



Product designation	Power contactor		
Product type designation	BF50		
Contact characteristics			
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 ($\leq 40^\circ C$)	A	90
	AC-1 ($\leq 55^\circ C$)	A	75
	AC-1 ($\leq 70^\circ C$)	A	65
	AC-3 ($\leq 440V \leq 55^\circ C$)	A	50
	AC-4 (400V)	A	28
Rated operational power AC-3 ($T \leq 55^\circ C$)			
	230V	kW	11
	400V	kW	22
	415V	kW	22
	440V	kW	22
	500V	kW	22
	690V	kW	30
	1000V	kW	22
Rated operational current AC-3 ($T \leq 55^\circ C$)			
	230V	A	50
	400V	A	50
	415V	A	50
	440V	A	50
	500V	A	44
	690V	A	39
	1000V	A	23
Rated operational power AC-1 ($T \leq 40^\circ C$)			
	230V	kW	34
	400V	kW	59
	500V	kW	74
	690V	kW	102
IEC max current I_e in DC1 with $L/R \leq 1ms$ 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 $L/R \leq 1ms$ with 2 poles in series			
	≤24V	A	60

	48V	A	60
	75V	A	60
	110V	A	50
	220V	A	7
IEC max current le 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
IEC max current le 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
IEC max current le 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	—
IEC max current le 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
IEC max current le 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
IEC max current le 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
Short-time allowable current for 10s (IEC/EN60947-1)		A	400
Protection fuse			
	gG (IEC)	A	100
	aM (IEC)	A	50
Making capacity (RMS value)		A	500
Breaking capacity at voltage			
	440V	A	400
	500V	A	352
	690V	A	312
Resistance per pole (average value)		mΩ	0.8
Power dissipation per pole (average value)			
	I _{th}	W	6.5
	AC-3	W	2
Tightening torque for terminals			

	min	Nm	4
	max	Nm	5
	min	Ibin	2.95
	max	Ibin	3.69
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	Ibin	0.8
	max	Ibin	0.74
Max number of wires simultaneously connectable		Nr.	2
Conductor section			
AWG/Kcmil	max		2
Flexible w/o lug conductor section			
	min	mm ²	1.5
	max	mm ²	35
Flexible c/w lug conductor section			
	min	mm ²	1.5
	max	mm ²	35
Power terminal protection according to IEC/EN 60529			IP20 front
Mechanical features			
Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight	g	1020	
Operations			
Mechanical life	cycles	15000000	
Electrical life	cycles	1400000	
Safety related data			
Performance level B10d according to EN/ISO 13489-1			
	rated load	cycles	1400000
	mechanical load	cycles	15000000
EMC compatibility			yes
AC coil operating			
Rated AC voltage at 60Hz	V	48	
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80
	max	%Us	110
drop-out			
	min	%Us	20
	max	%Us	55
AC average coil consumption at 20°C			
of 60Hz coil powered at 60Hz			
	in-rush	VA	210
	holding	VA	15
Dissipation at holding ≤20°C 50Hz		W	5
Max cycles frequency			
Mechanical operation		cycles/h	3600
Operating times			

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

UL technical data

Rated operational voltage AC (UL) V 600

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
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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	-50
max	°C	70

