

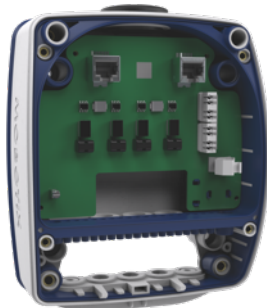


## **MxSplitProtect & MxSplitProtectHR**

Weatherproof installation box and separate DIN rail module to connect two IP cameras/PoE devices using one Ethernet installation cable (surge protection included)



### Technical Data: MxSplitProtect Installation Box



Open (LSA rail inside)



Closed (weatherproof, IP66)



Weatherproof bayonet fastening for MOBOTIX RJ45 connectors

| MxSplitProtect: Technical Basics                  |  |
|---|--|
| Product name                                      | MxSplitProtect Installation Box  |
| MOBOTIX order codes and EAN                       | Mx-A-SPA (EAN: 4047438030229)  |
| Operating temperature (according to DIN EN 50125) | -30 to 60°C (-22 to 140°F)   |
| IP Class  | IP67 (dust tight and protected against powerful water jets from any direction)   |
| Shock protection                                  | IK08   |
| Normal Usage                                      | PoE power supply, network connection and overvoltage protection for up to two IP cameras or PoE devices (PoE+ mode A according to IEEE 802.3at with up to 57 V)  |
| Protection against overvoltage                    | Tested up to 4 kV on all wires of attached cables according to EN 61000-4-5:2014 test standard; max. length of connection cables must not exceed 1 m/1 yd  |
| Installation notes                                | - Installation Class 3<br>- Not to be used in locations exposed to the dangers of explosion<br>- Installation only vertically on a wall or pole mount  |
| Mounting options                                  | Wall mount, pole mount with accessory  |
| Dimensions (height x width x depth)               | 180 x 54 x 80 mm   |
| Weight (without packaging)                        | 650 g  |
| Housing   | PBT-GF30, color: white   |
| Connections                                       | - 1 LSA (2x 100Base-T) with ground clamp<br>- 2 RJ45 Ethernet 100Base-T with PoE Mode A<br>- 1 ground wire (matching EIA/TIA-568B)   |
| Wire specifications                               | - ETH0 (IN): Ethernet installation cable CAT.6A/CAT.7 designation A1,2<br>- ETH1: max. 1 m, MX-OPT-CBL-LAN-1, designation A1<br>- ETH2: max. 1 m, MX-OPT-CBL-LAN-1, designation A2<br>- Ground wire: strength 1.5 bis 2.5 mm <sup>2</sup> (isolator color gn/ge), max. tightening torque: 0.5 Nm |
| Certifications                                    | EN 50581 (2012); EN 61000-4-5 (2014)   |
| MTBF  | > 80,000 hours   |
| Delivery  | Screws, dowel, Allen wrench, Torx wrench, Screwdriver, Quick Install   |
| Accessories                                       | MxSplitProtectHR Hat Rail module (Mx-A-SPA-HR), cover with camera mount in three versions (Mx-A-SPCA-M/-H/-V), pole mount (MX-MH-SecureFlex-ESWS)  |
| Detailed technical documentation                  | <a href="http://www.mobotix.com">www.mobotix.com</a> > Support > Manuals   |
| Online version of this document                   | <a href="http://www.mobotix.com">www.mobotix.com</a> > Support > Spec Sheets   |

