Thank you for purchasing the BC-R25 Series Recycling Model Burner Controller. This manual contains information for ensuring correct use of the BC-R25 Recycling Model Recycling Model. It also provides necessary information for installation, maintenance, and troubleshooting. This manual should be read by those who design and maintain devices that use the BC-R25 Series Recycling Model. Be sure to keep this manual nearby for handy reference. Please read the “Terms and Conditions” from the following URL before ordering or use: http://www.azbil.com/products/bi/order.html

This device is not packaged with a sub-base. To use it, you must have a BC-R50A100 sub-base, which is sold separately.

**SAFETY PRECAUTIONS**

Safety precautions are for ensuring safe and correct use of this product, and for preventing injury to the operator and other people or damage to property. You must observe these safety precautions. Also, be sure to read and understand the contents of this user’s manual.

**WARNING**

Warnings are indicated when mishandling this product might result in death or serious injury to the user.

**CAUTION**

Cautions are indicated when mishandling this product might result in minor injury to the user, or only physical damage to this product.

**WARNING**

Use this device with combustion equipment that is started and stopped at least once in a 24-hour period. This device cannot be used for equipment with combustion con- tinuing for 24 hours or longer. This device has functions that are extremely important for the safe operation of combustion equipment. Use it correctly in accordance with the user’s manual.

Check the model number carefully and check that the sequence timing is as specified for the combustion equipment manufacturer. Installing an incorrect model can result in an explosion hazard.

Terminal 14 (F) retains an electrical charge even after the power is turned off. Do not touch terminal 14 (F) even after turning the power off. Doing so may result in an electric shock.

Do not disassemble this device. Doing so may cause malfunction, device failure, or electric shock.

If the system is locked out, do not reset until the cause of the problem has been eliminated.

Do not remove monitor output or alarm output relay as safety output.

**CAUTION**

This device has a limited product life. Beyond the product life, the risk of device failure becomes higher. Replace this device with its product life.

Use this device correctly within the range of the rated specifications stated in the user’s manual. Not doing so may cause device failure or property damage. Make sure that the flame detector does not detect the ignition spark. If the flame detector can detect the spark, change the detector’s line of sight or change the ignition electrode’s position. Until an after ignition failure is detected, this device enters a reignition standby period. After the reignition standby period has passed, the combustion sequence restarts from the beginning.

Do not connect a load that exceeds the rating stated in the specifications to the control load terminals (terminals 2–1, 2–2, 2–7, or 2–8), and do not short-circuit the load. Doing so will burn out the internal fuses, making the device unusable.

This manual contains information for ensuring correct use of the BC-R25 Series Recycling Model. It also provides information and specifications in this manual are subject to change without notice.

Copying or duplicating this user’s manual in part or in whole is forbidden. The information and specifications in this manual are subject to change without notice.

In no event is Azbil Corporation liable to anyone for any indirect, special, or consequential damages as a result of using this product.

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**overview**

BC-R25 series Recycling Model series burner controllers are combustion safety controllers specifically designed for batch operation (systems which start and stop at least once within 24 hours), ensuring safety for oil and gas burners with on/off control and by automatic ignition and combustion supervision.

• For burners compliant with JIS B 8407-1 (for forced draft gas burners), if an ignition failure occurs, this device will attempt reignition.

• For burners complying with JIS B 8407-2 or JIS B 8407-7, this device is compliant with JIS B 8407-1.

• JIS B 8407-1 specifies the following sequence codes and alarm codes.

• Monitoring output for external devices and alarm reset by external signal (contact input) are possible.

• Host communication (RS-485) allowing remote observation of status.

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• flame rod (ionization)

• Flame rod (Ionization)

**unpacking**

For details on operations, calibration and maintenance, refer to manual CP-SP-1383E.

**Mounting on DI Rail**

(1) Pull down the sub-base’s DIN rail clamps.
(2) Attach to the DIN rail while checking above and below the sub-base.

**Mounting in a Panel**

(1) Drill two M4 screw holes into the panel.
(2) Use screws to mount the sub-base on the panel. (Max. tightening torque: 1.2 Nm)

**Mounting/Removing the Device**

• **Mounting**
  (1) Align the indentation in the center of this device with the projection on the sub-base.
  (2) Once aligned as in (1), push straight downwards slowly.

• **Removing**
  (1) Remove the retaining screws from this device.
  (2) Pull it horizontally while holding down the sub-base.

**FUNCTION SELECTION MODE**

For details on the POC selection method and various settings, refer to Section CP-SP-1385E.

**installation orientation**

Attach the device in the orientation illustrated below.
**WIRING CONNECTION**

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**WARNING**

- Connect the load (ignition transformer, solenoid valve, etc.) directly to the output terminals of this device. If it is not directly connected, combustion safety cannot be ensured.

**CAUTION**

- Follow all applicable regulations when doing the wiring work.
- Run the high-voltage ignition transformer cable separately and keep it at least 30 cm away from the device.
- Make sure that ignition transformer high-voltage cables are properly connected to prevent faulty contact. Faulty contact can generate high-frequency radio waves, causing malfunction.
- The ignition transformer ground lead should be connected directly to the burner itself or to a metallic part electrically connected to the burner.
- Keep power lines and ignition transformer high-voltage cables separate from the flame detector wires.
- Supply power at the voltage indicated on the model number label of the device.
- In keeping with technical standards for electrical equipment, the burner frame must be connected to an earth ground by a wire having a resistance of less than 100 Ohm.

After wiring work, be sure to check that the wiring is correct. Incorrect wiring can cause damage or malfunction.

If the wires from this device exceed the recommended length, to prevent malfunction due to external electrical noise, take measures such as keeping power lines away from the input lines between the control panel and the combustion equipment. After wiring, check that the equipment is operating properly.

Be sure to connect non-voltage contacts to the inputs of this device (terminals 16–24).

Make sure that loads connected to the terminals do not exceed the rating indicated in the specifications.

When discarding this product, dispose of it as industrial waste, following local regulations.

After the power has been turned ON, wait sufficient time before checking the output. This device does not operate for about 8 seconds after the power has been turned ON.

If there is an inverter or the like that generates strong electrical noise near this device, take noise-suppression measures, referring to the user’s manual for the noise-generating equipment.

Do not design instrumentation that shuts off the power to this device as soon as an alarm output is generated. Doing so can corrupt this device’s operation history records.

Do not connect a load that exceeds the rating stated in the specifications to the control load terminals (terminals 2–1, 2–6, 2–7, or 2–8), and do not short-circuit the load. Doing so will burn out the internal fuses, making the device unusable.

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**Wiring of the Flame Detector**

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Connect terminal P of the AUD10C Advanced Ultraviolet Flame Detector to terminal 14 (P1), and connect terminal G to terminal 15 (G). For the AUD10C/120C, connect the blue signal lead to terminal 14 (P1), and the white lead to terminal 15 (G). If the power is turned ON with incorrect wiring, the AUD10C unit will be damaged.

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**SEQUENCE CODES**

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**ALARM CODES**

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**Example of Wiring Connection with External Device**

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**Interrupted pilot type**

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**Direct ignition type**

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**Examples of sequence codes and alarm codes**

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**MODEL NUMBER COMPOSITION**

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**SPECIFICATIONS**

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**EXTERIOR DIMENSIONS**

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**Example: BC-R25B1H0500**

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**Specifications are subject to change without notice.**