



알루미늄 분리형 본체에 멀티미디어를 제공하는 시리즈  
프리미엄/스탠다드/방죽 모델

SMART X HMI



INTERFACE

SERIAL 3 PORTS | ETHERNET 2 CHANNEL | USB HOST 2 PORTS | USB OTG | SD CARD  
OPTION MODULE | WIFI | CAMERA | HDMI OUT | AUDIO OUT | VIDEO IN

\* 멀티미디어 기능은 프리미엄 모델만 제공됩니다.

CERTIFICATION



기본 인증

방죽 모델 추가 인증



QUAD CORE CPU

빠른 처리 속도를 지원하는 쿼드 코어 CPU 채택



16M FULL COLOR

밝고 선명한 풀컬러, 벡터 이미지 라이브러리 지원



알루미늄 프레임

강력한 내구성과 고급스러운 디자인을 갖춘  
알루미늄 본체



분리형 본체

다양한 사이즈의 디스플레이부와 필요 사양에 따라  
선택 가능한 프로세서부의 효율적인 제품 조합



이더넷 2 채널 제공

서로 다른 IP를 가진 기기용 네트워크 지원



전면 OTG USB

프로그램을 전송할 수 있는 전송 모드와  
USB 장치(메모리, 바코드 리더, 카메라 등)를  
장치할 수 있는 HOST 모드로 전환 가능



T6 온도 등급 방죽 인증

KCs(한국), CCC(중국) 방죽 인증 획득



멀티미디어 기능 제공(프리미엄 모델)

전면 카메라, 오디오 출력, 비디오 입력,  
HDMI 출력



전면 근접/조도 센서 제공(프리미엄 모델)

작업자의 거리에 따라 절전 모드와 운전 모드로  
전환이 가능한 근접 센서  
주변 환경의 밝기를 감지하여 화면의 밝기를  
조정하는 조도 센서

디스플레이부

Functional	TOPRD1520X	TOPRD1220X	TOPRD1020S
Display Type	15" TFT Color	12.1" TFT Color	10.4" TFT Color
Color	16M Color	16M Color	16M Color
Resolution	304 x 232 (1) 1024 x 768	240 x 184 (S) 1024 x 768	211.2 x 158.4 800 x 600
Backlight Type	LED	LED	LED
Backlight Life	50,000 hours	50,000 hours	50,000 hours
Touch Type	Resistive Touch Panel	Resistive Touch Panel	Resistive Touch Panel
Touch Life	1 million times or more	1 million times or more	1 million times or more
Touch Life	1 million times or more	1 million times or more	1 million times or more
Structure	254 x 238 170 x 301 x 39.7 (1.6)	204 x 217 126 x 171 x 24.4	160 x 202 176 x 219.5 x 32.6 (1.0)

프리미엄 모델

디스플레이부

Functional	TOPRD1510X	TOPRD1210S	TOPRD1010S
Display Type	15" TFT Color	12.1" TFT Color	10.4" TFT Color
Color	16M Color	16M Color	16M Color
Resolution	304 x 232 (1) 1024 x 768	240 x 184 (S) 1024 x 768	211.2 x 158.4 800 x 600
Backlight Type	LED	LED	LED
Backlight Life	50,000 hours	50,000 hours	50,000 hours
Touch Type	Resistive Touch Panel	Resistive Touch Panel	Resistive Touch Panel
Touch Life	1 million times or more	1 million times or more	1 million times or more
Touch Life	1 million times or more	1 million times or more	1 million times or more
Structure	254 x 238 170 x 301 x 39.7 (1.6)	204 x 217 126 x 171 x 24.4	160 x 202 176 x 219.5 x 32.6 (1.0)

스탠다드 모델

프로세서부

Functional	TOPRP200
Serial (COM)	RS-232C, RS-422/485 Asynchronous, +5Vdc PWR Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: D5UB 9pin x 1
Serial (COM2)	RS-232C, RS-422/485 Asynchronous, +5Vdc PWR Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: D5UB 9pin x 1
Serial (COM3)	RS-485 Asynchronous Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: 3.5mm 3pin x 1
Ethernet	10/100/1000BASE-T, 10BASE-T/100BASE-TX Connector: RJ-45 x 2
USB Host	USB 2.0 Compatible, Output 5Vdc/0.5A Support: USB Storage, USB Barcode Scanner, Standard Keyboard Protocol Connector: USB Type A x 2
USB OTG	USB 2.0 Compatible, Output 5Vdc/0.5A, Max 3m Support: USB Storage, USB Barcode Scanner, Standard Keyboard Protocol Connector: USB Micro-B(Front) x 1
SD Card	SD Card Slot x 1, SDHC(MAX 32GB)
Display Module	EtherCAT, CAN3.1
HDMI Output	HDMI v1.4a, HDMI Output, Max. Resolution: 1920x1080 at 60Hz Connector: HDMI x 1
Video Input	Encoder: NTSC, PAL, or IEEECAM composite video, S-Video Connector: RCA socket x 1
Audio Output	3.5mm Audio socket x 1
WiFi	2.4G, 2.400GHz ~ 2.4835GHz WLAN Standard: IEEE802.11 b/g/n Operation Range Up to 150meters in open space Security: WEP, TKIP, AES, WPA, WPA2 Full Protocol: IEEE802.11n, IEEE802.11g, IEEE802.11b
Memory & Drive	1GB DRAM, System buffer(10K Word), Including Alarm/Logging/Record Memory 2MB eMMC 1 LED (Power, Operation, Link) Built-in
Structure	111.5 x 74.3 x 27.3 (0.8)

\* 프로세서는 다양한 안티외 디스플레이부와 결합이 가능합니다.

