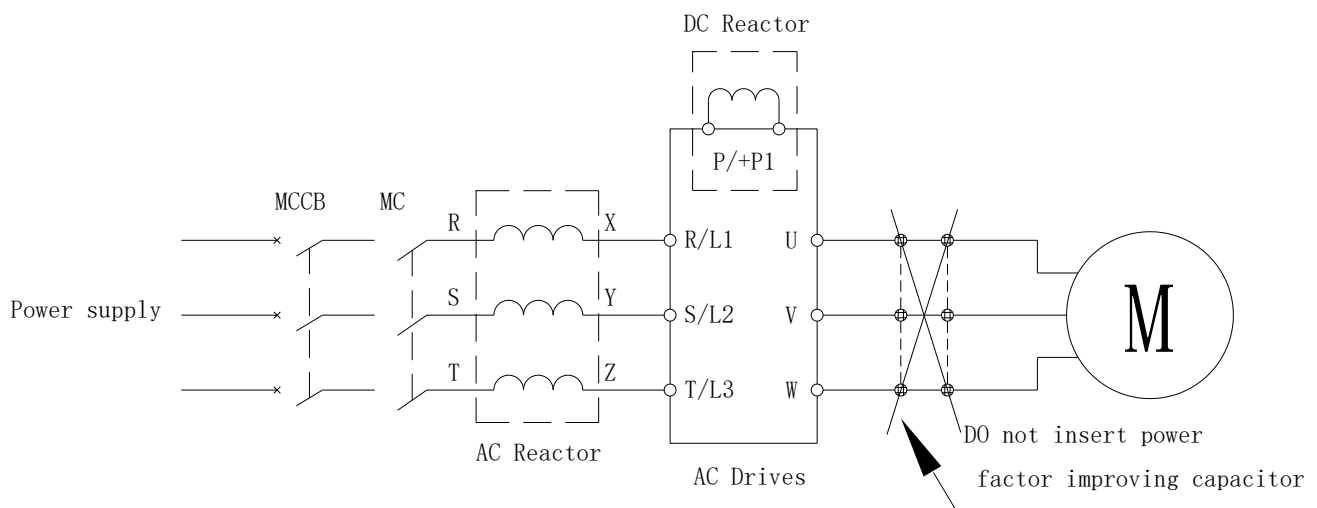


Shihlin Electric SC3 Series AC Drives Harmonics Report

(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 SC3 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 6.6kV (mA)	5th	7th	11th	13th	17th	19th	23th	25th	THDi
SC3-021-0.2K	0.6	1.8	109	77	49	10	7	4	3	3	2	94
SC3-021-0.4K	1	2.7	164	116	74	15	11	6	5	4	3	141
SC3-021-0.75K	1.5	4.5	273	193	123	24	18	11	9	6	4	234
SC3-023-0.2K	0.6	1.8	109	77	49	10	7	4	3	3	2	94
SC3-023-0.4K	1.2	3	182	129	82	16	12	7	6	4	3	156
SC3-023-0.75K	2	5	303	215	137	27	21	12	9	7	5	260
SC3-023-1.5K	3.2	8	485	344	219	43	33	19	15	11	8	416
SC3-043-0.4K	1	1.5	91	64	41	8	6	4	3	2	1	78
SC3-043-0.75K	2	2.6	158	112	71	14	11	6	5	4	3	135
SC3-043-1.5K	3	4.2	255	181	115	23	17	10	8	6	4	219
SC3-021-1.5K	2.5	8	485	344	219	43	33	19	15	11	8	416
SC3-021-2.2K	4.2	11	667	473	301	60	45	26	21	15	11	573
SC3-023-2.2K	4.2	11	667	473	301	60	45	26	21	15	11	573
SC3-023-3.7K	6.7	17.5	1,061	752	479	95	72	42	33	25	17	911
SC3-043-2.2K	4.6	6	364	258	164	33	25	14	11	8	6	312
SC3-043-3.7K	6.9	9	545	387	246	49	37	21	17	13	9	468
SC3-043-5.5K	9.2	12	727	516	328	65	49	29	23	17	12	625
SC3-043-7.5K/11KF	14	18	1,091	774	493	98	74	43	34	25	18	937
SC3-043-11K/15KF	18	24	1,455	1,032	657	130	99	57	46	34	24	1,249
SC3-043-15K/18.5KF	25	32	1,939	1,376	876	173	131	76	61	45	32	1,665
SC3-043-18.5K/22KF	29	38	2,303	1,633	1,040	206	156	90	72	53	38	1,978
SC3-043-22K	34	45	2,727	1,934	1,232	244	185	107	85	63	45	2,342