OVATO Electric THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 9A, DC COIL, 24VDC, 1NO AUXILIARY CONTACT



Product designation Product type designation			Power contactor BF09
Contact characteristics			DI 03
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			-
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		А	25
Operational current le			
	AC-1 (≤40°C)	А	25
	AC-1 (≤55°C)	А	20
	AC-1 (≤70°C)	А	18
	AC-3 (≤440V ≤55°C)	А	9
	AC-4 (400V)	А	4.9
Rated operational power AC-3 (T≤55°C)			
	230V	kW	2.2
	400V	kW	4.2
	415V	kW	4.5
	440V	kW	4.8
	500V	kW	5.5
	690V	kW	7.5
Rated operational power AC-1 (T≤40°C)			
	230V	kW	9.5
	400V	kW	16
	500V	kW	21
	690V	kW	27
IEC max current le in DC1 with $L/R \le 1$ ms with 1 poles in series			
	≤24V	А	15
	48V	А	13
	75V	А	12
	110V	А	6
	220V	Α	_
IEC max current le in DC1 with $L/R \le 1$ ms with 2 poles in series			
	≤24V	А	18
	48V	А	18
	75V	А	17
	110V	А	12
	220V	Α	1
IEC max current le in DC1 with $L/R \le 1$ ms with 3 poles in series			
	≤24V	А	20
	48V	А	20
	75V	А	20
	110V	А	15

