

# Specification Data Sheet - Industrial Electro-Boiler™

## Electric Hot Water Boiler Series

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### STANDARD EQUIPMENT

- Pressure vessel built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code (National Board and CRN registered)
- Meets the requirements of ASME CSD-1
- ASME pressure relief valve, 30 psi (125 psi optional, must specify when ordering)
- Low water cut-off with manual reset
- Auto reset hi-limit control, 210° F
- Manual reset hi-limit, 220° F
- Pressure/temperature gauge
- Circuit breaker or fuse protection on each stage
- Integrated ½" air vent
- 3" NPT inlet and outlet
- 3" inspection opening
- Safety door interlock and lockable door latch
- Emergency shut-down connection point
- Digital temperature control with display
- Supply and return water temperature sensing
- Outdoor reset, field configurable
- Stage active indicator lights
- 0-10VDC configurable for building boiler control
- Multi-boiler lead/lag control
- SCCR rated at 5 kV



 **Made in USA**

### OPTIONS

- 125 psi vessel
- BACnet or LonWorks interface
- Bender fault monitor
- T775R controller



All specifications subject to ELECTRO INDUSTRIES STANDARD TERMS AND CONDITIONS, download at [www.electromn.com/terms.pdf](http://www.electromn.com/terms.pdf).



**ELECTRO  
INDUSTRIES**

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## ELECTRIC SUPPLY

| Model          | Volts<br>3-Phase | kW  | Btu/h<br>Output | Total<br>Amps | Amps    |         | Element<br>Quantity | Steps         | Flow Rate<br>@20°F ΔT | Boiler<br>Weight<br>(LBS) |
|----------------|------------------|-----|-----------------|---------------|---------|---------|---------------------|---------------|-----------------------|---------------------------|
|                |                  |     |                 |               | Feed #1 | Feed #2 |                     |               | Required GPM          |                           |
| EB-NB-60-600   | 600              | 60  | 204,728         | 57.7          | 57.7    | –       | 5                   | 5 @ 12        | 21                    | 685                       |
| EB-NB-72-600   | 600              | 72  | 245,674         | 69.3          | 69.3    | –       | 6                   | 6 @ 12        | 25                    | 690                       |
| EB-NB-84-600   | 600              | 84  | 286,619         | 80.8          | 80.8    | –       | 7                   | 7 @ 12        | 29                    | 695                       |
| EB-NB-96-600   | 600              | 96  | 327,565         | 92.4          | 92.4    | –       | 8                   | 8 @ 12        | 33                    | 700                       |
| EB-NB-108-600  | 600              | 108 | 368,511         | 103.9         | 57.7    | 46.2    | 9                   | 9 @ 12        | 37                    | 705                       |
| EB-NB-120-600  | 600              | 120 | 409,457         | 115.5         | 57.7    | 57.7    | 10                  | 10 @ 12       | 41                    | 710                       |
| EB-NB-132-600  | 600              | 132 | 450,402         | 127.0         | 69.3    | 57.7    | 11                  | 11 @ 12       | 45                    | 715                       |
| EB-NB-144-600  | 600              | 144 | 491,348         | 138.6         | 69.3    | 69.3    | 12                  | 12 @ 12       | 50                    | 720                       |
| EB-NB-160-600  | 600              | 160 | 545,942         | 154.0         | 154.0   | –       | 8                   | 8 @ 20        | 55                    | 700                       |
| EB-NB-180-600  | 600              | 180 | 614,185         | 173.2         | 96.2    | 77.0    | 9                   | 9 @ 20        | 62                    | 705                       |
| EB-NB-200-600  | 600              | 200 | 682,428         | 192.5         | 96.2    | 96.2    | 10                  | 10 @ 20       | 69                    | 710                       |
| EB-NB-220-600  | 600              | 220 | 750,671         | 211.7         | 115.5   | 96.2    | 11                  | 11 @ 20       | 76                    | 715                       |
| EB-NB-240-600  | 600              | 240 | 818,914         | 230.9         | 115.5   | 115.5   | 12                  | 12 @ 20       | 82                    | 720                       |
