Operating and Monitoring Systems
Panel PC SERIES 400
Device platform MANTA
OS ET-477-2TX

STAHL

- 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 2x Ethernet as 10/100Base-TX via CAT5 up to 100 m

MY R. STAHL MANTAPCT-COSA

The OS-ET-477-2TX 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 2x Ethernet as 10/100Base-TX via CAT7 cable up to 100 m.

Technical Data

General	
Series	MANTA Panel PCs / Thin Clients Operator Stations
Product description	24" Panel PC
HMI type	Operator Station
Technology	Panel PC
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) India (PESO) Korea (KCS) China (CCC / CNEx) Australia (RCM)
IECEx certification	IECEx BVS 11.0075X
ATEX certification	BVS 11 ATEX E 102 X
NEC certification	70011698
CE-Code certification	70011698
PESO certification	A/P/HQ/TN/104/5768 (P438244)
CNEx certification	CNEx21.1938X
KCC certification	only devices with foil touchscreen depending on installed components

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R. STAHL HMI Systems GmbH | Adolf-Grimme-Allee 8 | 50829 KÖLN
Tel. +49 221 768 06 1200 | +49 221 768 06 4200 | Email: sales.dehm@r-stahl.com | r-stahl.com

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Explosion Protection

KCS certification	12-GA4BO-0617X
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
CE-Code 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
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
KCS explosion protection	Ex e q IIC T4 Ex tb IIIC IP64 T110°C Ex ia IIC T4 Ex ia IIIB T110°C

Electrical Data

Power supply	230 VAC
Rated operational voltage AC	230 V
Voltage range AC	100 – 240 V
Frequency range	50 – 60 Hz
Power consumption AC 1	1 A
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	2x 10/100Base-TX (Ex e)
Data cable	CAT7 installation cable AWG 23
Data cable length	2x Max. 100 m
Data cable notice	Minimum requirement CAT5e, recommended CAT7
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 reader	via USB or RS-232

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Electrical Data

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 mm² (AWG14) fixed cable up to 4 mm² (AWG12)
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

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/m²
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
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

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Display

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

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
Material front	Aluminium / stainless steel
Material back	Stainless steel
Ingress protection	IP66
Weight	64.5 kg
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

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.

Mounting / Installation

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

Components

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.

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