

150A/180A Magnetolectric Controller



FEATURE

- Wide voltage input range:
140-290VAC (KM150(180)-A220)
85-290VAC/VDC (KM150(180)-C220)
- Operating temperature range: -40°C to +70°C
- High reliability
- Input power: KM150≤5W, KM180≤4W
- Maximum operating frequency at 25°C: 7200 times/h lasts for 30s
- Turn-off delay time less than 50ms
- Customization available

KM150(180)-A(C)220— is a controller specially designed for contactor. It only needs one coil and is compatible with many contactor models. It features low power consumption, low delay, small size, low cost, high reliability and strong anti-tripping capability. The product is safe and reliable, with stable pull-in, fast response, wide input voltage range, strong anti-grid power shaking capability, KM150(180)-C220 universal AC and DC, no need for short-circuit design. It is widely used in various types of contactor power-saving and a new generation of wide-voltage input contactors. Applicable to the upgrade and optimization needs of most 150A/180A shells in the market.

Selection Guide

Part No.	Input Voltage	Contactor Rated Operational Current (A)	Control voltage range
KM150-A220	220VAC	150	140-290VAC
KM180-A220		180	
KM150-C220		150	85-290VAC/VDC
KM180-C220		180	

Input Specifications

Item	Operating Conditions	Part No.	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	KM150(180)-A220	140	220	290	VAC
	AC/DC input	KM150(180)-C220	85			VAC/VDC
AC Input Frequency	AC input		47	--	63	Hz
Input Power	220VAC input	KM150-A(C)220	--	--	5	W
		KM180-A(C)220	--	--	4	

Operating Specifications

Item	Operating Conditions	Part No.	Min.	Typ.	Max.	Unit
Minimum Operating Voltage	-40°C to 70°C	KM150(180)-A220	110	120	140	VAC
		KM150(180)-C220	70	80	85	VAC/VDC
Release Voltage	-40°C to 70°C	KM150(180)-A220	80	100	110	VAC
		KM150(180)-C220	40	62	70	VAC
				53		VDC
Operating Current	25°C, 140-290VAC input	KM150-A220	1.2	2.6	--	A
		KM180-A220	1.6	2.8	--	
	25°C, 85-290VAC/VDC input	KM150-C220	1.2	2.8	--	
		KM180-C220	1.6	3.0	--	

Hold-in Current	-40°C to 70°C, 140-290VAC input	KM150-A220	0.11	0.18	--	A
		KM180-A220		0.2	--	
	-40°C to 70°C, 85-290VAC/VDC input	KM150-C220		0.18	--	
		KM180-C220		0.2	--	
Start-up Delay Time	-40°C to 70°C, 220VAC input		--	40	60	ms
Turn-off Delay Time	-40°C to 70°C, 140-290VAC input	KM150(180)-A220	--	20	50	ms
	-40°C to 70°C, 85-290 VAC/VDC input	KM150(180)-C220	--	30		
Maximum Operating Frequency	25°C, 290VAC, lasts for 72h		--	--	1200	times/h
	70°C, 290VAC, lasts for 72h		--	--	1200	
	-40°C, 290VAC, lasts for 72h		--	--	600	
	25°C, 220VAC, lasts for 30s		--	--	7200	

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-40	--	+70	°C
Storage Temperature		-40	--	+85	
Storage Humidity		--	--	95	%RH
Safety Class		CLASS II			
MTBF	MIL-HDBK-217F@25°C	≥300,000 h			

Mechanical Specifications

Dimension	KM150-A(C)220	61.00 x 32.00 x 23.50mm
	KM180-A(C)220	92.90 x 32.00 x 23.00mm
Weight	KM150-A(C)220	15g(Typ.)
	KM180-A(C)220	18g(Typ.)
Cooling Method	Free air convection	

Electromagnetic Compatibility (EMC)

EMS	ESD	IEC/EN61000-4-2	Contact ±4kV/ Air ±8kV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	± 2kV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±1kV	perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria A

Design Reference

1. Typical application

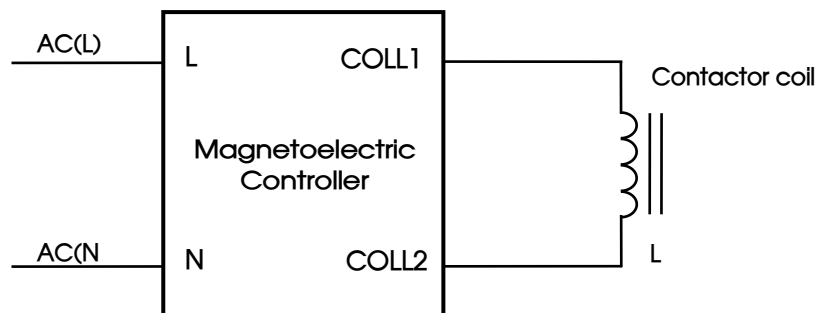


Fig. 1 Typical application

Recommended coil parameter table:

