1. PARTS DESCRIPTION

1.1 Module Mainframe

- **Module Mainframe**
- **Terminal type**
- **Connector type**

1.2 Communication Setup

- **Communication Setting**
- **Address setting switch**

1.3 Dimensions

- **Terminal type**
- **Connector type**

2. COMMUNICATION SETTING

- **Communication setting before mounting and wiring of the Z-C.T.**

3. MOUNTING

4. WIRING

---

**NOTICE**

- This manual assumes that the reader has a fundamental knowledge of the principles of electricity, process control, computer technology and communications.

**WARNING**

- This product is intended for use with industrial machines, test and measuring equipment.
- This is a Class I, Type I, Division 2, Group A, B, C and D equipment. Do not use the product in the presence of explosive gases.
- All wiring must be completed before power is turned on to prevent electric shock or damage to equipment.
- This equipment must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flamable or explosive gases.
- Do not connect high-voltage connections such as power supply terminals, etc., to avoid electric shock.
- RKC is not liable if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

**CAUTION**

- This product is intended for use with industrial machines, test and measuring equipment.
- This is a Class I, Type I, Division 2, Group A, B, C and D equipment. Do not use the product in the presence of explosive gases.
- All wiring must be completed before power is turned on to prevent electric shock or damage to equipment.
- This equipment must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flamable or explosive gases.
- Do not connect high-voltage connections such as power supply terminals, etc., to avoid electric shock.
- RKC is not liable if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

---

**WARNING**

- An external protection device must be installed if failure of this instrument could result in damage to persons or property, or in injury to persons.

---

**WARNING**

- An external protection device must be installed if failure of this instrument could result in damage to persons or property, or in injury to persons.

---

**NOTICE**

- This manual assumes that the reader has a fundamental knowledge of the principles of electricity, process control, computer technology and communications.

**WARNING**

- This product is intended for use with industrial machines, test and measuring equipment.
- This is a Class I, Type I, Division 2, Group A, B, C and D equipment. Do not use the product in the presence of explosive gases.
- All wiring must be completed before power is turned on to prevent electric shock or damage to equipment.
- This equipment must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flamable or explosive gases.
- Do not connect high-voltage connections such as power supply terminals, etc., to avoid electric shock.
- RKC is not liable if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

**CAUTION**

- This product is intended for use with industrial machines, test and measuring equipment.
- This is a Class I, Type I, Division 2, Group A, B, C and D equipment. Do not use the product in the presence of explosive gases.
- All wiring must be completed before power is turned on to prevent electric shock or damage to equipment.
- This equipment must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flamable or explosive gases.
- Do not connect high-voltage connections such as power supply terminals, etc., to avoid electric shock.
- RKC is not liable if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

---

**WARNING**

- An external protection device must be installed if failure of this instrument could result in damage to persons or property, or in injury to persons.

---

**NOTICE**

- This manual assumes that the reader has a fundamental knowledge of the principles of electricity, process control, computer technology and communications.

**WARNING**

- This product is intended for use with industrial machines, test and measuring equipment.
- This is a Class I, Type I, Division 2, Group A, B, C and D equipment. Do not use the product in the presence of explosive gases.
- All wiring must be completed before power is turned on to prevent electric shock or damage to equipment.
- This equipment must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flamable or explosive gases.
- Do not connect high-voltage connections such as power supply terminals, etc., to avoid electric shock.
- RKC is not liable if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

**CAUTION**

- This product is intended for use with industrial machines, test and measuring equipment.
- This is a Class I, Type I, Division 2, Group A, B, C and D equipment. Do not use the product in the presence of explosive gases.
- All wiring must be completed before power is turned on to prevent electric shock or damage to equipment.
- This equipment must be used in accordance with the specifications to prevent fire or damage to instrument and equipment.
- This instrument is not intended for use in locations subject to flamable or explosive gases.
- Do not connect high-voltage connections such as power supply terminals, etc., to avoid electric shock.
- RKC is not liable if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction can occur and warranty is void under these conditions.

