







PF maestro – SPF-21YP Series is a next-generation intelligent real-time power factor controller designed to deliver precision fundamental reactive energy control, kVAH billing optimization, and industrial-grade IoT secured data transfer. Available in both 3CT and advanced 6CT monitoring models, it offers real-time measurement of supply and capacitor bank currents, ensuring unparalleled accuracy, system visibility, and multiple fault detection & control. With integrated energy metering (kW, kVAR, kVA), harmonic analysis up to the 31st order, and programmable control modes, this product series adapts seamlessly to both low voltage and medium voltage power networks and maximum demand control indication. Its IoT-ready communication platform (RS-485/RS-232) ensures future-proof integration into SCADA, EMS, and cloud systems. Comprehensive protections, predictive maintenance tools, and field-upgradable firmware make this product series the ideal solution for industries seeking reliability, energy efficiency, and a smarter way to manage their electrical infrastructure.

PRODUCT FEATURES

Capacitor Bank Current Monitoring through Dedicated C-CT Inputs

Real-time monitoring of overall capacitor currents provides accurate measurements of capacitor current harmonics, leakage current enabling early detection of partial or degraded capacitor bank failures. By avoiding overcompensation and preventing imbalanced loading, the system helps extend capacitor life by reducing stress from excessive reactive current or harmonic distortion, both of which can lead to premature failure. The early fault detection capability minimizes the risk of component damage, reduces the need for unscheduled maintenance, and improves overall system reliability and energy efficiency.

> Real-time Automatic Displacement Power Factor (D-PF) Correction

SPF-21YP intelligently switches capacitor banks to maintain a programmable target PF up to three decimal places, ensuring optimal energy efficiency, improved voltage stability, and reduced utility penalties across dynamic industrial loads.

> Demand Controller with Programmable Integration Window and kW Limit

Monitors active power demand (kW) with Class 1.0 accuracy, applying an adjustable integration window from 1 to 60 minutes to detect peaks early and selectively disconnects capacitor banks or activates auxiliary relay outputs to shed external loads, enabling users to avoid exceeding contractual maximum demand limits without manual intervention while maintaining plant reliability.

> Comprehensive Electrical Parameter Measurement

Continuously measures Voltage, Current, Active Power (kW), Reactive Power (kVAR), Apparent Power (kVA), Distortion Power (D,Dx), Frequency (45–65Hz), Power Factor (DPF & PF), and Harmonics (up to 31st order). This is under IEC-62053 part 21 & 23 Class 1.0 accuracy, providing a comprehensive overview of power system performance and power quality.

> Auxiliary Control Voltage Monitoring for Enhanced System Protection

Monitors auxiliary supply voltage used for capacitor switching contactor coils. It inhibits capacitor switching during low-voltage events, preventing harmful contactor chattering, coil overheating due to over-voltage and premature mechanical or electrical failure of critical panel components like cooling fans, instrumentation supply etc., thereby extending the lifetime various devices within Auto PF correction system.

> Programmable Capacitor Discharge Time Enforcement

Ensures safe capacitor recharging by applying programmable discharge delays between 2 and 7299 seconds, which prevents reconnection under residual voltages, thereby protecting capacitors, contactors, and overall system stability during rapid compensation cycles.

> Capacitor Step Utilization Tracking and Predictive Maintenance Support

Tracks switching ON counts and cumulative ON-time in minutes for each capacitor step, calculating a Utilization Count that enables predictive maintenance scheduling, thus preventing unexpected step failures and maximizing the lifespan of capacitors, detuned reactors and switching devices.

> Dynamic Step Health Monitoring without External Current Sensing

Automatically compares expected reactive VAR injection with real-time performance at each step transition, identifying underperforming steps early without requiring dedicated CTs, which reduces installation complexity and protects system reliability.

> Programmable Step Usage Limits Based on Capacitor Duty Class

Supports alarm generation when capacitors reach operational thresholds aligned to duty categories (Normal, Heavy, APP, MD), ensuring that maintenance is based on real-life usage rather than theoretical assumptions, minimizing downtime and unexpected failures.

> Advanced Harmonic Distortion Monitoring up to 31st Order

Measures voltage THD% and current TDD% harmonic levels. It even monitors the capacitor current THD% & values. Detects and helps mitigate harmonic-related power quality issues, protecting system components.

