



Product designation  
Product type designation

Power contactor  
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 ( $\leq 40^\circ\text{C}$ )	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 11
	400V	kW 22
	415V	kW 22
	440V	kW 22
	500V	kW 22
	690V	kW 30
	1000V	kW 30
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	$\leq 24\text{V}$

	48V	A	60
	75V	A	60
	110V	A	50
	220V	A	7
<hr/>			
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
<hr/>			
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
<hr/>			
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	–
<hr/>			
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
<hr/>			
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
<hr/>			
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
<hr/>			
Short-time allowable current for 10s (IEC/EN60947-1)		A	400
<hr/>			
Protection fuse			
	gG (IEC)	A	100
	aM (IEC)	A	50
<hr/>			
Making capacity (RMS value)		A	500
<hr/>			
Breaking capacity at voltage			
	440V	A	400
	500V	A	352
	690V	A	312
<hr/>			
Resistance per pole (average value)		mΩ	0.8
<hr/>			
Power dissipation per pole (average value)			
	I <sub>th</sub>	W	6.5
	AC-3	W	2
<hr/>			
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 1020
<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</b>				V 48
<b>AC operating voltage</b>				
	of 50/60Hz coil powered at 50Hz			
	pick-up	min	%Us	80
		max	%Us	110
	drop-out	min	%Us	20
		max	%Us	55
	of 50/60Hz coil powered at 60Hz			
	pick-up	min	%Us	85
		max	%Us	110

drop-out

min	%Us	40
max	%Us	55

AC average coil consumption at 20°C

of 50/60Hz coil powered at 50Hz

in-rush	VA	210
holding	VA	15

of 50/60Hz coil powered at 60Hz

in-rush	VA	195
holding	VA	13

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

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

Contactors

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	-50
max	°C	70

Storage temperature

min	°C	-60
max	°C	80

Max altitude

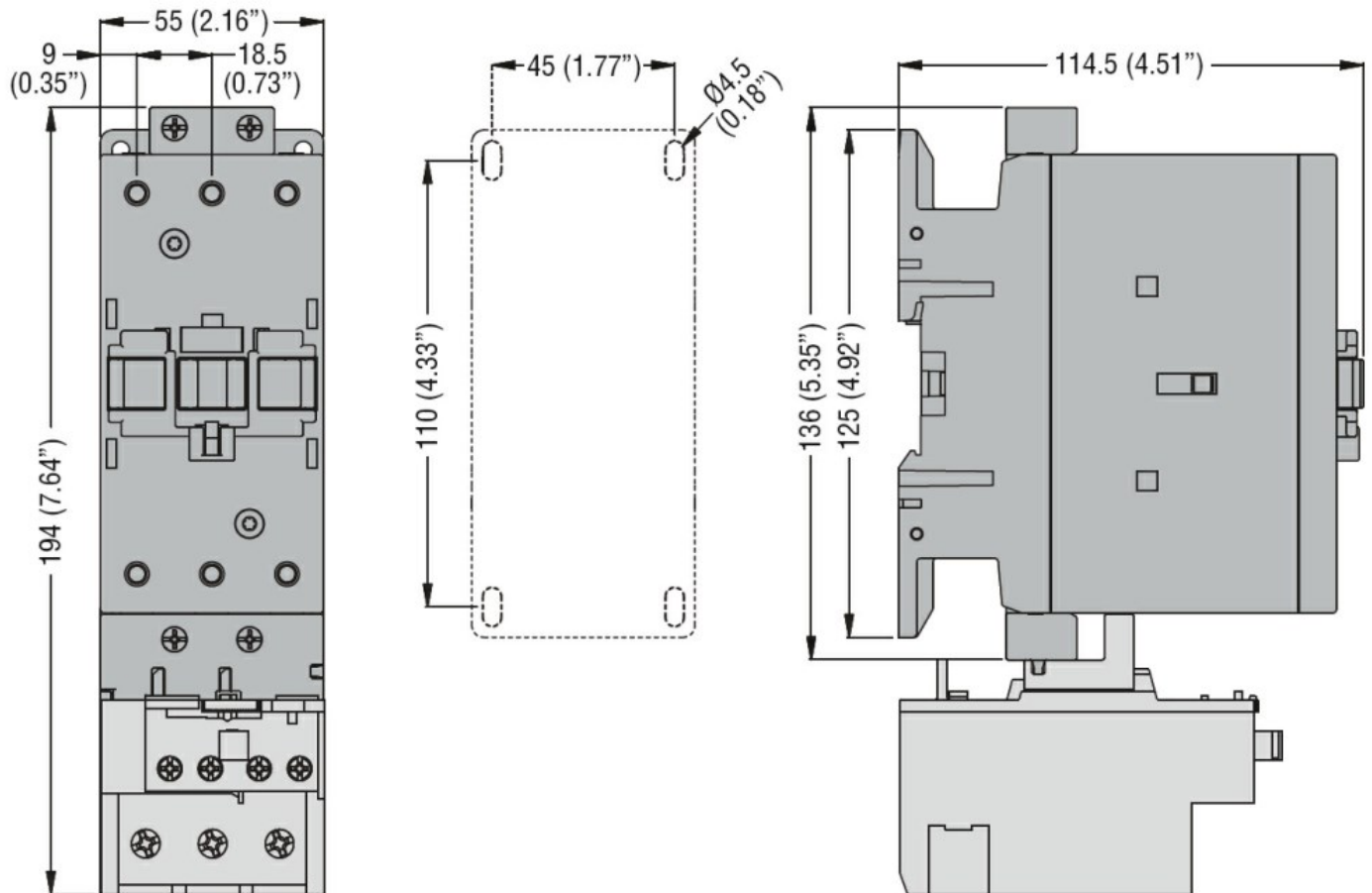
m	3000
---	------

**Resistance & Protection**

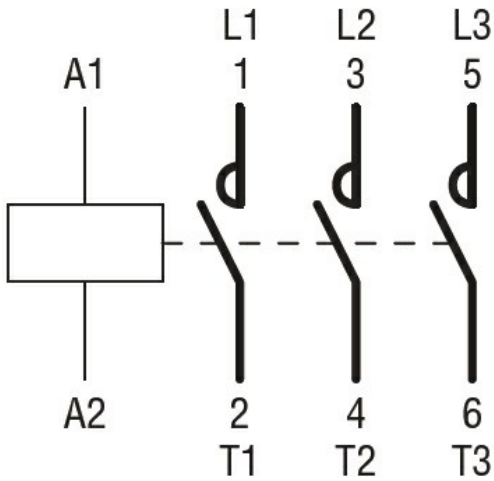
Pollution degree

3

**Dimensions**



**Wiring diagrams**



### Certifications and compliance

#### Compliance

CSA C22.2 n° 60947-1

CSA C22.2 n° 60947-4-1

IEC/EN/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