



Boiler Control

- Clear LCD display providing plain English information
- Outdoor Reset function modulates boiler water temperature according to outside air temperature
- BACnet over IP provided as standard
- Internal multiple boiler staging and rotation control for management of up to 24 boilers
- Software upgradable by internet or by USB port
- Accepts an external 0-10 VDC or 4-20 mA input signal
- Multiple load control with relays for five pumps
- Prioritizes up to 4 temperature circuits electrically for maximum fuel efficiencies
- Zoning feature for control of up to four load pumps for identical temperatures
- Load combining software for simultaneous running of compatible loads
- Load configuration save and export to USB
- Summer shutdown programmable by load
- Automatic altitude compensation to 12,000 ft
- Electronic water pressure sensing, for digital display of system pressure
- Two Interlock connections allowing external devices to effect a boiler safety shut-down
- Alarm dry contact for connection to external device
- Error log with detailed conditions capture
- Diagnostic pages for fan operation, sensors, boiler network and flame current
- User-defined unoccupied mode and DHW tank

temperature (when using sensor)

- Variable speed output signal
- Express setup mode for load parameters
- Thermostat ground terminal for power-stealing thermostat wiring
- Electronic ΔT fence of 80°F (44°C) to prevent thermal stress to boiler
- Built-in combustion air filter; ships with two spares

Warranties

- The boiler pressure vessel carries a ten (10) year limited warranty
- Burner, controls, and other included equipment comes complete with a two (2) year warranty

IBC Portal

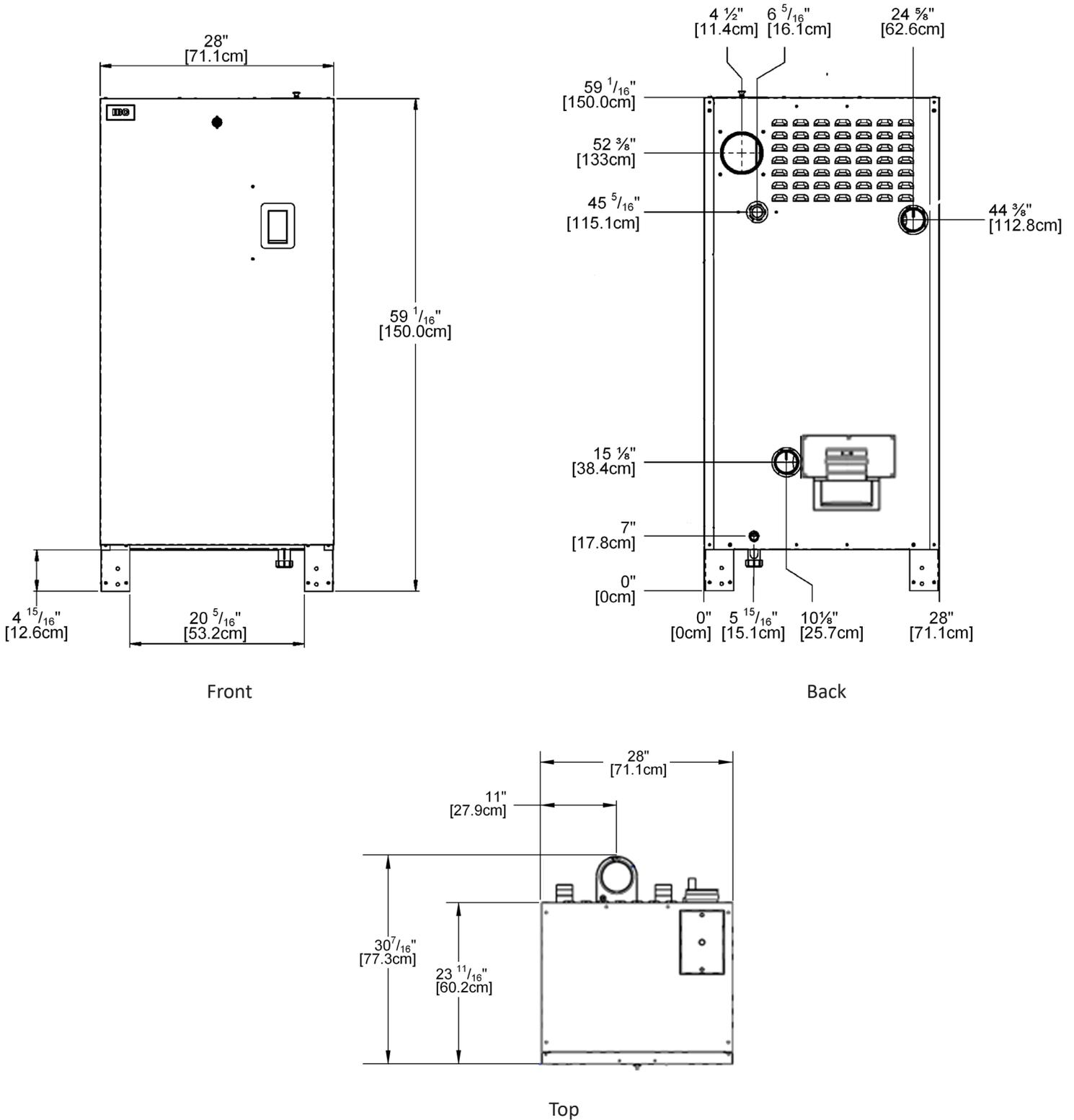
- Registering through an Ethernet connection gives remote access to controller functions
- Technician's View optimized for a browser
- Contractor or end user can receive email alerts for error states



