

Summator 100

Precision digital summation system



Field
configurable



Accurate
summation



Real time
summation

Rack mount, flexible summation and communications

Summator 100 is a digital summation system designed specifically to meet the multi-feeder metering needs of utilities. It uses the robust and accurate platform of Apex 100 meters for feeder metering and enables utilities to measure concurrent demand for multiple feeders. It can be provided as a pre-wired cubicle fitted with summator and feeder meters.



Application

- Bulk power transfer through multiple feeders, e.g. consumers requiring multi-feeder supply due to either criticality of supply or physical limitations of a single feeder
- Railway traction, radio/TV stations, airports, defence and hospitals, where power is supplied through multiple feeders for reliability and security
- IPP, solar and wind power generation plant
- Heavy industry with multi-feeder supply to cater for bulk power requirement e.g. steel plant, refineries etc.

Benefits

- Option for pre-wired panel with complete summation solution
- Capability for up to 7 feeder meters
- Different CT/PT ratios can be configured for individual feeder meters
- Supports industry standard DLMS and modbus protocols for easy integration
- Real-time digital summation and concurrent demand calculation for accurate billing
- Accurate time management through dual SNTP
- Eliminates need for summation CT and avoids associated errors
- Standard rack mounting, compatible with DIN 43862

Features

- 0.2S class Apex 100 used as feeder meter
- Draw-out type feeder meter and summator modules (automatic CT-shorting)
- Display for individual feeder meters and summator unit
- Communications options: Ethernet and RS232/RS485
- Optical and USB ports in summator and feeder meter modules
- Option for time synchronization through SNTP and digital input methods
- Option for dual-auxiliary or self + single-auxiliary power supply
- Secure communications between summation unit and feeder meters to prevent unauthenticated access
- Supports 10 energy, MD and TOU parameters
- Available in arithmetic, standard and differential summation configurations
- Supports 53 billing dates, 16 day types, 8 TOU energy registers, 8 TOU MD registers, 16 seasons and 30 special days
- Storage of summated high-resolution energy values, up to 9600 parameter days (e.g. 960 days for 10 parameters@ 30-minute interval)
- Intuitive graphical display for summation unit and feeder meters
- Simultaneous modbus and DLMS protocol support over ethernet port
- Field-replaceable battery for RTC, display viewing and meter reading



Technical specifications

Electrical (for feeder meter)

Accuracy	Class 0.2S
Connection type	CT/PT-operated
Wiring configuration	3 phase 3 wire/3 phase 4 wire
Voltage range	57.7-63.5/100-110 V (L-N/L-L), configurable
Current range	I _b : 1A or 5A, I _{max} : 120% or 200% of I _b
Frequency	50 Hz ±5%
Metrology indicator	LED per metering module, keypad configurable

Power supply

Auxiliary power supply	60-240 V AC/DC ±20%
Self (or PT) power supply	57.7-240V AC ±30%

Compliance

Standards	IS14697 and IEC62053-22 for individual feeder meters
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Mechanical

Dimensions (W x H x D)	428 mm x 133 mm x 260 mm approx. (meter with 19" rack)
Weight	Summation/Feeder meter: 3.8 kg approx. (± 0.1 kg)

Environmental

Ingress protection	IP51, IP53 over front fascia
Operating temperature	-10 °C to +60 °C
Limit range of operation	-25 °C to +70 °C
Storage temperature	-40 °C to +80 °C

Communication

Optical 1107 port	Protocol: DLMS Baud rate: 1200-19200 bps, half duplex
RS-232 port	Protocol: DLMS Baud rate: 1200-57600 bps, half duplex
RS-485 port	Protocol: configurable DLMS/MODBUS RTU Baud rate: 1200-57600 bps, half duplex
Ethernet port	Protocol: Dual SNTP, DLMS and MODBUS TCP Baud rate 10/100 Mbps, simultaneous client, full duplex

LED indicators

Six LEDs: system error, maximum demand, alarms (x2), security, feeder tamper

Pulse input and outputs

Pulse outputs	8 pulse outputs and 4 configurable as inputs/outputs Volt-free, 100 mA Voltage: 48-240 V AC/DC, option for 24-40 V DC, Pulse width: 80 ms
Configurable as pulse input/output	Pulse output type: volt-free, 100 mA Pulse input type: optical isolator Voltage: 24-240 V AC/DC

* Electrical, compliance, mechanical, software and features options depend on variant selected

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