UNITARY SIDE DISCHARGE SPLIT SYSTEM 24VAC CONTROL

48,000 BTU / H UNITARY HEAT PUMP SPLIT SYSTEM

SUBMITTAL DATA: TUD48-24AH2ADU / TU60-48WADU

Job Name	Location		Date	
Purchaser	Engineer			
Submitted To	For	☐ Reference	☐ Approval	☐ Construction
Unit Designation	Schedule No.			

SYSTEM TYPE:
HEAT PUMP



TUD48-24AH2ADU



TU60-48WADU

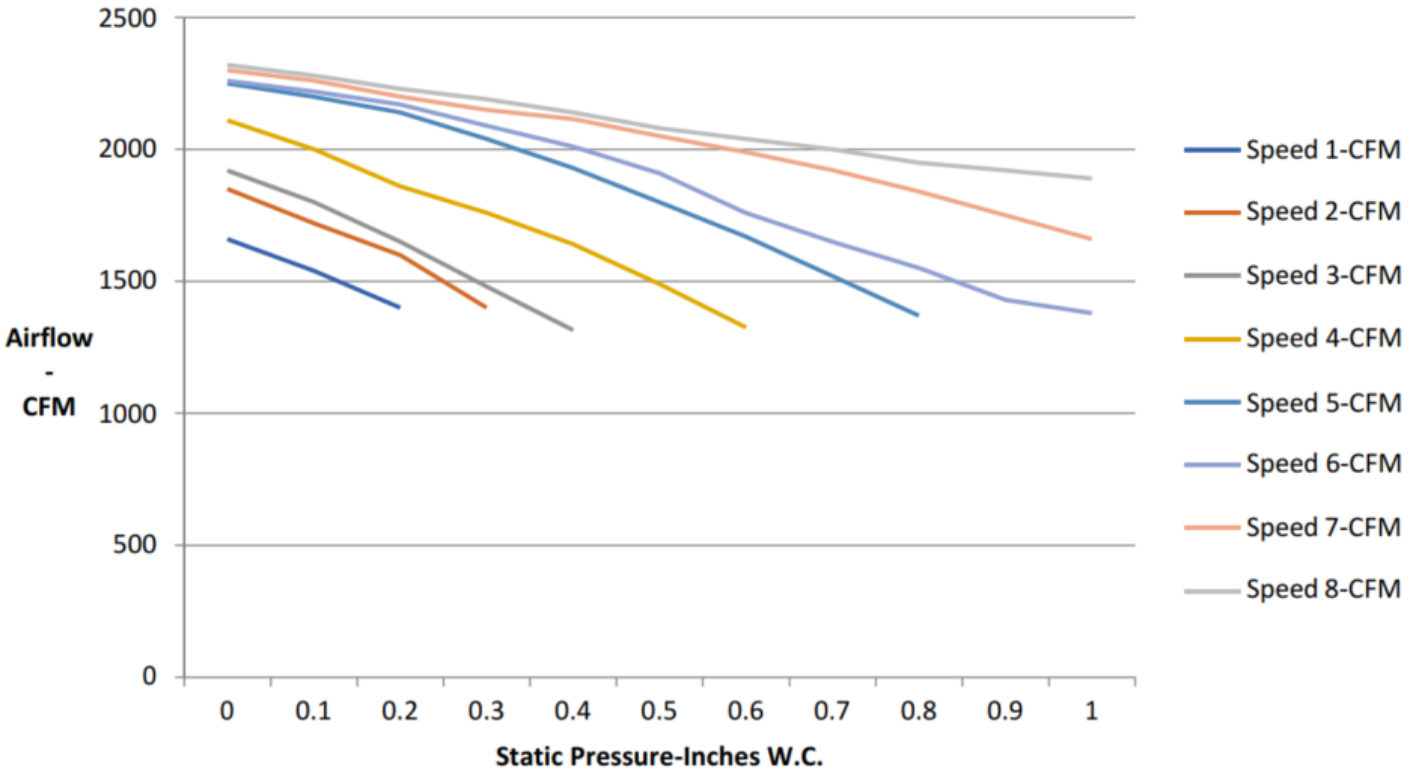
SYSTEM PERFORMANCE			
Cooling	Rated Capacity @ 95°F	Btu/h	48,000
	Min-Max Capacity	Btu/h	34,000 – 48,000
Heating	Rated Capacity @ 47°F	Btu/h	48,000
	Rated Capacity @ 17°F	Btu/h	31,400
	Min-Max Capacity	Btu/h	34,000 – 52,000
SEER / EER			18 / 11
HSPF / COP			10.5 / 3.6
SEER2 / EER2			17 / 11
HSPF2			9
AHRI Number			206414275
Cooling Temperature Range		°F/°C	5 ~ 129 / -15 ~ 54
Heating Temperature Range		°F/°C	-22 ~ 75 / -30 ~ 24
INDOOR UNIT			**TUD48-24AH2ADU**
Fan Motor Output Power		W	746
Fan Motor FLA		A	5
Air Flow (Min - Max)		CFM	1,380
Static Pressure (Rated / Maximum)		In w.c	0.2 / 1.0
Sound Pressure Level (Cooling / Heating)		dB(A)	50
Dehumidification		pt/hr	9.94
Condensate Drain Size (OD)		in	3 / 4
Unit Dimension (WxHxD)		in	24 3/4 x 57 x 21 1/4
Package Dimension (WxHxD)		in	27 5/16 x 59 3/8 x 26
Weight (Net / Gross)		lbs	202 / 218
Electric Heater (Optional)		kW	10, 15, 20
OUTDOOR UNIT			**TU60-48WADU**
Compressor Type			Inverter Rotary
Compressor RLA		A	19
Fan Motor Output Power (2)		W	149 * 2
Fan Motor (2)		A	1.5 * 2
Sound Pressure Level (Cooling / Heating)		dB(A)	55 (48 – 61)
Unit Dimension (WxHxD)		in	39 3/8 x 53 5/8 x 14 1/2
Package Dimension (WxHxD)		in	45 7/16 × 59 1/4 × 19 7/16
Weight (Net / Gross)		lbs	308 / 337
Refrigerant Charge - R410A		oz	220.5
Coil Type (Blue Fin)			Copper Tube / Aluminum Fin
REFRIGERANT PIPING			
Line Set Size (Liquid - Gas)		in	3/8 - 3/4
Pre-Charge Lengh		ft	31
Additional Charge		oz/ft	0.32
Pipe Length (Min - Max)		ft	10 - 98
Max. Pipe Elevation		ft	49
ELECTRICAL			
Power Supply			208/230V / 1Ph / 60 Hz
Outdoor Unit	Rated Current (Cooling / Heating)	A	30 / 31
	MCA / MOCP	A	35 / 45
Indoor Unit	Rated Current (Cooling / Heating)	A	5/ 5
	MCA / MOCP	A	8 / 15
Main Power Wire Size		AWG	Size Per Local Code
LIMITED WARRANTY	10 Year Parts, 10 Years Compressor - Residential & Commercial		

