TRANE

Chilled Water Fan Coil Unit

Model:HFCA

Size 03~14

The Best Choice for Comfort

The Best Results

- Quiet Comfort
  - Slope coil avoid air flow perpendicular impact
  - Low noise permanent split capacitor motor
  - Metal fan wheel both statically and dynamically balanced
  - Treaded connection, match up duct collars and keyholes for hangers shorten installation time
  - Quick delivery helps meet tight installation schedules
- Latest Perfection
  - Cleaner, quieter and more efficient fin design.

The Best System

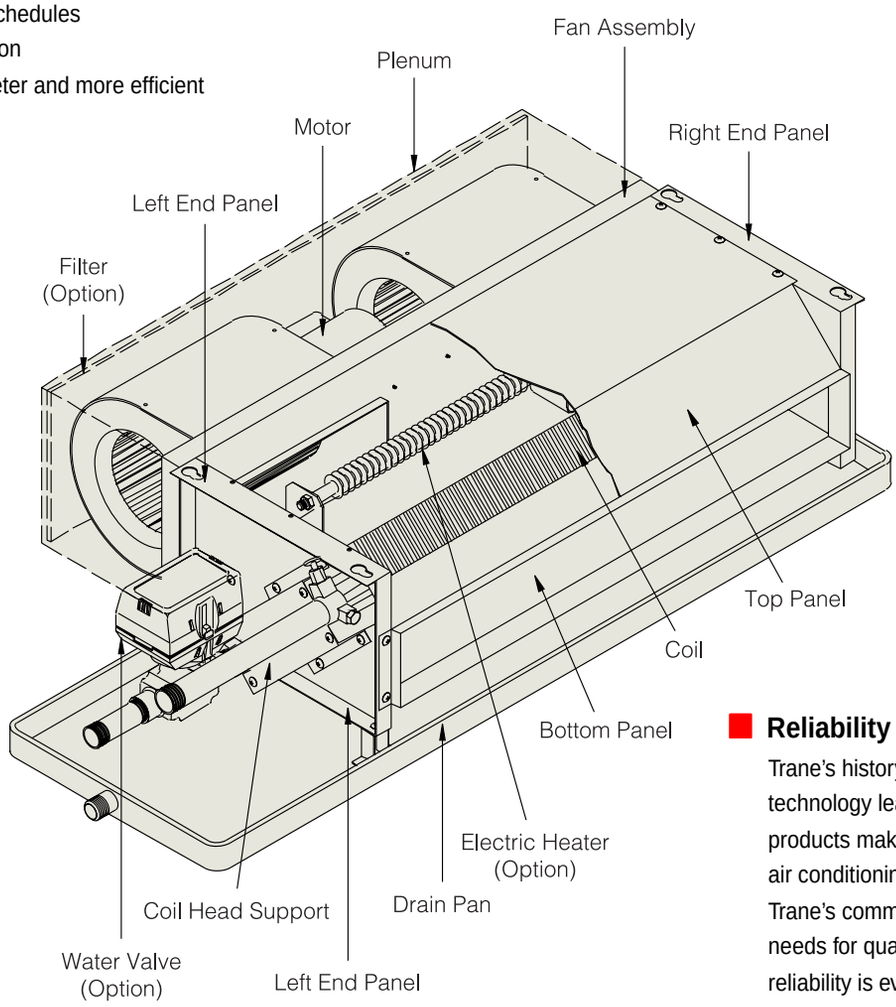
- Design for hidden comfort in home, office or shop. HFCA is easily installed in a false ceiling or closet, HFCA is the ideal solution for new or replacement applications.

Flexibility

- Easy to change water hand connections on the field.

The Best Fit

- Seven sizes to meet capacity requirements while minimizing the size fan coil needed
- One unit provides total comfort requirements: both cooling and heating
- Low height of just 250mm on all sizes means no difficulty in fitting tight ceiling applications



Reliability

Trane's history of innovation and technology leadership led to quality products making Trane a leader in the air conditioning markets worldwide. Trane's commitment to customer's needs for quality, efficiency and reliability is evident from the largest chiller to smallest fan coil.

