BID PROPOSAL FORM BID NO. 2018-008

BID TO:

CITY COMMISSION CITY OF MARGATE

1. The undersigned bidder proposes and agrees, if this bid is accepted, to enter into an Agreement with the Owner in the form included in the Contract Documents to perform the Work as specified or indicated in said Contract Documents entitled:

FURNISH AND INSTALL (2) HVAC SYSTEMS BID NO 2018-008

- 2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the Notice Inviting Bids and Instructions to Bidders, dealing with the disposition of the Bid Security.
- 3. The bid will remain open for the period stated in the Notice Inviting Bids unless otherwise required by law. Bidder will enter into an Agreement within the time and in the manner required in the Notice Inviting Bids and the Instructions to Bidders, and will furnish the insurance certificates, payment bond, and performance bond required by the Contract Documents.
- 4. It is the Contractor's responsibility to contact the City at (954) 935-5346 prior to the bid opening to determine if any addenda have been issued on the project. Bidder has examined copies of all the Contract Documents including the following addenda (receipt of all of which is acknowledged):

Number_	2018-008	_Date	3-7-18
	Contract to the second		

- **5.** Bidder has familiarized himself with the nature and extent of the Contract Documents, Work, site, locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations), and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as Bidder deems necessary.
- **6.** This bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation. Bidder has not directly or indirectly induced or solicited any other bidder to submit a false or sham bid. Bidder has not solicited or induced any person, firm or corporation to refrain from bidding and bidder has not sought by collusion to obtain for itself any advantage over any other bidder or over Owner.

To all the foregoing, and including all Bid Schedule(s) and Information Required of Bidder contained in this Bid Form, said bidder further agrees to complete the Work required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment thereof the Contract Price based on the Total Bid Price(s) named in the aforementioned Bidding Schedule(s).

NAME OF FIRM: CLIMATE TEMP INC
ADDRESS: 1915 BANKS ROAD MARGATE FL 33063
NAME OF SIGNER STEVE LALCHAN (Print or Type)
TITLE OF SIGNER PRESIDENT
SIGNATURE: Soulely DATE: 03-07-18
TELEPHONE NO: 954-749-2108 FACSIMILE NO: 954-698-994

SCHEDULE OF BID PRICES - BID NO. 2018-008

TO:	CITY COMMISSION	
	CITY OF MARGATE	
	(Please fill in all blanks and return with your	proposal.)
In acc	cordance with your request for proposals and the undersigned proposes the following:	ne specifications contained
****	***********	*******
DESC	CRIPTION	TOTAL COST
Furni conta for th 901 N Trane	#1 & #2 sh/Install (2) 20 Ton Trane rooftop self- ined HVAC Systems with new curb adapter, i e D.E.E.S. Administration Building located at lW 66 th Avenue, Margate, FL 33063. e Condenser #WCD240B40FFA, r technical specifications.	f required, \$ 54, 680.00
(*Rep	ngency* resents possible costs for unforeseen work, oproved by City)	\$ <u>5,000.00</u>
GRAN	ND TOTAL	\$ 59, 680.00
NOTE	: "City permit fee shall be waived for this pro	oject."
****	· ************************************	*****************
OFFIC	BIDS MUST BE SIGNED WITH THE VENDOR N CER OR EMPLOYEE HAVING THE AUTHORIT PANY OR FIRM BY SIGNATURE.	
MATE	RIAL SAFETY DATA SHEETS ENCLOSED?	YESNO
SPEC	IFICATION SHEETS/BROCHURES?	YESNO
	YOUR INSURANCE REPRESENTATIVE REV RANCE CERTIFICATE TO ENSURE COMPLIA	
	YOUR FIRM ACCEPT PAYMENT VIA A CITY (CUREMENT CARD? PLEASE CHECK ONE	OF MARGATE YESNO

BIDDER'S GENERAL INFORMATION: BID NO. 2018-008

The bidder shall furnish the following information. Additional sheets shall be attached as required. Failure to complete Item Nos. 1, 3, and 7 (if required) will cause the bid to be non-responsive and may cause its rejection. In any event, no award will be made until all of the Bidder's General Information (i.e., items I through 7 inclusive) is delivered to the City.

Contractor's name and address: STEVE LALCHAN	
1340 NW SIST TERRACE	
COCONIUT CREEK FL 33073	Company Was
Contractor's telephone number: 954-749-2108	
Contractor's license: Primary classification <u>CLASS A</u>	
State License Number: CAC0 57014	
Supplemental classifications held, if any:	
Name of Licensee, if different from (1) above:	
Name of person who inspected site of proposed Work for your firm:	
Name: STEVE LALCHAN Date of Inspection: 02.28-	18
Name, address, and telephone number of surety company and agent will provide the required bonds on this contract:	: who
ATTACH TO THIS BID the experience resume of the person who w	ill b
designated as Supervisor for this project.	

- (7) ATTACH TO THIS BID a financial statement (If Required), references, and other information, sufficiently comprehensive to allow an appraisal of Contractor's current financial condition. (Not Required)
- (8) Subcontractors: The bidder further proposes that as part of their submittal there is attached a list of subcontracting firms or businesses who will be awarded subcontracts for portions of the work in the event the bidder is awarded the Contract.

REFERENCE SHEET - BID NO. 2018-008

In order to receive bid award consideration on the proposed bid, it is a requirement that this sheet be completed and returned with your bid/proposal. This information may be used in determining the bid award for this Project.

BIDDER (COMPANY NAME): CLIMATE TEMP, INC
ADDRESS: 1915 BANKS ROAD, WARGATE, 76. 33063
CONTACT PERSON: STEVE LAHRMAN TITLE: PRESIDENT
TELEPHONE: 954-749-2108 FACSIMILE: 954-698-9941
NUMBER OF YEARS IN BUSINESS: 17 YEARS
ADDRESS OF NEAREST FACILITY: J.M. LEXUS, 5350 W. SAMPLE RE
LIST THREE (3) COMPANIES OR GOVERNMENTAL AGENCIES WHERE THESE PRODUCTS OR SERVICES HAVE BEEN PROVIDED IN THE LAST YEAR.
1. Company Name: JM. FAMILY ENTERPRISES
Address: 700 Jim MORAN BLVD Phone: 954-275-4934
Contact Person: DANNY FLYNN Title: FACILITIES MANAGER
2. Company Name: J.M. FAMILY ENTERPMSES
Address: 185 Jim MORAN BLUD Phone: 954-275-4934
Contact Person: DANNY FLYND Title: FACILITIES MANAGER
3. Company Name: S.M. LEXUS
Address: 5350 W. SAMPLE PD Phone: 954-304-1275
Contact Person: DENNIS ARSERIO Title: FACILITIES MANAGER

COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT

Bidder certifies that all material, equipment, etc. contained in this bid meets all O.S.H.A. requirements. Bidder further certifies that if he/she is the successful bidder, and the material, equipment, etc., delivered is subsequently found to be deficient in any O.S.H.A. requirement in effect on date of delivery, all costs necessary to bring the material, equipment, etc. into compliance with the aforementioned requirements shall be borne by the bidder.

OCCUPATIONAL HEALTH AND SAFETY MATERIAL SAFETY DATA SHEET REQUIRED:

In compliance with Chapter 442, Florida Statutes, any item delivered from a contract resulting from this bid must be accompanied by a SAFETY DATA SHEET (SDS). The SDS must include the following information:

- A. The chemical name and the common name of the toxic substance.
- B. The hazards or other risks in the use of the toxic substances, including:
 - 1. The potential for fire, explosion, corrosivity and reactivity;
 - 2. the known acute and chronic health effects of risks from exposure, including the medical conditions which are generally recognized as being aggravated by exposure to the toxic substance; and
 - 3. the primary routes of entry and symptoms of overexposure.
- C. The proper precautions, handling practices, necessary personal protective equipment, and other safety precautions in the use of or exposure to the toxic substances, including appropriate emergency treatment in case of overexposure.
- D. The emergency procedure for spills, fire, disposal and first aid.
- E. A description in lay terms of the known specific potential health risks posed by the toxic substances intended to alert any person reading this information.
- F. The year and month, if available, that the information was compiled and the name, address and emergency telephone number of the manufacturer responsible for preparing the information.

