Product Overview 2025

Power Factor Correction and Power Quality Solutions

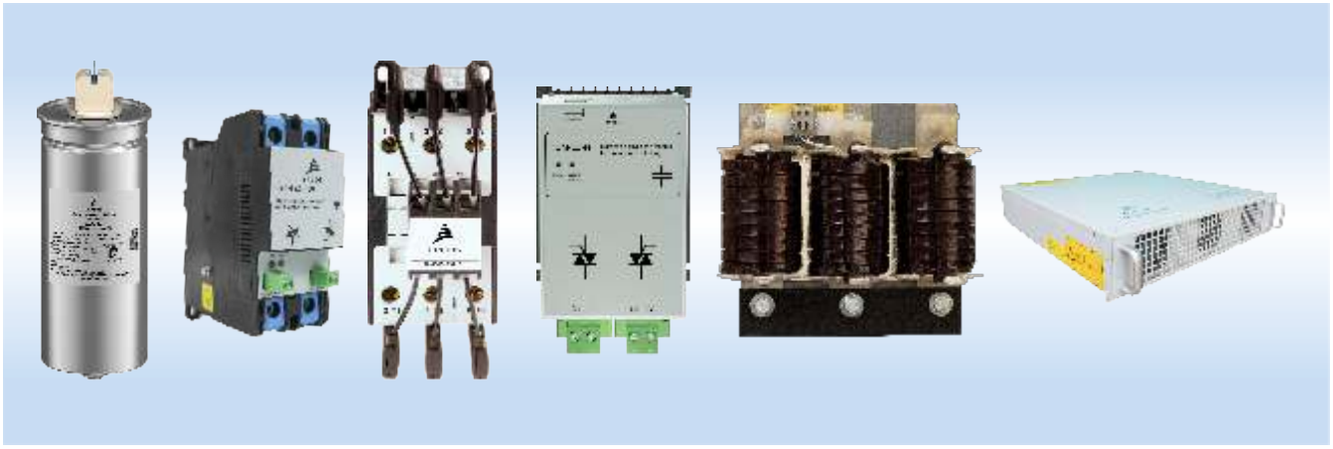
www.tdk-electronics.tdk.com

TDK Technology

Superior Solutions for a Smart World.

Contents

Power Factor Correction & Power Quality Solutions



Products driven by

Innovation + Sustainability + Miniaturization

PhiCap EHD (Gas)

TDK

*EHD = Extra Heavy Duty

- **Non-flammable Dry Type Inert Gas as Impregnant**
- **Reinforced Design:**
  - ❖ **Over Current: 2x In | Inrush Current: 300x In**
- **Electro-Sensitive applications:**
  - ❖ **Oil & Gas | Hospitals | Data centres | Pharma | Automobile**

Best of Both Worlds

True Dry Type Design + High Performance

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

LV PFC Capacitors & Key Components

PhiCap PFC Capacitors

			
Series	PhiCap Normal Duty B32340, B32341 and B32344	PhiCap Heavy Duty B32447 and B32448	PhiCap Extra Heavy Duty (Gas) B32474G* NEW
Technical Data	• Power: 1 to 30 kVAr • Rated Voltage: 415 V to 525 V • Frequency: 50 Hz • Max Transient peak current: 200 • IR*** • Maximum permissible current: 1.3 to 1.5 • IR*** • Life expectancy: Up to 100,000 hours • Terminal: 6.3 mm fast-on terminals for 1 to 7 kVAr Screw terminal for 7.5 to 30 kVAr • No. of switching per annum: Max. 5000 switching • Reference standard: IEC 60831-1/2, IS 13340	• Power: 1 to 33.1 kVAr • Rated Voltage: 415 V to 525 V • Frequency: 50 Hz • Max Transient peak current: 250 • IR*** • Maximum permissible current: 1.5 to 1.8 • IR*** • Life expectancy: Up to 130, 000 hours • Terminal: 6.3 mm fast-on terminals for plastic top Sigut terminals for metal top • No. of switching per annum: Max. 7500 switching • Reference standard: IEC 60831-1/2, IS 13340	• Power: 6.3 to 33.1 kVAr • Rated Voltage: 415 V to 525 V • Frequency: 50 Hz • Max Transient Peak Current 300 * IR*** • Maximum permissible current (Imax): 2.0 *IR*** • Life expectancy: Up to 180 000 hours • No. of switchings: Max. 10000 switchings per year • Terminal type: Safety terminal with M4 screws Reference standard : IEC 60831-1/2, IS 13340"
Features	• Self healing property • Low energy consumption • Soft biodegradable resin as impregnant • Over pressure disconnector • Temp class : -25/D	• Self healing property • Low energy consumption • High inrush current capability for non-linear loads • Soft biodegradable resin as impregnant • Over pressure disconnector • Temp class : -25/D	• Self-healing technology • Naturally air cooled (or forced air cooling) • Optimized capacitor safety terminals • Gas-impregnated, dry type, Non PCB • Provided with external discharge resistor • Overpressure disconnector for all 3 phases
Application	• Power Factor Correction in automatic capacitor banks • Fixed PFC applications, e.g., motor compensation • Detuned PFC systems • Dynamic PFC systems	• Power Factor Correction in automatic capacitor banks • Fixed PFC applications, e.g., motor compensation • Detuned PFC systems • Dynamic PFC systems	• Power factor correction in Automatic Banks • Fixed PFC applications • Tuned and Detuned PFC systems • Dynamic PFC Systems

PhaseCap Energy Plus PFC Capacitors

		
Series	PhaseCap Energy Plus Heavy Duty (Gas Filled) B25674L	PhaseCap Energy Plus Super Heavy Duty (Resin Filled) B25675L
Technical Data	• Power: 5 to 33.1 kVAr • Rated Voltage: 415 V to 690 V (800/1000V on request) • Frequency: 50 Hz • Max Transient peak current: ≤ 500 • IR*** • Maximum permissible current: 1.6 to 1.8 • IR*** • Life expectancy: Up to 2,20,000 hours • Terminal: Sigut terminals • No. of switching per annum: Max. 15,000 switching • Reference standard: IEC 60831-1/2, IS 13340	• Power: 1 to 50 kVAr • Rated Voltage: 415 V to 690 V (800/1000V on request) • Frequency: 50 Hz • Max Transient peak current: ≤ 500 • IR*** • Maximum permissible current: 1.6 to 2.0 • IR*** • Life expectancy: Up to 2,40,000 hours • Terminal: 6.3 mm fast-on terminals for plastic top Sigut terminals for metal top • No. of switching per annum: Max. 15,000 switching • Reference standard: IEC 60831-1/2, IS 13340
Features	• Self healing property • Low energy consumption • High inrush current capability (Upto 500 IR***) • Over pressure disconnector • Compact size and light weight • Dry type (Gas filled), freedom from oil leakage • Temp class: -40°C to 60°C	• Self healing property • Low energy consumption • High inrush current capability (Upto 500 IR***) • Over pressure disconnector • Compact size and light weight • Soft biodegradable resin as impregnant • Temp class: -40°C to 60°C
Application	• Automatic PFC equipment, capacitor banks • Individual Fixed PFC (e.g., motors, transformers, lighting) • Group fixed PFC • Tuned and detuned capacitor banks • Dynamic PFC	• Automatic PFC equipment, capacitor banks • Individual Fixed PFC (e.g., motors, transformers, lighting) • Group fixed PFC • Tuned and detuned capacitor banks • Dynamic PFC

SquareCap Capacitors

TDK

Resin filled SquareCap Capacitors

- Power: 1 to 50 Kvar
- Rated Voltage: 440V to 525V
- Life expectancy: Up to 1,50, 000 hrs.
- Rectangular MS Container with Stud terminals and ceramic bushing

Features

- Heavy Duty Long Life/Self healing property
- Low energy consumption
- Easy & quick repairability at site
- Over pressure disconnector
- PU resin as impregnant

Simplified modular construction for various industrial applications

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

LV PFC Capacitors & Key Components

SquareCap PFC Capacitors

		
Series	SquareCap ENDC B32457	SquareCap EHDLL B32459
Technical Data	• Power: 1 to 50 kVAr • Rated Voltage: 440 V • Frequency: 50 Hz • Max Transient peak current: 100 • IR*** • Maximum permissible current: 1.3 • IR*** • Life expectancy: Upto 100,000 hrs for -10/D • Construction: Rectangular MS container with Stud terminals and ceramic bushings • No. of switching/year: Max. 5000 switching • Reference standard: IEC 60831 1/2, IS 13340	• Power: 1 to 50 kVAr • Rated Voltage: 440 V to 525 V • Frequency: 50 Hz • Max Transient peak current: 250 • IR*** • Maximum permissible current: 1.5 • IR*** • Life expectancy: Upto 125,000 hrs for -10/D • Construction: Rectangular MS container with Stud terminals and ceramic bushings • No. of switching/year: Max. 5000 switching • Reference standard: IEC 60831 1/2, IS 13340
Features	• Self healing property • Low energy consumption • Easy & quick repairability at site • Over pressure disconnector • Compact size and light weight • Soft biodegradable resin as impregnant • Temp class: -10/D	• Heavy Duty Long Life / Self healing property • Low energy consumption • Easy & quick repairability at site • Over pressure disconnector • Simplified modular construction with hermetically sealed single phase basic capacitor cells. • PU resin as impregnant • Temp class: -10/D
Application	• Stand alone capacitors (Fixed compensation) • Capacitor banks • Detuned capacitor banks • Dynamic PFC	• Stand alone capacitors (Fixed compensation) • Capacitor banks • Detuned capacitor banks • Dynamic PFC

SquareCap and PoleCap Capacitors

		
Series	SquareCap ESHDC B32455	PoleCap For outdoor & Harsh Applications
Technical Data	• Power: 1 to 50 kVAr • Rated Voltage: 440 V to 525 V • Frequency: 50 Hz • Max Transient peak current: 350 • IR*** • Maximum permissible current: 1.6 • IR*** • Life expectancy: Upto 150,000 hrs for -10/D • Construction: Rectangular MS container with Stud terminals and ceramic bushings • No. of switching/year: Max. 7500 switching • Reference standard: IEC 60831 1/2, IS 13340	• Power: 5 kVAr to 25 kVAr • Rated Voltage: 440V, 480V, 525V • Frequency: 50 Hz • Max Transient Peak Current: < 200 *IR • Max. inrush current: Upto 200 *IR • Max. ambient temp: Upto -40/D • IP Protection available: IP 54, IP 65 • Mean life expectancy: Upto 130,000 hours • Impregnation : Gas/semidry resin impregnation available
Features	• Super Heavy Duty for non-linear arduous and fluctuating loads. • Self healing property • Low energy consumption • Easy & quick repairability at site • Over pressure disconnector • Simplified modular construction with hermetically sealed single phase basic capacitor cells. • PU resin as impregnant • Temp class: -10/D	• Factory pre-assembled cable and discharge resistors reduce labor costs and increase reliability • Excellent heat dissipation due to single-housing concept • Grounding provided by means of a M12 mounting stud • Compact design and low dimensions/weight • Easy installation and assembly
Application	• Stand alone capacitors (Fixed compensation) • Capacitor banks • Detuned capacitor banks • Dynamic PFC	• Outdoor installation, connected to low-voltage overhead lines and mounted onto the poles of the overhead line • Fixed PFC of an individual load, indoor as well as outdoor, specially in applications with high dust or moisture concentration • Automatic PFC systems

Compact TSM

Thyristor Switching Modules

TDK

- **Universal Power Connection** (Interchangeable Line-Load Connection)
- **Polarity Insensitive for Triggers & Aux Power Supply (24V DC)**
- **Wide Operating Voltage Band: 300V to 500V**
- **Peak Inverse Voltage (PIV): 2200V**
- **EMI/EMC Compliance**

Industry's First Ultra-Compact TSM Design

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

LV PFC Capacitors & Key Components

AirCon Capacitor and Capacitor Duty Contactor

		
Series	PFC Capacitors for AirCon B3244T	Capacitor Duty Contactor J110/J230/C24*
Technical Data	• Power: 1 to 2.8 kVAr • Rated Voltage: 480 V • Frequency: 50 Hz • Max Transient peak current: 200 • IR*** • Maximum permissible current: 1.3 to 1.5 • IR*** • Life expectancy: Upto 100,000 hrs • Construction: Extruded round aluminum can with stud and fast on terminals and insulated connection wires • No. of switching/year: Max.5000 switching • Reference standard: IS 13340	• Power : 7 kVAr to 100 kVAr • Optional Voltage Range: 380 V to 690 V • Operational temp.: Upto 60 ˚C
Features	• Life expectancy of up to 100 000 hours at 25/60 • Self healing • Overpressure disconnector • Soft biodegradable resin as impregnant	• Largest range • Excellent damping of inrush current • Longer useful life of main contacts of capacitor Contactor • Soft switching of contactor and thus longeruseful life • Weld resistant • Enhance mean life expectancy of PFC systems • Reduce Ohmic losses • Tamper proof and protected resistors • Suitable for use with or without detunedreactors • Easy access for cable connection • Type tested at CPRI • AC 6b Utilization category
Application	• Power Factor Correction of Domestic and commercial air conditioners	• In applications with or without reactors

Thyristor Modules

		
Series	Compact Thyristor Module B44066T* NEW	Thyristor Module TSM LC-N
Technical Data	• Dimensions: 65x165x150 mm (WxHxD) • Weight: 2kg • Operating voltage: 300 to 500 V • Auxiliary supply voltage: 24vdc ± 2 vdc (150mA max current), polarity insensitive Frequency: 50/ 60Hz • Max. voltage: In systems without reactor: 480V • 7% detuning: max 480V • 14% detuning: max 480V	• Power : 10 kVAr to 100 kVAr • Rated Voltage : 400, 415, 440 and 690 V • Operational temp.: -10..+ 55 °C
Features	• Thyristor module for dynamic compensation system in grids from 300 to 500 V • EMC/EMI Compliance • Self-adaptive to harmonics • Maximum switching time 10 msec • Near zero switching without noise • Enhanced temperature management • RoHS-compatible | CE marking	• Suitable for real time power factor correction • Easy Installation: Can be used as a Contactor • Reaction time: 5 milli seconds • Self Control of Voltage Parameter, Capacitor Current, Temperature of the thyristor switch • Alarm output per module • Manual operation possible • Auto switch off in over current and over temp. • Displays Operations, Faults & Activation
Application	• Presses, Welding machines, Elevators, Cranes, Wind turbines etc.	• Presses, Welding machines, Elevators, Cranes, Wind turbines etc.