프로세서부

Functional	TOPRP100
Serial (COM1)	RS-232C, RS-422/485 Asynchronous, +5Vdc PWR Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: D5UB 9pin x 1
Serial (COM2)	RS-232C, RS-422/485 Asynchronous, +5Vdc PWR Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: D5UB 9pin x 1
Serial (COM3)	RS-485 Asynchronous Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: 3.5mm 3pin x 1
Interface	Ethernet 10/100/1000BASE-T, 10BASE-T/100BASE-TX Connector: RJ-45 x 2
USB Host	USB 2.0 Compatible, Output 5Vdc/0.5A Support: USB Storage, USB Barcode Scanner, Standard Keyboard Protocol Connector: USB Type A x 2
USB OTG	USB 2.0 Compatible, Output 5Vdc/0.5A, Max 3m Support: USB Storage, USB Barcode Scanner, Standard Keyboard Protocol Connector: USB Micro-B(Front) x 1
SD Card	SD Card Slot x 1, SDHC(MAX 32GB)
Display Module	EtherCAT, CAN3.1
Memory & Drive	1GB DRAM, System buffer(10K Word), Including Alarm/Logging/Record Memory 2MB eMMC 1 LED (Power, Operation, Link) Built-in
Structure	111.5 x 74.3 x 27.3 (0.8)

\* 프로세서는 다양한 안티외 디스플레이부와 결합이 가능합니다.

디스플레이부 + 프로세서부 결합

프리미엄/스탠다드 모델

Functional	15"	12.1"	10.4"
Input Voltage	100V (pr. req.)	24Vdc (10~24Vdc)	12Vdc (pr. req.)
Power Consumption	1.5W (pr. req.)	1.5W or less	1.5W or less
Voltage Sag	-10Vdc	-10Vdc	-10Vdc
Insulation Resistance	500Vdc (10M)	500Vdc (10M)	500Vdc (10M)
Operation Temperature (Tc)	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C
Storage Temperature (Tc)	-20 ~ +55°C	-20 ~ +55°C	-20 ~ +55°C
Operation Humidity (RH)	5 ~ 95%RH (Dew)	5 ~ 95%RH (Dew)	5 ~ 95%RH (Dew)
Atmosphere	No corrosive gas	No corrosive gas	No corrosive gas
Vibration Endurance	Amplitude: 10Gr x 2100, 32Gr x 1.2 (each direction) at 30 (continous) 1000rpm (pr. req.) with 1min	Amplitude: 10Gr x 2100, 32Gr x 1.2 (each direction) at 30 (continous) 1000rpm (pr. req.) with 1min	Amplitude: 10Gr x 2100, 32Gr x 1.2 (each direction) at 30 (continous) 1000rpm (pr. req.) with 1min
Shock Immunity	Static Electricity Discharge	Static Electricity Discharge	Static Electricity Discharge
Static Electricity Discharge	Class 1 (2kV) or less	Class 1 (2kV) or less	Class 1 (2kV) or less
Ground Connection	Class 3 (100V) or less	Class 3 (100V) or less	Class 3 (100V) or less
Protection Class/UL	IP65 (standard)	IP65 (standard)	IP65 (standard)
Certification	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL
Weight (kg)	0.4	0.3	0.2
Cooling System	Passive	Passive	Passive
Case Material	Aluminum	Aluminum	Aluminum

### 디스플레이부

Functional	TOPRT1210SD-Ex
Display Type	12.1" TFT Color
Color	16M Colors
Display Area	264 x 184.5
Resolution	1024x768
Backlight Type	LED
Backlight Life	50,000 hours
Touch Type	5-Point Capacitive
Resolution	1024x768
Touch Life	1 million times or more
Mount Camera	Yes
Mount Lens	Yes
Panel Cuts	300x347
Structure	300x261x31.2

