

Technical Specifications

Meter type	Static, polyphase watt-hour meter
Network	3-phase 4 wire
Approval	IEC 62052-11, IEC 62053-21 & MID
Measuring scope	Active energy (both import and export)
Registers	LCD display - up to 6 tariff rates 5+0, 5+1, 5+2, 6, 6+1 Programmable display cycling Optional push button controlled display reading Maximum Demand registers - 5+3 (kW)
Historic registers	6 sets of historic data
Reference frequency	50hz or 60Hz
Reference voltage/frequency	3 x 230/400V
Operating voltage range	-20% to +15% Un
Power consumption (per phase)	Voltage circuit - <0.4W resp. <3.0VA @ 230V Current circuit - <0.1VA @ 5A
Class Index	IEC Class 2 (optional Class 1) & MID Class A or Class B
Basic current	5A, 10A or 20A
Maximum current	60A, 80A or 100A
Meter starting current	0.3%Ib (min 15mA)
Meter constant	programmable either 500 or 1000 imp/kWh
Impulse voltage test	8kV & 12kV
Immunity to HF fields	>15V/m (up to 2GHz)
Operating temperature range	-25°C to +60°C (-40°C tp +60°C on request)
Limit temperature range	-40°C to +60°C
Storage temperature	-40°C to 70°C
Relative humidity	Up to 95% for 30 days per year
Degree of protection (IEC 60529)	IP51
Diameter of current terminals	8.1mm +/-0.1 mm
Auxiliary terminals	up to 7, diameter 3.2mm
Voltage terminals	up to 3, diameter 3.2mm
Terminal arrangement	According to DIN 43857 Part 2
Terminal material	Brass, optional steel with zinc plating
Load management	Relay output: 4A, 250V latching drum throw (optional)
Optical port	IEC 62056-21 optical port, readout Read/Write
Battery	Internal lithium battery to support RTC Display reading without power
Pulse output	In accordance with IEC 62053-31
Data output	Read only, streamed data output (in place of pulse output)
Meter and terminal cover seals	Provision for sealing using conventional wire or plastic seals
Meter weight	0.95kg
Dimensions (W x H x D)	174mm x 235mm x 58mm

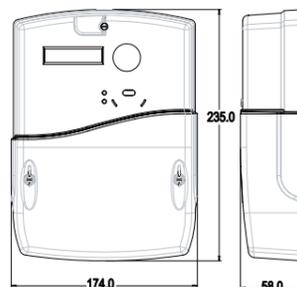
CE The ACE3000 type 520 complies with Council Directive 89/336/EEC on Electromagnetic Compatibility as amended by Council Directive 92/31/EEC and 93/68/EEC

Manufactured under a quality system approved to ISO9001

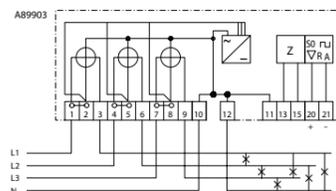
About Itron Inc.

Itron Inc. is a leading technology provider to the global energy and water industries. Our company is the world's leading provider of metering, data collection and utility software solutions, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our products include electricity, gas and water meters, data collection and communication systems, including automated meter reading (AMR) and advanced metering infrastructure (AMI); meter data management and related software applications; as well as project management, installation, and consulting services. To know more, start here: www.itron.com

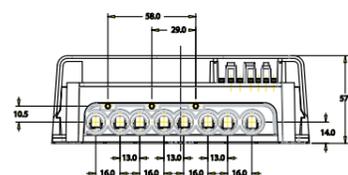
> Dimensions



> Main dimensions - ACE3000 type 520



> ACE3000 type 520 with pulse output



> Terminal arrangement

Electricity

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Knowledge to Shape Your Future



ACE3000 type 520

Three Phase Electricity Meter with real Time Clock



> ACE3000 type 520

- Up to 6 tariff registers
- Internal real time clock
- Display available without mains power
- Maximum demand for each tariff
- Display is backlit
- DIN terminal configuration

The Itron ACE3000 type 520 meter with integral Real Time Clock is a compact meter offering complex tariff functionality at value for money prices. The meter is well equipped for the modern utility environment with a number of enhanced features including communications capability that meets with international standards.

LCD Display

In keeping with present day customer requirements, the meter features a large LCD with backlight and an optional facility allowing reading without power.

Tariff Management

The fully flexible program management catered for within the meter, realises full Time Of Use (TOU) metering without the need for an external timing device.

In addition the meter is able to manage load switching depending upon rate switching,

thus ensuring consumers' high consumption devices are managed for maximum efficiency.

Maximum Demand information can be measured for all six tariff rates allowing optimum billing of high consumption customers in particular.

Anti Tamper Features

- > Terminal Cover open detection with time and date
- > Detection and recording of magnetic events
- > Sealing of IP links
- > Independent seals for terminal and main cover

Historic Readings

The meter can store up to 18 sets of historic meter reading data.

Itron

Itron Metering Solutions UK Ltd.

Langer Road
Felixstowe
Suffolk
IP11 2ER
United Kingdom
www.itron.com

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> Tariff time switch specifications

Number of tariff rates	Up to 6
Number of maximum demand rates	Up to 6
Seasonal definition	Up to 4 seasons
Weekdays/weekends	Independent day type Weekend days configurable
Mobile Special Days	Up to 10 profiles/year 20 year calendar
Fixed Special Days	Up to 30 days per year
Switching times	Up to 8 per day type and season
Historic registers	Up to 18 sets of data MD and kWh
Billing period	Definable (1, 2, 3, 4, 6 or 12 times a year) Meter reading taken at 00:00 on due date

Metering

The meter can be supplied with either Class 1 or Class 2 accuracy as defined by IEC 62053-21. The rated voltage of the meter is 3 x 230/400V at 50 or 60Hz.

The meter has a wide and flexible current dynamic starting at 5, 10 or 20A with a maximum current of 60, 80 or 100A per phase. Additionally, the meter start current can be set down to 15mA.

The meter is able to offer four registration modes to meet customer requirements for fraud prevention and home generation. The measurement mode, which is programmed at the factory prior to dispatch, allows reverse energy to be added to the meter reading, recorded separately or simply ignored.

Mode 1- Import per phase

The meter records only the import energy, the meter stops registering during reverse energy flow.

Mode 2 - Ferraris

The meter simulates the operation of an induction meter.

Mode 3 - Uni-directional

The meter records the sum of the energy flow, import and export kWh in one register.

Mode 4 - Bidirectional

The meter records import and reverse energy flow in separate registers, labelled import and export.

The time clock used by the meter is run from a quartz crystal clocking unit with an accuracy of +/- 5ppm at 25°C.

Optionally the ACE3000 type 520 meter can provide an output for switching load.

The output relay contact (2A, 250V latching) is configured to switch load either as the tariff changes or at preset times.

Tariff Control

The ACE3000 type 520 meter has a built-in real time clock function that manages rate changes to enable multi rates and complex tariffs. The meter is able to manage up to six Time of Use tariff rates for both consumption and Maximum Demand values.

The meter is able to generate "End of Period" information as defined by the user, usually based around billing dates. The meter is able to save register information for both consumption and Maximum Demand for up to eighteen billing periods. This removes the need to visit the meter on a frequent basis.

Additionally if a power outage occurs at the same time that an "end of period" reading is due, the meter will take a reading as soon as power is restored.

The tariff management engine is able to support up to four seasons and weekday / weekend tariffication possibilities. It is also possible to define which days are allocated weekend tariffs.

In addition the meter also has provision for up to 30 Fixed Special Days and 10 mobile Special Days for which alternative rate switching patterns can be defined for up to two years.

For each of the day types up to eight switching times can be programmed.

The tariff engine is able to manage changes in time to accommodate Daylight Savings hour changes according to a look up table that can be programmed with up to twenty five years' of switching information.

Maximum Demand

The meter calculates and displays Maximum Demand data for each tariff register. The Maximum Demand window is configurable to a 15, 30 or 60 minute integration period. Maximum Demand is displayed in kW to a resolution of 00000.000 kW.

Communications

The ACE3000 type 520 is fitted with an optical port to allow the unit to be programmed in the workshop or in the field under security control. Communication is in accordance with the protocol defined by IEC 62056-21 which has replaced, but which is compatible with, the IEC 61107 standard. The port is also enabled for meter reading in accordance with the same standard.

The port is secured, under password and encryption control, to prevent reprogramming access. The same level of security also applies to changes in the real time clock and the resetting of Maximum Demand and historic registers.

The programming tool can be configured on a User by User basis to allow or deny an operator access to any or all of the functions described above. In addition the tool can be configured to take a set of meter readings (all rate registers and Maximum Demand registers) before any changes are made to either the tariff or time.

As an optional alternative, the meter can be configured to download meter reading data without the need for operator intervention using one way communication only. The Hand Held terminal identifies and logs on to the meter and a full set of meter readings are taken.

The meter can also be configured with up to two pulse outputs in accordance with IEC 62053-31.

Display

The LCD used on the meter has been extensively tested and offers a 20 year life.

The LCD is configured with a backlight to enhance reading in low light conditions.

Additionally, the meter can be set to provide the capability to operate the display when the meter is not powered. This means that a reading can always be taken ending the need to re-visit due to power outage and simplifying the meter installation operation and control.

The display can either be configured to scroll automatically at a frequency that can be programmed between 1 second and 32 seconds per display, or to cycle under the control of a button mounted on the front cover. The order in which the displays are shown is programmable.

A test display is included to verify correct operation of all display segments.

The display is also used to indicate such items as Active Rate, Rate Number etc., using icons that are not language specific.

Indications include:

- > Reverse energy flow
- > Import/Export energy
- > No load/low load
- > Phase detection
- > Relay operation



The front panel of the meter is printed using a laser marking system allowing full configuration of iconic designation to the language and phrasing required by the customer as well as allowing logos and other information to be included as required.

Maximum Demand registers can be reset under security control using a hand-held terminal, or optionally, using the sealed push button.

> Display parameters

Display viewable size	15mm x 53mm
Character size	8mm high x 5mm wide between characters
Language independent icons for rate and function details	
Display configurable	to show 5, 5+1, 5+2, 5+3, 6+1, 6+2 or 7+0 integer/decimal digits
Display configuration	reverts to 5+3kW for Maximum Demand display