BR5600 R/T

Universal PF Controller

TDK

- Single Controller for LV/MV Sensing & Compensation
- 3/2/1 Phase CT Sensing
- 1ph & 3ph Capacitors in Same relay
- Four Quad Operation- Solar/Wind/Co-Gen
- %THDV, %THDI, %TDD upto 31st Harmonics (Odd & Even)
- Wide ranging Power Supply (90V~ to 485V~) with Auto roll back option
- Activation at 5mA (0.1% Load on 5Amp CT)

Most Versatile Relay to meet Wide Range of Applications

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

LV PFC Capacitors & Key Components

Power Factor Controllers

		
Series	Power Factor Controller BR 4000	Power Factor Controller BR 2100
Technical Data	• Steps: 4,6 and 8 relay outputs • Current Input: 1A or 5 A • Supply Voltage: 110 V AC to 550 V AC • Measurement Voltage : 30...550 V AC (L L/L N) • Operating temperature: 0 to 60 ºC • Compact 96 x 96 x 75 mm (Adapter plate for 144 x 144 cut out can be provided)	• Steps: 6, 8 and 12 relay outputs • Current Input: 1A or 5 A • Supply Voltage: 110 V AC to 550 V AC • Operating temperature: -10 to 60 ºC • Compact 144 x 144 mm front fascia
Features	• Intelligent control • Large measurement and input voltage range • User friendly operation • Individual harmonics up to 31st order • Four quadrant operations RS 485 communication/real time clock (optional) • 4 steps variant upgradable to 6 and 8 with additional module. • Configurable alarm output for various parameters • Recall recorded values for 10 various important parameters.	• Intelligent control • Menu driven handling in English language • Test run possible • Large voltage measuring range • Recall function of recorded values • Four quadrant operation • Potential free contact alarm output (Optional) • RS485 communication interface (Optional) • Real Time Clock (Optional) • Log of Time date stamping for last 3 system faults enabled • Auto Initialization function • Input voltage connection detection\(L-N-L-L) • Three bank selection mode • Control series (upto 20)

Power Factor Controllers

		
Series	Power Factor Controller BR 6000	Power factor controller BR5600 R/T (LV/HV) NEW
Technical Data	• Steps: 6 and 12 outputs (in both relay and transistorized versions) • Current Input : 1A or 5 A • Supply Voltage : 1Ph 230 V AC • Measurement Voltage :1Ph 30V 525V AC (L N) or (L L) • Operating temperature: -20 to +60 ºC • Compact 144 x 144 mm front fascia	• 16 steps controller (in both relay and transistorized versions) • Current input :1A or 5A (1CT/2CT/3CT sensing) • Supply voltage 90V to 485V L-L / 100V to 550Vdc • Measurement voltage 50...315V ~(L-N) / 85… 550V ~(L-L) • Operating temperature 0°C to 60°C • Size 144mm x144mm front fascia
Features	• Microcontroller logic for measurements • Self explanatory menu navigation in several languages • Self optimizing control capability • Control modes : LIFO, FIFO & Self optimized Intelligent Control • Large and multifunctional LCD with backlit display • Single CT sensing for balanced loads • Dual target PF setting (available in 12 stage) • Automatic synchronization possible • Display and storage of maximum values, number of switching operations and operating time • Recall function of recorded values • Dynamic PF Controller (Transistorized) available in 6 and 12 steps • Cascading possible with master slave versions • Protective earth terminal to reduce noise and unwanted interference signals • EMI/ EMC type tested • Individual Harmonic measurement upto 19th order.	• Intelligent control • Self-optimizing control capability • Wide range of auxiliary power supply with AC or DC input • Large measuring voltage range • Data logging • Four-quadrant operation (e.g. stand by generator) • High precision of measurement • Phase sequence of measurement voltage • Easy edit mode (to program minimum parameters) • Expert edit mode facility to access special functions • Minimum current sensing 5mA • Storage of maximum values • Storage of switching operations and time • Monitoring of capacitor kVAr • 1 auxiliary input & 3 auxiliary output • Measurement methods like 3 wattmeter/ 2 wattmeter/ balanced quadrature/ balanced in phase • RS232, RS485 and GPRS communication with modem connectivity • External temperature monitoring facility via PT100 sensor(RTD) • RoHS-compatible • CE marking

High VTHD Detuned Reactors

TDK

- Voltage Harmonics Withstand: 12% / 16% / 20% VTHD
- Al Foil Design
  - To avoid Skin Effect
  - Higher Short Circuit Withstand Capacity
- Linearity: Up to 250% of Rated Current

Designed to work for most demanding Applications

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

LV PFC Capacitors & Key Components

Detuned Filter Reactor

	 
Series	Three Phase Reactor B44066
Technical Data	• Effective Filter out put 5 kVAr to 100 kVAr • Filtering factor: (5.67%,7% and 14% corresponding to tuning frequencies of 210 Hz, 189 Hz and 134 Hz, for fundamental frequency of 50 Hz) • Rated Voltage: (230 V to 690 V) • Available in three designs 1. Aluminum Strip Wound 2. Aluminum Foil Wound 3. Copper Conductor wound
Features	• Highest linearity • Low loss design, light weight and low noise level < 65DB • High over loading capability • Safety device - bimetallic microswitch in central winding • Type tested at CPRI. • Specially designed high % THDV withstand reactors available on request (12%, 16% and 20%)
Application	• Avoidance of harmonic amplification • Reduction of harmonic distortion (network clearing)

High VTHD Reactor

	 
Series	High VTHD reactor (12% to 20%) NEW
Technical Data	• Operating voltage 400 to 440 Vac • Ratings 12.5 to 100kVAr • Frequency 50 /60 Hz • Ambient operating temperature at nominal load -5 to +55°C • Integrated cooling - AN • ROHS compatible • CE marking
Features	• Highest linearity upto 250x In • Temperature control via micro-switch in inner coil • Highest lifetime by high quality materials • High overloading capability • Safety device, temperature micro switch • Aluminium foil winding • Low noise • Broad Frequency Range • Enhanced Harmonic Filtering • Robust Construction • Simple installation and commissioning
Application	• To protect the capacitor from harmonics amplification • Industrial applications with non-linear loads such as variable frequency drives, inverters, UPS, Furnaces, EV charging, datacenter • In harmonics polluted environment

