

# Installation and Operating Instructions

## Equipment Interface to TCC-link RBC-TXIO



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## ■ Important

This manual is intended for those who have the required knowledge/Qualifications for electric or control and are in charge of any of the following:

- Installation of the product
- Design of the control system
- Management of the site

## ■ Agreements for use of this product

### (1) Scope of warranty

If a failure occurs in this product as a result of our fault or negligence we will provide replacement or repair of the product. We will not be responsible if the fault occurs as a result of any of the following.

- The product was handled or used under conditions/environment that is not specified in this manual.
- The failure was caused by aspects outside of this product.
- The product was altered or repaired by persons other than Toshiba Carrier.
- The product was not used in accordance with its original purpose.
- The cause of the failure was not foreseeable with our scientific and technical levels at the time of shipping.
- The failure is due to a natural calamity, disaster, or the like.

The warranty mentioned here shall cover only this product, and any damage and losses resulting from the failure of this product shall be excluded from the scope of warranty.

### (2) Restrictions of liability

In no event shall we be liable for any special, indirect, or consequential damage arising out of or in connection with the use of this product including any external equipment or apparatus connected.






### (3) Conditions for use of this product

- When this product is to be used in combination with other products, the dealer or qualified professional shall check the applicable standards, specifications, laws, and regulations beforehand. The dealer or qualified professional shall also verify that this product conforms to the customer's system, machines, and/or equipment in which this product is to be used. If the dealer or qualified professional fails to do so, we shall not be responsible for the conformity of this product.
- When you wish to use this product for any of the following purposes, be sure to consult our sales staff and use this product with a margin of rating and performance, as well as take appropriate safety measures for safety circuit, mechanism, etc. that will minimize danger in case of a failure.
  - Use this product outdoors or for purposes that may cause latent chemical contamination or electrical interference or use under conditions/environment that are not specified in this manual.
  - Use this product in nuclear power control facilities, incineration facilities, railway/airline/vehicle facilities, medical equipment, amusement machines, safety devices, and equipment/facilities that are restricted by administrative organizations and/or respective industries.
  - Use this product in systems, machines, or equipment that may pose a danger to human life or properties.
  - Use this product in systems or facilities that require high reliability, such as gas/water/electricity supply systems and non-stop operation systems.
  - Use this product for other purposes that require a high level of safety.
- Thoroughly understand and strictly observe all prohibitions and precautions for use stated in this manual to prevent contingent damage or losses to you or other persons due to improper use of this product.

### (4) Changes to specifications

The specifications described in this manual are subject to change for improvement or other reasons without notice. Contact our sales staff to confirm the latest specifications of this product.

## ■ Warning Indications on the Air Conditioner Unit

Warning indication	Description						
 <table border="1" data-bbox="304 412 639 622"> <tr> <td colspan="2" style="text-align: center;"><b>WARNING</b></td> </tr> <tr> <td colspan="2"><b>ELECTRICAL SHOCK HAZARD</b></td> </tr> <tr> <td colspan="2">Disconnect all remote electric power supplies before servicing.</td> </tr> </table>	<b>WARNING</b>		<b>ELECTRICAL SHOCK HAZARD</b>		Disconnect all remote electric power supplies before servicing.		<p><b>WARNING</b></p> <p><b>ELECTRICAL SHOCK HAZARD</b> Disconnect all remote electric power supplies before servicing.</p>
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## IMPORTANT INFORMATION

- **All electrical work should be carried out by a competent person and wiring must be in accordance with the national electrical installation regulations.**
- **Ensure that installation work is done correctly using the information contained in this manual.**
- **Make all connections securely so that any outside forces acting on the cables are not applied to the terminals.**
- **Never modify or repair by yourself.**  
Any attempt to do so will void the warranty.
- **To dispose of this product, consult your dealer.**

### **WARNING**

1. **Using the specified wires, ensure to connect the wires, and fix wires securely so that the external tension to the wires do not affect the connecting part of the terminals.**  
Incomplete connection or fixation may cause a fire, etc.
2. **Be sure to connect earth wire. (grounding work)**  
**Incomplete grounding** cause an electric shock. Do not connect ground wires to gas pipes, water pipes, lightning rods or ground wires for telephone wires.
3. **Appliance shall be installed in accordance with national wiring regulations.**  
Capacity shortage of power circuit or incomplete installation may cause an electric shock or a fire.

