



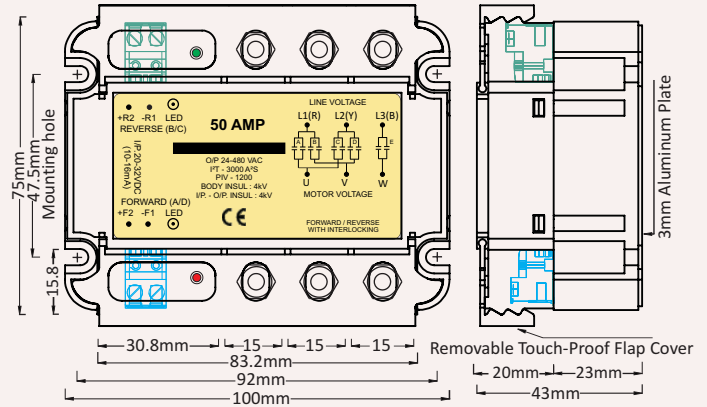
ÜRETİMLERİMİZ

BS3F MOTOR SAĞ-SOL

3 PHASE MOTOR FORWARD & REVERSE WITH INTERLOCKING SSM

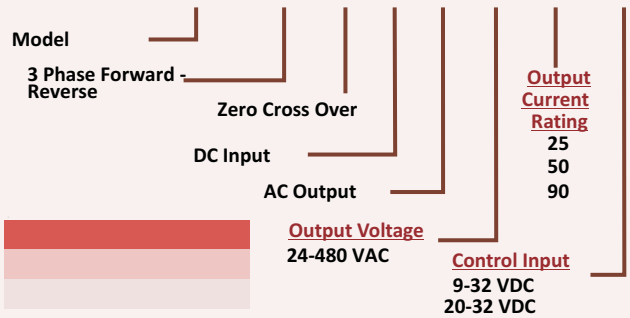


TYPE "E-75" HEAT SINK
BS3F Model
Current up to 21Amp with Din Rail 45mm, Thermal Resistance
RθSA = 3°C/W,
ΔT= 60 C
Surface Area:
258mm² X100mm
100mm(W) X 75mm(L)
X10mm(H) +SSM
Weight : @ 119gms



- Zero Voltage Turn-On .
- Rating from 25 Amp,50 Amp,90 Amp @25°C 24-480 VAC.
- With IP 20 protection cover.
- Long life cycle . Up to 10¹¹ cycles
- Fire Retardant Plastic as per UL94 VO GRADE.
- No contact arcing, low electromagnetic interference, high surge capability
- High resistance to aggressive chemicals and dust due to special Potting.
- Logic compatibility, Fast switching, Low coupling capacitance.
- New improved SEMS Screw - Washers input & Output terminals.
- SSMs can be provided as surface-mount technology (SMT)parts, which means lower cost and easier SMT printed-circuit board manufacture
- No need of External Snubber.
- If Forward control I/P is given at the same time Reverse control I/P is given to SSM than SSM will stop working because of I/P. Interlocking circuit in SSM within less than 4.80μs.
- While Resuming after Power failure 20 mS delay in First Cycle.
- For Forward/Reverse signal of SSM, Negative Terminal can be common for both but not Positive terminal.

ORDERING FORMAT

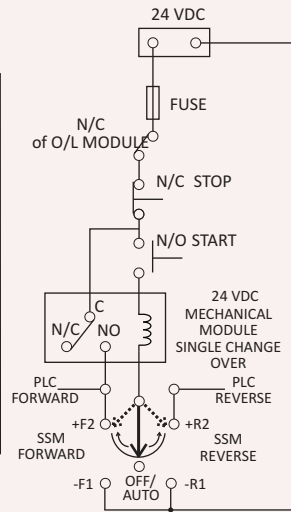
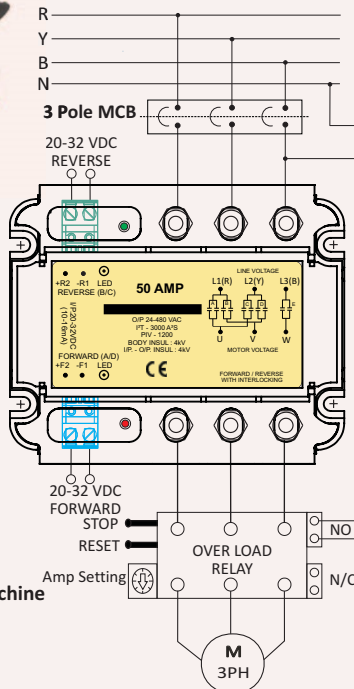