HFCA Model Nomenclature

H	F	C	A	03	C	N	H	1	N	A	N	B
1	2	3	4	5,6	7	8	9	10	11	12	13	14

DIGIT 1 - Position
H = Horizontal

DIGIT 2 - Unit Type
F = Fan Coil

DIGIT 3 - Casing
C = Concealed

DIGIT 4 - Development Sequence
A = First

DIGIT 5.6 - Size / Nominal CFM
03 = 300 CFM
04 = 400 CFM
06 = 600 CFM
08 = 800 CFM
10 = 1000 CFM
12 = 1200 CFM
14 = 1400 CFM

DIGIT 7 - Coil Row, Connection Side
A = 2 Row Cooling, Right Hand
B = 2 Row Cooling, Left Hand
C = 3 Row Cooling, Right Hand
D = 3 Row Cooling, Left Hand
E = 4 Row Cooling, Right Hand
F = 4 Row Cooling, Left Hand
G = 2 Row Cooling, 1 Row Heating, Right Hand
H = 2 Row Cooling, 1 Row Heating, Left Hand
J = 3 Row Cooling, 1 Row Heating, Right Hand
K = 3 Row Cooling, 1 Row Heating, Left Hand
S = Special

DIGIT 8 - Electric Heat 115V / 220V (240V)
N = None
A = 1.0 kW(1.2 kW) Heater (Size 03~14)
B = 1.5 kW(1.8 kW) Heater (Size 04~14)
C = 2.0 kW(2.4 kW) Heater (Size 06~14)
D = 2.5 kW(3.0 kW) Heater (Size 08~14)
E = 3.0 kW(3.6 kW) Heater (Size 08~14)
F = 3.5 kW(4.2 kW) Heater (Size 10~14)
G = 4.0 kW(4.8 kW) Heater (Size 12~14)
S = Special
* kW in bracket for 240V only

DIGIT 9 - Motor Type
N = Normal Duty Without Temperature Cutout-standard
M = Normal Duty With Temperature Cutout
H = High Static Without Temperature Cutout
G = High Static With Temperature Cutout
I = Normal Duty Without Temperature Cutout/With Ball Bearing
J = Normal Duty With Temperature Cutout/With Ball Bearing
E = High Static Without Temperature Cutout/With Ball Bearing
F = High Static With Temperature Cutout/With Ball Bearing
A = DCBL Motor For Low ESP(0~40pa)
B = DCBL Motor For High ESP(40~100pa)
S = Special

DIGIT 10 - Voltage/Hertz/Phase
1 = 220-240 / 50 / 1
2 = 220-240 / 60 / 1
5 = 115 / 60 / 1
S = Special

