

Gas-Fired Tempered Make-Up Air Unit

Model:

TK4ECDD-3PH-FF

3-Phase, 230V, 4.70 HP, Direct Drive, ECM Motor with Motorized Damper and 28" Blower. MAX 8200 CFM's



TK4-1000-28Z Direct Fired Direct Drive (1538 lbs.)



Direct Gas Fired Heated Make Up Air Unit with 28" Direct Drive Fan and 24" Burner.

Supply Motor:

Model 114112/A01-ECM-60-240-28, 4.700 HP, 3 Phase, 230 V, 60Hz, 9.3 FLA, ODP-ECM (Open Drip Proof Electronically Commutated Motor)

Burner:

Min Output BTU: 36,667 BTU/Hr
Max Output BTU: 1,100,001 BTU/Hr
Size: 24" long
Gas Type: Natural

Supply Performance:

Volume Range: 6000-8200 cfm
RPM: 1308
TS: 9588 ft/min
SP: 0.598" w.g.
0.500" Ext. + 0.069" Int. + 0.029" Opt.
BHP: 4.137

Heating Schedule:

Altitude: 0'
Winter Entering Air Dry Bulb Temp: 0°F
Temp Rise: 100°F
Output BTU: 885600
Input BTU: 962609
BTUs BASED OFF STANDARD AIR DENSITY

Supply Installation Information:

Gas Inlet Pressure: 7 in. w.c. - 14 in. w.c.
Insurance: No Insurance Requirement (ANSI)
Unit Main Input: 12.7 Amps MCA, 20 Amps MOP, 230 V, 14 AWG Wire Min.
Supply Unit Voltage: 3 phs 230 V 60Hz

Construction Features

Housing constructed of heavy duty G90 galvanized steel • Forward curved centrifugal blower wheel • Vibration isolation • Adjustable drive assemblies • Adjustable motor mount • Ball bearing motors • Heavy duty, pre-lubricated bearings rated for 200,000 hours of operation • Static resistant belts • Service doors on both sides • Horizontal & down discharge • Large intake area ensures low pressure drop across unit • Spring loaded profile plates automatically adjust for any airflow - no manual setting required! • Weatherproof safety disconnect switch • Modular design provides design flexibility • Fully insulated casing

Blower:

28 Inch Plenum Fan for size 4 MOD. Motor integral to Wheel. Max RPM = 1300.

Temp Control:

RTC Solutions • 40-90°F Discharge Temp Control • Field Wired On/Off Start Command

Intake:

Sloped Filtered Intake for Size #4 Modular Direct Fired Make-Up Air Units. 45.81" Wide x 70.05" Long x 44.00" High. Includes 2" MV EZ Kleen Metal Mesh Filter.

Filters:

10x MV EZ Kleen Metal Mesh Filter. 16"x 20"x 2" Used for heater and supply fan intakes. (3412)

