



# KATALOG Izolatorów

Niskiego  
i średniego napięcia



**Centrum Elektroniki Stosowanej CES Sp. z o.o.** zostało założone w 1992 roku przez inżynierów uczestniczących w konstruowaniu pierwszych polskich tranzystorowych przetwornic częstotliwości. Współpracując z doświadczonymi producentami, CES oferuje:

- izolatory niskiego i średniego napięcia
- urządzenia z zakresu zasilania rezerwowego
- falowniki oraz soft-starty niskiego i średniego napięcia
- kogenerację
- osprzęt instalacji biogazowych

Od początku działalności firma oferuje klientom najkorzystniejsze rozwiązania z zakresu oszczędzania energii elektrycznej oraz produkty i usługi najwyższej jakości. CES dzięki wykwalifikowanej kadrze pracowniczej, oprócz sprzedaży i dostaw urządzeń, zapewnia także fachowe doradztwo specjalistów, wykonuje projekty, montaż, uruchomienia, szkolenia użytkowników oraz serwis, przeglądy i naprawy.



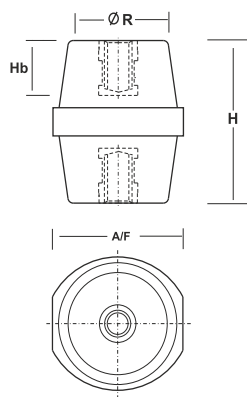
**Centrum Elektroniki Stosowanej CES Sp. z o. o** was established in 1992 by engineers who participated in the construction of first polish transistor frequency converters. Thanks to the cooperation with experienced producers, we are able to offer the highest quality products:

- low and medium voltage insulators
- emergency power supplies
- drives (frequency converters, soft-starts)
- cogeneration
- biogas plant equipment

Since the beginning, the company has been offering customers the best solutions in the field of electricity saving. Thanks to the qualified staff, CES, in addition to the sale and supply of devices, also provides expert advice from specialists, assembly, commissioning, user training as well as service, inspections and repairs.

|  |           |
|--|-----------|
| <b>I. IZOLATORY WSPORCZE (KOPYTKA)   STANDOFF INSULATORS.....</b>                      | <b>2</b>  |
| 1) Beczułkowe D   <i>Drum</i> .....  | 2         |
| 2) Sześciokątne H   <i>Hexagonal</i> .....   | 3         |
| 3) Sześciennie HH   <i>Full hex</i> .....  | 5         |
| 4) Walcowe o podstawie sześciokątnejRH  <i>Roundhex</i> .....                          | 6         |
| 5) Walcowe CY   <i>Cylindrical</i> .....   | 7         |
| <b>II. IZOLATORY DO PIONOWYCH UKŁADÓW SZYN   INSULATORS FOR VERTICAL BARS .....</b>    | <b>8</b>  |
| 1) Wsporniki 1-biegunowe   <i>Single pole supports</i> .....                           | 9         |
| 2) Wsporniki 3-biegunowe   <i>Three pole supports</i> .....                            | 10        |
| 3) Wsporniki 4-biegunowe   <i>Four pole supports</i> .....                             | 12        |
| <b>III. IZOLATORY DO SZYN MONTOWANYCH POZIOMO   INSULATORS FOR HORIZONTAL BARS... </b> | <b>13</b> |
| 1) Wsporniki 1, 3 i 4-biegunowe   <i>Single, three and four pole supports</i> .....    | 13        |
| 2) Wsporniki 1-biegunowe typu SP   <i>Single pole busbar supports</i> .....            | 14        |
| 3) Wsporniki schodkowe   <i>Step insulators</i> .....                                  | 15        |
| <b>IV. IZOLATORY WSPORCZE NA ŚREDNIE NAPIĘCIE   MEDIUM VOLTAGE INSULATORS.....</b>     | <b>17</b> |
| <b>I. IZOLATORY WSPORCZE (KOPYTKA)   STANDOFF INSULATORS .....</b>                     | <b>18</b> |
| 1) DB/P.....   | 18        |
| 2) CO/P.....   | 19        |
| 3) CS/P.....   | 20        |
| 4) CT/P.....   | 21        |
| 5) CPE.....  | 22        |
| <b>II. IZOLATORY PRZEPUSTOWE   PASSING INSULATORS.....</b>                             | <b>23</b> |
| <b>III. IZOLATORY DO SZYNOPRZEWODÓW TYPU PSB   VERTICAL RODHOLDERS.....</b>            | <b>24</b> |
| <b>SPECYFIKACJA TECHNICZNA TWORZYWA   TECHNICAL SPECIFICATION OF MATERIAL.....</b>     | <b>29</b> |

## 1) Beczułkowe D | Drum



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | Wymiary / Dimensions |      |       | Napięcie pracy<br>Nominal voltage<br>(AC/DC) |
|-------------|----------------------------|-----------------|----------------------|------|-------|--|
|             |                            |                 | A/F mm               | R mm | Hb mm |  |
| D420        | 20                         | M4              | 18                   | 14   | 5     | 800/1100                                     |
| D620        | 20                         | M6              | 18                   | 14,5 | 5     | 800/1100                                     |
| D625        | 25                         | M6              | 21                   | 16   | 7     | 1000/1400                                    |
| D630        | 30                         | M6              | 33                   | 25   | 9     | 1200/1600                                    |
| D830        | 30                         | M8              | 33                   | 26   | 9     | 1200/1600                                    |
| D635        | 35                         | M6              | 32                   | 26   | 12    | 1400/1900                                    |
| D835        | 35                         | M8              | 32                   | 26   | 12    | 1400/1900                                    |
| D1035       | 35                         | M10             | 32                   | 26   | 12    | 1400/1900                                    |
| D840        | 40                         | M8              | 39                   | 30   | 12    | 1600/2200                                    |
| D1040       | 40                         | M10             | 39                   | 31   | 12    | 1600/2200                                    |
| D845        | 45                         | M8              | 40                   | 31   | 12    | 1800/2500                                    |
| D1045       | 45                         | M10             | 41                   | 32   | 12    | 1800/2500                                    |
| D1245       | 45                         | M12             | 41                   | 32   | 12    | 1800/2500                                    |
| D1050       | 50                         | M10             | 48                   | 35   | 17    | 2000/2800                                    |
| D1250       | 50                         | M12             | 48                   | 35   | 17    | 2000/2800                                    |
| D851E       | 51                         | M8              | 35                   | 27   | 17    | 2040/2800                                    |
| D1051E      | 51                         | M10             | 35                   | 27   | 17    | 2040/2800                                    |
| D1060       | 60                         | M10             | 52                   | 37   | 17    | 2400/3300                                    |
| D1260       | 60                         | M12             | 52                   | 37   | 17    | 2400/3300                                    |
| D865        | 65                         | M8              | 55                   | 41   | 22    | 2600/3600                                    |
| D1065       | 65                         | M10             | 55                   | 41   | 22    | 2600/3600                                    |
| D1265       | 65                         | M12             | 55                   | 41   | 22    | 2600/3600                                    |
| D1070       | 70                         | M10             | 55                   | 42   | 22    | 2800/3900                                    |
| D1270       | 70                         | M12             | 55                   | 42   | 22    | 2800/3900                                    |
| D1075       | 75                         | M10             | 55                   | 42   | 22    | 3000/4200                                    |
| D1275       | 75                         | M12             | 55                   | 42   | 22    | 3000/4200                                    |
| D1076E      | 76                         | M10             | 50                   | 34   | 22    | 3000/4200                                    |
| D1276E      | 76                         | M12             | 54                   | 42   | 22    | 3000/4200                                    |

### DANE TECHNICZNE TECHNICAL SPECIFICATION

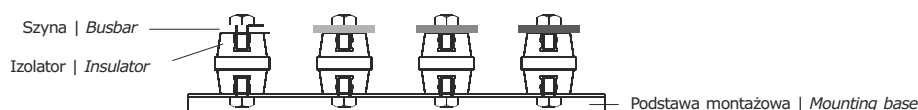
Własności elek. i mech.  
Elect. and mech. properties  
strona | page 4

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 18-22

Charakterystyka tworzywa  
Material characteristics  
strona | page 29

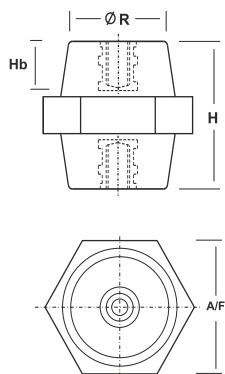
**Tworzywo DMC | Material: DMC (Dough Moulding Compound)**  
**Gwint stal (ocynkowana) | Insert: steel (zinc passivated)**  
**Wszystkie wymiary są w mm | All dimensions are in mm**  
**HB: Efektywna długość gwintu | HB: Effective thread length**

**Sposób montażu | Mounting arrangement:**





2) Sześciokątne H | Hexagonal



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | Wymiary/ Dimensions |      |       | Napięcie pracy<br>Nominal voltage<br>(AC/DC) |
|-------------|----------------------------|-----------------|---------------------|------|-------|--|
|             |                            |                 | A/F mm              | R mm | Hb mm |  |
| H416        | 16                         | M4              | 14                  | 11   | 3,5   | 640/800                                      |
| H420        | 20                         | M4              | 18                  | 14   | 5     | 800/1100                                     |
| H620        | 20                         | M6              | 18                  | 14   | 5     | 800/1100                                     |
| H625        | 25                         | M6              | 25                  | 22   | 7     | 1000/1400                                    |
| H630        | 30                         | M6              | 32                  | 24   | 9     | 1200/1600                                    |
| H830        | 30                         | M8              | 32                  | 25   | 9     | 1200/1600                                    |
| H635        | 35                         | M6              | 32                  | 26   | 12    | 1400/1900                                    |
| H835        | 35                         | M8              | 32                  | 26   | 12    | 1400/1900                                    |
| H1035       | 35                         | M10             | 32                  | 26   | 12    | 1400/1900                                    |
| H840        | 40                         | M8              | 39                  | 31   | 12    | 1600/2200                                    |
| H1040       | 40                         | M10             | 38                  | 30   | 12    | 1600/2200                                    |
| H845        | 45                         | M8              | 40                  | 32   | 12    | 1800/2500                                    |
| H1045       | 45                         | M10             | 40                  | 32   | 12    | 1800/2500                                    |
| H1050       | 50                         | M10             | 46                  | 35   | 17    | 2000/2800                                    |
| H1250       | 50                         | M12             | 46                  | 35   | 17    | 2000/2800                                    |
| H1060       | 60                         | M10             | 50                  | 38   | 17    | 2400/3300                                    |
| H1260       | 60                         | M12             | 50                  | 38   | 17    | 2400/3300                                    |
| H1065       | 65                         | M10             | 55                  | 41   | 17    | 2600/3600                                    |
| H1265       | 65                         | M12             | 55                  | 41   | 17    | 2600/3600                                    |
| H1070       | 70                         | M10             | 55                  | 41   | 22    | 2800/3900                                    |
| H1270       | 70                         | M12             | 55                  | 41   | 22    | 2800/3900                                    |
| H1075       | 75                         | M10             | 53                  | 42   | 22    | 3000/4200                                    |
| H1275       | 75                         | M12             | 53                  | 42   | 22    | 3000/4200                                    |
| H1076E      | 76                         | M10             | 50                  | 34   | 22    | 3000/4200                                    |

A

wsporcze | standoff

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

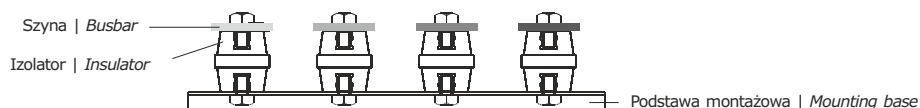
Własności elek. i mech.  
Elect. and mech. properties  
strona | page 4

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 18-22

Charakterystyka tworzywa  
Material characteristics  
strona | page 29

**Tworzywo DMC | Material: DMC (Dough Moulding Compound)**  
**Gwint stal (ocynkowana) | Insert: steel (zinc passivated)**  
**Wszystkie wymiary są w mm | All dimensions are in mm**  
**HB: Efektywna długość gwintu | HB: Effective thread length**

**Sposób montażu | Mounting arrangement:**



## Elektryczne i mechaniczne własności izolatorów wsporczych

### Electrical and mechanical properties of standoff insulators

#### DANE TECHNICZNE

TECHNICAL  
SPECIFICATION

A

wsporcze | standoff

#### Typ D\* | Type D\*

| Kod<br>Code  | Wysokość<br>Height<br>mm | Wytrzymałość<br>na rozciąganie | Wytrzymałość<br>na zginanie | Wytrzymałość<br>na skręcanie | Napięcie<br>przebiecia<br>Breakdown<br>voltage<br>KV | Wartość IR<br>IR Value<br>MΩ |
|--------------|--------------------------|--------------------------------|-----------------------------|------------------------------|--|------------------------------|
|              |                          | Tensile strength<br>Kgf        | Flexural strength<br>Kgf    | Torsional strength<br>N-m    |  |                              |
| D420 (M4)    | 20                       | 180                            | 45                          | 2.7                          | 20   | 10                           |
| D620 (M6)    | 20                       | 200                            | 67                          | 10                           | 18   | 15                           |
| D625 (M6)    | 25                       | 370                            | 110                         | 9.2                          | 22   | 15                           |
| D630 (M6)    | 30                       | 570                            | 200                         | 18                           | 30   | 15                           |
| D830 (M8)    | 30                       | 640                            | 190                         | 25                           | 30   | 15                           |
| D635 (M6)    | 35                       | 645                            | 210                         | 16.5                         | 32   | 15                           |
| D835 (M8)    | 35                       | 745                            | 215                         | 34                           | 35   | 15                           |
| D1035 (M10)  | 35                       | 780                            | 230                         | 25                           | 32   | 15                           |
| D840 (M8)    | 40                       | 650                            | 180                         | 34                           | 34   | 15                           |
| D1040 (M10)  | 40                       | 900                            | 260                         | 35                           | 35   | 15                           |
| D845 (M8)    | 45                       | 1045                           | 245                         | 40                           | 40   | 20                           |
| D1045 (M10)  | 40                       | 900                            | 350                         | 49                           | 40   | 20                           |
| D1245 (M12)  | 40                       | 1456                           | 470                         | 49                           | 40   | 20                           |
| D1050 (M10)  | 50                       | 1400                           | 440                         | 49                           | 40   | 20                           |
| D1250 (M12)  | 50                       | 1554                           | 492                         | 85                           | 40   | 20                           |
| D851E (M8)   | 51                       | 980                            | 182                         | 32                           | 40   | 20                           |
| D1051E (M10) | 51                       | 1420                           | 285                         | 50                           | 40   | 20                           |
| D1060 (M10)  | 60                       | 1620                           | 450                         | 55                           | 40   | 20                           |
| D1260 (M12)  | 60                       | 1410                           | 420                         | 84                           | 40   | 20                           |
| D865 (M8)    | 65                       | 1390                           | 340                         | 35                           | 40   | 20                           |
| D1065 (M10)  | 65                       | 1620                           | 420                         | 56                           | 40   | 20                           |
| D1265 (M12)  | 65                       | 1800                           | 490                         | 86                           | 40   | 15                           |
| D1070 (M10)  | 70                       | 1884                           | 470                         | 85                           | 40   | 20                           |
| D1270 (M12)  | 70                       | 1900                           | 492                         | 86                           | 40   | 20                           |
| D1075 (M10)  | 75                       | 1720                           | 410                         | 58                           | 40   | 20                           |
| D1275 (M12)  | 75                       | 2000                           | 495                         | 86                           | 40   | 20                           |
| D1076E (M10) | 76                       | 1640                           | 230                         | 52                           | 40   | 20                           |
| D1276 (M12)  | 76                       | 2000                           | 470                         | 55                           | 40   | 20                           |

