



Product designation				Power contactor
Product type designation				BF50
<b>Contact characteristics</b>				
Number of poles	Nr.			3
Rated insulation voltage $U_i$ IEC/EN	V			1000
Rated impulse withstand voltage $U_{imp}$	kV			8
Operational frequency	min	Hz	25	
	max	Hz	400	
IEC Conventional free air thermal current $I_{th}$	A			90
Operational current $I_e$	AC-1 (=40°C)	A	90	
	AC-1 (=55°C)	A	75	
	AC-1 (=70°C)	A	65	
	AC-3 (=440V =55°C)	A	50	
	AC-4 (400V)	A	28	
Rated operational power AC-3 (T=55°C)	230V	kW	15	
	400V	kW	22	
	415V	kW	30	
	440V	kW	30	
	500V	kW	30	
	690V	kW	37	
	1000V	kW	22	
Rated operational power AC-1 (T=40°C)	230V	kW	34	
	400V	kW	59	
	500V	kW	74	
	690V	kW	102	
IEC max current $I_e$ in DC1 with L/R = 1ms with 1 poles in series	=24V	A	45	
	48V	A	40	
	75V	A	40	
	110V	A	8	
	220V	A	-	
IEC max current $I_e$ in DC1 with L/R = 1ms with 2 poles in series	=24V	A	60	
	48V	A	60	
	75V	A	60	
	110V	A	50	
	220V	A	7	
IEC max current $I_e$ in DC1 with L/R = 1ms with 3 poles in series	=24V	A	60	
	48V	A	60	
	75V	A	60	

	110V	A	55
	220V	A	75
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IEC max current I <sub>e</sub> in DC1 with L/R = 1ms with 4 poles in series			
	=24V	A	60
	48V	A	60
	75V	A	60
	110V	A	60
	220V	A	90
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R = 15ms with 1 poles in series			
	=24V	A	30
	48V	A	25
	75V	A	22
	110V	A	3
	220V	A	–
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R = 15ms with 2 poles in series			
	=24V	A	35
	48V	A	35
	75V	A	30
	110V	A	25
	220V	A	5
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R = 15ms with 3 poles in series			
	=24V	A	50
	48V	A	50
	75V	A	45
	110V	A	30
	220V	A	40
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R = 15ms with 4 poles in series			
	=24V	A	55
	48V	A	55
	75V	A	55
	110V	A	45
	220V	A	50
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Short-time allowable current for 10s (IEC/EN60947-1)		A	400
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Protection fuse			
	gG (IEC)	A	100
	aM (IEC)	A	50
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Making capacity (RMS value)		A	500
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Breaking capacity at voltage			
	440V	A	400
	500V	A	352
	690V	A	312
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Resistance per pole (average value)		m?	0.8
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Power dissipation per pole (average value)			
	I <sub>th</sub>	W	6.5
	AC3	W	2
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Tightening torque for terminals			
	min	Nm	4
	max	Nm	5
	min	I <sub>bin</sub>	2.95
	max	I <sub>bin</sub>	3.69
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Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1

	min	I <sub>bin</sub>	0.8
	max	I <sub>bin</sub>	0.74
Max number of wires simultaneously connectable		Nr.	2
Conductor section			
AWG/Kcmil			
	max		2
Flexible w/o lug conductor section			
	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
Flexible c/w lug conductor section			
	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
Power terminal protection according to IEC/EN 60529			IP20 front
<b>Mechanical features</b>			
Operating position			
	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	1060
Conductor section			
AWG/kcmil conductor section			
	max		2
<b>Operations</b>			
Mechanical life		cycles	15000000
Electrical life		cycles	1400000
<b>Safety related data</b>			
Performance level B10d according to EN/ISO 13489-1			
	rated load	cycles	1400000
	mechanical load	cycles	15000000
Mirror contacts according to IEC/EN 60947-4-1			yes
EMC compatibility			yes
<b>AC coil operating</b>			
Rated AC voltage at 50/60Hz, 60Hz			
	min	V	20
	max	V	48
Rated AC voltage at 50/60Hz		V	24
AC operating voltage			
of 50/60Hz coil powered at 50Hz drop-out			
	max	%Us	=70 Us min
of 50/60Hz coil powered at 60Hz pick-up			
	min	%Us	80 Us min
	max	%Us	110 Us max
drop-out			
	max	%Us	=70 Us min
AC average coil consumption at 20°C			
of 50/60Hz coil powered at 50Hz			
	in-rush	VA	35...120
	holding	VA	1.5...3.7
of 50/60Hz coil powered at 60Hz			
	in-rush	VA	35...120

	holding	VA	1.5...3.7
Dissipation at holding =20°C 50Hz		W	1...2.5
<b>DC coil operating</b>			
DC rated control voltage	min	V	20
	max	V	48
DC rated control voltage		V	24
DC operating voltage			
pick-up	min	%Us	85 Us min
	max	%Us	110 Us max
drop-out	max	%Us	=70 Us min
Average coil consumption =20°C	in-rush	W	23...68
	holding	W	1.2...1,9
<b>Max cycles frequency</b>			
Mechanical operation		cycles/h	1500
<b>Operating times</b>			
Average time for Us control			
in AC			
Closing NO	min	ms	12
	max	ms	28
Opening NO	min	ms	8
	max	ms	22
in DC			
Closing NO	min	ms	40
	max	ms	85
Opening NO	min	ms	20
	max	ms	55
<b>UL technical data</b>			
Full-load current (FLA) for three-phase AC motor	at 480V	A	52
	at 600V	A	41
Yielded mechanical performance			
for single-phase AC motor	110/120V	HP	5
	230V	HP	10
for three-phase AC motor	200/208V	HP	15
	220/230V	HP	20
	460/480V	HP	40
	575/600V	HP	40
General USE			
Contactor	AC current	A	90
Short-circuit protection fuse, 600V			
High fault	Short circuit current	kA	100
	Fuse rating	A	150

