



# MB

## *Multi-Position Chilled Water Fan Coil*

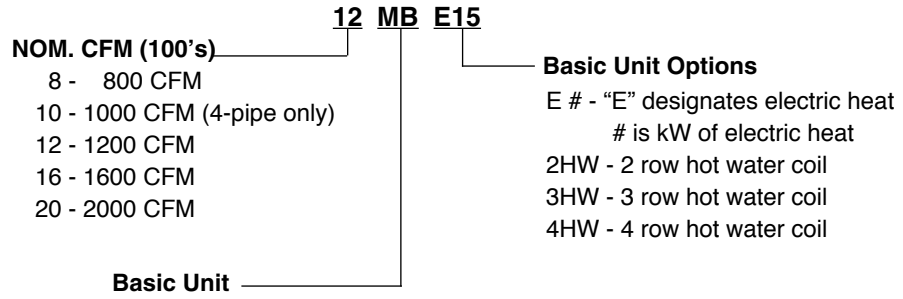
120V Motor - No Control

2 Pipe Cooling and Heating

Direct Drive Motor



# NOMENCLATURE



# MB

The **MB** Series 2-pipe fan coil comes with a 4 row cooling / heating coil and a 120V multi-speed motor. No controls are furnished.

## Basic Unit

All models are manufactured with **heavy gauge galvanized steel** to resist corrosion. Each cabinet is fully insulated. Coil connections are stubbed out the cabinet for easier installation.

## Coils

Coils have **3/8 inch copper tubing** expanded to high efficiency aluminum fins. Manual air vents are provided and all coils are pressure tested to 350 psig.

## Drain Pans

All fan coils can be installed vertically or horizontally (right-to-left airflow) with no modification. Horizontal drain pans can be repositioned within the cabinet to allow horizontal installation with left-to-right airflow. Each drain pan is coated with a "mastic" material to reduce corrosion. Threaded primary and secondary drain connections are also provided.

## Motors

Standard motors are **PSC type** with internal thermal overload protection and are mounted with rubber isolation bushings. Blower wheels are centrifugal, forward curved, and dynamically balanced.

## Filters

One inch throw away filters are factory installed.

