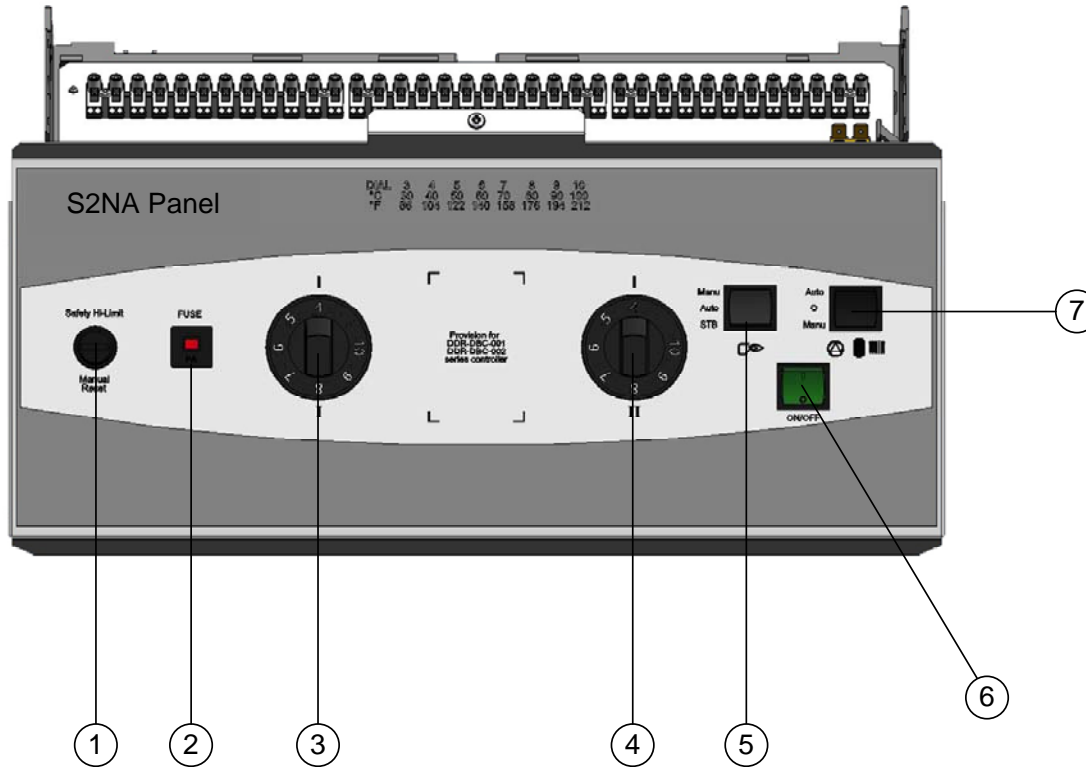


GT Series Main Boiler Control S2NA Components Part Numbers

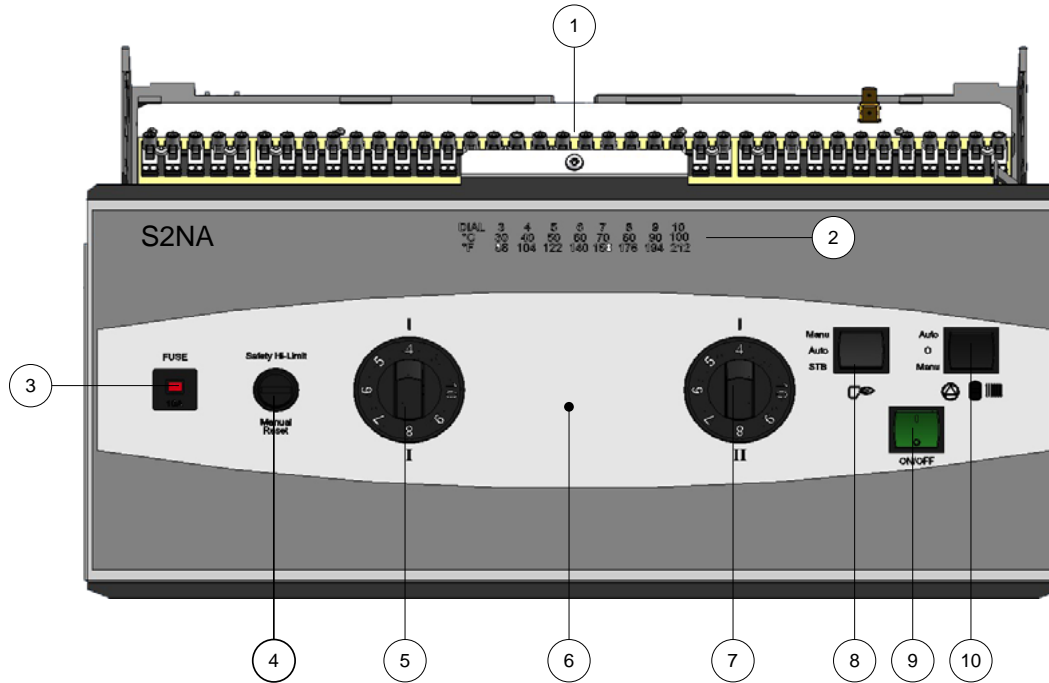


S2NA Panel Main Components		
Item	Description	DDT Part #
1	Safety Hi Limit (MR) 110°C [230°F]	9536 3311
2	Breaker 10A	9534 0286
3	Operating Limit 40-100°C [104-212°F]	9536 5604
4	2nd Stage Limit 40-100°C [104-212°F]	9536 5604
5	Man/Auto/STB sw itch	9532 5362
6	Eluminated ON/OFF Main sw itch	9532 5027
7	Aux sw itch (non safety)	9532 5050

S2NA =	Used on GT120-220 Series boilers only
S2NA =	Used on GT330-430-530 Series boiler only - See GT 330-430 and 530 parts

De Dietrich Cast Iron Boiler Temperature Controller Model S2NA (standard version)

OVERVIEW OF COMPONENTS



- ① Wiring terminal strip
- ② Operating limits dial conversion
- ③ Panel fuse protection (resettable-breaker) 250v 10A rated
- ④ Safety Hi-Limit (Manual Reset) Fixed Setting 110°C [230°F]
- ⑤ Limit adjustable 4-10 (40-100°C) or [104-212°F]
- ⑥ Optional digital control provision (consult factory)
- ⑦ Aux Limit adjustable 40-100°C [104-212°F] optional usage, for 2 stage control (L-H-L) or additional operating limit, additional relay required not provided.
- ⑧ Man/Auto/STB 3 position operating switch:
Man = Local panel operation
Auto = Remote control operation – separate operating control required.
STB = Testing Safety limit function
- ⑨ Pump (Aux) Switch – Optional usage (not part of safety circuit) consult factory for appropriate use and applications.
- ⑩ Main ON/OFF Switch



WARNING – ATTENTION:

All replacement and field wiring min 18awg. Type TEW or 1015 CSA/UL approved.

It is the sole responsibility of the installer/owner that the controls are operating correctly

Wiring mistake can lead to personal injury (including death) or property damage.

Mark all wires when prior to servicing or replacing wires or components.

All water piping shall be arranged to avoid spray or ingestion of water on control

Do not operate control if ingested or damaged by water. Do not attempt to repair, lockout and tag the control and replace.

Drawing Template [0]

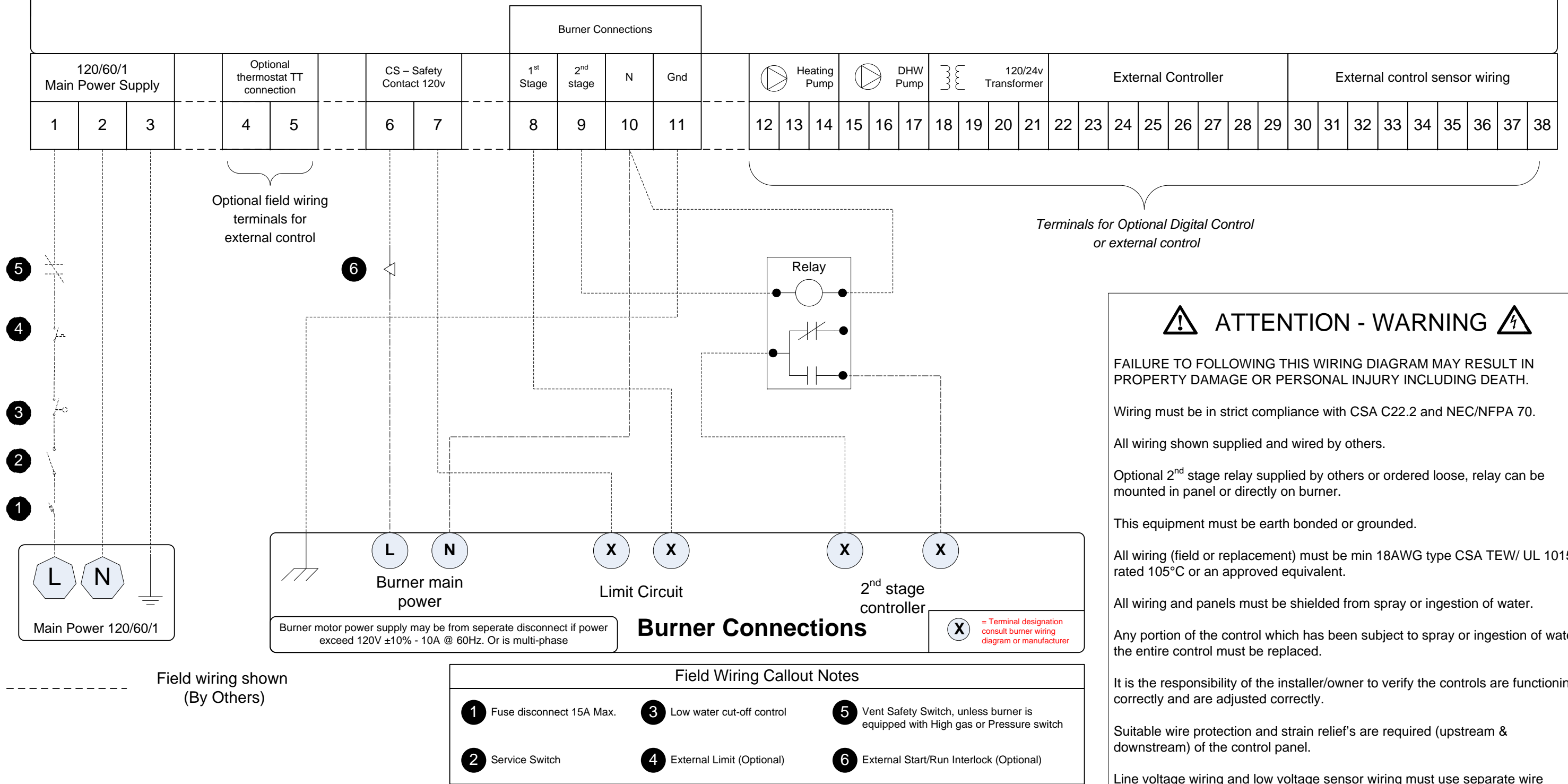


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Website: www.dedietrichboilers.com

Revisions			Description	Standard De Dietrich GT 120A-220A Series cast iron boiler temperature controller S2NA Panel				
Date	Description	Initial		Creator	Tolerances ±	Material	File Name	none
01/05/09	Fuse/hi limit change	CJH	Approved	Craig H.	Scale	NTS	4-122-S2V-001	
08/19/09	2 nd stage limit	CJH	Revision	2	Units	none	Date [mm/dd/yy]	08/18/09

S2NA (ME50) or S3NA (MD5) Temperature control panel (FIELD WIRING DIAGRAM)

Internal wiring by DDR-De Dietrich factory



⚠ ATTENTION - WARNING ⚠

FAILURE TO FOLLOWING THIS WIRING DIAGRAM MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY INCLUDING DEATH.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70.

All wiring shown supplied and wired by others.

Optional 2nd stage relay supplied by others or ordered loose, relay can be mounted in panel or directly on burner.

This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.

All wiring and panels must be shielded from spray or ingestion of water.

Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.

It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.

Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.

Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

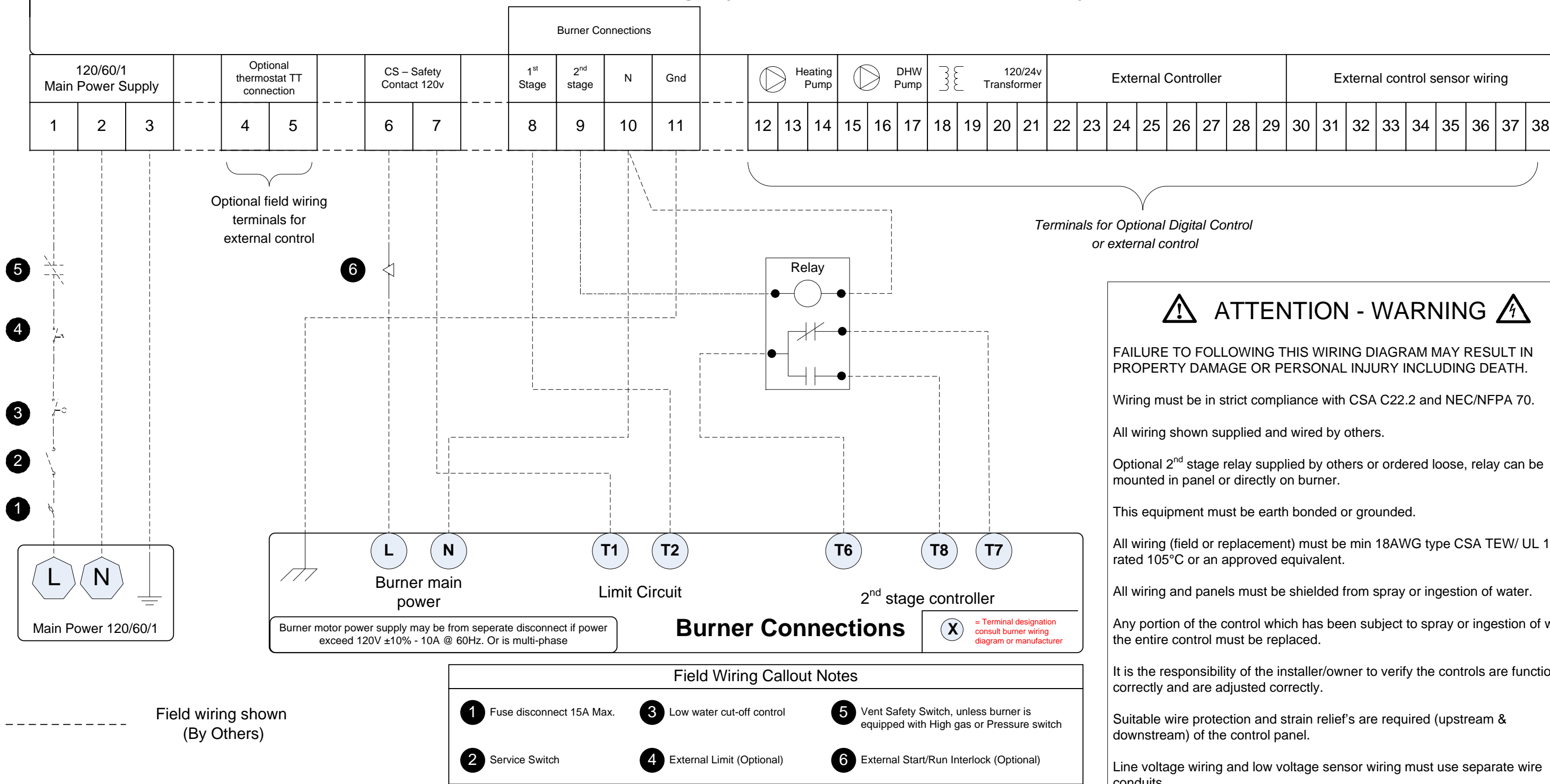
Drawn by: CJH 08-06-09 DWG #: 4-GTB-S23-001 (Rev1)



TYPICAL PANEL WIRING APPLICATION 2-STAGE (L-H-L) OPERATION

S2NA (ME50) or S3NA (MD5) Temperature control panel (FIELD WIRING DIAGRAM)

Internal wiring by DDR-De Dietrich factory



⚠ ATTENTION - WARNING ⚠

FAILURE TO FOLLOWING THIS WIRING DIAGRAM MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY INCLUDING DEATH.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70.

All wiring shown supplied and wired by others.

Optional 2nd stage relay supplied by others or ordered loose, relay can be mounted in panel or directly on burner.

This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.

All wiring and panels must be shielded from spray or ingestion of water.

Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.

It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.

Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.

Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

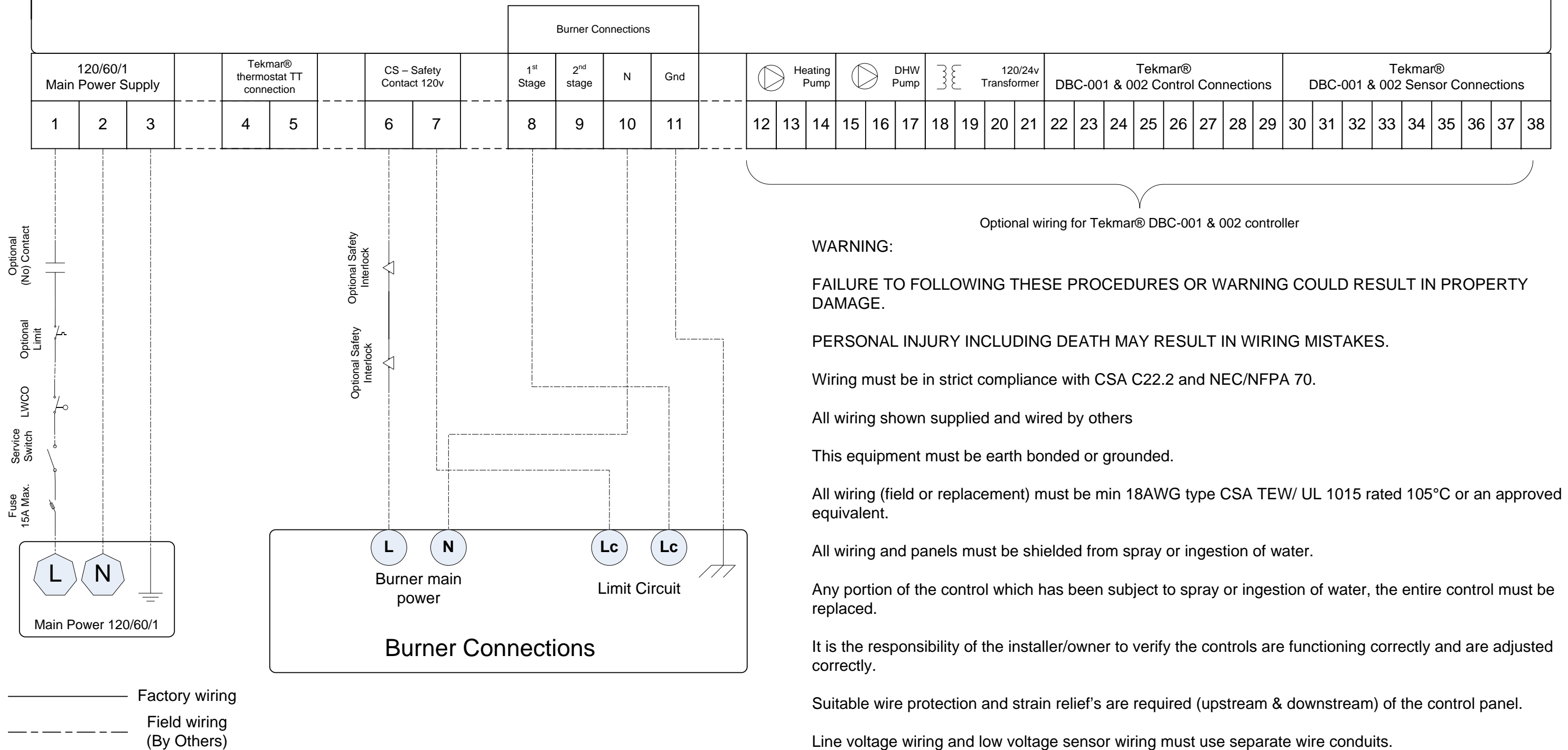
LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

Drawn by: CJH 08-06-09 DWG #: 4-GTB-S23-002 (Rev1)



RIELLO OR WIESHAUPT BURNER TYPICAL PANEL WIRING APPLICATION 2-STAGE (L-H-L) OPERATION

S2NA or S3NA Temperature control panel (Internal wiring by DDR-De Dietrich factory)



Optional wiring for Tekmar® DBC-001 & 002 controller

WARNING:

FAILURE TO FOLLOWING THESE PROCEDURES OR WARNING COULD RESULT IN PROPERTY DAMAGE.

PERSONAL INJURY INCLUDING DEATH MAY RESULT IN WIRING MISTAKES.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70.

All wiring shown supplied and wired by others

This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.

All wiring and panels must be shielded from spray or ingestion of water.

Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.

It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.

Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.

Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

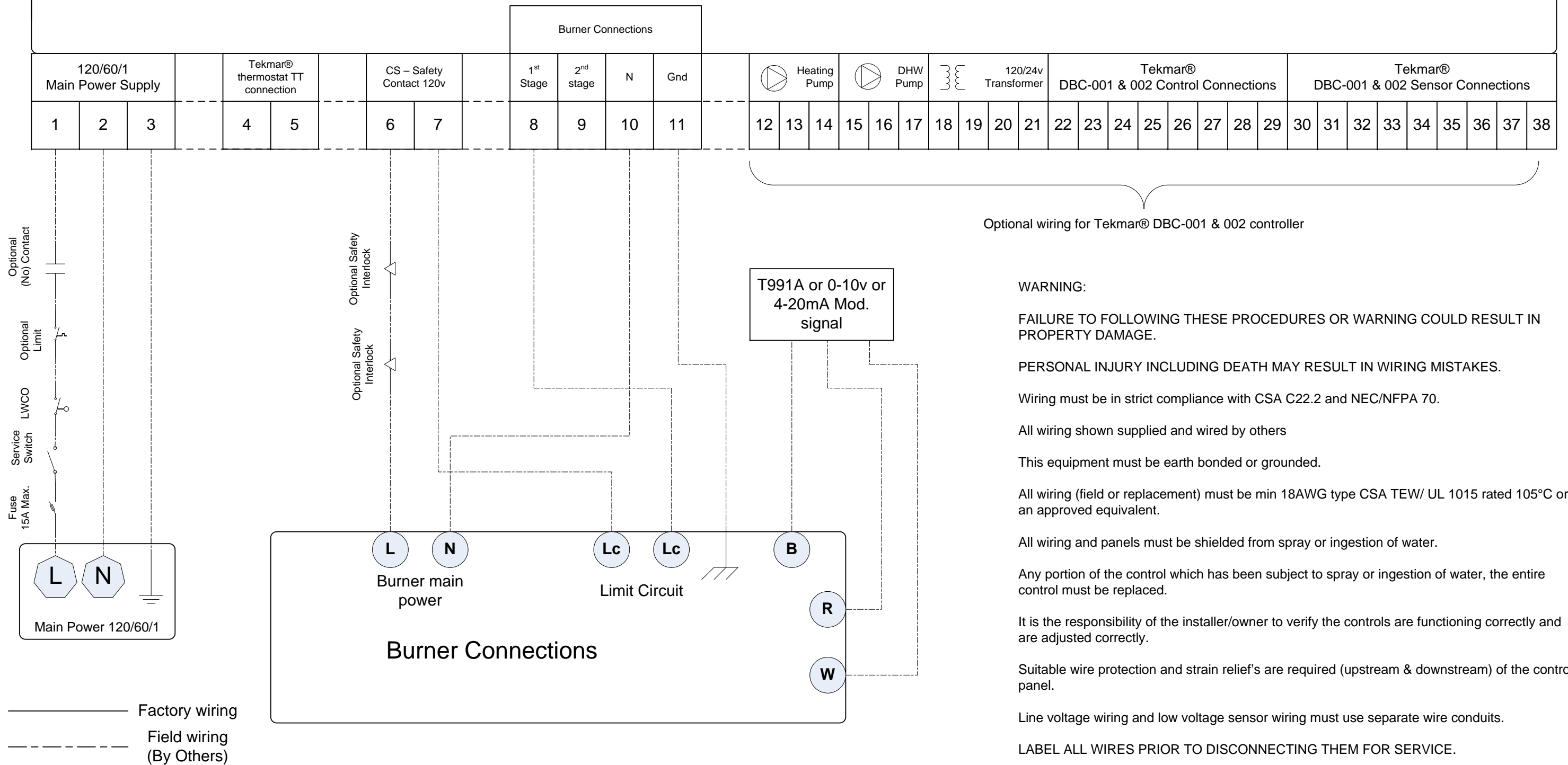
LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

Drawn by: CJH 06-24-08 DWG #: 4-GTB-S23-003 (Rev0)



S2NA & S3NA PANEL APPLICATION WIRING SINGLE STAGE (ON/OFF) OPERATION

S2NA or S3NA Temperature control panel (Internal wiring by DDR-De Dietrich factory)



Optional wiring for Tekmar® DBC-001 & 002 controller

WARNING:

FAILURE TO FOLLOWING THESE PROCEDURES OR WARNING COULD RESULT IN PROPERTY DAMAGE.

PERSONAL INJURY INCLUDING DEATH MAY RESULT IN WIRING MISTAKES.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70.

All wiring shown supplied and wired by others

This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.

All wiring and panels must be shielded from spray or ingestion of water.

Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.

It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.

Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.

Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

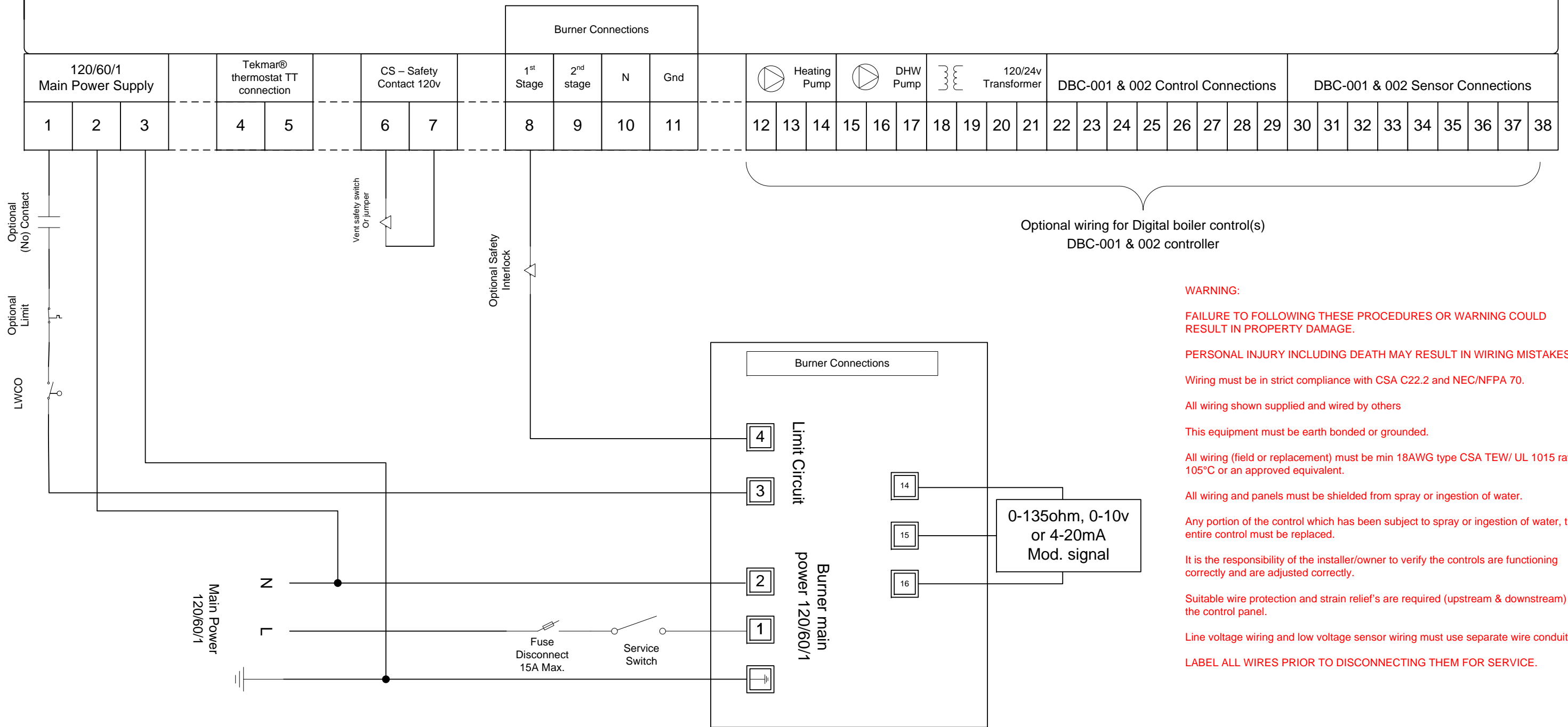
LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

Drawn by: CJH 06-24-08 | DWG #: 4-GTB-S23-004 (Rev0)



**S2NA or S3NA
PANEL APPLICATION WIRING
FULL MODULATING OPERATION**

S2NA or S3NA Temperature control panel (Internal wiring by DDR-De Dietrich factory)



WARNING:

FAILURE TO FOLLOWING THESE PROCEDURES OR WARNING COULD RESULT IN PROPERTY DAMAGE.

PERSONAL INJURY INCLUDING DEATH MAY RESULT IN WIRING MISTAKES.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70.

All wiring shown supplied and wired by others

This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.

All wiring and panels must be shielded from spray or ingestion of water.

Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.

It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.

Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.

Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

Drawn by: CJH 10-22-08 DWG #: 4-GTB-S23-005 (Rev0)

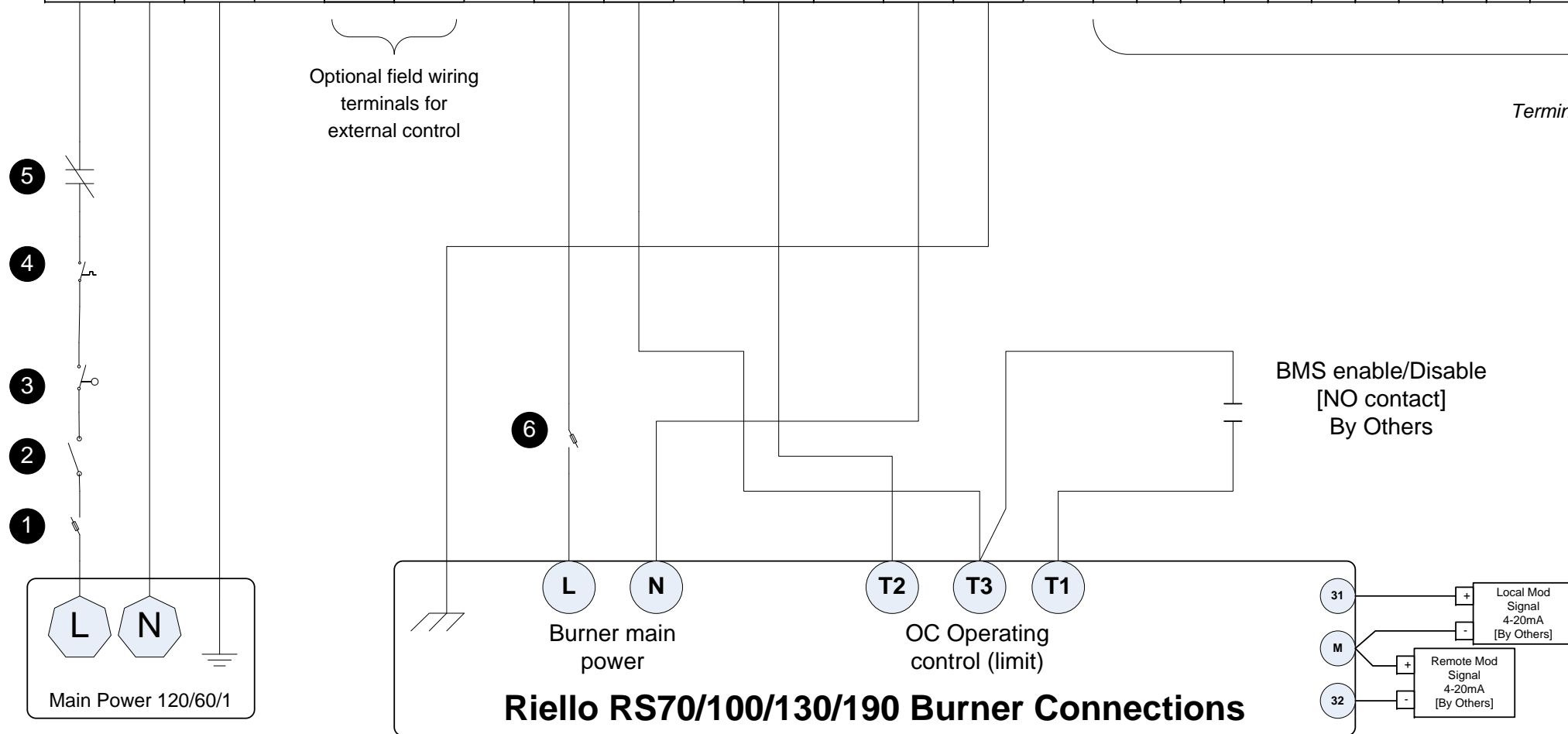
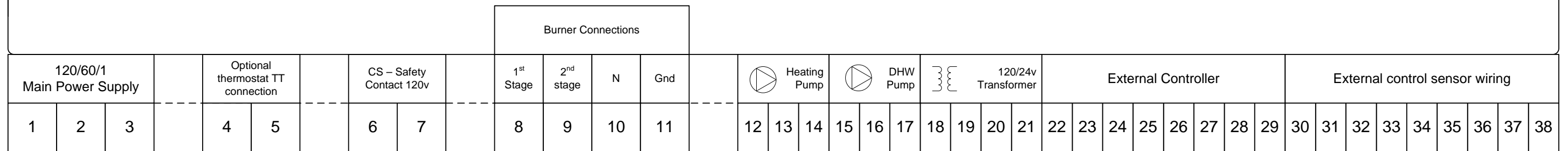


S2NA OR S3NA PANEL APPLICATION WIRING FULL MODULATING OPERATION

————— All field wiring shown by others

- 1 Burner terminals
- 1 Boiler panel terminals

De Dietrich S3NA (MD5) boiler control internal factory wiring



⚠ ATTENTION - WARNING ⚠

FAILURE TO FOLLOWING THIS WIRING DIAGRAM MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY INCLUDING DEATH.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70.

All wiring shown supplied and wired by others.

Optional 2nd stage relay supplied by others or ordered loose, relay can be mounted in panel or directly on burner.

This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.

All wiring and panels must be shielded from spray or ingestion of water.

Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.

It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.

Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.

Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

All Field wiring shown (By Others)

Burner fan motor power supply not shown separate disconnect power supply required (By others)

Field Wiring Callout Notes			
1	Fuse disconnect 15A Max.	5	Vent Safety Switch, unless burner is equipped with High gas or Pressure switch
2	Service Switch	4	External Limit (Optional)
3	Low water cut-off control	6	Burner control protection fuse 6A supplied/installed by others

Drawn by: CJH 11/01/09

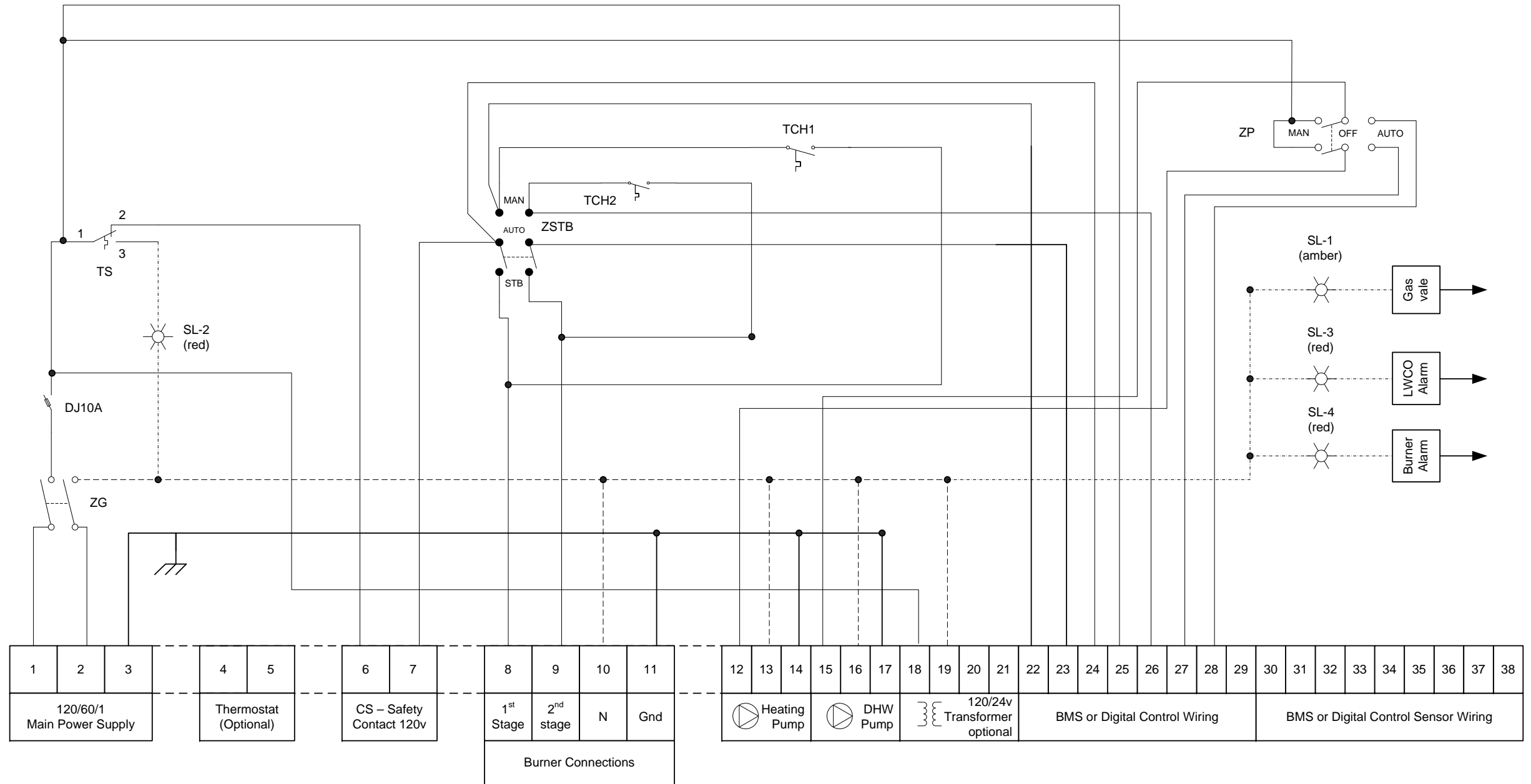


TYPICAL PANEL WIRING APPLICATION MODULATING BURNER

Standard De Dietrich GT Series Boilers Control Panel Internal Factory and optional status wiring

S2NA (ME50) or S3NA (MD5) Control Panels

symbol	Description
	ZG main power switch
	Earth Ground
	DJ 10A Fuse breaker
	TS - Safety limit (SPDT) manual reset
	Panel wire terminals
	ZSTB switch Man/Auto/STB (DPTP)
	TCH1 - 1 st stage limit or limit control
	TCH2 - 2 nd stage limit (optional usage)
	ZP - Aux (pump) switch MAN/OFF/AUTO
	Optional SL-1 status light (amber) heating
	Optional SL-2 status light (red) Hi-Temp alarm
	Optional SL-3 status light (red) LWCO alarm
	Optional SL-4 status light (red) Burner alarm
	Common connection
	Factory wiring Line (Hot or L1)
	Factory wiring Neutral (N or L2)
	Optional status wiring (by others)



All wiring min 18awg. (16 strd) type CSA TEW or UL1015 or equivalent (rated for at least 90°C)

All panels to be earth leakage test (Di-electric) and function tested

All components North American approved (see material listing)

