

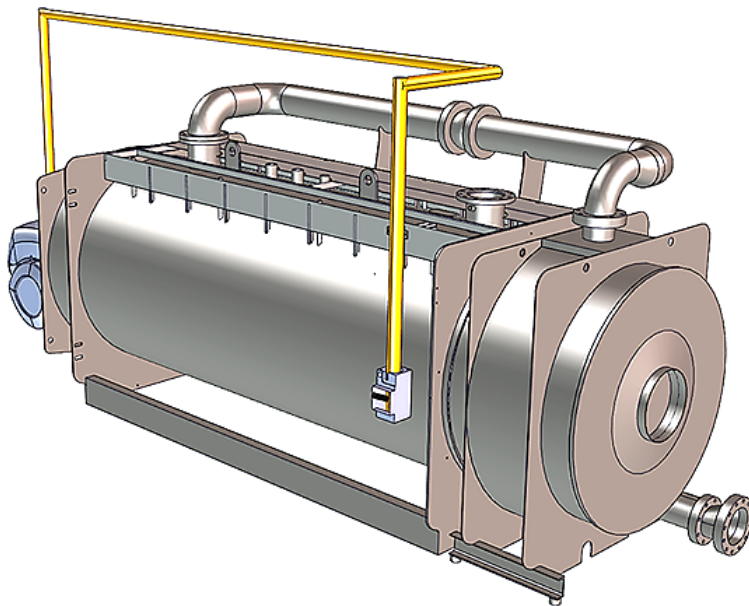


## TECHNICAL APPLICATION GUIDE

# Electrical Power Guide

## MFC Series Boilers

### Multi-Fuel, Condensing Boilers



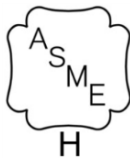
This document provides electrical requirements, required provisions, and wiring for MFC Series boilers.

#### Applies to MFC Series Models:

- MFC 3000
- MFC 4000
- MFC 5000
- MFC 6000
- MFC 8000
- MFC 10000

**Latest Update: 11/22/2017**

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## SECTION 1: GENERAL

The MFC series of boilers are knockdown boilers that require wiring connections to be done to the burner, as well as from the burner to the required safety devices on the boiler including; aquastats, low water cutouts, etc. This technical guide is intended to help designers provide electrical power wiring (line voltage) to the MFC Series units utilizing the Riello burner selection.

Control wiring details are provided in other publications, depending upon unit application. This document is intended only as a guide and therefore cannot include all possible alternatives, or unit applications. In order to comply with all codes and authorities having jurisdiction, designers and installers must plan the electrical wiring carefully and execute the installation completely. Emergency shutoffs, fusible fire switches, break glass stations, and other electrical requirements should be considered and installed whenever necessary.

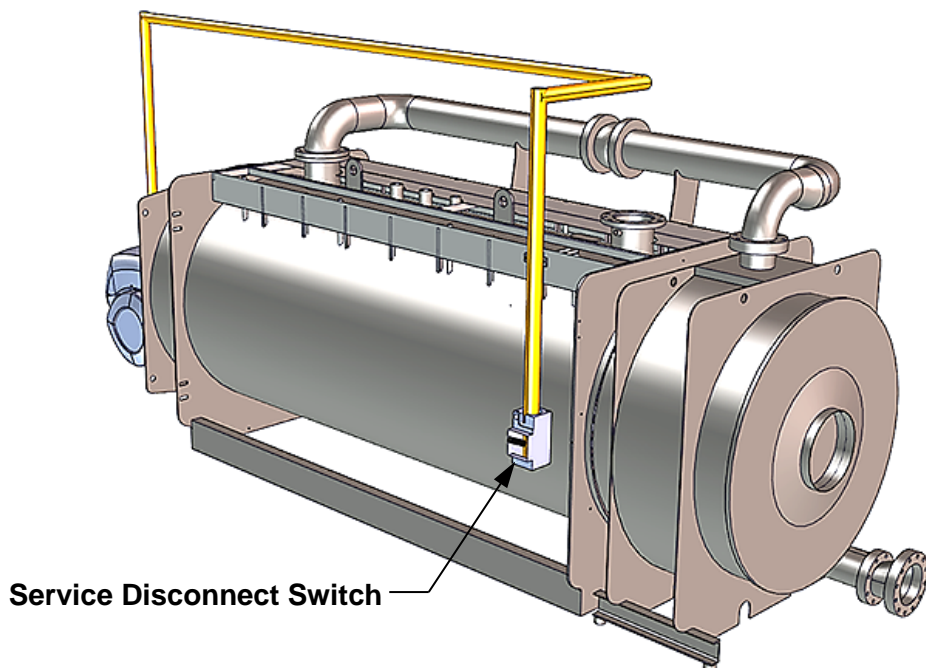
## SECTION 2: BOILER ELECTRICAL REQUIREMENTS

