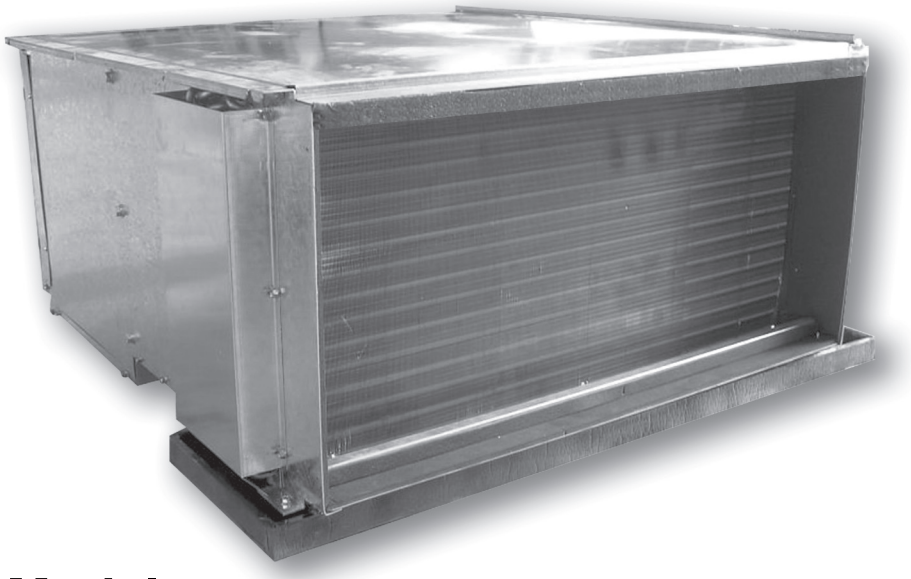
TRANE®

Installation
Operation
Maintenance

Commercial
Chilled Water
Blower Coil Unit, FWDP



Models

FWDP 008	FWDP 024
FWDP 014	FWDP 028
FWDP 018	FWDP 032

FWDP-SVX01A-E4 (June 08)

General Information

Foreword

These instructions do not attempt to cover all variations in systems, nor to provide for every possible contigency to be met in connection with installation. Should further information be desired or should particular problems arise which are not sufficiently covered for the purchaser's purpose, the matter should be referred to the manufacturer.

Warranty

Warranty is based on the general terms and conditions of Trane Company. The warranty is void if the equipments is repaired or modified without the written approval of the manufacturer, if the operating limits are exceeded or if the control system or the electrical wiring is modified. Damage due to misuse, lack of maintenance or failure to comply with the manufacturer's instructions or recommendations is not covered by the warranty obligation.

Reception

On arrival, inspect the unit before signing the delivery note. Specify any damage on the delivery note, and send a registered letter of protest to the last carrier of the goods **within 72hours** of delivery. Notify the local Trane Sales Office at the same time. The unit should be totally inspected within 15 days of delivery. If any concealed damage is discovered, stop unpacking the shipment. Take photos of the damaged material if possible. Notify the Carrier immediately by phone and registered mail. Notify the local Trane Sales Office. Concealed damage must be reported within 15 days of delivery. Check the unit nameplate to confirm that the proper unit was shipped. Available power supply must be compatible with electrical characteristics specified on component nameplates.

Installation

General Information

This manual covers the installation, operation and maintenance of the Trane FWDD Chilled Water Blower Coil units. These new air handler models are completely redesigned to incorporate a single slab coil assembly, improved application flexibilty, servicing and maintenance accessibility and an improved accessory line.

Note: *"Warnings" and "Cautions" appear at appropriate places in this manual. Your personal safety and the proper operation of this machine require that you follow them carefully. The manufacturer assumes no liability for instllations or servicing performed by unqualified personnel.*

Handling

The unit will be supplied with a shippling base and protective packaging over the unit casing. The packaging should be kept on the unit during handling or storage on site.

If it is necessary to remove the packaging for inspection prior to completion of on site handling, retain packaging parts and reapply them by tapping in position to prevent damage to the casing. The unit as supplied has a shipping base which is suitable for handling by a fork lift truck. If it is necessary to sling the unit, use spreader bars under the shipping base. Ensure that ropes do not cause abrasion to the surface of the unit.

