Heating & Air Conditioning
Amana®

ADSH8

Heating Input: 40,000–100,000 BTU/h

Two-Stage Convertible Multi-Speed Gas Furnace 80% AFUE

SureStart
SILICON NITRIDE IGNITER

Contents

Standard Features

- Two-stage convertible gas valve automatically adjusts to high or low stage
- Durable SureStart™ Silicon Nitride igniter
- Quiet single-speed draft inducer
- Self-diagnostic control board with constant memory fault code
- Color-coded low-voltage terminals with provisions for electronic air cleaner and humidifier
- Multi-speed blower motor
- Low continuous fan speed options offer quiet air circulation
- California Low NOx emissions standards models available
- Can no longer be installed in California's South Coast Air Quality Management District (SCAQMD) on or after October 1, 2019.

Cabinet Features

- Installation: dedicated downflow
- Convenient left or right connection for gas and electrical service
- Cabinet air leakage (QLeak) ≤ 2%
- Heavy-gauge steel cabinet with durable baked-enamel finish
- Fully insulated heat exchanger and blower section

LIFE TIME UNIT REPLACEMENT LIMITED WARRANTY*
10 YEAR PARTS LIMITED WARRANTY*
C ETL LISTED US Intertek
AHRI CERTIFIED
COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =
COMPANY WITH ENVIRONMENTAL SYSTEM CERTIFIED BY DNV GL = ISO 14001 =

* Complete warranty details available from your local dealer or at www.amana-hac.com. To receive the Lifetime Unit Replacement Limited Warranty (good for as long as you own your home) and 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Québec

A	D	S	H	80	040	3	A	X	**
1	2	3	4	5,6	7,8,9	10	11	12	13,14

BRAND

A- Amana® Brand

CONFIGURATION

M- Upflow/Horizontal

D- Downflow/Horizontal

MOTOR

V- Variable Speed ECM / ComfortNet

E- Multi-Speed ECM

S- Single Speed

GAS VALVE

M- Modulating

S- Single Stage

C- Two Stage

H- Convertible Single Phase

AFUE

80- 80% AFUE

MBTU/H

040- 40,000 BTU/h

060- 60,000 BTU/h

080- 80,000 BTU/h

100- 100,000 BTU/h

120- 120,000 BTU/h

140- 140,000 BTU/h

MAXIMUM CFM

2- 800 CFM

3- 1200 CFM

4- 1600 CFM

5- 2000 CFM

CABINET WIDTH

A- 14"

B- 17½"

C- 21"

D- 24½"

NOX

N- Natural Gas

X- Low NOx

ENGINEERING

Major /Minor Revisions

	ADSH80 0403A*A	ADSH80 0603A*A	ADSH80 0804B*A	ADSH80 1005C*A
HEATING CAPACITY				
Input [1]	40,000	60,000	80,000	100,000
Natural Gas Output [1]	32,000	48,000	64,000	80,000
LP Gas Output [1]	32,000	48,000	64,000	80,000
AFUE [2]	80	80	80	80
Available AC @ 0.5" ESP	3	3	4	5
Temperature Rise Range (°F)	25- 55	30-60	35-65	40-70
CIRCULATOR BLOWER				
Size (D x W)	10" x 6"	10" x 6"	10" x 8"	10" x 10"
Horsepower @1075 RPM	⅓	⅓	½	¾
Speed	4	4	4	4
Vent Diameter [3]	4"	4"	4"	4"
No. of Burners	2	3	4	5
ELECTRICAL DATA				
Min. Circuit Ampacity [4]	4.8	4.8	8.8	12.9
Max. Overcurrent Device (amps) [5]	15	15	15	15
SHIP WEIGHT (LBS)	88	92	106	114

[1] Natural Gas BTU/h; for altitudes above from 0' to 5,500' above sea level, reduce input rating 4% for each 1,000' above 5,500' altitude. Low-fire rate is 75% of high-fire rate.

[2] DOE AFUE based upon Isolated Combustion System (ICS)

