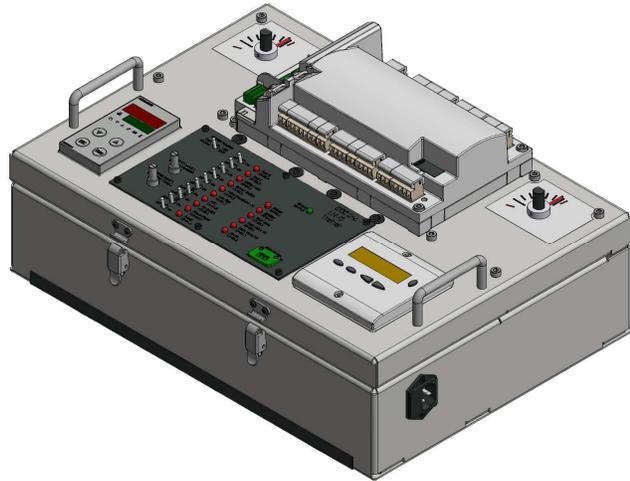


## TR Series

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### TR... Trainers



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### Description

TR... series trainers demonstrate the features and functionality of Siemens LMV5... or LMV3 burner controls.

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### Features

- Replicates control functionality of a typical burner
- LEDs display the status of inputs and outputs
- Switches simulate input conditions
- Encapsulated with protective foam inside a Pelican case
- Kickstand for improved viewing angle when sitting down
- Lightweight design
- Touchsafe terminals
- Power cable included

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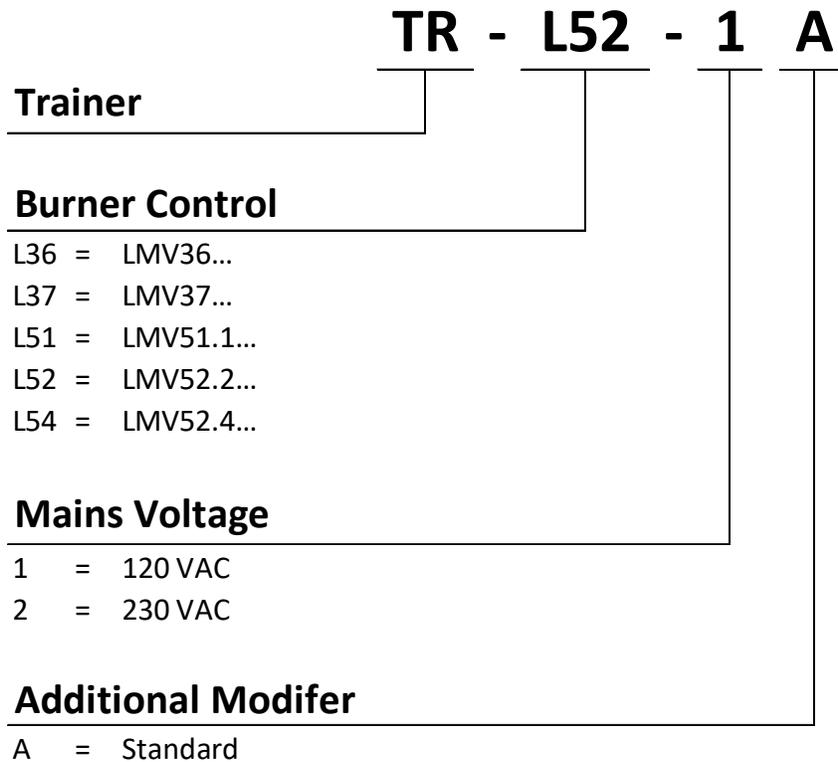
### Application

TR... series trainers demonstrate the features and functionality of Siemens LMV5... or LMV3...burner controls. Each trainer includes the burner control, an AZL... display, and other necessary equipment to simulate how the system monitors and controls the devices on a burner. All trainers come wired, programmed, and tested.

