



FRIEDRICH

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**Endeavor™ Line *E-Series*
iM Air Conditioners**



FWA13NZ

Cooling Efficiencies up to: 15.2 SEER2/12.0 EER2

Nominal Sizes: 1½ to 5 Ton [5.28 to 17.6 kW]

Cooling Capacities: 17.1 to 55.5 kBTU [5.0 to 16.3 kW]

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Features and Benefits

- **Fully Louvered Steel Cabinet:** Features durable construction to add protection from yard hazards, weather corrosion
- **Optimized 7 mm Coil¹:** Design allows for improved airflow, heat transfer and energy consumption
- **Easily Accessible Control Box:** Ease of installation and serviceability

¹Does not apply to 5 ton Models

Air Conditioners

<u>FW</u>	<u>A</u>	<u>13</u>	<u>N</u>	<u>Z</u>	<u>18</u>	<u>A</u>	<u>J</u>	<u>1</u>	<u>N</u>	<u>A</u>
Brand	Product Category	SEER2	Region	Refrigerant	Capacity BTU/HR	Major Series	Voltage	Type	Controls	Minor Series
FW - Friedrich®	A - Air Conditioners	13 - 13.4 SEER2	N - North	Z - R-410A	18 - 18,000 [5.28 kW] 24 - 24,000 [7.03 kW] 30 - 30,000 [8.79 kW] 36 - 36,000 [10.55 kW] 42 - 42,000 [12.31 kW] 48 - 48,000 [14.07 kW] 60 - 60,000 [17.58 kW]	A - 1st Design	J - 208/230/1/60	1 - 1-Stage	N - Non-Communicating	A - 1st Design

[] Designates Metric Conversions

Available Models
FWA13NZ18AJ1NA
FWA13NZ24AJ1NA
FWA13NZ30AJ1NA
FWA13NZ36AJ1NA
FWA13NZ42AJ1NA
FWA13NZ48AJ1NA
FWA13NZ60AJ1NA

Standard Equipment
R-410A Refrigerant
Scroll Compressor
Field Installed Filter Drier
Front Seating Service Valves
Internal Pressure Relief Valve
Internal Thermal Overload
Long Line Capability
Low Ambient Capability with Kit
Optimized Venturi Airflow
Rust Resistant Screws
QR Code
External Gauge Ports

General Data							
Model No.	FWA13NZ18	FWA13NZ24	FWA13NZ30	FWA13NZ36	FWA13NZ42	FWA13NZ48	FWA13NZ60
Nominal Tonnage	1.5	2.0	2.5	3.0	3.5	4.0	5.0
Valve Connections							
Liquid Line O.D. – in.	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Suction Line O.D. – in.	3/4	3/4	3/4	3/4	7/8	7/8	7/8
Refrigerant (R410A) furnished oz. ¹	70	78	86	106	126	121	186
Compressor Type	Scroll						
Outdoor Coil							
Net face area – Outer Coil	10.9	13.3	13.3	13.3	14.3	23.5	28.4
Net face area – Inner Coil	—	—	—	12.9	13.9	—	—
Tube diameter – in.	0.276	0.276	0.276	0.276	0.276	0.276	0.375
Number of rows	1	1	1	2	2	1	1
Fins per inch	24	24	24	24	24	24	22
Outdoor Fan							
Diameter – in.	20	24	24	24	24	26	26
Number of blades	2	3	3	3	2	3	3
Motor hp	1/7	1/6	1/6	1/6	1/5	1/5	1/5
CFM	1765	3439	3439	2957	2830	4095	4189
RPM	1075	825	825	825	825	850	850
Watts	154	197	197	188	145	203	204
Shipping weight – lbs.	COMING SOON						
Operating weight – lbs.							

Electrical Data							
Line Voltage Data (Volts-Phase-Hz)	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
Maximum overcurrent protection (amps) ²	20	25	30	30	40	50	50
Minimum circuit ampacity ³	12	16	19	18	25	33	34
Compressor							
Rated load amps	9	12	14	13	19	25	26
Locked rotor amps	43	60	68	83	110	120	150
Condenser Fan Motor							
Full load amps	0.8	0.8	0.8	0.8	1.0	1.0	1
Locked rotor amps	1.5	1.5	1.7	1.5	2.4	2.4	2.4

¹Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the installation instructions for information about set length and additional refrigerant charge required.

²HACR type circuit breaker or fuse.

³Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.