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220V   A   10     IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series   ≤24V   A   20     48V   A   20   75V   A   20     110V   A   16	
≤24V A 20 48V A 20 75V A 20	
48V A 20 75V A 20	
75V A 20	
220V A 12	
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series	
≤24V A 10	
48V A 9	
75V A 8	
110V A 2	
220V A -	
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series	
≤24V A 13	
48V A 11	
75V A 10	
110V A 7	
220V A 2	
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	
≤24V A 15	
48V A 15	
75V A 13	
110V A 11	
220V A 6	
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	
≤24V A 15	
48V A 15 75V A 15	
110V A 12	
220V A 7	
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A15	
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fuseFrom the second s	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A15Protection fusegG (IEC)A25aM (IEC)A10	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90	0
220V A 7   Short-time allowable current for 10s (IEC/EN60947-1) A 15   Protection fuse gG (IEC) A 25   aM (IEC) A 10   Making capacity (RMS value) A 90   Breaking capacity at voltage A 90	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A15Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA72	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA72500VA72	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA72500VA72690VA71	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA72500VA72690VA71Resistance per pole (average value)mQ2.5	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA72500VA72690VA71Resistance per pole (average value)mΩ2.5Power dissipation per pole (average value)mΩ2.5	0
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA440VA72500VA71Resistance per pole (average value)mΩ2.5Power dissipation per pole (average value)IthWIthW1.6	0  5 
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA440VA72500VA71Resistance per pole (average value)mΩ2.5Power dissipation per pole (average value)IthW1.6AC-3W0.2	0  5 
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA440VA72500VA71Resistance per pole (average value)mΩ2.5Power dissipation per pole (average value)IthW1.6AC-3W0.2Tightening torque for terminals0.2	0 5 5 2
220V   A   7     Short-time allowable current for 10s (IEC/EN60947-1)   A   154     Protection fuse   gG (IEC)   A   25     aM (IEC)   A   10     Making capacity (RMS value)   A   90     Breaking capacity at voltage   A   90     Breaking capacity at voltage   440V   A   72     Soov   A   71     Resistance per pole (average value)   m0   2.5     Power dissipation per pole (average value)   Ith   W   1.6     AC-3   W   0.2   7   7     Tightening torque for terminals   min   Nm   1.5	0 
220VA7Short-time allowable current for 10s (IEC/EN60947-1)A150Protection fusegG (IEC)A25aM (IEC)A10Making capacity (RMS value)A90Breaking capacity at voltage440VA72500VA72690VA71Resistance per pole (average value)mΩ2.5Power dissipation per pole (average value)thW1.6AC-3W0.2Tightening torque for terminalsminNm1.5maxNm1.8Nm1.8Nm1.8	0 5 5 5 5 3
220V   A   7     Short-time allowable current for 10s (IEC/EN60947-1)   A   15     Protection fuse   gG (IEC)   A   25     aM (IEC)   A   10     Making capacity (RMS value)   A   90     Breaking capacity at voltage   440V   A   72     500V   A   72     690V   A   71     Resistance per pole (average value)   mΩ   2.5     Power dissipation per pole (average value)   Ith   W   1.6     AC-3   W   0.2   1.5     Tightening torque for terminals   min   Nm   1.5     max   Nm   1.8   1.1	0 5 5 5 5 5 5 5 5 5 5 5
220V   A   7     Short-time allowable current for 10s (IEC/EN60947-1)   A   150     Protection fuse   gG (IEC)   A   25     aM (IEC)   A   10     Making capacity (RMS value)   A   90     Breaking capacity at voltage   440V   A   72     500V   A   72     690V   A   71     Resistance per pole (average value)   mΩ   2.5     Power dissipation per pole (average value)   M   1.6     AC-3   W   0.2     Tightening torque for terminals   min   Nm   1.5     min   Ibin   1.1   max   Ibin   1.5	0 5 5 5 5 5 5 5 5 5 5 5
220V   A   7     Short-time allowable current for 10s (IEC/EN60947-1)   A   15     Protection fuse   gG (IEC)   A   25     aM (IEC)   A   10     Making capacity (RMS value)   A   90     Breaking capacity at voltage   440V   A   72     500V   A   72     690V   A   71     Resistance per pole (average value)   mΩ   2.5     Power dissipation per pole (average value)   Ith   W   1.6     AC-3   W   0.2   1.5   1.5     Tightening torque for terminals   min   Nm   1.5     Tightening torque for coil terminal   Tightening torque for coil terminal   1.5	0 5 5 2 5 3 1 5
220V   A   7     Short-time allowable current for 10s (IEC/EN60947-1)   A   15     Protection fuse   gG (IEC)   A   25     aM (IEC)   A   10     Making capacity (RMS value)   A   90     Breaking capacity at voltage   440V   A   72     500V   A   72     690V   A   71     Resistance per pole (average value)   mΩ   2.5     Power dissipation per pole (average value)   Ith   W   1.6     AC-3   W   0.2   1.5     Tightening torque for terminals   min   Nm   1.5     Tightening torque for coil terminal   min   1.5	0 5 5 2 5 3 1 5
220V   A   7     Short-time allowable current for 10s (IEC/EN60947-1)   A   15     Protection fuse   gG (IEC)   A   25     aM (IEC)   A   10     Making capacity (RMS value)   A   90     Breaking capacity at voltage   440V   A   72     500V   A   72     690V   A   71     Resistance per pole (average value)   mΩ   2.5     Power dissipation per pole (average value)   Ith   W   1.6     AC-3   W   0.2   1.5   1.5     Tightening torque for terminals   min   Nm   1.5     Tightening torque for coil terminal   Tightening torque for coil terminal   1.5	0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

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		max	lbin	0.74
Max number of wires	simultaneously connectable		Nr.	2
Conductor section	AWG/Kcmil			
	AWG/KCIIII	max		10
	Flexible w/o lug conductor section			
	J. J	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section		2	
		min	mm² mm²	1
	Flexible with insulated spade lug conductor section	max	11111-	4
	The solution insulated space my conductor section	min	mm²	1
		max	mm²	4
Dower terminal protec	ation apporting to IEC/EN 60520			IP20 when
-	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position		<u>.</u>		
		normal		Vertical plan ±30°
		allowable		±30° Screw / DIN rai
Fixing				35mm
Weight			g	490
Auxiliary contact char	acteristics		Ű	
Thermal current Ith			А	10
IEC/EN 60947-5-1 de				A600 - P600
Operating current AC	15			
		230V	А	3
		400V	A	1.9
	40	500V	A	1.4
Operating current DC	12	110V	۸	F 7
Operating current DC	10	1100	A	5.7
Operating current DC		24V	А	5.7
		48V	A	2.9
		60V	A	2.3
		110V	A	1.25
		125V	А	1.1
		220V	А	0.55
		600V	А	0.2
Operations				
Mechanical life			cycles	2000000
Electrical life			cycles	2000000
Safety related data	10d according to EN/ISO 12480 1			
Performance level B1	10d according to EN/ISO 13489-1	rotod local	oveloc	2000000
	r	rated load	cycles cycles	2000000 20000000
EMC compatibility			0,0103	yes
DC coil operating				,
DC rated control volta	age		V	24
DC operating voltage				
	pick-up			
		min	%Us	70



