SECTION15760 (23 82 00)

ELECTRIC MAKE-UP AIR AND DUCT BOOST HEATERS

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\*\* NOTE TO SPECIFIER \*\* Electro Industries, Inc.; electric make-up air and boilers.  
This section is based on the products of Electro Industries, Inc., which is located at:  
2150 W. River St., P. O. Box 538  
Monticello, MN 55362  
Toll Free Tel: 800-922-4138  
Tel: 763-295-4138   
Fax: 763-295-4434  
Email: [request info (sales@electromn.com)](https://arcat.com/rfi?action=email&company=Electro%252BIndustries%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(15760eii)%253A%2520&coid=47396&spec=15760eii&rep=&fax=763-295-4434)  
Web: <http://www.electromn.com>   
 [ [Click Here](https://arcat.com/company/electro-industries-inc-47396) ] for additional information.  
Electro Industries has always had a strong desire to internally control all aspects of product control. We are unique in that we not only internally design our products, but we also fabricate our own sheet metal parts, with a welding department, circuit board assembly, and testing.  
As a company, we are continually seeking ways to improve upon and create new products to help our customers better manage their comfort and energy needs.

1. GENERAL
   1. SECTION INCLUDES
      1. Electric make-up air and duct boost heaters.
   2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 22 05 00 - Common Work Results for Plumbing.
    2. Section 26 05 00 - Common Work Results for Electrical.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Shop Drawings: Include system components, utility requirements and connections, relationship with adjacent construction. Include required clearances and access for servicing.
  2. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar equipment.
     2. Installer Qualifications: Minimum 2 years experience installing similar equipment.
  3. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation.
  4. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
  5. WARRANTY
     1. Provide manufacturers standard limited warranty.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Electro Industries, Inc., which is located at:  
         2150 W. River St., P. O. Box 538  
         Monticello, MN 55362  
         Toll Free Tel: 800-922-4138  
         Tel: 763-295-4138   
         Fax: 763-295-4434  
         Email: [request info (sales@electromn.com)](https://arcat.com/rfi?action=email&company=Electro%252BIndustries%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(15760eii)%253A%2520&coid=47396&spec=15760eii&rep=&fax=763-295-4434);Web: <http://www.electromn.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. AIR HEATERS

\*\* NOTE TO SPECIFIER \*\* Electro Industries manufactures a complete line of electric duct heaters with various physical sizes and KW/Btu/h outputs. Delete if not required.

* + 1. Electric Duct Heaters Basic:
       1. Product: Electro Duct basic electric element package as manufactured by Electro Industries, Inc.
       2. Provide units as indicated or scheduled on the drawings.
       3. Units: Basic staging duct insert heater, fused overcurrent protection.

\*\* NOTE TO SPECIFIER \*\* Non-blower engineered units. Refer to manufacturer's literature to select model based on temperature rise and air flow requirements. Delete model not required.

* + - 1. Model: EM-DI1025H-9600 watt, 240 V 700 CFM (20 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm d) element rack.
      2. Model: EM-DI1535H - 14,400-watt, 240 V, 900 CFM (20 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm d) element rack.
      3. Model: EM-DI2035H - 20,00-watt, 240 V, 1200 CFM (37 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm d) element rack.
      4. Model: EM-DI1025L-9600 watt, 240 V 700 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack
      5. Model: EM-DI1535L - 14,400-watt, 240 V, 900 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
      6. Model: EM-DI2035L- 20,00-watt, 240 V, 1200 CFM (37 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
      7. Model: EM-DI1025C-9600 watt, 240 V 700 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack within 16 inches by16 inches (406 mm by 406 mm) plenum enclosure.
      8. Model: EM-DI1535C - 14,400-watt, 240 V, 900 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack within 16 inches by16 inches (406 mm by 406 mm) plenum enclosure.
      9. Model: EM-DI2035C- 20,000-watt, 240 V, 1200 CFM (37 CMM) rating 8 inches by 16 inches d (203 mm by 406 mm) element rack within 16 inches by 16 inches (406 mm by 406 mm) plenum enclosure.
      10. Control: System or external contact closure provides 24 volts to the unit - Thermostat, blower function "G" (parallel connection)
      11. Control: System or external contact closure provides 24 volts to the unit - Temperature sensing thermostat (must also operate blower).
    1. Electric Duct Heaters WarmFlo with Outdoor Reset:
       1. Product: Electro Duct WarmFlo modulating electric element package as manufactured by Electro Industries, Inc.
       2. Provide units as indicated or scheduled on the drawings:
       3. Unit: WarmFlo Duct Insert heater with discharge air and outdoor temperature sensor. Discharge temperature determined by outdoor temperature reset, adjustable with 8 position dial switch. Minimum warm air temperature 90 to 104 F (32 to 40 degrees C) adjustable with 8 position dial switch, fused over current protection.

