POWERCOM

Yesterday's Maximum is Today's Minimum!

PCR423

POLYPHASE SMART ELECTRICITY METER

The PCR423 Series Polyphase Smart Electricity Meter is an intelligent node of Smart Grid, designed to meet the needs of residential, commercial and industrial three phase energy consumers. PCR423 integrates multi-communication and control methods. It performs precise energy measurement, remote control, load detection, the user application control, Multi utility for water and gas meters, User energy consumption display and management functions. Volt/VAR real time mesurement.

FEATURES

- Fully featured IEC standard, with measurement module covers IEC class 1, 0.5s and 0.2s for active energy, class 2 for reactive energy
- Measure positive and reverse active energy, leading and legging reactive energy in 4 quadrant, active power, maximum demand, reactive power, maximum demand, RMS voltage & current, power factor and frequency. Measure in 1, 2, 3 measurement
- TOU function, with 4 tariffs and 8 customer billing cycles
- Integrated Load switch, operation as credit or pre-payment, maximum load current up to 100A
- Power limitation – disconnect load when configurable power or frequency threshold is exceeded
- Power supply quality monitor, including phase and voltage loss, Outage, Current loss, power fail detection
- Demand metering allows billing based on maximum demand; includes extensive block or rolling demand calculations with configurable intervals and smaller sub intervals; supports local or remote demand reset
- Load profile includes: "voltage, current, frequency", "active power, reactive power", "power factor" total active energy value, total reactive energy value", "total reactive energy of 4 quadrant", "current demand"
- Automatic and Periodic register to meter reading, interval freeze, hourly freeze, daily freeze and monthly freeze.
- Certified to IEC 62053-11, 62053-21, 62053-22, 62053-23

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SPECIFICATIONS

Voltage Range	0.7 … 1.3Un
Nominal frequency	50Hz ±5%
Nominal Voltage Un	3x230/400V
Current Range	3x20(100)A
Meter Constant	400imp/kWh
Power Consumption	
Voltage Circuit (per phase)	<1.5(6VA); <8W when communication
Current Circuit (per phase)	<0.2VA
Accuracy	Active, Class 0.5s to IEC 62053-22, Reactive Class 2 to IEC 62053-23
Real time clock	<0.5s/d with temperature compensation fund
Temperature Range	
Specified operating range	-40° to +70 °
Limit range of operation	-40 ° to +70 °
Storage and transport	-40° to +70 °
Humidity	<= 95% RH
Voltage impulse strength	6kV with 1.2/50us
Insulation strength	4kV at 50Hz for 1 minute
EMC	To IEC 61000-4
Radio Interface	To IEC/CISPR 11, Class A equipment
Protection class	IP 54 (IEC 529) Indoor use
Load Switch Disconnect	Maximum 100A, local and remote control
Display	LCD, able to display during outage
Additional power supply	AC/DC
Output Interface	
Verification output	2 LEDs and isolated optocouplers representing kWh and kVarh. Pulse length: 80ms±20ms
Multi-function output	RTC accuracy test signal, tariff time switch signal, demand integrating period signal output programmed to switch settings on physical interface
Alarm Output	LED for light error alarm (low battery, communication, HW fault).
Digital Input/ Output	Two digital isolated outputs and one input
Measurement function	
Energy (kWh, kvarh)	Phase voltage, phase current, P, PF, Frequency with threshold function
Maximum Demand (kw, kvar)	Option
Power quality	Option
Event Log	
Programming, RTC time synchronization, Outage, load switch on/ off, terminal cover open, case cover open, Max. Current, Max. Voltage, Data loss, Phase loss, Unbalanced Currents, Incorrect phase connection, Overload	Records ten most recent logs on each event with date/time stamp
Power fail	Disconnecting the load in case the supply voltage drops under 70% or if Current is less than 5%In.
Firmware Upgrade	Remote firmware upgrade through communication
Renewal Energy special Tariff	Separate tariff setting (import and export) for energy metering when renewal energy is used (PV, Wind, etc.)
Credit/ Prepayment remote meter setup	Supports prepayments or credit upon remote configuration
Weight	Approx. 1.2 Kg
External Size Compliant with DIN43857	265 (h) x 170 (w) x 65 (d) mm
Meter life time	At least 15 years

