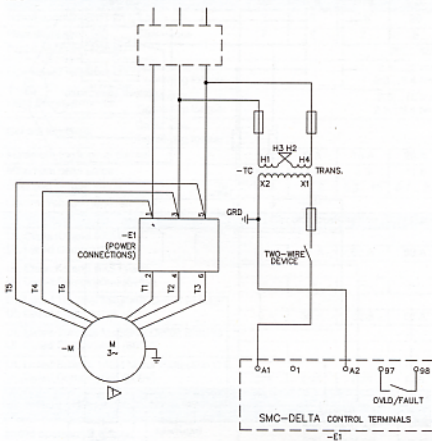
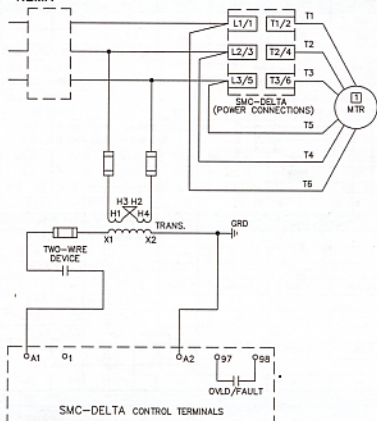


## Two-Wire Configuration

IEC

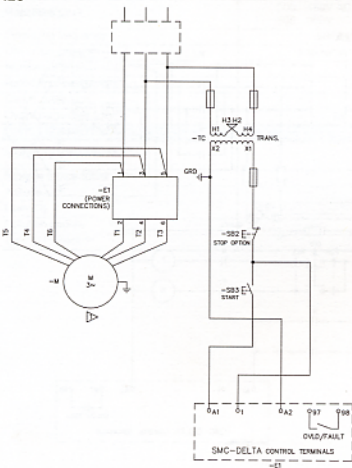


NEMA

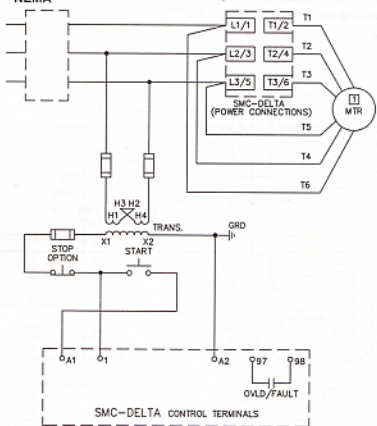


## Three-Wire Configuration

IEC

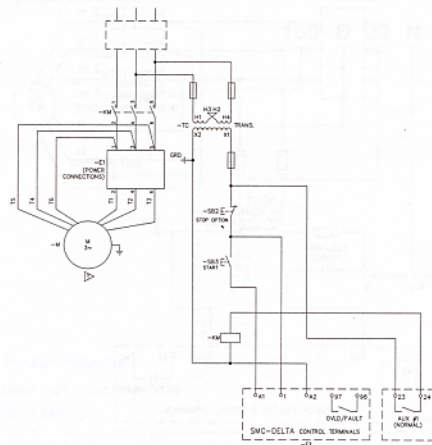


NEMA

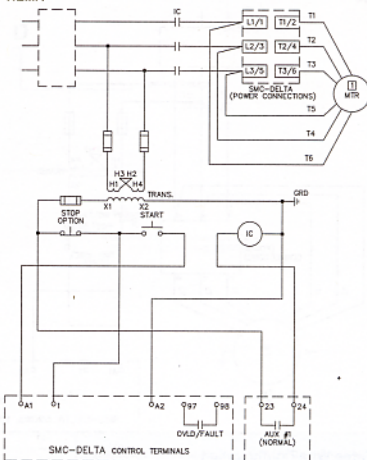


## Isolation Contactor Configuration

IEC



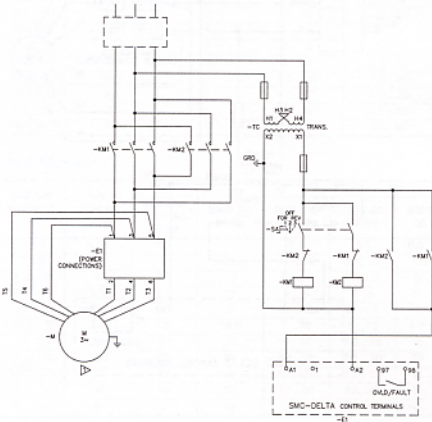
NEMA



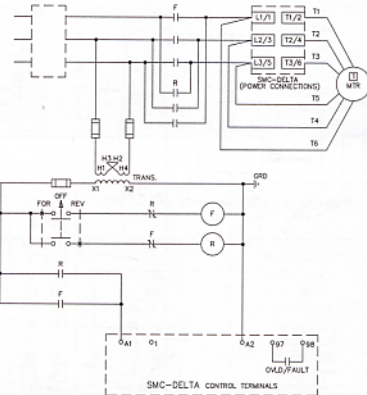
## Reversing Configuration

Note: Minimum Off time equals 1.0 s.

IEC



NEMA



Electrical Ratings Cat. Nos. 150-...												
Cat. No.	D3	D9	D16	D20	D25	D32	D51	D64	D74	D104	D147	
Rated operating current $I_b$ (A)	3	9	16	20	25	32	51	64	74	104	147	
Heat dissipation (W)	Continuous											
Rated operating voltage	200...480, 500...600V AC 50/60 Hz, 3-phase (+10%, -15%)											
Line Power terminals	Cable size:	2.5...25 mm <sup>2</sup> (14...4 AWG)							2.5...95 mm <sup>2</sup> (14...3/0 AWG)			
	Tightening torque:	2.3...3.4 N·m (20...30 in-lbs)							11.3...12.4 N·m (100...110 in-lbs)			
Load Power terminals	Cable size:	2.5...16 mm <sup>2</sup> (14...6 AWG)							2.5...50 mm <sup>2</sup> (14...1 AWG)			
	Tightening torque:	2.3...3.4 N·m (20...30 in-lbs)							11.3...12.4 N·m (100...110 in-lbs)			
Control terminals	Cable size:	0.2...2.5 mm <sup>2</sup> (24...14 AWG)										
	Tightening torque:	0.5...0.9 N·m (4.4...8.0 in-lbs)										
Maximum continuous current	3 A	9 A	16 A	20 A	25 A	32 A	51 A	64 A	74 A	104 A	147 A	
Maximum delta amps	1.74	5.2	9.3	11.6	14.5	17.4	29.6	36.5	42.8	60.1	85	
Overload current range	(A)	1...3	3...9	5.3...16	6.7...20	8.3...25	10.6...32	17...51	21.3...64	24.7...74	34.7...104	49...147
Control Voltage Requirements	100...240V AC or 24V AC/DC 50/60 Hz											
Short Circuit Coordination (Max Fuse or Circuit Breaker Size) Type 1												
UL Class K5 and RK5 Fuses UL Listed Combination (600V)	5 kA Available Fault Current											
	10 A	35 A	60 A	80 A	100 A	125 A	—	—	—	—	—	
UL Class K5 and RK5 Fuses UL Listed Combination (600V)	10 kA Available Fault Current											
	—	—	—	—	—	—	200 A	250 A	250 A	400 A	500 A	
UL Listed Thermal Magnetic Circuit Breaker UL Listed Combination (600V)	5 kA Available Fault Current											
	10 A	35 A	60 A	80 A	100 A	125 A	—	—	—	—	—	
UL Listed Thermal Magnetic Circuit Breaker UL Listed Combination (600V)	10 kA Available Fault Current											
	—	—	—	—	—	—	200 A	250 A	250 A	300 A	400 A	
UL Listed Bulletin 140M Motor Protection C.B. UL Listed Combination (600V)	5 kA Available Fault Current											
	C25	C25	C25	F45	F45	F45	—	—	—	—	—	
Power Circuit												
Rated operational voltage	UL/cUL					IEC						
	200...480V AC 500...600V AC					200...480V — 400V- 500V — 500V-						
Rated insulation voltage	600V AC					500V-						
Dielectric withstand	2200V AC					2500V-						
Repetitive peak	200...480V AC — 1400V 500...600V AC — 1600V					200...480V — 1400V 500V — 1600V						
Operating frequency	50/60 Hz					50/60 Hz						
Utilization category	Intermittent duty					AC-53b						
Number of poles	Equipment designed for 3-phase only											
Rated impulse voltage	6 kV											
DV/DT protection	1000 V/μs											
Overvoltage Category	III					III						
Environmental												
Operating temperature	0...50°C (32...122°F) (open) 0...40°C (32...104°F) (enclosed)											
Storage temperature	-25...85°C (-13...185°F)											
Altitude	2000 m (6560 ft)											
Humidity	5...95% (non-condensing)											
Pollution degree	2											
Type of Protection	IP2X											

