



# HE3 SERIES

Surge Protective Device Type 1 and Type 2  
100 – 300 kA per Phase

Surge Protection Devices (PSDs), designed for Type 1 and Type 2 surge Protection for electrical distribution systems against the risk of harmful effects of transient surges.

- Direct and indirect lightning strikes
- Power company load switching

### Typical Applications:

- Commercial
- Industrial
- Communications
- Renewable Energy
- Critical Power (Hospitals, Data Centers, etc.)

### Features:

- UL 1449 4<sup>th</sup> Type 1 SPDs with SCCR up to 200 kArms without external fuse or CB
- UL 1449 4<sup>th</sup> Type 2 SPDs with Sine Wave Tracking, SCCR 200 kArms
- Full modes protection
- High surge energy capability with compact size
- Low voltage protection rating
- Two type enclosure, NEMA 4X plastic and NEMA 4 metal enclosure
- Degradation failure indication.
- Surge event counter optional
- Sine wave tracking function optional (for UL Type 2 listed)
- Remote Alarm optional
- Threaded NPT



### Specifications:

|                                  |   |
|----------------------------------|---|
| <b>Certification</b>             | ANIS/UL 1449 4 <sup>th</sup> edition Type 1 / Type 2                                  |
| <b>Connection Type</b>           | Parallel Connected  |
| <b>Surge Capacity</b>            | 100 – 300 kA per Phase  |
| <b>SCCR</b>                      | 200 kArms   |
| <b>Sine Wave Tracking</b>        | Optional for UL Type 2 listed   |
| <b>Lightning Counter Current</b> | ≥ 200 A (with Reset button)   |
| <b>Failure Pre-Test</b>          | Press 2S (Test Button)  |
| <b>Power Status Indication</b>   | Normal = Blue LED On  |
| <b>Working Status Indication</b> | Normal = Blue LED ON; Fail = Blue LED Turn To Red                                     |
| <b>Connection Wire</b>           | 10AWG, 300mm (11.8”) Length, (L1 = Black; L2 = Red; L3 = Blue; N = White; PE = Green) |
| <b>Signal Cable</b>              | 16AWG, 300mm (11.8”) Length, (C = Red; NC = Blue; NO = Brown)                         |
| <b>Working Environments</b>      | Temperature -40°C ~ +75°C, Humidity Relative 5~95% (25°C), Altitude ≤ 3km             |



**Specifications:**

| Case Type                  | PLASTIC                    | METAL                   |
|----------------------------|----------------------------|-------------------------|
| Dimensions (W x Dx H)      | 200 x 150 x 100 mm         | 286 x 200 120 mm        |
| Threaded NPT               | 3/4" NPT                   |                         |
| Enclosure                  | Plastic Enclosure, NEMA 4X | Metal Enclosure, NEMA 4 |
| Net Weight (Typical Value) | 1.59 kg                    | 4.3 kg                  |

**Technical Data:**

| Model No. DT1  | System Voltage (50/60Hz) | In (kA) | Voltage Protection Mode Ratings (VPR @ 6kV/3kA) |      |      |      | MCOV     | Fig. |
|----------------|--------------------------|---------|---|------|------|------|----------|------|
|                |                          |         | L-N   | L-G  | N-G  | L-L  |          |      |
| HE3120P•PT1CTA | 120/240V SP              | 20      | 700   | 800  | 800  | 1200 | 150/320* | 1    |
| HE3120P•PT2CTA | 120/240V SP              | 20      | 700   | 800  | 800  | 1200 | 150/320* | 1    |
| HE3120P•MT1CTA | 120/240V SP              | 20      | 700   | 800  | 800  | 1200 | 150/320* | 1    |
| HE3120P•MT2CTA | 120/240V SP              | 20      | 700   | 800  | 800  | 1200 | 150/320* | 1    |
| HE3240P•PT1CTA | 240/480V SP              | 20      | 1200  | 1200 | 1200 | 2000 | 320/550* | 1    |
| HE3240P•PT2CTA | 240/480V SP              | 20      | 1200  | 1200 | 1200 | 2000 | 320/550* | 1    |
| HE3240P•MT1CTA | 240/480V SP              | 20      | 1200  | 1200 | 1200 | 2000 | 320/550* | 1    |
| HE3240P•MT2CTA | 240/480V SP              | 20      | 1200  | 1200 | 1200 | 2000 | 320/550* | 1    |
| HE3120S•PT1CTA | 120V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3120S•PT2CTA | 120V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3120S•MT1CTA | 120V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3120S•MT2CTA | 120V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3127S•PT1CTA | 127V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3127S•PT2CTA | 127V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3127S•MT1CTA | 127V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3127S•MT2CTA | 127V S                   | 20      | 700   | 800  | 800  | -    | 150      | 2    |
| HE3240S•PT1CTA | 240V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3240S•PT2CTA | 240V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3240S•MT1CTA | 240V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3240S•MT2CTA | 240V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3277S•PT1CTA | 277V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3277S•PT2CTA | 277V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3277S•MT1CTA | 277V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3277S•MT2CTA | 277V S                   | 20      | 1200  | 1200 | 1200 | -    | 320      | 2    |
| HE3347S•PT1CTA | 347V S                   | 20      | 1500  | 1500 | 1500 | -    | 420      | 2    |
| HE3347S•PT2CTA | 347V S                   | 20      | 1500  | 1500 | 1500 | -    | 420      | 2    |
| HE3347S•MT1CTA | 347V S                   | 20      | 1500  | 1500 | 1500 | -    | 420      | 2    |
| HE3347S•MT2CTA | 347V S                   | 20      | 1500  | 1500 | 1500 | -    | 420      | 2    |



