





Burner Controller Model BC-R15 User's Manual  
for Installation

Thank you for purchasing this product.

This manual contains information for ensuring the safe and correct use of the product. Those designing or maintaining a control panel or other equipment that uses this product should first read and understand this manual.

Be sure to keep it nearby for handy reference.

Please read “Terms and Conditions” from the following URL before ordering or use.  
<https://www.azbil.com/products/factory/order.html>

A sub-base is not included with this device. To use this device, a separately sold BC-R05A100 sub-base is necessary.

NOTICE

Please make sure that this manual is available to the user of the product.

Unauthorized duplication of this User's Manual in part or in whole is forbidden. The information and specifications in this manual are subject to change without notice.

Considerable effort has been made to ensure that this manual is complete and accurate, but if you should find an omission or error, please contact us.

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

SAFETY PRECAUTIONS

The safety precautions explained below aim to ensure safe and correct use of this product in order to prevent injury to you and others, and to prevent property damage. Be sure to observe these safety precautions. Also, make sure you understand the safety guidelines before reading the rest of this manual.

● Key to symbols

**WARNING**  
Warnings are indicated when mishandling this product may result in death or serious injury.

**CAUTION**  
Cautions are indicated when mishandling this product may result in minor injury or property damage only.

**WARNING**

**This device must be used with combustion equipment that starts and stops at least once every 24 hours.**

**This device cannot be used with combustion equipment that operates continuously for 24 hours or longer.**

**This device is equipped with functions that are extremely important for the safe operation of combustion equipment. Be sure to follow the instructions stated in this User's Manual.**

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

**Do not reset this device until the cause of the problem has been eliminated when lockedout occurs.**

**Do not reset this device repeatedly when lockout occurs. If this device is misused, a serious combustion equipment accident may occur.**

**Do not reset this device from a remote location. Because it is difficult to make a safety check when far from the equipment, there is an increased risk of explosion.**

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

**WARNING**

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

**Do not use the monitor output or alarm output as safety output.**

**Carry out the pilot turndown test carefully. For details, see *Burner Controller Model BC-R15 User's Manual*, No. CP-SP-1411E.**

**Do not operate this device without first completing its adjustment and testing, and also the testing specified by the combustion equipment manufacturer.**

**Use this device in combination with the AFD flame detector. If it is mistakenly used with a CdS flame detector or some other type, it may not detect a flame failure that occurs during normal combustion. As a result, fuel would continue to be supplied, potentially causing a major accident.**

**CAUTION**

**Use this product correctly within the range of the rated specifications stated in the User's Manual. Not doing so may cause device failure or malfunction.**

**Use this device within the operating ranges given in the specifications for temperature, humidity, voltage, vibration, shock, mounting position, atmosphere, etc.**

**Make sure that the flame detector does not detect the ignition spark. If the ignition spark is detected, change the position of the flame detector or ignition electrode.**

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

UNPACKING

| Model number | Product name            | Quantity | Notes                            |
|--------------|-------------------------|----------|----------------------------------|
| BC-R15       | Burner controller       | 1        | The sub-base is sold separately. |
| CP-UM-5897JE | User's Manual           | 1        | This manual.                     |
| 81429509-001 | 7-segment display label | 1        |                                  |
| -            | Dedicated pin plug      | 1        |                                  |

Related documents

- Burner Controller Model BC-R15 User's Manual*, No. CP-SP-1411 (Japanese) (for detailed operation, adjustment and maintenance)
- User's Manual for Dedicated Sub-base Model BC-R05 for Burner Controller Model BC-R*, No. CP-UM-5943JE (for information on the dedicated subbase, model BC-R05A100)(included with the sub-base)

OVERVIEW

BC-R15 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 burner with on/off control and by automatic ignition and combustion supervision.

- 7-segment display for sequence codes and alarm codes
- Status output to external devices and alarm reset by external signal (contact input)
- DIN rail mounting and sub-base structure for easy installation and replacement

NAMES OF PARTS

7-segment LED (green)  
When normal:  
Sequence code/Flame voltage  
When an error occurs:  
Alarm code/Flame voltage

DISP switch  
Switch to change as follows:  
Flame voltage/Sequence code or  
Flame voltage/Alarm code

Flame LED (green)  
On during flame signal is detected.  
Off when flame signal is not detected.

Loader jack  
Smart Loader jack

Main unit mounting screw

Main unit mounting screw

Reset switch  
Switch to cancel lock-out  
(Press and hold for approximately 1 s)

Alarm LED (red)  
ON when lockout occurs,  
OFF when there is no lockout.  
While contact reset input is not accepted, the alarm LED blinks.

