

M2I Corporation



Industrial HMI Touch Panel TOPRT40-Ex Series

Hardware Manual

Thank you for purchasing the industrial HMI touch panel series of M2I corporation.
Please read this manual carefully to know installing, wiring, operating this equipment for safe use of this product.





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Chapter 1 Safety Precautions









■ Before using the product

To use the product safely and effectively, please read the contents of this manual thoroughly before use. Please keep to the safety precaution, for it is to prevent accidents and potential danger from occurring. Safety precaution is classified into 'Warning' and 'Caution' and their meanings are as follows. Also, the indicated illustrations on the product and in the manual have the following meanings.







 Warning	Violating the instruction may result in serious personal injury or death
 Caution	Violating the instruction may result in slight personal injury or product damage
	Be cautious, for danger may be present
	Be cautious, for there is a possibility of an electric shock

■ Explosion proof(Ex) Precautions **Warning**




THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C AND D OR NON-HAZARDOUS LOCATIONS ONLY.

-  Do not open the product when explosive gas is around.
-  Do not open, maintain or service in an area where an explosive atmosphere.
-  Do not change SD Card when the power is connected to product.
-  All cables connected with the product should not be connected or disconnected when the power of product is on.
-  EXPLOSION HAZARD - DO NOT DISCONNECT OR CHANGE BATTERY UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS. or equivalent.
-  RISQUE D'EXPLOSION. NE PAS BRANCHER NI DEBRANCHER SOUS TENSION.
-  LES BATTERIES NE DOIVENT ETRE REMPLACEES QUE DANS UN EMPLACEMENT EXEMPT DE CONCENTRATIONS
-  Touch the device after wiping the front panel with a damp cloth or wearing anti-static gloves, to avoid the electrostatic charges.

■ General Precautions **Caution**

-  Do not press the screen with a hard or sharp object (awl, screwdriver, pen) with too strong a force. It may cause malfunction of touch due to damage of the front sheet.
-  Do not use or store in an environment with high vibration.
-  Do not allow foreign objects such as water, liquids, or metal powders to enter the product. This may cause breakage or electric shock.
-  Use the radio or mobile phone at least 30cm away from the main unit.
-  Two or fewer bright spots may appear on the LCD screen, and certain areas may appear brighter, but this is not a defect in LCD characteristics.
-  Do not store or operate in direct sunlight. Direct sunlight can change the properties of the LCD.

■ Specific Condition of Use

-  The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC/EN 60664-1.
-  Equipment shall be installed in a back enclosure with tool removable door or cover that provides a degree of protection not less than IP 54 in accordance with IEC/EN 60079-0.
-  The equipment shall only be installed in locations where there is a low risk of mechanical damage.

- ⊘ External connections to the equipment, including the front USB port must not be inserted or removed unless either the area in which the equipment is installed is known to be non-hazardous, or the circuits connected have been de-energized.
- ⊘ External connections to the equipment must be secured using the mechanical securing devices provided adjacent to connection to prevent unintentional separation.
- ⊘ Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 140%.

■ Design Precautions Warning

Install protection circuit on the outside of Products to protect the entire control system when external power supply or Products have problems.

- ⚠ As the malfunction & incorrect result of Products could damage the stability of the entire systems and human body, you must install damage preventing interlock circuit such as emergency stop, Protective circuits, positioning upper and lower limit switch and interlock for forward/reverse operation.
- ⚠ When computer or other controllers communicate and exchange data with products or change operation mode of products, set up protective sequence program in PC or Controller for protecting system from communication error.
- ⚠ The output signal or communication lines should be separated from the power line or high-tension wire. They should be installed 100mm (3.94 Inch) or more from each other.

■ Wiring Precautions Warning

- ⚠ Be sure the wiring is done correctly by checking the product's rated voltage and the terminal layout. Incorrect wiring could result in fire, damage or malfunctions.
 - ⚠ Tighten the terminal screw with the specified torque. If the screws of terminal are loose, it could result in short circuit, fire, malfunctions.
- FG Terminal must be used a dedicated ground. Not doing so could result in malfunctions.
- ⚠ a. Grounding should be the Class 3 grounding. The cable for grounding should be more than 2mm².
 - ⚠ b. grounding point be closed to the products and make short the distance to the ground cable if possible.

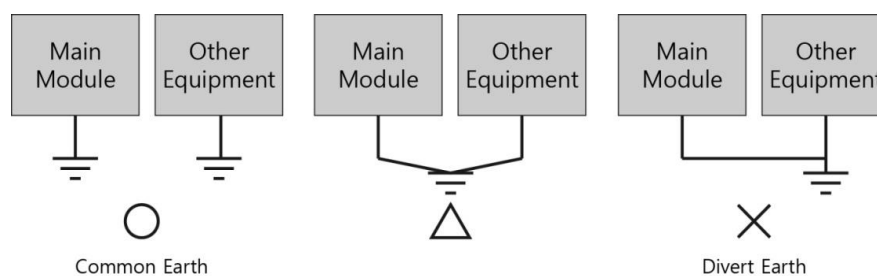


Fig. Grounding Example Diagram

■ Installation Precautions

- ⊘ Do not install the location which exceeds allowed temperature. Product can be damaged or shorten the life. Especially Install environment as below should be avoided.
- ⊘ Do not Install product to the place which the ambient temperature is out of limits, from -10°C to 50°C or on the surface of control board which high pressure equipment is installed.
- ⊘ Do not install to the place where strong shock or vibration continuously have impacted on product.
- ⊘ Use the product under 2000M altitude.

■ Disposal Precaution  **Caution**

When you dispose of product and battery, please treat it as industrial waste. It can create poisonous substances or explosion.

■ Cell Type Battery Specification

Mounted on mainboard Battery is not replaced by the user. If the battery has run out of service, please contact our Customer Support Center for replacement and inspection.

Item	Content
Battery Voltage	DC 2.3V, 7.7mAh
Battery Model	CTL920F (lithium Rechargeable / non-exchangeable)
Battery Lifetime	Permanent (In case of ambient temperature 25°C)

* The specifications are subject to change depending on the model.

■ All field-wiring connections to this unit shall be from Limited Voltage / Limited Current, below 20 ~ 28Vdc isolated secondary source with an output fuse, or Class 2 secondary circuits.