Content

TRANE®

FWDP
MODEL NOMENCLATURE

F W D P 0 0 8 R B 3 0 0 0 A A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Digit 1,2, 3 [F W D] — BLOWER COIL UNIT, DIRECT DRIVE, Cooling Only

Digit 4 [P] — Development Sequence, P

Digit 5,6,7 [0 0 8] — Nominal Capacity, Airflow[CFM]

008	=	800	014	=	1400
018	=	1800	024	=	2400
028	=	2800	032	=	3200

Digit 8 [R] — Coil Connection Side
L: Left Hand Connection
R: Right Hand Connection

Digit 9 [B] — Electrical rating / Utilization Range : Volt/Phase/Hz.
B = 220 - 240V / 1Ph / 50Hz

Digit 10 [3] — Chilled Water Coil
3 = 3 Rows
4 = 4 Rows
6 = 6 Rows (ONLY FOR FWDP 024/028/032)

Digit 11 [0] — Future Use

Digit 12 [0] — Future Use

Digit 13 [0] — Future Use

Digit 14 [A] — Minor Design Sequence
A = First

Digit 15 [A] — Service Indicator

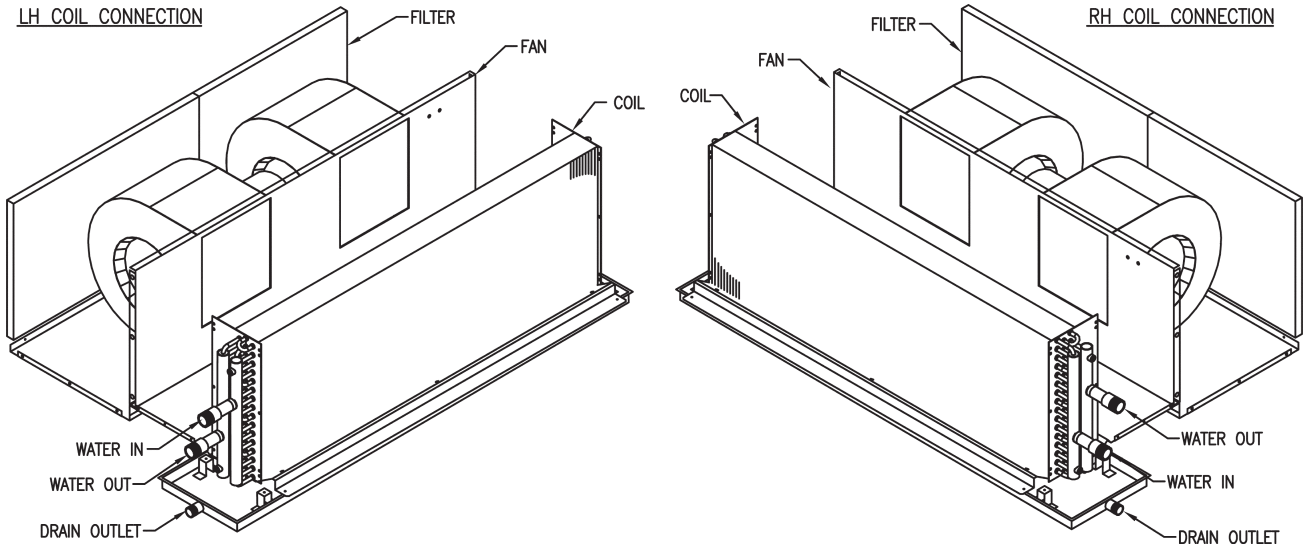
MODEL	MTR	FAN
FWDP 008	165W	KDD 8/8
FWDP 014/ 018	550W	KDD 9/9
FWDP 024	750W	KD2 9/7
FWDP 028/ 032	1100W	KD2 9/9

General Data
FWDP, 008, 014, 018, 024, 028, 032

		FWDP008	FWDP014	FWDP018	FWDP024	FWDP028	FWDP032
Cooling coil	unit						
Tube size, OD	mm	9.5	9.5	9.5	9.5	9.5	9.5
Face area	m2	0.26	0.26	0.33	0.46	0.62	0.67
Water in/out size	mm	1” (25mm) BSPT Male THD					
Drain pipe size	mm	3/4" (19mm) BSPT Male THD					