GENERAL FEATURES

- High Efficiency DC Inverter Technology
- Compact and Quiet 55 dB(A) Side Discharge Outdoor Unit
- Zero Lot Line Design
- Match with TOSOT or Competitive Indoor Unit
- Designed for New Construction or Replacement Market
- 24VAC Thermostat Compatible
- 8 Speed Fan Motor
- Low Ambient Cooling down to 5°F(-15°C)
- Low Ambient Heating down to -22°F(-30°C)
- Outdoor Coil has Copper Tube/Aluminum Fin with Acetal-Resin Coating (Golden Fin – 1,500Hr Salt Spray Rating)
- Indoor Coil has Copper Tube/Aluminum Fin with Acetal-Resin Coating (Blue Fin - 500Hr Salt Spray Rating)

TOSOT

FAN PERFORMANCE: TUD48-24AH2ADU



Static Pressure Inches W.C.	0	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Speed 1-CFM	1640	1500	1450	1350								
Speed 2-CFM	1680	1560	1500	1380	1300							
Speed 3-CFM	1810	1690	1620	1550	1380							
Speed 4-CFM	1930	1830	1770	1710	1580	1430	1280					
Speed 5-CFM	2200	2110	2040	1980	1860	1720	1620	1490	1380			
Speed 6-CFM	2240	2190	2145	2100	2010	1970	1750	1615	1500	1380		
Speed 7-CFM	2280	2240	2200	2180	2130	2080	2000	1880	1750	1600	1420	
Speed 8-CFM	2300	2260	2220	2190	2140	2090	2040	1980	1930	1800	1700	1550