Accessories

Model No.		FWA13NZ18	FWA13NZ24	FWA13NZ30	FWA13NZ36	FWA13NZ42	FWA13NZ48	FWA13NZ60
Compressor crankcase heater*		44-17402-44	44-17402-44	44-17402-44	44-17402-44	44-17402-45	44-17402-45	44-17402-45
Low ambient control		RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08
Compressor sound cover		68-23427-26	68-23427-26	68-23427-26	68-23427-26	68-23427-25	68-23427-25	68-23427-25
Compressor hard start kit		SK-A1	SK-A1	SK-A1	SK-A1	SK-A1	SK-A1	SK-A1
Compressor time delay		RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01
Low pressure control		RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07
High pressure control		RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07
Liquid Line Solenoid (24 VAC, 50/60 Hz)	Solenoid Valve	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC
	Solenoid Coil	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V
Liquid Line Solenoid (120/240 VAC, 50/60 Hz)	Solenoid Valve	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC
	Solenoid Coil	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V
Top Cap w/Label		91-101123-21	91-101123-21	91-101123-21	91-101123-21	91-101123-21	91-101123-21	91-101123-21

*Crankcase Heater recommended with Low Ambient Kit.

Weighted Sound Power Level (dBA)

Unit Size - Voltage, Series	Standard Rating (dBA)	Typical Octave Band Spectrum (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
FWA13NZ18	70	46.7	54.5	60.8	59.9	58.2	53.4	46.9
FWA13NZ24	71	46.3	58.4	62.7	59.0	58.0	52.4	47.3
FWA13NZ30	71	47.0	62.4	62.6	59.3	57.2	55.7	47.1
FWA13NZ36	71	45.5	58.4	63.9	59.2	56.6	52.1	47.7
FWA13NZ42	68	46.4	53.7	59.7	55.9	55.3	53.6	50.3
FWA13NZ48	71	49.2	56.2	62.3	59.5	57.9	49.9	40.7
FWA13NZ60	76	49.1	58.7	68.7	65.2	63.5	60.1	55.7

NOTE: Tested in accordance with AHRI Standard 270-08 (not listed in AHRI)

Unit Dimensions

Model No.	Operating						Shipping					
	H (Height)		L (Length)		W (Width)		H (Height)		L (Length)		W (Width)	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
FWA13NZ18AJ1	25.17	639	29.543	750	29.543	750	27.0625	687	32.625	829	32.625	829
FWA13NZ24AJ1	25.17	639	33.655	855	33.655	855	27.0625	687	36.625	930	36.625	930
FWA13NZ30AJ1	25.17	639	33.655	855	33.655	855	27.0625	687	36.625	930	36.625	930
FWA13NZ36AJ1	25.17	639	33.655	855	33.655	855	27.0625	687	36.625	930	36.625	930
FWA13NZ42AJ1	27.17	690	33.655	855	33.655	855	29.0625	738	36.625	930	36.625	930
FWA13NZ48AJ1	39.17	995	35.543	903	35.543	903	41.0625	1043	38.625	981	38.625	981
FWA13NZ60AJ1	45.17	1147	35.543	903	35.543	903	47.0625	1195	38.625	981	38.625	981