Front connector  
Flame voltage output (0-5 V)  
Monitor output (semiconductor relay output)  
Host communication (RS-485)

STRUCTURE

Compatible flame detector (sold separately)

| Model number | Product name                 | Notes                                           |
|--------------|------------------------------|-------------------------------------------------|
| AFD100A0700  | Visible light flame detector | Light reception direction: front, Top-view type |
| AFD100B0700  |                              | Light reception direction: side, Side-view type |

Optional parts (sold separately)

| Model number | Product name                                                                                                                       |
|--------------|------------------------------------------------------------------------------------------------------------------------------------|
| BC-R05A100   | Dedicated BC-R sub-base (a necessary requirement for the BC-R15)                                                                   |
| 81447514-001 | Connector for front wiring, Weidmueller BL3.5/11F, Compatible wire: 0.2–1.5 mm <sup>2</sup> (AWG28–14)                             |
| 81447514-002 | Connector for front wiring (for right side wiring), Weidmueller BL3.5/11/270F, Compatible wire: 0.2–1.5 mm <sup>2</sup> (AWG28–14) |
| 81447515-001 | Side boards (2)                                                                                                                    |
| SLP-BCRJ71   | Smart Loader Package (no cable)                                                                                                    |
| 81441177-001 | USB loader cable                                                                                                                   |
| FSP136A100   | Analog flame meter                                                                                                                 |
| 81447519-001 | Jack cover (1)                                                                                                                     |
| 81447531-001 | Front connector cover (includes mounting screw)                                                                                    |
| 81447596-001 | R4780/R4715-compatible mounting plate                                                                                              |

MOUNTING

**WARNING**

**Before mounting, removing, or wiring, be sure to turn off the power to this device and all connected devices. Failure to do so may result in an electric shock.**

**CAUTION**

**Do not install where exposed to any of the following:**

- Certain chemicals or corrosive gases (ammonia, sulfur, chlorine, ethylene compounds, acid, etc.)
- Splashing water or excessive humidity.
- High temperatures
- Prolonged vibration

**Installation, wiring, maintenance, inspection, and adjustment must be carried out by a professional with technical training in combustion equipment and combustion safety equipment.**

**For mounting and wiring, follow the instructions in this User's Manual or in manuals provided by the combustion equipment manufacturer.**

Cautions regarding installation

- Leave space 50 mm above and below, 50 mm on the left and right, and 80 mm in the front as space for removal, wiring, and maintenance. Also, do not install this device close to electrical power devices or other sources of heat.

- This device must be installed within a grounded and conductive control panel to ensure safety.
- Do not pull on the wiring while it is attached to the device. Doing so can cause failure of the connectors or this device itself.
- Firmly tighten the terminal screws with a torque of 0.5 N·m or less.

Installation orientation

Attach the unit in the orientation shown below.

Do not install it in the orientations illustrated below.

Mounting on a DIN rail

- Pull down the sub-base's DIN rail clamp.
- Attach the sub-base to the DIN rail, making sure that the sub-base is not upside-down.
- Push up the DIN rail clamp to fasten the sub-base to the DIN rail.

Pull down the DIN rail clamps    Attach sub-base to DIN rail    Push the DIN rail clamps upward to fix in place

Mounting in a panel

- Cut 2 M4 threaded holes into the panel.
- Use screws to mount the sub-base in the panel. (Maximum tightening torque: 1.2 N·m)

Unit: mm

M4 (2 locations)

62.5

TRIAL OPERATION MODE

*Burner Controller Model BC-R15 User's Manual*, No. CP-SP-1411 (Japanese) (for detailed trial operation mode)

FUNCTION SELECTION MODE

*Burner Controller Model BC-R15 User's Manual*, No. CP-SP-1411 (Japanese) (for detailed host communication mode)

WIRING

WARNING

Before mounting, removing, or wiring, be sure to turn off the power to this device and all connected devices. Failure to do so may result in an electric shock.

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.

Do not extend the lead wires of the contact reset for more than the allowable length of 10 meters. If the device is reset from a location where it is difficult to check the safety of combustion, there is a risk of explosion.

CAUTION

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

All wiring and installation must comply with applicable local electrical codes, ordinances and regulations.

Make sure bunner frame is properly grounded complying with applicable local electrical codes, ordinances and regulations.

Always supply electricity at the voltage and frequency stated on the model label of this device.

This device may operate at low voltages (85 V AC or less) outside the specified range. If there is a drop in supply voltage due to some external cause, only this device may continue to operate, with shutoff valves and other loads, and interlocks and other inputs, not operating normally. In this situation, if an abnormal condition such as ignition failure or flame failure would cause an equipment problem, a method of detecting low voltages and preventing problems from occurring must be put into place.

Keep power wires and the ignition transformer high voltage cable separate from the flame detector wiring.

Run the high-voltage ignition transformer cable separately and keep it at least 30 cm away from this device

Make sure that ignition transformer high-voltage cables are properly connected to prevent faulty contact. Faulty contact can generate highfrequency radio waves, causing malfunction.

The ignition transformer ground must be directly connected to the burner itself or to metal that is electrically connected to the burner.

Use non-voltage contacts for connections to the input terminals of this device (16 through 24).

Do not use unused terminals on the device as relay terminals.

Firmly tighten the terminal screws to the torque listed in the specifications.

Check that the wiring is correct before use. Incorrect wiring may cause damage or faulty operation.

Use a surge protector or similar device if there is a risk of power surges caused by lightning.

Take countermeasures based on the instruction manual for that device if there is a device such as an inverter nearby that generates strong electrical noise.

If the wiring from this device exceeds the recommended length, prevent malfunction due to the effects of external noise by running wires from the control panel to the case through a conduit, keeping power lines and input lines apart from each other, and other measures. Check the operation of the system after installation.

When the control load wiring is grounded, an alarm occurs.

Do not provide instrumentation to stop the power to the device as soon as the alarm operates. When the power to this device is turned on again, an alarm may be activated (E908).

This device does not start operation until about 8 seconds after power-on.

