SMART Impulse

DATASHEET

Managing your power consumption has never been easier.

Smart X®

SMARTER METERING



DESIGNED & MADE IN FRANCE

The simplest metering solution for roll-out across your organisation's property portfolio.

Smart X is a new-generation power meter installed in under one hour, with no tools and no interruption to the building's main power supply. One single meter allows you to identify the power consumption of each type of equipment in your building.

One meter covering all your power-monitoring needs

Real-time remote meter readings

Consumption by end-use

Sub-metering: additional measuring by zone or by specific equipment

A new-generation power meter

- **Installed in under one hour with no tools and no interruption.**
- **Compatible with all electrical configurations.**

Magnetic fixing
on metal surface or DIN rail

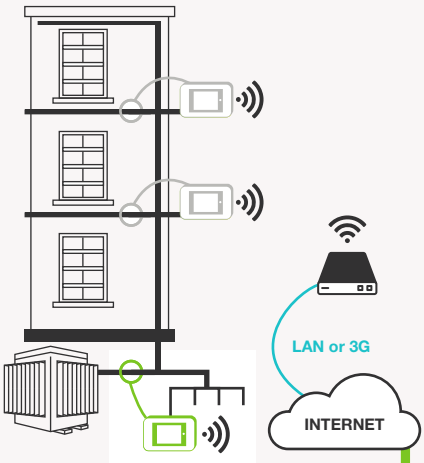
Power supply
Magnetic 3-phase power supply or single-phase outlet

Current measurement
by flexible split-core current sensors

Communication
Automatic and secure communication

HOW IT WORKS

Measuring & communicating data



Smart X as main meter: measures current and voltage at a building's main switchboard

Smart X as a sub-meter: measures specific circuits (by zone or individual end-use)

Smart Router: collects and transmits Smart X data to server

Breakdown by end-use

Breakdown of consumption by end-use thanks to patented Smart Impulse algorithms



TOTAL CONSUMPTION



CONSUMPTION BY END-USE

Data storage & monitoring

Visualisation platform

Automatic email reports

Automatic alerts

API

Characteristics

METER INPUT	SMART X + ART SENSORS	SMART X + ATO SENSORS
Power supply	Integrated single-phase 2 W power supply, Typical current consumption: 30 mA at 230 VAC	
Voltage	100–300 VAC, 50/60 Hz Single-phase, two-phase or three-phase	
Current (per phase)	10–2,300 A Diameter 70 or 125 mm CAT IV 300 V	1–125 A Diameter 16 mm CAT III 300 V

METROLOGY ACCURACY CLASS ACCORDING TO IEC 61557-12	SMART X + ART SENSORS	SMART X + ATO SENSORS
Current	0,5	
Voltage	0,5	
Frequency	0,1	
Active power	1	
Active energy	0,5	1
Reactive power	1	2
Reactive energy	2	

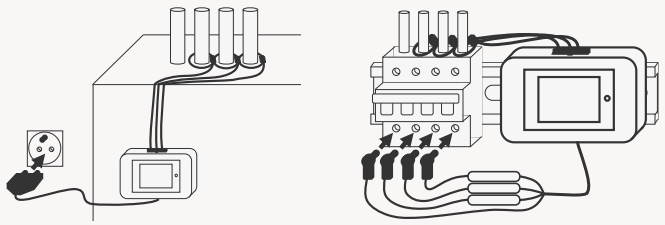
MECHANICAL	
Dimension	117 × 73 × 27 mm (7-module DIN format)
Weight	192 g without accessories
Fixing	Magnetic mounting on metal surfaces or on DIN rail with supplied adapters

STANDARDS		
Electrical safety	CAT III 300 V - per IEC 61010-1:2010 + A1:2016, IEC 61010-2-030, (IECEE) CB Certificate No. FR_707052/M1	
EMC / Radio	Class A - per EN 61326-1:2013, IEC 61000-3-2:2014, IEC 61000-3-3:2013 EN 301 489-1 V2.2.0:2017, EN 301 489-3 V2.1.1:2017, EN 301 489-17 V3.2.0:2017, EN 300 328 V2.2.2:2019	
RoHS	RoHS IEC 63000:2018	
International standards Others: contact us.	CE (Europe) UKCA (UK) CBVUS (USA - Canada) GITEKI (Japon) RCM (Australia - New Zeland) EAC (EEU Eurasian Economic Union)	KC (South Korea) NCC (Taiwan) SIRIM (Malaisia) NBTC (Thailand) ANRT (Morocco) TDRA (EAU) China…

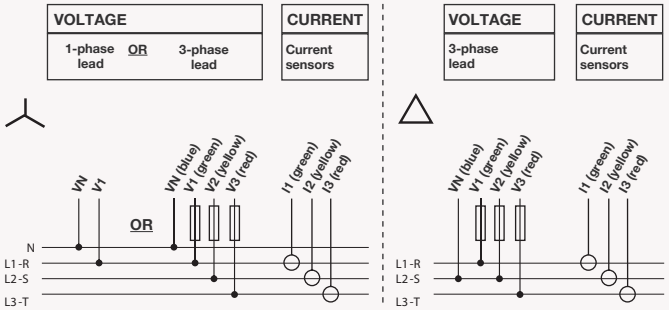
INSTALLATION

Installation Diagram

Outside the electrical panel **OR** Inside the electrical panel



Wiring



Data

DATA PROVIDED

Total power (load curve) accessible in real-time
Power by type of equipment (power and consumption) available within 24 hours
Data available for one year following end of measuring period
Time step: 10-minute default setting (modifiable)

DATA ACCESS

Web platform with secure access to visualisation display of consumption and data export (Excel format).
Public web API* or FTP Push for data integration:
https://dashboard.smart-impulse.com/api/doc/

Communication and Storage

DATA TRANSMISSION

Consumption data encrypted using AES before being stored internally or sent to servers via HTTPS after mutual authentication via mTLS (depending on version).

LOCAL STORAGE

> 1 month

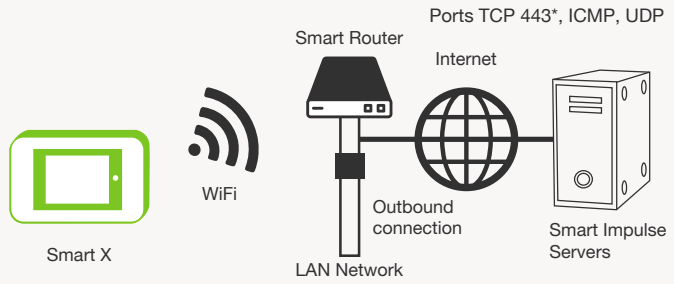
WIFI

Wifi 2,4 GHz 802.11n - Maximum transmit power: 20.0 dBm

3G COMMUNICATION

Optional. Multi-operator SIM card

LAN COMMUNICATION – NETWORK ENVIRONMENT



Breakdown by type of equipment**

Each type of equipment has a specific signature, extracted from the total electricity signal measured by Smart Impulse.

This signature is used to break down the building power consumption by category of equipment.

Studies comparing Smart Impulse technology to solutions with sub-meters per type of equipment have shown average discrepancies per category of 5%. Below is a typical but non-exhaustive breakdown for commercial buildings:

LIGHTING

LED, fluorescent, and compact fluorescent lighting

IT DEVICES

IT equipment, screens, UPS systems

HEATING / COOLING PRODUCTION

Chiller units, heat pumps, split systems (air conditioners) ...

HEATING ELEMENTS

Electric boiler, heating terminals, electric heaters
Domestic Hot Water (DHW)

VENTILATION

Air-handling Units
Terminal Units (fan coil units, etc.)

HVAC AUXILIARIES

Pumps and circulation pumps

SPECIFIC ZONES OR EQUIPMENT

Additional Smart X units can be added as sub-meters to refine monitoring by functional zone or equipment (parking, restaurant, specific processes, etc.). Contact us for more information.

* Application Programming Interface: data export to a third-party platform
** The level of granularity of the provided categories depends on the technologies used.