

UP TO **25:1**
TURNDOWN
RATIO



CAMUS[®]
HYDRONICS LTD.

ADVANTUS[™]

two-pass counter flow fire tube commercial boilers

for hydronic heating
and hot water supply

FEATURES AND CONTROLS



get connected

In a world where we are becoming more connected, the Advantus is ready to enter this revolutionary phase in building automation. All Advantus are equipped with standard Modbus RTU communication protocol to allow for BMS access to view boiler operation. The remote monitoring of a boiler plant allows for complete overview of various boiler-related temperatures, boiler status, pump activation, boiler error codes and more. This is not just limited to read-only parameters, as a BMS is permitted to write setpoint temperatures, enable/disable and remotely send and receive firing rate requests.

To further evolve and adapt to the changing marketplace, the Advantus is available with BacnetIP, BacnetMSTP, MetasysN2 and LonWorks protocol support. All the features available in the Modbus RTU realm are carried into these protocols with the use of a highly advanced yet user friendly Fieldserver Protonode. The Fieldserver Protonode is equipped with Ethernet or RS485 connectivity and is BTL (BACnet Testing Laboratory) Certified. This approval assures that we carry only the highest quality products with optimum performance and utmost ease of connectivity.

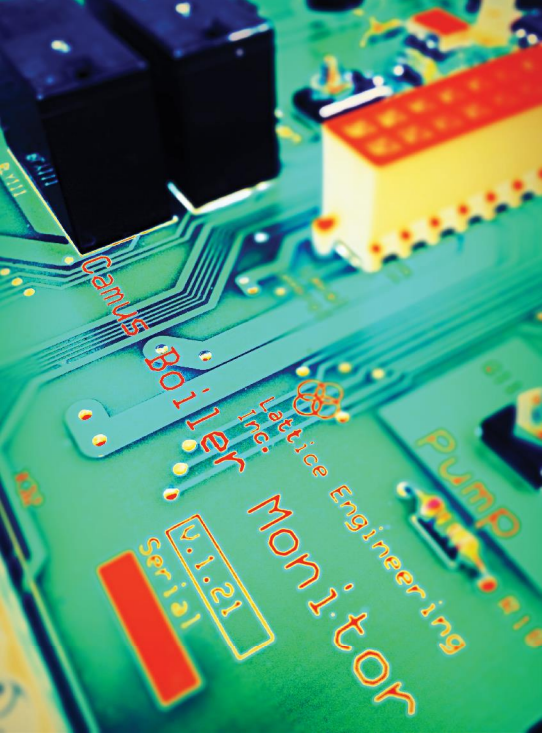
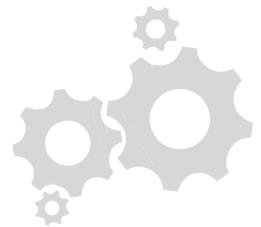
The Advantus is controlled by an integrated Honeywell SOLA controller. The 7" color touch screen provides remote operation through the 4-20mA or 0-10Vdc for set point or fire rate control. Paired with the ability to control multiple pump operation along with daisy chain set up for up to 8 boilers, this user friendly control also provides you with a USB output for screenshot capture, as well as password access for service personnel. Up to 8 SOLA devices may be monitored and controlled with one single display.



standard features

- Single point input adjustment for control of air and gas
- 1 to 1 air/gas ratio control for perfect combustion across entire modulation range
- Return water temperatures down to 40°F
- Extremely low NOx emissions - less than 9 ppm
- Local/Remote switch for building management, remote modulation and set-point control
- Direct ignition up to 2.5 million BTU/hr.
- Proven pilot ignition for 3 to 4 million BTU/hr.
- High gas pressure switch (models 3000-4000)
- Minimum gas pressure requirements of 4.0" w.c.
- Main burner test firing valve
- For operation with natural gas or propane
- Up to 25:1 turndown for seamless operation
- Boiler modulates to shut down on flue gas high temperature detection
- UV flame detection
- Staging relay to govern operation of low end or high end gas valve (models 800-4000)
- Electronic air proving switch
- Extremely low noise level

Flow switch, water pressure switch, pressure relief valve, low gas pressure switch and flame failure contacts are standard on every Advantus



