



ESTA PhMKP POWER CAPACITORS + ESTAspring

Vishay ESTA

World's First Terminal Block With Lever-Operated Spring Connection



INTRODUCTION

Time is money, and in the control cabinet the wiring of capacitors makes up a considerable part of the assembly time.

Most tubular power capacitors have an IP20 terminal block with a screw connection. Vishay is now introducing a new generation of power capacitors with fast connection technology. Completely screw-less, this new technology is significantly faster and simpler through spring force and lever actuation. Due to the lever position, a simple check for the completeness of all connections is possible. The necessary connection force results automatically, free from torque specifications.

In addition, fast connection technology offers maximum contact reliability over the entire service life of the capacitors, and is completely maintenance-free without the need to tighten screws. Particularly in the case of environments with permanent vibrations, such as those experienced in wind power plants, valuable investments remain secure against irreparable damage caused by loose connections.

APPLICATIONS

- Wind power plants
- Solar panels and inverters
- Thermal power stations
- Power factor correction $\leq 1000 \text{ VAC}_{\text{RMS}}$
- Harmonic filters

RESOURCES

- Datasheet: PhMKP with ESTAspring - www.vishay.com/doc?13179
- For technical questions contact esta@vishay.com

ESTAspring

A **WORLD OF**
SOLUTIONS™



ESTA PhMKP POWER CAPACITORS + ESTAspring

Vishay ESTA

Features:

| | |
|---|---|
| ✓ | Maintenance-free |
| ✓ | Reduced assembly times up to 60 % |
| ✓ | Vibration-proof in wind power plants and during transport |
| ✓ | Optical connection check: lever closed = successfully contacted |
| ✓ | 2.5 mm ² up to 25 mm ² with wire-end sleeve |
| ✓ | Defined continuous contact force through spring technology |
| ✓ | Stainless steel spring |
| ✓ | Corrosion-proof |
| ✓ | Fast and easy lever-operated wire connection |
| ✓ | Copper alloy for conductor material |

Standards for ESTAspring Terminal Block:

| | |
|---|---|
| ✓ | Conductor pull-out test according to IEC 60998-2-1 |
| ✓ | Impulse withstand voltage test according to IEC 60664-1 |
| ✓ | Current carrying capacity up to 90 A / phase according to IEC 60512-5-2 |
| ✓ | Vibration test according to IEC 60068-2-6 |
| ✓ | Corrosion test according to IEC 6988 |
| ✓ | Temperature shock test according to IEC 60512-11-4, clause 11d |
| ✓ | Degree of protection IP20, tested according to DIN 40050-9/60529 |
| ✓ | UL / ULC |

The lever is designed for a minimum of 10 operating cycles. Continuous use can result in excessive wear.



ESTAspring

ESTA PhMKP POWER CAPACITORS + ESTAspring

Vishay ESTA

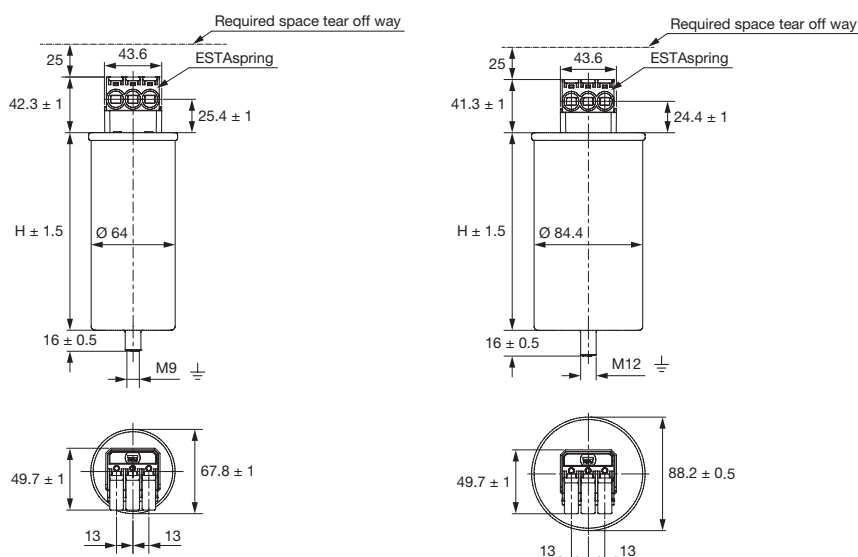
| Type | Article no. | Voltage (V) | Output (kvar) | Cap. (μF) delta | Current (A) | Dimensions Ø x H mm |
|----------------------|---------------|-------------|---------------|-----------------|-------------|---------------------|
| PhMKP400.3.12,50-S64 | 5341-48108-XX | 400 | 12.5 | 3 x 82.9 | 18 | 64 x 265 |
| PhMKP400.3.20,00-S84 | 5341-48807-XX | 400 | 20 | 3 x 132.6 | 28.8 | 84.4 x 265 |
| PhMKP400.3.25,00-S84 | 5341-48808-XX | 400 | 25 | 3 x 165.8 | 36.1 | 84.4 x 265 |
| PhMKP440.3.25,00-S84 | 5341-48816-XX | 440 | 25 | 3 x 137 | 32.8 | 84.4 x 265 |
| PhMKP440.3.28,10-S84 | 5341-48817-XX | 440 | 28.1 | 3 x 154 | 36.9 | 84.4 x 265 |
| PhMKP525.3.12,50-S84 | 5341-48820-XX | 525 | 12.5 | 3 x 48.1 | 13.7 | 84.4 x 190 |
| PhMKP525.3.20,00-S84 | 5341-48823-XX | 525 | 20 | 3 x 77 | 22 | 84.4 x 265 |
| PhMKP525.3.25,00-S84 | 5341-48824-XX | 525 | 25 | 3 x 96.2 | 27.5 | 84.4 x 265 |
| PhMKP660.3.22,90-S84 | 5341-48831-XX | 660 | 22.9 | 3 x 55.8 | 20 | 84.4 x 340 |