DIGIT 11 - Control Valve Package
N = Thread Connection / Without Valve Package
B = 2 Pipe System / With Single 2-Way 2 Position Valve / Without Thermostat
C = 2 Pipe System / With Single 2-Way 2 Position Valve / With Cool Thermostat
D = 2 Pipe System / With Single 2-Way 2 Position Valve / With Cool/Heat Thermostat
E = 2 Pipe System / With Single 3-Way 2 Position Valve / Without Thermostat
F = 2 Pipe System / With Single 3-Way 2 Position Valve / With Cool Thermostat
G = 2 Pipe System / With Single 3-Way 2 Position Valve / With Cool/Heat Thermostat
H = 4 Pipe System / With 2 Sets 2-Way 2 Position Valve / Without Thermostat
I = 4 Pipe System / With 2 Sets 2-Way 2 Position Valve / With Cool/ Heat Thermostat
V = Standard Piping / Infrared Wireless Control (Cooling & Heating)
W = 2 Pipe System / With Single 2-Way 2 Position Valve / Infrared Wireless Control (Cooling & Heating)
X = 2 Pipe System / With Single 3-Way 2 Position Valve / Infrared Wireless Control (Cooling & Heating)
1 = 2 Pipe System / With Single 2-Way 2 Position Valve / With Trane Wall Mounted Zone Sensor / ZN510 (Cooling Only)
2 = 2 Pipe System / With Single 2-Way 2 Position Valve / With Trane Wall Mounted Zone Sensor / ZN510 (Cooling & Heating)
3 = 2 Pipe System / With Single 2-Way Floating Valve / With Trane Wall Mounted Zone Sensor / ZN520 (Cooling Only)
4 = 2 Pipe System / With Single 2-Way Floating Valve / With Trane Wall Mounted Zone Sensor / ZN520 (Cooling & Heating)
5 = 2 Pipe System / With Single 3-Way 2 Position Valve / With Trane Wall Mounted Zone Sensor / ZN510 (Cooling Only)
6 = 2 Pipe System / With Single 3-Way 2 Position Valve / With Trane Wall Mounted Zone Sensor / ZN510 (Cooling & Heating)
7 = 2 Pipe System / With Single 3-Way Floating Valve / With Trane Wall Mounted Zone Sensor / ZN520 (Cooling Only)
8 = 2 Pipe System / With Single 3-Way Floating Valve / With Trane Wall Mounted Zone Sensor / ZN520 (Cooling & Heating)

DIGIT 12 - Drain Pan
A = STD. Galvanized Steel / 5mm PE Insulation
B = Long Galvanized Steel / 5mm PE Insulation
C = STD. SUS/5mm PE Insulation
D = Long SUS/5mm PE Insulation
E = STD. Galvanized Steel / 6mm Non-Flammable BS476, Part7 Insulation
F = Long Galvanized Steel / 6mm Non-Flammable BS476, Part7 Insulation
G = STD. SUS / 6mm Non-Flammable BS476, Part7 Insulation
H = Long SUS / 6mm Non-Flammable BS476, Part7 Insulation
I = STD. Galvanized Steel / 10mm PE Insulation
J = Long Galvanized Steel / 10mm PE Insulation
K = STD. SUS / 10mm PE Insulation
L = Long SUS / 10mm PE Insulation
M = STD. Galvanized Steel / 15mm PE Insulation
O = Long Galvanized Steel / 15mm PE Insulation
P = STD. Galvanized Steel / 9mm Non-Flammable BS476, Part7 Insulation
Q = Long Galvanized Steel / 9mm Non-Flammable BS476, Part7 Insulation
R = STD. SUS / 15mm PE Insulation
T = Long SUS / 15mm PE Insulation
U = STD. Galvanized Steel / 15mm Non-Flammable BS476, Part7 Insulation
V = Long Galvanized Steel / 15mm Non-Flammable BS476, Part7 Insulation
W = STD. Galvanized Steel / 25mm Non-Flammable BS476, Part7 Insulation
X = Long Galvanized Steel / 25mm Non-Flammable BS476, Part7 Insulation
Y = STD. SUS / 25mm Non-Flammable BS476, Part7 Insulation
Z = Long SUS / 25mm Non-Flammable BS476, Part7 Insulation
S = Special

DIGIT 13 - Plenum / Filters
N = Without Return Plenum / No Filter
A = With Return Plenum / 4mm P.P Nylon Filter
B = With Return Plenum / 12mm Aluminum Media
C = With Return Plenum / 12mm Foam Media
D = With Return Plenum / 20mm Aluminum Media
E = With Return Plenum / 20mm Foam Media
F = With Return Plenum / No Filter
G = With Return Plenum / 25mm Aluminum Media
I = With Return Plenum / 20mm P.P. Nylon Filter
K = With Return Plenum / 12mm Non-Woven
L = With Return Plenum / 20mm Non-Woven
P = With Return Plenum / 25mm Foam Media
S = Special

DIGIT 14 - Design Sequence
B = Second

Note:
1. HFCA will not support sweat connection for standard piping.
2. The wiring of thermostat or zone sensor to motors, ZN or valves must be done on job site.
3. Non-flammable PU insulation meet the regulation of BS476 part7 class 1 and part6 class O.