> Flexible Wiring Topologies with Automatic Adaptation

Supports 3CT/4Wire, 2CT/3Wire, and 1CT/2Wire configurations, allowing easy adaptation to standard LV panels or transformer secondary monitoring without special rewiring, making installations faster, safer, and more cost-efficient.

> Automatic and Manual Current-Voltage Wiring Synchronization

Corrects CT polarity, phase sequencing and capacitor bank sizing internally without requiring rewiring, reducing installation errors and commissioning time. Additionally provides the facility to manually synchronize the voltage and current connections without physical wiring termination change.

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> Wide Auxiliary Supply Range of 90-485V AC

The wide voltage range ensures the meter continues to function safely even during voltage fluctuations, preventing unexpected shutdowns or failures that could lead to electrical hazards, overheating, or damage to connected equipment.

> Integrated PT-100 Sensor Input for Thermal Protection

Monitors cabinet or equipment temperatures in real-time and triggers alarm or shutdown actions at programmable thresholds (typically 70–90°C), providing active thermal protection for sensitive electrical components and maintaining panel health under heavy ambient conditions.

> IoT-Ready Communication via RS-232 and RS-485

Enables integration with SCADA, BMS, or cloud platforms using MODBUS RTU/ASCII, dedicated https:// protocols at adjustable baud rates (4800–115200 bps), allowing real-time monitoring, remote diagnostics, and future system upgrades without hardware changes. The free PC based communication Windows based APP "PFC_DATAVIEW" can provide the users the facilities like Setting upload, Logged data download in Excel format, Real time data viewing on PC screen, providing wireless communication with GPRS https:// cloud based web server communication.

> Automatic Dual Source Detection and Management (Grid and Generator)

Switches between different PF targets, harmonic alarm levels, and control strategies based on source detection through auxiliary inputs, protecting generator alternators from reverse reactive flow while maintaining compliance during DG operation.

Advanced Fault Detection with Programmable Fault Handling

Advanced monitoring of over 100 fault & events conditions critical to power factor correction systems, including undervoltage (UV), overvoltage (OV), overcurrent (OC), earth faults, auxiliary voltage loss, and over-temperature conditions. With programmable fault handling, users can define specific response action - Log Only, Normal Trip, or Instant Trip to align with system importance and safety. The fault limits and resume limits setting as per site conditions ensures safe, efficient operation of the APFC panel.

> User-Friendly LCD Display and Soft-Touch Keypad Interface

Provides easy access to real-time data, configuration settings, and historical event logs via a two-line backlit LCD and intuitive 7-key navigation.

> Firmware Upgradability via RS-232 Interface

Allows future functionality enhancements, compliance adaptations, and security patches without requiring controller replacement, protecting long-term investments.

Rugged IP54 Fire-Retardant Housing with Full Compliance

Engineered with fire-retardant ABS material, IP54 front protection, and compliance with IEC 61326-1 EMC, CE, and RoHS3 standards, ensuring reliable and safe operation in harsh industrial conditions.

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TECHNICAL SPECIFICATIONS

| Function | Parameter | Condition | Minimum | Maximum | | | |
|-------------------|---|---|---|---|--|--|--|
| Measurement | | | | | | | |
| Supply | Voltage (V) Sinusoidal | 3-Phase & Neutral - fundamental 3-Phase (3-wire) - fundamental 2-Phase - fundamental 1-Phase & Neutral - fundamental | 50V~ L-N 85V~ L-L 85V~ L-L 50V~ L-N | 315V~ L-N 550V~ L-L 550V~ L-L 315V~ L-N | | | |
| | Current (I) Sinusoidal | 5 Amp IN: - fund. 1 Amp IN: - fund. | 75mA(cl-2),5mA-min 200mA(cl-2),5mA-min | 7.5 Amp 1.5 Amp | | | |
| | Frequency | Frequency (Hz) (Fundamental Supply Voltage measurement of frequency) | 47Hz (for 50Hz) 57Hz (for 60Hz) meas range 45Hz | 53Hz (for 50Hz) 63Hz (for 60Hz) meas range 65Hz | | | |
| | Power / Energy | IEC-62053 pt.21 & 23 4 quadrant measurement | 5Amp range: Class 2: P & Q 1Amp range <u>></u> 200mA: Class 2 P & Q | | | | |
| | Maximum Demand | S (VA) 1 min sliding window P (W) Window time user set. | Window time 5 - Minutes | Window time 60 - Minutes | | | |
| | Harmonics | Voltage - L-L & L-N Current - per L (RYB) & N | Spectrum: 2nd to 31st Harmonic. For Voltage and Current. | | | | |
| | VA Burden | Voltage at 550V~ L-L Voltage at 415V~ L-L Current at 7.5Amp~ S-CT Current at 5.0Amp~ S-CT Current at 1.0Amp~ S-CT | <1.13VA per ph., <3.40VA total 3-ph <0.65VA per ph., <1.95VA total 3-ph <1.0VA per ph., <3.0VA total 3-ph <0.5VA per ph., <1.5VA total 3-ph <0.05VA per ph., <0.15VA total 3-ph | | | | |
| | Current | 5 Amp IN: 1 Amp IN: | 75mA(cl-2),25mA<0 15mA(cl-2),05mA<0 | 7.5 Amp 1.5 Amp | | | |
| | Harmonics | Cap. Current - per Ph | 2nd to 31st Harmonic | | | | |
| Capacitor | VA Burden | Current at 5.0Amp~ C-CT Current at 1.0Amp~ C-CT | <0.5VA per ph., <1.5VA total 3-ph <0.05VA per ph., <0.15VA total 3-ph | | | | |
| | Bank VAR value | Fund. Voltage, Cap.Ampare & frequency normalized value. | % of capacitor current CT rating. Accuracy 3%: 10% to 150% C-CT rated Accuracy 10%: 2% to 10% C-CT rated | | | | |
| Capacitor Cont | rol | | | | | | |
| | Target PF | Displacement Power Factor setting | Inductive: 0.000 | Capacitive: 0.000 | | | |
| PF Correction | VAR margin | Smallest capacitor bank VAR X | X 1.1 | X 9.9 | | | |
| | Offset to target | % above the target PF setting | 0% | 100% | | | |
| ON/OFF control | Algorithm | Optimal value to target. | Single target PF with ac VAR tolerance band | djustable No action | | | |
| | Bank Utilization | Limit = (Number of switch ON / C) + (On duration in Minutes / T) | C = 01 (00 for Disb.) T = 01 (00 for Disb.) | C = 99 T = 99 | | | |
| | High Speed Pull-up Solid State switching | Group of 5 numbers (3-groups) + Transistor switched high speed on/off | Voltage: +10Vdc Amp: 0mA dc | Voltage: +24Vdc Amp:30mA dc(<2.5Vdrop) Current limit 32- 40mA | | | |

| Auxiliary Suppl | у | | | | | | |
|----------------------------|-------------------------|---|--|--|--|--|--|
| | AC supply | | 90 V~ | 485 V~ | | | |
| Voltage | DC supply | for energizing unit | 100 V | 550 V | | | |
| VA consumption | AC supply | 90V~: 485V~: metering | | 7.5 VA | | | |
| | VA | With full Control loading | | 15.0VA | | | |
| | DC supply | 100V to 550Vmetering | | 7.5 VA | | | |
| | VA | With full Control loading | | 15.0VA | | | |
| Auxiliary Functions | | | | | | | |
| Add-on Fault detection: | Actions | On exceeding the user set conditions | Indicative: Data Log: LDATA Capacitor Regular trip: NTRIP Capacitor Instant trip: INS-X | | | | |
| | Recovery | Automatic Timer Reset Manual intervention Reset | Depending upon fault type. (Refer details in the further part of this document) | | | | |
| Auxiliary Input | Voltage~ Rating | AC supply input (abs. max. rating) AC measurement range Digital range | 0 - (Zero) Volt ~ 68 Volt ~ 0 (Zero): < 3 Volt~ | 300 - Volt ~ 290 Volt ~ 1 (One): > 68 Volt ~ | | | |
| Auxiliary Output | NO contact | AO1 & AO2 | 5Amp Resistive / 0.5Amp Inductive Amp~ 250V~ voltage contact rating. | | | | |
| | Transistor | AO3 | High Speed Pull-up Solid State switching +10Vdc to +24Vdc up to 30mA (<2.5V drop) output with current limit. (32mA to 40mA current limit) | | | | |
| Enclosure / Dis | play / Keyboaı | rd / Connectors | | | | | |
| | Туре | Fire retardant ABS grade | | | | | |
| | Dimensions | Front Facia dimensions + depth Panel cutout dimensions | 146 (H) x 146 (W) x 75 (D) mm 138 x 138 mm | | | | |
| Enclosure | Weight | Unpacked unit weight Packed unit weight | < 0.9 KG including mounting clamps <= 1.25 KG | | | | |
| | IP Class | Front Facia: Back side - Inside Panel: | IP-54 IP-20 | | | | |
| . | LCD backlit | Yellow-Green with LED Backlit | 16 Graphic Character X 2 Lines | | | | |
| Display | Contrast/vi ew | Adjust Min - Max 25 key presses | Left key: Lighter | Right key: Darker | | | |
| Keyboard | Isolated tact switch | 7 - Key - User Friendly | Up, Down, Left, Right : 4 Navigation keys Enter: For value entering Selection: Mode & Parameter selection Save: Saving key | | | | |
| Connectors | Plug - Socket | Voltage Measuring Current (supply & cap) Measuring Output Control & Aux control Communication & Pt-100 | 7.62mm pitch - Pin type lugs tightening 5.08mm pitch - Screw lockable plug-socket 7.62mm pitch 3.81mm pitch | | | | |

