Typical Gas310/610 boiler field wiring - Remote 0-10v controlled Operation

- **BMS control via 0-10v, connect 0-10v signal on X29.11 & X29.12, boiler modulates based on temperature or output according to signal sent to boiler.**
- **Operating Status (dry contact normally open relay)**
- **LWCO & External Hi-Limit fault attenuation on control, connect devices in series on X29.1 & X29.2 – Generates fault code flashing numbers $\boxed{X}$ $\boxed{i2}$ requires manual reset of safety devices first then reset of the boiler control. $\boxed{X}$ = Code display & $\boxed{i2}$ = $\bigcirc$ display**
- **Optional flow switch application (Start interlock only)**
- **Optional LWCO & Safety Hi limit – can be wired on X29.5 & X29.6 if power failures are common, note boiler display will not display fault code, but a shut-off code $\boxed{b.}$ $\boxed{X.}\boxed{X.}$ (Flashing dots)**

NOTE:
A) Fault codes in both (Alternating flashing codes $\boxed{X}$ = Code display & $\boxed{X}\boxed{X}$ = $\bigcirc$ display) require manual reset of the device if equipped and then boiler control.
B) Shutoff codes $\boxed{b.}$ $\boxed{X.}\boxed{X.}$ (Flashing dots) do not require manual intervention, when condition returns to normal, the boiler automatic resume normal operation.
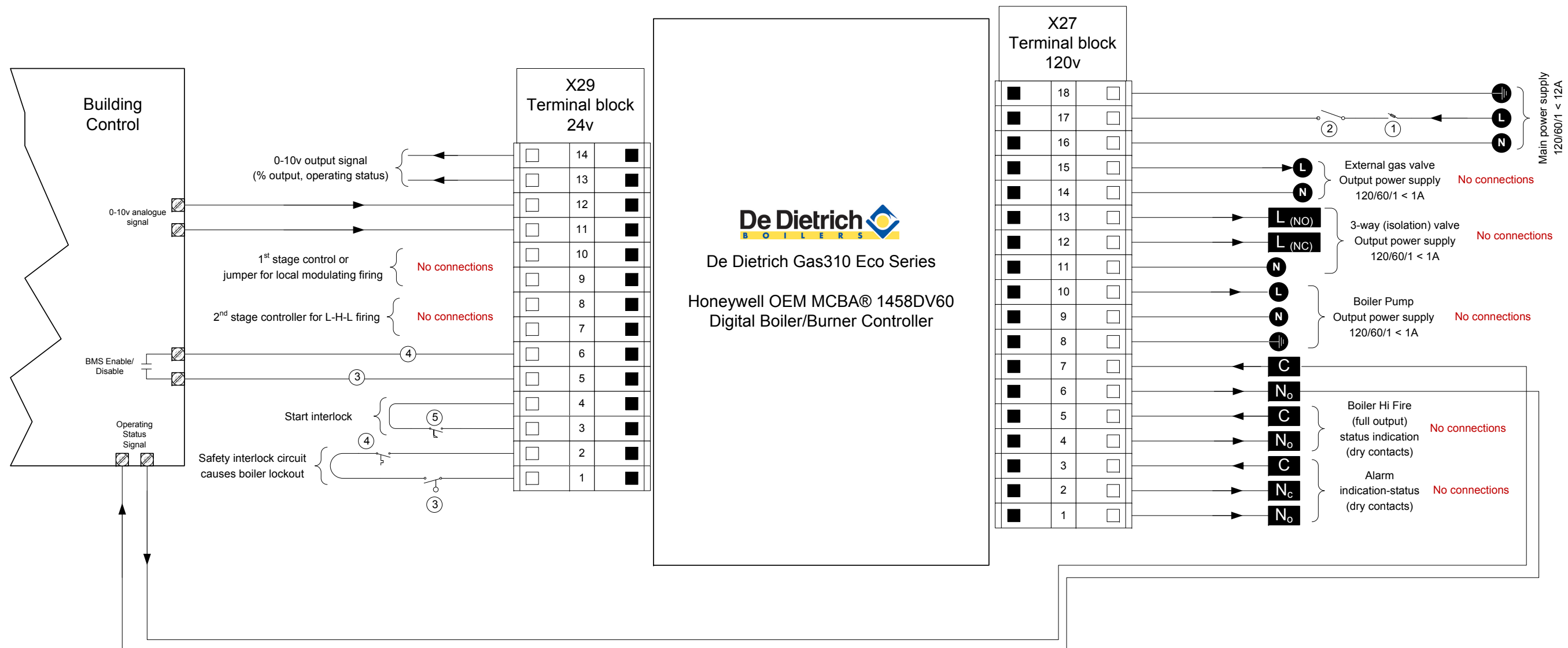
Note: Gas610 models wiring applies to each module