\*\* NOTE TO SPECIFIER \*\* Non-blower engineered units. Refer to manufacturer's literature to select model based on temperature rise and air flow requirements. Delete model not required.

* + - 1. Model: EM-WE1025H-9600 watt, 240 V 700 CFM (20 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm) element rack
      2. Model: EM-WE1535H - 14,400-watt, 240 V, 900 CFM (20 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm) element rack.
      3. Model: EM-WE2035H - 20,00-watt, 240 V, 1200 CFM (37 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm) element rack.
      4. Model: EM-WE1025L-9600 watt, 240 V 700 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm) element rack
      5. Model: EM-WE1535L - 14,400-watt, 240 V, 900 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm) element rack.
      6. Model: EM-WE2035L- 20,00-watt, 240 V, 1200 CFM (37 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm) element rack.
      7. Model: EM-WE1025C-9600 watt, 240 V 700 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm) element rack within 16 inches by 16 inches (406 mm by 406 mm) plenum enclosure.
      8. Model: EM-WE1535C - 14,400-watt, 240 V, 900 CFM (20 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack within 16 inches by 16 inches (406 mm by 406 mm) plenum enclosure.
      9. Model: EM-WE2035C- 20,000-watt, 240 V, 1200 CFM (37 CMM) rating 8 inches by 16 inches d (203 mm by 406 mm d) element rack within 16 inches by 16 inches (406 mm by 406 mm) plenum enclosure.
      10. Control: System or external contact closure provides 24 volts to the unit - Thermostat, blower function "G" (parallel connection)
      11. Control: System or external contact closure provides 24 volts to the unit - Temperature sensing thermostat (must also operate blower).
    1. Electric Boost Heater, Make Up Air WarmFlo Controlled
    2. Product: Electro Duct WarmFlo modulating electric element package as manufactured by Electro Industries Inc.
       1. Provide units as indicated or scheduled on the drawings:
       2. Unit: Duct Insert heater and outlet temperature sensor. Discharge temperature range 20 to 124 degrees F (minus 6 to 51 degrees C) adjustable with two 8 position dial switches.
       3. Model: EM-WC0515H - 4,800-watt, 240 V, 400 CFM (11 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm d) element rack.
       4. Model: EM-WC0515L - 4,800-watt, 240 V, 400 CFM (11 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
       5. Model: EM-WC1025H - 9,600-watt, 240 V, 800 CFM (23 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
       6. Model: EM-WC1025L - 9,600-watt, 240 V, 800 CFM (23 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack
       7. Control: System or external contact closure provides 24 volts to the unit - Pressure differential switch.
       8. Control: System or external contact closure provides 24 volts to the unit - Inlet damper end switch.
       9. Control: System or external contact closure provides 24 volts to the unit - Relay connected to blower motor, contact closure.
       10. Control: System or external contact closure provides 24 volts to the unit - Exhaust motor current switch contact.
       11. Control: System or external contact closure provides 24 volts to the unit - Thermostat, blower function "G" (parallel connection)
       12. Control: System or external contact closure provides 24 volts to the unit - Temperature sensing thermostat (must also operate blower).
    3. Electric Boost Heater, Make Up Air ,WarmFlo Controlled:
       1. Product: Electro Duct WarmFlo modulating electric element package as manufactured by Electro Industries Inc.
       2. Provide units as indicated or scheduled on the drawings:
       3. Unit: Duct Insert heater and discharge temperature sensor. Discharge temperature range 20 to 124 degrees F (minus 6 to 51 degrees C) adjustable with two 8 position dial switches. Fused overcurrent protection.
       4. Model: EM-WM1535L - 15,000-watt, 240 V, 1100 CFM (31 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
       5. Model: EM-WM2035L - 20,000-watt, 240 V, 1300 CFM (37 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
       6. Model: EM-WM1134H - 10,800-watt, 208 V 3-phase, 800 CFM (23 CMM) rating, 8 inches by 10 inches d (203 mm by 254 mm d) element rack.
       7. Model: EM-WM1536L - 15,000-watt, 208 V 3-phase, 1100 CFM (31 CMM) rating, 8 inches by 16 inches d (203 mm by 406 mm d) element rack.
       8. Control: System or external contact closure provides 24 volts to the unit - Pressure differential switch.
       9. Control: System or external contact closure provides 24 volts to the unit - Inlet damper end switch.
       10. Control: System or external contact closure provides 24 volts to the unit - Relay connected to blower motor, contact closure.
       11. Control: System or external contact closure provides 24 volts to the unit - Exhaust motor current switch contact.
       12. Control: System or external contact closure provides 24 volts to the unit - Thermostat, blower function "G" (parallel connection).
    4. Electric Boost Heater, Make Up Air, WarmFlo Controlled:
       1. Product: Electro Duct WarmFlo modulating electric element package as manufactured by Electro Industries, Inc.
       2. Provide units as indicated or scheduled on the drawings:
       3. Unit: Inline duct heater and outlet temperature sensor. Discharge temperature range 20 to 124 degrees F (minus 6 to 51 degrees C) adjustable with two 8 position dial switches.
       4. Model: EM-WX01-120-1-06 - 1,000-watt, 120 V plug-in, 150 CFM (4.2 CMM) rating, 6 inches (152 mm) round duct section.
       5. Model: EM-WX02-240-1-06 - 2,500-watt, 240 V, 250 CFM (7 CMM) rating, 8 inches (203 mm) round duct section.
       6. Model: EM-WX05-240-1-08 - 5,000-watt, 240 V, 350 CFM (10 CMM) rating, 8 inches (203 mm) round duct section.
       7. Model: EM-WX10-240-1-10 - 10,000-watt, 240 V, 700 CFM (20 CMM) rating, 10 inches (254 mm) round duct section.
       8. Control: System or external contact closure provides 24 volts to the unit - Pressure differential switch.
       9. Control: System or external contact closure provides 24 volts to the unit - Inlet damper end switch.
       10. Control: System or external contact closure provides 24 volts to the unit - Relay connected to blower motor, contact closure.
       11. Control: System or external contact closure provides 24 volts to the unit - Exhaust motor current switch contact.
       12. Control: System or external contact closure provides 24 volts to the unit - Thermostat, blower function "G" (parallel connection).
       13. Control: System or external contact closure provides 24 volts to the unit - Furnace or Air Handler fan center "G"
    5. Packaged Electric Make-Up Air Heaters with Multi-Speed Control:
       1. Product: WarmFlo as manufactured by Electro Industries, Inc.
       2. Provide packaged units as indicated or scheduled on the drawings:
       3. Unit: 240/208 1 and 3 phase, current sensor (included) or end switch activated, Multiple fan speed input, multiple interfacing options to external controls, LCD display, digital proportional temperature control, integrated powered inlet damper, aluminum mesh permanent washable filter, three CT inputs available for multiple fan applications, horizontal or vertical installation, unique design allows for simplified installation, 20 year finned rod element warranty, 2-year parts warranty.
