

## Fuse protected selection type 2, Iq = 50kA, IS13947-4-1

- The selection is valid only for complete Siemens combinations i.e. SDF + DIN Fuse + Contactor + Birelay (+ timer).
- In case this combination is changed to accommodate another brand/rating of SDF/DIN Fuse/Contactor/BMR, it shall be the responsibility of the person making such a change to assure type 2 performance.**
- Selection is for **normal starting** conditions with starting time  $\leq 6$  seconds. (For **heavy starting** applications e.g. ID/FD fans, reciprocating compressor, ball mills etc., please consult Siemens.)
- At 60°C service temperature the bi-relay has to be derated. The bi-relay can be used upto the maximum current setting indicated. For example - A bi-relay with setting 32-50A, at 60°C can be used only upto 47A. This however does not mean that at 60°C, the 50A setting corresponds to 47A. It means that, the bi-relay should not be set beyond 47A.
- The electronic star-delta timer type 3RP should be used in star-delta feeders.**
- SDF: Switch Disconnecter Fuse. **All fuses are DIN HRC type.**
- Tested Type 2 combinations
- Low LCC = Low Life Cycle Cost

### Direct-on-line feeder, for Low LCC

SL Motor kW 415V, 3ph, 50Hz	Motor I <sub>L</sub> Amp	SDF		HRC Fuse		Contactor		Bi-Relay		Bi-Relay	
		Type	Rating	Type 3NA7	Amp	Type	Amp	Type (50°C)	Set-Range Amp	Type (60°C)	Available Set- Range Amp
0.37	1	3KL811	20	3NA78040RC	4	3TF30	9	3UA5000-0K	0.8 - 1.25	3UA5000-0K	0.8 - 1.17
0.55	1.3	3KL811	20	3NA78040RC	4	3TF30	9	3UA5000-1A	1 - 1.6	3UA5000-1A	1 - 1.5
0.75	1.9	3KL811	20	3NA78010RC	6	3TF30	9	3UA5000-1B	1.25 - 2	3UA5000-1C	1.6 - 2.3
1.1	2.6	3KL811	20	3NA78010RC	6	3TF30	9	3UA5000-1D	2 - 3.2	3UA5000-1D	2 - 3
1.5	3.7	3KL811	20	3NA78030RC	10	3TF30	9	3UA5000-1E	2.5 - 4	3UA5000-1E	2.5 - 3.7
2.2	4.8	3KL811	20	3NA78050RC	16	3TF30	9	3UA5000-1F	3.2 - 5	3UA5000-1G	4 - 5.9
3.7	7.8	3KL811	20	3NA78070RC	20	3TF30	9	3UA5000-1H	5 - 8	3UA5000-1J	6.3 - 9.4
5.5	11.2	3KL812	32	3NA78100RC	25	3TF31	12	3UA5000-1K	8 - 12.5	3UA5000-1K	8 - 11.7
7.5	16	3KL812	32	3NA78120RC	32	3TF32	16	3UA5200-2A	10 - 16	3UA5200-2B	12.5 - 18.7
9.3	19	3KL815	63	3NA78200RC	50	3TF34	32	3UA5500-2B	12.5 - 20	3UA5500-2C	16 - 23.4
11	20.8	3KL815	63	3NA78200RC	50	3TF34	32	3UA5500-2C	16 - 25	3UA5500-2C	16 - 23.4
15	28	3KL815	63	3NA78220RC	63	3TF34	32	3UA5500-2D	20 - 32	3UA5500-2D	20 - 30
18.5	34	3KL815	63	3NA78220RC	63	3TF35	38	3UA5500-2Q	25 - 36	3UA5500-2R	32 - 37.4
22	40	3KL821	100	3NA78240RC	80	3TF46	45	3UA5800-2FZ1	32 - 50	3UA5800-2FZ1	32 - 47
30	53	3KL821	100	3NA78300RC	100	3TF47	63	3UA5800-2TZ1	40 - 57	3UA5800-2PZ1	50 - 59
37	65	3KL822	125	3NA78320RC	125	3TF477	70	3UA5800-2VZ2	57 - 70	3UA5800-2VZ2	57 - 65.5
45	78	3KL822	125	3NA78320RC	125	3TF49	85	3UA5800-8YZ1	70 - 95	3UA5800-8YZ1	70 - 88.9
55	96	3KL823	160	3NA78360RC	160	3TF50	110	3UA5830-5A	85 - 105	3UA5830-5C	85 - 98.2
75	131	3KL831	200	3NA71400RC	200	3TF51	140	3UA6230-5A	85 - 135	3UA6230-5B	115 - 168
90	156	3KL832	250	3NA71440RC	250	3TF52	170	3UA6230-5B	115 - 180	3UA6230-5B	115 - 168
110	189	3KL832	250	3NA71440RC	250	3TF53	205	3UA6230-5C	160 - 250	3UA6230-5C	160 - 234
132	227	3KL833	315	3NA72520RC	315	3TF54	250	3UA6230-5C	160 - 250	3UA6230-5C	160 - 234
160	271	3KL834	400	3NA72600RC	400	3TF55	300	3UA6230-5D	200 - 320	3UA6230-5D	200 - 299
200	339	3KL841	500	3NA73650RC	500	3TF56	400	3UA6230-5E	250 - 400	3UA6230-5E	250 - 374
250	398	3KL841	500	3NA73650RC	500	3TF57	475	3UA6830-5F	320 - 500	3UA6830-5F	320 - 468