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| Model No. DT1  | System Voltage (50/60Hz) | In (kA) | Voltage Protection Mode Ratings (VPR @ 6kV/3kA) |           |      |           | MCOV    | Fig. |
|----------------|--------------------------|---------|---|-----------|------|-----------|---------|------|
|                |                          |         | L-N   | L-G       | N-G  | L-L       |         |      |
| HE3127Y•PT1CTA | 220Y/127V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3127Y•PT2CTA | 220Y/127V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3127Y•MT1CTA | 220Y/127V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3127Y•MT2CTA | 220Y/127V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3120Y•PT1CTA | 208Y/120V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3120Y•PT2CTA | 208Y/120V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3120Y•MT1CTA | 208Y/120V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3120Y•MT2CTA | 208Y/120V Y              | 20      | 700   | 800       | 800  | 1200      | 150     | 3    |
| HE3240Y•PT1CTA | 415Y/240V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3240Y•PT2CTA | 415Y/240V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3240Y•MT1CTA | 415Y/240V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3240Y•MT2CTA | 415Y/240V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3277Y•PT1CTA | 480Y/277V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3277Y•PT2CTA | 480Y/277V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3277Y•MT1CTA | 480Y/277V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3277Y•MT2CTA | 480Y/277V Y              | 20      | 1200  | 1200      | 1200 | 2000      | 320     | 3    |
| HE3347Y•PT1CTA | 600Y/347V Y              | 20      | 1500  | 1500      | 1500 | 2500      | 420     | 3    |
| HE3347Y•PT2CTA | 600Y/347V Y              | 20      | 1500  | 1500      | 1500 | 2500      | 420     | 3    |
| HE3347Y•MT1CTA | 600Y/347V Y              | 20      | 1500  | 1500      | 1500 | 2500      | 420     | 3    |
| HE3347Y•MT2CTA | 600Y/347V Y              | 20      | 1500  | 1500      | 1500 | 2500      | 420     | 3    |
| HE3120H•PT1CTA | 120/240V HL              | 20      | 700/1200  | 800/1200  | 800  | 1200/2000 | 150/320 | 3    |
| HE3120H•PT2CTA | 120/240V HL              | 20      | 700/1200  | 800/1200  | 800  | 1200/2000 | 150/320 | 3    |
| HE3120H•MT1CTA | 120/240V HL              | 20      | 700/1200  | 800/1200  | 800  | 1200/2000 | 150/320 | 3    |
| HE3120H•MT2CTA | 120/240V HL              | 20      | 700/1200  | 800/1200  | 800  | 1200/2000 | 150/320 | 3    |
| HE3240H•PT1CTA | 240/480V HL              | 20      | 1200/1800                                       | 1200/1800 | 1200 | 2000/3000 | 320/550 | 3    |
| HE3240H•PT2CTA | 240/480V HL              | 20      | 1200/1800                                       | 1200/1800 | 1200 | 2000/3000 | 320/550 | 3    |
| HE3240H•MT1CTA | 240/480V HL              | 20      | 1200/1800                                       | 1200/1800 | 1200 | 2000/3000 | 320/550 | 3    |
| HE3240H•MT2CTA | 240/480V HL              | 20      | 1200/1800                                       | 1200/1800 | 1200 | 2000/3000 | 320/550 | 3    |
| HE3240D•PT1CTA | 240V D                   | 20      | -   | 1200      | -    | 1200      | 320     | 4    |
| HE3240D•PT2CTA | 240V D                   | 20      | -   | 1200      | -    | 1200      | 320     | 4    |
| HE3240D•MT1CTA | 240V D                   | 20      | -   | 1200      | -    | 1200      | 320     | 4    |
| HE3240D•MT2CTA | 240V D                   | 20      | -   | 1200      | -    | 1200      | 320     | 4    |
| HE3480D•PT1CTA | 480V D                   | 20      | -   | 1800      | -    | 2000      | 550     | 4    |
| HE3480D•PT2CTA | 480V D                   | 20      | -   | 1800      | -    | 2000      | 550     | 4    |
| HE3480D•MT1CTA | 480V D                   | 20      | -   | 1800      | -    | 2000      | 550     | 4    |
| HE3480D•MT2CTA | 480V D                   | 20      | -   | 1800      | -    | 2000      | 550     | 4    |
| HE3600D•PT1CTA | 600V D                   | 20      | -   | 2000      | -    | 2500      | 690     | 4    |
| HE3600D•PT2CTA | 600V D                   | 20      | -   | 2000      | -    | 2500      | 690     | 4    |
| HE3600D•MT1CTA | 600V D                   | 20      | -   | 2000      | -    | 2500      | 690     | 4    |
| HE3600D•MT2CTA | 600V D                   | 20      | -   | 2000      | -    | 2500      | 690     | 4    |