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

The flame detector connected to this device has polarity. Check the “F” and “G” markings to be sure that the wiring is correct. If power is supplied to the burner controller with the wrong wiring polarity, the flame detector failure may result.

Example of wiring connection with external device  
(Terminals 1 to 24: sub-bases 25 to 35: front connector)

\* Only for models with airflow switch monitoring.

Note:

- After mounting the connector for front wiring, secure it in place with the screw on the side of the connector.
- Use reset (terminal 24) input in isolation. It cannot be used in conjunction with other BC-R contact reset inputs.
- Output common (terminals 4, 5) and input common (terminal 16, 17) cannot be used in conjunction with other BC-R.

| SEQUENCE CODES |                                 |  |
|----------------|---------------------------------|--|
| Display        | Status content                  |  |
| $P1$           | Start check                     |  |
| $P2$           | Pre-purge/Pre-ignition prepurge |  |
| $P4$           | Main trial                      |  |
| $P5$           | Post ignition                   |  |
| $P8$           | RUN                             |  |
| $Pr$           | Reignition standby              |  |
| --             | Controlled shutdown             |  |

| ALARM CODES                |                           |                                                                                                                         |
|----------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Display                    | Name                      | Description                                                                                                             |
| $E0$                       | Interlock error           | Lock-out interlock operated                                                                                             |
| $E1$                       | False flame               | The flame signal is detected for 5 s during pre-purge                                                                   |
| $E2$                       | Air-flow switch error (1) | The air-flow switch turned OFF during combustion                                                                        |
| $E3$                       | Air-flow switch error (2) | The air-flow switch stayed ON for 180 s during start check<br>The air-flow switch stayed OFF for 180 s during pre-purge |
| $E6$                       | Ignition failure          | Ignition could not be detected with ignition trial                                                                      |
| $E7$                       | Flame failure             | The flame signal disappeared in the sequence after ignition trial                                                       |
| $E9$ +sub-code (2 digits)* | Device error              | Abnormal voltage detected in output from the ignition transformer or Hi/Lo solenoid valves, etc.                        |

\* Burner Controller Model BC-R15 User's Manual, No. CP-SP-1411 (Japanese) (for details)

Examples of sequence codes and alarm codes

Alarm code: E0–E8

Alarm code: E9 + sub-code (2 digits)

8.8

8.8

Switches every 0.8 s

8.8

0.0

8.8

(Sub-code)

Switches every 0.8 s

| MODEL SELECTION |                           |                 |                |                 |                 |                            |                             |            |
|-----------------|---------------------------|-----------------|----------------|-----------------|-----------------|----------------------------|-----------------------------|------------|
| Model number    | Airflow switch monitoring | Prepurge method | Pre-purge time | Main trial time | Post ignition*2 | Operation at flame failure | Flame failure response time | Post-purge |
| BC-R15A7G004    | Yes                       | Pre-ignition*3  | 20±2 s         | 4.5±0.5 s       | 11±1.5 s        | Lockout                    | 2 s or less                 | 0 s        |
| BC-R15A7H003    |                           | Pre-ignition*3  |                | 4.5±0.5 s       | 11±1.5 s        | Recycle*4                  | 1 s or less                 |            |
| BC-R15A7H005    |                           | Pre-ignition*3  |                | 4.5±0.5 s       | 15±1.5 s        | Recycle*4                  | 1 s or less                 |            |
| BC-R15A7J002    |                           | Pre-purge       |                | 4.5±0.5 s       | 7±1 s           | Lockout                    | 2 s or less                 |            |
| BC-R15A7K007    | No*1                      | Pre-purge       |                | 7±1 s           | 7±1 s           | Recycle*4                  | 1 s or less                 |            |
| BC-R15A7L004    |                           | Pre-ignition*3  |                | 4.5±0.5 s       | 11±1.5 s        | Lockout                    | 2 s or less                 |            |
| BC-R15A7M003    |                           | Pre-ignition*3  |                | 4.5±0.5 s       | 11±1.5 s        | Recycle*4                  | 1 s or less                 |            |
| BC-R15A7M005    |                           | Pre-ignition*3  |                | 4.5±0.5 s       | 15±1.5 s        | Recycle*4                  | 1 s or less                 |            |
| BC-R15A7N002    |                           | Pre-purge       |                | 4.5±0.5 s       | 7±1 s           | Lockout                    | 2 s or less                 |            |
| BC-R15A7P007    |                           | Pre-purge       |                | 7±1 s           | 7±1 s           | Recycle*4                  | 1 s or less                 |            |

\_ : 0: without additional functions, D: with inspection report (with data)  
\*1. It must be used for burners that are configured for use without an airflow rate detector, as specified in JIS B 8407-2, “Forced Draught Burners, Part 2: Oil Burners.”  
\*2. From the completion of the main ignition time to the post-ignition time.  
\*3. The ignition transformer is ON during prepurge.  
\*4. When a flame failure occurs, after the flame failure response time elapses, a recycling type moves to prepurge after the 5 s of re-ignition standby time and 2 s of start check time elapse. The recycling operation is performed once. If there is a second flame failure, a lockout occurs.