SIGNATURE: DATE: 03-07-18

CITY OF MARGATE STATEMENT OF NO BID

IF YOU DO NOT INTEND TO BID ON THIS PROPOSAL, RETURN THIS FORM TO ADDRESS WHERE BID IS TO BE SUBMITTED:

I/We have declined to bid on your proposal No: 2018-008

Bid Description: FURNISH AND INSTALL (2) HVAC SYSTEMS BID NO. 2018-008

For the follow	wing reason:
12345678.	Specifications are too tight, i.e. geared toward one brand of manufacturer only. (Explain reason below.) Insufficient time to respond to invitation. We do not offer this commodity/service or equivalent. Our product/service schedule would not permit us to perform. Unable to meet specifications. Unable to meet bonding requirements. Specifications unclear (Explain below). Other (Specify below).
REMARKS:_	
Attach additi	onal pages if required. tand that if the NO BID form is not executed and returned, our name ted from the list of qualified bidders for the City of Margate.
COMPANY I	NAME:
ADDRESS:	
TELEPHONI	E NO:DATE:
SIGNATURE	OF BIDDER:

DRUG-FREE WORKPLACE PROGRAM FORM BID NO. 2018-008

In accordance with Section 287.087, State of Florida Statutes, preference shall be given to businesses with Drug-free Workplace Programs. Whenever two or more bids which are equal with respect to price, quality and service are received for the procurement of commodities or contractual service, a bid received from a business that certifies that it has implemented a Drug-free Workplace Program shall be given preference in the award process. In the event that none of the tied vendors have a Drug-free Workplace program in effect the City reserves the right to make final Decisions in the City's best interest. In order to have a Drug-free Workplace Program, a business shall:

- 1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- 2. Inform employees about the dangers of drug abuse in the Workplace, the business's policy of maintaining a drug-free Workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
- 3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
- 4. In the statement specified in subsection (1), notify employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contenders to, any violation of Chapter 893 or of any controlled substance law of the United States of any State, for a violation occurring in the Workplace no later than five (5) days after such conviction
- 5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is convicted.
- 6. Make a good faith effort to continue to maintain a drug-free Workplace through implementation. If bidder's company has a Drug-free Workplace Program, so certify below:

AS THE PERSON AUTHORIZED TO SIGN THE STATEMENT, I CERTIFY THAT THIS FIRM COMPLIES FULLY WITH THE ABOVE REQUIREMENTS.

SIGNATURE OF BIDDER:

DATE:03/07/18

OFFEROR'S QUALIFICATION STATEMENT BID NO. 2018-008

The und answers	ersigned certifies to questions ma	under oath the truth and correctness of all statements and of all de hereinafter:	
SUBMIT	TED TO:	City of Margate (Purchasing Division)	
ADDRES	SS:	5790 Margate Blvd. Margate, FL 33063	
		CIRCLE ONE	
SUBMIT	TED BY: CLIM	PATE TEMP INC Corporation	
NAME:_	STEVE L	Partnership Individual	
ADDRES	s: 1915 B	ANKS ROAD, MARGATE FL 33063	
TELEPH	ONE NO.: 95	4-749-2108	
FACSIM	LE NO.: 9 €	54-698-9941	
 State the true, exact, correct, and complete name of the partnership, corporation, trade or fictitious name under which you do business and the address of the place of business. 			
Th	The correct name of the Offeror is: CLIMATE TEMP INC		
Th	e address of the	principal place of business is:	
	1915 BAN	JKS ROAD, MARGATE, FL 33063	

2. If (Offeror is a corpo	pration, answer the following:	
a.	Date of Inco	rporation: OCTOBER 08 1999	
b.	State of Inco	prporation: FLORIDA	
с.	President's	name: STEVE LALCHAN	

d.	Vice President's name: <u>JAG WATIE</u> LALCHAN
e.	Secretary's name: PARIUS LALCHAN
f.	Treasurer's name: STEVE LALCHAN
g.	Name and address of Resident Agent:
	STEVE LALCHAN
	7340 NW SIST TERRACE COCONUTCREEK, FZ 3307
If Off	feror is an individual or a partnership, answer the following:
a.	Date of organization:
b.	Name, address and ownership units of all partners:
	NA
C.	State whether general or limited partnership:
If Off organ	feror is other than an individual, corporation or partnership, describe the nization and give the name and address of principals:

a.	Under what other former names has your organization operated?
-	
profe	ate registration, license numbers or certificate numbers for the businesses of essions which are the subject of this Proposal. Please attach certificate of petency and/or state registration.
ST	ATE OF FLORIDA CLASS A AIR CONDITIONING-CACOS
Have wher	you ever failed to complete any work awarded to you? If so, state where and why?
Have where	e and why?
where	e and why?
where	e and why?
where	e and why?

9.	State the names, telephone numindividuals or representatives of have performed or goods you howners are preferred as referent the following the state of the second temperature of the second temperatur	owners with the most knowle ave provided, and to which y	edge of work which you you refer (government
	(name)	(address)	(phone number)
	JENNIS HRSERIO	0	
	J. M. LEXUS 536 (name)	50 W. JAMPHEROAL	954-304-1275
	(name)	(address)	(phone number)
			a
	(name)	(address)	(phone number)
	((444,000)	(priorie ridifiber)
10.	List the pertinent experience of the insert sheet, if necessary).	he key individuals of your org	anization (continue on
0	STEVE LARCHAN - C.	19 YEARS EXPER	ENCE, HETHY
	MECHANICAL DESIGN	BACKGROUND EMS	SUSTEMS TAB
2	RAMJESS LALCHAN	- 44 YEARS EX	PERIENCE
3	DARIUS LALEHAD	- 17 YEARS SEPER	IENEE-COMPUTER EN
			BACKGROUND.
11.	State the name(s) of the individual work:	dual(s) who will have persor	nal supervision of the
	STEVE LALCHA	HA	
	RAMJESS LALCH	tAN .	
	DARIUS LALEA	IAN	

THE OFFEROR ACKNOWLEDGES AND UNDERSTANDS THAT THE INFORMATION CONTAINED IN RESPONSE TO THIS QUALIFICATION STATEMENT SHALL BE RELIED UPON BY OWNER IN AWARDING THE CONTRACT AND SUCH INFORMATION IS WARRANTED BY OFFEROR TO BE TRUE. THE DISCOVERY OF ANY OMISSION OR MISSTATEMENT THAT MATERIALLY AFFECTS THE OFFEROR'S QUALIFICATIONS TO PERFORM UNDER THE CONTRACT SHALL CAUSE THE OWNER TO REJECT THE PROPOSAL, AND IF AFTER THE AWARD TO CANCEL AND TERMINATE THE AWARD AND/OR CONTRACT.

Signature: Secur	
State of Florida County of	WHRD
On this the day of undersigned Notary Public of (Name(s) of individual(s) who appears Subscribed to the within instrument	and whose name(s) is/are
executed it.	
	NOTARY PUBLIC, STATE OF FLORIDA
NOTARY PUBLIC SEAL OF OFFICE:	(Name of Notary Public: Print, Stamp or Type as Commissioned.)
	Personally known to me, or Produced identification:
	(Type of Identification Produced ☐ DID take an oath, or ☐ DID NOT take an oath
OPTIONAL INFORMATION: Type of Document:Numb	er of Pages: Number of Signatures Notarized:



NON-COLLUSIVE AFFIDAVIT FOR BID NO. 2018-008

State of FLORIDA)
County of BROWARD)
being first duly sworn, deposes
and says that:
He/she is the PRESIDENT, (Owner, Partner, Officer Representative or Agent) of Chimatelet, if the Offeror that has submitted the attached Proposal;
He/she is fully informed regarding the preparation and contents of the attached Proposal and of all pertinent circumstances regarding such Proposal;
Such Proposal is genuine and is not a collusive or sham Proposal;
Neither the said Offeror nor any of its officers, partners, owners, agents representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any othe Offeror, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from bidding in connection with such Work; or have in any manner, directly or indirectly sought by agreement or collusion, or communication, or conference with any Offeror, firm, or person to fix the price or prices in the attached Proposal or of any other Offeror, or to fix any overhead, profit, or cost elements of the Proposal price of the Proposal price of any other Offeror, or to secure through any collusion conspiracy, connivance, or unlawful agreement any advantage against (Recipient) or any person interested in the proposed Work;
The price or prices quoted in the attached Proposal are fair and proper and are no tainted by any collusion, conspiracy, connivance, or unlawful agreement on the par of the Offeror or any other of its agents, representatives, owners, employees o parties in interest, including this affiant.
Signed, sealed and delivered in the presence of: Witness STEVE LALCHAN
Witness Printed Name PRESIDENT Title

ACKNOWLEDGMENT NON-COLLUSIVE AFFIDAVIT FOR BID NO. 2018-008

State of Florida County of Soloward	
On this the 7 day of WARCO	H, 2018, before me, the undersigned Notary Public of beared
(Name(s) of individual(s) who appe	and eared before notary)
whose name(s) is/are Subscribed t that he/she/they executed it.	o within the instrument, and he/she/they acknowledge
WITNESS my hand and official seal.	Wayn Beach
NOTARY PUBLIC SEAL OF OFFICE:	NOTARY PUBLIC STATE OF FLORIDA
Notary Public State of Florida Roger Gowder My Commission FF 965823 Expires 03/29/2020	(Name of Notary Public: Print, Stamp, or Type as Commissioned) Personally known to me, or Produced identification:
	(Type of Identification Produced)
	☐ DID take an oath, or ☐ DID NOT take an oath

TECHNICAL SPECIFICATIONS BID 2018-008 FURNISH AND INSTALL HVAC SYSTEMS

SPECIFICATIONS:

Unit #1 & 2: D.E.E.S Administration Building, 901 NW 66th Ave, Margate, FL 33063. Furnish and install (2) new Trane 20-ton rooftop self-contained AC units with new curb adapter, if required.

