

Electro Industries' Industrial Electric Water Boilers

Electro Industries' Industrial Boiler is a very compact and an effective solution to retrofitting old, inefficient fossil fuel boilers, or for use in new installations.

Safety is one major benefit of these boilers. Several state electrical jurisdictions are requiring the (optional) Bender Insulation Monitor device (ground fault) for increased operating safety, personal protection and reliability of the boiler. Secondly, there are individual circuit breakers for each heating element, further increasing the safety and reliability of our boilers.

Each boiler also includes built-in digital supply return and outdoor temperature sensors, enabling you to internally set and maintain the correct system design temperature, simplifying the installation process.

Features & Benefits

- 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
- Compact, can easily fit through service doors
- High efficiency electric boiler with no combustion waste
- No minimum return water temperature required
- Individual circuit breakers for each heating element
- All boilers come fully assembled; control box is within front door
- Built-in digital temperature sensing; adjustable desired temperature allows the user to set the boiler to operate at a specific supply temperature (set point mode)
- Outdoor reset (can be enabled or disabled)
- Outdoor reset sensing and software (reset mode)
- Operator alarm monitor and control functions including manual resets are in the control box
- All parts within the boiler are rated for 60° C
- Optional Honeywell T775R temperature control
- 0-10VDC terminal enabling control of boiler via building automation system, etc.
- Software and interface cable for setup, monitoring, and troubleshooting



Transformer Wiring Configurations

Standard boiler - add to building electrical service, 4-wire but no neutral current. All service wiring design, safety and ground fault equipment, NEC special code application, etc. are the responsibility of the installer.

Standard boiler with option ground fault monitor - suitable for use with a 3-wire Delta service, dedicated utility transformer (Delta or unbonded/neutral). All control and protection needed to meet NEC Article 250 is included.

Product Specifications

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. A window shall be included on the door of the control enclosure to permit viewing of monitor and alarm LED's. The control assembly shall include a six function alarm LED. 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.

Standard Equipment

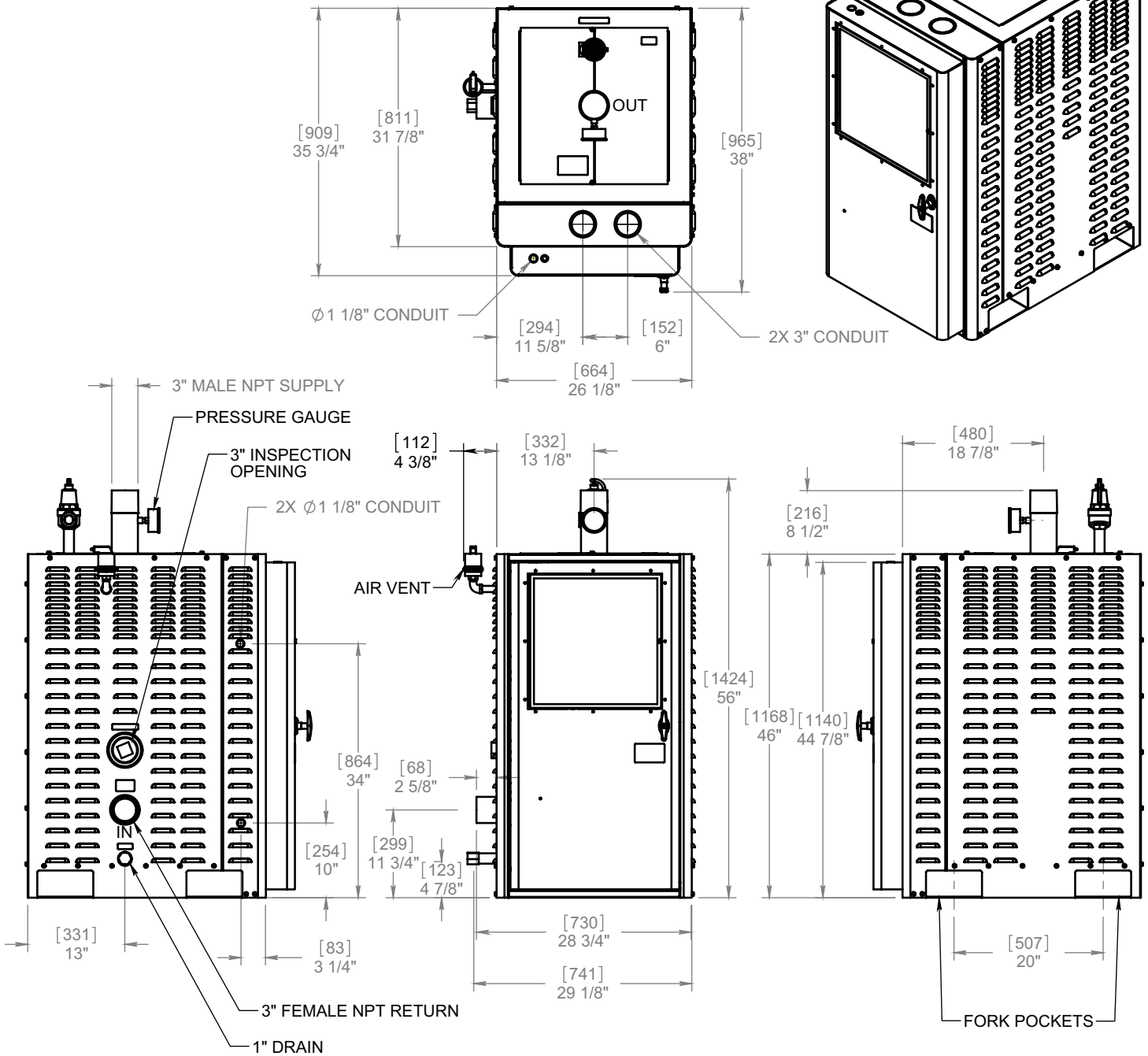
- Circuit breakers, each stage
- Manual reset hi-limit - 220° F
- Auto reset limit control - 210° F
- Low water cut-off with manual reset
- Integrated ½" air vent
- ASME pressure relief valve, 30 or 125 psi (design pressure specified when placing order)
- Pressure/temperature gauge
- Drain pipe
- 3" NPT inlet and outlet, with inspection opening
- Incoloy sheathed heating elements, vessel top screw-in
- Staging indicator lights, at contactor
- Main supply circuit lugs
- Safety door interlock and lockable door latch