| SPECIFICATIONS                      |                                                                                                                                                                       |                                                                 |                        |                               |                   |  |  |  |  |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------|-------------------------------|-------------------|--|--|--|--|
| Item                                |                                                                                                                                                                       | Description                                                     |                        |                               |                   |  |  |  |  |
| Application                         |                                                                                                                                                                       | Batch-operated combustion equipment burning oil                 |                        |                               |                   |  |  |  |  |
| Compatible flame detector           |                                                                                                                                                                       | Visible light flame detector AFD100                             |                        |                               |                   |  |  |  |  |
| Sequence                            | Sequence timing                                                                                                                                                       | Pre-purge                                                       | Main trial*1           | Post ignition*1               | Post-purge        |  |  |  |  |
|                                     |                                                                                                                                                                       | 20±2 s                                                          | 4.5±0.5 s<br>7±1 s     | 11±1.5 s<br>15±1.5 s<br>7±1 s | 0 s               |  |  |  |  |
|                                     |                                                                                                                                                                       | Flame failure response timing*1                                 |                        |                               |                   |  |  |  |  |
|                                     |                                                                                                                                                                       | 1 s or less, or 2 s or less (for 20 lx → 0 lx)                  |                        |                               |                   |  |  |  |  |
|                                     |                                                                                                                                                                       | Reset timing                                                    |                        |                               |                   |  |  |  |  |
|                                     |                                                                                                                                                                       | 1 s or longer (main unit reset switch or contact reset input*3) |                        |                               |                   |  |  |  |  |
|                                     | Alarm detection timing                                                                                                                                                | False flame                                                     | Airflow switch error 1 | Airflow switch error 2        | Interlock error   |  |  |  |  |
|                                     |                                                                                                                                                                       | 5 s                                                             | 1 s or less            | 180 s                         | 1 s or less       |  |  |  |  |
|                                     | Airflow switch monitoring*1                                                                                                                                           |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Yes/No                                                                                                                                                                |                                                                 |                        |                               |                   |  |  |  |  |
| Electrical specifications           | Lockout                                                                                                                                                               |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Lockout requiring manual reset                                                                                                                                        |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Operation at ignition failure                                                                                                                                         |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Lockout                                                                                                                                                               |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Operation at flame failure*1                                                                                                                                          |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Lockout/Recycle                                                                                                                                                       |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Rated power supply                                                                                                                                                    |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | AC100 to 230 V, 50/60 Hz                                                                                                                                              |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Allowable power supply voltage                                                                                                                                        |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | 85 to 110% of rated power supply                                                                                                                                      |                                                                 |                        |                               |                   |  |  |  |  |
| Wiring types and max. wiring length | Power consumption                                                                                                                                                     |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | 10 W or less                                                                                                                                                          |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Dielectric strength                                                                                                                                                   |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | 1,500 V AC for 1 min, or 1,800 V AC for 1 s. Between each terminal and ground (the DIN rail clamp), except for flame detector connection terminals (terminals 14, 15) |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Insulation resistance                                                                                                                                                 |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | 50 MΩ min. with 500 V DC megger. Between each terminal and ground (the DIN rail clamp), except for flame detector connection terminals (terminals 14, 15)             |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Contact rating                                                                                                                                                        | Blower motor (electromagnetic switch)                           | Ignition transformer   | Lo solenoid valve             | Hi solenoid valve |  |  |  |  |
|                                     |                                                                                                                                                                       | 100VA                                                           | 300VA                  | 200VA                         | 200VA             |  |  |  |  |
|                                     | Monitor outputs*2                                                                                                                                                     | Alarm                                                           |                        |                               |                   |  |  |  |  |
|                                     |                                                                                                                                                                       | 75VA                                                            |                        |                               |                   |  |  |  |  |
| Operating conditions                | Flame voltage output                                                                                                                                                  |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Flame voltage output range: DC0.2 to 4.8 V                                                                                                                            |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Input                                                                                                                                                                 |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Start, lockout interlock, contact reset, airflow switch                                                                                                               |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Each input is a non-voltage contact input, with allowable contact resistance of 500 Ω or less.                                                                        |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Life                                                                                                                                                                  |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | 10 years when used for 8 hours per day, or 100,000 start/stop cycles (at 25 °C, room temperature, rated voltage)                                                      |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Ambient temperature                                                                                                                                                   |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | –20 to +60 °C                                                                                                                                                         |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | Ambient humidity                                                                                                                                                      |                                                                 |                        |                               |                   |  |  |  |  |
|                                     | 10–90 %RH (no condensation)                                                                                                                                           |                                                                 |                        |                               |                   |  |  |  |  |
| Vibration                           | 0 to 3.2 m/s <sup>2</sup> (10–150 Hz, 1 octave/minute, 10 cycles, in each of XYZ directions)                                                                          |                                                                 |                        |                               |                   |  |  |  |  |

EXTERNAL DIMENSIONS

Model BC-R15

Unit: mm

| 基于SJ/T11364-2014「电子电气产品有害物质限制使用标识要求」的表示样式 |        |        |        |              |            |              |
|-------------------------------------------|--------|--------|--------|--------------|------------|--------------|
| 产品中有害物质的名称及含量                             |        |        |        |              |            |              |
| 部件名称                                      | 有害物质   |        |        |              |            |              |
|                                           | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 印刷电路板组装                                   | ×      | ○      | ○      | ○            | ○          | ○            |

本表格依据SJ/T 11364 的规定编制。  
○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。  
×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