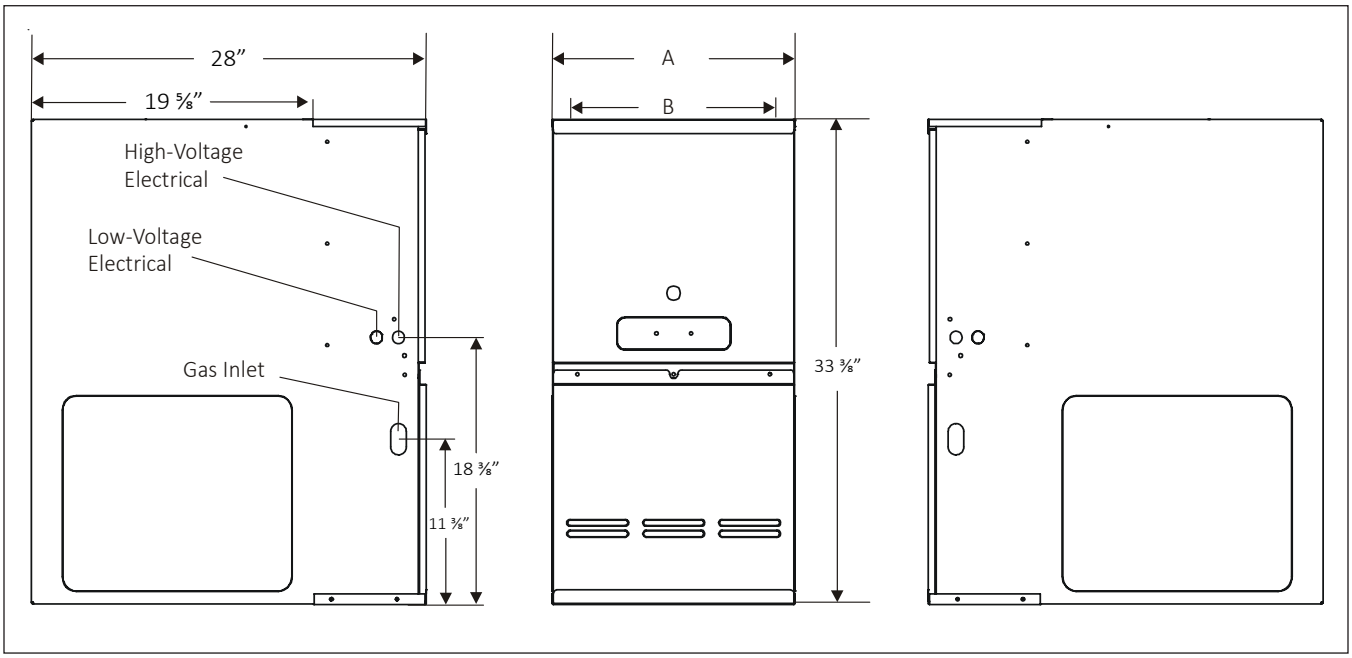
[3] Vent and combustion air diameters may vary depending upon vent length. Refer to the latest editions of the National Fuel Gas Code NFPA 54/ANSI Z223.1 (in the USA) and the Canada National Standard of Canada, CAN/CSA B149.1 and CAN/CSA B142.2 (in Canada).

[4] Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

[5] Maximum Overcurrent Protection Device refers to maximum recommended fuse or circuit breaker size. May use fuses or HACR-type circuit breakers of the same size as noted.

NOTES

- All furnaces are manufactured for use on 115 VAC, 60 Hz, single-phase electrical supply.
- Gas Service Connection ½" FPT
- Important: Size fuses and wires properly and make electrical connections in accordance with the National Electrical Code and/or all existing local codes.



MODEL	A	B	NON-COMBUSTIBLE FLOOR BASE
ADSH800403A*A	14”	12½”	SBT14
ADSH800603A*A	14”	12½”	SBT14
ADSH800804B*A	17½”	16”	SBT17
ADSH801005C*A	21”	19½”	SBT21

Note : Line voltage wiring can enter through the right or left side of furnace. Low-voltage wiring can enter through the right or left side of furnace.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

SIDES	REAR	FRONT[1]	VENT[2]		TOP
			SW	B	
1”	0”	3”	6”	1”	1”

[1] 24” clearance for serviceability recommended.

[2] Single Wall Vent (SW) to be used only as a connector.

NOTES

- Approved for line contact in the horizontal position
- Refer to the appropriate USA and Canadian codes:
  In the USA: the National Fuel Gas Code NFPA 54 / ANSI Z223.1
  In Canada: the Canada National Standard of Canada, CAN/CSA B149.1 and CAN/CSA B142.2