# Technical Specification

## MxSplitProtect & MxSplitProtectHR



### MxSplitProtect: Protective Circuit

| Protective Circuit  |  |  | MIN          | TYP             | MAX                      | UNIT                     |
|---|--|--|--------------|-----------------|--------------------------|--------------------------|
| <i>INST</i>   | Installation class                     | DIN EN 61000-4-5:2014, p. 42 et seqq.  | Class 3      |                 |                          |                          |
| <i>ÜLA</i>  | Overload failure mode                  | DIN EN 61643-21:2013-07, S. 15 (German: Modus 2)   |              | Type 2          |                          |                          |
| <i>SWA</i>  | Protective effect of charge eliminator | Testing accuracy: DIN EN 61000-4-5:2014, p. 39 et seqq.  |              | P4              |                          |                          |
| <i>SSB</i>  | Peak current rating                    | Pulse form: DIN EN 61643-21:2013-07, S. 30   |              | C2              |                          |                          |
| <i>t<sub>Reset</sub></i>  | Pulse reset time                       |  |              |                 | 2                        | s                        |
| <i>I<sub>B</sub></i>  | Rated current                          | DIN EN 61643-21:2013-07, p. 17   |              |                 | 0.9                      | A                        |
| <i>I<sub>n, Pa-Pa</sub></i><br><i>I<sub>n, Ad-Ad</sub></i><br><i>I<sub>n, Ad-PE</sub></i><br><i>I<sub>total</sub></i> | Nominal discharge current              | C2 / 8/20 $\mu$ s / Pair-Pair / PoE<br>C2 / 8/20 $\mu$ s / Core-Core<br>C2 / 8/20 $\mu$ s / Core-Ground<br>C2 / 8/20 $\mu$ s / Core-Ground / total | 0.2          | 16<br>16        | 16.1<br>150<br>2.5<br>20 | A<br>A<br>kA<br>kA       |
| <i>U<sub>P, Ad-Ad</sub></i><br><i>U<sub>P, Ad-PE</sub></i><br><i>U<sub>P, Pa-Pa</sub></i>                             | Voltage protection level               | @ <i>I<sub>n</sub></i> / C2 / Core-Core<br>@ <i>I<sub>n</sub></i> / C2 / Core-Ground<br>@ <i>I<sub>n</sub></i> / C2 / Pair-Pair / PoE              |              | 9<br>150<br>105 |                          | V<br>V<br>V              |
| <i>R<sub>ISO</sub></i>  | Insulation resistance                  | @ <i>U<sub>C, PoE</sub></i> / Pair-Pair<br>@ <i>U<sub>C, Eth</sub></i> / Core-Core   | 80<br>15     |                 |                          | M $\Omega$<br>M $\Omega$ |
| <i>R<sub>serie</sub></i>  | Equivalent series resistance           | @ <i>I<sub>L</sub></i> , <i>U<sub>C</sub></i> / Pair 1,2-3,6<br>@ <i>I<sub>L</sub></i> , <i>U<sub>C</sub></i> / Pair 4,5-7,8                       |              | 1.3<br>1.2      | 3.4<br>2.7               | $\Omega$<br>$\Omega$     |
| Information Parameter   |  |  | MIN          | TYP             | MAX                      | UNIT                     |
| <i>f<sub>Gr</sub></i>   | Cut-off frequency                      | Cut-off frequency of CMD   |              |                 | 150                      | MHz                      |
| <i>C<sub>Ad-Ad</sub></i>  | Capacity Core-Core                     | f = 1 MHz / U = 0 V  | 5.5          |                 | 7                        | pF                       |
| <i>C<sub>Ad-PE</sub></i>  | Capacity Core-Ground                   | f = 1 MHz / U = 0 V  |              |                 | 2                        | pF                       |
| <i>C<sub>Pa-Pa</sub></i>  | Capacity Pair-Pair                     | f = 1 MHz / U = 0 V  | 4.5          |                 | 6                        | pF                       |
| <i>a<sub>1</sub></i>  | Input attenuation                      | Core-Core / f = 0-100 MHz  |              |                 | 0.7                      | dB                       |
| <i>RL</i>   | Reflection loss                        | Core-Core / @IN / f = 0-100 MHz<br>Core-Core / @OUT / f = 0-100 MHz  | 20.6<br>20.7 |                 |                          | dB                       |
| <i>ACR-N</i>  | Crosstalk attenuation                  | Pair-Pair / @IN / f = 0-100 MHz<br>Pair-Pair / @OUT / f = 0-100 MHz  | 61.3<br>58.7 |                 |                          | dB                       |
| <i>NEXT</i>   | Near-end crosstalk attenuation         | Pair-Pair / @IN / f = 0-100 MHz<br>Pair-Pair / @OUT / f = 0-100 MHz  | 44<br>42.6   |                 |                          | dB                       |