Engineering Submittal

EX 400, 500, 700, 850 Modulating Condensing Boilers

EX 400, 500

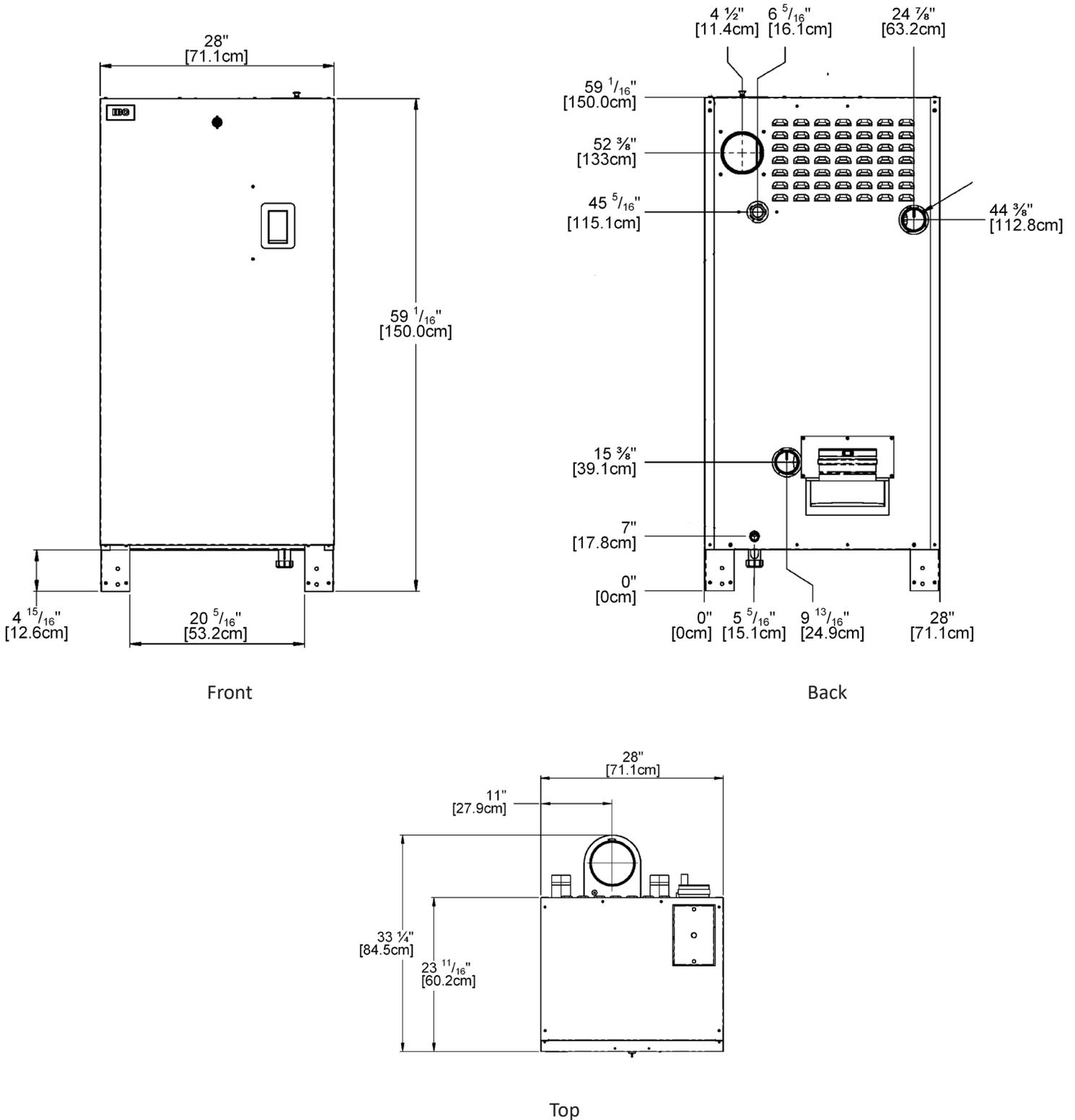




Engineering Submittal

EX 400, 500, 700, 850 Modulating Condensing Boilers

EX 700, 850





Product Specifications

Specification	EX 400	EX 500	EX 700	EX 850
CSA Input (Natural Gas or Propane) - MBH	40-399	50-500	70-700	85-850
CSA Input (Natural Gas or Propane) - kW	11.7 - 117	14.6 - 146.5	20.5 - 205	24.9 - 249
CSA Output - MBH	388	485	679	824.5
CSA Output - kW	114	142	199	241.6
Thermal Efficiency	97.9	97.5	97.0	97.0
Minimum gas supply pressure (Natural Gas or Propane) - inch w.c.	4	4	4	4
Maximum gas supply pressure (Natural Gas or Propane) - inch w.c.	14	14	14	14
Ambient temperature:				
Low - °F/°C	32 / 0	32 / 0	32 / 0	32 / 0
High - °F/°C	122 / 50	122 / 50	122 / 50	122 / 50
Maximum relative humidity (non-condensing)	90%	90%	90%	90%
Minimum water temperature - °F/°C	34 / 1	34 / 1	34 / 1	34 / 1
Maximum water temperature (electronic hi-limit) - °F/°C	190 / 88	190 / 88	190 / 88	190 / 88
Maximum ΔT - supply / return (electronic fence) - °F/°C	80 / 44	80 / 44	80 / 44	80 / 44
Maximum water temperature lockout limit - °F/°C	201 / 94	201 / 94	201 / 94	201 / 94
Power use (120 Vac/60 Hz) @ full fire - Watts (less pumps)	150	210	195	228
Weight (empty) - lbs/Kg	Approx. 414 / 188	Approx. 441 / 200	Approx. 486 / 220	Approx. 510 / 231
Heating surface area - ft ² / m ²	55.3 / 5.14	72.9 / 6.77	84.6 / 7.86	99.88 / 9.28
Pressure vessel water content - USG/liters	13.5 / 51.1	12.4 / 46.9	17.5 / 66.3	16.4 / 62.0
Maximum boiler flow rate - USgpm	100	100	100	100
Minimum boiler flow rate - USgpm	10	12	18	21
Maximum operating water pressure - psig	160	160	160	160
Minimum water pressure - psig	8	8	8	8
Relief valve pressure (supplied) - psig	50	50	50	50
Approved installation altitude - ASL	0 - 12,000'	0 - 12,000'	0 - 12,000'	0 - 12,000'