#### Typ H\* | Type H\*

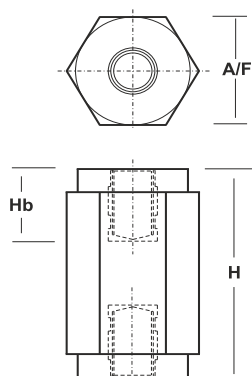
| Kod<br>Code  | Wysokość<br>Height<br>mm | Wytrzymałość<br>na rozciąganie | Wytrzymałość<br>na zginanie | Wytrzymałość<br>na skręcanie | Napięcie<br>przebiecia<br>Breakdown<br>voltage<br>KV | Wartość IR<br>IR Value<br>MΩ |
|--------------|--------------------------|--------------------------------|-----------------------------|------------------------------|--|------------------------------|
|              |                          | Tensile strength<br>Kgf        | Flexural strength<br>Kgf    | Torsional strength<br>N-m    |  |                              |
| H416 (M4)    | 16                       | 80                             | 25                          | 2.71                         | 16   | 15                           |
| H420 (M4)    | 20                       | 182                            | 65                          | 4.9                          | 20   | 15                           |
| H620 (M6)    | 20                       | 195                            | 75                          | 8.4                          | 22   | 15                           |
| H625 (M6)    | 25                       | 540                            | 190                         | 10                           | 22   | 15                           |
| H630 (M6)    | 30                       | 532                            | 154                         | 13.4                         | 32   | 15                           |
| H830 (M6)    | 30                       | 796                            | 240                         | 25                           | 32   | 15                           |
| H635 (M6)    | 35                       | 620                            | 244                         | 14.1                         | 35   | 15                           |
| H835 (M8)    | 35                       | 670                            | 250                         | 26.5                         | 37   | 15                           |
| H1035 (M10)  | 35                       | 805                            | 190                         | 27                           | 35   | 20                           |
| H840 (M8)    | 40                       | 860                            | 340                         | 35                           | 40   | 20                           |
| H1040 (M10)  | 40                       | 1054                           | 345                         | 39                           | 40   | 25                           |
| H845 (M8)    | 45                       | 1100                           | 345                         | 37                           | 40   | 15                           |
| H1045 (M10)  | 45                       | 1220                           | 300                         | 44                           | 40   | 20                           |
| H1050 (M10)  | 50                       | 1550                           | 500                         | 50                           | 40   | 20                           |
| H1250 (M12)  | 76                       | 1511                           | 472                         | 86                           | 40   | 20                           |
| H1060 (M10)  | 60                       | 1570                           | 410                         | 45                           | 40   | 20                           |
| H1260 (M12)  | 60                       | 1640                           | 520                         | 83                           | 40   | 20                           |
| H1065 (M10)  | 65                       | 1620                           | 452                         | 52                           | 40   | 20                           |
| H1265 (M12)  | 65                       | 1652                           | 456                         | 86                           | 40   | 20                           |
| H1070 (M10)  | 70                       | 1720                           | 490                         | 55                           | 40   | 20                           |
| H1270 (M12)  | 70                       | 1800                           | 500                         | 85                           | 40   | 20                           |
| H1075 (M10)  | 75                       | 1690                           | 430                         | 80                           | 40   | 20                           |
| H1275 (M12)  | 75                       | 1840                           | 540                         | 87                           | 40   | 20                           |
| H1076E (M10) | 76                       | 1600                           | 350                         | 49                           | 40   | 20                           |

\* Wartości mogą się różnić od  $\pm 5\%$ . Podane wartości są wartościami przy rozbiciu próbki testowej.  
\* Values may vary between  $\pm 5\%$ . Values given are values when breaking the test sample.

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 18-22

Charakterystyka tworzywa  
Material characteristics  
strona | page 29

3) Sześciennie HH | Full hex

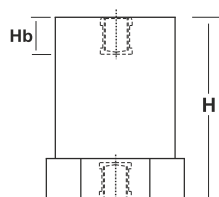
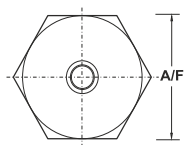


| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | Wymiary / Dimensions |       | Napięcie pracy<br>Nominal voltage<br>(AC/DC) |
|-------------|----------------------------|-----------------|----------------------|-------|--|
|             |                            |                 | A/F mm               | Hb mm |  |
| 14HH415     | 15                         | M4              | 14                   | 3,5   | 600/800                                      |
| 14HH420     | 20                         | M4              | 14                   | 5     | 800/1100                                     |
| 14HH425     | 25                         | M4              | 14                   | 5     | 1000/1400                                    |
| 14HH515     | 15                         | M5              | 14                   | 3,5   | 600/800                                      |
| 14HH520     | 20                         | M5              | 14                   | 5     | 800/1100                                     |
| 14HH525     | 25                         | M5              | 14                   | 7     | 1000/1400                                    |
| 20HH520     | 20                         | M5              | 20                   | 5     | 800/1100                                     |
| 20HH525     | 25                         | M5              | 20                   | 7     | 1000/1400                                    |
| 20HH530     | 30                         | M5              | 20                   | 7     | 1200/1600                                    |
| 20HH535     | 35                         | M5              | 20                   | 12    | 1400/1900                                    |
| 20HH540     | 40                         | M5              | 20                   | 12    | 1600/2200                                    |
| 20HH545     | 45                         | M5              | 20                   | 12    | 1800/2500                                    |
| 20HH550     | 50                         | M5              | 20                   | 12    | 2000/2800                                    |
| 20HH555     | 55                         | M5              | 20                   | 12    | 2200/3000                                    |
| 20HH560     | 60                         | M5              | 20                   | 12    | 2400/3300                                    |
| 20HH620     | 20                         | M6              | 20                   | 5     | 800/1100                                     |
| 20HH625     | 25                         | M6              | 20                   | 7     | 1000/1400                                    |
| 20HH630     | 30                         | M6              | 20                   | 7     | 1200/1600                                    |
| 20HH635     | 35                         | M6              | 20                   | 12    | 1400/1900                                    |
| 20HH640     | 40                         | M6              | 20                   | 12    | 1600/2200                                    |
| 20HH645     | 45                         | M6              | 20                   | 12    | 1800/2500                                    |
| 20HH650     | 50                         | M6              | 20                   | 12    | 2000/2800                                    |
| 20HH655     | 55                         | M6              | 20                   | 12    | 2200/3000                                    |
| 20HH660     | 60                         | M6              | 20                   | 12    | 2400/3300                                    |
| 25HH625     | 25                         | M6              | 25                   | 7     | 1000/1400                                    |
| 25HH630     | 30                         | M6              | 25                   | 7     | 1200/1600                                    |
| 25HH635     | 35                         | M6              | 25                   | 9     | 1400/1900                                    |
| 25HH640     | 40                         | M6              | 25                   | 12    | 1600/2200                                    |
| 25HH645     | 45                         | M6              | 25                   | 12    | 1800/2500                                    |
| 25HH650     | 50                         | M6              | 25                   | 12    | 2000/2800                                    |
| 25HH655     | 55                         | M6              | 25                   | 12    | 2200/3000                                    |
| 25HH660     | 60                         | M6              | 25                   | 12    | 2400/3300                                    |
| 25HH825     | 25                         | M8              | 25                   | 7     | 1000/1400                                    |
| 25HH830     | 30                         | M8              | 25                   | 9     | 1200/1600                                    |
| 25HH835     | 35                         | M8              | 25                   | 12    | 1400/1900                                    |
| 25HH840     | 40                         | M8              | 25                   | 12    | 1600/2200                                    |
| 25HH845     | 45                         | M8              | 25                   | 12    | 1800/2500                                    |
| 25HH850     | 50                         | M8              | 25                   | 17    | 2000/2800                                    |
| 25HH855     | 55                         | M8              | 25                   | 17    | 2200/3000                                    |
| 25HH860     | 60                         | M8              | 25                   | 17    | 2400/3300                                    |
| 35HH830     | 30                         | M8              | 35                   | 9     | 1200/1600                                    |
| 35HH835     | 35                         | M8              | 35                   | 12    | 1400/1900                                    |
| 35HH840     | 40                         | M8              | 35                   | 12    | 1600/2200                                    |
| 35HH845     | 45                         | M8              | 35                   | 12    | 1800/2500                                    |
| 35HH850     | 50                         | M8              | 35                   | 17    | 2000/2800                                    |
| 35HH855     | 55                         | M8              | 35                   | 17    | 2200/3000                                    |
| 35HH860     | 60                         | M8              | 35                   | 17    | 2400/3300                                    |
| 35HH1030    | 30                         | M10             | 35                   | 9     | 1200/1600                                    |
| 35HH1035    | 35                         | M10             | 35                   | 12    | 1400/1900                                    |
| 35HH1040    | 40                         | M10             | 35                   | 12    | 1600/2200                                    |
| 35HH1045    | 45                         | M10             | 35                   | 12    | 1800/2500                                    |
| 35HH1050    | 50                         | M10             | 35                   | 17    | 2000/2800                                    |
| 35HH1055    | 55                         | M10             | 35                   | 17    | 2200/3000                                    |
| 35HH1060    | 60                         | M10             | 35                   | 17    | 2400/3300                                    |
| 45HH1035    | 35                         | M10             | 45                   | 12    | 1400/1900                                    |
| 45HH1040    | 40                         | M10             | 45                   | 12    | 1600/2200                                    |
| 45HH1045    | 45                         | M10             | 45                   | 12    | 1800/2500                                    |
| 45HH1050    | 50                         | M10             | 45                   | 17    | 2000/2800                                    |
| 45HH1055    | 55                         | M10             | 45                   | 17    | 2200/3000                                    |
| 45HH1060    | 60                         | M10             | 45                   | 17    | 2400/3300                                    |
| 45HH1070    | 70                         | M10             | 45                   | 22    | 2800/3900                                    |
| 45HH1080    | 80                         | M10             | 45                   | 22    | 3200/4400                                    |
| 45HH1090    | 90                         | M10             | 45                   | 22    | 3600/5000                                    |
| 45HH10100   | 100                        | M10             | 45                   | 22    | 4000/5600                                    |
| 45HH1235    | 35                         | M12             | 45                   | 12    | 1400/1900                                    |
| 45HH1240    | 40                         | M12             | 45                   | 12    | 1600/2200                                    |
| 45HH1245    | 45                         | M12             | 45                   | 12    | 1800/2500                                    |
| 45HH1250    | 50                         | M12             | 45                   | 17    | 2000/2800                                    |
| 45HH1255    | 55                         | M12             | 45                   | 17    | 2200/3000                                    |
| 45HH1260    | 60                         | M12             | 45                   | 17    | 2400/3300                                    |
| 45HH1270    | 70                         | M12             | 45                   | 22    | 2800/3900                                    |
| 45HH1280    | 80                         | M12             | 45                   | 22    | 3200/4400                                    |
| 45HH1290    | 90                         | M12             | 45                   | 22    | 3600/5000                                    |
| 45HH12100   | 100                        | M12             | 45                   | 22    | 4000/5600                                    |

A

wsporcze | standoff

4) Walcowe o podstawie sześciokątnej RH | *Round hex*



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | Wymiary / Dimensions |       | Napięcie pracy<br>Nominal voltage<br>(AC/DC) |
|-------------|----------------------------|-----------------|----------------------|-------|--|
|             |                            |                 | A/F mm               | Hb mm |  |
| 20RH620     | 20                         | M6              | 20                   | 5     | 800/1100                                     |
| 20RH625     | 25                         | M6              | 20                   | 7     | 1000/1400                                    |
| 30RH830     | 30                         | M8              | 30                   | 9     | 1200/1600                                    |
| 30RH840     | 40                         | M8              | 30                   | 12    | 1600/2200                                    |
| 30RH1030    | 30                         | M10             | 30                   | 9     | 1200/1600                                    |
| 30RH1040    | 40                         | M10             | 30                   | 12    | 1600/2200                                    |
| 40RH1030    | 30                         | M10             | 40                   | 9     | 1200/1600                                    |

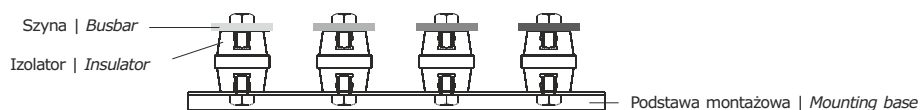
A

wsporcze | standoff

**DANE TECHNICZNE**  
*TECHNICAL SPECIFICATION*

**Tworzywo** DMC | *Material: DMC (Dough Moulding Compound)*  
**Gwint** stal (ocynkowana) | *Insert: steel (zinc passivated)*  
**Wszystkie wymiary są w mm** | *All dimensions are in mm*  
**HB: Efektywna długość gwintu** | *HB: Effective thread length*

**Sposób montażu** | *Mounting arrangement:*

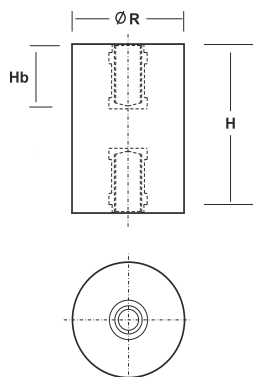


Inne izolatory wsporcze  
*Other standoff insulators*  
strona | page **18-22**

Charakterystyka tworzywa  
*Material characteristics*  
strona | page **29**



5) Walcowe CY | Cylindrical



| Kod<br>Code  | Wysokość<br>Height<br>H mm | Gwint<br>Insert | Wymiary/ Dimensions |       | Napięcie pracy<br>Nominal voltage<br>(AC/DC) |
|--------------|----------------------------|-----------------|---------------------|-------|--|
|              |                            |                 | R mm                | Hb mm |  |
| CY3030 (M6)  | 30                         | M6              | 30                  | 9     | 1200/1600                                    |
| CY3030 (M8)  | 30                         | M8              | 30                  | 9     | 1200/1600                                    |
| CY3030 (M10) | 30                         | M10             | 30                  | 9     | 1200/1600                                    |
| CY3040 (M6)  | 40                         | M6              | 30                  | 12    | 1600/2200                                    |
| CY3040 (M8)  | 40                         | M8              | 30                  | 12    | 1600/2200                                    |
| CY3040 (M10) | 40                         | M10             | 30                  | 12    | 1600/2200                                    |
| CY3050 (M6)  | 50                         | M6              | 30                  | 12    | 2000/2800                                    |
| CY3050 (M8)  | 50                         | M8              | 30                  | 17    | 2000/2800                                    |
| CY3050 (M10) | 50                         | M10             | 30                  | 17    | 2000/2800                                    |
| CY3060 (M6)  | 60                         | M6              | 30                  | 12    | 2400/3300                                    |
| CY3060 (M8)  | 60                         | M8              | 30                  | 17    | 2400/3300                                    |
| CY3060 (M10) | 60                         | M10             | 30                  | 17    | 2400/3300                                    |
| CY4040 (M8)  | 40                         | M8              | 40                  | 12    | 1600/2200                                    |
| CY4040 (M10) | 40                         | M10             | 40                  | 12    | 1600/2200                                    |

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

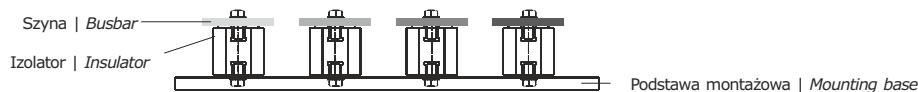
**Tworzywo DMC | Material: DMC (Dough Moulding Compound)**

**Gwint stal (ocynkowana) | Insert: steel (zinc passivated)**

**Wszystkie wymiary są w mm | All dimensions are in mm**

**HB: Efektywna długość gwintu | HB: Effective thread length**

**Sposób montażu | Mounting arrangement:**



| Kod<br>Code  | Wysokość<br>Height<br>mm | Wytrzymałość<br>na rozciąganie | Wytrzymałość<br>na zginanie | Wytrzymałość<br>na skręcanie | Napięcie<br>przebiecia<br>Breakdown<br>voltage<br>KV | Wartość IR<br>IR Value<br>MΩ |
|--------------|--------------------------|--------------------------------|-----------------------------|------------------------------|--|------------------------------|
|              |                          | Kgf                            | Kgf                         | N-m                          |  |                              |
| Cy3030 (M6)  | 30                       | 500                            | 220                         | 12                           | 30   | 15                           |
| CY3030 (M8)  | 30                       | 550                            | 220                         | 22                           | 25   | 15                           |
| CY3030 (M10) | 30                       | 700                            | 230                         | 25                           | 25   | 15                           |
| CY3040 (M6)  | 40                       | 710                            | 210                         | 12                           | 25   | 20                           |
| CY3040 (M8)  | 40                       | 752                            | 230                         | 25                           | 37   | 20                           |
| CY3040 (M10) | 40                       | 800                            | 230                         | 27                           | 38   | 20                           |
| CY3050 (M6)  | 50                       | 790                            | 200                         | 15                           | 40   | 20                           |
| CY3050 (M8)  | 50                       | 990                            | 220                         | 31                           | 35   | 20                           |
| CY3050 (M10) | 50                       | 950                            | 430                         | 40                           | 40   | 20                           |
| CY3060 (M6)  | 60                       | 790                            | 110                         | 18                           | 36   | 15                           |
| CY3060 (M8)  | 60                       | 856                            | 170                         | 36                           | 38   | 15                           |
| CY3060 (M10) | 60                       | 900                            | 200                         | 45                           | 39   | 15                           |
| CY4040 (M8)  | 40                       | 1140                           | 470                         | 40                           | 38   | 15                           |
| CY4040 (M10) | 40                       | 1380                           | 520                         | 35                           | 40   | 20                           |

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 18-22

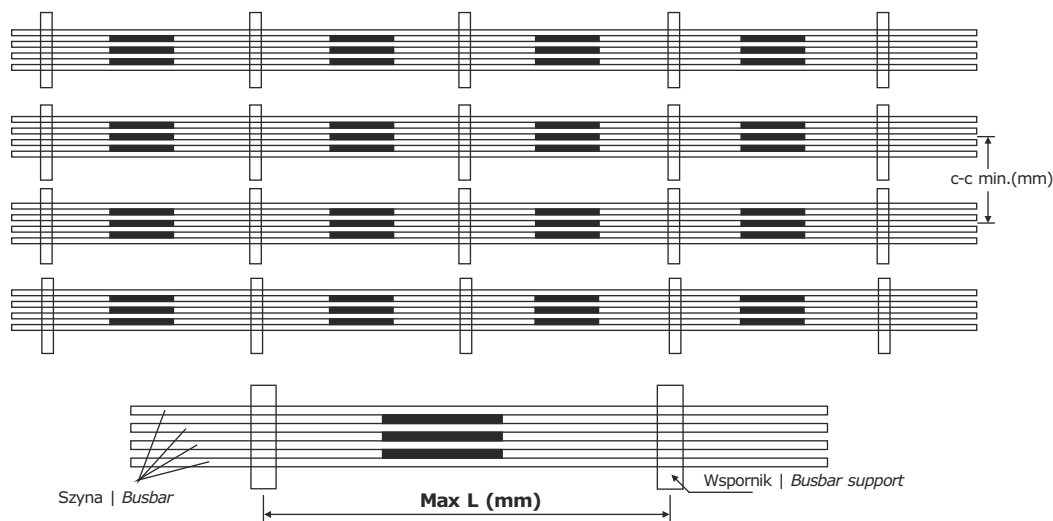
Charakterystyka tworzywa  
Material characteristics  
strona | page 29

A  
wsporcze | standoff

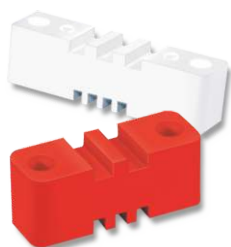
### DANE TECHNICZNE

#### TECHNICAL SPECIFICATION

ODLEGŁOŚCI MIĘDZY WSPORNIKAMI (MAX L) I SĄSIEDNIMI FAZAMI (c-c min.) W PIONOWYCH I POZIOMYCH UKŁADACH SZYN  
 DISTANCE BETWEEN CENTERS OF SUPPORTS (MAX L) AND TWO SUBSEQUENT PHASES (c-c min.) IN VERTICAL AND HORIZONTAL BARS



### 1) Wsporniki 1-biegowe | Single pole supports



| Kod<br>Code         | Szyna   Busbar<br>(mm x mm x szt.)<br>(mm x mm x pcs) | c-c min. | Max L dla prądu zwarciovego<br>Max L for short circuit current |         |         |         |
|---------------------|---|----------|--|---------|---------|---------|
|                     |   |          | 25kA 1s  | 35kA 1s | 50kA 1s | 65kA 1s |
| <b>11-P-311/214</b> | 100 x 10 x 3  | 200      | 1000   | 1000    | 830     | 490     |
|                     | 100 x 12 x 2  | 200      | 1000   | 1000    | 1000    | 690     |
| <b>11-P-306/211</b> | 100 x 6 x 3   | 200      | 1000   | 870     | 420     | 250     |
|                     | 100 x 10 x 2  | 200      | 1000   | 1000    | 850     | 500     |
| <b>12-P-406/311</b> | 100 x 6 x 4   | 250      | 1000   | 1000    | 520     | 300     |
|                     | 100 x 10 x 3  | 250      | 1000   | 1000    | 1000    | 630     |
| <b>14-P-411/000</b> | 100 x 10 x 4  | 250      | 1000   | 1000    | 1000    | 630     |
| <b>22-P-411</b>     | 100 x 10 x 4  | 170      | 1000   | 1000    | 620     | 370     |
| <b>20-P-211</b>     | 100 x 10 x 2  | 120      | 1000   | 890     | 440     | 260     |
| <b>21-P-311</b>     | 100 x 10 x 3  | 150      | 1000   | 1000    | 540     | 320     |

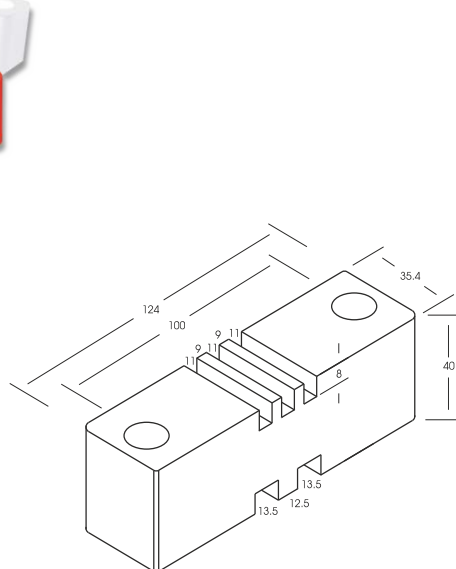
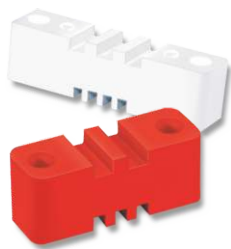
\*\* nie polecane | *not recommend*

**c-c (min.)** - minimalna odległość pomiędzy środkami 2 sąsiednich faz | *the minimum distance between the centers of two adjacent phases*

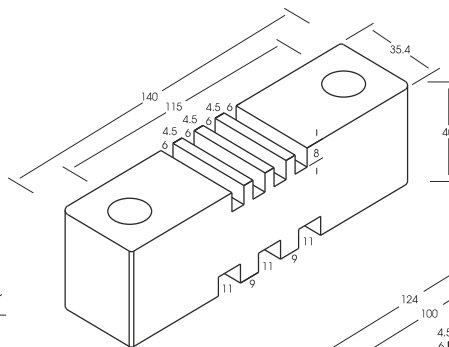
**Max L** - odległość między wspornikami w mm | *distance between centers of supports in mm*

Rysunek | *Draft*  
 strona | *page 9*

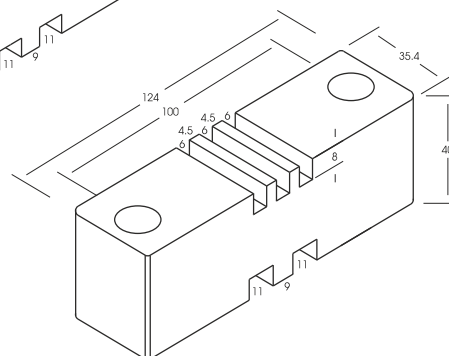
## 1) Wsporniki 1-biegunowe | Single pole supports



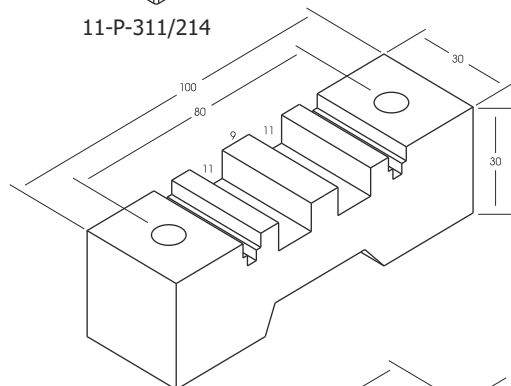
11-P-311/214



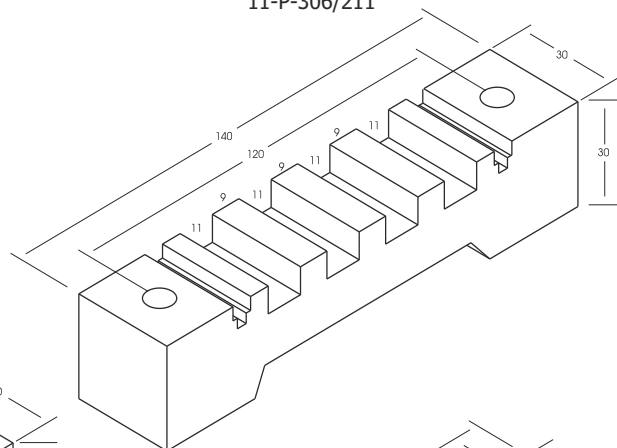
12-P-306/311



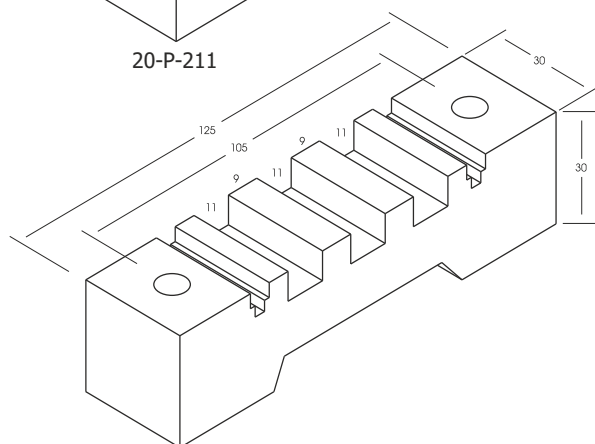
11-P-306/211



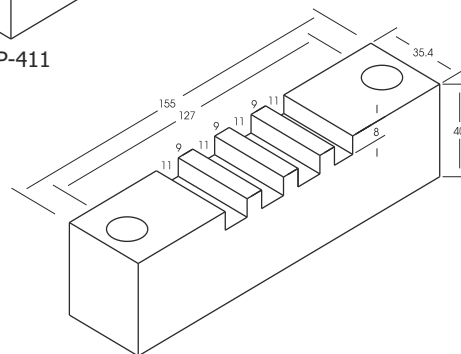
20-P-211



22-P-411



21-P-311

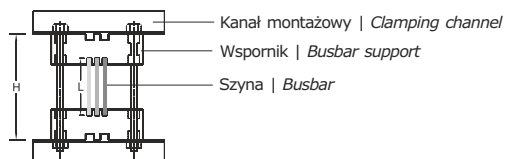


14-P-411/000

### DANE TECHNICZNE TECHNICAL SPECIFICATION

**Tworzywo DMC lub SMC | Material: DMC or SMC**  
**Otwór montażowy 8,5 mm | Mounting hole: 8,5 mm**

**Sposób montażu | Mounting arrangement:**



**H=L + 64 mm (11P, 12P, 14P)**

**H=L + 44 mm (20P, 21P, 22P)**

Charakterystyka tworzywa  
Material characteristics  
strona | page 29

A

układy pionowe | vertical bars

## 2) Wsporniki 3-biegunowe | Three pole supports



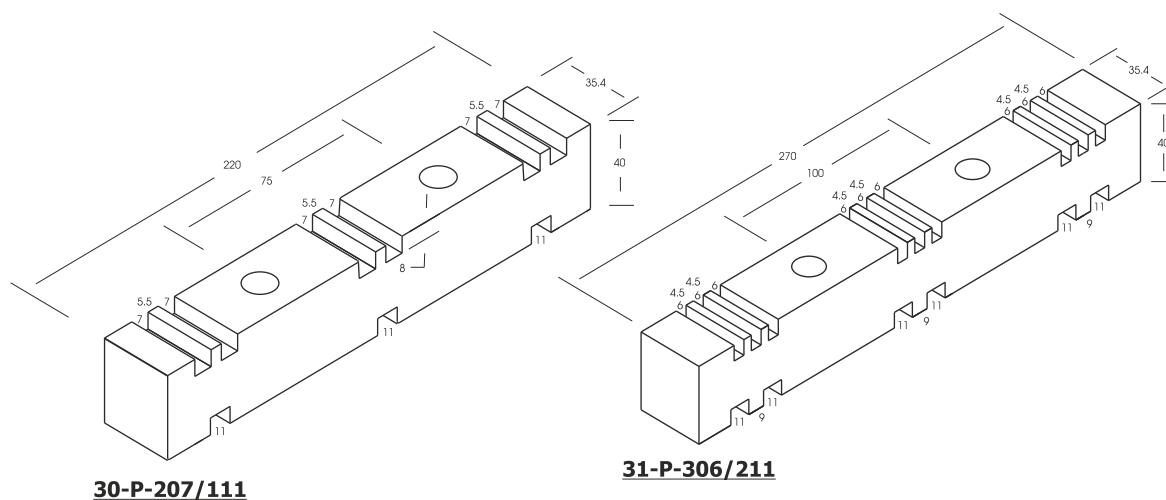
| Kod<br>Code         | Szyna   Busbar<br>(mm x mm x szt.)<br>(mm x mm x pcs) | c-c min. | Max L dla prądu zwarciovego<br>Max L for short circuit current |         |         |         |
|---------------------|---|----------|--|---------|---------|---------|
|                     |   |          | 25kA 1s  | 35kA 1s | 50kA 1s | 65kA 1s |
| <b>30-P-207/111</b> | 100 x 6 x 2   | 75       | 780  | 400     | 200     | **      |
|                     | 100 x 10 x 1  | 75       | 1000   | 1000    | 1000    | 610     |
| <b>31-P-306/211</b> | 100 x 6 x 3   | 100      | 860  | 440     | 210     | **      |
|                     | 100 x 10 x 2  | 100      | 1000   | 870     | 430     | 250     |
| <b>31-P-211/214</b> | 100 x 10 x 2  | 100      | 1000   | 870     | 430     | 250     |
|                     | 100 x 12 x 2  | 100      | 1000   | 1000    | 590     | 350     |
| <b>61-P-306/211</b> | 100 x 6 x 3   | 100      | 860  | 440     | 210     | **      |
|                     | 100 x 10 x 2  | 100      | 1000   | 870     | 430     | 250     |
| <b>61-P-211/214</b> | 100 x 10 x 2  | 100      | 890  | 430     | 250     | **      |
|                     | 100 x 12 x 2  | 100      | 1000   | 560     | 350     | 230     |
| <b>62-P-211/214</b> | 100 x 10 x 2  | 125      | 1000   | 530     | 320     | 220     |
|                     | 100 x 12 x 2  | 125      | 1000   | 740     | 440     | 290     |

\*\* nie polecane | *not recommend*

**c-c (min.)** - minimalna odległość pomiędzy środkami 2 sąsiednich faz | *the minimum distance between the centers of two adjacent phases*

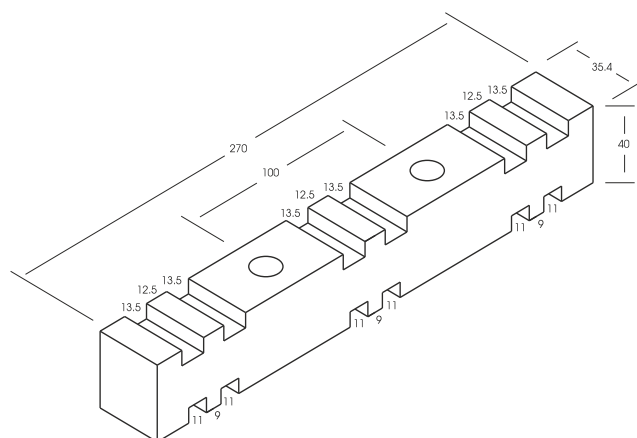
**Max L** - odległość między wspornikami w mm | *distance between centers of supports in mm*

