

DESIGNED AND CERTIFIED UNDER THE DIRECTIVE 2014/30/UE

# EMC SWITCHES (ELECTROMAGNETIC COMPATIBILITY)

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#### WE PUT AT YOUR DISPOSAL

We offer over **50 years** providing solutions to demanding customers who require very specific characteristics and behaviour according to the sector and their needs.

#### HIGH STANDARD OF QUALITY AND SERVICES

We only use materials provided by companies who offer the very **highest quality**, suitable and certified products. Our success is due to top quality assurance: ISO 9001, SGS, UL, TÜV, ISO 14000 and Ohsas 18001.



#### WHEREVER YOU GO

We are committed to working closely with our customers, providing them with **exceptional service** and offering an advanced and extensive range of products with very competitive prices.

#### CUSTOMIZE TOTALLY YOUR SAFETY SWITCH

Our production systems can give custom-made solutions **On demand.** Every colour from RAL chart is available to be personalized. A variety of protection standards thanks to our own painting facilities.



## CONTACT US

Confidentiality, reliability & quality

www.ihathor.com comercial@ihathor.com +34 945 601 381

ALSO ONLINE

# Please contact our technical sales department

A team of professionals with high experience and ability to solve all your queries



# EMC SERIES iHATHOR SAFETY SWITCHES

Electromagnetic Compatibility is defined in the EMC Directive as "the ability of equipments to function satisfactorily in a electromagnetic environment without introducing intolerable electromagnetic disturbances to other equipment in the same environment" and covers two basic principles:

- Not to disturb the other equipment and not to emit disturbances above a given level (this is called "disturbance emission").
- Not to be disturbed by other equipment with a sufficient level of protection so as not to be disturbed easily (this is called ''disturbance immunity'').

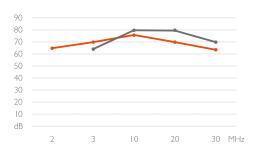
Electric, magnetic and electromagnetic fields are everywhere. Also around safety and isolation switches: they are mostly conventional electromagnetic fields such as grid connection lines, signal and control lines, and electrical and electronic modules which radiate electromagnetic fields. iHATHOR safety and isolation switches gives the protection needed for conventional electromagnetic fields. However, for some intense electromagnetic fields like microwaves, EDM facilities by arc, HF welding technique it is necessary to create a complete screening

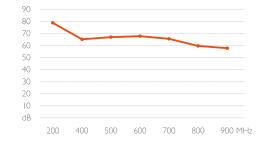
#### EFFECTIVENESS OF SCREENING IN EMC IHATHOR SWITCHES

iHATHOR safety and isolation switches offer optimum shielding effect to achieve electromagnetic compatibility, both in conventional and strong electromagnetic fields.

effect.

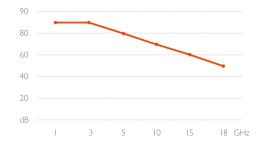
FRECUENCY	ELECTRIC FIELD AND PLANE WAVES
200 MHz	78 dB
400 MHz	64 dB
500 MHz	66 dB
600 MHz	67 dB
700 MHz	64 dB
800 MHz	60 dB
900 MHz	58 dB





FRECUENCY	MAGNETIC FIELD	ELECTRIC FIELD
2 MHz		66 dB
3 MHz	63 dB	
10 MHz	80 dB	75 dB
20 MHz	80 dB	69 dB
30 MHz	70 dB	65 dB

	PLANE WAVES
l GHz	86 dB
3 GHz	86 dB
5 GHz	80 dB
10 GHz	69 dB
15 GHz	60 dB
18 GHz	50 dB





# EMC SERIES iHATHOR SAFETY SWITCHES



Examples



Provide Safety to your Property and your Personnel

iHATHOR EMC Series is a full line of safety and isolation switches of indoor and outdoor applications (made in stainless steel AISI 304L). We design and manufacture every product ourselves in our own factories. Focused heavily on safety, iHATHOR's switching device product line brings state-of-the art designs that can even be customized to fit your unique needs. iHATHOR switch disconnectors onload, are available from 20A to 1800A, a large range for solving the different necessity in a electromagnetic environment. Achieving an optimal design for facility it's installation and operation. Key on hand.

FOR MORE INFORMATION CLICK HERE



# EMC SERIES iHATHOR SAFETY SWITCHES

# 

Safely cut off electricity in your electrical installations: aeronautics, medical equipment, professional electronics, safe in solar and wind renewable energy, offshore, maritime, power distribution, food industry, manufacturing machinery and other general industries.

iHATHOR safety switches are reliable and provide safety to your property and your personnel in addition to providing:

- Protection against in a electromagnetic environment.
- Protection against overcurrent.
- Protection against circuit overloads.
- Protection against short circuiting.

## ADVANTAGES

- Ready for installation in a electromagnetic environment.
- Compact design.
- Possibilities in custom housing design.
- Versatility.
- Fast delivery time.
- Custom designs available.
- Quantity discount.



#### 

- Complies with 2014/30/UE and EMC Directive 2014/35/UE.
- IEC/EN 60947-3
- IP66 Norm IEC EN 62208 and EN 60529.
- Maximum IK10 resistance Norm IEC62208 and IEC 62262.
- UE Directive of low voltage 2014/35/UE.
- Materials intended to come into contact with food, CE 1935/2004.
- Offhore, maritime grade IP66.
- UL Standard(s) Safety: UL508A-Industrial Control Panels, CSA C22.2 No.14- Industrial Control Equipment.

## OPTIONS

- The most standard products are presented, options are available upon request.
- Option multiple of switch, n° of poles, current, aux. contacts,...
- Drills in base your needs.
- Option of different supports.
- Option of manufactured in different materials: stainless steel AISI 316L (enclosure maritime grade) or painted galvanized steel finish in RAL 7035 or another color.
- Design on IP67 or IP68 box.
- Possibility of Atex load switch.



# HATHOR SWITCH DISCONNECTOR EMC BKP SERIES





Example 20A - 25A - 40A

Example 63A - 80A



Example 100A - 125A

# 

#### Available in a Wide Range of Currents from 20A Up 125A

iHATHOR switch disconnectors available in a wide range of currents from 20A up 125A. EMC BKP Series has been designed according to standard IEC/EN60947-3 and 2014/30/ UE for its use in low voltage civil and industrial installations and electromagnetic environment; also are certificated to UL 508 for use as manual motor controllers.

FOR MORE INFORMATION CLICK HERE

		ATHOR SWITCH E							
ACCORDING TO VDE 0660, IEC/EN 60947		20	25	40	63	80	125		
Rated thermal current	lth		A	20	25	40	63	80	125
Rated thermal current enclosed	lthe		A	20	25	40	63	80	110
Rated insulation voltage	Ui		V	690	690	690	690	690	1000
Rated impulse withstands voltage	Uimp		kV	6	6	6	6	6	8
Rated operational current AC	le	AC21A	A	20	25	40	63	80	125
Making capacity	leff	3×380-440V	А	160	190	300	370	440	850
Breaking capacity		3×220-240V	А	160	180	250	330	380	680
Breaking capacity		3×380-440V	А	160	180	250	330	380	680
Breaking capacity		3×660-690V	А	80	110	170	190	220	420
Direct switching motors	AC3	3x400V	А	12	16	30	37	37	72
Direct switching motors	AC3	3×220-240V	kW	3	4	7,5	11	11	22
Direct switching motors		3×380-440V	kW	5,5	7,5	15	18,5	18,5	37
Direct switching motors		3×660-690V	kW	5,5	7,5	15	18,5	18,5	30
Main & safety switch	AC23	3x400V	A	16	20	32	45	45	85
Main & safety switch	AC23A	3×220-240V	kW	4	5,5	9	15	15	30
Main & safety switch	AC23B	3x380-440V	kW	7,5	10	16	22	22	45
Main & safety switch		3×660-690V	kW	5,5	7,5	15	18,5	18,5	37
Rated conditional short- circuit current			kAeff	10	10	10	10	10	10
Max, fuse size	gL (gG)		A	25	35	50	63	80	125
Rated short-time withstand current 1s.	lcw		А	250	300	500	600	850	1500
Mechanical life			×103	200	200	200	100	100	100
CONNECTING CAPACITY									
Solid or stranded cable			mm <sup>2</sup>	0,5	-10	-	25	4-	-50
Solid or stranded cable			AWG	20	)-8	16	-4	I 0-C	) (10)
Flexible cable			mm <sup>2</sup>	0,5	5-6	4-	16	10	-35
Flexible cable			AWG	20	-10	16	-6	8	-2
Size of terminal screw				M	3,5	M	15	٩	16
Tightening torque			Nm	0.8	-1,7	2.	-4	3.5	-4.5

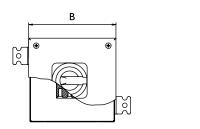


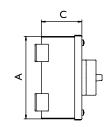
## **iHATHOR SWITCH DISCONNECTOR EMC BKP SERIES**

## PLANS AND REFERENCES

#### BKP SERIES | 20A-25A-40A



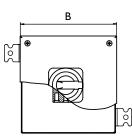


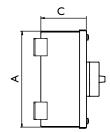


EMC BKP SERIES (20A - 25A - 40A)	DIMENSIONS (mm)						
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES		
BKP20A3PM	160	160	90	20	3		
BKP20A4PM	160	160	90	20	4		
BKP25A3PM	160	160	90	25	3		
BKP25A4PM	160	160	90	25	4		
BKP40A3PM	160	160	90	40	3		
BKP40A4PM	160	160	90	40	4		

#### BKP SERIES | 63A-80A



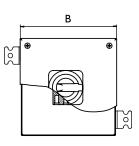


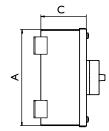


EMC BKP SERIES (63A - 80A)	DIMENSIONS (mm)						
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES		
BKP63A3PM	200	200	120	63	3		
BKP63A4PM	200	200	120	63	4		
BKP80A3PM	200	200	120	80	3		
BKP80A4PM	200	200	120	80	4		

#### BKP SERIES | 100A-125A







EMC BKP SERIES (100A - 125A)	DIMENSIONS (mm)						
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES		
BKP100A3PM	200	200	120	100	3		
BKP100A4PM	200	200	120	100	4		
BKP125A3PM	200	200	120	125	3		
BKP125A4PM	200	200	120	125	4		



# iHATHOR SWITCH DISCONNECTOR EMC H0 SERIES



Rated Breaking Current of Up to 8 Times the Rated Operational Current

Switch disconnectors on-load EMC H0 Series, are available from 125A for 250A, versions under request on order. Rated breaking current of up to 8 times the rated operational current, with ability to establish and support short circuit currents up to 100kA; uninterrupted duties in extreme tropic and polar conditions, as well electromagnetic environment.

FOR MORE INFORMATION CLICK HERE

Example

# TECHNICAL INFORMATION

	iHA	THOR SWITCH DISCONI	NECTORS	5 - EMC	H0 SERIES			
ACCORDING TO IEC/EN 60947-3					125	160	200	250
Rated thermal current in ambient at	lth	40°C		A	125	160	200	250
Rated thermal current in ambient at	lth	50°C		A	125	160	200	250
Rated thermal current in ambient at	lth	60°C		A	125	160	200	250
Rated insulation voltage	Ui			$\vee$	1000	1000	1000	1000
Rated impulse withstands voltage	Uimp	kV kV			8	8	8	8
AC rated operational current $\!\!\!\!\!\!\!^{*(I)}$	le	Ue 400V	AC21A	A	125	160	200	250
AC rated operational current $\!\!\!\!\!\!\!^{*(I)}$	le	Ue 400V	AC22A	А	125	160	200	250*(3)
AC rated operational current $\!\!\!\!\!\!\!^{*(I)}$	le	Ue 400V	AC23A	A	125	160	160	160
Rated breaking capacity		400V	AC23	A	1000	1280	1280	1280
Rated making capacity		400V	AC23	A	1250	1600	1600	1600
SHORT - CIRCUIT BEHAVIOUR					125	160	200	250
Rated short-circuit making capacity $\!$		lcm	kA (beak)	)	13	13	13	13
Rated short-time withstand current 1s.		lcw	kA rms		7	7	7	7
MECHANICAL FEATURES					125	160	200	250
Number of mechanical operations (according to the standars, for other values please consult)					8000	8000	8000	8000
Maximum weight 3P			Kg		0,85	0,85	0,9	0,9
Maximum weight 3P + N			Kg					

\*(1) Other voltages and/or utilization categories. Please consult.

\*<sup>(2)</sup> Without limiting protective device (short-circuit maintained 50ms. - 100ms.)

\*(3) Intensidad de empleo AC22B.



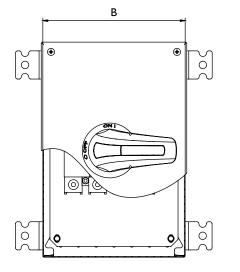


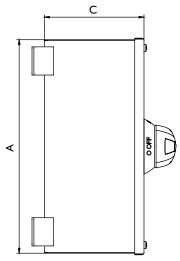
# iHATHOR SWITCH DISCONNECTOR EMC HO SERIES

#### PLANS AND REFERENCES

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EMC H0 SERIES	DIMENSIONS (mm)							
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES			
HI25A3PPM	300	200	150	125A	3			
HI60A3PPM	300	200	150	160A	3			
HI25A4PPM	300	200	150	125A	4			
HI60A4PPM	300	200	150	160A	4			
HI25A3PBM	300	200	150	125A	3			
HI60A3PBM	300	200	150	160A	3			
H200A3PBM	300	200	150	200A	3			
HI25A4PBM	300	200	150	125A	4			
HI60A4PBM	300	200	150	160A	4			
H200A4PBM	300	200	150	200A	4			
H200A3PPM	400	300	150	200A	3			
H250A3PPM	400	300	150	250A	3			
H200A4PPM	400	300	150	200A	4			
H250A4PPM	400	300	150	250A	4			

PP: strip connection

PB: flange connection



# HATHOR SWITCH DISCONNECTOR



Rated Breaking Current of Up to 8 Times the Rated Operational Current

Switch disconnectors on-load EMC H1 Series, are available from 315A for 400A, versions under request on order. Rated breaking current of up to 8 times the rated operational current, with ability to establish and support short circuit currents up to 100kA; uninterrupted duties in extreme tropic and polar conditions, as well electromagnetic environment.

Example

#### FOR MORE INFORMATION CLICK HERE

## TECHNICAL INFORMATION

	iHATH	HOR SWITCH DISCONNECTO	rs - emc hi	SERIES		
ACCORDING TO IEC/EN 60947-3					315	400
Rated thermal current in ambient at	lth	40°C		А	315	400
Rated thermal current in ambient at	lth	50°C		А	315	400
Rated thermal current in ambient at	lth	60°C		А	315	400
Rated insulation voltage	Ui			$\vee$	1000	1000
Rated impulse withstands voltage	Uimp			kV	8	8
AC rated operational current $*^{(1)}$	le	Ue 400V	AC21A	А	315	400
AC rated operational current $*^{(1)}$	le	Ue 400V	AC22A	А	315	400
AC rated operational current $*^{(1)}$	le	Ue 400V	AC23A	А	315	400
Rated breaking capacity		400V	AC23	А	2520	3200
Rated making capacity		400V	AC23	А	3150	4000
SHORT - CIRCUIT BEHAVIOUR					315	400
Rated short-circuit making capacity <sup>*(2)</sup>		lcm	kA (beak)	)	20	20
Rated short-time withstand current 1s.		lcw	kA rms		12	12
MECHANICAL FEATURES					315	400
Number of mechanical operations (according to the standars, for other values please consult)			Cycles		8000	5000
Maximum weight 3P			Kg		1,7	1,9
Maximum weight 3P + N					1,9	2,1

\*(1) Other voltages and/or utilization categories. Please consult.

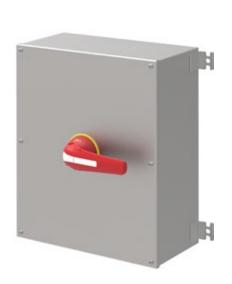
\*(2) Without limiting protective device (short-circuit maintained 50ms. - 100ms.)

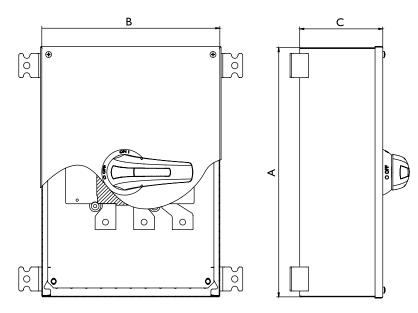




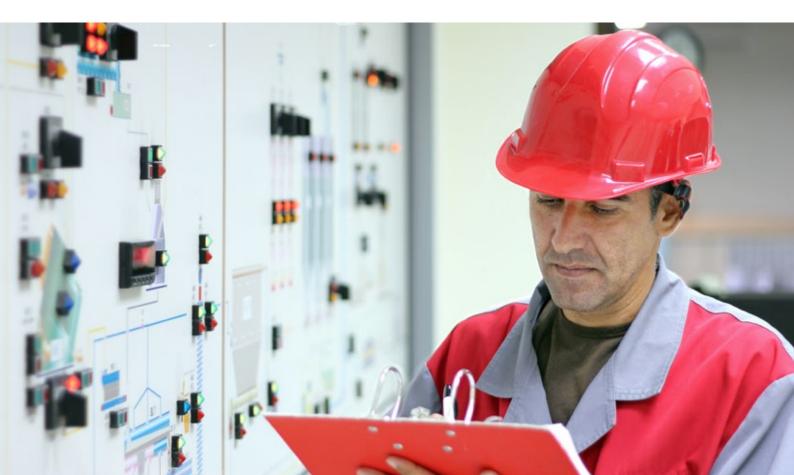
# iHATHOR SWITCH DISCONNECTOR EMC HI SERIES

## PLANS AND REFERENCES





EMC HI SERIES	DIMENSIONS (mm)						
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES		
H315A3PPM	400	300	150	315A	3		
H315A4PPM	400	300	150	315A	4		
H400A3PPM	500	400	200	400A	3		
H400A4PPM	500	400	200	400A	4		



# iHATHOR SWITCH DISCONNECTOR EMC H2 SERIES



Rated Breaking Current of Up to 8 Times the Rated Operational Current

Switch disconnectors on-load EMC H2 Series, are available from 500A for 800A, versions under request on order. Rated breaking current of up to 8 times the rated operational current, with ability to establish and support short circuit currents up to 100kA; uninterrupted duties in extreme tropic and polar conditions, as well electromagnetic environment.

Example

#### FOR MORE INFORMATION CLICK HERE

#### TECHNICAL INFORMATION

	iHATH	OR SWITCH DISCONNEC	CTORS - E	MC H2	SERIES		
ACCORDING TO IEC/EN 60947-3					500	630	800
Rated thermal current in ambient at	lth	40°C			500	630	800
Rated thermal current in ambient at	lth	50°C A			500	630	720
Rated thermal current in ambient at	lth	60°C A			500	630	640
Rated insulation voltage	Ui	V			1000	1000	1000
Rated impulse withstands voltage	Uimp	imp kV			12	12	12
AC rated operational current <sup>*(1)</sup>	le	Ue 400V	AC21A	A	500	630	800
AC rated operational current $*^{(I)}$	le	Ue 400V	AC22A	A	500	630	800
AC rated operational current $*^{(I)}$	le	Ue 400V	AC23A	А	500	630	800
Rated breaking capacity 400V		AC23	А	4000	5000	6400	
Rated making capacity		400V	AC23	A	5000	6300	8000
SHORT - CIRCUIT BEHAVIOUR					500	630	800
Rated short-circuit making capacity <sup>*(2)</sup>		lcm	kA (beak)		26	26	26
Rated short-time withstand current 1s.		lcw	kA rms		16	16	16
MECHANICAL FEATURES					500	630	800
Number of mechanical operations (according to the standars, for other values please consult)			Cycles		5000	5000	3000
Maximum weight 3P			Kg		4,2	4,2	4,2
Maximum weight 3P + N			Kg		4,5	4,5	4,5

\*(1) Other voltages and/or utilization categories. Please consult.

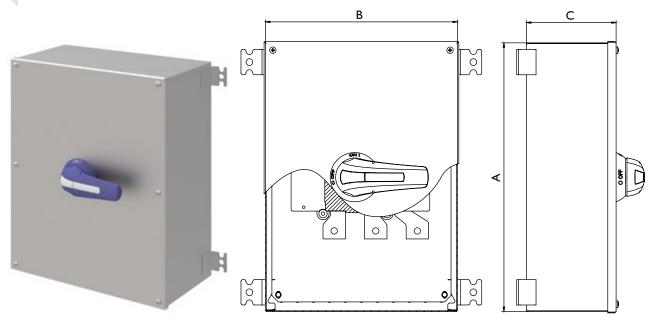
\*(2) Without limiting protective device (short-circuit maintained 50ms. - 100ms.)





## iHATHOR SWITCH DISCONNECTOR EMC H2 SERIES





EMC H2 SERIES	DIMENSIONS (mm)							
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES			
H500A3PPM	500	400	200	500A	3			
H500A4PPM	500	400	200	500A	4			
H630A3PPM	500	400	200	630A	3			
H630A4PPM	500	400	200	630A	4			
H800A3PPM	500	400	200	800A	3			
H800A4PPM	500	400	200	800A	4			



# iHATHOR SWITCH DISCONNECTOR EMC H3 SERIES



Example

**TECHNICAL INFORMATION** 

#### Rated Breaking Current of Up to 8 Times the Rated Operational Current

Switch disconnectors on-load EMC H3 Series, are available from 1000A for 1800A, versions under request on order. Rated breaking current of up to 8 times the rated operational current, with ability to establish and support short circuit currents up to 100kA; uninterrupted duties in extreme tropic and polar conditions, as well electromagnetic environment.

FOR MORE INFORMATION CLICK HERE

#### ACCORDING TO IEC/EN 60947-3 1800 40°C А 1000 1800 lth Rated thermal current in ambient at А 1000 lth 1800 Rated thermal current in ambient at 60°C А 1000 Rated thermal current in ambient at lth 1600 Rated insulation voltage Ui V 1000 1000 kV 12 12 Rated impulse withstands voltage Uimp 12 12 1000 1600 le Ue 400V AC21A А 1800 AC rated operational current $^{*(I)}$ AC rated operational current\*(1) le Ue 400V AC22A А 1000 1800 le Ue 400V AC23A А 1600 1800 AC rated operational current\*(1) AC rated operational current\*( le Ue 800V AC21B А 400V AC23 А 3750 4800 5400 Rated breaking capacity 3000 400V А 3750 Rated making capacity AC23 3000 4800 5400 SHORT - CIRCUIT BEHAVIOUR 1800 Rated short-circuit making capacity\*(2) lcm kA (beak) 60 60 75 75 25 Rated short-time withstand current 1s. kA rms 50 50 MECHANICAL FEATURES 1800 3000 3000 3000 3000 Number of mechanical operations (according to the standars, for other values please consult) Cycles 18.5 18.5 18.5 18.5 Maximum weight 3P Kg Maximum weight 3P + N 20.8 20.8 20.8 20.8 Kg

\*(1) Other voltages and/or utilization categories. Please consult.

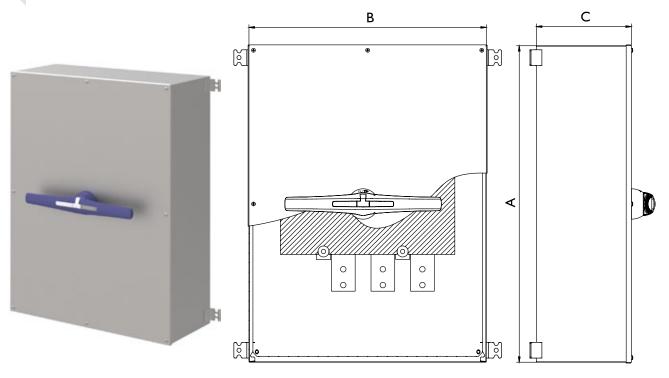
\*<sup>(2)</sup>Without limiting protective device (short-circuit maintained 50ms. - 100ms.)





## iHATHOR SWITCH DISCONNECTOR EMC H3 SERIES



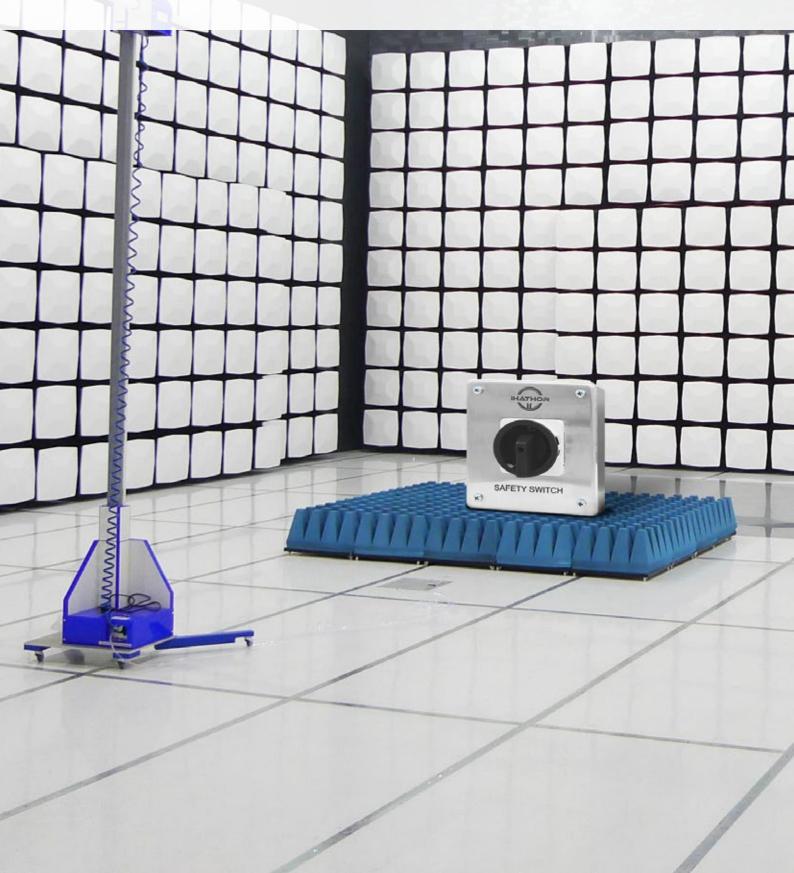


EMC H3 SERIES	DIMENSIONS (mm)							
REFERENCES	HEIGHT (A)	WIDTH (B)	DEPTH (C)	CURRENT	N° POLES			
HI000A3PPM	600	500	200	1000A	3			
HI000A4PPM	600	500	200	1000A	4			
HI250A3PPM	600	500	200	1250A	3			
HI250A4PPM	600	500	200	1250A	4			
HI600A3PPM	800	600	250	1600A	3			
HI600A4PPM	800	600	250	1600A	4			
HI800A3PPM	800	600	250	1800A	3			
HI800A4PPM	800	600	250	1800A	4			





We EMC safety and isolation switches is adapted in the Electromagnetic Compatibility (EMC) and certificate by directive 2014/30/UE





# CUSTOMIZED SWITCHES SOLUTIONS IHATHOR

The customized manufacture of all safety and isolation switches iHATOR is carry out with the most advanced technical methods and with the precision and consciousness of a craftsman. Therefore, it is not an accident that our company has been present in the market for many years: it is the result of hard work and effort by many people.

In iHATHOR we bear in mind that customers perceive the quality very clearly safety and useful solutions are what customers value most. Nowadays we have license to use the most exigents certifications. Our flexible manufacturing environment greatly reduces the costs associated with changeovers and small production lots.





ATEX SAFETY SWITCHES

UL 98 AND UL 508 SAFETY SWITCHES







IECEX SAFETY SWITCHES





#### CORROSION RESISTANT SWITCHES



#### EMC SWITCHES DISCONNECTORS

#### WEATHERPROOF AND DUST-TIGHT SWITCHES

Buy direct from manufacturer of custom made IP66 heavy duty industrial and waterproof switches AISI 304L and 316L made by standard IEC 60529. iHATHOR has tested all sizes and dimensions of waterproof enclosures according to EN 60529:2018. All weather resistant enclosures are more than simply rainproof, they meet a minimum of Nema 4X and IP66 requirements to ensure your electronics are protected. From safety switches to disconnectors, iHATHOR weatherproof enclosures offer a wide range of sizes and styles to keep your project waterproof.



CABLE GLANDS FOR SAFE AREAS

#### CABLE GLANDS FOR ATEX AREAS

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#### **HEAVY DUTY SAFETY SWITCHES**



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