*\*Note: Replace • With TPMOV Combination Per Phase Configuration. See Chart Below.*

**Configuration:**

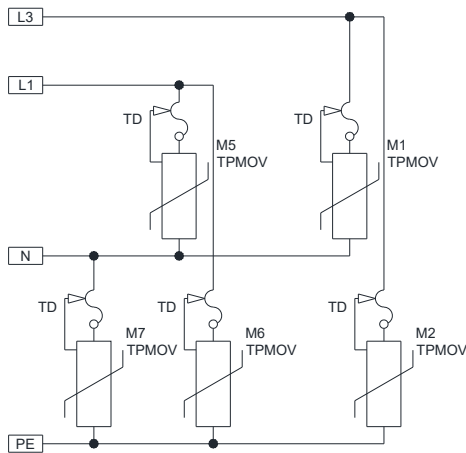
| •                 | 22                        | 32                        | 42                         | 52                         | 62                         |
|-------------------|---------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| TPMOV Combination | 100kA/PHASE,<br>50kA/MODE | 150kA/PHASE,<br>75kA/MODE | 200kA/PHASE,<br>100kA/MODE | 250kA/PHASE,<br>125kA/MODE | 300kA/PHASE,<br>150kA/MODE |

**Configure & Ordering Information:**

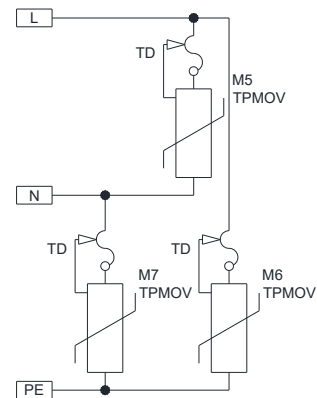
|   |  |   |  |
|---|--|---|--|
| <b>Part Number:</b> HE 3 120 P 22 P T1 CTA<br>1 2 3 4 5 6 7 8 | <b>3. Voltage Code:</b><br>120<br>127<br>240<br>277<br>347<br>480<br>600 | <b>4. System Configuration</b><br>S - Single Phase<br>P - Split Phase<br>Y - WYE<br>H - High Leg Delta<br>D - Delta | <b>5. TP MOV Combination</b><br>22<br>32<br>42<br>52<br>62 |
| <b>1: Product ID:</b><br>HE – Hulk Series                     |  |   | <b>6. Material:</b><br>P - Plastic<br>M - Metal            |
| <b>2: Series Category:</b><br>3 – HE3                         |  |   | <b>7. SPD Type:</b><br>T1 - Type 1<br>T2 - Type 2          |
|   |  | <b>8. Options:</b><br>C – Surge Counter<br>T – Failure Test<br>A – Remote Alarm                                     |  |

