iTDC/iTDC-SR

Access Control Panel
[Max 4 Door]

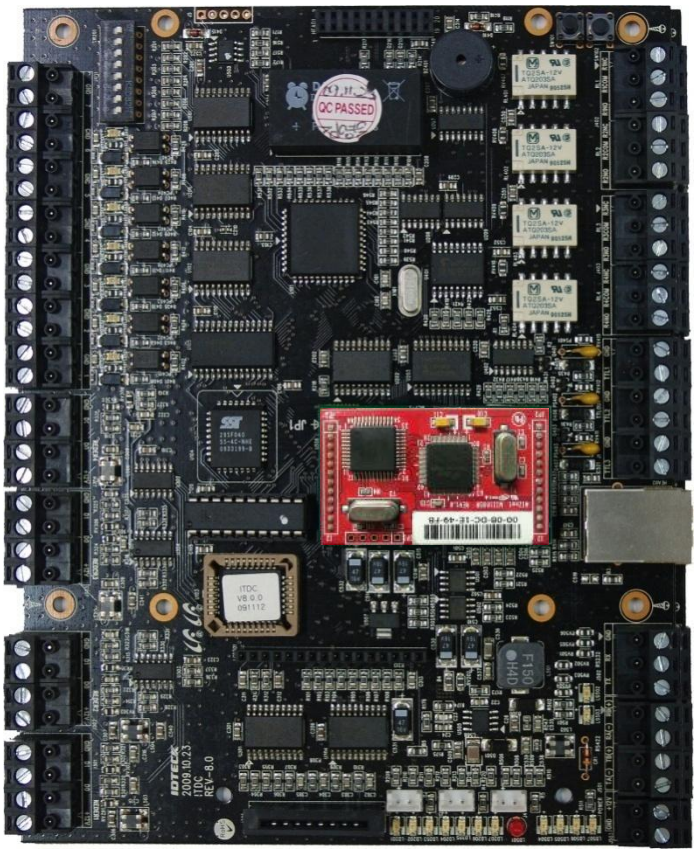


Table of Contents

1. IDENTIFYING SUPPLIED PARTS

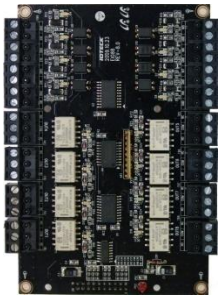
Unpack and check the contents. If any of these parts are missing, contact your distributor.

Main Unit (1ea)

Quick Guide (1copy)

Diode(4ea)

Door Lock & ALARM Guide (1Sheet)



Expansion I/O Board (EIO88)

Keypad(Option)

LCD Module(Option)

TCP/IP Module(Option)

※ iTDC : 26bit Wiegand Reader Compatible

※ iTDC-SR : 34bit Wiegand Reader Compatible

2. RECOMMANDED CABLE TYPE AND PERMISSIBLE LENGTH

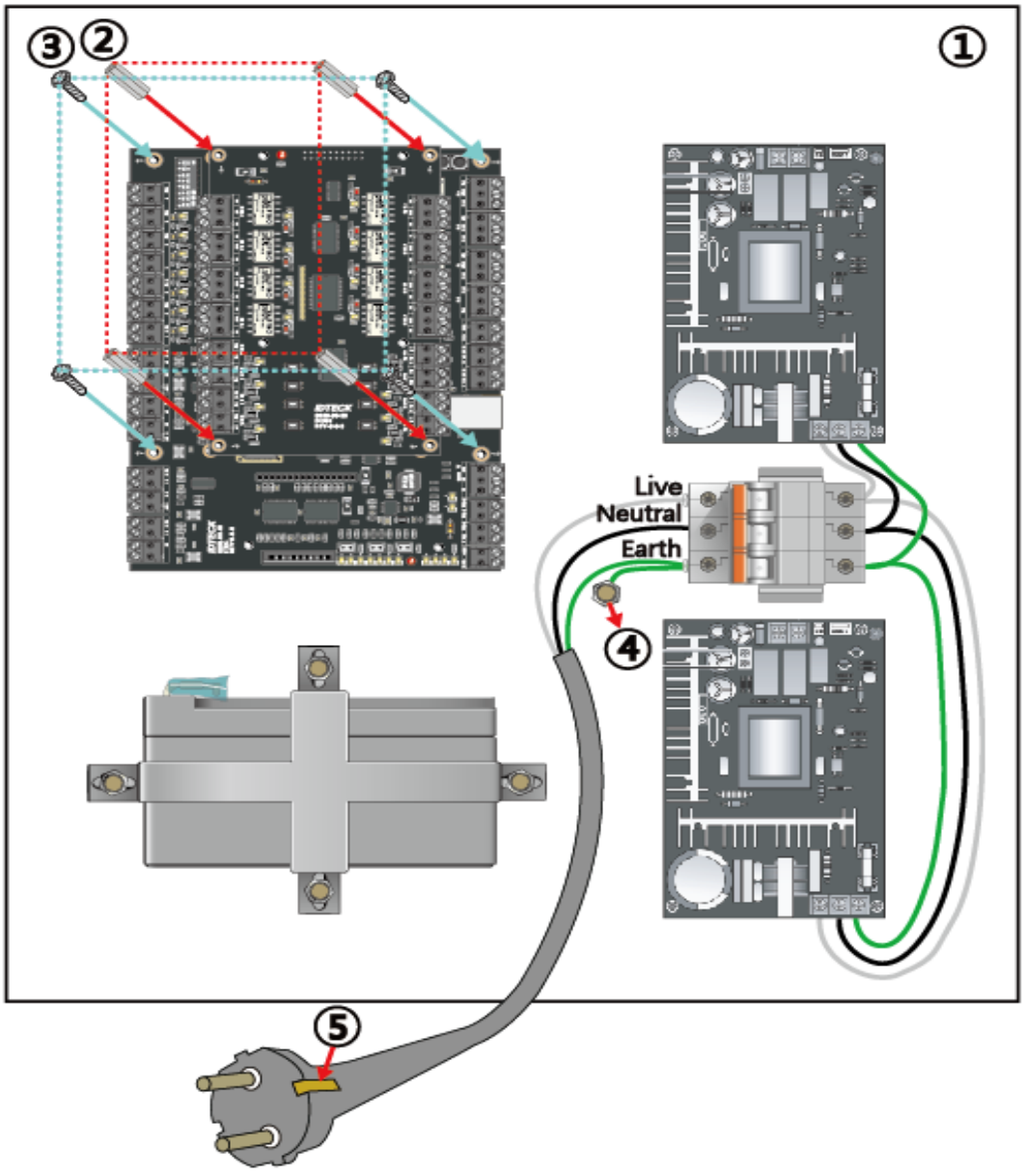
Reference	Description	Cable Specification	Maximum Distance
①	iTDC/iTDC-SR Power (DC12V) DC Power <--> iTDC/iTDC-SR	Belden #9409, 18 AWG 2 conductor, unshielded	3m
②*	Reader (Power and Data) Extra Reader	Belden #9512, 22 AWG 4 conductor, shielded Belden #9514, 22 AWG 8 conductor, shielded	150m
③	Door Contact Exit Button Sensor Input Input <--> iTDC/iTDC-SR	Belden #9512, 22 AWG 4 conductor, shielded Belden #9514, 22 AWG 8 conductor, shielded	300m
④	Door Lock, Alarm Device Lock (Alarm) <--> iTDC/iTDC-SR	Belden #9409, 18AWG 2 conductor, unshielded	300m
⑤	RS232 Cable Converter <--> Host P.C.	Belden #9829, 24 AWG 2-twisted pair, shielded	15m
⑥	RS422 Cable iTDC/iTDC-SR <--> iTDC/iTDC-SR iTDC/iTDC-SR <--> Converter	Belden #9830, 24 AWG 3-twisted pair, shielded	1,200m
⑦	UTP Cable Host PC <--> HUB HUB <--> iTDC/iTDC-SR	UTP Cable CAT5(Catagory5)	100m

*** For reference 2, make sure to use wire with proper thickness in order to withstand current that exceeds the maximum consuming level.**

3. EARTH GND CONNECTION

3.1 EARTH GND CONNECTION WHEN INSTALLING ITDC/ITDC-SR TO NEMA CASE

Please refer to a figure below for Earth GND connection (only applicable for NEMA package). GND connection will avoid potential difference and also prevents any possible abnormal behavior caused by thunderbolt or surge.



(Figure: Earth GND connection when installing iTDC/iTDC-SR to NEMA case.)

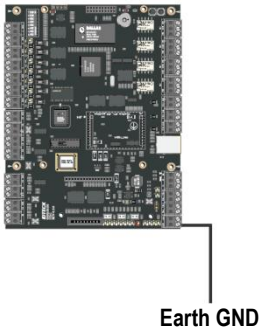
No. / Name	HOW TO CONNECT EARTH GND
1. NEMA case	A NEMA case provided by IDTECK is metallic which will be suitable for the product. Make sure to use metallic NEMA case if you are using one from a third party.
2. Supporter	Make sure to use metallic supporters (Supporter to connect iTDC/iTDC-SR main board to EIO88, Nema case to iTDC/iTDC-SR, and NEMA case to power supply device).
3. Screw	When fixing the product to the NEMA case, make sure to use metallic screws.
4. Ground contact part of Nema case	Ground contact part is for connecting a plug (Earth GND) to the NEMA case. Connect Earth wire of NFB using a metallic screw. A circular lug must be used to tightly fix the screws.
5. Ground contact part of power point	Make sure to use power point with Earth GND connecting piece as shown in the figure above.

Caution when using NEMA case

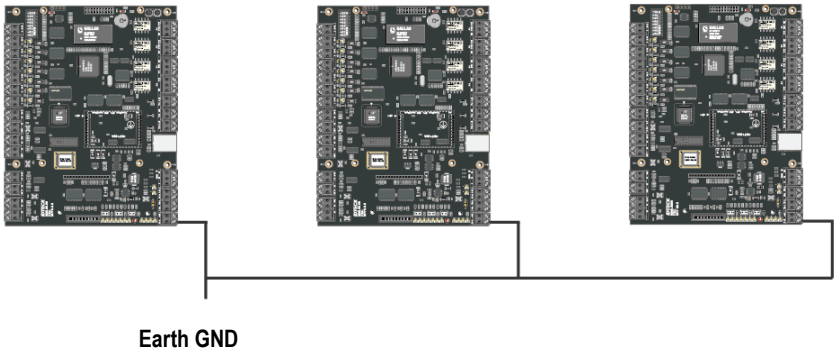
The size of IDTECK's NEMA case is 350mm X 399mm X 100mm (Width X Depth X Height) with thickness of 1.4mm. When using any third party NEMA Case, make sure that it is metallic (for conductivity) and has a larger size than IDTECK's NEMA case. Make sure to ground it firmly. Use the ones with doors to completely isolate the product from outer environment.

3.2 EARTH GND CONNECTION WHEN ITDC/ITDC-SR IS NOT INSTALLED ON NEMA CASE

When installing iTDC/iTDC-SR without a NEMA case, GND wire associated to power port of each device must be grounded to Earth GND. GND connection will avoid potential difference and also prevents any possible abnormal behavior caused by thunderbolt or surge. Please refer to the figure below for instruction of how to connect Earth GND.



(Figure: Connection of Earth ground when installing a iTDC / iTDC-SR)



(Figure: Earth GND connection for installation of multiple iTDC / iTDC-SR)

Caution

Please make sure that power is not being supplied to the controller when wiring to prevent electric shock accident.

4. DEVICE WIRING

4.1 POWER

Connect (+) wire of DC 12V power to +12V terminal
Connect GND (-) wire of DC 12V power to GND terminal

4.2 INPUT DEVICE WIRING

Additional device such as door contact or exit button can be connected to input ports (INPUT#1~INTPUT#7) of iTDC/iTDC-SR. Wiring method may vary based on the number of doors to be controlled. Please refer to below table for more details about how to wire an input device.
TIP: I/O board (EIO88) is required for additional door control (Maximum up to 4 doors).

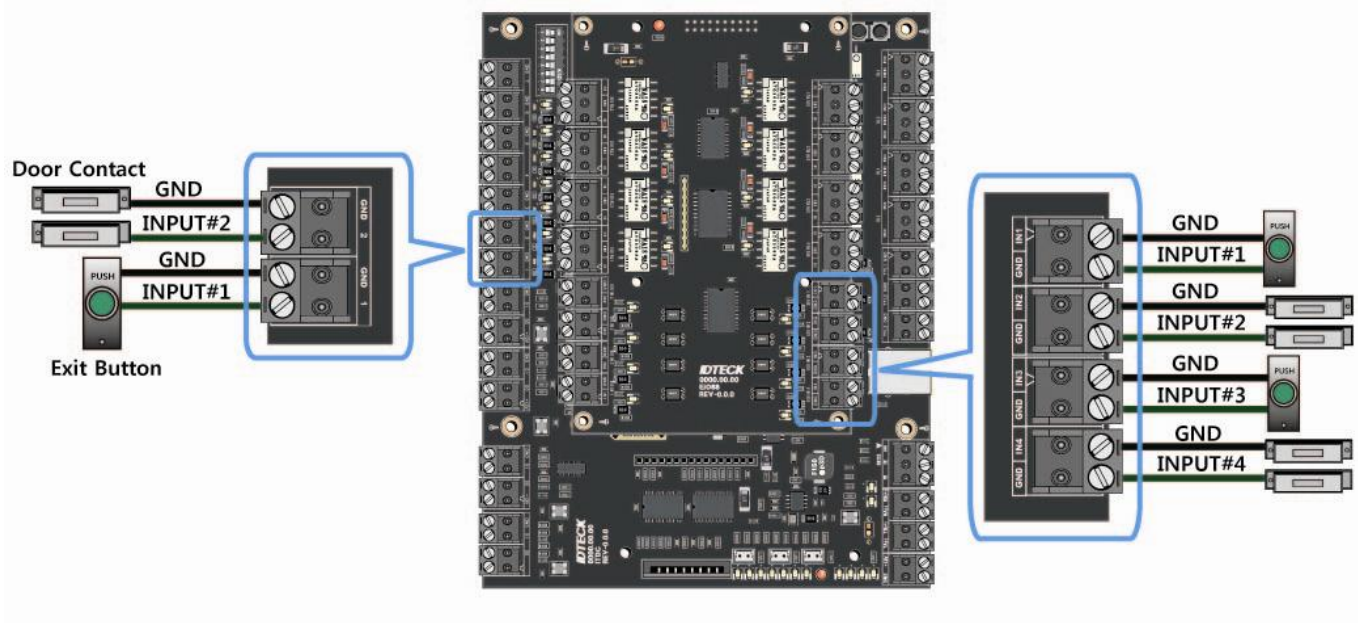


Figure: Input device wiring

2-DOOR CONTROL

Wires of an exit button can be connected to Input and GND with no distinction (one wire to input, the other to GND).