PQSine Ultima | PQvar Ultima

Active Harmonic Filter | Static VAr Generator

TDK

- **Higher Efficiency: 99%**
- **Truly Modular design allows parallel modules of varying ratings**
- **3C2 Conformal Coating (Designed to work in Harsh Environment)**
- **Compact Size | Lesser Weight | Lesser Heat Generation**
- **High Power Density**
- **Leverage Benefits of “Silicon Carbide MOSFET”**

Ultimate Design to Meet Challenges of New World

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

Low Voltage Active Solutions

PQSine Ultima | PQvar Ultima - SiC MOSFET

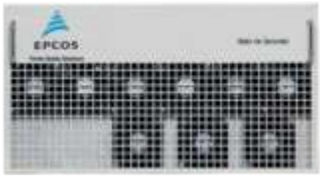
	PQSine Ultima NEW	PQvar Ultima NEW
Function	Harmonic, reactive power and three-phase unbalance compensation	Reactive power and three-phase unbalance compensation
Features	Ultimate performance, Very Compact Design, Higher Efficiency upto 99% , SiC MOSFET Technology, Truly Modular in construction, Low Noise	Ultimate performance, Very Compact Design, Higher Efficiency upto 99%, SiC MOSFET Technology, Truly Modular in construction, Low Noise
Nominal voltage	220V (176V~264V) / 400V(228-456V) / 480V (384V~528V)	220V（176V~264V) / 400V（228-456V) / 480V (384V~528V）
Nominal frequence	50/60Hz, auto sensing (Range : 45Hz~62.5Hz)	50/60Hz, auto sensing（Range : 45Hz～62.5Hz）
Filter Current	25/35/50/60/75/100/150 A	30/50/75/100 Kvar
Neutral Filtering Capability	Upto 3 Times of the rated filter current , > 97%	
Parallel quantities	Unlimited	Unlimited
Efficiency	99%	99%
Connection type	3 Phase 3 Wire / 3 Phase 4 Wire	3 Phase 3 Wire / 3 Phase 4 Wire
CT location	Load / Supply side	Load / Supply side
Control algorithm	FFT, intelligent FFT, and instantaneous reactive power	FFT, intelligent FFT, and instantaneous reactive power
Compensation Order	2nd to 51st, selectable for each order	
Advanced control algorithm	Resonance suppression, compensation performance software auto-tuning	
Compensation rate	> 97% (For both Odd and Even Harmonic)	> 97% (For both Odd and Even Harmonic)
Reaction Time	< 50us	< 50us
Response Time	<15ms	<15ms
Target power factor	Adjustable from -1 to +1	Adjustable from -1 to +1
Switching frequency	Average 40kHz , designed to operated up to 95kHz	Average 40kHz , designed to operated up to 95kHz
Cooling air requirement	Fan Cooled	Fan Cooled
Noise level	<64dB (Full load)	<64dB (Full load)
Communications ports	RS485 and Ethernet port(RJ45)	RS485 and Ethernet port(RJ45)
Communications protocols	Modbus RTU, TCP/IP	Modbus RTU, TCP/IP
Module display interface	4.3-inch HMI(module), 7-inch HMI(central monitor) and LED	4.3-inch HMI(module), 7-inch HMI(central monitor) and LED
Protection functions	Over-voltage protection, under-voltage protection, inverter bridge inverse protection, over-compensation protection and so on	Over-voltage protection, under-voltage protection, inverter bridge inverse protection, over-compensation protection and so on
Mounting type	Wall-mounted, Rack-mounted and Cabinet	Wall-mounted, Rack-mounted and Cabinet
Operating Ambient temperature	-10～50℃ (will derate capacity if ambient temperature exceeds 40℃)	-10℃～50℃ (will derate capacity if ambient temperature exceeds 40℃)
Relative humidity	5% to 95%, non-condensing	5% to 95%, non-condensing
Altitude	≤1500m, 1500-4000m, capacity is derating 1% for every 100m altitude increased.	≤1500m, 1500-4000m, capacity is derating 1% for every 100m altitude increased.
Panel color	RAL 7035 light grey	RAL 7035 light grey
Protection class	IP20 (IP grade can be customizable)	IP20 (IP grade can be customizable)
Electro-Sensitive Applications	EMI / EMC Filter Availble (Optional)	EMI / EMC Filter Availble (Optional)

Low Voltage Active Solutions

Active Harmonic Filter PQSine

Features

- Compact Design
- Modular in construction
- 3 Level Topology
- Low Loss
- Low Noise
- High Attenuation Efficiency



Technical data and specification

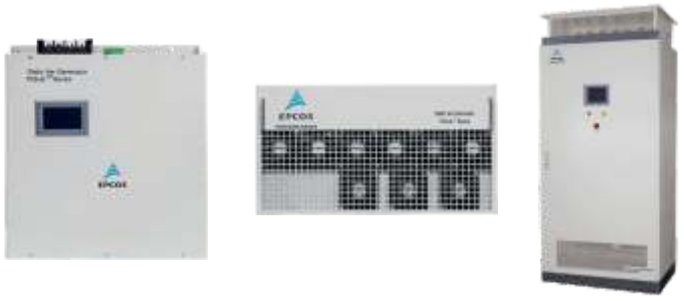
Rated Voltage	380V / 400V / 415V / 440V / 480V / 690V
Mains Frequency	50…60Hz, ± 10%
Filter Current	25A / 35A / 50A / 60A / 75A/ 100A / 120A / 150A / 300A
Neutral Filtering Capability	3 Times the rated Filter Current
Harmonic Current Compensation Range	2nd to 51st Harmonic Order
Rate of harmonic reduction	> 95%
Target Power Factor	Adjustable from -1 to +1
Switching/Control Frequency	20 kHz Average
Reaction Time	< 100 us
Overall Response Time	< 5ms
Harmonic Compensation	Available
Reactive Power Compensation	Available
Unbalance Compensation	Available
Display	TFT Color Control Touchscreen Display
Communication Ports	RS485 / Ehternet (Optinal)
Communication Protocols	MODBUS (RTU)
Fault Alarms	Fault records through history
Noise Level	< 65 DB
Protection Functions	Over-voltage, Under-Voltage, Short circuit, Inverter bridge, Over-temperature
Operating Temperature	-10°C to +40°C
Relative Humidity	< 95%
Cooling	Fan Cooled
Protection Class	IP20 according to IEC 529
Panel Colour	RAL 7035 Light Grey
Altitude	Upto < 2000 meter without derating
Qualifications	In compliance to General requirement of EN61000-6-4, EN61000-6-2,EN61800-3 (C2)
Compliance To Standards	IEEE 519-2014

