



# MULTI-SENSOR KIT QUICK START GUIDE



CAT III  
300 V



Full instructions and video tuto.  
<http://doc.smart-impulse.com>



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V4.2

## SETUP

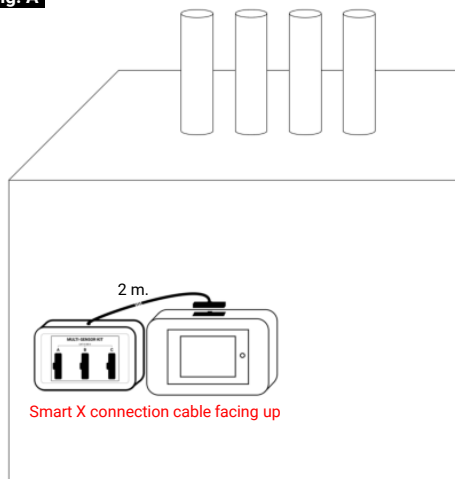
If the studied electrical panel either:

- supplies a **capacitor bank (PFC)**,
  - is fed by **several coupled transformers**
  - has **power production units downstream** the measured incomer (excluding generator)
- it is absolutely necessary to measure each of these points independently.

To do this, the **multi-sensor kit** connected to the Smart X can be used to sum up to 3 different measuring points.

Magnetic, it can be installed on any metallic surface near the points to be measured, at a max. distance of 2 metres from the Smart X (fig.A).

Fig. A



## MEASUREMENT

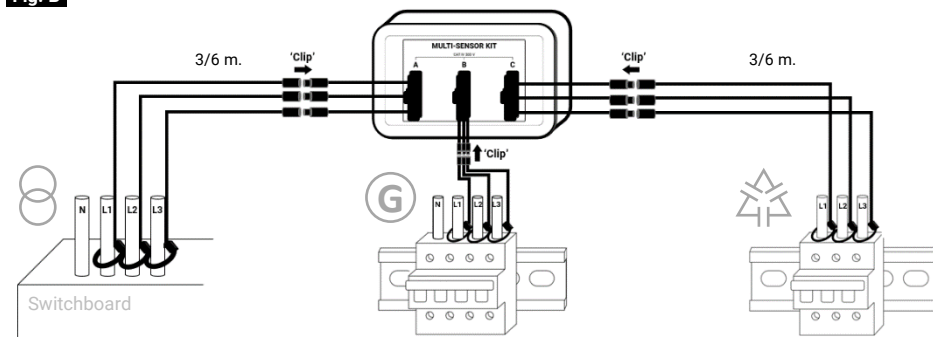
For each measuring point (ex: low voltage main incomer, capacitor bank, photovoltaic panels), encircle all the insulated conductors of each phase\* using the openable coils, **by imperatively respecting**:

- **the order of the phases (L1/L2/L3)**, which must imperatively be the same for every point to be measured,
- **the direction of the sensors** (fig. B): arrow outside the sensor's loop and positioned:
  - in the current direction for low voltage main incomer and power production units,
  - In the opposite current direction for capacitor banks to neutralise the disturbances.

Then connect each coil to the current adapter (respect color matching) then connect the adapter to the Smart X until you hear the connection 'clip'.

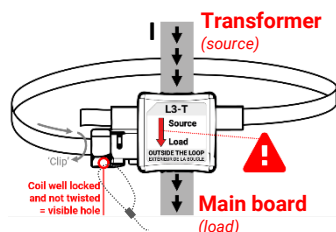
**⚠ To ensure high-quality measurement, the sensor loops must encircle only the conductor(s) to be measured, be spaced from each other (by fixing them if necessary) and not be intertwined. Each coil must be correctly locked and not twisted. Once the installation is validated by Smart Impulse, clamping clips can 'seal' the sensors.**

Fig. B



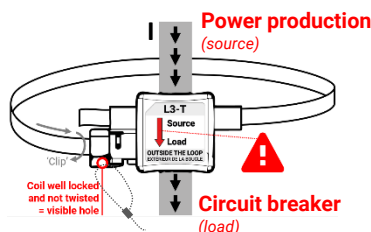
### Low voltage main incomer

Arrow outside the loop, pointing from the low-voltage main incomer (transformer) to the main switchboard (main circuit breaker) (current direction)



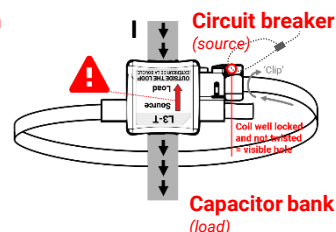
### Power production units

Arrow outside the loop, pointing from the power production unit (excl. stand-by generators) to its circuit breaker. (current direction)



### Capacitor banks

Arrow outside the loop, pointing from the capacitor bank to its circuit breaker (opposite current direction)



\* If the diameter of the coil does not permit to measure all the insulated conductors per phase, it is possible to measure only a part of these ones. In this case, respect imperatively the following instructions and warn Smart Impulse:

- The number of encircled conductors must be the same for each phase of a given measuring point (ex: 2 measured conductors out of 4 for phases 1, 2 and 3 of the low voltage main incomer)
- The proportion of encircled conductors must be the same for each measuring point (ex: 2 conductors out of 4 for low voltage main incomer, 1 out of 2 for power production units, 1 out of 2 for capacitor banks)

To disconnect a sensor from the adapter, press the locking clip and pull while holding the plastic part of the connector on the adapter side.

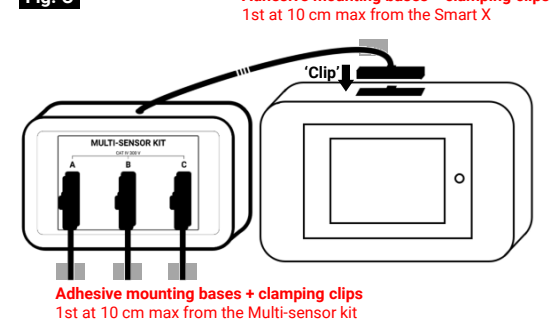
## CONNECTION

Once the sensors are installed, connect the multi-sensor kit to the Smart X until you hear the connection 'clip' and install the adhesive bases provided along the cables (fig. C, 1<sup>st</sup> at 10 cm max from the Smart X / multi-sensor kit)

Then connect the Smart X to its power supply and to the Smart Router (see Smart X quick start guide).

*Note: To validate the proper functioning of the installation, you will be asked (see installation certificate) to connect each measuring point of the kit (A, B, C) one after the other in order to validate them individually, then to connect all the points.*

Fig. C



## VALIDATION

Once the installation is completed, please fill in the installation certificate in order to **validate the compliance and correct operation of the installation** and **send it within 24 hours to [support@smart-impulse.com](mailto:support@smart-impulse.com) imperatively with the photographs below. The installation will only be validated upon receipt of these documents.**

Thank you !

- Smart X meter
- Multi-sensor kit
- Current sensors of the different measuring points, with arrow visible
- Power supply connection
- Smart Router
- Wide plan of room after installation

