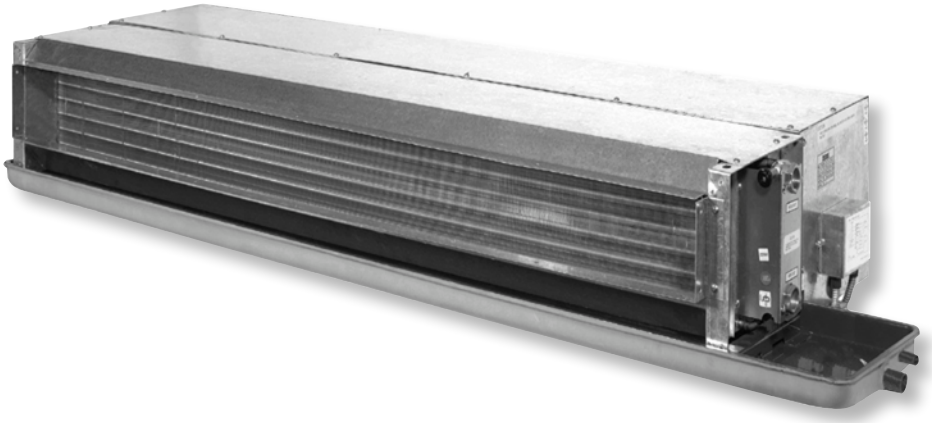
DAIKIN

Catalog 700-6

Horizontal Concealed Fan Coils

Model THC

Sizes 200 through 1200 CFM



Nomenclature

F THC 2 S02 A A 70 A 69 AX 20 A A

Fan Coil

Description /Type of Product
THC = Horizontal THC Concealed

Design Series
1 = A Design
2 = B Design

Unit Size
Nominal CFM
S02 = 200
S03 = 300
S04 = 400
S06 = 600
S08 = 800
S10 = 1000
S12 = 1200

Power Supply/Motor Voltage
A = 115V-60-1
E = 208/230V-60-1
J = 277-265V-60-1

Main Coil (Heating/Cooling)
A = 3-Row Coil

Secondary Coil (Heating)
70 = 1-Row Heating

Hand Orientation
A = Same Hand - Left
B = Same Hand – Right

Controls
00 = JBox with Terminal Strip & Wired Motor Leads
69 = LV-3SP JBox, DDC Ready Interface and Toggle Disconnect Switch

Discharge
AX = Front Discharge with Built in Duct Collar

Return Air
17 = Rear Ducted with Plenum, Filter & Duct Collar
20 = No Plenum, Open Return

Power Connection
A = Junction Box

SKU Type
A = Stock
C = Build to Order

Design Features

Daikin Applied Fan Coils have been widely applied in hotels, apartments, dormitories and military barracks, assisted living facilities and offices. They have earned a reputation for quality—providing years of efficient, reliable, quiet heating and cooling and easy, low-cost installation and maintenance. The Model THC horizontal concealed fan coil unit is a slim, lightweight unit that is ideal for installation in ceilings where height is limited. Units are available in seven sizes from 200 to 1,200 cfm.

Slim Profile

The highly compact, super lightweight design of the Model THC fan coil unit makes it ideal for inside ceiling installations where height is limited.

High Efficiency Coil

Unique coil design promotes the mixture of warm and cold air, resulting in high thermal efficiency and lower operating costs.

Quiet and Efficient Centrifugal Fan Motor Assembly

With a statically and dynamically balanced centrifugal fan wheel and a high efficiency motor assembly, the THC offers you:

1. Minimized vibration.
2. Low noise operation.
3. Low operating cost.
4. 4 speed tap motor for better speed control.

Indoor Air Quality Design

Coils

- All THC water coils feature aluminum blue fins mechanically bonded to seamless copper tubes. The blue fins are covered with an epoxy polymer that causes condensation to drip off more quickly, preventing mold build-up and increasing the coil and fin life expectancy
- Hand operated brass air vent, conveniently located over the drain pan, requires no tools for venting, and is supplied with a clear plastic hose to prevent spills

Drain Pan

- Galvanized
- Extends past the coil to collect condensation from valve and piping packages
- Stamped with no welded corners
- Positively sloped to provide proper drainage and minimize microbial growth
- Equipped with main condensate and auxiliary drain connections to provide overflow protection
- Easily removable
- Coated with a thick layer of powder paint and baked for easy cleaning and to help protect against microbial growth and corrosion
- Insulated with form-fitted, closed cell insulation to prevent condensation build-up on the exterior of the drain pan

Return Air Plenum

- Units are available with or without a return air plenum. Units with a plenum are supplied with a high quality filter, filter guide and 3/4" return air duct collar. Easy filter removal encourages frequent changing, especially when the unit is used with a Daikin Applied T170 thermostat, which has a filter reminder.
- Aluminum foil faced insulation is used in the return air plenum to prevent glass fibers from entering the air stream, to reduce unit sweating, and to attenuate fan noise.
- Top and side panels surrounding the coil are also insulated with aluminum foil face to prevent the possibility of condensation forming on the outside of the cabinet.