Door 1	**Exit Button**	Connect one wire to Input#1 of iTDC/iTDC-SR main board.
		Connect the other wire to Input#1 GND of iTDC/iTDC-SR main board.
	Door Contact	Connect one wire to Input#2 of iTDC/iTDC-SR main board.
		Connect the other wire to INPUT#2 GND of iTDC/iTDC-SR main board.
Door 2	**Exit Button**	Connect one wire to Input#3 of iTDC/iTDC-SR main board.
		Connect the other wire to Input#3 GND of iTDC/iTDC-SR main board.
	Door Contact	Connect one wire to Input#4 of iTDC/iTDC-SR main board.
		Connect the other wire to Input#4 GND of iTDC/iTDC-SR main board.

3-DOOR CONTROL

Attach I/O board(EIO88) to iTDC/iTDC-SR before wiring. Door 1 is controlled by main board of iTDC/iTDC-SR and door 2 and 3 are controlled by I/O board (EIO88).

Door 1	**Exit Button**	Connect one wire to Input#1 of iTDC/iTDC-SR main board. Connect the other wire to Input#1 GND of iTDC/iTDC-SR main board.
	Door Contact	Connect one wire to Input#2 of iTDC/iTDC-SR main board. Connect the other wire to Input#2 GND of iTDC/iTDC-SR main board.
Door 2	**Exit Button**	Connect one wire to Input#1 of EIO88. Connect the other wire to Input#1 GND of EIO88.
	Door Contact	Connect one wire to Input#2 of EIO88. Connect the other wire to Input#2 GND of EIO88.
Door 3	**Exit Button**	Connect one wire to Input#3 of EIO88. Connect the other wire to Input#3 GND of EIO88.
	Door Contact	Connect one wire to Input#4 of EIO88 Connect the other wire to Input#4 GND of EIO88.

4-DOOR CONTROL

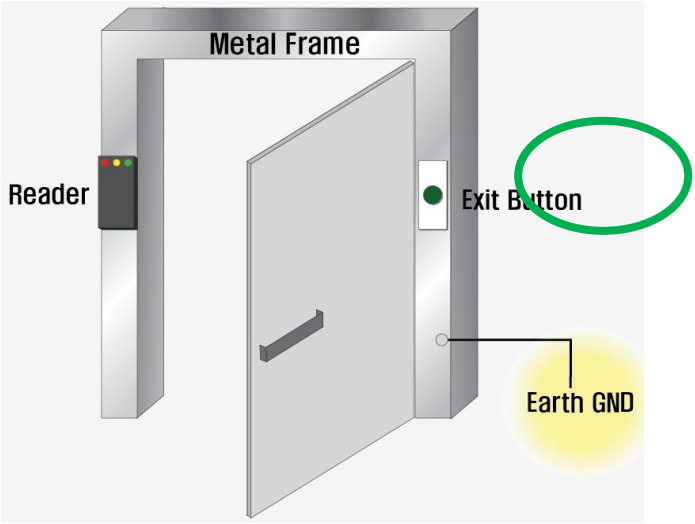
Attach I/O board(EIO88) to iTDC/iTDC-SR before wiring. Door 1 and 2 are controlled by main board of iTDC/iTDC-SR and door 3 and 4 are controlled by I/O board (EIO88).

Door 1	**Exit Button**	Connect one wire to Input#1 of iTDC/iTDC-SR main board. Connect the other wire to Input#1 GND of iTDC/iTDC-SR main board.
	Door Contact	Connect one wire to Input#2 of iTDC/iTDC-SR main board. Connect the other wire to Input#2 GND of iTDC/iTDC-SR main board.
Door 2	**Exit Button**	Connect one wire to Input#3 of iTDC/iTDC-SR main board. Connect the other wire to Input#3 GND of iTDC/iTDC-SR main board.
	Door Contact	Connect one wire to Input#4 of TDC/iTDC-SR main board. Connect the other wire to Input#4 GND of iTDC/iTDC-SR main board.
Door 3	**Exit Button**	Connect one wire to Input#1 of EIO88. Connect the other wire to Input#1 GND of EIO88.
	Door Contact	Connect one wire to Input#2 of EIO88. Connect the other wire to Input#2 GND of EIO88.
Door 4	**Exit Button**	Connect one wire to Input#3 of EIO88. Connect the other wire to Input#3 GND of EIO88.
	Door Contact	Connect one wire to Input#4 of EIO88. Connect the other wire to Input#4 GND of EIO88.

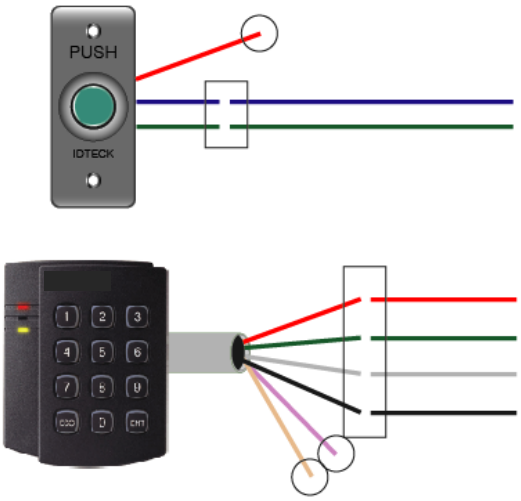
Caution when wiring reader or input device

1. When installing reader or input device on metal frame, make sure to ground the metal frame and Earth GND firmly to prevent static electricity. Static electricity may cause abnormal behavior and shorten the product lifetime.

2. In order to prevent interaction with an external conductive material, use insulation tape when wiring reader, exit button, and lock. Make sure to cut cleanly to prevent exposure of cable core. Use insulation tape to complete the wiring. Interaction of exposed cable core with conductive materials (frame) must be avoided to prevent product damage.



(Figure: Connection of Earth GND for metal frame)



(Figure: Insulation taping to marked part)

4.3 OUTPUT DEVICE WIRING

Door lock and alarm device can be connected to output ports (RELAY#1~RELAY#4) of iTDC/iTDC-SR.
Wiring for Power Fail Safe and Power Fail Secure is different so follow the correct way to wire.
I/O board (EIO88) is required to control more than 3 doors.

Door Lock Wiring

▪ **Door Lock (Power Fail Safe) Connection**
- Connect COM port of Relay to DC+12V
- Connect NC port of Relay to (+) wire of door lock device
- Connect GND port to (-) wire of door lock devices

▪ **Door Lock (Power Fail Secure) Connection**
- Connect COM port of Relay to DC+12V
- Connect NO port of Relay to (+) wire of door lock device
- Connect GND port to (-) wire of door lock devices

▪ **Alarm Device Connection**
- Connect COM port of Relay to DC+12V
- Connect NO port of Relay to (+) wire of Alarm devices
- Connect GND port to (-) wire of Alarm devices

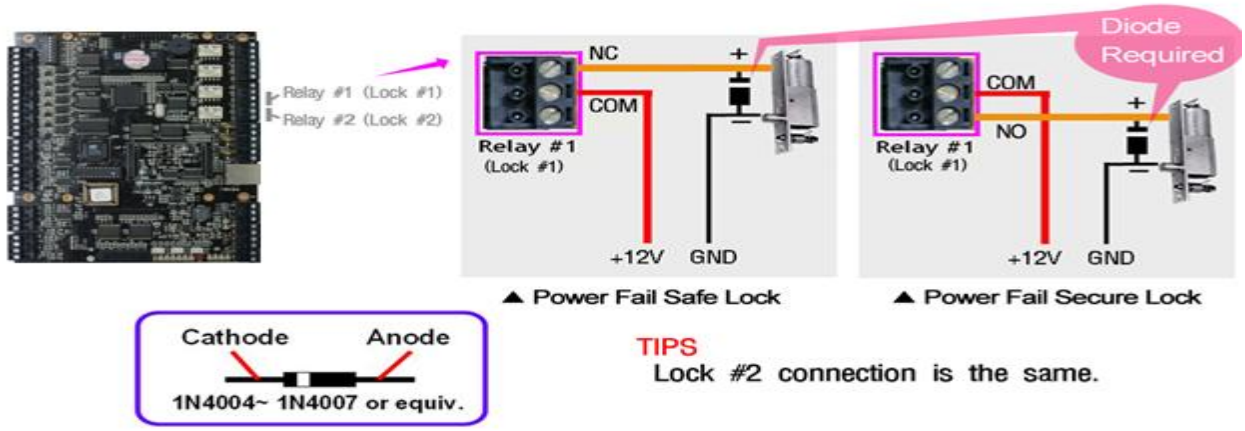


Figure: Door Lock, Alarm Device Connection

You need to connect the diode (1N4001 ~ 1N4007 or Similar) when connecting external devices to relay.

NOTE: Power Fail Secure/Power Fail Safe

▪ Power Fail Secure Mode
This mode allows doors to be closed automatically when there is no power being supplied to door lock.
During this situation, the security level will increase. This is recommended for a place where keeps the doors closed all the time (EX: bank safe).

▪ Power Fail Safe Mode
This mode allows doors to be opened automatically when there is no power being supplied to door lock.
During this situation, the security level will decrease. This is recommended for a place where keeps doors opened all the time (EX: emergency exit door).

■ **2-Door Control**

Wiring for door lock and alarm in Power Fail Safe Mode

Door 1	**Door Lock**	Connect +12V wire of DC12V power device to R1COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of door lock to R1NC port of iTDC/iTDC-SR main board.
		Connect (-) of door lock to GND (-) wire of DC12V power device.
		Connect anti-inverse voltage diode between (+) wire and (-) wire of door lock.
	Alarm	Connect +12V wire of DC12V power device to R2COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of alarm to R2NO of iTDC/iTDC-SR main board.
		Connect (-) wire of alarm to GND (-) wire of DC12V power device.
		Connect anti-inverse voltage diode between (+) wire and (-) wire of alarm.
Door 2	**Door Lock**	Connect DC12V +12V wire of DC12V power device to R3COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of door lock to R3NC port of iTDC/iTDC-SR main board.
		Connect (-) wire of door lock to GND (-) wire of DC12V power device.
		Connect anti-inverse voltage diode between (+) wire and (-) wire of door lock.
	Alarm	Connect +12V wire of DC12V power device to R4COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of alarm to R4NO port of iTDC/iTDC-SR main board.
		Connect (-) wire of alarm to GND (-) wire of power device.
		Connect anti-inverse voltage diode between (+) wire and (-) wire of alarm.

Wiring for door lock and alarm in Power Fail Secure Mode

Door 1	**Door Lock**	Connect +12V wire of DC12V power device to R1COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of door lock to R1NO port of iTDC/iTDC-SR main board.
		Connect (-) wire of door lock to GND (-) wire of DC12V power device.
		Connect Anti-inverse voltage diode between (+) wire and (-) wire of door lock.
	Alarm	Connect +12V wire of DC12V power device to R2COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of alarm to R2NO port of iTDC/iTDC-SR main board.
		Connect (-) wire of alarm to GND (-) wire of DC12V power device.
		Connect Anti-inverse voltage diode between (+) wire and (-) wire of alarm.
Door 2	**Door Lock Door Lock**	Connect +12V wire of DC12V power device to R3COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of door lock to R3NO port of iTDC/iTDC-SR main board.
		Connect (-) wire of door lock to GND (-) wire of DC12V power device.
		Connect Anti-inverse voltage diode between (+) wire and (-) wire of door lock.
	Alarm	Connect +12V wire of DC12V power device to R4COM port of iTDC/iTDC-SR main board.
		Connect (+) wire of alarm to R4NO port of iTDC/iTDC-SR main board.
		Connect (-) wire of alarm to GND (-) wire of DC12V power device.
		Connect Anti-inverse voltage diode between (+) wire and (-) wire of alarm.

▪ **3-Door control**

Attach I/O board (EIO88) to iTDC/iTDC-SR before wiring. Door 1 is controlled by main board of iTDC/iTDC-SR and door 2 & 3 are controlled by I/O board (EIO88).

Door 1	**Door Lock**	Connect to R1 port of iTDC/iTDC-SR main board. (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect to R2 port of iTDC/iTDC-SR main board.
Door 2	**Door Lock**	Connect to OUT1 port of EIO88 (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect to OUT2 port of EIO88
Door 3	**Door Lock**	Connect to OUT3 port of EIO88 (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect OUT4 port of EIO88.

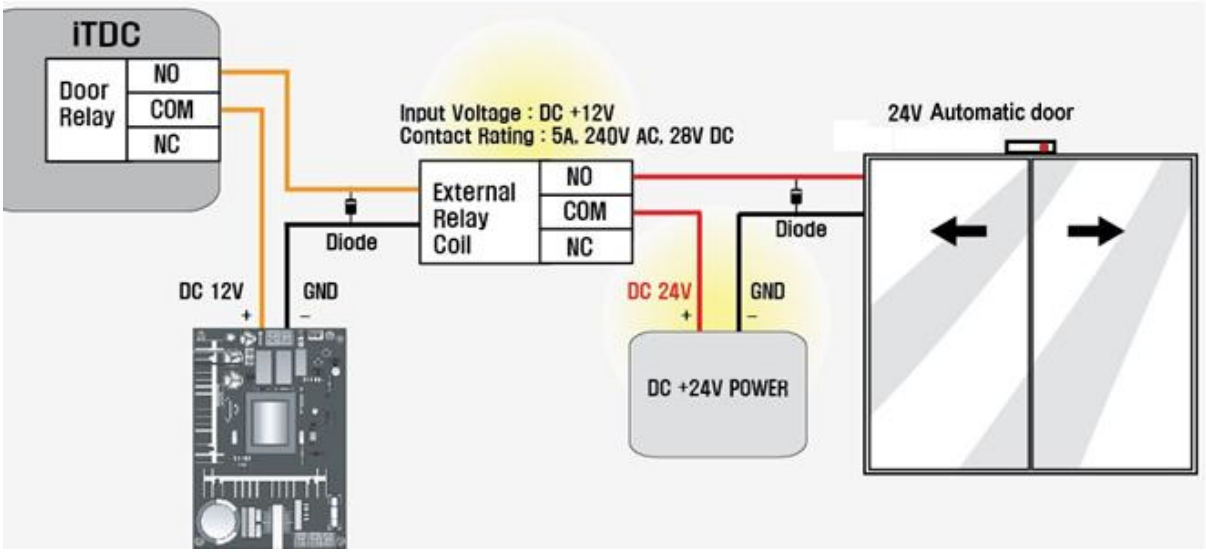
▪ **4-Door Control**

Attach I/O board (EIO88) to iTDC/iTDC-SR before wiring. Door 1 and 2 are controlled by main board of iTDC/iTDC-SR and door 3 & 4 are controlled by I/O board (EIO88).