       4. Unit: 120 V 1 phase, manual fan speed adjust, digital proportional temperature control, integrated powered inlet damper, aluminum mesh permanent washable filter, requires contact closure for activation, horizontal or vertical installation, unique design allows for simplified installation, 20 year finned rod element warranty, 2-year parts warranty.
       5. Model: EM-MB00-120-1-06. 0 KW, 120 V 0 btu/hr, 0.5 amps 1/16 HP blower motor, 150 max CFM at 0.03 static pressure. 6 inches (152 mm) round duct connection.
       6. Model: EM-MB01-120-1-06. 1 KW, 120 V 3,410 btu/hr, 8.3 amps 1/16 HP blower motor, 150 max CFM at 0.03 static pressure. 6 inches (152 mm) round duct connection. Max Fuse/HACR 15 A.
       7. Model: EM-MB02-120-1-06, 1.6 KW, 120 V 5,459 btu/hr, 13.3 amps 1/16 HP blower motor, 150 max CFM at 0.03 static pressure. 6 inches (152 mm) round duct connection. Max Fuse/HACR 20 A.
       8. Model: EM-MC00-240-1-08, 0 KW 240/208 V 0 btu/hr, 1 phase 0.4 amps 1/10 HP blower motor 350 max CFM at 0.50 static pressure. 8 inches (203 mm) round duct connection.
       9. Model: EM-MC05-240-1-08, 5/3.8 KW, 240/208 V 1 phase 17,060/ 12,795 btu/hr, 20.8/18.0 amps 1/10 HP blower motor 350 max CFM at 0.50 static pressure. 8 inches (203 mm) round duct connection. Max Fuse/HACR 30 A.
       10. Model: EM-MC05-208-3-08, 4.8 KW, 208 V 3 phase 16,378 btu/hr, 13.3 amps 1/10 HP blower motor 350 max CFM at 0.50 static pressure. 8 inches (203 mm) round duct connection. Max Fuse/HACR 20 A
       11. Model: EM-MD00-240-1-10 0 KW 240 V 1 phase 0 btu/hr, 0.8 amps 1/5 HP blower motor 600 max CFM at 0.50 static pressure. 10 inches (252 mm) round duct connection.
       12. Model: EM-MD05-240-1-10 5/3.8 KW 240/208 V 1 phase 17,060/12,795 btu/hr, 20.8/18.0 amps 1/5 HP blower motor 600 max CFM at 0.50 static pressure. 10 inches (252 mm) round duct connection. Max Fuse/HACR 30 A.
       13. Model: EM-MD10-240-1-10 10 KW 240/208 V 1 phase 34,121/ 25,591 btu/hr 41.7 / 36.1 amps 1/5 HP blower motor 600 max CFM at 0.50 static pressure. 10 inches (252 mm) round duct connection. Max Fuse/HACR 60 A.
       14. Model: EM-MD05-208-3-10 4.8 KW 208 V 3 phase 16,378 btu/hr, 13.3 amps 1/5 HP blower motor 600 max CFM at 0.50 static pressure. 10 inches (252 mm) Round duct connection. Max Fuse/HACR 20 A.
       15. Model: EM-MD10-208-3-10 9.6 KW 208 V 3 phase 32,756 btu/hr, 26.6 amps 1/5 HP blower motor 600 max CFM at 0.50 static pressure. 10 inches (252 mm) round duct connection. Max Fuse/HACR 35 A.
       16. Model: EM-ME00-240-1-14. 0 KW 240/208 V 1 phase 0 btu/hr, 1.5 amps 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection.
       17. Model: EM-ME05-240-1-14. 5/3.8 KW 240/208 V 1 phase 17,060/12795 btu/hr, 20.8/18 amps, 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 30 A.
       18. Model: EM-ME10-240-1-14. 10/7.5 KW 240/208 V 1 phase 34,121/25591 btu/hr, 41.7/36.1 amps 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 60 A.
       19. Model: EM-ME15-240-1-14. 15/11.3 KW 240/208 V 1 phase 51,182/38,386 btu/hr, 62.5/54.1 amps, 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 90A, internal CB 60 A 30 A.
       20. Model: EM-ME05-208-3-14. 4.8 KW 208 V 3 phase 16,378 btu/hr, 13.3 amps, 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 20 A.
       21. Model: EM-ME10-208-3-14 9.6 KW 208 V 3 phase 32,756 btu/hr, 26.6 amps 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 35 A.
       22. Model: EM-ME14-208-3-14 14.4 KW 208 V 3 Phase 49,134 btu/hr, 40 amps 1/4 HP blower motor 900 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection Max Fuse/HACR 50 A. Internal CB 50 A.
       23. Model: EM-MF00-240-1-14 0 KW 240/208 V 1 phase 0 btu/hr, 1.5 amps 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection.
       24. Model: EM-MF05-240-1-14. 5/3.8 KW 240/208 V 1 phase 17,060/12,795 btu/hr, 20.8/18 amps, 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 30 A.