Flexible Coil and Piping Connections

Units are easily converted to opposite-hand orientation without requiring additional parts or a conversion kit.

Heating and cooling pipe connections are located on the same end. Four pipe coils are factory installed in the reheat position, but are easily field-converted to the preheat position. Coils can be factory installed in the preheat position as a special request.

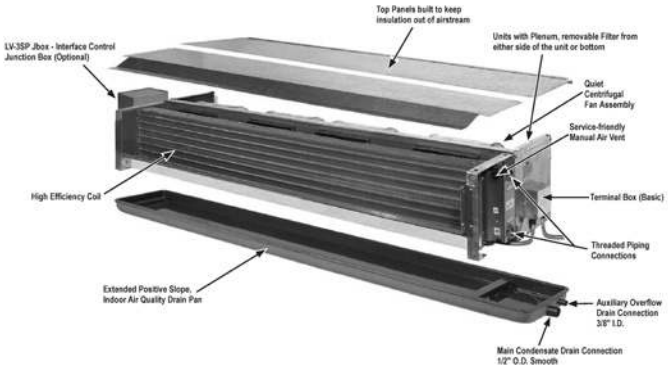
Threaded or Sweat Connections

Coils feature a brass header with 3/4” FPT connections to facilitate quick installation of Daikin Applied threaded or quick-connect, factory built valve packages. A galvanized steel cover plate protects the header and provides additional structural support to facilitate connection of any type of valve package and matched load pumps. If sweat copper tube connections are desired, sets of two (2) 3/4” MPT x 1/2” copper male adapters are provided in the basic units.

Electrical Connection – Control Interface

All remote thermostats and controls generally require low voltage control wiring from the thermostat/control device to the unit control box. That is why Daikin Applied provides a full range of control options. See Thermostats and Controls.

Figure 1: Fan Coil Construction



Thermostats and Controls

Wall-mounted thermostats are available for all applications, ranging from a simple thermostat and/or 3-speed switch to a digital, ADA display thermostat with auto-stage control.

NOTE: For details on thermostats and wiring refer to ED18513.

Factory installed options include:

- **Basic:** A single point power connection junction box that consists of a terminal strip for line-voltage control connection to an Off, Hi, Med, Lo switch, plus a thermostat or a control
- **DDC ready interface via an LV-3SP control box:** For low-voltage applications, it includes three 24 volt relays, a line voltage/24volt transformer, two sets of terminal strips and a toggle disconnect. This interface control can be used with a simple 24 volt thermostat or with building automation systems. This interface is also available as a field installed option

Valve Packages

Two-way and three-way deluxe electric valve packages are available in line-voltage configurations for field installation on 2-pipe and 4-pipe systems.

Valve/piping packages are available with and without bleed lines. Packages without bleed lines will require thermostats capable of sampling the entering water temperature to sense automatic changeover on two-pipe changeover units. (Refer to valve/piping package Engineering Data documentation).

Figure 2: Interface Control Junction Box

NOTE: For wiring diagram details for Vintage B THC units and the LV-3SP Jbox refer to Certified Drawing FC-THC-H02-H012

THC Horizontal Concealed (2-Pipe System)

Table 1: ARI Approved Standard Coil Water Cooling Capacity Ratings, 2-pipe system, Cooling Data (3-Row)

Unit Size	FTHC Horizontal Concealed Unit			
	Cooling Capacity		Water Flow GPM	Water P.D. FT. W.C.
	Total BTUH	Sensible BTUH		
S02	7130	5630	1.8	5.4
S03	10,300	7640	2.5	4.4
S04	14,200	10,500	3.4	7.9
S06	19,900	14,200	4.8	14
S08	25,300	19,500	6.1	6.7
S10	29,400	20,700	6.9	7.7
S12	34,600	25,100	8.5	11.9

Table 2: Standard Coil Water Heating Capacity Ratings, 2-Pipe System, Heating Data (1-Row)

Unit Size	FTHC Horizontal Concealed Unit		
	Heating Capacity	Water Flow GPM	Water P.D. FT. W.C.
	Sensible BTUH		
S02	11,900	1.8	5.4
S03	17,400	2.5	4.4
S04	24,900	3.4	7.9
S06	33,900	4.8	14
S08	44,600	6.1	6.7
S10	50,400	6.9	7.7
S12	65,400	8.5	11.9

Table 3: General Unit Data, 2-Pipe System

	Unit Size						
	S02	S03	S04	S06	S08	S10	S12
Fan							
Type	Centrifugal Fan (forward-curved galvanized steel fan wheel)						
Number of Fans	1	1	2	2	3	3	4
Coil							
Number of Rows	3						
Type	Water - (3-Row Chilled Water)						
Circuits	2	3	3	3	6	6	6
Motor(s)							
Type	PSC						
Number of Motors	1	1	1	1	2	2	2
Power Supply	115/60/1, 208-230/50/60/1, 277/60/1						
Watts - High Speed							
50Hz	62	91	109	171	242	249	321
60Hz	75	109	131	205	291	299	385
Coil Connection							
	3/4" FPT						
Drain Pipe Connections							
	Main Drain - 3/4" O.D. Smooth / Auxiliary Drain - 3/8" I.D. Smooth						
Unit with Return Air Plenum and Filter							
Length(in.)	23.25	23.25	23.25	23.25	23.25	23.25	23.25
Width(in.)	32.05	38.74	43.86	51.73	61.57	65.51	75.75
Height(in.)	9.88	9.88	9.88	9.88	9.88	9.88	9.88
Ship Weight(lb.)	63.00	73.00	88.00	102.00	134.00	143.00	153.00

Weight: Includes return air plenum and packing.

THC Horizontal Concealed (4-Pipe System)

Table 4: ARI Approved Standard Coil Water Cooling Capacity Ratings, 4-pipe system, Cooling Data (3-Row)

Unit Size	FTHC Horizontal Concealed Unit			
	Cooling Capacity		Water Flow GPM	Water P.D. FT. W.C.
	Total BTUH	Sensible BTUH		
S02	7260	5740	1.8	4.9
S03	10,500	7790	2.5	4
S04	14,500	10,700	3.4	7.2
S06	20,400	14,500	4.8	12.7
S08	25,800	20,000	6.1	6.1
S10	29,200	21,200	6.9	7
S12	35,400	25,600	8.5	10.9

Table 5: Standard Coil Water Cooling Capacity Ratings, 4-pipe system Heating Data (1-row)

Unit Size	FTHC Horizontal Concealed Unit		
	Heating Capacity	Water Flow GPM	Water P.D. FT. W.C.
	Sensible BTUH		
S02	4600	1.1	4
S03	7780	1.1	4.5
S04	10,900	1.1	4.9
S06	14,600	1.1	6.9
S08	17,400	1.1	1.3
S10	23,600	2.2	4.3
S12	28,900	2.2	4.9

Table 6: General Unit Data, 4-Pipe System

	Unit Size						
	S02	S03	S04	S06	S08	S10	S12
Fan							
Type	Centrifugal Fan (forward-curved galvanized steel fan wheel)						
Number of Fans	1	1	2	2	3	3	4
Coil							
Number of Rows	3/1 Split						
Type	Water - (3-Row Chilled Water) (1-Row Hot Water)						
Circuits (CW/HW)	2/1	3/1	3/1	3/1	6/2	6/2	6/2
Motor(s)							
Type	PSC						
Number of Motors	1	1	1	1	2	2	2
Power Supply	115/60/1, 208-230/50/60/1, 277/60/1						
Watts - High Speed							
50Hz	62	91	109	171	242	249	321
60Hz	75	109	131	205	291	299	385
Coil Connection							
	3/4" FPT						
Drain Pipe Connections							
	Main Drain - 3/4" O.D. Smooth / Auxiliary Drain - 3/8" I.D. Smooth						
Unit with Return Air Plenum and Filter							
Length(in.)	23.25	23.25	23.25	23.25	23.25	23.25	23.25
Width(in.)	32.05	38.74	43.86	51.73	61.57	65.51	75.75
Height(in.)	9.88	9.88	9.88	9.88	9.88	9.88	9.88
Ship Weight(lb.)	63.00	73.00	88.00	102.00	134.00	143.00	153.00

Weight: Includes return air plenum and packing.

