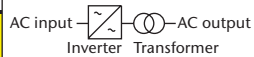


## Frequency Converters (AC / AC Inverters) with I-phase output

### Features

- AC input: 1 or 3-phase, 47 – 400 Hz
- AC output: 115 or 230 V or any other output voltage (to be specified)
- 40 – 400 Hz or fixed frequency (crystal stabilized)
- Sine wave
- Continuous short circuit protection
- Thermal shutdown with auto restart for inverters > 1 kVA
- Suitable for complex load
- Surge power capability
- Industrial grade components
- Compact and robust design

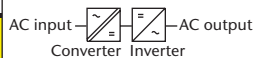


### Series IT Switch mode inverter and transformer (for isolation and voltage transformation)

| Input VAC<br>1-Phase | Output<br>kVA | Size | Input VAC<br>1-Phase                | Input VAC<br>3-Phase                  |                                       |                                       | Output<br>kVA | Size | Cooling | Output<br>VAC |
|----------------------|---------------|------|-------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------|------|---------|---------------|
| 115 ±20%             |               |      | 230 <sup>+15%</sup> <sub>-20%</sub> | 3x200 <sup>+15%</sup> <sub>-20%</sub> | 3x400 <sup>+15%</sup> <sub>-20%</sub> | 3x480 <sup>+10%</sup> <sub>-15%</sub> |               |      |         |               |
| IT 1666              | 0.5           | A    | IT 1686                             | IT 1666 V                             |                                       |                                       | 0.5           | A    |         | 115           |
| IT 3666              | 1             | B    | IT 3686                             | IT 3666 V                             | IT 3686 V                             |                                       | 1             | B    |         |               |
| IT 3866              | 1.2           | C    | IT 3886                             | IT 3866 V                             | IT 3886 V                             | IT 3896 V                             | 1.6           | C    |         |               |
| IT 4866              | 2             | D    | IT 4886                             | IT 4866 V                             | IT 4886 V                             | IT 4896 V                             | 2.5           | D    |         |               |
| IT 5666              | 3             | E    | IT 5686                             | IT 5666 V                             | IT 5686 V                             | IT 5696 V                             | 5             | F+T1 |         |               |
| IT 5766              | 5             | F+T1 | IT 5786                             | IT 5766 V                             | IT 5786 V                             | IT 5796 V                             | 8             | F+T2 |         |               |
|                      |               |      |                                     |                                       | IT 5886 V                             | IT 5896 V                             | 12            | F+T3 |         |               |
| IT 1668              | 0.5           | A    | IT 1688                             | IT 1668 V                             |                                       |                                       | 0.5           | A    |         | 230           |
| IT 3668              | 1             | B    | IT 3688                             | IT 3668 V                             | IT 3688 V                             |                                       | 1             | B    |         |               |
| IT 3868              | 1.2           | C    | IT 3888                             | IT 3868 V                             | IT 3888 V                             | IT 3898 V                             | 1.6           | C    |         |               |
| IT 4868              | 2             | D    | IT 4888                             | IT 4868 V                             | IT 4888 V                             | IT 4898 V                             | 2.5           | D    |         |               |
| IT 5668              | 3             | E    | IT 5688                             | IT 5668 V                             | IT 5688 V                             | IT 5698 V                             | 5             | F+T1 |         |               |
| IT 5768              | 5             | F+T1 | IT 5788                             | IT 5768 V                             | IT 5788 V                             | IT 5798 V                             | 8             | F+T2 |         |               |
|                      |               |      |                                     |                                       | IT 5888 V                             | IT 5898 V                             | 12            | F+T3 |         |               |

