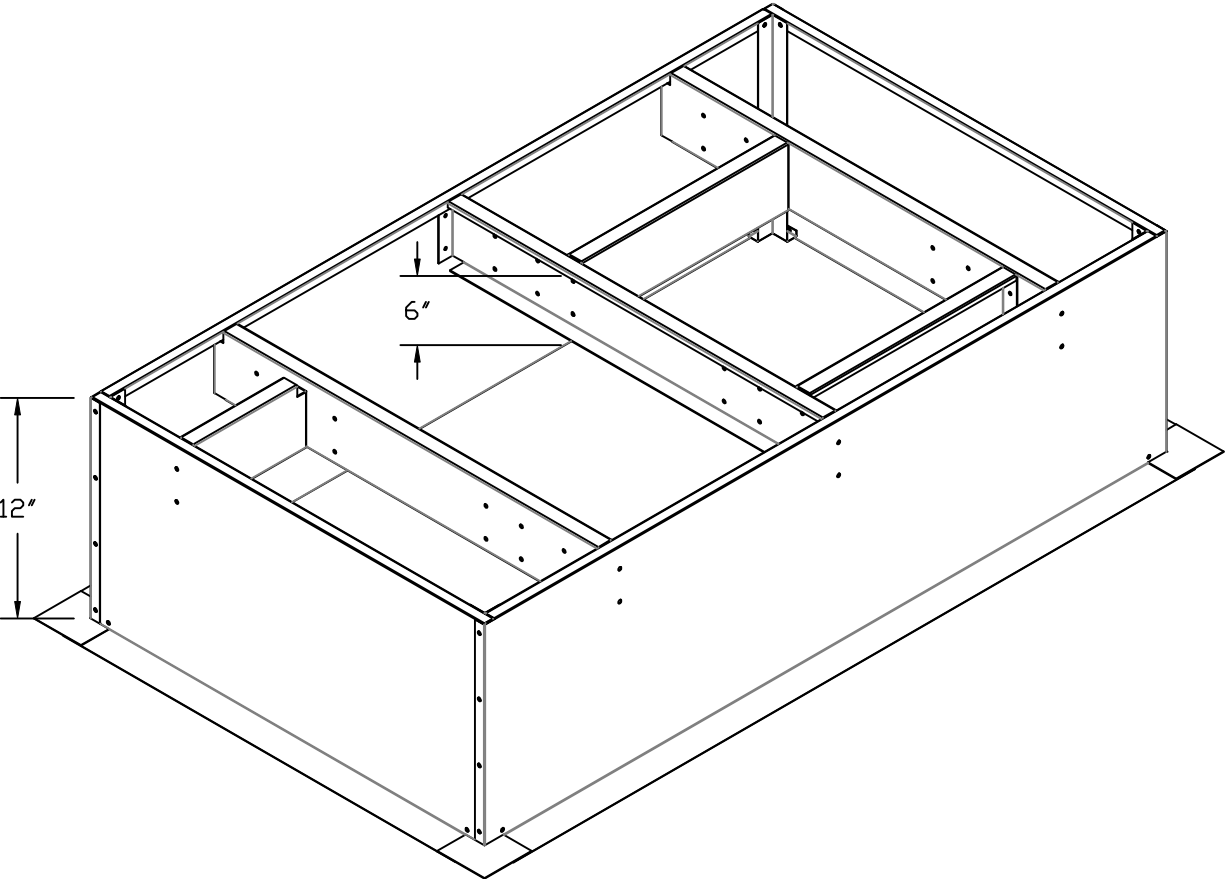