### Technical Data: MxSplitProtectHR DIN Rail Module



Connections on the Mx-A-SPA-HR (two views of device): 2 RJ45 to the switch (for two PoE devices) and 1 RJ45 (to the patch panel)

| MxSplitProtectHR: Technical Data – Basics         |  |
|---|--|
| Product name                                      | MxSplitProtectHR DIN Rail module   |
| MOBOTIX order codes and EAN                       | Mx-A-SPA-HR (EAN: 4047438030236)   |
| Operating temperature (according to DIN EN 50125) | 0 to 40°C (32 to 140°F)  |
| IP Class  | None (indoor use only)   |
| Normal Usage                                      | PoE power supply, network connection and overvoltage protection for up to two IP cameras or PoE devices (PoE+ mode A according to IEEE 802.3at with up to 57 V)  |
| Protection against overvoltage                    | Tested up to 4 kV on all wires of attached cables according to EN 61000-4-5:2014 test standard; length of connection cable to protected device: max 1 m/1 yd   |
| Installation notes                                | <ul style="list-style-type: none"> <li>- Installation Class 3</li> <li>- Not to be used in locations exposed to the dangers of explosion</li> <li>- Indoors, for DIN rails 35 mm (EN 60715)</li> </ul>   |
| Mounting options                                  | On 35 mm DIN rails   |
| Dimensions (height x width x depth)               | 54 x 61 x 90 mm  |
| Weight (without packaging)                        | 85 g   |
| Housing   | Polycarbonate, color: gray   |
| Connections                                       | <ul style="list-style-type: none"> <li>- 1 RJ45 (2x 100Base-T) with ground clamp</li> <li>- 2 RJ45 Ethernet 100Base-T with PoE Mode A</li> <li>- 1 ground wire (matching EIA/TIA-568B)</li> </ul>  |
| Wire specifications                               | <ul style="list-style-type: none"> <li>- A1,2 (IN): CAT.5e STP max 10 m</li> <li>- A1 and A2: CAT.5e STP max 1 m</li> <li>- Ground wire: strength 1.5 bis 2.5 mm<sup>2</sup> (isolator color gn/ge), max. tightening torque: 0.5 Nm</li> </ul> |
| Certifications                                    | EN 50581 (2012); EN 61000-4-5 (2014)   |
| MTBF  | > 80,000 hours   |
| Delivery  | 1 MxSplitProtectHR, Quick Install  |
| Accessories                                       | MxSplitProtect (Mx-A-SPA), MxSwitch (MX-SWITCH1)   |
| Detailed technical documentation                  | <a href="http://www.mobotix.com">www.mobotix.com</a> > Support > Manuals   |
| Online version of this document                   | <a href="http://www.mobotix.com">www.mobotix.com</a> > Support > Spec Sheets   |

