

HEATING INPUT : 40,000 – 80,000 BTU/H

*SINGLE-STAGE, MULTI-SPEED ECM,
 MULTI-POSITION, ULTRA-LOW NOX
 GAS FURNACE
 80% AFUE*



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R32

Standard Features

- Heavy-duty stainless-steel, dual-diameter tubular heat exchanger
- Single-stage gas valve
- Durable Hot-surface igniter
- Quiet, modulating draft inducer
- Self-diagnostic control board
- Multi-speed ECM blower motor
- Eligible for installation in California’s South Coast Air Quality Management District (SCAQMD) and San Joaquin Valley Air Pollution Control District (SJVUAPCD). This furnace complies with the 14 ng/J NOx emission limit in SCAQMD Rule 1111 and SJVUAPCD Rule 4905.
- AHRI Certified; ETL Listed

Cabinet Features

- Installation: upflow, horizontal left or right
- Convenient left or right connection for gas and electrical service
- Heavy-gauge steel cabinet with durable baked-enamel finish
- Foil faced insulated heat exchanger



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 Heat Exchanger Limited Warranty (good for as long as you own your home), 2-Year Unit Replacement Limited Warranty and 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec. The duration of warranty coverage in Texas and Florida differs in some cases.

| | AR9S80 0403AU* | AR9S80 0603AU* | AR9S80 0604BU* | AR9S80 0804BU* | AR9S80 0805CU* |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| HEATING CAPACITY | | | | | |
| Input ¹ | 40,000 | 60,000 | 60,000 | 80,000 | 80,000 |
| Natural Gas Output ¹ | 32,000 | 48,000 | 48,000 | 64,000 | 64,000 |
| AFUE ² | 80 | 80 | 80 | 80 | 80 |
| Available AC @ 0.5" ESP | 1 - 3 | 1 - 3 | 1.5 - 4 | 1.5 - 4 | 2.5 - 5 |
| Temperature Rise Range (°F) | 25-55 | 20-50 | 20-50 | 35-65 | 35-65 |
| CIRCULATOR BLOWER | | | | | |
| Size (D x W) | 10" x 6" | 10" x 6" | 10" x 8" | 10" x 8" | 10" x 10" |
| Horsepower | 1/2 | 1/2 | 3/4 | 3/4 | 1 |
| Speed | 9 | 9 | 9 | 9 | 9 |
| Vent Diameter ³ | 4" | 4" | 4" | 4" | 4" |
| No. of Burners | 2 | 3 | 3 | 4 | 4 |
| ELECTRICAL DATA | | | | | |
| Min. Circuit Ampacity ⁴ | 9.1 | 9.1 | 12.7 | 12.7 | 15.7 |
| Max. Overcurrent Device (amps) ⁵ | 15 | 15 | 20 | 20 | 25 |
| SHIP WEIGHT (LBS) | 86 | 90 | 100 | 108 | 116 |

¹ Natural Gas BTU/h; for altitudes 0-4500' Only

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).

