



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 Specification

MxSplitProtect & MxSplitProtectHR



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	<ul style="list-style-type: none">- Installation Class 3- Not to be used in locations exposed to the dangers of explosion- 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	<ul style="list-style-type: none">- 1 LSA (2x 100Base-T) with ground clamp- 2 RJ45 Ethernet 100Base-T with PoE Mode A- 1 ground wire (matching EIA/TIA-568B)
Wire specifications	<ul style="list-style-type: none">- ETH0 (IN): Ethernet installation cable CAT.6A/CAT.7 designation A1,2- ETH1: max. 1 m, MX-OPT-CBL-LAN-1, designation A1- ETH2: max. 1 m, MX-OPT-CBL-LAN-1, designation A2- Ground wire: strength 1.5 bis 2.5 mm² (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	www.mobotix.com > Support > Manuals
Online version of this document	www.mobotix.com > 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_{Reset}</i>	Pulse reset time				2	s
<i>I_B</i>	Rated current	DIN EN 61643-21:2013-07, p. 17			0.9	A
<i>I_{n, Pa-Pa}</i> <i>I_{n, Ad-Ad}</i> <i>I_{n, Ad-PE}</i> <i>I_{total}</i>	Nominal discharge current	C2 / 8/20 μ s / Pair-Pair / PoE C2 / 8/20 μ s / Core-Core C2 / 8/20 μ s / Core-Ground C2 / 8/20 μ s / Core-Ground / total	0.2	16 16	16.1 150 2.5 20	A A kA kA
<i>U_{P, Ad-Ad}</i> <i>U_{P, Ad-PE}</i> <i>U_{P, Pa-Pa}</i>	Voltage protection level	@ <i>I_n</i> / C2 / Core-Core @ <i>I_n</i> / C2 / Core-Ground @ <i>I_n</i> / C2 / Pair-Pair / PoE		9 150 105		V V V
<i>R_{iso}</i>	Insulation resistance	@ <i>U_{C, PoE}</i> / Pair-Pair @ <i>U_{C, Eth}</i> / Core-Core	80 15			M Ω M Ω
<i>R_{serie}</i>	Equivalent series resistance	@ <i>I_L</i> , <i>U_C</i> / Pair 1,2–3,6 @ <i>I_L</i> , <i>U_C</i> / Pair 4,5–7,8		1.3 1.2	3.4 2.7	Ω Ω
Information Parameter			MIN	TYP	MAX	UNIT
<i>f_{Gr}</i>	Cut-off frequency	Cut-off frequency of CMD			150	MHz
<i>C_{Ad-Ad}</i>	Capacity Core-Core	f = 1 MHz / U = 0 V	5.5		7	pF
<i>C_{Ad-PE}</i>	Capacity Core-Ground	f = 1 MHz / U = 0 V			2	pF
<i>C_{Pa-Pa}</i>	Capacity Pair-Pair	f = 1 MHz / U = 0 V	4.5		6	pF
<i>a₁</i>	Input attenuation	Core-Core / f = 0–100 MHz			0.7	dB
<i>RL</i>	Reflection loss	Core-Core / @IN / f = 0–100 MHz Core-Core / @OUT / f = 0–100 MHz	20.6 20.7			dB
<i>ACR-N</i>	Crosstalk attenuation	Pair-Pair / @IN / f = 0–100 MHz Pair-Pair / @OUT / f = 0–100 MHz	61.3 58.7			dB
<i>NEXT</i>	Near-end crosstalk attenuation	Pair-Pair / @IN / f = 0–100 MHz Pair-Pair / @OUT / f = 0–100 MHz	44 42.6			dB

Technical Specification

MxSplitProtect & MxSplitProtectHR



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">- Installation Class 3- Not to be used in locations exposed to the dangers of explosion- Indoors, for DIN rails 35 mm (EN 60715)
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">- 1 RJ45 (2x 100Base-T) with ground clamp- 2 RJ45 Ethernet 100Base-T with PoE Mode A- 1 ground wire (matching EIA/TIA-568B)
Wire specifications	<ul style="list-style-type: none">- A1,2 (IN): CAT.5e STP max 10 m- A1 and A2: CAT.5e STP max 1 m- Ground wire: strength 1.5 bis 2.5 mm² (isolator color gn/ge), max. tightening torque: 0.5 Nm
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	www.mobotix.com > Support > Manuals
Online version of this document	www.mobotix.com > Support > Spec Sheets