# Technical Specification

## MxSplitProtect & MxSplitProtectHR

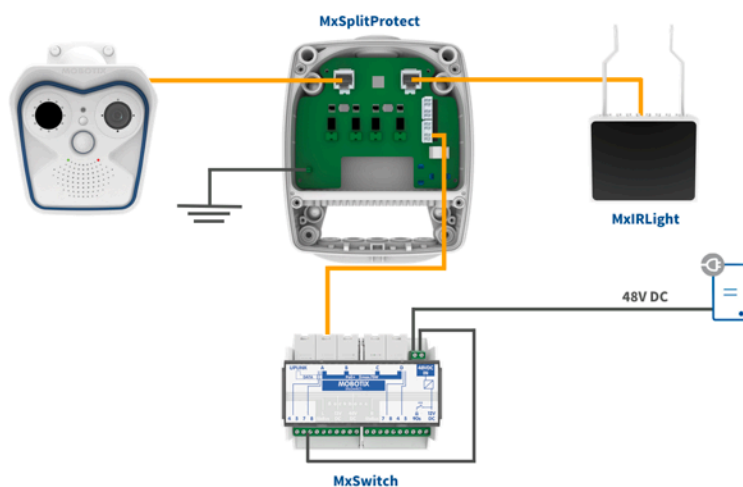


| MxSplitProtectHR: Technical Data – Protective Circuit   |  |   | MIN          | TYP             | MAX                      | UNIT                     |
|---|--|---|--------------|-----------------|--------------------------|--------------------------|
| <b>Protective Circuit</b>   |  |   |              |                 |                          |                          |
| <i>INST</i>   | Installation class                     | DIN EN 61000-4-5:2014, p. 42 et seqq.   | Class 3      |                 |                          |                          |
| <i>ÜLA</i>  | Overload failure mode                  | DIN EN 61643-21:2013-07, S. 15 (German: Modus 2)  |              | Type 2          |                          |                          |
| <i>SWA</i>  | Protective effect of charge eliminator | Testing accuracy: DIN EN 61000-4-5:2014, p. 39 et seqq.   |              | P4              |                          |                          |
| <i>SSB</i>  | Peak current rating                    | Pulse form: DIN EN 61643-21:2013-07, S. 30  |              | C2              |                          |                          |
| <i>t<sub>Reset</sub></i>  | Pulse reset time                       |   |              |                 | 2                        | s                        |
| <i>I<sub>B</sub></i>  | Rated current                          | DIN EN 61643-21:2013-07, p. 17  |              |                 | 0.9                      | A                        |
| <i>I<sub>n, Pa-Pa</sub></i><br><i>I<sub>n, Ad-Ad</sub></i><br><i>I<sub>n, Ad-PE</sub></i><br><i>I<sub>total</sub></i> | Nominal discharge current              | <i>I<sub>n, Pa-Pa</sub></i> C2 / 8/20 $\mu$ s / Pair-Pair / PoE<br><i>I<sub>n, Ad-Ad</sub></i> C2 / 8/20 $\mu$ s / Core-Core<br><i>I<sub>n, Ad-PE</sub></i> C2 / 8/20 $\mu$ s / Core-Ground<br><i>I<sub>total</sub></i> C2 / 8/20 $\mu$ s / Core-Ground / total | 0.2          | 16<br>16        | 16.1<br>150<br>2.5<br>20 | A<br>A<br>kA<br>kA       |
| <i>U<sub>P, Ad-Ad</sub></i><br><i>U<sub>P, Ad-PE</sub></i><br><i>U<sub>P, Pa-Pa</sub></i>                             | Voltage protection level               | @ <i>I<sub>n</sub></i> / C2 / Core-Core<br>@ <i>I<sub>n</sub></i> / C2 / Core-Ground<br>@ <i>I<sub>n</sub></i> / C2 / Pair-Pair / P oE  |              | 9<br>150<br>105 |                          | V<br>V<br>V              |
| <i>R<sub>iso</sub></i>  | Insulation resistance                  | @ <i>U<sub>C, PoE</sub></i> / Pair-Pair<br>@ <i>U<sub>C, Eth</sub></i> / Core-Core  | 550<br>15    |                 |                          | M $\Omega$<br>M $\Omega$ |
| <i>R<sub>serie</sub></i>  | Equivalent series resistance           | @ <i>I<sub>L</sub></i> , <i>U<sub>C</sub></i> / Pair 1,2-3,6<br>@ <i>I<sub>L</sub></i> , <i>U<sub>C</sub></i> / Pair 4,5-7,8  |              | 2<br>2          | 3.1<br>3.1               | $\Omega$<br>$\Omega$     |
| <b>Information Parameter</b>  |  |   | <b>MIN</b>   | <b>TYP</b>      | <b>MAX</b>               | <b>UNIT</b>              |
| <i>f<sub>Gr</sub></i>   | Cut-off frequency                      | Cut-off frequency of CMD  |              |                 | 150                      | MHz                      |
| <i>C<sub>Ad-Ad</sub></i>  | Capacity Core-Core                     | f = 1 MHz / U = 0 V   | 5.5          |                 | 7                        | pF                       |
| <i>C<sub>Ad-PE</sub></i>  | Capacity Core-Ground                   | f = 1 MHz / U = 0 V   |              |                 | 2                        | pF                       |
| <i>C<sub>Pa-Pa</sub></i>  | Capacity Pair-Pair                     | f = 1 MHz / U = 0 V   | 4.5          |                 | 6                        | pF                       |
| <i><math>\alpha_1</math></i>  | Input attenuation                      | Core-Core / f = 0-100 MHz   |              |                 | 0.7                      | dB                       |
| <i>RL</i>   | Reflection loss                        | Core-Core / @IN / f = 0-100 MHz<br>Core-Core / @OUT / f = 0-100 MHz   | 23.8<br>21.7 |                 |                          | dB                       |
| <i>ACR-N</i>  | Crosstalk attenuation                  | Pair-Pair / @IN / f = 0-100 MHz<br>Pair-Pair / @OUT / f = 0-100 MHz   | 63.9<br>71.2 |                 |                          | dB                       |
| <i>NEXT</i>   | Near-end crosstalk attenuation         | Pair-Pair / @IN / f = 0-100 MHz<br>Pair-Pair / @OUT / f = 0-100 MHz   | 48.2<br>47.5 |                 |                          | dB                       |

