

# Operating and Monitoring Systems

KVM system SERIES 600

Device platform SHARK

MT-638-DVI3-1TX



- KVM System, 15" display, optional sunlight-readable 1200 cd/m<sup>2</sup>
- Rugged design: IP66, shock, vibration and seawater-proof, temperature range -40 °C to +65 °C
- Compact, lightweight HMI design < 18 kg / 40 lbs
- Data transmission via CAT7 copper cable up to 150 m

MY R. STAHL SHARKKVM-  
SA



R. STAHL's operating devices with the SHARK device platform are explosion-protected. Their rugged design with degree of protection IP66 makes them shock, vibration and seawater-proof and suitable for temperatures ranging from -40 °C to +65 °C. A chemically hardened, glare-free glass screen protects the display and the function keys, and a projected-capacitive multi-touch touch screen, camera and Bluetooth antenna. The MT-638-DVI3-1TX is a KVM system for Zones 2, 22 with a 15" display (resolution 1024 x 768), optionally available as a sunlight-readable version (1200 cd/m<sup>2</sup>). Data is transmitted via CAT7 copper cable up to 150 m

## Technical Data

### General

|                     |                             |
|---------------------|-----------------------------|
| Series              | SHARK KVM Operator Stations |
| Product description | 15" KVM system              |
| Technology          | Remote HMI KVM              |
| HMI type            | Rugged Panel                |

### Explosion Protection

|                               |   |
|-------------------------------|---|
| Application range (zones)     | 2<br>22   |
| Application range (divisions) | Class I, Zone 2<br>Class I, Division 2<br>Class II, Division 2<br>Class III   |
| Scope                         | EU (CE / ATEX)<br>International (IECEX)<br>USA (NEC)<br>Canada (CEC)<br>China (CCC / CNEx)<br>India (PESO)<br>Australia (RCM) |
| IECEX certification           | IECEX BVS 14.0116X  |
| ATEX certification            | BVS 14 ATEX E 134 X   |
| NEC certification             | FM 16 US 0278 X   |
| CEC certification             | FM 16 CA 0141 X   |
| PESO certification            | A/P/HQ/TN/104/5747 (P436617)<br>P436617/1   |
| CCC certification             | 2020312309000280  |
| CNEX certification            | CNEx22.2713X  |

# Operating and Monitoring Systems

KVM system SERIES 600

Device platform SHARK

MT-638-DVI3-1TX



## Explosion Protection

|                                 |  |
|---------------------------------|--|
| IECEx gas explosion protection  | Ex tc [ia op is Da] IIIC T115°C Dc   |
| IECEx dust explosion protection | Ex tc [ia op is Da] IIIC T115°C Dc   |
| ATEX gas explosion protection   | II 3(1) G Ex nA nR [ia op is Ga] IIC T4 Gc   |
| ATEX dust explosion protection  | II 3(1) D Ex tc [ia op is Da] IIIC T115°C Dc   |
| NEC gas explosion protection    | Ex nA nR [ia Ga] IIC T4 Gc<br>Class I, Div. 2 Groups A, B, C, D, T4                          |
| NEC dust explosion protection   | Zone 22, AEx tc [ia op is Da] IIIC T115°C Dc<br>Class II, Div. 2 Groups F, G T4<br>Class III |
| CEC gas explosion protection    | Ex nA nR [ia Ga] IIC T4 Gc<br>Class I, Div. 2 Groups A, B, C, D, T4                          |
| CEC dust explosion protection   | Zone 22, Ex tc [ia Da] IIIC T115°C Dc<br>Class II, Div. 2 Groups E, F, G T4<br>Class III     |
| PESO explosion protection       | Ex ec nR [ia op is Ga] IIC T4 Gc   |
| CNEX gas explosion protection   | Ex ec nR [ia op is Ga] IIC T4 Gc   |
| CNEX dust explosion protection  | Ex tc [ia op is Da] IIIC T115°C Dc   |