LEGEND:
- ① Main fuse disconnect
- ② Service switch
- ③ External Hi Limit
- ④ External LWCO device
- ⑤ External Flow Switch (optional not required)
- **L** Line 120v
- Earth ground
- **N** Neutral
- **L (NC)** Output 120v (normally closed)
- **L (NO)** Output 120v (normally open)
- **C** Common dry contact
- **No** Normally open dry contact
- **Nc** Normally closed dry contact

Building Control

X29 Terminal block 24v

0-10v output signal (% output, operating status)

0-10v analogue signal

1st stage control or jumper for local modulating firing — No connections

2nd stage controller for L-H-L firing — No connections

BMS Enable/ Disable

Operating Status Signal

Start interlock

Safety interlock circuit causes boiler lockout

De Dietrich BOILERS

De Dietrich Gas310 Eco Series

Honeywell OEM MCBA® 1458DV60 Digital Boiler/Burner Controller

X27 Terminal block 120v

Main power supply 120/60/1 < 12A

External gas valve Output power supply 120/60/1 < 1A — No connections

3-way (isolation) valve Output power supply 120/60/1 < 1A — No connections

Boiler Pump Output power supply 120/60/1 < 1A — No connections

Boiler Hi Fire (full output) status indication (dry contacts) — No connections

Alarm indication-status (dry contacts) — No connections

Typical Gas310/610 boiler field wiring – Local (Internal) Modulation Operation
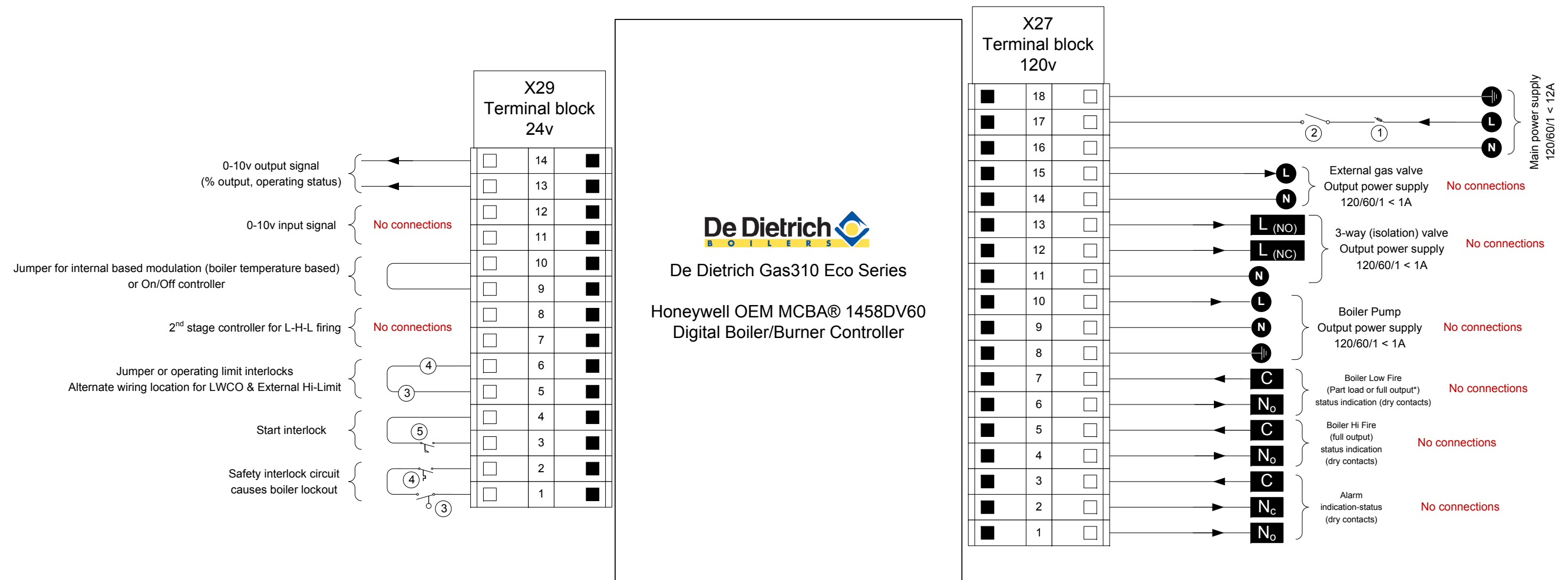
- **On/Off control or jumper – modulates according to internal set-point (Connect X29.9 & X29.10)**
- **Operating Status (dry contact normally open relay)**
- **LWCO & External Hi-Limit fault attenuation on control, connect devices in series on X29.1 & X29.2 – Generates fault code flashing numbers $\boxed{X}$ $\boxed{12}$ requires manual reset of safety devices first then reset of the boiler control. $\boxed{X}$ = Code display & $\boxed{12}$ = $\bigcirc$ display**
