



ACE6000

Commercial Electricity Meter Portfolio

ACE6000 four-quadrant load profiling meters support the new needs arising from deregulation and competition in the electricity market as well as classic metering.

Smart

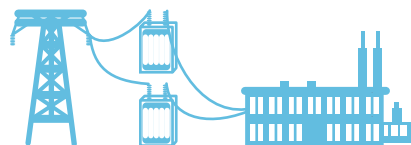
Compliant with IEC standards, these meters include large innovative capabilities.

They allow multiple recording of load profiles along with local and remote communication.

Flexible

Designed for direct or transformer connection, ACE6000 meters employ a scalable architecture that makes them equally suitable for use with existing and new electricity distribution networks.

Wide Range of Applications



Thanks to an auto-ranging power supply and wide measuring range, a single meter type can be used across a variety of applications – from large commercial installations to industrial metering.

Accuracy and linearity ensure high quality billing data (including Load Profiles).

Instantaneous values for a variety of quantities serve as a base for network monitoring.

PSTN, GSM, GPRS and IP communications are supported thanks to DLMS-Cosem Protocol.

ADDING VALUE

Through the application of the latest-generation metrological and communications technologies, ACE6000 meters bring significant benefits to utilities and end-users alike, adding value to every aspect of the metering process.

Utility Benefits

- » **Reduced Inventory Cost**
Thanks to a wide measuring range and auto-ranging power supply, industrial and commercial users need only one type of meter for many types of installations.
- » **Reduced Data Collection Cost**
Read cycles are kept to a minimum by internal storage of all billing data, and powerful communications capabilities permit low-cost remote meter reading. Conformance with the latest IEC DLMS-Cosem communications standards ensures that the meters can

be integrated easily into standard data collection systems as well as future GPRS or IP based systems.

- » **Reduced Non-Technical Losses**
Multiple safety features guard against technical problems being introduced by human intervention.
- » **Withstand Adverse Environments**
Our meters are designed and tested to cope with severe environmental conditions, such as electromagnetic disturbances and network condition variations.

End-User Benefits

- » **Excess Consumption Feature**
ACE6000 meters can monitor consumption against configurable thresholds and can activate contacts if consumption exceeds limits.
- » **Instantaneous values such as Power Factor, Demand, Volts and Amps are made available for the end-user to help monitor personal consumption.**

KEY FEATURES

Multi-Energy

Internal measurement of active and reactive power in each direction.

Load Profiles

Up to 16 channels for various base quantities into two independent profiles

Multi-Rate

- » Multi-rate billing for energy and demand
- » 10 basic quantities can be submitted to billing
- » 32 energy-rate and 24 demand-rate registers are available
- » Rate switching performed by internal clock

Smart metering features:

- » Remote/Local connect/disconnect meter installation through external contactor
- » Meter communication lock after wrong passwords sessions
- » EN50160 compliancy
- » Deliver modem information on demand

Communications

- » Two communication channels
- » Local- and remote-reading ports
- » External telephone modem can be supplied from the meter, (PSTN, GSM)
- » DLMS-Cosem compliance opens to GPRS and IP networks

Software

Itron offers a complete range of associated software:

- » ACE Pilot software for reading and programming
- » Compatibility with already deployed AMR systems



ACE6000 Meter series

- » Basic version without outputs with 1 serial port
- » Flexible version with 4 outputs and 1 serial port
- » Serial port can either be RS232 or RS485