### **CAUTION**

- If incorrect/incomplete wiring is carried out, it will cause an electrical fire or smoke.
- Be sure to install an earth leakage breaker that is not tripped by shock waves.  
If an earth leakage breaker is not installed, an electric shock may be caused.
- Be sure to use the cord clamps attached to the product.
- Do not damage or scratch the conductive core and inner insulator of power and inter-connecting wires when peeling them.
- Use the power cord and Inter-connecting wire of specified thickness, type, and protective devices required.
- Never connect 220-240V power to the terminal blocks ( A , B , U1/U2, U3/U4 etc.) for control wiring (Otherwise, the system will fail).

### **REQUIREMENT**

- For power supply wiring, strictly conform to the Local Regulation in each country.
- For wiring of power supply of the outdoor units, follow the Installation Manual of each outdoor unit.
- Perform the electric wiring so that it does not come to contact with the high-temperature part of the pipe. The coating may melt resulting in an accident.
- After connecting wires to the terminal blocks, provide a trap and fix wires with the cord clamp.
- Run the refrigerant piping line and control wiring line in the same line.
- Do not turn on the power of the indoor unit until vacuuming of the refrigerant pipes completes.

### ■ **Power supply wire and communication wires specifications**

Power supply wire and communication wires are procured locally.

For the power supply specifications, follow to the table below. If capacity is little, it is dangerous because overheat or seizure may be caused. For specifications of the power capacity of the outdoor unit and the power supply wires, refer to the Installation Manual attached to the outdoor unit.

#### **Indoor unit power supply**

- For the power supply of the indoor unit, prepare the exclusive power supply separated from that of the outdoor unit.
- Arrange the power supply, earth leakage breaker, and main switch of the indoor unit connected to the same outdoor unit so that they are commonly used.
- Power supply wire specification : Cable 3-core 2.5mm<sup>2</sup>, **in conformity with Design 60245 IEC 57.**

#### **▼ Power supply**

Power supply	220-240V —, 50Hz	
Power supply switch/Earth leakage breaker or power supply wiring/fuse rating for indoor units should be selected by the accumulated total current values of the indoor units.		
Power supply wiring	Below 50m	2.5 mm <sup>2</sup>

#### **Control wiring, Central controller wiring**

- 2-core with polarity wires are used for the Control wiring between indoor unit and outdoor unit and Central controller wiring.
- To prevent noise trouble, use 2-core shield wire,
- The length of the communication line means the total length of the inter-unit wire length between indoor and outdoor units added with the central control system wire length

## Product Description

The RBC-TXIO Network Interface Module enables third party equipment to be controlled and monitored with the Toshiba Smart Touch Screen Controller and the Toshiba Black Pear BMS interface.

## Interface Features

Each RBC-TXIO Network Interface can be given a TCC-Link central address and will appear on the Smart Touch Screen or Black Pear BMS interface as a simple unit with ON/OFF, Error and Return Air parameters.

ON/OFF is provided as a relay output rated at 230v 1A resistive.

A digital input provides an error monitoring facility with the error being reported as a C12. The polarity of the input is selectable.

Return Air may be monitored by connection a 10K301 thermistor to RA input terminals.

### SPECIFICATION INDOOR INTERFACE

RBC-TXIO Network Interface			
Supply	230V/1ph/50Hz	Casing	ABS Plastic
Power	+10% / -6%	Dimensions	H90 x W107 x D32 mm
Relay	0.1A, 24VAC max	Weight	120g
	1A, 230V max	Mounting	2 Key Slot or DIN Rail
EMC Emissions	EN61000-6-1	Protection	IP30
EMC Immunity	EN61000-6-3	Storage Temperature Range	-10°C to 50°C
Connectors	Rising clamp to 0.75 <sup>2</sup> mm	Operating Temperature range	0°C to 50°C
		Humidity Range	0-90% RH non-condensing