All applications of the Riello burner on the MFC Series boiler require both 3Ø for the burner and includes a step-down transformer as standard to provide 120Vac power to the control portion of the burner. The burners are available in three voltage options:

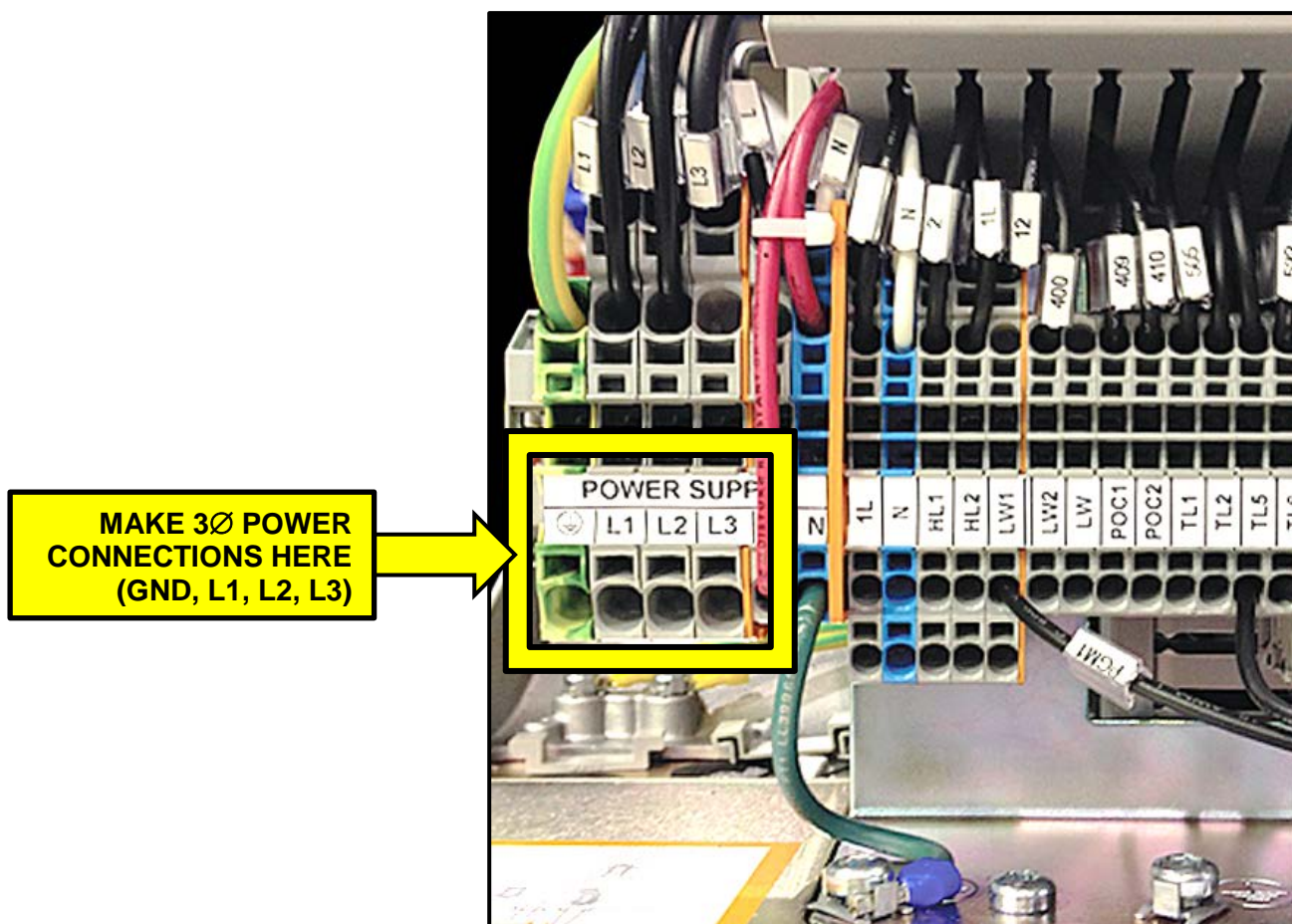
Multi-Fuel (Gas-Oil) Power Requirements (Amperage)				
MFC	Burner	208/3Ø/60	460/3Ø/60	575/3Ø/60
3000	RLS120	20.0	15.0	15.0
4000	RLS160	30.0	15.0	15.0
5000	RLS160	30.0	15.0	15.0
6000	RLS160	30.0	15.0	15.0
8000	RLS300	40.0	20.0	15.0
10000	RLS300	40.0	20.0	15.0

Gas Burner Power Requirements (Amperage)				
MFC	Burner	208/3Ø/60	460/3Ø/60	575/3Ø/60
3000	RS68	15.0	15.0	15.0
4000	RS120	15.0	15.0	15.0
5000	RS160	15.0	15.0	15.0
6000	RS160	20.0	15.0	15.0
8000	RS300	30.0	15.0	15.0
10000	RS300	30.0	15.0	15.0

For Riello Burner models RLS 120 & 160 and RS 68,120 and 160, the power distribution block for field wiring connections (Diagram 2) is located on the LEFT hand side of the strip of terminal blocks, under the burner cover. For Riello burner models RLS 300 and RS300, the power distribution block for field wiring connections (Diagram 2) is located on the RIGHT hand side of the strip of terminal blocks, under the burner cover. All copper wire must be connected to the power distribution block.



