



PRODUCT RANGE

GIS and Transformer Connectors

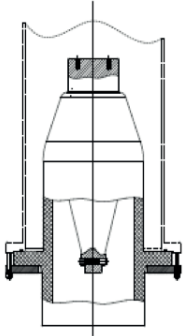


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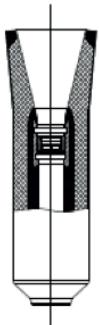
Connector Components

The single-piece prefabricated Click-Fit field body (II) connects the cable plug (III) to the socket (I) and provides both electrical insulation and field control. The unique Click-Fit mechanism locks both the plug and the socket to the body, offering a sturdy and reliable connection.



I) CLICK-FIT SOCKET

- Factory tested epoxy resin insulator
- Silver plated top connection
- Vacuum casted insulator with 'closed top' connector
- Click-Fit plug-in conductor connection
- Flange (to fix insulator to GIS cable enclosure)



II) CLICK-FIT FIELD BODY

- Factory tested HTV silicone-rubber insulator
- Integrated locking system to eliminate movement due to thermo-mechanical forces
- Copper casing provided with M12 earth connection



III) CLICK-FIT CABLE PLUG

- Prepared cable end with silver plated connector
- Integrated locking system to eliminate movement due to thermo-mechanical forces

Delivery Configurations



Configuration 1

Connector for assembly and testing (FAT) at switchgear manufacturing site:

- I) CLICK-FIT SOCKET

For installation on-site, parts required:

- II) CLICK-FIT FIELD BODY
- III) CLICK-FIT CABLE PLUG

Configuration 2

Pre-assembled connector for installation on-site:

- I) CLICK-FIT SOCKET
- II) CLICK-FIT FIELD BODY

For installation on-site, parts required:

- III) CLICK-FIT CABLE PLUG

Configuration 3

Connector for installation on-site:

- I) CLICK-FIT SOCKET
- II) CLICK-FIT FIELD BODY
- III) CLICK-FIT CABLE PLUG

System Voltage [kV]

Type	72,5	123	145	170	245
	CFC-A	CFC-B	CFC-B	CFC-B	CFC-C
I) CLICK-FIT SOCKET Code					
CFC-A	✓				
CFC-B		✓	✓	✓	
CFC-B (ABB flange)		✓	✓	✓	
CFC-C (IEC62271-209 fig. 3)					✓
CFC-C (IEC62271-209 fig. 5)					✓
II) CLICK-FIT FIELD BODY					
Depends on cable size (ø 79 mm max)	✓				
Depends on cable size (ø 100 mm max)		✓	✓	✓	
Depends on cable size (ø 117 mm max)					✓
III) CLICK-FIT Cable Plug Set					
Aluminium or Copper conductor*	✓	✓	✓	✓	✓

* Cable plug sets are dependent on the cable type and diameter, on request (max 2.500 mm²)

Connector Specifications




System Voltage [kV]

72,5 123 145 170 245

DIMENSIONS

		72,5	123	145	170	245
Max conductor size	[mm²]	1.600	1.600*	1.600*	1.600*	2.500
Max insulation diameter	[mm]	79	97	97	97	117

TESTING

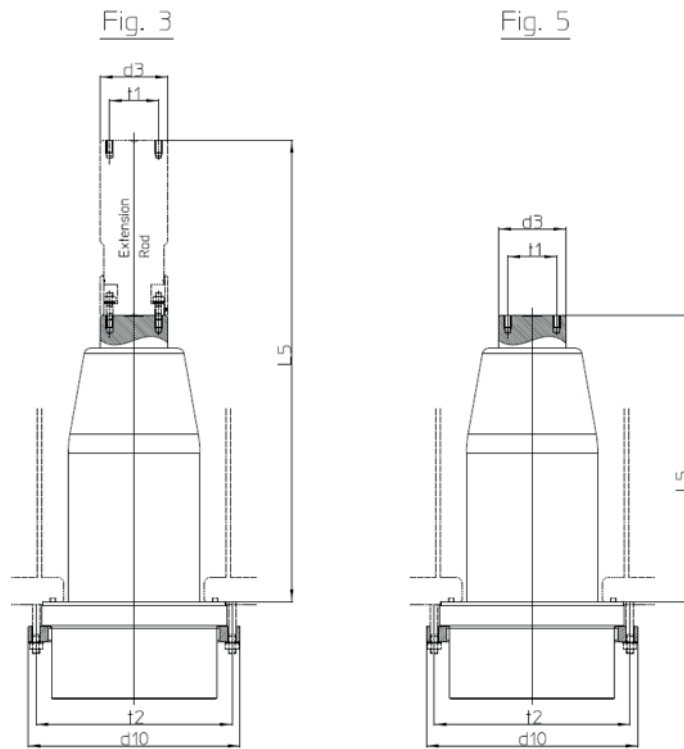
HVAC routine test	100%	2,5 U _o -30 min / PD level < 5pC at 1,7 U _o				
L.I. withstand voltage test	[kV +10/-10]	350	550	650	750	1.050
24 hr AC-test	[kV]	110	190	240	260	380
1 minute AC	[kV]	140	230	310	325	460
Short circuit current (1 sec)	[kV]	Limited by cable design				

STANDARDS

Dimensions according	IEC	IEC-62271-209 / EN-50299				
Type Test according	IEC	IEC-60840				IEC-62067
	IEEE	IEEE-St48				
	NEN	NEN-HD632				

* 2.000 - 2.500 mm² cable cross sections upon request

IEC Standard Dimensions



System Voltage [kV]

72,5 123 145 170 245

DIMENSIONS: IEC-62271-209 / EN-50299

L5 fig 3 - fluid filled*	[mm]	583	757	757	757	960
L5 fig 5 - dry type	[mm]	310	470	470	470	620
L5 fig 4 - IEC-60859-2**	[mm]					650
t1 ø	[mm]	80	80	80	80	110
t2 ø fig 3 - fluid filled	[mm]	270	320	320	320	582
t2 ø fig 5 - dry type	[mm]	270	320	320	320	475
t2 ø fig 4 - IEC-60859-2***	[mm]					582
d3 ø	[mm]	110	110	110	110	142
d10 ø fig 3 - fluid filled	[mm]	295	346	346	346	620
d10 ø fig 5 - dry type	[mm]	295	346	346	346	500

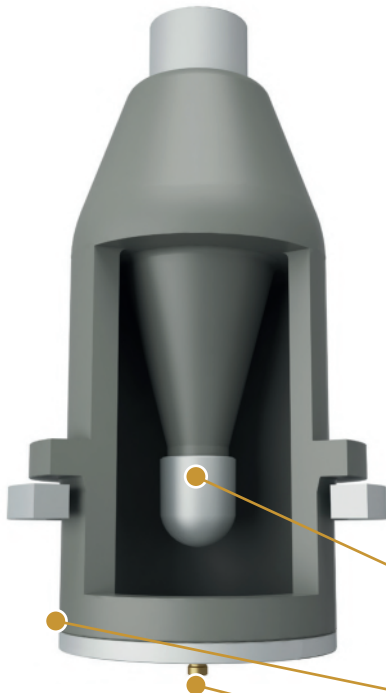
* VDE standard design upon request

** Total length including extension rod

*** Some existing switchgear cable boxes still require these old (different) termination dimensions

Additional Components

GIS Test Set



To perform **Factory Acceptance Testing of the switchgear cable box (GIS)**, the test set can be installed on the socket of the cable connector. The socket needs to be filled with SF-6 gas during the FAT of the switchgear and will be supplied with a jointing instruction how to install the GIS Test Set.

The epoxy resin socket is built into the GIS or transformer, providing an electrically insulating seal to the gas or oil inside the equipment. The socket can be assembled at the switchgear or transformer manufacturer. The equipment is then factory tested, shipped, installed and field tested including the socket. Subsequent connection of the cable is completed without assistance of the switchgear or transformer manufacturer. This provides an economical procedure with reduced on-site installation time and simplified logistics.

Elements

- A** Shielding cap over locking mechanism
- B** Grounding connection cable for test flange
- C** Test flange with integrated Dilo (SF-6) coupling

System Voltage [kV]

Type	System Voltage [kV]				
	72,5	123	145	170	245
	0-80-400	0-80-310	0-80-310	0-80-310	0-80-320
I) CLICK-FIT SOCKET GIS test set					
CFC-A test set	✓				
CFC-B test set		✓	✓	✓	
CFC-C test set					✓

Optionally the GIS Test Set can be supplied with a manometer that is fitted to the test flange

Additional Components

ClickFit™

Extension Rod - adapter for long version



To adapt the length of cable connectors from short version (dry) to long version (fluid-filled) according to IEC (L5) dimensions.

System Voltage [kV]

	72,5	123	145	170	245
Type	0-80-400	0-80-310	0-80-310	0-80-310	0-80-320

Extension Rod - Dimensions IEC-62271-209 / EN-50299

L5 fig 3 - fluid filled*	[mm]	72,5	123	145	170	245
CFC-A extension rod		✓				
CFC-B extension rod			✓	✓	✓	
CFC-C extension rod						✓

* Length incl. extension rod

Adaptation Set CFC-245



This adaptation set has been developed to connect a 245 kV epoxy resin insulator (with different dimensions to previous IEC standard designed GIS cable box). Adaptation from IEC 62271-209 figure 5 into IEC-62271-209 figure 3 or IEC-60859 figure 4 to IEC-60859 figure 2**.

System Voltage [kV]

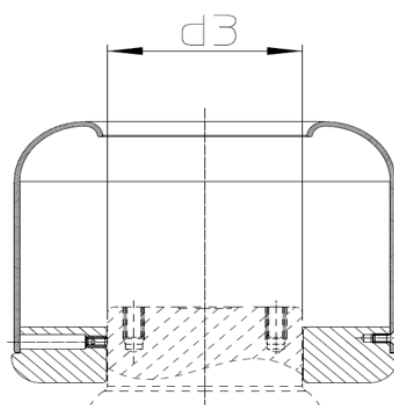
	72,5
Type	0-80-820
CFC-C adaptation set	✓

** Different designs upon request

Additional Components

Corona Shield - installation in transformer

For installation of cable connectors in transformers and other oil insulated devices, the corona shield protects against sharp-edged areas in the connection system. This corona shield can also be used in combination with an extension rod. Delivery includes crepe paper to protect against chain formation in the oil.



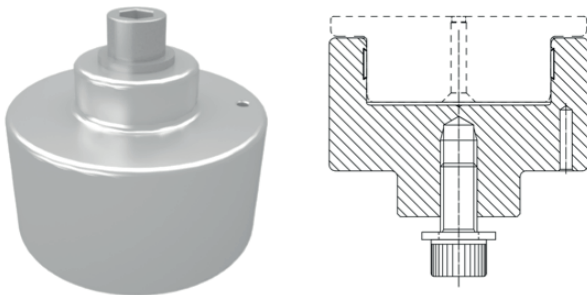
System Voltage [kV]

		72,5	123	145	170	245
Corona Shield - Type		0-80-503	0-80-503	0-80-503	0-80-503	0-80-801
Dimensions IEC-62271-209 / EN-50299						
d3 ø	[mm]	110	110	110	110	142
Code						
CFC-A/B corona shield		✓	✓	✓	✓	
CFC-C corona shield						✓
Cor. Shield + extension rod + crepe paper - Type		0-80-501	0-80-501	0-80-501	0-80-501	0-80-802
Code						
CFC-A CSERCP		✓				
CFC-B CSERCP			✓	✓	✓	
CFC-C CSERCP						✓

Additional Components

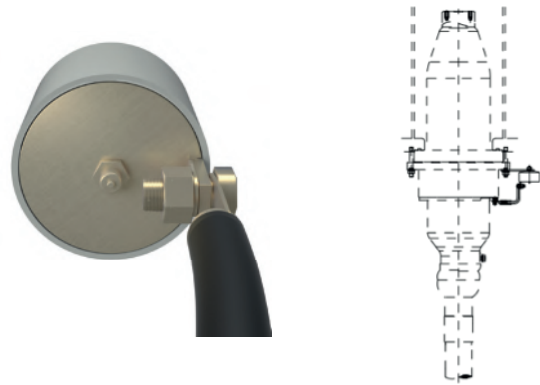
“Banana” Plug Connector

This plug connector is a testing device to carry out contact resistance tests on switchgears installed with the pre-assembled socket insulator.



Surge Arrestor Set

Surge arrestors are designed to protect the earthing system from the switchgear against undefined over voltages with the Click-Fit socket.



System Voltage [kV]

	72,5	123	145	170	245
Banana Plug- Type*	CFC-A	CFC-B	CFC-B	CFC-B	CFC-C
Code					
CFC-A banana plug	✓				
CFC-B banana plug		✓	✓	✓	
CFC-C banana plug					✓
Surge Arrestor Set - Type**	0-12-244	0-12-244	0-12-244	0-12-244	0-12-244
Code					
CFC-A surge arrestor	✓				
CFC-B surge arrestor		✓	✓	✓	
CFC-C - IEC62271-209 fig. 3 - surge arrestor					✓
CFC-C - IEC62271-209 fig. 5 - surge arrestor					✓

Additional Components

ClickFit™

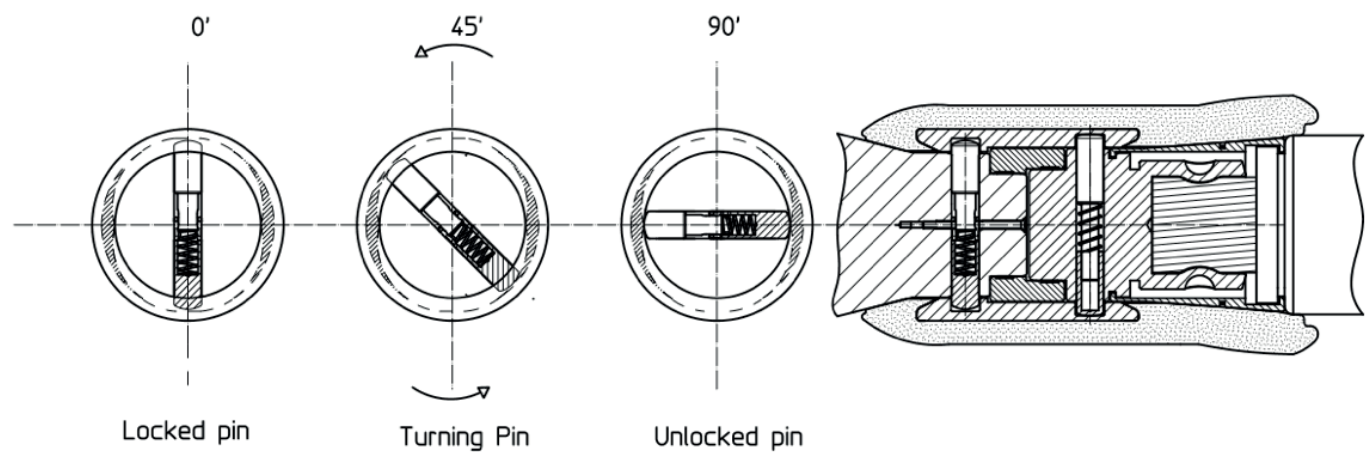
Factory pre-connectorized cable end

The unique Click-Fit concept allows the cable ends to be prepared in the factory. Connectors are installed on the cables after preparation and they are tested together with the cable. Mechanical protection during transport is ensured by a special protection sleeve with an integrated pulling eye.



Rotational Click Out

During normal operation, the cable is locked/fix inside the socket insulator. Optionally it is possible to unlock the cable from the socket as well as to unlock the cable from the field body, by using the rotational “Click-Out” mechanism. This requires additional components and tools.



For more details about this feature and other tailor made solutions please contact Click-Fit customer service.

Various toolsets are available for installation or unplugging a cable from the GIS or Transformer Connector.

Tools for cable preparation (details on request)

- Peeling tool for the removal of the insulation screen
- Peeling tool for the removal of the XLPE insulation
- Peeling tool for the removal of the conductor screen
- Peeling tool for insulation fixation groove

Tools for termination joint installation

- Pulling flange for installing the connector field body to the socket

Tools for cable installation

- Cable pulling clamp for installing the cable end in the connector



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