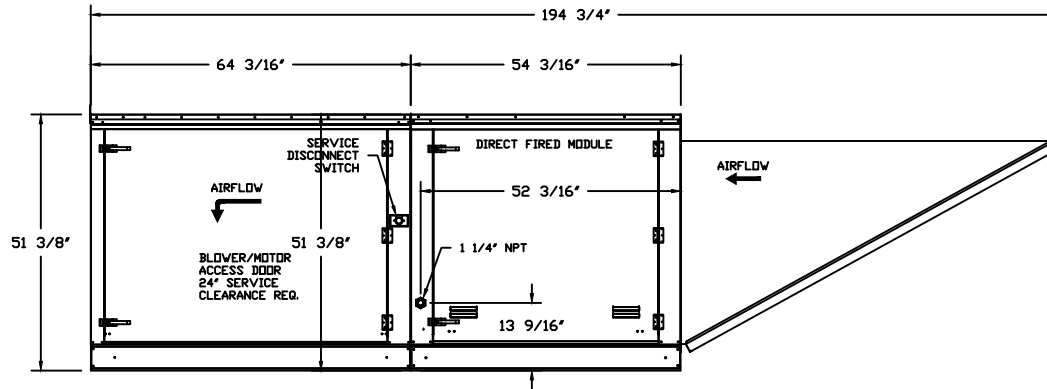
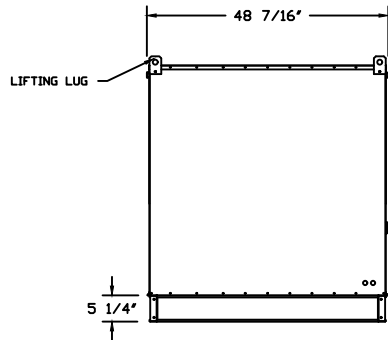
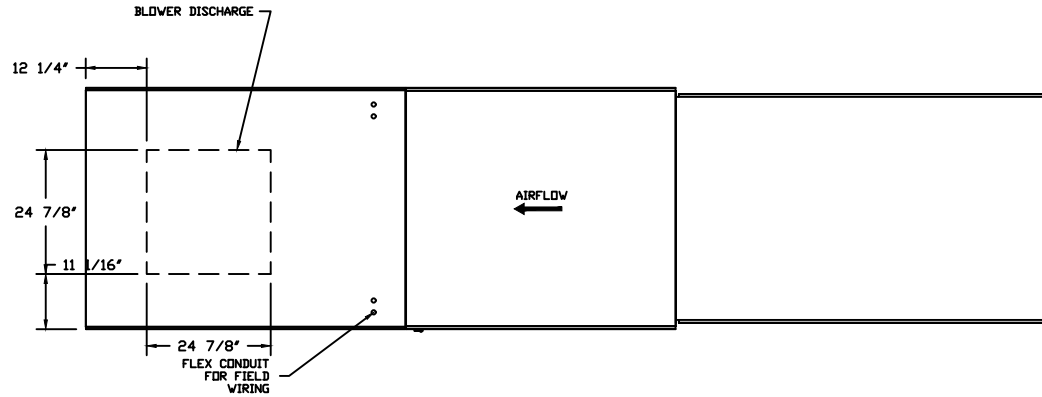
Selected Options:

- Motorized Back Draft Damper 34" X 36" for Size 4 Standard & Modular Heater Units w/Extended Shaft, Standard Galvanized Construction, 3/4" Rear Flange, Low Leakage, NFBUP-S Actuator Included
- Low Fire Start. Allows the burner circuit to energize when the modulation control is in a low fire position.
- Gas Pressure Gauge, 0-35", 2.5" Diameter, 1/4" Thread Size
- Gas Pressure Gauge, -5 to +15 Inches Wc., 2.5" Diameter, 1/4" Thread Size
- ECM Wiring Package and Manual or 0-10 VDC Control for Supply EC Ziehl Fans. RTC Controller

TK4-D1000-28Z DIRECT FIRED HEATER

1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 28" DIRECT DRIVE FAN AND 24" BURNER.
2. INTAKE HOOD WITH EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. MOTORIZED BACK DRAFT DAMPER 34" X 36" FOR SIZE 4 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, NFBUP-S ACTUATOR INCLUDED
5. LOW FIRE START, ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
6. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
7. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE
8. ECM WIRING PACKAGE AND MANUAL OR 0-10 VDC CONTROL FOR SUPPLY EC ZIEHL FANS. RTC CONTROLLER