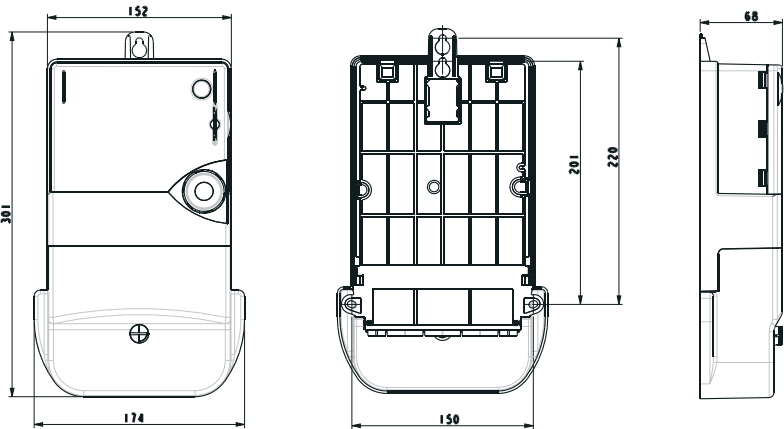
Technical Specifications

Ratings	Voltage: Direct Current: Ct/Connection:	3*57.7/100V up to 3*277/480V auto ranging Ib 5A, I _{max} 100A Ib 1A, I _{max} 10A
Network Types	Direct Connection: C/t, v/t connection:	4-wire meter, fully operational in 3-wire connection without neutral 3- and 4-wire configurable connections (for asymmetrical VDE or symmetrical USE connections)
Accuracy	Direct Connected: Transformer Connected: Reactive energy:	Active energy MID: Class B Active energy Class 0.5S & MID: Class B Class 2 or Class C
Frequency	50 / 60 Hz	
Real Time Clock	Back up with external removable battery and internal super capacitor Compliant with IEC 62054-21	
Operating Temperature Range	-40°C to +70°C (specific variant for high temperature operating conditions)	
Standards	Full compliance with MID standard EN50470-1 and EN50470-3 and CE marking standards (mechanical, climatic, electrical, electromechanical, metrological)	
Communications	IR-port (IEC 62056/21 and IEC 62056/42-46-53-61-62) RS232C or RS485 DLMS-Cosem, Protocol (IEC 62056/42-46-53-61-62)	

Accessories

Communications	External telephone modem Cabling for external communications devices IR-reading device for connection to PC Itron Sparklet modem is easily inserted under the ACE6000 terminal cover.
Configuration/ Calibration	ACE Pilot Utility Software for configuration and reading
Documentation	Test certificate User guide Installation Manual

Dimensions



Itron is the leading provider of energy and water resource management solutions for nearly 8,000 utilities around the world. We offer end-to-end solutions that include electricity, gas, water and heat measurement and control technology; communications systems; software; and professional services. With nearly 10,000 employees doing business in more than 130 countries, Itron empowers utilities to responsibly and efficiently manage energy and water. To realize your smarter energy and water future, start here: www.itron.com

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ACE SL7000

Industrial & Substation Electricity Meter Range

Itron's ACE SL7000 meter range offers a solution for all industrial and substation applications. Equipped with flexible communication technology combined with elements of traditional C&I metering, the ACE SL7000 meter range offers the versatility and flexibility required to meet today's rapidly changing markets.

Flexible

Designed for direct or transformer connection, ACE SL7000 meters offer a scalable architecture that allows them to be installed on existing and new electricity distribution networks.

Versatile

The ACE SL7000 meter range can be installed in multiple markets and for several applications. Its auto-ranging power supply and extremely wide measuring range ensures that a single meter type can be used across a variety of applications – from large commercial installations to substation metering.

- » Commercial and Industrial Applications: Summation features and multi-energy inputs reduce the need for additional data concentrators. Separate communication lines for the utility and customer provide a closer link and added value to the electricity provider.
- » Substation Applications: High accuracy and linearity ensure quality billing data. Instantaneous values for a variety of quantities serve as a base for network monitoring. In addition, simultaneous communication channels ensure that several departments can benefit from the data received from the installed meter base.

KEY FEATURES

- » Proven experience in multiple markets
- » Accuracy and linearity
- » Multi-energy inputs
- » Simultaneous communication channels

Smart

Compliant with IEC standards, include innovative capabilities.

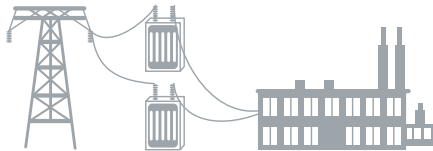
They allow multiple recording of load profiles along with local and remote communication on several lines.



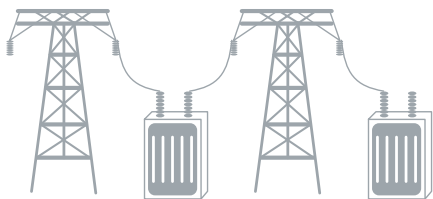
ACE SL7000 Meter series

- » Basic version without electrical I/O lines
- » Intermediate version with limited set of I/O lines
- » Flexible version with extended I/O capabilities
- » In all versions, several configurations are available

Commercial & Industrial Applications



Substation Applications



ADDING VALUE

Through of the latest-generation metrological and communications technology, ACE SL7000 meters bring significant benefits to utilities and end-users alike, adding value to every aspect of the metering process.