Chapter 2 Overview

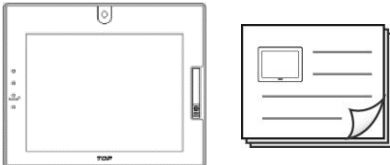


2.1 Introduction of Products

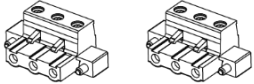
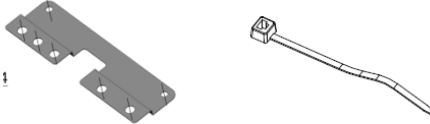
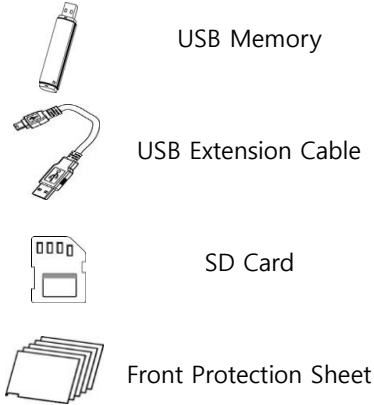
This industrial HMI touch panel is an industrial control device required in industrial field. It is a device based on RS-232C and RS-422/485, Ethernet which is used for the basic purpose of communication with another device (PLC).

2.2 Package Contents

The components of the product are as follows.

Before using the product, please check that all of the following components are included.

Item	Figure	Quantity
Product and User Manual		1 Each
Gasket		1
Mounting Clamp		10

Power Connector and COM3 communication connector		1 Each
USB Cable Clamp Cable Tie		1 Each
Accessories (Sold separate)	 <p>USB Memory</p> <p>USB Extension Cable</p> <p>SD Card</p> <p>Front Protection Sheet</p>	User Option

2.3 Explanation of Model name

TOPR	T	□□	□□	□	□	-Ex	□□□
Series	Type	Screen	Option	Resolution	Power	-	Reserve
	P: Process	08: 8.4"	10: TOPRP10D + TOPRD **10*	Q: QVGA(320*240)	D: DC	Ex:: Explosion proof or special model	Customer option: No relate to Explosion proof. Can be states as Alphabet, Digits, or blank space.
	D: Display	10: 10.4"	20: TOPRP10D + TOPRD **20*	V: VGA(640*480)	A: AC	Blank: Non- explosion proof or general model	
	T: P + D	12: 12.1"	30: TOPRP10D + TOPRD **30*	S: SVGA(800*600)			
		15: 15"	40: Premium	X: XGA(1024*768)			

Chapter 3 General Specifications

3.1 Electrical Specifications

Part	Specifications	
Rated voltage	DC 24V, Class 2	
Input Voltage Range	DC 20~28V, Class 2	
Power Consumption	TOPRT1040SD-Ex	15W
	TOPRT1540XD-Ex	25W
Voltage endurance	DC 24V, within 10ms	
Insulation Resistance	500V DC, 10 MΩ	

3.2 Display Specifications

Part	Specifications
Color	16M Color
Brightness Level	10 Levels(by software)
Backlight Type	LED
Backlight Life	50,000 or more
Display Font	MS Windows Vector font possible Image font
Front LED Indicate	Built in

3.3 Touch Specifications

Part	Specifications
Touch Type	Built-in, Analog resistive touch sensor

3.4 Sub Function Specifications

Part	Specifications
Front Camera	Built-in, Resolution: VGA(640*480)
Proximity Sensor	Built-in, Sensing Distance 0.7M
Illuminance Sensor	Built-in, Automatic control by 10 levels
IrDA	Built-in, Sensing Distance 0.7M, communicate with dedicated devices

3.5 Memory Specifications

Part	Specifications
Screen Memory	128MB
Backup Memory	512KB: System buffer(10K Word),Including Alarm/Log/Recipe
Backup Period	Permanent
Real Time Clock	Built in(by Battery)

3.6 Environment Specifications

Part	Specifications
Operation Temperature(°C)	-10 ~ +50
Storage Temperature(°C)	-20 ~ +60
Operation Humidity(%RH)	0 ~ 90 (No dew)
Atmosphere	No corrosive gas
Vibration Endurance	Amplitude: 10≤F < 25Hz(2G) X, Y, Z each direction(for 30 minutes)

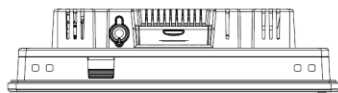
Noise Immunity	1000Vp-p(Pulse width 1 μ s)
Electrostatic Discharge	Connective discharge from EN61000-4-2: \pm 4kV
Shock Endurance	10G X,Y,Z each direction(for 3 times)
Withstand	500V(Line-Line)
Ground Connection	Class 3(Under 100 Ω)
Protection Classification	Front IP54

3.7 Structure Specifications

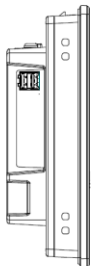
	TOPRT1040SD-Ex	TOPRT1540XD-Ex
Weight (Kg)	2.7	5.2
Cooling System	Natural air circulation	
Case Material	Aluminum	

Chapter 4 Parts Identification and Specifications

4.1 TOPRT1040SD-Ex



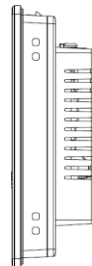
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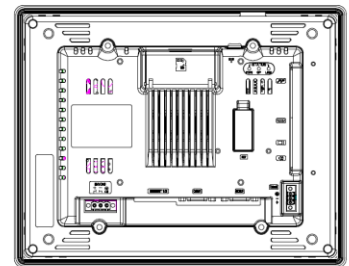
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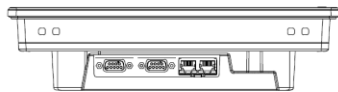
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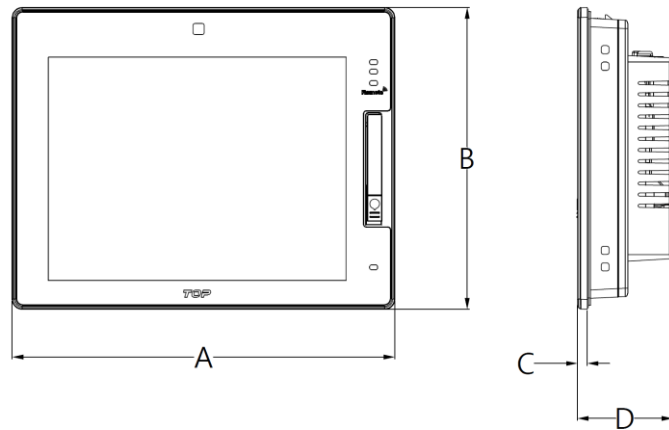


