

## Surge Protection Made Simple™ for LV Control Applications

### UL Type 4 BSP LV Control Series for 24Vac/dc to 230Vac/dc LV Systems



#### Description

The Bussmann UL Type 4 component assembly for use in Type 3 applications 24Vac/dc, 48Vac/dc, 60Vac/dc, 120Vac/dc and 230Vac/dc, two-pole, modular surge arresters feature local, *easyID™* visual indication and optional remote contact signaling. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

#### LV Control System Arresters

The features of these two-pole devices are for use in coordination with other upstream SPDs in UL 508A Applications\*.

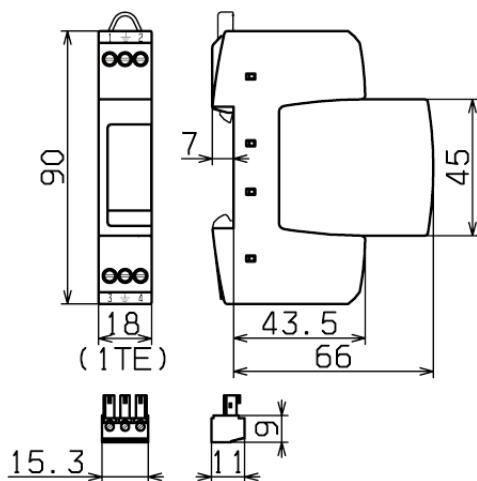
- Surge arrester according to UL 1449 3<sup>rd</sup> Edition, Type 4 Component Assembly for use in Type 3 applications helps meet UL 508A requirements
- Proven MOV and GDT hybrid technology for reliable surge protection
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with module release button make module replacement easy without tools
- Optional remote signaling of all protection modules make status monitoring easy and accurate in any monitoring scheme
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

#### Optional Remote Signaling Contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

\* UL 1449 3<sup>rd</sup> Edition not applicable to DC voltages.

#### Dimensions - mm



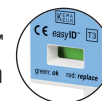
Shown with optional remote contact signaling



BSPH2A24D24LV  
BSPH2A48D48LV  
BSPH2A60D60LV  
BSPH2A150D150LV  
BSPH2A230D230LV



**easyID™**  
Visual Status Indication

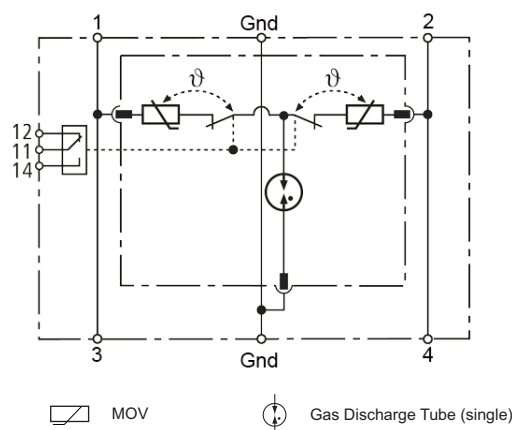


Remote Signal  
Contact Available



## Non SCCR BSP LV Control Series

#### Circuit Diagrams



BSPHA24D24LV, BSPHA48D48LV, BSPHA60D60LV  
BSPHA150D150LV, BSPHA230D230LV\*

Shown with optional remote contact signaling

\* For remote signaling contact, add "R" suffix to the part number.  
E.g., BSPHA230D230LVR