3 Phase Forward & Reverse Connection with Overload Relay

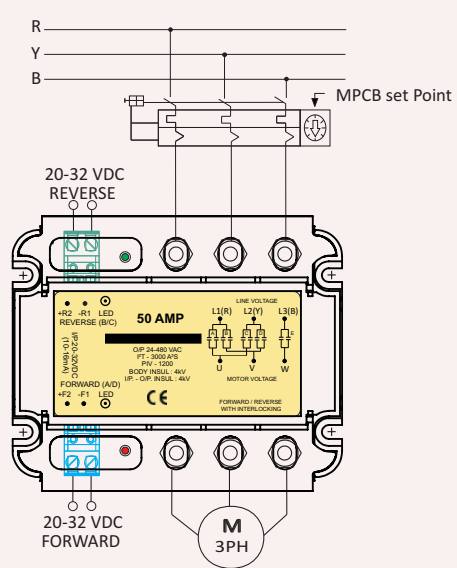


Approved By
CE EN-60947-5-1
D&B
LEAD - FREE
RoHS COMPLIANT

3 Phase Forward & Reverse Connection with MPCB



3 Phase Forward & Reverse Connection with MPCB



APPLICATIONS:

- Plastic Processing Machinery for Plastic Die rotation. Extruder, Injection, Rope making machine
- CNC Turning like tool change over
- Pipe Bending Machines
- Printing Machinery
- Industrial Hoists/Overhead Crane
- Paper shredding Machine
- Ring frame Machine/Ring Spinning Machine
- Electrical Actuators/Valves Controls
- Conveyor System/Belts
- Material Handling System like Furnace Trolley

Note : Specifications are subject to change without prior notice.

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General Specification

Max Barrier Layer Temperature (T _{max})	< 125 °C
Ambient Temperature Range (T _{amb})	0-85 °C
SSM Storage Temperature Range (T _{st})	-40°C to 80°C
Input Terminal Screw Torque Range	T = 0.5 N.m (Max.)
Output Terminal Screw Torque Range	T = 2.5 N.m (Max.)
Power Factor COSφ @Max. Load @480VAC	> 0.55
Housing Material	UL-94 V0 Grade
Base Plate	Aluminium
SSM Weight	390 grams
Control Input Electrical Wire Size (Max.)	Up to 2.1 sq mm(14 AWG)
Power Output Electrical Wire Size (Max.)	Up to 25 sq mm(3 AWG)
Test Standards:	ROHS,IP20
Pending Approvals:	UL 508,VDE ,TUV ,CSA 22-2 IEC 60947-5-1:2016 IEC 62314:2006

Input Technical Specifications

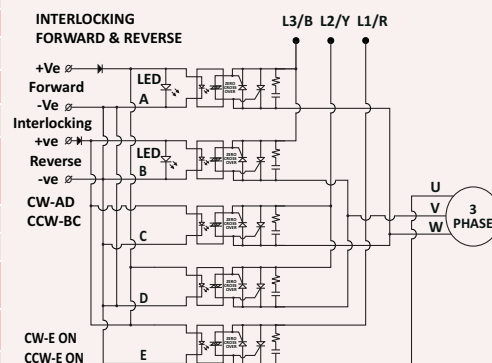
Parameters	Unit	
Forward & Reverse Control Voltage Range	V	9-32VDC / 20-32VDC
Control Supply Current Consumption	mA	8-16mA / 10-16 mA
Max. Input current at time of interlocking condition	mA	32 mA/28 mA
Interlocking time duration	µS	< 5 µS
Input Impedance (Current Regulator Circuit Impedance)	Ω	1 kΩ - 2 kΩ
Minimum Turn ON Voltage	VDC	6.6 VDC/18.5 VDC
Turn OFF Voltage	VDC	< 6.5 VDC/< 19 VDC
Forward Control Input Status Indication	-	Red LED Indication
Reverse Control Input Status Indication	-	Green LED Indication
Maximum Turn ON Time	mS	≤ 1/2 Cycle(10 mS)
Maximum Turn OFF Time	mS	≤ 1/2 Cycle(10 mS)