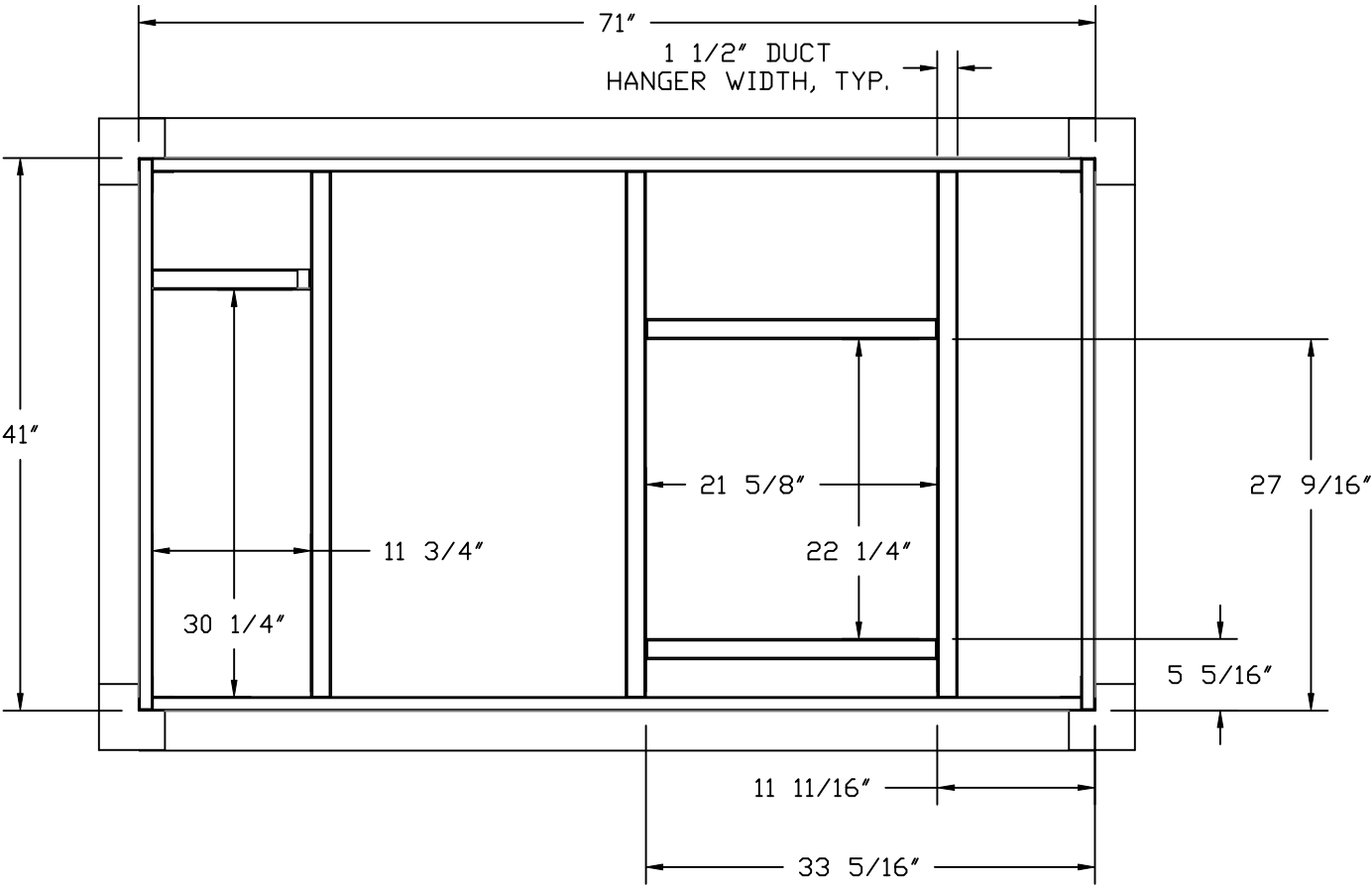
NOTES:

- 1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
- 2.  DENOTES CORNER WEIGHT.
- 3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 15.5" x 19.25".

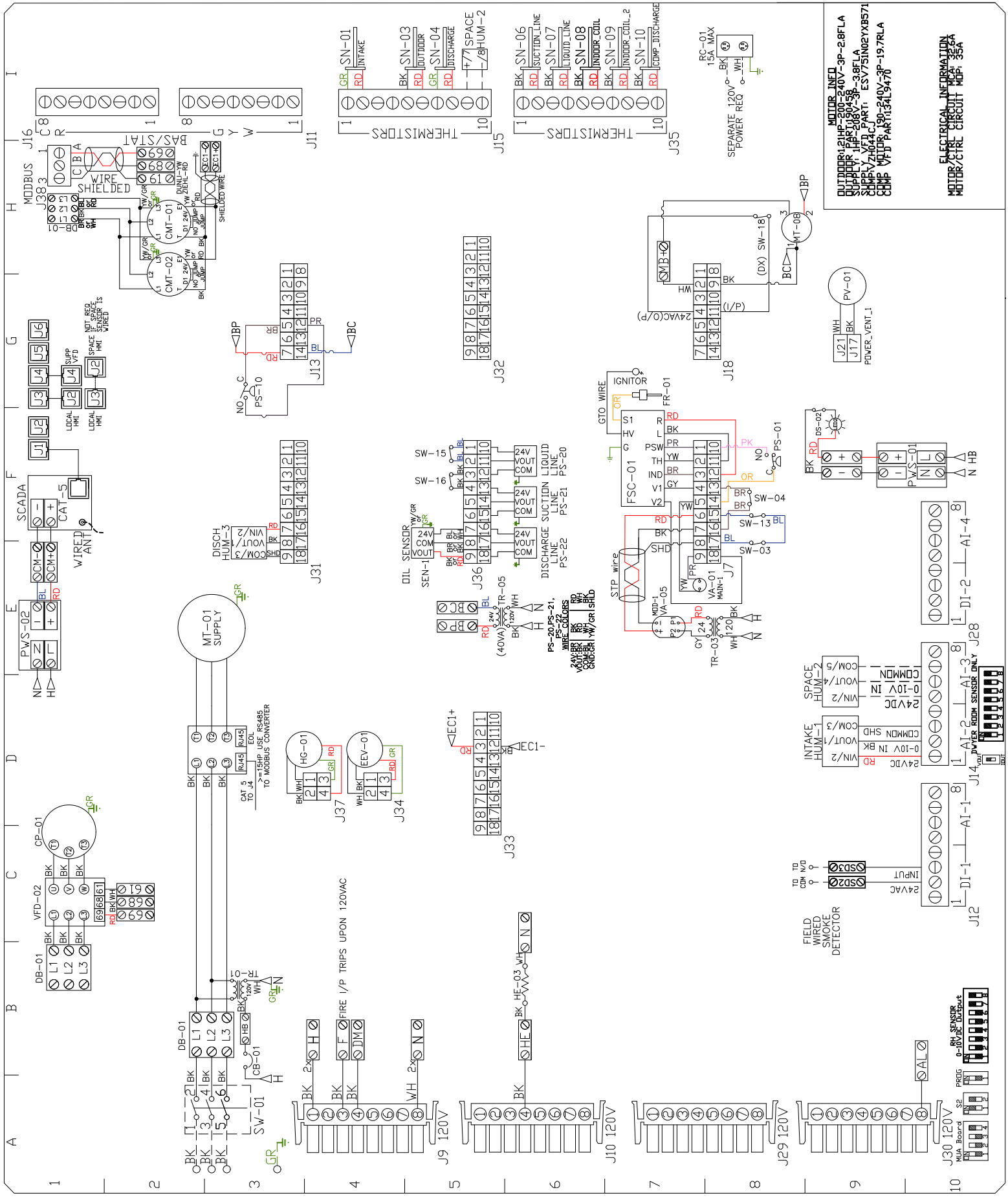


Fan #1 Curb
ROOF CURB - 41" Width, 71" Length, 12" Supply
Height, Insulated.