HEAT EXCHANGER & BURNER

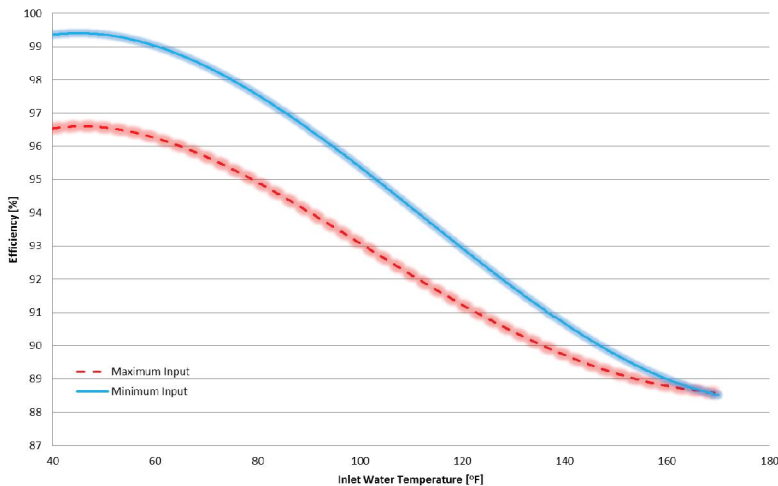
Camus® has once again designed an INDUSTRY FIRST!

The Advantus features a two-pass counter-flow fire-tube heat exchanger with 1.5" diameter oval tubes configured to optimize performance and maximize heat transfer and efficiencies. It has a maximum working pressure of 160 PSIG and a maximum working temperature of 210°F for both heating and domestic hot water applications. Designed with a generous heating surface to sustain efficiencies across complete firing range, the Advantus impresses with flow rates ranging from as low as 6.6 GPM* to upwards of 380 GPM**. Constructed using 304L/316L grade stainless steel, this all welded heat exchanger has been designed with a unique counter flow design so that as flue products exit the boiler, they have maximum contact time with incoming water to achieve the highest possible heat transfer and latent heat capture.

*Advantus model 500 at minimum firing rate, 10°F ΔT
**Advantus model 4000 at maximum firing rate, 20°F ΔT



Advantus efficiency and inlet water temperature



THERMAL EFFICIENCIES OF UP TO
99%

The burner is 100% stainless steel vertical mounted radial fired with stainless knitted metal fiber construction. The burner combusts a precise amount of premixed combustion air and gas to provide equal distribution of heat for heat transfer to the entire heat exchanger. Providing a turn down ratio of up to 25:1 all while sustaining combustion characteristics throughout the entire modulating range.

INTEGRATED LEAD LAG



High efficiency is being demanded during the design phase of building construction and each Advantus is equipped with a state of the art lead lag algorithm which provides sequencing for up to 8 appliances using a 3-wire RS485 daisy-chain network. This eliminates the need for costly and complex boiler sequencer panels. Combined with an ultra-high turn down ratio of up to 25:1 on an individual appliance, a network of 8 Advantus appliances can be operated with an industry leading 200:1 turndown. A high turn down results in significantly reduced short cycling, increases thermal efficiency and provides unmatched levels of comfort with the ability to track building load accurately. An adjustable Base Load Rate parameter ensures that all appliances in the network are firing before modulating in unison up to maximum firing rate. Run time equalization methodology evenly distributes the operation time across the entire boiler plant through the rotation of lead boilers.

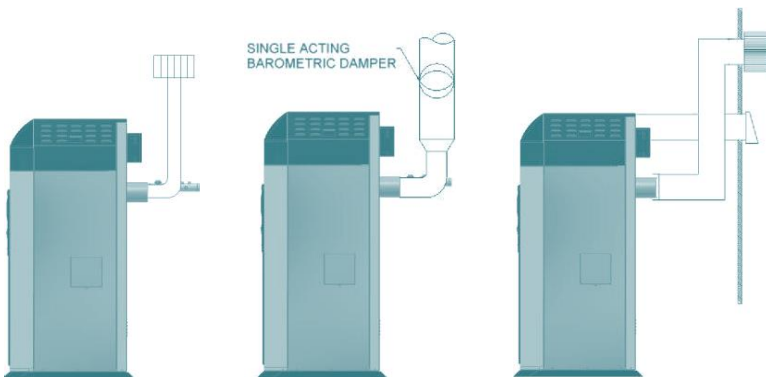
The use of a single system sensor wired to the first Advantus dictates the sequencing operation. In the event an unexpected incident occurs where the first Advantus is disabled, the remaining Advantus appliances will intervene and provide heating based on a pre-defined standalone algorithm. The assurance of fail safe operation provides peace of mind operation and this advanced lead lag functionality is equipped with "shift on the fly" capability where additional appliances are automatically detected and join into the lead lag sequence for optimum efficiency operation.