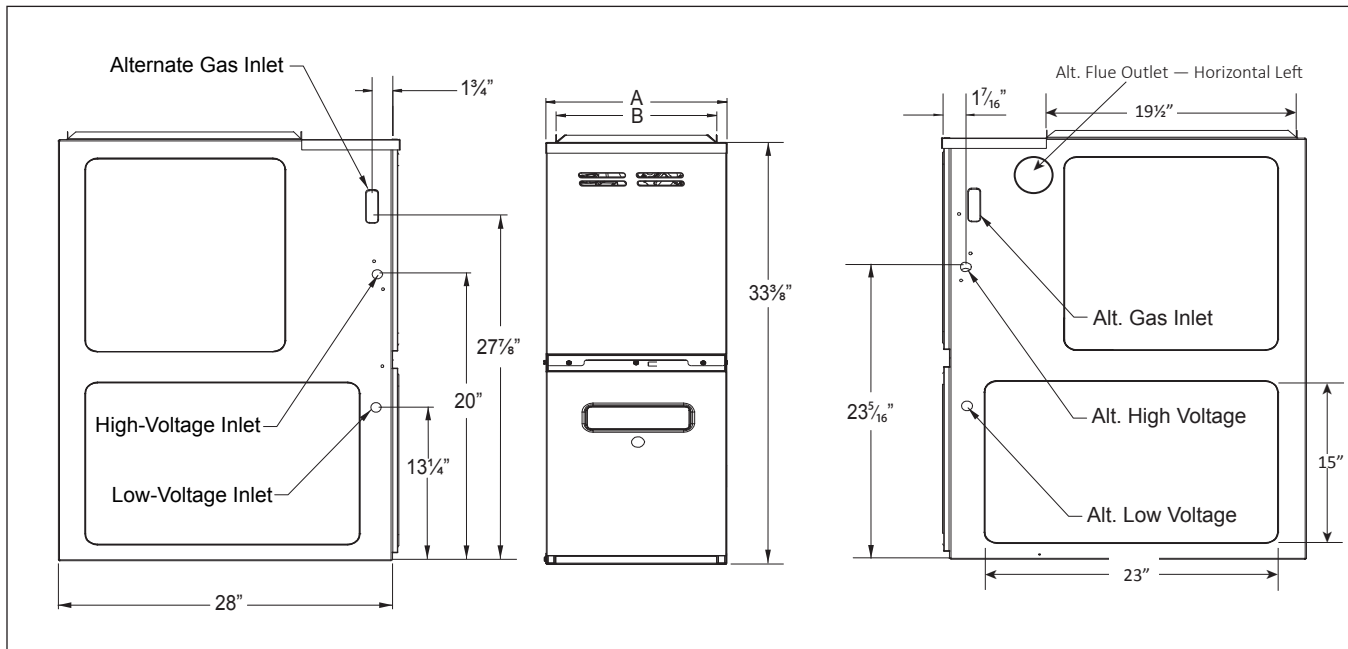
⁴ Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

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.

AM9S80-U DIMENSIONS



| MODEL | A | B |
|---------------|---------|---------|
| AR9S800403AU* | 14" | 12 1/2" |
| AR9S800603AU* | 14" | 12 1/2" |
| AR9S800604BU* | 17 1/2" | 16" |
| AR9S800804BU* | 17 1/2" | 16" |
| AR9S800805CU* | 21" | 19 1/2" |

NOTES

- 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.
- Installer must supply the following gas line fittings, according to which entrance is used:
Left: One 2" pipe nipple; one 90° elbow; straight pipe; one ground joint union
Right: Five 90° elbow; one ground joint union; various pipe nipples

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. 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).

Note: AR9S80 approved for line contact in the horizontal position.