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			max	%Us	125
	drop-out				
			min	%Us	10
Average seil sensu	imption <20°C		max	%Us	40
Average coil consu	imption ≤20 C		in-rush	W	5.4
			holding	Ŵ	5.4
Max cycles frequer	ncy		lioiding		
Mechanical operati				cycles/h	3600
Operating times				,	
Average time for U	ls control				
	in AC				
		Closing NO			
			min	ms	8
			max	ms	24
		Opening NO			4.0
			min	ms	10
		Closing NC	max	ms	20
			min	ms	14
			max	ms	28
		Opening NC			
			min	ms	7
			max	ms	18
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
UL technical data			max	ms	17
Rated operational v				V	600
	LA) for three-phase	AC motor		v	000
			at 480V	А	7.6
			at 600V	A	0.375
Yielded mechanica	al performance				
	for single-phas	e AC motor			
	- ·		110/120V	HP	0.75
			230V	HP	2
	for three-phase	e AC motor			
			200/208V	HP	3
			220/230V	HP	3
			460/480V	HP	5
General USE			575/600V	HP	7.5
General USE	Contactor				
	Contactor		AC current	А	25
	Auxiliary contact	rts	AC current	А	20
	Auxiliary collide	010	AC voltage	V	600
			AC voltage	Ă	10
			DC voltage	V	250
			DC current	A	1
Short-circuit protec	tion fuse 6001/				

Short-circuit protection fuse, 600V



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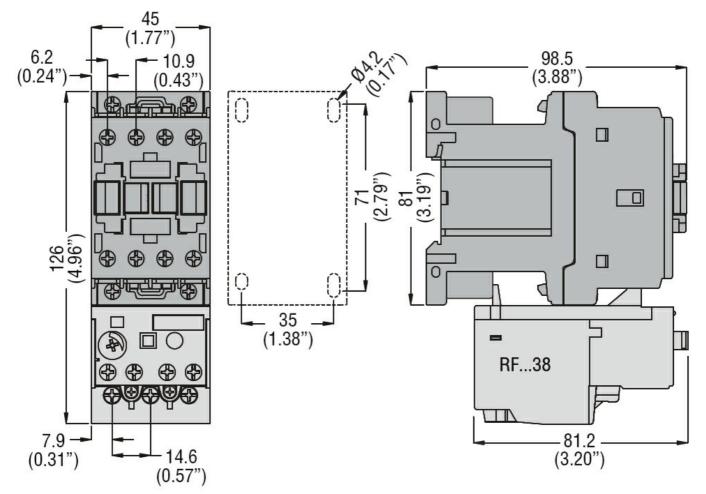
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High fault			
	Short circuit current	kA	100
	Fuse rating	А	30
	Fuse class		J
Standard fault			
	Short circuit current	kA	5
	Fuse rating	А	60
Contact rating of auxiliary contacts according to UL			A600 - P600
Ambient conditions			
Temperature			
Operating temperature			
	min	°C	-50
	max	°C	70
Storage temperature			
	min	°C	-60
	max	°C	80
Max altitude		m	3000
Resistance & Protection			
Pollution degree			3

Pollution degree

Dimensions

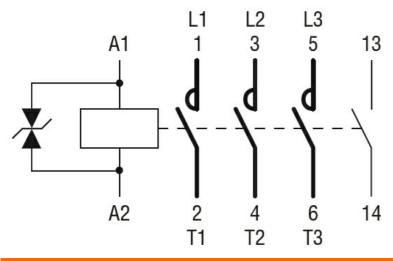


## Wiring diagrams

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## Certifications and compliance

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
	EAC
ETIM classification	

ETIM 8.0

EC000066 -Power contactor, AC switching

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