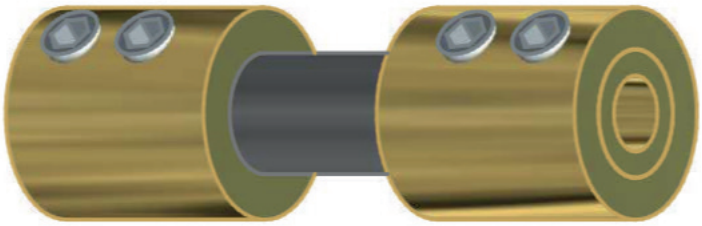
Protection element that minimizes the induced high frequency over voltages



The dinco connector model DNNF is a protection element that minimizes the induced high frequency over voltages derived from atmospheric discharges, electromagnetic pulses and other sources that can appear on the downstream cable of the DDCE.

Technical principle of operation

The principle of operation of the dinco connector is based on generating a small counter-electromotive force that opposes the passage of its alternating component, generating limited energy absorption through the ferrite core in the form of heat. The dinco connector minimizes the effect of high frequency overvoltage by 10-15%.

Technical characteristics

Concept	Connector
Product	dinco
Model	DNNF
Direct current electrical resistance using 10 A source	0,170 m"
Resistance after 3 current injections of 100 KA 10/350 according to standard UNE EN IEC 62305-1:2011 Annex C and UNE EN IEC 62561-1:2012	0,180 m"
Requirement of value of electrical resistance of the connector using source of 10 A before and after the 3 injections of current of 100 KA 10/350	< 1 m" !
Intensity	100 KA 10/350
Specific energy	2500 KJ/"
Cable insertion in brass part	See figure 1
Allen type clamping screws	M8x10
Required tightening torque of Allen screws M8x10	8 Nm
Certified normative	UNE EN IEC 62305-1:2011 (Report No. LCOE 2019033F0134) UNE EN IEC 62561-1:2012

Table 1. Technical characteristics of the dinco connector.

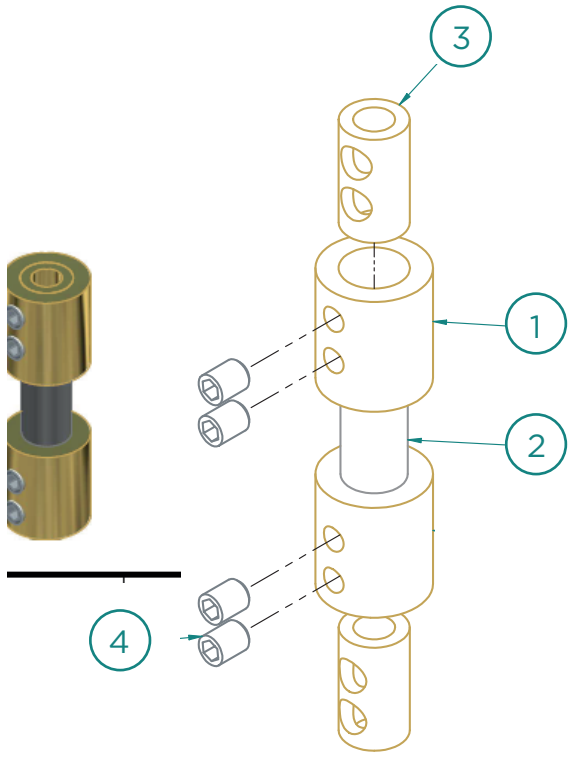
Testing results

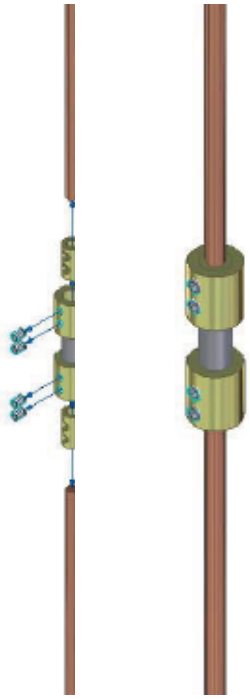
Sample	Serial number	Register	Ip (kA)	W/R (KJ/")	Q (C)	T1 (! s)	T2 (! s)	Result of the visual inspection	Resistance before the tests (m")	Tightening torque before testing	Tightening torque after testing
DNNF	S/N	RC12-15	87,6	2.555	52,8	24,6	546	SATISFACTORY	0,170	8 Nm	0.7Nm>1.4Nm
		RC12-16	93,1	3.100	60,2	24,5	599	SATISFACTORY			
		RC12-17	94,0	3.085	60,4	24,4	568	SATISFACTORY			
		RC12-18	94,1	3.145	62,3	24,4	582	SATISFACTORY			

Table 2. Results of the dinco connector tests at the LCOE.

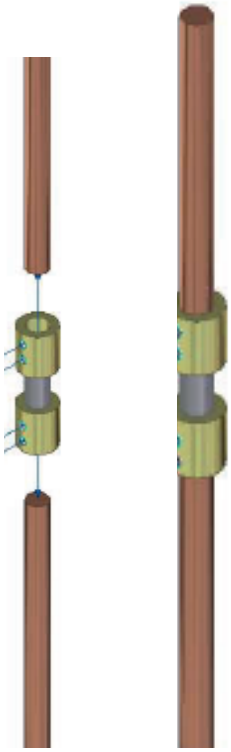
Conclusions

No sample presented evidence of visual damage. The measured resistance of its contacts was less Tightening torques after the test were less than 1.5 times and greater than 0.75 of the initial values.





Cables up to 10 mm ø!



Cables from 10 to 16 mm ø!

Detail 1: Brass part for cables from 10 to 16 mm ø.
Detail 2: Ferrite.
Detail 3: Brass part for cables up to 10 mm ø.
Detail 4: Allen screws for tightening inserted cable.!

Figure 1. Dinco connector model DNNF.

Installation

It is installed at the mast outlet on the downstream cable of the DDCE (Figure 2). If the mast used to install the DDCE is made of fiber, the dinco connector must be installed just after the exit of the cable downstream of the DDCE itself.

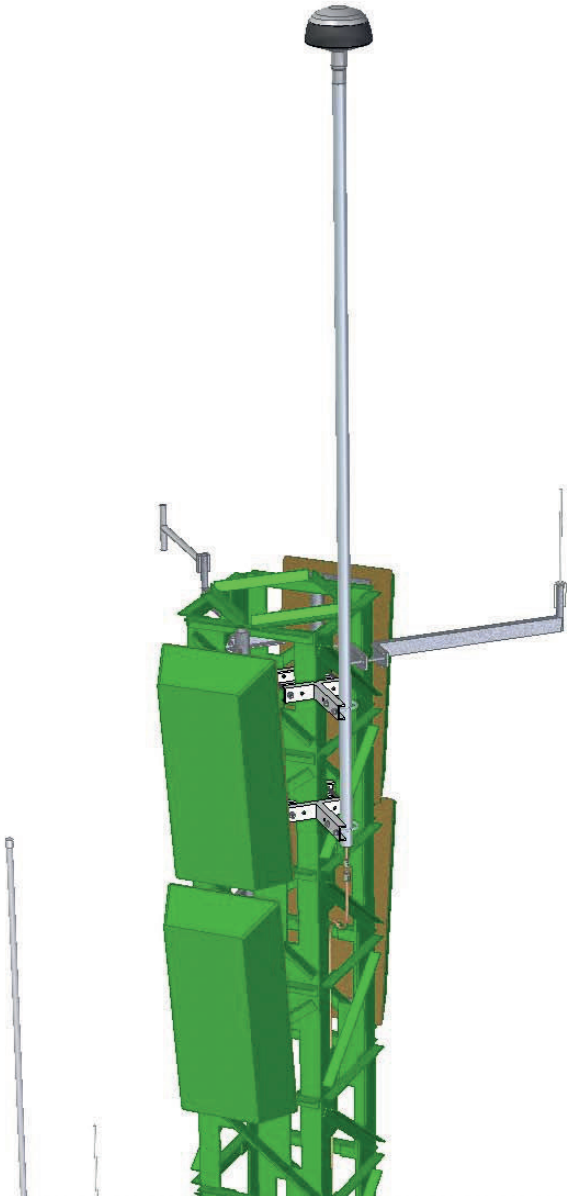


Figure 2. Typical installation of the dinco connector at the output of the DDCE mast.

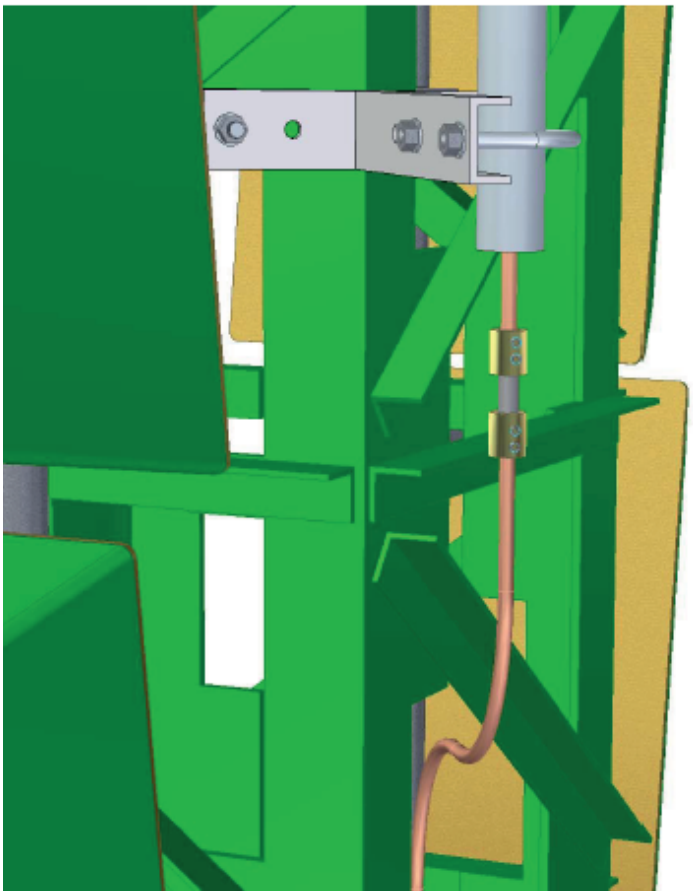


Figure 3. Detail of installation of the dinco connector.

Application

Its installation is recommended in all those structures whose exposure to this type of surge is not significant.