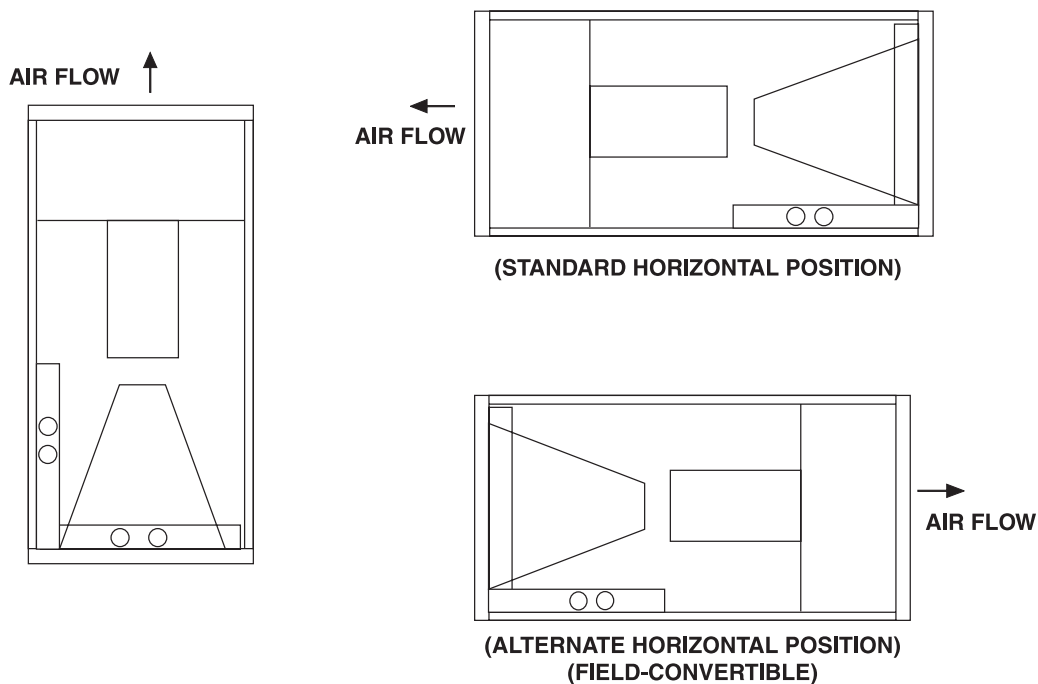
## Agency Listing

All standard models are **ETL Listed**.

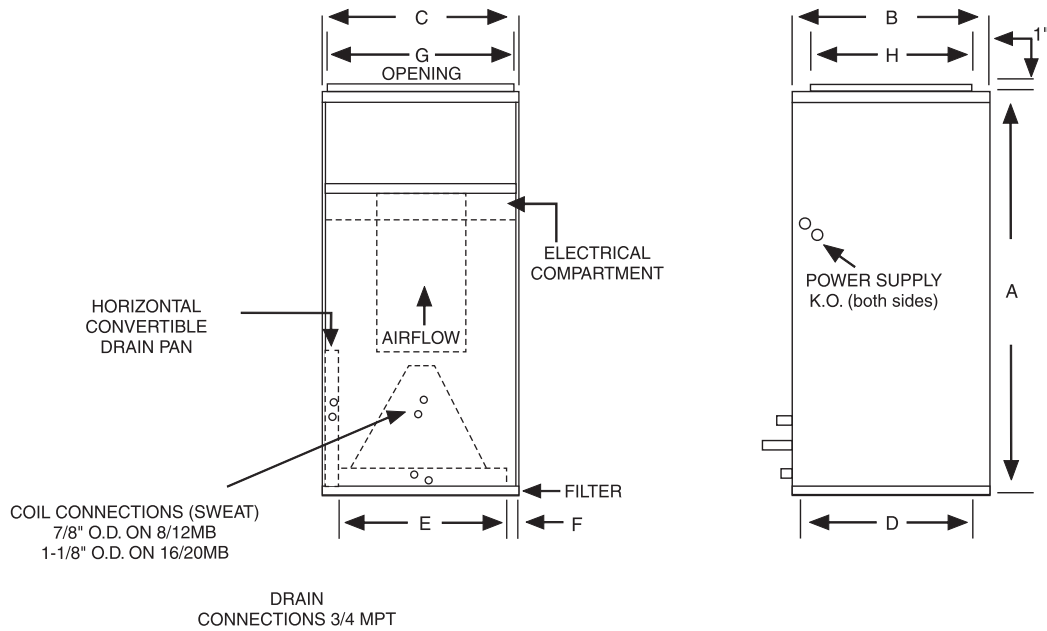
## Optional "Autospeed 24V" Control

The MB and MB-HW models are available with an optional 24V 3-speed control board and a 24V 3-speed digital wall thermostat. This option, called the "Autospeed 24V", provides maximum comfort and efficiency by automatically selecting the appropriate High, Medium, or Low fan speed, depending on room temperature and thermostat temperature setting.

## 3-WAY AIRFLOW



# DIMENSIONS



PHYSICAL DIMENSIONS											
UNIT MODEL	A	B	C	D	E	F	G	H	COIL CONNECTIONS	FILTER SIZE	SHIP WT. (LBS)
<b>8MB</b>	40	20	20	18-1/2	16	2	18	16	7/8 SWEAT	18 X 20 X 1	115
<b>12MB</b>	42	23	20	21-1/2	16	2	18	17	7/8 SWEAT	20 X 22 X 1	120
<b>16/20MB</b>	48	28	21-1/4	26-1/4	17-1/4	2	19-1/4	18	1-1/8 SWEAT	20 X 25 X 1	210

## Features:

1. 4 row cooling / heating coil
2. 120V multi-speed motor
3. Vertical / Horizontal drain pan (right-to-left and left-to right airflow)
4. Manual air vent
5. Throw away filter



In keeping with its policy of continuous progress and product improvement, First Operations reserves the right to make changes without notice.