Low Voltage Active Solutions

Static Var Generator (SVG) PQvar

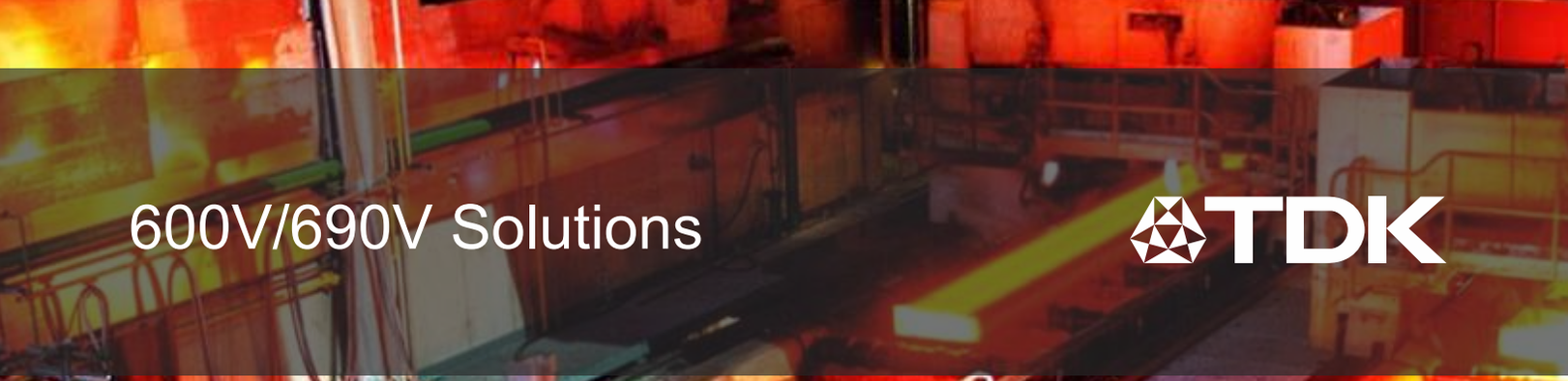
Features

- Compact
- Modular in Construction
- 3 Level Topology
- Low Loss
- Low Noise
- High Attenuation Efficiency
- Capable for both inducive & capacitive compensation



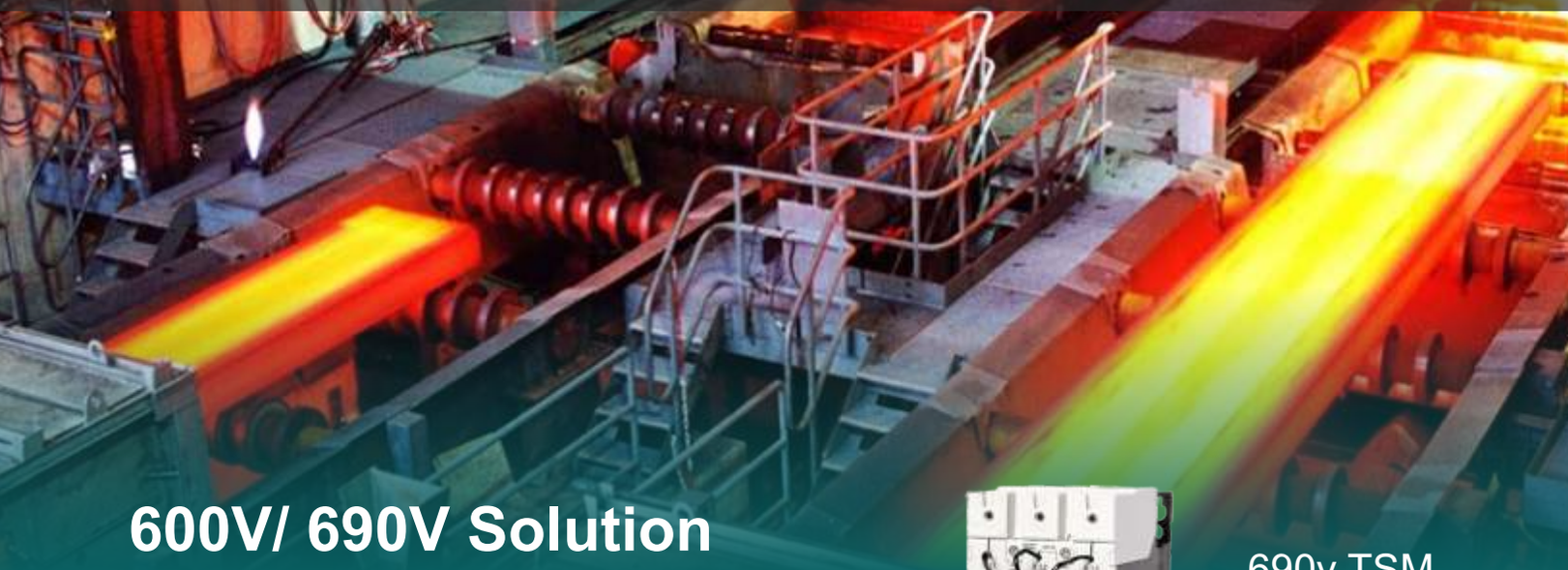
Technical data and specification

Rated voltage	380 V / 400 V / 415 V / 440 V / 480 V / 690 V
Mains frequency	50/60 Hz, + 10%
Parellel operation	10 modules in one cabinet
Reponse time	<15 ms
Overall efficiency	>97%
Power grid structure	3P3W / 3P4W
Current transformers	150/5 ~ 10000/5
Circuit topology	3-level
Single-module compensation capacity	30 / 50 / 100 / 200 / 250 kVAr
Cooling mode	Smart air cooling: 220 L/sec
Target power factor	Adjustable from -1 to +1
Cabinet mounting	Floor-mounted, wall-mounted
Communication protocols	RS485 / Ethernet (Optional)
Noise level	<65 dB (depending on the model)
Protection functions	Over-voltage, under-voltage, short-circuit, inverter bridge inverse, over-compensation, and so on
Operating temperature	-10 to 40oC
Relative humidity	50%...95%, non-condensing
Protection class	IP20 (other IP classes are customizable)
Panel color	RAL7035 light grey
Altitude	Upto < 2000 meter without derating
General safety requirement for SVG PQvar use and operation area	EN 50178:1997/IEC 50178:1997
SVG PQvar EMC requirement	EN 61000_6_2(2005)/EN55011, GROUP1, CLASS A IEC 61000_6_2(1999)/CISPR11, GROUP1, CLASS A
SVG PQvar performances requirements	EN 50091-3/IEC 62040-3/AS 62040-3 (VFI SS 111)



