

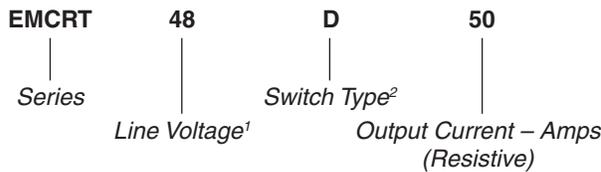
FEATURES/BENEFITS

- Controls and reverses three-phase motors without direct third leg (two legs)
- IP20 touch-proof housing
- Up to 10hp motors
- Very high immunity components, 1600 Vpeak
- All solid-state components
- Built-in snubber and MOV
- Forward/Reverse display LED



Part Number	Description
EMCRT48D50	3x480 Vac 4kW Motor Reverser
EMCRT48D75	3x480 Vac 7.5 kW Motor Reverser

Part Number Explanation



NOTES

- 1) Line Voltage (nominal): 48 = 480 Vdc nominal
- 2) Switch Type: D = zero-cross turn-on

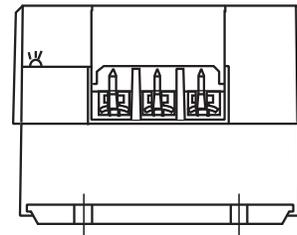
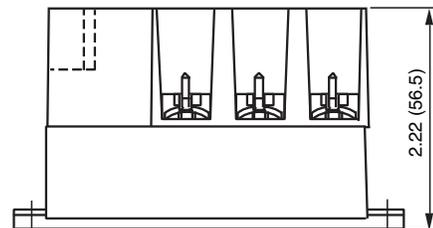
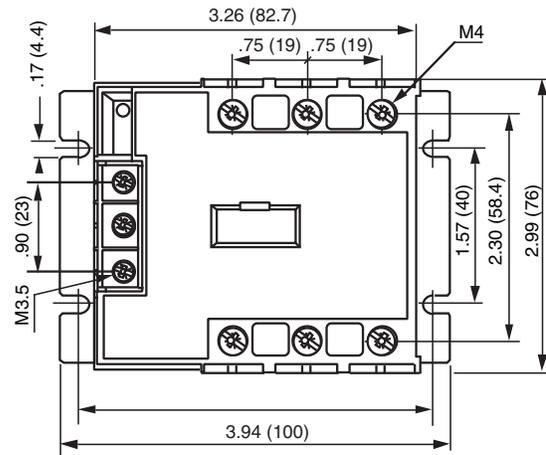
ELECTRICAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

INPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Control Range	12	30	Vdc
Input Current Range	15	25	mAdc
Must Turn-Off Voltage	6		Vdc
Reverse Voltage		30	Vdc
Reversing Time (fixed)		70	ms
Protection Against Simultaneous Control	Yes		
LED		Yes	

MECHANICAL SPECIFICATION



Weight: 4.58 oz. (130g)

