

Clamp Type HF Current Transformer Large bar coupling version **HFCT-140**



TechImp Clamp High Frequency Current Transformer model 140 is an inductive sensor for partial discharge measurements. It is suitable for online /off line PD tests on : large diameter cables ; grounding rod bar ; etc.

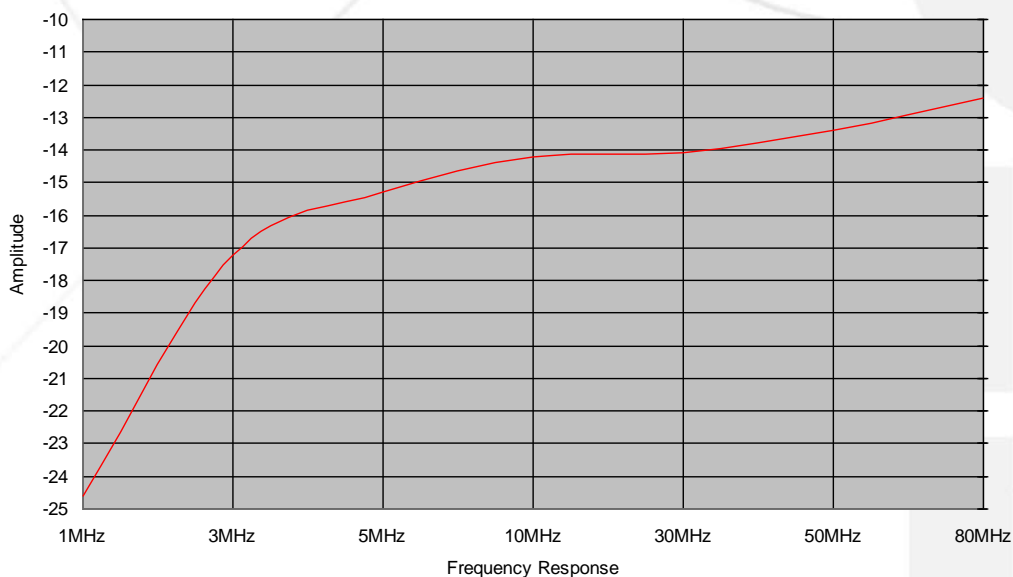
A TNC termination is available to connect the Clamp HFCT 140 to the TechImp PD analyzer : PDCheck , PDBase etc.

The arrow indicates the requested input current (I_{in}) direction to get coherent output voltage (V_{out}) polarity respect to ground.

When the sensor is installed with the arrow directed to ground, the detected voltage signal (V_{out}) has the same phase of the input current (I_{in}).

Overall Specifications

| | |
|---|-------------------------|
| Bandwidth (-6dB) | 2 MHz 100 MHz |
| Sensitivity (V_{out} / I_{in} at 10 MHz, 50 Ω load) | 10 mV/ mA |
| Load Impedance | 50 Ω |
| Overall dimension | 310 mm x 320 mm x 40 mm |
| Hole dimension | Φ 140 mm |
| Weight | 6,0 Kg |



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Detailed Electrical Specifications

Frequency response

TEST CONDITIONS:

Attenuation shown in the table is the ratio (in dB) between the output voltage (V_{out}) and the input voltage (V_{in}), defined as follow:

$$V_{in} = I_{in} * 50\Omega$$

V_{out} is measured on a pure resistive 50Ω load

| Frequency | Attenuation |
|-----------|------------------|
| 1MHz | -24,6dB (±0,1dB) |
| 3MHz | -17,2dB (±0,1dB) |
| 5MHz | -15,3dB (±0,1dB) |
| 10MHz | -14,2dB (±0,1dB) |
| 30MHz | -14,2dB (±0,1dB) |
| 50MHz | -13,4dB (±0,1dB) |
| 80MHz | -12,4dB (±0,1dB) |

Derating curve

Due to the saturation of the magnetic core, as a superimposed 50Hz current (if any) rises the high frequency sensitivity of the HF CT decreases

When the high frequency pulse is added to the 50Hz current (i.e. they have the same algebraic sign), the worst case in term of sensitivity is when the peak of the high frequency pulse lays on the peak of the 50Hz current (phase sum).

The below table shows the derating value (worst case) to be applied with different 50/60Hz current values:

| Frequency | Sensitivity attenuation |
|-----------|-------------------------|
| 0 A | 0dB |
| 50 A | 0dB |
| 100 A | -0,1dB |
| 200 A | -0,7dB |
| 300 A | -1,2dB |
| 400 A | -2,6dB |
| 500 A | -6,0dB |
| 600 A | -12,0dB |