- **Optional flow switch application (Start interlock only)**
- **Optional LWCO & Safety Hi limit – can be wired on X29.5 & X29.6 if power failures are common, note boiler display will not display fault code, but a shut-off code $\boxed{b.}$ $\boxed{X.X.}$ (Flashing dots)**

NOTE:
A) Fault codes in both (Alternating flashing codes $\boxed{X}$ = Code display & $\boxed{X}\boxed{X}$ = $\bigcirc$ display) require manual reset of the device if equipped and then boiler control.
B) Shutoff codes $\boxed{b.}$ $\boxed{X.}\boxed{X.}$ (Flashing dots) do not require manual intervention, when condition returns to normal, the boiler automatic resume normal operation.

Note: Gas610 models wiring applies to each module

LEGEND:
- ① Main fuse disconnect
- ② Service switch
- ③ External Hi Limit
- ④ External LWCO device
- ⑤ External Flow Switch (optional not required)
- **L** Line 120v
- ⏚ Earth ground
- **N** Neutral
- **L (NC)** Output 120v (normally closed)
- **L (NO)** Output 120v (normally open)
- **C** Common dry contact
- **N₀** Normally open dry contact
- **N꜀** Normally closed dry contact

X29 Terminal block 24v — terminals 1–14

X27 Terminal block 120v — terminals 1–18

De Dietrich Gas310 Eco Series
Honeywell OEM MCBA® 1458DV60
Digital Boiler/Burner Controller

Left side labels (X29):
- 0-10v output signal (% output, operating status) — 14, 13
- 0-10v input signal — No connections — 12, 11
- Jumper for internal based modulation (boiler temperature based) or On/Off controller — 10, 9
- 2nd stage controller for L-H-L firing — No connections — 8, 7
- Jumper or operating limit interlocks / Alternate wiring location for LWCO & External Hi-Limit — ④ ③ — 6, 5
- Start interlock — ⑤ — 4, 3
- Safety interlock circuit causes boiler lockout — ④ ③ — 2, 1