Figure 1

BLOCK DIAGRAM

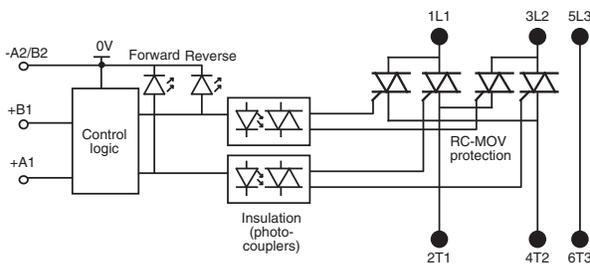


Figure 2

INTERNAL DIAGRAM FOR TWO-LEG MODELS

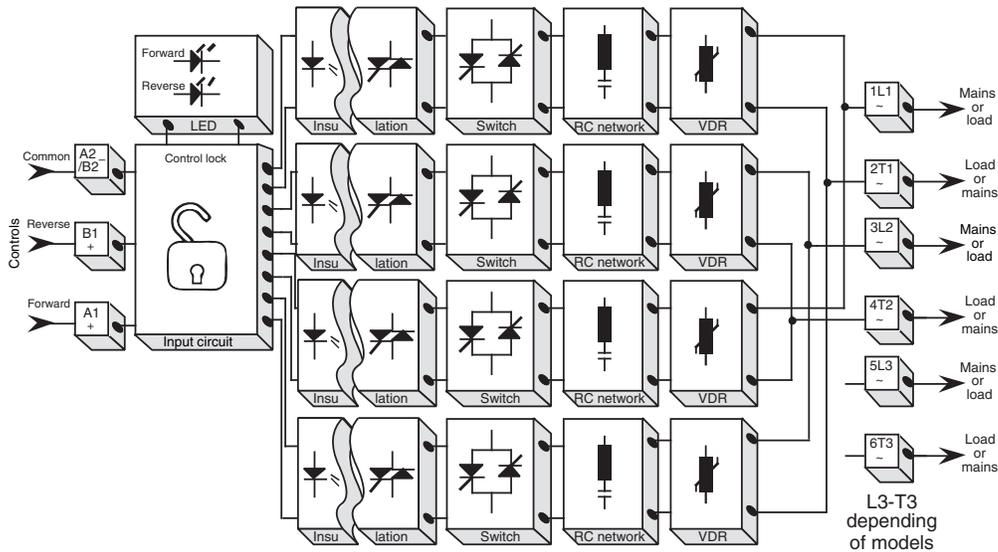


Figure 3

ELECTRICAL SPECIFICATIONS

(+20°C ambient temperature unless otherwise specified)

OUTPUT (LOAD) SPECIFICATIONS

	Min	Max	Units
Mains Voltage Range			
EMCRT48D50	24	520	Vac
EMCRT48D75	24	550	Vac
Non-Repetitive Peak Voltage		1600	V
Load Current (Motor Load)			
EMCRT48D50	0.1	8.5	A
EMCRT48D75	0.1	16	A
Three-Pole Power Motor			
EMCRT48D50		4	kW
EMCRT48D75		7.5	kW
Voltage Drop		1.4	Vrms
Non-Repetitive Overload Current			
EMCRT48D50		550	A
EMCRT48D75		1000	A
I ² t @ 10ms			
EMCRT48D50		1500	A ² s
EMCRT48D75		5000	A ² s
Power Factor (Rated Current)		0 up to 1	
Turn-On Time		20	ms
Reversing Time		100	ms
Turn-Off Time		10	ms
Leakage Current		5	mArms
Off-State Voltage Rise (dv/dt)		500	V/μs
Operating Frequency	25	440	Hz

GENERAL SPECIFICATIONS

(+20°C ambient temperature unless otherwise specified)

ENVIRONMENTAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature	-40	+100	°C
Storage Temperature	-40	+100	°C
Input-Output Isolation	3300		Vrms
Output-Case Isolation	3000		Vrms
Rated Impulse Voltage	4000		V
Thermal Resistance (Per Leg) θ _{JC}		0.5	°C/W
Thermal Resistance θ _{JA}		5	°C/W

TYPICAL APPLICATION

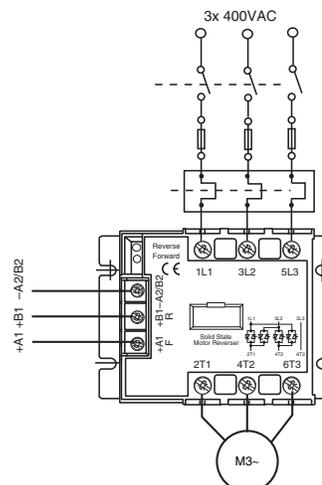


Figure 4

E.M.C.	
Max Conducted Immunity Level Test according to I.E.C. 1000-4-4 (bursts)	4KV direct at output, 4KV with a clamp at input no turn-on or damage
Max Conducted Immunity Level Test according to I.E.C. 1000-4-5 (el. shocks)	2KV in common mode, 1KV in differential mode (input & output) no turn-on or damage
Max Radiated Immunity Level Test according to I.E.C. 1000-4-3	10V/m no turn-on or damage
Max Conducted Emission Level (0.8<Pf<1) Test according to EN55011	Conducted noise made by SSR depends on the wiring configuration and the load type. Because test methods may vary from reality, we advise choosing the right filter for your use.
Max Radiated Emission Level Test according to EN55011 @Ic	<30dB μ V from 30 to up 230MHz; <37dB μ V from 230 up to 1000 MHz