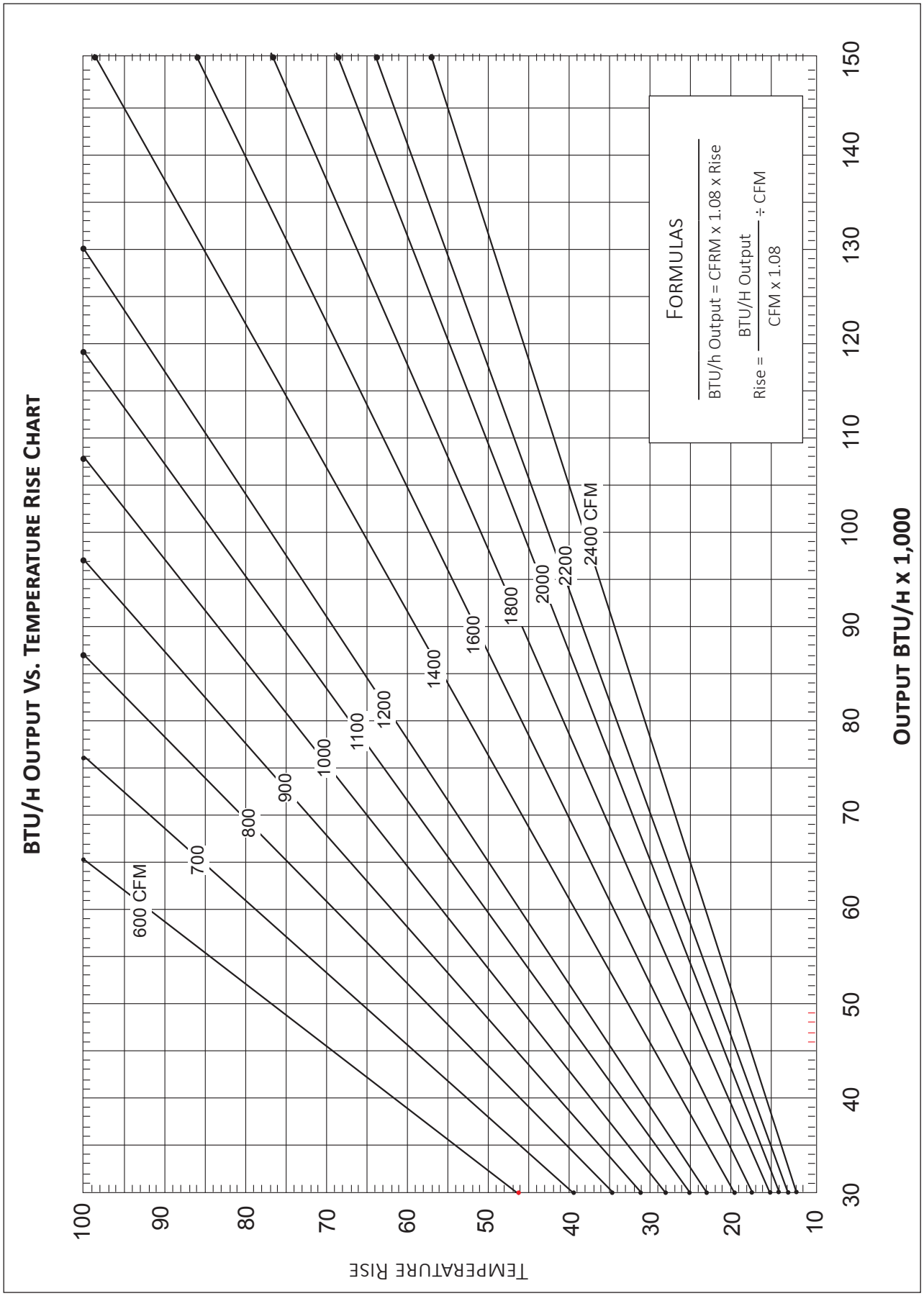
(CFM & TEMPERATURE RISE VS. EXTERNAL STATIC PRESSURE)

