

# Operating and monitoring systems

KVM system SERIES 600

Device platform MANTA

PM ET-687-DVI3-MM



- KVM system for panel mounting, 24" WU display, 1920 x 1200
- 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 multi-mode fibre optic up to 550 m

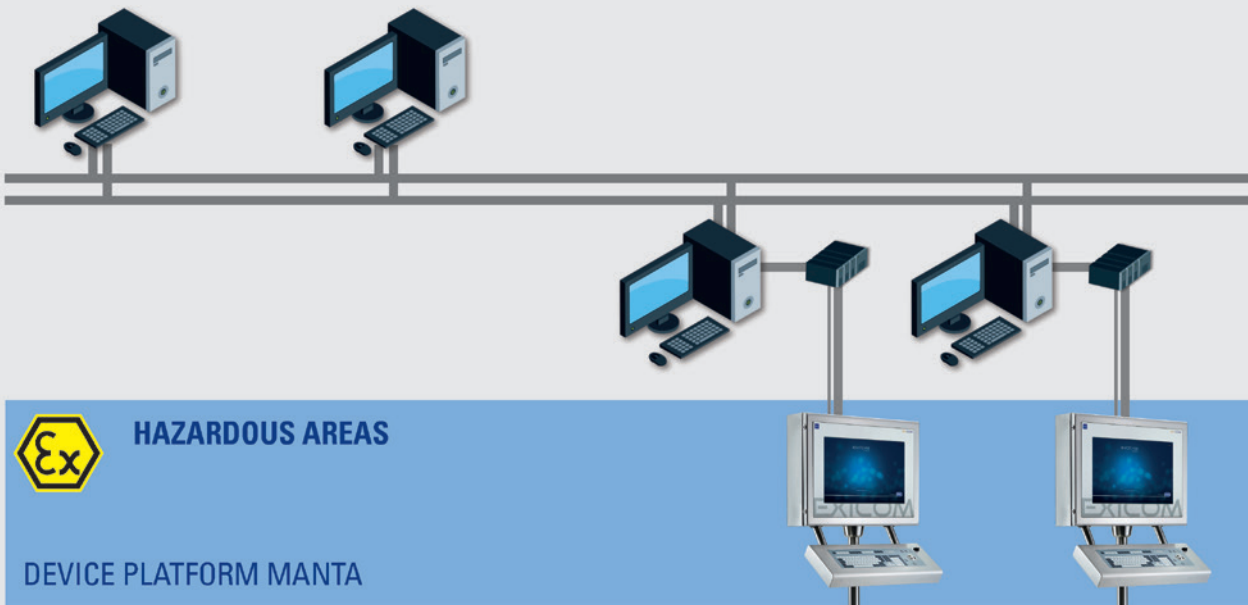
WebCode **ET687A**



The PM ET-687-DVI3 HMI series includes KVM systems for panel mounting in hazardous zones 1, 2, 21, 22 and Division 2. Their brilliant 24" WU widescreen displays with a resolution of 1920 x 1200 pixels (format 16:10) are available with or without touch screen. Country-specific keyboards, pointer instruments and RFID and barcode scanners are useful accessories making work easier and extending functionality. Data is transmitted via multi-mode fibre optic up to 550 m.

## KVM SYSTEMS INTEGRATION

### PC WORKSTATIONS



## Technical Data

### General

Series	Panel mount device PM ET-687 (discontinued)
Product description	24" KVM system

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#### General

Technology	Remote HMI KVM
HMI type	Panel mount device
WebCode	ET687A

#### 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
Ship certificates	DNV / GL
IECEx certification	IECEx BVS 11.0075X
ATEX certification	BVS 11 ATEX E 102 X
NEC certification	70011698
CEC certification	70011698
KCS certification	12-GA4BO-0617X
KCC certification	Touch version only, not glass touch
DNV certification	TAA00000BK ET-687-DVI3-yM-FO-TFT-TG-AC-O30-AL devices only!
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
CEC explosion protection	Ex e q [ia] IIC T4 Gb Class I, Division 2
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

Rated operational voltage DC	24 V
Voltage range DC	20 – 30 V
Rated operational voltage AC	230 V
Voltage range AC	100 – 240 V
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 / 100 W at O30 / max. 150 W (typically 170 BTU / 341 BTU at O30 / max. 510 BTU)
Transfer technology	KVM-DVI3
Ethernet / Data	FO multi-mode
Data cable	50/125 µm FO cable or 62.5/125 µm FO cable

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#### Electrical Data

Data cable length	max. 550 m, with 50 µm FO cable max. 300 m, with 62.5 µm FO cable
Interface medium	Multi-mode optical fibre cable
Frequency range	50 – 60 Hz
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 in / 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 <sup>2</sup> (AWG14) fixed cable up to 4 mm <sup>2</sup> (AWG12)
Plug version FO	LC duplex connector
Max. input voltage U <sub>m</sub>	250 VAC
Audio sound	optional: Audio amplifier (mono amplifier) 3.5 W, for 2x loudspeaker connection (Ex e)

#### Display

Display version	TFT Colour display
Display version 2	16.7 million colours
Display size inch	24
Display size centimetres	61
Display resolution	WUXGA
Total pixels	1920 x 1200
Display dimensions	16:10
Display brightness	300 cd/m <sup>2</sup>
Display contrast	1000:1
Display viewing angle horizontal	178° at CR ≥5
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

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## Display

Backlight	LED Technology
Backlight service life	50 000 h at +20 °C
Front plate (display)	Aluminium

## 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.
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
Vibration sinus 2	30 Hz: ±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	≤ 5 mm
Depth of cut-out	110 mm
Mounting position	vertical or horizontal
Weight	32 kg
Material front	Aluminium
Material back	Steel
Ingress protection	IP66
IP enclosure front	IP66
IP enclosure back	IP65
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	M16 = 4 ... 8 mm / M20 = 6 ... 12 mm / M25 = 14 ... 18 mm
Cable gland wrench size	M16 = SW 19 / M20 = SW 22 / M25 = SW 30

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## Mounting / Installation

Mounting option	Panel-mount
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## Components

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