INSTALLATION MANUAL
ROOM CONTROL UNIT
20 Inputs 24 Outputs

Model: RCU-24R20Z

TIS
Automation Made Easy

🛈 PRODUCT INFORMATION

This device is used to control ON/OFF for lights and other devices, electrical locks, 3rd-party curtain motors, shutters, floor heaters, and it includes 20 Digital Inputs (dry inputs).

PRODUCT SPECIFICATIONS

⬆	**Output switching voltage**	Number of channels	24
		Nominal voltage	0 – 230 V AC 50/60 Hz
		Max. switching Voltage	**440VAC / 125VDC**
⬆	**Output switching current**	Nominal current per channel	Ch 1-12: 10A Ch 13-24: 5A
		Maximum total channels load	180 A / 230
		Max switching current	CH 1-12: 16A Ch 13-24: 6A
		Max Continues current	Ch 1-12: 10A Ch 13-24: 5A
⬇	**Input**	Number of channels	20
		Input Type	Digital input. Open / Close
		Length of connected wire	< 350 meter
TISBUS	**TIS Bus**	Number of devices on 1 line	Max. 64
		Bus voltage	12-32 V DC
		Current consumption (Normal)	<30 mA / 24 V DC
		Current consumption (Peak)	<40 mA / 24 V DC
		Protection	Reverse Polarity Protection
	Operating and display elements	Programming button/LED (PRG)	For assignment of the physical address
		2 buttons	Manually ON/OFF and Programming
⚙	**Functions**	Lighting control ON/OFF Dimming	24 channels controlled separately
		Curtain control	Can set 12 group of curtains (open/close) option
		Fan speed control	Can set 8 group of Fan (low, med, high) option
		Scenes	12 different scenarios
		24 Digital inputs	Programmable inputs to connect to normal wall switches and sensors
⊞	**Dimensions**	Width × Length × Height	215mm × 75mm × 91mm
	Housing	Materials	ABS fire proof
		Casing color	Black Gray
		Button color	Silver
		IP rating	IP 20

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Read Instructions

We recommend that you read this Instruction Manual before installation.

Safety instructions

Electrical equipment should only be installed and fitted by electrically skilled persons.

Failure to observe the instructions may cause damage to the device and other hazards.

These instructions are an integral part of the product and must remain with the end customer.

Programming

Advanced programming requires TIS Device Search software. Advanced software programming knowledge should be obtained in the advanced training courses.

Simple Installation

DIN Rail mount facilitates installation. Fixing points are provided for installation without the use of DIN rail.

Mounting Location

Install in a dry, well-ventilated location. Controllers may emit some mechanical noise. Take this into account when deciding on a mounting location.

Data Cable

Use screened stranded RS485 data cable with four twisted pairs. Configure devices in a "Daisy Chain."
Do not cut or terminate live data cables.

Electrical Wires

The installer should adequately consider the total current consumption when selecting the wires.

Recommended wire size for load (light channels) and input wires is 2.5 - 4 mm.

Warranty

We provide a warranty as required by law. A hologram warranty seal and product serial number are provided on each device. Please send the description of the defect with Product S/N to our dealer network.

www.tiscontrol.com

⚙ INSTALLATION STEPS

1 ❯❯ Turn off the main electrical source before installation.

⚡ **WARNING! HIGH VOLTAGE**

2 ❯❯ Mount the device on a DIN Rail inside an approved enclosure. The device can also be installed without the use of DIN Rail by two mounting screw holes.

3 ❯❯ Connect RS485 data cable to the TIS-BUS port as per the connection diagram. No need to loop the TIS-bus cable if 2 DIN Rail modules are connected together from the side bus train terminal.

To the TIS BUS Network ❮❮❮ Cat5e

4 ❯❯ Complete the load connection, light, floor heating, and shutter, and FCU as per the following steps:
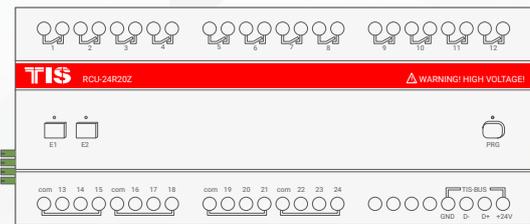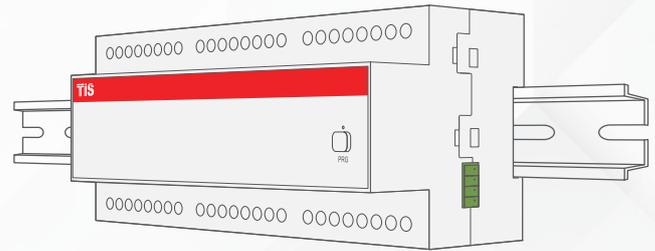
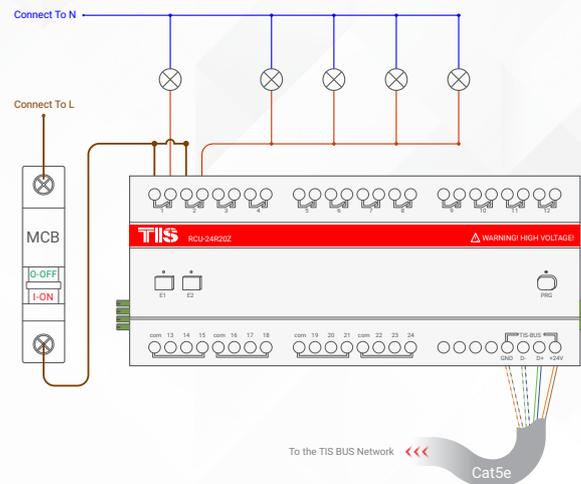### 💡 LIGHTS / APPLIANCES / FLOOR-HEATING CONNECTION

