

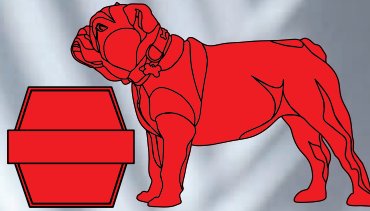
50<sup>th</sup> anniversary

1974

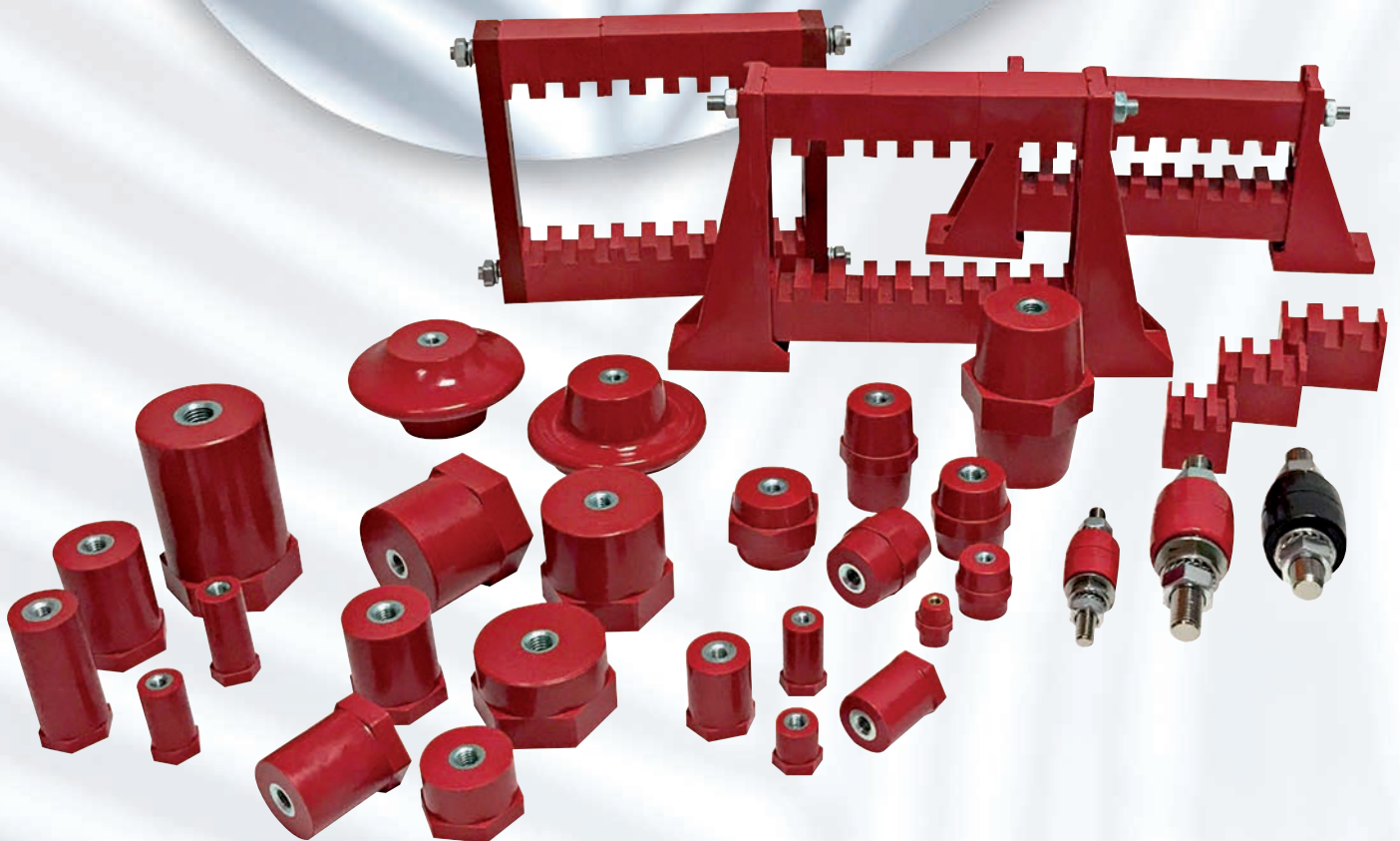
2024



**ERIB**  
STRONG INSULATORS

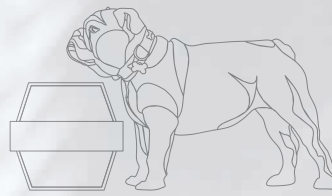


CATALOGO GENERALE *GENERAL CATALOGUE*









# MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:  
C621361

Initial certification date:  
12 January 2024

Valid:  
12 January 2024 – 11 January 2027

This is to certify that the management system of  
**Erim S.r.l.**  
Via Monte Nevoso, 16 - 20095 Cusano Milanino (MI) - Italy

has been found to conform to the Quality Management System standard:  
**ISO 9001:2015**

This certificate is valid for the following scope:  
**Production of polyester insulators and busbar holders for low voltage.**  
(IAF: 14)

Place and date:  
Vimercate (MB), 12 January 2024



SGQ N° 003 A  
SGA N° 003 D  
SGE N° 007 M  
SCR N° 004 F  
ERAS N° 009 P  
PRG N° 003 B  
PRS N° 004 C  
SSI N° 002 G  
Membro di IMA EA per gli schemi di accreditamento  
SGQ, SGA, PRG, PRS, ISO 9001, LAB e LAT, di IMA IAF  
e PED e di IMA ILAC per gli schemi di accreditamento  
LAB, MED, LAT e DSP

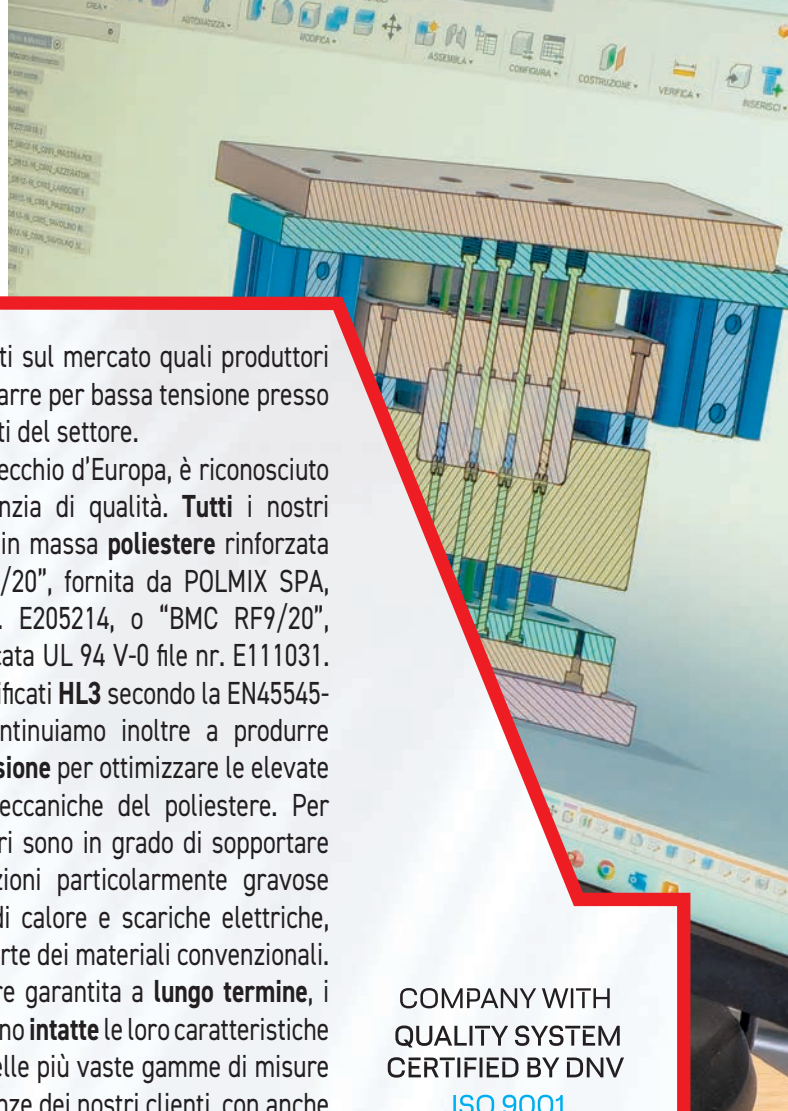
For the issuing office:  
**DNV - Business Assurance**  
Via Energy Park, 14, - 20871 Vimercate (MB) -  
Italy

*Claudia Baroncini*

**Claudia Baroncini**  
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.  
ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 68 99 905. www.dnv.it





Da oltre 50 anni siamo presenti sul mercato quali produttori qualificati di isolatori e portasbarre per bassa tensione presso le aziende ed enti più importanti del settore.

Il nostro marchio **ERIB**, il più vecchio d'Europa, è riconosciuto in tutto il mondo come garanzia di qualità. **Tutti** i nostri isolatori sono infatti realizzati in massa **poliestere** rinforzata con fibra di vetro "BMC RF 3/20", fornita da POLMIX SPA, certificata UL 94 V-0 file nr. E205214, o "BMC RF9/20", fornita da POLYNT SPA, certificata UL 94 V-0 file nr. E111031. Entrambi i materiali sono classificati **HL3** secondo la EN45545-2, certificati da CSI SPA. Continuiamo inoltre a produrre tramite **stampaggio a compressione** per ottimizzare le elevate caratteristiche elettriche e meccaniche del poliestere. Per questa ragione i nostri isolatori sono in grado di sopportare senza inconvenienti sollecitazioni particolarmente gravose come shock meccanici, colpi di calore e scariche elettriche, che danneggiano la maggior parte dei materiali convenzionali. Questa loro resistenza è inoltre garantita a **lungo termine**, i nostri isolatori infatti mantengono **intatte** le loro caratteristiche per molti anni. Abbiamo una delle più vaste gamme di misure per soddisfare le diverse esigenze dei nostri clienti, con anche la possibilità di **progettare e costruire stampi** per componenti realizzati su richiesta e disegno del cliente. Manteniamo un magazzino sempre ben fornito per garantire i **migliori tempi di consegna**. I nostri isolatori tipo DB/P e i nostri portasbarre PSB sono stati testati per resistenza al cortocircuito secondo la EN61439-2.



I nostri prodotti sono conformi alle seguenti direttive europee

- Direttiva Bassa Tensione 2014/35/EU
- Regolamento REACH nr. 1907/2006
- Direttiva RoHS 2011/65/CE

COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
**ISO 9001**

Il nostro Sistema di Gestione  
è certificato secondo le norme  
ISO 9001:2015

Tutti i nostri isolatori sono certificati UL



File nr. E502533 - Categoria QEU2/8 per isolatori con voltaggio massimo 1000 V.  
Secondo gli standard UL67, UL891, CSA C22.2 NO. 29-15 e 244-05.

File nr. E502534 - Categoria DLAR2/8 per isolatori con voltaggio superiore ai 1000 V.  
Secondo gli standard IEEE C37.20.2/3 e CSA C22.2 NO. 31-18.

100%



MADE IN ITALY

L'intero ciclo produttivo dei nostri isolatori viene realizzato completamente in Italia con prodotti di sola origine italiana, a partire dalle materie prime fino all'imballaggio finale.







From over 50 years we've been in business as a qualified manufacturer of low voltage insulators and bus bar systems and supply the most important companies.

Our mark **ERIB**, the oldest one in Europe, is recognized all over the world as a quality guarantee. All our insulators are indeed made of **polyester material** reinforced with fiberglass "BMC RF 3/20", supplied by the company POLMIX SPA, UL certified UL 94 V-0 file nr. E205214, or "BMC RF9/20", supplied by POLYNT SPA, UL certified file nr. E111031. Both the materials are class **HL3** according to the EN45545-2, certified by CSI SPA. We continue to manufacture insulators by **compression moulding** in order to optimise the high-level electrical and mechanical performances of polyester material. For this reason, our insulators endure, without any inconveniences, particularly heavy stresses like mechanical shock, heat-strokes, electric discharges, which generally cause damages when using other material. Their resistance is **long term guaranteed**, our insulators indeed keep **intact** their characteristics for many years.

We have one of the widest range of sizes to meet the different needs of our customers, with also the possibility of **designing and building molds** for components made to the customer's request and drawing. We maintain a warehouse always well stocked to guarantee the **best delivery times**. Our insulators type **DB/P** and our vertical rodholders **PSB** are tested for shortcircuit resistance according to EN61439-2.

**All our insulators are UL certified**



Our products are in conformity with the European standards

- Low Voltage Directive 2014/35/EU
- EC Regulation nr. 1907/2006
- Council Directive 2011/65/CE

COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
**ISO 9001**

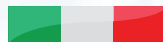
Our Management System  
is certified according to  
ISO 9001:2015 standards



File nr.E502533 - Category QEU2/8 for panelboard components with operating voltage 1000 V max.  
According to standards UL67, UL891, CSA C22.2 NO. 29-15 e 244-05.

File nr.E502534 - Category DLAR2/8 for panelboard components with operating voltage above 1000V  
According to standards IEEE C37.20.2/3 e CSA C22.2 NO. 31-18.

**100%**



**MADE IN ITALY**

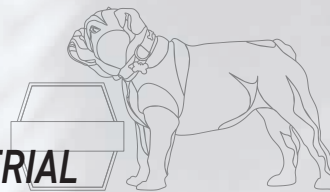
The entire production cycle of our insulators is completely made in Italy with products of Italian origin only, from the raw materials to the final packaging.



# STRONG INSULATORS

## SCHEDA TECNICA MASSA POLIESTERE

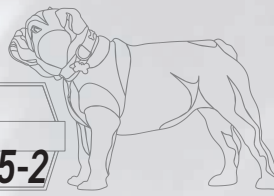
### TECHNICAL DATA SHEET POLYESTER MATERIAL



Il BMC è un Bulk Moulding Compound a base di resina poliestere termoindurente insatura, ignifuga, priva di alogeni e rinforzata con fibre di vetro.  
The BMC is a Bulk Molding Compound based on unsaturated thermosetting polyester resin, fire retardant grade, halogen-free and reinforced with glass fibres.

PROPRIETÀ PROPERTIES	METODO TEST TEST METHOD	UNITÀ UNIT	POLMIX "RF 3/20"	POLYNT "RF 9/20"
PERCENTUALE FIBRA VETRO QUANTITY OF GLASS	-	%	20	20
RESISTIVITÀ SUPERFICIALE SURFACE RESISTIVITY	IEC 60093	Ω	10 <sup>13</sup>	10 <sup>14</sup>
RESISTIVITÀ VOLUME VOLUME RESISTIVITY	IEC 60093	Ω	-	10 <sup>14</sup>
RESILIENZA CHARPY IMPACT STRENGTH	UNI EN ISO 179	KJ/m <sup>2</sup>	30	30
RESISTENZA ALLA FLESSIONE FLEXURAL STRENGTH	UNI EN ISO 178	N/mm <sup>2</sup>	90	-
	ISO 14125A	Mpa	-	90
MODULO ELASTICO A FLESSIONE FLEXURAL MODULUS	UNI EN ISO 178	GPa	10	-
	ISO 14125A	Mpa	-	10000
PROVA A FILO INCANDESCENTE GLOW WIRE TEST	IEC 60695-2-12	°C	960	960
AUTOESTINGUENZA PER APPLICAZIONI FERROVIARIE FIRE PROTECTION ON RAILWAY VEHICLES	EN 45545 (R22/R23)	-	HL3	HL3
INDICE OSSIGENO OXYGEN INDEX	EN ISO 4589-2	%	-	≥ 32
FUMI SMOKE	EN ISO 5659-2 25KWm <sup>2</sup>	Ds max.	-	≤ 150
TOSSICITÀ TOXICITY	NF X 70-100-1 and -2	CIT <sub>NLP</sub>	-	≤ 0,75
ASSORBIMENTO ACQUA WATER ABSORPTION	ISO 62	%	< 0,2	≤ 0,2
PESO SPECIFICO DENSITY	ISO 1183	g/cm <sup>3</sup>	1,80 ± 0,02	1,80
RITIRO LINEARE LINEAR SHRINKAGE	ISO 2577	%	0,10 ± 0,03	0,10
RIGIDITÀ DIELETRICA DIELECTRIC STRENGTH	UNI 4291	kV/mm	17	-
	IEC 60243	kV/mm	-	15
RESISTENZA ALL'ARCO ARC RESISTANCE	ASTM D 495	s	≥ 180	≥ 180
DISTORSIONE AL CALORE HEAT DEFLECTION TEMP.	ISO 75	°C	> 200	> 200
DUREZZA ROCKWELL (Scala M) ROCKWELL HARDNESS (M Scale)	ISO 2039-2	HRM	-	80
RESISTENZA ALLE CORRENTI SUPERFICIALI TRACKING RESISTANCE	IEC 60112	V	600	600
AUTOESTINGUENZA FLAME RESISTANCE	UL94	Class/mm	V0/3,00 File Nr. E205214	V0/3,00 File Nr. E111031
EU RoHS DIRECTIVE	-	-	compliant	compliant
EU REACH SVHC	-	-	compliant	compliant

**CLASSIFICAZIONE SECONDO LA EN 45545-2**  
**CLASSIFICATION ACCORDING TO THE EN 45545-2**



CSI  
 Mod. M03-2

CSI SpA  
 Sede Legale  
 20030 Senago - MI - I  
 Cascina Traversagna 21  
 Direzione, Uffici e Laboratori  
 20021 Bollate - MI - I  
 Viale Lombardia 20  
 Tel. +39 02 383301  
 Fax +39 02 3503940  
 www.csipa.com

**CSI CERT**

Attestato n°:  
 Statement n.:

0923DC/REA18\_1

Visti i rapporti di Prova CSI n. 0923DC/REA18 e 0094DC/TOX18  
 Referring to the CSI test reports n. 0923DC/REA18 and 0094DC/TOX18

si dichiara che  
 we declare that

**BMC RF3/20**  
 (Lastra in resina poliestere rinforzata con fibra di vetro e cariche minerali, spessore 3 mm)  
 (Glass fiber reinforced polyester resin sheet with mineral fillers, 3 mm thick)

Fabbricato da:  
 Manufactured by

**POLMIX S.r.l.**  
 Via Duca d'Aosta, 3  
 21052 - BUSTO ARSIZIO (VA)  
 Italia

è conforme alla norma  
 is found to comply with the standard

EN 45545-2:2013+A1:2015 requisiti R22/R23 per HL1, HL2 e HL3  
 per le prove T01, T10.03 e T12  
 EN 45545-2:2013+A1:2015 requirements R22/R23 for HL1, HL2 and HL3  
 For the tests T01, T10.03 and T12

Data di rilascio/certificato issue date: 30/10/2018

Ing. P. Fumogalli

pagina 1 di 2

CSI

GRUPPO IMO

CSI

THE CERTIFICATE REMAINS THE PROPERTY OF CSI SPA

Attestato n° / Statement no.:

C1344IDC/REA120

Visti i rapporti di prova CSI n. 1344IDC/REA120 e 0139IDC/TOX20  
 Referring to the CSI test reports n. 1344IDC/REA120 and 0139IDC/TOX20

si dichiara che  
 this is to declare that

**BMC RF 9/20**  
 (Resina poliestere insatura caricata con cariche minerali e rinforzata con fibre di vetro)  
 (Glass fiber reinforced mineral filler added un-saturated polyester resin)

Fabbricato da:  
 Manufactured by

**POLYNT SPA**  
 VIA CADUTI E DISPERSI DELL'AERONAUTICA, 18  
 24030 BREMBATE DI SOPRA (BG)

è conforme alla norma  
 is found to comply with the standard

EN 45545-2:2013+A1:2015 requisiti R22-R23 per HL1, HL2 e HL3  
 per le prove T01, T10.03 e T12  
 EN 45545-2:2013+A1:2015 requirements R22-R23 for HL1, HL2 and HL3  
 for the tests T01, T10.03 and T12

Data di rilascio/certificato issue date: 25/11/2020

Ing. P. Fumogalli

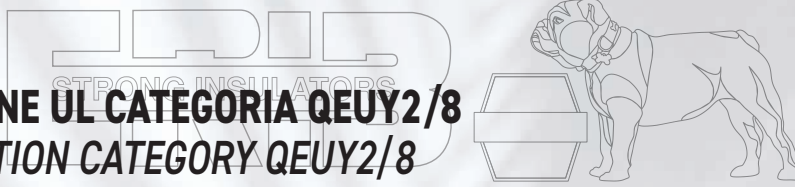
CSI SpA - A. RICCIO IMACO  
 SOCIETÀ AD AZIENDA DISPERSE E  
 COORDINAMENTO DI IMACO GROUP S.p.A.

REA MI 1446310  
 R.L. C.F. P.I. 13614910151  
 Cap. Soc. € 1.040.000

Sede legale  
 Italia | 20030 Senago (MI) | Cascina Traversagna 21  
 Direzione: casin@csipa.com | info@csipa.com | www.csipa.com



# CERTIFICAZIONE UL CATEGORIA QEUY2/8 UL CERTIFICATION CATEGORY QEUY2/8



## CERTIFICATE OF COMPLIANCE

Certificate Number 20190509-E502533  
Report Reference E502533-20180924  
Issue Date 2019-MAY-09

Issued to: ERIM SRL  
via Bovisasca 24/26  
20026 Novate Milanese MI ITALY

This certificate confirms that representative samples of COMPONENT - PANELBOARD AND SWITCHBOARD ACCESSORIES See Addendum Page

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: UL 67, STANDARD FOR PANELBOARDS  
UL 891 & CSA C22.2 NO. 244-05, SWITCHBOARDS  
CSA C22.2 NO. 29-15, PANELBOARDS AND ENCLOSED PANELBOARDS

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

*Barabes*

Bruce Mahanovich, Director North American Certification Program

UL LLC  
Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://www.ulprospector.com>



## CERTIFICATE OF COMPLIANCE

Certificate Number 20190509-E502533  
Report Reference E502533-20180924  
Issue Date 2019-MAY-09

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

USR CNR - Recognized Component- Standoff Insulators-

Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
DB 16/P	DB 25/P	DB 35/P	DB 50/P	DB 70/P	DB 100/P
DB 20/P	DB 30/P	DB 40/P	DB 60/P	DB 75/P	
	DB 34/P	DB 45/P	DB 65/P		
CO/P 16	CO/P 25	CO/P 35	CO/P 45	CO/P 55	
CO/P 20	CO/P 30	CO/P 40	CO/P 50	CO/P 60	
CSP 30	CSP 40	CSP 50	CSP 60	CSP 70	
CSP 35	CSP 45	CSP 55	CSP 65	CSP 75	
CTP 30	CTP 40	CTP 50	CTP 60	CTP 70	
CTP 35	CTP 45	CTP 55	CTP 65	CTP 75	
CPE 40	CPE 80				
CPE 60	CPE 100				
I2IC10001B	I2IC100012	I2IC100016			
PSB 6	PSB 8	PSB 10	PSB/1	PSB/2	PSB/120
PI/P-4	PI/P-6	PI/P-8	PI/P-10	PI/P-12	PI/P-16
PI/P-6	PI/P-8	PI/P-10	PI/P-12	PI/P-16	PI/P-20
NA029					

*Barabes*

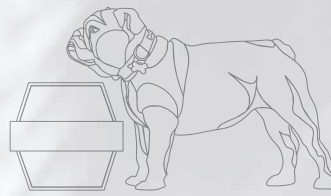
Bruce Mahanovich, Director North American Certification Program

UL LLC  
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# CERTIFICAZIONE UL CATEGORIA DLAR2/8 UL CERTIFICATION CATEGORY DLAR2/8



## CERTIFICATE OF COMPLIANCE

**Certificate Number** 20190509-E502534  
**Report Reference** E502534-20181115  
**Issue Date** 2019-MAY-09

**Issued to:** ERIM SRL  
 via Bovisasca 24/26  
 20026 Novate Milanese MI ITALY

This certificate confirms that representative samples of

**COMPONENT - ACCESSORIES FOR USE IN CIRCUIT BREAKERS AND METAL-CLAD SWITCHGEAR OVER 1000 VOLTS**  
 See Addendum Page

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.


**Standard(s) for Safety:** IEEE C37.20.2, METAL-CLAD SWITCHGEAR  
 CSA C22.2 NO. 31-14, SWITCHGEAR ASSEMBLIES

**Additional Information:** See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.



*Ramirez*  
Ulises Marinovich, Director North American Certification Program  
UL LLC  
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## CERTIFICATE OF COMPLIANCE

**Certificate Number** 20190509-E502534  
**Report Reference** E502534-20181115  
**Issue Date** 2019-MAY-09

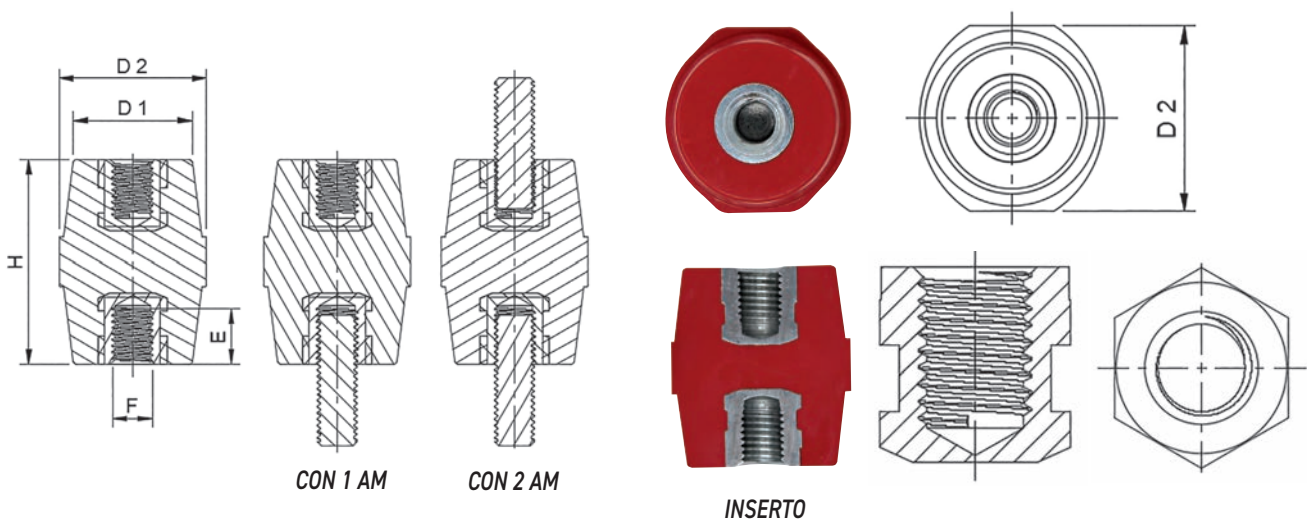
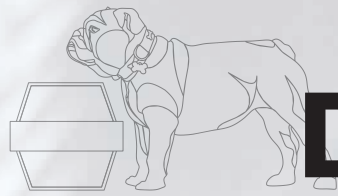
This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

USR - Accessories for Use in Circuit Breakers and Metal-Clad Switchgear Over 1000 Volts - Standoff Insulators  
 CNR - Accessories for Use in Circuit Breakers and Metal-Clad Switchgear Over 750 Volts - Standoff Insulators

Part No.	Part No.	Part No.	Part No.
DB 34/P	DB 45/P	DB 65/P	DB 750/P
DB 35/P	DB 50/P	DB 70/P	DB 100/P
DB 40/P	DB 60/P	DB 75/P	
CO/P Series		CO/P Series	
Part No.	Part No.	Part No.	Part No.
CO/P 45	CO/P 50	CO/P 655	CO/P 60
CS/P Series		CS/P Series	
Part No.	Part No.	Part No.	Part No.
CS/P 30	CS/P 45	CS/P 60	CS/P 65
CS/P 35	CS/P 50	CS/P 65	CS/P 70
CS/P 40	CS/P 55	CS/P 70	
CT/P Series		CT/P Series	
Part No.	Part No.	Part No.	Part No.
CT/P 30	CT/P 45	CT/P 60	CT/P 65
CT/P 35	CT/P 50	CT/P 65	CT/P 70
CT/P 40	CT/P 55	CT/P 70	
CPE Series		CPE Series	
Part No.	Part No.	Part No.	Part No.
CPE 40	CPE 80		
CPE 60	CPE 100		
Type FP		Type FP	
Part. No	Part. No	Part. No	Part. No
I2IC100010	I2IC100012	I2IC100016	
PI/P Series		PI/P Series	
Part. No	Part. No	Part. No	Part. No
PI/P-16	PI/P-20		



*Ramirez*  
Ulises Marinovich, Director North American Certification Program  
UL LLC  
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### Isolatori Distanziatori DB/P

Prodotti tramite stampaggio a compressione e realizzati solo in massa poliestere rinforzata con fibra di vetro BMC certificata UL e classificata HL3 secondo la EN 45545-2.

Su richiesta possiamo fornire gli isolatori con:

- Inserti femmina in **inox**
- Inserti femmina in **pollici**
- Uno o due attacchi maschio "AM" montati e bloccati

### Standoff Insulators DB/P

Manufactured by compression molding and made only in polyester material reinforced with fiberglass BMC UL certified and classified HL3 according to EN45545-2.

On request we can supply the insulators with:

- Female inserts made of **stainless steel**
- Female inserts in **inches** sizes
- One or two male connections type "AM" set and locked



I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
- Direttiva Bassa Tensione (Low Voltage Directive) 2014/35/EU  
- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE

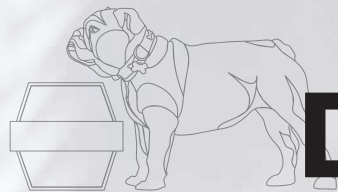


100% prodotto italiano  
100% Italian product

COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
ISO 9001



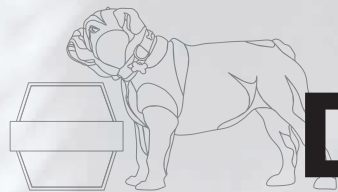
# ISOLATORI DISTANZIATORI STANDOFF INSULATORS



# DB/P

Articolo Item	F	E Thread depth (mm)	Valore di serraggio Tightening torque	H (mm)	D1 (mm)	D2 (mm)	Tensione di esercizio Operating voltage	Conf. Pack.	Peso Weight (Kg)
DB 12/P	M 3	3	1 Nm	12	10	11	220 V	1.400	4,00
	M 4	3	2 Nm						
DB 16/P	M 3	4	2 Nm	16	13	14	380 V	700	4,00
	M 4	4	4 Nm						
DB 20/P	M 4	6	4 Nm	15	17	17	500 V	400	4,30
	M 5	6	5 Nm						
	M 6	5	8 Nm						
DB 25/P	M 5	7	6 Nm	25,2	15	19	600 V	250	3,40
	M 6	6	8 Nm						
DB 30/P	M 6	8	12 Nm	30	26	30	600 V	80	3,50
	M 8	8	16 Nm						
DB 34/P	M 6	10	12 Nm	35	28	32	1000 V	64	4,70
	M 8	10	18 Nm						
	M 10	10	24 Nm						
DB 35/P	M 6	10	12 Nm	35,5	35	41	1000 V	36	3,60
	M 8	10	20 Nm						
	M 10	10	26 Nm						
DB 40/P	M 6	13	10 Nm	40	40	46	1000 V	24	3,60
	M 8	13	20 Nm						
	M 10	13	24 Nm						
	M 12	13	36 Nm						
DB 45/P	M 6	13	14 Nm	45	35	41	1500 V	27	3,30
	M 8	13	22 Nm						
	M 10	13	28 Nm						
	M 12	13	36 Nm						
DB 50/P	M 6	13	10 Nm	51	29	36	2000 V	36	3,90
	M 8	13	22 Nm						
	M 10	13	26 Nm						
	M 12	13	36 Nm						
DB 60/P	M 8	17	22 Nm	60	46	55	2000 V	12	3,20
	M 10	17	26 Nm						
	M 12	17	36 Nm						
DB 65/P	M 6	17	12 Nm	63,5	35	41	3000 V	22	3,70
	M 8	17	22 Nm						
	M 10	17	26 Nm						
	M 12	17	36 Nm						
DB 70/P	M 10	17	26 Nm	70	52	65	4000 V	8	3,00
	M 12	17	36 Nm						
	M 16	18	50 Nm						
DB 75/P	M 8	17	22 Nm	76	36	50	5000 V	12	3,00
	M 10	17	26 Nm						
	M 12	17	36 Nm						
DB 750/P	M 8	17	22 Nm	75	52	65	5000 V	8	3,50
	M 10	20	26 Nm						
	M 12	20	36 Nm						
	M 16	18	50 Nm						
DB 100/P	M 10	20	26 Nm	101	52	65	8000 V	4	2,30
	M 12	20	36 Nm						
	M 16	18	50 Nm						

# ISOLATORI DISTANZIATORI STANDOFF INSULATORS



# DB/P

Articolo Item	Tensione di scarica superficiale C.A. A.C. surface flashover voltage (kV)	Tensione di scarica interna C.A. A.C. internal flashover voltage (kV)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a flessione Cantilever stress (DaN)	Sollecitazione a compressione Compressive stress (DaN)	Sollecitazione a torsione Twisting stress (DaN x m)
DB 16/P	3	8	100	50	500	0,4
DB 20/P	4	15	150	60	600	0,4
DB 25/P	7	20	300	180	2.100	3
DB 30/P	8	23	500	250	4.400	3
DB 34/P	10	30	800	450	6.500	5
DB 35/P	10	30	1.100	800	8.000	9
DB 40/P	10	40	1.100	800	8.300	10
DB 45/P	12	40	1.200	800	8.000	10
DB 50/P	12	40	850	450	6.800	6
DB 60/P	15	40	1.500	800	11.700	10
DB 65/P	15	40	1.500	700	8.300	6
DB 70/P	23	50	2.450	950	16.600	10
DB 75/P	25	50	2.300	900	10.000	10
DB 750/P	25	50	2.800	1.500	15.000	13
DB 100/P	30	50	2.950	1.550	16.700	14,5

- Temperatura di esercizio / *Operating temperature*: **-40° C + 130° C**
- Carichi di rottura / *Breaking charges*: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / *Dimensional tolerance according with*: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / *Fire reaction*: **Class UL94-V0 and HL3 EN 45545-2 for requirment R22/R23**



I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
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- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE



100% prodotto italiano  
100% Italian product

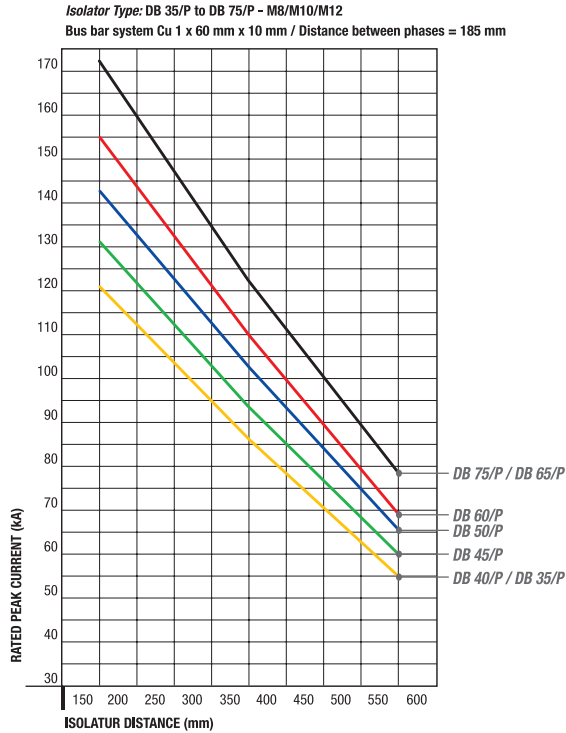
COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
ISO 9001



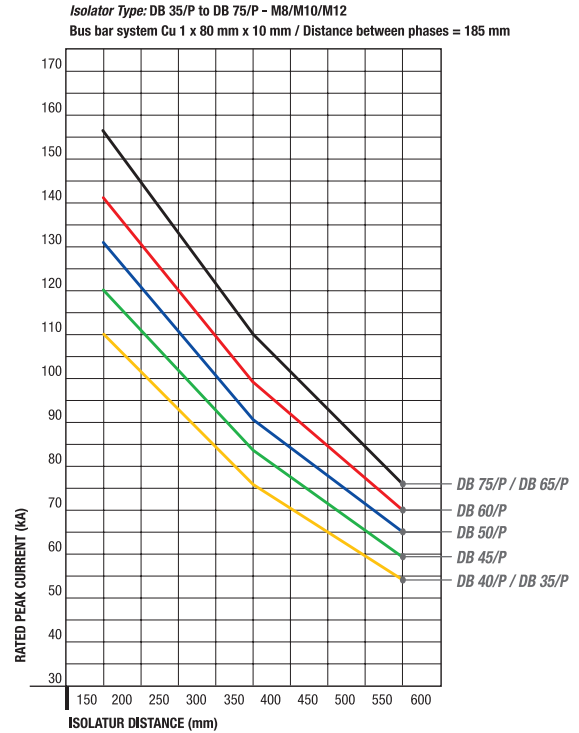


**Short-circuiting resistance of the isolators Type DB/P**

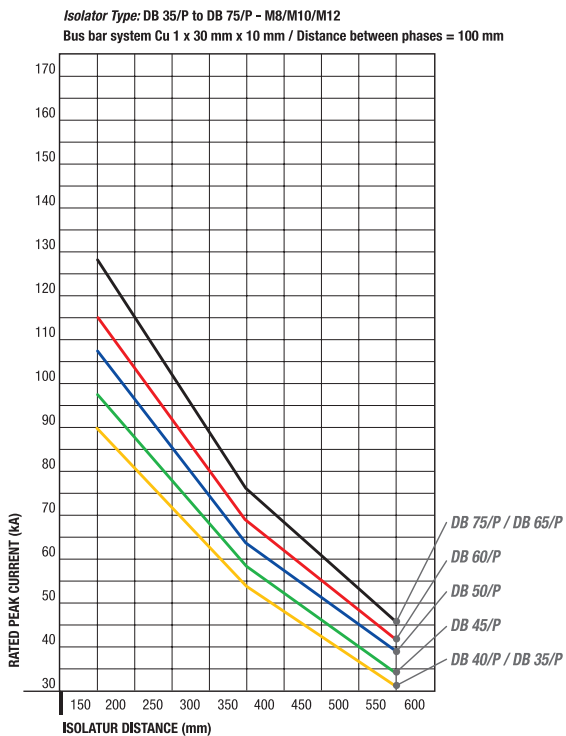
**TAB. 1** SHORT-CIRCUITING RESISTANCE / ISOLATOR DISTANCE



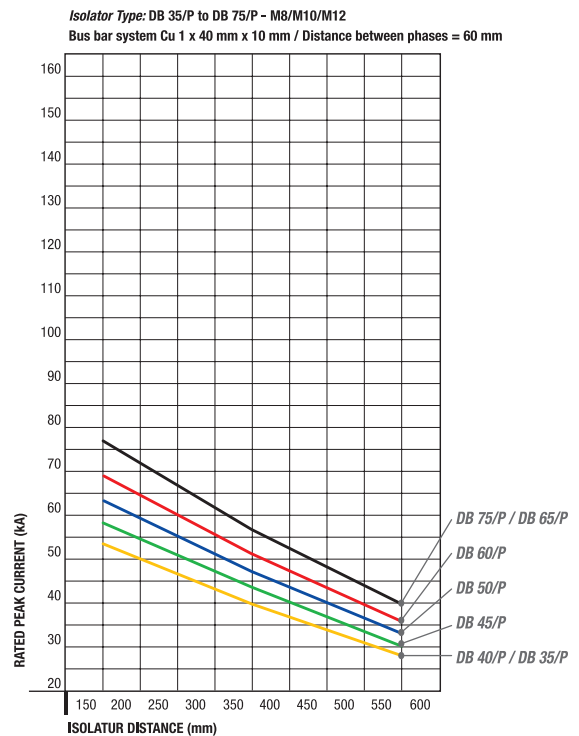
**TAB. 2** SHORT-CIRCUITING RESISTANCE / ISOLATOR DISTANCE



**TAB. 3** SHORT-CIRCUITING RESISTANCE / ISOLATOR DISTANCE




**TAB. 4** SHORT-CIRCUITING RESISTANCE / ISOLATOR DISTANCE





# TEST PER RESISTENZA AL CORTOCIRCUITO EN 61439-2 SHORT-CIRCUITING RESISTANCE EN 61439-2



Independent, accredited testing station · Member laboratory of STL and LOVAG

## TEST REPORT

NO. 1469.2101265.0692

MBS AG  
Eisbachstraße 51  
74429 Sulzbach-Laufen  
GERMANY

---

CLIENT

Busbar systems: ERIM SRL, Novate Milanese  
Distance insulators MBS AG

---

MANUFACTURER

Busbar systems for low-voltage switchgear assemblies with distance insulators

---

TEST OBJECT

DB/P 50 with M10 & M12 threads

---

TYPE:

Test sample

---

SERIAL NO.

Rated operational voltage	$U_o$	400 V	RATED CHARACTERISTICS GIVEN BY THE CLIENT
Rated insulation voltage	$U_i$	1000 V	
Rated peak withstand current			
30 mm x 10 mm up to	$I_{pk}$	63 kA	
40 mm x 10 mm up to	$I_{pk}$	106 kA	
60 mm x 10 mm up to	$I_{pk}$	132 kA	
80 mm x 10 mm up to	$I_{pk}$	144 kA	
Rated frequency	f	50 Hz	

---

IEC 61439-2: 2009-01, EN 61439-2: 2009-11

---

NORMATIVE DOCUMENT

Verification of dynamic short-circuit withstand strength

---

RANGE OF TESTS PERFORMED

12 to 14 October 2010

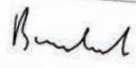
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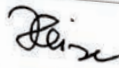
DATE OF TEST

See Sub-clause 4.6

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TEST RESULT

  
**RONALD BORCHERT**  
 Senior engineer  
 Berlin, 25 November 2010

  
**MICHAEL HEISE**  
 Test engineer in charge



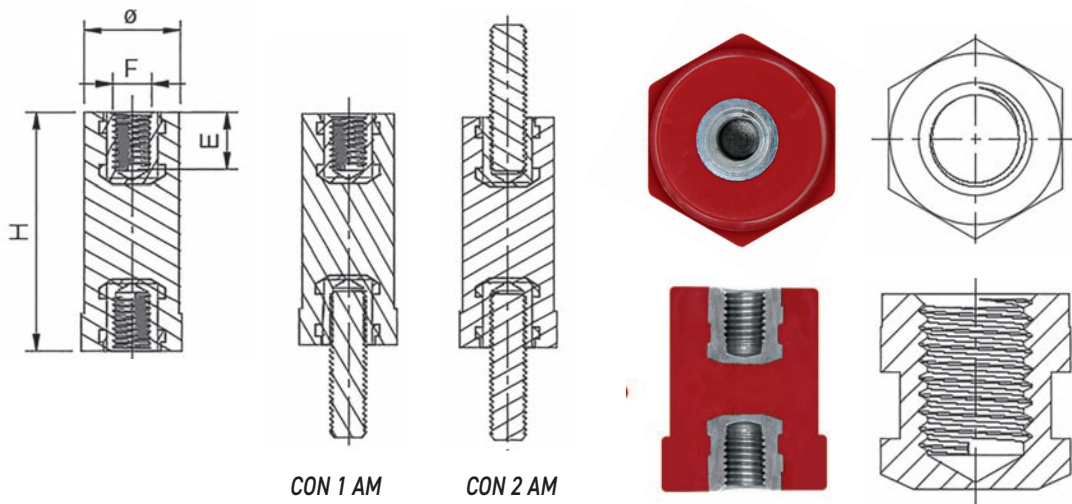
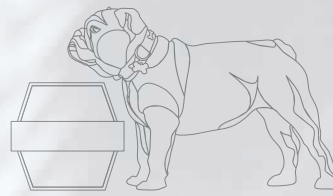
Independent test laboratory, accredited by Deutsche Akkreditierungsstelle Technik (DATech) eV in the fields of hv apparatus and switchgear, power cables and power cable accessories, hv apparatus and switchgear, installation equipment and switching and control equipment.  
 Institut „Prüfteil für elektrische Hochleistungstechnik“ GmbH (IPH Berlin) is a subsidiary of CESI S.p.A. Milan.



DAT - P - 019/92



# COLONNINE DISTANZIATRICI SPACING STUD BOLTS



## Colonnine distanziatrici tipo CO/P Ø 20 - CS/P Ø 30 - CT/P Ø 40 - CPE Ø 60

Prodotti tramite stampaggio a compressione e realizzati solo in massa poliestere rinforzata con fibra di vetro BMC certificata UL e classificata HL3 secondo la EN 45545-2.

Su richiesta possiamo fornire gli isolatori con:

- Inserti femmina in **inox**
- Inserti femmina in **pollici**
- Uno o due attacchi maschio "AM" montati e bloccati

## Spacing stud bolts type CO/P Ø 20 - CS/P Ø 30 - CT/P Ø 40 - CPE Ø 60

Manufactured by compression molding and made only in polyester material reinforced with fiberglass BMC UL certified and classified HL3 according to EN45545-2.

On request we can supply the insulators with:

- Female inserts made of **stainless steel**
- Female inserts in **inches** sizes
- One or two male connections type "AM" set and locked



I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
- Direttiva Bassa Tensione (Low Voltage Directive) 2014/35/EU  
- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE



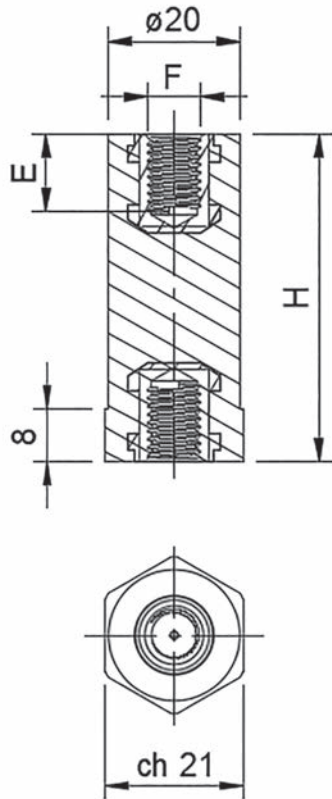
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# COLONNINE DISTANZIATRICI SPACING STUD BOLTS



# CO/P - ø20



Articolo Item	F	E Thread depth (mm)	Valore di serraggio Tightening torque	H (mm)	Tensione di esercizio Operating voltage	Conf. Pack.	Peso Weight (Kg)
CO/P 16	M 4	3	2 Nm	16	220 V	250	4,10
	M 5	3	6 Nm				
	M 6	3	8 Nm				
	M 8	4	10 Nm				
CO/P 20	M 4	5	2 Nm	20	400 V	200	4,20
	M 5	5	6 Nm				
	M 6	5	10 Nm				
	M 8	5	10 Nm				
CO/P 25	M 4	7	2 Nm	25	500 V	150	3,80
	M 5	7	6 Nm				
	M 6	7	10 Nm				
	M 8	7	14 Nm				
CO/P 30	M 4	8	2 Nm	30	600 V	140	4,20
	M 5	8	8 Nm				
	M 6	8	12 Nm				
	M 8	8	16 Nm				
CO/P 35	M 5	8	8 Nm	35	600 V	120	3,90
	M 6	8	12 Nm				
	M 8	8	16 Nm				
CO/P 40	M 5	9	8 Nm	40	600 V	110	3,90
	M 6	10	12 Nm				
	M 8	10	16 Nm				
CO/P 45	M 5	9	8 Nm	45	750 V	100	4,00
	M 6	10	12 Nm				
	M 8	10	16 Nm				
CO/P 50	M 5	9	8 Nm	50	750 V	80	3,40
	M 6	10	12 Nm				
	M 8	10	16 Nm				
CO/P 60	M 6	10	12 Nm	60	750 V	70	3,40
	M 8	10	16 Nm				

Articolo Item	Tensione di scarica superficiale C.A. A.C. surface flashover voltage (kV)	Tensione di scarica interna C.A. A.C. internal flashover voltage (kV)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a flessione Cantilever stress (DaN)	Sollecitazione a compressione Compressive stress (DaN)	Sollecitazione a torsione Twisting stress (DaN x m)
CO/P 16	-	-	400	250	2.100	0,6 - 1,7
CO/P 20	-	-	400	250	2.100	0,6 - 1,7
CO/P 25	5	15	400	250	2.100	0,6 - 1,7
CO/P 30	5	15	400	200	2.100	1 - 2
CO/P 40	8	20	400	150	2.100	1 - 2
CO/P 50	10	25	400	100	2.100	1 - 2
CO/P 60	10	30	400	100	2.100	1 - 2

- Temperatura di esercizio / Operating temperature: **-40° C + 130° C**
- Carichi di rottura / Breaking charges: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / Dimensional tolerance according with: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / Fire reaction: **Class UL94-V0 and HL3 EN 45545-2 for requirement R22/R23**

**UL** I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
- Direttiva Bassa Tensione (Low Voltage Directive) 2014/35/EU  
- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE



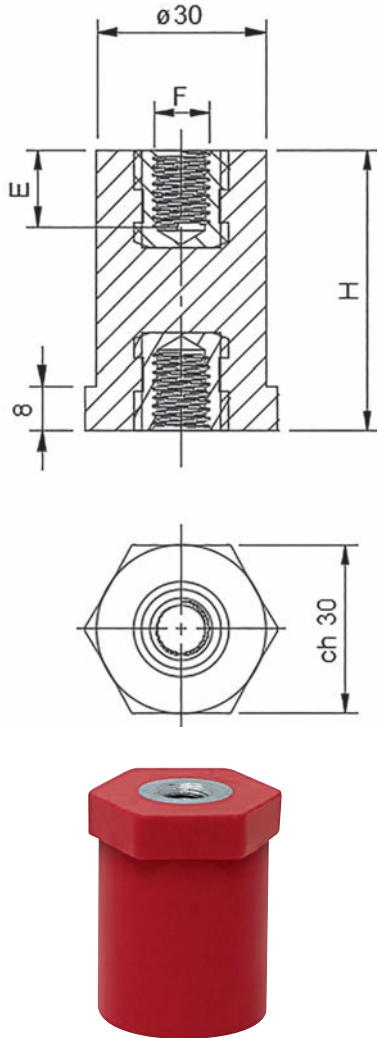
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CERTIFIED BY DNV  
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# COLONNINE DISTANZIATRICI SPACING STUD BOLTS



# CS/P - ø30



Articolo Item	F	E Thread depth (mm)	Valore di serraggio Tightening torque	H (mm)	Tensione di esercizio Operating voltage	Conf. Pack.	Peso Weight (Kg)
CS/P 30	M 6	8	10 Nm	30	750 V	80	4,80
	M 8	8	22 Nm				
	M 10	8	24 Nm				
CS/P 35	M 6	9	10 Nm	35	1000 V	64	4,70
	M 8	9	22 Nm				
	M 10	9	24 Nm				
CS/P 40	M 6	13	10 Nm	40	1000 V	60	4,90
	M 8	13	22 Nm				
	M 10	13	24 Nm				
CS/P 45	M 6	13	10 Nm	45	1500 V	48	4,40
	M 8	13	22 Nm				
	M 10	13	24 Nm				
CS/P 50	M 6	13	10 Nm	50	1500 V	48	4,50
	M 8	13	22 Nm				
	M 10	13	24 Nm				
CS/P 55	M 6	13	10 Nm	55	1500 V	40	4,10
	M 8	13	22 Nm				
	M 10	13	24 Nm				
CS/P 60	M 6	13	10 Nm	60	1500 V	40	4,50
	M 8	17	22 Nm				
	M 10	17	24 Nm				
CS/P 65	M 6	13	10 Nm	65	1500 V	32	3,80
	M 8	17	22 Nm				
	M 10	17	24 Nm				
CS/P 70	M 6	13	10 Nm	70	1500 V	32	4,00
	M 8	17	22 Nm				
	M 10	17	24 Nm				

Articolo Item	Tensione di scarica superficiale C.A. A.C. surface flashover voltage (kV)	Tensione di scarica interna C.A. A.C. internal flashover voltage (kV)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a flessione Cantilever stress (DaN)	Sollecitazione a compressione Compressive stress (DaN)	Sollecitazione a torsione Twisting stress (DaN x m)
CS/P 30	8	20	900	450	4.000	1,3 - 2,6
CS/P 40	8	25	900	300	4.000	1,3 - 2,6
CS/P 50	10	35	900	200	4.000	1,3 - 2,6
CS/P 60	15	35	900	150	4.000	1,3 - 2,6

- Temperatura di esercizio / Operating temperature: **-40° C + 130° C**
- Carichi di rottura / Breaking charges: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / Dimensional tolerance according with: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / Fire reaction: **Class UL94-V0 and HL3 EN 45545-2 for requirement R22/R23**

**RU** I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534

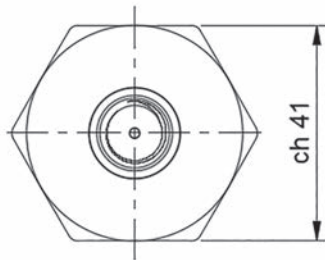
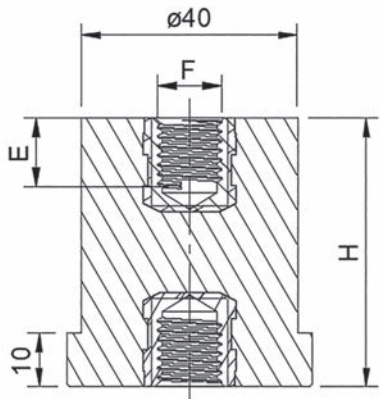
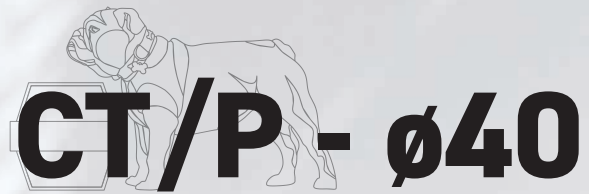


I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
- Direttiva Bassa Tensione (Low Voltage Directive) 2014/35/EU  
- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE

**100%** 100% prodotto italiano  
100% italian product  
**MADE IN ITALY**

COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
**ISO 9001**

# COLONNINE DISTANZIATRICI SPACING STUD BOLTS



Articolo Item	F	E Thread depth (mm)	Valore di serraggio Tightening torque	H (mm)	Tensione di esercizio Operating voltage	Conf. Pack.	Peso Weight (Kg)
CT/P 30	M 6	8	12 Nm	30	750 V	45	4,20
	M 8	8	22 Nm				
	M 10	8	24 Nm				
CT/P 35	M 8	9	22 Nm	35	750 V	36	4,10
	M 10	9	26 Nm				
CT/P 40	M 6	13	22 Nm	40	1000 V	27	3,30
	M 8	13	24 Nm				
	M 10	13	36 Nm				
CT/P 45	M 8	13	22 Nm	45	1500 V	27	3,80
	M 10	13	24 Nm				
CT/P 50	M 8	13	22 Nm	50	1500 V	27	3,80
	M 10	13	26 Nm				
	M 12	13	36 Nm				
CT/P 55	M 8	13	22 Nm	55	1500 V	18	2,90
	M 10	13	26 Nm				
CT/P 60	M 8	17	22 Nm	60	1500 V	18	3,10
	M 10	17	26 Nm				
	M 12	17	36 Nm				
CT/P 65	M 8	17	22 Nm	65	1500 V	18	3,50
	M 10	17	26 Nm				
CT/P 70	M 8	17	22 Nm	70	1500 V	18	3,50
	M 10	17	26 Nm				

Articolo Item	Tensione di scarica superficiale C.A. A.C. surface flashover voltage (KV)	Tensione di scarica interna C.A. A.C. internal flashover voltage (KV)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a flessione Cantilever stress (DaN)	Sollecitazione a compressione Compressive stress (DaN)	Sollecitazione a torsione Twisting stress (DaN x m)
CT/P 30	8	20	1.000	750	8.000	3 - 6
CT/P 40	10	25	1.000	700	8.000	3 - 6
CT/P 50	10	35	1.000	500	8.000	3 - 6
CT/P 60	10	35	1.000	370	8.000	3 - 6

- Temperatura di esercizio / Operating temperature: **-40° C + 130° C**
- Carichi di rottura / Breaking charges: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / Dimensional tolerance according with: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / Fire reaction: **Class UL94-V0 and HL3 EN 45545-2 for requirement R22/R23**

**RU** I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



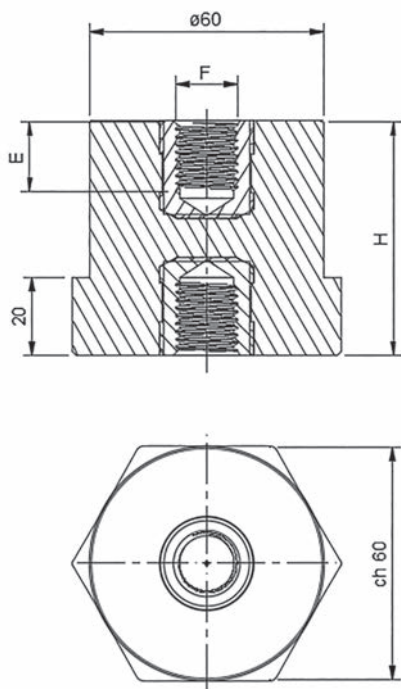
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- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE



COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
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# COLONNINE DISTANZIATRICI SPACING STUD BOLTS



Articolo Item	F	E Thread depth (mm)	Valore di serraggio Tightening torque	H (mm)	Tensione di esercizio Operating voltage	Conf. Pack.	Peso Weight (Kg)
CPE 40	M 10	13	24 Nm	40	1500 V	12	2,90
	M 12	13	36 Nm				
	M 16	13	50 Nm				
CPE 60	M 10	17	24 Nm	60	3000 V	10	3,50
	M 12	17	36 Nm				
	M 16	18	50 Nm				
CPE 80	M 10	20	24 Nm	80	5000 V	8	3,70
	M 12	20	36 Nm				
	M 16	18	55 Nm				
CPE 100	M 10	20	24 Nm	100	8000 V	5	2,80
	M 12	20	36 Nm				
	M 16	18	55 Nm				

Articolo Item	Tensione di scarica superficiale C.A. A.C. surface flashover voltage (KV)	Tensione di scarica interna C.A. A.C. internal flashover voltage (KV)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a flessione Cantilever stress (DaN)	Sollecitazione a compressione Compressive stress (DaN)	Sollecitazione a torsione Twisting stress (DaN x m)
CPE 30	10	25	1.100	700	10.000	6
CPE 60	20	50	1.500	600	10.000	8
CPE 80	25	50	2.300	900	12.000	10
CPE 100	30	50	3.000	1.500	15.000	15

- Temperatura di esercizio / Operating temperature: **-40° C + 130° C**
- Carichi di rottura / Breaking charges: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / Dimensional tolerance according with: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / Fire reaction: **Class UL94-V0 and HL3 EN 45545-2 for requirement R22/R23**

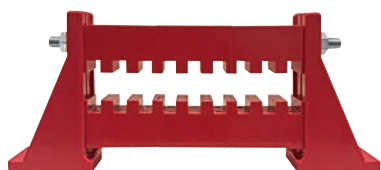
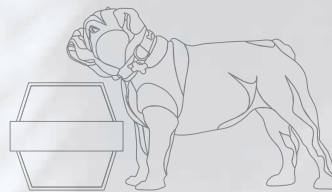
**RU** I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



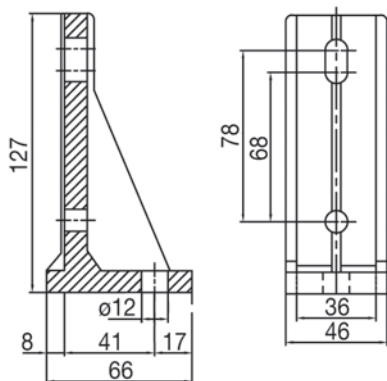
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- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE



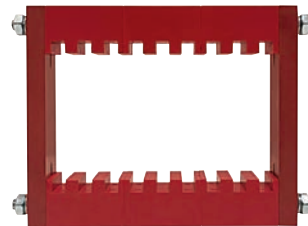
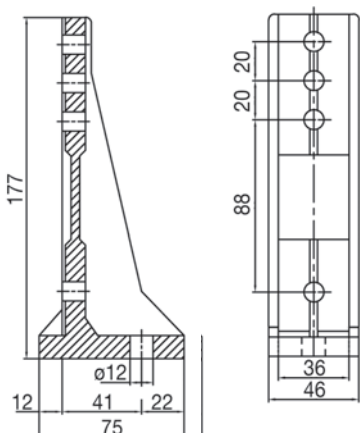
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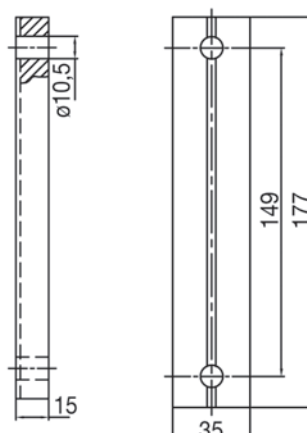
**PSB/2**  
Spalla di sostegno  
Lateral support



**PSB/1**  
Spalla di sostegno  
Lateral support



**PSB/120**  
Spalla di sostegno  
Lateral support



**Portasbarre verticale tipo PSB**

Prodotti tramite stampaggio a compressione e realizzati solo in massa poliestere rinforzata con fibra di vetro BMC certificata UL e classificata HL3 secondo la EN45545-2. Portasbarre verticale componibile adatto per sbarre da mm. 40x6 min. a mm. 120x10 max. Per realizzare un portasbarre occorrono: 2 spalle, 2 tiranti di assemblaggio e un numero di blocchetti tiranti di assemblaggio e un numero di blocchetti necessario per formare la composizione desiderata.

**Busbar systems PSB**

Manufactured by compression moulding and made only in polyester material reinforced with fiberglass BMC UL certified and classified HL3 according to EN45545-2. Assembleable vertical rodholders suitable for bars from min. mm. 40 x 6 to max mm 120 x 10. To realise a busbar system are needed: 2 lateral supports, 2 assembly screws and a necessary number of blocks required to obtain the composition needed.

Spalla Lateral support	Blocchetti Blocks	Sbarre Rods	Conf. Pack.
<b>PSB/2</b>	PSB 6	40 x 6	-
	PSB 8	40 x 8	
	PSB 10	40 x 10	
<b>PSB/1</b>	PSB 6	60 x 6	100 x 6
	PSB 8	60 x 8	100 x 8
	PSB 10	60 x 10	100 x 10
<b>PSB/120</b>	PSB 6	120 x 6	-
	PSB 8	120 x 8	
	PSB 10	120 x 10	



I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534



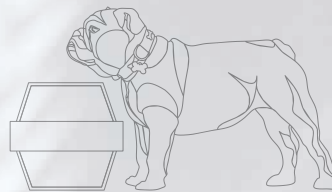
I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
- Direttiva Bassa Tensione (Low Voltage Directive) 2014/35/EU  
- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE



100% prodotto italiano  
100% Italian product

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QUALITY SYSTEM  
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ISO 9001

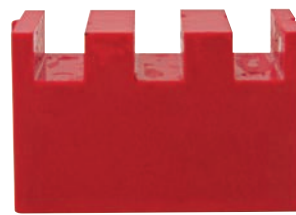




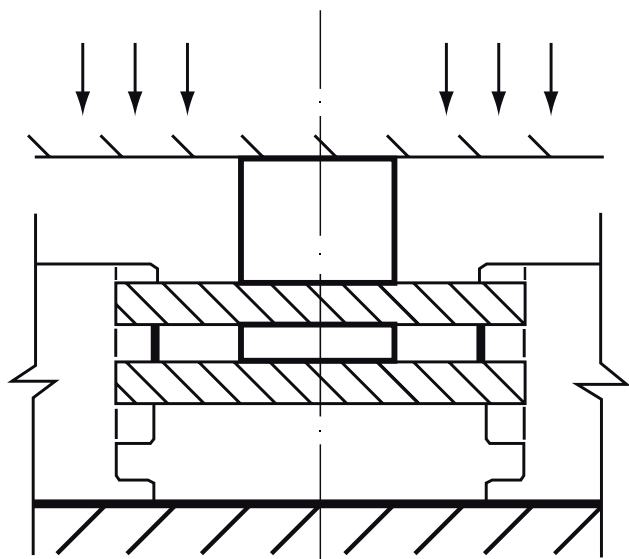
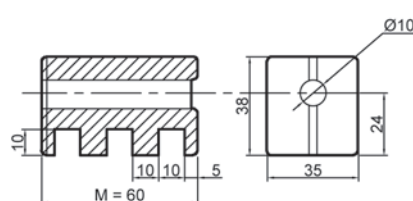
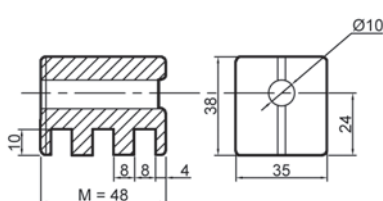
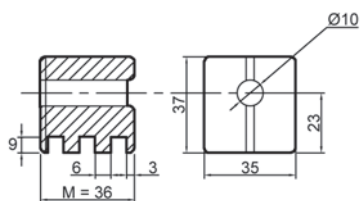
**PSB/6**  
Blocchetto sbarre 6 mm  
Block for rods thickness 6 mm



**PSB/8**  
Blocchetto sbarre 8 mm  
Block for rods thickness 8 mm



**PSB/10**  
Blocchetto sbarre 10 mm  
Block for rods thickness 10 mm



**Flessione del dente con inizio rottura**  
**Elastic deflection of the tooth with beginning of rupture**

Articolo Article	Flessione Cantilever (mm)	Conf. Pack.
PSB/6	950	36
PSB/8	1130	30
PSB/10	1375	24

- Temperatura di esercizio / *Operating temperature*: **-40° C + 130° C**
- Carichi di rottura / *Breaking charges*: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / *Dimensional tolerance according with*: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / *Fire reaction*: **Class UL94-V0 and HL3 EN 45545-2 for requirement R22/R23**

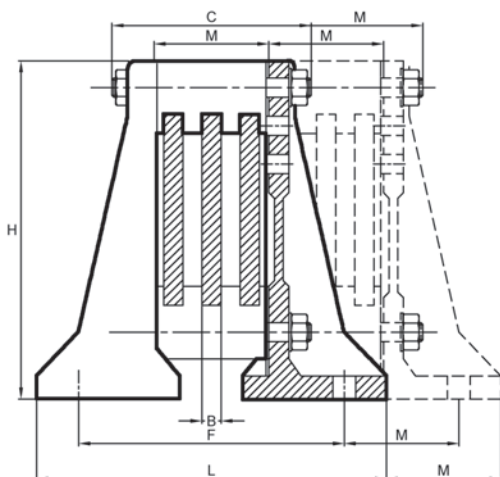
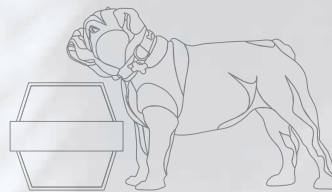
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- Direttiva RoHS (Council Directive) 2011/65/CE

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**Fig. 1**  
Esempio di portasbarre unipolare realizzato con 3 spalle in parallelo

**Fig. 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7**

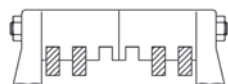
Rappresentano possibili realizzazioni

**H**

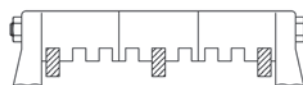
Con spalla di sostegno PSB/2=127 mm, PSB/1=177 mm

**M**

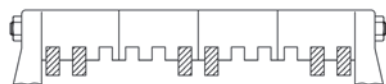
Con blocchetto PSB/6=36 mm, PSB/8=48mm, PSB/10=60mm



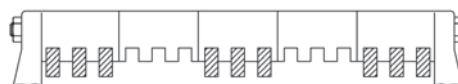
**Fig. 3**



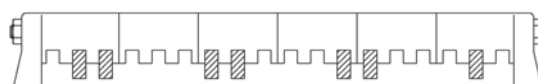
**Fig. 4**



**Fig. 5**



**Fig. 6**



**Fig. 7**

**Fig. 1**

Example of unipolar busbar system made with 3 parallel rods

**Fig. 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7**

They show some possible realizations

**H**

With lateral support PSB/2=127 mm, PSB/1=177 mm

**M**

With block PSB/6=36 mm, PSB/8=48mm, PSB/10=60mm

**LEGENDA/LEGEND**

<b>A</b> Numero blocchetti Number of the blocks	<b>C</b> Lunghezza tiranti Length of the bolts	<b>F</b> Interasse fori Distance between centers of the holes	<b>M</b> Modulo Module
<b>B</b> Spessore sbarra rod thickness	<b>L</b> Ingombro esterno Exterior encumbrance	<b>B</b> Altezza Height	

**PSB/1**

Fig.	A	B	C	L	F	H	M
<b>1</b>	1	6	70	162	118	177	36
	1	8	90	174	130	177	48
	1	10	100	186	142	177	60
<b>3</b>	2	6	110	198	154	177	36
	2	8	140	222	178	177	48
	2	10	160	246	202	177	60
<b>4</b>	3	6	150	234	190	177	36
	3	8	194	270	226	177	48
	3	10	230	306	262	177	60
<b>5</b>	4	6	194	270	226	177	36
	4	8	242	318	274	177	48
	4	10	290	366	322	177	60
<b>6</b>	5	6	230	306	262	177	36
	5	8	290	366	322	177	48
	5	10	350	426	382	177	60
<b>7</b>	6	6	270	342	298	177	36
	6	8	338	414	370	177	48
	6	10	410	486	442	177	60

**PSB/2**

Fig.	A	B	C	L	F	H	M
<b>1</b>	1	6	70	152	118	127	36
	1	8	90	164	130	127	48
	1	10	100	176	142	127	60
<b>3</b>	2	6	110	198	154	127	36
	2	8	140	212	178	127	48
	2	10	160	236	202	127	60
<b>4</b>	3	6	150	224	190	127	36
	3	8	194	260	226	127	48
	3	10	230	296	262	127	60
<b>5</b>	4	6	194	260	226	127	36
	4	8	242	308	274	127	48
	4	10	290	356	322	127	60
<b>6</b>	5	6	230	296	262	127	36
	5	8	290	356	322	127	48
	5	10	350	416	382	127	60
<b>7</b>	6	6	270	332	298	127	36
	6	8	338	404	370	127	48
	6	10	410	476	442	127	60





**TEST PER RESISTENZA AL CORTOCIRCUITO EN 61439-2**  
**SHORT-CIRCUITING RESISTANCE EN 61439-2**

Independent, accredited testing station · Member laboratory of STL and LOVAG

**IPH BERLIN**

# TEST REPORT

NO. 1469.2111429.0957

MBS AG  
Eisbachstraße 51  
74429 Sulzbach-Laufen  
GERMANY

MBS AG

Busbar systems for low-voltage switchgear and controlgear assemblies with vertical busbar supports of the type PSB, L & Z

PSB/1, PSB/2, PSB/10, PSB/120, spacer PSB, busbar support L 100, Z 185-2

90175, 90176, 90177, 90180, 2.8246, 90391, 90385

Rated operational voltage	$U_e$	400 V	RATED CHARACTERISTICS GIVEN BY THE CLIENT
Rated insulation voltage	$U_i$	1000 V	
Rated peak withstand current	$I_{pk}$	up to 264 kA	
Rated short-time withstand current	$I_{cw}$	up to 120 kA, 1s	
Rated frequency	$f$	50 Hz	

IEC 61439-2: 2011-08, EN 61439-2: 2012-06

Verification of short-circuit withstand strength

16 and 17 August 2012

See Sub-clause 4.6

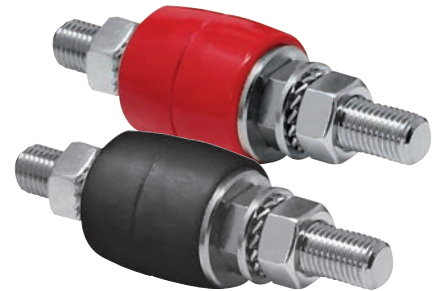
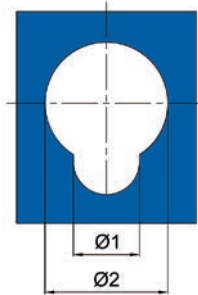
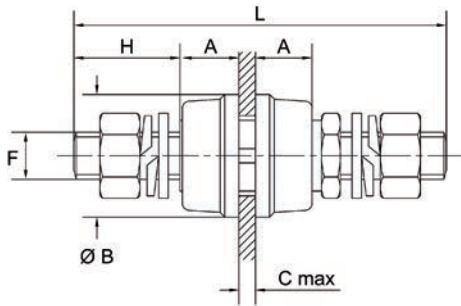
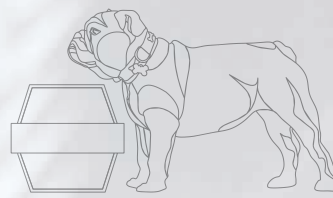
RONALD BORCHERT  
Senior engineer  
Berlin, 07 December 2012

MICHAEL HEISE  
Test engineer in charge

**IPH BERLIN**  
INSTITUT FÜR ELEKTRISCHE HOCHLEISTUNGSTECHNIK

Independent test laboratory accredited by the German Accreditation Body DAkkS, Deutsche Akkreditierungsstelle GmbH in the fields of high-voltage switchgear and their components, cables and conductors as well as industrial low-voltage apparatus  
IPH Institut „Profitec für elektrische Hochleistungstechnik“ GmbH (IPH Berlin) is a subsidiary of CESI SpA, Milan

**DAkkS**  
Deutsche Akkreditierungsstelle  
D-PL-12107-01-01



**Isolatori passanti**

I nostri isolatori PI/P sono costituiti da:

- Due parti isolanti in massa poliestere rinforzata con fibra di vetro BMC RF 3/20 o RF 9/20 prodotte in modo che si inseriscano l'una nell'altra
- Dadi e rondelle in ottone nichelato e acciaio zincato
- Tirante centrale in ottone

Quest'ultima componente è di fondamentale importanza in quanto il perno centrale viene tornito da esagono in ottone, in questo modo dado e tirante sono un pezzo unico. Questa costosa soluzione garantisce le corrette prestazioni elettriche che questo isolatore richiede.

**Passing insulators**

The passing insulators PI/P are composed of:

- Two insulating parts made of polyester material reinforced with fiberglass BMC RF 3/20 or RF 9/20 manufactured in order to fit one into the other
- Nickel-plated brass and galvanized steel nuts and washers
- Nickel-plated brass bolt

This last component is of essential importance since the central bolt is turned by brass hexagon, in this way nut and bolt are one single piece. This expensive solution guarantees the correct electrical characteristics that this insulator requires.

Articolo Item	F	Valore di serraggio Tightening torque	L (mm)	A (mm)	Ø B (mm)	C max (mm)	H (mm)	Ø 1 (mm)	Ø 2 (mm)	Portata nominale In rated range	Tensione di esercizio Operated voltage	Tensione prova Test voltage (KV)	Conf. Pack.	Peso Weight (Kg)
<b>PI/P M 4</b>	M 4	3 Nm	50	10	15	3	12,5	2,5	8,5	25 A	600 V	4	40	1,00
<b>PI/P M 6</b>	M 6	5 Nm	65	12	22	5	17	3,5	12,5	50 A	1.000 V	6	40	1,60
<b>PI/P M 8</b>	M 8	10 Nm	80	13,5	25	5	21	3,5	15,5	80 A	1.000 V	6	40	2,30
<b>PI/P M 10</b>	M 10	16 Nm	95	15	30	5	28	4,5	17,5	120 A	1.000 V	6	40	2,80
<b>PI/P M 12</b>	M 12	18 Nm	105	17	35	5	29	5	20,5	200 A	1.000 V	6	40	3,10
<b>PI/P M 16</b>	M 16	22 Nm	135	22	43	7	38	5,5	25,5	300 A	2.000 V	8	40	4,40
<b>PI/P M 20</b>	M 20	26 Nm	155	25	54	8	44	6	30,5	450 A	2.000 V	8	40	3,80

- Temperatura di esercizio / *Operating temperature*: **-40° C + 130° C**
- Carichi di rottura / *Breaking charges*: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / *Dimensional tolerance according with*: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / *Fire reaction*: **Class UL94-V0 and HL3 EN 45545-2 for requirement R22/R23**

**UL** I nostri isolatori sono certificati UL  
Our insulators are UL certified  
File Nr. E502533 - File Nr. E502534

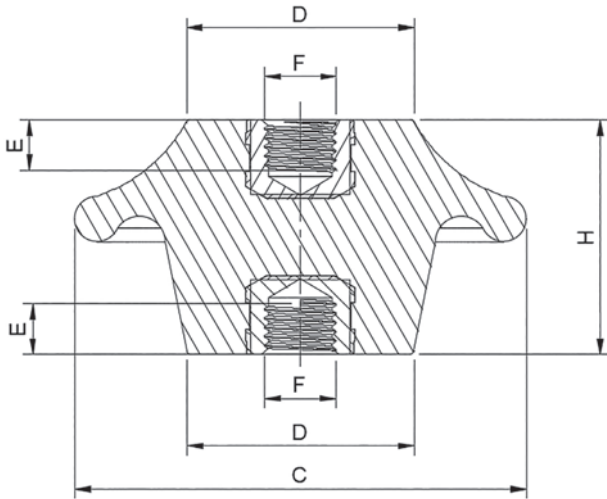


I nostri prodotti sono conformi alle seguenti direttive europee  
Our products are in conformity with the European standards  
- Direttiva Bassa Tensione (Low Voltage Directive) 2014/35/EU  
- Regolamento REACH (EC Regulation) nr. 1907/2006  
- Direttiva RoHS (Council Directive) 2011/65/CE

**100%** 100% prodotto italiano  
100% italian product  
**MADE IN ITALY**

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QUALITY SYSTEM  
CERTIFIED BY DNV  
**ISO 9001**

# ISOLATORI A CAMPANA PETTICOAT INSULATORS



## Isolatori a campana

Prodotti tramite stampaggio a compressione e realizzati solo in massa poliestere rinforzata con fibra di vetro BMC certificata UL e classificata HL3 secondo la EN 45545-2.

Su richiesta possiamo fornire gli isolatori con:

- Uno o due attacchi maschio "AM" montati e bloccati

## Petticoat insulators

Manufactured by compression moulding and made only in polyester material reinforced with fiberglass BMC certified UL and classified HL3 according to EN 45545-2.

On request we can supply the insulators with:

- One or two male connections type "AM" set and locked

Articolo Item	F	E Thread depth (mm)	Valore di serraggio Tightening torque	A (mm)	C (mm)	D (mm)	Tensione di esercizio Operated voltage	Conf. Pack.	Peso Weight (Kg)
I2IC100010	M 10	13	24 Nm	52	100	50	5.000 V	80	29,10
I2IC100012	M 12	13	36 Nm	52	100	50	5.000 V	80	28,70
I2IC100016	M 16	18	50 Nm	52	100	50	5.000 V	80	30,30

Articolo Item	Tensione di scarica superficiale C.A. A.C. surface flashover voltage (KV)	Tensione di scarica interna C.A. A.C. internal flashover voltage (KV)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a trazione Tensile stress (DaN)	Sollecitazione a flessione Cantilever stress (DaN)	Sollecitazione a torsione Twisting stress (DaN x m)
I2IC1000	50	40	1.950	980	14.700	10

- Temperatura di esercizio / Operating temperature: **-40° C + 130° C**
- Carichi di rottura / Breaking charges: **Tolleranza / Allowance ± 10%**
- Tolleranze dimensionali secondo / Dimensional tolerance according with: **UNI ISO 22768-1 Class C**
- Reazione al fuoco / Fire reaction: **Class UL94-V0 and HL3 EN 45545-2 for requirment R22/R23**

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Our insulators are UL certified  
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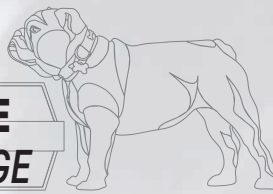


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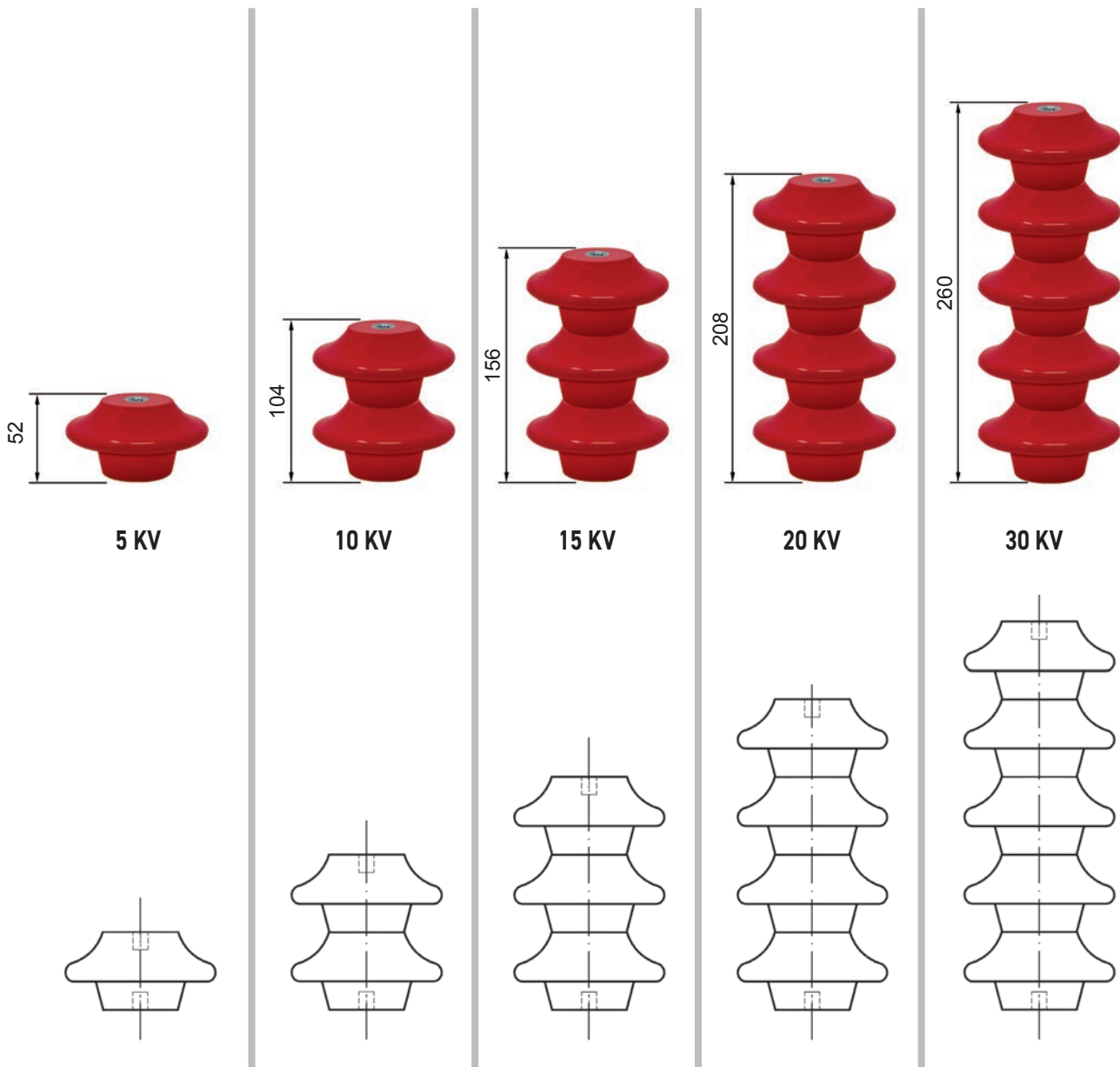


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**ISOLATORI A CAMPANA PER MEDIA TENSIONE**  
**PETTICOAT INSULATORS FOR MEDIUM VOLTAGE**



Articolo Item	Altezza Height (mm)	Tensione nominale Voltage range (KV)	Tensione max di esercizio Max operating voltage (KV)	Tenuta a frequenza industriale Withstand voltages industrial frequency (KV)	Tenuta a impulsi Withstand voltages impulses (KV)
<b>I2IC1000</b>	52	5	7,2	28	60
<b>I2IC2000</b>	104	10	12	38	75
<b>I2IC3000</b>	156	15	17,5	45	95
<b>I2IC4000</b>	208	20	24	55	125
<b>I2IC5000</b>	260	30	36	75	170





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