Storage temperature

min	°C	-60
max	°C	80

Max altitude

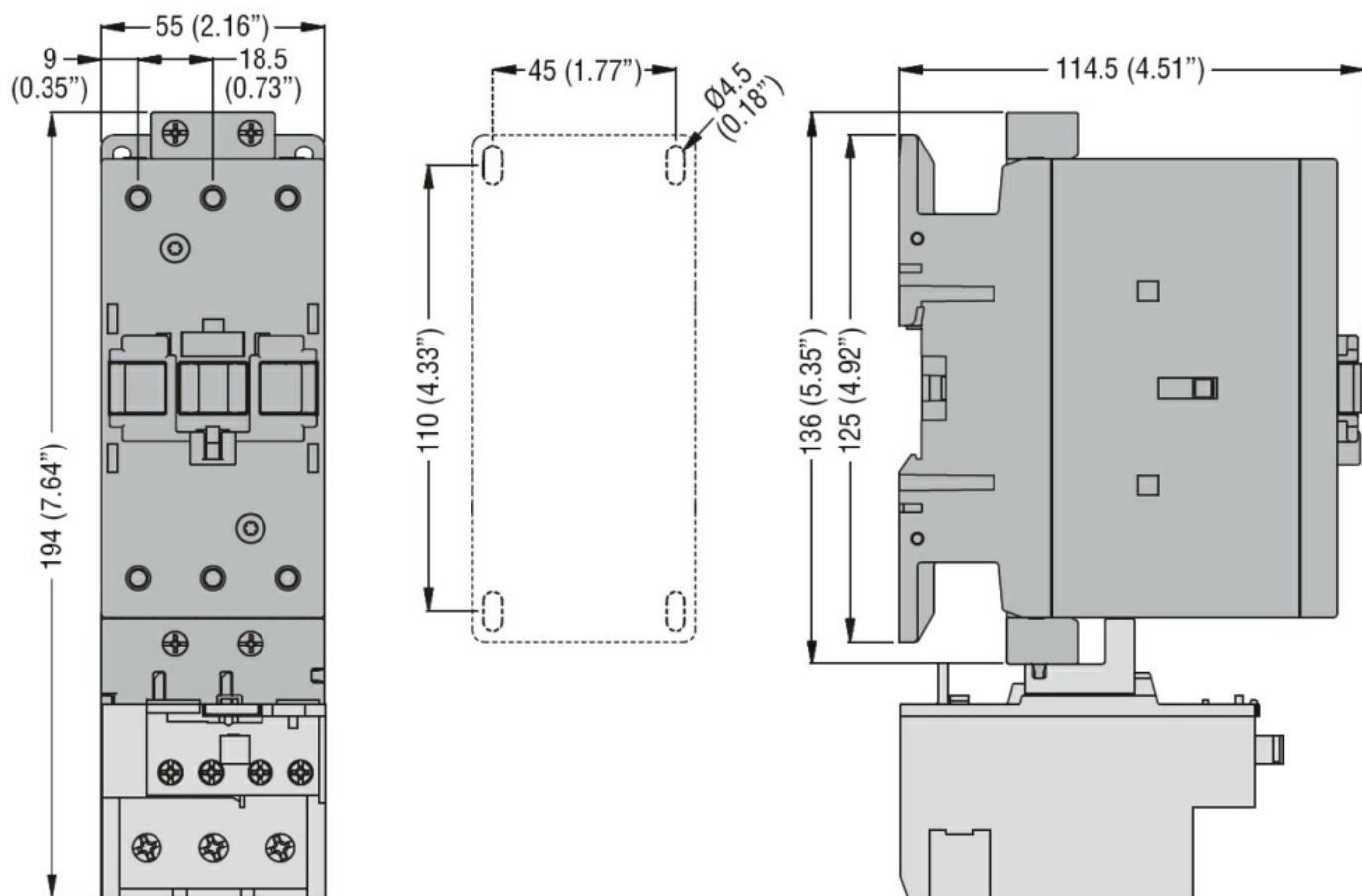
m	3000
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Resistance & Protection

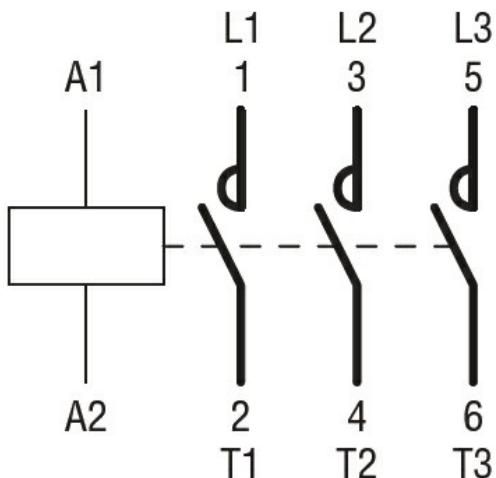
Pollution degree

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