Performance Data

Cooling Capacity (Example)

Cooling Capacity : kW	Cooling Rows : 3	SH : Sensible Cooling Capacity, kW
EAT : 26.0˚C / 60.0%	Motor Frequency : 50Hz	WPD : Water Pressure Drop, M
ESP : 30 / 60 Pa (Normal / Hi-Static) Applicable	TH : Total Cooling Capacity, kW	WFR : Water Flow Rate, L / S

Model	Nominal Airflow (CMH)	WTR (˚C)	Entering Water Temperature											
			5˚C				7˚C				9˚C			
			SH	TH	WFR	WPD	SH	TH	WFR	WPD	SH	TH	WFR	WPD
03	509	3.0	3.19	5.17	0.41	7.60	2.86	4.43	0.35	5.74	2.54	3.65	0.29	4.03
		5.0	2.92	4.55	0.22	2.47	2.59	3.78	0.18	1.77	2.30	3.02	0.14	1.18
		7.0	2.62	3.85	0.13	1.02	2.32	3.10	0.11	0.69	2.06	2.39	0.08	0.44
04	678	3.0	4.81	7.81	0.62	21.93	4.32	6.72	0.53	16.63	3.84	5.57	0.44	11.80
		5.0	4.45	7.02	0.33	7.35	3.97	5.87	0.28	5.31	3.52	4.74	0.23	3.60
		7.0	4.08	6.13	0.21	3.20	3.63	5.02	0.17	2.23	3.22	3.97	0.14	1.45
06	1018	3.0	5.32	8.58	0.68	9.38	4.78	7.35	0.58	7.06	4.24	6.05	0.48	4.96
		5.0	4.86	7.55	0.36	3.04	4.33	6.27	0.30	2.17	3.85	5.03	0.24	1.46
		7.0	4.39	6.41	0.22	1.26	3.90	5.16	0.18	0.86	3.46	3.99	0.14	0.54
08	1357	3.0	6.92	11.15	0.89	17.68	6.23	9.56	0.76	13.33	5.55	7.88	0.63	9.39
		5.0	6.38	9.90	0.47	5.80	5.69	8.24	0.39	4.16	5.06	6.63	0.32	2.81
		7.0	5.81	8.55	0.29	2.48	5.19	6.97	0.24	1.72	4.62	5.48	0.19	1.12
10	1696	3.0	8.42	13.48	1.07	4.87	7.56	11.50	0.91	3.64	6.71	9.40	0.75	2.53
		5.0	7.60	11.60	0.55	1.52	6.77	9.54	0.46	1.07	5.98	7.53	0.36	0.70
		7.0	6.66	9.27	0.32	0.57	5.85	7.15	0.24	0.36	5.12	5.15	0.18	0.20
12	2036	3.0	10.34	16.56	1.32	8.05	9.30	14.14	1.12	6.03	8.26	11.60	0.92	4.22
		5.0	9.41	14.41	0.69	2.56	8.40	11.93	0.57	1.82	7.46	9.53	0.45	1.21
		7.0	8.43	12.03	0.41	1.03	7.48	9.56	0.33	0.68	6.62	7.25	0.25	0.42
14	2366	3.0	11.19	17.92	1.43	14.15	10.06	15.06	1.24	11.51	8.93	13.15	1.05	8.21
		5.0	10.30	16.10	0.77	4.23	9.17	13.67	0.65	3.32	8.04	11.09	0.53	2.24
		7.0	9.35	14.08	0.48	2.15	8.21	11.49	0.39	1.40	7.13	8.89	0.30	0.91