Model BC-R05A100 sub-base (sold separately)/  
model 81447515-001 sideboard (sold separately)

Unit: mm

azbil

Specifications are subject to change without notice. (11)

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E2

## 安全に使用するために JP

### 警 告

- 火災や感電など危険な災害を招く原因になるおそれがありますので、以下のことを守ってください。
- ・本器は、24時間以内に1回以上発停する装置に使用してください。
- ・本器は、24時間以上連続して燃焼が継続する装置には使用できません。
- ・本器は、燃焼装置を安全に運転するために極めて重要な機能をもっています。取扱説明書に従って正しくご使用ください。
- ・形番は、よく確認した上、装置メーカーが規程しているシーケンスタイミングとなっているか確認してください。誤った形番を設置すると爆発を起こす危険な状態になる場合があります。
- ・本器の電源OFF後に端子14(F)には触れないでください。端子14(F)には、電荷が残っており、感電するおそれがあります。
- ・本器の分解はしないでください。誤動作、故障や感電のおそれがあります。
- ・ロックアウトした場合は、その原因を取り除いた後、リセットを行ってください。
- ・遠隔からのリセット操作は、行わないでください。安全確認が困難な場合、爆発の危険があります。
- ・モニタ出力、警報出力を安全出力として使用しないでください。
- ・本器には寿命があります。寿命が来る前に本器の交換を行ってください。寿命を超えてのご使用は故障がおきやすくなります。
- ・本器の取り付け・取り外し、および結線のときは、本器および接続機器の電源をすべて切ってください。感電するおそれがあります。
- ・負荷(点火トランス、電磁弁など)は、本器の出力端子に直接接続してください。直接接続しないと燃焼安全を確保することができません。

### 注 意

- 火災や感電など危険な災害を招く原因になるおそれがありますので、以下のことを守ってください。
- ・仕様に記載された使用条件(温度、湿度、電圧、振動、衝撃、取付方向、雰囲気など)の範囲内で使用してください。
- ・本器は、本器の取扱説明書に明示されている定格仕様の範囲内で正しく使用してください。故障や誤動作のおそれがあります。
- ・本器の制御負荷(2-1、2-6、2-7、2-8端子)には定格を超える負荷接続や負荷を短絡しないでください。本器内部のヒューズが熔断し使用できなくなります。
- ・次のような場所へは取り付けないでください。
  - ・特殊薬品や腐食性ガスのある所(アンモニア・硫黄・塩素・エチレン化合物・酸・その他)
  - ・水滴や過度の湿気のあるところ
  - ・高温にさらされるところ
  - ・振動が長時間続くところ
- ・取り付け・結線は、製品の取扱説明書または装置メーカー作成の取扱説明書に従ってください。
- ・結線は、すべて定められた基準に従って行ってください。
- ・通電前に配線が正しく行われている事を必ず確認してください。
- ・未使用端子を中継端子として使用しないでください。
- ・点火トランスの高圧ケーブルは独立配線とし、本器から30cm以上離してください。
- ・点火トランスの高圧ケーブルの接続は確実に行い、接触不良のないようにしてください。接触不良があると高周波電波を発生し、誤動作の原因になることがあります。
- ・点火トランスのアースは、バーナ本体または、バーナ本体と電気的に接続された金属部に直接取り付けてください。
- ・電源線、および点火トランスの高圧ケーブルと火災検出器電線は分離配線してください。
- ・電気設備の技術基準によるD種接地以上の工事を行い、バーナきょう体を接地してください。
- ・結線後は、結線が正しいか、確認してください。誤った結線は、破損や誤動作の原因となります。
- ・本器からの配線が推奨配線長を超えて長くなる場合は、外部からのノイズの影響で誤動作することを防止するため、制御盤からきょう体までの電力線と入力線の分離配線する等の対応を行った上、設置時に装置での動作確認を行ってください。
- ・各端子に接続する負荷は、仕様に示す定格を超えないでください。
- ・インバータなどの強いノイズを発生する併設機器がある場合は、併設機器の取扱説明書に基づいてノイズ対策を行ってください。
- ・本器と接続する火災検出器には極性があります。F/Gの表記を確認して正しく接続してください。間違えて、電源を入れた場合、火災検出器が故障することがあります。
- ・端子ねじは仕様に記載されたトルクで確実に締め付けてください。
- ・雷サージのおそれがある場合には、サージアブソーバ(サージ防止器)を使用してください。

### PRECAUTIONS FOR USE

ご使用の前に、あわせて製品の取扱説明書を必ずお読みください。

#### azbil

この資料の記載内容は、お断りなく変更する場合もありますのでご了承ください。

#### アズビル株式会社

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## Instructions for Safe Use GB

### WARNING

- The following warnings must be observed to prevent electric shock, fire, and other hazardous conditions.
- This device must be used with combustion equipment that starts and stops at least once every 24 hours.
  - This device cannot be used with combustion equipment that operates continuously for 24 hours or longer.
  - This device is equipped with functions that are extremely important for the safe operation of combustion equipment. Be sure to follow the instructions given in the product operation manual.
  - Check the model number carefully and check that the sequence timing is as specified by the combustion equipment manufacturer. Installing the wrong model can result in an explosion hazard.
  - Do not touch terminal 14 (F) immediately after the power has been turned off. Because the terminal retains an electrical charge, there is a danger of electric shock.
  - Do not disassemble this device. Malfunction, device failure, or electric shock may result.
  - If the system is locked out, do not reset it until the cause of the problem has been eliminated.
  - Never input a reset command from a remote location. Because it is difficult to make a safety check when far from the equipment, there is an increased risk of explosion.
  - Do not use the monitor output or alarm output as safety output.
  - This device has an operating life and should be replaced within that time. Continued use beyond the lifespan may result in device failure.
  - Before mounting, removing, or wiring, be sure to turn off the power to this device and all connected devices. Failure to do so may result in electric shock.
  - 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