< Rear >



< Bottom >

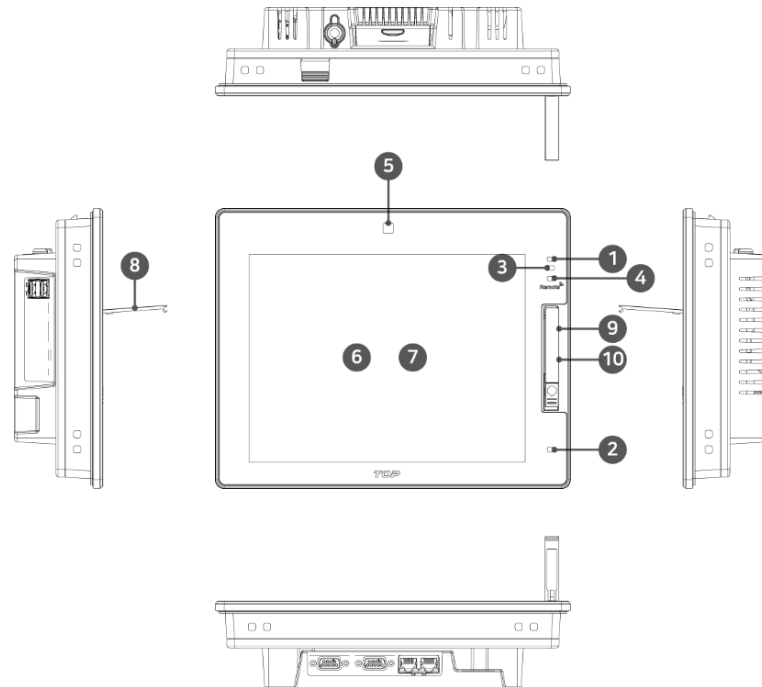
4.1.1 External Dimension



(mm)

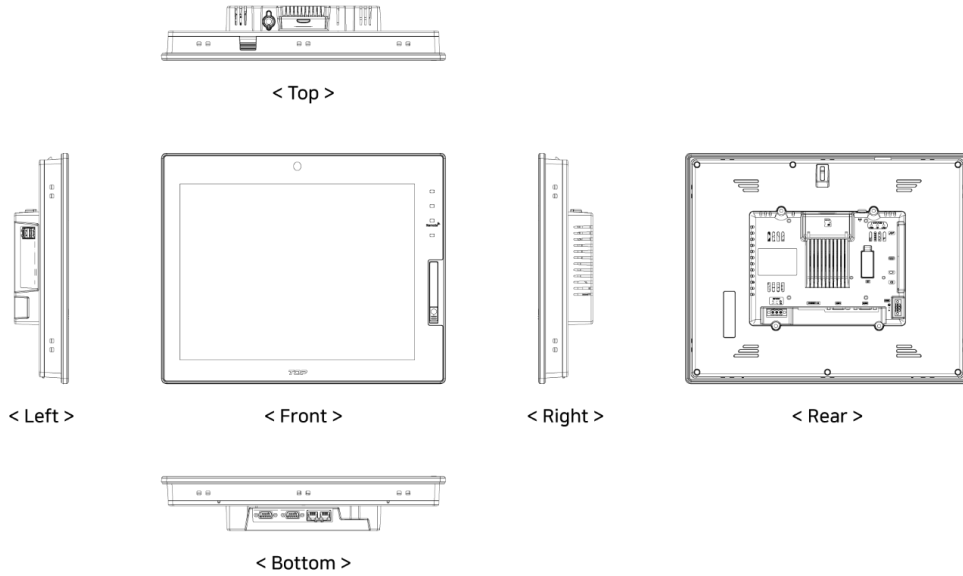
Model	A	B	C	D
TOPRT1040SD-Ex	275	217	7	68

4.1.2 Front Part Names and Specifications

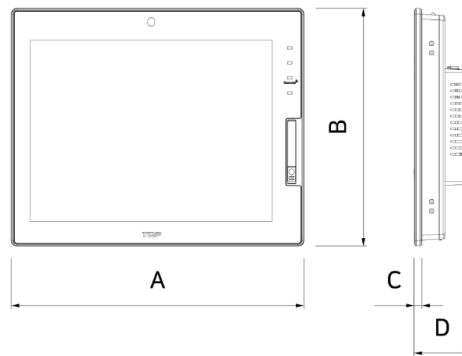


No	Part	Description
①	Power LED	System power status LED
②	Proximity Sensor	Automatically backlight ON/OFF by sensing object coming
③	Illuminance Sensor	Automatic brightness change by ambient illumination
④	IrDA Sensor	Communication device for dedicated product
⑤	Camera	Resolution: VGA(640*480)
⑥	LCD Panel	TFT 16M Color LCD
⑦	Touch Panel	Analog resistive touch sensor
⑧	USB Cover	Front USB cover
⑨	USB OTG	Project file upload/download (*Internal program managing purpose)
⑩	USB HOST	USB Connector, 5V/0.5A output

4.2 TOPRT1540XD-Ex



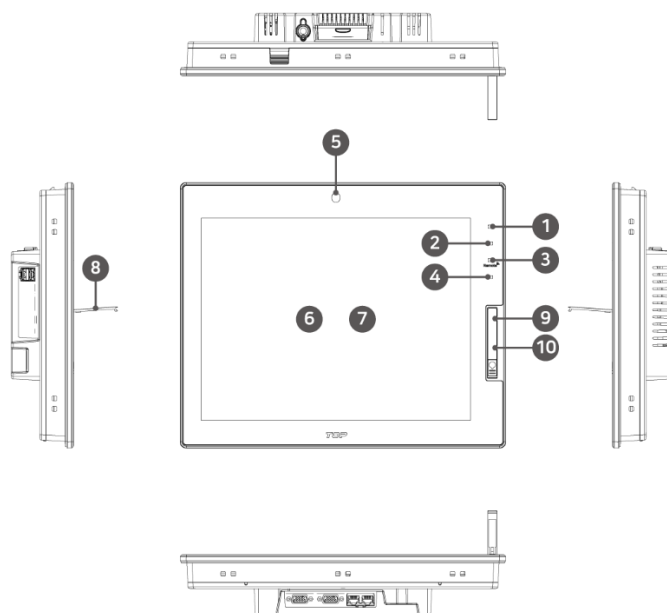
4.2.1 External Dimension



(mm)