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EXTENDED RATINGS: TUD48-24AH2ADU / TU60-48WADU

COOLING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature																			
		70°F (DB) / 59°F (WB)					75°F (DB) / 63°F (WB)					80°F (DB) / 67°F (WB)					90°F (DB) / 73°F (WB)				
		TC (Btu/h)	SC (Btu/h	SHR	EER	Power Input (W)	TC (Btu/h)	SC (Btu/h	SHR	EER (Btu/ (h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h	SHR	EER (Btu/ (h·W))	Power Input (W)	TC (Btu/h)	SC (Btu/h	SHR	EER (Btu/ (h·W))	Power Input (W)
MAX OUTPUT*	5°F	40800	29154	71.46%	17.82	2290	44400	32097	72.29%	18.46	2405	48000	35040	73.00%	19.05	2520	50000	36440	72.88%	19.31	2590
	10°F	40800	28974	71.01%	17.59	2320	44400	32007	72.09%	17.94	2475	48000	35040	73.00%	18.25	2630	50000	36440	72.88%	18.52	2700
	15°F	40800	28956	70.97%	17.36	2350	44400	31998	72.07%	17.45	2545	48000	35040	73.00%	17.52	2740	50000	36440	72.88%	17.79	2810
	20°F	40800	29276	71.75%	16.82	2425	44400	32158	72.43%	16.71	2657.5	48000	35040	73.00%	16.61	2890	50000	36440	72.88%	16.89	2960
	25°F	40800	29136	71.41%	16.13	2530	44400	32088	72.27%	16.01	2772.5	48000	35040	73.00%	15.92	3015	50000	36440	72.88%	16.21	3085
	30°F	40800	29086	71.29%	15.45	2640	44400	32063	72.21%	15.50	2865	48000	35040	73.00%	15.53	3090	50000	36440	72.88%	15.82	3160
	35°F	40800	29187	71.54%	14.95	2730	44400	32114	72.33%	15.09	2942.5	48000	35040	73.00%	15.21	3155	50000	36440	72.88%	15.50	3225
	40°F	40800	29256	71.71%	14.52	2810	44400	32148	72.41%	14.70	3020	48000	35040	73.00%	14.86	3230	50000	36440	72.88%	15.15	3300
	45°F	40800	28964	70.99%	14.02	2910	44400	32002	72.08%	14.28	3110	48000	35040	73.00%	14.50	3310	50000	36440	72.88%	14.79	3380
	50°F	40800	28968	71.00%	13.60	3000	44400	32004	72.08%	13.88	3200	48000	35040	73.00%	14.12	3400	50000	36440	72.88%	14.41	3470
	55°F	40800	29543	72.41%	12.75	3200	44400	32292	72.73%	13.25	3350	48000	35040	73.00%	13.71	3500	50000	36440	72.88%	14.01	3570
	60°F	40800	29453	72.19%	12.00	3400	44400	32247	72.63%	12.64	3512.5	48000	35040	73.00%	13.24	3625	50000	36440	72.88%	13.53	3695
	65°F	40800	29784	73.00%	11.46	3560	44400	32412	73.00%	12.15	3655	48000	35040	73.00%	12.80	3750	50000	36440	72.88%	13.09	3820
	70°F	40800	29874	73.22%	11.33	3600	44400	32339	72.84%	12.00	3700	48000	34804	72.51%	12.63	3800	50000	36204	72.41%	12.92	3870
	75°F	40800	29294	71.80%	11.18	3650	44400	31879	71.80%	11.84	3750	48000	34464	71.80%	12.47	3850	50000	35864	71.73%	12.76	3920
	80°F	40800	29824	73.10%	10.88	3750	44650	32462	72.70%	11.55	3865	48500	35100	72.37%	12.19	3980	50500	36500	72.28%	12.47	4050
	85°F	40800	29580	72.50%	10.60	3850	44850	32516	72.50%	11.28	3975	48900	35453	72.50%	11.93	4100	50900	36853	72.40%	12.21	4170
	90°F	40800	29236	71.66%	10.23	3990	44850	32368	72.17%	10.67	4205	48900	35500	72.60%	11.06	4420	50900	36900	72.50%	11.34	4490
	95°F	40800	29784	73.00%	9.88	4130	44850	32741	73.00%	10.14	4425	48900	35697	73.00%	10.36	4720	50900	37097	72.88%	10.63	4790
	100°F	40800	29035	71.16%	8.91	4580	44600	32068	71.90%	9.32	4785	48400	35100	72.52%	9.70	4990	50400	36500	72.42%	9.96	5060
	105°F	40800	28968	71.00%	8.11	5030	44400	31524	71.00%	8.60	5165	48000	34080	71.00%	9.06	5300	50000	35480	70.96%	9.31	5370
	110°F	37500	27400	73.07%	7.70	4870	41400	30200	72.95%	8.32	4975	45300	33000	72.85%	8.92	5080	47300	34400	72.73%	9.18	5150
	115°F	35400	26196	74.00%	7.52	4710	39450	29193	74.00%	8.24	4785	43500	32190	74.00%	8.95	4860	45500	33590	73.82%	9.23	4930
	120°F	33000	24542	74.37%	7.32	4510	37250	27846	74.75%	8.14	4575	41500	31150	75.06%	8.94	4640	43500	32550	74.83%	9.24	4710
	122°F	31500	23465	74.49%	7.33	4300	35250	26758	75.91%	8.08	4360	39000	30050	77.05%	8.82	4420	41000	31450	76.71%	9.13	4490
	125°F	30000	22453	74.84%	7.30	4110	33750	25677	76.08%	8.12	4155	37500	28900	77.07%	8.93	4200	39500	30300	76.71%	9.25	4270
	129°F	29000	21754	75.01%	7.40	3920	32500	24777	76.24%	8.21	3960	36000	27800	77.22%	9.00	4000	38000	29200	76.84%	9.34	4070