- The following cautions must be observed to prevent electric shock, fire, and other hazardous conditions.
- Use this device within the operating ranges given in the specifications for temperature, humidity, voltage, vibration, shock, mounting position, atmosphere, etc.
  - Be sure to use this device correctly, within the ranges specified in the product operation manual. Otherwise device failure or malfunction could result.
  - 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 fuse, making the device unusable.
  - Do not install where exposed to any of the following:
    - Certain chemicals or corrosive gases (ammonia, sulfur, chlorine, ethylene compounds, acid, etc.)
    - Splashing water or excessive humidity.
    - High temperatures
    - Prolonged vibration
  - When mounting and wiring, be sure to follow the instructions in the product operation manual or in the combustion equipment manufacturer’ s manual.
  - Follow all applicable regulations when doing the wiring work.
  - Be sure to check that this device has been correctly wired before turning on the power.
  - Do not use unused terminals on the device as relay terminals.
  - Run the high-voltage ignition transformer cable separately and keep it at least 30 cm away from this 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.
  - 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 Ω .
  - 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 burner controller. After wiring, check that the equipment is operating properly.
  - Make sure that loads connected to the terminals do not exceed the rating indicated in the specifications.
  - 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.
  - The flame detector connected to this device has polarity. Check the “F” and “G” markings to be sure that the wiring is correct. If power is supplied to the burner controller when the wiring polarity is wrong, the flame detector may be damaged.
  - Firmly tighten the terminal screws to the torque listed in the specifications.
  - If there is a risk of a power surge caused by lightning, use a surge absorber (surge protector).

### PRECAUTIONS FOR USE

Before use, be sure to read the product operation manual.

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Specifications are subject to change without notice.

## Hinweise für einen sicheren Gebrauch DE

### WARNUNG

- Die folgenden Sicherheitshinweise sind zu beachten, um elektrische Schläge, Feuer und andere Gefahrensituationen zu vermeiden.
- Dieses Gerät darf nur in Verbindung mit Verbrennungsanlagen verwendet werden, die mindestens alle 24 Stunden stillstehen und neu starten.
  - Dieses Gerät darf nicht in Verbindung mit Verbrennungsanlagen verwendet werden, die länger als 24 Stunden ununterbrochen in Betrieb sind.
  - Dieses Gerät ist mit Funktionen ausgestattet, die für den sicheren Betrieb einer Verbrennungsanlage äußerst wichtig sind. Bitte beachten Sie die Hinweise in der Bedienungsanleitung des Produkts.
  - Überprüfen Sie die Modellnummer sorgfältig und kontrollieren Sie, ob die Abfolge der Betriebszeiten den Herstellerangaben der Verbrennungsanlage entspricht. Die Installation eines falschen Modells kann zu Explosionsgefahr führen.
  - Berühren Sie Anschluss 14 (F) nicht direkt nach dem Abschalten. Da der Anschluss weiterhin elektrisch geladen ist, besteht die Gefahr eines elektrischen Schlags.
  - Nehmen Sie das Gerät nicht auseinander. Es können Störungen, Defekte am Gerät oder elektrische Schläge auftreten.
  - Wenn das System störungsbedingt abgeschaltet wurde, darf es nicht neu gestartet werden, bis die Störungsursache beseitigt wurde.
  - Schalten Sie das Gerät niemals mithilfe eines Fernstarts ein. Da die Durchführung von Sicherheitsüberprüfungen aus der Ferne schwierig ist, besteht eine erhöhte Explosionsgefahr.
  - Verwenden Sie nicht den Monitor- oder Alarmausgang als Sicherheitsausgang.
  - Das Gerät besitzt eine festgelegte Lebensdauer und muss innerhalb dieser Zeit ersetzt werden. Die Nutzung über diese Lebensdauer hinaus kann zu einem Ausfall des Geräts führen.
  - Schalten Sie unbedingt die Stromversorgung dieses Geräts und aller daran angeschlossenen Geräte ab, bevor Sie das Gerät montieren, verdrahten oder entfernen. Andernfalls besteht die Gefahr eines elektrischen Schlags.
  - Verbinden Sie die Verbraucher (Zündtrafo, Magnetventil usw.) direkt mit dem Ausgangsanschluss dieses Geräts. Besteht keine direkte Verbindung, ist die Sicherheit der Verbrennungsanlage nicht gewährleistet.