600V/690V Solutions

TDK



600V/ 690V Solution

800v **"ISI Marked"** Capacitors

690v TSM
or
690v CDC

690v 7% **Detuned Reactor**

Universal PF Controllers
BR5600 R/T

One Stop Shop for all your PF Improvement Needs

TEG-ENA-IN-Sales@tdk.com

www.tdk.com

LV Hybrid Solutions

	Hybrid SVG Panels	Hybrid AHF Panels
	 The advanced step less technology consists of IGBT based 3 level topology. The product can be performed effectively even if combined with normal APFC system.TDK designed and developed technology of Hybrid Solution which gives stepless and stepped switching as an integrated single panel solution. The product consists of standard SVG Modules and LC (Reactor-Capacitor) steps, which are monitored and controlled by Advanced multilevel Controller inbuilt in the system. The controller intelligently uses the stepless and stepped combination based on need of reactive power to fine the power factor to unity.	 An ever increasing deployment of high power converters in industrial application causes the issue of power quality to deteriorate at user end which leads issues related to power factor and harmonic distortion. An active harmonic filter (AHF) is capable of addressing both, the low power factor issue as well as harmonic distortion. However to resolve this issue only AHF would be an expensive proposal. To address this issue TDK offers cost effective hybrid solution which combines the features of the AHF and that of automatic power factor correction (APFC) capacitors. This hybrid solution offered by TDK ensures high performance and quality of power.
Series	B25176XXXXXXX	B25174XXXXXXX
Reference Standard	IEC 61921, IS-16636, IEC 61000	IEC 61000, CE, ETL(UL508), IEEE 519
Rated output, Qn (kVAR)	30 to 2000	30 to 2000 (Harmonics+ Unbalance + Reactive)
Rated Voltage, Un (V)	400 to 690	400 to 690
Rated frequency, fn (Hz)	50/60	50/60
Configuration	3-Φ 3 W / 3-Φ 4 W	3-Φ 3 W / 3-Φ 4 W
Response time	< 15 ms	< 5 ms
Efficiency	> 97%	> 97%
Circuit Topology of Active	3 Level	3 Level
Noise Level	< 65 DB	< 65 DB
Operating Temperature	' -10 Deg C to + 40 Deg C	' -10 Deg C to + 40 Deg C
Panel Colour	RAL 7035	RAL 7035
Controller	18 O/P Contacts Thyristor / Controller	7" HMI TFT Display
Communication Port / Protocol	RS 485 / Modbus	RS 485 / Modbus
Display Parameters	V, I, F, PF , THD, KW , kVAr, KVA, Temp	V, I, F, PF , THD, KW , kVAr, KVA, Temp
Protections	Overvoltage, Undervoltage Short Circuit	Overvoltage, Undervoltage , Short Circuit
Standard Configurations (Active/Passive)	H10, H20 and H50	H10, H20 and H50
Features	• Advanced DSP Controller • Suitable for inductive and Capacitive Loads • Real time reactive power compensation. • Load Balancing • Most suited for reduction in MD	• High quality integrated product. • Effective Thermal Design. • Unique test facility including harmonic generator. • All major components under one roof. • Controllers with ease of programming. • Less Maintenance
Application	• Best suited for Robotic and welding loads. • Induction furnace startup loads. • Iron and Steel Rolling Mills. • High unbalance and highly fluctuating Loads. • Industries Such as Food, Paper Automobile & Commercial Malls etc.	• Best suited in industry for centralized group compensation. • Industries having VFD and invertor, UPS, etc. • Industries such as Textile, Paper, Steel, Automobile, IT-parks, Data Centers Hospitals. • Solar Generation Farms and Wind Mills

MV Key Components

Vacuum Contactor				
				
Series	MV VACUUM CONTACTOR B44061			
Technical Data				
Reference Standard:	IEC:62271-103			
PARAMETER	**UNIT**	**EVC7400**	**EVC7630**	**EVC12400**
Voltage	kV	7.2	7.2	12
Rated Thermal Current	Amp	400	630	400
Motor Switching Current (AC3)	Amp	400	630	400
Motor Switching Current (AC4)	Amp	200	200	200
Capacitor Switching current	Amp	100	100	200
Rated Power frequency	kV	20	20	28
Lightning Impulse (1.2/50 µ sec)	kVp	60	60	75
STC for 1 sec	kA	10kArms with 25kA dynamic peak.	10kArms with 25kA dynamic peak.	10kArms with 25kA dynamic peak.
Operation frequency (AC3)	operation/hr	120	120	120
100 closing operations	Amp	4000	6300	4000
25 opening operations	Amp	4000	6300	4000
Aux. voltage (AC/DC)	V	110/220	110/220	110/220
Life Expectancy				
Electrical life (Category AC3)	operations	100000	100000	100000
Mechanical Life	operations	200000	200000	200000
Capacitor switch duty	operations	50000	50000	50000
Short circuit breaking capacity	kAp	4	6.3	4
Short circuit making capacity	kAp	25	25	25
Contact gap (appx)	mm	3	3	6
Closing time (appx)	ms	100	100	100
Closing current (appx)	Amp	5	5	5
Holding current (appx)	Amp	0.5	0.5	0.5
Closing coil wattage (appx)	Watt	880	880	880
Holding coil wattage (appx)	Watt	88	88	88
Weight (appx) for 3pole VC	Kg	24	24	25
Number of Poles	No.	1/2/3		
Operating Mechanism		Solenoid/Latch Type		
Features		• Compact Design • Completely encapsulated Vacuum Interrupter- Additional External Creepage and Enhanced Electrical strength. • Inbuilt DC breaking-No additional Auxiliary contactor for current bypassing. • Electronic control voltage regulator- Wider input Voltage range • Accepts both AC/DC control voltage. • Easy handling and easy service.		
Applications		**Capacitor/Motor/Neutral Ground Resistor/Transformer/Soft starter**		

Product Change: Old Vs New

PhiCap ND Series Parts			Old Parts		New Parts	
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
1	440	PhiCap ND 440V 50Hz 1 kVAr 3Ph	B32344N4012A040	50 x 75	B32344N4012B040	50 x 75
1.2	440	PhiCap ND 440V50Hz 1.2 kVAr 3Ph	B32344N4012A240	50 x 75	B32344N4012B240	50 x 75
2	440	PhiCap ND 440V 50Hz 2 kVAr 3Ph	B32344N4022A040	50 x 112	B32344N4022B040	50 x 112
2.5	440	PhiCap ND 440V 50Hz 2.5 kvar 3PH	B32344N4022A540	50 x 112	B32344N4022B540	50 x 112
3	440	PhiCap ND 440V 50Hz 3 kVAr 3Ph	B32344N4032A040	55 x 112	B32344N4032B040	55 x 112
4	440	PhiCap ND 440V 50Hz 4 kVAr 3Ph	B32344N4042A040	55 x 137	B32344N4042B040	55 x 137
5	440	PhiCap ND 440V 50Hz 5 kVAr 3Ph	B32344N4052A040	55 x 147	B32344N4052B040	55 x 147
7	440	PhiCap ND 440V 50Hz 7 kVAr 3Ph	B32344N4072A040	63 x 146	B32344N4072B040	63.5 x 146
7.5	440	PhiCap ND 440V 50Hz 7.5 kVAr 3Ph	B32344N4072A540	75 x 157	B32344N4072B540	75 x 157
8.3	440	PhiCap ND 440V 50HZ 8.3 KVAR 3Pn	B32344N4082A340	75 x 157	B32344N4082B340	75 x 157
10	440	PhiCap ND 440V 50Hz 10 kVAr 3Ph	B32344N4102A040	75 x 167	B32344N4102B040	75 x 167
12.5	440	PhiCap ND 440V 50Hz 12.5 kVAr 3Ph	B32344N4122A540	75 x 197	B32344N4122B540	75 x 197
15	440	PhiCap ND 440V 50Hz 15 kVAr 3Ph	B32344N4152A040	75 x 270	B32344N4152B040	85 x 197
20	440	PhiCap ND 440V 50Hz 20 kVAr 3Ph	B32344N4202A040	85 x 270	B32344N4202B040	75 x 272
25	440	PhiCap ND 440V 50Hz 25 kVAr 3Ph	B32344N4252A040	90 x 270	B32344N4252B040	85 x 272
30	440	PhiCap ND 440V 50Hz 30 kVAr 3Ph	B32344N4302A040	90 x 348	B32344N4302B040	90 x 272
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
5	480	PhiCap ND 480V 50Hz 5 kVAr 3Ph	B32344N4052A080	63 x 136	B32344N4052B080	63.5 x 136
5.5	480	PhiCap ND 480V 50Hz5.5 kVAr 3Ph	B32344N4052A580	63 x 136	B32344N4052B580	63.5 x 136
8.3	480	PhiCap ND 480V 50Hz 8.3 kVAr 3Ph	B32344N4082A380	75 x 167	B32344N4082B380	75 x 167
10.4	480	PhiCap ND 480V 50Hz 10.4 kVAr 3Ph	B32344N4102A480	75 x 197	B32344N4102B480	75 x 197
11.1	480	PhiCap ND 480V 50Hz 11.1 kVAr 3Ph	B32344N4112A180	75 x 197	B32344N4112B180	75 x 197
12.5	480	PhiCap ND 480V 50Hz 12.5 kVAr 3Ph	B32344N4122A580	75 x 197	B32344N4122B580	75 x 197
15	480	PhiCap ND 480V 50Hz 15 kVAr 3Ph	B32344N4152A080	75 x 270	B32344N4152B080	85 x 197
16.7	480	PhiCap ND 480V 50Hz 16.7 kVAr 3Ph	B32344N4162A780	75 x 270	B32344N4162B780	85 x 197
20.8	480	PhiCap ND 480V 50Hz 20.8 kVAr 3Ph	B32344N4202A880	85 x 270	B32344N4202B880	75 x 272
22.1	480	PhiCap ND 480V 50Hz 22.1 kVAr 3Ph	B32344N4222A180	85 x 348	B32344N4222B180	85 x 272
25	480	PhiCap ND 480V 50Hz 25 kVAr 3Ph	B32344N4252A080	85 x 348	B32344N4252B080	85 x 272
27.7	480	PhiCap ND 480V 50Hz 27.7 kVAr 3Ph	B32344N4272A780	90 x 348	B32344N4272B780	90 x 272
30	480	PhiCap ND 480V 50Hz 30 kVAr 3Ph	B32344N4302A080	90 x 348	B32344N4302B080	90 x 272
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
5	525	PhiCap ND 525V 50Hz 5 kVAr 3Ph	B32344N5052A025	63 x 146	B32344N5052B025	63.5 x 146
6.6	525	PhiCap ND 525V 50Hz 6.6 kVAr 3Ph	B32344N5062A625	75 x 157	B32344N5062B625	75 x 157
7.5	525	PhiCap ND 525V 50Hz 7.5 kVAr 3Ph	B32344N5072A525	75 x 167	B32344N5072B525	75 x 167
10.4	525	PhiCap ND 525V 50Hz 10.4 kVAr 3Ph	B32344N5102A425	75 x 197	B32344N5102B425	75 x 197
13.2	525	PhiCap ND 525V 50Hz 13.2 kVAr 3Ph	B32344N5132A225	85 x 270	B32344N5132B225	85 x 197
16.7	525	PhiCap ND 525V 50Hz 16.7 kVAr 3Ph	B32344N5162A725	85 x 270	B32344N5162B725	75 x 272
20.8	525	PhiCap ND 525V 50Hz 20.8 kVAr 3Ph	B32344N5202A825	90 x 270	B32344N5202B825	85 x 272
25	525	PhiCap ND 525V 50Hz 25 kVAr 3Ph	B32344N5252A025	90 x 348	B32344N5252B025	85 x 272