*Maximum Output values are not based on AHRI test conditions

LEGEND:	W - Watts
	DB - Dry Bulb
	TC - Total Capacity
	SC - Sensible Capacity
	SHR - Sensible Heat Ratio
	COP - Coeffecient of Performance

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EXTENDED RATINGS: TUD48-24AH2ADU / TU60-48WADU

HEATING PERFORMANCE

Outdoor Ambient Temperature (DB)		Return Air Temperature											
		70°F (DB) / 59°F (WB)			75°F (DB) / 63°F (WB)			80°F (DB) / 67°F (WB)			90°F (DB) / 73°F (WB)		
		TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)	TC (Btu/h)	COP (W/W)	Power Input (W)
MAX OUTPUT*	-22°F	26400	1.36	5700	26100	1.34	5725	25800	1.32	5750	27300	1.37	5820
	-20°F	27450	1.39	5800	27175	1.37	5825	26900	1.35	5850	28400	1.41	5920
	-15°F	28500	1.42	5900	28200	1.39	5930	27900	1.37	5960	29400	1.43	6030
	-10°F	30900	1.50	6050	30800	1.48	6080	30700	1.47	6110	32200	1.53	6180
	-5°F	34200	1.62	6200	33850	1.59	6230	33500	1.57	6260	35000	1.62	6330
	0°F	38700	1.73	6560	37650	1.70	6510	36600	1.66	6460	38100	1.71	6530
	5°F	43000	1.82	6920	41350	1.78	6790	39700	1.75	6660	41200	1.79	6730
	10°F	44500	1.89	6905	42850	1.86	6748	41200	1.83	6590	42700	1.88	6660
	15°F	46200	1.94	6990	44150	1.91	6760	42100	1.89	6530	43600	1.94	6600
	17°F	48000	2.04	6880	46000	2.02	6680	44000	1.99	6480	45500	2.04	6550
	20°F	48000	2.22	6350	46500	2.16	6315	45000	2.10	6280	46500	2.15	6350
	25°F	48000	2.31	6090	47000	2.26	6085	46000	2.22	6080	47500	2.26	6150
	30°F	48000	2.43	5800	47500	2.39	5825	47000	2.35	5850	48500	2.40	5920
	35°F	48000	2.61	5400	47500	2.57	5425	47000	2.53	5450	48500	2.58	5520
	40°F	48000	2.81	5000	47600	2.82	4950	47200	2.82	4900	48700	2.87	4970
	45°F	48000	3.06	4600	47650	3.05	4575	47300	3.05	4550	48800	3.10	4620
	47°F	50000	3.48	4210	48750	3.35	4265	47500	3.22	4320	49000	3.27	4390
	50°F	50700	3.42	4350	49350	3.42	4225	48000	3.43	4100	49500	3.48	4170
	55°F	51400	3.35	4500	49950	3.51	4175	48500	3.69	3850	50000	3.74	3920
	60°F	52000	3.28	4650	50500	3.59	4125	49000	3.99	3600	50500	4.03	3670
	65°F	52000	3.18	4800	50500	3.61	4100	49000	4.22	3400	50500	4.27	3470
	70°F	52000	3.08	4950	50500	3.63	4075	49000	4.49	3200	50500	4.53	3270
	75°F	52000	2.99	5100	50500	3.61	4100	49000	4.63	3100	50500	4.67	3170
	80°F												
	86°F												