VENTING

For ease of installation the fully condensing Advantus can be vented individually in a Category IV positive pressure venting arrangement or they can be vented in a common chimney designed for a Category II venting system.

With the outstanding efficiency of the Advantus it can be vented with corrosion resistant CPVC, Polypropylene, AL29-4C or 316L stainless steel material as stack temperatures are between 10-30°F (5.5 – 16.7°C) above incoming water temperatures. This allows a diverse range of venting materials to suit any installation and for Category II, the Advantus is capable of venting up to 100 equivalent feet and up to 100 equivalent feet of combustion air can be brought directly to the boiler for direct vent installations.

The Advantus is available with an air inlet damper for cold climates which prevents outdoor air from infiltrating the heat exchanger when the Advantus is in standby.



suitable for category II or category IV

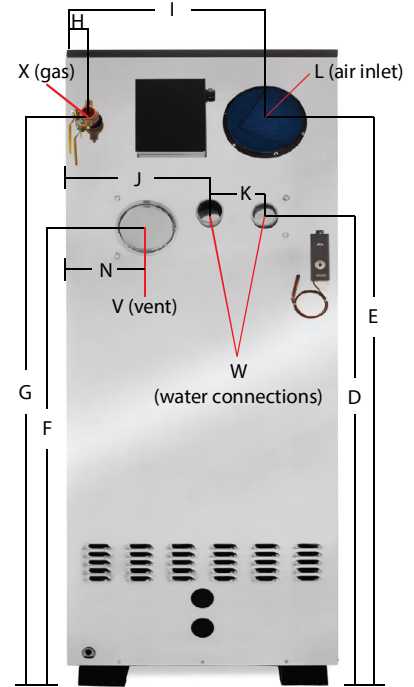
DIMENSIONS & SPECIFICATIONS



FRONT VIEW



SIDE VIEW



BACK VIEW

Model	Dim. "A"	Dim. "B"	Dim. "C"	Dim. "D"	Dim. "E"	Dim. "F"	Dim. "G"	Dim. "H"	Dim. "I"	Dim. "J"	Dim. "K"	Dim. "L"	Dim. "M"	Dim. "N"	Dim. "P"	Dim. "R"	Dim. "V" (as shipped)	Ø Dim. "W"	Ø Dim. "X"
																		Water	Gas
500	29½"	34"	60"	39½"	54½"	37½"	50"	9½"	5"	15"	6"	6"	19 1/8"	9"	22½"	37½"	5"	2"	1"
600	29½"	34"	60"	39½"	54½"	37½"	50"	9½"	5"	15"	6"	6"	19 1/8"	9"	22½"	37½"	5"	2"	1"
800	30"	34"	83"	61"	74"	59½"	68½"	4"	21½"	15½"	6"	8"	19"	9"	22"	37½"	6"	2"	1"
1000	30"	34"	83"	61"	74"	59½"	68½"	4"	21½"	15½"	6"	8"	19"	9"	22"	37½"	6"	2"	1"
1200	30"	42"	83"	59"	75"	57"	67"	4"	21½"	15½"	6"	10"	19"	7½"	22"	45½"	7"	2½"	1"
1400	30"	42"	83"	59"	75"	57"	67"	4"	21½"	15½"	6"	10"	19"	7½"	22"	45½"	7"	2½"	1½"
1600	30"	42"	83"	54½"	75"	51"	63"	4"	21½"	16½"	6"	10"	23"	7½"	22"	45½"	8"	3"	1½"
1800	30"	42"	83"	54½"	75"	51"	63"	4"	21½"	16½"	6"	10"	23"	7½"	22"	45½"	8"	3"	1½"
2000	30"	42"	93"	63½"	80"	60"	72"	4"	22"	16½"	6"	12"	23"	7½"	22"	45½"	9"	3"	1½"
2500	30"	42"	93"	63½"	80"	60"	72"	4"	22"	16½"	6"	12"	23"	7½"	22"	45½"	9"	3"	1½"
3000	35"	47"	101"	66"	90"	62"	78"	5½"	26"	5½"	24"	12"	23"	17½"	27½"	50"	10"	3"	1½"
3500	35"	47"	101"	66"	90"	62"	78"	5½"	26"	5½"	24"	12"	23"	17½"	27½"	50"	10"	4"	2"
4000	35"	47"	101"	66"	90"	62"	78"	5½"	26"	5½"	24"	12"	23"	17½"	27½"	50"	10"	4"	2½** (2"***)