| Ordering Information                                                           |                          |                                          |                |                |                  |                             |
|--------------------------------------------------------------------------------|--------------------------|------------------------------------------|----------------|----------------|------------------|-----------------------------|
| System Voltage                                                                 |                          | 24Vac/dc                                 | 48Vac/dc       | 60Vac/dc       | 120Vac/dc        | 230Vac/dc                   |
| Max. Continuous operating AC voltage (MCOV) [V <sub>C</sub> ]                  |                          | 30Vac/dc                                 | 60Vac/dc       | 75Vac/dc       | 150Vac/dc        | 255Vac/dc                   |
| Catalog Numbers:<br>(Base + Modules)                                           | Without Remote Signaling | BSPH2A24D24LV                            | BSPH2A48D48LV  | BSPH2A60D60LV  | BSPH2A150D150LV  | BSPH2A230D230LV             |
|                                                                                | With Remote Signaling    | BSPH2A24D24LVR                           | BSPH2A48D48LVR | BSPH2A60D60LVR | BSPH2A150D150LVR | BSPH2A230D230LVR            |
| Replacement Modules                                                            |                          | BPHA24D24LV                              | BPHA48D48LV    | BPHA60D60LV    | BPHA150D150LV    | BPHA230D230LV               |
| Specifications                                                                 |                          |                                          |                |                |                  |                             |
| Nominal AC voltage [V <sub>0</sub> ]                                           |                          | 24V                                      | 48V            | 60V            | 120V             | 230V                        |
| Max. continuous operating AC voltage [V <sub>C</sub> ]                         |                          | 30V                                      | 60V            | 75V            | 150V             | 255V                        |
| Max. continuous operating DC voltage [V <sub>C</sub> ]                         |                          | 30V                                      | 60V            | 75V            | 150V             | 255V                        |
| Nominal load current AC [I <sub>L</sub> ]                                      |                          | 25A                                      | 25A            | 25A            | 25A              | 25A                         |
| Nominal discharge current (8/20 μs) [I <sub>n</sub> ]                          |                          | 1kA                                      | 1kA            | 2kA            | 2kA              | 3kA                         |
| Total discharge current (8/20 μs) [L+N-Gnd] [I <sub>total</sub> ]              |                          | 2kA                                      | 2kA            | 4kA            | 4kA              | 5kA                         |
| Combined impulse [U <sub>OC</sub> ]                                            |                          | 2kV                                      | 2kV            | 4kV            | 4kV              | 6kV                         |
| Combined impulse [L+N-Gnd] [U <sub>OC</sub> total]                             |                          | 4kV                                      | 4kV            | 8kV            | 8kV              | 10kV                        |
| Voltage protection level [L-N] [V <sub>PR</sub> ]                              |                          | ≤ 180V                                   | ≤ 350V         | ≤ 400V         | ≤ 640V           | ≤ 1250V                     |
| Voltage protection level [L/N-Gnd] [V <sub>PR</sub> ]                          |                          | ≤ 630V                                   | ≤ 730V         | ≤ 730V         | ≤ 800V           | ≤ 1500V                     |
| Temporary overvoltage (TOV) [L-N]                                              |                          | --                                       | --             | --             | --               | 335V / 5 sec.               |
| Temporary overvoltage (TOV) [L/N-Gnd]                                          |                          | --                                       | --             | --             | --               | 400V / 5 sec.               |
| Temporary overvoltage (TOV) [L+N-Gnd]                                          |                          | --                                       | --             | --             | --               | 1200V + V <sub>0</sub> / 20 |
| TOV characteristics [L-N]                                                      |                          | --                                       | --             | --             | --               | Withstand                   |
| TOV characteristics [L/N-Gnd]                                                  |                          | --                                       | --             | --             | --               | Withstand                   |
| TOV characteristics [L+N-Gnd]                                                  |                          | --                                       | --             | --             | --               | Failure                     |
| SPD according to EN 61643-11                                                   |                          | Type 3                                   |                |                |                  |                             |
| SPD according to IEC 61643-1                                                   |                          | Class III                                |                |                |                  |                             |
| Response time [L-N] [t <sub>A</sub> ]                                          |                          | ≤ 25 ns                                  |                |                |                  |                             |
| Response time [L/N-Gnd] [t <sub>A</sub> ]                                      |                          | ≤ 100 ns                                 |                |                |                  |                             |
| Operating temperature range [T <sub>U</sub> ]                                  |                          | -40°C to +80°C                           |                |                |                  |                             |
| Operating state/fault indication                                               |                          | Green (good) / Red (replace)             |                |                |                  |                             |
| Number of ports                                                                |                          | 1                                        |                |                |                  |                             |
| Cross-sectional area (min.)                                                    |                          | 0.5mm²/18AWG solid/flexible              |                |                |                  |                             |
| Cross-sectional area (max.)                                                    |                          | 4mm²/10AWG solid/2.5mm²/12AWG flexible   |                |                |                  |                             |
| For mounting on                                                                |                          | 35mm DIN rail per EN 60715               |                |                |                  |                             |
| Enclosure material                                                             |                          | Thermoplastic, UL 94V0                   |                |                |                  |                             |
| Location category                                                              |                          | Indoor                                   |                |                |                  |                             |
| Degree of protection                                                           |                          | IP20                                     |                |                |                  |                             |
| Capacity                                                                       |                          | 1 Mod., DIN 43880                        |                |                |                  |                             |
| Agency Information*                                                            |                          | UL / cUL, CSA, KEMA                      |                |                |                  |                             |
| Product Warranty                                                               |                          | Five Years**                             |                |                |                  |                             |
| Remote Contact Signaling                                                       |                          |                                          |                |                |                  |                             |
| Remote Contact Signaling Type                                                  |                          | Changeover Contact                       |                |                |                  |                             |
| AC Switching Capacity (Volts/Amps)                                             |                          | 250V/0.5A                                |                |                |                  |                             |
| DC Switching Capacity (Volts/Amps)                                             |                          | 250V/0.1A; 125V/0.2A; 75V/0.5A           |                |                |                  |                             |
| Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals |                          | 60/75°C Max. 1.5mm²/14AWG Solid/Flexible |                |                |                  |                             |
| Ordering Information                                                           |                          | Order from Catalog Numbers Above         |                |                |                  |                             |

\* Standards information not applicable to DC ratings.

\*\* See Cooper Bussmann SPD Limited Warranty Statement (3A1502) for details at [www.cooperbussmann.com/surge](http://www.cooperbussmann.com/surge).

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