### Star-Delta feeder, for Low LCC

SL Motor kW 415V, 3ph, 50Hz	Motor		SDF		HRC Fuses		Contactor Line/Delta		Contactor Star		Bi-Relay		Bi-Relay		Timer
	I <sub>L</sub> Amp.	I <sub>ph</sub> Amp	Type	Rating	Type 3NA7	Amp	Type	Amp	Type	Amp	Type (50°C)	Set-Range Amp	Type (60°C)	Available Set-Range Amp	Type
2.2	4.8	2.8	3KL811	20	3NA78010RC	6	3TF30	9	3TF30	9	3UA5000-1D	2-3.2	3UA5000-1D	2-3	3RP15
3.7	7.8	4.5	3KL811	20	3NA78030RC	10	3TF30	9	3TF30	9	3UA5000-1F	3.2-5	3UA5000-1F	3.2-4.7	3RP15
5.5	11.2	6.5	3KL811	20	3NA78050RC	16	3TF30	9	3TF30	9	3UA5000-1H	5-8	3UA5000-1H	5-7.5	3RP15
7.5	16	9.2	3KL811	20	3NA78070RC	20	3TF31	12	3TF30	9	3UA5000-1J	6.3-10	3UA5000-1J	6.3-9.4	3RP15
9.3	19	11	3KL812	32	3NA78100RC	25	3TF31	12	3TF30	9	3UA5000-1K	8-12.5	3UA5000-1K	8-11.7	3RP15
11	20.8	12	3KL812	32	3NA78100RC	25	3TF31	12	3TF30	9	3UA5000-1K	8-12.5	3UA5000-2S	10-13.6	3RP15
15	28	16.2	3KL812	32	3NA78120RC	32	3TF33	22	3TF32	16	3UA5200-2B	12.5-20	3UA5200-2B	12.5-18.7	3RP15
18.5	34	19.7	3KL815	63	3NA78200RC	50	3TF34	32	3TF34	32	3UA5500-2B	12.5-20	3UA5500-2C	16-23.4	3RP15
22	40	23.2	3KL815	63	3NA78200RC	50	3TF34	32	3TF34	32	3UA5500-2C	16-25	3UA5500-2D	22-30	3RP15
30	53	30.6	3KL815	63	3NA78220RC	63	3TF34	32	3TF34	32	3UA5500-2D	20-32	3UA5500-2Q	25-33.7	3RP15
37	65	37.5	3KL821	100	3NA78240RC	80	3TF35	38	3TF34	32	3UA5500-2R	32-40	3UA5500-8M	36-45	3RP15
45	78	45	3KL821	100	3NA78300RC	100	3TF46	45	3TF34	32	3UA5800-2FZ1	32-50	3UA5800-2FZ1	32-47	3RP15
55	96	55.4	3KL821	100	3NA78300RC	100	3TF47	63	3TF34	32	3UA5800-2TZ1	40-57	3UA5800-2PZ1	50-59	3RP15
75	131	75.6	3KL823	160	3NA78360RC	160	3TF49	85	3TF47	63	3UA5800-8YZ1	70-95	3UA5800-8YZ1	70-88.9	3RP15
90	156	90.1	3KL823	160	3NA78360RC	160	3TF50	110	3TF47	63	3UA5830-5B	70-95	3UA5830-5C	85-98.2	3RP15
110	189	109	3KL831	200	3NA71400RC	200	3TF50	110	3TF50	110	3UA5830-5D	95-120	3UA5830-5D	95-112	3RP15
132	227	131.1	3KL832	250	3NA71440RC	250	3TF51	140	3TF50	110	3UA6230-5B	115-180	3UA6230-5B	115-168	3RP15
160	271	156.5	3KL833	315	3NA72520RC	315	3TF52	170	3TF50	110	3UA6230-5B	115-180	3UA6230-5B	115-168	3RP15
200	339	195.7	3KL834	400	3NA72600RC	400	3TF54	250	3TF52	170	3UA6230-5C	160-250	3UA6230-5C	160-234	3RP15
250	398	229.8	3KL841	500	3NA72600RC	400	3TF54	250	3TF54	250	3UA6230-5C	160-250	3UA6230-5D	200-299	3RP15