### General Product Information

#### MxSplitProtect: Versatile Installation Box For Outdoor Applications (IP66)

The MxSplitProtect enables users to connect a maximum of two IP/PoE devices using one Ethernet cable to the supplying PoE switch – weatherproof and protected against power surges. In addition to new installations, you can cost-effectively make expansions to existing video surveillance systems, such as installing a second IP camera or a PoE infrared illuminator to a pole with an IP camera already. The MxSplitProtect offers a simple means of adding an additional Ethernet cable from the PoE switch in the electrical cabinet to the pole.



**Split Function:** An MxSwitch (MX-SWITCH) is installed in the electrical cabinet to connect a MOBOTIX camera with the MxIRLight Infrared Illuminator. It is supplied with power via a 48-V power supply unit (2 A min.) and as a **MOBOTIX Switch special feature**, it uses separate wires to supply the power required by the camera and IR illuminator in order to supply both MxSplitProtect ports (left: data and power for the camera; right: power only for the IR illuminator). A **standard PoE switch is not suitable for such applications.**

**Protect Function:** In addition to providing **two RJ45 sockets** to connect the network devices via the MOBOTIX patch cable (MX-OPT-CBL-LAN, permitted length: max. 1 m), an **LSA terminal connector** to connect the 8-wire Ethernet installation cable and the terminal connector for the ground wire, the MxSplitProtect provides effective **surge protection of up to 4 kV on the PoE cable.**

#### Please note:

The MxSplitProtect protects against **surges of up to 4 kV** on an Ethernet cable, but not against direct lightning strikes. A specialist should establish a surge protection concept and implement such a system in order to reduce the danger of damage as much as possible.

#### MxSplitProtect: Ordering Information

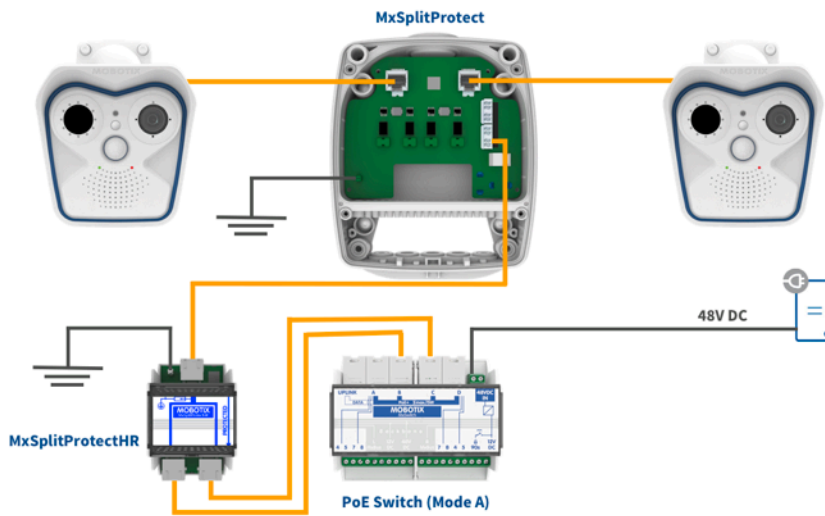
| Order Number | EAN           | Description   |
|--------------|---------------|---|
| Mx-A-SPA     | 4047438030229 | Weatherproof installation box with integrated 4-kV surge protection for connection (Type 2 P4) to two IP cameras/PoE devices using one Ethernet cable • Interfaces (weatherproof): 1 LSA (2x 100Base-T) with ground clamp, 2 RJ45 Ethernet 100Base-T with PoE Mode A, 1 ground wire (matching EIA/TIA-568B) • IP66 and IK08, ambient temperature: -30°C to 60°C (-22°F to 140°F) • Accessories (available separately): MxSplitProtectHR DIN rail module (Mx-A-SPA-HR), cover with camera mount in three versions (Mx-A-SPCA-M/-H/-V), pole mount (MX-MH-SecureFlex-ESWS) • Housing color: white |

