

# Product Profile



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## Hazardgard<sup>®</sup>

*Engineered to perform in the harshest environments*

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### Hazardous Location Room Air Conditioners

#### Features

- Permanent split capacitor motor
- Hermetically sealed refrigeration system
- Environmentally sealed on/off switch and gold plated contacts in thermostat for corrosion resistance
- Solid-state control relays for compressor and fan operation
- Hot gas bypass allows the air conditioner to operate at low ambient conditions without freezing at outdoor temperatures as low as 45° F (7°C)
- Hermetically sealed reciprocating compressor is cooled during the refrigeration cycle, which allows the unit to tolerate higher outdoor temperatures up to 130° F (55°C)
- Larger, commercial grade, enclosed fan motor with hermetically sealed overload for arc-free operation.
- Field supplied, direct-wired, 15-amp circuit with time-delay fuse that will tolerate current surge without tripping the breaker
- 22-gauge, G60 steel air conditioner cabinet is powder coated for corrosion protection and to withstand years of hard use
- High density EPS foam insulation for thermal resistance and sound control
- Heavy duty hexacomb packaging resists damage during shipment and is environmentally friendly
- Coils coated for corrosion resistance



- **UL LISTED** for CLASS 1, DIV 2, GROUPS A, B, C and D
- **T4 / T4A Temperature Classification**
- **CERTIFIED** in accordance with ISA 12.12.01 and NFPA 70 (NATIONAL ELECTRIC CODE), ANSI/UL 484 Room Air Conditioners
- **KSA REGISTERED and TESTED** in accordance with SASO



# Model Identification & Specifications

<b>SH</b>	<b>15</b>	<b>M</b>	<b>20</b>	<b>A</b>
Series SH = Hazardgard® Series				Marketing Code
Nominal Capacity (BTU) 15 = 15000 20 = 20000 24 = 24000			Voltage & Frequency 20 = 230/208V - 60Hz / 240/220V – 50 Hz 30 = 230/208V - 60Hz 50 = 240/220V - 50 Hz	
M = Hazardgard® Engineering Series				

Model	Cooling Capacity Btu / Hr.	Electrical Characteristics (60 Hertz)			Energy Efficiency Ratio (EER)	Moisture Removal (Pints/Hr.)	Air Direction Controls	Air Circulation (CFM)
		Volts - Frequency Rated	Cooling Amps	Cooling Watts				
<b>60 Hz North America</b>								
<b>SH15M30A</b>	14500/14000	230/208 - 60	6.9/7.5	1495/1443	9.7/9.7	4.0	8-way	375
<b>SH20M30A</b>	20000/19000	230/208 - 60	8.7/9.6	2125/2021	9.4/9.4	5.5	8-way	375
<b>50 Hz / 60 Hz International / North America</b>								
<b>SH24M20 *</b>	24000/23700	230/208 - 60	12.6/13.5	2727/2788	8.8/8.5	8.0/7.5	8-way	385
	21000/20500	240/220 - 50	15.0 /13.2	2600/2412	8.1/8.5	7.0 /7.0	8-way	360
<b>50 Hz International</b>								
<b>SH20M50A</b>	19500/19100	240/220 - 50	9.8/10.3	2167/2156	9.0/9.0	5.6/5.5	8-way	425
<b>Refrigerant: R – 410A (all Models)</b>								

Due to continuing engineering research and technology, specifications are subject to change without notice. Manufactured under U.S. Design Patent DES 368, 306 decorative front; Utility Patent 5, 622, 058. MAXIMUM outdoor ambient operating temperature is 130°F. (55°C) MAXIMUM TEMPERATURE RATING FOR CLASS I, DIVISION 2, GROUPS A,B,C,D.

For global applications, Hazardgard cooling capacities are tested in a certified laboratory at moderate (T1\*) and hot (T3\*) climate conditions in accordance with SASO (Saudi Arabian Standards Organization) Standard 2681. SASO Standard 2681 is adopted from ISO Standard 5151 for testing and rating for performance of non-ducted air conditioners and heat pumps.