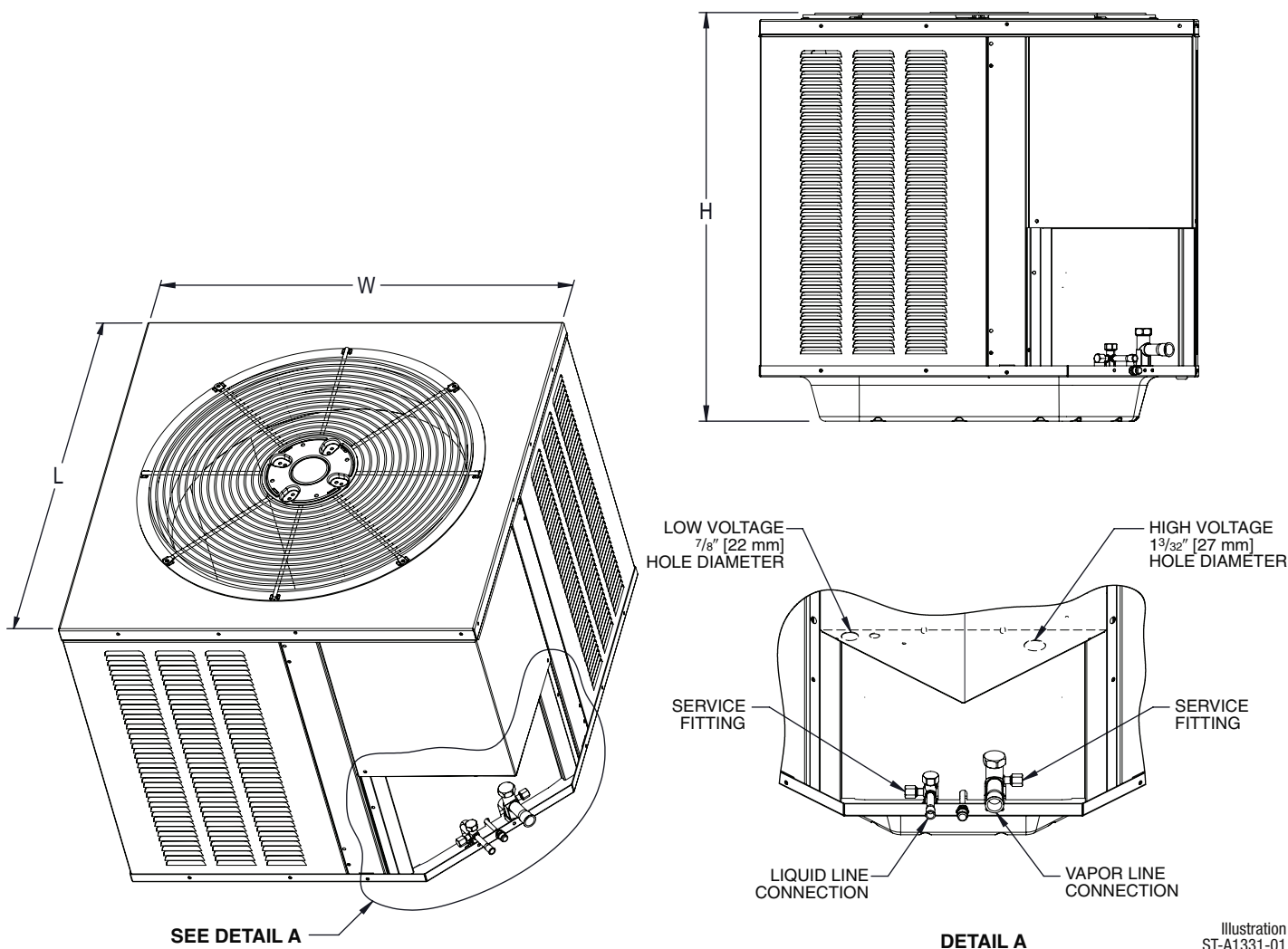
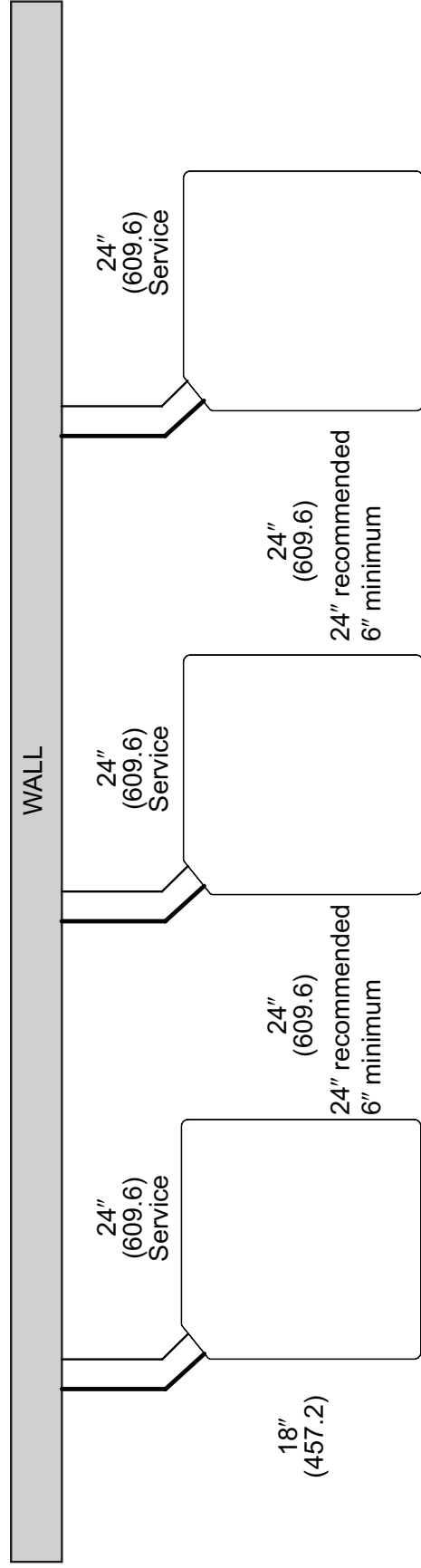
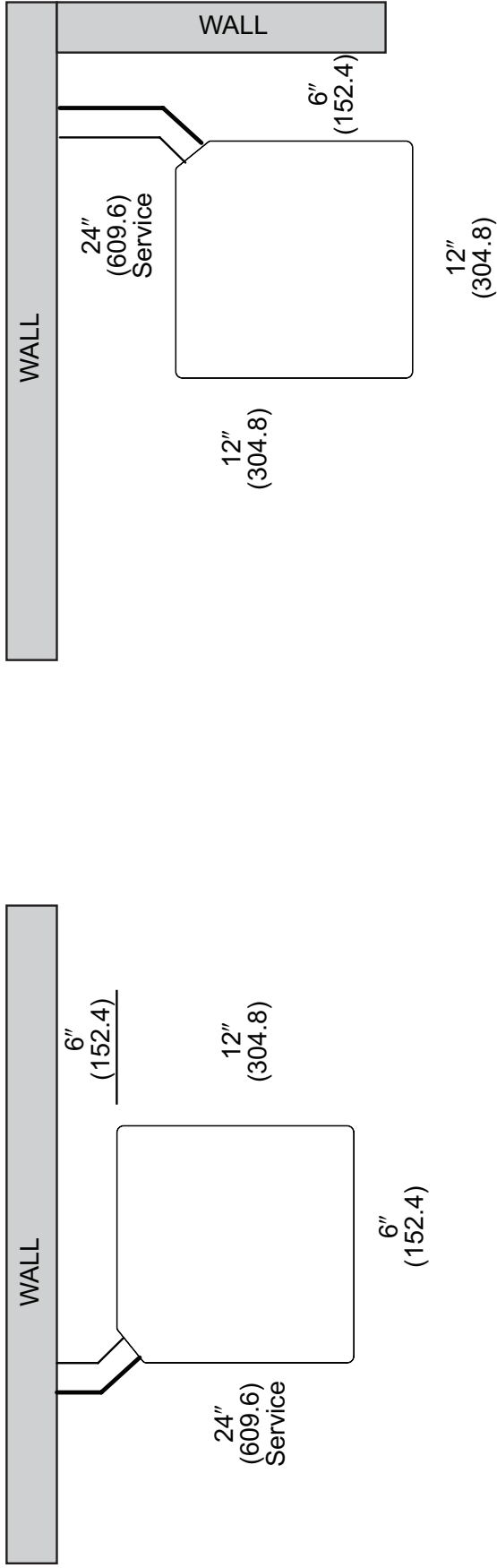


