

Achieving Type 2 “No Damage” Motor Start Protection

General Electric Motor Starters & Mersen Fuses

Type 2 “No Damage” Protection - What Is It and Which Fuses Are Best?

Type 2 protection, also referred to as “no damage” protection, simply means that if a short circuit occurs, the short circuit protective device will operate fast enough to prevent fault current damage to healthy equipment in the system. Tests show that current-limiting fuses are the best choice for the protection of the motor controllers if damage-free performance is required. To ensure that correct fuse choices are made, short circuit tests must be made on every possible combination of motor control and fuse. This sheet summarizes a major manufacturer’s motor starter and the Mersen time-delay fuses which give Type 2 “no damage” protection. All combinations are UL witnessed and certified.

200 Volt, Three-Phase Motors

HP	Contactor	OLR	Class J	SCCR (kA)
1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1J	AJT4	100
1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8†	100
3/4	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8	100
1	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1L	AJT10	100
1 1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1M	AJT12	100
2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1N	AJT20†	100
3	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1P	AJT20	100
5	CL02, CL03, CL04, CL25, CL45	RT*1S	AJT35	100
5	CL06, CL07, CL08, CL09, CL10	RT*2B	AJT35	100
5	CL03, CL04, CL45	RT*1T	AJT45†	100
7 1/2	CL04, CL05	RT*1U	AJT45	100
7 1/2	CL06, CL07, CL08, CL09, CL10	RT*2D	AJT60†	100
7 1/2	CL04, CL45	RT*1V	AJT60†	100
10	CL45	RT*1W	AJT70	100
10	CL06, CL07, CL08, CL09, CL10	RT*2E	AJT70	100
15	CL07, CL08, CL09, CL10	RT*2G	AJT100	100
20	CL08, CL09, CL10	RT*2H	AJT125	100
20	CK08, CK09, CK95	RT*3B	AJT125	100
25	CK08, CK09	RT*3C	AJT150	100

230 Volt, Three-Phase Motors

HP	Contactor	OLR	Class J	SCCR (kA)
1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1J	AJT4	100
3/4	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8†	100
1	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1L	AJT10	100
1 1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1L	AJT10	100
2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1M	AJT12	100
3	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1N	AJT20	100
5	CL02, CL03, CL04, CL25, CL45	RT*1S	AJT35†	100
5	CL06, CL07, CL08, CL09, CL10	RT*2B	AJT35†	100
7 1/2	CL03, CL04, CL45	RT*1T	AJT45	100
7 1/2	CL06, CL07, CL08, CL09, CL10	RT*2C	AJT45	100
7 1/2	CL03, CL04, CL45	RT*1U	AJT45	100
10	CL04	RT*1V	AJT60	100
10	CL45	RT*1V	AJT60	100
10	CL06, CL07, CL08, CL09, CL10	RT*2D	AJT60	100
15	CL06, CL07, CL08, CL09, CL10	RT*2F	AJT90	100
20	CL07, CL08, CL09, CL10	RT*2G	AJT100	100
20	CL07, CL08, CL09, CL10	RT*2H	AJT125†	100
25	CK08, CK09, CK95	RT*3B	AJT125	100
25	CL08, CL09, CL10	RT*2J	AJT125	100
30	CK08, CK09, CK95	RT*3B	AJT125	100
25	CK08, CK09	RT*3C	AJT150	100

* Replace * with “A” or “M”

†† May be too small to allow some motors to start.

† Sized larger than code max for single motor.

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460 Volt, Three-Phase Motors

HP	Contactor	OLR	Class J	SCCR (kA)
1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1F	AJT1-1/2††	100
1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1G	AJT2	100
3/4	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1H	AJT4†	100
1	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1J	AJT4	100
1 1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8†	100
2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8†	100
3	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1L	AJT10	100
5	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1N	AJT20†	100
7 1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1P	AJT20	100
10	CL02, CL03, CL04, CL25, CL45	RT*1R	AJT25	100
10	CL06, CL07, CL08, CL09, CL10	RT*2A	AJT30	100
15	CL03, CL04, CL45	RT*1T	AJT45	100
15	CL06, CL07, CL08, CL09, CL10	RT*2C	AJT45	100
20	CL04, CL45	RT*1V	AJT60	100
20	CL06, CL07, CL08, CL09, CL10	RT*2D	AJT60	100
25	CL45	RT*1W	AJT70	100
25	CL06, CL07, CL08, CL09, CL10	RT*2E	AJT70	100
30	CL06, CL07, CL08, CL09, CL10	RT*2E	AJT70	100
30	CL06, CL07, CL08, CL09, CL10	RT*2F	AJT90	100
40	CL07, CL08, CL09, CL10	RT*2G	AJT100	100
50	CL08, CL09, CL10	RT*2H	AJT125	100
50	CL08, CL09, CL10	RT*3B	AJT125	100
50	CL08, CL09, CL10	RT*2J	AJT125	100
60	CL09, CL10	RT*3B	AJT125	100
60	CL09, CL10	RT*2K	AJT150	100

575 Volt, Three-Phase Motors

HP	Contactor	OLR	Class J	SCCR (kA)
1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1F	AJT1-1/2	100
3/4	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1G	AJT2	100
3/4	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1H	AJT4†	100
1	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1H	AJT4†	100
1 1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1J	AJT4	100
2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1J	AJT4	100
2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8†	100
3	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1K	AJT8	100
5	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1L	AJT10	100
5	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1M	AJT12	100
7 1/2	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1N	AJT20	100
10	CL00, CL01, CL02, CL03, CL04, CL25, CL45	RT*1P	AJT20	100
15	CL02, CL03, CL04, CL25, CL45	RT*1S	AJT35	100
15	CL06, CL07, CL08, CL09, CL10	RT*2B	AJT35	100
20	CL03, CL04, CL45	RT*1T	AJT45	100
20	CL06, CL07, CL08, CL09, CL10	RT*2C	AJT45	100
20	CL03, CL04, CL45	RT*1U	AJT45	100
25	CL04, CL45	RT*1V	AJT60	100
25	CL06, CL07, CL08, CL09, CL10	RT*2D	AJT60	100
30	CL04, CL45	RT*1V	AJT60	100
30	CL06, CL07, CL08, CL09, CL10	RT*2D	AJT60	100
30	CL45	RT*1W	AJT70	100
30	CL06, CL07, CL08, CL09, CL10	RT*2E	AJT70	100
40	CL06, CL07, CL08, CL09, CL10	RT*2E	AJT70	100
40	CL06, CL07, CL08, CL09, CL10	RT*2F	AJT90	100
50	CL07, CL08, CL09, CL10	RT*2G	AJT100	100
60	CL07, CL08, CL09, CL10	RT*2H	AJT125	100
60	CK08, CK09, CK95	RT*3B	AJT125	100
75	CK08, CK09, CK95	RT*3B	AJT125	100
75	CK08, CK09	RT*3C	AJT150	100

* Replace * with “A” or “M”

†† May be too small to allow some motors to start.

† Sized larger than code max for single motor.

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