Right side labels (X27):
- Main power supply 120/60/1 < 12A — 18, 17, 16 — ② ①
- External gas valve Output power supply 120/60/1 < 1A — No connections — 15 (L), 14 (N)
- 3-way (isolation) valve Output power supply 120/60/1 < 1A — No connections — 13 L(NO), 12 L(NC), 11 N
- Boiler Pump Output power supply 120/60/1 < 1A — No connections — 10 L, 9 N, 8 ⏚
- Boiler Low Fire (Part load or full output*) status indication (dry contacts) — No connections — 7 C, 6 N₀
- Boiler Hi Fire (full output) status indication (dry contacts) — No connections — 5 C, 4 N₀
- Alarm indication-status (dry contacts) — No connections — 3 C, 2 N꜀, 1 N₀

Typical Gas310/610 boiler field wiring – 2 stage (L-H-L) Operation

- **On/Off control or jumper – for 1st stage modulates 20-50% of boiler output according to internal set-point (Contacts X29.9 & X29.10)**
- **2nd stage controller or jumper modulates 50-100% of boiler output according to internal set-point Contacts X29.7 & X29.8)**
- **Operating Status (dry contact normally open relay)**
- **LWCO & External Hi-Limit fault attenuation on control, connect devices in series on X29.1 & X29.2 – Generates fault code flashing numbers ⊠ ⎹2 requires manual reset of safety devices first then reset of the boiler control. ⊠ = Code display & ⎹2 = ① display**
- **Optional flow switch application (Start interlock only)**
- **Optional LWCO & Safety Hi limit – can be wired on X29.5 & X29.6 if power failures are common, note boiler display will not display fault code, but a shut-off code b. X.X. (Flashing dots)**

NOTE:
A) Fault codes in both (Alternating flashing codes ⊠ = Code display & ⊠⊠ = ① display) require manual reset of the device if equipped and then boiler control.
B) Shutoff codes b. X.X (Flashing dots) do not require manual intervention, when condition returns to normal, the boiler automatic resume normal operation.

Note: Gas610 models wiring applies to each module

LEGEND:

①	Main fuse disconnect
②	Service switch
③	External Hi Limit
④	External LWCO device
⑤	External Flow Switch (optional not required)
⑥	2nd stage controller

- L Line 120v
- Earth ground
- N Neutral

L (NC)	Output 120v (normally closed)
L (NO)	Output 120v (normally open)
C	Common dry contact
No	Normally open dry contact
Nc	Normally closed dry contact

X29 Terminal block 24v

- 14, 13 — 0-10v output signal (% output, operating status)
- 12, 11 — 0-10v input signal — No connections
- 10, 9 — Jumper for internal based modulation (boiler temperature based) or On/Off controller
- 8, 7 — 2nd stage controller for L-H-L firing ⑥
- 6, 5 — Jumper or operating limit interlocks
- 4, 3 — Start interlock ⑤
- 2, 1 — Safety interlock circuit causes boiler lockout ④ ③

De Dietrich BOILERS

De Dietrich Gas310 Eco Series

Honeywell OEM MCBA® 1458DV60
Digital Boiler/Burner Controller

X27 Terminal block 120v

- 18, 17, 16 — ② ① Main power supply 120/60/1 < 12A
- 15, 14 — L, N — External gas valve Output power supply 120/60/1 < 1A — No connections
- 13, 12, 11 — L (NO), L (NC), N — 3-way (isolation) valve Output power supply 120/60/1 < 1A — No connections
- 10, 9, 8 — L, N — Boiler Pump Output power supply 120/60/1 < 1A — No connections
- 7, 6 — C, No — Boiler Low Fire (Part load or full output*) status indication (dry contacts) — No connections
- 5, 4 — C, No — Boiler Hi Fire (full output) status indication (dry contacts) — No connections
- 3, 2, 1 — C, Nc, No — Alarm indication-status (dry contacts) — No connections