| EB-NB-260-600  | 600              | 260 | 887,156         | 250.2         | 134.7   | 115.5   | 13                  | 13 @ 20       | 89                    | 725                       |
| EB-NB-280-600  | 600              | 280 | 955,400         | 269.4         | 134.7   | 134.7   | 14                  | 14 @ 20       | 96                    | 730                       |
| EB-NB-280-600H | 600              | 278 | 948,575         | 267.5         | 134.7   | 132.8   | 13                  | 7 @ 20/6 @ 23 | 95                    | 725                       |
| EB-NB-300-600  | 600              | 300 | 1,023,642       | 288.7         | 154.0   | 134.7   | 15                  | 15 @ 20       | 103                   | 735                       |
| EB-NB-300-600H | 600              | 299 | 1,020,230       | 287.7         | 154.9   | 132.8   | 13                  | 13 @ 23       | 102                   | 725                       |
| EB-NB-60-480   | 480              | 60  | 204,728         | 72.2          | 72.2    | –       | 5                   | 5 @ 12        | 21                    | 685                       |
| EB-NB-72-480   | 480              | 72  | 245,674         | 86.6          | 86.6    | –       | 6                   | 6 @ 12        | 25                    | 690                       |
| EB-NB-84-480   | 480              | 84  | 286,619         | 101.0         | 101.0   | –       | 7                   | 7 @ 12        | 29                    | 695                       |
| EB-NB-96-480   | 480              | 96  | 327,565         | 115.5         | 115.5   | –       | 8                   | 8 @ 12        | 33                    | 700                       |
| EB-NB-108-480  | 480              | 108 | 368,511         | 129.9         | 72.2    | 57.7    | 9                   | 9 @ 12        | 37                    | 705                       |
| EB-NB-120-480  | 480              | 120 | 409,457         | 144.3         | 72.2    | 72.2    | 10                  | 10 @ 12       | 41                    | 710                       |
| EB-NB-132-480  | 480              | 132 | 450,402         | 158.8         | 86.6    | 72.2    | 11                  | 11 @ 12       | 45                    | 715                       |
| EB-NB-144-480  | 480              | 144 | 491,348         | 173.2         | 86.6    | 86.6    | 12                  | 12 @ 12       | 50                    | 720                       |
| EB-NB-160-480  | 480              | 160 | 545,942         | 192.5         | 192.5   | –       | 8                   | 8 @ 20        | 55                    | 700                       |
| EB-NB-180-480  | 480              | 180 | 614,185         | 216.5         | 120.3   | 96.2    | 9                   | 9 @ 20        | 62                    | 705                       |
| EB-NB-200-480  | 480              | 200 | 682,428         | 240.6         | 120.3   | 120.3   | 10                  | 10 @ 20       | 69                    | 710                       |
| EB-NB-220-480  | 480              | 220 | 750,671         | 264.6         | 144.3   | 120.3   | 11                  | 11 @ 20       | 76                    | 715                       |
| EB-NB-240-480  | 480              | 240 | 818,914         | 288.7         | 144.3   | 144.3   | 12                  | 12 @ 20       | 82                    | 720                       |
| EB-NB-260-480  | 480              | 260 | 887,156         | 312.7         | 168.4   | 144.3   | 13                  | 13 @ 20       | 89                    | 725                       |
| EB-NB-280-480  | 480              | 280 | 955,400         | 336.8         | 168.4   | 168.4   | 14                  | 14 @ 20       | 96                    | 730                       |
| EB-NB-280-480H | 480              | 278 | 948,575         | 334.4         | 168.4   | 166.0   | 13                  | 7 @ 20/6 @ 23 | 95                    | 725                       |
| EB-NB-300-480  | 480              | 300 | 1,023,642       | 360.8         | 192.5   | 168.4   | 15                  | 15 @ 20       | 103                   | 735                       |
| EB-NB-300-480H | 480              | 299 | 1,020,230       | 359.6         | 193.7   | 166.0   | 13                  | 13 @ 23       | 102                   | 725                       |