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## Product Part Numbers

The part number structure for TR... series trainers is shown below. Not all possible part number combinations are available. See the following page for all available trainer part numbers.



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## Product Part Numbers (continued)

All available TR... series trainer part numbers are tabulated below.

**Table 1: Available TR... Trainer Part Numbers**

Part Number	Description	Protective Case
TR-L51-1A	LMV51.1 trainer, 120 VAC, with LMV51.140C1 burner control	Pelican 1550
TR-L52-1A	LMV52.2 trainer, 120 VAC, with LMV52.240B1 burner control	Pelican 1550
TR-L54-1A	LMV52.4 trainer, 120 VAC, with LMV52.440B1 burner control	Pelican 1550
TR-L51-2A	LMV51.1 trainer, 230 VAC, with LMV51.100C2 burner control	Pelican 1550
TR-L52-2A	LMV52.2 trainer, 230 VAC, with LMV52.200B2 burner control	Pelican 1550
TR-L54-2A	LMV52.4 trainer, 230 VAC, with LMV52.400B2 burner control	Pelican 1550
TR-L36-1A	LMV36 trainer, 120 VAC, with LMV36.420A1 burner control	Pelican 1550
TR-L37-1A	LMV37 trainer, 120 VAC, with LMV37.420A1 burner control	Pelican 1550

Note: LMV36 and LMV37 trainers are only available in 120 VAC.

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## Specifications

### Electrical characteristics

#### Operating Voltage

- 120 VAC trainers (TR-Lxx-1A)	102-132 VAC
- 230 VAC trainers (TR-Lxx-2A)	196-253 VAC

#### Power Cable

- 120 VAC trainers (TR-Lxx-1A)	NEMA 5-15P to C13, 10 foot
- 230 VAC trainers (TR-Lxx-2A)	CEE7/7 to C13, 10 foot

### Physical characteristics

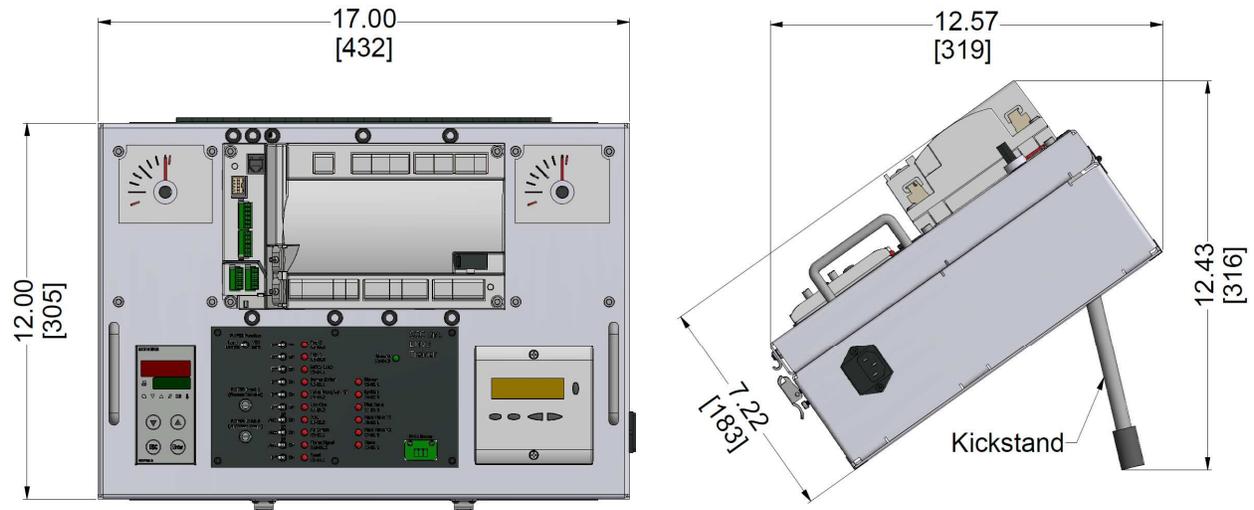
#### Weight

- LMV3 trainers (TR-L3x-1A)	27 lb [12 kg]
- LMV5 trainers (TR-L5x-xA)	35 lb [16 kg]