HEATING DATA - 180° F EWT, 70° F EAT						
UNIT MODEL	CFM	GPM	P.D. (FT. WTR.)	HEAT BTUH (1000)	LVG AIR °F	LVG WTR °F
8MB	800	3.0	2.5	57.7	137	132
		4.5	5.5	62.2	142	142
		6.0	9.5	65.0	145	148
	600	3.0	2.5	47.8	144	138
		4.5	5.5	51.0	149	147
		6.0	9.5	53.1	152	152
12MB	1200	4.0	2.4	83.9	135	128
		6.0	4.8	90.9	140	140
		8.0	7.9	95.2	144	146
	1000	4.0	2.4	74.7	139	133
		6.0	4.8	80.3	144	143
		8.0	7.9	83.8	148	149
16MB	1600	6.0	3.3	118.7	138	131
		8.0	5.4	124.7	142	139
		10.0	7.9	129.5	145	144
	1400	6.0	3.3	108.3	142	134
		8.0	5.4	114.0	145	142
		10.0	7.9	118.1	148	146
20MB	2000	7.0	4.3	141.6	136	126
		10.0	7.9	151.3	140	140
		13.0	12.5	157.5	143	146
	1600	7.0	4.3	121.7	140	135
		10.0	7.9	129.4	145	144
		13.0	12.5	134.4	148	149

BLOWER DATA									
UNIT MODEL	NOM. COOL TONS	MOTOR HP-AMP (120V)	MOTOR SPEED	CFM vs. EXTERNAL STATIC PRESSURE					
				0.05	0.10	0.20	0.30	0.40	0.50
8MB	2	1/5-3.0	High	830	790	740	680	640	580
			Med-Hi	690	660	630	590	550	480
			Med-Low	530	520	470	450	410	390
12MB	3	1/3-6.0	High	1130	1100	1070	1040	1010	950
			Med-Hi	1000	990	980	950	900	870
			Med-Low	870	870	860	840	820	760
16MB	4	1/2-8.0	High	1730	1700	1650	1580	1530	1440
			Med	1550	1520	1490	1450	1380	1310
			Low	1290	1290	1280	1250	1210	1170
20MB	5	3/4-10.5	High	1860	1820	1820	1810	1740	1670
			Med	1530	1500	1550	1520	1490	1450
			Low	1210	1230	1230	1220	1200	1180