## Features

- Hazardgard<sup>®</sup> meets T4 temperature classification which means unit surface temperatures will not rise above 135° C/275° F. (note: 50/60Hz model listed as T4A for surface temperatures to 120° C/248° F).
- Operates at low ambient conditions without freezing at outdoor ambient temperatures as low as 7° C/45° F
- Tolerates higher outdoor temperatures up to 55° C /130° F
- Equipment is certified in accordance with ISA 12.12.01 and NFPA 70 (National Electric Code)

### ARTICLE 501

Class I, Div. 2, Group A and Group B

Class I, Div. 2, Group B

Class I, Div. 2, Group C

Class I, Div. 2, Group D

### ARTICLE 505

Class I, Zone 2, Group IIC

Class I, Zone 2, Group IIB plus hydrogen, or "+H2"

Class I, Zone 2, Group IIB

Class I, Zone 2, Group IIA

## COILS COATED FOR CORROSION RESISTANCE

### MODEL SH24M20

- ElectroFin<sup>®</sup> 5-stage, immersion ecoat process on 100% of metallic surfaces on the outdoor coil provides outstanding corrosion resistance protection in coastal or corrosive environments

### ELECTROFIN BENEFITS:

- Excellent adhesion characteristics
- Less than 1% thermal degradation
- Outstanding chemical resistance
- Passed 6048 hrs.ASTM B-117 Salt Spray Test

### 5-stage ecoat



### ELECTROFIN MEETS THE FOLLOWING:

- MIL-C-46168 Chemical Agent Resistance - DS2, HCl Gas
- CID A-A-52474A (GSA)
- MIL-STD 810F, Method 509.4 (Sand and Dust)
- MIL-P-53084 (ME)-TACOM Approval
- MIL-DTL-12468 Decontamination Agent (STB)
- DPG (Douglas Proving Grounds) Soil & Water Exposure Tests
- GM9540P-97 Accelerated Corrosion Test (120 cycles)
- ASTM B117-G85 Modified Salt Spray (Fog) Testing-2,000 hours
- ASTM B117 Salt Spray Test (tested by ARL for Lockheed Martin)

**DIAMONBLUE**  
Advanced Corrosion Protection

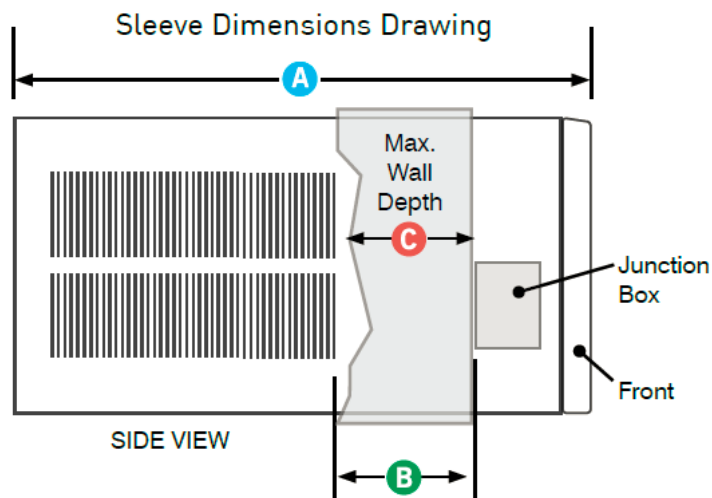


### MODELS SH15M30A, SH20M30A, SH20M50A

- Diamonblue Advanced Corrosion Protection<sup>®</sup> on the outdoor coil protects the coil against deterioration and extends the life of the unit especially in coastal or corrosive environments

# Installation Information

Model	Dimensions (Inches)						Window Width (Inches)		In-Wall Installation Finished Hole (Inches)			Circuit Rating Breaker or T - D Fuse	Weight (lbs.)	
	Height	Width	Depth Overall	Depth J Box to Louvers	Minimum Extension Into Room	Minimum Extension Outside	Min	Max	Height	Width	Max. Depth	Volts - Amps	Net	Shipping
	A	B	C											
SH15M30A	15 15/16"	25 15/16"	27 3/8"	6"	3 1/16"	16 15/16"	27 7/8"	42"	16 3/16"	26 3/16"	6"	250V - 15A	140	167
SH20M30A	17 15/16"	25 15/16"	27 3/8"	6"	3 1/16"	16 15/16"	27 7/8"	42"	18 3/16"	26 3/16"	6"	250V - 15A (230V)	166	170
												250V - 20A (208V)		
SH20M50A	17 15/16"	25 15/16"	27 3/8"	6"	3 1/16"	16 15/16"	27 7/8"	42"	18 3/16"	26 3/16"	6"	250V - 15A	171	175
SH24M20	17 15/16"	25 15/16"	27 3/8"	6"	3 1/16"	16 15/16"	27 7/8"	42"	18 3/16"	26 3/16"	6"	250V - 30A	180	185



NOTE: Hazardgard unit must be hard-wired.