	Fuse class	J
Standard fault		
	Short circuit current	kA 5
	Fuse rating	A 150
	Fuse class	RK5

**Ambient conditions**

Temperature

Operating temperature

min	°C	-40
max	°C	70

Storage temperature

min	°C	-50
max	°C	80

Max altitude

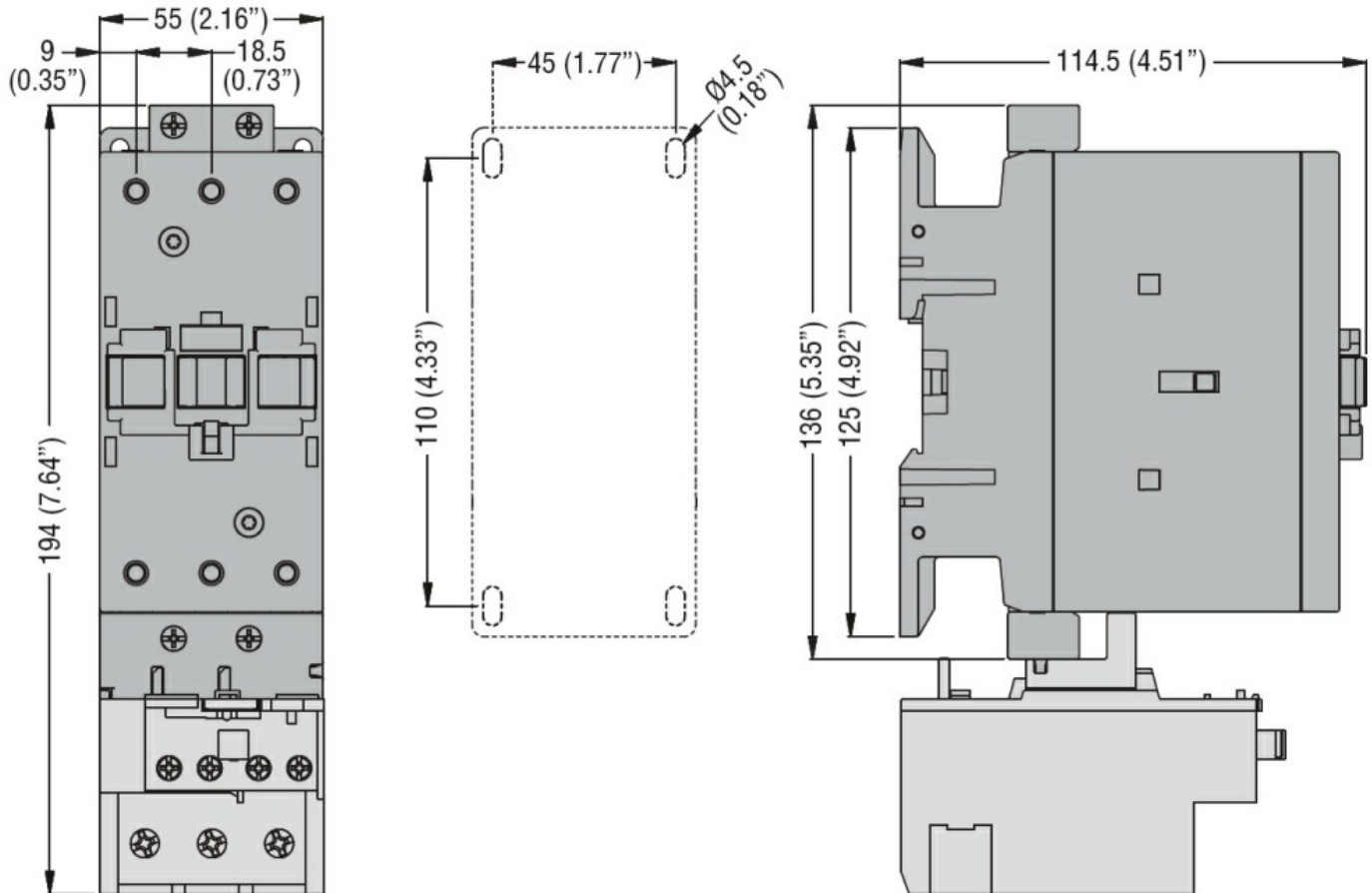
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**Resistance & Protection**

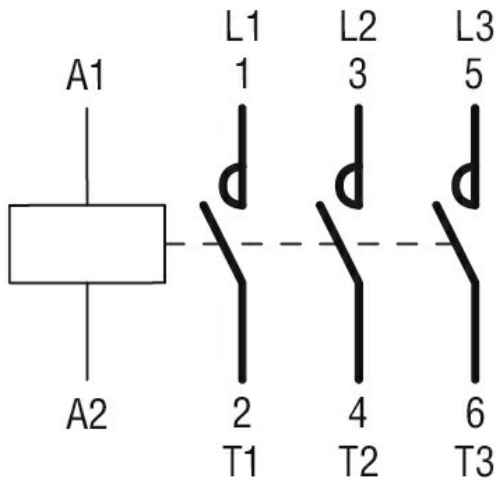
Pollution degree

3

**Dimensions**



**Wiring diagrams**



**Certifications and compliance**

Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN/BS 60947-1

IEC/EN/BS 60947-4-1

UL 60947-1

UL 60947-4-1

Certificates

CCC

cULus

**ETIM classification**

ETIM 8.0

EC000066 -  
 Power contactor,  
 AC switching