**NOTE:** Discharge air temperature must not exceed 150 degrees.

CHILLED WATER COOLING CAPACITY - 4 ROW (MB, MB-HW, MBE SERIES)															
UNIT MODEL	CFM	GPM	P.D. (FT. WTR.)	45° ENTERING WATER						42° ENTERING WATER					
				80° DB/67° F WB ENT. AIR			75° DB/63° F WB ENT. AIR			80° DB/67° F WB ENT. AIR			75° DB/63° F WB ENT. AIR		
				TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE
8MB	600	3.0	2.5	19.0	13.8	12.7	14.5	12.1	9.7	20.7	14.4	13.8	15.8	12.6	10.5
		4.5	5.5	22.4	15.1	9.9	17.1	13.1	7.6	24.4	15.9	10.8	18.6	13.7	8.3
		6.0	9.5	24.4	15.9	8.2	18.7	13.7	6.2	26.6	16.8	8.9	20.3	14.4	6.8
	800	3.5	3.4	23.1	17.3	13.2	17.6	15.3	10.1	25.2	18.1	14.4	19.2	15.8	11.0
		5.0	6.7	26.9	18.7	10.7	20.5	16.3	8.2	29.3	19.6	11.7	22.4	17.1	8.9
		6.5	11.0	29.2	19.6	9.0	22.3	17.0	6.9	31.8	20.6	9.8	24.3	17.8	7.5
10/12MB	1000	4.0	2.4	28.3	21.6	14.1	21.6	19.0	10.8	30.8	22.5	15.4	23.6	19.7	11.8
		6.0	4.8	33.9	23.7	11.3	25.9	20.6	8.6	36.9	24.8	12.3	28.2	21.6	9.4
		8.0	7.9	37.3	25.0	9.3	28.5	21.7	7.1	40.6	26.3	10.2	31.0	22.7	7.8
	1200	5.0	3.5	33.7	25.5	13.5	25.8	22.4	10.3	36.8	26.6	14.7	28.1	23.3	11.3
		6.5	5.5	38.0	27.1	11.7	29.1	23.7	8.9	41.5	28.4	12.8	31.7	24.7	9.7
		8.0	7.9	41.0	28.2	10.3	31.3	24.6	7.8	44.7	29.6	11.2	34.1	25.7	8.5
16MB	1400	4.5	2.0	36.2	29.2	16.1	27.7	25.8	12.3	39.5	30.3	17.6	30.1	26.7	13.4
		6.0	3.3	42.4	31.4	14.1	32.4	27.6	10.8	46.2	32.8	15.4	35.3	28.7	11.8
		7.5	4.8	46.9	33.1	12.5	35.8	28.9	9.6	51.1	34.7	13.6	39.0	30.2	10.4
	1600	6.0	3.3	44.2	34.1	14.7	33.8	30.0	11.3	48.2	35.5	16.1	36.8	31.2	12.3
		8.0	5.4	51.0	36.6	12.7	38.9	32.0	9.7	55.5	38.3	13.9	42.4	33.4	10.6
		10.0	7.9	55.7	38.4	11.1	42.5	33.4	8.5	60.7	40.3	12.1	46.3	34.9	9.3
20MB	1600	6.5	3.8	46.1	34.8	14.2	35.2	30.6	10.8	50.3	36.3	15.5	38.4	31.8	11.8
		8.5	6.0	52.3	37.1	12.3	39.9	32.4	9.4	57.0	38.8	13.4	43.5	33.8	10.2
		10.5	8.6	56.6	38.7	10.8	43.2	33.7	8.2	61.7	40.7	11.8	47.1	35.2	9.0
	2000	7.0	4.3	52.4	40.9	15.0	40.0	36.1	11.4	57.1	42.6	16.3	43.6	37.4	12.5
		10.0	7.9	61.7	44.3	12.3	47.1	38.8	9.4	67.3	46.4	13.5	51.4	40.5	10.3
		13.0	12.5	67.5	46.5	10.4	51.6	40.5	7.9	73.6	48.8	11.3	56.2	42.4	8.6

**NOTE:**

1. All cooling coils have four rows.
2. Contact factory for capacities at other conditions.

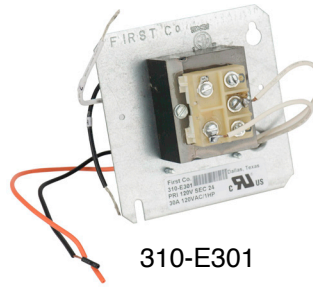
# ACCESSORIES



Power Head



Valve Body  
(2-way)



310-E301



CP905

ACCESSORIES (field installed) MB, MB-HW, MBE Series	
<b>Power Heads: (two power heads required for 4-pipe) - For all units</b>	
E50131180 E50132180 E50137180 E50138180	24V 110V/50Hz - 120V/60Hz 277V 220V/50Hz - 230/60Hz
<b>Seperate Valve Bodies: (order power heads seperately)</b>	
E421317 E431317 E421417 E431417	3/4" 2-way - For (PHYB, 8-12MB/MBE/MB-HW (and 8-16MB-HW htg.coil) 3/4" 3-way - For (PHYB, 8-12MB/MBE/MB-HW (and 8-16MB-HW htg.coil) 1" 2-way - For 16 - 20MB/MBE/MB-HW (and 20MB-HW htg. coil) 1" 3-way - For 16 - 20MB/MBE/MB-HW (and 20MB-HW htg. coil)
<b>Hand Valves: (Combination balance / shut-off) (2 usually req'd per coil)</b>	
CP90 CP905	3/4" For 8-12MB/MBE/MB-HW (8-16MB-HW Htg. coil) 1" For 16-20MB/MBE/MB-HW (16 and 20MB-HW Htg. coil)
<b>Relay - Transformer</b>	
310-E301	120 / 24V for ALL 120V motors