Control Box includes:

- Contains all boiler controls and adjustments
- Bender fault monitor (optional)
- Manual reset low water cut-off
- Hi-limit reset button
- Temp Sensing & Alarm board
- T775R controller (optional)
- Alarm and alarm LED's
- Sequencer up to 15 stages
- Progressive staging delay time
- 0-10VDC for external boiler control
- Built-in load management controls

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

Electric Supply

Model	Volts	kW	Amps 3-Phase		Watts	Element Quantity	Steps	Btu/h Output	Flow Rate @20°ΔT	Boiler Weight
			Feed #1†	Feed #2†					Required GPM	
EB-NB-72-600	600	72	70	-	72,000	6	6 @ 12	245,736	25	690
EB-NB-84-600	600	84	81	-	84,000	7	7 @ 12	286,692	29	695
EB-NB-108-600	600	108	93	12	108,000	9	9 @ 12	368,604	37	700
EB-NB-120-600	600	120	93	24	120,000	10	10 @ 12	409,560	41	705
EB-NB-144-600	600	144	93	46	144,000	12	12 @ 12	491,472	49	710
EB-NB-160-600	600	160	154	-	160,000	8	8 @ 20	546,080	55	695
EB-NB-200-600	600	200	154	39	200,000	10	10 @ 20	682,600	68	700
EB-NB-240-600	600	240	154	77	240,000	12	12 @ 20	819,120	82	705
EB-NB-300-600	600	300	154	135	300,000	15	15 @ 20	1,023,900	102	710
EB-NB-300-600H	600	300	154	135	300,000	13	13 @ 23	1,023,900	102	750
EB-NB-84-480	480	84	101	-	84,000	7	7 @ 12	286,692	29	695
EB-NB-108-480	480	108	116	15	108,000	9	9 @ 12	368,604	37	700
EB-NB-120-480	480	120	116	29	120,000	10	10 @ 12	409,560	41	705
EB-NB-144-480	480	144	116	58	144,000	12	12 @ 12	491,472	49	710
EB-NB-160-480	480	160	193	-	160,000	8	8 @ 20	546,080	55	695
EB-NB-200-480	480	200	193	48	200,000	10	10 @ 20	682,600	68	700
EB-NB-240-480	480	240	193	96	240,000	12	12 @ 20	819,120	82	705
EB-NB-300-480	480	300	193	169	300,000	15	15 @ 20	1,023,900	102	710
EB-NB-300-480H	480	300	193	169	300,000	13	13 @ 23	1,023,900	102	750
EB-NB-60-208	208	60	167	-	60,000	4	4 @ 15	204,780	21	716
EB-NB-75-208	208	75	209	-	75,000	5	5 @ 15	255,975	26	721
EB-NB-105-208	208	105	292	-	105,000	7	7 @ 15	358,365	36	721
EB-NB-150-208	208	150	292	125	150,000	10	10 @ 15	511,950	50	731
EB-NB-180-208	208	180	292	210	180,000	12	12 @ 15	614,340	61	737
EB-NB-60-240	240	60	145	-	60,000	4	4 @ 15	204,780	20	716
EB-NB-75-240	240	75	181	-	75,000	5	5 @ 15	255,975	26	721
EB-NB-105-240	240	105	253	-	105,000	7	7 @ 15	358,365	36	721
EB-NB-150-240	240	150	289	73	150,000	10	10 @ 15	511,950	51	731
EB-NB-180-240	240	180	289	145	180,000	12	12 @ 15	614,340	61	737

†Actual calculated amps, not service rating.

Options

EB-N-GFM-KIT - Ground fault monitor kit. ONLY suitable for use with dedicated 3-wire Delta service with unbonded neutral. Not suitable for WYE service or non-dedicated 3-wire Delta.

EB-NB-*-***H** - 125 psi vessel and relief valve.



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