120VAC

JUNCTION BOX

NEUTRAL

TERMINAL STRIP
120V SUPPLY "L"

TERMINAL STRIP
120V SUPPLY "N"

BOX DEPICTS
OPTIONAL ITEMS

BOX DEPICTS
DUAL SENSOR
SINGLE HOUSING

WARNING

DISCONNECT POWER
BEFORE SERVICING

LOW VOLTAGE
120 VAC
HIGH VOLTAGE

INTEGRATED CONTROL

ON/OFF
SWITCH

X1-6

F2
3.15 A

F4
5.0 A

SYSTEM PUMP
RELAY

BOILER PUMP
RELAY

DHW PUMP
RELAY

X1-3

X1-12

X1-1

X1-2

X1-4

X1-8

1.5A EACH MAX

TERMINAL STRIP

SYSTEM PUMP
CONTACTOR

BOILER PUMP
CONTACTOR

DHW PUMP
CONTACTOR

GROUND

BLOWER
RELAY

X10-1

SMALL GAS
VALVE RELAY

LARGE GAS
VALVE RELAY

LARGE GAS
VALVE RELAY

SMALL GAS
VALVE RELAY

X10-2

X10-3

X10-6

X10-5

X10-4

GAS
VALVE
(LARGE)

GAS
VALVE
(SMALL)

FLAME
SENSE 1

X1-3

X1-7

X1-10

SPARK
GENERATOR

SPARK
ROD

FLAME
SENSE 2

X2-3

X6-1

X2-5

X11

USB
INTERFACE

X6-3

X6-10

X13-4

BLOWER

BLOWER
RELAY

1

2

3

X1-1

BAS (AS APPLICABLE)

X1-2

X1-3

FLUE DAMPER
TRANSFORMER

FLUE DAMPER

M

24V
TRANSFORMER

J3-6

J3-5

LWCO
PROBE

TEST
SWITCH

J3-3

J3-2

LWCO RESET

J2-1

J3-4

J2-2

LWCO
BOARD

INTEGRATED
CONTROL

X8-20

X4-1

X8-10

X4-2

X8-1

X4-3

BAS
BOARD
(AS
APPLICABLE)

X6-3

CN6-3

X6-1

CN6-2

X6-2

CN6-1

LARGE
CONNECTION BOARD

X7-8

CN3-6

X7-7

CN3-7

X8-13

CN3-14

X8-14

CN3-13

X8-12

CN3-12

X8-11

CN3-11

X8-5

CN3-10

X8-15

CN3-4

CN3-9

X8-6

CN3-8

X8-16

CN3-1

X8-7

CN3-2

X8-17

CN3-3

X8-1

CN3-4

17 SHIELD
18 A BAS OPTION
19 B
20 SHIELD
21 + 0-10V RATE OUT
22 -
23 + 0-10V BOILER PUMP OUT
24 -
25 SYSTEM RETURN SENSOR
26
27 SYSTEM SUPPLY SENSOR
28
29 TANK SENSOR
30
31 OUTDOOR SENSOR
32
33 + 0-10V BMS IN
34 -
35 + 0-10V SYSTEM PUMP IN
36 -
37 SHIELD
38 A CASCADE
39 B
40 SHIELD

X8-3

INLET SENSOR

X8-8

OUTLET SENSOR (S9)

X8-2

OUTLET SENSOR (S1)

X8-4

FLUE SENSOR

X8-9

FLUE SENSOR (S10)

X7-1

PRE-MIX SENSOR 1 (S11)

X7-5

PRE-MIX SENSOR 1 (S13)

LCD
DISPLAY

X6-18

1

BLOWER

X6-9

4

X6-17

2

X6-8

5

WIFI
DONGLE

LG CON BRD

CN6-2

BAS

CN6-1

CN6-3

J10

J6

J7

SW1

J8

USB CABLE

J9

J17

OPTIONAL USB/WIFI
EXTENSION CABLE

J2

J11

J12

J23

E
GND

4V

X4

OPTIONAL
ETHERNET CABLE

SHIELDED CABLE FROM X4
TO J12 OR J23 AS APPLICABLE

CN-4

CN-1

CN-2

CN-3

AIR VALVE

M

GPS1

GPS2

X6-5

X6-15

AIR VALVE
PRESS. SWITCH

X6-12

INTEGRATED
CONTROL

X6-13

X13-1

BLOCKED FLUE
SWITCH

X6-6

BLOCKED DRAIN
SWITCH

X5-1

X5-7

X5-2

X5-8

X5-3

X5-9

X5-4

X5-10

X5-5

X5-41

X5-6

X5-12

"X5"
BLOCK WIRING
IS MODEL
DEPENDENT

X3-3

X3-4

X3-1

X3-2

X6-11

X6-2

X6-14

X6-4

HIGH LIMIT
SWITCH

CN1-4

CN1-5

CN1-6

CN1-12

CN1-10

CN1-11

CN1-9

CN1-8

CN1-7

CN1-1

CN1-2

CN1-3

SMALL
CONNECTION BOARD

1 ALARM CONTACTS
2
3 RUN-TIME CONTACTS
4
5 TANK THERMOSTAT
6
7 R ENABLE
8 W
9 LOUVER PROVING
10
11 24 VAC LOUVER RELAY COIL
12
13 AUX SWITCH 1
14
15 AUX SWITCH 2
16

Notes:
1. All wiring must be installed in accordance with: local, state, provincial and national code requirements per either N.E.C. in USA or C.S.A. in Canada.
2. If any original equipment wire as supplied with the appliance must be replaced, it must be replaced with wire having same wire gauge (AWG) and rated for a minimum of 105℃. Exceptions: Replacement high voltage spark lead and shielded cables must be purchased from the factory. Use of a non-approved spark lead or shielded cables can lead to operational problems which could result in non-repairable damage to the integrated controller or other components.
3. Actual connector block locations may vary from those shown on diagrams. Refer to actual components for proper connector block locations when using diagrams to troubleshoot unit.