

Operating and monitoring systems

Panel PC SERIES 400

Device platform MANTA

OS ET-477-TX

STAHL



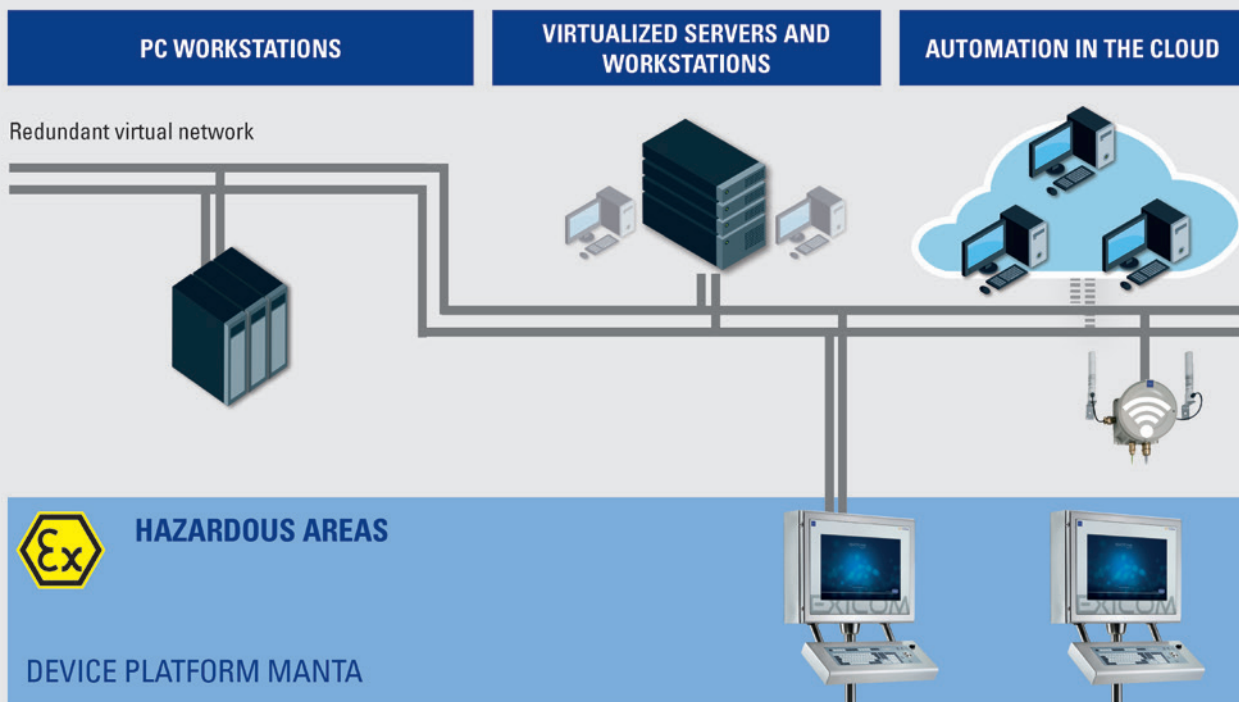
- Panel PC Operator Station, quad core ATOM E3845, 24" display, full HD 1920 x 1080
- Zone 1, 2, 21, 22, stainless steel enclosure IP66, optional acc. to GMP
- Optional resistive glass or foil touch screen
- Data is transmitted via Ethernet as 10/100Base-TX via CAT7 up to 100 m

WebCode ET477A



The OS ET-477 HMI series includes Panel PC Operator Stations 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), and are available with or without touch screen. The stainless steel enclosures (SS304 or SS316L) are available with a front opening or in cleanroom-compliant design and with different mounting options. Accessories include country-specific keyboards, pointer instruments and RFID and barcode readers, and different memory sizes and SSDs complement the quad core processors. Data is transmitted via Ethernet as 10/100Base-TX via CAT7 cable up to 100 m.

PANEL PC INTEGRATION



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Technical Data

General

| | |
|---------------------|----------------------------|
| Series | Operator Station OS ET-477 |
| Product description | 24" Panel PC |
| Technology | Panel PC |
| HMI type | Operator Station |
| WebCode | ET477A |

Explosion Protection

| | |
|---------------------------------|---|
| Application range (zones) | 1 2 21 22 |
| Application range (divisions) | Class I, Division 2 |
| Certifications | ATEX, IECEx, EAC, NEC, CEC, PESO, KGS, RCM |
| IECEx certification | IECEx BVS 11.0075X |
| ATEX certification | BVS 11 ATEX E 102 X |
| EAC certification | TC RU C-DE.HA91.B.00145/20 |
| NEC certification | 70011698 |
| CEC certification | 70011698 |
| KGS certification | 12-GA4BO-0617X |
| Notice certification | The certificates and explosion protection markings apply to a standard device combination with display, keyboard and enclosure. Any additional built-in or added components may have an impact on / change these. |
| 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 |
| EAC gas explosion protection | 1Ex e q [ia op is Ga] IIC T4 Gb X |
| EAC dust explosion protection | Ex tb IIIC [ia op is Da] T110°C Db X |
| NEC explosion protection | Class I, Zone 1 AEx e q [ia] IIC T4 Gb |
| CEC explosion protection | Ex e q [ia] IIC T4 Gb Class I, Division 2 |
| KGS explosion protection | Ex e q IIC T4 Ex tb IIIC IP64 T110°C Ex ia IIC T4 Ex ia IIIB T110°C |

Electrical Data

| | |
|------------------------------|-------------|
| 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 |