Rysunek | *Draft*  
strona | *page 10-11*



**30-P-207/111**

**31-P-306/211**

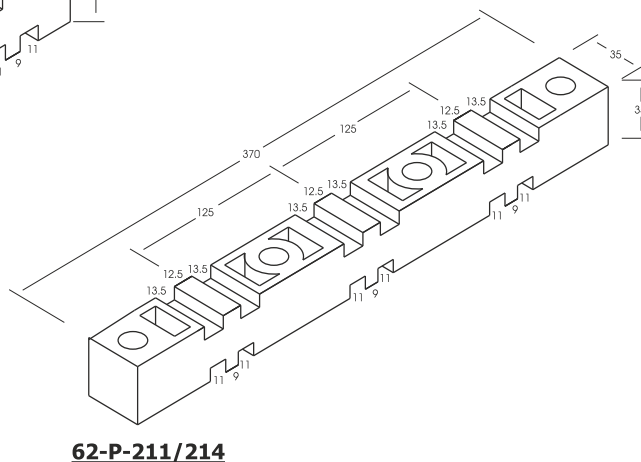
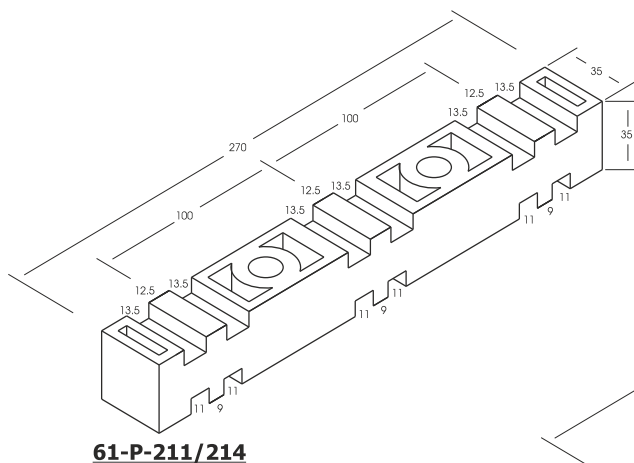
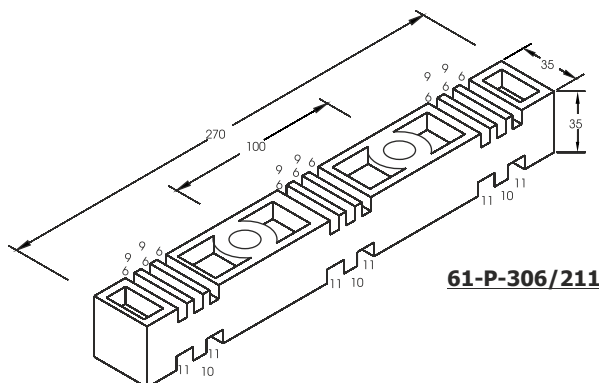


**31-P-211/214**

A

układy pionowe | vertical bars

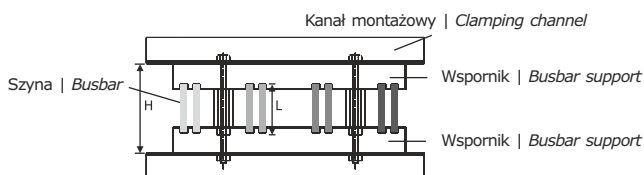
2) Wsporniki 3-biegunowe | Three pole supports



**DANE TECHNICZNE**  
TECHNICAL  
SPECIFICATION

**Tworzywo SMC | Material: SMC**  
**Otwór montażowy 8,5 mm | Mounting hole: 8,5 mm**

**Sposób montażu | Mounting arrangement:**



**H=L + 64 mm (30P, 31P, 42P, 65P, 92P)**  
**H=L + 54 mm (61P, 62P)**

Charakterystyka tworzywa  
Material characteristics  
strona | page 29

A

układy pionowe | vertical bars



3) Wsporniki 4-biegunowe | Four pole supports



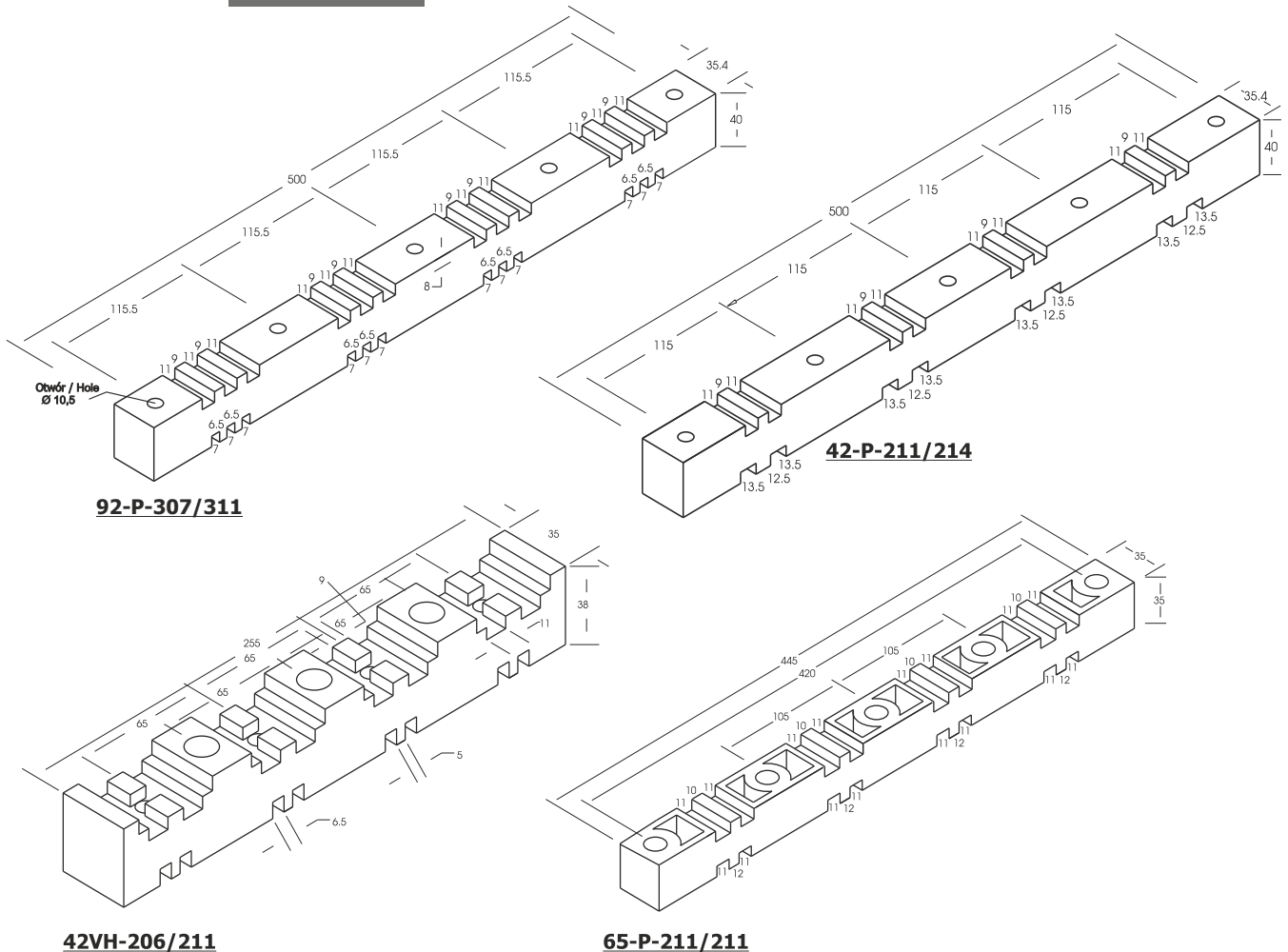
| Kod<br>Code   | Szyna   Busbar<br>(mm x mm x szt.)<br>(mm x mm x pcs) | c-c min. | Max L dla prądu zwarciovego<br>Max L for short circuit current |         |         |         |
|---------------|---|----------|--|---------|---------|---------|
|               |   |          | 25kA 1s  | 35kA 1s | 50kA 1s | 65kA 1s |
| 42-P-211/214  | 100 x 10 x 2  | 115      | 1000   | 1000    | 490     | 290     |
|               | 100 x 12 x 2  | 115      | 1000   | 1000    | 680     | 400     |
| 92-P-307/311  | 100 x 6 x 3   | 115      | 730  | 360     | 210     | **      |
|               | 100 x 10 x 3  | 115      | 1000   | 500     | 300     | **      |
| 42-VH-206/211 | 100 x 6 x 2   | 65       | 350  | 200     | **      | **      |
|               | 100 x 10 x 2  | 65       | 580  | 320     | **      | **      |
| 65-P-211/211  | 100 x 10 x 2  | 105      | 1000   | 500     | 300     | 200     |

\*\* nie polecane | not recommend

c-c (min.) - minimalna odległość pomiędzy środkami 2 sąsiednich faz | the minimum distance between the centers of two adjacent phases

Max L - odległość między wspornikami w mm | distance between centers of supports in mm

Rysunek | Draft  
strona | page 12

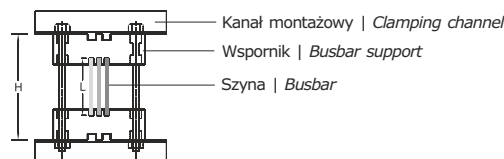


układy pionowe | vertical bars

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

Tworzywo SMC | Material: SMC  
Otwór montażowy 8,5 mm | Mounting hole: 8,5 mm

Sposób montażu | Mounting arrangement:



H=L + 64 mm (30P, 31P, 42P, 65P, 92P)  
H=L + 54 mm (61P, 62P)

Charakterystyka tworzywa  
Material characteristics  
strona | page 29

## 1) Wsporniki 1, 3 i 4-biegunowe | Single, three and four pole supports



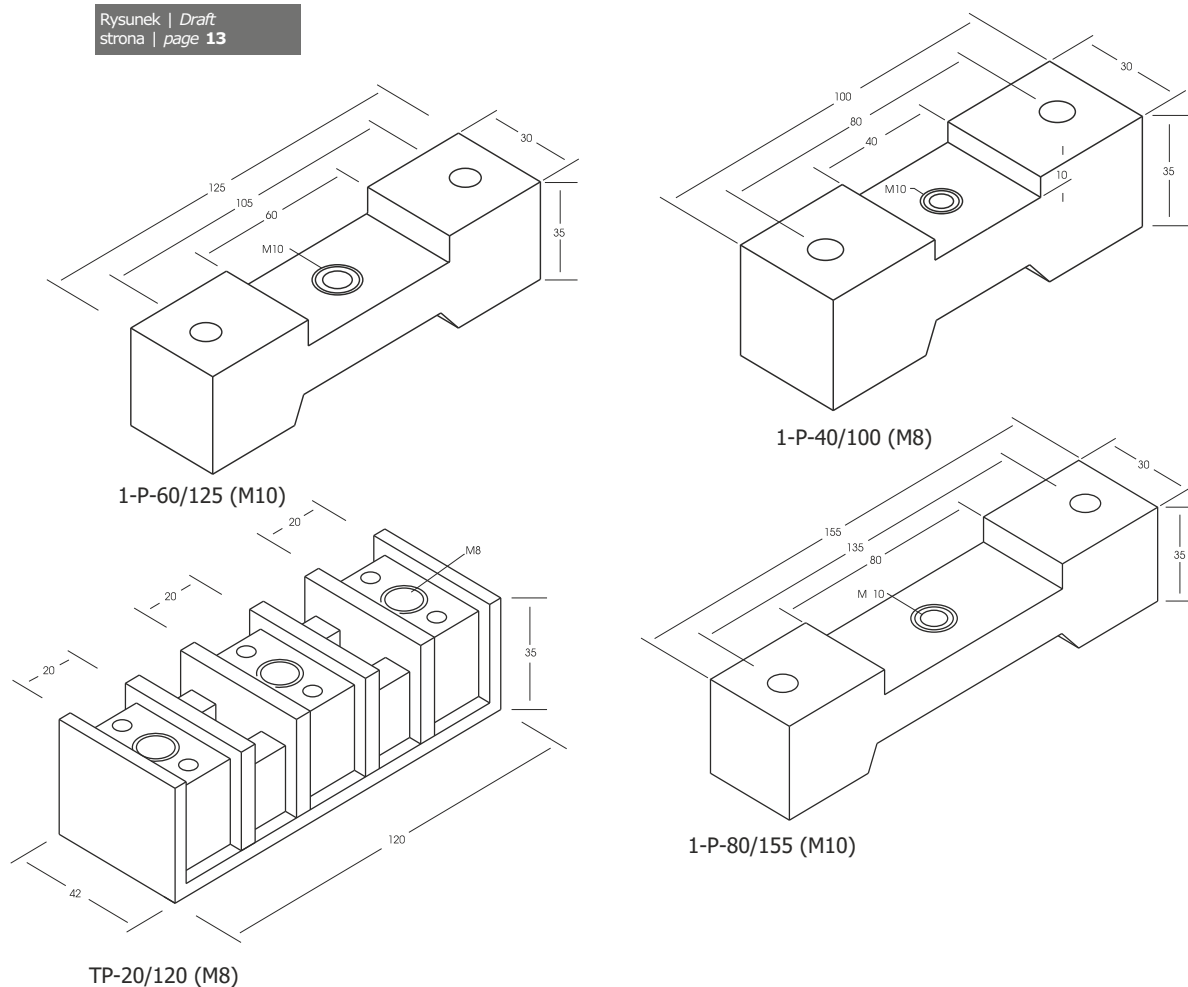
| Kod<br>Code             | Szyna   Busbar<br>(mm x mm x szt.)<br>(mm x mm x pcs) | c-c min. | Max L dla prądu zwarciego<br>Max L for short circuit current |         |         |
|-------------------------|---|----------|--|---------|---------|
|                         |   |          | 25kA 1s  | 35kA 1s | 50kA 1s |
| <b>1-P-40/100</b>       | 40 x 6 x 1  | 120      | 600  | 400     | **      |
|                         | 40 x 5 x 2  | 120      | 550  | 350     | **      |
| <b>1-P-60/125</b>       | 60 x 5 x 1  | 150      | 740  | 375     | 220     |
|                         | 60 x 5 x 2  | 150      | 700  | 350     | 200     |
| <b>1-P-80/155</b>       | 80 x 5 x 1  | 170      | 700  | 430     | 210     |
|                         | 80 x 6 x 2  | 170      | 650  | 400     | 200     |
| <b>TP-20/120 (M8)</b>   | 20 x 60 x 1   | 45       | 500  | 300     | 200     |
| <b>TP-50/270 (M10)</b>  | 50 x 10 x 1   | 70       | 1000   | 700     | 330     |
| <b>TP-100/500 (M10)</b> | 100 x 10 x 1  | 141      | 1000   | 500     | 250     |

\*\* nie polecane | *not recommend*

**c-c (min.)** - minimalna odległość pomiędzy środkami 2 sąsiednich faz | *the minimum distance between the centers of two adjacent phases*

**Max L** - odległość między wspornikami w mm | *distance between centers of supports in mm*

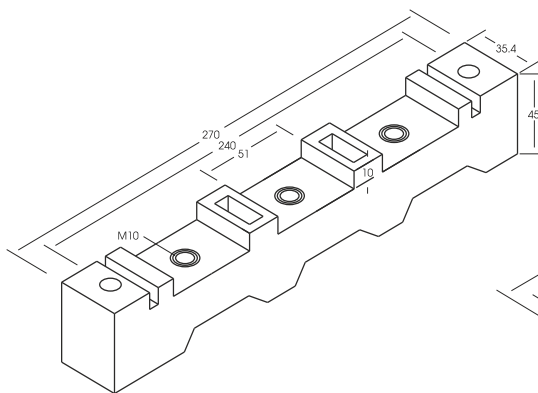
Rysunek | *Draft*  
strona | *page 13*



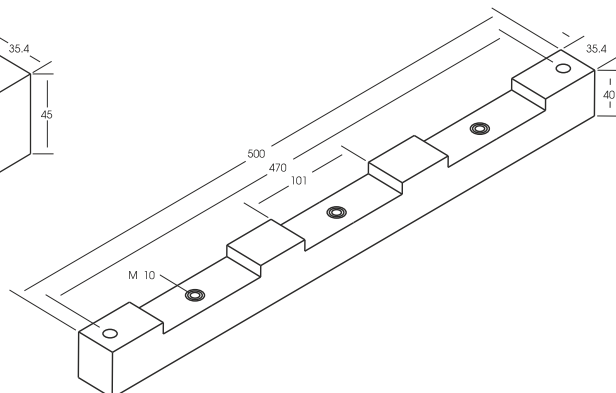
A

układy poziome | horizontal bars

1) Wsporniki 1, 3 i 4-biegunowe | Single, three and four pole supports



TP-50/270 (M10)



TP-100/500 (M10)

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

**Tworzywo:** SMC lub DMC | *Material: SMC or DMC*  
**Otwór montażowy:** 8,5 mm | *Mounting hole: 8,5 mm*

Charakterystyka tworzywa  
*Material characteristics*  
strona | page 29

układy poziome | horizontal bars

2) Wsporniki 1-biegunowe typu SP | Single pole busbar supports SP



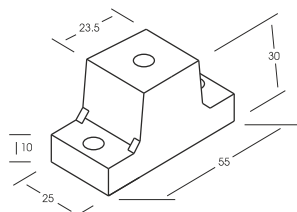
| Kod<br>Code | Szyna   Busbar<br>(mm x mm x szt.)<br>(mm x mm x pcs) | c-c min. | Max L dla prądu zwarciovego<br>Max L for short circuit current |         |         |         |
|-------------|---|----------|--|---------|---------|---------|
|             |   |          | 10kA 1s  | 15kA 1s | 20kA 1s | 25kA 1s |
| SP 30       | 25 x 5 x 1  | 80       | 500  | 200     | 130     | **      |
| SP 35       | 50 x 6 x 1  | 100      | 500  | 410     | 230     | 150     |