Door 1	**Door Lock**	Connect to R1 port of iTDC/iTDC-SR main board. (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect to R2 port of iTDC/iTDC-SR main board.
Door 2	**Door Lock**	Connect to R3 port of iTDC/iTDC-SR main board. (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect to R4 port of iTDC/iTDC-SR main board.
Door 3	**Door Lock**	Connect to OUT1 port of EIO88 (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect to OUT2 port of EIO88
Door 4	**Door Lock**	Connect to OUT3 port of EIO88 (Check the wiring type between POWER FAIL SAFE and POWER FAIL SECURE)
	Alarm	Connect to OUT4 port of EIO88

■ **Wiring when using 24V door lock or automatic door**

When using 24V door lock or automatic door, make sure to connect all wires in accordance to either Power Fail Safe or Power Fail Secure mode. A separate power supply is required for 24V external relay. Please refer to the figure below.



(Figure: Wiring for using 24V door lock or automatic door)

Caution when using 24V door lock or automatic door

Make sure to use a separate power supply and an external relay. Fail to do so may cause possible product damage.

4.4 READER WIRING

RF reader can be connected to reader port (READER#1~ READER#4) of iTDC/iTDC-SR. Wiring method may vary depending on the number of doors to be controlled. Please follow the instruction shown in the table below.

2-Door Control

For 2-Door Control, a door is connected to external reader for entrance and the other door is connected to internal reader for exit. Also exit button can be used behalf of internal reader.

Door 1	**External Reader Reader#1**	Connect +12V wire (Red) to +12V of READER#1 port of iTDC/iTDC-SR main board.
		Connect GND (-) wire (Black) to GND of READER#1 port of iTDC/iTDC-SR main board.
		Connect D0 wire (Green) to D0 of READER#1 port of iTDC/iTDC-SR main board.
		Connect D1 wire (White) to D1 of READER#1 port of iTDC/iTDC-SR main board.
	Internal Reader Reader#2	Connect +12V wire (Red) to +12V of READER#2 port of iTDC/iTDC-SR main board.
		Connect GND (-) wire (Black) to GND of READER#2 port of iTDC/iTDC-SR main board.
		Connect D0 wire (Green) to D0 of READER#2 port of iTDC/iTDC-SR main board.
		Connect D1 wire (White) to D1 of READER#2 port of iTDC/iTDC-SR main board.
Door 2	**External Reader Reader#3**	Connect +12V wire (Red) to +12V of READER#3 of iTDC/iTDC-SR main board.
		Connect GND (-) wire (Black) to GND of READER#3 of iTDC/iTDC-SR main board.
		Connect D0 wire (Green) to D0 of READER#3 of iTDC/iTDC-SR main board.
		Connect D1 wire (White) to D1 of READER#3 of iTDC/iTDC-SR main board.
	Internal Reader Reader#4	Connect +12V wire (Red) to +12V of READER#4 port of iTDC/iTDC-SR main board.
		Connect GND (-) wire (Black) to GND of READER#4 port of iTDC/iTDC-SR main board.
		Connect D0 wire (Green) to D0 of READER#4 port of iTDC/iTDC-SR main board.
		Connect D1 wire (White) to D1 of READER#4 of iTDC/iTDC-SR main board.

3-Door Control (If external reader and internal reader are connected to door 1.)

Attach I/O board (EIO88) to iTDC/iTDC-SR before wiring. 3 external readers and an internal reader are controlled by the main board of iTDC/iTDC-SR. 2 exit buttons are controlled by I/O board (EIO88).

Door 1	**External Reader (Reader#1)**	Connect to READER#1 port of iTDC/iTDC-SR main board.
	Internal Reader (Reader#2)	Connect to READER#2 port of iTDC/iTDC-SR main board.
Door 2	**External Reader (Reader#3)**	Connect to READER#3 of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#1 port of EIO88.
Door 3	**External Reader (Reader#4)**	Connect to READER#4 of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#3 port of EIO88.

3-Door Control (If external reader and exit button are connected to door1)

Instead of internal reader, exit button can be connected to door 1. Expansion I/O board (EIO88) is required to connect an exit button.

Door 1	**External Reader (Reader#1)**	Connect to READER#1 port of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#1 port of iTDC/iTDC-SR main board.
Door 2	**External Reader (Reader#3)**	Connect to READER#3 port of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#1 port of EIO88
Door 3	**External Reader (Reader#4)**	Connect to READER#4 port of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#3 port of EIO88

4-Door Control

Expansion I/O board (EIO88) is required to control 4 doors.

Door 1	**External Reader (Reader#1)**	Connect to READER#1 port to iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#1 port of iTDC/iTDC-SR main board.
Door 2	**External Reader (Reader#2)**	Connect to READER#2 port of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#3 port of iTDC/iTDC-SR main board.
Door 3	**External Reader (Reader#3)**	Connect to READER#3 port of iTDC/iTDC-SR main board.
	Exit Button	Connect to INPUT#1 port of EIO88.
Door 4	**External Reader (Reader#4)**	Connect to READER#4 port of iTDC/iTDC-SR main board.
	Exit Button	Connect INPUT#3 port of EIO88.

Caution when wiring reader

Make sure to ground GND of external power and GND of iTDC/iTDC-SR as common. Failed to do so may cause communication error. Noise from outside can cause system troubles and may shorten the product lifetime. RF reader can use external power.

5. REVERSE DIODE CONNECTION

If you connect an inductor (Door Locks or Alarm device) to the output relays, there will be a high surge voltage created while the inductor is turning on and off. To protect this problem, connect the reverse diode as the figure below.

- **Caution**

It is strongly recommended to add a reverse diode between the inductor coils to absorb this surge voltage.
If you do not connect a reverse diode, the surge voltage will transfer and damage the electronic circuit of the controller.
1N4004 – 1N4007 or equality efficiency diode is included in gift box.

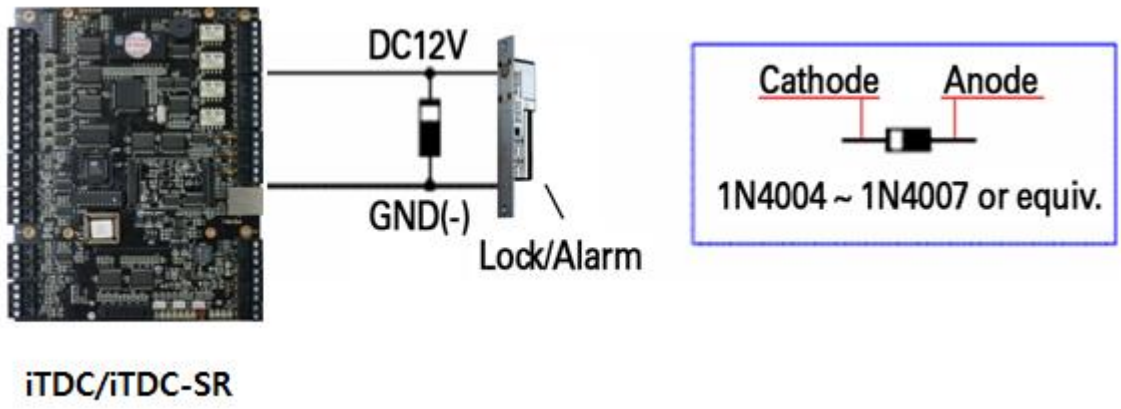


Figure: Reverse Diode Connection

6. SYSTEM INITIALIZATION

Initialization must be performed before first installation of iTDC/iTDC-SR. Press down the two initialization switches simultaneously then keep pressing more than 2 seconds. Once buzzer sound is generated, release the switches to finish initialization. The system will restart automatically.