| MODEL | THERMOSTAT CALL | TAP # | EXTERNAL STATIC PRESSURE (INCHES OF WATER COLUMN) | | | | | | | | | | | |
|----------------|-----------------|-------|---|------|------|------|------|-------|------|-------|------|-------|------|-------|
| | | | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | | 0.60 | | 0.70 | | 0.80 | |
| | | | CFM | CFM | CFM | CFM | CFM | WATTS | CFM | WATTS | CFM | WATTS | CFM | WATTS |
| AR9S80 0403AU* | Y1/Y2/G | F01 | 590 | 540 | 483 | 429 | 369 | 72 | 311 | 78 | 247 | 84 | 203 | 89 |
| | | F02 | 690 | 643 | 597 | 547 | 498 | 90 | 443 | 96 | 389 | 102 | 343 | 109 |
| | | F03 | 750 | 702 | 660 | 618 | 572 | 104 | 525 | 110 | 477 | 116 | 421 | 124 |
| | | F04 | 876 | 832 | 794 | 758 | 716 | 138 | 678 | 146 | 641 | 152 | 598 | 157 |
| | | F05^ | 927 | 881 | 841 | 806 | 771 | 155 | 734 | 161 | 698 | 168 | 662 | 174 |
| | | F06 | 1058 | 1015 | 976 | 945 | 915 | 202 | 881 | 210 | 849 | 218 | 818 | 226 |
| | | F07 | 1116 | 1071 | 1036 | 1003 | 975 | 230 | 943 | 236 | 919 | 245 | 884 | 252 |
| | | F08^^ | 1238 | 1192 | 1158 | 1124 | 1098 | 291 | 1070 | 299 | 1044 | 308 | 1016 | 318 |
| | | F09 | 1398 | 1357 | 1320 | 1293 | 1269 | 396 | 1239 | 405 | 1216 | 411 | 1194 | 416 |
| AR9S80 0603AU* | Y1/Y2/G | F01 | 587 | 542 | 490 | 437 | 382 | 75 | 318 | 82 | 266 | 88 | 207 | 93 |
| | | F02 | 685 | 638 | 590 | 543 | 498 | 92 | 448 | 98 | 392 | 105 | 339 | 112 |
| | | F03 | 856 | 814 | 774 | 732 | 693 | 136 | 657 | 142 | 622 | 148 | 581 | 154 |
| | | F04^ | 937 | 892 | 855 | 819 | 786 | 163 | 752 | 170 | 715 | 177 | 684 | 184 |
| | | F05 | 1060 | 1017 | 981 | 950 | 921 | 212 | 886 | 219 | 856 | 227 | 828 | 234 |
| | | F06^^ | 1108 | 1068 | 1033 | 1003 | 972 | 234 | 942 | 243 | 914 | 250 | 882 | 259 |
| | | F07 | 1274 | 1233 | 1203 | 1174 | 1146 | 327 | 1118 | 337 | 1089 | 345 | 1065 | 353 |
| | | F08 | 1374 | 1340 | 1306 | 1278 | 1254 | 399 | 1227 | 411 | 1201 | 414 | 1179 | 421 |
| | | F09 | 1437 | 1395 | 1362 | 1332 | 1305 | 473 | 1278 | 482 | 1253 | 492 | 1228 | 502 |
| AR9S80 0604BU* | Y1/Y2/G | F01 | 836 | 774 | 711 | 655 | 596 | 108 | 523 | 116 | 456 | 124 | 397 | 130 |
| | | F02 | 1274 | 1228 | 1188 | 1147 | 1107 | 248 | 1064 | 256 | 1027 | 266 | 990 | 276 |
| | | F03 | 1295 | 1256 | 1214 | 1181 | 1140 | 260 | 1100 | 269 | 1062 | 279 | 1024 | 287 |