## 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         | 4.6 A at 24 VDC (6.9 A with heater)  |
| Power consumption AC 1       | 0.6 A at 230 VAC (0.8 A with heater)   |
| Power consumption AC 2       | 1.1 A at 110 VAC (1.7 A with heater)   |
| Protection fuse DC           | 12 A   |
| Protection fuse AC           | 5 A  |
| Rated operational power      | typically 100 W / max. 150 W (typically 340 BTU / max. 510 BTU)  |
| Transfer technology          | KVM-DVI3   |
| Operating system             | independent  |
| Language support             | User menu: English   |
| Cameras                      | optional, 5 megapixels front   |
| Ethernet / Data              | 1x 100/1000Base-TX (Ex ec)   |
| Data cable                   | CAT7 installation cable AWG23  |
| Data cable length            | max. 150 m   |
| Interface medium             | CAT7 Data transmission   |
| Interface USB                | 3 x USB (Ex ia)<br>1 x USB (Ex ec)   |
| Interface serial             | 1 x RS-232 / RS-422 / RS-485 (Ex ec)   |
| Interface reader             | 1 x reader / barcode reader interface (Ex i)   |
| 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<br>1D/2D Barcode scanner: support of all common 1D/2D codes, wired or Bluetooth |
| Interface audio              | 1 x Audio line out (Ex e)  |
| Bluetooth                    | V. 2.1 / 3 / 4.1 / 4.2   |

# Operating and Monitoring Systems

KVM system SERIES 600

Device platform SHARK

MT-638-DVI3-1TX



## Electrical Data

|                                   |   |
|-----------------------------------|---|
| Bluetooth frequency               | 2.4 GHz   |
| Front camera                      | optional, 5 megapixels, in-built  |
| Connection compartment            | Power supply direct in integrated Ex e terminal box   |
| Connections                       | Via plug-in screw terminals, green  |
| Wiring                            | Flexible conductors 0.2 to 2.5 mm <sup>2</sup> (AWG24 to AWG14)<br>Rigid conductors 0.2 to 2.5 mm <sup>2</sup> (AWG24 to AWG14) |
| Plug version USB                  | USB-A connector   |
| Max. input voltage U <sub>m</sub> | 250 VAC   |
| Status LED                        | LEDs for:<br>- on / off (green)<br>- voltage applied to supply line / power supply OK (orange)<br>- heater on (blue)            |

## Display

|   |   |
|---|---|
| Display version                                   | TFT colour display<br>or<br>sunlight-readable display                       |
| Display version 2                                 | 16.7 million colours  |
| Display size inch                                 | 15  |
| Display size centimetres                          | 38  |
| Display resolution                                | 1024 x 768  |
| Total pixels                                      | 1024 x 768  |
| Display dimensions                                | 1899-12-31  |
| Display brightness                                | TFT 450 cd/m <sup>2</sup><br>SR 1200 cd/m <sup>2</sup>                      |
| Display contrast                                  | TFT 500:1<br>SR 600:1   |
| Touchscreen                                       | projected capacitive (PCAP), multi-touch                                    |
| Touchscreen technology                            | projected capacitive (PCAP), protected under glass                          |
| Touchscreen activation                            | capacitive, no activation pressure required                                 |
| Touchscreen input method                          | Finger, thin gloved finger or special gloves, conductive stylus             |
| Touchscreen durability                            | Very good   |
| Touch screen scratch hardness MoHS                | 6   |
| Touchscreen scratch hardness pencil test ISO15184 | 9H  |
| Touchscreen transmissivity / optic                | very good   |
| Touchscreen surface contaminants                  | unaffected (may however be affected by conductive fluids such as saltwater) |
| Touchscreen abrasive resistance                   | no abrasion by finger or rubber   |
| Backlight   | LED Technology  |
| Backlight service life                            | 70000 h at +25 °C   |
| Front plate (display)                             | Hardened glass front in aluminium enclosure, powder-coated                  |
| Function keys                                     | 8   |

## Ambient Conditions

|                                 |                               |
|---------------------------------|-------------------------------|
| Heater operation                | Automatic                     |
| Ambient temperature operation   | -10 °C ... +65 °C             |
| Ambient temperature operation 1 | -40 °C ... +65 °C with heater |
| Storage temperature             | -40 °C ... +70 °C             |