SCOPE OF WORK:

- 1. Removal and disposal of existing package unit.
- 2. Install two 20 ton Trane rooftop self-contained heated AC units #WCD240B40FFA.
- 3. If required, install new curb adapters.
- 4. The new coils shall be factory dip coated.
- 5. Install two float switches for each unit; one in the air handler and one in the drain pan.
- 6. Modify existing power and control electrical wiring to the new unit.
- 7. Reconnect to existing supply ductwork, existing copper lines, existing drain line and existing electrical.
- 8. Provide crane service to install equipment.
- 9. Units shall be equipped with motorized outside air dampers.
- 10. Obtain all necessary permits; City of Margate permit fees shall be waived.
- 11. Provide signed and sealed structural drawings for the unit tie down.
- 12. Provide all necessary labor to complete the scope of work provided.
- 13. Start up and monitor unit for proper operation.
- 14. Return ceiling to original condition.

The following "disconnect" instructions shall apply to all units:

- Disconnect existing high and low voltage wiring
- Disconnect existing supply duct
- Disconnect existing return ducts
- Removal and disposal of existing/replaced units

The following "reconnect" instructions shall apply to all units:

- Reconnect existing high and low voltage wiring
- Reconnect existing supply duct
- Reconnect existing return duct
- Perform system start up and calibrate for peak performance
- Strap units per local code requirements

ATTACHMENT "A"

OP ID: AR

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 03/07/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed

t	F SUBROGATION IS WAIVED, subject his certificate does not confer rights t	t to t	he te	rms and conditions of the	he polic	y, certain po	olicies may	require an endorsemen	t. As	tatement on
PRO New 5700 Holl	DDUCER man Insurance Agency, Inc. Stirling Road wood, FL 33021-			963-9626	CONTAC NAME: PHONE (A/C, No	Ext): 954-96		FAX (A/C, No):		
Wan	en Brówn				E-MAIL ADDRES	1000000				T
						INSI R A : ^{Cypress} Pr		RDING COVERAGE		NAIC #
INS	URED Climate Temp, Inc.				INSURE	R B : Progressiv	e Companies	,		10193
	1915 Banks Road #B-8 Pompano Beach, FL 33063									10133
	Tompano Beach, TE 33003				INSURE					
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CC	VERAGES CER	RTIFI	CATE	E NUMBER:				REVISION NUMBER:		
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								PERSONAL & ADV INJURY	\$	1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE	\$	2,000,000
	X POLICY PRO-							PRODUCTS - COMP/OP AGG	\$	2,000,000
В	OTHER: AUTOMOBILE LIABILITY							COMBINED SINGLE LIMIT (Ea accident)	\$	1,000,000
	X ANY AUTO			02464259-4		10/29/2017	10/29/2018	BODILY INJURY (Per person)	\$	
	OWNED AUTOS ONLY SCHEDULED AUTOS ONLY NON-OWNED AUTOS ONLY							BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	\$	
								PIP	\$	10,000
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	EXCESS LIAB CLAIMS-MADE							AGGREGATE	\$	
	DED RETENTION \$							1050	\$	
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY							PER OTH- STATUTE ER		
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A						E.L. EACH ACCIDENT	\$	
	If yes, describe under							E.L. DISEASE - EA EMPLOYEE	\$	
	DÉSCRIPTION OF OPERATIONS below							E.L. DISEASE - POLICY LIMIT	\$	
	CRIPTION OF OPERATIONS / LOCATIONS / VEHICI of Margate is also listed as Additional Insured with ity.				ile, may be	attached if more	e space is requi	red)		
CE	RTIFICATE HOLDER				CANC	ELI ATION				
JE	THE HOLDER			CITYOMA	CANCI	ELLATION				
	City of Margate 5790 Margate Blvd Margate, FL 33063				THE	EXPIRATION	DATE THE	ESCRIBED POLICIES BE CA EREOF, NOTICE WILL E Y PROVISIONS.		
	mai gate, FL 33003				_	IZED REPRESEN				
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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

STATISTICS OF THE PARTY.	intincate noider in her of such endor	eem	entle).	Leveline					
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	X ANY AUTO							(Ea accident)	Phylograph	500K
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	NON-OWNED AUTOS							***************************************	8	Marino de la composição d
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	ANY PROPRIETOR PARTHER EXECUTIVE OFFICER MEMBER EXCLUDED?	N/A		shall provide a copy of				E.L. EACH ACCIDENT	8	100,000
	(Mandatory in NH) If yes, describe under			authorized certificate or				E.L. DISEASE - EA EMPLOYEE	S	100,000
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Packaged Heat Pumps

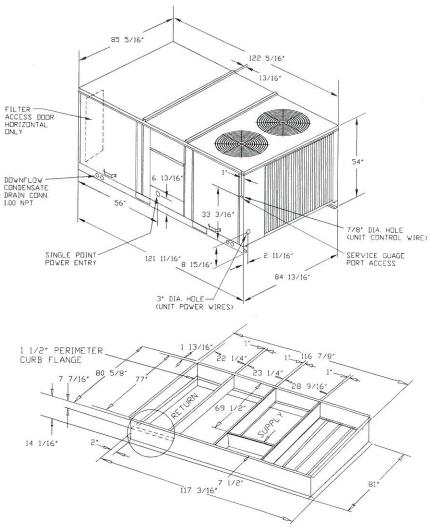
Voyage r^{TM} 12½ – 20 Tons — 60 Hz





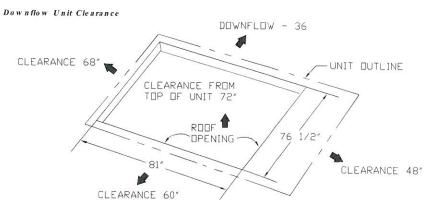
Dimensional (20 Ton) Data

All dimensions are in inches.



NOTE:

Duct flanges mount 7-7/16" down inside the curb on the 11/2" curb flanges. See recommended duct dimensions on the next page. Roofcurb is intended for downflow use only.







Weather Tight Top and Cabinet

- Voyager units incorporate either a one piece top or the Trane-Tite-Top (T³).
 Each part of the top (either two or three pieces) overlaps in such a way that water cannot leak into the unit. These overlapped edges are gasketed and sealed to ensure superior water integrity.
- Quick-Access (12½-20 tons) panels reduce the number of possible water entry points.
- For added water integrity, Voyager has a raised 11/8" lip around the supply and return of the downflow units to prevent water from blowing into the ductwork.

Quality And Reliability Testing

- The fan and idler arm assembly designs have been tested to over 300,000 cycles each. Our combined cycle testing is now over 7,000,000 cycles.
- All of Voyager's designs were rigorously rain tested at the factory to ensure water integrity.

- Actual shipping tests were performed to determine packaging requirements. Units were test shipped around the country to determine the best packaging. Factory shake and drop tests were used as part of the package design process to help assure that the unit arrives at the job site in top condition.
- Rigging tests include lifting a unit into the air and letting it drop one foot, assuring that the lifting lugs and rails hold up under stress.
- We perform a 100% coil leak test at the factory. The evaporator and condenser coils are leak tested at 200 psig and pressure tested to 450 psig.
- All parts are inspected at the point of final assembly. Sub-standard parts are identified and rejected immediately.
- Every unit receives a 100% unit run test before leaving the production line to make sure it lives up to rigorous Trane requirements.

We test designs at our factory not on our customers!

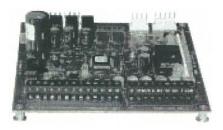
Conversionless Units

- The dedicated design units (either downflow or horizontal) require no panel removal or alteration time to convert in the field — a major cost savings during installation.
- Horizontal units come complete with duct flanges so the contractor doesn't have to field fabricate them. These duct flanges are a time and cost saver.

U-shaped Airflow

 U-shaped airflow allows for improved static capabilities.





Re lia Te l™

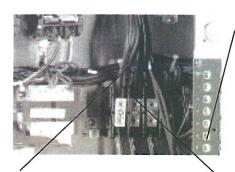
Several years ago, Trane was the first to introduce ReliaTel into the Light Commercial Market. That design, along with immeasurable experience, has provided the technology for Trane's second-generation ReliaTel microprocessor controls.

Re lia Te 1:

- Provides unit control for heating, cooling, and ventilating by utilizing input from sensors that measure outdoor and indoor temperature.
- Improves quality and reliability through the use of time-tested microprocessor controls and logic.
- Prevents the unit from short cycling, considerably improving compressor life.
- Ensures that the compressor will run for a specific amount of time, which allows oil to return for better lubrication, enhancing the reliability of the compressor.
- Reduces the number of components required to operate the unit, thereby reducing possibilities for component failure.

- Eliminates the need for field-installed components with its built-in anti-shortcycle timer, time delay relay and minimum "on" time controls. These controls are factory tested to assure proper operation.
- Requires no special tools to run the unit through its paces during testing. Simply place a jumper between Test 1 and Test 2 terminals on the Low Voltage Terminal Board and the unit will stage through its operational steps. The unit automatically returns control after 60 minutes to the zone sensor after stepping through the test mode a single time, even if the jumper is left on the unit.
- As long as the unit has power and the LED is lit, the ReliaTel is operational.
 The light indicates that the ReliaTel is functioning properly.
- Features expanded diagnostic capabilities when used with Trane's Integrated Comfort™ Systems.
- As an energy benefit, softens electrical "spikes" by staging on fans, compressors and heaters.
- The Intelligent Fallback or Adaptive Control is a benefit to the building occupant. If a component goes astray, the unit will continue to operate at predetermined temperature set points.
- Intelligent Anticipation is a standard feature of the ReliaTel. Functioning constantly, the ReliaTel and zone sensors work together in harmony, to provide tight comfort control.





Standardized Components

- Components are placed in the same location on all Voyager units.
 Familiarize yourself with one Voyager and you are familiar with every Voyager.
- ReliaTel can fit all Voyager Packaged Gas/Electrics, Cooling with Electric Heat, and Heat Pump models. This provides standardization of parts for the contractors. Less money is tied up in inventory using the ReliaTel.
- Contractors/owners can stock fewer parts due to standardized components throughout Voyager units.

Single Side Service

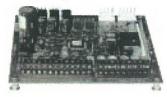
Single side service is standard on all Voyager $12\frac{1}{2}$ -20 tons.

Quick-Access Panels On The 121/2-20 Tons

Remove three or fewer screws for access to the standardized internal components and wiring.

Easy Access Low Voltage Term in al Board

Voyager's Low Voltage Terminal Board is external to the electrical control cabinet. It is extremely easy to locate and attach the thermostat wire. This is another cost and time saving installation feature.



Low Voltage Connections

The wiring of the low voltage connections to the unit and the zone sensors is as simple as 1-1, 2-2, and 3-3. This simplified system makes it easy for the installer to wire.

Colored And Numbered Wiring

You save time and money tracing wires and diagnosing the unit.

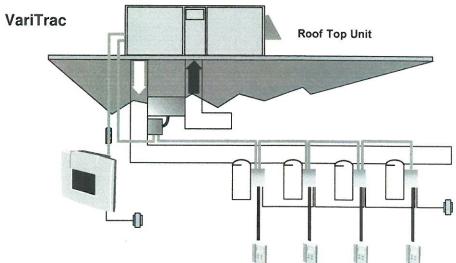
Va riTra c™

When Trane's changeover VAV System for light commercial applications is coupled with Voyager, it provides the latest in technological advances for comfort management systems and can allow thermostat control in every zone served by VariTrac.



Quick-Adjust Idler Arm

With the Quick-Adjust Idler Arm, the belt and sheaves on all 12½-20 tons can be quickly adjusted without moving the mounted fan motor. The result is a major savings in time and money.





Capacity Modulation

 The 12½-20 tons have dual compressors.

Com pressors

 Voyager contains the best compressor technology available to achieve the highest possible performance. The dual compressor models are outstanding for humidity control, light load cooling conditions and system back-up applications.

Low Ambient Cooling

All Voyager 12½-20 tons have cooling capabilities down to 0°F as standard.

Power Exhaust Option

This option is available on the 12½-20 tons downflow units. It provides exhaust of the return air, when using a downflow economizer, to maintain proper building pressurization. Great for relieving most building overpressurization problems.

CO2 Sensing

The CO_2 sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO_2 (Carbon Dioxide) in the air. As the CO_2 levels increase, the outside air damper modulates to meet the CO_2 space ventilation requirements. The CO_2 sensor kit is available as a field installed accessory.

Ventilation Override Accessory

With the Ventilation Override Accessory installed, the unit can be set to transition to up to 3 different pre-programmed sequences for Smoke Purge, Pressurization, and Exhaust. The transition occurs when a binary input on the RTOM is closed (shorted). This would typically be a hard wired relay output from a smoke detector of fire control panel. The ventilation override kit is available as a field installed accessory.

Flexible Applications

- Only two roof curbs for the entire Voyager line simplifies curb selection.
- Airflow is outstanding. The Voyager can replace an older machine with old ductwork and, in many cases, improve the comfort through better air distribution.
- A wide variety of Factory Installed Options (FIOPs) are available.

Trane Communication Interface (TCI)

Available factory or field installed. This module when applied with the Micro easily interfaces with Trane's Integrated Comfort $^{\text{TM}}$ System.

Single Point Power

A single electrical connection powers the unit

Sloped Drain Pans

Standard on every unit.

Downflow And Horizontal Economizers

The economizers come with three control options — dry bulb is standard, enthalpy and differential enthalpy are optional.

High Static Drive Accessory

Available on many models, this high static drive accessory extends the capability of the standard motor. Avoid expensive motors and operating costs by installing this optimized sheave accessory.

Factory Built Roof Curbs

Available for the downflow units.

Zone Sensors

Available in programmable, automatic and manual styles.

The following options round-out the complete line of Voyager accessories:

- 0 25% manual outside air hood
- Motorized outside air for 121/2-20 tons

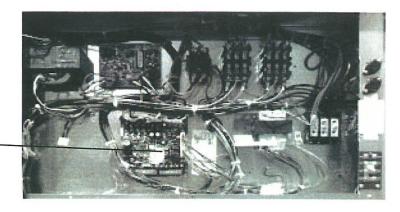
One Of Our Finest Assets:

Trane Sales Representatives are a Support group that can assist you with:

- Product
- Application
- Service
- Training
- Special Applications
- Specifications
- Computer Programs and much more

Voyager has the features and benefits that make it first class in the light commercial rooftop market. Designed with input from field contractors and engineers, its U-shaped airflow performance is outstanding.

If all of your customers knew about Voyager, all would insist on it.



ReliaTel -



Application Considerations

Application of this product should be within the cataloged airflow and cooling considerations.

Low Ambient Cooling

This Voyager line features, as standard, low ambient cooling down to 0°F. Contact your local Trane Representative for more assistance with low ambient cooling applications.

Barom etric Relief

This product line offers an optional barometric relief damper included in the downflow economizer accessory. This accessory consists of gravity dampers which open with increased pressure. As the building air pressure increases, the pressure in the unit return air section also increases, opening the dampers and relieving the conditioned space.

NOTE: THE EFFECTIVENESS OF BAROMETRIC RELIEF DAMPER DURING ECONOMIZING OPERATION IS SYSTEM RELATED.

PRESSURE DROP OF THE RETURN AIR SYSTEM SHOULD BE CONSIDERED TO CONTROL BUILDING PRESSURIZATION.

Power Exhaust Accessory

The power exhaust accessory is available on all 12½-20 tons downflow units. This accessory can be field installed and will assist in relieving building pressurization.

Condensate Trap

The evaporator is a draw-thru configuration. A trap must be field provided prior to start-up on the cooling cycle.

Clearance Requirements

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances which appear inadequate should be reviewed with the local Trane sales personnel.

Unit Pitch

These units have sloped condensate drain pans. Units must be installed level, any unit slope must be toward access side of unit.