# Electrical Requirements

ALL FIELD WIRING MUST MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (ANSI/NFPA 70) ARTICLE 501.

THE FIELD-PROVIDED CIRCUIT PROTECTION DEVICE (HACR CIRCUIT BREAKER OR TIME DELAY FUSE) MUST NOT EXCEED THE AMPACITY INDICATED ON THE PRODUCT NAMEPLATE.

**IMPORTANT:** Before you begin the actual installation of your air conditioner, check local electrical codes and the information below.

Your air conditioner must be connected to a power supply with the same A.C. voltage and frequency (hertz) as marked on the data plate located on the chassis. Only alternating current (A.C.), no direct current (D.C.), can be used.

An overloaded circuit will invariably cause malfunction or failure of the air conditioner; therefore, it is extremely important that the electrical power is adequate. Consult your dealer or Power Company if in doubt.

The following instructions are for HAZARDGARD models and cabinet sizes listed below

GROUPS	CABINET SIZE (H x W x D)
SMALL CHASSIS SH15	15 <sup>15</sup> / <sub>16</sub> " x 25 <sup>15</sup> / <sub>16</sub> " x 27 <sup>3</sup> / <sub>8</sub> " (405 mm x 660 mm x 695 mm)
MEDIUM CHASSIS SH20, SH24	17 <sup>15</sup> / <sub>16</sub> " x 25 <sup>15</sup> / <sub>16</sub> " x 27 <sup>3</sup> / <sub>8</sub> " (455 mm x 660 mm x 695 mm)

Model Number	Plug Type	Circuit Rating Time Delay Fuse
SH15	Junction Box	250V-15 Amp
SH20, SH 24	Junction Box	250V-15 Amp

**Hazardgard - EXTENDED COOLING PERFORMANCE**

Model	OUTDOOR DRY BULB TEMP. (DEGREES F AT 40% R.H.)												110				
	75				85				95					105			
	72	67	62	57	72	67	62	57	72	67	62	57		72	67	62	57
	INDOOR WET BULB TEMP. (DEGREES F AT 80 F.D.B.)																
	72	67	62	57	72	67	62	57	72	67	62	57	72	67	62	57	
<b>SH15M30A</b>	BTUh	17052	16400	15182	16240	15312	14123	12833	14500	12833	14616	12978	11441	13811	12086	10665	
	WATTS	1220	1239	1253	1329	1343	1359	1495	1495	1495	1616	1615	1619	1689	1689	1695	
	AMPS	5.7	5.7	5.8	6.1	6.2	6.2	6.9	6.90	6.9	7.4	7.4	7.5	7.8	7.8	7.8	
	SHR	0.48	0.65	0.88	0.49	0.68	0.89	0.49	0.70	0.9	0.5	0.74	0.9	0.52	0.76	0.9	
<b>SH20M30A</b>	BTUh	23520	22620	20940	22400	21120	19480	17700	20000	17700	20160	17900	15780	19050	16670	14710	
	WATTS	1734	1762	1781	1889	1908	1932	2125	2125	2125	2297	2295	2301	2401	2400	2409	
	AMPS	7.2	7.2	7.3	7.8	7.8	7.8	8.7	8.70	8.7	9.4	9.4	9.4	9.8	9.8	9.8	
	SHR	0.45	0.61	0.83	0.46	0.64	0.84	0.46	0.66	0.85	0.48	0.7	0.85	0.49	0.72	0.85	
<b>SH20M50A</b>	BTUh	22932	22055	20417	21840	20592	18993	17258	19500	17258	19656	17453	15386	18574	16253	14342	
	WATTS	1768	1796	1816	1926	1946	1970	2167	2167	2167	2343	2340	2347	2449	2448	2456	
	AMPS	8.1	8.2	8.3	8.7	8.8	8.8	9.8	9.80	9.8	10.5	10.5	10.6	11	11	11.1	
	SHR	0.49	0.66	0.89	0.5	0.69	0.91	0.5	0.71	0.91	0.51	0.75	0.92	0.52	0.77	0.91	
<b>SH24M20 (230 / 208 V - 60 Hz)</b>	BTUh	28224	27144	25128	26880	25344	23376	21240	24000	21240	24192	21480	18936	22860	20004	17652	
	WATTS	2225	2261	2285	2424	2449	2479	2727	2727	2727	2948	2945	2953	3082	3080	3091	
	AMPS	10.4	10.5	10.6	11.2	11.3	11.3	12.5	12.60	12.7	13.6	13.6	13.6	14.2	14.2	14.2	
	SHR	0.42	0.57	0.76	0.43	0.59	0.78	0.43	0.61	0.78	0.44	0.64	0.79	0.45	0.67	0.78	
<b>SH24M20 (240 / 220 V - 50 Hz)</b>	BTUh	24696	23751	21987	23520	22176	20454	18585	21000	18585	21168	18795	16569	20003	17504	15446	
	WATTS	2122	2155	2179	2311	2335	2363	2600	2600	2600	2811	2808	2816	2938	2937	2947	
	AMPS	12.4	12.5	12.6	13.4	13.4	13.5	14.9	15.00	15.1	16.1	16.1	16.2	16.9	16.9	16.9	
	SHR	0.44	0.6	0.8	0.45	0.62	0.82	0.45	0.64	0.82	0.46	0.68	0.83	0.47	0.7	0.82	
<b>RATING POINT ANSI/ASHRAE 16</b>																	