\*\* nie polecane | *not recommend*

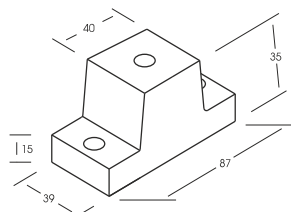
**c-c (min.)** - minimalna odległość pomiędzy środkami 2 sąsiednich faz | *the minimum distance between the centers of two adjacent phases*

**Max L** - odległość między wspornikami w mm | *distance between centers of supports in mm*

Rysunek | *Draft*  
strona | page 14



SP-30



SP-35

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

**Tworzywo:** SMC lub DMC | *Material: SMC or DMC*  
**Otwór montażowy:** 8,5 mm | *Mounting hole: 8,5 mm*

Charakterystyka tworzywa  
*Material characteristics*  
strona | page 29

3) Wsporniki schodkowe | Step supports



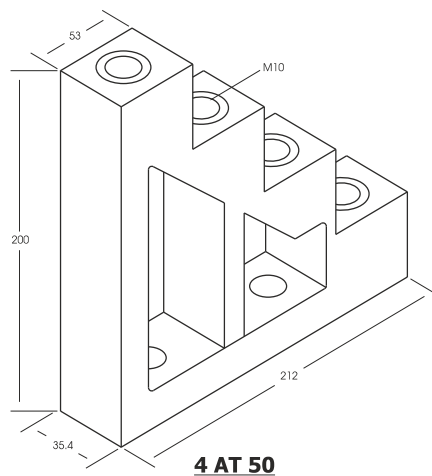
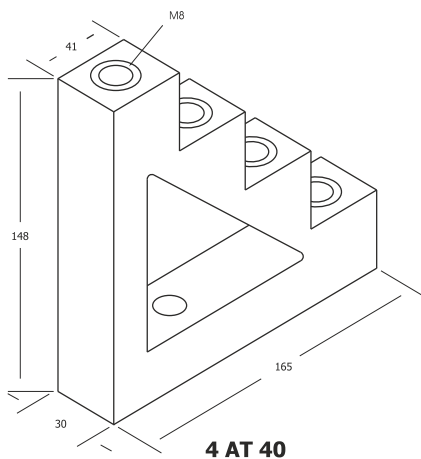
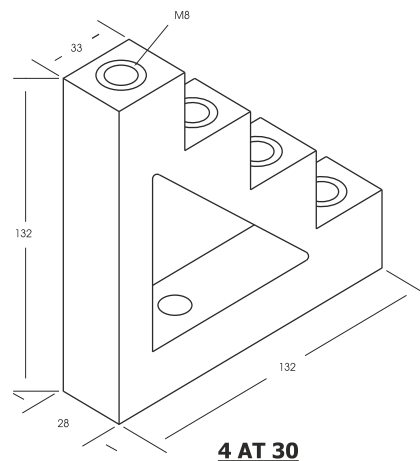
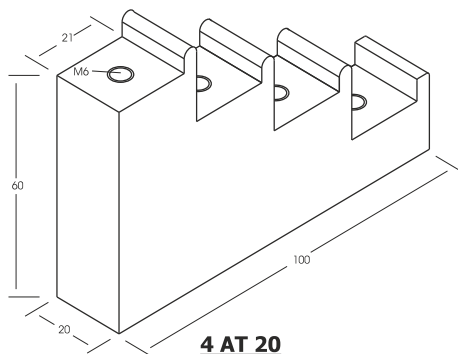
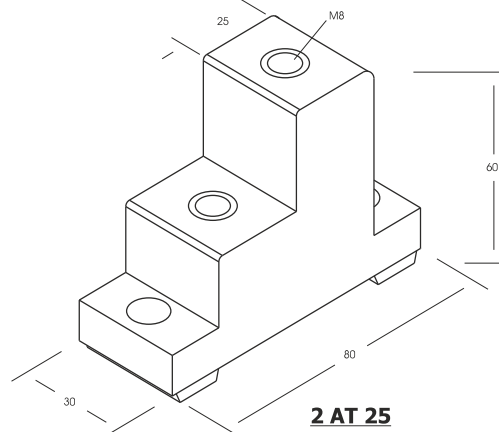
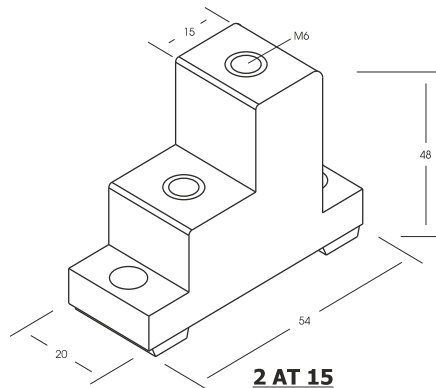
| Kod<br>Code | Szyna   Busbar<br>(mm x mm x szt.)<br>(mm x mm x pcs) | Max L dla prądu zwarcowego<br>Max L for short circuit current |          |          |          |          |
|-------------|---|---|----------|----------|----------|----------|
|             |   | 10 kA 1s  | 15 kA 1s | 25 kA 1s | 35 kA 1s | 50 kA 1s |
| 2AT 15      | 15 x 3 x 1  | 200   | **       | **       | **       | **       |
| 2AT 25      | 25 x 5 x 1  | 550   | 250      | **       | **       | **       |
| 4AT 20      | 20 x 5 x 1  | 490   | 220      | **       | **       | **       |
| 4AT 30      | 32 x 5 x 1  | 750   | 600      | 350      | 250      | **       |
| 4AT 40      | 40 x 6 x 1  | 750   | 600      | 320      | 250      | **       |
| 4AT 50      | 50 x 6 x 1  | 750   | 750      | 750      | 550      | 300      |
| 4BT 30      | 32 x 5 x 1  | 750   | 750      | 500      | 300      | **       |
| 4BT 40      | 40 x 6 x 1  | 750   | 750      | 500      | 300      | 250      |
| 4BT 50      | 50 x 6 x 1  | 750   | 750      | 600      | 450      | 320      |
| 5AT 25      | 25 x 5 x 1  | 200   | 120      | **       | **       | **       |

\*\* nie polecane | not recommend

c-c (min.) - minimalna odległość pomiędzy środkami 2 sąsiednich faz | the minimum distance between the centers of two adjacent phases

Max L - odległość między wspornikami w mm | distance between centers of supports in mm

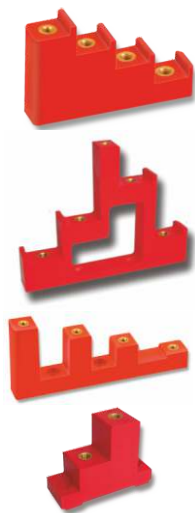
Rysunek | Draft  
strona | page 15



A

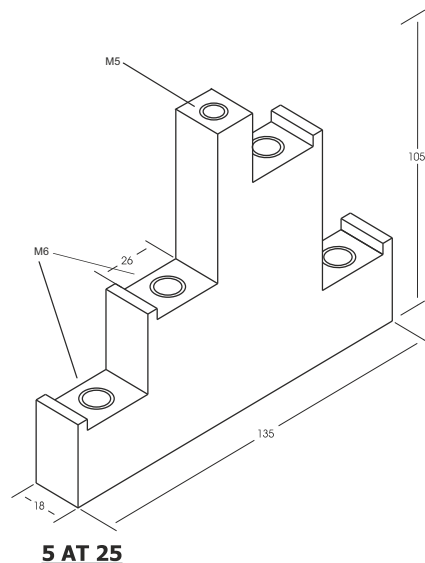
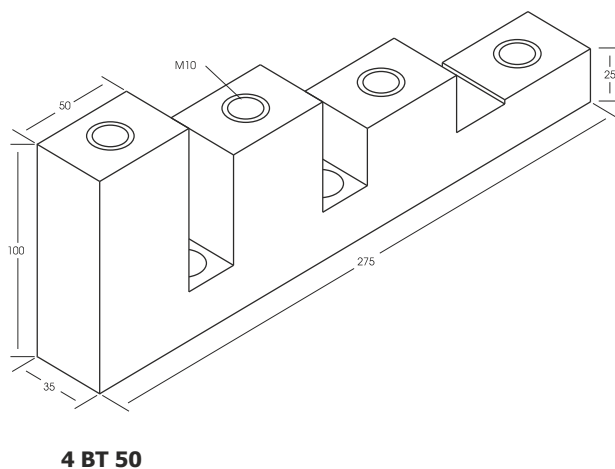
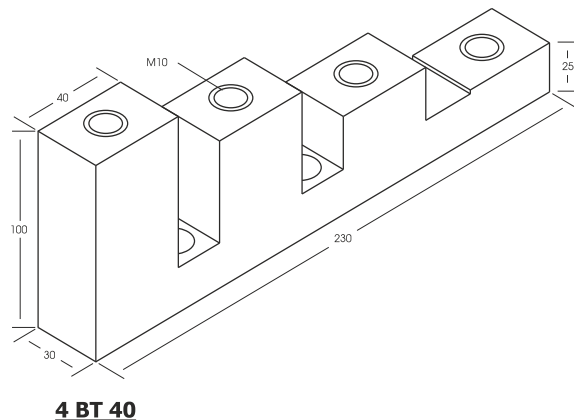
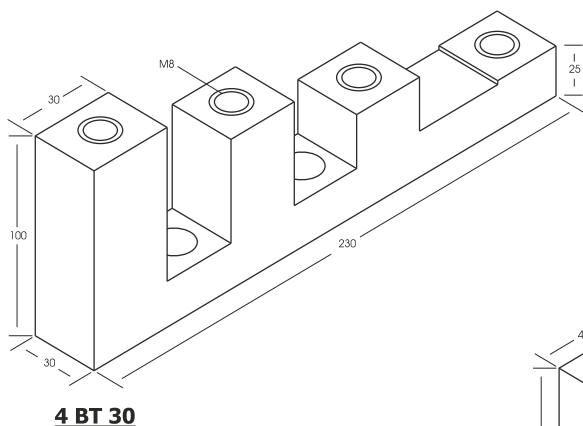
układy poziome | horizontal bars

3) Wsporniki schodkowe | *Step supports*



A

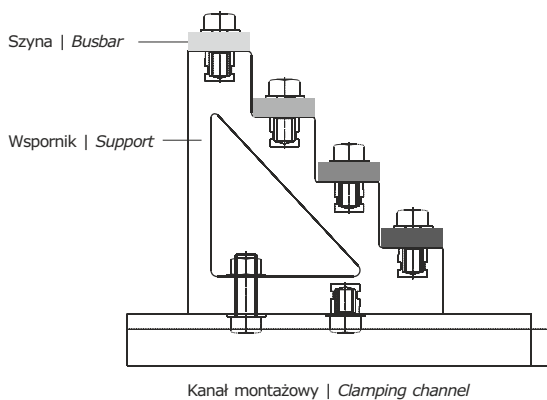
układy poziome | *horizontal bars*



**DANE TECHNICZNE**  
*TECHNICAL SPECIFICATION*

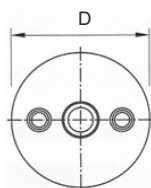
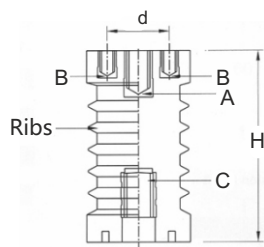
**Tworzywo DMC** | *Material: DMC (Dough Moulding Compound)*

**Sposób montażu** | *Mounting arrangement:*



Charakterystyka tworzywa  
*Material characteristics*  
strona | *page 29*





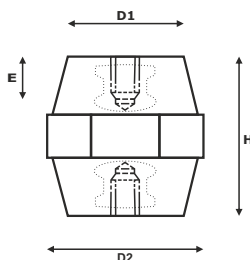
| Kod<br>Code       | Napięcie<br>znamionowe<br>Rated voltage | Ø D<br>mm | L<br>mm | Ø d<br>mm | A<br>mm  | B<br>mm  | C<br>mm  |
|-------------------|---|-----------|---------|-----------|----------|----------|----------|
| <b>MV 6040</b>    | 3,5 kV                                  | 60        | 40      | 36        | M10 x 15 | M8 x 12  | M10 x 15 |
| <b>MV 606560</b>  | 5,5 kV                                  | 60/65     | 60      | 36        | M12 x 20 | M8 x 20  | M12 x 20 |
| <b>MV 859060</b>  | 5,5 kV                                  | 85/90     | 60      | 60        | M16 x 20 | M10 x 20 | M16 x 20 |
| <b>MV 6075</b>    | 6,8 kV                                  | 60        | 75      | 36        | M10 x 20 | M6 x 15  | M12 x 25 |
| <b>PDMV 6075</b>  | 6,8 kV                                  | 60        | 75      | 36        | M10 x 20 | M8 x 15  | M12 x 25 |
| <b>MV 6090</b>    | 8,5 kV                                  | 60        | 90      | 36        | M10 x 20 | M6 x 15  | M12 x 25 |
| <b>PDMV 6090</b>  | 8,5 kV                                  | 60        | 90      | 36        | M10 x 20 | M8 x 15  | M12 x 25 |
| <b>MV 60130</b>   | 12 kV                                   | 60        | 130     | 36        | M12 x 25 | M6 x 15  | M16 x 35 |
| <b>PDMV 60130</b> | 12 kV                                   | 60        | 130     | 36        | M12 x 25 | M8 x 15  | M16 x 35 |
| <b>MV 75130</b>   | 12 kV                                   | 75        | 130     | 45        | M16 x 35 | M10 x 20 | M20 x 40 |
| <b>MV 70210</b>   | 22 kV                                   | 70        | 210     | 36        | M10 x 25 | M6 x 15  | M16 x 55 |
| <b>PDMV 70210</b> | 22 kV                                   | 70        | 210     | 36        | M10 x 25 | M8 x 15  | M16 x 55 |
| <b>MV 80300</b>   | 35 kV                                   | 80        | 300     | 36        | M10 x 25 | M6 x 16  | M16 x 75 |
| <b>PDMV 80300</b> | 35 kV                                   | 80        | 300     | 36        | M10 x 25 | M8 x 15  | M16 x 75 |
| <b>MV 95300</b>   | 35 kV                                   | 95        | 300     | 46        | M16 x 55 | M10 x 20 | M22 x 65 |

A

średnie napięcie / medium voltage

**Tworzywo Żywica** | Material: Cast resin  
**Temperatura pracy** -40°C ~ +135°C | Operating temperature: -40°C ~ +135°C