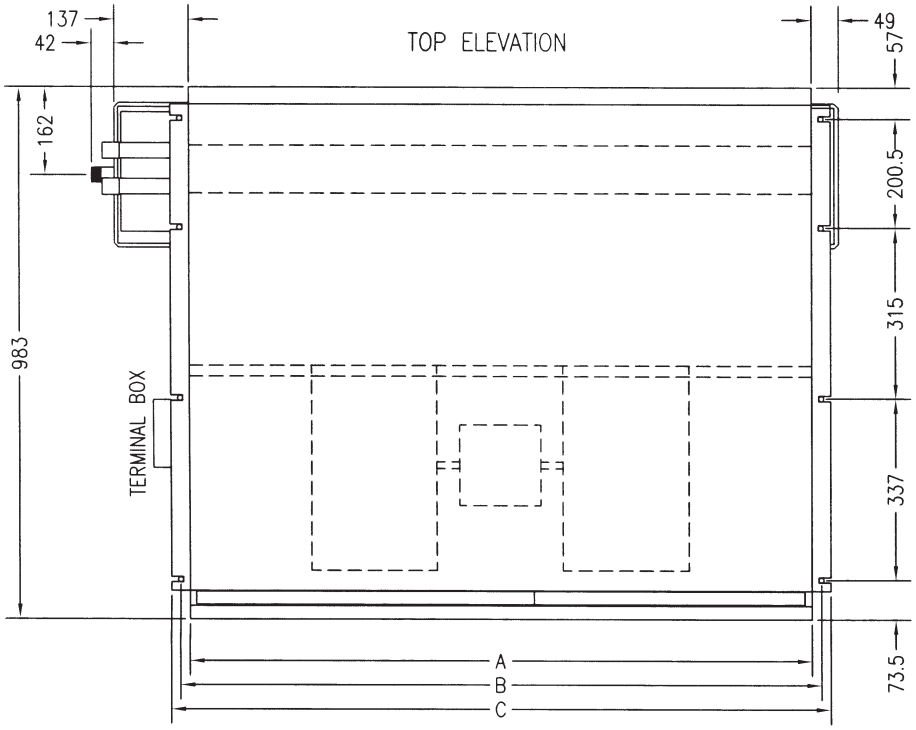
Fan type		FC Centrifugal					
Quantity	pc	1	1	1	2	2	2
Drive type		Direct drive					
Number of speed		1 speed	3 speeds				
Number of motor	pc	1	1	1	1	1	1
Power input	KW	0.165	0.55	0.55	0.75	1.1	1.1
Full Load Amps, Hi/Med/Lo	Amps	1.3	5.6/5.3/4.5	5.6/5.3/4.5	5.8/5.5/4.4	9/8.5/7.5	9/8.5/7.5

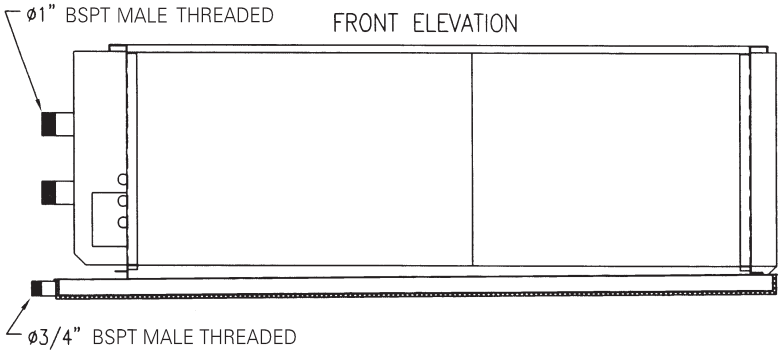
Filter		25mm					
Quantity	pc	1	1	1+1	1 + 1	3	2 + 1
Size (nominal)		16"x25"	16"x25"	15"x20"/15"x15"	16"x20"/16"x25"	16"x20"	16"x20"/16"x25"
Net weight	kg	54	58	68	82	114	120