       25. Model: EM-MF10-240-1-14. 10/7.5 KW 240/208 V 1 phase 34,121/25,591 btu/hr, 10/7.5 amps, 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 60 A.
       26. Model: EM-MF15-240-1-14. 15/11.3 KW 240/208 V 1 phase 51,182/38,386 btu/hr, 15/11.3 amps, 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 90A Internal CB 60A 30 A.
       27. Model: EM-MF05-208-3-14. 4.8 KW 208 V 3 phase 16,378 btu/hr, 13.3 amps, 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 20 A.
       28. Model: EM-MF10-208-3-14. 9.6 KW 208 V 3 phase 32,756 btu/hr, 26.6 amps, 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 35 A.
       29. Model: EM-MF14-208-3-14. 14.4 KW 208 V 3 Phase 49,134 btu/hr, 40 amps 1/4 HP blower motor 1050 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection Max Fuse/HACR 50 A. Internal CB 50 A.
       30. Model: EM-MG00-240-1-14. 0 KW 240/208 V 1 phase 0 btu/hr, 3.3 amps 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection.
       31. Model: EM-MG05-240-1-14. 5/3.8 KW 240/208 V 1 phase 17,060/12795 btu/hr, 20.8/18 amps, 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 30 A.
       32. Model: EM-MG10-240-1-14. 10/7.5 KW 240/208 V 1 phase 34,121/25,591 btu/hr, 10/7.5 amps, 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 60 A.
       33. Model: EM-MG15-240-1-14. 15/11.3 KW 240/208 V 1 phase 51,182/38,386 btu/hr, 62.5/54.1 amps, 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 90 A. Internal CB 60 A and 30 A
       34. Model: EM-MG20-240-1-14. 20/15 KW 240/208 V 1 phase 68,242/51, 182 btu/hr, 83.3/72.1 amps, 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 120 A. Internal CB 60 A and 60 A.
       35. Model: EM-MG07-208-3-14. 7.2 KW 208 V 3 Phase 24,567 btu/hr, 20 amps 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection. Max Fuse/HACR 25 A.
       36. Model: EM-MG14-208-3-14. 14.4 KW 208 V 3 Phase 49,134 btu/hr, 40 amps 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection Max Fuse/HACR 50 A. Internal CB 50 A.
       37. Model: EM-MG22-208-3-14. 21.6 KW 208 V 3 Phase 73,702 btu/hr, 60 amps 1/2 HP blower motor 1200 max CFM at 0.50 static pressure. 14 inches (355 mm) round duct connection Max Fuse/HACR 80 A. Internal CB 50 A and 30 A.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install in accordance with manufacturer's instructions. Test for proper operation.
      2. Make-up Air Heater Installation:
         1. When installing this duct heater, NEC 424, Part IV, Duct Heaters, applies.
         2. When installed in an "inline" duct or round pipe adapter for a general distribution boost heater or make-up air application, observe the following guidelines:
            1. Product shall be installed in conditioned space only.
            2. This product can be installed vertically or horizontally. When vertical, inlet must face down. Discharge air from top
            3. This product shall be installed in a metal duct, size of element rack.
            4. There shall be no insulation on the inside of this sheet metal duct section.
            5. Flex-pipe or other insulated pipe shall be at least 24 inches (610 mm) from the electric element.
            6. Mounting - there shall be at least 2 inches (51 mm) air clearance around all sides of this sheet metal duct section. Make mounting provisions for 1 inch (25 mm) air space at the top.
            7. No materials shall be in contact with cabinet housing which as a flame point less than wood 300 deg F (150 deg C).
            8. To insulate this duct section for moisture condensation or in an unheated compartment, wrap insulation around the exterior of this metal duct section.
            9. The control box shall be positioned so it will not receive dripping water or collection of moisture.
   4. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION