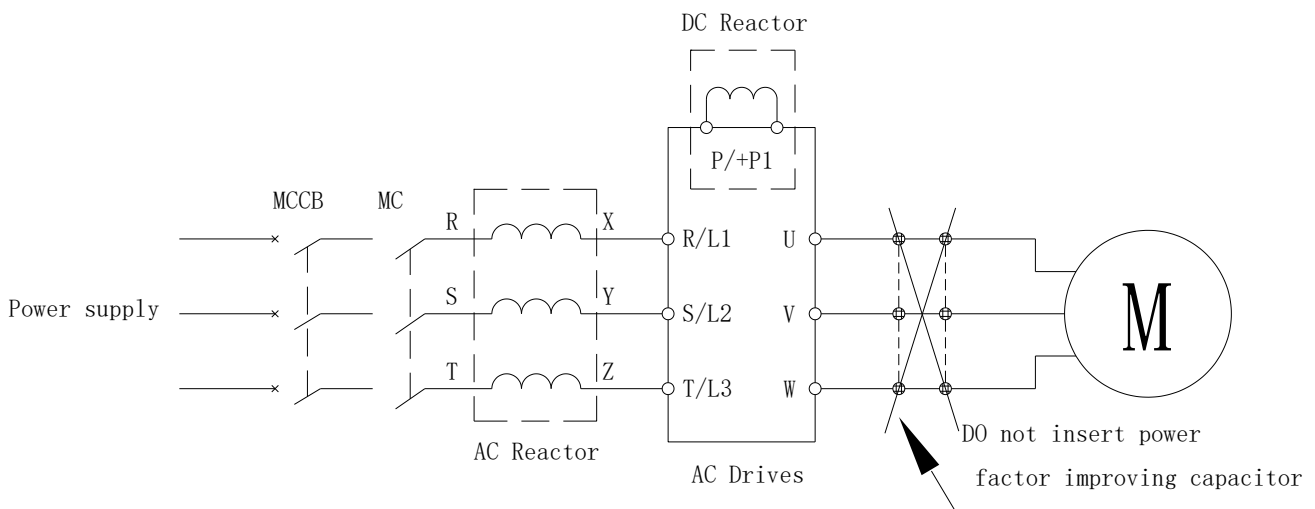


Shihlin Electric SS2 Series AC Drives Harmonics Report

(Released date: 20230527 Version: Ver1.00)

1. Harmonic suppression method

Power harmonics are generated by the rectifier parts of the AC Drives, which will affect both the power supply equipment and the power factor correction capacitor. To suppress harmonics and improve power factor, AC reactor (FA-ACL series) is added on the input side of the SS2 Series AC Drives.



2. Harmonic ratio

| Reactor status | 5th | 7th | 11th | 13th | 17th | 19th | 23th | 25th | THDi |
|-----------------|------|------|------|------|------|------|------|------|------|
| Without reactor | 70.9 | 45.2 | 8.9 | 6.8 | 3.9 | 3.1 | 2.3 | 1.6 | 85.9 |
| AC | 36.6 | 14.4 | 7.9 | 3.4 | 3.3 | 1.2 | 1.2 | 0.8 | 40.9 |

Note 1. The above table shows the value of each harmonic when the fundamental-wave current is 100% in this two wiring conditions: no reactor, only AC reactor is installed.

2. THDi may vary slightly, depending on the installation conditions and environment (e.g., cable, motor).

3. Outgoing harmonic current

| Model name | Output capacity | Output current | Fundamental wave current | Outgoing harmonic current converted from 6.6 kV (mA) (Without reactor, 100% operation rate) | | | | | | | | |
|---------------|-----------------|----------------|----------------------------|--|-----|------|------|------|------|------|------|------|
| | (kVA) | (A) | converted from 6.6 kV (mA) | 5th | 7th | 11th | 13th | 17th | 19th | 23th | 25th | THDi |
| SS2-021-0.4K | 0.95 | 2.7 | 164 | 116 | 74 | 15 | 11 | 6 | 5 | 4 | 3 | 141 |
| SS2-021-0.75K | 1.5 | 4.5 | 273 | 193 | 123 | 24 | 18 | 11 | 9 | 6 | 4 | 234 |
| SS2-023-0.4K | 1.2 | 3 | 182 | 129 | 82 | 16 | 12 | 7 | 6 | 4 | 3 | 156 |
| SS2-023-0.75K | 2 | 5 | 303 | 215 | 137 | 27 | 21 | 12 | 9 | 7 | 5 | 260 |
| SS2-023-1.5K | 3.2 | 8 | 485 | 344 | 219 | 43 | 33 | 19 | 15 | 11 | 8 | 416 |
| SS2-043-0.4K | 1 | 1.5 | 91 | 64 | 41 | 8 | 6 | 4 | 3 | 2 | 1 | 78 |
| SS2-043-0.75K | 2 | 2.6 | 158 | 112 | 71 | 14 | 11 | 6 | 5 | 4 | 3 | 135 |
| SS2-043-1.5K | 3 | 4.2 | 255 | 181 | 115 | 23 | 17 | 10 | 8 | 6 | 4 | 219 |
| SS2-021-1.5K | 2.5 | 8 | 485 | 344 | 219 | 43 | 33 | 19 | 15 | 11 | 8 | 416 |
| SS2-021-2.2K | 4.2 | 11 | 667 | 473 | 301 | 60 | 45 | 26 | 21 | 15 | 11 | 573 |
| SS2-023-2.2K | 4.2 | 11 | 667 | 473 | 301 | 60 | 45 | 26 | 21 | 15 | 11 | 573 |
| SS2-023-3.7K | 6.7 | 17.5 | 1,061 | 752 | 479 | 95 | 72 | 42 | 33 | 25 | 17 | 911 |
| SS2-043-2.2K | 4.6 | 6 | 364 | 258 | 164 | 33 | 25 | 14 | 11 | 8 | 6 | 312 |
| SS2-043-3.7K | 6.9 | 9 | 545 | 387 | 246 | 49 | 37 | 21 | 17 | 13 | 9 | 468 |
| SS2-043-5.5K | 9.2 | 12 | 727 | 516 | 328 | 65 | 49 | 29 | 23 | 17 | 12 | 625 |