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| Communication & Data Logging | | | | | | | |
|-------------------------------------|--|--|---|-------------------|--|--|--|
| | RS-485 | Protocol | MODBUS-(RTU & ASCII), PC App data | | | | |
| Communication | RS-232 | GPRS Modem & Data download | AT+ for MODEM, PC App data D/L | | | | |
| Data Logging | non-volatile memory | Interval Records: Event Records: Daily Records: User Settings Parameters: | As per user selected Communication mode & Data logging structure. | | | | |
| Date / Time Management | Real Time Clock. (RTC) Power down time backup | RTC maximum deviation. Power down RTC Back-up time with Super-Capacitor usage. | ±1-min in 30-days within op. temp. range 30-days minimum back-up time range if temp. maintained within 10°C to 40°C ambient. | | | | |
| Temperature se | ensing | | | | | | |
| Internal unit temperature | For Unit right functioning | Range within unit operating temperature | 0°C | +65°C | | | |
| PT-100 temperature | For PF panel temperatur e | Range within the PF correction panel operating temperature. | 0°C | +100°C | | | |
| Environmental / Safety - Type tests | | | | | | | |
| IEC61326-1 | EMC | Electromagnetic Compatibility | Compliance | | | | |
| | EMI | Electromagnetic Interference | Compliance | | | | |
| IEC61010-1 | Safety Standards | Safety Standards with Low Voltage instruments directive (category III) | Compliance | | | | |
| RoHS | 2002/95/EC RoHS 3.0 | Regulation on Hazardous Substances usage. | Compliance | | | | |
| CE | | | Compliance | | | | |
| | Dry Heat | Storage condition +70°C for 72Hrs | Compliance | | | | |
| IEC60068-2 | Cold Test | Storage condition -25°C for 72Hrs | Compliance | | | | |
| | Damp Heat Cyclic Test | Power-up condition At RH 93% +40°C & +25°C 12-12Hrs. cyclic 144Hrs. | Compliance | | | | |
| Temperatura | Operating | Surrounding Ambient temperature | 0°C | +60°C | | | |
| remperature | Storage | Surrounding Ambient temperature | -10°C | +70°C | | | |
| Humidity | RH% | Relative Humidity | 10%RH | 95%RH (non-cond.) | | | |

All specifications are typical and subject to change without notice due to ongoing product development and improvement.

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WIRING TERMINALS





Serial Communcation Termination Block



External Temperature Sensor RTD input. PT100 (3-wire)

MECHNICAL DIMENSIONS



www.taspowertek.com

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WIRING RECOMMENDATIONS



CAPACITOR CURRENT MEASURMENT



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PRODUCT SELECTION AND FEATURES

| | Features/Models √ - Available X - Not Available • - Optional | SPF-21Y/FK6DCTO | SPF-21Y/FT6DCTO | SPF-21Y/FK3DCTO | SPF-21Y/FT3DCTO | SPF-21Y/AK3DCTO | SPF-21Y/AT3DCTO |
|---------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Steps | 16 | 16 | 16 | 16 | 10 | 10 |
| | Mounting dimensions 144 X 144 | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Step switching Relay (R) | \checkmark | Х | | Х | \checkmark | Х |
| | Step switching Transistor (T) | Х | \checkmark | Х | \checkmark | Х | \checkmark |
| | Supply Current Measurement 3-CTs | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Capacitor/Inductor Current Meas. 3-CTs or 1-CT | \checkmark | \checkmark | Х | Х | Х | Х |
| | Data Logging | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| FEATORES | Communication port RS-485 MODBUS + PC-App | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Communication port RS-232 GPRS MODEM + PC-App | | | | | \checkmark | \checkmark |
| | External Temp. sense PT100 | | | | | | \checkmark |
| | Internal Temperature sensing within MCU | | | | | | \checkmark |
| | Auxiliary Dig. Inputs | | | | | | \checkmark |
| | Auxiliary Digital Outputs | | | | | | |
| | Supply freq. phase locked measurement | | | | | \checkmark | \checkmark |
| | Voltage meas. 4W, 3W, 2WLL, 2WLN | | | | | | \checkmark |
| | Power meas. 3Watt-met, 2Watt-met, 1Watt-met | | | | | | |
| | Supply RMS Current measurement | | | | | | |
| | Supply RMS Voltage measurement | | | | | | |
| | VAR injection RMS Current measurement | | | Х | Х | Х | Х |
| | Cap/inductor Neutral / EF current | | | Х | Х | Х | Х |
| | Volt/Amp/Cap-ind. Volt & Amp fundamental values | | | • | • | • | • |
| | Power Distortion & Cross distortion values | | | | | | |
| | Minimum supply current sensitivity 0.001% of rated | | | | | | |
| | Frequency range 45Hz to 65Hz | | | | | | |
| | P.Q.S RMS 3-phase overall Values | | | | | | |
| | P. Q. S Fundamental 3-phase Overall Values | | | | | | |
| MEASUREMENT & | Ph. Qh. Sh + & - RMS Energy | | | | | | |
| DISPLAY | Ph1, Qh1, Sh1 + & - Fund. Energy | | | | | | |
| | Maximum (+/-) values of various measured parameters | | | | | | |
| | Maximum Demand KVA & KW-user set sliding window | | | | | | |
| | Supply Voltage harmonics THD-% & value | | | | | | |
| | Supply current harmonics THD% & TDD% | | | | | | |
| | Cap/inductor Current harmonics THD-% & values | | | Х | Х | Х | Х |
| | Volt & Amp, C/I. Amp harmonic spectrum up to 31st | | | • | • | • | • |
| | Display on External PC/Laptop | | \checkmark | | \checkmark | \checkmark | \checkmark |
| | AC voltage meas. with aux.i/p (contactor coil) | | \checkmark | | | \checkmark | \checkmark |
| | PFC internal operating temperature | | | \checkmark | | \checkmark | \checkmark |
| | External temperature measurement by PT100 RTD | | | \checkmark | | \checkmark | \checkmark |
| | Capacitor steps VAR on-line detection (normalized) | | | | | \checkmark | \checkmark |
| | Capacitor steps Utilization (switching & time) | | | | | \checkmark | \checkmark |
| | PFC powering up/down counter | | | | | \checkmark | \checkmark |

| | Features/Models √ - Available X - Not Available • - Optional | SPF-21Y/FK6DCTO | SPF-21Y/FT6DCTO | SPF-21Y/FK3DCTO | SPF-21Y/FT3DCTO | SPF-21Y/AK3DCTO | SPF-21Y/AT3DCTO |
|-----------------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | PFC power voltage 90V~ to 485V~ (Max limit 600V~) | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | EMI filter for transient protection on PFC power supply | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Early Warning Power Fail detection for data loss | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Real Time Clock with Super-Cap backup (no maint) | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| RELIABILITY | Capability to work in Dusty & Conductive environment | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| FEATURES | Operability at -10°C to +60°C ambient temperature | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | S/c protected sourcing / sinking current Transistor o/ps | Х | \checkmark | Х | \checkmark | Х | \checkmark |
| | Galvanically isolated communication ports | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Fire retardant material housing | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Housing Front facia IP-54, Back IP-30 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Contactor coils voltage over / under value | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Over & Under Voltage on meas. Voltage | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | PFC power shutoff protection for excess Over-voltage | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Supply Voltage Over-frequency and Under-frequency | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Capacitor/Inductor Over and Under current | \checkmark | \checkmark | Х | Х | Х | Х |
| EAULT | Capacitor step VAR health monitor & selective trip | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| FAULI MONITORING & | Capacitor step user masking | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| CAP.TRIPPING | Supply Voltage, Current Over-harmonics | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Capacitor/Inductor Current over harmonics | \checkmark | \checkmark | Х | Х | Х | Х |
| | Capacitor/Inductor Earth Fault / Neutral current trip | \checkmark | \checkmark | Х | Х | Х | Х |
| | Capacitor step over-utilization selective trip | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | PFC electronics & memory self monitoring faults | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Over Temperature internal to PFC unit | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Over Temperature sensed by external PT100 RTD | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Fan control by over temperature | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Step/s declared faulty & masked | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Indicative Fault / Event alarm | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Step/s (1 or more) trip alarm | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| ALARMS & | Auto-synchronization failure alarm | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| AUX.Function | Cap. Step earth fault / neutral current alarm | \checkmark | \checkmark | Х | Х | Х | Х |
| | RTC-real time clock needs setting: alarm | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | GPRS communication data lost alarm | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | GPRS network strength weak alarm | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Unit functioning without any fault indicator | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | EASY EDIT settings for standard LV usage | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | PC programmable EXPERT EDIT remote upload | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | HV APFC system usage | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| APPLICATION | Steps Capacitor testing mode | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| FEATURES | Fixed capacitor banks step declaration by user | \checkmark | \checkmark | | | | \checkmark |
| | Fixed or Proportionate Correction time - user set | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Mono-phase compensation with Cap & Ind. VAR | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| | Inductive VAR compensation for 3-ph & per-ph. | | | | | \checkmark | |

| | Features/Models √ - Available X - Not Available • - Optional | SPF-21Y/FK6DCTO | SPF-21Y/FT6DCTO | SPF-21Y/FK3DCTO | SPF-21Y/FT3DCTO | SPF-21Y/AK3DCTO | SPF-21Y/AT3DCTO |
|------------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | User friendly Keyboard for front operations | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Capacitor step status on front LCD | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Adjustable C/K:Offset & VAR band width to Target PF | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Automatic Supply V & A synchronization | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Automatic step VAR detection | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| APPLICATION | Manual wiring V & A synchronization | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| FEATURES | Expansion of steps by additional module | | \checkmark | | \checkmark | \checkmark | \checkmark |
| | Dual PF settings for Generator & Grid supply | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Voltage & Current sensing on 2 sides of transformer | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Remote communication for VAR compensation | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | HV side sensing and LV side compensation | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| | LV side sensing & compensation with HV side control | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | 4-quadrant operation for Solar/Wind generation | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | High speed cycle to cycle control with Thy.version | Х | \checkmark | Х | | Х | \checkmark |
| | PC-Application program for data view & log | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Two X'mer with 2 APFC with bus coupler operation | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Monthly auto reset of MD / Energy values | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Password protected user settings | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | "I AM OK" self-monitoring health indicator (LED / LCD) | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Internal data log memory of 3.9M-bit | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Log of user programmable size & time interval data | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Fault / Event data up to last 250 records on FIFO | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Daily stored parameter log up to 4 months | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Real time data availability on MODBUS (RS-485) | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | Real time data by GPRS https:// to web server | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| Data Logging (PQ | Logged data by GPRS https:// on web server | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| (SCADA) | User settings by PC-App "PFC_DATAVIEW" | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| , , | User settings by GPRS https:// to web server | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | RTC clock auto update when connected to GPRS | \checkmark | | \checkmark | | | |
| | MODBUS declaration of any step masked or usable | \checkmark | | \checkmark | | | |
| | Remote firmware update services | \checkmark | | \checkmark | | | |
| | PC-App with facility for GPRS Web view | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| | Secured end to end GPRS communication | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | CE | \checkmark | \checkmark | \checkmark | | \checkmark | \checkmark |
| | ROHS | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | EMC/EMI | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| | SAFETY Voltage category III | | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| ТҮРЕ ТЕСТ | Environmental | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| CERTIFICATIONS | IP Enclosure | | \checkmark | | | \checkmark | |
| | Pollution Degree III compliance | • | • | • | • | ٠ | • |
| | Accuracy of Measurement as defined | | \checkmark | | | \checkmark | |
| | Galvanic isolation insulation standards | \checkmark | \checkmark | \checkmark | | \checkmark | |
| | Storage | • | • | • | • | • | • |
| | Handling safety | • | • | • | • | • | • |