## 1) DB / P



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | Wymiary/ Dimensions |       |       | Moment<br>dokręcania<br>Tightening torque | Napięcie pracy<br>Operating voltage |
|-------------|----------------------------|-----------------|---------------------|-------|-------|---|-------------------------------------|
|             |                            |                 | E mm                | D1 mm | D2 mm |   |                                     |
| DB 12/P     | 12                         | M3              | 3                   | 10    | 11    | 1 Nm                                      | 220 V                               |
|             |                            | M4              | 3                   |       |       | 2 Nm                                      |                                     |
| DB 16/P     | 16                         | M3              | 4                   | 13    | 14    | 2 Nm                                      | 380 V                               |
|             |                            | M4              | 4                   |       |       | 4 Nm                                      |                                     |
| DB 20/P     | 20                         | M4              | 6                   | 15    | 17    | 4 Nm                                      | 500 V                               |
|             |                            | M5              | 6                   |       |       | 5 Nm                                      |                                     |
| DB 25/P     | 25,2                       | M6              | 5                   | 15    | 19    | 8 Nm                                      | 600 V                               |
|             |                            | M5              | 7                   |       |       | 6 Nm                                      |                                     |
| DB 30/P     | 30                         | M6              | 6                   | 26    | 30    | 8 Nm                                      | 600 V                               |
|             |                            | M8              | 8                   |       |       | 12 Nm                                     |                                     |
| DB 34/P     | 35                         | M6              | 10                  | 28    | 32    | 16 Nm                                     | 1000 V                              |
|             |                            | M8              | 10                  |       |       | 12 Nm                                     |                                     |
| DB 35/P     | 35,5                       | M10             | 10                  | 35    | 41    | 18 Nm                                     | 1000 V                              |
|             |                            | M6              | 10                  |       |       | 24 Nm                                     |                                     |
| DB 40/P     | 40                         | M8              | 10                  | 40    | 46    | 20 Nm                                     | 1000 V                              |
|             |                            | M10             | 10                  |       |       | 20 Nm                                     |                                     |
| DB 45/P     | 45                         | M12             | 12                  | 35    | 41    | 24 Nm                                     | 1500 V                              |
|             |                            | M6              | 13                  |       |       | 10 Nm                                     |                                     |
| DB 50/P     | 51                         | M8              | 12                  | 29    | 36    | 20 Nm                                     | 2000 V                              |
|             |                            | M10             | 12                  |       |       | 22 Nm                                     |                                     |
| DB 60/P     | 60                         | M12             | 12                  | 46    | 55    | 26 Nm                                     | 2000 V                              |
|             |                            | M8              | 14                  |       |       | 10 Nm                                     |                                     |
| DB 65/P     | 63,5                       | M10             | 16                  | 35    | 41    | 22 Nm                                     | 3000 V                              |
|             |                            | M6              | 17                  |       |       | 12 Nm                                     |                                     |
| DB 70/P     | 70                         | M8              | 16                  | 52    | 65    | 26 Nm                                     | 4000 V                              |
|             |                            | M10             | 16                  |       |       | 26 Nm                                     |                                     |
| DB 75/P     | 76                         | M16             | 23                  | 36    | 50    | 50 Nm                                     | 5000 V                              |
|             |                            | M8              | 17                  |       |       | 22 Nm                                     |                                     |
| DB 750/P    | 75                         | M10             | 16                  | 52    | 65    | 26 Nm                                     | 5000 V                              |
|             |                            | M12             | 17                  |       |       | 36 Nm                                     |                                     |
| DB 100/P    | 101                        | M8              | 19                  | 52    | 65    | 22 Nm                                     | 8000 V                              |
|             |                            | M10             | 20                  |       |       | 26 Nm                                     |                                     |
|             |                            | M12             | 20                  |       |       | 36 Nm                                     |                                     |
|             |                            | M16             | 21                  |       |       | 50 Nm                                     |                                     |
|             |                            | M10             | 20                  |       |       | 26 Nm                                     |                                     |
|             |                            | M12             | 19                  |       |       | 36 Nm                                     |                                     |
|             |                            | M16             | 23                  |       |       | 50 Nm                                     |                                     |

### DANE TECHNICZNE TECHNICAL SPECIFICATION

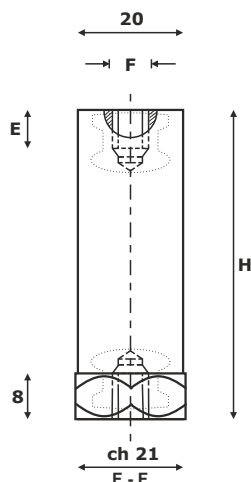
**Tworzywo** Poliester wzmocniony włóknem szklanym | *Material: Polyglass polyester* 1DN ≈ 1Kg  
**Temperatura pracy** -40°C ~ +130°C | *Operating temperature: -40°C ~ +130°C*  
**Próba ogniowa, klasa** UL94 - V0, HL2, EN 45545-2 | *Fire reaction, class: UL94 - V0, HL2, EN 45545-2*  
**Wytrzymałość mechaniczna** tolerancja ± 10% | *Breaking charges: tolerance ± 10%*

| Kod<br>Code | Napięcie przeskoku<br>iskry po powierzchni<br>AC surface flashover<br>voltage | Napięcie przebicia<br>izolatora wewnątrz<br>AC internal flashover<br>voltage | Wytrzymałość<br>na rozciąganie<br>Tensile strength | Wytrzymałość<br>na zginanie<br>Flexural strength | Wytrzymałość<br>na ściskanie<br>Compressive strength | Wytrzymałość<br>na skręcanie<br>Torsional strength |
|-------------|---|--|--|--|--|--|
| DB 16/P     | 3   | 8  | 100  | 50   | 500  | 0,4  |
| DB 20/P     | 4   | 15   | 150  | 60   | 600  | 0,4  |
| DB 25/P     | 7   | 20   | 300  | 180  | 2.100  | 3  |
| DB 30/P     | 8   | 23   | 500  | 250  | 4.400  | 3  |
| DB 34/P     | 10  | 30   | 800  | 450  | 6.500  | 5  |
| DB 35/P     | 10  | 30   | 1.100  | 800  | 8.000  | 9  |
| DB 40/P     | 10  | 40   | 1.100  | 800  | 8.300  | 10   |
| DB 45/P     | 12  | 40   | 1.200  | 800  | 8.000  | 10   |
| DB 50/P     | 12  | 40   | 850  | 450  | 6.800  | 6  |
| DB 60/P     | 15  | 40   | 1.500  | 800  | 11.700   | 10   |
| DB 65/P     | 15  | 40   | 1.500  | 700  | 8.300  | 6  |
| DB 70/P     | 23  | 50   | 2.450  | 950  | 16.600   | 10   |
| DB 75/P     | 25  | 50   | 2.300  | 900  | 10.000   | 10   |
| DB 750/P    | 25  | 50   | 2.800  | 1.500  | 15.000   | 13   |
| DB 100/P    | 30  | 50   | 2.950  | 1.550  | 16.700   | 14,5   |

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 2-7

Charakterystyka tworzywa  
Material characteristics  
strona | page 31

2) CO / P



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | E<br>mm | Moment<br>dokręcania<br>Tightening torque | Napięcie pracy<br>Operating voltage |
|-------------|----------------------------|-----------------|---------|---|-------------------------------------|
| CO/P 16     | 16                         | M4              | 3       | 2 Nm                                      | 220 V                               |
|             |                            | M5              | 3       | 6 Nm                                      |                                     |
|             |                            | M6              | 3       | 8 Nm                                      |                                     |
|             |                            | M8              | 4       | 10 Nm                                     |                                     |
| CO/P 20     | 20                         | M4              | 5       | 2 Nm                                      | 400 V                               |
|             |                            | M5              | 5       | 6 Nm                                      |                                     |
|             |                            | M6              | 5       | 10 Nm                                     |                                     |
|             |                            | M8              | 5       | 10 Nm                                     |                                     |
| CO/P 25     | 25                         | M4              | 7       | 2 Nm                                      | 500 V                               |
|             |                            | M5              | 6       | 6 Nm                                      |                                     |
|             |                            | M6              | 7       | 10 Nm                                     |                                     |
|             |                            | M8              | 6       | 14 Nm                                     |                                     |
| CO/P 30     | 30                         | M4              | 8       | 2 Nm                                      | 600 V                               |
|             |                            | M5              | 8       | 8 Nm                                      |                                     |
|             |                            | M6              | 8       | 12 Nm                                     |                                     |
|             |                            | M8              | 8       | 16 Nm                                     |                                     |
| CO/P 35     | 35                         | M5              | 8       | 8 Nm                                      | 600 V                               |
|             |                            | M6              | 8       | 12 Nm                                     |                                     |
|             |                            | M8              | 8       | 16 Nm                                     |                                     |
|             |                            | M5              | 7       | 8 Nm                                      |                                     |
| M6          | 8                          | 12 Nm           |         |   |                                     |
| M8          | 8                          | 16 Nm           |         |   |                                     |
| CO/P 40     | 40                         | M5              | 10      | 8 Nm                                      | 750 V                               |
|             |                            | M6              | 10      | 12 Nm                                     |                                     |
|             |                            | M8              | 10      | 16 Nm                                     |                                     |
|             |                            | M5              | 8       | 8 Nm                                      |                                     |
| M6          | 10                         | 12 Nm           |         |   |                                     |
| M8          | 10                         | 16 Nm           |         |   |                                     |
| CO/P 45     | 45                         | M5              | 10      | 8 Nm                                      | 750 V                               |
|             |                            | M6              | 10      | 12 Nm                                     |                                     |
|             |                            | M8              | 10      | 16 Nm                                     |                                     |
|             |                            | M6              | 12      | 12 Nm                                     |                                     |
| M8          | 10                         | 16 Nm           |         |   |                                     |

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

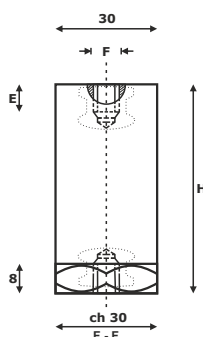
**Tworzywo** Poliester wzmocniony włóknem szklanym | *Material: Polyglass polyester* 1DN ≈ 1Kg  
**Temperatura pracy** -40°C ~ +130°C | *Operating temperature: -40°C ~ +130°C*  
**Próba ogniowa, klasa** UL94 - V0, HL2, EN 45545-2 | *Fire reaction, class: UL94 - V0, HL2, EN 45545-2*  
**Wytrzymałość mechaniczna** tolerancja ± 10% | *Breaking charges: tolerance ± 10%*

| Typ   Type  |         | CO/P 16 | CO/P 20 | CO/P 25 | CO/P 30 | CO/P 40 | CO/P 50 | CO/P 60 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Napięcie przeskoku iskry po powierzchni</b><br><i>AC surface flashover voltage</i> | KV      | -       | -       | 5       | 5       | 8       | 10      | 10      |
| <b>Napięcie przebicia izolatora wewnątrz</b><br><i>AC internal flashover voltage</i>  | KV      | -       | -       | 15      | 15      | 20      | 25      | 30      |
| <b>Wytrzymałość na rozciąganie</b><br><i>Tensile strength</i>                         | DN      | 400     | 400     | 400     | 400     | 400     | 400     | 400     |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>                           | DN      | 250     | 250     | 250     | 200     | 150     | 100     | 100     |
| <b>Wytrzymałość na ściskanie</b><br><i>Compressive strength</i>                       | DN      | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    |
| <b>Wytrzymałość na skręcanie</b><br><i>Torsional strength</i>                         | DN x mm | 0,6-1,7 | 0,6-1,7 | 0,6-1,7 | 1-2     | 1-2     | 1-2     | 1-2     |

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 2-7

Charakterystyka tworzywa  
Material characteristics  
strona | page 31

3) CS / P



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | E<br>mm | Moment<br>dokręcania<br>Tightening torque | Napięcie pracy<br>Operating voltage |
|-------------|----------------------------|-----------------|---------|---|-------------------------------------|
| CS/P 30     | 30                         | M6              | 9       | 10 Nm                                     | 750 V                               |
|             |                            | M8              | 8       | 22 Nm                                     |                                     |
|             |                            | M10             | 7       | 24 Nm                                     |                                     |
| CS/P 35     | 35                         | M6              | 10      | 10 Nm                                     | 1000 V                              |
|             |                            | M8              | 9       | 22 Nm                                     |                                     |
| CS/P 40     | 40                         | M10             | 9       | 24 Nm                                     | 1000 V                              |
|             |                            | M6              | 12      | 10 Nm                                     |                                     |
| CS/P 45     | 45                         | M8              | 12      | 22 Nm                                     | 1000 V                              |
|             |                            | M10             | 13      | 24 Nm                                     |                                     |
|             |                            | M6              | 12      | 10 Nm                                     |                                     |
| CS/P 50     | 50                         | M8              | 13      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 13      | 24 Nm                                     |                                     |
|             |                            | M6              | 12      | 10 Nm                                     |                                     |
| CS/P 55     | 55                         | M8              | 12      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 13      | 24 Nm                                     |                                     |
|             |                            | M6              | 12      | 10 Nm                                     |                                     |
| CS/P 60     | 60                         | M8              | 16      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 17      | 24 Nm                                     |                                     |
|             |                            | M6              | 13      | 10 Nm                                     |                                     |
| CS/P 65     | 65                         | M8              | 17      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 13      | 24 Nm                                     |                                     |
|             |                            | M6              | 13      | 10 Nm                                     |                                     |
| CS/P 70     | 70                         | M8              | 16      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 17      | 24 Nm                                     |                                     |

B

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

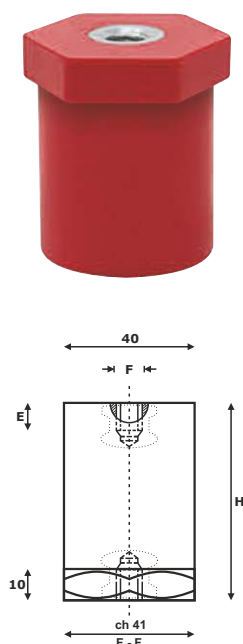
**Tworzywo** Poliester wzmocniony włóknem szklanym | *Material: Polyglass polyester* 1DN ≈ 1Kg  
**Temperatura pracy** -40°C ~ +130°C | *Operating temperature: -40°C ~ +130°C*  
**Próba ogniowa, klasa** UL94 - V0, HL2, EN 45545-2 | *Fire reaction, class: UL94 - V0, HL2, EN 45545-2*  
**Wytrzymałość mechaniczna** tolerancja ± 10% | *Breaking charges: tolerance ± 10%*

| Typ   Type   |         | CS/P 30 | CS/P 40 | CS/P 50 | CS/P 60 |
|--|---------|---------|---------|---------|---------|
| <b>Napięcie przeskoku iskry po powierzchni</b><br><i>AC suface flashover voltage</i> | KV      | 8       | 8       | 10      | 15      |
| <b>Napięcie przebicia izolatora wewnątrz</b><br><i>AC internal flashover voltage</i> | KV      | 20      | 25      | 35      | 35      |
| <b>Wytrzymałość na rozciąganie</b><br><i>Tensile strength</i>                        | DN      | 900     | 900     | 900     | 900     |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>                          | DN      | 450     | 300     | 200     | 150     |
| <b>Wytrzymałość na ściskanie</b><br><i>Compressive strength</i>                      | DN      | 4000    | 4000    | 4000    | 4000    |
| <b>Wytrzymałość na skręcanie</b><br><i>Torsional strength</i>                        | DN x mm | 1,3-2,6 | 1,3-2,6 | 1,3-2,6 | 1,3-2,6 |

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 2-7

Charakterystyka tworzywa  
Material characteristics  
strona | page 31

4) CT / P



| Kod<br>Code | Wysokość<br>Height<br>H mm | Gwint<br>Insert | E<br>mm | Moment<br>dokręcania<br>Tightening torque | Napięcie pracy<br>Operating voltage |
|-------------|----------------------------|-----------------|---------|---|-------------------------------------|
| CT/P 30     | 30                         | M6              | 9       | 12 Nm                                     | 750 V                               |
|             |                            | M8              | 9       | 22 Nm                                     |                                     |
|             |                            | M10             | 8       | 24 Nm                                     |                                     |
| CT/P 35     | 35                         | M8              | 10      | 22 Nm                                     | 750 V                               |
|             |                            | M10             | 10      | 26 Nm                                     |                                     |
| CT/P 40     | 40                         | M8              | 12      | 22 Nm                                     | 1000 V                              |
|             |                            | M10             | 13      | 24 Nm                                     |                                     |
| CT/P 45     | 45                         | M12             | 13      | 36 Nm                                     | 1000 V                              |
|             |                            | M8              | 13      | 22 Nm                                     |                                     |
| CT/P 50     | 50                         | M10             | 13      | 26 Nm                                     | 1500 V                              |
|             |                            | M12             | 12      | 36 Nm                                     |                                     |
| CT/P 55     | 55                         | M8              | 13      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 17      | 26 Nm                                     |                                     |
| CT/P 60     | 60                         | M8              | 17      | 22 Nm                                     | 1500 V                              |
|             |                            | M10             | 18      | 26 Nm                                     |                                     |
| CT/P 65     | 65                         | M12             | 16      | 36 Nm                                     | 1500 V                              |
|             |                            | M8              | 18      | 22 Nm                                     |                                     |
| CT/P 70     | 70                         | M10             | 17      | 26 Nm                                     | 1500 V                              |
|             |                            | M10             | 17      | 26 Nm                                     |                                     |

DANE TECHNICZNE  
TECHNICAL  
SPECIFICATION

**Tworzywo** Poliester wzmocniony włóknem szklanym | *Material: Polyglass polyester* 1DN ≈ 1Kg  
**Temperatura pracy** -40°C ~ +130°C | *Operating temperature: -40°C ~ +130°C*  
**Próba ogniowa, klasa** UL94 - V0, HL2, EN 45545-2 | *Fire reaction, class: UL94 - V0, HL2, EN 45545-2*  
**Wytrzymałość mechaniczna** tolerancja ± 10% | *Breaking charges: tolerance ± 10%*

