

Three-phase electricity meter smartESOX pro

Application

High-precision, multi-tariff, four-quadrant active and reactive electricity meter, used in three-phase 3- or 4-wire networks. Dedicated for HV-, MV- or LV-powered users. Features extended capabilities for measuring and registering electrical quantities and energy quality parameters. The optimal solution for high-precision measurements, also in Smart Grid networks. Designed for durability.




Features

- Measurement of active, reactive and apparent energy
- Measurement of instantaneous, maximum and cumulative power
- Measurement of transformer losses: OLA, NLA, OLR, NLR, I^2t , U^2t
- Measurement of network parameters, including: voltages, currents, voltage and current harmonics, frequencies, THD, asymmetry factor and neutral wire current
- Monitoring of power grid parameters: voltage dips and swells, long power outages, current and voltage asymmetry, current flow with no applied voltage, no current flow; exceeded current limit
- CT and CT/VT versions for connections through current and voltage transformers
- Recording of energy in six tariff zones, switched by a built-in real time clock
- Wide range of recording capabilities for measured parameters:
 - independently configurable profiles with different recording intervals
 - ability to configure a different set of recorded data for each profile
- Enhanced event logging:
 - 7 groups of events, recorded in independent logs
 - Sending immediate event notifications to the host device/system
- Wide range of recording capabilities for measured parameters
 - Up to 50 parameters recorded in reference periods
- DLMS/COSEM communication protocol, possibility to read measurement data through EN 62056-21 (IEC1107) protocol
- Three built-in communication ports: one optical, two serial
- Interchangeable communication module: GSM or Ethernet
- Built-in emergency power supply connected to an external power source
- Internal battery that maintains clock operation and displays data on the LCD during power outages
- Ability to read profiles and reference periods on the LCD

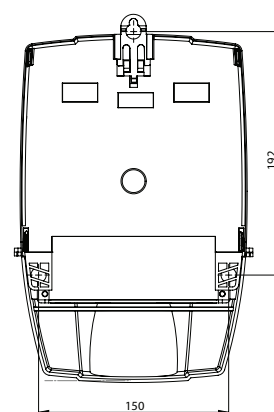
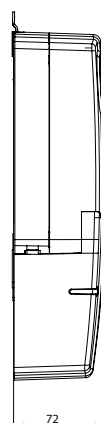
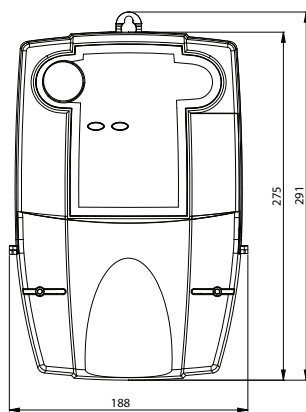
Do you know that...

ESOX means **PIKE**
in Latin: commonly
considered to be
a long-living fish.



Key Technical Parameters

Model	smartESOX pro
Connection method	CT or CT/VT
Rated voltage U_n	3 x 58/100...3x230/400 V
Reference current I_{ref}	1 or 5 A
Maximum current I_{max}	6 A
Accuracy class for active energy	B or C
Accuracy class for reactive energy	3 or 2
Insulation	4 (AC 50 Hz), 6 or 8 - optional (surge 1,2/50 μ s) kV
Meter constant	20 000 [imp/kWh] / [imp/kvarh]
Clock	Internal RTC, accuracy not lower than 0.5 s/24 h at 23°C, synchronised by an external signal or communication port
Communication	DLMS/COSEM (EN 62056-5-3, EN 62056-6-2) protocol support Reading data through serial ports acc. to EN 62056-21 (IEC1107) Ports: <ul style="list-style-type: none"> • Optical (EN 62056-21), up to 19200 Bd • Two independent serial ports (2x RS485 or 1x RS-485 and 1xRS-232), from 300 Bd to 57,600 Bd • Interchangeable communication module – GSM or Ethernet
Inputs	Two optically isolated inputs (features: registration, tariffs, RTC synchronised clock, alarm input, pulse counting)
Outputs	Up to six pulse outputs (for energy counting) Two programmable relay outputs
Event logging	Logging of events related to illegal power consumption, contactor operations, firmware changes, energy quality, interface functionality, clock management, and power outages, including the date and time of each event
Display	Dedicated LCD compliant with VDEW requirements
Operating temperature	- 40 to +70°C
Housing	II protection class
Ingress protection rating	IP54
Standards	EN 50470-1 EN 50470-3 EN 62053-22 EN 62053-23 EN 62053-11



kWh

kvarh

φ

$P_{(t)}$

P_{max}

P_{ill}

$\frac{I}{u f}$

I^2h
 U^2h