## Dimensions

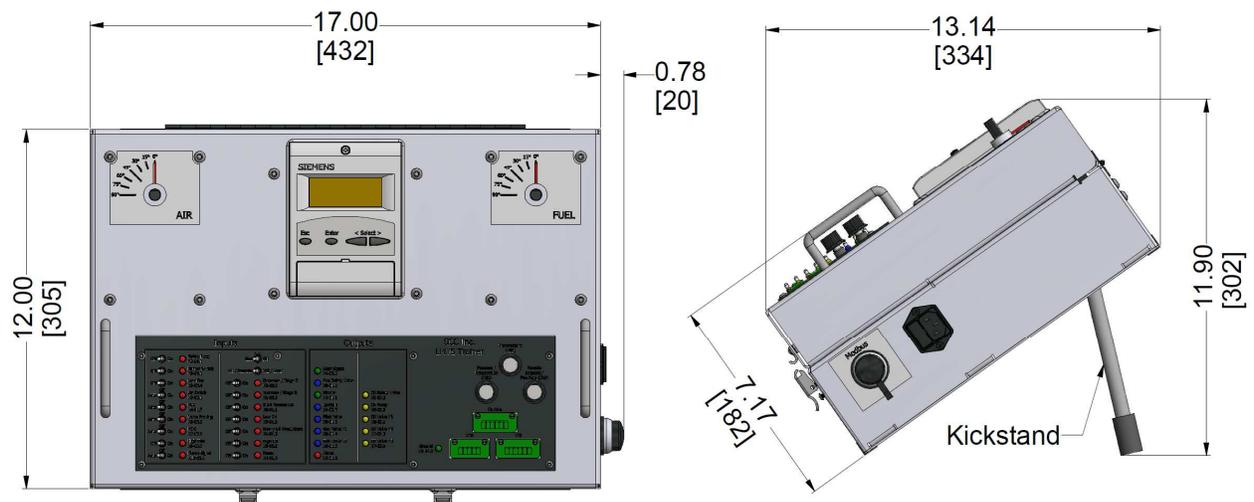
### TR-L3x-1A

Dimensions in inches [mm]



### TR-L5x-xA

Dimensions in inches [mm]

