



- // Automatic burner control unit with integrated ignition transformer packaged in a single compact metal housing (IP 54/Nema 3 rating)
- // For use with direct spark ignited burners
- // For continuous operation
- // For use with modulating or frequency fired control systems
- // Models available with air valve control
- // Displays program status, unit parameters, fault code or flame signals
- // Optional optical interface for diagnostic information and parameter settings
- // Manual mode for burner adjustments and troubleshooting
- // Select restart or immediate fault lockout in the event of a flame failure
- // Removable bottom mounting plate with five (5) ½" conduit openings make installation of electrical connections simple
- // Removable terminal blocks to facilitate electrical field wiring
- // Available with Profibus-DP field bus link
- // Meets NFPA 86 standard

Application

The BCU 460 combines the functionally related components of the automatic burner control unit, ignition transformer, manual/automatic mode and a digital display for operating parameters and fault status indication in a single metal housing. The BCU® controls the ignition process and continuously monitors the burner operation. The BCU® is designed to mount close to the burner to reduce installation costs and simplify installation, commissioning and troubleshooting efforts.

Specifications

Operating Temperature:	-4 °F to 140 °F (-20 °C to 60 °C)
Operating Voltage:	115 VAC +10%, -15%, 50/60 Hz
Power Consumption:	9 VA, plus power consumption depending on incorporated ignition transformer from 80 to 235 VA
Output Current:	2 A per output at 115 VAC Maximum current for valves and ignition transformer is 2.5 A
Flame Sense Current:	> 1 µA
Max. Number of Operations:	1,000,000 Cycles
Housing Material:	Die-cast aluminum

Features

The BCU 460 Series burner control unit offers extensive diagnostic features to simplify start-up and troubleshooting efforts. The operation sequence, fault status, device parameters and flame signals can be monitored on a two-digit, 7-segment display.

Manual mode allows the burner to be started in a step-by-step operation, which allows time to adjust the air/fuel ratio at each burner.

In addition, the optical interface adapter communication between the BCU® and a PC allows viewing of the flame signal and fault information. This provides valuable historical diagnostic and operational information. It also makes the modification of specific parameters possible.



Additional features include

- // Ignition and flame monitoring possible with one electrode (single electrode operation)
- // Ionization or UV control
- // Two gas valve outputs
- // Optional air valve control
- // Flame signal sensitivity adjustment
- // Operation and fault-signaling contacts
- // Main power switch
- // Reset/information button
- // For earthed and unearthed power systems
- // Optional flame-simulation test during stand-by or start-up
- // Labeling window for individual unit identification

Additional Models

The BCU..B1 is available in models with Profibus-DP interface. With Profibus-DP, you can effortlessly integrate multiple BCU..B1 units into multiple burner applications. The Profibus interface provides the individual burner control functions, operational information, fault status and flame signal information on a single cable that interfaces directly to a PLC.

The BCU 461 model provides a digital air control output and an adjustable minimum off time, both features can be used for frequency fired systems. In addition an optional over-travel input has been added to prove the gas valve closed before igniting the burner. This feature was designed to meet the new NFPA requirements.

The BCU 460 is used for direct ignited burners of unlimited capacity in a wide range of industrial and commercial applications. The BCU® can be used in modulating or frequency fired control systems.

Application examples

Typical modulating control system

(Fig. 1)

The burner is ignited when the air butterfly valve is in the ignition position (low-fire). Once the burner is ignited, the air butterfly valve can be modulated throughout its control range. The gas is controlled with an air/fuel ratio regulator cross-connected to the burner air supply piping.

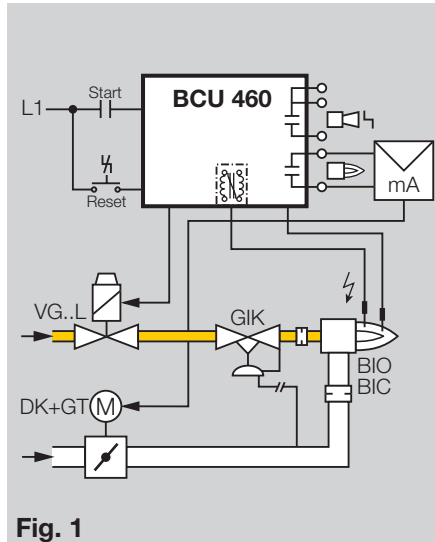


Fig. 1

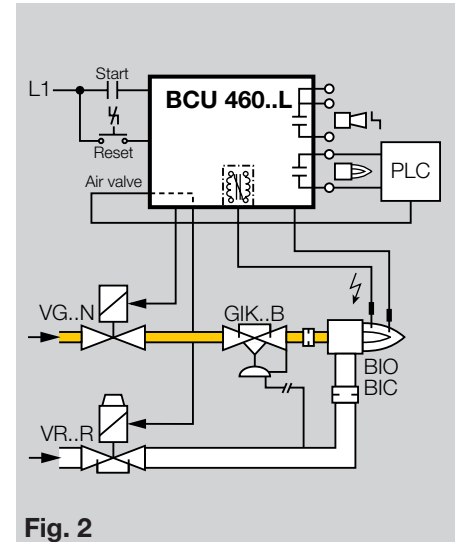


Fig. 2

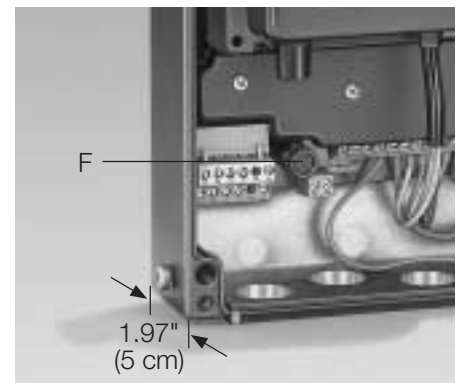
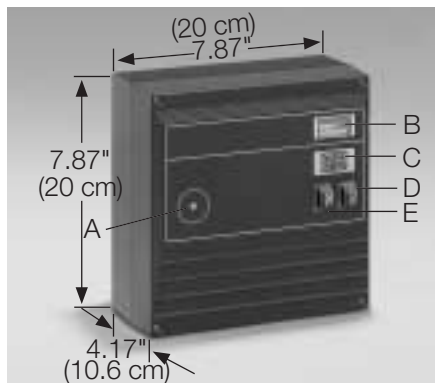
Frequency fired control system

(Fig. 2)

The burner is ignited at low-fire. Once the burner is ignited, the air valve is either opened or closed with a signal from a PLC or frequency controller. The on and off time is determined by the frequency control algorithm.

Display and Operation

- A: Optical interface
- B: Labeling panel
- C: Two-digit, 7-segment display
- D: Power on/off switch
- E: Reset/Information button for resetting after a fault or for calling parameters onto the display.
- F: Fuse F1



During operation, the 7-segment display shows the program status. Should a fault occur, the BCU® stops the program sequence and the display flashes indicating the cause of the fault.

The flame signal and all additional parameters of the BCU® can be viewed on the display by repeatedly pressing the Reset/Information button.

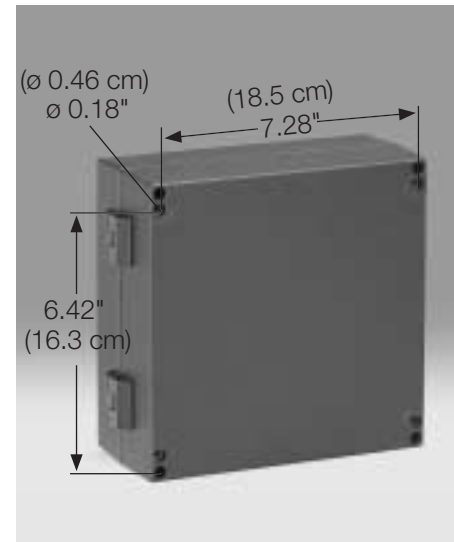
BCU 460

Dimensions

Overall Dimensions L x W x H:
7.87 inch x 7.87 inch x 4.17 inch (20 cm x 20 cm x 10.6 cm)

Mounting Dimensions L x H:
7.28 inch x 6.42 inch (18.5 cm x 16.3 cm)

Weight:
11 lbs (5 kg)



Order Information

Description	Model Designation	Part No.
Models for 115 VAC, 50/60 Hz	Standard Version	
Safety period on start-up 5 s*	BCU 460T-5/2R3	84631437
Safety period on start-up 10 s*	BCU 460T-10/2R3	84631438
	with air valve control	
Safety period on start-up 5 s*	BCU 460T-5/2LR3	84631439
Safety period on start-up 10 s*	BCU 460T-10/2LR3	84631440

* Safety period includes trial for ignition and flame failure response time.

Accessories

Optical adapter including CD-ROM "BC-Soft" – Part No. 74919456
(can be used to change parameters and view historical information and flame signals)

UVS 6T Ultraviolet flame detector – Part No. 84315100

UVS 8T Ultraviolet flame detector – Part No. 84333120

Angular plug \varnothing 4 mm, interference-suppressed – Part No. 04115308

Straight plug \varnothing 4 mm, interference-suppressed – Part No. 04115307

Warning:

Situations dangerous to personnel and property can result from the misapplication and incorrect operation of combustion equipment. Kromschroder advises compliance with the National Fire Protection Association standards that apply for related equipment and Insurance Underwriters recommendation, and care of operation.

We reserve the right to make technical changes designed to improve our products without prior notice.
For current product information, visit our website at www.kromschroder.com.