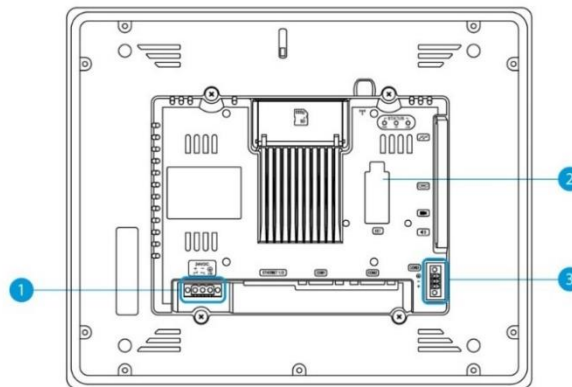
Model	A	B	C	D
TOPRT1540XD-Ex	370	301	7	71

4.2.2 Front Part Names and Specifications



No	Part	Description
①	Power LED	System power status LED
②	Illuminance Sensor	Automatic brightness change by ambient illumination
③	IrDA Sensor	Communication device for dedicated product
④	Proximity Sensor	Automatically backlight ON/OFF by sensing object coming
⑤	Camera	Resolution: VGA(640*480)
⑥	LCD Panel	TFT 16M Color LCD
⑦	Touch Panel	Analog resistive touch sensor
⑧	USB Cover	Front USB cover
⑨	USB OTG	Project file upload/download (*Internal program managing purpose)
⑩	USB HOST	USB Connector, 5V/0.5A output

4.3 Rear Part Names and Specifications (Common)



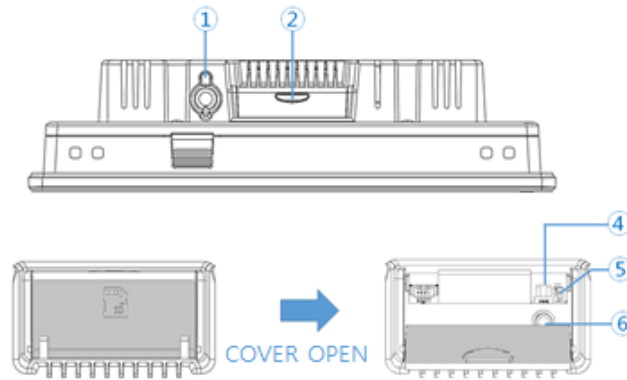
No.	Part	Form	Description
①	Power Connector	TB 5mm 3P	Power Supply for Product (DC 20~28V)
②	Extension Connector	-	Open the cover and insert an extension module
③	COM3 Connector	TB 3.5mm 3P	RS-485 Serial Communication Connector

4.4 Side Part Names and Specifications (Common)



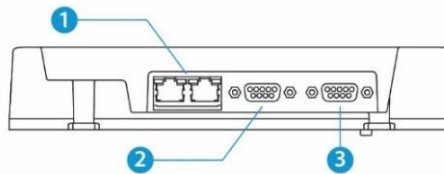
No.	Part	Form	Description
①	USB HOST	A Type x 2ch	Connector for option for USB storage. 5V/0.5A limit

4.5 Top Part Names and Specifications (Common)



No.	Part	Form	Description
①	External antenna connector	-	No Use
②	Cover	Plastic Cover	Reset Switch, Mode Switch included
④	Cover Sensor	Photo coupler	Sensing Open/Close status of the cover
⑤	Mode Switch	DIP Switch 2P	Set Up System Mode
⑥	Reset Switch	Tact Switch	System reset Switch

4.6 Bottom Part Names and Specifications (Common)



No.	Part	Form	Description
①	Ethernet Connector	RJ45 x 2ch	10Base-T/100Base-T/1000base-T, Auto-MDIX
②	Serial COM1	DSUB 9	RS-232C/422/485 communication port (Switchable the Comm. Software select)
③	Serial COM2	DSUB 9	RS-232C/422/485 communication port (Switchable the Comm. Software select)

Chapter 5 External Device Interface

In order for the main unit to communicate with an external device, please check below contents.

5.1 Serial Communication Specifications

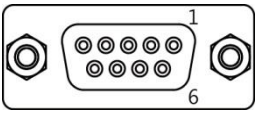
5.1.1 RS-232C

Items		Contents
Protocol		Full Duplex
Synch		Asynchronous
Communication Distance		About 15m
Type of Connection		1:1
Control Code		ASCII Code or HEXA Code
Transmission Speed		2400, 4800, 9600, 19200, 38400, 57600, 76800, 115200bps
Data Type	Data Bit	7, 8bit
	Parity Bit	NONE, ODD, EVEN Parity
	Stop Bit	1, 2bit
Connector		DSUB 9pin

5.1.2 RS-422/485

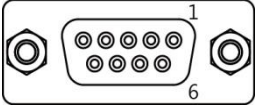
Items		Contents
Protocol		Full Duplex / Half Duplex
Synch		Asynchronous
Communication Distance		About 500m
Type of Connection		1:N (N≤31)
Control Code		ASCII Code or HEXA Code
Transmission Speed		2400, 4800, 9600, 19200, 38400, 57600, 76800, 115200bps
Data Type	Data Bit	7, 8bit
	Parity Bit	NONE, ODD, EVEN Parity
	Stop Bit	1, 2bit
Connector		DSUB 9pin

5.1.3 COM1 Connector pin number and Signal name


Type	Pin No.	Signal	Direction	Meaning
9Pin Female 	1	RDA(RD+)	Input	RS-422/485Data Receive(+)
	2	RD(RxD)	Input	RS-232C Data Receive
	3	SD(TxD)	Output	RS-232C Data Send
	4	RDB(RD-)	Input	RS-422/485Data Receive(-)
	5	SG	-	Signal Ground
	6	SDA(SD+)	Output	RS-422/485Data Send(+)
	7	Power ^{*1)}	-	+5V, 0.2A
	8	N.C	-	N.C
	9	SDB(SD-)	Output	RS-422/485Data Send(-)

^{*1)} If VCC is required for an external device, connect pin 7(+ 5.0V) and pin 5. (* 0.2A output)

5.1.4 COM2 Connector pin number and Signal name

Type	Pin No.	Signal	Direction	Meaning
 <p>9Pin Female</p>	1	RDA(RD+)	Input	RS-422/485 Data Receive(+)
	2	RD(RxD)	Input	RS-232C Data Receive
	3	SD(TxD)	Output	RS-232C Data Send
	4	RDB(RD-)	Input	RS-422/485 Data Receive(-)
	5	SG	-	Signal Ground
	6	SDA(SD+)	Output	RS-422/485 Data Send(+)
	7	RTS	Output	RS-232C Send Request Signal
	8	CTS	Input	RS-232C Send Available Signal
	9	SDB(SD-)	Output	RS-422/485 Data Send(-)

5.1.5 COM3 Connector pin number and Signal name

Type	Pin No.	Signal	Direction	Meaning
	1	D+	I/O	RS-485 Data (+)
	2	D-	I/O	RS-485 Data (-)
	3	SG	-	Signal Ground

* Be sure to connect the RD and SD to the RS-232C communication line by crossing each other with a Twisted Pair Cable. Please connect SG directly.