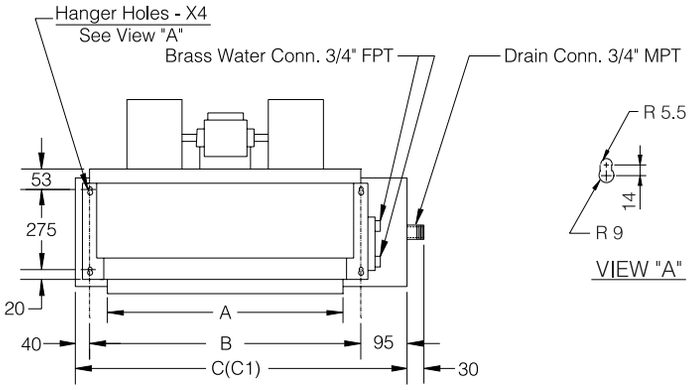
Spec./ Input Power

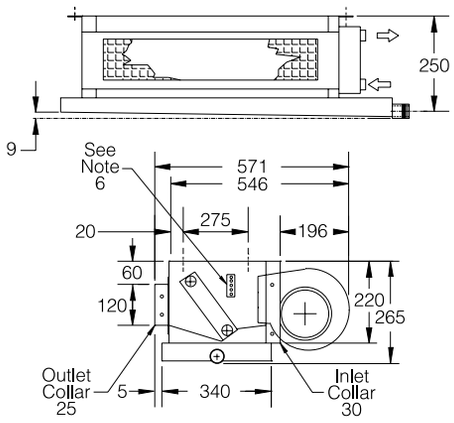
Model	03	04	06	08	10	12	14
Nominal Airflow (CMH)	509	678	1018	1357	1696	2036	2366
Input Power (Watts)*							
Hi-Static Motor	97	110	162	200	286	324	400
Normal Motor	88	98	138	180	218	250	317
*Available with 115V/60Hz, 220V/50Hz, or 220V/60Hz							
Options:							
✻ Heat Capacity Type (kW)							
• Hot Water 1Row	2.86	3.71	4.95	6.16	6.91	7.94	9.26
	EWT=55˚C; EAT=21˚C; WFR=0.3L/S						
• Electric Sheathed Element	1.0	1.5	2	3	3.5	4	4
	Available with high temperature cutout						
✻ Plenum/Filters	Return air plenum with filters-washable foam, PP nylon or aluminium						

Note: It reserves the right to change design and specification without notice.

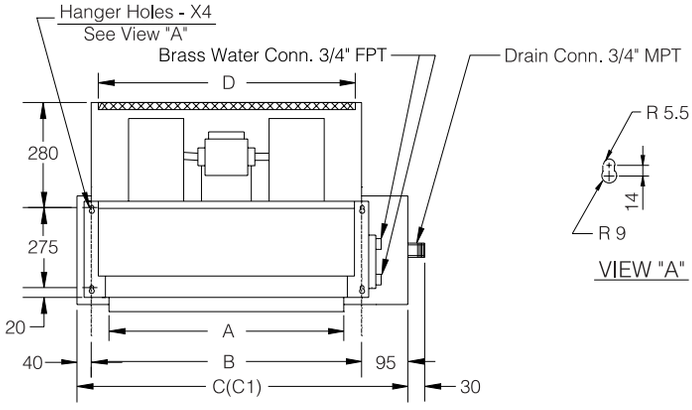
Dimension Data and Weight

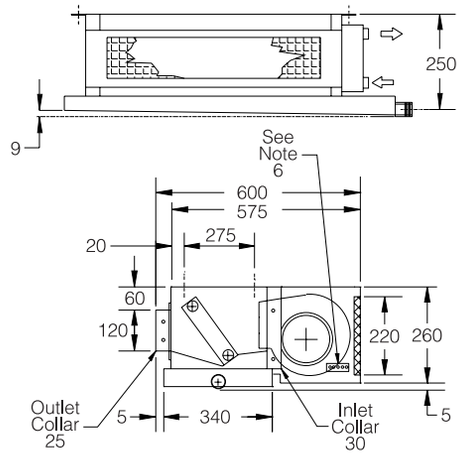
Model HFCA





Model HFCA with Return Plenum and Filter





Note :

1. Dimensions in mm.
2. C1 is the dimension of long drain pan.
3. Right hand coil connection shown.
4. Wiring connection same side as coil and drain connections.
5. Access door below unit required to service fan motor.
6. Wiring controls and junction box not supplied by Trane.
7. Terminal strip supplied with electric heat option only.