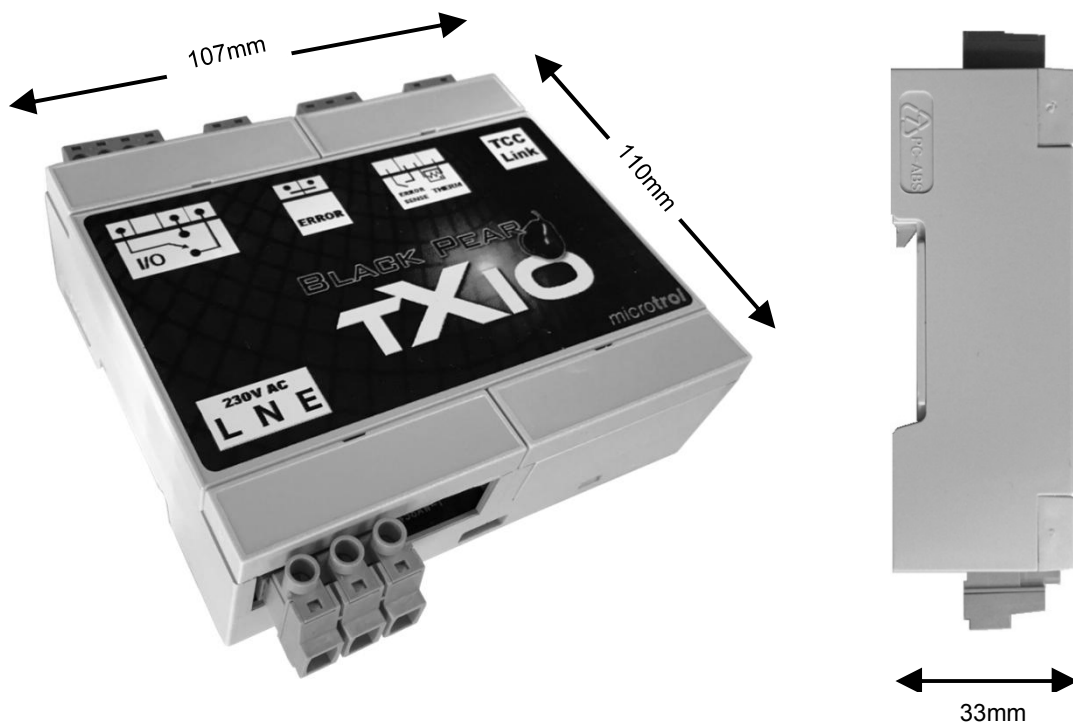
### SPECIFICATION FOR CONNECTION CABLES

INPUT	DESCRIPTION		
TCC-Link	Cable Type	2-core shield wires	Screen must be earthed at one end only
	Wire size and max. length	1.5 mm <sup>2</sup>	