*Maximum Output values are not based on AHRI test conditions

LEGEND:	W - Watts
	DB - Dry Bulb
	TC - Total Capacity
	SC - Sensible Capacity
	SHR - Sensible Heat Ratio
	COP - Coeffecient of Performance

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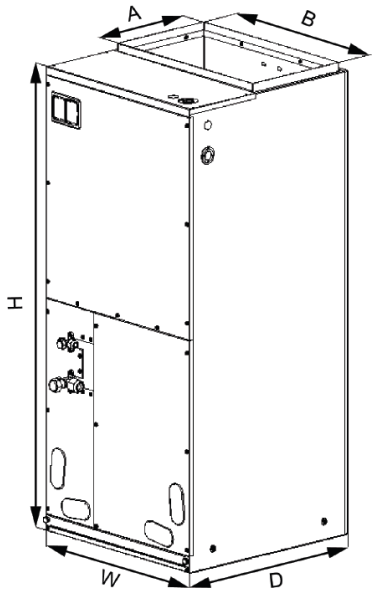
TOSOT

FEATURES SUMMARY: TUD48-24AH2ADU/ TU60-48WADU

SYSTEM FEATURES	
Compressor	Inverter
Ultra Low Frequency Torque Control	YES
Power Factor Correction	YES
Compressor Type	Rotary
Refrigerant Type	R410A
Outdooor Electronic Expansion Valve (EEV)	YES
Indoor TXV Control	YES
Basepan With Electric Heater	YES
Compressor With Electric Heater	YES
Fin Coating (Outdoor & Indoor)	Acrylic Resin
Intelligent Defrosting	YES
Intelligent Preheating	YES
Low Voltage Startup	YES
Memory/Power Failure Recovery	YES
Self Diagnosis	YES
Low Ambient Cooling	YES
24VAC Thermostat Compatible	YES
Indoor Fan Type	Centrifugal
Multi Fan Speeds	8 Speeds
Auxiliary Electrical Heater	Optional

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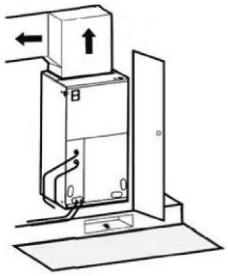
DIMENSIONS & CLEARANCES: TUD48-24AH2ADU

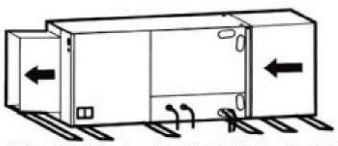


Dimensions	
A	11 5/8
B	20
H	57
W	24 3/4
D	21 1/4

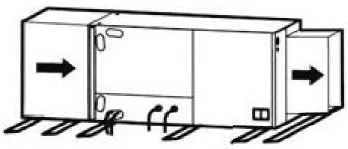
Filter Size	
Supplied*	20 5/8 x 20 5/16 x 1/2
Suggested	20 5/8 x 20 5/16 x 1
*Supplied filter is metal mesh	