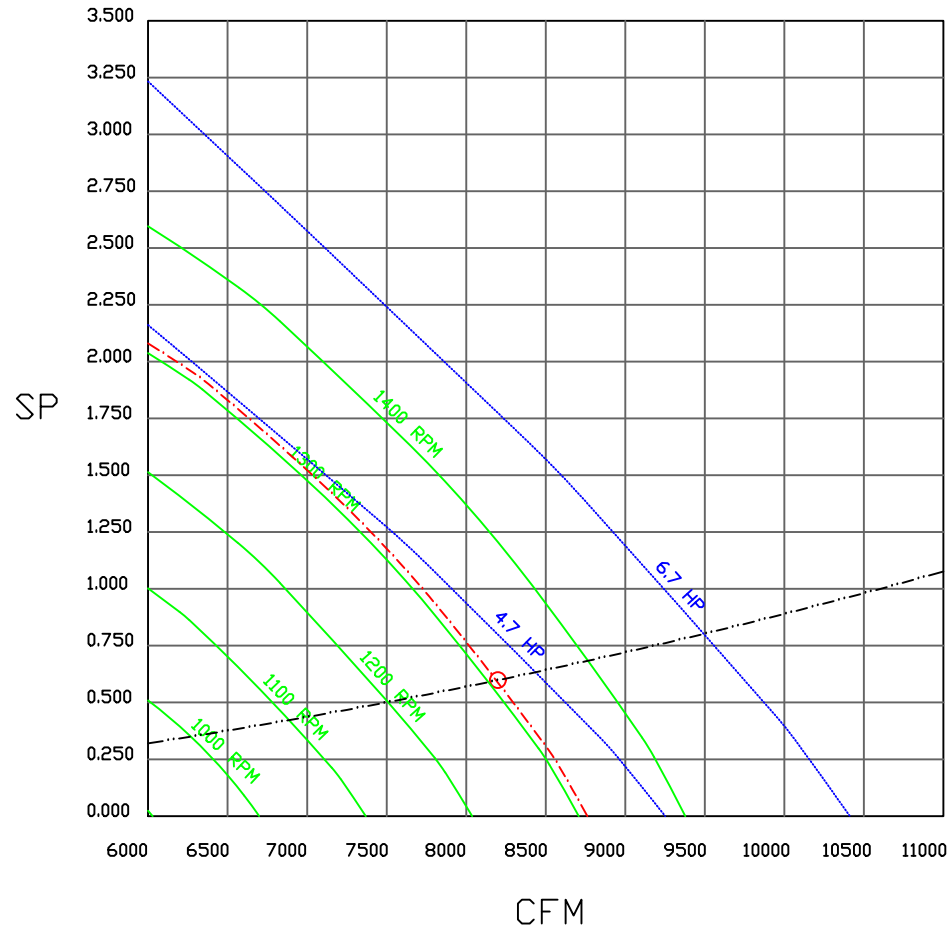
NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE UNLESS OTHERWISE SPECIFIED. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.



  		JOB	
		LOCATION	
		DATE	JOB #
		DWG #	DRAWN BY
		REV.	SCALE 1/4" = 1'-0"

(8200 4.7HP/3PH-230V) - HEATER PERFORMANCE CURVES.

8200 CFM, 0.598 SP @ 1308 RPM and 4.137 BHP at 0 feet and 100 deg F
 * Please note that these curves were adjusted for job specific temperature and altitude.



	naKS NORTH AMERICAN KITCHEN SOLUTIONS INCORPORATED		JOB	
			LOCATION	
			DATE	JOB #
			DWG #	DRAWN BY
			REV.	SCALE 3/8" = 1'-0"