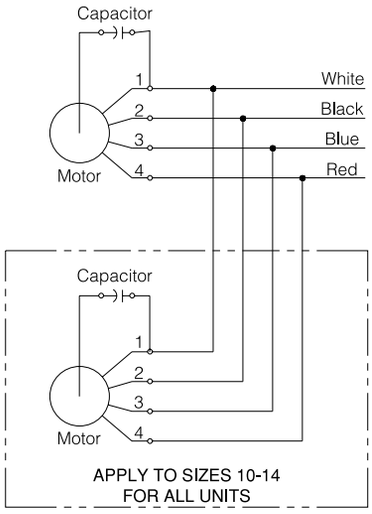
Model Size	External Dimensions(mm)					Number of		Net Weight(Kg)			Net Weight-With Return plenum and Filter (Kg)			Operating Weight(Kg)			Operating Weight-With Return plenum and Filter (Kg)		
	A	B	C	C1	D	Fan(s)	Motor(s)	2Row	3Row	4Row	2Row	3Row	4Row	2Row	3Row	4Row	2Row	3Row	4Row
HFCA-03	480	530	665	964	490	1	1	19	20	21	22	23	24	19.7	21	22.3	22.7	24	26.3
HFCA-04	730	780	915	1164	740	2	1	23	25	26	27	29	30	24.7	26	28.3	28.7	30	32.3
HFCA-06	865	915	1050	1349	875	2	1	25	27	29	31	33	35	26.2	28.8	31.4	32.2	34.8	37.4
HFCA-08	1150	1200	1335	1624	1160	2	1	30	33	35	38	41	43	31.6	35.4	38.1	39.6	43.4	46.1
HFCA-10	1320	1370	1505	1824	1330	3	2	40	43	46	48	51	54	41.8	45.7	49.6	50.8	54.7	58.6
HFCA-12	1570	1620	1755	2074	1580	4	2	44	48	52	55	58	63	46.2	51.2	56.3	57.2	61.2	67.3
HFCA-14	1650	1700	1835	2154	1660	4	2	47	51	55	59	62	67	49.3	54.4	59.5	61.3	65.4	71.5