= natural convection

= temperature controlled fans



### Series CI Switch mode converter (for isolation and voltage transformation) and inverter in one package

| Input VAC<br>1-Phase |                                     |                                                   | Input VAC<br>3-Phase                  |                                       |                                       | Output<br>kVA | Size | Cooling | Output<br>VAC |
|----------------------|-------------------------------------|---------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------|------|---------|---------------|
| 115 ±20%             | 230 <sup>+15%</sup> <sub>-20%</sub> | 115 ±20% /<br>230 <sup>+15%</sup> <sub>-20%</sub> | 3x200 <sup>+15%</sup> <sub>-20%</sub> | 3x400 <sup>+15%</sup> <sub>-20%</sub> | 3x480 <sup>+10%</sup> <sub>-15%</sub> |               |      |         |               |
| CI 1666              | CI 1686                             | CI 1696                                           | CI 1666 V                             |                                       |                                       | 0.6           | G    |         | 115           |
| CI 3666              | CI 3686                             | CI 3696                                           | CI 3666 V                             | CI 3686 V                             | CI 3696 V                             | 1.2           | H    |         |               |
| CI 4866              | CI 4886                             | CI 4896                                           | CI 4866 V                             | CI 4886 V                             | CI 4896 V                             | 1.8           | I    |         |               |
| CI 5666              | CI 5686                             | CI 5696                                           | CI 5666 V                             | CI 5686 V                             | CI 5696 V                             | 2.4           | K    |         |               |
| CI 5766              | CI 5786                             |                                                   | CI 5766 V                             | CI 5786 V                             | CI 5796 V                             | 3.5           | K    |         |               |
|                      |                                     |                                                   |                                       |                                       |                                       |               |      |         |               |
| CI 1668              | CI 1688                             | CI 1698                                           | CI 1668 V                             |                                       |                                       | 0.6           | G    |         | 230           |
| CI 3668              | CI 3688                             | CI 3698                                           | CI 3668 V                             | CI 3688 V                             | CI 3698 V                             | 1.2           | H    |         |               |
| CI 4868              | CI 4888                             | CI 4898                                           | CI 4868 V                             | CI 4888 V                             | CI 4898 V                             | 1.8           | I    |         |               |
| CI 5668              | CI 5688                             | CI 5698                                           | CI 5668 V                             | CI 5688 V                             | CI 5698 V                             | 2.4           | K    |         |               |
| CI 5768              | CI 5788                             |                                                   | CI 5768 V                             | CI 5788 V                             | CI 5798 V                             | 3.5           | K    |         |               |
|                      |                                     |                                                   |                                       |                                       |                                       |               |      |         |               |

= natural convection

= temperature controlled fans

## Frequency Designation (output)

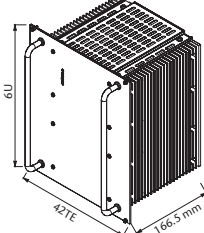
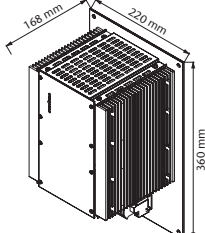
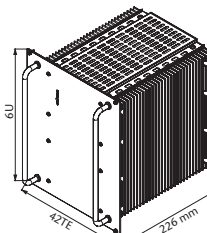
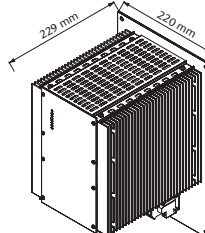
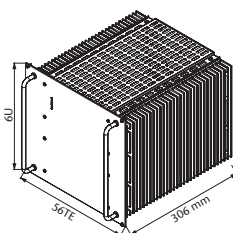
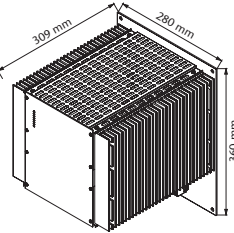
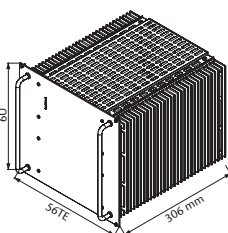
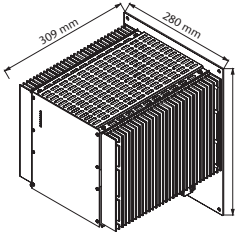
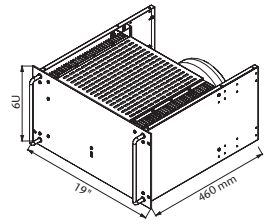
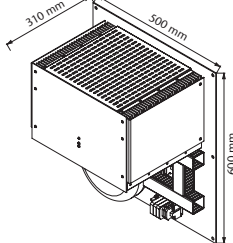
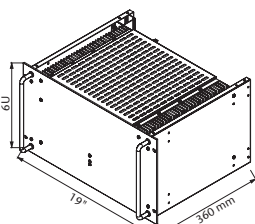
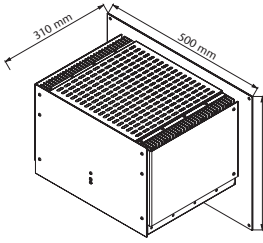
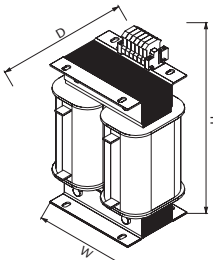
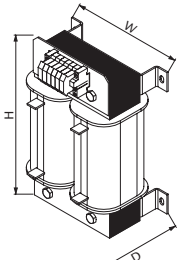
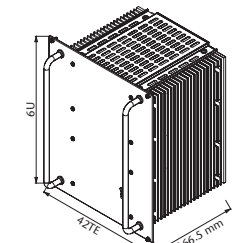
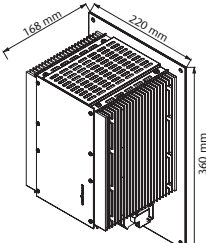
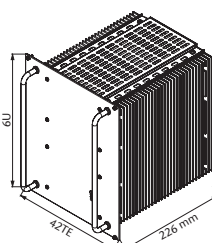
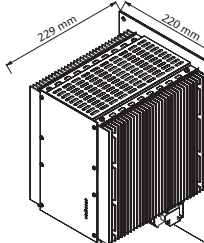
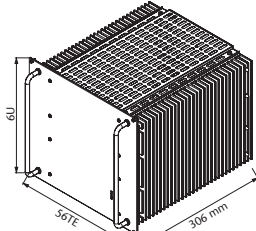
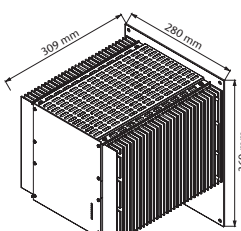
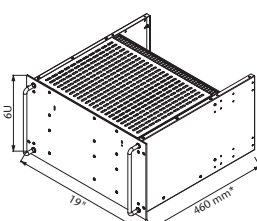
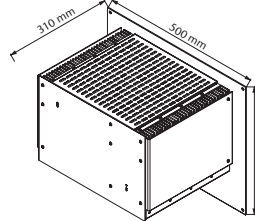
|     |                                                                 |
|-----|-----------------------------------------------------------------|
| .0  | any external signal (control, ramp) → <i>only for Series CI</i> |
| .1  | 40 - 400 Hz adjustable / programmable                           |
| .2  | 45 - 65 Hz adjustable / programmable                            |
| .3  | any fixed frequency between 40 - 400 Hz                         |
| .4  | 400 Hz                                                          |
| .5  | 50 Hz                                                           |
| .51 | synchronized with 50 Hz mains                                   |
| .6  | 60 Hz                                                           |
| .61 | synchronized with 60 Hz mains                                   |
| .7  | 50/60 Hz switchable                                             |

### Assistance in table use:

- 1 Select the column for input voltage range.
- 2 Select the row for the appropriate output voltage and power.
- 3 The intersection of both results in the module required.
- 4 Add the required frequency designation to the part number.

### For example:

- 1 input voltage = 115 VAC, 60 Hz
- 2 output voltage = 230 VAC, 50 Hz @ 1.2 kVA
- 3 results in a CI 3668
- 4 for 50 Hz add .5, i.e. CI 3668.5

|  <p>6U<br/>42TE<br/>166.5 mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p><b>Size A</b></p>  <p>168 mm 220 mm 360 mm</p> <p>Eurocassette / approx. 9 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 11 kg<br/>(optional)</p>     |  <p>6U<br/>42TE<br/>226 mm</p>    | <p><b>Size B</b></p>  <p>229 mm 220 mm 360 mm</p> <p>Eurocassette / approx. 13 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 15 kg<br/>(optional)</p>            |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--|-------|--|--|--|----|-----|-----|-----|----|----|-----|-----|-----|----|----|-----|-----|-----|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---|---|---|-----------------|--|-------|--|--|--|----|-----|-----|-----|----|----|-----|-----|-----|----|----|-----|-----|-----|----|
|  <p>6U<br/>56TE<br/>306 mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p><b>Size C</b></p>  <p>309 mm 280 mm 360 mm</p> <p>Eurocassette / approx. 18 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 21 kg<br/>(optional)</p>   |  <p>6U<br/>56TE<br/>306 mm</p>   | <p><b>Size D</b></p>  <p>309 mm 280 mm 360 mm</p> <p>Eurocassette / approx. 21 - 24 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 24 - 27 kg<br/>(optional)</p> |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|  <p>6U<br/>19" 460 mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p><b>Size E</b></p>  <p>310 mm 500 mm 600 mm</p> <p>19" Plug-in module / approx. 46 - 50 kg</p> <p>Wall mount / approx. 54 - 58 kg<br/>(optional)</p>                           |  <p>6U<br/>19" 360 mm</p>        | <p><b>Size F</b></p>  <p>310 mm 500 mm 400 mm</p> <p>19" Plug-in module / approx. 32 kg</p> <p>Wall mount / approx. 36 kg<br/>(optional)</p>                                             |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|  <p>D<br/>H<br/>W</p> <p><b>Size T1 - T3</b></p> <table><tr><th>Trans-<br/>former</th><th>H</th><th>W</th><th>D</th><th>Weight<br/>in kg</th></tr><tr><td></td><td colspan="4">in mm</td></tr><tr><td>T1</td><td>390</td><td>240</td><td>233</td><td>33</td></tr><tr><td>T2</td><td>450</td><td>280</td><td>253</td><td>50</td></tr><tr><td>T3</td><td>450</td><td>280</td><td>283</td><td>66</td></tr></table> <p>Transformers refer to 50/60 Hz.<br/>Other frequencies or tropical insulation may<br/>change size and weight.</p> <p>Standing version</p> | Trans-<br>former                                                                                                                                                                                                                                                  | H                                                                                                                  | W                                                                                                                                                                                                                                                                           | D               | Weight<br>in kg |  | in mm |  |  |  | T1 | 390 | 240 | 233 | 33 | T2 | 450 | 280 | 253 | 50 | T3 | 450 | 280 | 283 | 66 |  <p>W<br/>H<br/>D</p> <p><b>Size T1 - T3</b></p> <table><tr><th>Trans-<br/>former</th><th>H</th><th>W</th><th>D</th><th>Weight<br/>in kg</th></tr><tr><td></td><td colspan="4">in mm</td></tr><tr><td>T1</td><td>335</td><td>230</td><td>210</td><td>33</td></tr><tr><td>T2</td><td>390</td><td>260</td><td>240</td><td>50</td></tr><tr><td>T3</td><td>390</td><td>260</td><td>270</td><td>66</td></tr></table> <p>Transformers refer to 50/60 Hz.<br/>Other frequencies or tropical insulation may<br/>change size and weight.</p> <p>Wall mount version</p> | Trans-<br>former | H | W | D | Weight<br>in kg |  | in mm |  |  |  | T1 | 335 | 230 | 210 | 33 | T2 | 390 | 260 | 240 | 50 | T3 | 390 | 260 | 270 | 66 |
| Trans-<br>former                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | H                                                                                                                                                                                                                                                                 | W                                                                                                                  | D                                                                                                                                                                                                                                                                           | Weight<br>in kg |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | in mm                                                                                                                                                                                                                                                             |                                                                                                                    |                                                                                                                                                                                                                                                                             |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 390                                                                                                                                                                                                                                                               | 240                                                                                                                | 233                                                                                                                                                                                                                                                                         | 33              |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 450                                                                                                                                                                                                                                                               | 280                                                                                                                | 253                                                                                                                                                                                                                                                                         | 50              |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 450                                                                                                                                                                                                                                                               | 280                                                                                                                | 283                                                                                                                                                                                                                                                                         | 66              |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| Trans-<br>former                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | H                                                                                                                                                                                                                                                                 | W                                                                                                                  | D                                                                                                                                                                                                                                                                           | Weight<br>in kg |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | in mm                                                                                                                                                                                                                                                             |                                                                                                                    |                                                                                                                                                                                                                                                                             |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| T1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 335                                                                                                                                                                                                                                                               | 230                                                                                                                | 210                                                                                                                                                                                                                                                                         | 33              |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| T2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 390                                                                                                                                                                                                                                                               | 260                                                                                                                | 240                                                                                                                                                                                                                                                                         | 50              |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
| T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 390                                                                                                                                                                                                                                                               | 260                                                                                                                | 270                                                                                                                                                                                                                                                                         | 66              |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|  <p>6U<br/>42TE<br/>166.5 mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p><b>Size G</b></p>  <p>168 mm 220 mm 360 mm</p> <p>Eurocassette / approx. 6 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 8 kg<br/>(optional)</p>   |  <p>6U<br/>42TE<br/>226 mm</p> | <p><b>Size H</b></p>  <p>229 mm 220 mm 360 mm</p> <p>Eurocassette / approx. 10 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 12 kg<br/>(optional)</p>         |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |
|  <p>6U<br/>56TE<br/>306 mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p><b>Size I</b></p>  <p>309 mm 280 mm 360 mm</p> <p>Eurocassette / approx. 18 kg<br/>(pluggable module for 19" sub-rack)</p> <p>Wall mount / approx. 21 kg<br/>(optional)</p> |  <p>6U<br/>19" 460 mm*</p>     | <p><b>Size K</b></p>  <p>310 mm 500 mm 400 mm</p> <p>19" Plug-in module / approx. 28-32 kg<br/>*) less depth upon request</p> <p>Wall mount / approx. 34-38 kg<br/>(optional)</p>      |                 |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |                 |  |       |  |  |  |    |     |     |     |    |    |     |     |     |    |    |     |     |     |    |