| | | F04 | 1385 | 1337 | 1301 | 1260 | 1222 | 298 | 1186 | 308 | 1149 | 315 | 1114 | 326 |
| | | F05 | 1454 | 1407 | 1372 | 1353 | 1325 | 349 | 1291 | 360 | 1255 | 370 | 1219 | 379 |
| | | F06^ | 1528 | 1485 | 1438 | 1409 | 1383 | 382 | 1349 | 391 | 1317 | 402 | 1285 | 412 |
| | | F07 | 1619 | 1579 | 1551 | 1523 | 1495 | 444 | 1463 | 454 | 1430 | 464 | 1402 | 476 |
| | | F08^^ | 1746 | 1697 | 1667 | 1642 | 1617 | 534 | 1593 | 545 | 1570 | 559 | 1540 | 571 |
| | | F09 | 1772 | 1735 | 1698 | 1674 | 1645 | 559 | 1622 | 571 | 1598 | 584 | 1574 | 597 |
| AR9S80 0804BU* | Y1/Y2/G | F01 | 722 | 658 | 599 | 534 | 458 | 88 | 386 | 94 | 330 | 99 | 268 | 105 |
| | | F02 | 1270 | 1223 | 1179 | 1139 | 1105 | 250 | 1066 | 259 | 1029 | 267 | 996 | 277 |
| | | F03 | 1304 | 1254 | 1212 | 1173 | 1135 | 264 | 1104 | 273 | 1069 | 282 | 1032 | 290 |
| | | F04 | 1367 | 1318 | 1277 | 1236 | 1199 | 296 | 1169 | 306 | 1135 | 315 | 1102 | 327 |
| | | F05^ | 1473 | 1429 | 1386 | 1355 | 1320 | 354 | 1289 | 365 | 1258 | 372 | 1224 | 383 |
| | | F06 | 1560 | 1518 | 1476 | 1441 | 1409 | 409 | 1382 | 422 | 1350 | 429 | 1321 | 439 |
| | | F07 | 1647 | 1605 | 1562 | 1531 | 1497 | 460 | 1467 | 471 | 1440 | 481 | 1408 | 492 |
| | | F08^^ | 1720 | 1710 | 1674 | 1642 | 1611 | 544 | 1581 | 558 | 1553 | 565 | 1527 | 579 |
| | | F09 | 1796 | 1759 | 1721 | 1687 | 1655 | 582 | 1628 | 595 | 1604 | 607 | 1578 | 619 |
| AR9S80 0805CU* | Y1/Y2/G | F01 | 1280 | 1228 | 1178 | 1134 | 1086 | 204 | 1036 | 214 | 986 | 226 | 936 | 236 |
| | | F02 | 1401 | 1356 | 1313 | 1273 | 1234 | 252 | 1190 | 262 | 1145 | 270 | 1099 | 282 |
| | | F03 | 1593 | 1550 | 1512 | 1475 | 1436 | 332 | 1399 | 341 | 1360 | 354 | 1319 | 364 |
| | | F04 | 1706 | 1662 | 1621 | 1586 | 1550 | 383 | 1515 | 395 | 1479 | 407 | 1444 | 414 |
| | | F05^ | 1821 | 1775 | 1736 | 1703 | 1669 | 443 | 1636 | 455 | 1605 | 468 | 1576 | 480 |
| | | F06 | 1836 | 1793 | 1757 | 1721 | 1689 | 459 | 1659 | 472 | 1628 | 486 | 1592 | 497 |
| | | F07 | 1932 | 1888 | 1855 | 1825 | 1794 | 517 | 1762 | 532 | 1733 | 545 | 1701 | 560 |
| | | F08^^ | 2184 | 2143 | 2110 | 2072 | 2048 | 706 | 2017 | 724 | 1989 | 741 | 1959 | 756 |
| | | F09 | 2221 | 2178 | 2145 | 2109 | 2082 | 731 | 2053 | 747 | 2025 | 764 | 1992 | 780 |