## Mechanical Data

### CAUTION

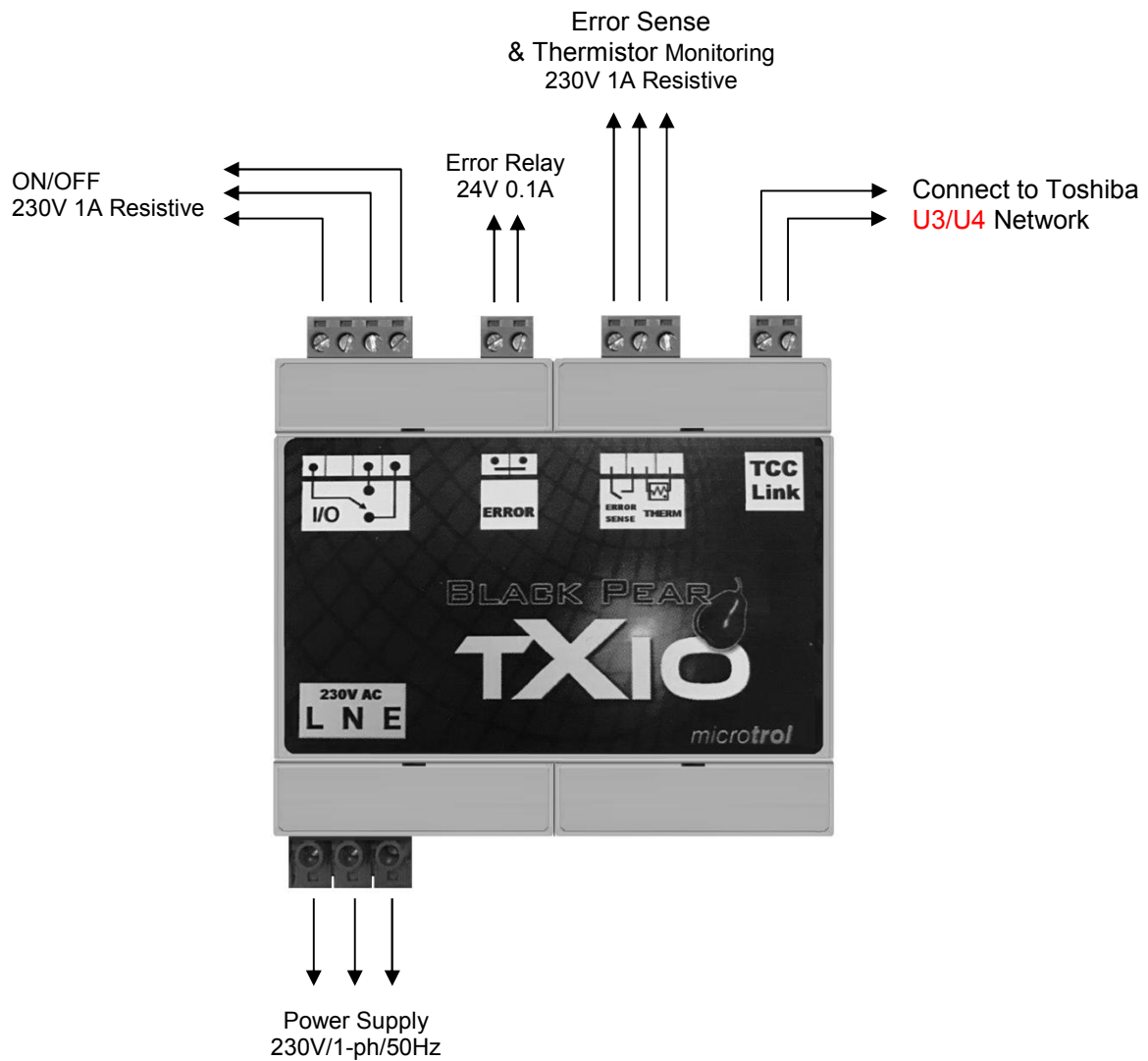
- ◆ Do not exceed the specified fault relay ratings
- ◆ Observe precautions for handling electrostatic sensitive devices