---

**WARNING**

- An external protection device must be installed if failure of this instrument could result in damage to persons or property, or in injury to persons.
General specifications
Power supply voltage: 24 V DC (Rating)
Power consumption (at maximum load): 36 mA max. (all 24 V DC)
Rush current: 1 A or less
Allowable ambient temperature: -10 to +60 °C
Allowable ambient humidity: 5 to 95 % RH
(Absolute humidity: MAX. 29.3 g/m³ dry air at 101.3 kPa)
Installation environment:
Weight: Approx. 140 g
Connector type and module: Approx. 120 g

Standard
CE marking
Safety standards:
UL: UL61010-1
cUL: CAN/CSA-C22.2 No.61010-1
CSA: CSA22.2 No.61010-1 (equivalent to EN61010)
EMC: EN61326
Safety standards:
UL: UL61010-1
cUL: CAN/CSA-C22.2 No.61010-1
C-Tick: AS/NZS CISPR 11 (equivalent to EN55011)

5. SPECIFICATIONS

<table>
<thead>
<tr>
<th>Current transformer (CT) input</th>
<th>Number of inputs: 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current transformer (CT) input</td>
<td>Number of inputs: 12</td>
</tr>
<tr>
<td>Current transformer (CT) input</td>
<td>Number of inputs: 12</td>
</tr>
<tr>
<td>Input range: 0.0 to 10.0 A</td>
<td>0.0 to 10.0 A</td>
</tr>
<tr>
<td>Input range: 0.0 to 30.0 A</td>
<td>0.0 to 30.0 A</td>
</tr>
<tr>
<td>Input range: 0.0 to 100.0 A</td>
<td>0.0 to 100.0 A</td>
</tr>
<tr>
<td>Sampling cycle: 3 seconds</td>
<td></td>
</tr>
</tbody>
</table>

Performance
Ambient temperature: 23°C ± 3 °C, 10 to 90 %, non-condensing
Input range: 0.0 to 10.0 A, 0.0 to 30.0 A, 0.0 to 100.0 A
Input range: 0.0 to 30.0 A, 0.0 to 100.0 A
Influence due to ambient temperature: 40 °C ± 0.1 °C
Influence due to power frequency: 50 Hz ± 2 Hz

5. COMMUNICATION DATA MAP

- Modbus register address (Hex) / Decimal (Dec): This is the register address to exchange data.
- Digit: The number of digits for display and input.
- Symbol used in MAP: B0………..B9: Least significant digit
- B1…………….B9: Most significant digit
- Symbols used in MAP: B0………..B9: Least significant digit
- B1…………….B9: Most significant digit
- For details on the communication data, see the Z-TI0 Host Communication Quick Instruction Manual (Detailed version) [MS117123-E2]

6. COMMUNICATION DATA (RKC communication/Modbus)

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Address</th>
<th>Data type</th>
<th>Data range</th>
<th>Factory set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater breaker alarm (HBA) set value</td>
<td>Heater breaker alarm (HBA) set value</td>
<td>0000</td>
<td>4 bytes</td>
<td>0 to 105.0 A</td>
<td>0.0: heater overcurrent alarm function OFF</td>
</tr>
<tr>
<td>Heater breaker alarm (HBA) set value</td>
<td>Heater breaker alarm (HBA) set value</td>
<td>0000</td>
<td>4 bytes</td>
<td>0 to 105.0 A</td>
<td>0.0: heater overcurrent alarm function OFF</td>
</tr>
<tr>
<td>Heater breaker alarm (HBA) set value</td>
<td>Heater breaker alarm (HBA) set value</td>
<td>0000</td>
<td>4 bytes</td>
<td>0 to 105.0 A</td>
<td>0.0: heater overcurrent alarm function OFF</td>
</tr>
</tbody>
</table>

7. AUTOMATIC SETTING FUNCTION

- Heater breaker alarm (HBA) set value and heater overcurrent alarm set value can be automatically set by the push button or the push button.
- When the alarm values are automatically set by push button, the setting value can be set in the CT input module.
- When the alarm values are automatically set by communication, each CT input channel can be separately set.

- Procedure for automatic setting of the heater break alarm (HBA) set value:

  1. If the ON or OFF time of time proportioning output is 0.5 seconds or less, automatic setting is not possible. In addition, alarm detection is not possible.

  2. To perform automatic setting of the heater breaker alarm (HBA) set value, set the following Z-TI0 CT module parameters from the host computer (loader communication can also be used).

    a. Configure the set values according to your operation conditions.

    b. Before performing automatic setting, complete all connections and settings so that the system is ready for operation.

    c. When not specified, these codes will not be printed on labels and all settings will be factory default.

    d. For checking the digital output (DO), see the Z-TI0 instruction manual (Detailed version) [MS117123-E2].

- Checking the heater break alarm (HBA) and heater overcurrent alarm

  The Z-TI0 CT module does not have a terminal that outputs alarm signals, and thus the alarm status must be checked using one of the methods below:

  a. Check the alarm status in the communication data (heater break alarm (HBA) state monitor; heater overcurrent alarm state monitor).

  b. Use a Z-DIO module to check the alarm status in the digital output (DO) *.

  c. *: The heater overcurrent alarm state is not output from the digital output (DO) of the Z-TI0 module.

- For checking the digital output (DO), see the Z-TI0 instruction manual (Detailed version) [MS117123-E2].