

Operating and Monitoring Systems

Panel PC SERIES 400

Device platform MANTA

OS ET-477-LX



- Panel PC Operator Station, 24" display, full HD 1920 x 1080
- Zone 1, 2, 21, 22, stainless steel enclosure IP66, optional acc. to GMP
- Optional resistive glass or foil touch screen
- Data is transmitted via Ethernet as 1000Base-LX via single mode fibre optic up to 10 km.

MY R. STAHL MANTAPCT-COSA



The OS-ET-477-LX operator stations with MANTA device platform are explosion -protected Panel PCs for Zones 1, 2, 21, 22 and Division 2. Their brilliant 24" widescreen displays with a resolution of 1920 x 1080 pixels (format 16:9) are available with or without touch screen. The stainless steel enclosures (SS304 or SS316L) are available with a front opening in cleanroom-compliant design and with different mounting options. Configuration options include country-specific keyboards, pointer instruments, RFID readers and barcode readers, different memory sizes and SSDs. Data is transmitted via Ethernet as 1x1000Base-LX via single mode FO up to 10 km and 1x10/100Base-TX via CAT7 up to 100 m.

Technical Data

General

| | |
|---------------------|--|
| Series | MANTA Panel PCs / Thin Clients Operator Stations |
| Product description | 24" Panel PC |
| Technology | Panel PC |
| HMI type | Operator Station |

Explosion Protection

| | |
|-------------------------------|--|
| Application range (zones) | 1 2 21 22 |
| Application range (divisions) | Class I, Division 2 |
| Scope | EU (CE / ATEX) International (IECEX) USA (NEC) Canada (CEC) China (CCC / CNEx) Korea (KCS) India (PESO) Australia (RCM) |
| IECEX certification | IECEX BVS 11.0075X |
| ATEX certification | BVS 11 ATEX E 102 X |
| NEC certification | 70011698 |
| CEC certification | 70011698 |
| PESO certification | A/P/HQ/TN/104/5768 (P438244) |
| KCC certification | only devices with foil touchscreen depending on installed components |
| KCS certification | 12-GA4BO-0617X |

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Explosion Protection

| | |
|---------------------------------|---|
| CNEX certification | CNEx21.1938X |
| Notice certification | The certificates and explosion protection markings apply to a standard device combination with display, keyboard and enclosure. These may vary with further installations and extensions. |
| IECEx gas explosion protection | Ex eb q [ia op is Ga] IIC T4 Gb |
| IECEx dust explosion protection | Ex tb IIIC [ia op is Da] IP65 T110°C Db |
| ATEX gas explosion protection | II 2(1) G Ex eb q [ia op is Ga] IIC T4 Gb |
| ATEX dust explosion protection | II 2(1) D Ex tb IIIC [ia op is Da] IP65 T110°C Db |
| NEC explosion protection | Class I, Zone 1 AEx e q [ia] IIC T4 Gb Class I, Division 2, Groups A, B, C, D |
| CEC gas explosion protection | Ex e q [ia] IIC T4 Gb Class I, Division 2, Groups A, B, C, D |
| PESO explosion protection | Ex eb q [ia op is Ga] IIC T4 Gb |
| KCS explosion protection | Ex e q IIC T4 Ex tb IIIC IP64 T110°C Ex ia IIC T4 Ex ia IIIB T110°C |
| CNEX gas explosion protection | Ex e q [ia op is Ga] IIC T4 Gb |
| CNEX dust explosion protection | Ex tD [iaD op is] A21 IP65 T110°C |

Electrical Data

| | |
|------------------------------|--|
| Power supply | 24 VDC or 230 VAC |
| Rated operational voltage DC | 24 V |
| Voltage range DC | 20 – 30 V |
| Rated operational voltage AC | 230 V |
| Voltage range AC | 100 – 240 V |
| Frequency range | 50 – 60 Hz |
| Power consumption DC | 3 A |
| Power consumption AC 1 | 1 A |
| Protection fuse DC | 5 AT |
| Protection fuse AC | 5 AT |
| Rated operational power | typically 50 W / max. 150 W (typically 170 BTU / max. 510 BTU) |
| Processor type | AMD GX-222GC |
| Processor details | 2.2 GHz, Dual Core, 10W TDP |
| RAM | 4 GB |
| Data memory | 64 GB MLC 128 GB MLC |
| Graphics controller | integrated AMD Radeon R5E graphics |
| Memory technology | SSD solid state flash drive |
| Operating system | Windows 10 IoT Enterprise (64 bit) (included in standard delivery) Windows 10 IoT Enterprise (32 bit) (optional on USB stick) |
| Language support | via Windows operating system |
| Ethernet / Data | 1x 1000Base-LX (Ex op is) 1x 10/100/1000Base-TX (Ex e) |
| Data cable | LX: 9/125 µm FO cable TX: CAT7 installation cable AWG23 |
| Data cable length | LX: max. 10 km TX: max. 100 m |