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Electrical Data

| | |
|-----------------------------------|---|
| Rated operational power | typ. 50 W / 100 W with O30 / max. 150 W (typ. 170 BTU / 341 BTU with O30 / max. 510 BTU) |
| Processor type | ATOM E3845 |
| Processor details | Intel Bay Trail (BT); 1.91 GHz; quad core |
| RAM | 4 GB |
| Data memory | 64 GB MLC 128 GB MLC |
| Graphics controller | integrated Intel Gen. 7 HD Graphics |
| Memory technology | SSD solid state flash drive M.2 |
| Operating system | Windows Embedded Standard 7 (64-Bit) Windows 7 Ultimate (64-Bit) Windows 10 IoT Enterprise 2019 LTSC (64 bit) (included in standard delivery) Windows 10 IoT Enterprise 2019 LTSC (32 bit) (optional on USB stick) |
| Language support | via Windows operating system |
| Ethernet / Data | 10/100Base-TX (Ex e) |
| Data cable | CAT7 installation cable AWG23 |
| Data cable length | max. 100 m |
| Interface medium | 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 audio | 1 x Audio line out (Ex e) |
| WLAN | optional via USB |
| Connection compartment | Power supply direct in integrated Ex e connection box |
| Connections | via screw terminals, green |
| Voltage output | 12 V DC, max. 500 mA |
| Wiring | flexible cable up to 2.5 mm ² (AWG14) fixed cable up to 4 mm ² (AWG12) |
| Max. input voltage U _m | 250 VAC |
| Audio sound | optional: Audio amplifier (mono amplifier) 3.5 W, for 2x loudspeaker connection (Ex e) |
| 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

| | |
|----------------------------------|-----------------------|
| Display version | TFT Colour display |
| Display version 2 | 16.7 million colours |
| Display size inch | 24 |
| Display size centimetres | 61 |
| Display resolution | Full HD |
| Total pixels | 1920 x 1080 |
| Display dimensions | 16:9 |
| Display brightness | 300 cd/m ² |
| Display contrast | 1000:1 |
| Display viewing angle horizontal | 178° at CR ≥5 |

Display

| | |
|---|---|
| Display viewing angle vertical | 170° at CR ≥5 |
| Display | Glass |
| Touchscreen | optional, resistive |
| Touchscreen technology | 5-wire glass or membrane touch |
| Touchscreen activation | Foil touch: low activation pressure (0.1 up to max. 1 N) Glass touch: medium activation pressure (1.8 up 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 force the spacer dots could be damaged. Glass touch: Quite good, but with high pressure force the spacer dots could be damaged. |
| Touch screen scratch hardness MoHS | Foil touch: - Glass touch: >5 |
| Touchscreen scratch hardness pencil test ISO15184 | Foil touch: 3H Glass touch: 9H |
| Touchscreen transmissivity / optic | Foil touch: small milky effect due to the foil Glass touch: very good |
| Touchscreen surface contaminants | unaffected |
| Touchscreen abrasive resistance | 36 million times with a silicone rubber of R8 finger, hitting rate 250 g at 2 times per second |
| Backlight | LED Technology |
| Backlight service life | 50 000 h at +20 °C |
| Front plate (display) | Aluminium |

Ambient Conditions

| | |
|---------------------------------|--|
| Ambient temperature operation | -20 °C ... +55 °C |
| Ambient temperature operation 1 | -30 °C ... +55 °C with heater version O30 |
| Storage temperature | -30 °C ... +70 °C |
| Cold start temperature | -10 °C |
| Temperature note 1 | The O30 version is only available for the AC version devices ! |
| 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. Any additional built-in or added components may have an impact on / change these. |
| Heat dissipation | about 40 % via the front plate and 60 % via the enclosure |
| Relative humidity | 10 to 90 % at +40 °C, non-condensing |
| Damp heat cyclic | +55 °C (±2 °C) ≥95 % (only device 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 |

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| | |
|-------------------|--|
| Vibration sinus 2 | 30 Hz: ± 0.7 g 90 min. Change cycle 1 oct/min Axis Y, Z |
|-------------------|--|

Mechanical Data

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|----------------------|--|
| Dimensions (WxHxD) | 740 mm x 872 mm x 400 mm |
| Weight | 64.5 kg |
| Material front | Aluminium / stainless steel |
| Material back | Stainless steel |
| Ingress protection | IP66 |
| Breather | optional |
| Keyboard note | With a keyboard with trackball, the operator station's ingress protection is reduced to IP54, when the trackball is moved. |
| Mechanical data note | The mechanical data apply to an FR enclosure with display and keyboard. Other enclosure types as well as any additional built-in or added components may have an impact on / change these. |


Mounting / Installation

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

Components

| | |
|----------|---|
| Keyboard | optional, 107 keys with trackball / joystick / mouse / touchpad (Ex ia) |
|----------|---|

Accessories

| KB2-x-HSG-x-M01-x | | Art. No. |
|--|--|----------|
|  | KB2-x-HSG-x-M01-x Keyboard KB2 in stainless steel enclosure for SERIES MANTA Variant for FR / CFR enclosure Supply and connection via USB interface Enclosure protection: IP66 Operating temperature range: -40 ° C ... +70 ° C Optional equipment: Enclosure material: V2A (SS304, 1.4301) or V4A (SS316L, 1.4404) Keyboard layout: German (QWERTZ), American (QWERTY), French (AZERTY), Spanish, Swiss German, Danish, Swedish, Slovenian, Japanese Pointing device: trackball, touchpad, or joystick Enclosure option: additional installation of UB03-* | |

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