Output Technical Specifications @ 25°C Unless Specified

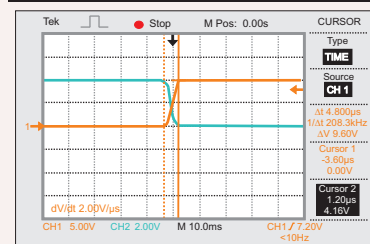
Parameters	Symbol	Unit	25 Amp	50 Amp	90 Amp
			24-480 VAC 3Q TRIAC	24-480 VAC BACK TO BACK SCR	
Operating Voltage Range	V _{AC}	V _{RMS}			
Operating Frequency Range	f	Hz	47-63 Hz		
Peak Inverse Voltage	PIV	V _{PK}	1200	1200	1200
Max. Surge Voltage With Stand Capacity (<1 Second)	V _{surge}	V _{RMS}	2700 V_{RMS} (3800 V_{PK})		
Rated Operational Current AC51a @ 20°C (Resistive Load)	I _T	Amp	25	50	90
Rated Operational Current AC53a @ 55°C (Inductive Load-Motor)	I _T	Amp	6	15	25
Maximum 3 Phase Motor Rating	hp	hp	1.5 hp	5 hp	7.5 hp
	kW	kW	1.11	3.72	5.59
NON Repetitive Surge Peak ON-State Current @ Rated V _{RRM} applied for 1/2 Cycle t=10 mS/ t=8.33 mS (50 Hz/60 Hz)	I _{TSM} @ 50 Hz	A _p	260	800	1200
	I _{TSM} @ 60 Hz	A _p	273	840	1260
Max. I ² t for Fusing @ t=10 mS (50Hz)	I ² t	A ² s	340	3000	7200
Max. I ² t for Fusing @ t=8.33 mS (60Hz)	I ² t	A ² s	305	2750	6510
Max. Peak ON-state voltage Drop	V _{TM}	V _{RMS}	≤1.2	≤1.2	≤1.2
Min. Isolation Resistance between F-R Input Terminals (-R1,+R2) & (-F1,+F2) to Output Terminals (L1,L2,L3,U,V,W) @ 500 VDC	Ω	GΩ	50	50	50
Isolation Voltage F-R Input Terminals (-R1,+R2) & (-F1,+F2) to Output Terminals (L1,L2,L3,U,V,W) for 1 Minute	V _{ISO}	kV	4	4	4
Isolation Voltage I/P & O/P Terminal (-R1,+R2,-F1,+F2,L1,L2,L3,U,V,W) to Body Isolation for 1 Minute	V _{ISO}	kV	4	4	4
Max. Rate of Rise OFF-State Voltage	dV/dt	V/µS	400	600	1000
Max. Rate of Rise OFF-State Current	di/dt	A/µS	22	100	150
Max. Peak Repetitive Forward OFF-State Voltage	V _{DRM}	V	800	1200	1600
Max. Peak Repetitive Forward OFF-State current	I _{DRM}	mA	0.05	0.1	0.05
Max. Peak repetitive reverse off-state Voltage	V _{RRM}	V	800	1200	1600
Max. Peak repetitive reverse off-state current	I _{RRM}	mA	0.05	0.1	0.05
Max. DC Gate Trigger Voltage	V _{GT}	V	1.2	1.5	1.5
Max. DC Gate Trigger Current	I _{GT}	mA	50	8.8	20
Turn OFF Time	t _q	µS	20	120	200
Maximum Latching Current	I _L	mA	100	160	200
Maximum Holding Current	I _H	mA	75	150	150
Thermal Resistance R _θ (Junction to case)	R _{θ(j-c)}	°C/W	1.2	1	0.32
OFF State SSM Leakage Current @ Rated Voltage & Frequency (Snubber Leakage)	I _{leak}	mA	< 2 mA	< 2 mA	< 2 mA
SCCR Current Rating	I _{SCCR}	kA	-	10 kA	10 kA
SSM Weight	W	gram	390	390	390

	FORWARD	REVERSE
LED INDICATION	● RED	● GREEN

Circuit Diagram- BS3F



3FR Interlocking Waveform of BS3F



Interlocking Time Period ≤ 4.80 µs



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