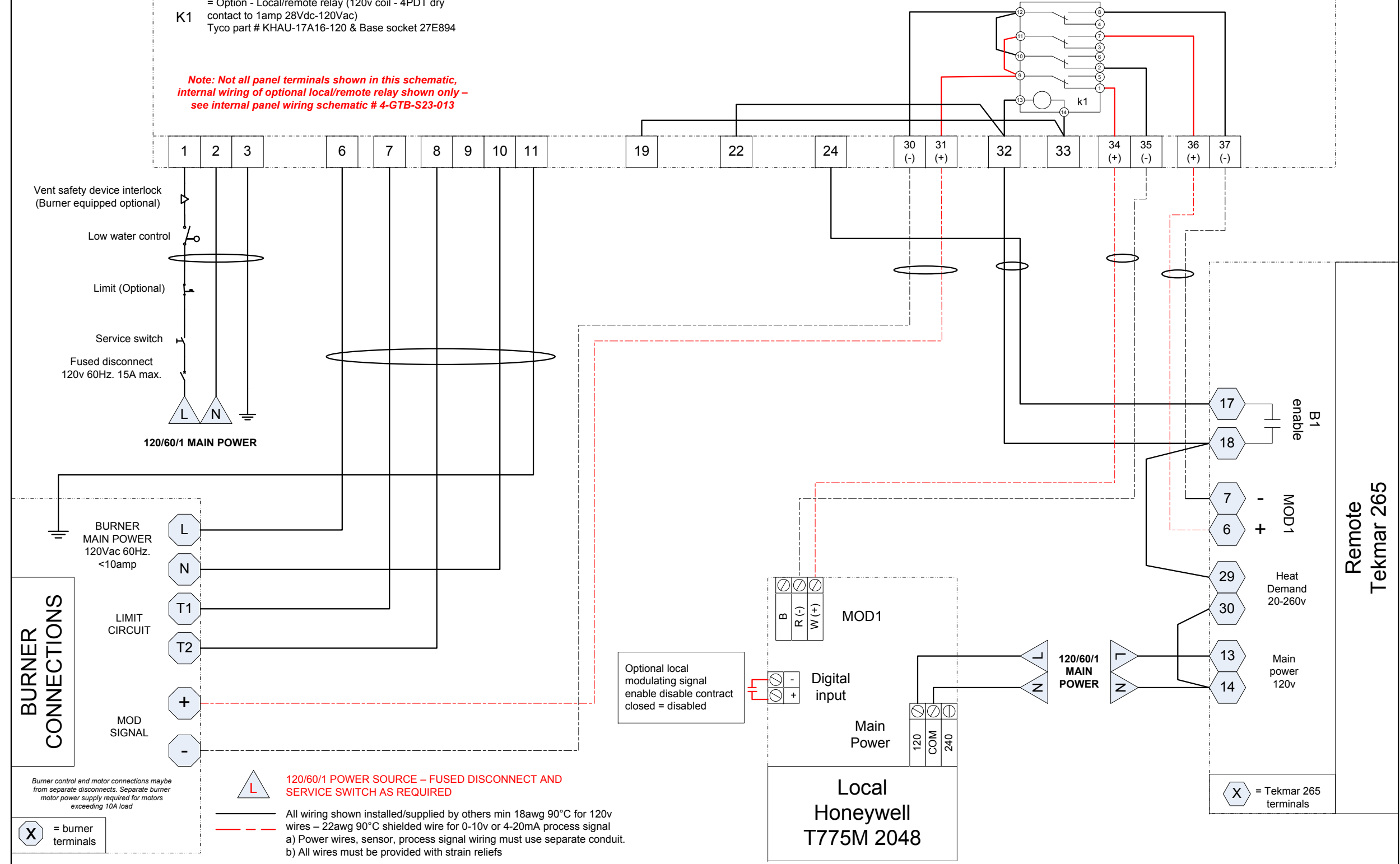
Field Wiring and Connection (By Others)
See other wiring diagrams for typical field applications

Drawing Template [0]	De Dietrich BOILERS	Revisions		Standard DDR Americas MD5 (S3NA) & ME50 S2NA - boiler panel shown with optional operating status lights – internal wiring of panel									
	DDR Americas Inc. 1090 Fountain Street North, Unit 10 & 11 Cambridge, Ontario N3E 1A3 – Canada Tel: 1.800.943.6275 Fax: 519.650.1709 www.dedietrichboilers.com	Date	Description	Initial	Description	Creator		Tolerances ±		Material		none	
						Craig H.				File Name		4-GTB-S23-013	
						Approved		Scale		Date [mm/dd/yy]		05/26/09	
						Revision		Units					

DE DIETRICH S2NA (ME50) OR S3NA (MD5) PANEL

X = S2NA – S3NA BOILER TEMPERATURE CONTROL PANEL TERMINALS
 = Option - Local/remote relay (120v coil - 4PDT dry contact to 1amp 28Vdc-120Vac)
 Tyco part # KHAU-17A16-120 & Base socket 27E894

Note: Not all panel terminals shown in this schematic, internal wiring of optional local/remote relay shown only – see internal panel wiring schematic # 4-GTB-S23-013



BURNER CONNECTIONS

Remote Tekmar 265

Burner control and motor connections may be from separate disconnects. Separate burner motor power supply required for motors exceeding 10A load

120/60/1 POWER SOURCE – FUSED DISCONNECT AND SERVICE SWITCH AS REQUIRED

— All wiring shown installed/supplied by others min 18awg 90°C for 120v wires – 22awg 90°C shielded wire for 0-10v or 4-20mA process signal
 a) Power wires, sensor, process signal wiring must use separate conduit.
 b) All wires must be provided with strain reliefs

De Dietrich BOILERS

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 Website: www.dedietrichboilers.com

Revisions		Description							
Date	Description		Initial	Creator	Tolerances	Material	File Name		
		De Dietrich temperature control panel S2NA (ME50) or S3NA (MD5) wiring schematic with optional local/remote process signal 0-10v or 4-20mA relay using Honeywell T775M 2048 (Local) & Tekmar 265 (Remote) modulating controls	Craig H.	±	None				
					None			None specified	
					NTS			4-GTB-S23-014	
					None			08/12/09	

Drawing Template [0]