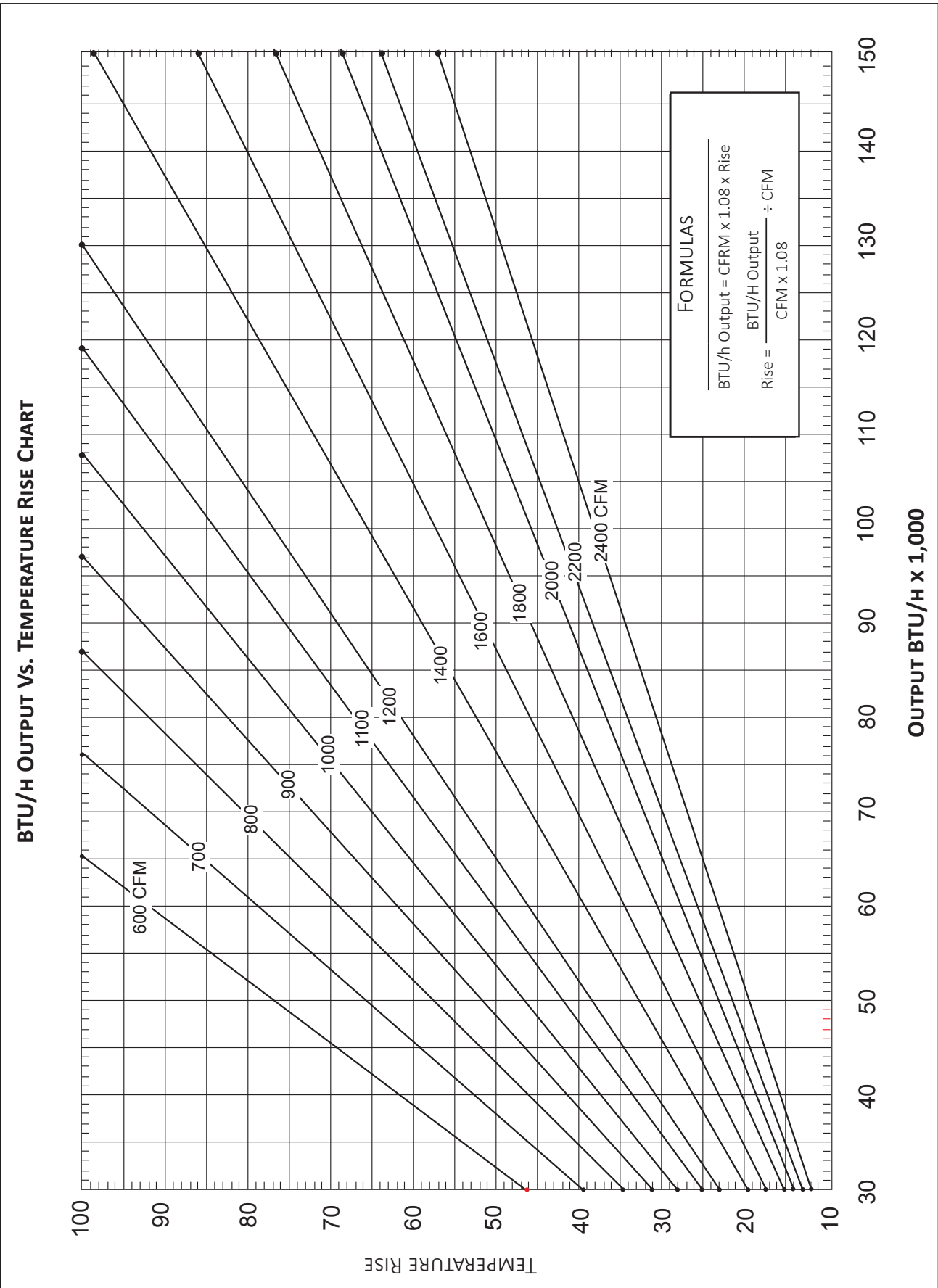
- Notes:**
- Default speed is F01 for circulation for all models
 - ^ Default Y1 speed
 - ^^ Default Y2 speed