Sound Power Level

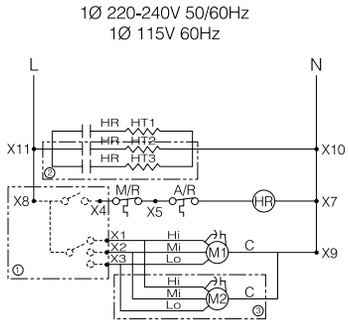
Motor Type		Normal								Hi-Static							
Unit Model	Speed	Octave Band (dB) & Center Frequency (Hz)								Octave Band (dB) & Center Frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000	63	125	250	500	1000	2000	4000	8000
03	High	38	51	48	47	44	43	39	34	43	57	54	54	49	50	39	40
	Medium	33	46	43	42	39	38	34	29	37	51	48	48	43	45	34	34
	Low	29	42	39	38	35	34	30	25	32	46	43	43	38	40	30	29
04	High	40	53	48	50	45	44	37	38	46	61	57	56	52	51	44	43
	Medium	45	48	43	45	40	39	32	31	40	55	51	50	46	45	38	37
	Low	41	44	39	41	36	35	38	27	35	50	46	45	41	40	33	32
06	High	44	57	52	53	48	47	40	39	48	61	59	58	54	53	44	42
	Medium	39	52	47	48	43	42	35	34	42	55	53	52	48	47	38	36
	Low	35	48	43	44	39	38	31	30	38	51	49	48	44	43	34	32
08	High	46	58	52	53	51	50	42	41	48	62	59	60	57	55	46	45
	Medium	41	53	47	48	46	45	37	36	42	56	53	54	51	49	40	39
	Low	37	49	43	44	42	41	33	32	38	52	49	50	47	45	36	35
10	High	47	60	56	55	53	51	44	44	51	64	61	60	59	55	47	46
	Medium	42	55	51	50	48	46	39	39	45	58	55	54	53	49	41	40
	Low	38	51	47	46	44	42	35	35	40	53	50	49	48	44	36	35
12	High	48	62	57	56	52	51	44	46	52	65	61	61	57	58	46	47
	Medium	43	57	52	51	47	46	39	41	46	59	55	55	51	52	40	41
	Low	39	53	48	47	43	42	35	37	41	54	50	50	46	47	35	36
14	High	50	63	60	57	54	52	48	45	54	65	62	63	60	57	50	48
	Medium	45	58	55	52	49	47	43	40	48	59	56	57	54	51	44	42
	Low	41	54	51	48	45	43	39	35	43	54	52	52	49	46	39	37

Notes:
1. Data referenced to 10^{-12} watts.
2. Above performance determined with both Normal static motor and Hi-static motor operating against 0 Pa ESP (no ducting, ceiling material or other sound attenuating materials used).

Wiring Diagram



MOTOR SPEED CONTROL
White and Black Wires = High Speed
White and Blue Wires = Medium Speed
White and Red Wires = Low Speed

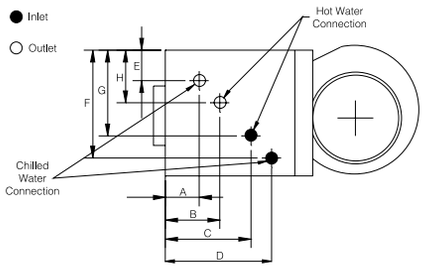


JUNCTION BOX SUPPLIED
WHEN ALL UNITS WITH
ELECTRIC HEAT OPTION

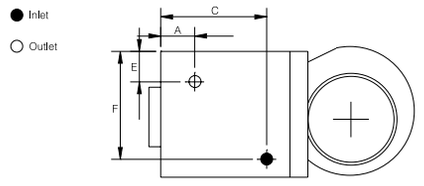
① Field wiring (Thermostat)
② For multiple heaters unit
③ For 10, 12, 14 unit (two motors)
HR: Heater Relay
M/R: Manual reset klixon
A/R: Auto reset klixon
L: Active power (220-240V)
N: Neutral (0V)
X1-X12: Terminals

Connection / Piping

Model HFCA Coil Connections



Cooling & Heating Coil Connection Dimensions								
Unit Size	3 Row (2 Row Cooling / 1 Row Heating)							
	A	B	C	D	E	F	G	H
03~14 Left / Right Hand	69.6	104.2	138.8	173.6	59.8	171.3	134.2	97
Unit Size	4 Row (3 Row Cooling / 1 Row Heating)							
	A	B	C	D	E	F	G	H
03~14 Left / Right Hand	68.1	58.4	115.9	183.1	58.6	158.6	158.6	108.6



Cooling Connection Dimensions												
Unit Size	2 Row Coil				3 Row Coil				4 Row Coil			
	A	C	E	F	A	C	E	F	A	C	E	F
03~14 Left / Right Hand	57	178	51	181	57	178	51	181	41	174	60	176

Note:
1.Dimension in mm
2. 25.4 mm=1 in.