Table 7: Air Volume Capacity Data—Air volume versus external static pressure

Unit Size		Fan Motor Speed																				
		High							Medium							Low						
		External Static Pressure (inches of water)							External Static Pressure (inches of water)							External Static Pressure (inches of water)						
		0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.00	0.05	0.10	0.15	0.20	0.25	0.30
S02	Air Flow CFM	311	293	276	258	240	223	203	231	211	195	178	164	152	134	181	157	139	125	111	94	87
	RPM	1070	1130	1170	1200	1230	1262	1291	869	899	966	1012	1051	1104	1142	704	773	826	887	965	1032	1091
S03	Air Flow CFM	423	391	368	344	319	297	270	296	277	262	244	229	213	197	234	202	179	161	144	122	113
	RPM	1143	1172	1202	1226	1255	1282	1313	838	890	945	992	1043	1097	1144	714	756	833	886	953	1023	1081
S04	Air Flow CFM	507	472	444	416	386	359	326	349	327	310	288	268	247	227	278	241	214	192	171	145	134
	RPM	1122	1165	1201	1221	1258	1285	1314	788	851	903	964	1043	1093	1156	678	737	811	891	957	1028	1091
S06	Air Flow CFM	798	770	742	714	688	654	627	581	555	530	508	483	456	432	518	497	471	444	425	406	376
	RPM	1295	1311	1333	1361	1382	1399	1416	990	1017	1060	1102	1151	1182	1230	894	937	994	1049	1086	1141	1181
S08	Air Flow CFM	949	915	874	828	775	730	690	740	701	652	615	572	528	490	662	620	580	535	490	442	400
	RPM	1172	1192	1221	1259	1286	1320	1341	931	1003	1027	1072	1124	1167	1219	892	935	956	1014	1070	1121	1174
S10	Air Flow CFM	1032	981	932	881	836	712	716	775	723	688	631	582	533	493	697	643	602	538	496	463	410
	RPM	1251	1279	1303	1331	1344	1386	1412	984	1037	1068	1115	1169	1245	1255	902	969	1001	1062	1123	1161	1204
S12	Air Flow CFM	1428	1380	1334	1287	1229	1173	1114	1067	1022	976	927	875	833	781	960	912	877	826	788	806	705
	RPM	1344	1367	1389	1408	2845	2886	1462	1039	1062	1106	1149	1192	1235	1277	958	1003	1043	1095	1141	1178	1224

Note: Based on 115V operation, and dry coils.

Table 8: Motor Data

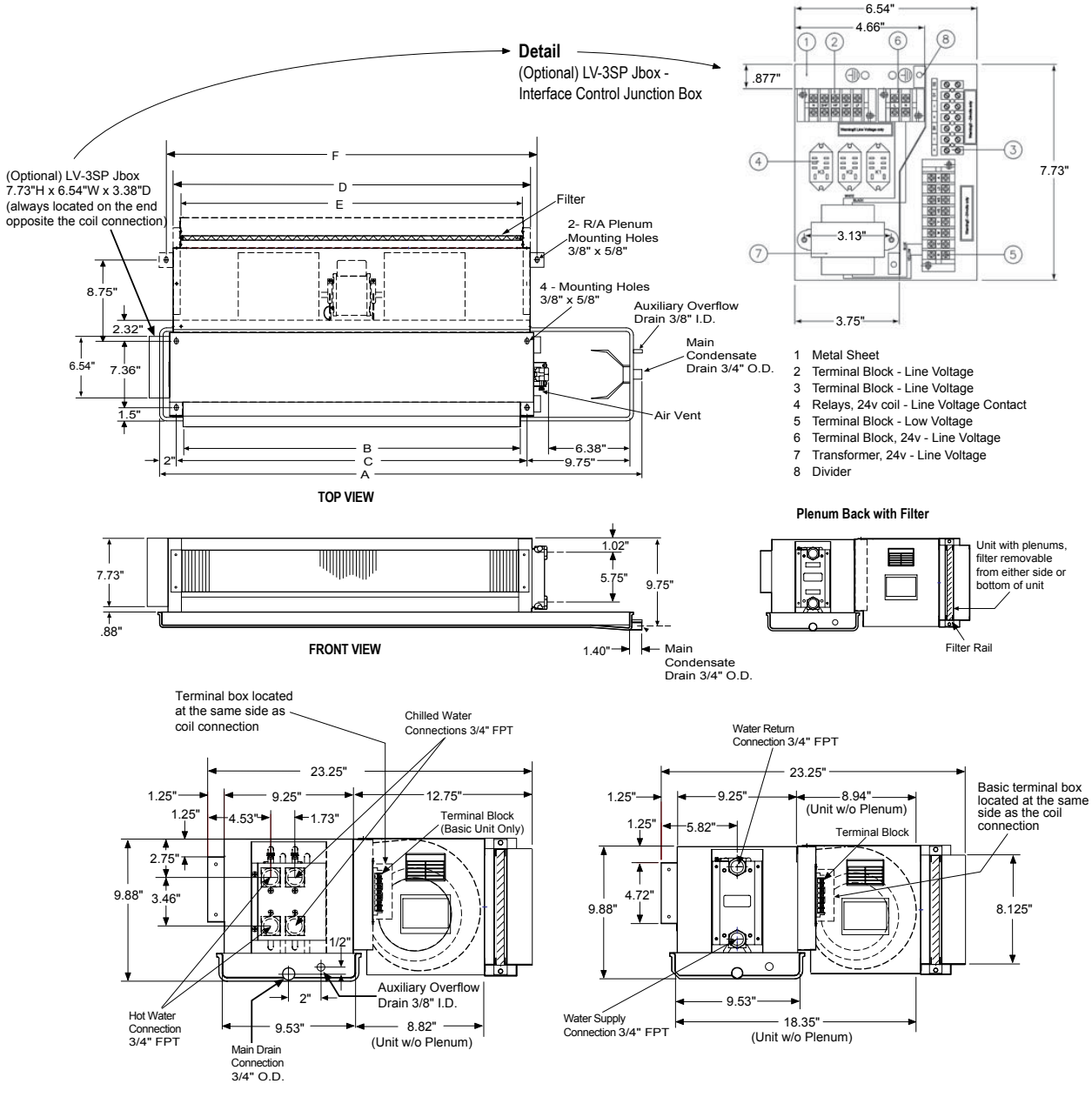
Fan Motor Speed	Unit Size																				
	S02			S03			S04			S06			S08			S10			S12		
	Amps	Watts	RPM	Amps	Watts	RPM	Amps	Watts	RPM	Amps	Watts	RPM	Amps	Watts	RPM	Amps	Watts	RPM	Amps	Watts	RPM
	115/60/1																				
High	0.8	90	1043	1.0	117	1143	1.3	150	1122	1.9	218	1295	2.6	296	1172	2.8	325	1251	3.6	415	1344
Medium	0.6	61	869	0.7	73	838	0.9	93	788	1.4	155	990	2	229	931	2	225	984	2.7	305	1039
Low	0.5	53	704	0.6	63	714	0.8	83	678	1.3	145	894	1.9	211	892	1.9	211	902	2.5	279	958