**Diagram 1: Service Disconnect Switch Typical Location**



**Diagram 2: Power Connections: RLS 120 &160 and RS 68, 120 & 160**

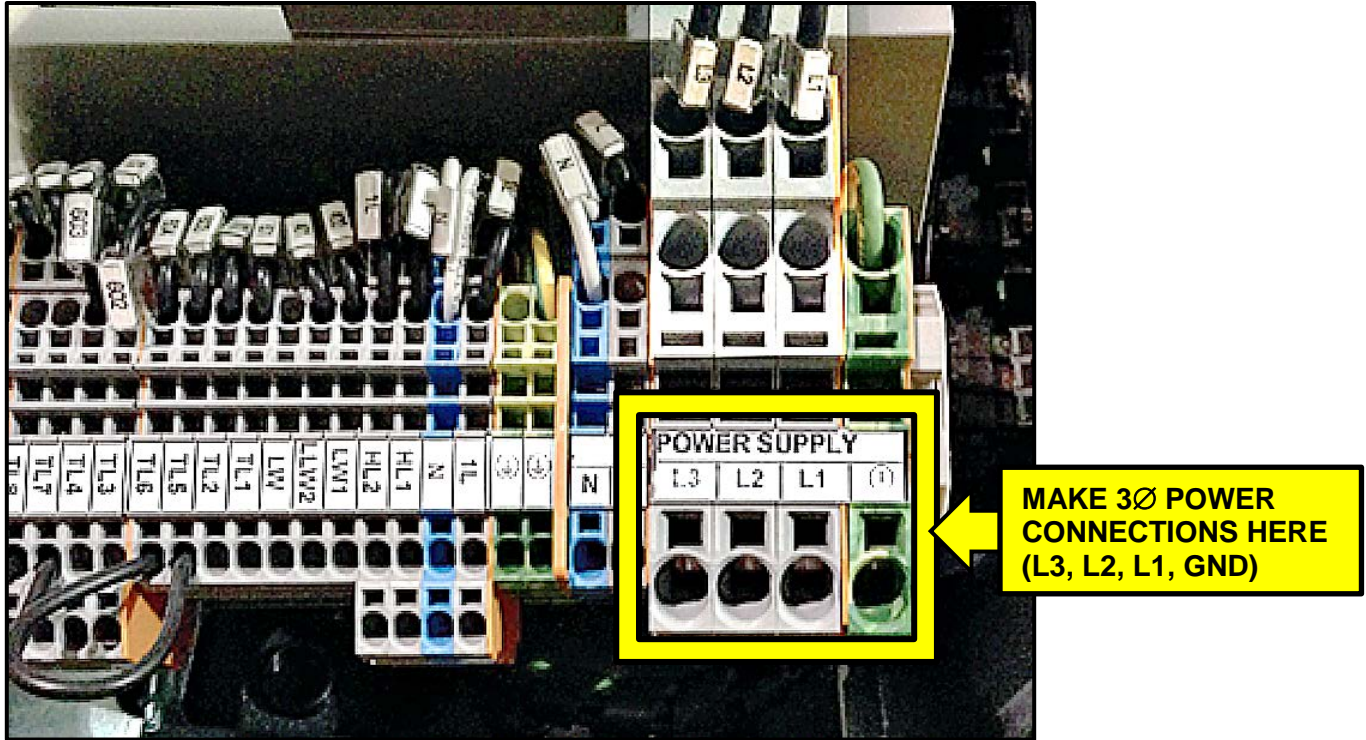


Diagram 3: Power Connections: RLS 300 and RS 250 & 300

### SECTION 3: PROVISIONS FOR SERVICE

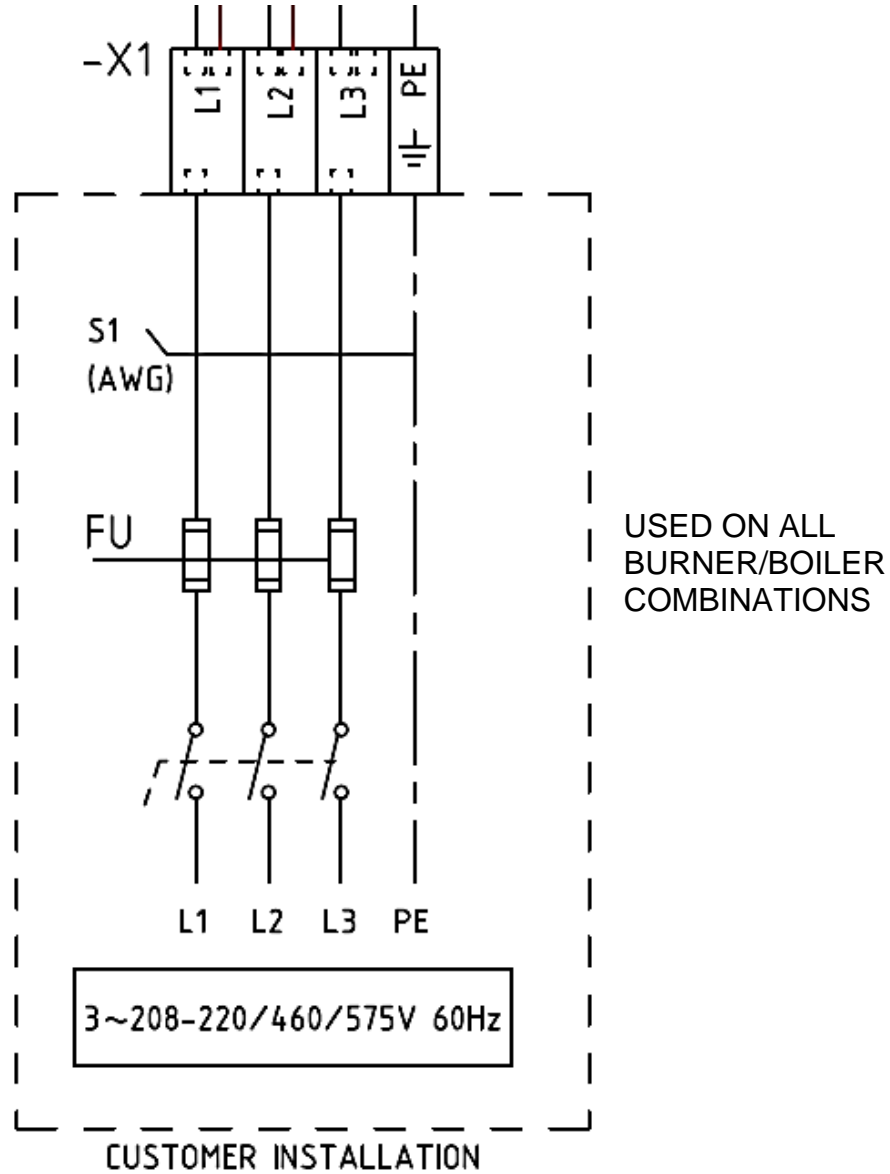
Designers must provide emergency shutoffs and other devices to satisfy electrical codes. It is also recommended to provide an electrical shutoff disconnect switch of suitable load carrying characteristics on or near each MFC Series boiler. No electrical boxes or field components should be mounted to the surface of the boiler. The service disconnect switch should be mounted near the unit, as illustrated in Diagram 1. Wiring conduit, EMT, or other wiring paths should not be secured to the unit, but supported externally. Electricians should be instructed as to where the wiring conduit should be located, such as away from the relief valve discharge, drains, etc. All electrical conduit and hardware should be installed so that it does not interfere with the removal of any covers, inhibit service or maintenance, or prevent access between the unit and walls or another unit. It is recommended to have a flexible connection to the burner as the unit door swings open for servicing of the boiler flue passageways,

### SECTION 4: BOILER WIRING

A dedicated protected circuit should be provided from the power source to the boiler. No other electrical devices should be permanently wired on the same circuit. An emergency switch (electrical shutoff) must be in series with the power to the unit. For applicable wiring connections, refer to Diagram 4 below:

**SECTION 5: MULTIPLE UNIT WIRING**

Whenever multiple units are installed within the same mechanical spaces, electrical code requirements call for a single electrical shutoff for emergency use. It is the responsibility of the electrical designer to comply with local codes and regulations affecting an individual installation.



**Diagram 4: 208-230,460,575VAC/3Ø/60Hz Field Power Connections**

Change Log:		
Date	Description	Changed by
02/08/2016	<b>Rev B:</b> Removed AHRI per cert., replaced AERCO logos with new, reformatted cover, header, and footers to match manuals.	Curtis Harvey
11/22/2017	<b>Rev C:</b> <b>DIR 17-004:</b> Updated burner model numbers for Riello burners (section 2), <b>DIR 17-069:</b> Updated formatting per current standard.	Chris Blair