Natural Gas*Propane

Model	10°F Rise (Minimum Input)		20°F Rise (Maximum Input)		40°F Rise (Maximum Input)		60°F Rise (Maximum Input)	
	US GPM	ΔP-Ft.	US GPM	ΔP-Ft.	US GPM	ΔP-Ft.	US GPM	ΔP-Ft.
	500	N/A	N/A	47.20	1.80	23.60	0.50	15.70
600	N/A	N/A	56.60	2.60	28.30	0.60	18.90	0.30
800	6.60	0.03	74.80	4.50	37.40	1.10	24.90	0.50
1000	8.20	0.05	93.40	7.00	46.70	1.80	31.20	0.80
1200	9.90	0.02	112.20	2.00	56.10	0.50	37.40	0.20
1400	11.50	0.02	130.80	2.70	65.40	0.70	43.60	0.30
1600	13.20	0.03	149.60	3.90	74.80	0.80	49.90	0.40
1800	14.80	0.04	168.20	4.40	84.10	1.20	56.10	0.50
2000	16.50	0.05	189.80	5.60	94.90	1.40	63.20	0.60
2500	20.60	0.07	237.20	8.80	118.60	2.20	79.10	1.00
3000	24.70	0.01	284.60	1.60	142.30	0.40	95.00	0.20
3500	28.90	0.02	332.00	2.20	166.00	0.60	110.70	0.30
4000	33.00	0.02	379.40	2.90	189.70	0.70	126.50	0.30

Heat Exchanger Head Loss and Flow

Model	Up to 100 ft. Equiv. Length		Ø Dim. "V"
	Air Inlet	Cat IV	Vent CAT. II
500	5	5	6
600	5	5	6
800	6	6	6
1000	6	6	7
1200	6	7	8
1400	6	7	8
1600	8	7	9
1800	8	8	10
2000	8	8	10
2500	8	9	10
3000	10	10	10
3500	10	10	12
4000	10	10	14

Air Inlet and Venting (Inches)

Model	100°F Rise GPH	56°C Rise LPH	80°F Rise GPH	44°C Rise LPH	60°F Rise GPH	33°C Rise LPH
500	510	1926	637	2408	849	3210
600	679	2568	849	3210	1132	4281
800	906	3424	1132	4281	1510	5707
1000	1132	4281	1416	5351	1887	7134
1200	1346	5088	1346	5088	2243	8480
1400	1570	5936	1570	5936	2617	9893
1600	1795	6784	1795	6784	2991	11306
1800	2019	7632	2019	7632	3365	12719
2000	2277	8606	2277	8606	3795	14344
2500	2846	10758	2846	10758	4743	17930
3000	3415	12910	3415	12910	5692	21516
3500	3984	15061	3984	15061	6641	25102
4000	4554	17213	4554	17213	7589	28688

Recovery Capacity

Model	Water Content (Gal)
500	25
600	28
800	35
1000	42
1200	50
1400	50
1600	60
1800	60
2000	80
2500	80
3000	130
3500	130
4000	165

Heat Exchanger Water Content

Model	Maximum Input MBTU/hr	Maximum Output MBTU/hr
500	450	425
600	600	567
800	800	749
1000	1000	936
1200	1200	1123
1400	1400	1310
1600	1600	1498
1800	1800	1685
2000	2000	1900
2500	2500	2375
3000	3000	2850
3500	3500	3325
4000	4000	3800

Input and Output



forward thinking

CONTACT US

CAMUS HYDRONICS LTD.

6226 Netherhart Road
Mississauga, ON
L5T 1B7

p: 905.696.7800
f: 905.696.8801

www.camus-hydronics.com
camus@bellnet.ca

Camus is continually setting new benchmarks of excellence through skillfully engineered and solidly constructed high-efficiency products designed to provide years of reliable service and comfort.

Representation of our products is coast to coast as well as internationally through a growing list of knowledgeable and professional distributors.

Additional specifications can be obtained by visiting our website or by calling your local Camus representative.



The Camus Certified seal assures you that reliability, efficiency and serviceability are built into every single unit.