Maximum equivalent vent length, each side (vent & air intake) (natural gas or propane)	170'	170'	120'	120'
Air intake options: either direct vent or indoor supply				



Connection Specifications

	EX 400, EX 500	EX 700, EX 850
Flue Outlet	4" Schedule 40	6" Schedule 40
Combustion Air Inlet	4" Schedule 40	4" Schedule 40 *
Water Outlet	2" NPT-M	2 ½" NPT-M
Water Inlet	2" NPT-M	2 ½" NPT-M
Knock-outs (8)	½"	½"
Gas Inlet	1" NPT-F	1" NPT-F
Condensate Outlet	¾" Hose	¾" Hose

* You must use a reducer to connect 6" vent piping to the 4" vent collar

Recommended Minimum Clearances

EX 400, EX 500, EX 700, EX 850	
Surface	Recommended clearance
Front	30"
Rear flue connection	24"
Left side	2"
Right side	4"
Top	12"
Bottom	0"

Boiler Head Loss

Boiler Head Loss - EX Series									
Flow rate (gpm)	20	30	40	50	60	70	80	90	100
Head @ flow (ft) - EX 400, EX 500	2.6	3.0	3.7	4.4	5.2	6.3	7.4	8.9	10.7
Head @ flow (ft) - EX 700, EX 850	2.6	2.9	3.2	3.7	4.2	4.8	5.5	6.4	7.2

Optional Accessories

Propane Conversion Kits:

EX 400 IBC part P-1236 qty: _____

EX 500 IBC part P-1238 qty: _____

EX 700 IBC part P-1201 qty: _____

EX 850 IBC part P-1203 qty: _____

Secondary Loop Sensor with Stainless Steel Well Kit, IBC part P-216 qty: _____

Replacement integral combustion air filters (3), IBC part P-381 qty: _____

Condensate Neutralization Tank, IBC part 180-048 qty: _____

Boiler Network Wiring Kit (1 required per link), IBC part P-1268 qty: _____

Flow Switch, IBC part 180-079 qty: _____

Alternate Pressure Relief Valves (boiler ships with 50 psi relief valve, IBC part P-1205)

30 psi pressure relief valve, IBC part P-1204 qty: _____

100 psi pressure relief valve, IBC part P-1206 qty: _____

125 psi pressure relief valve, IBC part P-1207 qty: _____

150 psi pressure relief valve, IBC part P-1208 qty: _____