COMPONENT LIST	
LABEL	DESCRIPTION
CB-01	CIRCUIT BREAKER
FL-01	SCADA COMM. MODULE
DMT-YX	CONDENSING MTR
DB-01	DISTRIBUTION BLOCK
DS-XX	ELEC. DISC. SWITCH
EEC-01	ELEC. EXT. VALVE_1
F3/6/9	PHIMAX HUMIDITY SENSOR
F7/8	PHIMAX HUMIDITY SENSOR
FSC-01	FLAME SAFETY CTRLR
HUM-XX	HUMIDITY SENSOR
HE-03	CRANKCASE HEATER
HG-01	REHEAT VALVE_1
MT-01	SUPPLY MOTOR
LED-XX	CAB. LED STRIP
MT-08	M8 DAMPER MTR
PS-01	VENT PROVING_1
PS-10	CLGDD. FILTER_SWITCH
PS-20	LIQUID LINE PRES
PS-21	SUCTION LINE PRES
PS-22	DISCHARGE LINE PRES
PS-XX	FURNACE POWER_VEN
RC-01	CONDV. OUTLET
SD-01	SMOKE DETECTOR
SEN-01	OIL SENSOR
SN-XX	TEMP SENSOR 14/15/16/17
SV-01	DISCONNECT SWITCH
SV-03	ROLL OUT J-1
SV-04	FURN. HIGH_TEMP_J-1
SV-05	ROLL OUT J-2
SV-06	REFR. LIQ. PRES. SV
SV-16	REFR. HIGH PRES. SV
SV-18	DX FLAT SWITCH
TR-01	CTRL. TRANSMR
TR-03	MOD. VALVE TRMPL_1
TR-05	BOARD POWER TRMR
VA-01	SINGLE SAFETY VALVE
VA-05	MOD. GAS VALVE
VFD-01	SUPPLY_FAN_VFD
VFD-02	COMP_VFD

LEGEND FIELD WIRING BK- BLACK YX- YELLOW BL- BLUE GY- GREY BR- BROWN PR- PURPLE BU- BLUE RD- RED GR- GREEN WH- WHITE OR- ORANGE DR/BL- DR/BL STRIPE BL/RD- BL/RD STRIPE RD/GR- RD/GR STRIPE WH/BL- WH/BL STRIPE	
JOB NAME	HAL Extraction ...
DRAWING TITLE	
DESCRIPTION OF OPERATION	
MUA BOARD (DETAILS TO FOLLOW)	
JOB NO.	DRAWN BY
5970982	AUTO
TYPE	DATE
FACTORY	4/25/2023
DWG	HW5970982-1



SUPPLY DRIVE PARAMETER SETTINGS

P100	(START SOURCE) = 01 (TERMINAL STRIP)
P150	(TB-30 OUTPUT) = 1
P194	PASSWORD = 225
P410	MODBUS ADDRESS = 21

ADJUST MANUALLY ON ALL DRIVES

ADJUST MANUALLY ON ALL DRIVES	
P103	VFD MAX FREQUENCY
P107	00 (IF 120 OR 208 VAC) OR 01 (IF 230, 480 OR 575VAC)
P108	MOTOR FLA x 100 / DRIVE OUTPUT RATING
P167	REFERENCE BUILD SHEET

*NOTE: THE DEFAULT FOR THE DRIVE IS "225".

All external control wires to motor speed control should be 16–20 AWG shielded multi-conductor cables and must not be run in the same conduit or raceway with any high power wiring. Ground Shielded Cable at the drive chassis **ONLY**.

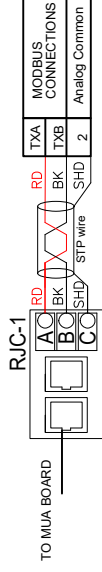
PG. 11, 19, 23 OF THE DRIVE MANUAL DESCRIBES THE PROPER HANDLING OF THE VARIABLE FREQUENCY DRIVE.

IT MAY BE REQUIRED TO FULLY POWER DOWN THE DRIVE AND TURN BACK ON IN ORDER TO INITIATE NEW PARAMETER SETTINGS.

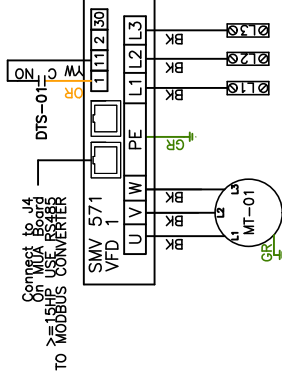
****Min. and Max. Frequency Settings override all other Preset speeds/Parameters. Do not adjust these on the VFD. Min. and Max. Frequency should be adjusted on the RTU HMI.**