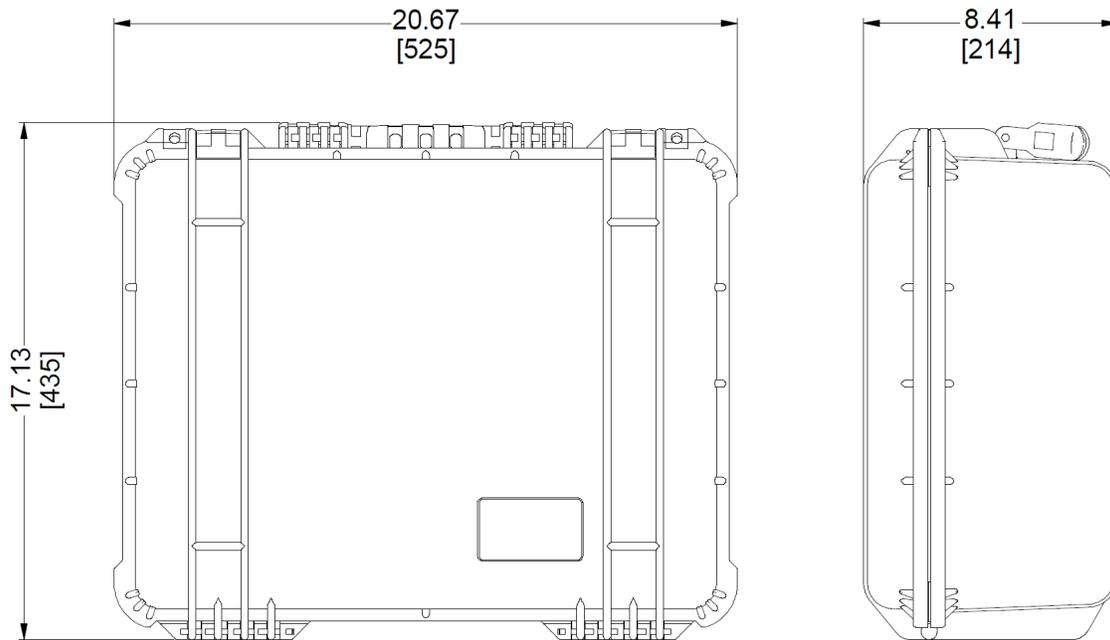


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## Dimensions (continued)

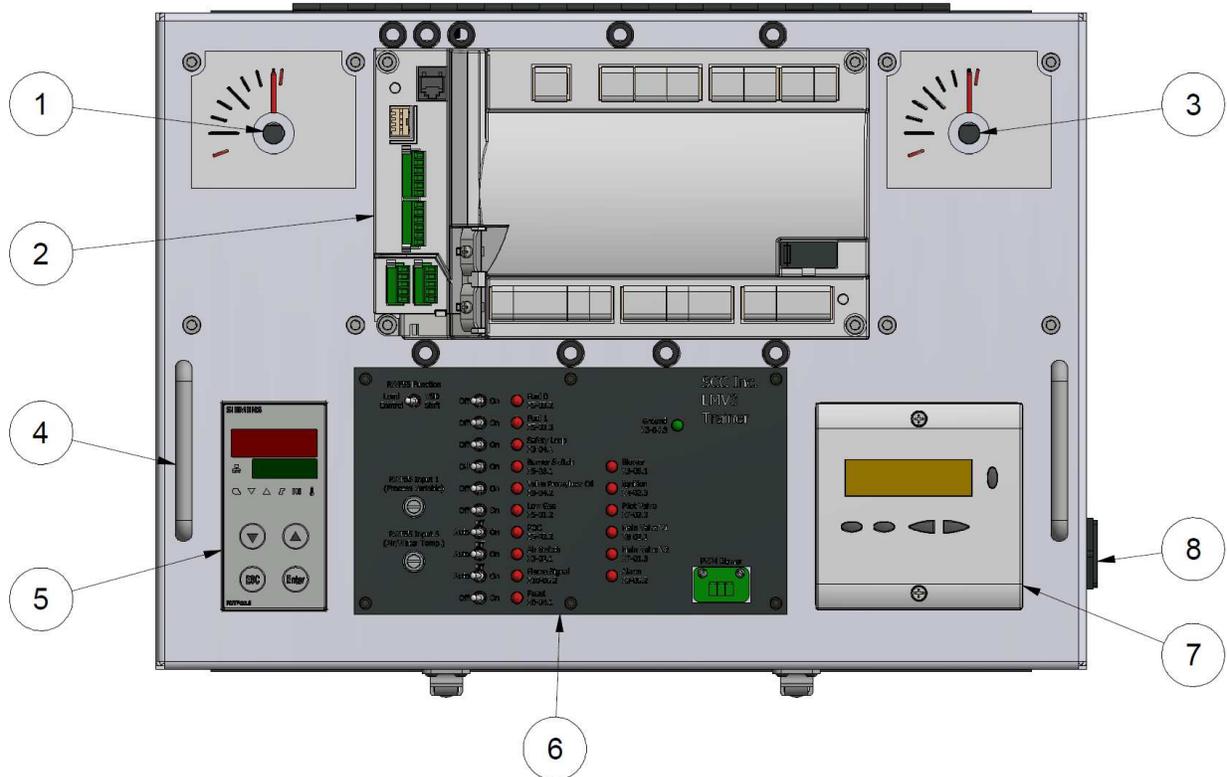
**1550 Pelican Case** - included with TR-L3x-1A and TR-L5x-xA trainers

