

# ARControl BMS Dual Quick Start Guide

This quick start guide provides information regarding hardware installation and using the ARControl BMS Dual Module. The ARControl BMS Dual should be installed according to the directions provided in this guide and always be in compliance with local electrical codes and the specifications of the operating company. The full manual is available at [www.arcontrolbms.com](http://www.arcontrolbms.com).

## Proper Use of the BMS Module 1870-511

The valve output on the BMS Module is the system's ESD valve and is intended to be installed upstream of all other valves in the ARControl BMS installation. The dual-probe thermocouple input on the BMS Module is intended to be used as the source for the high-temperature cutoff. If the BMS Module 1870-511 is used in a manner not specified by Cimarron Energy, Inc., the protection provided by the equipment may be impaired.

## ARControl Installation Guidelines

- A switch or circuit breaker must be included in the installation; it must be suitably located and easily reached. It must be marked as the disconnecting device for the equipment.
- Proper earth grounding per local electrical codes must be utilized in the installation.
- If the ARControl is used in a manner not specified by Cimarron Energy, Inc., the protection provided by the equipment may be impaired.
- If the BMS Module (1870-511) is used in conjunction with the ARControl it must be mounted externally of the ARControl in order for the ARControl to remain regulatory compliant.
- Use the hardware supplied with the ARControl. The hardware kit supplied with the ARControl contains an aluminum pre-drilled mounting bracket, and (4) 3/4-inch bolts and nuts.
- Locate the unit out of traffic and working areas, away from excessive heat, and above areas where water and liquids may accumulate. Visibility of the display will be enhanced if not facing direct sun.
- Measure the wiring distance. The ignition cable is restricted to a length of 25 feet maximum.

## ARControl BMS Dual Installation

Follow these steps to install the ARControl BMS Dual (options for DIN mount or CID1):

1. Locate and open the hardware kit.
2. Attach the mounting flanges to the back of the ARControl (1960-155) with the supplied hardware.
3. Drill holes in the bottom of the enclosure to accommodate the cables and conduit to the unit. It is recommended to use a step drill bit to drill the holes.
4. Mount the ARControl via the flanges to a secure location and away from heat sources.

Follow these steps to setup Unit 1 (repeat the steps to setup Unit 2):

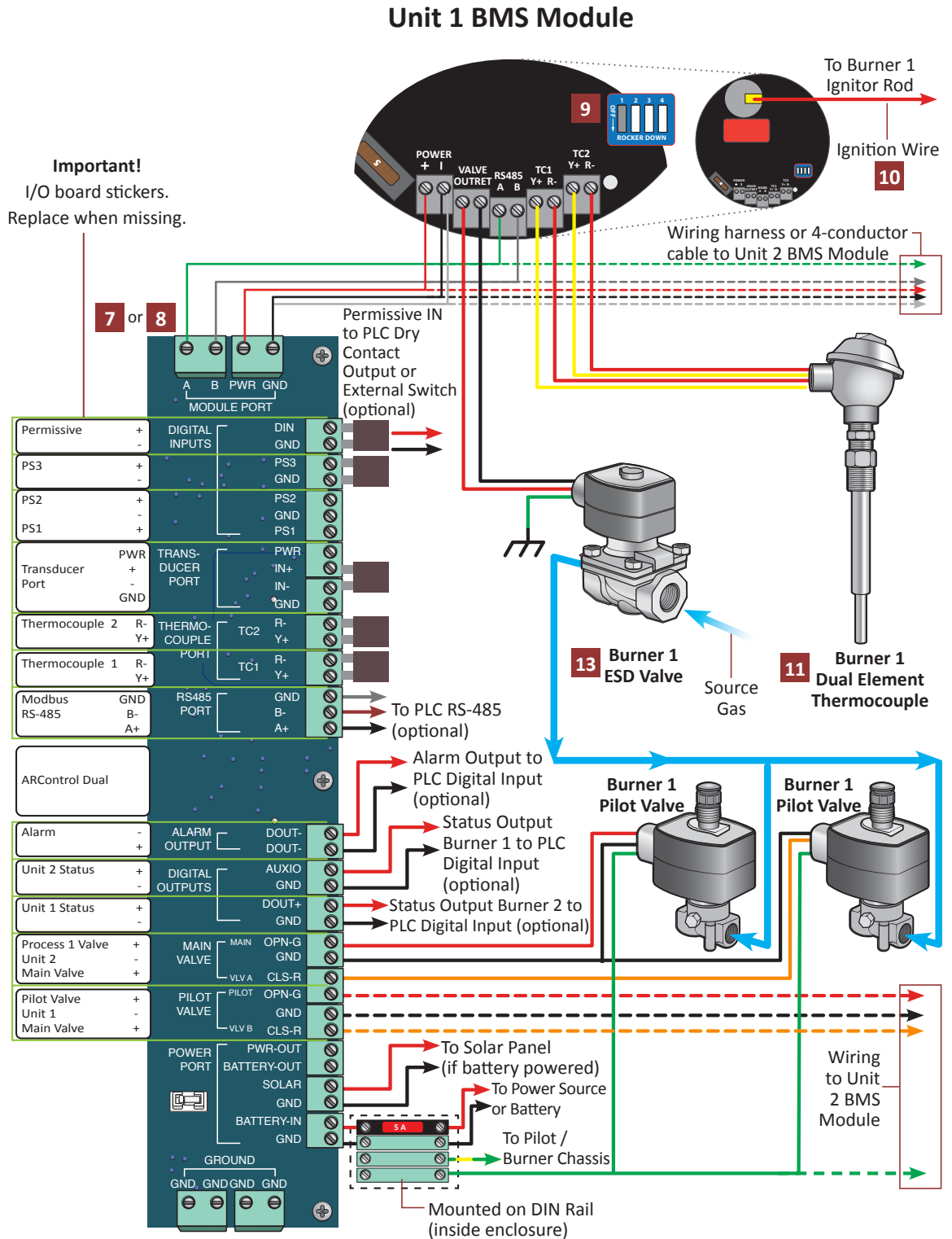
**WARNING: Do not apply power to the system until instructed to do so in step 16. Failure to comply may result in serious personal injury or death.**