AR9S80-U HEATING AIRFLOW DATA

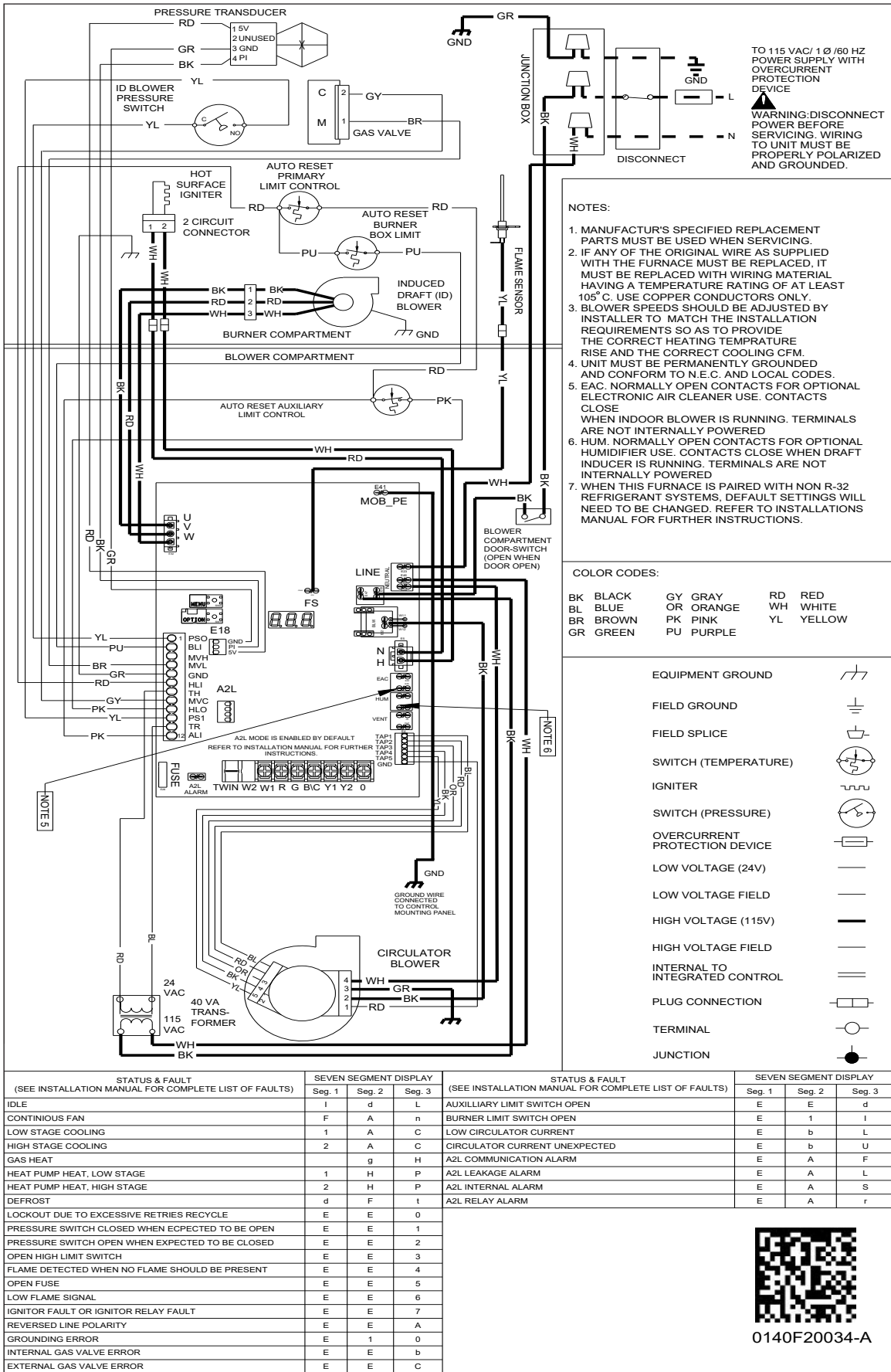
| HEATING AIFLOW | | | | | | | | | | | | | | | | TEMP RANGE |
|----------------|-----------------|-------|---|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| MODEL | THERMOSTAT CALL | TAP # | EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN) | | | | | | | | | | | | | |
| | | | 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 | |
| AR9S80 0403AU* | W/W1 | F02 | 690 | 42 | 643 | 46 | 597 | 49 | 547 | 53 | 498 | 55 | 443 | 389 | 343 | 25 - 55 |
| | | F03^ | 750 | 39 | 702 | 42 | 660 | 45 | 618 | 48 | 572 | 52 | 525 | 477 | 421 | |
| | | F04 | 876 | 34 | 832 | 36 | 794 | 37 | 758 | 39 | 716 | 41 | 678 | 641 | 598 | |
| | | F05 | 927 | 32 | 881 | 34 | 841 | 35 | 806 | 37 | 771 | 38 | 734 | 698 | 662 | |
| | | F06 | 1058 | 28 | 1015 | 29 | 976 | 30 | 945 | 31 | 915 | 32 | 881 | 849 | 818 | |
| | | F07 | 1116 | 27 | 1071 | 28 | 1036 | 29 | 1003 | 30 | 975 | 30 | 943 | 919 | 884 | |
| AR9S80 0603AU* | W/W1 | F05 | 1060 | 42 | 1017 | 44 | 981 | 45 | 950 | 47 | 921 | 48 | 886 | 856 | 828 | 20 - 50 |
| | | F06 | 1108 | 40 | 1068 | 42 | 1033 | 43 | 1003 | 44 | 972 | 46 | 942 | 914 | 882 | |
| | | F07^ | 1274 | 35 | 1233 | 36 | 1203 | 37 | 1174 | 38 | 1146 | 39 | 1118 | 1089 | 1065 | |
| AR9S80 0604BU* | W/W1 | F02 | 1274 | 35 | 1228 | 36 | 1188 | 37 | 1147 | 39 | 1107 | 40 | 1064 | 1027 | 990 | 20 - 50 |
| | | F03 | 1295 | 34 | 1256 | 35 | 1214 | 37 | 1181 | 38 | 1140 | 39 | 1100 | 1062 | 1024 | |
| | | F04^ | 1385 | 32 | 1337 | 33 | 1301 | 34 | 1260 | 35 | 1222 | 36 | 1186 | 1149 | 1114 | |