Product Change: Old Vs New

PhiCap HD Series Parts			Old Parts		New Parts	
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
1.0	440	PhiCap HD ROU 440V 50Hz 1kVAr 3Ph	B32447H4012A040	53 x 117	B32447H4012B040	50 x 75
2.0	440	PhiCap HD ROU 440V 50Hz 2kVAr 3Ph	B32447H4022A040	53 x 117	B32447H4022B040	50 x 112
3.0	440	PhiCap HD ROU 440V 50Hz 3kVAr 3Ph	B32447H4032A040	53 x 117	B32447H4032B040	55 x 112
4.0	440	PhiCap HD ROU 440V 50Hz 4kVAr 3Ph	B32447H4042A040	53 x 152	B32447H4042B040	55 x 137
5.0	440	PhiCap HD ROU 440V 50Hz 5kVAr 3Ph	B32447H4052A040	53 x 152	B32447H4052B040	55 x 147
6.0	440	PhiCap HD ROU 440V 50Hz 6kVAr 3Ph	B32447H4062A040	63 x 152	B32447H4062B040	63.5 x 136
7.5	440	PhiCap HD SIG 440V 50Hz 7.5kVAr 3Ph	B32448H4072A540	75 x 160	B32448H4072B540	75 x 162
8.3	440	PhiCap HD SIG 440V 50Hz 8.3kVAr 3Ph	B32448H4082A340	75 x 160	B32448H4082B340	75 x 162
10.0	440	PhiCap HD SIG 440V 50Hz 10kVAr 3Ph	B32448H4102A040	75 x 197	B32448H4102B040	75 x 197
12.5	440	PhiCap HD SIG 440V 50Hz 12.5kVAr 3Ph	B32448H4122A540	75 x 197	B32448H4122B540	75 x 197
15.0	440	PhiCap HD SIG 440V 50Hz 15kVAr 3Ph	B32448H4152A040	75 x 270	B32448H4152B040	85 x 197
20.0	440	PhiCap HD SIG 440V 50Hz 20kVAr 3Ph	B32448H4202A040	85 x 270	B32448H4202B040	75 x 272
25.0	440	PhiCap HD SIG 440V 50Hz 25kVAr 3Ph	B32448H4252A040	90 x 270	B32448H4252B040	85 x 272
30.0	440	PhiCap HD SIG 440V 50Hz 30kVAr 3Ph	B32448H4302A040	90 x 348	B32448H4302B040	90 x 272
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
5.0	480	PhiCap HD ROU 480V 50Hz 5kVAr 3Ph	B32447H4052A080	63 x 152	B32447H4052B080	63.5 x 136
5.5	480	PhiCap HD ROU 480V 50Hz 5.5kVAr 3Ph	B32447H4052A580	63 x 152	B32447H4052B580	63.5 x 136
6.3	480	PhiCap HD ROU 480V 50Hz 6.3kVAr 3Ph	B32447H4062A380	63 x 152	B32447H4062B380	63.5 x 146
8.3	480	PhiCap HD SIG 480V 50Hz 8.3kVAr 3Ph	B32448H4082A380	75 x 160	B32448H4082B380	75 x 162
10.4	480	PhiCap HD SIG 480V 50Hz 10.4kVAr 3Ph	B32448H4102A480	75 x 197	B32448H4102B480	75 x 197
11.1	480	PhiCap HD SIG 480V 50Hz 11.1kVAr 3Ph	B32448H4112A180	75 x 197	B32448H4112B180	75 x 197
12.5	480	PhiCap HD SIG 480V 50Hz 12.5kVAr 3Ph	B32448H4122A580	75 x 197	B32448H4122B580	75 x 197
13.8	480	PhiCap HD SIG 480V 50Hz 13.8kVAr 3Ph	B32448H4132A880	75 x 270	B32448H4132B880	85 x 197
15.0	480	PhiCap HD SIG 480V 50Hz 15kVAr 3Ph	B32448H4152A080	75 x 270	B32448H4152B080	85 x 197
16.7	480	PhiCap HD SIG 480V 50Hz 16.7kVAr 3Ph	B32448H4162A780	85 x 270	B32448H4162B780	85 x 197
18.7	480	PhiCap HD SIG 480V 50Hz 18.7kVAr 3Ph	B32448H4182A780	85 x 270	B32448H4182B780	75 x 272
20.0	480	PhiCap HD SIG 480V 50Hz 20kVAr 3Ph	B32448H4202A080	85 x 270	B32448H4202B080	75 x 272
22.0	480	PhiCap HD SIG 480V 50Hz 22kVAr 3Ph	B32448H4222A080	85 x 348	B32448H4222B080	85 x 272
25.0	480	PhiCap HD SIG 480V 50Hz 25kVAr 3Ph	B32448H4252A080	85 x 348	B32448H4252B080	85 x 272
27.7	480	PhiCap HD SIG 480V 50Hz 27.7kVAr 3Ph	B32448H4272A780	90 x 348	B32448H4272B780	90 x 272
28.1	480	PhiCap HD SIG 480V 50Hz 28.1kVAr 3Ph	B32448H4282A180	90 x 348	B32448H4282B180	90 x 272
30.0	480	PhiCap HD SIG 480V 50Hz 30kVAr 3Ph	B32448H4302A080	90 x 348	B32448H4302B080	90 x 272
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
5.0	525	PhiCap HD ROU 525V 50Hz 5kVAr 3Ph	B32447H5052A025	63 x 152	B32447H5052B025	63.5 x 146
6.3	525	PhiCap HD SIG 525V 50Hz 6.3kVAr 3Ph	B32448H5062A325	75 x 160	B32448H5062B325	75 x 162
6.6	525	PhiCap HD SIG 525V 50Hz 6.6kVAr 3Ph	B32448H5062A625	75 x 160	B32448H5062B625	75 x 162
8.3	525	PhiCap HD SIG 525V 50Hz 8.3kVAr 3Ph	B32448H5082A325	75 x 160	B32448H5082B325	75 x 162
10.4	525	PhiCap HD SIG 525V 50Hz 10.4kVAr 3Ph	B32448H5102A425	75 x 197	B32448H5102B425	75 x 197
12.5	525	PhiCap HD SIG 525V 50Hz 12.5kVAr 3Ph	B32448H5122A525	85 x 197	B32448H5122B525	85 x 197
13.2	525	PhiCap HD SIG 525V 50Hz 13.2kVAr 3Ph	B32448H5132A225	75 x 270	B32448H5132B225	85 x 197

Product Change: Old Vs New

PhiCap HD Series Parts			Old Parts		New Parts	
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
15.0	525	PhiCap HD SIG 525V 50Hz 15kVAr 3Ph	B32448H5152A025	85 x 270	B32448H5152B025	85 x 197
16.7	525	PhiCap HD SIG 525V 50Hz 16.7kVAr 3Ph	B32448H5162A725	85 x 270	B32448H5162B725	75 x 272
20.0	525	PhiCap HD SIG 525V 50Hz 20kVAr 3Ph	B32448H5202A025	90 x 270	B32448H5202B025	85 x 272
25.0	525	PhiCap HD SIG 525V 50Hz 25kVAr 3Ph	B32448H5252A025	90 x 348	B32448H5252B025	85 x 272
26.5	525	PhiCap HD SIG 525V 50Hz 26.5kVAr 3Ph	B32448H5262A525	90 x 348	B32448H5262B525	90 x 272
30.0	525	PhiCap HD SIG 525V 50Hz 30kVAr 3Ph	B32448H5302A025	116 x 280	B32448H5302B025	85 x 348
33.1	525	PhiCap HD SIG 525V 50Hz 33.1kVAr 3Ph	B32448H5332A125	116 x 280	B32448H5332B125	85 x 348
PhaseCap Energy Plus SHD Series Parts			**Old Parts**		**New Parts**	
Rating kVAr	Voltage V V(AC)	Description	Material Code	D x H mm	Material Code	D x H mm
1.0	440	PhaseCap Energy Plus SHD 440V 50/60Hz 1/1.2kVAr 3Ph	B25675L4012J040	50 x 75	B25675L4012B040	50 x 75
2.0	440	PhaseCap Energy Plus SHD 440V 50/60Hz 2/2.4kVAr 3Ph	B25675L4022J040	50 x 112	B25675L4022B040	50 x 112
3.0	440	PhaseCap Energy Plus SHD 440V 50/60Hz 3/3.6kVAr 3Ph	B25675L4032J040	55 x 112	B25675L4032B040	55 x 112
4.0	440	PhaseCap Energy Plus SHD 440V 50/60Hz 4/4.8kVAr 3Ph	B25675L4042J040	55 x 137	B25675L4042B040	55 x 137
5.0	440	PhaseCap Energy Plus SHD 440V 50/60Hz 5/6kVAr 3Ph	B25675L4061J040	55 x 147	B25675L4061B040	55 x 147

The world of electronic components,
modules and systems within a mouse click

www.tdk-electronics.tdk.com
product.tdk.com

TDK India Private Limited

Sales Head Office

2nd Floor, Tower-A, Logix Cyber Park,
C-28-29, Sector-62, Noida, 201 301, India
Email: sales.in@tdk-electronics.tdk.com

Learn more about our products for
Power Factor Correction

Regional Sales Offices:

Noida	Tel: +91-120-450 5801
Bengaluru	Tel: +91-80-4039 0600
Mumbai	Tel: +91-22-2575 0800
Pune	Tel: +91-20-6829 1262