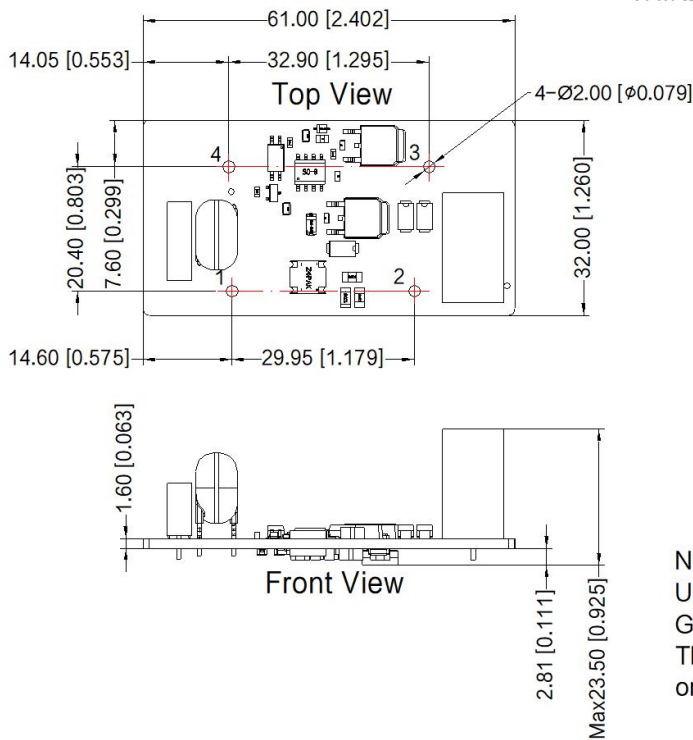
Part No.	Air-cored inductance (mH)	Release inductance (mH)	Operating inductance (mH)	Coil resistance (Ω)	Coil diameter (mm)	Coil turns (T)
KM150-A(C)220	91	216	233	41.58	0.4	1507
KM180-A(C)220	87	250	290	33.87	0.4	1367

Note:
1. Hot plug is unavailable;
2. Air-cored inductance, Release inductance and Operating inductance are measured under the condition of 10kHz/0.1V, and the above data are measured at 25°C.

Dimensions and Recommended Layout

KM150-A(C)220

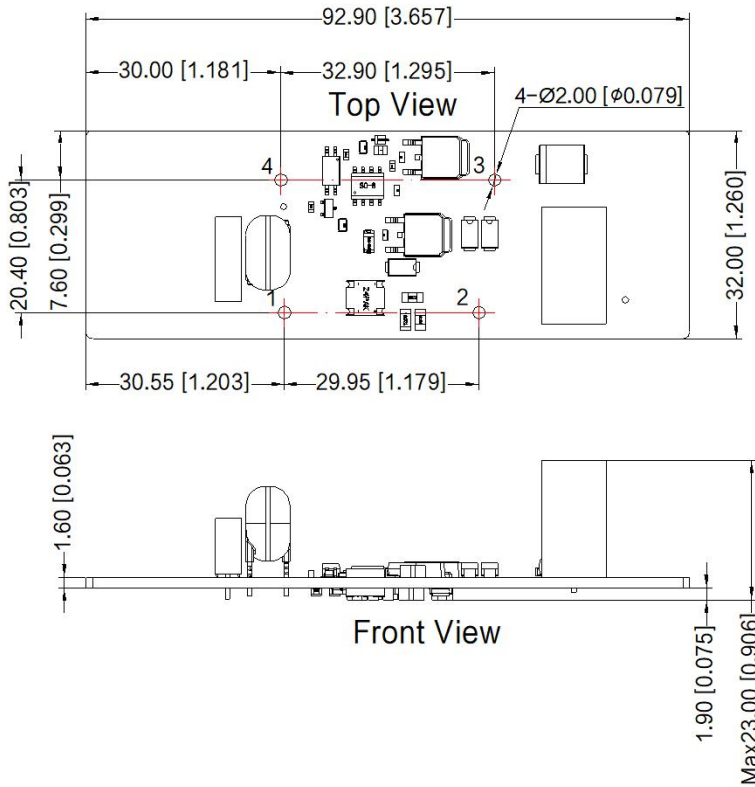
THIRD ANGLE PROJECTION 



Pin-Out	
Pin	Mark
1	L
2	N
3	COLL2
4	COLL1

Note:
Unit: mm[inch]
General tolerances: ± 0.50 [± 0.02]
The layout of the device is for reference only, please refer to the actual product

KM180-A(C)220



THIRD ANGLE PROJECTION

Pin-Out	
Pin	Mark
1	L
2	N
3	COLL2
4	COLL1

Note:
Unit: mm[inch]
General tolerances: $\pm 0.50[\pm 0.02]$
The layout of the device is for reference only, please refer to the actual product

- Note:
- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58060023(KM150-A(C)220), 58060025(KM180-A(C)220);
 - Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^\circ\text{C}$, humidity<75%RH with nominal input voltage;
 - All index testing methods in this datasheet are based on company corporate standards;
 - We can provide product customization service, please contact our technicians directly for specific information;
 - Products are related to laws and regulations: see "Features" and "EMC";
 - The Magnetolectric Controller should be considered as a part of the contactor, all EMC tests need to be confirmed with the contactor. For guidance on EMC test operation, please consult our FAE;
 - Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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