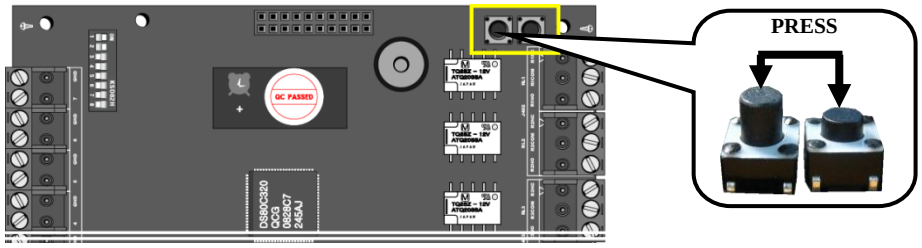


Figure: Position of Initialization Switches and its Magnification

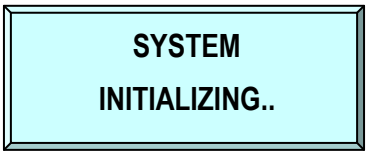


Figure: LCD Display

Caution for initializatiton

If you initialize the iTDC, all the data memories such as ID information, communication speed, door setting, time schedule and event information stored in the controller will be cleared and the basic setting values (factory setting values) will be reloaded. Therefore, the Initialization should be performed by authorized personnel only.

7. COMMUNICATION

7.1 RS232 Communication Port Connection

A 9-pin connector (Serial communication connector, female) is required to connect the iTDC/iTDC-SR to a host computer via RS232 communication. Please follow the instructions.

- Connect RS232-TX port of iTDC/iTDC-SR to the pin #2(RX) of the 9-pin connector.
- Connect RS232-RX port of iTDC/iTDC-SR to the pin #3(TX) of the 9-pin connector.
- Connect RS232-GND of iTDC/iTDC-SR to the pin #5 of the 9-pin connector.
- Plug in the 9-pin connector to COM1 or COM2 Port of the host PC.
- Install and run iTDC/iTDC-SR Application Software.

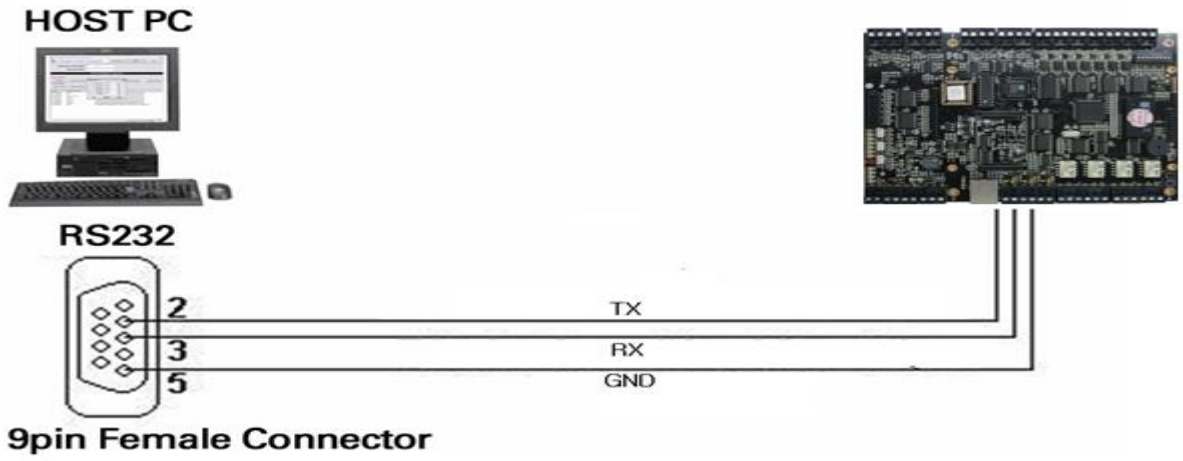


Figure: RS232 Communication

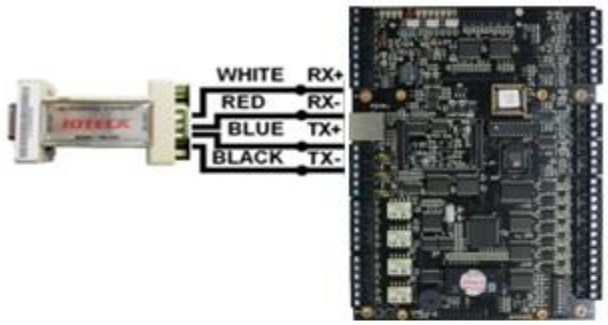
7.2 RS-422 Communication Port Connection

7.2.1 RS-422 Connection (Single iTDC/iTDC-SR Connection)

An RS422/RS232 converter is required to use RS422 communication between the **iTDC/iTDC-SR** and the PC.
CAUTION: The INC400 converter is recommended for stable communication when the distance between the converter and the device is too far.
Please follow the instructions below;
- Connect RS422-TX (+) of iTDC/iTDC-SR to RS422-RX (+) port of converter.
- Connect RS422-TX (-) of iTDC/iTDC-SR to RS422-RX (-) port of converter.
- Connect RS422-RX (+) of iTDC/iTDC-SR to RS422-TX (+) port of converter.
- Connect RS422-RX (-) of iTDC/iTDC-SR to RS422-TX (-) port of converter.
- Plug in the RS232 9PIN connector of the converter to the COM1 or COM2 port of the PC.
- Install and run iTDC/iTDC-SR Application Software.

< A Type >

INC400	Unit(RS422)
WHITE	RX+
RED	RX-
BLUE	TX+
BLACK	TX-



< B Type >

INC400	Unit(RS422)
485+/(T+)	RX+
485-/(T-)	RX-
R+	TX+
R-	TX-

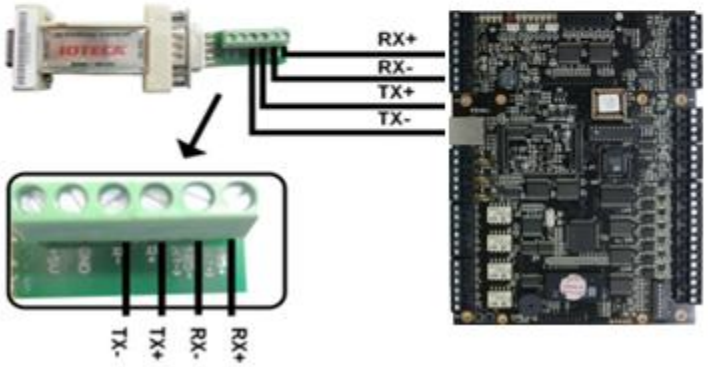


Figure: RS422 Communication between iTDC/iTDC-SR and the PC

7.2.2 RS-422 Connection (Multiple iTDC/iTDC-SR Connections)

RS422/RS232 converter is required to use RS422 communication between multiple iTDC/iTDC-SRs and a host computer. Please follow the following instructions.

First, you have to connect all RS422 port of all iTDC/iTDC-SRs in parallel.
- Connect RS422-TX(-) of one iTDC/iTDC-SR to RS422-TX(-) of another iTDC/iTDC-SR.
- Connect RS422-TX(+) of one iTDC/iTDC-SR to RS422-TX(+) of another iTDC/iTDC-SR.
- Connect RS422-RX(-) of one iTDC/iTDC-SR to RS422-RX(-) of another iTDC/iTDC-SR.
- Connect RS422-RX(+) of one iTDC/iTDC-SR to RS422-RX(+) of another iTDC/iTDC-SR.