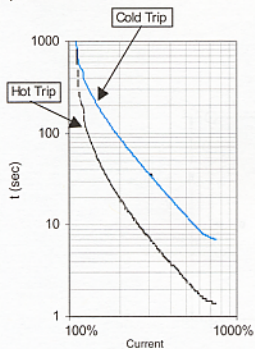
## Specifications, Continued

Control Circuit			
		UL/cUL	IEC
Rated operational voltage (+10%, -15%)		100...240V AC, 24V AC/DC	100...240V-, 24V AC/DC
Rated insulation voltage		250V	250V-
Rated impulse voltage		—	4 kV
Dielectric withstand		1500V AC	2000V-
Overvoltage category		—	III Ⓚ
Operating frequency		50/60 Hz	50/60 Hz
Input onstate voltage minimum, during start (A1, 1)		65V AC, 19.2V DC / 13.5V AC	
Input onstate current, during start with fan (A1, 1)	3...64 A	195 mA @ 120V AC / 140 mA @ 240V AC, 790 mA @ 24V DC / 650 mA @ 24V AC	
	74...147 A	200 mA @ 120V AC / 100 mA @ 240V AC, 700 mA @ 24V AC/DC	
Input offstate voltage maximum (A1, 1)		30V AC, 17V DC / 12V AC	
Input offstate current @ input offstate voltage (A1, 1)		<2 mA	
Control power with fan, during start	3...64 A	195 mA @ 120V AC / 140 mA @ 240V AC, 790 mA @ 24V DC / 650 mA @ 24V AC	
	74...147 A	200 mA @ 120V AC / 100 mA @ 240V AC, 700 mA @ 24V AC/DC	
Control power without fan, during start		185 mA @ 120V AC / 125 mA @ 240V AC, 695 mA @ 24V DC / 570 mA @ 24V AC	
Auxiliary Contact			
		UL/cUL	IEC
Rated operational voltage		250V AC / 30V DC	250V- / 30V DC
Rated insulation voltage		250V	250V-
Rated impulse voltage		—	4 kV
Dielectric withstand		1500V AC	2000V-
Overvoltage category		—	III Ⓚ
Operating frequency		50/60 Hz	50/60 Hz
Utilization category		D300	AC15
TB-97, -98 (OVLD/Fault)	Type of control circuit	Electromagnetic relay	
	Number of contacts	1	
	Type of contacts	Normally Open (N.O.)	
	Kind of current	AC/DC	
	Rated operational current (max.)	0.6 A @ 120V- and 0.3 A @ 240V-	
	Conventional thermal current $I_{th}$	1 A	
	Make VA/break VA	432/72	
Standard Features			
Start times		2, 5, 10, or 15 s	
Selectable current limit		150%, 250%, 300%, and 350% of full load current	
Weight — kg (lbs)	1...64 A	0.86 (1.9)	
	74...147 A	2.25 (5)	
Mechanical Design Specifications/Test Requirements			
Resistance to vibration	Operational	1.0 G peak, 0.152 mm (0.006 in.) displacement	
	Non-operational	2.5 G peak, 0.381 mm (0.015 in.) displacement	
Resistance to shock	Operational	15 G	
	Non-operational	30 G	
Other			
		UL/cUL	IEC
EMC emission levels	Conducted radio frequency emissions	—	Class A
	Radiated emissions	—	Class A
EMC immunity levels	Electrostatic discharge	4 kV contact and 8kV air discharge	
	Radio frequency electromagnetic field	—	Per IEC 60947-4-2
	Fast transient	—	Per IEC 60947-4-2
	Surge transient	—	Per IEC 60947-4-2

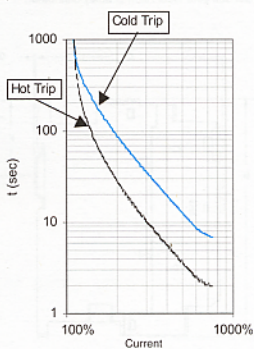
Ⓚ Overvoltage category II, when either control or auxiliary circuit is wired to a SELV or PELV circuit.

## SMC-Delta Overload Relays

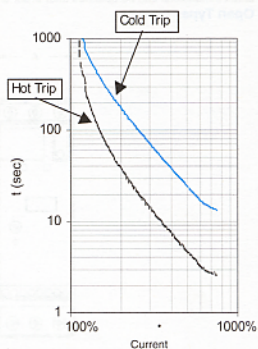
## Trip Class 10



## Trip Class 15



## Trip Class 20



## Starts per Hour Curves