Product Specification

General

- Fabricated with a rigid galvanized steel casing.
- The DIDW centrifugal fans have balanced, galvanized steel, and forward curved blades.
- The fan board and the top of coil casing have insulation of 6mm thickness, 108 kg/m^3 high-density non-flammable PU foam.
- Interchangable coil direction to match water connections on the field.
- An optional return air plenum is available to allow the connection different types of filter.
- IEC 60335 safety certified.

Motor

- Motor is of permanent split capacitor type for maximum efficiency and low noise with sealed sleeve bearing and permanent lubrication.
- The motor capacitor is totally enclosed in a metal shield, and attached to the motor. The motor lead-out wires are enclosed by flexible metal conduit and providing protection against damage.
- Optional ball bearing.
- CE and CAS safety certified.

Coil

- The coil can have 2,3 or 4 rows, with copper tubes mechanically bonded into slit aluminum fin collars.
- Water inlet / outlet connections are 3/4-inch female pipe thread (JIS B 0203-1966). Header assembly is a one-piece casting, which enables to connect steel pipe directly.
- Coil assembly is tested over 20 kg/cm^2.
- A manual air vent is fitted with a drain line to the drain pan to avoid any water drips when venting.
- A water drain is located at the bottom of the coil header.

Drain Pan

The drain pan is 25mm depth with 0.8mm thickness galvanized steel c/w internal epoxy resin coating.

For sure without leakage occur, the fabrication of drain pan by one-piece stamping process with seamless and no joint. The standard insulation material is 5mm thickness, 27 kg/m^3 density PE foam. The drain pan has one 3/4-inch male pipe thread (JIS B 0203-1966) connection.

Options

Heater

Two types of heating device are available: hot water and electric sheathed heating element. Please check technical data for such different types of heating capacity.
Meet Australia safety code AS 1668.1 (Section 2.9), and AS 3102.

Plenum & Filters

S430(Standard) / S304(Option) Stainless Steel Drain Pan

Blue Fin

The blue fin with vinyl-epoxy-based coating that has been tested under ASTM B117, and thus of higher corrosion resistance than aluminum fin stock.

Factory-mounted Control Valve Package

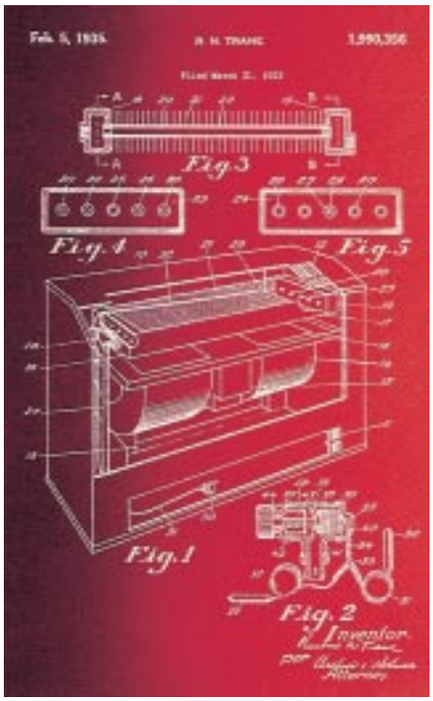
Factory mounted and tested for options of 2way or 3way control valve package, and provision with or without thermostat.

Trane Building Management System

The Tracer Summit™ system is designed for monitoring and control air conditioning system, lighting and other controllable devices for building.

Such Building Control Unit (BCU) manages all Unit Control Moduls (UCM) for different zones management. Each UCM performs scan on couples of HFCA equips ZN controller in specific zone and regularly report to the central system.

The Trane Fan Coil...
...Invented by Trane
...Perfected by Trane



Since 1885, Trane has been at the technological forefront of air conditioning. The company's pioneering spirit, commitment to research and pursuit of quality have made it a world leader in the manufacture of water chillers.

Over 70 years ago Trane produced the first fan coil unit and in so doing created a product which is now built worldwide. The universal acceptance of this product has prompted Trane to focus the same engineering experience to the fan coil as given to the refrigeration products.

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