**Basic Circuits:**

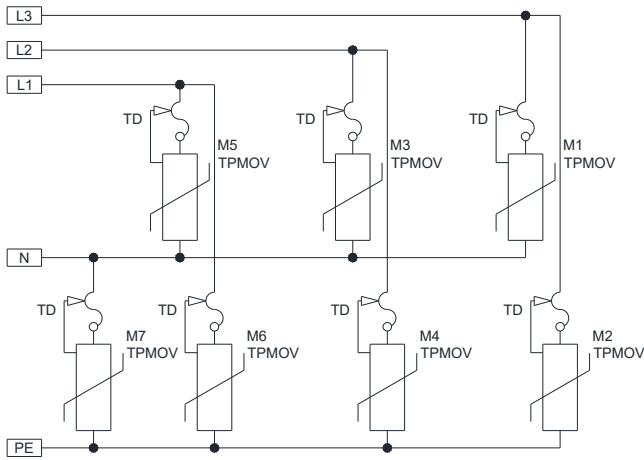
**Fig. 1**



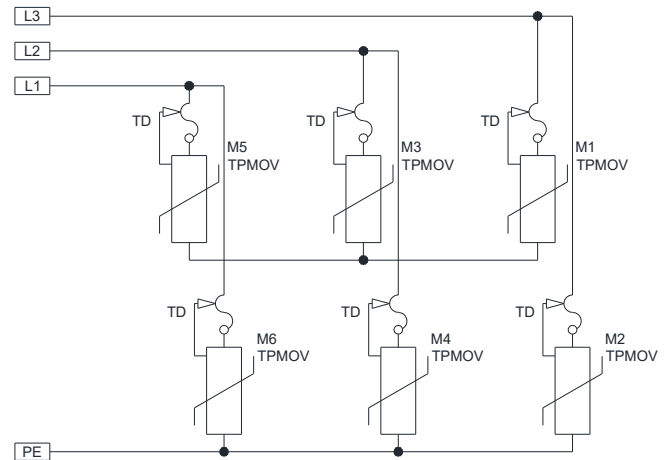
**Fig. 2**



**Fig. 3**

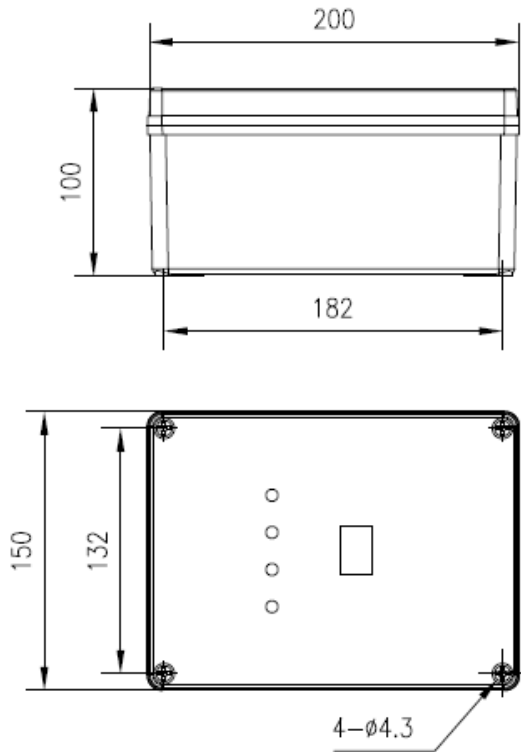


**Fig. 4**

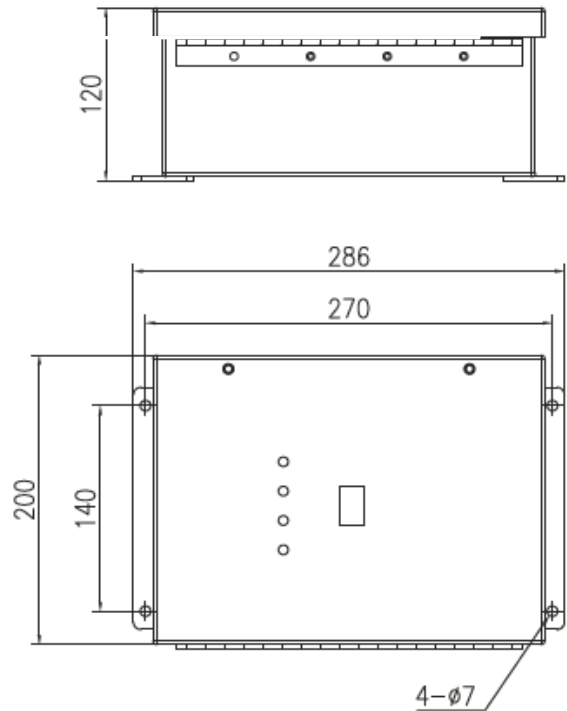


**Dimensions:**

**NEMA 4X**



**NEMA 4**



**Certification:**