Type designation

| | | | | |
|---------------------|-------------|-----------------|---------------|----------------------------------|
| PhMKP | 440 | .3. | 28,10 | -S84 |
| Series (oil-filled) | Voltage (V) | Delta-connected | Output (kvar) | ESTAspring on 84 mm diameter can |

Additional ratings on request

| | |
|---------------------|---|
| Series | PhMKP, oil-filled; PhMKPg, DRY, gas-filled |
| Voltage (VAC) | 230 – 1000 |
| Connection | Single = 1; star = 2; delta = 3 |
| Output (kvar) | 2 – 37.1 |
| Terminal / diameter | S = ESTAspring / 64 mm, 84 mm, 116 mm, 136 mm |





ESTA PhMKP POWER CAPACITORS + ESTAspring

Vishay ESTA

SEMICONDUCTORS

MOSFETs Segment

MOSFETs

- Low Voltage TrenchFET® Power MOSFETs
- Medium Voltage Power MOSFETs
- High Voltage Planar MOSFETs
- High Voltage Superjunction MOSFETs
- Automotive Grade MOSFETs

ICs

- VRPower® DrMOS Integrated Power Stages
- Power Management and Power Control ICs
- Smart Load Switches
- Analog Switches and Multiplexers

Diodes Segment

Rectifiers

- Schottky Rectifiers
- Ultrafast Recovery Rectifiers
- Standard and Fast Recovery Rectifiers
- High Power Rectifiers / Diodes
- Bridge Rectifiers

Small Signal Diodes

- Schottky and Switching Diodes
- Zener Diodes
- RF PIN Diodes

Protection Diodes

- TVS TRANSZORB® and PAR® Diodes (unidirectional, bidirectional)
- ESD Protection Diodes (including arrays)

Thyristors / SCRs

- Phase Control Thyristors
- Fast Thyristors

Power Modules

- Input Modules (diodes and thyristors)
- Output and Switching Modules (contain MOSFETs, IGBTs, and diodes)
- Custom Modules

Optoelectronic Components Segment

Infrared Emitters and Detectors

Optical Sensors

- Proximity
- Ambient Light
- Light Index (RGBW, UV, IR)
- Humidity
- Quadrant Sensors
- Transmissive
- Reflective

Infrared Remote Control Receivers

Optocouplers

- Phototransistor, Photodarlington
- Linear
- Phototriac
- High Speed
- IGBT and MOSFET Drivers

Solid-State Relays

LEDs and 7-Segment Displays

Infrared Data Transceiver Modules

Custom Products

PASSIVE COMPONENTS

Resistors and Inductors Segment

Film Resistors

- Metal Film Resistors
- Thin Film Resistors
- Thick Film Resistors
- Power Thick Film Resistors
- Metal Oxide Film Resistors
- Carbon Film Resistors

Wirewound Resistors

- Vitreous, Cemented, and Housed Resistors
- Braking and Neutral Grounding Resistors
- Custom Load Banks

Power Metal Strip® Resistors

Battery Management Shunts

Crowbar and Steel Blade Resistors

Thermo Fuses

Chip Fuses

Pyrotechnic Initiators / Igniters

Variable Resistors

- Cement Variable Resistors
- Wirewound Variable Resistors
- Conductive Plastic Variable Resistors
- Contactless Potentiometers
- Hall Effect Position Sensors
- Precision Management Encoders

Networks / Arrays

RF and Microwave Resistors

High Voltage Resistors

Dividers

Non-Linear Resistors and Temperature Sensors

- NTC Thermistors
- PTC Thermistors
- Thin Film RTDs
- Varistors
- Platinum Chip Temperature Sensors

Magnetics

- Power Inductors
- Power Chokes
- High Frequency RF Inductors
- Magnetic Actuators
- Wireless Charging Coils
- Planar Devices
- Transformers
- Custom Magnetics

Connectors

Capacitors Segment

Tantalum Capacitors

- Molded Chip Tantalum Capacitors
- Molded Chip Polymer Tantalum Capacitors
- Tantalum MAP Capacitors
- Polymer Tantalum MAP Capacitors
- Coated Chip Tantalum Capacitors
- Solid Through-Hole Tantalum Capacitors
- Wet Tantalum Capacitors

Ceramic Capacitors

- Multilayer Chip Capacitors
- Disc Capacitors
- Multilayer Chip RF Capacitors
- Chip Antennas
- Thin Film Capacitors

Film Capacitors

Power Capacitors

Heavy-Current Capacitors

Aluminum Electrolytic Capacitors

ENYCAP™ Energy Storage Capacitors