**F R I E D R I C H**

**Friedrich Air Conditioning Company**

10001 Reunion Place, Suite 500

San Antonio, TX 78216

800.541.6645

[www.friedrich.com](http://www.friedrich.com)

## **HAZARDGARD® ROOM AIR CONDITIONERS LIMITED WARRANTY**

### **LIMITED ONE YEAR PARTS WARRANTY**

**1. Limited warranty – One year.** Friedrich warrants that it will provide a replacement for any part of this HazardGard Room Air Conditioner found defective in material or workmanship for a period of one (1) year from the date of original purchase.

**2. Limited warranty – One year.** The Friedrich warranty also covers the cost of labor for repairing any compressor, condenser, evaporator or inter-connecting tubing found defective within the warranty period, provided the unit is returned to an authorized Friedrich Repair Station located within the Continental United States.

**The Friedrich warranty does not cover:**

**LIMITATIONS: This warranty is a LIMITED warranty. Anything in the warranty notwithstanding, IMPLIED WARRANTIES FOR PARTICULAR PURPOSE AND MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY. MANUFACTURER EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY.**

**Performance of Friedrich's Warranty obligation is limited to one of the following methods:**

1. Repair of the unit
2. A refund to the customer for the prorated value of the unit based upon the remaining warranty period of the unit.
3. Providing a replacement unit of equal value

**The method of fulfillment of the warranty obligation is at the sole discretion of Friedrich Air Conditioning.**



# F R I E D R I C H

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10001 Reunion Place, Suite 500  
San Antonio, TX 78216  
800.541.6645  
[www.friedrich.com](http://www.friedrich.com)

## **INTERNATIONAL LIMITED WARRANTY**

### **TERMS OF LIMITED WARRANTY**

Friedrich Air Conditioning Co. warrants to the original purchaser that this Friedrich Air Conditioner is free from defects as to material and workmanship. This Warranty pertains to such manufacturing defects as may develop through normal usage and is in effect for a period of 12 months from date of installation or 18 months from the original date of purchase (date of invoice), whichever date shall occur first. The Company's obligation under this Warranty is limited to furnishing (FOB San Antonio, Texas – no freight allowed), at its option, either a suitable replacement part or a remanufactured part or assembly for the sole purpose of replacing any part or parts which may be defective. All such warranty claims shall be directed through an authorized Friedrich Distributor/Dealer. Friedrich reserves the right to have the defective part returned to Friedrich for examination at the customer's expense. This Warranty does not apply to air filters, fuses, cabinet enclosures, refrigerant charge, and damage to any part resulting from installation not in accordance with manufacturer's recommendations; nor does it apply to exterior finishes, except where examination discloses that same was defective at the time of initial shipment. This Warranty also does not apply to a Friedrich Air Conditioner, or any part thereof, which has been subject to misuse, neglect, alteration, accident, flood, fire, or Act of God. No warranty shall apply if the product has been used on electrical circuits of voltage and cycle characteristics other than specified on the model and serial number plate.

### **GENERAL TERMS**

The furnishing of replacement parts as described above shall constitute complete fulfillment of all obligations with respect to the Friedrich Air Conditioner. Under no circumstances does Friedrich assume any responsibility for service, labor costs, or transportation charges. THESE WARRANTIES ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.