MOUNTING ON A HEAT SINK

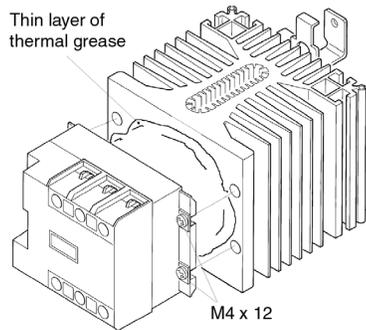


Figure 5

TEMPLATE

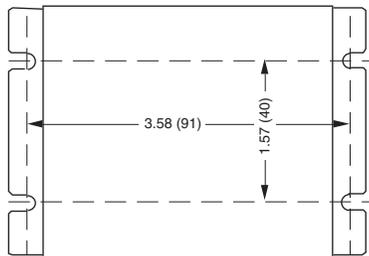


Figure 6

THERMAL CHARACTERISTICS

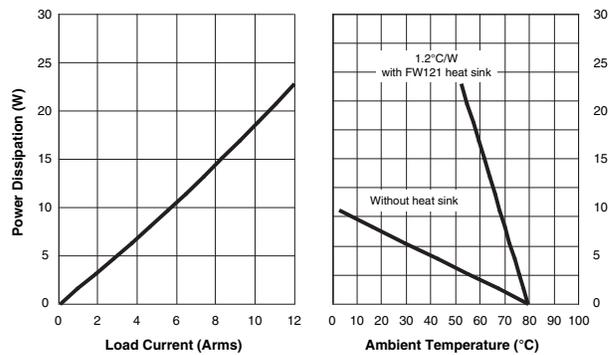


Figure 7a — EMCRT48D50

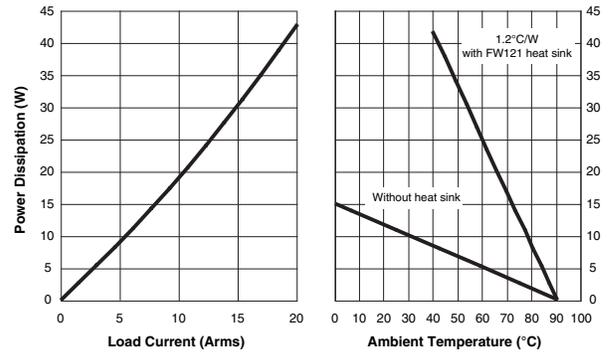


Figure 7b — EMCRT48D75

SURGE CURRENT

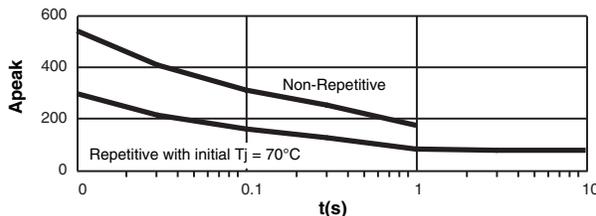


Figure 8a — EMCRT48D50

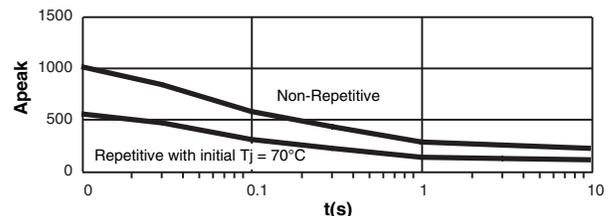
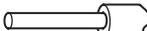
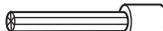
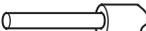
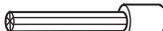


Figure 8b — EMCRT48D75

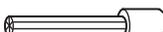
REVERSERS + HEATSINK SELECTION IN COMPLIANCE WITH EN60947-4-2

SSR SELECTION Motors Soft-Starters for a Permanent Current		Relays without Heat Sink	Heat Sink Ambient = 40°C Heat Sink = 80°C	Ferraz Fuse Type 14x51 size/ max. rating	Overload Relay Type Klöckner-Moeller
Motor Power	Motor current (@480V)	Two Legs Models	With Integrated DIN Rail adaptor		
0.75kW	2A	EMCRT48D50	None	am 8A/500V	Z00-2.4
1.1kW	2.6A	EMCRT48D50	None	am 8A/500V	Z00-6
1.5kW	3.5A	EMCRT48D50	None	am 12A/500V	Z00-6
2.2kW	5A	EMCRT48D50	FW121	am 12A/500V	Z00-6
3kW	6.6A	EMCRT48D50	FW121	am 12A/500V	Z00-10
4kW	8.5A	EMCRT48D50	FW121	am 12A/500V	Z00-10
5.5kW	12A	EMCRT48D75	FW121	am 20A/500V	Z00-16
7.5kW	16A	EMCRT48D75	FW121	am 32A/500V	Z00-16

CONTROL WIRING

Number of Wires				Screwdriver Type	Recommended Torque
1		2			
Solid (no ferrule)	Fine Stranded (with ferrule)	Solid (no ferrule)	Fine Stranded (with ferrule)		N.m
					
AWG18...AWG14	AWG18...AWG14	AWG18...AWG14	AWG18...AWG14	Pozidriv 2	1.2

POWER WIRING

Number of Wires				Screwdriver Type	Recommended Torque
1		2			
Solid (no ferrule)	Fine Stranded (with ferrule)	Solid (no ferrule)	Fine Stranded (with ferrule)		N.m
					
AWG16...AWG8	AWG16...AWG10	AWG16...AWG8	AWG16...AWG10	Pozidriv 2	1.8

APPLICATION WITH ONE PHASE MOTOR

The EMCRT relay, initially developed to reverse three-phase asynchronous motors, can be used for reversing single phase motors. This relay has four power switches, a reversing temporization and a lock in case of simultaneous controls. If you need large quantities for single-phase use, please contact us. We can simplify the product because only two switches of four are used.