Direct Fired Heater Wiring

JOB NAKS Direct Fired Direct Drive MUA

DRAWING NUMBER

SHIP DATE

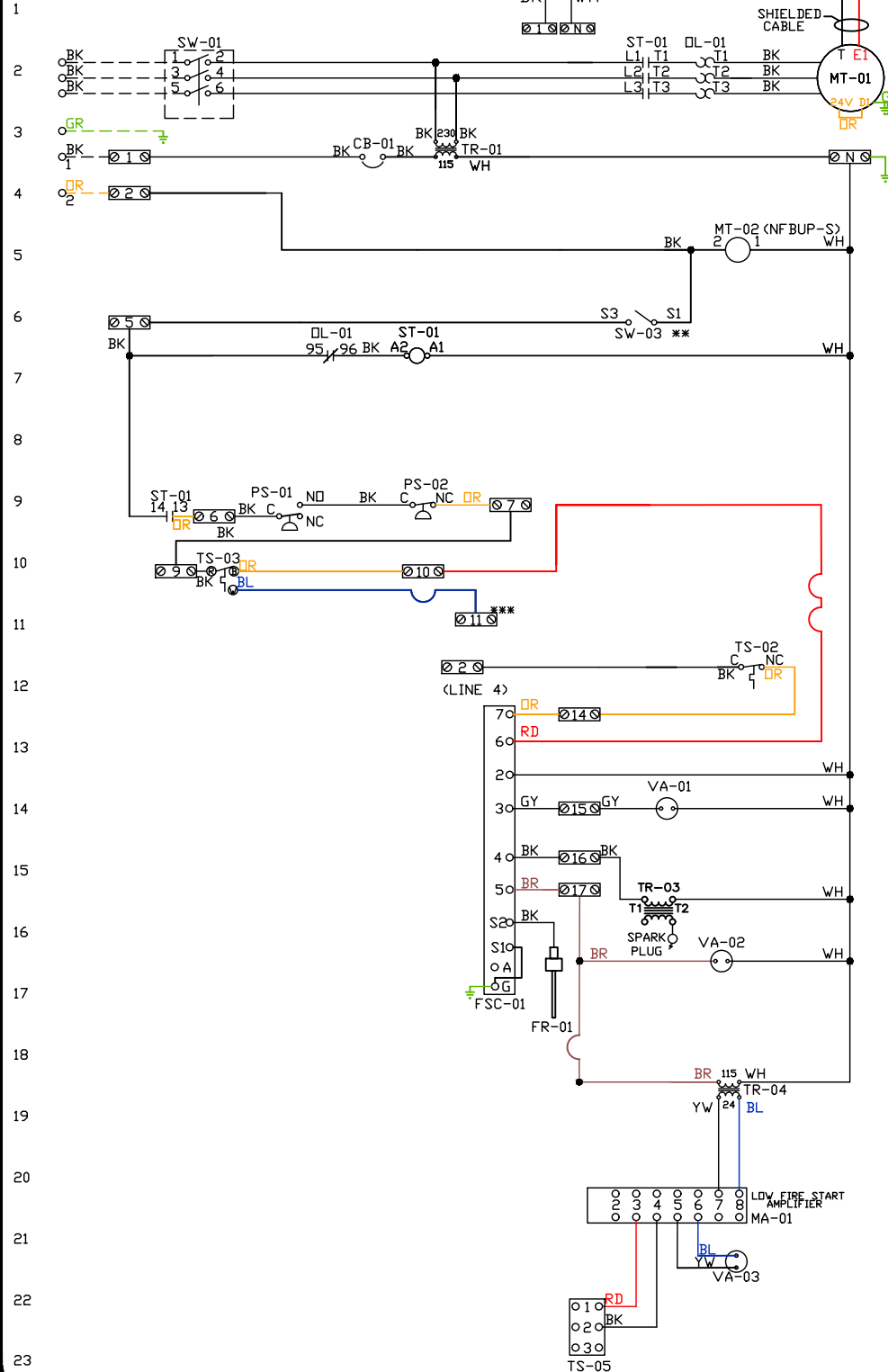
MODEL TK 1-5 Series Direct Drive ECM

ATTENTION ELECTRICIAN!
DROP FDR DISCONNECT CONNECTION
IS FACTORY SUPPLIED
CONNECT POWER TO THE DROP

OPTIONAL 0-10VDC
SPEED REFERENCE
INPUT

Installed Options
Field Wired Single Switch Control
Motorized Back Draft Damper

Discharge Temp. Control



Label	Component Identification Description	Location
CB-01	Circuit breaker (2amp)	[3]
FR-01	Flame rod	[16]
FSC-01	Fireeye FSC	[11-14]
MA-01	Modulating amplifier	[19]
MT-01	Supply motor	[2]
MT-02	Damper motor	[5]
DL-01	Supply motor overload	[2][7]
PS-01	Low AirFlow Switch	[9]
PS-02	High AirFlow Switch	[9]

SC-01	RTC-FSC-1	[1]
ST-01	Supply motor contactor	[2][7][9]
SW-01	Main disconnect switch	[2]
SW-03	Damper end limit switch	[4]
TR-01	Power transformer(200v63)	
TR-03	Ignition transformer	[14]
TR-04	Power transformer(20va)	[17]
TR-06	24VAC 20VA Transformer	[1]
TS-02	High temp limit switch	[10]
TS-03	Intake Air Sensor	[10]
TS-05	Discharge Air Sensor	[21]
VA-01	Pilot gas valve	[12]
VA-02	Main gas valve	[15]
VA-03	Modulating gas valve	[20]

MOTOR INFO
SUPPLY: 4.7HP-230V-3P-9.3FLA
CONTACTOR: 100-CJ6D10
OVERLOAD: 193-TIAC10

ELECTRICAL INFORMATION
MOTOR/CTRL CIRCUIT MCA: 12.7A
MOTOR/CTRL CIRCUIT MDP: 20A

NOTES

--- DENOTES FIELD WIRING
— DENOTES INTERNAL WIRING

** TERMINALS S4 AND S6 USED ON
NF & AF SERIES ACTUATORS
*** TERMINAL 11 PROVIDES COOLING
CONNECTION

WIRE COLOR		SOCKET STYLE "CLIM" RELAY	
BK - BLACK	YW - YELLOW	RD - RED	NO 4 1 3
BL - BLUE	GR - GREEN	WH - WHITE	NC 2 1 1
BR - BROWN	GY - GRAY	PK - PINK	COM 8 7 7
DR - DRANGE	FR - PURPLE		COM 6 1 5