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Electrical Data

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|-----------------------------------|--|
| Data cable notice | Minimum requirement CAT5e, recommended CAT7 |
| Interface medium | LX: single mode optical cable TX: CAT7 data transmission |
| Interface USB | 2 x USB (Ex ia) 1 x USB (Ex e) 2 x USB (Ex ia) (keyboard, pointing device) |
| Interface serial | 1 x RS-232 (Ex e) |
| Interface reader | via USB or RS-232 |
| Interface reader note | RFID reader, support of the following standards: MIFARE Classic, DESFire, DESFire EV1, LEGIC prime and advant, NFC, INSIDE Secure, Sony FeliCa, ISO 14443A & 15693 1D/2D Barcode scanner: support of all common 1D/2D codes, wired or Bluetooth |
| Interface audio | 1 x Audio line out (Ex e) |
| WLAN | optional via USB |
| Connection compartment | Power supply direct in integrated Ex e terminal box |
| Connections | via screw terminals, green |
| Voltage output | 12 VDC, max. 500 mA |
| Wiring | flexible cable up to 2.5 mm ² (AWG14) fixed cable up to 4 mm ² (AWG12) |
| Plug version FO | LC duplex socket |
| Max. input voltage U _m | 250 VAC |
| Real-time clock | Yes |
| Real-time clock data buffer | Lithium battery and capacitor buffered, maintenance-free |
| Battery buffered | > 5 years |
| Capacitor buffered | at least 4 days |

Display

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| Display version | TFT Color display |
| Display version 2 | 16.7 million colours |
| Display size inch | 24 |
| Display size centimetres | 61 |
| Display resolution | 1920 x 1080, 1680 x 1080, 1280 x 1024 |
| Total pixels | 1920 x 1080 |
| Display dimensions | 16:9 |
| Display brightness | 300 cd/m ² |
| Display contrast | 1000:1 |
| Display viewing angle horizontal | 178° |
| Display viewing angle vertical | 170° |
| Touchscreen | optional, resistive glass or foil touchscreen |
| Touchscreen technology | 5-wire glass or foil touch |
| Touchscreen activation | Foil touch: low activation pressure (0.1 to max. 1 N) Glass touch: medium activation pressure (1.8 to max. 2.5 N) |
| Touchscreen input method | Finger, gloved finger or stylus |
| Touchscreen durability | Foil touch: polyester foil is easily scratched, with high pressure the spacer dots could be damaged Glass touch: Satisfactory, but glass is not hardened, with high pressure the spacer dots could be damaged |
| Touch screen scratch hardness MoHS | Foil touch: - Glass touch: >5 |

Display

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| Touchscreen scratch hardness pencil test ISO15184 | Foil touch: 3H Glass touch: 9H |
| Touchscreen transmissivity / optic | Foil touch: slightly milky effect due to foil Glass touch: very good |
| Touchscreen surface contaminants | unaffected |
| Touchscreen abrasive resistance | 36 million activations with a silicone rubber finger R8, 250 g for 2 activations per second |
| Backlight | LED Technology |
| Backlight service life | 50000 h at +20 °C |
| Front plate (display) | Aluminium and no touchscreen: glass foil touchscreen: polyester glass touchscreen: thin glass |
| Function keys | optional via keyboard with integrated trackball, joystick or touchpad |
| Softkeys | optional via keyboard with integrated trackball, joystick or touchpad |
| Cursor keys | optional via keyboard with integrated trackball, joystick or touchpad |
| Alphanumeric keys | optional via keyboard with integrated trackball, joystick or touchpad |
| System keys | optional via keyboard with integrated trackball, joystick or touchpad |

Ambient Conditions

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| Ambient temperature operation | -20 °C ... +55 °C |
| Storage temperature | -30 °C ... +70 °C |
| Cold start temperature | -10 °C |
| Temperature note 2 | Operating temperature +55 °C for a maximum of 5 h, for constant operation (24/7) +50 °C. |
| Temperature note 3 | Cold start temperature: If the HMI device is switched on at a temperature below -10 °C the display will need a certain amount of time to warm up until everything is clearly visible. Depending on how low the temperature is, this process may last up to 3 hours. |
| Temperature note general | The temperature details apply to a standard device combination with display, keyboard and enclosure. They may change accordingly with any additional built-in or added components. |
| Heat dissipation | about 40% via the front plate and 60% via the enclosure |
| Relative humidity | 10 to 90% at +40°C [+104 °F], non-condensing |
| Damp heat cyclic | +55 °C (±2 °C) ≥95 % (only devices with glass touch (TG)) |
| Dry heat | +65 °C |
| Vibration sinus | 5 to 13.2 Hz: ±1 mm 13.2 to 100 Hz: ±0.7 g Change cycle 1 oct/min Axis X, Y, Z |
| Vibration sinus 1 | 71.7 to 79.2 Hz: ±0.7 g 120 min. Change cycle 1 oct/min Axis X |
| Vibration sinus 2 | 30 Hz: ±0.7 g 90 min. Change cycle 1 oct/min Axis Y, Z |

Mechanical Data

| | |
|--------------------|--------------------------|
| Dimensions (WxHxD) | 740 mm x 872 mm x 400 mm |
| Weight | 64.5 kg |

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Mechanical Data

| | |
|----------------------|--|
| Material front | Aluminium / stainless steel |
| Material back | Stainless steel |
| Ingress protection | IP66 |
| Breather | optional |
| Keyboard note | Only for KBDi: For keyboards with a trackball, the IP protection of the operator station is reduced to IP54 when the trackball is being moved. |
| Mechanical data note | The mechanical data apply to an FR enclosure with display and keyboard. They may change accordingly with other enclosure types as well as any additional built-in or added components. |
| Weight | - |

Mounting / Installation

| | |
|-----------------|---|
| Enclosure type | Stainless steel enclosure (FR) optional clean room (CFR) |
| Mounting option | Wall, elbow, stand |

Components

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|----------|---|
| Keyboard | optional, 105 keys with trackball / joystick / touchpad (Ex ia) |
|----------|---|

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.