# Technical Specification

## MxSplitProtect & MxSplitProtectHR



### MxSplitProtectHR: DIN Rail Module For The Electrical Cabinet



The MxSplitProtectHR DIN rail module is required (usually in the electrical cabinet), in addition to a PoE switch with PoE Mode A (for example, the MxSwitch) with two free ports, in order to connect two PoE-powered network devices (such as two MOBOTIX cameras) with the MxSplitProtect via one Ethernet installation cable with power. It transfers **data and power from both PoE ports** (each using only four wires) to the eight-wire installation cable, which is then split again between the

MxSplitProtect Installation Box's two RJ45 ports. The MxSplitProtectHR DIN rail module offers the same split feature and 4-kV surge protection like the MxSplitProtect; however, it is not weatherproof. In addition, instead of an LSA terminal connector, there is an RJ45 socket for the supply line, which is designed to be a patch cable.

### MxSplitProtectHR: Ordering Information

| Order Number | EAN           | Description  |
|--------------|---------------|--|
| Mx-A-SPA-HR  | 4047438030236 | Compatible with MxSplitProtect Installation Box (Mx-A-SPA): Hat rail module (for 35 mm DIN rails) with integrated 4-kV surge protection (Type 2 P4) for connection to two IP cameras/PoE devices using one Ethernet cable • Interfaces: 1 RJ45 (2x 100Base-T) with ground clamp, 2 RJ45 Ethernet 100Base-T with PoE Mode A, 1 ground wire • Only use in indoor areas, ambient temperature: 0°C to 40°C (32°F to 104°F) • Accessories (available separately): MxSwitch (MX-SWITCH1) • Housing color: gray |

### MxSplitProtect Covers With Camera Mount (Installation Accessories, Three Versions)

MOBOTIX offers three different covers with an integrated camera mount for the MxSplitProtect Installation Box to further simplify the installation of the camera and to protect the RJ45 sockets from direct access. A MOBOTIX M15/M16/M25/M26 camera with a standard VarioFlex wall mount or a MOBOTIX Q25/Q26/D25/D26 camera can be mounted to it either horizontally or vertically with a 15° tilt. If there is already a pole mount of an M1x/M2x in use, it can also continue to be used for the MxSplitProtect. The MxSplitProtect can also be used outdoors without this cover, thanks to its robust housing made of UV-resistant PBT-30GF and weatherproof connections for the Ethernet cable (concealed LSA terminal connector inside the housing) and for the MOBOTIX patch cable of the cameras and the MxIRLight (see Figure, right).