THC Horizontal Concealed, with Plenum Box

Table 9: Dimensions (inches)

Unit Size	A	B	C	D	E	F	Filters	
							Size	Qty
S02	32.05	17.64	19.17	19.96	18.46	21.13	18⅛ × 8 × 1	1
S03	38.74	24.33	25.87	26.65	25.15	27.82	24⅞ × 8 × 1	1
S04	43.86	29.45	30.98	31.77	30.20	32.94	29⅞ × 8 × 1	1
S06	51.73	37.32	38.86	39.65	38.07	40.82	18⅞ × 8 × 1	2
S08	61.57	47.17	48.70	49.49	47.91	50.66	23¾ × 8 × 1	2
S10	65.51	51.10	52.64	53.43	51.85	54.60	25¾ × 8 × 1	2
S12	75.75	61.34	62.87	63.66	62.09	64.83	30⅞ × 8 × 1	2

NOTE: For wiring diagram details for Vintage B THC units and the LV-3SP Jbox refer to Certified Drawing FC-THC-H02-H012

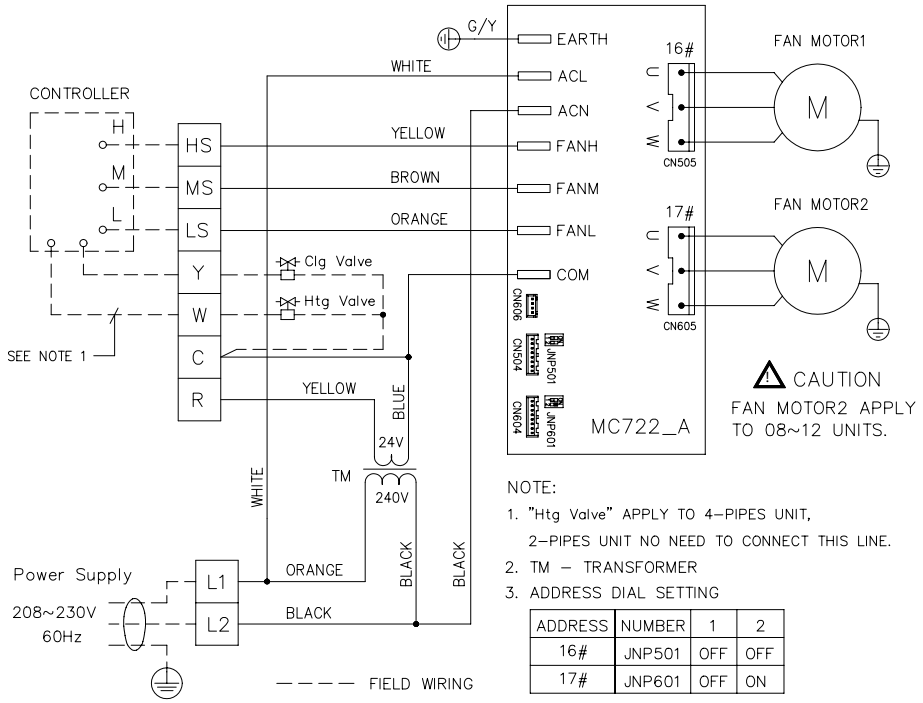


4-Pipe System - Right Hand Unit*

***Factory supplied left hand units also available**

2-Pipe System - Right Hand Unit*