* RS-422/485 communication line must use RDA and RDB as Twisted Pair Cable, SDA and SDB as Twisted Pair Cable.

5.2 Ethernet Communication Specifications

5.2.1 Ethernet

Item	Description
Ethernet Method	IEEE802.3i/IEEE802.3u/IEEE802.3ab, 10BaseT/100BaseT/1000baseT
Speed	10M / 100M / 1000M bps
Communication Method	Base Band
Switching Method	AUTO MDIX
Maximum Segment Length	100M (Hub between products)
Communication Cable	UTP (Unshielded Twisted Pair)
Modular Jack	RJ45 x 2ch

5.2.2 RJ-45 Pin Layout

Type	Pin No.	Color	10M/100MHz	1GHz
	1	Orange/White	TD+	BI_DA+
	2	Orange	TD-	BI_DA-
	3	Green/White	RD+	BI_DB+
	4	Blue	Unused	BI_DC+
	5	Blue/White	Unused	BI_DC-
	6	Green	RD-	BI_DB-
	7	Brown/White	Unused	BI_DD+
	8	Brown	Unused	BI_DD-

* When HUB is used, Straight cable should be used.

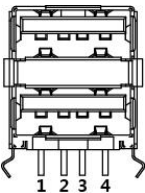
Ex) Straight Cable Wiring: Connect 1:1 according to the wiring diagram above.

* In case of connected directly without HUB, Cross Cable should be used.

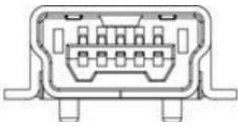
Ex) Cross Cable Wiring: In the above wiring diagram, TD+ and RD+ are changed, and TD- and RD- are exchanged.

5.3 USB Communication Specifications

5.3.1 USB Host

Type	Items	Specifications
	USB Interface	EHCI/OHCI Specification Version 1.0, USB3.0/2.0/1.1 Compatible
	Communication Method	Control/Bulk
	Transfer Speed	Max. 5Gb/s
	Support Device	USB Storage (FAT16/FAT32 Format Available)
	Connector Type	Type A(2ch)

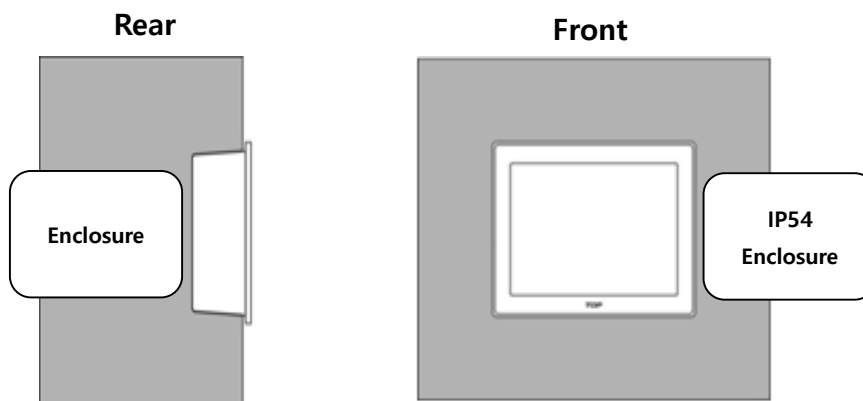
5.3.2 USB Device

Type	Items	Specifications
	USB Interface	USB 2.0
	Communication Method	Interrupt/Bulk/Isochronous
	Transfer Speed	Max. 480Mb/s
	Supported OS	Windows 98SE/2000/XP/VISTA/7/10(32/64bit)
	Cable Length	M2I manufacturer's cable is recommended (3M), and 1.5M or less when purchased separately.
	Connector Type	USB Mini B, Female
	Connection Method	Through USB Connector on Front Side

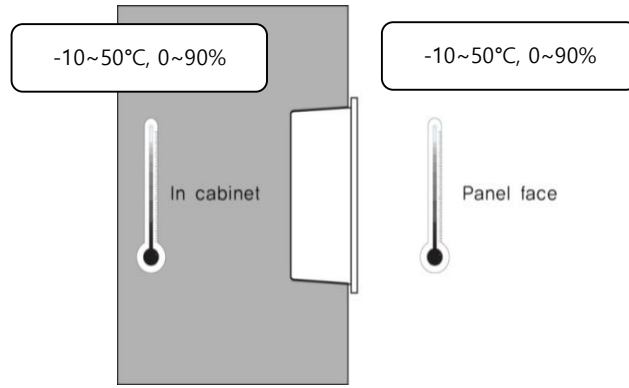
Chapter 6 Installation Warning

6.1 Installation Requirement

- (1) It should be installed within $-10 \sim 50^{\circ}\text{C}$ and 10 ~ 80% relative-humidity, otherwise the screen may be changed or cause malfunction and damage.
- (2) The degrees of protection should be made sure IP54 of Front.
- (3) Be sure that heat from surrounding equipment does not cause product to exceed its standard operating temperature.



- (4) In order to minimize external mechanical hazards for maintaining Explosion proof performance, please control the mechanical hazards of the surrounding environment.

