







#### **GENERAL SPECIFICATIONS**

- IGBT Rectifier and Inverter
- Active Input Current Correction < %5
- Silent Performance
- DSP Controlled
- Up to 0.99 Input Power Factor Correction
- Advanced LCD Panel
- Up to 500 Event History
- CE Certificate

| Frequency Converters Technical Specifications         |
|---|
| 10-300 kVA 3 Phase Input - 3 Phase Output (HF) 400 Hz |

| MODEL                        | 3010 M   | 3015 M  | 3020 M | 3030 M  | 3040 M          | 3060 M    | 3080 M  | 3100 M   | 3120 M   | 3160 M   | 3200 M  | 3250 M        | 3300 M       |
|------------------------------|--|---|--------|---------|-----------------|-----------|---------|----------|----------|----------|---------|---------------|--------------|
| Apparent Power(kVA)          | 10   | 15  | 20     | 30      | 40              | 60        | 80      | 100      | 120      | 160      | 200     | 250           | 300          |
| Active Power (kW)            | 8  | 12  | 16     | 24      | 32              | 48        | 64      | 80       | 96       | 128      | 160     | 160           | 240          |
| INPUT                        |  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Voltage                      | 115/200 Vac, 220/380 Vac, 254/440 Vac 3 Phase+N or Optional Special Design W/O Neutral   |   |        |         |                 |           |         |          |          |          |         |               |              |
| Voltage Tolerance            |  | ± %5%20 (Adjustable with %1 step)   |        |         |                 |           |         |          |          |          |         |               |              |
| Frequency                    | 50 Hz (On request 60 Hz)   |   |        |         |                 |           |         |          |          |          |         |               |              |
| Frequency Tolerance          | %5   |   |        |         |                 |           |         |          |          |          |         |               |              |
| THDi                         | <5%  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Input Power Factor           |  | 0.99  |        |         |                 |           |         |          |          |          |         |               |              |
| OUTPUT                       |  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Voltage                      | 115/200 Vac, 220/380 Vac, 254/440 Vac 3 Phase + N or Optional Special Design W/O Neutral   |   |        |         |                 |           |         |          |          |          |         |               |              |
| Voltage Regulation           | <±1%   |   |        |         |                 |           |         |          |          |          |         |               |              |
| Frequency                    |  | $400 \text{ Hz} \pm 0.5\%$  |        |         |                 |           |         |          |          |          |         |               |              |
| Crest Ratio                  |  | 3:1   |        |         |                 |           |         |          |          |          |         |               |              |
| Efficiency (100 Load)        | >89%   |   |        |         | >90%            |           |         |          |          |          |         |               |              |
| Power Factor                 |  | 0,8   |        |         |                 |           |         |          |          |          |         |               |              |
| THDv                         | <3% Linear Load, <5% Non Linear Load   |   |        |         |                 |           |         |          |          |          |         |               |              |
| Overload                     | %10  | %100 <load<%125 %125<load<%150="" 1="" 10="" for="" load="" min.,="">150 :Shut down</load<%125> |        |         |                 |           |         |          |          |          |         |               |              |
| Short Circuit Protection     |  |   |        |         | Ele             | ectronic  | Protec  | tion, Fu | se       |          |         |               |              |
| GENERAL FEATURES             |  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Working Type                 |  |   |        |         | Stat            | ic, Onli  | ne, DSI | P Contro | olled    |          |         |               |              |
| Topology                     |  |   |        | Н       | igh Fred        |           |         |          |          | gy       |         |               |              |
| Display                      |  |   |        |         | •               | 128x6     | 4 Graph | nic LCD  |          | -        |         |               |              |
| LED                          |  |   | 6 p    | ocs for | Line, CI        | narge, E  | attery, | Inverte  | r, Overl | oad Fail | ure     |               |              |
| Event Logs                   |  |   |        |         |                 |           |         | Event H  |          |          |         |               |              |
| ENVIRONMENTAL                |  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Operating Temperature        |  |   |        |         |                 |           | 0-40 °( | С        |          |          |         |               |              |
| Storage Temperature          |  |   |        |         |                 | -25       | ~ +5    | 5 °C     |          |          |         |               |              |
| Relative Humidity            |  | % 0-95 (Non-condensing)   |        |         |                 |           |         |          |          |          |         |               |              |
| Altide (without derating)    |  | <1000 m   |        |         |                 |           |         |          |          |          |         |               |              |
| Cooling                      |  |   |        |         |                 | Force     | d Air C | ooling   |          |          |         |               |              |
| Protection Level             |  | IP20 (Others on request)  |        |         |                 |           |         |          |          |          |         |               |              |
| Acotic Noise                 | <55 dBA  |   |        |         | <60 dBA <65 dBA |           |         |          |          | <70 dBA  |         |               |              |
| PHYSICAL                     |  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Dimesions (WxDxH)cm          | 350  | x795x1  | 110    |         | 500x80          | 6x1213    | 3       | 550x80   | 0x1335   | 680x10   | 07x1747 | 780x1260x1900 | 1600x868x180 |
| Weight without Batteries(kg) | 11   |   | 115    | 119     | 160             | 165       | 172     | 290      | 315      | 490      | 540     | 870           | 1300         |
| OPTIONS                      |  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Functions                    |  |   |        | Parall  | el Opera        | ation, El | P0, Em  | ergency  | / Stop,  | Heater   |         |               |              |
| Battery                      | Parallel Operation, EPO, Emergency Stop, Heater 60x12 Vdc Maintenance Free Type  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Isolation Transformer        | Input and/or Output  |   |        |         |                 |           |         |          |          |          |         |               |              |
| Communication                | Dry Contacts, SNMP, Modem, RS232, RS485  |   |        |         |                 |           |         |          |          |          |         |               |              |
| STANDARDS                    |  |   |        | 2.,     |                 | , ,,,,,,  | ,       | ,0       | ,        | -        |         |               |              |
| Harmonized Standards         | EN 62040-1(LVD), EN 62040-2(EMC), EN 62040-3, EN 55011, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-2-2, MIL-STD-461, MIL-STD-1310G |   |        |         |                 |           |         |          |          |          |         |               |              |
|                              |  |   |        | -,-     |                 | ,         |         | ,        |          |          |         |               |              |



#### **FREQUENCY CONVERTER**

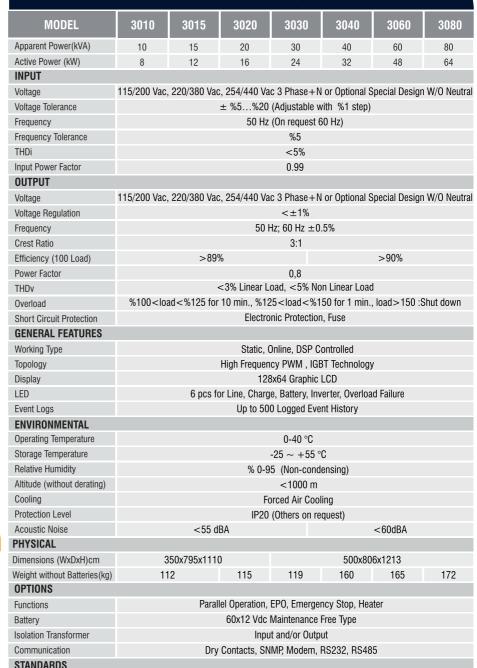
Static frequency converters are used with the devices which cannot adapt to line frequency. Static converters are more economic and more technological solution than the conventional motor generator (Dynamic Converter) for these problems. Their efficiency is higher, but operation costs are lower. Frequency converter's dynamic response is very short, because of working with static components. They are DSP controlled and they can be developed according to customer needs. Battery can be added to system and converter can continue to work even in line failures.







# Frequency Converters Technical Specifications 10-800 kVA 3 Phase Input 3 Phase Output (HF)



EN 62040-1 (LVD), EN 62040-2 (EMC), EN 62040-3



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Harmonized Standards

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## Frequency Converters Technical Specifications 10-800 kVA 3 Phase Input - 3 Phase Output (HF)