SMV 571 SERIES VFD

Terminal	Description
1	Digital Input(Start/Stop)
11	Internal DC Supply for External Devices
2	Analog Common
30	Analog Output/Configurable with P150.P155
R4/5	MODBUS COMMUNICATION
	Ground Terminal
PE	
L1	3 Phase Input or Single Phase Input
L2	3 Phase Input or Single Phase Input
L3 (N)	3 Phase Input (Neutral for 120v)
U	3 Phase AC Motor
V	3 Phase AC Motor
W	3 Phase AC Motor



FOR SUPPLY FAN VFD's LARGER THAN 15HP USE RS485
TO MODBUS CONVERTER

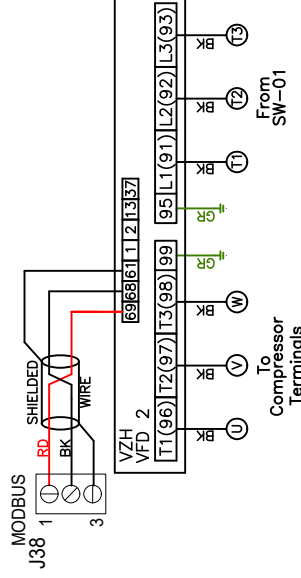


**COMPRESSOR DRIVE PARAMETER SETTINGS
MUST BE CONFIGURED BEFORE STARTUP**

0-60	225	10 SECONDS	
1-71	30.00		
3-02	30.00		
3-15	[0] NO FUNCTION		
3-16	[0] NO FUNCTION		
3-41	200.00s		
3-42	200.00s		
4-18	IF 200V = 70(05s), 82(03s), 108(04s) IF 480V/575V = 70(05s), 82(03s), 115(04s)		
8-01	[2] CTRL. WORD ONLY		
8-03	20 SECONDS		
8-04	[2] STOP		
8-30	[2] MODEBUS RTU		
8-31	1		
8-32	19200		
8-33	[0] EVEN PARITY, 1 STOP BIT		
8-43-2	1610		
8-43-3	1610		
8-43-4	1613		
8-43-5	1613		
8-43-6	1614		
8-43-7	1614		
8-43-8	1690		
8-43-9	1690		
8-43-10	1634		
8-43-12	1694		
8-43-13	1694		
28-00	DISABLE		
28-11	15m		
28-12	24h		
28-15(14)	100Hz (3000RPM)		
28-17(16)	140Hz (4200RPM)		

VZH SERIES COMPRESSOR VFD

TERMINAL	FUNCTION
13	24+
37	Pressure Switch In
1	Relay 1 to oil solenoid
2	Relay 1 to oil solenoid
61	COM RS-485
68	N RS-485
69	P RS-485
95	INPUT Ground
L1 (91)	3 Phase Input or Single Phase Input
L2 (92)	3 Phase Input or Single Phase Input
L3 (93)	3 Phase Input
T1 (96)	Compressor
T2 (97)	Compressor
T3 (98)	Compressor
99	Compressor Ground



MOTOR INFO
OUTDOOR: 1.21HP-200-240V-3P-2.8FLA
OUTDOOR PART: 190458
SUPPLY: 1HP-208V-3P-3.8FLA
SUPPLY VFD PART: ESV751N02YXB571
COMP: VZH044CJ
COMP MOTOR: 190-240V-3P-19.7RLA
COMP VFD PART: 134L9470

ELECTRICAL INFORMATION
MOTOR/CTRL CIRCUIT MCA: 32.6A
MOTOR/CTRL CIRCUIT MOP: 35A

*Must be programmed using software

RTU VFD

COMPONENT LIST

LABEL	DESCRIPTION
DTS-01 MT-01	Blower Door Sw Supply Motor
PWS-01	24VDC Power Supply
SW-01 VFD-1 VFD-2	Main Disconnect Supply Motor VFD Compressor VFD

HAL Extraction ...

DESCRIPTION OF OPERATION MUA BOARD (DETAILS TO FOLLOW)	JOB NO	DRAWN BY
	5970982	AUTO
	TYPE	DATE
	FACTORY	4/25/2023
DWG NO		ULVDF5970982-1

MODEL CASRTU1-I.125-15-7.5T



SPACE REHEAT CONTROL

NOTES