Dimensions in inches [mm]



## Parts List

### TR-L3x-1A Trainer



### Parts List

1. SQM33.550A9 air actuator, position indicator pin, and label
2. TR-L37-1A: LMV37.420A1 burner control with touchsafe terminal covers  
TR-L36-1A: LMV36.520A1 burner control with touchsafe terminal covers
3. SQM33.550A9 fuel actuator, position indicator pin, and label
4. Handle (x2) to lift trainer out of Pelican case
5. RWF55.50A9 controller
6. Simulation board (see following pages for more information)
7. AZL23.00A9 display
8. Power inlet

### Inside trainer (not shown)

9. Power cable
10. Kickstand

## Parts List (continued)

### TR-L3x-1A Simulation Board



The LMV3 simulation board has the following features:

1. Switches to simulate the following LMV3 inputs with LEDs to display the status of the inputs.

Terminal	Description	Type of Switch
X5-03.2	LMV37 trainer: Decrease fire rate / revert to pilot LMV36 trainer: Run fuel 0	2-position (off-on)
X5-03.3	LMV37 trainer: Increase fire rate LMV36 trainer: Run fuel 1	2-position (off-on)
X3-04.1	Safety loop	2-position (off-on)
X5-03.1	Burner on/off	2-position (off-on)
X9-04.2	Valve proving pressure switch	2-position (off-on)
X5-01.2	Low gas pressure switch	2-position (off-on)
X5-02.2	Proof-of-closure (POC) switch	3-position (auto-off-on)
X3-02.1	Air pressure switch	3-position (auto-off-on)
X10-05.2	Flame signal	3-position (auto-off-on)
X8-04.1	Remote reset	2-position (off-on[momentary])

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## Parts List (continued)

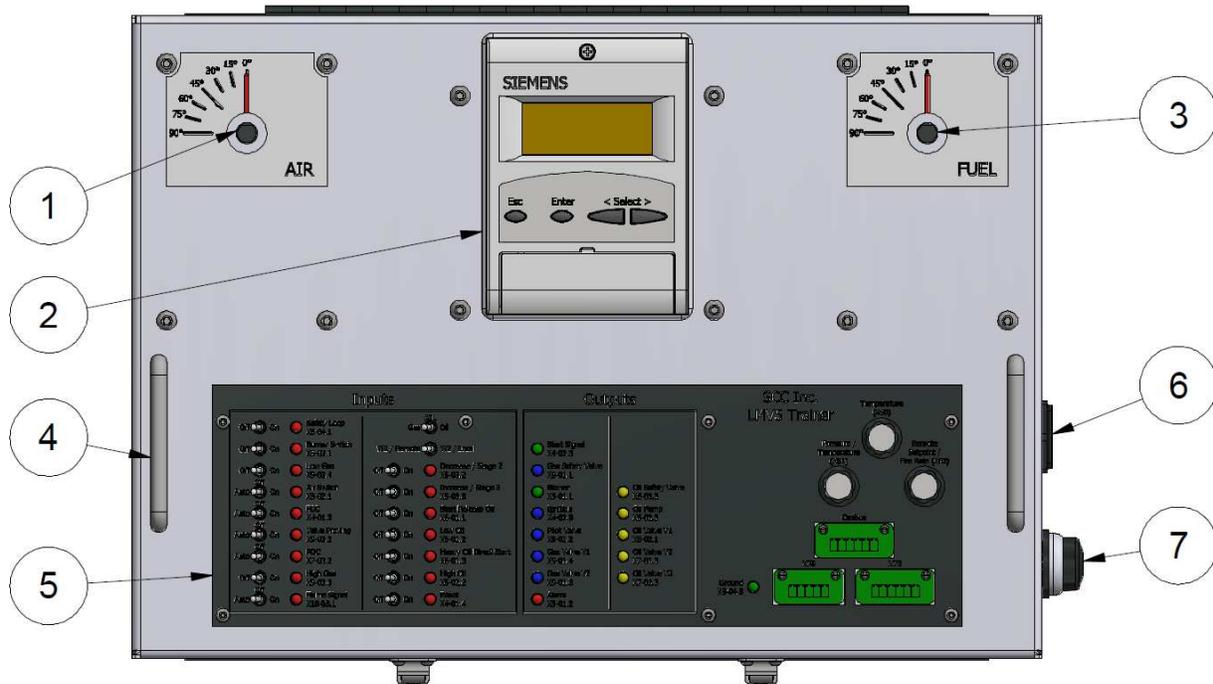
2. LEDs to display the status of the following outputs.