5. Mount provided ignition rod assembly to the pilot or burner assembly.
6. Attach the free end of the grounding wire (green wire with yellow trace) to the burner's chassis.
7. **When installing the BMS Module with included DIN bracket (1960-171) inside of the ARControl:**
  - a. Attach provided cable conduit using provided glands to enclosure and burner chamber.
  - b. Mount the ignition module to the DIN rail on the inside of the enclosure. **WARNING: Mounting ignition module inside enclosure VOIDS the 1960-155 ARControl Class I Division 2 rating.**
  - c. Wire the ignition module to the ARControl's **MODULE PORT** using the provided wiring harness.
8. **When installing the BMS Module with Class 1 Division 1 enclosure (1960-170) external from the ARControl:**
  - a. Mount the BMS Module enclosure near the burner of the process equipment.
  - b. Attach suitable cable conduit between the ARControl and BMS Module.
  - c. Attach suitable cable conduit between the BMS Module and burner chamber.
  - d. Wire the ignition module to the ARControl's **MODULE PORT** using suitable 4-conductor cable (Image 1.1.1).
9. Set the dip switch of the Unit 1 BMS Module to 1. Set the dip switch of the Unit 2 BMS Module to 2.
10. Connect the ignition wire to the tab of the BMS Module spark transformer, run it through the conduit and attach it to ignition rod assembly.
11. Install dual-probe thermocouple (148197) in process equipment.
12. Wire dual-probe thermocouple to the BMS Module's thermocouple ports using k-type thermocouple extension wire.
13. Install the **ESD** valve upstream of the pilot and process valves and wire the **ESD** valve to the **VALVE** output of the Unit 1 BMS Module.

14. Install the pilot valve upstream of the pilot and wire the pilot valve to the Unit 1 Pilot Valve output of the ARControl.
15. Install the main valve upstream of the burner and wire the main valve to the Unit 1 Main Valve output of the ARControl.
16. Connect the power source to the power and ground terminal blocks.
17. If using the **High-temperature** shutdown feature, navigate to **SETTING MENU > UNIT 1 > BMS MODULE > TEMP LIMIT** to set the high-temperature shutdown temperature.
18. If using **Temperature Control** (old Torch functionality) (Image 1.2.2), navigate to **SETTING MENU > UNIT 1 > PROCESS 1** and set:
  - **SOURCE** to TC BMS
  - **LOGIC** to  $\uparrow$  OFF  $\downarrow$  ON
  - **HIGH LEVEL** to high process temperature
  - **LOW LEVEL** to low process temperature
19. Navigate to the **U<sub>1</sub> START (HOLD OK)** menu entry on the home screen and hold the **OK** key for at least a second. This will start the ignition sequence and process control.

**Notes:**

- Remove jumper if installing outside wiring
- BMS Module for Burner 1 **must** be set to address 1 (Dip Switch 1 on)
- BMS Module for Burner 2 **must** be set to address 2 (Dip Switch 2 on)
- Install shield on module side Ground



**Maintenance & Service**

Contact Cimarron Energy, Inc. for information in regard to maintenance, parts, or service at 1-844-746-1676 or visit [www.cimarronenergy.com](http://www.cimarronenergy.com)

Image 1.1.1 • Unit 1 & Unit 2 BMS Module wiring diagram

## Unit 2 BMS Module

