AETHEREDGE™ · AE SERIES

AE120K

Single-phase smart meter with integrated STS keypad

A direct-connected single-phase DLMS/COSEM meter for utility AMI and prepayment, with an integrated STS keypad, plug-in communication and an internal load switch.



CONNECTION	VOLTAGE	CURRENT
1P2W · direct connected	**220–240 V**	**0.25–5(100) A**

FREQUENCY	ACCURACY	PROTECTION AND TEMPERATURE
50/60 Hz	**Class 1 active · Class 2 reactive**	**IP56 · −40 °C to +70 °C**

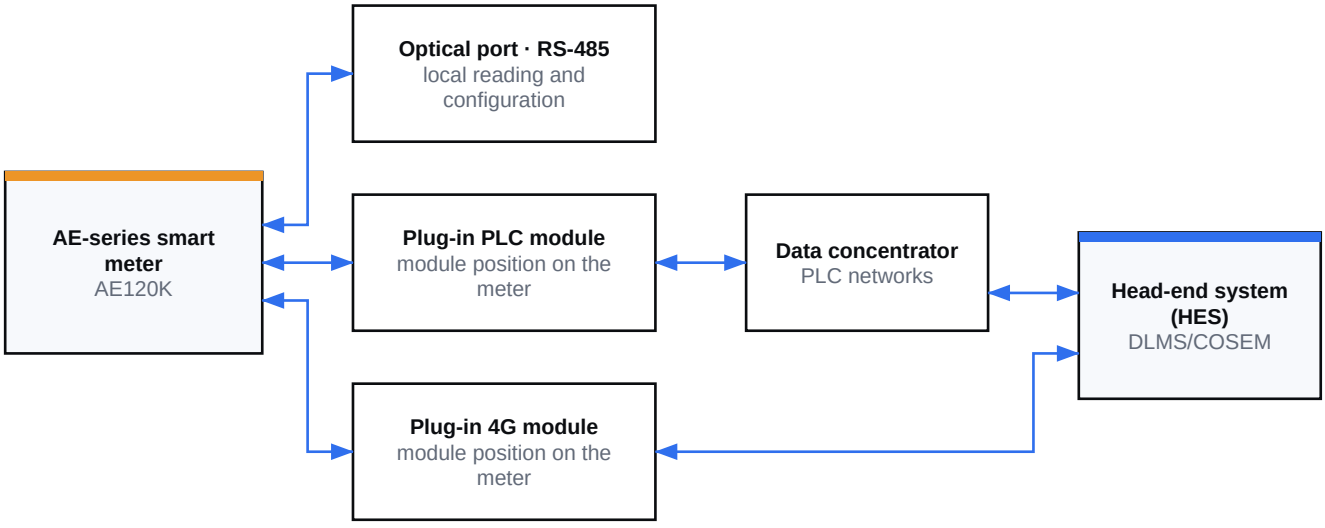
Key benefits

- DLMS/COSEM application model with Public, Reader, Operator and Administrator associations and AES-GCM-128 message protection.
- Plug-in communication module: PLC and 4G module positions are marked on the module cover; the fitted bearer follows the order.
- Four time-of-use tariff registers, maximum demand, monthly and daily billing, two load profiles and timestamped event logs.
- Internal latching load switch, controlled by authorised commands and configured local conditions.
- Integrated 12-key STS keypad for 20-digit token prepayment, emergency credit and friendly hours.

DOCUMENT	EDITION	ISSUE DATE	LANGUAGE	STATUS
ARCHAI-AE120K-DS	Edition 02	4 November 2026	English	Preliminary

Functions and system fit

Capability	Configuration or limit	Basis
Measurement	Active, reactive and apparent energy, import and export; combined active total; four-quadrant registers.	DESIGN
Instantaneous values	Voltage, current, active / reactive / apparent power, power factor and frequency.	DESIGN
Demand	Block or sliding demand; base period 60 / 300 / 900 / 1 800 / 3 600 s; 1–15 subintervals; maximum demand overall and per tariff.	CONFIGURABLE
Tariffs	4 time-of-use registers; 12 intervals per day; 8 day profiles, 8 week profiles, 12 seasons, 100 holidays; stepped tariff up to 7 steps.	CONFIGURABLE
Billing and profiles	Monthly billing (12 entries) and daily billing (62 entries); load profile 1 (demand) and load profile 2 (energy, 9 600 entries); up to 16 captured objects per load profile.	CONFIGURABLE
Load control	Internal latching load switch; DLMS disconnect-control modes 0–6; load limits in 500 W steps; overcurrent reconnection sequence.	DESIGN
Events and alarms	Standard, tamper, communication, disconnector and power-quality logs; three alarm registers with filters and descriptors; Data-Notification push.	DESIGN
Security	Security policy 0–3; security suite 0: AES-GCM-128 authenticated encryption, AES-128 key wrapping; LLS / HLS associations.	CONFIGURABLE
Communication	Plug-in module (PLC and 4G positions on the module cover); optical port (HDLC or IEC 62056-21 mode E); RS-485 (HDLC).	BY ORDER
Display	LCD with eight-digit data area, six-digit identifier and status symbols; automatic, manual and supply-off modes; up to 64 display objects.	CONFIGURABLE
Firmware	Local (optical, RS-485) and remote image transfer with signature verification; metering continues during transfer.	DESIGN
Prepayment	STS 20-digit tokens through the integrated 12-key keypad; credit, emergency credit and friendly hours; short-code queries; recharge and management-token histories (100 / 50 entries).	CONFIGURABLE



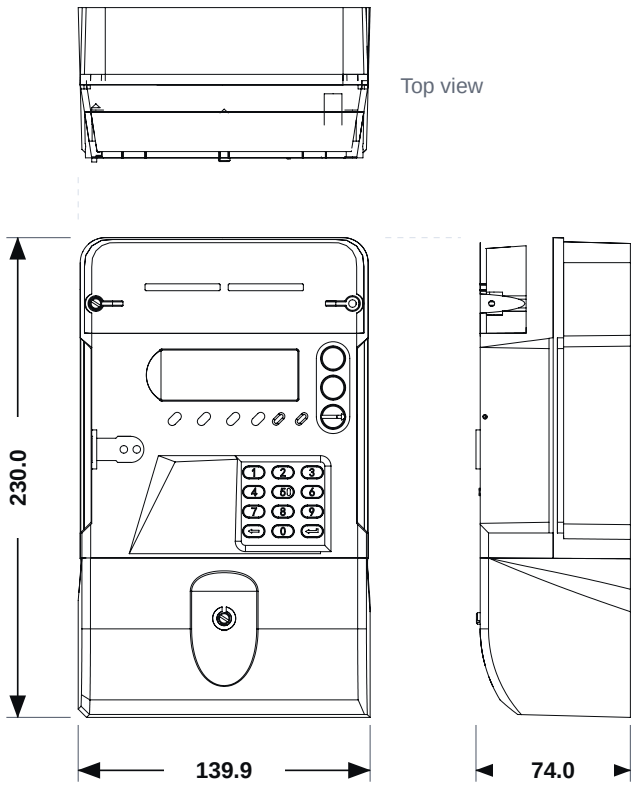
System context. Fitted interfaces and bearers depend on the order; the head-end system and data concentrator are not part of this product.

Basis: Nameplate — marked on the product; Design — stated in the technical documentation; Configurable — set by the utility configuration; By order — depends on the ordered configuration; 3D model — measured on the supplied 3D assembly.

Technical specifications

Electrical ratings		
Connection	Single phase, two wire (1P2W), direct connected	**NAMEPLATE**
Voltage	220–240 V	**NAMEPLATE**
Current	0.25–5(100) A	**NAMEPLATE**
Frequency	50/60 Hz	**NAMEPLATE**
Utilisation category	UC3	**NAMEPLATE**
Impulse voltage	Uimp 6 kV	**NAMEPLATE**
Metrology		
Active energy	Class 1 · IEC 62053-21	**NAMEPLATE**
Reactive energy	Class 2 · IEC 62053-23	**NAMEPLATE**
Active pulse constant (LED)	1 000 imp/kWh	**NAMEPLATE**
Reactive pulse constant (LED)	1 000 imp/kvarh	**NAMEPLATE**
Measuring elements	Phase and neutral	**DESIGN**
Environment		
Operating temperature	−40 °C to +70 °C	**NAMEPLATE**
Ingress protection	IP56	**NAMEPLATE**
Communication and security		
Application protocol	DLMS/COSEM (IEC 62056 series)	**DESIGN**
Optical port	Direct HDLC or IEC 62056-21 mode E	**DESIGN**
RS-485	Direct HDLC	**DESIGN**
Plug-in module	PLC and 4G module positions; fitted bearer per order	**BY ORDER**
Associations	Public · Reader · Operator · Administrator	**CONFIGURABLE**
Message protection	Security suite 0: AES-GCM-128, AES-128 key wrapping	**CONFIGURABLE**
Prepayment		
Token standard	STS · 20-digit tokens	**DESIGN**
Input	Integrated 12-key keypad with audible feedback	**DESIGN**
Credit functions	Emergency credit · friendly hours · three low-credit alarm levels	**CONFIGURABLE**
Queries	133 short codes (see user manual)	**DESIGN**
Clock and backup		
Real-time clock	32.768 kHz crystal · Gregorian calendar 2000–2099	**DESIGN**
Backup	Replaceable lithium battery for clock and supply-off display	**DESIGN**
Mechanical		
Overall envelope W × H × D	139.9 × 230.0 × 74.0 mm	**3D MODEL**
Enclosure	Polycarbonate with transparent terminal cover	**DESIGN**

Mechanical, ordering and references



AE120K overall envelope in millimetres, third-angle projection of its own 3D assembly. Not a mounting-hole or tolerance drawing.

Ordering information

Model	Description	Overall envelope
AE120K	Single-phase smart meter with integrated STS keypad · 1P2W · direct connected	139.9 × 230.0 × 74.0 mm

Communication module, configuration and accessories are specified with the order. Related AE-series models are described in the AE-series catalogue.

Standards referenced

Reference	Subject
IEC 62053-21	Static meters for AC active energy (classes 0.5, 1 and 2).
IEC 62053-23	Static meters for reactive energy (classes 2 and 3).
IEC 62052-11	Metering equipment: general requirements, tests and test conditions.
IEC 62056 series	DLMS/COSEM electricity-metering data exchange.
IEC 62055-41	STS application-layer protocol for one-way token carrier systems.
IEC 62055-51	Physical-layer protocol for one-way numeric and magnetic-card token carriers.

Referenced documents identify the technical context. They are not certification claims; applicable approvals and test reports are confirmed for each order.

This preliminary edition is subject to change without notice. Confirm ratings on the nameplate of the delivered meter. ARCHAI-AE120K-DS · sales@archai.co.kr · www.archai.co.kr