# Operating and Monitoring Systems

KVM system SERIES 600

Device platform SHARK

MT-638-DVI3-1TX



## Ambient Conditions

|                        |   |
|------------------------|---|
| Cold start temperature | -10 °C<br>or<br>-40 °C  |
| Temperature note 1     | The cold-start temperature depends on the "outdoor installation" (with / without heater).   |
| Temperature note 2     | Cold-start temperature:<br>If the HMI device is switched on at temperatures below -10 °C, the electronics and the display will need a certain warm-up time before everything works smoothly and the display starts to be legible. Depending on how low the temperature is, this process may last up to 3 hours. |
| Heat dissipation       | Via heat pipes and cooling fins   |
| Damp heat              | +55 °C / 95 %   |
| Damp heat cyclic       | +55 °C ( $\pm 2$ °C) $\geq$ 95 %<br>Humidity location class B   |
| Corrosion resistance   | Salt water<br>5 % NaCl / +20 °C / 2 h<br>93 % r.H. / +40 °C / 168 h<br>ISA-S71.04-1985, severity G3   |
| Vibration sinus        | 5 to 13.2 Hz: $\pm 1$ mm<br>13.2 to 100 Hz: $\pm 0.7$ g<br>Change cycle 1 oct/min<br>Axis X, Y, Z   |
| Vibration sinus 1      | 5 to 58 Hz: $\pm 0.075$ mm<br>58 to 500 Hz: $\pm 1$ g<br>Change cycle 1 oct/min<br>Axis X, Y, Z   |
| Vibration sinus 2      | 5 to 1000 Hz<br>5 g   |
| Shock                  | 18 Schocks 25 g / 6 ms<br>Axis X, Y, Z  |

## Mechanical Data

|                                      |  |
|--------------------------------------|--|
| Enclosure / Design (1)               | VESA 200 Standard  |
| Dimensions (WxHxD) (1)               | 380 mm x 394 mm x 137 mm<br>(+52 mm for cable entries)     |
| Cable gland type (1)                 | HSK-MZ-Ex  |
| Cable gland number (1)               | 3 x M16, 3 x M20, 2 x M25                                  |
| Cable gland thread size (1)          | M16 x 1.5 / M20 x 1.5 / M25 x 1.5                          |
| Cable gland cable diameter range (1) | M16 = 4 ... 8 mm / M20 = 10 ... 14 mm / M25 = 14 ... 18 mm |
| Cable gland wrench size (1)          | M16 = SW 19 / M20 = SW 22 / M25 = SW 30                    |
| Enclosure / Design (2)               | VESA 200 Top Connect                                       |
| Dimensions (WxHxD) (2)               | 380 mm x 394 mm x 212 mm                                   |
| Cable gland type (2)                 | Screw plug   |
| Cable gland number (2)               | 3 x M16, 3 x M20   |
| Cable gland thread size (2)          | M16 x 1.5 / M20 x 1.5                                      |
| Mounting possibility                 | Panel mount with xx8 Mounting-Kit                          |
| Cut-out (WxH)                        | for xx8 Mounting-Kit: 360 mm x 364 mm ( $\pm 1$ mm)        |
| Mounting position                    | any  |
| Weight                               | 18 kg  |
| Material front                       | Seawater resistant and coated aluminium, hardened glass    |

# Operating and Monitoring Systems

KVM system SERIES 600

Device platform SHARK

MT-638-DVI3-1TX



## Mechanical Data

|                    |  |
|--------------------|--|
| Material back      | Seawater-resistant powder coated aluminum      |
| Ingress protection | IP66   |
| IP enclosure front | IP66   |
| IP enclosure back  | IP66   |
| Breather           | yes, part of the enclosure and device approval |
| Weight             | -  |

## Mounting / Installation

|                  |   |
|------------------|---|
| Enclosure type   | Rugged Panel Design (RP)  |
| Enclosure design | VESA 200 Standard, VESA 200 Top Connect   |
| Mounting option  | Yoke and wall-mounting, handle and feet, sun protection roof, panel mount (with xx8 Mounting-Kit) |
| Mounting type    | when switched on: a fixed device (stationary, non-portable equipment)                             |

## Components

|          |   |
|----------|---|
| Keyboard | optional, attached keyboard and pointing device (trackball, joystick or 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.