



Product designation  
Product type designation

Power contactor  
BF50

**Contact characteristics**

Number of poles	Nr.	3
Rated insulation voltage U <sub>i</sub> IEC/EN	V	1000
Rated impulse withstand voltage U <sub>imp</sub>	kV	8
Operational frequency	min	Hz 25
	max	Hz 400
IEC Conventional free air thermal current I <sub>th</sub>	A	90
Operational current I <sub>e</sub>	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 current AC-3 (T≤55°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≤40°C)	230V	kW 34
	400V	kW 59
	500V	kW 74
	690V	kW 102
IEC max current I <sub>e</sub> 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 <sub>e</sub> 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
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IEC max current I <sub>e</sub> 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)		mΩ	0.8
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Power dissipation per pole (average value)			
	I <sub>th</sub>	W	6.5
	AC-3	W	2
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Tightening torque for terminals			

	min	Nm	4
	max	Nm	5
	min	Ibin	2.95
	max	Ibin	3.69
<b>Tightening torque for coil terminal</b>			
	min	Nm	0.8
	max	Nm	1
	min	Ibin	0.8
	max	Ibin	0.74
<b>Max number of wires simultaneously connectable</b>			Nr. 2
<b>Conductor section</b>			
AWG/Kcmil			
	max		2
<b>Flexible w/o lug conductor section</b>			
	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
<b>Flexible c/w lug conductor section</b>			
	min	mm <sup>2</sup>	1.5
	max	mm <sup>2</sup>	35
<b>Power terminal protection according to IEC/EN 60529</b>			IP20 front
<b>Mechanical features</b>			
<b>Operating position</b>			
	normal allowable		Vertical plan ±30°
<b>Fixing</b>			Screw / DIN rail 35mm
<b>Weight</b>			g 1060
<b>Conductor section</b>			
AWG/kcmil conductor section			
	max		2
<b>Operations</b>			
<b>Mechanical life</b>			cycles 15000000
<b>Electrical life</b>			cycles 1400000
<b>Safety related data</b>			
<b>Performance level B10d according to EN/ISO 13489-1</b>			
	rated load	cycles	1400000
	mechanical load	cycles	15000000
<b>Mirror contacts according to IEC/EN 60947-4-1</b>			yes
<b>EMC compatibility</b>			yes
<b>AC coil operating</b>			
<b>Rated AC voltage at 50/60Hz, 60Hz</b>			
	min	V	100
	max	V	250
<b>AC operating voltage</b>			
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
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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 ≤20°C

in-rush	W	23...68
holding	W	1.2...1,9

Max cycles frequency

Mechanical operation

cycles/h	1500
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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

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

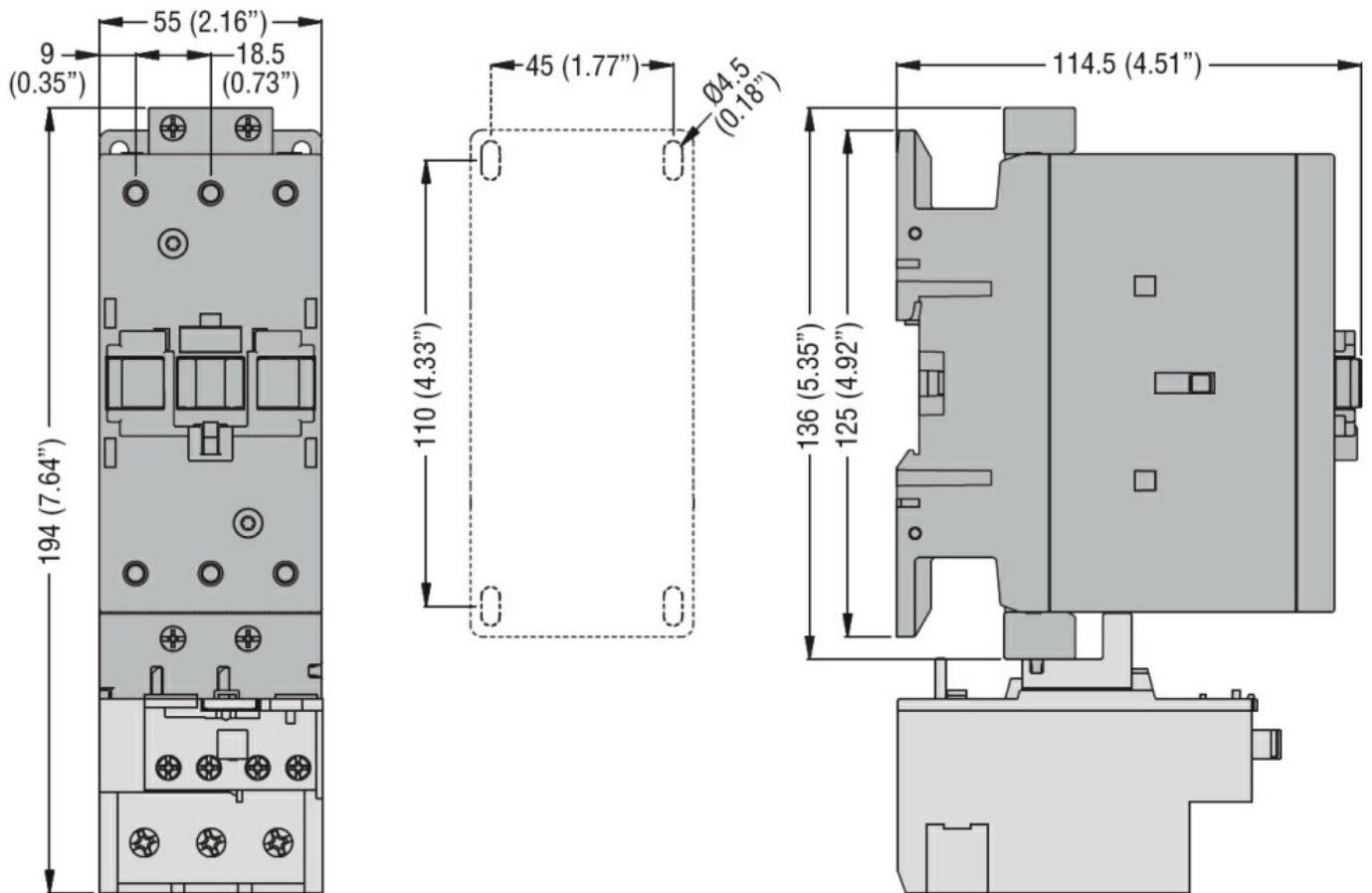
**Ambient conditions**

Temperature	Operating temperature		
	min	°C	-40
	max	°C	70
Storage temperature	min	°C	-50
	max	°C	80
Max altitude	m		3000

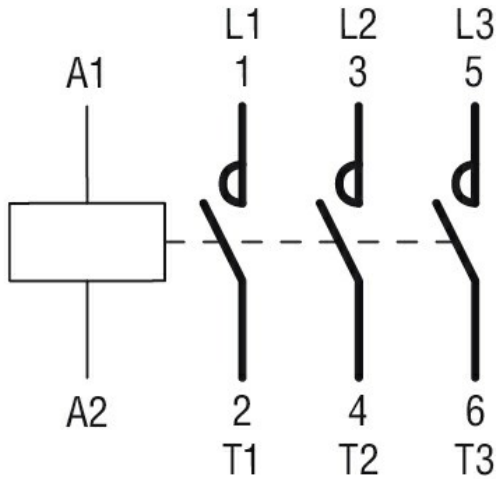
**Resistance & Protection**

Pollution degree			3
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**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