Model Number Description

Packaged Heat Pump Unit Model Nomenclature

 $\frac{\mathbf{W} \quad \mathbf{C}}{1 \quad 2} \quad \frac{\mathbf{D}}{3} \quad \frac{\mathbf{I} \quad \mathbf{5} \quad \mathbf{0}}{4 \quad 5 \quad 6} \quad \frac{\mathbf{C}}{7} \quad \frac{\mathbf{3}}{8} \quad \frac{\mathbf{0}}{9} \quad \frac{\mathbf{0}}{10} \quad \frac{\mathbf{B}}{11} \quad \frac{\mathbf{A}}{12}$

Digits 1,2 Product Type

WC = Heat Pump, Packaged WF = With Factory Installed Options

Digit 3 - Airflow Configuration

D = Downflow H = Horizontal

Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

 $150 = 12\frac{1}{2} \text{ ton}$ 180 = 15 ton240 = 20 ton Digit 7- Major Development Sequence

Digit 8 - Electrical Characteristics

3 = 208-230/60/3 4 = 460/60/3 W = 575/60/3

Digits 9, 10 - Factory Installed Options

OO = Packed Stock, No Options
OA = Factory Installed Downflow
Economizer

OB = Oversize Motor

OC = Downflow Economizer and Oversize

Motor

OF = Trane Communications Interface (TCI)

OG = Downflow Economizer and TCI

Digit 11- Minor Design Sequence

Digit 12- Service Digit



General Data

(15, 20 Ton)

	15 Ton Downflow and Horizontal Units		and Horizontal Units
	WC* 180B3, B4, BW	WCD240B3, B4, BW	WCH240B3, B4, BW
Cooling Performance ¹			
Gross Cooling Capacity	183,500	233,000	237,000
EER ²	9.5	10.0	10.5
Nominal CFM / ARI Rated CFM	6,000 / 5,300	8,000 / 8,000	8,000/7,000
ARI Net Cooling Capacity	174,000	222,000	224,000
Integrated Part Load Value ³	10.0	9.7	
System Power KW	18.31	22.2	10.3 21.3
Heating Performance ¹		Gen flux + Gen	21.0
High Temp. Btuh Rating	160,000	208,000	004.000
System Power KW/COP	· · · · · · · · · · · · · · · · · · ·		204,000
Low Temp. Btuh Rating	15.12/3.10	19.65/3.10	19.29/3.10
	88,000	128,000	118,000
System Power KW/COP	12.89/2.0	18.75/2.0	17.29/2.00
HSPF (Btu/Watts-hr)		_	_
Compressor	***		
No./Type	2/Trane 3-D Scroll	2/Copeland Scroll	2/Copeland Scroll
Sound Rating (BELS) ⁴	9.2	9.4	9.4
Outdoor Coil — Type	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.) OD	.375	.375	.375
Face Area (sq ft)	28.21	35.3	35.3
Rows/FPI	2/16	3/16	3/16
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve
ndoor Coil — Type	Hi-Performance	Hi-Performance	Hi-Performance
Tube Size (in.)	.375	.375	.375
Face Area (sq ft)	17.50	26.00	26.00
Rows/FPI	2/15	3/15	3/15
Refrigerant Control	Capillary Tube	Capillary Tube	A SEA THE
Drain Connection No./Size (in.)	1/1.00 NPT	1/1.00 NPT	Capillary Tube 1/1.00 NPT
outdoor Fan — Type			
No. Used/Diameter (in.)	Propeller	Propeller	Propeller
	2/26	2/28	2/28
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1
CFM	11,200	13,800	13,800
No. Motors/HP	2/.50	2/1.0	2/1.0
Motor RPM	1,100	1,125	1,125
ndoor Fan — Type	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used	1		1 1
Diameter x Width (in.)	15 x 15	18 x 18	18 x 18
Drive Type/No. Speeds	Belt/1	Belt/1	Belt/1
No. Motors	1	1	1
Motor HP (Standard/Oversized)	3.0/5.0	5.0/7.5	5.0/7.5
Motor RPM (Standard/Oversized)	1,740/3,450	3,450/3,450	3,450/3,450
Motor Frame Size (Standard/Oversized)	145T/145T	184T/184T	184T/184T
ilters — Type Furnished ⁶	Throwaway	Throwaway	Throwaway
(No.) Size Recommended (in.)	(2) 20 x 20 x 2	(4) 20 x 20 x 2	
,,	(4) 20 x 25 x 2	(4) 20 x 20 x 2 (4) 20 x 25 x 2	(8) 20 x 25 x 2
efrigerant Charge (Lbs of R-22)5	13.2/12.8/Circuit	· · · · · · · · · · · · · · · · · · ·	22 0/04 0/01 1
OTES:	13.2/12.0/OITCUIT	22.0/21.0/Circuit	22.0/21.0/Circut

NOTES:

1. Cooling Performance and Heating Performance is rated at 95°F ambient, 80°F entering dry bulb, 67°F entering wet bulb. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Certified in accordance with the Unitary Large Equipment certification program, which is based on ARI Standard 340/360-93.

2. EER is rated at ARI conditions and in accordance with DOE test procedures.

3. Integrated Part Load Value is based in accordance with ARI Standard 210/240 or 340. Units are rated at 80°F entering dry bulb, and 67°F entering wet bulb at ARI rated cfm.

4. Sound Rating shown is tested in accordance with ARI Standard 270 or 370.

5. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.

6. Optional 2 inch pleated filter also available.

^{*}Indicates both downflow and horizontal units.



Performance (20 Ton) Data

Table PD-4 — Gross Cooling Capacities (MBh) 20 Ton Downflow Three Phase WCD240B

						Am	bient Te	mper	ature (F)					
			85			95			***	105			115	
	Ente	er.										-,	1.0	
CFM	Dry					Ent	ering We	et Bul	b (F)					
	Bulb	61	67	73	61	67	73		61	67	73	l 61	67	73
Airflow	(F)	MBH SHC	MBH SH	с мвн ѕнс	MBH SH	MBH SH	МВН	SHC	MBH SHO	MBH SHC	MBH SHC	MBH SHC	MBH SHO	MBH SHC
	75	212.0 177.0	233.0 137	0 243.0 89.7	198.0 173	0.228.0.133	0.244.0	873	179 0 164	0 211 0 130 0	239 0 83 1	160 0 154 0	180 0 115 0	225.0.76.9
7000	80	219.0 218.0	234.0 165	.0 246.0 122.0	204 0 204	0 229 0 168	0 2470	123.0	188 0 188	0 212 0 160 0	240 0 118 0	172 0 172 0	100.0 110.0	225.0 70.0
7200	85	229.0 229.0	236.0 197	0 249.0 148.0	220.0 220	0 231 0 202	0 249 0	153.0	205.0.205	0 215 0 196 0	242.0 153.0	189 0 189 0	190.0 130.0	225.0 112.0
	90	238.0238.0	238.0227	0 252.0 174.0	234.0234	0233.0233.	0252.01	183.0	222.0222	0222 0222 0	242 0186 0	206 0206 0	206 0206 0	220.0 140.0
	75			.0 244.0 91.2										
	80	224.0 224.0	239.0 173	.0 247.0 123.0	213 0 213	0 233 0 176	0 249 0	126.0	196 0 196 (2170 170 0	242.0 03.0	180 0 180 0	195.0 126.0	229.0 76.8
8000	85	234.0 234.0	241.0 207	0 250.0 150.0	228 0 228	0 235 0 213	0 252 0	158.0	215 0 215 (0 221 0 210 0	244.0 159.0	1070 100.0	193.0 100.0	230.0 117.0
	90	242.0242.0	245.0238	.0253.0178.0	240 0240	0240 0240	0254.01	190.0	231 0 231	0 231 0 231 0	246 0 195 0	216 0216 0	216 0216 (230.0 133.0
	75	223.0 201.0	238 0 148	.0 245.0 93.4	209 0 196	0 235 0 145	0.248.0	90.6	189 0 186	220 0 138 0	244.0 96.9	169 0 169 0	100.0210.0	232.0 193.0
1201	80	229.0 229.0	241.0 177	0 248.0 139.0	220.0 220	0 236 0 184	0 250.0 °	128 0	204 0 204 1	0 220.0 130.0 0 221 0 180 0	244.0 00.0	196.0 106.0	196.0 136.0	232.0 80.6
8800	85	238.0 238.0	244.0 212	.0 252.0 152.0	234 0 234	0 239 0 223	0 253.0	161.0	204.0 204.0 222 N 222 (226.0 223.0	240.0 129.0	205 0 205 0	205.0 170.0	233.0 122.0
	90	245.0245.0	247.0 245	.0255.0181.0	245 0245	0245 0245	0256.01	195.0	238 0238	0 220.0 220.0	247.0 100.0	203.0 203.0	203.0 205.0	233.0 164.0
	75	226 0 208 0	2410 151	0 246.0 94.2	214.0.206	0.236.0.148	0.240.0	01.4	101 0 101 0	2230.0230.0	245.0203.0	474.0.474.0	100.0.110.0	236.0205.0
	80	232 0 232 0	243 0 185	0 250.0 126.0	226 0 226	0 230.0 140.	0 249.0	115.0	211 0 211 0	225.0 144.0	245.0 88.6	102.0 102.0	199.0 143.0	235.0 82.4
9600	85	2410 2410	245 0 222	.0 253.0 155.0	230.0 220.	0 230.0 190.	0 251.0	165.0	211.0 211.0	223.0 109.0	247.0 123.0	193.0 193.0	203.0 1/9.0	235.0 127.0
	90	248 0248 0	2470 247	0 256.0 184.0	248 0248	0248.0231.	0 200.0	200.0	242.0.243.0	7243.0 229.0	249.0 170.0	212.0 212.0	212.0 212.0	236.0 1/1.0

- NOTES:
 1. Dry Coil Condition. Total Gross Cooling Capacity (MBh) shown to the left is not applicable. In this case the Sensible Heat Capacity (SHC) is the total capacity.
 2. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling subtract indoor fan heat.
 3. MBH = Total Gross Capacity
 4. SHC = Sensible Heat Capacity

Table PD-5 — Gross Cooling Capacities (MBh) 20 Ton Horizontal Three Phase WCD240B

						Am	bient Temper	ature (F)					
			85			95			105			115	
	Ente	er.										1.0	
CFM	Dry					Ente	ering Wet Bu	lb (F)					
	Bulb	61	67	73	61	67	73	61	67	73	l 61	67	73
Airflow	(F)	MBH SHC	MBH SHO	MBH SHC	MBH SHO	MBH SHO	MBH SHC	MBH SHC	MBH SHC	MBH SHC	MBH SHC	MBH SHC	MBH SHO
	75	217.0 181.0	238.0 140.	0 248.0 91.4	202.0 177.0	233.0 136.0	249.0 88.9	183.0 167.0	215.0 132.0	244 0 84 7	163.0.1570	192 0 1170	220 0 78 3
200	80	224.0 223.0	239.0 168.	0 250.0 124.0	208.0 208.0	233.0 171.0	251.0 126.0	192.0 192.0	216.0 163.0	245.0 121.0	175 0 175 0	194 0 153 0	229 0 114 0
200	85	233.0 233.0	241.0 201.	0 253.0 151.0	224.0 224.0	235.0 206.0	254.0 156.0	209.0 209.0	219.0 200.0	246.0 156.0	192 0 192 0	198 0 190 0	230.0 149.
	90	242.0 242.0	242.0230.	0256.0 177.0	238.0238.0	0238.0238.0	257.0 186.0	226.0226.0	226.0226.0	247.0 189.0	210.0210.0	210.0210.0	231 0 185
	75			249.0 93.5									
2000	80	228.0 228.0	244.0 176.	0 252.0 126.0	217.0 217.0	237.0 180.0	254.0 128.0	200.0 200.0	221.0 174.0	248.0 126.0	183 0 183 0	199.0 163.0	234 0 1197
8000	85	238.0 238.0	246.0 211.0	255.0 153.0	233.0 233.0	240.0 217.0	256.0 161.0	219.0 219.0	225.0 214.0	249 0 163 0	201 0 201 0	201 0 201 0	234.0 158.0
	90	246.0 246.0	250.0243.	0258.0181.0	245.0245.0	245.0245.0	259.0194.0	235.0235.0	235.0235.0	251.0 199.0	220 0220 0	220 0220 0	236 0 197
	75	228.0 205.0	243.0 151.0	0 250.0 95.2	213.0 200.0	239.0 147.0	252.0 92.3	193.0.189.0	224 0 140 0	249 0 88 5	172 0 172 0	200.0220.0	2270 92 1
2000	80	233.0 233.0	245.0 181.0	253.0 142.0	224.0 224.0	240.0 187.0	255.0 131.0	208.0 208.0	225.0 183.0	250.0 131.0	190 0 190 0	203.0 133.0	237.0 02.1
8800	85	242.0 242.0	248.0 216.	0 256.0 155.0	239.0 239.0	243.0 227.0	258.0 165.0	227.0 227.0	230.0 227.0	252.0 169.0	209 0 209 0	209.0 170.0	238 0 1670
	90	249.0 249.0	252.0250.	0260.0184.0	249.0249.0	249.0249.0	261.0 199.0	242.0242.0	242.0242.0	254.0 207.0	228 0228 0	228 0228 0	240.0 107.0
	75	231.0 212.0	245.0 153.	0 251.0 96.0	218.0 210.0	241.0 151.0	253.0 93.1	195.0 195.0	2270 146.0	250.0.90.3	1770 1770	203.0.146.0	230 0 94 0
000	80	237.0 237.0	247.0 188.	0 254.0 128.0	230.0 230.0	243.0 194.0	256.0 117.0	215 0 215 0	229 0 193 0	251.0 125.0	196 0 196 0	2070 183 0	240 0 130 (
600	85	245.0 245.0	249.0 226.	0 258.0 158.0	243.0 243.0	246.0 236.0	260.0 168.0	233.0 233.0	233 0 233 0	253.0 173.0	216 0 216 0	216 0 216 0	241.0 175.0
	90	253.0 253.0	252.0252.	0261.0 187.0	253.0253.0	253.0253.0	263 0204 0	2470 2470	2470 2470	256 0214 0	235 0235 0	1225 0225 0	241.0 173.0

- NOTES:

 1. Dry Coil Condition. Total Gross Cooling Capacity (MBh) shown to the left is not applicable. In this case the Sensible Heat Capacity (SHC) is the total capacity.

 2. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling subtract indoor fan heat.

 3. MBH = Total Gross Capacity

 4. SHC = Sensible Heat Capacity

^{*}Indicates both downflow and horizontal units.



Performance Data

(20 Ton)

Table PD-8 — Evaporator Fan Performance — 20 Ton — W C*240B

								Externa	al Static	Pressure	(Inches	of Water)							
		10		20	.3	30	.4	10		50		30		70	3.	30	.9	0	1.0	00
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
		5	HP Sta	ndard N	Notor &	Field S	upplied	Low S	tatic Dr	ive (1)		100000	5	HP St	andard	Motor	& Driv	/e		
6400		_	531	1.80	556	1.97	582	2.14	610	2.28	634	2.44	658	2.61	681	2.79	705	2.98	729	3.19
7200	552	2.23	576	2.16	605	2.60	631	2.81	655	3.00	678	3.18	701	3.36	722	3.55	743	3.74	763	3.94
8000	605	3.01	627	3.16	655	3.39	679	3.63	702	3.86	724	4.07	745	4.28	766	4.48	786	4.68	805	4.90
8800	648	3.83	678	4.10	705	4.34	729	4.61	751	4.87	771	5.12	791	5.36	811	5.59	830	5.81	848	6.03
9600	702	4.91	729	5.21	755	5.49	779	5.77	800	6.06	820	6.34	839	6.61	857	6.88	875	7.13	893	7.37
							The state of the s		(2)	40-004-00		7.5	HP O	versize	d Moto	r & Dr		200	

Table PD-8 — Evaporator Fan Performance — 20 Ton — W C*240B — Continued

								Externa	al Static	Pressure	(Inches	of Water	.)							- 8
	1.	10	1.	20	1.	30	1	40	1.	50	1.	60	1.	70	1.	80	1.9	90	20	00
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
			5 HP St	andard	Motor a	& Drive					HP St	andard	Motor 8	& High	Static	Drive A	ccesso	orv		
6400	753	3.39	776	3.59	799	3.80	. 822	4.02	844	4.24	865	4.47	886	4.69	906	4.92	925	5.16	944	5.40
7200	784	4.15	806	4.38	827	4.61	848	4.84	869	5.07	889	5.30	910	5.54	930	5.79	950	6.04	969	6.29
8000	824	5.11	842	5.32	860	5.55	880	5.80	899	6.06	918	6.31	937	6.56	956	6.81	974	7.07	993	7.33
8800	866	6.26	884	6.49	901	6.73	917	6.96	934	7.20	951	7.46	969	7.74	986	8.02	1004	8.30	333	1.55
9600	910	7.61	927	7.85	943	8.10	960	8.35	975	8.61					_	0.02	1004	0.50		_
			7	.5 HP O	versize	d Motor	& Driv	e										No-00	100000	1000

Notes: Fan motor heat (MBH) = 3.15 x Fan BHP. Data includes pressure Drop Due to Wet Coils and Filters.

No accessories or options are included in pressure drop data.

Refer to Table PD-19 to determine add I static pressure drop due to other options/accessories.

Notes:

1. Field Supplied Fan Sheave BK190 Required. Field Supplied Belt may be

necessary.

2. 7.5 HP Oversize Motor with Field Supplied Motor Sheave 1VP50 Required. Field Supplied Belt may be necessary.

Trane's factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions, Using the full horsepower range of our fan motors as shown in our tabulated data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.



Data

Performance (12½ - 20 Tons)

Table PD-12 — Static Pressure Drops Through Accessories (Inches Water Column)

	Unit		Standard	2 Inch		nizer with Dampers ¹			Electric He ccessory (
Tons	Model No.	CFM	Filters ³	Pleated Filters⁴	100% OA	100% RA	5-12	14-23	36	54	72
		4000	0.05	0.08	0.20	0.02	_	0.03	0.03	0.04	
121/2	WC+150B	5000	0.07	0.11	0.26	0.03	_	0.04	0.05	0.06	
		6000	0.11	0.15	0.35	0.04	_	0.06	0.07	0.09	_
		4800	0.07	0.10	0.24	0.03		0.04	0.04	0.05	
15	WC-180B	6000	0.11	0.15	0.35	0.04		0.06	0.07	0.08	_
		7200	0.15	0.19	0.42	0.05	_	0.09	0.10	0.12	-
		6400	0.07	0.11	0.22	0.04	_	-	0.06	0.08	0.09
	WCD240B	8000	0.11	0.15	0.31	0.05	-	_	0.10	0.12	0.14
	(1 	9600	0.16	0.02	0.44	0.07	_	9 <u>2222</u>	0.14	0.17	0.20
20		6400	0.06	0.01	0.22	0.04	_	_	0.06	0.08	0.09
	WCH240B	8000	0.09	0.13	0.31	0.05	_	_	0.10	0.12	0.14
		9600	0.13	0.17	0.44	0.07		_	0.14	0.17	0.20

NOTES:

1. OA = Outside Air and RA = Return Air.

2. Nominal KW ratings at 240, 480, 600 volts.

3. Tested with:2" filters 12½-20 tons.

4. Difference in pressure drop should be considered when utilizing optional 2" pleated filters.

^{*}Indicates both downflow and horizontal units.



Performance (20 Ton) Data

Table PD-16 — 20 Ton Downflow Three Phase Heating Capacities (Net) WCD240B3, B4, BW At 8000 CFM

Outdoor Temp.		Heating Cated Indoo				otal Powe ated Indo		ratts A alb Temp.	
F.	60	70	75	80	60	70	75	80	
-8	78.1	75.8	74.9	74.0	16.7	17.8	18.4	19.1	
-3	86.8	84.4	83.4	82.5	16.8	17.9	18.6	19.3	
2	96.0	93.6	92.4	91.4	16.9	18.1	18.7	19.5	
7	106.4	103.8	102.0	100.9	17.1	18.3	18.9	19.7	
12	119.9	117.1	115.8	114.6	17.3	18.6	19.2	20.0	
17	131.0	128.0	126.6	125.3	17.5	18.8	19.5	20.2	
22	142.5	139.4	137.9	136.4	17.7	19.0	19.8	20.5	
27	154.5	151.2	149.6	148.0	18.0	19.3	20.0	20.8	
32	167.2	163.6	161.7	160.0	18.3	19.6	20.3	21.1	
37	180.8	176.9	174.8	172.9	18.5	19.8	20.5	21.3	
42	194.0	189.8	187.5	185.5	18.7	20.0	20.7	21.5	
47	213.9	209.0	206.6	204.3	18.9	20.2	20.9	21.7	
52	228.5	223.1	220.4	217.8	19.0	20.4	21.1	21.9	
57	243.4	237.4	234.5	231.7	19.4	20.8	21.5	22.3	
62	262.1	255.5	252.3	249.1	19.9	21.2	21.9	22.7	
67	278.3	271.2	267.7	264.1	20.3	21.7	22.4	23.2	
72	295.6	288.1	284.3	280.5	20.8	22.2	23.0	23.8	

For other airflow conditions, see heating capacity correction factor (Table PD-18).

Net Heating Capacity and Power Input include indoor fan heat at nominal cfm and .40 inch ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

Heating capacities and powers are integrated to include the effects of defrost in the frost region.

All heating capacities and power (Kw) are at 70% OD relative humidity.

Table PD-17 — 20 Ton Horizontal Three Phase Heating Capacities (Net) WCH240B3, B4, BW At 8000 CFM

Outdoor Temp.		l Heating C ated Indoo				otal Power ated Indo		atts At ulb Temp.	
F.	60	70	75	80	60	70	75	80	
8	77.7	75.4	74.5	73.6	15.4	16.4	17.0	17.6	
-3	86.3	84.0	82.9	82.0	15.5	16.5	17.1	17.8	
2	95.5	93.0	92.0	90.9	15.6	16.7	17.3	18.0	
7	105.9	103.2	101.5	100.4	15.8	16.9	17.5	18.2	
12	109.9	107.3	106.1	105.0	16.0	17.1	17.8	18.4	
17	120.0	117.3	116.1	114.8	16.2	17.3	18.0	18.7	
22	130.6	127.7	126.4	125.0	16.4	17.6	18.2	18.9	
27	141.6	138.5	137.1	135.6	16.6	17.8	18.5	19.2	
32	153.2	149.9	148.2	146.6	16.9	18.1	18.7	19.5	
37	179.7	175.9	173.8	172.0	17.6	18.9	19.6	20.4	
42	192.9	188.7	186.5	184.5	17.9	19.2	19.9	20.7	
47	210.6	205.8	203.4	201.1	18.3	19.6	20.3	21.0	
52	225.0	219.6	217.0	214.4	19.0	20.3	21.0	21.8	
57	239.6	233.7	230.9	228.0	19.4	20.7	21.4	22.2	
62	256.8	250.3	247.2	244.0	19.8	21.1	21.9	22.6	
67	272.6	265.7	262.3	258.8	20.3	21.6	22.3	23.1	
72	289.6	282.2	278.5	274.8	20.8	22.1	22.9	23.7	

For other airflow conditions, see heating capacity correction factor (Table PD-18).

Net Heating Capacity and Power Input include indoor fan heat at nominal cfm and .40 inch ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.

Heating capacities and powers are integrated to include the effects of defrost in the frost region.

All heating capacities and power (Kw) are at 70% OD relative humidity.



Performance (12½ - 20 Tons) Data

Table PD-21 — Air Tem perature Rise Across Electric Heaters (Degree F)

		12½ Ton 5000 CFM	15 Ton _6000 CFM	20 Ton 8000 CFM
1919004181	1251	Three Phase	Three Phase	Three Phase
KW	Stages	WC* 150B	WC* 180B	WC*240B
9.00	1	_	_	
17.30	1	_	_	_
18.00	1	11.4	9.5	-
27.00	2		_	-
36.00	2	23.0	19.0	14.2
54.00	2	34.1	28.4	21.3
72.00	2	_	2042060000	28.5

Table PD-22 — Electric Heater Temperature Rise Correction Factors

% Variation From Nominal CFM	- 20	- 15	- 10	- 5	0	+5	+10	+15	+20
Temperature Rise Multiplier	1.25	1.17	1.11	1.05	1.00	0.95	0.91	0.87	0.83



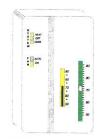
Controls

Field Installed Control Options

Zone Sensors

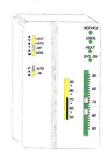
Zone sensors are the building occupant's comfort control devices. They replace the conventional electro-mechanical thermostats. The following zone sensor options are available for Voyager units with the ReliaTel™ control:

Manual Changeover Heat, Cool or Off System Switch. Fan Auto or Off Switch. One temperature setpoint lever.



Manual/Automatic Changeover Auto, Heat, Cool or Off System Switch.

Fan Auto or Off Switch. Two temperature setpoint levers. Optional Status Indication LED lights, System On, Heat, Cool, or Service.



Remote Sensor Sensor(s) available for all zone sensors to provide remote sensing capabilities.



Dual Thermistor Remote Zone Sensor This sensor will allow the customer to reduce the total number of remote sensors to obtain space temperature averaging. This sensor should be utilized with Relia Tel controls.

Digital Display Zone Sensor

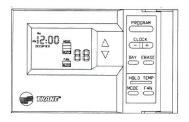
The Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality

of standard zone sensors. This sensor includes a digital display of set point adjustment and space temperature in F (Fahrenheit) or C (Celsius). Includes FAN and SYSTEM buttons (supports the service functions of the standard



sensor). E-squared memory stores last programmed set points. Requires 24 VAC (Volts AC). This sensor should be utilized with ReliaTel™ controls.

Program mable Night Setback Auto or manual changeover with sevenday programming. Keyboard selection



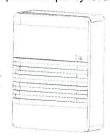
of Heat, Cool, Fan, Auto, or On. All programmable sensors have System On, Heat, Cool, Service LED/indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Un-occupied, and two (2) Override programs per day.

Integrated
Comfort™
System
Sensor(s)
available with optional
temperature
adjustment and override buttons to provide central control through a
Trane Integrated
Comfort™ system.



 $CO_2\,S\,\varepsilon\,n\,s\,in\,g\,$ —The $CO_2\,sensor\,has\,the$ ability to monitor space occupancy levels

within the building by measuring the parts per million of CO₂ (Carbon Dioxide) in the air. As the CO₂ levels increase, the outside air damper modulates to



meet the CO₂ space ventilation requirements. The CO₂ sensor kit is available as a field installed accessory.

Economizer Controls

The standard equipment offering is a fixed dry bulb changeover control. In addition, there are two optional controls, Enthalpy and Differential Enthalpy Control.

Enthalpy Control

Replaces the dry bulb control with a wet bulb changeover controller which has a fully adjustable set point. Enthalpy control offers a higher level of comfort control, along with energy savings potential, than the standard dry bulb control. This is due to the additional wet bulb sensing capability.

Differential Enthalpy
Replaces the standard dry bulb control
with two enthalpy sensors that compare
total heat content of the indoor air and
outdoor air to determine the most
efficient air source. This control option
offers the highest level of comfort control,
plus energy efficiency, available.

Remote Potentiometer
Minimum position setting of economizer
can be remotely adjusted with this
accessory.

Differential Pressure Switches
This factory or field-installed option
allows individual fan failure and dirty filter
indication. The fan failure switch will
disable all unit functions and "flash" the
Service LED on the zone sensor. The dirty
filter switch will light the Service LED on
the zone sensor and will allow continued
unit operation.

Trane Communication Interface (TCI) This factory or field-installed microprocessor interface allows the unit to communicate to Trane's Integrated Comfort TM system.



Electrical Data

Table ED-1 — Unit Wiring

Tons		Unit Operating Voltage Range	Standard	d Indoor Fan Motor	Oversize Indoor Fan Motor		
	Unit Model No.		Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker ¹	Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker ¹	
	WC* 150B3	187-253	66.0	80	72.0	80	
121/2	WC*150B4	414-506	31.0	40	34.0	40	
	WC* 150BW	517-633	25.0	30	28.0	35	
	WC* 180B3	187-253	77.0	90	83.0	100	
15	WC*180B4	414-506	40.0	45	43.0	50	
	WC* 180BW	517-633	32.0	35	34.0	40	
	WC*240B3	187-253	96.0	125	103.0	125	
20	WC*240B4	414-506	49.0	60	53.0	60	
	WC*240BW	517-633	38.0	45	41.0	50	

Table ED-2 — Electrical Characteristics — Power Exhaust Accessory

	Accessory	Accessory Operating		HP		Amps	
Tons	Model Number	Voltage	Phase		RPM	FLA	LRA
30de374	BAYPWRX019	208-230	1	3/4	1040	6.6	13.5
12½, 15, 20	BAYPWRX020	460	1	3/4	1040	3.2	8.4
	BAYPWRX021	575	1	3/4	1040	2.1	5.2

NOTE:
1. HACR type circuit breaker per NEC.

^{*}Indicates both downflow and horizontal units.



Electrical Data

Table ED-3 — Unit Wiring With Electric Heat (Single Point Connection, Continued)

Tons	To Use With	Heater Model No.			Stan	dard Indoor Motor	Oversize Indoor Motor		
			Heater KW Rating ¹	Control Stages	MCA	Max Fuse Size Or Max Circuit Breaker ²	MCA	Max Fuse Size Or Max Circuit Breaker ²	
			208	/230 Volt	s Three F	Phase			
	3417 N. S.	AYDHTRK318A	13.5/18.0	1	113/120	125/125	119/127	125/150	
	WCD150B3	AYDHTRK336A	27.0/36.0	2	160/175	175/175	166/181	175/200	
4017		AYDHTRK354A	40.5/54.0	2	207/229	225/250	213/235	225/250	
12½		AYHHTRN318A	13.5/18.0	1	113/120	125/125	119/127	125/150	
	WCH150B3	AYHHTRP336A	27.0/36.0	2	160/175	175/175	166/181	175/200	
		AYHHTRP354A	40.5/54.0	2	207/229	225/250	213/235	225/250	
		AYDHTRK318A	13.5/18.0	1	124/131	125/150	130/137	150/150	
	WCD180B3	AYDHTRK336A	27.0/36.0	2	171/185	175/200	177/191	200/200	
	Q	AYDHTRK354A	40.5/54.0	2	218/240	225/250	224/246	225/250	
15		AYHHTRN318A	13.5/18.0	1	124/131	125/150	130/137	150/150	
	WCH180B3	AYHHTRP336A	27.0/36.0	2	171/185	175/200	177/191	200/200	
		AYHHTRP354A	40.5/54.0	2	218/240	225/250	224/246	225/250	
		AYDHTRL336A	27.0/36.0	2	190/204	200/225	197/212	200/225	
	WCD240B3	AYDHTRL354A	40.5/54.0	2	237/258	250/300	244/266	250/300	
		AYDHTRK372A	54.0/72.0	2	284/312	300/350	291/320	300/350	
20		AYHHTRN336A	27.0/36.0	2	190/204	200/225	197/212	200/225	
	WCH240B3	AYHHTRN354A	40.5/54.0	2	237/258	250/300	177/266	250/300	
		AYHHTRN372A	54.0/72.0	2	284/312	300/350	224/320	300/350	

NOTES:
1. Heater kw ratings are at 208/240 for 208/230V unit 480V for 460 V unit
2. HACR type circuit breaker per NEC.



Electrical Data

Table ED-3 — Unit Wiring With Electric Heat (Single Point Connection, Continued)

	To Use With	Heater Model No.			Star	ndard Indoor Motor	Oversize Indoor Motor	
Tons			Heater KW Rating ¹	Control Stages	MCA	Max Fuse Size Or Max Circuit Breaker ²	MCA	Max Fuse Size Or Max Circuit Breaker ²
			575	Volts Th	ree Pha	se		
		AYDHTRKW18A	18.0	1	47	50	49	50
	WCD150BW	AYDHTRKW36A	36.0	2	69	70	71	80
4017		AYDHTRKW54A	54.0	2	90	90	93	100
121/2		AYHHTRNW18A	18.0	1	47	50	49	50
	WCH150BW	AYHHTRQW36A	36.0	2	69	70	71	80
		AYHHTRPW54A	54.0	2	90	90	93	100
		AYDHTRKW18A	18.0	1	54	60	56	60
	WCD180BW	AYDHTRKW36A	36.0	2	76	80	78	80
		AYDHTRKW54A	54.0	2	97	100	99	100
15		AYHHTRNW18A	18.0	1	54	60	56	60
	WCH180BW	AYHHTRQW36A	36.0	2	76	80	78	80
		AYHHTRPW54A	54.0	2	97	100	99	100
		AYDHTRLW36A	36.0	2	81	90	84	90
	WCD240BW	AYDHTRLW54A	54.0	2	103	110	106	110
		AYDHTRKW72A	72.0	2	125	125	128	150
20		AYHHTRNW36A	36.0	2	81	90	84	90
	WCH240BW	AYHHTRNW54A	54.0	2	103	110	106	110
		AYHHTRNW72A	72.0	2	125	125	128	150

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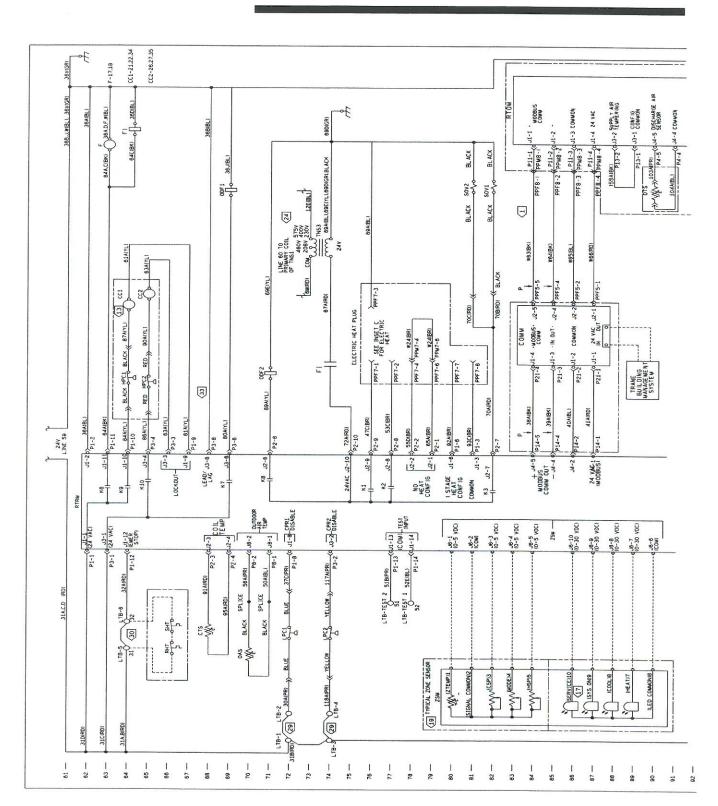
NOTES:
1. Heater kw ratings are at 600V for 575V unit
2. HACR type circuit breaker per NEC.

^{*}Indicates both downflow and horizontal units.



Typical Wiring

(121/2 - 20 Tons)



ACKNOWLEDGEMENT FORM

ADDENDUM NO. 1

BID NO. 2018-008 FURNISH AND INSTALL (2) HVAC SYSTEMS

I acknowledge receipt of Addendum No. 1 for BID No. 2018-008, Furnish and Install (2) HVAC Systems. This addendum contains five (5) pages. Please include the original of this form in your qualifications submission.

NOTE: The original of this form must be included with your qualifications

submission.