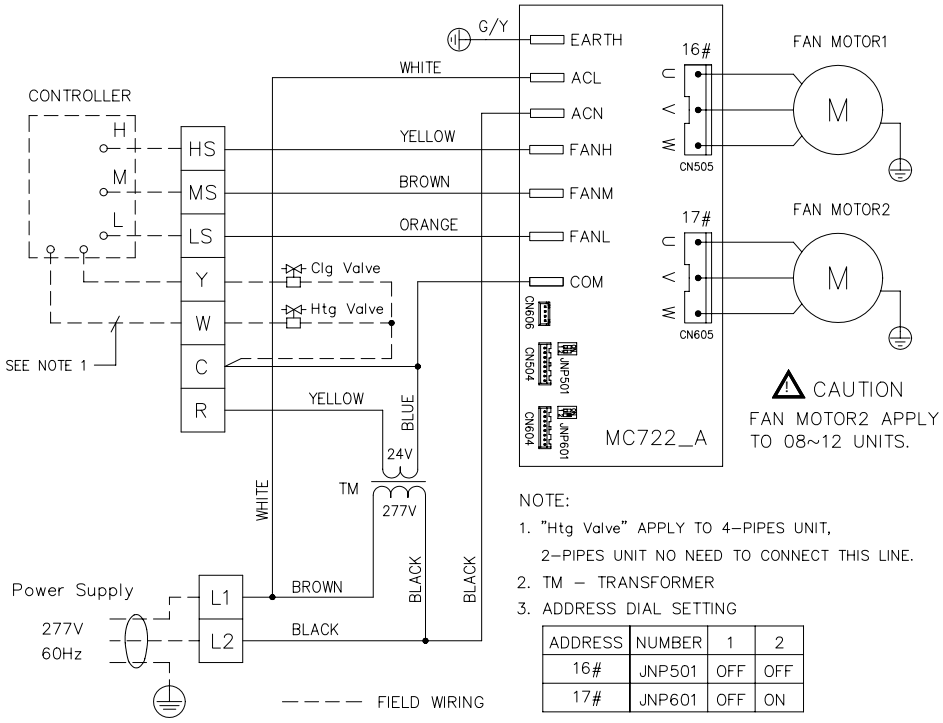
Model C3H, 02–12EA, 208–230V, 60Hz



NOTE:
1. "Htg Valve" APPLY TO 4–PIPES UNIT,
   2–PIPES UNIT NO NEED TO CONNECT THIS LINE.
2. TM – TRANSFORMER
3. ADDRESS DIAL SETTING

ADDRESS	NUMBER	1	2
16#	JNP501	OFF	OFF
17#	JNP601	OFF	ON

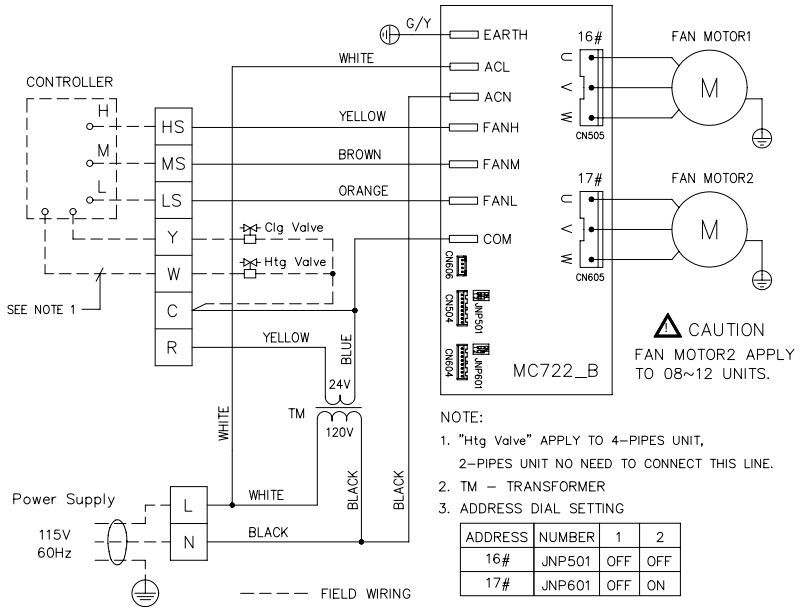
Model C3H, 02–12JA, 277V, 60Hz



NOTE:
1. "Htg Valve" APPLY TO 4–PIPES UNIT,
   2–PIPES UNIT NO NEED TO CONNECT THIS LINE.
2. TM – TRANSFORMER
3. ADDRESS DIAL SETTING

ADDRESS	NUMBER	1	2
16#	JNP501	OFF	OFF
17#	JNP601	OFF	ON

Model C3H, 02–12AA, 115V, 60Hz

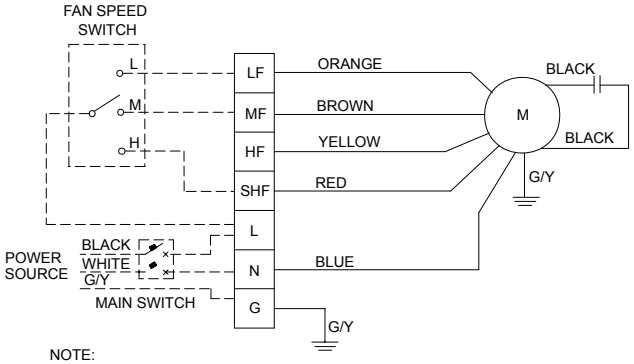


NOTE:
1. "Htg Valve" APPLY TO 4-PIPES UNIT,
   2-PIPES UNIT NO NEED TO CONNECT THIS LINE.
2. TM – TRANSFORMER
3. ADDRESS DIAL SETTING