Clearances	
Front	> 24 inch
	Allow a minimum of 24” in front of the unit for service clearance. When installing in an area directly over a finished ceiling (such as an attic), an emergency drain pan is required directly under the unit. See local and state codes for requirements. When installing this unit in an area that may become wet, elevate the unit with a sturdy, non-porous material. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage.This air handler is designed for a complete supply and return ductwork system.
Multi-Position Capabilities	



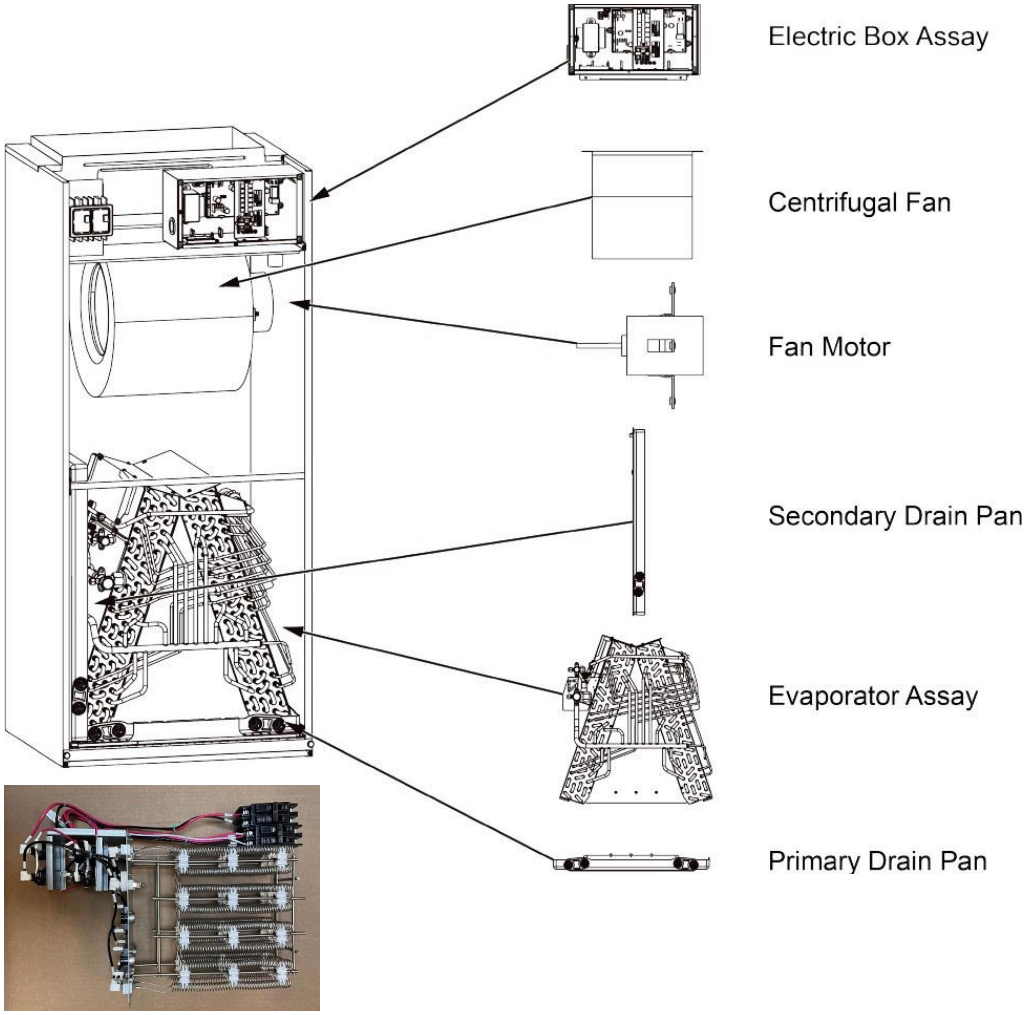


Horizontal Left Configuration - No Modification Needed



Horizontal Right Configuration - Must Relocate Drain Pan

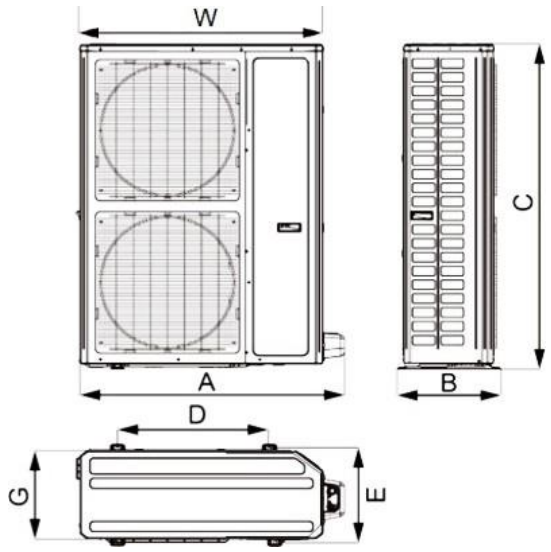
ACCESSORY HEATER AND GENERAL INFORMATION: TUD48-24AH2ADU



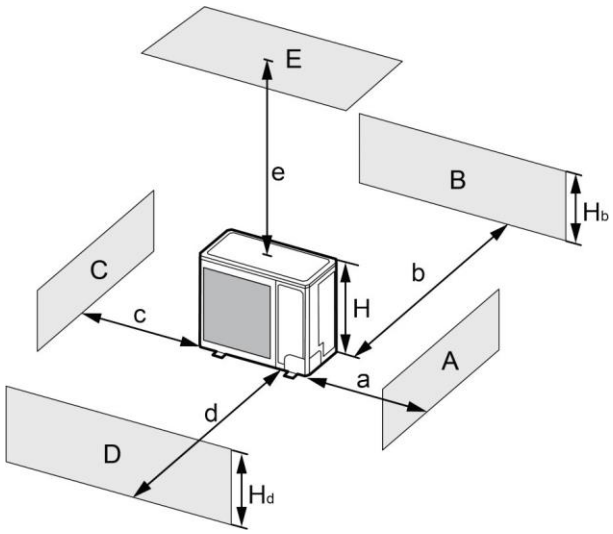
Model	Heat Kit Model	Electric Heat (kW)		Min. Circuit		Max.Fuse or Breaker	