Utility Benefits

» Reduced Inventory Cost

Thanks to a wide measuring range and an auto-ranging power supply for most variants, one type of meter covers many installations configurations.

» Reduced Data Collection Cost

Read cycles are kept to a minimum by internal storage of all billing data, and powerful communications capabilities allow cost-effective remote meter reading. Conformance with the latest IEC communications standards ensures that the meters can be easily integrated into standard data collection systems.

» Reduced Non-Technical Losses

Multiple safety features guard against human intervention. IEC7 evolution brings standard magnet detection and an optional terminal cover opening detection.

» Network Monitoring

Our meters allow monitoring of the network and logging of anomalies. This can be used to prevent and repair faulty network conditions.

» Feature Upgrades

ACE SL7000 meters include an upgrade engine to further enhance functionality and keep metering costs to a minimum through the re-use of existing equipment. Starting with IEC7 version firmware, upgrades can now be performed remotely.

» Withstand Adverse Environments

Our meters are designed and tested to cope with severe environmental conditions such as electromagnetic disturbances and network condition variations regardless of the frequency contents.

End-User Benefits

» Consumption Monitoring

The meters provide information that is readable online through a dedicated communications port, so that end-users can monitor and control energy consumption.

» Supply Monitoring

Voltage quality parameters can be defined and the supply monitored. This data can be used for verification purposes when quality of supply is a contractual parameter.

» Excess Consumption Feature

ACE SL7000 meters can monitor consumption against configurable thresholds and trigger contacts if consumption exceeds limits.

KEY FEATURES

Multi-Energy

- » Internal measurement of active, reactive and apparent power in each direction, and separately per phase.
- » Four pulse inputs provide additional metering information (versions with I/O lines).

Load Profiles

- » Storage of up to 16 channels for various quantities in two independent banks.

Multi-Rate

- » Multi-rate billing for energy and demand.
- » 10 Basic quantities can be selected for billing data.
- » 32 energy-rate registers and 24 demand-rate registers are available.
- » Rate switching mainly performed by internal clock, but can also be triggered externally (versions with I/O lines).

Voltage Quality

- » Process voltage threshold levels to perform in-depth analysis of supply voltage fluctuations.

Auxiliary Power Supply (APS)

- » From IEC7 versions, the optional APS is isolated (2KV) from measurement voltages.

Communications

- » Up to three communication channels (2 electrical & 1 optical) depending on the meter version.
- » Two channels can be used simultaneously.
- » Local- and remote-reading ports.
- » Power to an external modem can be supplied from the meter (PSTN / GSM / GPRS / LAN); in IEC7 versions, the meter now provides up to 3W.
- » DLMS-Cosem conformance.



Technical Specifications

Ratings	Voltage: Direct Current: CT Connection:	3*57.7/100V up to 3*277/480V auto ranging In 5A, I _{max} 120A Ib 1A, I _{max} 10A
Network Types	Direct Connection: CT, VT connection:	4-wire meter remains operational in 3-wire connection without neutral 3- and 4-wire configurable configurations
Accuracy	Direct Connected: Transformer Connected: Reactive energy:	Class 1 or Class B Class 0.2S, Class 0.5S or Class C Class 1 or Class 2
Frequency	50 / 60 Hz	
Standards	Full compliance with IEC 62052, IEC 62053, MID standard EN50470-1 and EN50470-3 and CE marking standards (mechanical, climatic, electrical, electromechanical, metrological)	
Communications	IR-port (IEC 61107), optional RS232C and/or RS485 DLMS-Cosem Protocol (IEC 62056) Integrated in most market leading software packages	

Accessories

Communications	External modems Itron Sparklet modem, powered by the meter, is easily attachable under terminal cover Cabling for external communications devices IR-reading device for connection to PC	
Configuration/ Calibration	Customer software for consumption monitoring Itron ACE Pilot Utility Software for configuration and reading	
Installation tools	Transformer ratio labels Sealing kit	
Documentation	Test certificate User guide Installation Manual	

Dimensions