## ELECTRIC SUPPLY (continued)

| Model         | Volts<br>3-Phase | kW  | Btu/h<br>Output | Total<br>Amps | Amp     |         | Element<br>Quantity | Steps   | Flow Rate<br>@20°F ΔT | Boiler<br>Weight<br>(LBS) |
|---------------|------------------|-----|-----------------|---------------|---------|---------|---------------------|---------|-----------------------|---------------------------|
|               |                  |     |                 |               | Feed #1 | Feed #2 |                     |         | Required GPM          |                           |
| EB-NB-60-208  | 208              | 60  | 204,728         | 166.5         | 166.5   | –       | 4                   | 4 @ 15  | 21                    | 680                       |
| EB-NB-75-208  | 208              | 75  | 255,910         | 208.2         | 208.2   | –       | 5                   | 5 @ 15  | 26                    | 685                       |
| EB-NB-90-208  | 208              | 90  | 307,092         | 249.8         | 249.8   | –       | 6                   | 6 @ 15  | 31                    | 690                       |
| EB-NB-105-208 | 208              | 105 | 358,274         | 291.5         | 291.5   | –       | 7                   | 7 @ 15  | 36                    | 695                       |
| EB-NB-120-208 | 208              | 120 | 409,457         | 333.1         | 333.1   | –       | 8                   | 8 @ 15  | 41                    | 700                       |
| EB-NB-135-208 | 208              | 135 | 460,639         | 374.7         | 208.2   | 166.5   | 9                   | 9 @ 15  | 47                    | 705                       |
| EB-NB-150-208 | 208              | 150 | 511,821         | 416.4         | 208.2   | 208.2   | 10                  | 10 @ 15 | 52                    | 710                       |
| EB-NB-165-208 | 208              | 165 | 563,003         | 458.0         | 249.8   | 208.2   | 11                  | 11 @ 15 | 57                    | 715                       |
| EB-NB-180-208 | 208              | 180 | 614,185         | 499.6         | 249.8   | 249.8   | 12                  | 12 @ 15 | 62                    | 720                       |
| EB-NB-60-240  | 240              | 60  | 204,728         | 144.3         | 144.3   | –       | 4                   | 4 @ 15  | 21                    | 680                       |
| EB-NB-75-240  | 240              | 75  | 255,910         | 180.4         | 180.4   | –       | 5                   | 5 @ 15  | 26                    | 685                       |
| EB-NB-90-240  | 240              | 90  | 307,092         | 216.5         | 216.5   | –       | 6                   | 6 @ 15  | 31                    | 690                       |
| EB-NB-105-240 | 240              | 105 | 358,274         | 252.6         | 252.6   | –       | 7                   | 7 @ 15  | 36                    | 695                       |
| EB-NB-120-240 | 240              | 120 | 409,457         | 288.7         | 288.7   | –       | 8                   | 8 @ 15  | 41                    | 700                       |
| EB-NB-135-240 | 240              | 135 | 460,639         | 324.8         | 180.4   | 144.3   | 9                   | 9 @ 15  | 47                    | 705                       |
| EB-NB-150-240 | 240              | 150 | 511,821         | 360.8         | 180.4   | 180.4   | 10                  | 10 @ 15 | 52                    | 710                       |
| EB-NB-165-240 | 240              | 165 | 563,003         | 396.9         | 216.5   | 180.4   | 11                  | 11 @ 15 | 57                    | 715                       |
| EB-NB-180-240 | 240              | 180 | 614,185         | 433.0         | 216.5   | 216.5   | 12                  | 12 @ 15 | 62                    | 720                       |

## ENGINEERING SPECIFICATION STATEMENT

The electric hot water boiler shall be an Electro Industries, Inc. model number EB-NB-\_\_\_\_\_. The Boiler output shall be \_\_\_\_\_ Btu/h or \_\_\_\_\_ kW at \_\_\_\_\_ volts three phase. Wiring within the main cabinet shall be rated at 75°C or higher. Aluminum or copper conductors may be used for field installed power wiring. The boiler shall include provisions to connect directly to utility load control. The boiler shall include a dedicated 15A 120V single phase control circuit (general service).

As a preferred option the boiler (dependant upon kW) shall be wired using (2) three phase delta feeds without neutral (unbonded neutral) within the dedicated utility transformer XO terminal. All Delta 3-phase require optional Bender fault monitor.

The vessel shall be wrapped with 3" insulation. The vessel shall be enclosed in a 14 gauge fully enclosed cabinet. The cabinet and vessel shall be attached to a 10 gauge structural steel base. The base includes integral fork pockets for easy maneuvering during installation. Both base and cabinet shall be painted with powder coated enamel. The cabinet shall include a full length hinged door with an included lockable T-handle. The inside dead front panel shall include an integral door safety interlock switch.