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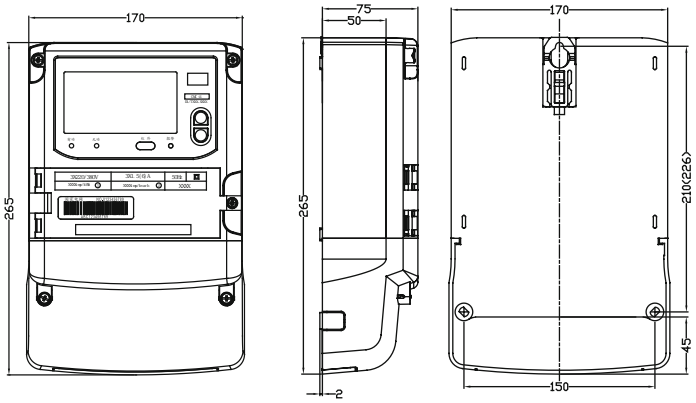
Time of Use (TOU)	4 tariffs, 2 sets of tariff and table structures. Each table includes at least 2 time zones per year, 8 possible tier switches per day, with holiday, weekend, Saturday and Sunday schedules.
Step Tariff	In the electricity billing cycle (usually one month), the energy consumption value can be divided into 4 sections (Each section has its own corresponding unit price, which varies from section to section). The unit price table for energy consumption value sections. At least 2 sets of tariff tables.
Load Profile and Demand Response	Combines six data items: "voltage, current, frequency", "active power, reactive power", "power factor", "total active energy of 4 quadrant", "current demand". Duration: 1 to 60 minute. Capacity: 40 days with 1 minute duration
Data Freeze	Stores data into memory at any given moment
• Interval Freeze	Registers energy data on designed start time and at intervals Stores min. 12 most recent energy data
• Hourly Freeze	Registers total active energy data (hourly or half-hourly). Stores most recent values (up to 100)
• Daily Freeze	Registers energy data on 00:00 per day. Stores at least 3 months
• Instantaneous Freeze	During irregular circumstances, registers current calendar date, time, energy data and other important data. Stores 3 most recent values
• Designated Freeze	Registers the energy data, stores 2 most recent values
• Data Storage	Stores minimum 12 total energy and tariff energy data with 1 direction or 2 directions on settlement date per month Non-volatile memory. At outage, all data related to settlement is kept at least 15 years.
• Multi Utility	The meter serves as master for additional 12 slave meters through RS485
Communication Interface	
• IR	Baud rate: 1200bps
• RS485	Isolated output with fail-safe circuitry able to withstand AC 230V, 2 minutes without damage. Baud rate: 1200bps to 9600bps, the default value is 2400bps.
• PLC (option)	Narrowband, Modular design, hot insertion functionality
• RF (option)	Communication up to 99 devices via mesh topology. Communication between electricity meter and water meter, gas meter, appliance control devices (APM) and the customer interface unit (CIU)
• GPRS/CDMA (option)	Communication between meter and master station, Modular design, Hot swap. Supports TCP and UDP type. Supports "permanent online" and 'passive activation' working mode. The master station is able to set up the working mode remotely.

DIMENSIONS:



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Part Numbering PCR423 A 1 10 G R

Network Type
- A 3 phase 3 wire network
- B 3 phase 4 wire network

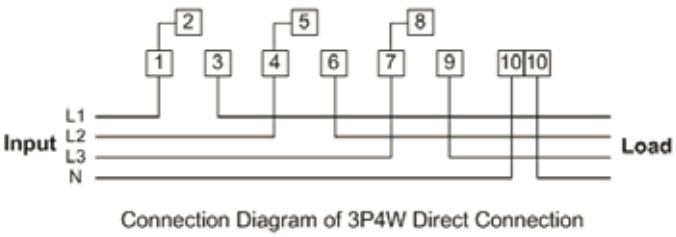
Connection Type
- 1 Direct connection

Accuracy Class active energy
- 5 Class 0.5 (IEC); B (MID)
- 10 Class 1 (IEC); A (MID)

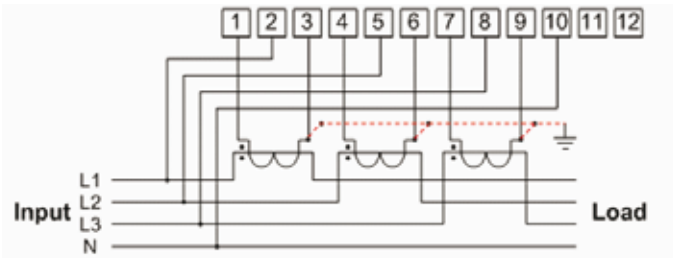
Communication Type
- P Power Line communication (PLC)
- G GPPRS
- F Radio Frequency

Functionality
- C Meter with communucation
- R Meter with communucation and disconnector

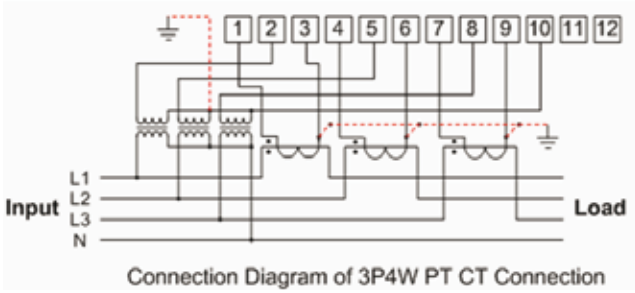
Connection diagram PCR423



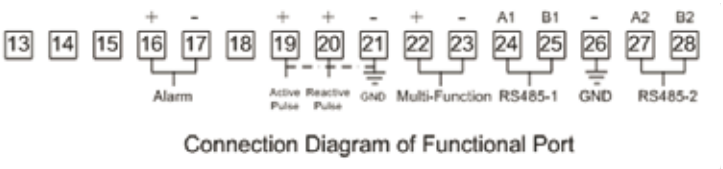
Connection Diagram of 3P4W Direct Connection



Connection Diagram of 3P4W CT Connection



Connection Diagram of 3P4W PT CT Connection



Connection Diagram of Functional Port