Connect the load electrical wires to outputs 1-24. Each channel from 1-12 can control a maximum of 10A loads, and each channel from 13-24 can control a maximum of 5A loads. The installer should make sure not to overload the channels.

Load neutral wire should be linked to the neutral connection in DB enclosure.

Connect To N
Connect To L
MCB
O-OFF
I-ON
To the TIS BUS Network ❮❮❮ Cat5e
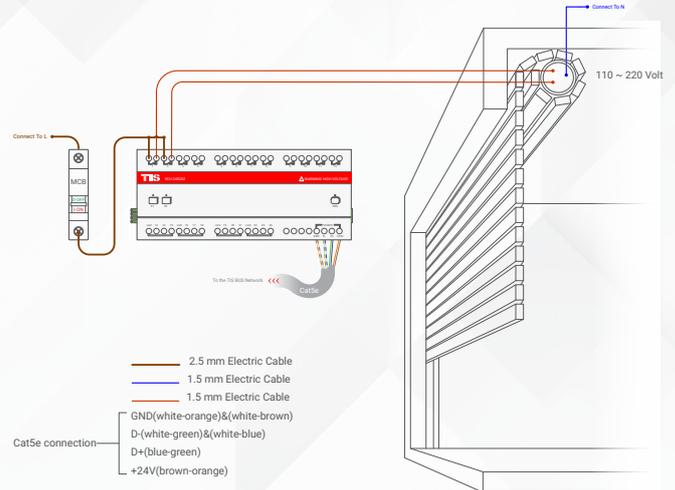
INSTALLATION STEPS

SHUTTER / CURTAIN CONNECTION

Once you combine any 2 channels as shutter/curtain, then connect the shutter-open wire to the first channel and the shutter-close wire to the second channel. The shutter neutral wire should be linked to the neutral connection in DB enclosure.

WARNING: Do not connect curtain motor wires before combining (interlocking) 2 relay channels together as curtain mode to avoid causing damage to motors. Please read about how to manually program shutter/curtain pairing in this manual.

Connect To N
110 ~ 220 Volt
Connect To L
MCB
To the TIS BUS Network
Cat5e

2.5 mm Electric Cable
1.5 mm Electric Cable
1.5 mm Electric Cable

Cat5e connection
GND(white-orange)&(white-brown)
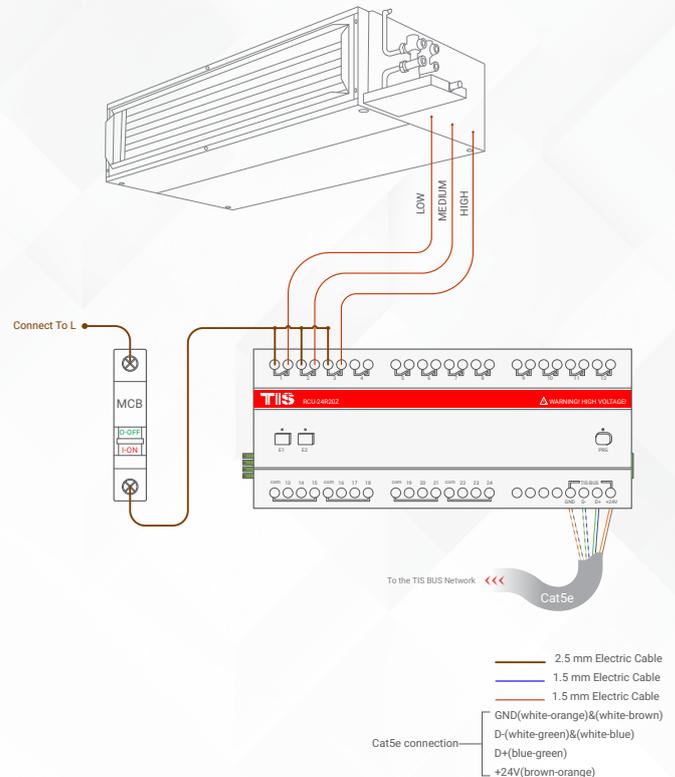D-(white-green)&(white-blue)
D+(blue-green)
+24V(brown-orange)

FCU Connection

Once you combine any 3 channels as FCU, then connect the FCU (Low, Medium, High) wires to the first, second, and third channels, consecutively. The FCU neutral wire should be linked to the neutral connection of the same section.