Technical Specification

MxSplitProtect & MxSplitProtectHR



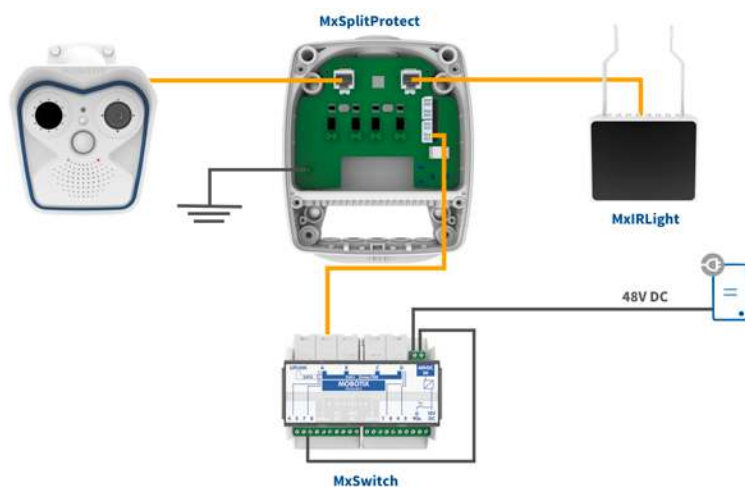
MxSplitProtectHR: Technical Data – Protective Circuit

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_{Reset}</i>	Pulse reset time				2	s
<i>I_B</i>	Rated current	DIN EN 61643-21:2013-07, p. 17			0.9	A
<i>I_{n, Pa-Pa}</i> <i>I_{n, Ad-Ad}</i> <i>I_{n, Ad-PE}</i> <i>I_{total}</i>	Nominal discharge current	C2 / 8/20 μ s / Pair-Pair / PoE C2 / 8/20 μ s / Core-Core C2 / 8/20 μ s / Core-Ground C2 / 8/20 μ s / Core-Ground / total	0.2	16 16	16.1 150 2.5 20	A A kA kA
<i>U_{P, Ad-Ad}</i> <i>U_{P, Ad-PE}</i> <i>U_{P, Pa-Pa}</i>	Voltage protection level	@ <i>I_n</i> / C2 / Core-Core @ <i>I_n</i> / C2 / Core-Ground @ <i>I_n</i> / C2 / Pair-Pair / P oE		9 150 105		V V V
<i>R_{iso}</i>	Insulation resistance	@ <i>U_{C, PoE}</i> / Pair-Pair @ <i>U_{C, Eth}</i> / Core-Core	550 15			M Ω M Ω
<i>R_{serie}</i>	Equivalent series resistance	@ <i>I_L</i> , <i>U_C</i> / Pair 1,2–3,6 @ <i>I_L</i> , <i>U_C</i> / Pair 4,5–7,8		2 2	3.1 3.1	Ω Ω
Information Parameter			MIN	TYP	MAX	UNIT
<i>f_{Gr}</i>	Cut-off frequency	Cut-off frequency of CMD			150	MHz
<i>C_{Ad-Ad}</i>	Capacity Core-Core	f = 1 MHz / U = 0 V	5.5		7	pF
<i>C_{Ad-PE}</i>	Capacity Core-Ground	f = 1 MHz / U = 0 V			2	pF
<i>C_{Pa-Pa}</i>	Capacity Pair-Pair	f = 1 MHz / U = 0 V	4.5		6	pF
<i>a₁</i>	Input attenuation	Core-Core / f = 0–100 MHz			0.7	dB
<i>RL</i>	Reflection loss	Core-Core / @IN / f = 0–100 MHz Core-Core / @OUT / f = 0–100 MHz	23.8 21.7			dB
<i>ACR-N</i>	Crosstalk attenuation	Pair-Pair / @IN / f = 0–100 MHz Pair-Pair / @OUT / f = 0–100 MHz	63.9 71.2			dB
<i>NEXT</i>	Near-end crosstalk attenuation	Pair-Pair / @IN / f = 0–100 MHz Pair-Pair / @OUT / f = 0–100 MHz	48.2 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 via the installation cable 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

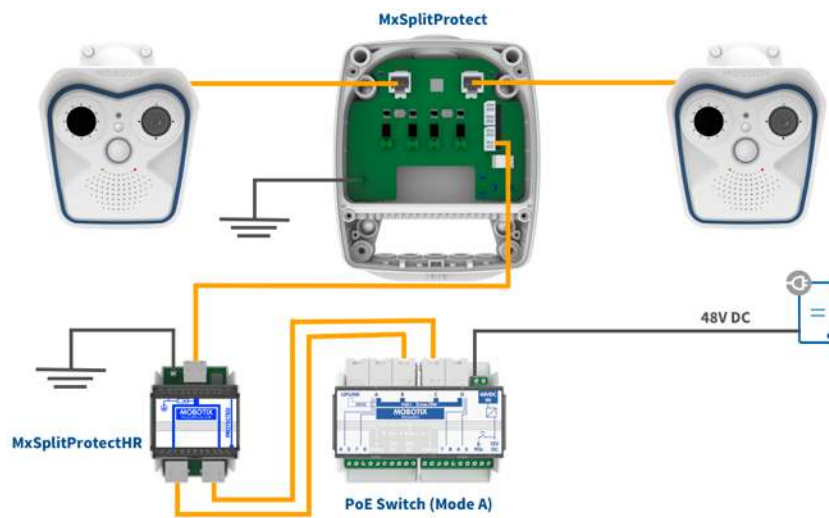
Order Number	EAN	Description
Mx-A-SPA	4047438030229	Weatherproof installation box with integrated 4-kV surge protection for connection (Type 2 P4) to two IP cameras/PoE devices using one Ethernet cable • Interfaces (weatherproof): 1 LSA (2x 100Base-T) with ground clamp, 2 RJ45 Ethernet 100Base-T with 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).