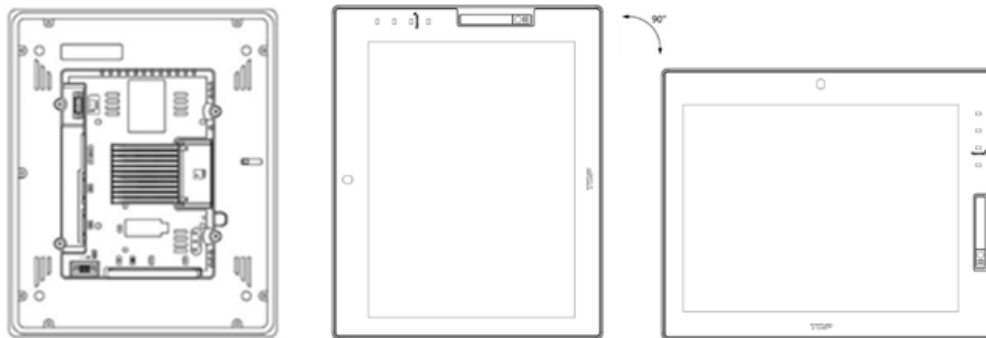


6.2 Installation Procedure  Warning

Please follow to below instructions to install the product.

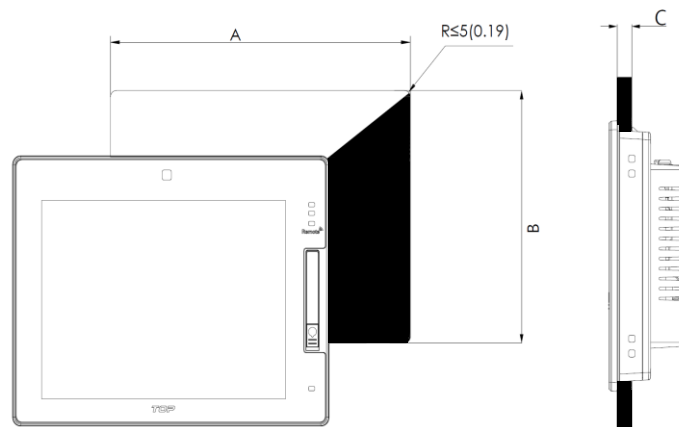
6.2.1 Direction

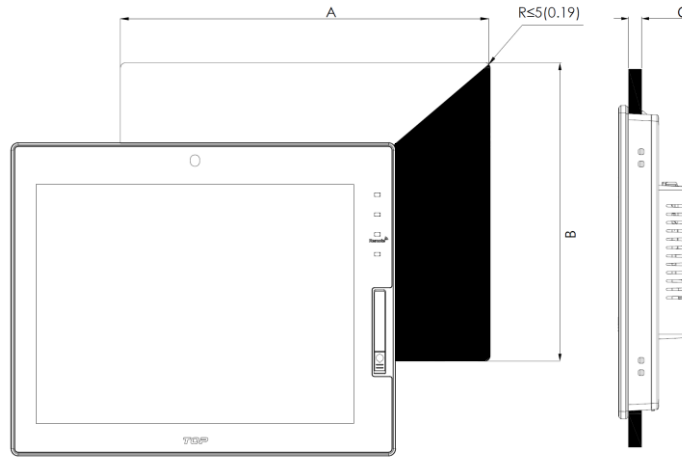
It is recommended that the power connector at the rear is located at the top for vertical installation.



6.2.2 Panel Cut-out

Make a panel cut which product is mounted and insert the TOPR to the panel from the front side. Making the Panel Cut (Mounting Size) per each model as below Table, Before Installation.





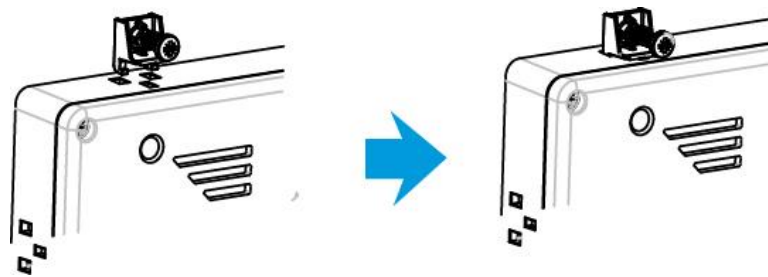
Model	A	B	C
TOPRT1040SD-Ex	260(+1.0/0)	202(+1.0/0)	1.6~5.0(+1.0)
TOPRT1540XD-Ex	355(+1.0/0)	286(+1.0/0)	1.6~5.0(+1.0)

(mm)

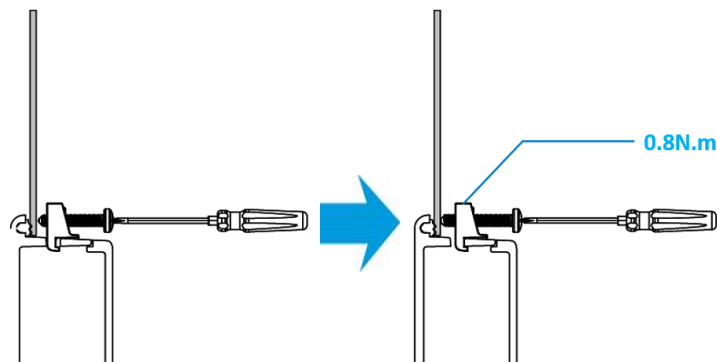
6.2.3 Fixation  Warning

Installation methods should be following by using the supplied installation clamps for IP performance.

(1) Insert the clamp into the slot of the product.



(2) Screw the unit into the panel cut with a screwdriver.



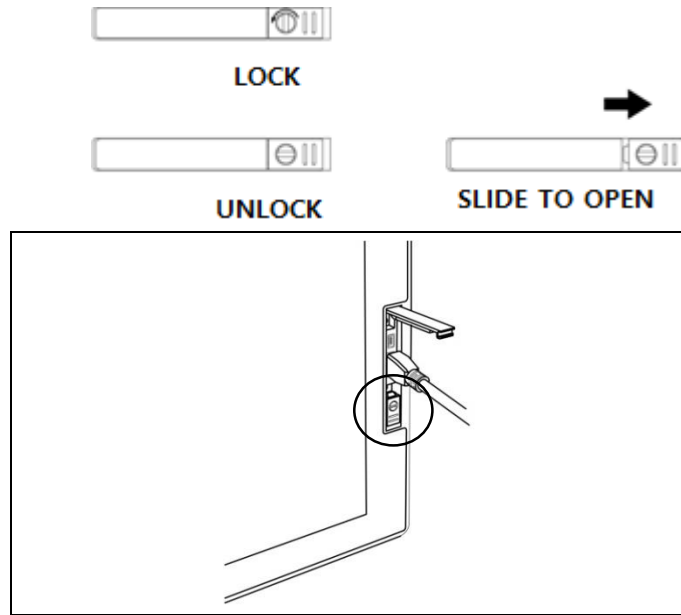
Note: If the clamping screw below is over-tightened, the touch sensor may stop working or malfunction. Tighten to 0.8N.m screwdriver torque.