WARNING: Do not connect FCU wires before combining (interlocking) 3 relay channels together as FCU mode to avoid causing damage to FCU. Please read about how to manually program FCU pairing in this manual.


LOW
MEDIUM
HIGH
Connect To L
MCB
O-OFF
I-ON
To the TIS BUS Network
Cat5e

2.5 mm Electric Cable
1.5 mm Electric Cable
1.5 mm Electric Cable
GND(white-orange)&(white-brown)
D-(white-green)&(white-blue)
D+(blue-green)
+24V(brown-orange)
Cat5e connection

⚙ INSTALLATION STEPS

5 》 Connect the live (supply) wire to inputs. All inputs must have an appropriate voltage source and an MCB to protect that load circuit.
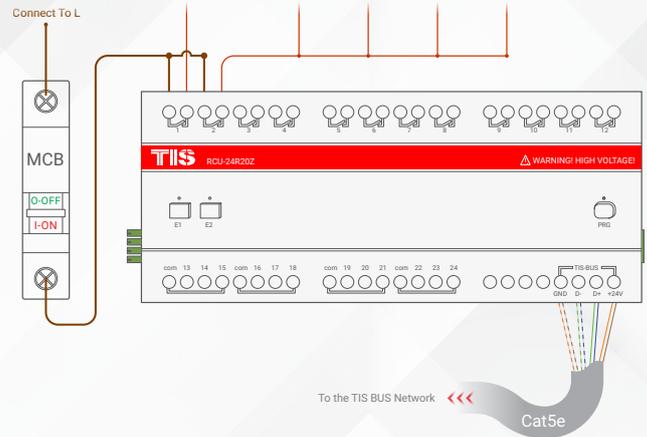
6 》 Connect digital inputs (dry contacts) GND terminal, and zone number (z1-z20) terminal to mechanical switches without any voltage supply. Then test it by pressing the wall switch up/down, z1-z20 inputs will trigger relay ch1-ch20 consecutively as default setting.

Traditional Switch
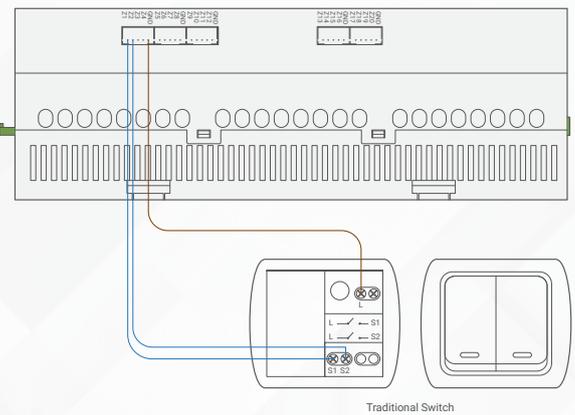
7 》 Turn on the power source, and then test the loads by short pressing on the device's local override buttons E1-E2.
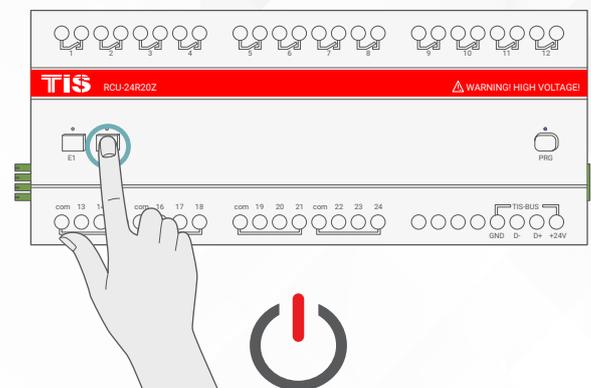
🧰 TROUBLESHOOTING

PRG Button Blinks Red Color Rapidly	**Reason:** The Module address conflicts with other device in TIS network, you need to press and hold the PRG button for 6 seconds so the module can get new address
Device PRG LED is not Blinking; Device not Powered	**Reason:** Device is not powered on; no TIS-BUS 24V supply connected to the device.
Device E1, E2 Button LED ON but lights not ON	**Reason 1:** Lights' neutral wire not connected **Reason 2:** E1.E2 default setup in software has changed
Wall Panels can't Control the Device Channels	**Reason 1:** TIS-BUS connection has a problem; check the wires and make sure there's not a short in the connection. **Reason 2:** Programming address is wrong.
Dry input is not turning the RCU lights ON/OFF	**Reason:** Either the default setting in software or the RCU address has changed.
Channel is turning off by itself after few seconds	**Reason:** It is programmed as shutter / curtain combination, and running time is enabled in the software.