

# high performance PD sensors

## FMC – Flexible Magnetic Coupler

The FMC (Flexible Magnetic Coupler) is a partial discharge sensor whose working principle is based on a direct magnetic coupling with the cable conductor and shield.

It picks up a magnetic signal given by PD activity. Its compact and robust design makes the FMC the optimal sensor for direct installation on cables and accessories such as joints and termination as well as GIS/GIL.

This sensor has a sensitive side which has to face to the object under test, while the other side (shielded) reject the noise from the environment.

### Applications

For usage medium voltage cables, high voltage cables, terminations or joints and GIS/GIL.

When other kind of sensors lacks in easiness of use or whenever an outage cannot be met, this sensor is a good choice. In many practical cases we don't have ground cables where other type of sensors could fit (i.e. HF CTs) and FMCs can make the difference between the possibility to perform a PD measurement or not. Two versions are available, depending on the size of the cable. For high voltage cables (higher than 100kV) the larger version is more suitable while for smaller cables the medium voltage version should be chosen.



### Specifications

Bandwith	500 kHz – 50 MHz
Working principle	Inductive coupling
Overall Dimensions (High Voltage version)	500 x 120 x 10 mm approx (L x W x H)
Overall Dimensions (Medium Voltage version)	500 x 40 x 10 mm approx (L x W x H)
Overall Dimensions (with IP68 cover)	710 x 170 x 100 mm approx (L x W x H)
Connector	BNC
Power Supply	Needed only for optional devices (AFMC amplifier)
Installation	Tied to the cable in proximity of cable joint or cable terminal
Operating temperature:	-20°C ÷ +65°C
UV resistance	Excellent
Oil resistance	Excellent
Acid resistance	Good

# FMC – Flexible Magnetic Coupler

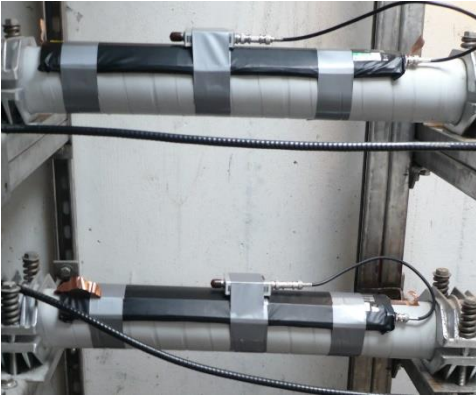
FMC sensor can be simply laid on the cable and shaped according on the device bending. It should be tied with cable ties or tape, depending if we are performing a spot measurement or if it has to remain in place for a long period.

If the measurement object is a cable accessory (whether a joint or cable termination), the FMC should be placed on the cable itself but very close to the joint.

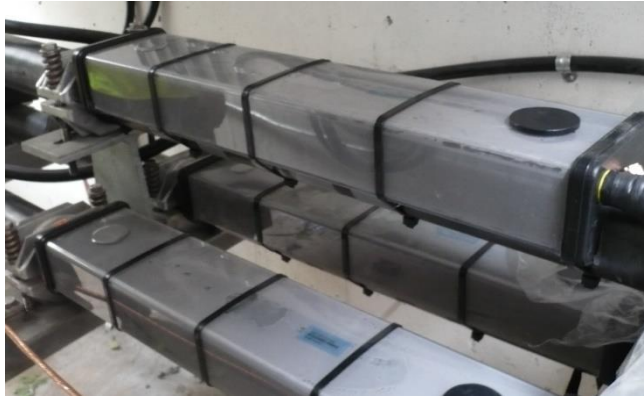
Optional dedicated amplifiers (AFMC) as well as signal conditioning devices are available by Techimp to get improved sensitivity and excellent signal-to-noise ratio.

An optional cover can be provided for all cases where flooding (i.e. in manholes) or adverse weather conditions are expected. In these cases the IP68 option is preferable.

## Installation Examples



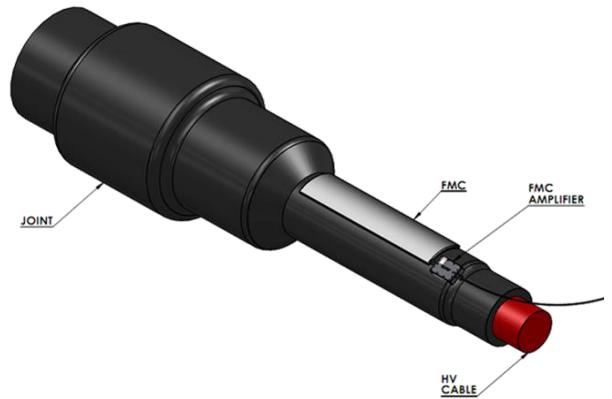
Example of FMC on high voltage cable  
Standard installation on HV cable, with Amplifier



Example of FMC on high voltage cable with IP68 protection cover



Example of FMC on medium voltage cables



 **Suitable For**

HVAC  
CABLE

MVAC  
CABLE

HVDC  
CABLE

GIS  
GIL  
GIB

Several different sensors are available, fully compatible with Techimp Global Diagnostic platform. They can be freely combined at customer needs provided they can be applied for the specific application.

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