ADDRESS	NUMBER	1	2
16#	JNP501	OFF	OFF
17#	JNP601	OFF	ON

For Models: THCS02, THCS03, THCS04, and THCS06 (Basic Unit Only)

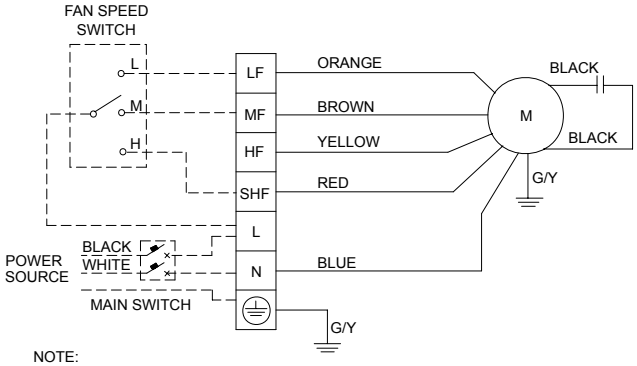
Wiring (115V/1P/60Hz)(208-230V/1P/60Hz)(265/277V/1P/60Hz)



NOTE:

_ _ _ _ _ FIELD WIRING
M: FAN MOTOR
G/Y: GREEN/YELLOW
LF: FAN SPEED LOW
MF: FAN SPEED MEDIUM
HF: FAN SPEED HIGH
SHF: FAN SPEED SUPER HIGH

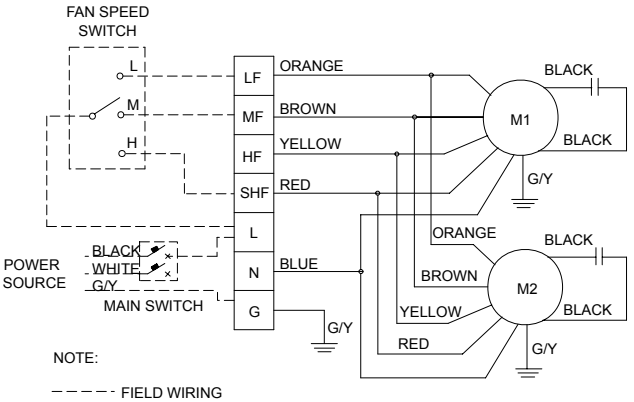
Wiring (220V/1P/50Hz)



NOTE:

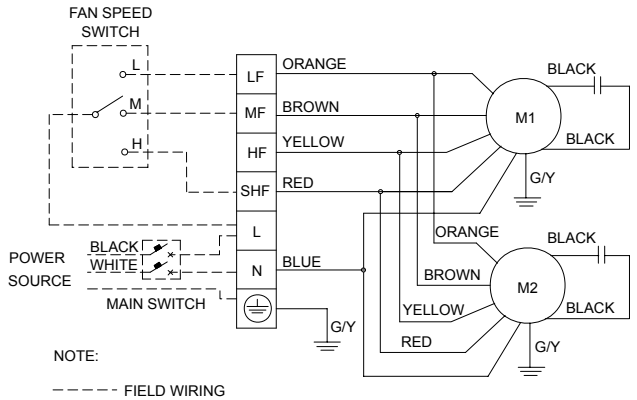
_ _ _ _ _ FIELD WIRING
M: FAN MOTOR
G/Y: GREEN/YELLOW
LF: FAN SPEED LOW
MF: FAN SPEED MEDIUM
HF: FAN SPEED HIGH
SHF: FAN SPEED SUPER HIGH

For Models: THCS08, THCS10, THCS12 (Basic Unit Only)



NOTE:

_ _ _ _ _ FIELD WIRING
M1,M2: FAN MOTOR
G/Y: GREEN/YELLOW
LF: FAN SPEED LOW
MF: FAN SPEED MEDIUM
HF: FAN SPEED HIGH
SHF: FAN SPEED SUPER HIGH



NOTE:

_ _ _ _ _ FIELD WIRING
M1,M2: FAN MOTOR
G/Y: GREEN/YELLOW
LF: FAN SPEED LOW
MF: FAN SPEED MEDIUM
HF: FAN SPEED HIGH
SHF: FAN SPEED SUPER HIGH