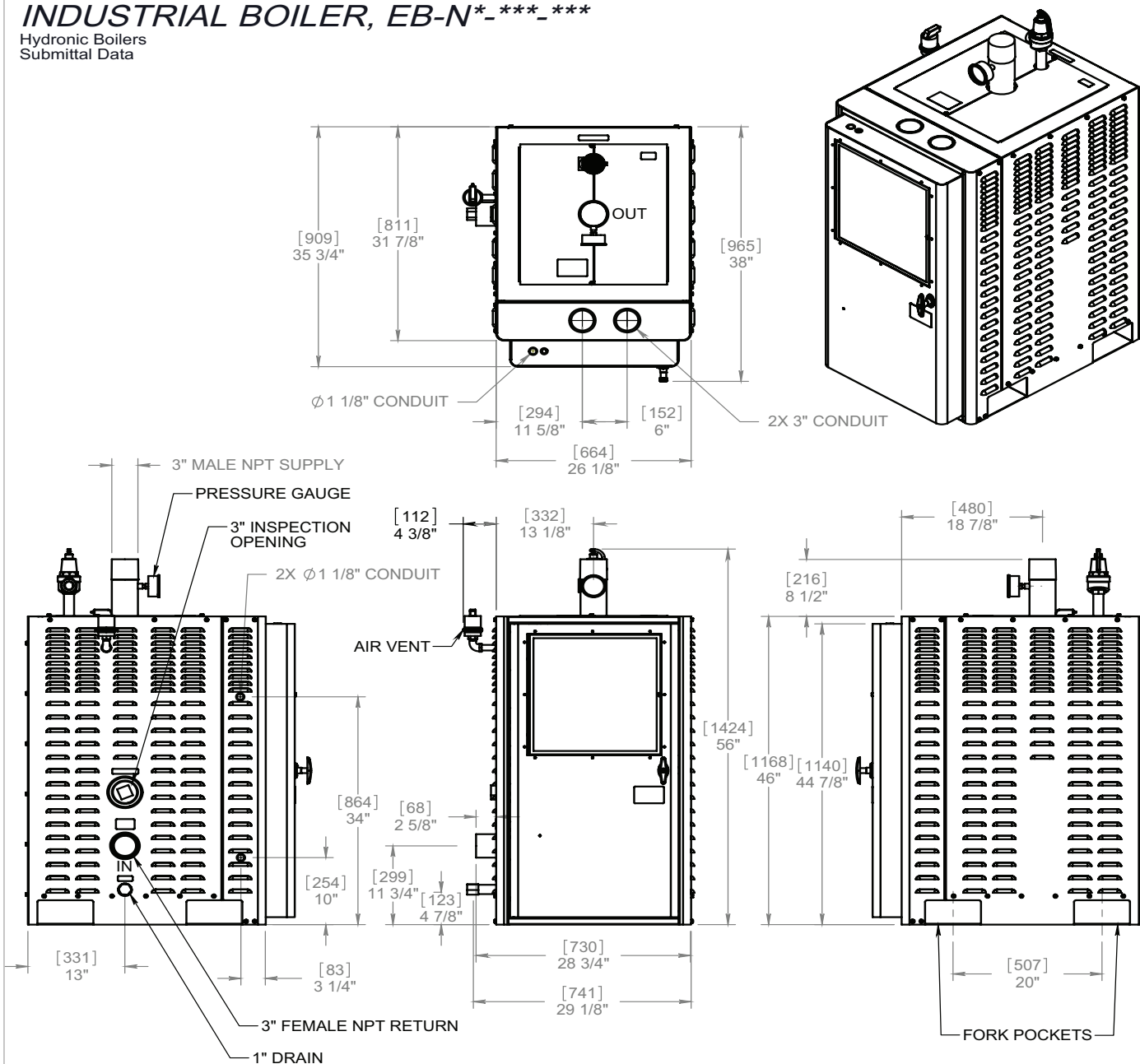
The vessel shall have a capacity of 40 gallons. The vessel shall be "H" stamped and National Board registered with a maximum working pressure of 30 or 125 PSI. The Vessel shall have 3" NPT threaded inlet and outlet nozzles. The outlet nozzle shall be located on the top of the vessel. The inlet nozzle shall be located on the left side of the vessel.

The immersion heating elements shall be installed in the top of the vessel and threaded into vessel for easy servicing (water draw-down not required). The heating elements shall be constructed using incoloy sheathing for long service life. The low-watt density heating elements shall be 30" in length. The cabinet shall have a split cover top for easy access to the heating elements. Contactors used to operate the heating elements shall be rated for 500,000 cycles.

The boiler shall include mounted control enclosure. The control enclosure shall contain all boiler controls and adjustments. Operator is not required to enter main cabinet for resets or other functions. The control assembly shall include a digital boiler control with O-LED digital display and keypad for boiler mode set-up, water temperature set point adjustment, and alarm fault monitoring. Boiler digital display shall be visible to operator through the front panel. The control assembly shall include a sequencer control board for element contactors. The sequencer shall include provisions for stage rotation. An optional emergency stop switch can be field installed at the terminals provided in the boiler. The boiler shall include a 5-year limited warranty on the vessel and a 1-year limited warranty on the parts. The boiler shall be fully tested using standard UL834 and shall bear the CSA mark.

# INDUSTRIAL BOILER, EB-N\*-\*\*\*-\*\*\*

Hydronic Boilers  
Submittal Data



## CLEARANCES

|       | MINIMUM CLEARANCE FROM COMBUSTIBLE SURFACES |        | SUGGESTED MINIMUM SERVICE CLEARANCE |        |
|-------|---------------------------------------------|--------|-------------------------------------|--------|
| BACK  | 0 INCH                                      | 0 MM   | 0 INCH                              | 0 MM   |
| LEFT  | 12 INCHES                                   | 305 MM | 24 INCHES                           | 610 MM |
| RIGHT | 8 INCHES                                    | 203 MM | 12 INCHES                           | 305 MM |
| FRONT | 24 INCHES                                   | 457 MM | 36 INCHES                           | 914 MM |
| TOP   | 26 INCHES                                   | 660 MM | 26 INCHES                           | 660 MM |

DIMENSIONS ARE:  
[mm]  
IN