| | | F05 | 1454 | 31 | 1407 | 32 | 1372 | 32 | 1353 | 33 | 1325 | 34 | 1291 | 1255 | 1219 | |
| AR9S80 0804BU* | W/W1 | F02^ | 1270 | 47 | 1223 | 48 | 1179 | 50 | 1139 | 52 | 1105 | 54 | 1066 | 1029 | 996 | 35 - 65 |
| | | F03 | 1304 | 45 | 1254 | 47 | 1212 | 49 | 1173 | 51 | 1135 | 52 | 1104 | 1069 | 1032 | |
| | | F04 | 1367 | 43 | 1318 | 45 | 1277 | 46 | 1236 | 48 | 1199 | 49 | 1169 | 1135 | 1102 | |
| AR9S80 0805CU* | W/W1 | F01 | 1280 | 46 | 1228 | 48 | 1178 | 50 | 1134 | 52 | 1086 | 55 | 1036 | 986 | 936 | 35 - 65 |
| | | F02^ | 1401 | 42 | 1356 | 44 | 1313 | 45 | 1273 | 47 | 1234 | 48 | 1190 | 1145 | 1099 | |

Notes:

- ^ Default Heat Speed



WIRING DIAGRAM



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 | AR9S80 0403AU* | AR9S80 0603AU* | AR9S80 0604BU* | AR9S80 0804BU* | AR9S80 0805CU* |
|---------------------|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| AFE18-60A | Fossil Fuel (Dual Fuel) Kit | √ | √ | √ | √ | √ |
| MVK-01 ¹ | Masonry Vent Kit | √ | √ | √ | √ | √ |

¹ Upflow applications only

MINIMUM FILTER SIZES

| MODEL # | AR9S80 0403AU* | AR9S80 0603AU* | AR9S80 0604BU* | AR9S80 0804BU* | AR9S80 0805CU* |
|--------------------------------|---|-------------------|------------------------------|-------------------|--|
| Filter Size (in ²) | (1) 16 x 25 (Side) or (1) 14 x 24 (Bottom) | | (1) 16 x 25 (Side or Bottom) | | (2) 16 x 25 (Side) or (1) 20 x 25 (Bottom) ¹ |

Note: Larger filters may be used; filters may also be centrally located.

¹ Use 2 - 16 x 25 filters on side returns or 20 x 25 filter on bottom return if furnace is connected to a cooling unit over 4 tons nominal capacity.