Caution: IP performance cannot be secured if the clamp is not tightened with a tightening force of 0.8N.m.

6.3 Front USB

6.3.1 Front USB Cover Open/Close

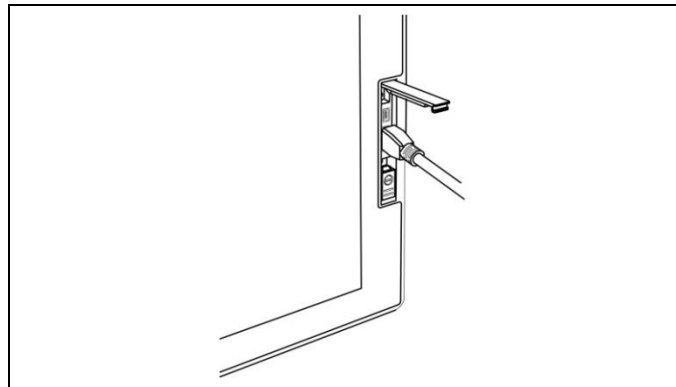
Turn left or right the locking screw on the USB cover.



6.3.2 Data Upload and Download Warning

You can download or Upload Project file data through USB interface.


※ Do not use USB in explosive circumstances. There can be an explosion during operation.

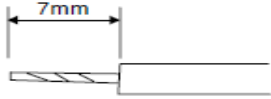


Chapter 7 Wiring Warning

7.1 Power Cable Wiring Warning

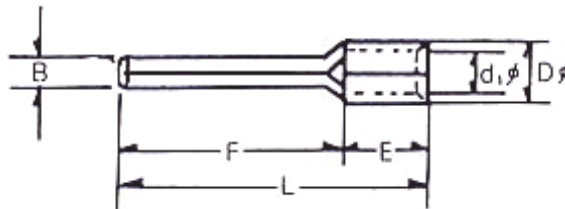
(1) The power and ground cable should have the following specification.

Power Cable Specification	0.75 ~ 2.5mm ² (18~12AWG)
F.G Cable Specification	2mm ² (14AWG)
Conductor type	Simple or Stranded wire
Bolt torque	≥ 0.6N.m  Warning

Conductor length	
Temperature rating of the field installed conductors	65°C or under

(2) The power and ground terminal to be following specifications. **⚠ Caution**

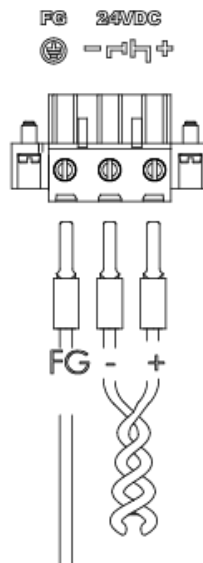
Caution: The use of the Pin Terminal(ferrule) when installing the power supply and ground terminal is important for maintaining the performance of the device. Failure to install power and ground using the same Pin Terminal(ferrule) as below may cause explosion due to spark due to abnormal cable loss. Therefore, please be sure to familiarize yourself with how to use Pin Terminal(ferrule) below.



(mm)

B	L	F	E	D	d
1.8~2.0	14~22	8~14	5	3.3~3.8	2~2.5

(3) Wiring of power cable is as follows. **⚠ Warning**



7.2 Ground Cable Wiring **⚠ Warning**

(1) The product has enough anti-noise measure, so except that there are many noises. Especially, the ground is not needed. When doing ground, please refer to the followings.

(2) The ground should be the exclusive ground. The ground should be type class 3 ground (ground resistor is less than 100Ω)

(3) When not doing the exclusive ground, do common ground like below image.

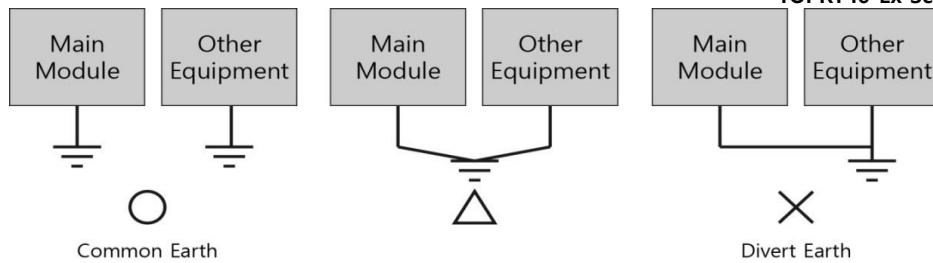


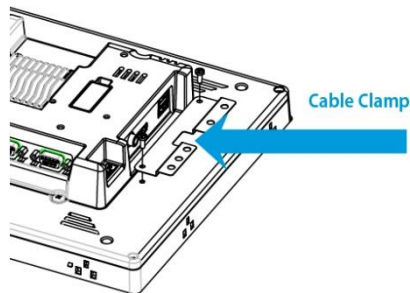
Fig. Grounding Example Diagram

(4) Use the cable width more than 2mm^2 . Put the point of the ground near product and shorten Ground line.

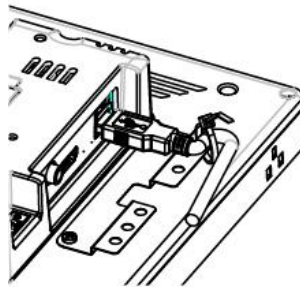
7.3 Cable Clamp Installation Caution

CAUTION: If you use an extension cable on the USB terminal block, install the cable clamp to prevent the USB connection from being disconnected or sparking because the cable is disconnected.

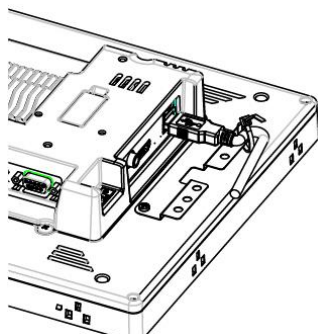
(1) Place cable clamp at the screw hole on Rear of the product and turn the screw to fix it.



(2) Pass the band through hole of cable clamp.