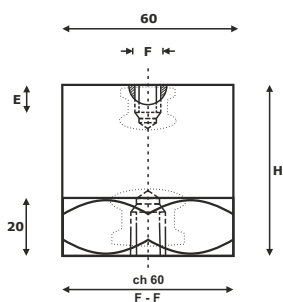
| Typ   Type   |         | CT/P 30 | CT/P 40 | CT/P 50 | CT/P 60 |
|--|---------|---------|---------|---------|---------|
| <b>Napięcie przeskoku iskry po powierzchni</b><br><i>AC suface flashover voltage</i> | KV      | 8       | 10      | 10      | 10      |
| <b>Napięcie przebicia izolatora wewnątrz</b><br><i>AC internal flashover voltage</i> | KV      | 20      | 25      | 35      | 35      |
| <b>Wytrzymałość na rozciąganie</b><br><i>Tensile strength</i>                        | DN      | 1000    | 1000    | 1000    | 1000    |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>                          | DN      | 750     | 700     | 500     | 370     |
| <b>Wytrzymałość na ściskanie</b><br><i>Compressive strength</i>                      | DN      | 8000    | 8000    | 8000    | 8000    |
| <b>Wytrzymałość na skręcanie</b><br><i>Torsional strength</i>                        | DN x mm | 3-6     | 3-6     | 3-6     | 3-6     |

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 2-7

Charakterystyka tworzywa  
Material characteristics  
strona | page 31



5) CPE



| Kod Code | Wysokość Height H mm | Gwint Insert | E mm | Moment dokręcania Tightening torque | Napięcie pracy Operating voltage |
|----------|----------------------|--------------|------|-------------------------------------|----------------------------------|
| CPE 40   | 40                   | M10          | 14   | 24 Nm                               | 1500 V                           |
|          |                      | M12          | 13   | 36 Nm                               |                                  |
|          |                      | M16          | 12   | 50 Nm                               |                                  |
| CPE 60   | 60                   | M10          | 16   | 24 Nm                               | 3000 V                           |
|          |                      | M12          | 17   | 36 Nm                               |                                  |
|          |                      | M16          | 22   | 50 Nm                               |                                  |
| CPE 80   | 80                   | M10          | 20   | 24 Nm                               | 5000 V                           |
|          |                      | M12          | 17   | 36 Nm                               |                                  |
|          |                      | M16          | 24   | 55 Nm                               |                                  |
| CPE 100  | 100                  | M10          | 20   | 24 Nm                               | 8000 V                           |
|          |                      | M12          | 20   | 40 Nm                               |                                  |
|          |                      | M16          | 24   | 55 Nm                               |                                  |

B

DANE TECHNICZNE  
TECHNICAL SPECIFICATION

**Tworzywo** Poliester wzmocniony włóknem szklanym | *Material: Polyglass polyester* 1DN ≈ 1Kg  
**Temperatura pracy** -40°C ~ +130°C | *Operating temperature: -40°C ~ +130°C*  
**Próba ogniowa, klasa** UL94 - V0, HL2, EN 45545-2 | *Fire reaction, class: UL94 - V0, HL2, EN 45545-2*  
**Wytrzymałość mechaniczna** tolerancja ± 10% | *Breaking charges: tolerance ± 10%*

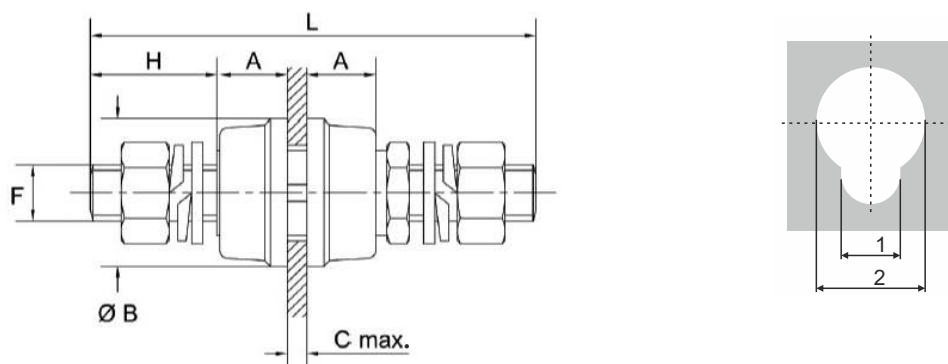
| Typ   Type   |         | CPE 40 | CPE 60 | CPE 80 | CPE 100 |
|--|---------|--------|--------|--------|---------|
| <b>Napięcie przeskoku iskry po powierzchni</b><br><i>AC suface flashover voltage</i> | KV      | 10     | 20     | 25     | 30      |
| <b>Napięcie przebicia izolatora wewnątrz</b><br><i>AC internal flashover voltage</i> | KV      | 25     | 50     | 50     | 50      |
| <b>Wytrzymałość na rozciąganie</b><br><i>Tensile strength</i>                        | DN      | 1100   | 1500   | 2300   | 3000    |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>                          | DN      | 700    | 600    | 900    | 1500    |
| <b>Wytrzymałość na ściskanie</b><br><i>Compressive strength</i>                      | DN      | 10000  | 10000  | 12000  | 15000   |
| <b>Wytrzymałość na skręcanie</b><br><i>Torsional strength</i>                        | DN x mm | 6      | 8      | 10     | 15      |

Inne izolatory wsporcze  
Other standoff insulators  
strona | page 2-7

Charakterystyka tworzywa  
Material characteristics  
strona | page 31



Izolatory przepustowe PI/P zrobione są z poliestru. Wykonywane są w kolorze czerwonym. Cechą charakterystyczną danego typu jest przeniesienie potencjału z jednego zacisku izolatora na drugi (ciągłość śruby metalowej) z pełną izolacją wobec płyty montażowej, w której izolator jest zamontowany. Główne zastosowanie znajdują przy produkcji urządzeń elektrycznych i energoelektronicznych, gdzie obudowy lub elementy konstrukcyjne wykonywane są z materiałów przewodzących prąd, np.: z blachy, a istnieje konieczność wyprowadzania zacisków wyjściowych do zewnętrznych podłączeń kablowych. Powyższe rozwiązanie daje możliwość pełnej ochrony wnętrza urządzenia przed ingerencją klienta oraz umożliwia dokonywanie w łatwy sposób podłączeń zewnętrznych.



| Kod Code | F   | Moment dokręcania Tightening torque | L   | Zakres prądowy Rated range | Napięcie pracy Operating voltage | Test napięcia Test voltage | A    | B Ø | C max | H    | Ø1  | Ø2   |
|----------|-----|-------------------------------------|-----|----------------------------|----------------------------------|----------------------------|------|-----|-------|------|-----|------|
| PI/P 4   | M4  | 3 Nm                                | 50  | 25 A                       | 600 V                            | 4 kV                       | 10   | 15  | 3     | 12,5 | 2,5 | 8,5  |
| PI/P 6   | M6  | 5 Nm                                | 65  | 50 A                       | 1000 V                           | 6 kV                       | 12   | 22  | 5     | 17   | 3,5 | 12,5 |
| PI/P 8   | M8  | 10 Nm                               | 80  | 80 A                       | 1000 V                           | 6 kV                       | 13,5 | 25  | 5     | 21   | 3,5 | 15,5 |
| PI/ P 10 | M10 | 16 Nm                               | 95  | 120 A                      | 1000 V                           | 6 kV                       | 15   | 30  | 5     | 28   | 4,5 | 17,5 |
| PI/P 12  | M12 | 18 Nm                               | 105 | 200 A                      | 1000 V                           | 6 kV                       | 17   | 35  | 5     | 29   | 5   | 20,5 |
| PI/P 16  | M16 | 22 Nm                               | 135 | 300 A                      | 2000 V                           | 8 kV                       | 22   | 43  | 7     | 38   | 5,5 | 25,5 |
| PI/P 20  | M20 | 26 Nm                               | 155 | 450 A                      | 2000 V                           | 8 kV                       | 25   | 54  | 8     | 44   | 6   | 30,5 |

Wszystkie wymiary w mm | all dimension in mm

### DANE TECHNICZNE TECHNICAL SPECIFICATION

**Tworzywo** Poliester wzmocniony włóknem szklanym | *Material: Polyglass polyester*  
**Temperatura pracy** -40°C ~ +130°C | *Operating temperature: -40°C ~ +130°C*  
**Próba ogniowa, klasa** UL94 - V0 | *Fire reaction, class: UL94 - V0*  
**Elementy metalowe** niklowany mosiądz | *Metal elements: nickel brass*

Charakterystyka tworzywa  
Material characteristics  
strona | page 31



Układy izolatorów do szynoprzewodów wykonane są z poliestru zbrojonego włóknem szklanym. Wytwarzane w kolorze czerwonym. Umożliwiają montaż szyn od 40 x 6 mm do 120 x 10 mm. Ze względu na uniwersalność konstrukcji umożliwiają montaż systemów szyn jedno-, dwu-, lub wielotorowych. Sposób konfiguracji i budowy izolatorów daje możliwość uzyskania szerokiego zakresu napięć pracy oraz bardzo dużej wytrzymałości mechanicznej uzyskiwanej konstrukcji. Dla odpowiedniej konfiguracji układu szynoprzewodów dobieramy:

- wsporniki kątowe (typ PSB/1, PSB/2, PSB/120)
- moduły szynowe (typ PSB/6 dla szyn 6 mm, PSB/8 dla szyn 8 mm, PSB/10 dla szyn 10 mm)

I to wszystko jest skręcane śrubą metalową M10 o długości zależnej od przyjętej konfiguracji układu szynoprzewodów. Możliwości konfiguracji ilustrują rysunki oraz tabelki, które pozwalają zaprojektować i wykonać dowolny układ szynoprzewodów na dowolne napięcie.

*Vertical rodholders insulators are made with red polyester material reinforced with fiberglass. They are suitable for single and parallel rods: from 40 x 6 mm to 120 x 10 mm.*

*Because of the construction characteristic, vertical rodholders insulators are an excellent application where a great insulation capacity and mechanical resistivity is needed.*

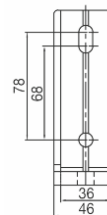
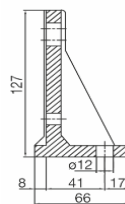
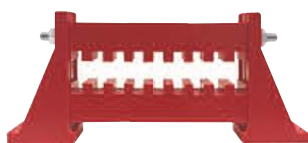
*To implement a rodholder are required: 2 lateral supports, 2 assembly screws and proper type of block required to obtain the composition of needed rods.*

| Wspornik<br>Support | Moduł<br>Block | Przewód szynowy<br>Rods |         |          |
|---------------------|----------------|-------------------------|---------|----------|
| PSB/2               | PSB 6          | 40 x 6                  | 50 x 6  |          |
|                     | PSB 8          | 40 x 8                  | 50 x 8  |          |
|                     | PSB 10         | 40 x 10                 | 50 x 10 |          |
| PSB/1               | PSB 6          | 60 x 6                  | 80 x 6  | 100 x 6  |
|                     | PSB 8          | 60 x 8                  | 80 x 8  | 100 x 8  |
|                     | PSB 10         | 60 x 10                 | 80 x 10 | 100 x 10 |
| PSB/120             | PSB 6          | 120 x 6                 |         |          |
|                     | PSB 8          | 120 x 8                 |         |          |
|                     | PSB 10         | 120 x 10                |         |          |

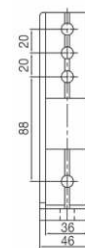
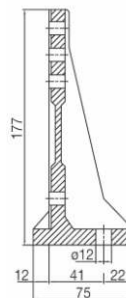
B

układy pionowe | vertical bars

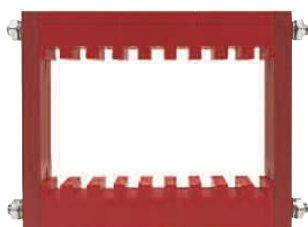
PSB 2



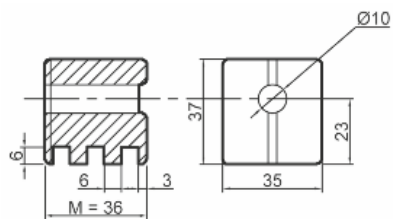
PSB 1



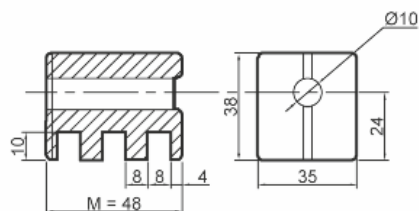
PSB 120



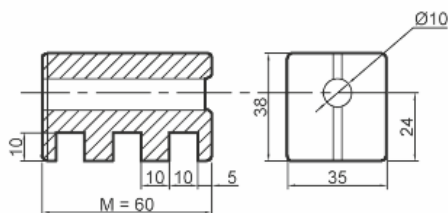
PSB/6



PSB/8



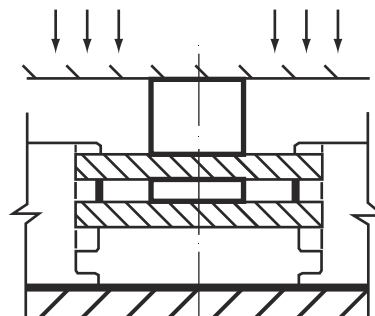
PSB/10



#### DANE TECHNICZNE TECHNICAL SPECIFICATION

**Elastyczne zgięcie zęba z początkiem złamania** | Elastic deflection of the tooth with beginning of rupture:

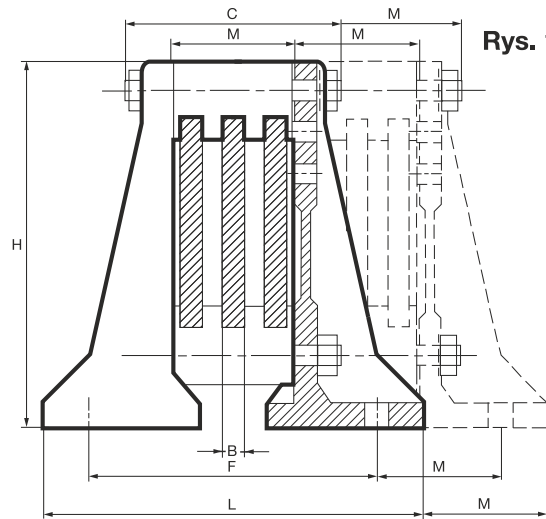
| Wspornik<br>Busbar<br>systems | Wytrzymałość na<br>przechyłanie się<br>Tilt resistance<br>[Kg] |
|-------------------------------|--|
| PSB/6                         | 950 kg   |
| PSB/8                         | 1130 kg  |
| PSB/10                        | 1375 kg  |



**Tworzywo** Poliester wzmocniony włóknem szklanym | **Material:** Polyglass polyester  
**Temperatura pracy** -40°C ~ +130°C | **Operating temperature:** -40°C ~ +130°C  
**Próba ogniowa, klasa** UL94 - V0 | **Fire reaction, class:** UL94 - V0  
**Napięcie pracy** 1000 V | **Operating voltage:** 1000 V

**DANE TECHNICZNE**  
 TECHNICAL  
 SPECIFICATION

**Sposób montażu** | *Mounting arrangement:*



**Rys. 1**

A = **liczba modułów** | *number of the blocks*

B = **grubość szynoprzewodu** | *thickness of the rod*

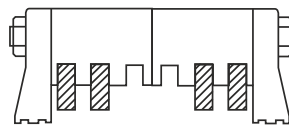
C = **długość śruby** | *length of the bolt*

L = **wymiar zewnętrzny** | *external dimension*

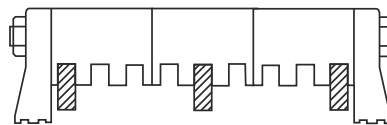
F = **rozstaw otworów do mocowania** | *distance between centers of the holes*

H = **wysokość** | *height*

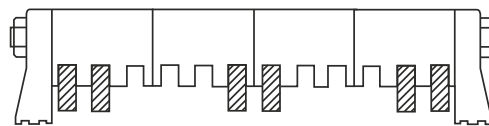
M = **szerokość modułu** | *module width*