Illustration
ST-A1331-01
Rev. 10-20-2022

[] Designates Metric Conversions

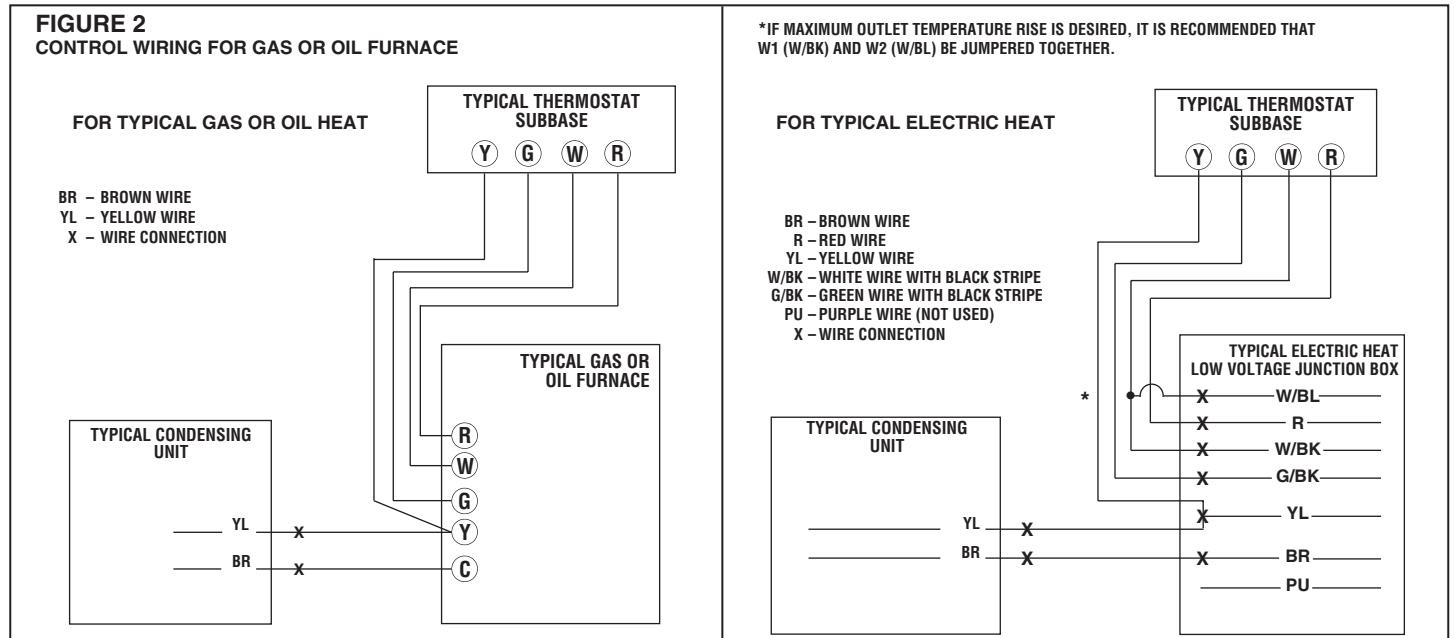
CLEARANCES



NOTE: NUMBERS IN () = mm

IMPORTANT: When installing multiple units in an alcove, roof well or partially enclosed area, ensure there is adequate ventilation to prevent re-circulation of discharge air.