Installation Wiring

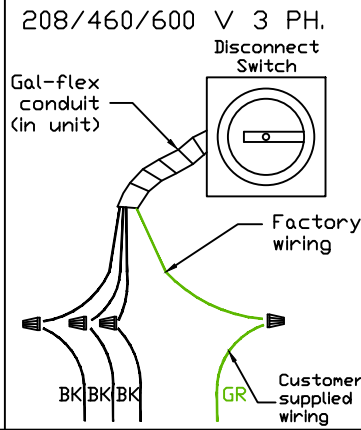
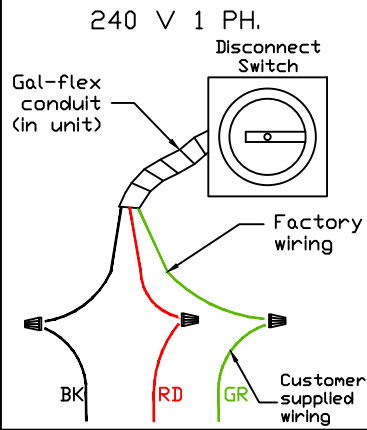
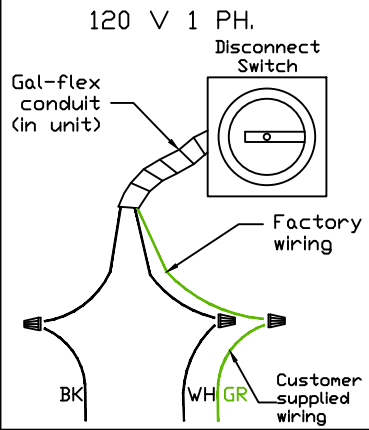
JOB *NAKS Direct Fired MUA*

DRAWING NUMBER

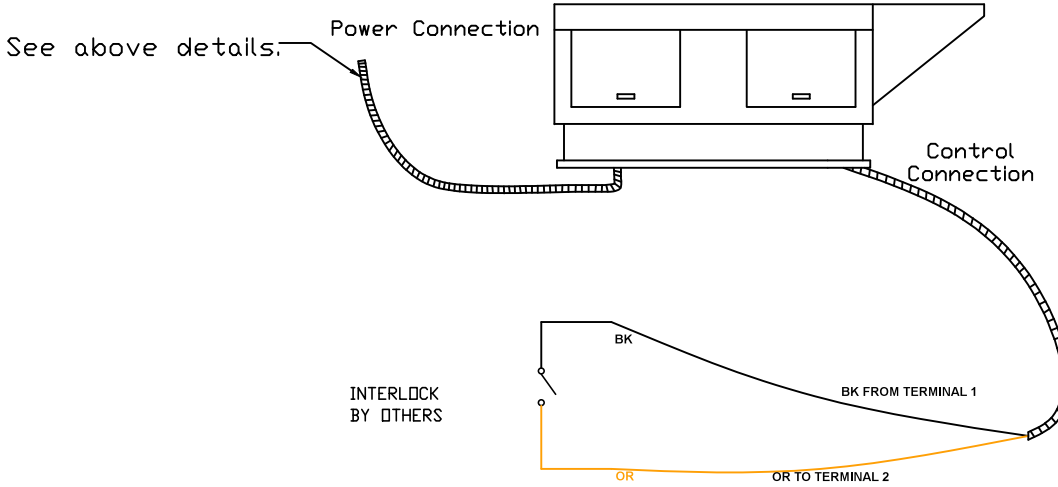
SHIP DATE

MODEL **TK 1-5 Series**

Installed Options



Field Wired On/Off Switch



NOTES

- WIRE COLOR
- BK - BLACK
 - BL - BLUE
 - BR - BROWN
 - OR - ORANGE
 - RD - RED
 - WH - WHITE
 - YW - YELLOW
 - GR - GREEN
 - GY - GRAY
 - PR - PURPLE
 - PK - PINK