



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 $I_{th} \leq 40^\circ\text{C}$	A	90
Operational current I_e	AC-1 ($\leq 40^\circ\text{C}$)	A 90
	AC-1 ($\leq 55^\circ\text{C}$)	A 75
	AC-1 ($\leq 70^\circ\text{C}$)	A 65
	AC-3 ($\leq 440\text{V} \leq 55^\circ\text{C}$)	A 50
	AC-4 (400V)	A 28
Rated operational power AC-3 ($T \leq 55^\circ\text{C}$)	230V kW	15
	400V kW	22
	415V kW	30
	440V kW	30
	500V kW	30
	690V kW	37
	1000V kW	22
Rated operational current AC-3 ($T \leq 55^\circ\text{C}$)	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 ($T \leq 40^\circ\text{C}$)	230V kW	34
	400V kW	59
	500V kW	74
	690V kW	102
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series	$\leq 24\text{V}$ A	45
	48V A	40
	75V A	40
	110V A	8
	220V A	—
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series	$\leq 24\text{V}$ A	60

	48V	A	60
	75V	A	60
	110V	A	50
	220V	A	7
IEC max current Ie 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 Ie 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 Ie 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 Ie 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 Ie 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 Ie 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)			
	Ith	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	1060
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 50/60Hz, 60Hz				
		min	V	100
		max	V	250
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 $\leq 20^{\circ}\text{C}$ 50Hz		W	1...2.5

DC coil operating

DC rated control voltage

	min	V	100
	max	V	250

DC operating voltage

pick-up

	min	%Us	80 Us min
	max	%Us	110 Us max

drop-out

	max	%Us	≤ 70 Us min
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Average coil consumption $\leq 20^{\circ}\text{C}$

	in-rush	W	23...68
	holding	W	1.2...1.9

Max cycles frequency

Mechanical operation cycles/h 1500

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
	220/240V	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	-40
max	°C	70

Storage temperature

min	°C	-50
max	°C	80

Max altitude

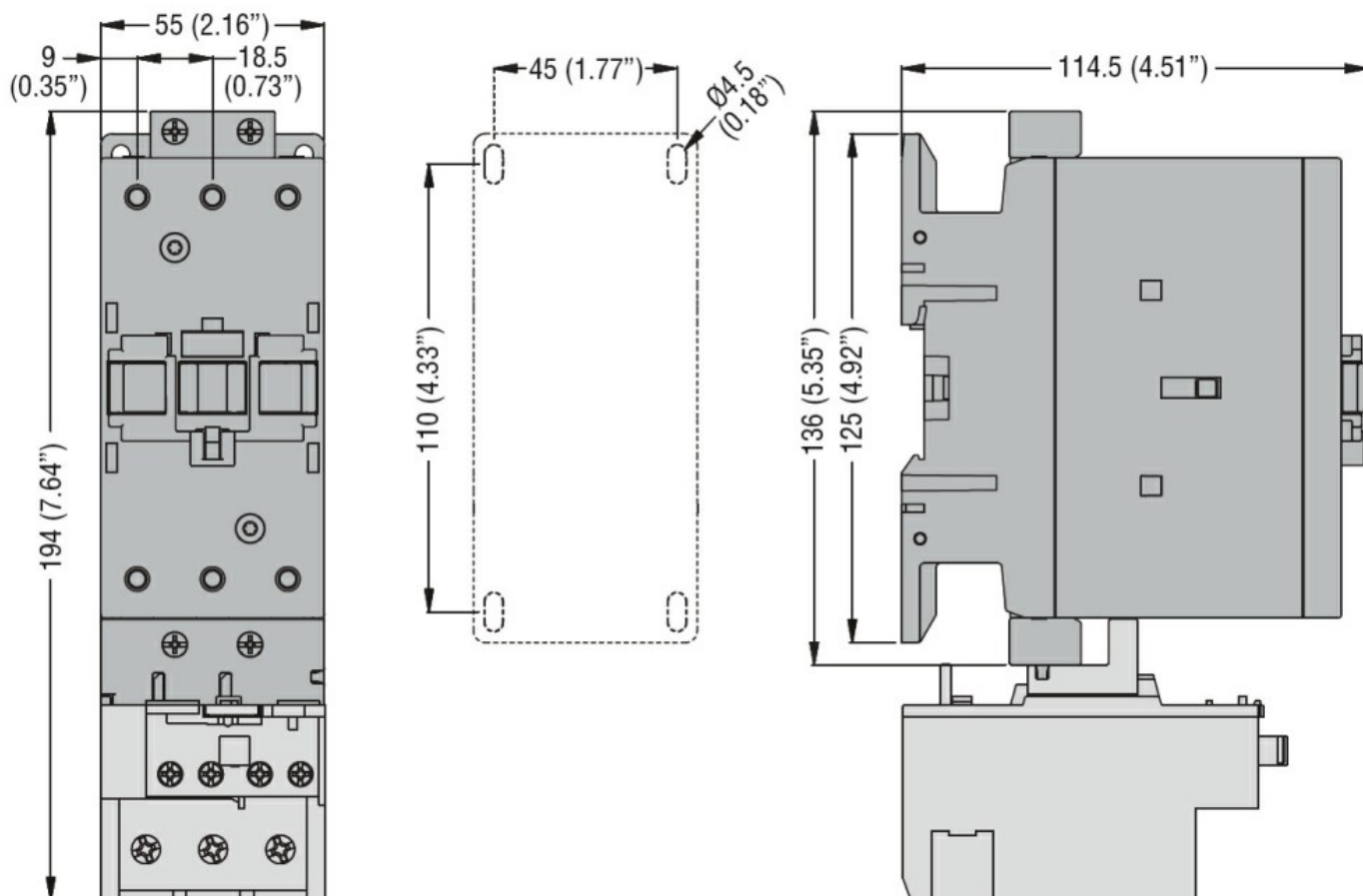
m 3000

Resistance & Protection

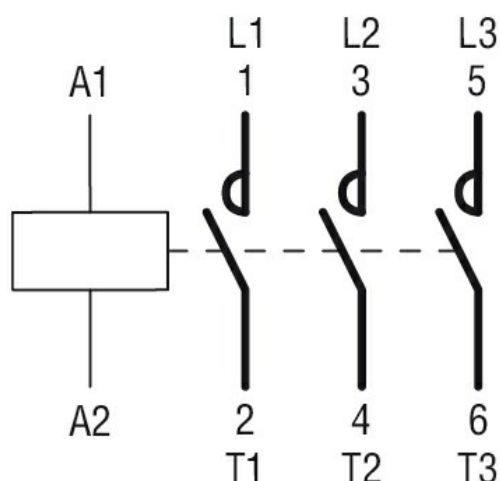
Pollution degree

3

Dimensions



Wiring diagrams



Certifications and compliance

Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN 60335-2-89

IEC/EN/BS 60947-1

IEC/EN/BS 60947-4-1

UL 60947-1

UL 60947-4-1

Certificates

CCC

CSA C22.2 n. 60335-2-40:22 LZGH A2L

CSA C22.2 No. 60335-2-89:21 LZGH A2L

cULus

UL 60335-2-40 LZGH A2L

UL 60335-2-89 LZGH A2L

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching