

# POLYGLASS LOW VOLTAGE INSULATORS


## Polyglass

Raw material	Fiber reinforced polyester	
Flexural strength	80 N/mm <sup>2</sup>	ISO R 178
Flexural modulus	7 GPa	ISO 178
Impact strength	25 KJ/m <sup>2</sup>	ISO 179
Hot deflection temperature	> 200 °C	ISO 75
Class of flammability	V0 >3mm	UL 94
Water absorbtion	< 0,2 %	ISO 62
Tracking resistance	CTI >600 -0.0	IEC 60112
Linear shrinkage	0,18 %	ISO 2577
Hardness	80 HRM	UNI 4278
Dielectric strength	12 kV/mm	IEC 60243 - 1
Arc resistance	> Sec. 180	D-495
Density	1.8 g/cm <sup>3</sup>	ISO 1183-1
Color	RAL 3002 (red)	RAL



Our Polyester insulators are in conformity with DIRECTIVE 2006/95/EC (Electrical equipment designed for use within certain voltage limits). Directive 2006/95/EC is a codifying Directive which brings together in one text the "original" Low Voltage Directive 73/23/EEC6 with its subsequent amendments. Directive 2006/95/EC came into force and repealed Directive 73/23/EC as from 16th January 2007. The Directive applies to all electrical equipment designed for use with a voltage rating of between 50 and 1000 V for alternating current and between 75 and 1500 V for direct current. The CE marking is placed on the electrical equipment or, where this is not practically possible, on the packaging.



Our Polyester insulators are molded of Underwriters Laboratories Incorporated  recognized flame-resistant fiberglass-reinforced polyester molding compound.

### EN45545 part 2

Conformity according to EN 45545 part 2 : Railway application- fire protection on railway vehicles part 2 requirements for fire behaviour of materials and components

Test results : Spread of flame : HL 3 - Smoke : HL2 - Toxicity : HL3 - Heat release : HL 2  
Final classification : HL2



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**Polyglass standoff - spacing Insulators**  
**Isolateurs supports polyverre**  
**Polyglas isolatoren**

Article :

**DB/P**

Made in polyglass polyester material reinforced with fiberglass, red colour. The DB/P insulators types, absolutely unbreakable, with high mechanical and electrical characteristics, can be used even under precarious working conditions (high room temperature, in the presence of corrosive substance, etc.). The central layer sides ease the insulators gripping and locking of.

Fabriqués en «polyverre» résine de polyester renforcé de fibres de verre de couleur rouge. Les isolateurs DB/P sont incassables. Les caractéristiques électriques et mécaniques sont particulièrement indiquées pour les conditions ambiantes sévères (température, agent corrosifs, vibrations, etc.). La partie centrale facilite l'agrippement et le serrage.

Vervaardigd uit «polyglas» polyester met glasvezelversterking in rode kleur. De DB/P isolatoren zijn onbreekbaar. De elektrische en mechanische eigenschappen zijn aangewezen bij uiterst zware gebruiksomstandigheden (hoge temperatuur, agressieve omgeving, trillingen, etc.). Het centrale gedeelte vergemakelijkt het grijpen en het vastschroeven.

Art.	Surface flashover Surcharge /surface Overbelasting opp.	Intern. flashover Surcharge intern. Inwend. overbelast.	Tensile stress Traction Trek.	Cantilever stress Flexion Buiging	Comp. stress Compression Druk	Twist. stress Torsion Torsie
	kV (A.C.)	kV (A.C.)	DN	DN	DN	DN 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	2100	3
DB 30/P	8	23	500	250	4400	3
DB 34/P	10	30	800	450	6500	5
DB 35/P	10	30	1100	800	8000	9
DB 40/P	10	40	1100	800	8300	10
DB 45/P	12	40	1200	800	8000	10
DB 50/P	12	40	850	450	6800	6
DB 60/P	15	40	1500	800	11700	10
DB 65/P	15	40	1500	700	8300	6
DB 70/P	23	50	2450	950	16600	10
DB 75/P	25	50	2300	900	10000	10
DB750/P	25	50	2800	1500	15000	13
DB100/P	30	50	2950	1550	16700	14,5

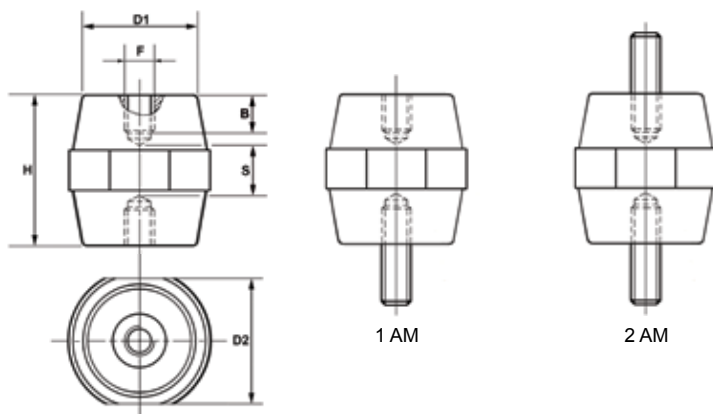
Operating Temperature Température d'utilisation Gebruikstemperatuur	-40°C +130°C
Fire Reaction Tenue au feu Vuurbestendigheid	Class UL-94 VO HL 2 (EN45545-2)
Breaking charge Charge de rupture Breekweerstand	Tolerance +/- 10 %
Water absorption Absorption d'eau Wateropname	< 0,2 %
Arc resistance Résistance à l'arc Vlamboog weerstand	> 180 sec.
Dielectric strength Résistance diélectrique Dielectrische weerstand	12 kV/mm
Comparative Tracking index	CTI 600

1 DN = ~ 1 Kg

Our standoff Insulators are molded of Underwriters Laboratories Incorporated recognized flame-resistant fiberglass-reinforced polyester molding compound.

Color Couleur Kleur	Art.	F (* = stock)	H mm	D1 mm	D2 mm	B mm	Service Voltage		
● ●	DB 12/P	M3 - M4	12	10	11	3	220 V	100	
● ●	DB 16/P	M3 - M4*	16	13	14	4	380 V	100	
● ●	DB 20/P	M4 - M5 - M6*	20	15	17	6	500 V	100	~ 1,05 kg
● ●	DB 25/P	M5* - M6*	25,2	15	19	7	600 V	250	~ 3,50 kg
● ●	DB 30/P	M6* - M8*	30	26	30	8	600 V	80	~ 3,40 kg
● ●	DB 34/P	M6* - M8* - M10*	35	28	32	9/10	1000 V	64	~ 4,85 kg
● ●	DB 35/P	M6 - M8* - M10*	35,5	35	41	9/10	1000 V	36	~ 3,70 kg
● ●	DB 40/P	M6 - M8 - M10 - M12	40	40	46	10/12	1000 V	24	
● ●	DB 45/P	M6 - M8* - M10* - M12*	45	35	41	12	1500 V	27	~ 3,45 kg
● ●	DB 50/P	M6* - M8* - M10* - M12	51	29	36	12/13	2000 V	36	~ 4,00 kg
● ●	DB 60/P	M8 - M10 - M12	60	46	55	20	2000 V	12	
● ●	DB 65/P	M6 - M8* - M10* - M12*	63,5	35	41	17/19	3000 V	22	~ 4,00 kg
● ●	DB 70/P	M10 - M12 - M16	70	52	65	25	4000 V	8	
● ●	DB 75/P	M8 - M10* - M12*	76	36	50	19	5000 V	12	~ 3,00 kg
● ●	DB 750/P	M8 - M10 - M12* - M16*	75	52	65	18/23	5000 V	8	~ 3,60 kg
● ●	DB 100/P	M12 - M16	101	52	65	25	8000 V	4	

\* = Stock



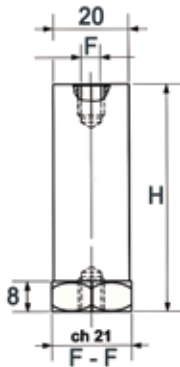
**Polyester**


Polyglass spacing Insulators  
Isolateurs supports polyverre  
Polyglas isolatoren

Article :

**CO/P**

**CO/P**



Art.	F	H	Service Voltage	
CO/P 16	M4 - M5 - M6 - M8	16 mm	220 V	250
CO/P 20	M4 - M5 - M6 - M8	20 mm	400 V	200
CO/P 25	M4 - M5 - M6 - M8	25 mm	500 V	150
CO/P 30	M4 - M5 - M6 - M8	30 mm	600 V	140
CO/P 35	M5 - M6 - M8	35 mm	600 V	140
CO/P 40	M5 - M6 - M8	40 mm	600 V	120
CO/P 45	M6 - M8	45 mm	750 V	100
CO/P 50	M5 - M6 - M8	50 mm	750 V	80
CO/P 60	M6 - M8	60 mm	750 V	70

Operating Temperature Température d'utilisation Gebruikstemperatuur	-40°C +130°C
Fire Reaction Tenue au feu Vuurbestendigheid	Class UL-94 VO HL 2 (EN45545-2)
Breaking charge Charge de rupture Breukweerstand	Tolerance +- 10 %

Art.	Surface flashover Surcharge /surface Overbelasting opp.	Intern. flashover Surcharge intern. Inwend. overbelast.	Tensile stress Traction Trek.	Cantilever stress Flexion Buiging	Comp. stress Compression Druk	Twist. stress Torsion Torsie
	kV (A.C.)	kV (A.C.)	DN	DN	DN	DN x m
CO/P 30	5	15	400	200	2100	1-2
CO/P 40	8	20	400	150	2100	1-2
CO/P 50	10	25	400	100	2100	1-2
CO/P 60	10	30	400	100	2100	1-2

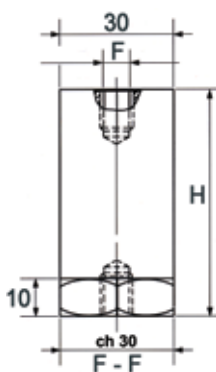



Polyglass spacing Insulators  
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Article :

**CS/P**

**CS/P**



Art.	F	H	Service Voltage	
CS/P 30	M6 - M8 - M10	30 mm	750 V	80
CS/P 35	M6 - M8 - M10	35 mm	1000 V	64
CS/P 40	M6 - M8 - M10	40 mm	1000 V	60
CS/P 45	M6 - M8 - M10	45 mm	1000 V	48
CS/P 50	M6 - M8 - M10	50 mm	1500 V	48
CS/P 55	M6 - M8 - M10	55 mm	1500 V	40
CS/P 60	M6 - M8 - M10	60 mm	1500 V	40
CS/P 65	M6 - M8 - M10	65 mm	1500 V	32
CS/P 70	M6 - M8 - M10	70 mm	1500 V	32

Operating Temperature Température d'utilisation Gebruikstemperatuur	-40°C +130°C
Fire Reaction Tenue au feu Vuurbestendigheid	Class UL-94 VO HL 2 (EN45545-2)
Breaking charge Charge de rupture Breukweerstand	Tolerance +- 10 %


Art.	Surface flashover Surcharge /surface Overbelasting opp.	Intern. flashover Surcharge intern. Inwend. overbelast.	Tensile stress Traction Trek.	Cantilever stress Flexion Buiging	Comp. stress Compression Druk	Twist. stress Torsion Torsie
	kV (A.C.)	kV (A.C.)	DN	DN	DN	DN x m
CS/P 30	8	20	900	450	4000	1,3 - 2,6
CS/P 40	8	25	900	300	4000	1,3 - 2,6
CS/P 50	10	35	900	200	4000	1,3 - 2,6
CS/P 60	15	35	900	150	4000	1,3 - 2,6

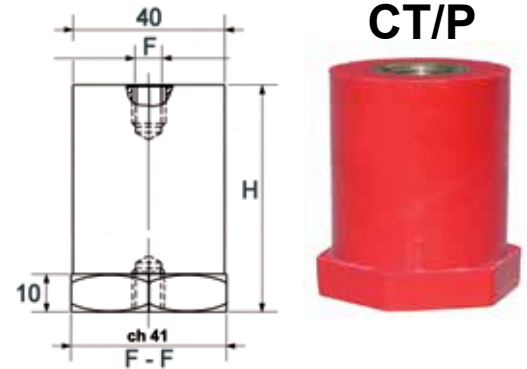


Polyglass spacing Insulators  
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Article :

**CT/P**

Art.	F	H	Service Voltage	
CT/P 30	M6 - M8 - M10	30 mm	750 V	45
CT/P 35	M8 - M10	35 mm	750 V	36
CT/P 40	M8 - M10 - M12	40 mm	1000 V	27
CT/P 45	M8 - M10 - M12	45 mm	1000 V	27
CT/P 50	M8 - M10 - M12	50 mm	1500 V	27
CT/P 55	M8 - M10	55 mm	1500 V	18
CT/P 60	M8 - M10 - M12	60 mm	1500 V	18
CT/P 65	M8 - M10	65 mm	1500 V	18
CT/P 70	M8 - M10	70 mm	1500 V	18
CT/P 80	M8 - M10	80 mm	1500 V	14



Art.	Surface flashover Surcharge /surface Overbelasting opp.	Intern. flashover Surcharge intern. Inwend. overbelast.	Tensile stress Traction Trek.	Cantilever stress Flexion Buiging	Comp. stress Compression Druk	Twist. stress Torsion Torsie
	kV (A.C.)	kV (A.C.)	DN	DN	DN	DN x m
CT/P 30	8	20	1000	750	8000	3 - 6
CT/P 40	10	25	1000	750	8000	3 - 6
CT/P 50	10	35	1000	750	8000	3 - 6
CT/P 60	10	35	1000	750	8000	3 - 6

Operating Temperature Température d'utilisation Gebruikstemperatuur	-40°C +130°C
Fire Reaction Tenue au feu Vuurbestendigheid	Class UL-94 VO HL 2 (EN45545-2)
Breaking charge Charge de rupture Breukweerstand	Tolerance +- 10 %




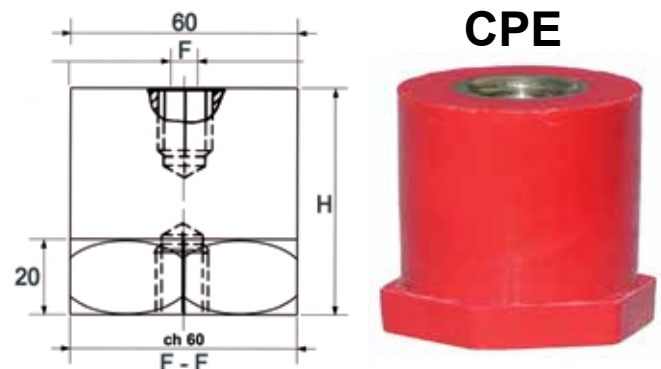
Polyester

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Article :

**CPE**

Art.	F	H	Service Voltage	
CPE 40	M10 - M12 - M16	40 mm	1500 V	12
CPE 50	M10 - M12 - M16	50 mm	3000 V	10
CPE 60	M10 - M12 - M16	60 mm	3000 V	10
CPE 70	M10 - M12 - M16	70 mm	4000 V	10
CPE 80	M10 - M12 - M16	80 mm	5000 V	8
CPE 100	M10 - M12 - M16	100 mm	8000 V	5



TYPE	Surface flashover Surcharge /surface Overbelasting opp.	Intern. flashover Surcharge intern. Inwend. overbelast.	Tensile stress Traction Trek.	Cantilever stress Flexion Buiging	Comp. stress Compression Druk	Twist. stress Torsion Torsie
	kV (A.C.)	kV (A.C.)	DN	DN	DN	DN x m
CPE 40	10	25	1100	700	10000	6
CPE 60	20	50	1500	600	10000	8
CPE 80	25	50	2300	900	12000	10
CPE 100	30	50	3000	1500	15000	15

Operating Temperature Température d'utilisation Gebruikstemperatuur	-40°C +130°C
Fire Reaction Tenue au feu Vuurbestendigheid	Class UL-94 VO HL 2 (EN45545-2)
Breaking charges Charge de rupture Breukweerstand	Tolerance +- 10 %



Polyglass spacing Insulators  
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Article :

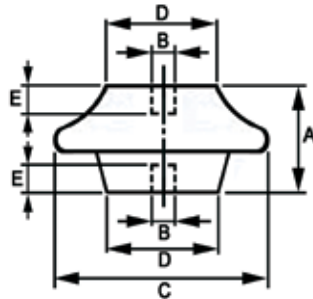
**I2IC1000**

These insulators are used in humid and dusty ambients as the particular bell shape helps moisture runaway and prevents dust build-up.

Ces isolateurs conviennent pour des environnements humide et poussiéreux. Le design à cloche permet l'évacuation de l'eau et évite les dépôts de poussière.

Deze isolatoren zijn aangewezen voor toepassingen in vochtige en stoffige omgevingen. De klok-vorm helpt het weglopen van water en voorkomt stof opbouw.

**I2IC1000-...**



Art.	A	B	C	D	E	F	Service Volt.
I2IC1000-08	52	M8	100	50	15	25	5000 V
I2IC1000-10	52	M10	100	50	15	25	5000 V
I2IC1000-12	52	M12	100	50	16	30	5000 V
I2IC1000-16	52	M16	100	50	16	30	5000 V

Creepage distance = 85 mm  
Ligne de fuite = 85 mm  
Kruipafstand = 85 mm

TYPE	Surface flashover Surcharge /surface Overbelasting opp. kV (A.C.)	Intern. flashover Surcharge intern. Inwend. overbelast. kV (A.C.)	Tensile stress Traction Trek. DN	Cantilever stress Flexion Buiging DN	Comp. stress Compression Druk DN	Twist. stress Torsion Torsie DN x m
I2IC1000	50	40	1950	980	14700	10

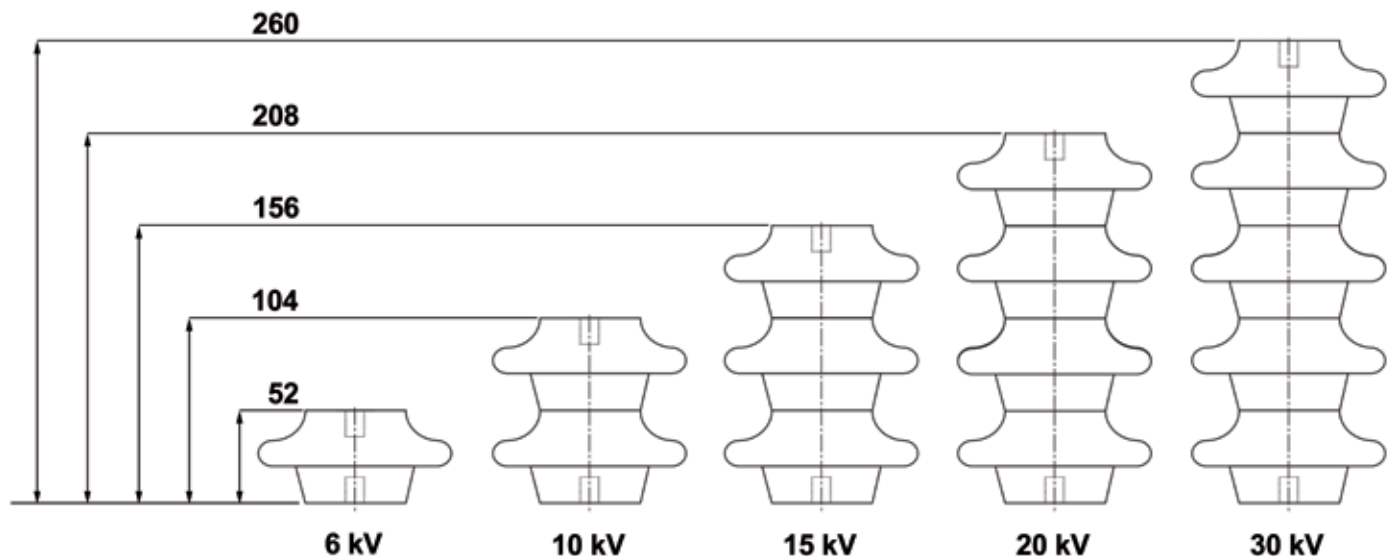
Operating Temperature Température d'utilisation Gebruikstemperatuur	-40°C +130°C
Fire Reaction Tenu au feu Vuurbestendigheid	Class UL-94 VO HL 2 (EN45545-2)
Breaking charge Charge de rupture Breukweerstand	Tolerance +- 10 %

The particular shape permits to have a creepage distance which satisfies the operating voltage by assembling several pieces together

Le design particulier permet d'avoir une ligne de fuite adaptée à la tension de service en assemblant plusieurs pièces ensemble.

De bijzondere vorm biedt de mogelijkheid toe om een kruipafstand te hebben voor een geschikte werkspanning door meerdere stukken opelkaar te monteren.

Assembled qty	Height mm	Creepage distance mm	Nominal voltage range kV	Max. operating Voltage kV	Withstand voltage at industrial frequency	Rated lightning impulse Voltage kV
1	52	85	6	7,2	28	60
2	104	170	10	12	38	75
3	156	255	15	17	45	95
4	208	340	20	24	55	125
5	260	425	30	36	75	170



Male rods  
Inserts mâle  
Draadstangen

Article :

**G/GR**

On request we can supply the spacing insulators with 1 or 2 male connections type «AM».

Sur demande nous pouvons fournir des isolateurs avec 1 ou 2 inserts mâles – ref AM.

Op aanvraag kunnen wij isolatoren leveren met 1 of 2 draadstangen - ref AM.



G5x20	G8x22	G10x30	G12x30
G6x20	G8x33	G10x40	G16x30
G6x30	G8x50	G10x50	
G8x15	G10x22	G12x25	



GR 12/10
GR 16/10
GR 16/12
GR 8/12



Passing insulators. (bushings)  
Isolateurs passe-cloison  
Doorvoerisolatoren

Article :

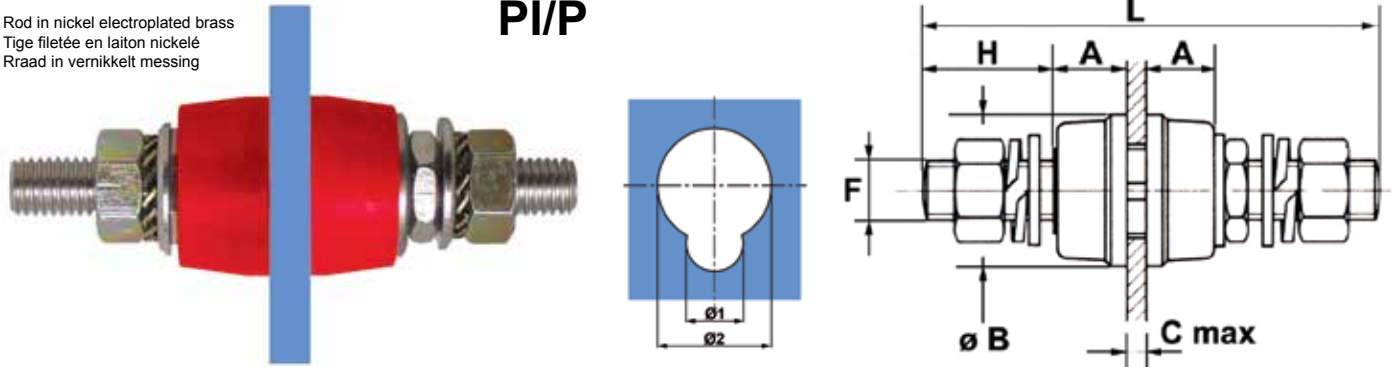
**PI/P**

The passing insulators are composed of 2 polyglass insulating parts fitting in each other. The locking is made by a rod and 2 nuts wherefrom one is fixed to the rod. The conductors are locked with the rod and nuts. The conductors can be connected or disconnected both sides without turning or unclamping it from the screwing up.

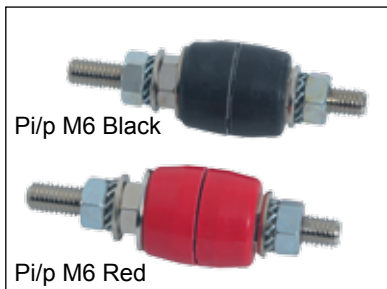
Les isolateurs passe-cloison sont constitué de 2 parties isolées en polyverre s'emboitant l'une dans l'autre. Le blocage des parties isolantes est faite par un tirant et 2 écrous dont une est solidaire au tirant. Les conducteurs sont bloqués au tirant par des écrous. Les conducteurs peuvent être connecter ou séparer sans faire tourner ou débloquer le serrage.

De doorvoerisolatoren bestaan uit 2 geïsoleerde delen in polyglas die inmekaar worden gemonteerd. De blokering van de 2 isolerende delen gebeurt met een draadstang en 2 moeren waarvan 1 solidair is aan de draadstang. De geleiders worden vastgeschroefd met 2 moeren. De geleiders kunnen aangesloten of verwijderd worden, zonder draaien of uitschroeven van de blokering.

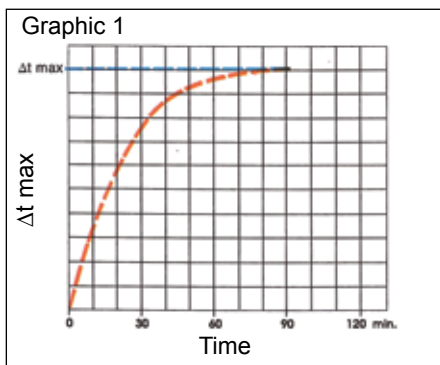
Rod in nickel electroplated brass  
Tige filetée en laiton nickelé  
Rraad in vernikkelt messing



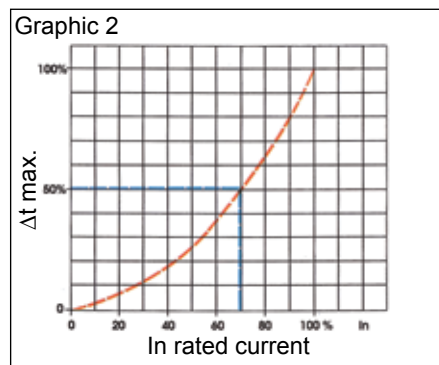
Art.	Color	F	In rated current (Amp.)	Service Voltage (V)	Test Voltage (kV)	L	A	B diam	C max	H	Ø1	Ø2	
PI/P - 4	● ●	M4	25 A	600	4	50	10	15	3	12,5	2,5	8,5	10
PI/P - 6	● ●	M6	50 A	1000	6	65	12	22	5	17	3,5	12,5	10
PI/P - 8	● ●	M8	80 A	1000	6	80	13,5	25	5	21	3,5	15,5	10
PI/P - 10	● ●	M10	120 A	1000	6	95	15	30	5	28	4,5	17,5	10
PI/P - 12	● ●	M12	200 A	1000	6	105	17	35	5	29	5	20,5	10
PI/P - 16	● ●	M16	300 A	2000	8	135	22	43	7	38	5,5	25,5	5
PI/P - 20	● ●	M20	450 A	2000	8	155	25	54	8	44	6	30,5	5



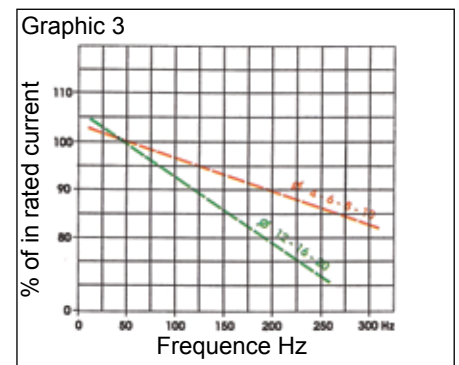
Art.	In rated range (Amp.)	Ambient temperature °C	Δt rod °C	Δt insulator °C
PI/P - 4	25 A	20	10	2
PI/P - 6	50 A	20	14	4
PI/P - 8	80 A	20	26	12
PI/P - 10	120 A	20	34	16
PI/P - 12	200 A	20	38	18
PI/P - 16	300 A	20	47	32
PI/P - 20	450 A	20	49	36



Graphic 1 : After having connected the rated current for about one hour, the elements in circuit can be considered under thermic conditions.



Graphic 2 : Δt max is varying according to the % of the in rated current. Example : Insulator PI/P-16 with in rated current of 300A reach Δt max of 47°C (see table), if it charged with 70% (210A) it will reach a Δt of 50% (or 23,5°C)



Graphic 3 : Passing insulators can be used with a different frequency according to the temperature indicated in table, as long as the graphic degrading is respected.