Second, you have to connect one of RS422 port of iTDC/iTDC-SR to RS422/RS232 converter.
- Connect RS422-TX(-) of the one iTDC/iTDC-SR to RX(-) port of the converter.
- Connect RS422-TX(+) of the one iTDC/iTDC-SR to RX(+) port of the converter.
- Connect RS422-RX(-) of the one iTDC/iTDC-SR to TX(-) port of the converter.
- Connect RS422-RX(+) of the one iTDC/iTDC-SR to TX(+) port of the converter.
- Plug in the RS232 9-pin connector of the converter to the COM1 or COM2 Port of the PC.
- Install and run iTDC/iTDC-SR Application Software.

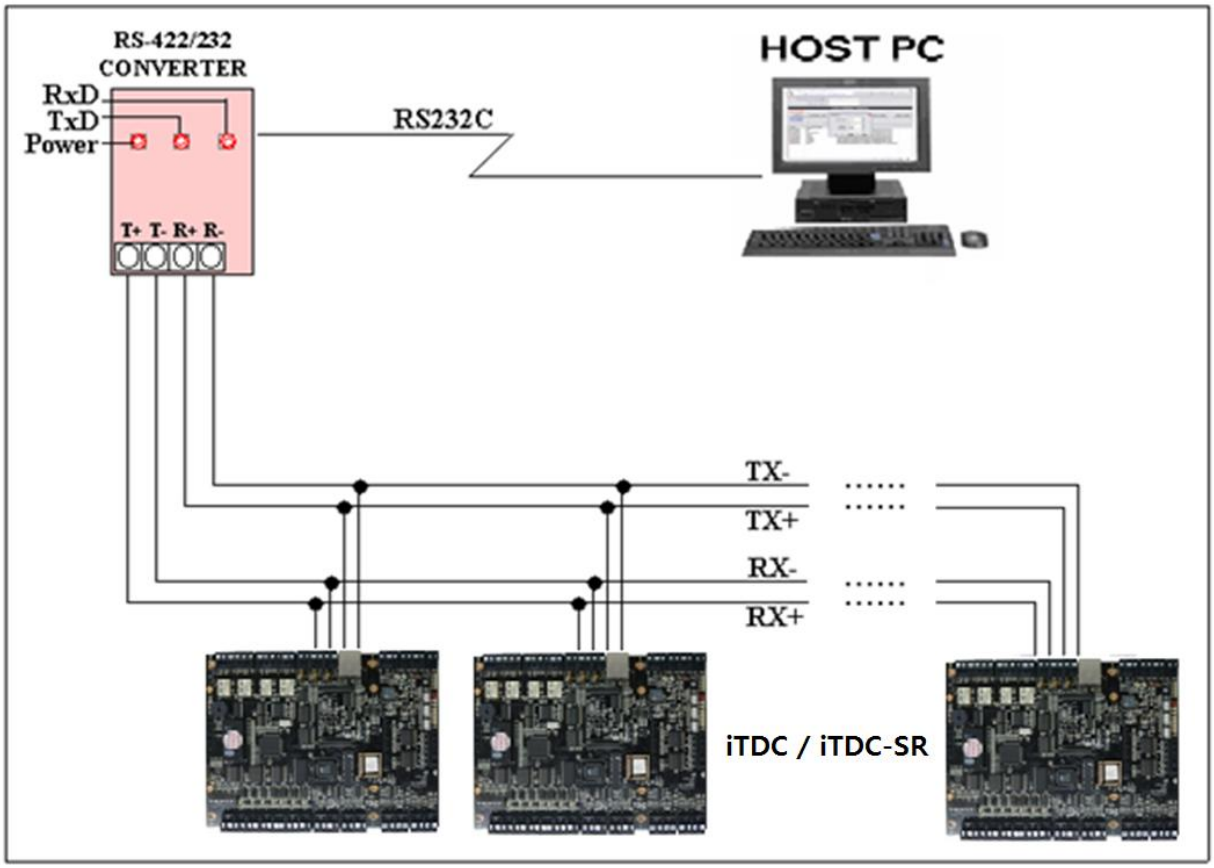


Figure: RS422 Communication between iTDC/iTDC-SRs and Host Computer

7.3 TCP/IP Communication Port Connection (Optional)

7.3.1 How to Connect TCP/IP Module to iTDC/iTDC-SR

1) As below figure, insert TCP/IP module to iTDC/iTDC-SR in right direction. Direction of arrows must be matched between iTDC/iTDC-SR (JP1) and TCP/IP (JP1) module.

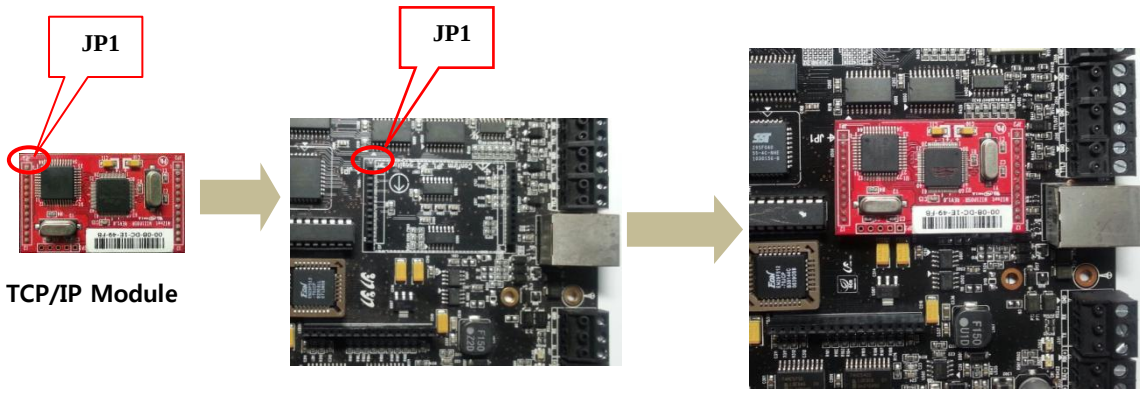


Figure: TCP/IP module Connection

2) As below figure, connect LAN cable to TCP/IP RJ-45 jack.

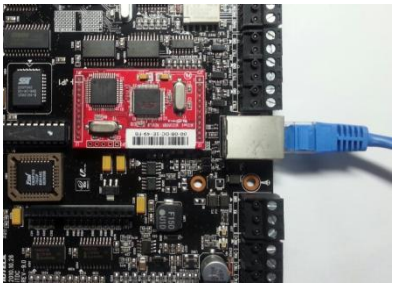


Figure: LAN Connection

7.3.2 How to wire TCP/IP Communication

Optional TCP/IP module is required for TCP/IP communication between the iTDC/iTDC-SR and the PC. Please follow the instructions below;

1. Connect the LAN cable of the network system to the RJ45 jack of the iTDC/iTDC-SR.
2. Set the board ID of the iTDC/iTDC-SR.
3. Install and run the iTDC/iTDC-SR application software.

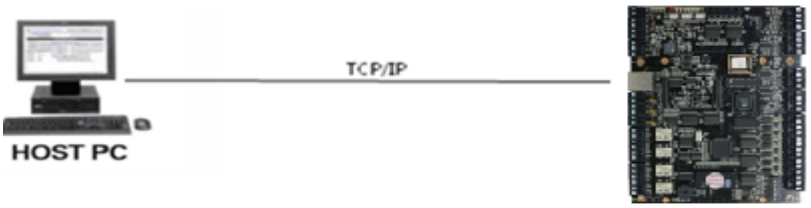


Figure: TCP/IP Connection between iTDC/iTDC-SR and PC

7.4 TCP/IP Converter (External Version)

When using the TCP/IP converter for communication, select either RS232 or RS422.

