Permanent Cable PD Sensor (HFCT) Options

HFCT's (High Frequency Current Transformers) are used to detect and measure partial discharge in shielded cables.

Permanent installation of HFCT's allows the user to survey or monitor their cables safely at any time.

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Product Brochure

Permanent HFCT for periodic and full-time PD testing

Shielded cables are used at 2500V and above require engineered terminations. If these terminations are not done correctly, partial discharge and eventual failure can occur. Partial discharge can also result from cable defects or damage.

HFCT's need to be mounted on the ground straps of shielded cable to detect partial discharge. By mounting them on the ground strap adjacent to a solid ground point, they remain at a safe potential under any system conditions.

HFCT's are specially designed to detect high frequencies well above the power system frequency. This allows them to be sensitive to very low PD currents in the presence of large power system currents.

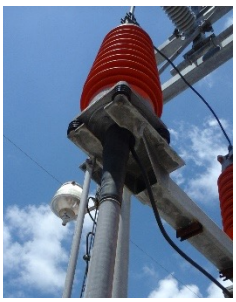
Cable termination in metal-clad switchgear

Permanent HFCT locations

Medium and high voltage shielded cables terminate typically in one of two ways, indoor and outdoor. Indoor terminations are inside metal clad switchgear. They are inside locked cabinets to prevent accidental contact. This means that the HFCT must be installed and cabled to outside the cabinet while de-energized. Once installed, the user can access the sensor connection safely at any time. These HFCT's do not need to be weatherproof

Outdoor terminations can be in switchyards attached to structures. There, ground straps typically are safely accessible while the station is energized. Sometimes cable terminations are at the top of what are called riser poles. These straps are not easily or safely accessible. All outdoor locations are exposed to the weather and need to be protected.

In outdoor applications, non-weatherproof, temporary HFCT can be used to run short term tests. For permanent installation or longer tests, weatherproof HFCT are required.



Cable termination in 69KV switchyard

Cable termination on riser pole

Indoor HFCT (EA part # HFCT50 / HFCT100)

This is a split core HFCT suitable for installation indoors. Because it is split, it can be installed without disconnecting the ground strap. It is available with a 50 or 100mm inner diameter. Standard is 50mm.

Feature	Specification
Bore Diameter	50mm / 100mm
Outer Diameter	96mm / 150mm
Height	24mm
Frequency Responce	1 MHz - 70 MHz
Impedance	50 Ohms
Connector	Male BNC
IP Rating	2X
Installed or storage temperature	-40C to +50C
Operating temperature	-20C to +50C

Weatherproof HFCT (EA part # HFCT-WP-X)

This is a single phase HFCT suitable for installation outdoors. Because it is not split, it cannot be installed without temporarily disconnecting the ground strap. The signal cable is permanently attached to avoid exposed connectors. Cable length must be specified at time of order.

Feature	Specification
Bore Diameter	36mm
Outer Diameter	175mm x 145mm x 30mm
Weight	2.5Kg
Frequency Responce	1 MHz - 70 MHz
Impedance	50 Ohms
Connector	Male BNC Plug
IP Rating	68
Installed or storage temperature	-40C to +55C
Operating temperature	-20C to +50C

RFCT/HFCT Test Box (EA part # RFCT-TBx)

The RFCT/HFCT test box provides a location where the sensor connections can be made to the test equipment. This box provides a sealed, lockable point where the cables from the RFCT are terminated. The CableData Collector, UltraTEV Plus2, or UltraTEV Monitor can connect at this point.
The test box can be supplied with 3, 6, or 9 connection points. Larger test boxes with more ports are available as special-order items.

Feature	Specification
Outer Diameter	190mm x 220mm x 150mm
Weight	2.5Kg
Frequency Responce	1 MHz - 70 MHz
Impedance	50 Ohms
Connectors	Female BNC Type
IP Rating	66
Operating temperature	-40C to +55C

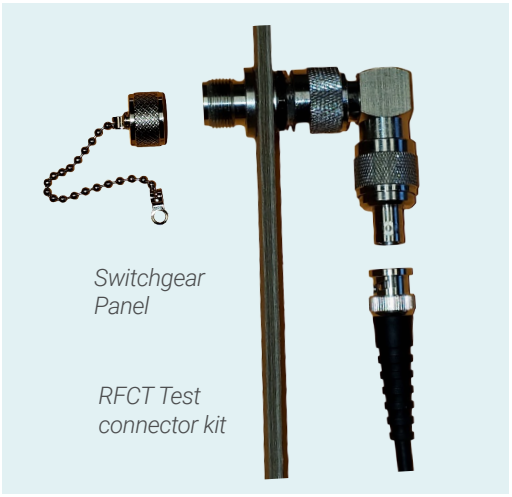
RFCT/HFCT Test Box (3 port)

Panel Mount RFCT/HFCT Connector Kit

(EA part # RFCT-TCK)

The RFCT/HFCT test connector kit provides a connector outside the metal-clad switchgear where the sensor connections can be made to the test equipment. This weatherproof connector includes a dust cap for protection. The outside connector is an N-type and the RFCT/HFCT cable connection point is a male BNC.

Feature	Specification
Outer Diameter	70mm x 70mm x 25mm
Weight	0.25Kg
Impedance	50 Ohms
Test equipment connector	Male N-Type
RFCT/HFCT connector	Male BNC
IP Rating	65
Operating temperature	-40C to +55C



Cable to RFCT (Not included in kit)

RFCT/HFCT Test Connector Adapter

(EA part # RFCT-APT)

The RFCT test connector kit provides an N-type connector where connections can be made to the test equipment. EA test equipment uses the standard BNC connector type. This adapter connects the test equipment to the switchgear connector. Three are needed for a CableData Collector and one is needed for an UltraTEV Plus2.

RFCT/HFCT Test Connector Adapter

Warning – Installation of HFCT equipment in proximity to high voltage can be dangerous. Follow all applicable safety rules and refer to EA Technology's RFCT installation guideline document. Proper procedures must be followed, or injury or death can result.

EA Part Number	Description
HCFT50	Indoor HFCT, 50mm bore HFCT50(1)
HCFT100	Indoor HFCT, 100mm bore HFCT100(1)
HCFT-WP-x	Weatherproof Permanent HFCT - (x = 2, 5, 10 or 15) Weatherproof HFCT(1) for a single ground strap. Has permanently attached cable with male BNC Connector. (x) refers to cable length in meters.
RFCT-TBx	Permanent RFCT / HFCT Test Box - 3, 6 or 9 ports (x = 3, 6 or 9) External Enclosure (1) with (x) BNC test points.
RFCT-ADT	RFCT/HFCT Test Connector Adapter BNC to N type adapter (gold plated center pin)
HFCT50-Px	Permanent HFCT50 kit with test box - 1, 3, 6 or 9 ports (x = 1, 3, 6 or 9) HFCT50 (x), 2M BNC cable (x), Test Box (1) with (3, 6 or 9) BNC test points.
HFCT50-PMK	Permanent HFCT50 kit with panel mount connector HFCT 50(1), 2M BNC cable (1), Panel Mount RFCT/ HFCT Connector kit (1)
RFCT-TCK	Panel mount RFCT / HFCT Test Connector Kit BNC to N type adapter, N type right angle, weatherproof N type bulkhead, N type dust cap

Other kits are available upon request

Global Footprint

At EA Technology we specialise in asset management solutions for owners and operators of power network assets.

Founded in 1966 we have over 50 years' experience in the industry and 6 regional offices around the world to support our global customer base.

We work with a lot of our clients on a long-term basis to help them safeguard their power networks.

We advise our clients on strategy and implementation of a range of technology solutions to manage power assets, delivering maximum life and minimise cost.

ea technology

Safer, Stronger, Smarter Networks

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