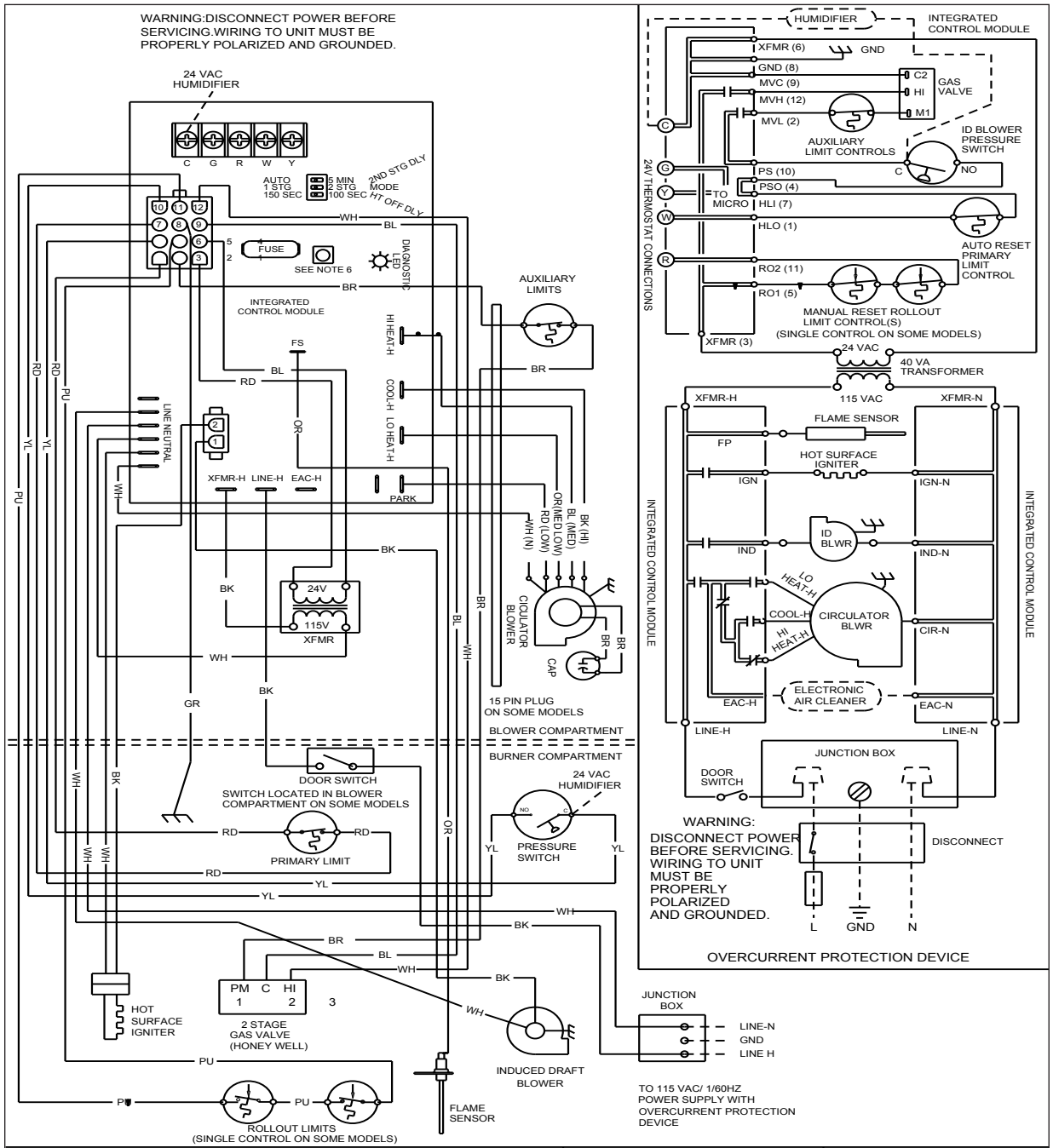
MODEL	MOTOR SPEED	TONS AC[1]	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)												
			0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8
			CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	CFM	CFM
ADSH80 0403A*A	High	3	1,353	---	1,290	---	1,246	---	1,199	25	1,149	26	1,116	1,116	1,099
	Med	2.5	1,183	25	1,113	27	1,098	27	1,052	28	1,039	29	1,006	1,012	969
	Med-Lo	2	980	30	946	31	920	32	900	33	896	33	885	855	804
	Low	1.5	778	38	762	39	738	40	746	40	738	40	717	696	678
ADSH80 0603A*A	High	3	1,290	34	1,236	36	1,194	37	1,166	38	1,176	38	1,166	1,108	1,029
	Med	2.5	1,139	39	1,090	41	1,035	43	1,063	42	1,063	42	1020	962	895
	Med-Lo	2	962	46	927	48	925	48	941	47	909	49	877	834	779
	Low	1.5	787	56	776	57	763	58	744	60	723	---	690	641	581
ADSH80 0804B*A	High	4	2,128	---	2,063	---	2,001	---	1,927	---	1,824	---	1,726	1,628	1,529
	Med	3.5	1,840	---	1,788	---	1,745	---	1,689	35	1,625	36	1,550	1,470	1,364
	Med-Lo	3	1,602	37	1,558	38	1,543	38	1,493	40	1,455	41	1,402	1,328	1,239
	Low	2.5	1,277	46	1,252	47	1,244	48	1,229	48	1,214	49	1,179	1141	1079
ADSH80 1005C*A	High	3	2,405	---	2,361	---	2,250	---	2,161	---	2,037	36	1,937	1,808	1,689
	Med	2.5	1,880	39	1,838	40	1,794	41	1,734	43	1,677	44	1,568	1,510	1,401
	Med-Lo	2	1659	45	1,630	45	1,587	47	1,537	48	1,492	50	1,445	1,368	1,287
	Low	1.5	1,472	50	1,454	51	1,404	53	1,366	54	1,326	56	1300	1228	1139

[1] @ 0.5" ESP

NOTES

- CFM in chart is without filter(s). Filters do not ship with this furnace, but must be provided by the installer. If the furnace requires two return filters, this chart assumes both filters are installed.
- All furnaces ship as high-speed cooling and medium-speed heating. Installer must adjust blower cooling and heating speed as needed.
- For most jobs, 400 CFM per ton for cooling is desirable.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
- This chart is for information only. For satisfactory operation, external static pressure should not exceed value shown on the rating plate.
- The dashed (----) areas indicate a temperature rise not recommended for this model.
- At higher altitudes, a properly derated unit will have approximately the same temperature rise at a particular CFM, while ESP at the CFM will be lower.


BTU/H Output Vs. Temperature Rise Chart
Temperature Rise
Output BTU/H x 1,000
600 CFM
700
800
900
1000
1100
1200
1400
1600
1800
2000
2200
2400 CFM
Formulas
BTU/h Output = CFRM x 1.08 x Rise
Rise = BTU/H Output / CFM x 1.08 ÷ CFM



- 0 STEADY ON = NORMAL OPERATION
- OFF = CONTROL FAILURE
- 1 1 FLASH = SYSTEM LOCKOUT (RETRIES/RECYCLES EXCEEDED)
- 2 2 FLASHES = PRESSURE SWITCH STUCK CLOSED
- 3 3 FLASHES = PRESSURE SWITCH STUCK OPEN
- 4 4 FLASHES = OPEN HIGH LIMIT
- 5 5 FLASHES = FLAME SENSE WITHOUT GAS VALVE
- 6 6 FLASHES = OPEN ROLLOUT OR OPEN FUSE
- 7 7 FLASHES = LOW FLAME SIGNAL
- 8 8 FLASHES = CHECK IGNITER OR IMPROPER GROUND
- C RAPID FLASHES = REVERSED 115 VAC POLARITY/VERIFY GND

- LOW VOLTAGE (24V)
- LOW VOLTAGE FIELD
- HI VOLTAGE (115V)
- HI VOLTAGE FIELD
- JUNCTION
- TERMINAL
- INTERNAL TO INTEGRATED CONTROL
- PLUG CONNECTION

- EQUIPMENT GND
- FIELD GND
- FIELD SPLICE
- SWITCH (TEMP.)
- IGNITER
- SWITCH (PRESS.)
- OVERCURRENT PROT. DEVICE

COLOR CODES:

YL YELLOW	PK PINK
OR ORANGE	BR BROWN
PU PURPLE	WH WHITE
GR GREEN	BL BLUE
BK BLACK	GY GRAY
	RD RED

0140F00662 REV. A

NOTES:
1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105 °C. USE COPPER CONDUCTORS ONLY.
4. BLOWER SPEEDS SHOULD BE ADJUSTED BY INSTALLER TO MATCH THE INSTALLATION REQUIREMENTS SO AS TO PROVIDE THE CORRECT HEATING TEMPERATURE RISE AND THE CORRECT COOLING CFM. (SEE SPEC SHEET FOR AIR FLOW CHART)
5. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.
6. TO RECALL THE LAST 5 FAULTS, MOST RECENT TO LEAST RECENT, DEPRESS SWITCH FOR MORE THAN 2 SECONDS WHILE IN STANDBY(NO THERMOSTAT INPUTS).

High Voltage: Disconnect all power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury, or death.

WARNING

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

Model	Description	ADSH8 0403A*A	ADSH8 0603A*A	ADSH8 0804B*A	ADSH8 1005C*A
LPM-06	LP Conversion Kit (Springs & Orifice)[1]	√	√	√	√
HANG21	High-Altitude Natural Gas Kit (5500+ ft)	√	√	√	√
FTK04	Twinning Kit	√	√	√	√
AFE18-60A	Fossil Fuel Kit	√	√	√	√
SBT 14/17/21	Downflow Sub-base	√	√	√	√

[1] Honeywell or White-Rodgers valves

Minimum Filter Sizes

Model #s	ADSH80403A*	ADSH80603A*	ADSH80804B*	ADSH81005C*
Filter Size (in^2)	(2) 10 x 20 or (1) 14 x 25 (Top Return)		(2) 14 x 20 or (1) 16 x 25 (Top Return)	(2) 14 x 20 or (1) 20 x 25 (Top Return)

Note: Other size filters of equal or greater surface area may be used; filters may also be centrally located.