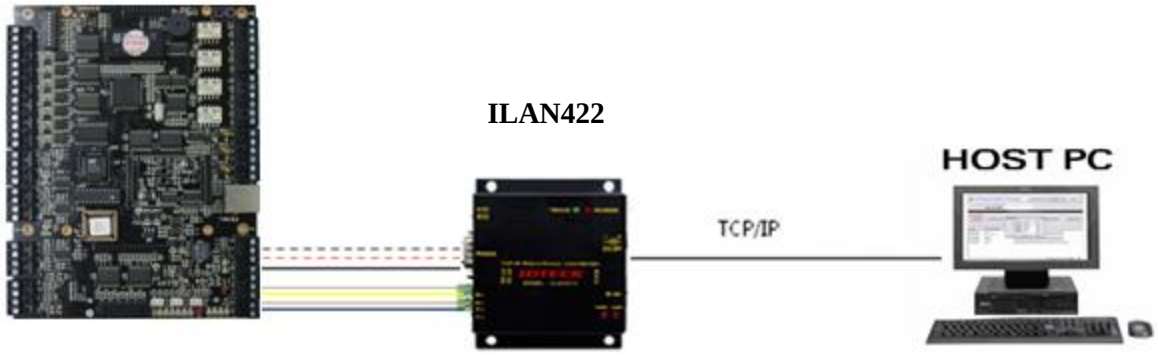


Figure: TCP/IP Converter between Host PC and iTDC/iTDC-SR

INTERFACE	iTDC/iTDC-SR	ILAN422
RS232	TX (CON2)	RX (RS232 DSUB9)
	RX (CON2)	TX (RS232 DSUB9)
	GND(CON2)	GND
RS422	TX+ (CON3)	RX+ (RS422 CONNECTOR)
	TX- (CON3)	RX- (RS422 CONNECTOR)
	RX+ (CON3)	TX+ (RS422 CONNECTOR)
	RX- (CON3)	TX- (RS422 CONNECTOR)

7.5 Bypass Communication Wiring

iTDC/iTDC-SR will be able to communicate with Host PC when internal ECP/IP module is equipped. The iTDC/iTDC-SR communicates RS422 with another iTDC/iTDC-SR.

First, you have to connect iTDC/iTDC-SR RS422 port to RS422 port of iTDC/iTDC-SR (No.1 , TCP/IP communication) as below.
- Connect iTDC/iTDC-SR(No.1) controller's RS422-TX(-) to iTDC/iTDC-SR controller's RS422-RX(-)
- Connect iTDC/iTDC-SR(No.1) controller's RS422-TX(+) to iTDC/iTDC-SR controller's RS422-RX(+)
- Connect iTDC/iTDC-SR(No.1) controller's RS422-RX(-) to iTDC/iTDC-SR controller's RS422-TX(-)
- Connect iTDC/iTDC-SR(No.1) controller's RS422-RX(+) to iTDC/iTDC-SR controller's RS422-TX(+)
- Connect TCP/IP communication between iTDC/iTDC-SR and HOST PC.
- Install and run iTDC/iTDC-SR Application Software.

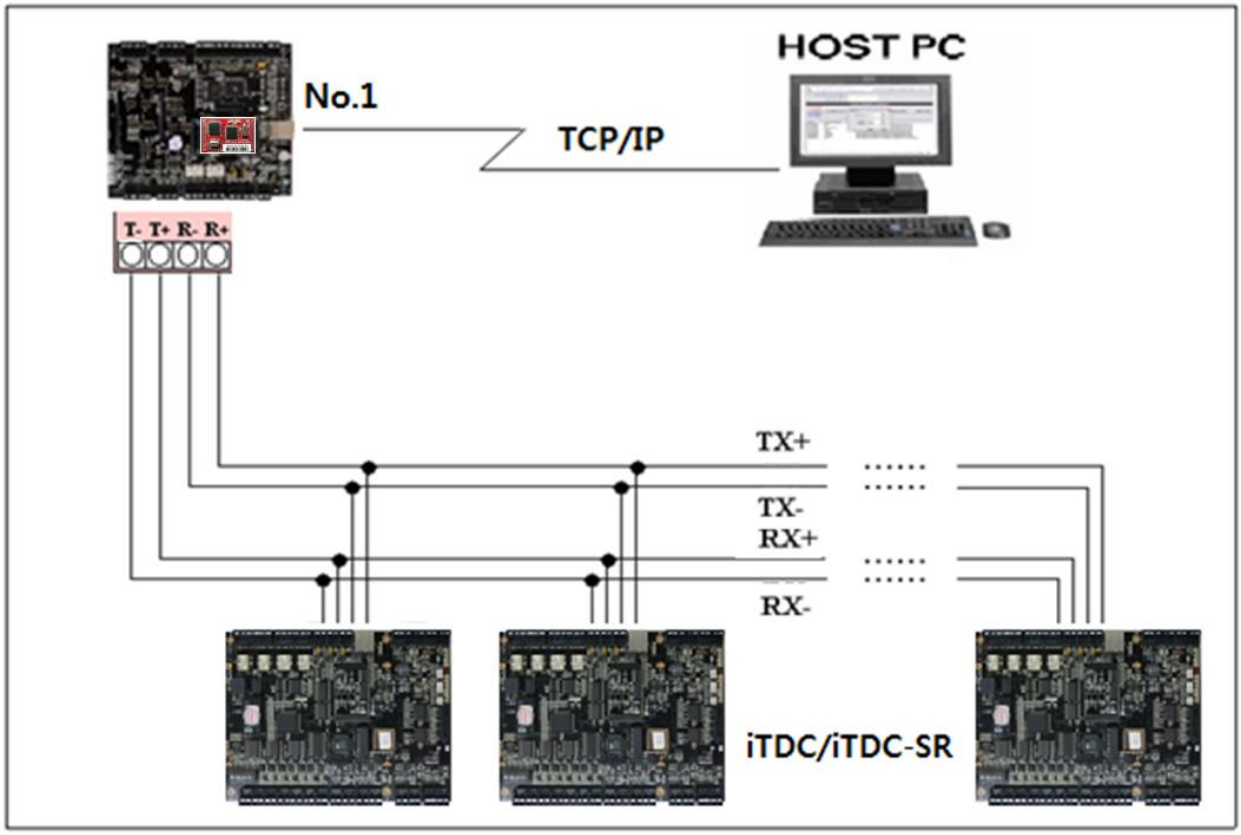


Figure: Bypass communication

Second, you have to connect all RS422 port of iTDC/iTDC-SR in parallel except iTDC/iTDC-SR. (No.1, TCP/IP communication).
- Connect RS422-TX(-) of iTDC/iTDC-SR to RS422-TX(-) of another iTDC/iTDC-SR.
- Connect RS422-TX(+) of iTDC/iTDC-SR to RS422-TX(+) of another iTDC/iTDC-SR.
- Connect RS422-RX(-) of iTDC/iTDC-SR to RS422-RX(-) of another iTDC/iTDC-SR.
- Connect RS422-RX(+) of iTDC/iTDC-SR to RS422-RX(+) of another iTDC/iTDC-SR.

8. PRODUCT MANUAL DOWNLOAD INFORMATION

This Quick Installation Guide is a manual to provide product's basic installation information only. If you need all the information of the product, please download detailed manual following the steps specified below.

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The specifications contained in this manual are subject to change without notice at any time.

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