Control Wiring



Application Guidelines

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01 -in. wc.
2. Minimum outdoor operation air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 125°F (51.7°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. Use only copper wire for electric connections at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
6. Do not apply capillary tube indoor coils to these units.
7. Factory-supplied filter drier must be installed.

Refrigerant Line Size Information

13.4 SEER2 Single-Stage Air-Conditioners													
Unit Size	Allowable Liquid Line Size	Allowable Suction Line Size	Apply Long Line Guidelines if Linear Line Length Exceeds Those Shown Below (Feet)	Equivalent Length (Feet)									
				Maximum Vertical Rise (Outdoor Unit Below Indoor Unit) * / Capacity Multiplier									
			(-)A13NZ	< 25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	226-250
1.5 Ton **SEE NOTE 3	1/4"	5/8"	N/A	25/1.00	50/0.99	62/0.98	43/0.98	24/0.97	57/0.97	NR	NR	NR	NR
	5/16"	5/8"	N/A	25/1.00	50/0.99	75/0.98	98/0.98	93/0.97	88/0.97	83/0.96	78/0.96	73/0.95	68/0.94
	3/8"	5/8"	178	25/1.00	50/0.99	75/0.98	100/0.98	100/0.97	100/0.97	100/0.96	100/0.96	100/0.95	100/0.94
	1/4"	3/4"	N/A	25/1.00	50/1.00	62/0.99	43/0.99	24/0.99	57/0.99	NR	NR	NR	NR
	5/16"	3/4"	N/A	25/1.00	50/1.00	75/0.99	98/0.99	93/0.99	88/0.99	83/0.99	78/0.98	73/0.98	68/0.98
	3/8"	3/4"	178	25/1.00	50/1.00	75/1.00	100/0.99	100/0.99	100/0.99	100/0.99	100/0.98	100/0.98	100/0.98
2 Ton	1/4"	5/8"	N/A	25/0.99	50/0.98	21/0.97	NR	NR	NR	NR	NR	NR	NR
	5/16"	5/8"	213	25/0.99	50/0.98	75/0.97	87/0.96	77/0.95	69/0.94	61/0.93	53/0.92	45/0.91	37/0.90
	3/8"	5/8"	142	25/0.99	50/0.98	75/0.97	100/0.96	100/0.95	100/0.94	98/0.93	95/0.92	92/0.91	89/0.90
	1/4"	3/4"	N/A	25/1.00	50/1.00	21/0.99	NR	NR	NR	NR	NR	NR	NR
	5/16"	3/4"	213	25/1.00	50/1.00	75/0.99	87/0.99	77/0.98	69/0.98	61/0.98	53/0.97	45/0.97	37/0.96
	3/8"	3/4"	142	25/1.00	50/1.00	75/0.99	100/0.99	100/0.98	100/0.98	98/0.98	95/0.97	93/0.97	90/0.96
2.5 Ton	5/16"	5/8"	N/A	25/0.99	50/0.98	75/0.96	70/0.94	59/0.93	48/0.91	36/0.90	NR	NR	NR
	3/8"	5/8"	142	25/0.99	50/0.98	75/0.96	100/0.94	98/0.93	94/0.91	90/0.90	NR	NR	NR
	5/16"	3/4"	213	25/1.00	50/0.99	75/0.99	70/0.98	59/0.98	48/0.97	36/0.96	25/0.96	13/0.95	NR
	3/8"	3/4"	142	25/1.00	50/0.99	75/0.99	100/0.98	98/0.98	94/0.97	90/0.96	86/0.96	82/0.95	78/0.95
	5/16"	5/8"	N/A	25/0.99	50/0.97	66/0.94	49/0.92	32/0.90	NR	NR	NR	NR	NR
	3/8"	5/8"	108	25/0.99	50/0.97	75/0.94	95/0.92	89/0.90	NR	NR	NR	NR	NR
3 Ton	5/16"	3/4"	N/A	25/1.00	50/0.99	66/0.98	49/0.98	32/0.97	15/0.96	NR	NR	NR	NR
	3/8"	3/4"	108	25/1.00	50/0.99	75/0.98	95/0.98	89/0.97	84/0.96	78/0.95	72/0.94	67/0.93	61/0.93
	1/2"	3/4"	54	25/1.00	50/0.99	75/0.98	100/0.98	100/0.97	100/0.96	100/0.95	100/0.94	100/0.93	100/0.93
	5/16"	7/8"	N/A	25/1.00	50/1.00	66/1.00	49/0.99	32/0.99	15/0.99	NR	NR	NR	NR
	3/8"	7/8"	108	25/1.00	50/1.00	75/1.00	95/0.99	89/0.99	84/0.99	78/0.98	72/0.98	67/0.98	61/0.97
	1/2"	7/8"	54	25/1.00	50/1.00	75/1.00	100/0.99	100/0.99	100/0.99	100/0.98	100/0.98	100/0.98	100/0.97
3.5 Ton	3/8"	3/4"	150	25/0.99	50/0.98	75/0.97	88/0.96	80/0.95	72/0.94	65/0.92	57/0.91	49/0.90	NR
	1/2"	3/4"	75	25/0.99	50/0.98	75/0.97	100/0.96	100/0.95	100/0.94	100/0.92	100/0.91	100/0.90	NR
	3/8"	7/8"	150	25/1.00	50/1.00	75/0.99	88/0.99	80/0.99	72/0.98	65/0.97	57/0.97	49/0.96	42/0.96
	1/2"	7/8"	75	25/1.00	50/1.00	75/0.99	100/0.99	100/0.99	100/0.98	100/0.97	100/0.97	100/0.96	100/0.96