Siemens switchgear. Tried, tested, trusted.

## Fuseless selection type 2, Iq = 50kA, IS13947-4-1

- The selection is valid only for complete Siemens combinations i.e. MPCB / MCCB + contactor + bi-relay (+timer)
- In case this combination is changed to accommodate another brand/rating of MPCB/MCCB/contactor/BMR, it shall be the responsibility of the person making such a change to assure Type 2 performance.
- Selection is for **normal starting** conditions with starting time  $\leq 6$  seconds. (For **heavy starting** applications e.g. ID/FD fans, reciprocating compressor, ball mills etc., please consult Siemens.)
- The electronic star-delta timer type 3RP should be used in star-delta feeders.
- Truly tested Type 2 combinations at neutral authorities
- Low LCC = Low life cycle cost

### Direct-on-line feeder, for low LCC

SL motor		Circuit breaker		Contactor		Bi-relay	
kW 415V, 3ph, 50Hz	IL A	Type	A	Type	A	Type (50°C)	Range (A)
0.37	1	3RV11 21-0KA10	1.25	3TF30	9	#	0.9 - 1.25
0.55	1.3	3RV11 21-1AA10	1.6	3TF30	9	#	1.1 - 1.6
0.75	1.9	3RV11 21-1BA10	2	3TF30	9	#	1.4 - 2
1.1	2.6	3RV11 21-1DA10	3.2	3TF31	12	#	2.2 - 3.2
1.5	3.7	3RV11 21-1EA10	4	3TF32	16	#	2.8 - 4
2.2	4.8	3RV11 21-1FA10	5	3TF32	16	#	3.5 - 5
3.7	7.8	3RV11 21-1HA10	8	3TF32	16	#	5.5 - 8
5.5	11.2	3RV11 21-1KA10	12.5	3TF34	32	#	9 - 12.5
7.5	16	3RV11 21-4BA10	20	3TF34	32	#	11 - 16
9.3	19	3RV11 21-4BA10	20	3TF34	32	#	14 - 20
11	20.8	3RV11 21-4CA10	22	3TF34	32	#	17 - 22
15	28	3RV11 31-4EA10	32	3TF35	38	#	22 - 32
18.5	34	3RV11 31-4FA10	40	3TF46	45	#	28 - 40
22	40	3RV11 31-4HA10	50	3TF48	75	#	36 - 45
30	53	3RV11 42-4JA10	63	3TF48	75	#	45 - 63
37	65	3RV11 42-4KA10	75	3TF50	110	#	57 - 75
45	78	3RV11 42-4LA10	90	3TF50	110	#	70 - 90
55	96	3RV11 42-4MA10	100	3TF52	170	#	80 - 100
75	131	3VL27 16-1DK36-0AA0	160	3TF52	170	3UA62 30-5A	85-135
90	156	3VL37 25-1DK36-0AA0	250	3TF53	205	3UA62 30-5B	115-180
110	189	3VL37 25-1DK36-0AA0	250	3TF53	205	3UA62 30-5C	160 - 250
132	227	3VL37 25-1DK36-0AA0	250	3TF54	250	3UA62 30-5C	160 - 250
160	271	3VL47 31-1DK36-0AA0	315	3TF55	300	3UA62 30-5D	200 - 320
200	339	3VL57 50-1DK36-0AA0	500	3TF57	475	3UA62 30-5E	250 - 400
250	398	3VL57 50-1DK36-0AA0	500	3TF57	475	3UA68 30-5F	320 - 500

#3RV11 comes with integral relay function, hence external birelay is eliminated.

(3RV10 MPCB with 'standard release' can also be used.)

### Star-delta feeder, for low LCC

SL motor			Circuit breaker		Contactor line/delta		Contactor star		Bi-relay		Timer
kW 415V, 3ph, 50Hz	IL A	Iph A	Type	A	Type	A	Type	A	Type (50°C)	Range (A)	Type
2.2	4.8	2.8	3RV13 21-1FC10	5	3TF32	16	3TF30	9	3UA52 00-1D	2 - 3.2	3RP15
3.7	7.8	4.5	3RV13 21-1HC10	8	3TF32	16	3TF30	9	3UA52 00-1F	3.2 - 5	3RP15
5.5	11.2	6.5	3RV13 21-1KC10	12.5	3TF34	32	3TF30	9	3UA52 00-1H	5 - 8	3RP15
7.5	16	9.2	3RV13 21-4AC10	16	3TF34	32	3TF30	9	3UA52 00-1J	6.3 - 10	3RP15
9.3	19	11	3RV13 21-4CC10	22	3TF34	32	3TF30	9	3UA52 00-1K	8 - 12.5	3RP15
11	20.8	12	3RV13 21-4CC10	22	3TF34	32	3TF30	9	3UA52 00-1K	8 - 12.5	3RP15
15	28	16.2	3RV13 31-4EC10	32	3TF35	38	3TF32	16	3UA52 00-2B	12.5 - 20	3RP15
18.5	34	19.7	3RV13 31-4FC10	40	3TF46	45	3TF34	32	3UA52 00-2C	16 - 25	3RP15
22	40	23.2	3RV13 31-4GC10	45	3TF48	75	3TF34	32	3UA52 00-2C	16 - 25	3RP15
30	53	30.6	3RV13 41-4JC10	63	3TF48	75	3TF34	32	3UA55 00-2D	20 - 32	3RP15
37	65	37.5	3RV13 41-4KC10	75	3TF50	110	3TF34	32	3UA55 00-2R	32 - 40	3RP15
45	78	45	3RV13 41-4LC10	90	3TF50	110	3TF34	32	3UA55 00-8M	36 - 45	3RP15
55	96	55.4	3RV13 41-4MC10	100	3TF52	170	3TF34	32	3UA58 00-2TZ1	40 - 57	3RP15
75	131	75.6	3VL27 16-1DK36-0AA0	160	3TF52	170	3TF47	63	3UA58 00-8YZ1	70 - 95	3RP15
90	156	90.1	3VL37 25-1DK36-0AA0	250	3TF53	205	3TF47	63	3UA58 30-5B	70 - 95	3RP15
110	189	109	3VL37 25-1DK36-0AA0	250	3TF53	205	3TF50	110	3UA58 30-5D	95 - 120	3RP15
132	227	131.1	3VL37 25-1DK36-0AA0	250	3TF54	250	3TF50	110	3UA62 30-5B	115 - 180	3RP15
160	271	156.5	3VL47 31-1DK36-0AA0	315	3TF55	300	3TF50	110	3UA62 30-5B	115 - 180	3RP15
200	339	195.7	3VL57 50-1DK36-0AA0	500	3TF57	475	3TF52	170	3UA62 30-5C	160 - 250	3RP15
250	398	229.8	3VL57 50-1DK36-0AA0	500	3TF57	475	3TF54	250	3UA62 30-5D	160 - 250	3RP15