**NOTE:**

1. Power head leads are 18".

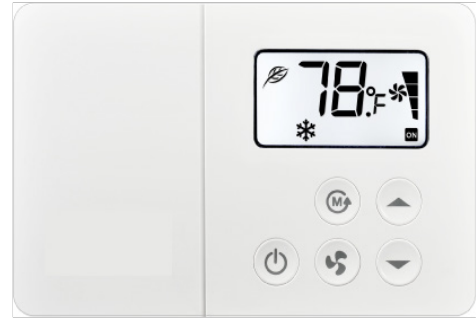


# Autospeed 24V™ Thermostats

(Part #'s T200/T201)

## Accurate, Efficient, and Quiet Fan Coil Operation

The new Autospeed 24V™ thermostat (part's # T200 and T201) provides 24V AC single stage temperature control of 2 pipe and 4 pipe fan coil applications. The T200/T201 thermostat offers maximum comfort and efficiency by **automatically selecting the appropriate High, Medium, or Low fan speed**, depending on room temperature and thermostat temperature setting. This automatic fan speed control not only brings the room temperature to the desired set point quickly, it maintains the room temperature with the most efficient fan speed selection. Once the desired room temperature is achieved the fan coil operates on low speed for extremely quiet operation. The fan coil control board (which is factory installed in all CW units) is a circuit board that provides control of a 3-speed line voltage fan motor. The control board allows the thermostat to control the fan motor even though, by itself, the thermostat does not have the amperage capability nor the voltage rating capability to control the fan motor.



(T200 shown with wall plate)

### T200/T201 Thermostat Features

- Compatible with 2 pipe and 4 pipe fan coils:  
Series HBC/PHBC/RHBC/CHBC,  
MB/MB-HW, HYB/PHYB, and CW/CW-HW
- Cycle fan or continuous fan operation
- **T200**-Manual Heat / Cool changeover switch
- **T201**-Automatic Heat / Cool changeover switch
- Large LED digital display
- Allows less expensive 24V control wiring from the fan coil to the thermostat, rather than larger, more expensive line voltage wiring.
- 3-speed fan operation, with speed indicator lights
- Fan speed determination:
  - If room temperature is 4 degrees (F.) off thermostat set point, fan will operate on High speed.
  - If 3 degrees off set point, fan will operate on Medium speed.
  - If within 2 degrees of set point, fan will operate on Low speed.
- One or 3 hour Auto override - Fan speed defaults to "Auto" mode after 1 hour if the user manually changes it to a particular fan speed.
- Temperature set range: 64-88 degrees F.
- Adjustable high and low temperature set points
- Selectable Fahrenheit / Centigrade display
- Power switch turns system off/on
- Requires 7-wire 24V thermostat wire
- No batteries required
- Set points are permanently retained in memory in case of power interruption
- Simple operation
- Mercury Free
- Wall plate included

DISPLAY CODES		
DISPLAY	STEADY	FLASHING
P1	Auto fan timer - 1 hour (default)	Auto fan timer - 3 hour
P2	Continuous fan (default)	Cycled fan
P3	°F (default)	°C
P4	Cycled fan standard	Cycled fan overdrive (default)
P5	Low temp limit 64 °F (default)	Low temp limit 67 °F
P6	Hi temp limit 88 °F (default)	Hi temp limit 84 °F



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