TCIF23TSX

Clock module and non optoisolated TTL/RS-485 serial interface

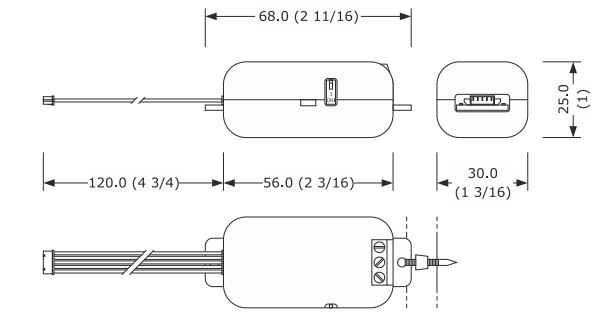
PLEASE READ CAREFULLY
and save this document
CONSIDER THE ENVIRONMENT

E ENGLISH

- Clock.
- TTL MODBUS port (input).
- RS-485 MODBUS port (output).

1 MEASUREMENTS AND INSTALLATION

Measurements in mm (inches); to be fitted on rigid support, with cable tie (not provided).



INSTALLATION PRECAUTIONS

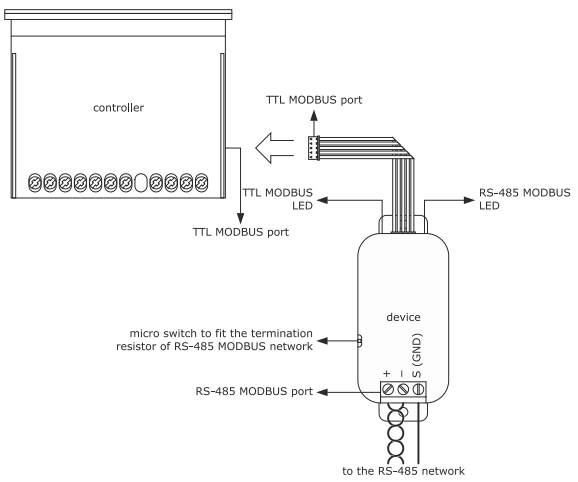
- Ensure that the working conditions are within the limits stated in the *TECHNICAL SPECIFICATIONS* section.
- Do not install the device close to heat sources, equipment with a strong magnetic field, in places subject to direct sunlight, rain, damp, excessive dust, mechanical vibrations or shocks.
- In compliance with safety regulations, the device must be installed properly to ensure adequate protection from contact with electrical parts. All protective parts must be fixed in such a way as to need the aid of a tool to remove them.

2 ELECTRICAL CONNECTION

Important

- Use cables of an adequate wire gauge for the current running through them.
- To reduce any electromagnetic interference connect the power cables as far away as possible from the signal cables and, if necessary, connect to a RS-485 MODBUS network by using a twisted pair.

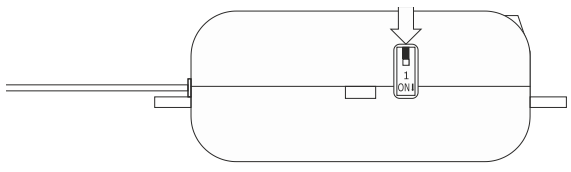
Example of electrical connection to a controller belonging to the TC3 series.



LED	ON	OFF	BLINKING
TTL MODBUS	-	no TTL MODBUS activity	TTL MODBUS activity
RS-485 MODBUS	- device power up - waiting RS-485 MODBUS data	no RS-485 MODBUS activity	RS-485 MODBUS activity

2.1 Fitting the termination resistor of RS-485 MODBUS network

To fit the RS-485 MODBUS network termination resistor, place the micro-switch in the on position.



PRECAUTIONS FOR ELECTRICAL CONNECTION

- Only use a manual screwdriver.
- If the device has been moved from a cold to a warm place, the humidity may have caused condensation to form inside. Wait about an hour before connecting it to the controller.
- Disconnect the device from the controller before doing any type of maintenance.
- For repairs and for further information, contact a PENN sales representative.
- Disconnect the controller from the mains before connecting a serial interface or an RS-485 device to the controller.

3 FIRST-TIME USE

1. Install following the instructions given in the section *MEASUREMENTS AND INSTALLATION*.
2. Disconnect the device from the mains; see the relative installation guide.
3. Connect the TTL MODBUS port of the device to the TTL MODBUS port of the controller as shown in the section *ELECTRICAL CONNECTION*.
4. Connect the RS-485 MODBUS port of the device to the RS-485 MODBUS network as shown in the section *ELECTRICAL CONNECTION*.
5. Power up the controller and an internal test of the device will be run.
   The test normally takes a few seconds, when it is finished the LED of the device will switch off.
6. The controller shows the label "**rtc**" flashing: set the date and time of the controller.
   Do not disconnect the device from the mains in the two minutes following the setting of the date and time.

4 TECHNICAL SPECIFICATIONS

Container:	Black, self-extinguishing.
Category of heat and fire resistance:	D.
Measurements:	176.0 x 30.0 x 25.0 mm (6 15/16 x 1 3/16 x 1 in).
Mounting methods for the control device:	on rigid support, with cable tie (not provided).
Degree of protection provided by the covering:	IP00.
Connection method:	
Pico-Blade connector	Fixed screw terminal block for wires up to 2.5 mm².
Maximum permitted length for connection cables:	RS-485 MODBUS port: 1,000 m (328 ft).
Operating temperature:	From 0 to 55 °C (from 32 to 131 °F).
Storage temperature:	From -25 to 70 °C (from -13 to 158 °F).
Operating humidity:	Relative humidity without condensate from 5 to 95%.
Compliance:	
Europe	CE Compliant. Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive and RoHS Directive.
USA	FCC Compliant to CFR47, Part 15, Subpart B
Canada	Industry Canada (IC) compliant to Canadian ICES-003
Power supply:	the device is powered by the TTL MODBUS port of the controller.
Software class and structure:	A.
Clock:	secondary lithium battery.
Clock drift:	≤ 60s/month at 25°C (77 °F).
Clock battery autonomy in the absence of a power supply:	> 6 months at 25 °C (77 °F).
Clock battery charging time:	24h (the battery is charged by the power supply of the device).
Displays:	TTL MODBUS and RS-485 MODBUS communication status LED.
Communications ports:	
1 TTL MODBUS subordinate port	1 RS-485 MODBUS subordinate port.

5 POINTS OF SINGLE CONTACT

APAC	Europe	NA/SA
JOHNSON CONTROLS C/O CONTROLS PRODUCT MANAGEMENT NO. 32 CHANGJIJANG RD NEW DISTRICT WUXI JIANGSU PROVINCE 214028 CHINA	JOHNSON CONTROLS WESTENDHOF 3 45143 ESSEN GERMANY	JOHNSON CONTROLS 507 E MICHIGAN ST MILWAUKEE WI 53202 USA

Important

The device must be disposed of according to local regulations governing the collection of electrical and electronic waste.

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