# Technical Specification

## MxSplitProtect & MxSplitProtectHR



Mx-A-SPA



Mx-A-SPCA-M



Mx-A-SPCA-V

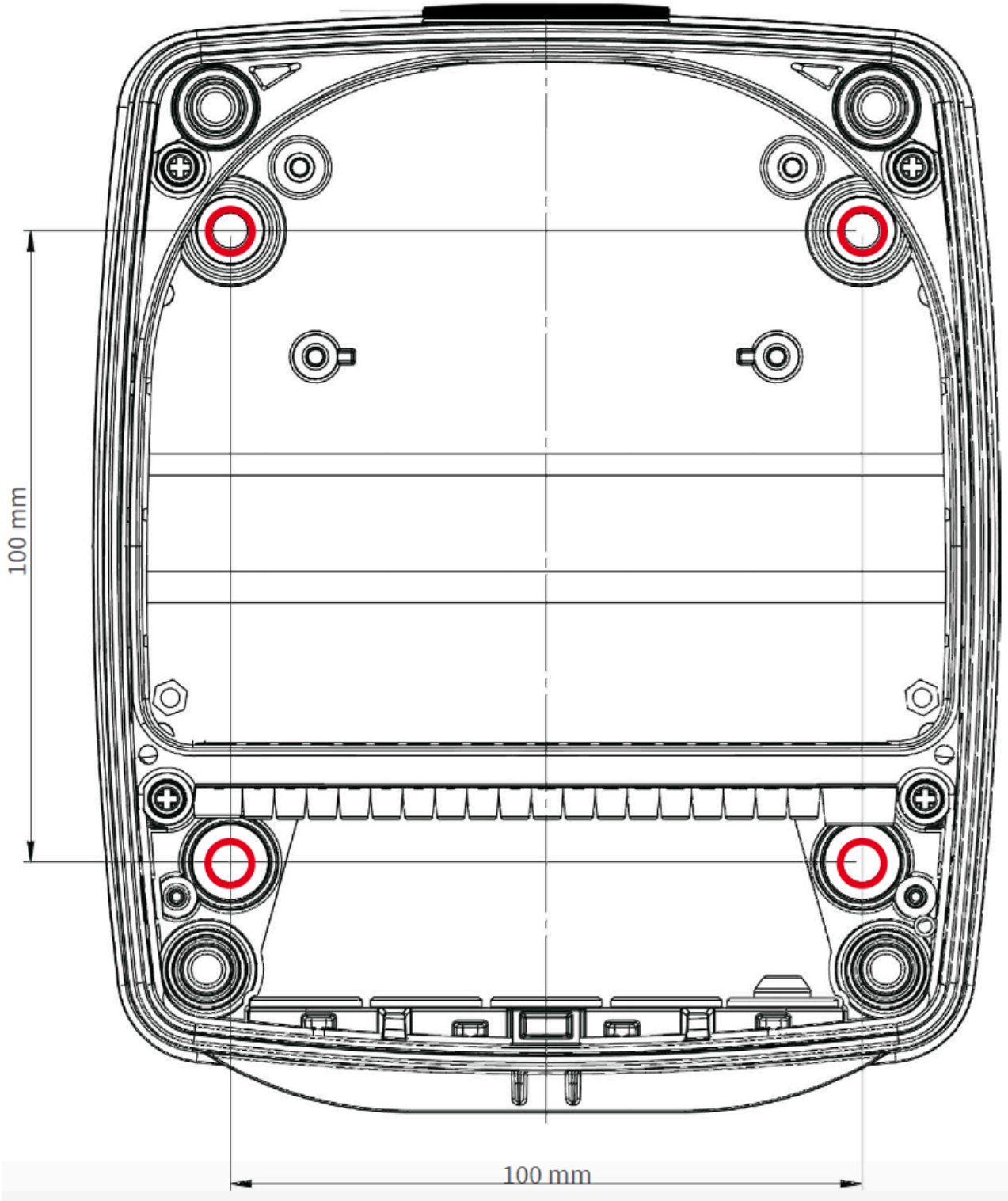


Mx-A-SPCA-H

### MxSplitProtect Covers: Ordering Information

| Order Number | EAN           | Description  |
|--------------|---------------|--|
| Mx-A-SPCA-M  | 4047438028820 | Cover/mounting option with camera mount • Accessories for the MxSplitProtect Installation Box (Mx-A-SPA) • Also possible to install the standard VarioFlex wall mount of an M15/M16/M25/M26 camera directly to the cover • Color: white                      |
| Mx-A-SPCA-V  | 4047438028844 | Cover/mounting option with camera mount • Accessories for the MxSplitProtect Installation Box (Mx-A-SPA) • Also possible to (vertically) install a Q2x (orD2x) camera with a 15° tilt angle without an additional mount directly to the cover • Color: white |
| Mx-A-SPCA-H  | 4047438028837 | Cover/mounting option with camera mount • Accessories for the MxSplitProtect Installation Box (Mx-A-SPA) • Also possible to (horizontally) install a Q2x/D2x camera without an additional mount directly to the cover • Color: white                         |





Drilling hole positions of MxSplitProtect