| MODEL                        | 5100  | 5120  | 5160                  | 5200       | 5250  | 5300        | 5400        | 5500                              | 5600      | 5800 |  |  |
|------------------------------|---|---|-----------------------|------------|---|-------------|-------------|-----------------------------------|-----------|------|--|--|
| Apparent Power(kVA)          | 100   | 15  | 120                   | 160        | 250   | 300         | 400         | 500                               | 600       | 800  |  |  |
| Active Power (kW)            | 80  | 12  | 96                    | 128        | 200   | 240         | 320         | 400                               | 40        | 640  |  |  |
| INPUT                        |   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Voltage                      | $115/200\ Vac,\ 220/380\ Vac,\ 254/440\ Vac\ 3\ Phase+N\ or\ Optional\ Special\ Design\ W/O\ Neutral$ |   |                       |            |   |             |             |                                   |           |      |  |  |
| Voltage Tolerance            | ± %5%20 (Adjustable with %1 step)   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Frequency                    | 50 Hz (On request 60 Hz)  |   |                       |            |   |             |             |                                   |           |      |  |  |
| Frequency Tolerance          | %5  |   |                       |            |   |             |             |                                   |           |      |  |  |
| THDi                         | <5%   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Input Power Factor           | 0.99  |   |                       |            |   |             |             |                                   |           |      |  |  |
| OUTPUT                       |   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Voltage                      | 115/200 Vac, 220/380 Vac, 254/440 Vac 3 Phase+N or Optional Special Design W/O Neutral                |   |                       |            |   |             |             |                                   |           |      |  |  |
| Voltage Regulation           | <±1%  |   |                       |            |   |             |             |                                   |           |      |  |  |
| Frequency                    | 50 Hz; 60 Hz ±0.5%  |   |                       |            |   |             |             |                                   |           |      |  |  |
| Crest Ratio                  | 3:1   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Efficiency (100 Load)        |   |   | >89%                  |            |   |             |             | >90%                              | )         |      |  |  |
| Power Factor                 |   | 0,8   |                       |            |   |             |             |                                   |           |      |  |  |
| THDv                         | <3% Linear Load, <5% Non Linear Load  |   |                       |            |   |             |             |                                   |           |      |  |  |
| Overload                     | %100  | <load<%< td=""><td>6125 for <sup>2</sup></td><td>10 min., 9</td><td>%125<loa< td=""><td>id&lt;%150</td><td>for 1 min</td><td>n., load&gt;</td><td>150 :Shut</td><td>down</td></loa<></td></load<%<> | 6125 for <sup>2</sup> | 10 min., 9 | %125 <loa< td=""><td>id&lt;%150</td><td>for 1 min</td><td>n., load&gt;</td><td>150 :Shut</td><td>down</td></loa<> | id<%150     | for 1 min   | n., load>                         | 150 :Shut | down |  |  |
| Short Circuit Protection     |   |   |                       | Elec       | ctronic Pro   | otection, F | use         |                                   |           |      |  |  |
| GENERAL FEATURES             |   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Working Type                 |   |   |                       | Statio     | c, Online,  | DSP Conf    | trolled     |                                   |           |      |  |  |
| Topology                     |   |   | H                     | ligh Frequ | iency PW  | M , IGBT    | Technolog   | ЭУ                                |           |      |  |  |
| Display                      |   |   |                       |            | 128x64 G  | raphic LC   | D           |                                   |           |      |  |  |
| LED                          |   |   | 6 pcs for             | Line, Ch   | arge, Batte   | ery, Invert | ter, Overlo | ad Failure                        | )         |      |  |  |
| Event Logs                   |   |   |                       | Up to      | 500 Logg  | ed Event    | History     |                                   |           |      |  |  |
| ENVIRONMENTAL                |   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Operating Temperature        |   |   |                       |            | 0-4   | 0 °C        |             |                                   |           |      |  |  |
| Storage Temperature          | -25 ∼ +55 °C  |   |                       |            |   |             |             |                                   |           |      |  |  |
| Relative Humidity            | % 0-95 (Non-condensing)   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Altide (without derating)    |   | <1000 m   |                       |            |   |             |             |                                   |           |      |  |  |
| Cooling                      | Forced Air Cooling  |   |                       |            |   |             |             |                                   |           |      |  |  |
| Protection Level             |   |   |                       | IP         | 20 (Other   | s on requ   | est)        |                                   |           |      |  |  |
| Acotic Noise                 | <65 dBA <70 dBA <74dBA <75dBA   |   |                       |            |   |             |             | dBA                               |           |      |  |  |
| PHYSICAL                     |   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Dimesions (WxDxH)cm          | 550X80  | 550X800X1335 68X1007X1747   |                       |            | 780X1260<br>X1900   | 1600X86     | 68X1800     | <sup>2190X801</sup> 3216X868X1800 |           |      |  |  |
| Weight without Batteries(kg) | 290   | 315   | 490                   | 540        | 870   | 1300        | 1370        | 1480                              | 1690      | 1750 |  |  |
| OPTIONS                      |   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Functions                    | Parallel Operation, EPO, Emergency Stop, Heater   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Battery                      | 60x12 Vdc Maintenance Free Type   |   |                       |            |   |             |             |                                   |           |      |  |  |
| Isolation Transformer        |   |   |                       |            | Input and   | or Outpu/   | t           |                                   |           |      |  |  |
| Communication                |   |   | Dry                   | Contacts   | s, SNMP, N  | /lodem, R   | S232, RS    | 3485                              |           |      |  |  |
| STANDARDS                    |   |   |                       |            |   |             |             |                                   |           |      |  |  |

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