NOTES:

- 1) Do not exceed 200 ft linear line length.
- 2) *Do not exceed 100 ft vertical separation if outdoor unit is above indoor unit.
- 3) **3/4" suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

Refrigerant Line Size Information (Con't.)

13.4 SEER2 Single-Stage Air-Conditioners													
Unit Size	Allowable Liquid Line Size	Allowable Suction Line Size	Apply Long Line Guidelines if Linear Line Length Exceeds Those Shown Below (Feet)	Equivalent Length (Feet)									
				< 25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	226-250
				Maximum Vertical Rise (Outdoor Unit Below Indoor Unit) * / Capacity Multiplier									
4 Ton	3/8"	3/4"	148	25 / 0.99	50 / 0.98	75 / 0.96	77 / 0.95	67 / 0.93	57 / 0.92	46 / 0.91	NR	NR	NR
	1/2"	3/4"	74	25 / 0.99	50 / 0.98	75 / 0.96	100 / 0.95	100 / 0.93	100 / 0.92	100 / 0.91	NR	NR	NR
	3/8"	7/8"	148	25 / 1.00	50 / 0.99	75 / 0.99	77 / 0.98	67 / 0.97	57 / 0.97	46 / 0.96	36 / 0.96	26 / 0.95	15 / 0.95
	1/2"	7/8"	74	25 / 1.00	50 / 0.99	75 / 0.99	100 / 0.98	100 / 0.97	100 / 0.97	100 / 0.96	100 / 0.96	99 / 0.95	97 / 0.95
	3/8"	3/4"	78	25 / 0.99	50 / 0.97	75 / 0.94	61 / 0.92	46 / 0.90	NR	NR	NR	NR	NR
	1/2"	3/4"	39	25 / 0.99	50 / 0.97	75 / 0.94	100 / 0.92	100 / 0.90	NR	NR	NR	NR	NR
5 Ton	3/8"	7/8"	78	25 / 1.00	50 / 0.99	75 / 0.98	61 / 0.97	46 / 0.96	32 / 0.95	18 / 0.94	NR	NR	NR
	1/2"	7/8"	39	25 / 1.00	50 / 0.99	75 / 0.98	100 / 0.97	100 / 0.96	100 / 0.95	97 / 0.94	95 / 0.94	92 / 0.93	89 / 0.92
	3/8"	1-1/8"	78	25 / 1.01	50 / 1.01	75 / 1.00	61 / 1.00	46 / 0.99	32 / 0.99	18 / 0.99	NR	NR	NR
	1/2"	1-1/8"	39	25 / 1.01	50 / 1.01	75 / 1.00	100 / 1.00	100 / 0.99	100 / 0.99	97 / 0.99	95 / 0.99	92 / 0.99	89 / 0.98

NOTES:

- 1) Do not exceed 200 ft linear line length.
- 2) *Do not exceed 100 ft vertical separation if outdoor unit is above indoor unit.
- 3) **3/4" suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

Refrigerant Line Size Information (Con't.)