### 방폭 모델

Functional	TOPRT1210SD-Ex
Input Voltage	RS-232C, RS-422/485 Asynchronous +5Vdc PWR
Serial COM1	(Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/ODD/Even, Baud rate: 2400~115.2kbps, Transmission: 500B/8pin x 1)
Serial COM2	RS-232C, RS-422/485 Asynchronous, (Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/ODD/Even, Baud rate: 2400~115.2kbps, Connector: D SUB 9pin x 1)
Serial COM3	RS-485 Asynchronous, (Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/ODD/Even, Baud rate: 2400~115.2kbps, Connector: 2.5mm 3pin x 1)
USB Host	IEEE802.3u/IEEE802.3z 10BASE-T/100BASE-TX, Connector: RJ-45 x 2
USB OTS	USB 2.0 Composable Output 5Vdc/5A, Support: USB Storage, USB Barcode Scanner(Standard Keyboard Protocol), Connector: USB Type A x 2
SD Card	USB 2.0 Composable Output 5Vdc/5A, Max 3m, Support: U3D Storage, USB Barcode Scanner(Standard Keyboard Protocol), Connector: USB Micro-B(Front) x 1
Memory & Others	512KB System Buffer(10K Words), including Alarm/Logged/Retick Permanent, Backup Memory, Backup Period, Real Time Clock, System I/F
Structure	11F24Power, Standalone, 1 unit Wall or 201.6x147.5x31.2

### 프로세스부

Functional	TOPRT1210SD-Ex
Input Voltage	220VAC22~28Vdc
Power Consumption	15W or less
Voltage gain	2400~115200%
Resolution	500Vdc, 10B
Operation Temperature	-10 ~ +50
Storage Temperature	-20 ~ +60
Temperature Humidity Ratio	0 ~ 90%RH (Max)
Altitude	5000meters
Vibration Endurance	Amplitude: 10g x 25Hz(2G x 12.5Hz) 3min/30min(1G)
Shock Resistance	1500g/2ms pulse width 1sec
Static Electricity Discharge	Connector discharge from 5kV MOQ(+2, +4kV)
Proof Endurance	100k cycle each direction (2 times)
Ground Connection	Class 3 to Class 1 or less
Protection Class	IP65(Front) for CE, IEC/UL, IP54(Front) for CCC, IP44(Front) for KCS
Installation	CC, KC, UL, RS, CCC
Weight	72g
Painting System	Water of air circulation
Case Material	ALuminum

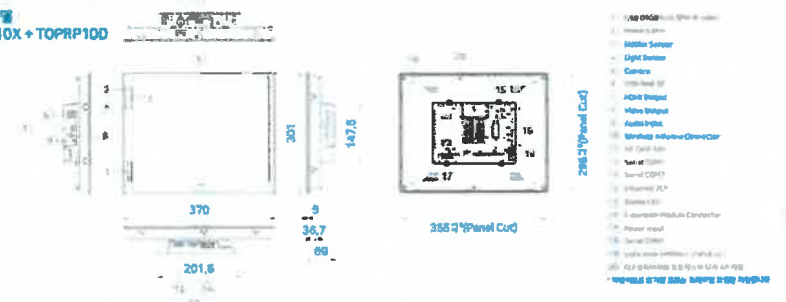
### 디스플레이부 + 프로세스부 결합

Functional	TOPRT1210SD-Ex
Power	220VAC22~28Vdc, 15W or less, 2400~115200%, 500Vdc, 10B, -10 ~ +50, -20 ~ +60, 0 ~ 90%RH (Max), 5000meters
Resolution	Amplitude: 10g x 25Hz(2G x 12.5Hz) 3min/30min(1G), 1500g/2ms pulse width 1sec, Connector discharge from 5kV MOQ(+2, +4kV), 100k cycle each direction (2 times), Class 3 to Class 1 or less, IP65(Front) for CE, IEC/UL, IP54(Front) for CCC, IP44(Front) for KCS
Structure	CC, KC, UL, RS, CCC, 72g, Water of air circulation, ALuminum

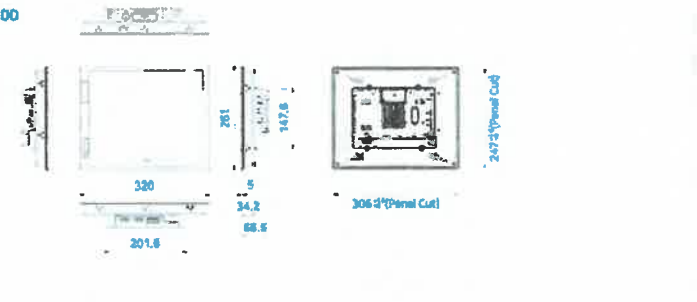
### DRAWING

\* 각 인자별 프리미엄 모델과 스탠다드 모델의 도면 사이즈는 동일합니다.  
\* 각 포트의 명칭과 위치는 **TOPR 시리즈**를 참고하세요.

프리미엄 모델  
TOPRD1520X + TOPRP200  
스탠다드 모델  
TOPRD1510X + TOPRP100



프리미엄 모델  
TOPRD1220X + TOPRP200  
스탠다드 모델  
TOPRD1210S + TOPRP100  
방폭 모델  
TOPRT1210SD-Ex



프리미엄 모델  
TOPRD1020S + TOPRP200  
스탠다드 모델  
TOPRD1010S + TOPRP100