Furnish and install where shown on the plans and specifications, Daikin Applied THC Horizontal Concealed Fan Coil Units. Types, sizes and performance are as tabulated in the schedule. Unit performance is substantiated by computer generated output data. Each unit is ARI certified and consists of and complies with the following:

Construction

General – Basic unit consist of a chassis, hydronic coil(s), drain pan, junction box, motor, centrifugal fan assembly. Top and side panels surrounding the coil are insulated with aluminum foil face to prevent condensation. The casing, fabricated of heavy gauge galvanized steel with four-sided one inch duct collar for an easy connections to discharge duct work. Units are available with or without return air plenum. Units with return air plenum have a filter frame with 3/4" return air duct collar. Plenum is fully insulated with foil faced, thermal and acoustical insulation to prevent glass fibers in the air stream, unit sweating, and to attenuate fan noise. Mounting holes are to be provided on all four corners to allow the units to be suspended from the ceiling with threaded rods. Selectable either as 2 or 4-pipe systems with coil pipe connections located on the same side. Units are tested in accordance with ARI 440. The units comply with NFPA 90A and are ETL listed in the U.S. and Canada. Top panel and drain pan is easily removed to allow coil access.

Coils – All THC water coils feature aluminum blue fins mechanically bonded to seamless copper tubes. The blue fins are covered with an epoxy polymer that causes condensation to drip off more quickly, preventing mold build-up and increasing the coil and fin life expectancy. All water coils are 12 fins per inch. Factory burst tested at 425 psig (2930kPa) and leak tested at 225 psig (1552 kPa). Maximum main coil working pressure is 300 psig (2,069 kPa). Maximum entering water temperature is 200°F (93°C). Cooling coil (2-Pipe) or combination cooling and heating coils (4-Pipe) are available. Heating coils are factory installed in the reheat position with same hand coil connection. Heating coils are capable to be field converted to preheat position. Coils are provided with a brass header, 3/4" FPT coil connections, and a hand operated brass manual air vent, conveniently located over the drain pan, and supplied with a clear plastic hose to prevent spills. The 3/4" FPT connections facilitate the field installation of Daikin Applied threaded, quick-connect factory built valve package. Coil brass headers are protected with a galvanized steel cover plate and held in position with holding screws thus providing additional structural support to thread piping-valve package and matched load pumps.

On Basic units optional sets of two (2) 3/4" MPT × 1/2" copper male adapters are provided if sweat copper tube connections are desirable.

NOTE: Units provided with factory installed LV-3SP interface board (with or without plenum) are provided with sets of two (2) 3/4" MPT × 1/2" piping elbow adapter to be used with Daikin Applied threaded, quick-connect valve packages.

Fan Assembly – Aluminum fan wheels are dynamically balanced, forward curved, double-width, inside double-inlet scroll centrifugal type housings constructed of galvanized steel for corrosion resistance. The rest of the assembly is made with a heavier gauge galvanized steel which provides additional strength and rigidity resulting in smoother, quieter operation.

Sound – Units shall have published sound power level data tested in accordance with ARI 350.

(For more information contact your local Daikin Applied Sales Representative).

Motors – 4 speed, permanently lubricated sleeve bearing, permanent split capacitor motors, (115/60/1) (208-230/60/1) (265/60/1) with UL listed automatic reset integral thermal overload protection. Maximum ambient operating temperature of 104°F. Run tested in assembled units.Motors are resiliently mounted to assure quiet, vibration free operation.

Drain Pan – Stamped with no welded corners. The galvanized steel drain pans are cleaned, phosphatized before they are coated with a thick layer of powder paint. Insulated with form-fitted closed cell insulation the drain pan is positively sloped and easily removable for cleaning. Extended out 6½" beyond the coil connections for valve/piping packages. Vintage B drain pans include a auxiliary drain connection.

Insulation – Hideaway return air plenum is fully insulated with foil faced, thermal and acoustical insulation to prevent glass fibers entering the air stream, unit sweating, and to attenuate fan noise.

Filters – Standard filter is 1" nominal throwaway type. Filters are removable from either the sides or bottom.

Electrical – THC fan-coils are made available with the following factory installed options:

- **Basic:** Unit is furnished with single point power connection junction box that includes a terminal strip for line voltage control connection.
- **DDC ready interface:** LV-3SP control box includes (3) - 24 volt relays, line voltage/24volt transformer, 4 sets of terminal strips and toggle disconnect (See Note).

Piping Packages – All THC units are available with factory-built basic piping packages for field installation.

- 2 or 3-way
- 1/2" control valve
- 2-position or 2 pos only

Basic piping package consists of a shutoff ball valve with memory stop on coil return and on/off control valve and valve actuator on coil supply.

Valve packages for sweat connection are also available. Field connection side of valve packages are 5/8" OD sweat

Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin equipment, its care should be a high priority. For training information on all Daikin HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

Warranty

All Daikin equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

Aftermarket Services

To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

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