

# Operating and Monitoring Systems

KVM system SERIES 600

Device platform MANTA

PM ET-677-DVI3-SM



- KVM system for panel mounting, 24" display, Full HD 1920 x 1080
- Zone 1, 2, 21, 22 und Division 2, can be installed in hazardous areas without additional enclosure
- Optional resistive glass or foil touch screen
- Data transmission via single mode fibre optic up to 10 km

MY R. STAHL MANTAKVMP-MA



The PM ET-677-SM operating devices are explosion-protected KVM systems for panel mounting in hazardous 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. Data is transmitted via single mode fibre optic up to 10 km.

## Technical Data

### General

Series	MANTA KVM Panel mount devices
Product description	24" KVM system
HMI type	Panel-mount device
Technology	Remote HMI KVM

### 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
KCS certification	12-GA4BO-0617X
DNV certification	TAA00000BK only devices with glass touchscreen, AC and O30
IECEX gas explosion protection	Ex eb q [ja op is Ga] IIC T4 Gb

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## Explosion Protection

IECEx dust explosion protection	Ex tb IIIC [ja op is Da] IP65 T110°C Db
ATEX gas explosion protection	II 2(1) G Ex eb q [ja op is Ga] IIC T4 Gb
ATEX dust explosion protection	II 2(1) D Ex tb IIIC [ja op is Da] IP65 T110°C Db
NEC explosion protection	Class I, Zone 1 AEx e q [ja] IIC T4 Gb Class I, Division 2, Groups A, B, C, D
CE-Code gas explosion protection	Ex e q [ja] IIC T4 Gb Class I, Division 2, Groups A, B, C, D
PESO explosion protection	Ex eb q [ja op is Ga] IIC T4 Gb
CNEx gas explosion protection	Ex e q [ja op is Ga] IIC T4 Gb
CNEx dust explosion protection	Ex tD [jaD 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	typ. 50 W / 100 W at O30 / max. 150 W (typ. 170 BTU / 341 BTU at O30 / max. 510 BTU)
Transfer technology	KVM-DVI3
Operating system	independent
Language support	User menu: English
Ethernet / Data	FO single mode
Data cable	9/125 µm FO cable
Data cable length	max. 10 km
Interface medium	Single mode optical cable
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 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 in / 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 <sup>2</sup> (AWG14) fixed cable up to 4 mm <sup>2</sup> (AWG12)
Plug version FO	LC duplex socket
Max. input voltage U <sub>m</sub>	250 VAC

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## 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/m <sup>2</sup>
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
Front plate (display)	Aluminium and no touchscreen: glass foil touchscreen: polyester glass touchscreen: thin glass

## Ambient Conditions

Ambient temperature operation	-20 °C ... +60 °C
Ambient temperature operation 1	-30 °C ... +60 °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 +60 °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.
Relative humidity	10 to 90 % at +40 °C, non-condensing
Damp heat cyclic	+55 °C (±2 °C) ≥95 % (only device with glass touch (TG))

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## Ambient Conditions

Vibration sinus	5 to 13.2 Hz: $\pm 1$ mm 13.2 to 100 Hz: $\pm 0.7$ g Change cycle 1 oct/min Axis X, Y, Z
Vibration sinus 1	71.7 to 79.2 Hz: $\pm 0.7$ g 120 min. Change cycle 1 oct/min Axis X
Vibration sinus 2	30 Hz: $\pm 0.7$ g 90 min. Change cycle 1 oct/min Axis Y, Z

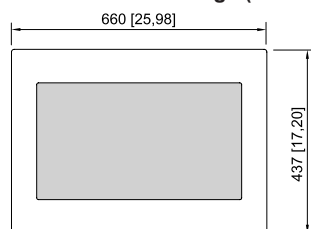
## Mechanical Data

Dimensions (WxHxD)	660 mm x 475 mm x 110 mm
Cut-out (WxH)	615 mm x 435 mm (+/- 0.5 mm)
Wall thickness	$\leq 5$ mm
Depth of cut-out	110 mm
Mounting position	vertical or horizontal
Material front	Aluminium
Material back	Steel
Ingress protection	IP66
IP enclosure front	IP66
IP enclosure back	IP65
Weight	32 kg
Cable gland type	HSK-M-Ex
Cable gland number	2 x M16, 1 x M20, 3 x M25
Cable gland thread size	M16 x 1.5 / M20 x 1.5 / M25 x 1.5
Cable gland cable diameter range	1x M16 = 4 ... 8 mm / 1x M16 = 5 ... 10 mm / M20 = 7 ... 13 mm / M25 = 14 ... 18 mm
Cable gland wrench size	M16 = SW 20 / M20 = SW 24 / M25 = SW 30
Breather	yes, part of the enclosure and device approval
Cable gland note	Similar certified cable glands may be used.
Cable gland note 1	Not used cable glands must be closed by certified screw plugs or stopping plugs !

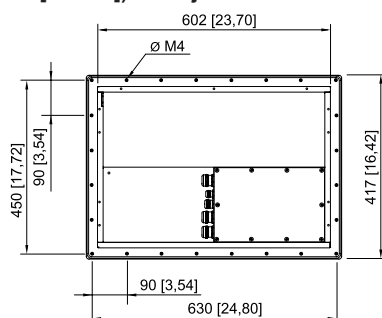
## Mounting / Installation

Mounting option	Front installation
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## Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



Panel mount front view



Panel mount back view

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