GENERAL UNIT CONSTRUCTION

Dimensional Data
FWDP 008/014/018/024/028/032





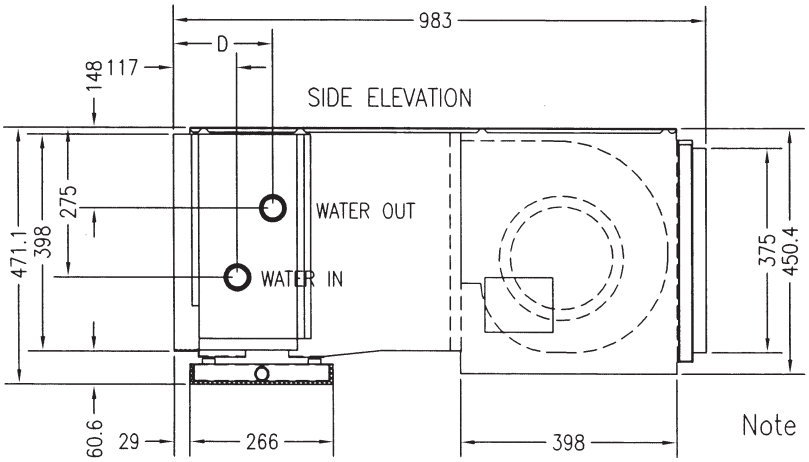


Table 1: - Fan Coil Dimensions

MODEL	A	B	C
008/014	635	669.5	703.5
018	813	847.5	881.5
024	1148	1182.5	1216.5
028	1524	1558.5	1592.5
032	1651	1685.5	1719.5

	D		
MODEL	3 ROWS	4 ROWS	6 ROWS
008/014	161	183	
018			
024			227
028			
032			

Note: - Dimensions are in mm.

NOTES: -
KDD FAN FOR FWDP 008/014/018
KD2 FAN FOR FWDP 024/028/032

Note :- All dimensions are in mm.

Unit Installation

⚠ WARNING: OPEN AND LOCK UNIT DISCONNECT TO PREVENT INJURY OR DEATH FROM ELECTRIC SHOCK OR CONTACT WITH MOVING PARTS BEFORE ATTEMPTING ANY INSTALLATION OR MAINTENANCE.

The general location of the air handler is normally selected by the architect, contractor, and/or buyer. For proper installation, the following items must be considered.

1. Available power supply must agree with electrical data on component nameplate.
2. Air handlers shipped wired for 220 - 240 Volt applications.
3. If external accessories are installed on the unit, additional clearances must be provided.
4. All duct work should be properly insulated to prevent condensation and heat loss.

Note: It is recommended that the outline drawings (page6) be studied and dimensions properly noted and checked against selected installation site.

Important: *If adding external accessories to the unit, additional clearances must be considered for the over all space needed.*

Lifting Recommendation

Before preparing the unit for lifting, the center of gravity should be determined for lifting safety. Because of the placement of internal componets, the unit weight may be unevenly distributed.

⚠ WARNING: ON SITE LIFTING EQUIPMENT MUST BE CAPABLE OF LIFTING THE WEIGHT OF THE UNIT WITH AN ADEQUATE SAFETY FACTOR. THE USE OF UNDER CAPACITY LIFTING DEVICES MAY RESULT IN PERSONAL INJURY OR DEATH AND CAUSE DAMAGE TO THE UNIT.

The unit can be moved using a forklift of suitable capacity. For lifting the unit into an elevated mounting pasition, run lifting straps or slings under the unit and attach securely to the lifting device. Use spreader bars to protect the unit casing from damage. Test lift the unit to determine proper balance and stability.

Caution: Use spreader bars to prevent straps from damaging the unit. Install the bars between lifting straps, both underneath the unit and above the unit. This will prevent the straps from crushing the unit cabinet or damaging the unit finish.

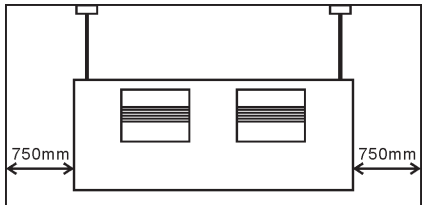
Installation Considerations
For proper installation and operation, check each of the following before mounting the units.

(a) Space Requirement And Clearances.

Allow adequate space for the unit and free air service clearances. See Figure in page 3 general unit dimensions.

For servicing and routine maintenance, provide access to the unit through removable panels in the ceiling..

Figure 1



(b) Location, Mounting And Positioning
Before installing any unit make sure proper preparation has been made at each unit location for piping and electrical connections.

Unit Installation

The unit should be installed for horizontal application only. Suspend the unit using the factory-provided threaded mounting holes on top of the unit. This is usually accomplished through the use of spring or rubber isolators, which are to be furnished by the installer.

All units must be mounted level to assure proper drainage and operation.

Check that the supporting structure is strong enought to support unit weights.

Align the mounting holes with structural support and secure suspension rods to the structure, then to the air handler cabinet. If the mounting holes locations do not permit proper alignment with existing structure. It may be necessary to field fabricate cross members on existing structural beams.

(c) Coil Piping Connections.

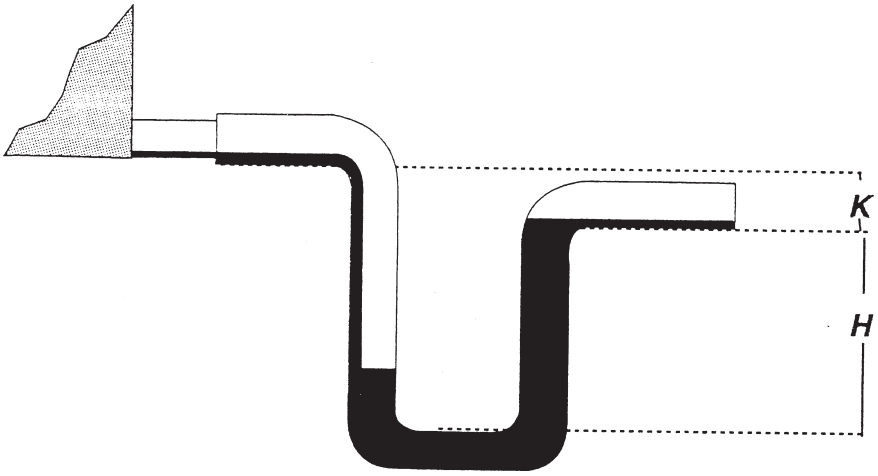
Coils are fitted with 1-1/4" (32mm) BSPT MALE threaded connections. To complete piping connections, attach the water piping with 1-1/4 inch connection to the coil. The water inlet is on the bottom and water outlet on the top of the coil. Coil connection size and coil connection locations are given in page 3.

(d) Condensate Drain Connections.

These air handlers come standard with a drain pan. Drain connections are provided on one side of the air handlers.

For a typical drain trap assembly, see Figure 2.

Figure 2
Drain Pan Trapping for unit under Prositive Pressure



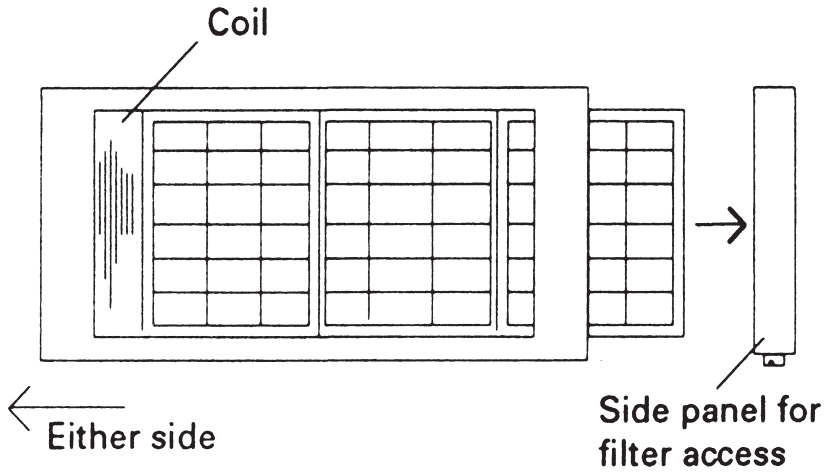
Prositive Pressure Module

The positive pressure unit requires a different design than the negative pressure trap. Refer to Figure and the formula provided to determine the minimum trap depth.

K = min. 1/2

H = 1/2 plus maximum total static pressure
008 / 014 / 018
H = 1”
024 / 028 / 032
H = 1.5”

Unit Installation



(e) Auxiliary Drain Pan

A field fabricated auxiliary drain pan should be installed under the unit especially if the unit is installed above ceilings or in other locations where condensate overflow may cause damage. This drain pan will eliminate any excess condensation that may be due to extreme humidity or an obstructed drain in the primary drain pan. Drain lines from this pan must be installed, but should not be connected to the primary drain line from the unit. Isolate the auxiliary drain pan from both the air handler and the structure.

(f) Filters

Air handlers are shipped with 1 filters installed in the unit. For filter dimensions, refer to page 5. (General data).

To replace filters remove side access panel (either end and slide old filters out and replace with new ones.
Figure 3

(g) Duct Connections

The supply and return ducts should be connected to the unit with flame retardant duct connectors to reduce vibration transmission. The return duct should be sized to the same dimensions as the return inlet of the unit. Refer to Figure in page 3 for the dimension.

(h) Electrical Connections

> ⚠ **WARNING: WHEN INSTALLING OR SERVICING THIS EQUIPMENT, ALWAYS EXERCISE BASIC SAFETY PRECAUTIONS TO AVOID THE POSSIBILITY OF ELECTRIC SHOCK THAT COULD RESULT SEVERE PERSONAL INJURY OR DEATH.**

1. All electrical lines, sizing, protection and ground ing must be in accordance with the National Electric Code and local codes.

2. If conduit is used, isolate whenever vibration transmission may cause a noice problem within the building structure.

3. Ensure all connections are tight and no wires exposed.

4. All accessories must be installed and wired according to the instructions packaged with that accessory.

Installation Checklist

Complete this checklist once the unit is installed to verify that all recommended procedures have been accomplished before the system is started. Operational checks cannot be performed until the system in terconnection is complete.

1. Verify that the unit electrical power is disconnected.

2. Inspect all field wiring connections. All connections should be clean and tight.

3. Inspect unit suspension arrangement(s). Ground must comply with all applicable codes.

4. Inspect unit suspension arrangement (if used). Unit position must be secure. Remove any tools or debris found in or near the unit.

5. Inspect duct outlets. Outlets must be open and unrestricted.

6. Inspect unit drain lines. Pipe connections must be tight and drain line unrestricted.

7. Inpect fan assembly to insure all moving parts move freely.

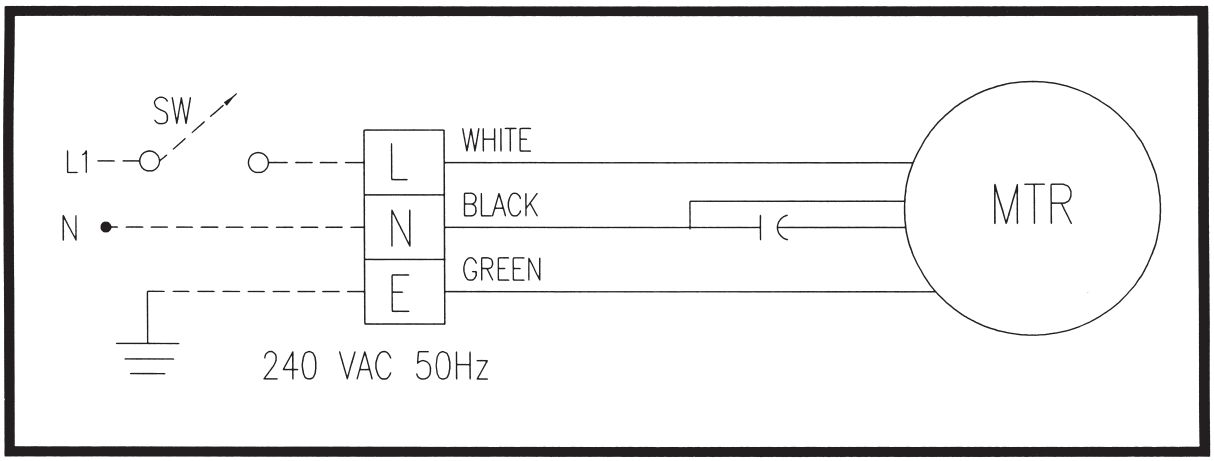
8. If unit is horizontally mounted, make sure secondary drain pan has been installed.

9. Inspect unit for proper filters, securely installed. All cabinet panels must be secured.

10. Instruct owner/operator on proper system operating and maintenance procedure.

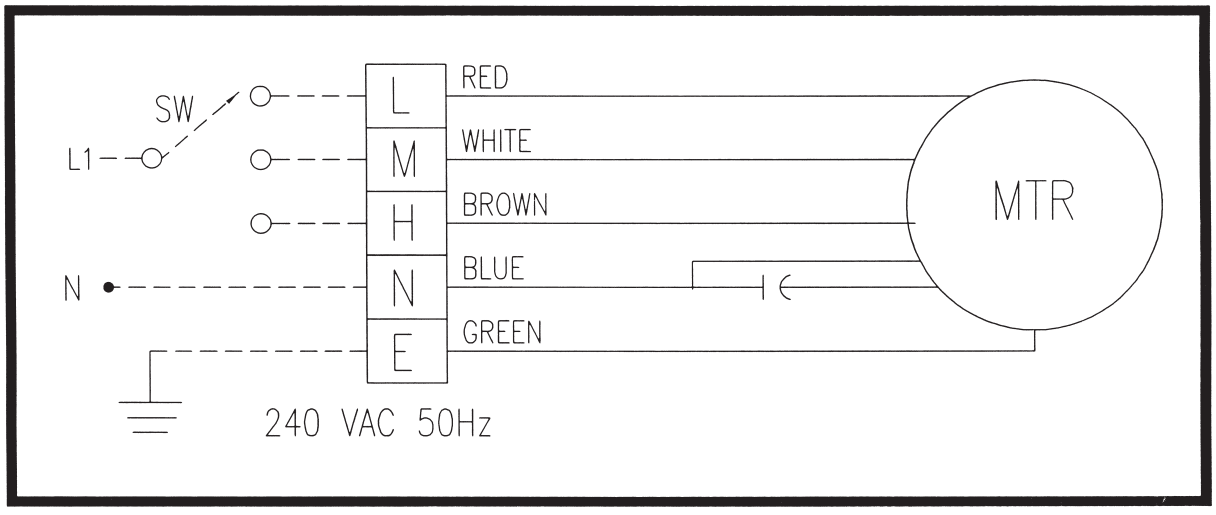
Wiring Diagram

FWDP 008



SINGLE SPEED MOTOR

FWDP 014/018/024/028/032



3 SPEED MOTOR

LEGEND

⊣∈	CAPACITOR	E	EARTH
MTR	DIRECT DRIVE MOTOR	SW	SWITCH (FIELD SUPPLIED)
– –	FIELD WIRING	L	LOW SPEED
N	NEUTRAL	M	MEDIUM SPEED
L1	LIVE	H	HIGH SPEED

Unit Installation

Maintenance Contract

It is strongly recommended that you sign a maintenance contract with your local Service Agency. This contract provides regular maintenance of your installation by a specialist in our equipment. Regular maintenance ensures that any malfunction is detected and corrected in good time and minimizes the possibility that serious damage will occur. Finally, regular maintenance ensures the maximum operation life of your equipment. We would remind you that failure to respect these installation and maintenance instructions may result in immendiate cancellation of the warranty.

Training

The equipment described in this manual is the result of many years of research and continuous developement. To assist you in obtaining the best use of it, and maintaining it in perfect operating condition over a long period of time, the constructor have at your disposal a refrigeration and air conditioning service school. The principal aim of this is to give operators and maintenance technicians a better knowledge of the equipment they are using, or that is under their charge. Emphasis is particualrly given to the importance of periodic checks on the unit operating parameters as well as on preventive maintenance, which reduces the cost of owning the unit by avoiding serious and costly breakdown.

The constructors policy is one of continuous product improvement, and he reserves the right to alter any details of the products at any time without notice.

This publiction is a general guide to install, use and properly maintain our products. The information given may be different from the specification for a particular country or for a specific order. In this event, please refer to your nearest TRANE office.

For additional information, contact:

TRANE®

Trane
www.trane.com

For more information, contact your local district office

Literature Order Number FWDP-SVX01A-E4 (June 2008)

File Number

Supersedes FWDP-SVX01A-E4 (July 2006)

Stocking Location Malaysia