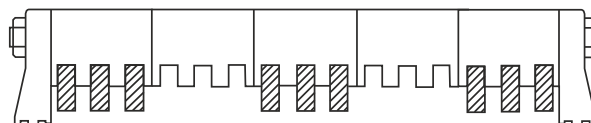
**Rys. 2**



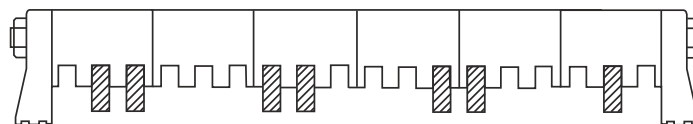
**Rys. 3**



**Rys. 4**



**Rys. 5**



**Rys. 6**

B

układy pionowe | vertical bars

**DANE TECHNICZNE**  
TECHNICAL  
SPECIFICATION

**PSB/1**

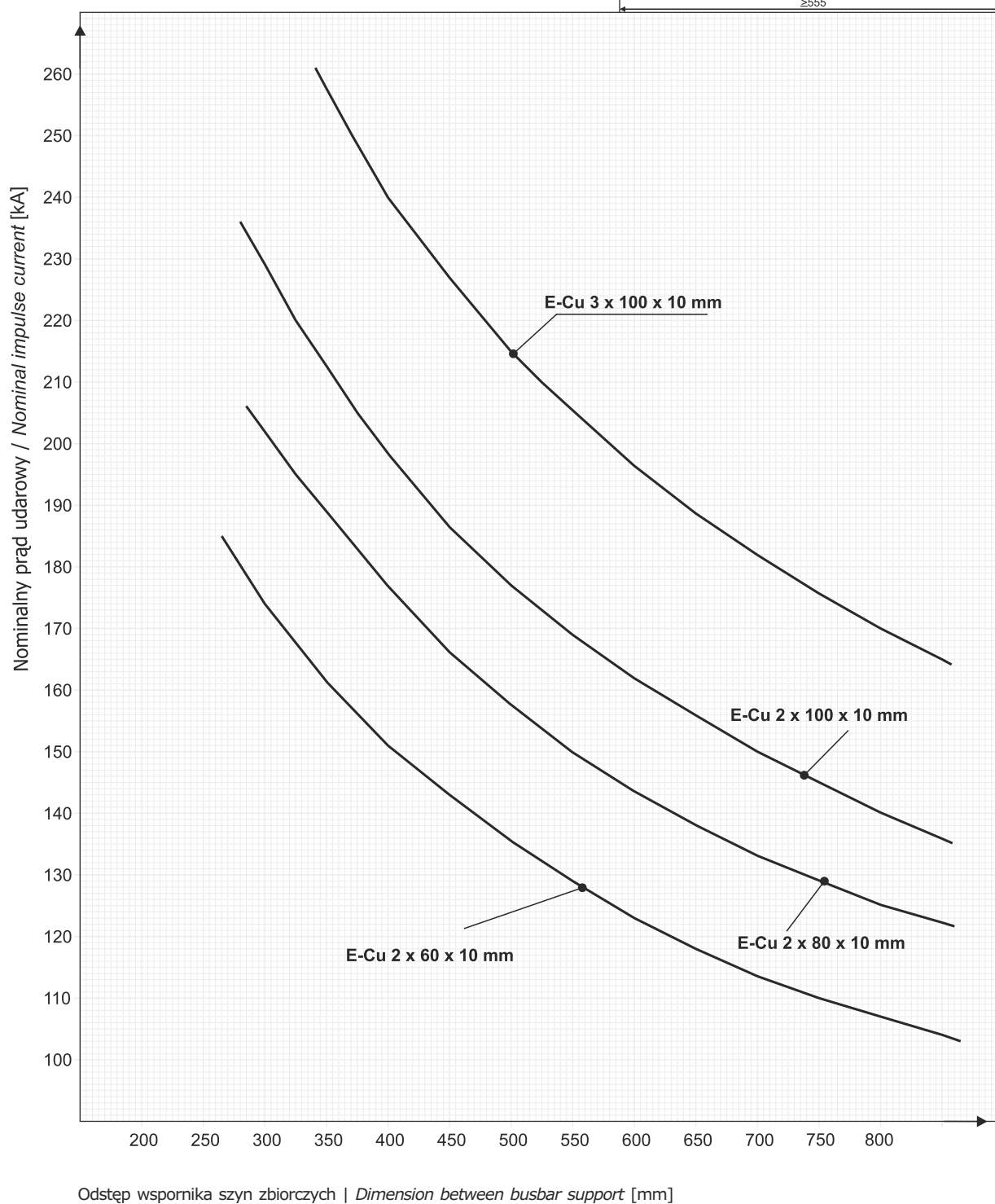
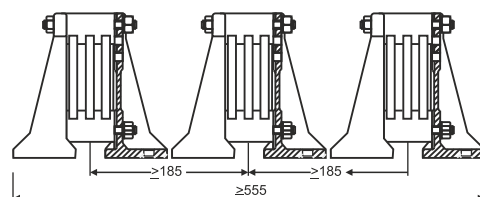
| Rys. Fig. | A | B<br>mm | C<br>mm | L<br>mm | F<br>mm | H<br>mm | M<br>mm |
|-----------|---|---------|---------|---------|---------|---------|---------|
| 1         | 1 | 6       | 70      | 162     | 118     | 177     | 36      |
|           | 1 | 8       | 90      | 174     | 130     |         | 48      |
|           | 1 | 10      | 100     | 186     | 142     |         | 60      |
| 2         | 2 | 6       | 110     | 198     | 154     | 177     | 36      |
|           | 2 | 8       | 140     | 222     | 178     |         | 48      |
|           | 2 | 10      | 160     | 246     | 202     |         | 60      |
| 3         | 3 | 6       | 150     | 234     | 190     | 177     | 36      |
|           | 3 | 8       | 194     | 270     | 226     |         | 48      |
|           | 3 | 10      | 230     | 306     | 262     |         | 60      |
| 4         | 4 | 6       | 194     | 270     | 226     | 177     | 36      |
|           | 4 | 8       | 242     | 318     | 274     |         | 48      |
|           | 4 | 10      | 290     | 366     | 322     |         | 60      |
| 5         | 5 | 6       | 230     | 306     | 262     | 177     | 36      |
|           | 5 | 8       | 290     | 366     | 322     |         | 48      |
|           | 5 | 10      | 350     | 426     | 382     |         | 60      |
| 6         | 6 | 6       | 270     | 342     | 298     | 177     | 36      |
|           | 6 | 8       | 338     | 414     | 370     |         | 48      |
|           | 6 | 10      | 410     | 486     | 442     |         | 60      |

**PSB/2**

| Rys. Fig. | A | B<br>mm | C<br>mm | L<br>mm | F<br>mm | H<br>mm | M<br>mm |
|-----------|---|---------|---------|---------|---------|---------|---------|
| 1         | 1 | 6       | 70      | 152     | 118     | 127     | 36      |
|           | 1 | 8       | 90      | 164     | 130     |         | 48      |
|           | 1 | 10      | 100     | 176     | 142     |         | 60      |
| 2         | 2 | 6       | 110     | 188     | 154     | 127     | 36      |
|           | 2 | 8       | 140     | 212     | 178     |         | 48      |
|           | 2 | 10      | 160     | 236     | 202     |         | 60      |
| 3         | 3 | 6       | 150     | 224     | 190     | 127     | 36      |
|           | 3 | 8       | 194     | 260     | 226     |         | 48      |
|           | 3 | 10      | 230     | 296     | 262     |         | 60      |
| 4         | 4 | 6       | 194     | 260     | 226     | 127     | 36      |
|           | 4 | 8       | 242     | 308     | 274     |         | 48      |
|           | 4 | 10      | 290     | 356     | 322     |         | 60      |
| 5         | 5 | 6       | 230     | 296     | 262     | 127     | 36      |
|           | 5 | 8       | 290     | 356     | 322     |         | 48      |
|           | 5 | 10      | 350     | 416     | 382     |         | 60      |
| 6         | 6 | 6       | 270     | 332     | 298     | 127     | 36      |
|           | 6 | 8       | 338     | 404     | 370     |         | 48      |
|           | 6 | 10      | 410     | 476     | 442     |         | 60      |

## DANE TECHNICZNE TECHNICAL SPECIFICATION

Wytrzymałość zwarciova | Short circuit strength



B

układy pionowe | vertical bars



| <b>WŁAŚCIWOŚCI</b><br><i>Properties</i>  | <b>METODY TESTOWE</b><br><i>Test methods</i> | <b>JEDNOSTKI</b><br><i>Units</i> | <b>DMC</b>             | <b>SMC</b>              |
|--|--|----------------------------------|------------------------|-------------------------|
| <b>Ciężar właściwy</b><br><i>Specific gravity</i>  | ASTM D-792                                   | -                                | 1.9                    | 1.7                     |
| <b>Zawartość włókna szklanego</b><br><i>Fiberglass contents</i>  | -  | %                                | 15                     | 25                      |
| <b>Absorpcja wilgoci (24 godz.)</b><br><i>Water absorption (24 hrs)</i>  | ASTM D-570                                   | %                                | 0.15                   | 0.2                     |
| <b>Palność</b><br><i>Flammability Index</i>  | UL-94  | -                                | V-0                    | V-0                     |
| <b>Wytrzymałość na rozciąganie</b><br><i>Tensile strength</i>  | ASTM D-638                                   | kgf/cm <sup>2</sup>              | 400                    | 700                     |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>  | ASTM D-790                                   | kgf/cm <sup>2</sup>              | 900                    | 1550                    |
| <b>Wytrzymałość na ściskanie</b><br><i>Compressive strength</i>  | ASTM D-695                                   | kgf/cm <sup>2</sup>              | 1500                   | 1800                    |
| <b>Udarowość wg Izoda</b><br><i>Impact strength Izod</i>   | ASTM D-265                                   | J/m                              | 250                    | 600                     |
| <b>Wytrzymałość dielektryczna</b><br><i>Dialectric strength</i>  | ASTM D-149                                   | KV/mm                            | 10                     | 12                      |
| <b>Współczynnik odporności na prądy pełzające (CTI)</b><br><i>Tracking index</i>   | BS-5901                                      | V                                | >600                   | >600                    |
| <b>Odporność na łuk</b><br><i>ARC resistance</i>   | ASTM D-495                                   | s                                | +180                   | +180                    |
| <b>Kolor</b><br><i>Colour</i>  | -  |                                  | czerwony<br><i>red</i> | kremowy<br><i>ivory</i> |
| <b>Temperatura pracy</b><br><i>Working temperature</i>   | -  | °C                               | -40 ~ +135             | -40 ~ +135              |
| <b>Test zapłonu rozżarzonym drutem na próbce o grubości 3 mm</b><br><i>Glow wire ignition test over 3 mm thickness specimen</i>                | IEC-60695-2-13                               | °C                               | 960                    | 960                     |
| <b>Próba zapłonu gorącym drutem</b><br><i>Hot wire ignition test</i>   | ASTM D-3874                                  | s                                | >120                   | >120                    |
| <b>Względny wskaźnik termiczny, wytrzymałość (grubość 3 mm)</b><br><i>Relative thermal index, strength (thickness 3 mm)</i>                    | UL-746B                                      | °C                               | 130                    | 130                     |
| <b>Względny wskaźnik termiczny, właściwość elektryczna (grubość 3 mm)</b><br><i>Relative thermal index, electric property (thickness 3 mm)</i> | UL-746B                                      | °C                               | 105                    | 105                     |
| <b>Szybkość śledzenia łuku wysokiego napięcia</b><br><i>High voltage arc tracking rate</i>   | UL-746A                                      | mm/min                           | 0-10                   | 0-10                    |
| <b>Grupa materiałowa</b><br><i>Material group</i>  | IEC-60112                                    | -                                | 1                      | 1                       |
| <b>Stopień zanieczyszczenia</b><br><i>Pollution degree</i>   | IEC-60950                                    | -                                | 3                      | 3                       |
| <b>Klasa izolacji</b><br><i>Insulation class</i>   | JIS C 4003                                   | -                                | B                      | B                       |

| <b>WŁAŚCIWOŚCI</b><br><i>Properties</i>  | <b>METODY TESTOWE</b><br><i>Test methods</i> | <b>JEDNOSTKI</b><br><i>Units</i> | <b>ŻYWICA</b><br><i>Cast resin</i> |
|--|--|----------------------------------|------------------------------------|
| <b>Ciężar właściwy</b><br><i>Specific gravity</i>                                    | ASTM D-792                                   | -                                | 1.9                                |
| <b>Zawartość włókna szklanego</b><br><i>Fiberglass contents</i>                      | -  | %                                | 15                                 |
| <b>Absorpcja wilgoci (24 godz.)</b><br><i>Water absorption (24 hrs)</i>              | ASTM D-570                                   | %                                | 0.15                               |
| <b>Palność</b><br><i>Flammability Index</i>  | UL-94  | -                                | V-0                                |
| <b>Wytrzymałość na rozciąganie</b><br><i>Tensile strength</i>                        | ASTM D-638                                   | kgf/cm <sup>2</sup>              | 400                                |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>                          | ASTM D-790                                   | kgf/cm <sup>2</sup>              | 900                                |
| <b>Wytrzymałość na ściskanie</b><br><i>Compressive strength</i>                      | ASTM D-695                                   | kgf/cm <sup>2</sup>              | 1500                               |
| <b>Udarność wg Izoda</b><br><i>Impact strength Izod</i>                              | ASTM D-265                                   | J/m                              | 250                                |
| <b>Wytrzymałość dielektryczna</b><br><i>Dialectric strength</i>                      | ASTM D-149                                   | kV/mm                            | 10                                 |
| <b>Współczynnik odporności na prądy<br/>pełzające (CTI)</b><br><i>Tracking index</i> | BS-590                                       | V                                | >600                               |
| <b>Odporność na łuk</b><br><i>ARC resistance</i>                                     | ASTM D-495                                   | s                                | +180                               |
| <b>Kolor</b><br><i>Colour</i>  | -  | -                                | brązowy<br><i>brown</i>            |
| <b>Temperatura pracy</b><br><i>Working temperature</i>                               | -  | °C                               | -40 ~ +135                         |

| <b>WŁAŚCIWOŚCI</b><br><i>Properties</i>  | <b>METODY TESTOWE</b><br><i>Test methods</i> | <b>JEDNOSTKI</b><br><i>Units</i> | <b>POLIESTER</b><br><i>Polyester</i> |
|--|--|----------------------------------|--------------------------------------|
| <b>Skurcz liniowy</b><br><i>Linear shrinkage</i>   | ISO 2577                                     | %                                | 0,10 ± 0,03                          |
| <b>Gęstość</b><br><i>Density</i>   | ISO 1183                                     | g/cm <sup>3</sup>                | 1,80 ± 0,02                          |
| <b>Absorpcja wody</b><br><i>Water absorption</i>   | ISO 62                                       | %                                | < 0,2                                |
| <b>Wytrzymałość na zginanie</b><br><i>Flexural strength</i>                              | UNI EN ISO 178                               | MPa                              | 90                                   |
| <b>Moduł sprężystości przy zginaniu</b><br><i>Flexural modulus</i>                       | UNI EN ISO 178                               | MPa                              | 10000                                |
| <b>Temperatura ugięcia pod wpływem ciepła</b><br><i>Heat deflection temperature</i>      | ISO 75                                       | °C                               | > 200                                |
| <b>Wytrzymałość na uderzenia</b><br><i>Impact strength</i>                               | UNI EN ISO 179                               | KJ/m <sup>2</sup>                | 30                                   |
| <b>Odporność na prądy powierzchniowe</b><br><i>Tracking resistance</i>                   | IEC 60112                                    | V                                | 600                                  |
| <b>Rezystywność powierzchniowa</b><br><i>Surface resistivity</i>                         | IEC 60093                                    | Ohm                              | 1.00E + 013                          |
| <b>Wytrzymałość dielektryczna</b><br><i>Dielectric strength</i>                          | UNI 4291                                     | kV/mm                            | 17                                   |
| <b>Odporność na łuk</b><br><i>Arc resistance</i>   | ASTM D295                                    | s                                | > 180                                |
| <b>Próba drutu żarowego</b><br><i>Glow wire test</i>                                     | IEC 60695-2-12                               | °C                               | 960                                  |
| <b>Ochrona pożarowa pojazdów szynowych</b><br><i>Fire protection on railway vehicles</i> | EN45545                                      | Class                            | HL2                                  |
| <b>Temperatura pracy</b><br><i>Working temperature</i>                                   | -  | °C                               | -40 ~ +130                           |
| <b>Ognioodporność</b><br><i>Fire retardancy</i><br>Nr. File UL: E205214                  | UL 94  | Class                            | V0 (3 mm)                            |

Wersja 2023/10. Dane zawarte w tym dokumencie mają charakter informacyjny i mogą ulec zmianie. W sprawie aktualnej oferty prosimy o kontakt z działem sprzedaży izolatorów.



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