### ACHTUNG

- Die folgenden Sicherheitshinweise sind zu beachten, um elektrische Schläge, Feuer und andere Gefahrensituationen zu vermeiden.
- Verwenden Sie dieses Gerät innerhalb der in den Spezifikationen angegebenen Betriebsgrenzwerte für Temperatur, Luftfeuchtigkeit, Spannung, Vibrationen, Stöße, Montageposition, Atmosphäre usw.
  - Stellen Sie eine ordnungsgemäße Nutzung des Geräts innerhalb der in der Bedienungsanleitung des Produkts angegebenen Grenzwerte sicher. Andernfalls können Störungen oder Defekte am Gerät auftreten.
  - Schließen Sie keine elektrischen Geräte an die Steuer-Verbrauchsanschlüsse (Anschlüsse 2-1, 2-6, 2-7, oder 2-8) an, die die festgeschriebenen Werte übersteigen, und verursachen Sie keine Kurzschlüsse am Laststromkreis. Dies führt zu einem Durchbrennen der geräteeigenen Sicherung und macht das Gerät unbenutzbar.
  - Installieren Sie das Gerät nicht an Orten, wo es den folgenden Gefahren ausgesetzt ist:
    - Bestimmte Chemikalien oder korrosive Gase (Ammoniak, Schwefel, Chlor, Ethylenverbindungen, Säure usw.)
    - Spritzwasser oder übermäßige Feuchtigkeit.
    - Hohe Temperaturen
    - Anhaltende Vibrationen
  - Beachten Sie während der Montage und Verdrahtung die Anweisungen in der Bedienungsanleitung des Produkts oder in der Bedienungsanleitung des Herstellers der Verbrennungsanlage.
  - Befolgen Sie während der Verdrahtung alle geltenden Vorschriften.
  - Überprüfen Sie vor dem Einschalten des Geräts, ob es sachgerecht verdrahtet wurde.
  - Verwenden Sie nicht benutzte Anschlüsse am Gerät nicht als Relaisanschlüsse.
  - Verlegen Sie das Hochspannungskabel für den Zündtrafo separat und in einem Mindestabstand von 30 cm von diesem Gerät.
  - Achten Sie darauf, dass Hochspannungskabel für den Zündtrafo ordnungsgemäß angeschlossen sind, um fehlerhafte Kontakte zu vermeiden. Fehlerhaft Kontakte können Hochfrequenzfunkwellen verursachen, die Störungen führen können.
  - Das Massekabel des Zündtrafos muss direkt mit dem Brenner selbst oder einem Metallteil verbunden sein, das elektrisch mit dem Brenner verbunden ist.
  - Verlegen Sie die Kabel für die Stromversorgung und die Hochspannungskabel für den Zündtrafo getrennt von den Leitungen des Flammenmelders.
  - Um die technischen Standrads für Elektrogeräte einzuhalten, muss das Brennergehäuse mit einem Erdungskabel verbunden sein, das einen Widerstand von weniger als 100 Ω besitzt.
  - Kontrollieren Sie nach der Verdrahtung, ob alle Kabel richtig verbunden sind. Eine falsche Verdrahtung kann Defekte oder Störungen verursachen.
  - Wenn die Kabel dieses Geräts die empfohlene Länge überschreiten, verlegen Sie keine Kabel für die Stromversorgung nahe der Eingangsleitung zwischen dem Bedienfeld und dem Feuerungsautomat, um einen Defekt aufgrund eines externen elektrischen Rauschens zu vermeiden. Überprüfen Sie nach der Verdrahtung, ob die Anlage ordnungsgemäß funktioniert.
  - Achten Sie darauf, dass die mit den Anschlüssen verbundenen Lasten die in den Spezifikationen angegebenen Werte nicht überschreiten.
  - Sollte sich in der Nähe des Geräts ein Wechselrichter oder ähnliches befinden, der starkes elektrisches Rauschen verursacht, schaffen Sie Abhilfe entsprechend der Anleitung im Benutzerhandbuch über Geräte, die Rauschen verursachen.
  - Der mit diesem Gerät verbundene Flammenmelder ist gepolt. Überprüfen Sie die Kennzeichnungen “F” und “G” , um die korrekte Verdrahtung sicherzustellen. Wenn der Feuerungsautomat an den Strom angeschlossen wird und die Kabel falsch angeschlossen sind, kann dies zu Beschädigungen am Flammenmelder führen.
  - Ziehen Sie die Anschlusschrauben mit dem in den Spezifikationen angegebenen Anzugsmoment fest an.
  - Falls das Risiko von Überspannung durch Blitzeinschlag besteht, muss ein Überspannungsableiter (Überspannungsschutz) verwendet werden.

### VORSICHTSHINWEISE FÜR DEN GEBRAUCH

Lesen Sie vor Gebrauch die nachstehende Betriebsanleitung.

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Die Spezifikationen unterliegen unangekündigten Änderungen.