## Wiring Information

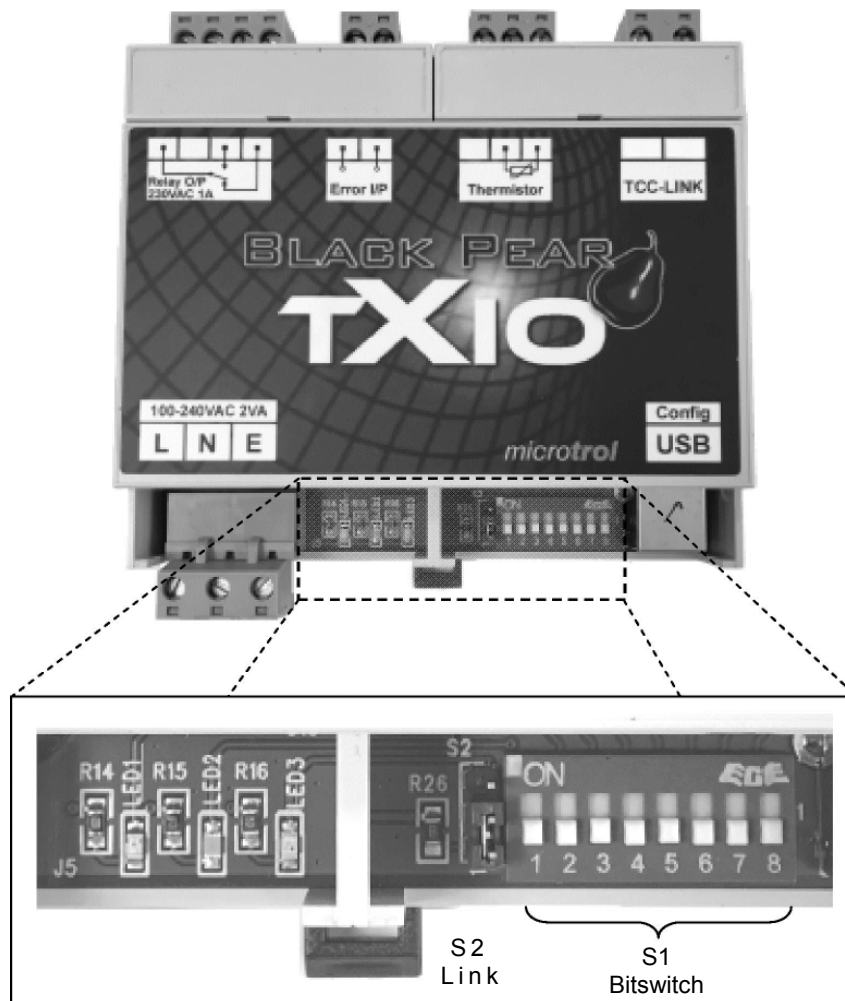
### CAUTION

- All electrical work should be carried out by a competent person and wiring must be in accordance with the national electrical installation regulations.





## Configuration



**LEDs and Config Switches**

### S1 Bitswitch Function

S1-1                      On = 100 ohm terminator connected across the TCC-Link lines  
                                  Off = No terminating resistor.

Note:- Only one terminating resistor should be enabled per network

S1-2                      On = Auto Restart (retain the I/O state as it was at power down)  
                                  Off = Start in the OFF condition

S1-3 to S1-8 Set the address of the unit; S1-3 = MSB : S1-8 = LSB  
 The address is the binary value of S1-3 to S1-8 plus 1.  
 (all switches off = 1, all switches on = 64)

1	ON OFF		14	ON OFF		27	ON OFF		40	ON OFF		53	ON OFF	
2	ON OFF		15	ON OFF		28	ON OFF		41	ON OFF		54	ON OFF	
3	ON OFF		16	ON OFF		29	ON OFF		42	ON OFF		55	ON OFF	
4	ON OFF		17	ON OFF		30	ON OFF		43	ON OFF		56	ON OFF	
5	ON OFF		18	ON OFF		31	ON OFF		44	ON OFF		57	ON OFF	
6	ON OFF		19	ON OFF		32	ON OFF		45	ON OFF		58	ON OFF	
7	ON OFF		20	ON OFF		33	ON OFF		46	ON OFF		59	ON OFF	
8	ON OFF		21	ON OFF		34	ON OFF		47	ON OFF		60	ON OFF	
9	ON OFF		22	ON OFF		35	ON OFF		48	ON OFF		61	ON OFF	
10	ON OFF		23	ON OFF		36	ON OFF		49	ON OFF		62	ON OFF	
11	ON OFF		24	ON OFF		37	ON OFF		50	ON OFF		63	ON OFF	
12	ON OFF		25	ON OFF		38	ON OFF		51	ON OFF		64	ON OFF	
13	ON OFF		26	ON OFF		39	ON OFF		52	ON OFF				

The address set by S1-3 to S1-8 is used for both the central TCC-Link address and also for the Unit address in the Line/Unit addressing mode.

The Line address for the TXIO interface is always 29.

**S2 Link Function**

S2 controls the polarity of the 'Error' input signal.

Normally open signal (Closed=Error) Link S2-1 to S2-2 (bottom pair of pins)

Normally closed signal (Open = Error) Link S2-2 to S2-3 (top pair of pins)

**LED Functions**

LED 3 (Blue)

LED 2 (Red)

LED 1 (Amber)

Power

TCC-Link Comms

Output State

(Flashing = 'In Error')

Flashes for each message

(On = Active)

**Error Relay**

Error output indication 24VAC 0.1A

**Appendix : Document Revision History**

<b>Date</b>	<b>Document Ver</b>	<b>Firmware Ver</b>	<b>By</b>	<b>Comments</b>
01/07/2017	v1.00	v1.10	mcb	First version converted from preliminary instructions.
05/07/2017	v1.01	v1.10	mcb	Converted to booklet



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**[toshiba-calc.co.uk/fault-codes/](http://toshiba-calc.co.uk/fault-codes/)**

**Fault Code Text Service: 07624 803017**

**[technical.enquiries@toshiba-ac.com](mailto:technical.enquiries@toshiba-ac.com)**

Technical Department

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