13.4 SEER2 Single-Stage Air-Conditioners													
Unit Size	Allowable Liquid Line Size mm [in.]	Allowable Suction Line Size mm [in.]	Apply Long Line Guidelines if Linear Line Length Exceeds Those Shown Below (Feet)	Equivalent Length (Meters)								70-76	
				< 8	8-15	16-23	24-30	31-38	39-46	47-53	54-61		62-69
				Maximum Vertical Rise (Outdoor Unit Below Indoor Unit) * / Capacity Multiplier									
(-)A13NZ				8 / 1.00	15 / 0.99	19 / 0.98	13 / 0.98	7 / 0.97	2 / 0.97	NR	NR	NR	NR
5.3 KW [1.5 Ton] **SEE NOTE 3	6.35 [1/4]	15.88 [5/8]	N/A	8 / 1.00	15 / 0.99	19 / 0.98	13 / 0.98	7 / 0.97	2 / 0.97	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	N/A	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.98	28 / 0.97	27 / 0.97	25 / 0.96	24 / 0.96	22 / 0.95	21 / 0.94
	9.53 [3/8]	15.88 [5/8]	54	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.98	30 / 0.97	30 / 0.97	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94
7.0 KW [2 Ton]	6.35 [1/4]	19.05 [3/4]**	N/A	8 / 1.00	15 / 1.00	19 / 0.99	13 / 0.99	7 / 0.99	2 / 0.99	NR	NR	NR	NR
	7.94 [5/16]	19.05 [3/4]**	N/A	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	28 / 0.99	27 / 0.99	25 / 0.99	24 / 0.98	22 / 0.98	21 / 0.98
	9.53 [3/8]	19.05 [3/4]**	54	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.98	30 / 0.98	30 / 0.98
8.8 KW [2.5 Ton]	6.35 [1/4]	15.88 [5/8]	N/A	8 / 0.99	15 / 0.98	6 / 0.97	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	65	8 / 0.99	15 / 0.98	23 / 0.97	27 / 0.96	23 / 0.95	21 / 0.94	19 / 0.93	16 / 0.92	14 / 0.91	11 / 0.90
	9.53 [3/8]	15.88 [5/8]	43	8 / 0.99	15 / 0.98	23 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	30 / 0.93	29 / 0.92	28 / 0.91	27 / 0.90
10.6 KW [3 Ton]	6.35 [1/4]	19.05 [3/4]	N/A	8 / 1.00	15 / 1.00	6 / 0.99	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	19.05 [3/4]	65	8 / 1.00	15 / 1.00	23 / 0.99	27 / 0.99	23 / 0.98	21 / 0.98	18 / 0.97	16 / 0.97	14 / 0.97	11 / 0.96
	9.53 [3/8]	19.05 [3/4]	43	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	30 / 0.99	30 / 0.98	30 / 0.98	29 / 0.97	28 / 0.97	27 / 0.96
12.3 KW [3.5 Ton]	6.35 [1/4]	15.88 [5/8]	N/A	8 / 0.99	15 / 0.97	20 / 0.94	15 / 0.92	10 / 0.90	NR	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	33	8 / 0.99	15 / 0.97	23 / 0.94	29 / 0.92	27 / 0.90	NR	NR	NR	NR	NR
	9.53 [3/8]	19.05 [3/4]	N/A	8 / 1.00	15 / 0.99	20 / 0.98	15 / 0.98	10 / 0.97	5 / 0.96	NR	NR	NR	NR
12.70 [1/2]	6.35 [1/4]	19.05 [3/4]	33	8 / 1.00	15 / 0.99	23 / 0.98	29 / 0.98	27 / 0.97	26 / 0.96	24 / 0.95	22 / 0.94	20 / 0.93	19 / 0.93
	7.94 [5/16]	19.05 [3/4]	17	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.98	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	30 / 0.93	30 / 0.93
	9.53 [3/8]	22.23 [7/8]	N/A	8 / 1.00	15 / 1.00	20 / 1.00	15 / 0.99	10 / 0.99	5 / 0.99	NR	NR	NR	NR
12.70 [1/2]	6.35 [1/4]	22.23 [7/8]	33	8 / 1.00	15 / 1.00	23 / 1.00	29 / 0.99	27 / 0.99	26 / 0.99	24 / 0.98	22 / 0.98	20 / 0.98	19 / 0.97
	7.94 [5/16]	22.23 [7/8]	17	8 / 1.00	15 / 1.00	23 / 1.00	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.98	30 / 0.98	30 / 0.97
	9.53 [3/8]	19.05 [3/4]	46	8 / 0.99	15 / 0.98	23 / 0.97	27 / 0.96	24 / 0.95	22 / 0.94	20 / 0.92	17 / 0.91	15 / 0.90	NR
12.70 [1/2]	6.35 [1/4]	22.23 [7/8]	23	8 / 0.99	15 / 0.98	23 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	30 / 0.92	30 / 0.91	30 / 0.90	NR
	7.94 [5/16]	22.23 [7/8]	46	8 / 1.00	15 / 1.00	23 / 0.99	27 / 0.99	24 / 0.99	22 / 0.98	20 / 0.97	17 / 0.97	15 / 0.96	13 / 0.96
	9.53 [3/8]	22.23 [7/8]	23	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	30 / 0.99	30 / 0.98	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94

NOTES:

- 1) Do not exceed 61m linear line length.
- 2) *Do not exceed 30m vertical separation if outdoor unit is above indoor unit.
- 3) **19.05mm suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

Refrigerant Line Size Information (Con't.)