(3) Tighten the band of clamp sufficiently and check that the cable is not pulled out by external force.



Chapter 8 Maintenance Warning

8.1 Cleaning of a Display

When the surface or frame of the display become dirty, spray the cleaning solution onto a soft cloth and wipe the device. Do not spray the cleaning solution directly onto the device.

8.2 Periodic Check Points

Check the followings periodically for the best condition of the device.

(1) Environment

- Is the operating temperature within the allowable range(-10~50°C)?
- Is the operating humidity within the allowable range(0~90%RH)?
- Is the Surrounding pollution no corrosive gas?

(2) Power

- Is the input voltage within the change range($\pm 15\%$)?

(3) Related Items

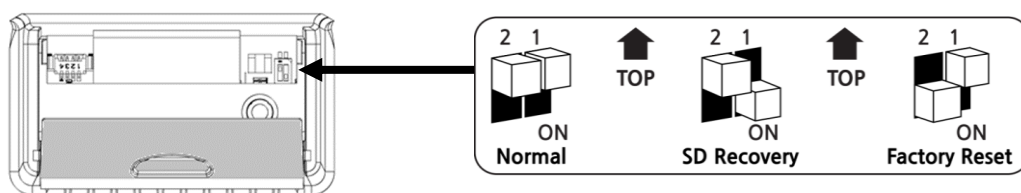
- Check the battery when is exchanged and voltage drop is indicated.
- Check the guarantee duration of LCD Backlight by eye.
- Check the touch pad there is no damage, scratch or pollution by eye.

8.3 Problems with the Device Warning

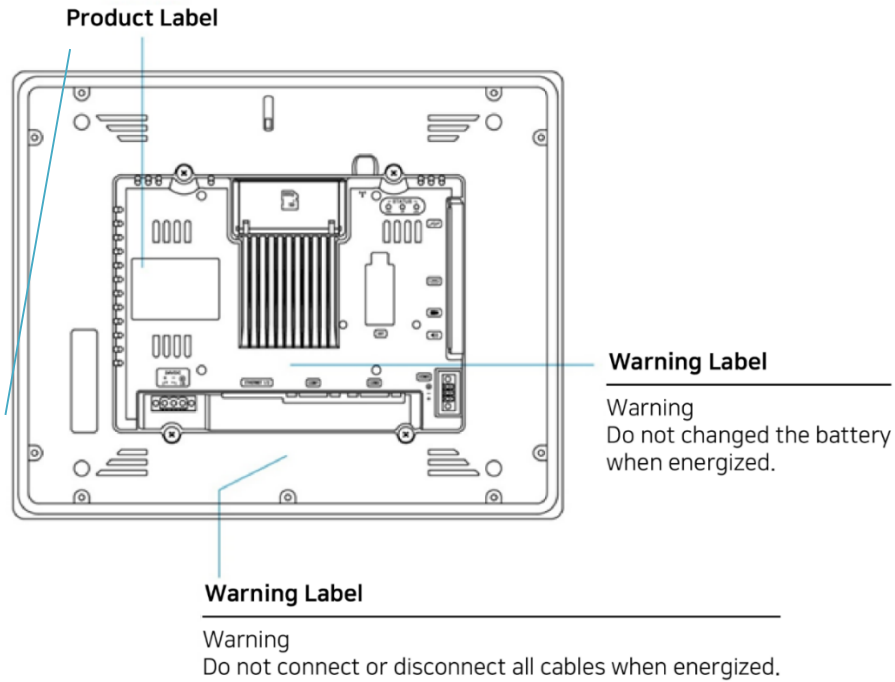
- If there is a problem during operation, stop using it and contact the A/S department of M2I Corporation, which is indicated on the product label.
- Only the authorized worker from M2I Corporation can check and repair problems related to malfunction of the machine.
- If the problem cannot be solved at the installation site, the equipment can be collected and moved to M2I Corporation.
- The manufacturer, M2I Corporation, is not responsible for damage or malfunction of the equipment caused by the use conditions of the user beyond the installation and use standards described in the manual.
- If there is a high electromagnetic noise, put ferrite core on main power cable and field cable.
- The noise of power cable and communication cables can be high under the installation circumstances.

8.4 Setting System Recovery Mode








- If the system fails to boot normally due to a problem during operation, the built-in recovery function can be used to maintain the factory default state. Please note that the built-in project will be deleted when using the recovery mode.
- After opening the rear cover, you can adjust the setting switch. Keep the "Normal" state when booting normally. If the system is recovering, turn off the power and set it to "Factory Reset".
- When the recovery is completed, the buzzer sounds, then turn off the power and reset to "Normal" state.



Chapter 9 Warning Label



Chapter 10 Product Label

Manufacturer	→	M2i Corporation 工业操作终端	Service & Support www.m2i.co.kr
*1) Model	→	TOPRT1040SD-Ex	M2i Bldg, Simin-daero 327, Anyang-si, 14055
*2) Power	→	IN(输入): 20~28V \equiv class2, 15W	Made In Korea
Battery	→	Inside Cell(内部电池): CTL920F	韩国制造
Operation Temp.	→	S / N (产品系列号): - Tamb (使用温度): $-10^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	V1 <input type="checkbox"/>
Warning	→	Ingress Protection(入口保护): IP54(Front/正面) ⚠ If you need change the inside battery please contact the A/S center ⚠ For use on a flat surface of a Type 1 Enclosure WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD ⚠ SEE INSTRUCTIONS	  
**Certificates Protect Grade	→	 EXXXXX PROG. CNTLR. Class I Division 2 Group A,B,C,D T6 Haz.Loc  Ex ec IIC T6 XXXXXXXXXXXXXXXX	 IIG Ex ic ec IIC T6 Gc IECEx XXXXXXXX  Ex ec IIC T6 Gc

*1) Model name can be changed by each model.

*2) The power consumption can be changed by each model.

** Certificates or protection grade can be changed by each model.

10.1 Model Name and Power Specifications

- TOPRT1040SD-Ex: 20~28Vdc, 15W, Class 2
- TOPRT1540XD-Ex: 20~28Vdc, 25W, Class 2

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www.m2i.co.kr

Document No: TOPRT-D0009 Rev.0

- When using M2I equipment, thoroughly read this datasheet and associated manuals introduced in this datasheet, also pay careful attention to safety and handle the module properly.
- Store this datasheet in a safe place so that you can take it out read it whenever necessary.