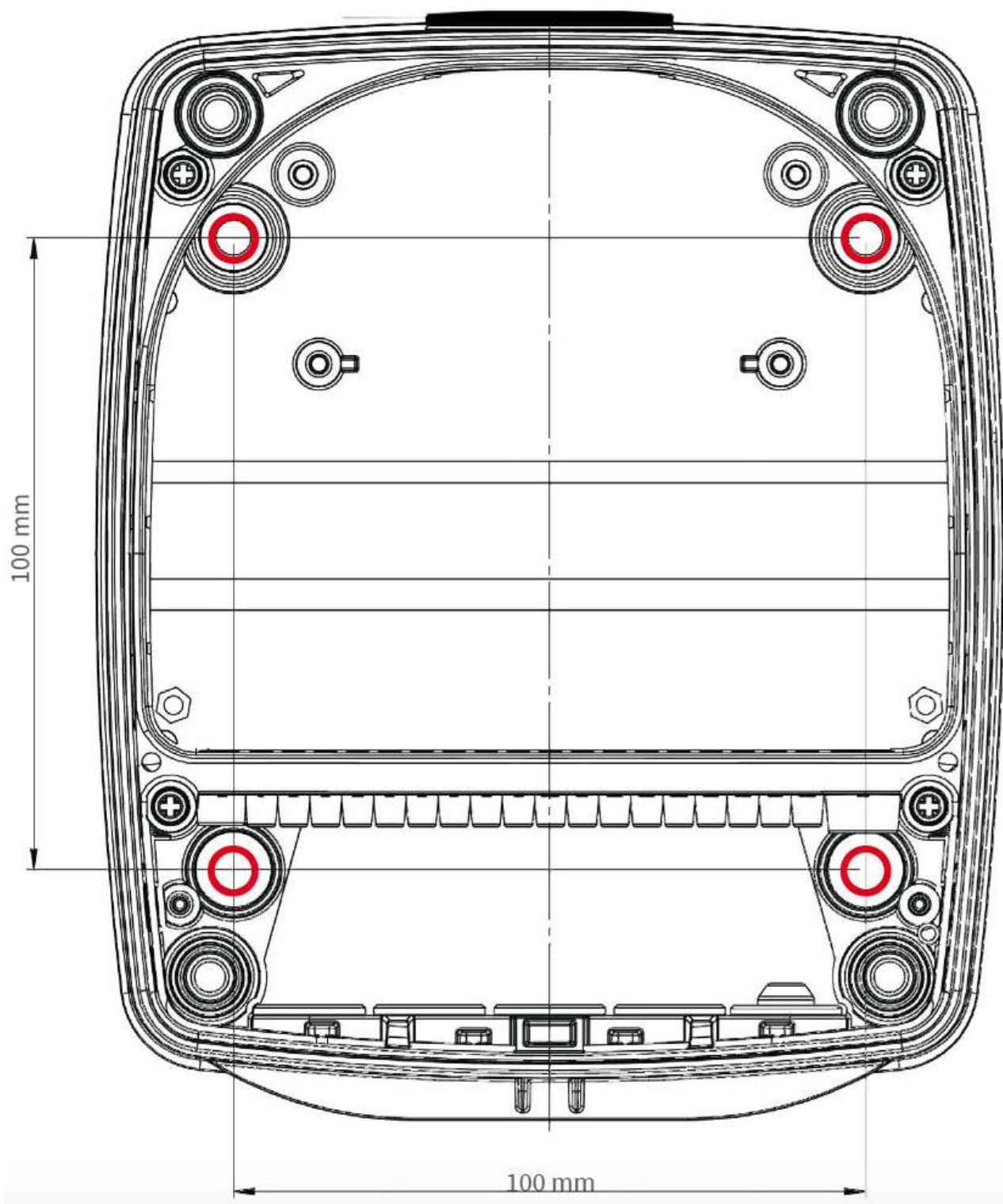


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MxSplitProtect & MxSplitProtectHR



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 (or D2x) 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