		240V	208V	240V	208V	240V	208V
TUD48-24AH2ADU	TUD-Heat Kit-5KW	5	3.76	26	22.6	30	25
	TUD-HEAT KIT-8KW	8	6.00	41.7	36	45	40
	TUD-HEAT KIT-10KW	10	7.51	52	45	60	45
	TUD-HEAT KIT-15KW	15	11.25	52 & 26	45 & 22.6	60 & 30	45 & 25
	TUD-HEAT KIT-20KW	20	15.02	52 & 52	45 & 45	60 & 60	45 & 45

TOSOT

DIMENSIONS & CLEARANCES: TU60-48WADU



Dimensions	
A	42-3/4
B	16-7/8
C	53-5/8
D	24-3/8
E	15-5/8
G	14-1/2



Obstacle/Wall A~E	Obstacle/Wall Hb Hd H		Clearance (in)				
			A	b	c	d	e
B	—		-	⩾4	-	-	-
A,B,C,	—		⩾12	⩾4	⩾4	-	-
B,E	—		-	⩾4	-	-	⩾10
A,B,C,E	—		⩾12	⩾6	⩾6	-	⩾40
A,C,E	—		⩾8	-	⩾20	-	⩾10
D	—		-	-	-	⩾40	-
D,E	—		-	-	-	⩾40	⩾40
B,D	Hb < Hd	Hd > H	-	⩾4	-	⩾40	-
	Hb > Hd	Hd < H	-	⩾4	-	⩾40	-
B,D,E	Hb < Hd	Hb⩽1/2H	-	⩾10	-	⩾80	⩾40
		1/2H < Hb⩽H	-	⩾10	-	⩾80	⩾40
		Hb > H	Prohibited				
	Hb > Hd	Hd⩽1/2H	-	⩾4	-	⩾80	⩾40
		1/2H < Hd⩽H	-	⩾200	-	⩾80	⩾40
		Hd > H	Prohibited				

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