<b>Terminal</b>	<b>Description</b>
X3-05.1	Blower motor
X4-02.3	Ignition
X7-02.3	Pilot valve (PV)
X8-02.1	Main valve (V1)
X7-01.3	Main valve (V2)
X3-05.2	Alarm

3. Switches to adjust the functionality of the RWF55 controller.
- a. 2-position switch to toggle between using the RWF55 as a load controller or as a controller to adjust the VSD shift signal
  - b. 2-position switch to toggle between using the RWF55's K6 contact for low fire hold or for revert to pilot (LMV37 trainer only)
4. Potentiometers to adjust the following inputs on the RWF55 controller.
- a. Input 1 – process variable
  - b. Input 3 – boiler water temperature / outside air temperature
5. A 3-pin terminal to connect a PWM blower.

## Parts List (continued)

### TR-L5x-xA Trainer



### Parts List

1. SQM45.295B9 air actuator, position indicator pin, and label
2. AZL52.40B1 display
3. SQM45.295B9 fuel actuator, position indicator pin, and label
4. Handle (x2) to lift trainer out of Pelican case
5. Simulation board (see following pages for more information)
6. Power inlet
7. Modbus connection

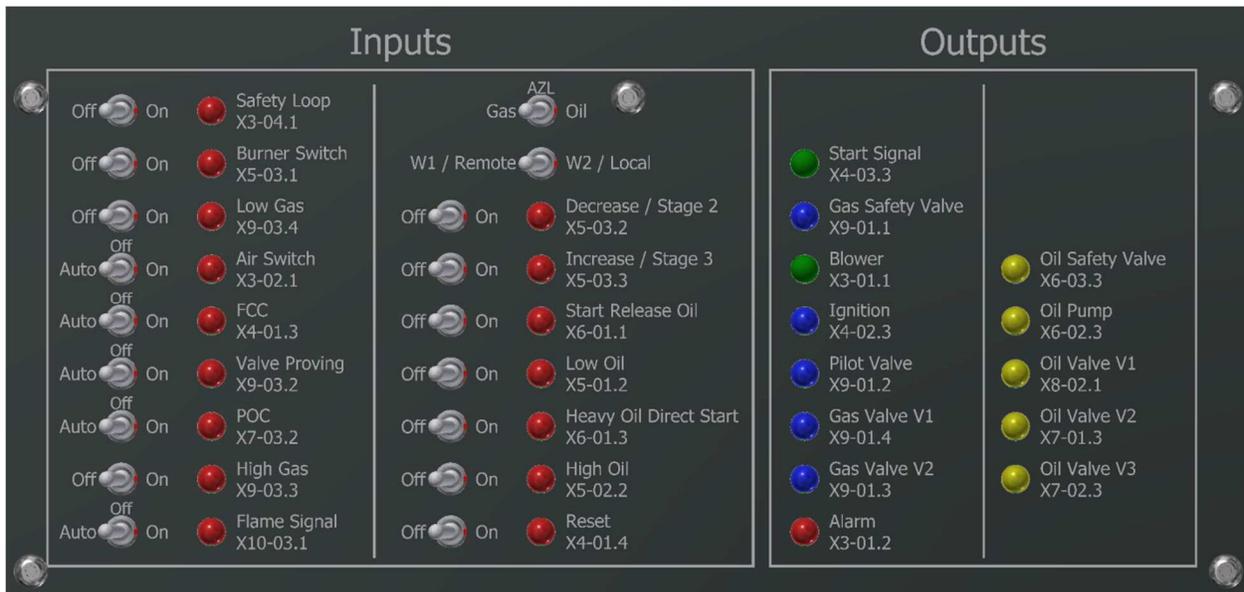
### Inside trainer (not shown)

8. LMV5 burner control with touchsafe terminal covers
9. AGG5.2x0 Canbus transformer
10. Power cable
11. Kickstand (x2)

## Parts List (continued)

### TR-L5x-xA Simulation Board

#### Left Side



#### Right Side



## Parts List (continued)

The LMV5 simulation board has the following features:

1. Switches to simulate the following LMV5 inputs with LEDs to display the status of the inputs.

Terminal	Description	Type of Switch
X3-04.1	Safety loop	2-position (off-on)
X5-03.1	Burner on/off	2-position (off-on)
X9-03.4	Low gas pressure switch	2-position (off-on)
X3-02.1	Air pressure switch	3-position (auto-off-on)
X4-01.3	Fan contactor contact (FCC)	3-position (auto-off-on)
X9-03.2	Valve proving pressure switch	3-position (auto-off-on)
X7-03.2	Proof-of-closure (POC) switch	3-position (auto-off-on)
X9-03.3	High gas pressure switch	2-position (off-on)
X10-05.2	Flame signal	3-position (auto-off-on)
X5-03.2	Decrease fire rate / stage 2 oil	2-position (off-on)
X5-03.3	Increase fire rate / stage 3 oil	2-position (off-on)
X6-01.1	Start release oil	2-position (off-on)
X5-01.2	Low oil pressure switch	2-position (off-on)
X6-01.3	Heavy oil direct start	2-position (off-on)
X5-02.2	High oil pressure switch	2-position (off-on)
X4-01.4	Remote reset	2-position (off-on[momentary])

2. LEDs to display the status of the following outputs.

Terminal	Description
X4-03.3	Start signal
X9-01.1	Gas safety valve
X3-01.1	Blower motor
X4-02.3	Ignition
X9-01.2	Pilot valve
X9-01.4	Main gas valve (V1)
X9-01.3	Main gas valve (V2)
X3-01.2	Alarm
X6-03.3	Oil safety valve
X6-02.3	Oil pump
X8-02.1	Main oil valve (V1)
X7-01.3	Main oil valve (V2)
X7-02.3	Main oil valve (V3)

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## Parts List (continued)

3. Switches to adjust the functionality of the LMV5 burner control.
  - a. 3-position switch to toggle between fuels (run gas - select via AZL – run oil)
  - b. 2-position switch to toggle between setpoints W1 and W2 (when in mode “IntLC”) or to toggle between remote and local operation (any mode other than “IntLC”)
4. Potentiometers to adjust the following inputs on the LMV5 burner control.
  - a. X60 – boiler water temperature
  - b. X61 – process variable (pressure or temperature)
  - c. X62 – remote setpoint / remote fire rate
5. Terminals to connect external devices to the trainer.
  - a. Canbus – 6-pin terminal to connect additional SQM4 actuators or PLL52 O<sub>2</sub> module
  - b. X70 – 5-pin terminal to connect a VFD speed sensor
  - c. X73 – 6-pin terminal to connect to the run / stop contact and 4-20 mA input on a VFD

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