13.4 SEER2 Single-Stage Air-Conditioners													
Unit Size	Allowable Liquid Line Size mm [in.]	Allowable Suction Line Size mm [in.]	Apply Long Line Guidelines if Linear Line Length Exceeds Those Shown Below (Feet)	Equivalent Length (Meters)									
				< 8	8-15	16-23	24-30	31-38	39-46	47-53	54-61	62-69	70-76
				Maximum Vertical Rise (Outdoor Unit Below Indoor Unit) * / Capacity Multiplier									
14.1 KW [4 Ton]	9.53 [3/8]	19.05 [3/4]	45	8 / 0.99	15 / 0.98	23 / 0.96	24 / 0.95	20 / 0.93	17 / 0.92	14 / 0.91	NR	NR	NR
	12.7 [1/2]	19.05 [3/4]	23	8 / 0.99	15 / 0.98	23 / 0.96	30 / 0.95	30 / 0.93	30 / 0.92	30 / 0.91	NR	NR	NR
	9.53 [3/8]	22.23 [7/8]	45	8 / 1.00	15 / 0.99	23 / 0.99	24 / 0.98	20 / 0.97	17 / 0.97	14 / 0.96	11 / 0.96	8 / 0.95	5 / 0.95
	12.7 [1/2]	22.23 [7/8]	23	8 / 1.00	15 / 0.99	23 / 0.99	30 / 0.98	30 / 0.97	30 / 0.97	30 / 0.96	30 / 0.96	30 / 0.95	30 / 0.95
17.6 KW [5 Ton]	9.53 [3/8]	19.05 [3/4]	24	8 / 0.99	15 / 0.97	23 / 0.94	19 / 0.92	14 / 0.90	NR	NR	NR	NR	NR
	12.7 [1/2]	19.05 [3/4]	12	8 / 0.99	15 / 0.97	23 / 0.94	30 / 0.92	30 / 0.90	NR	NR	NR	NR	NR
	9.53 [3/8]	22.23 [7/8]	24	8 / 1.00	15 / 0.99	23 / 0.98	19 / 0.97	14 / 0.96	10 / 0.95	5 / 0.94	NR	NR	NR
	12.7 [1/2]	22.23 [7/8]	12	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	29 / 0.94	28 / 0.93	27 / 0.92
	9.53 [3/8]	28.58 [1-1/8]	24	8 / 1.01	15 / 1.01	23 / 1.00	19 / 1.00	14 / 0.99	10 / 0.99	5 / 0.99	NR	NR	NR
	12.7 [1/2]	28.58 [1-1/8]	12	8 / 1.01	15 / 1.01	23 / 1.00	30 / 1.00	30 / 0.99	30 / 0.99	30 / 0.99	29 / 0.99	28 / 0.99	27 / 0.98

NOTES:

- 1) Do not exceed 61m linear line length.
- 2) *Do not exceed 30m vertical separation if outdoor unit is above indoor unit.
- 3) **19.05mm suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

Performance Data @ AHRI Standard Conditions – Cooling

Designated Tested Combination (DTC)							
Outdoor Unit	Indoor Coil	Total Capacity BTU/H [kW]	Net Sensible BTU/H [kW]	Net Latent BTU/H [kW]	SEER2	EER2	Indoor CFM [L/s]
FWA13NZ18AJ1	RCFZ2417STAN	17,100 [5.0]	13,000 [3.8]	4,100	13.4	9.0	600 [283.2]
FWA13NZ24AJ1	RCFZ2417STAN	22,800 [6.7]	17,000 [5.0]	5,800	13.4	9.0	735 [346.9]
FWA13NZ30AJ1	RCFZ3617STAN	28,400 [8.3]	20,800 [6.1]	7,600	13.4	9.0	910 [429.5]
FWA13NZ36AJ1	RCFZ3617STAN	34,200 [10.0]	24,600 [7.2]	9,600	13.4	9.0	1,025 [483.7]
FWA13NZ42AJ1	RCFZ4821STAN	40,000 [11.7]	29,500 [8.6]	10,500	13.4	9.0	1,300 [613.5]
FWA13NZ48AJ1	RCFZ4821STAN	46,000 [13.5]	33,500 [9.8]	12,500	13.4	9.0	1,425 [672.5]
FWA13NZ60AJ1	RCFZ6024STAN	55,500 [16.3]	39,000 [11.4]	16,500	13.4	9.0	1,600 [755.1]

NOTE: This data includes DTC (Designated Test Combination) ratings and is for reference purposes only. A full listing of official ratings and system match-ups, along with downloadable certificates, can be accessed from the AHRI website: www.ahridirectory.org.

[] Designates Metric Conversions



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GENERAL TERMS OF LIMITED WARRANTY*

Friedrich® will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

Parts Five (5) Years

***For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.

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