## Instructions pour une utilisation en toute sécurité F

### AVERTISSEMENT

- Il est impératif de respecter les consignes suivantes pour éviter les chocs électriques, les incendies et autres situations dangereuses.
- Cet appareil doit être utilisé avec une installation de combustion lancée et arrêtée au moins une fois toutes les 24 heures.
  - Cet appareil ne peut pas être utilisé avec une installation de combustion fonctionnant sans interruption pendant 24 heures ou plus.
  - Cet appareil dispose de fonctions extrêmement importantes pour une utilisation sécurisée de l’ installation de combustion. Assurez-vous de suivre les instructions indiquées dans le manuel d’ utilisation.
  - Vérifier soigneusement le numéro du modèle et vérifier que le cadencement de séquence correspond à celui indiqué par le fabricant de l’ installation de combustion. L’ installation du mauvais modèle peut provoquer un risque d’ explosion.
  - Ne pas toucher à la borne 14 (F) immédiatement après avoir éteint l’ alimentation. La borne conservant une tension électrique, il y a un risque de choc électrique.
  - Ne pas démonter cet appareil. Un dysfonctionnement, une défaillance de l’ appareil ou un choc électrique peuvent se produire.
  - En cas de verrouillage du système, ne pas le réinitialiser tant que la cause du problème n’ a pas été éliminée.
  - Ne jamais lancer une commande de réinitialisation à partir d’ un emplacement distant. Étant donné qu’ il est difficile de réaliser un contrôle de sécurité à distance de l’ installation, il existe un risque élevé d’ explosion.
  - Ne pas utiliser la sortie moniteur ou la sortie d’ alarme comme sortie de sécurité.
  - Cet appareil a une durée de vie et doit être remplacé selon le délai indiqué. Une utilisation continue au-delà de la durée de vie peut entraîner une défaillance de l’ appareil.
  - Avant de monter, de retirer ou de connecter cet appareil, toujours le mettre hors tension et couper l’ alimentation des autres dispositifs connectés. Un manquement à cette règle peut entraîner un choc électrique.
  - Connecter la charge (transformateur d’ allumage, vanne solénoïde, etc.) directement aux bornes de sortie de cet appareil. Si la charge n’ est pas directement connectée, la sécurité de combustion ne peut être garantie.

### ATTENTION

- Il est impératif de respecter les consignes suivantes pour éviter les chocs électriques, les incendies et autres situations dangereuses.
- Veiller à ce que les conditions de fonctionnement de l’ appareil (température, humidité, tension, vibrations, choc, conditions ambiantes etc.) soient conformes aux spécifications.
  - Veillez à ce que les conditions de fonctionnement de l’ appareil soient conformes aux spécifications du manuel d’ utilisation. Dans le cas contraire, un dysfonctionnement ou une défaillance de l’ appareil pourrait survenir.
  - Ne pas connecter une charge dépassant les caractéristiques indiquées dans les spécifications aux bornes de charge de contrôle (bornes 2-1, 2-6, 2-7, ou 2-8) et ne pas court-circuiter la charge. Cela aurait pour conséquence de brûler le fusible interne, rendant l’ appareil inutilisable.
  - Ne pas installer l’ appareil dans un endroit exposé aux éléments suivants :
    - Certains produits chimiques ou gaz corrosifs (ammoniac, soufre, chlore, composés d’ éthylène, acide, etc.)
    - Éclaboussures d’ eau ou humidité excessive
    - Températures élevées
    - Vibration prolongée
  - Lors du montage et du câblage, assurez-vous de bien suivre les instructions du manuel d’ utilisation du produit ou du manuel du fabricant de l’ installation de combustion.
  - Suivre toutes les règles applicables lors du câblage.
  - Toujours vérifier que cet appareil est correctement câblé avant de le mettre sous tension.
  - Ne pas utiliser comme bornes de relais les bornes disponibles sur l’ appareil.
  - Introduire le câble du transformateur d’ allumage haute tension séparément et l’ éloigner d’ au moins 30 cm de cet appareil.
  - Vérifier que les câbles haute tension du transformateur d’ allumage sont correctement connectés afin d’ éviter tout contact défectueux. Un contact défectueux peut créer des ondes radio haute fréquence, causant un dysfonctionnement.
  - Le câble de terre du transformateur d’ allumage doit être connecté directement au brûleur ou à un élément métallique connecté électriquement au brûleur.
  - Éloigner du détecteur de flamme les câbles de courant et les câbles haute tension du transformateur d’ allumage des câbles.
  - Conformément aux normes techniques relatives aux équipements électriques, le cadre du brûleur doit être connecté à la terre par un fil dont la résistance est inférieure à 100 Ω .
  - Après le câblage, toujours vérifier que le câblage est correct. Un câblage incorrect peut provoquer des dommages ou un dysfonctionnement.
  - Si la longueur des fils de cet appareil dépasse la longueur recommandée, afin d’ éviter tout dysfonctionnement dû au bruit électrique externe, procéder comme suit : éloigner les lignes électriques des lignes d’ entrée entre le panneau de commande et le contrôleur de brûleur. Après le câblage, vérifier que l’ installation fonctionne correctement.
  - Vérifier que les charges connectées aux bornes ne dépassent pas les caractéristiques indiquées dans les spécifications.
  - En présence d’ un onduleur ou autre élément générant un bruit électrique important à proximité de cet appareil, prendre les mesures nécessaires pour supprimer le bruit, en se reportant au manuel de l’ appareil générant du bruit.
  - Le détecteur de flamme connecté à cet appareil a une polarité. Vérifier les marquages « F » et « G » pour garantir que le câblage est correct. Une alimentation au niveau du contrôleur de brûleur avec une mauvaise polarité peut endommager le détecteur de flamme.
  - Bien serrer les écrous des bornes aux couples indiqués dans les spécifications.
  - En cas de risque de surtension provoquée par la foudre, utiliser un dérivateur de surtension (protection contre les surtensions).

### PRÉCAUTIONS D’ EMPLOI

Avant utilisation, assurez-vous de lire le manuel d’ utilisation.

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Les spécifications sont sujettes à modification sans préavis.

