

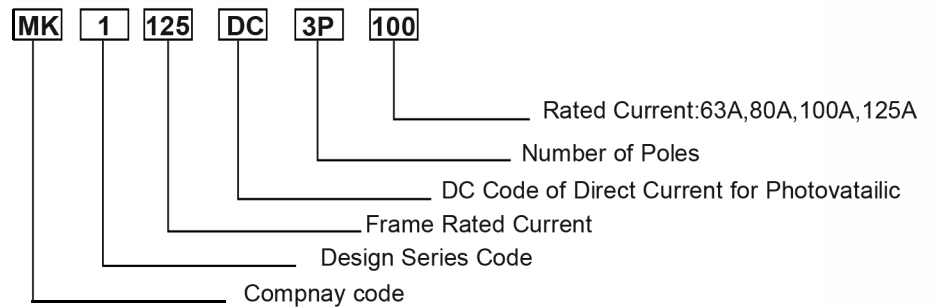
MK1-125DC DC Miniature Circuit Breaker

Functions

- Overload protection
- Short circuit protection
- Controlling
- Protection for people and big length cables in TN and IT systems
- DC string protection: protects the PV module from dangerously high DC back current
- Application in direct current circuit ,like motors ,auxiliary ,circuits and photovoltaic
- Used in industry and new energy



Instruction of type code



Technical specifications

- Rated current I_n (A): **63,80,100,125**
- Number of poles : 1P/2P/3P/4P
- Rated voltage U_e (DC):V
 1P 250VDC 3P 750VDC
 2~4P 500VDC 4P 1000VDC
- Operational voltage
 Min:12 VDC
 Max:1P 250VDC, 2P 500VDC,
 3P 750VDC□4P 1000VDC
- Power- frequency withstand voltage :2000V/min
- Rated impulse withstand voltage:2500V
- Rated impulse withstand voltage(kV): 6
- Tripping Characteristics:C,D
 Characteristic curve B(I_n): $4\pm 20\%$
 Characteristic curve C(I_n): $8\pm 20\%$
 Characteristic curve D(I_n): $12\pm 20\%$
- Degree of protection:IP40(top),IP20(terminal),with connected conductors
- Electrical life (times):4.000
- Mechanical life(times):10.000

MK1-125DC DC Miniature Circuit Breaker



- **Rated breaking Capacity**

Model	Rated voltage(V)	ICU(kA)	ICS(kA)	Standards
MK1-125DC	1P:250VDC	10, 6	6, 4.5	IEC60947-2
MK1-125DC	2P:500VDC	10, 6	6, 4.5	IEC60947-2
MK1-125DC	3P:750VDC	10, 6	6, 4.5	IEC60947-2
MK1-125DC	4P:1000VDC	10, 6	6, 4.5	IEC60947-2

- Fire resistance according to UL 94:V-0
- Mounting position: Din Rail
- For connection:
 - Wires section size 16-50mm²
 - Wire stripping length 15mm
- Terminal tightening torque(N.m):2.5-3
- Operation ambient temperature(°C) :-25~+45
- Humidity 95% when ambient temperature 55°C
- Storage temperature (°C) :-40~+75
- Altitude Max.(meters):2000

Magnetic release

An electromagnet with plunger ensures instantaneous tripping in case of short circuit. Following the current for instantaneous release type C

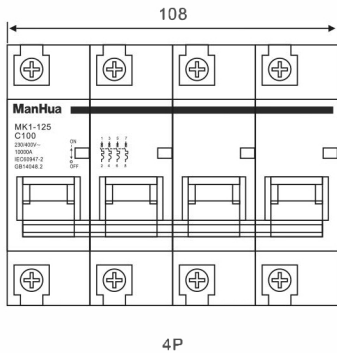
	Test current	Tripping Time		Applications
C	5In	T≥0.1s	Non-Tripping	Usual loads such as: -lighting -socket outlets -small motors
	10In	t<0.1s	Tripping	

Thermal release

- The release is initiated by a bimetal strip in case of overload
- The standard defines the range of release for specific overload values
- Reference ambient temperature is 30°C

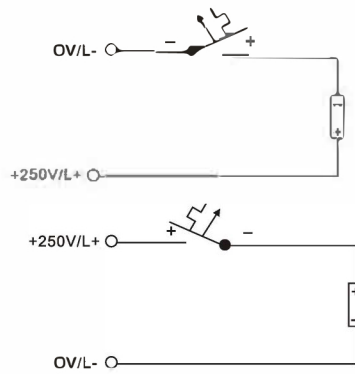
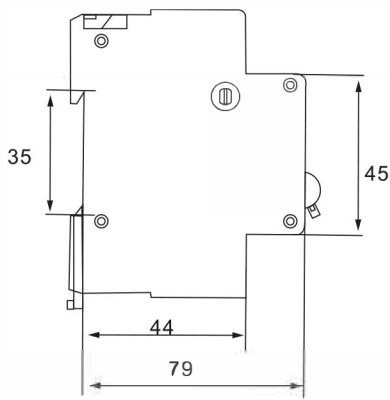
	Test Current	Tripping Time	
	1.13In	t≥1h(In≤63A)	Non-Tripping
	1.45In	t<1h(In≤63A)	Tripping
	2.55In	1s<t<60s(In≤32A) 1s<t<120s(In<32A)	Tripping

Outline and installation dimensions

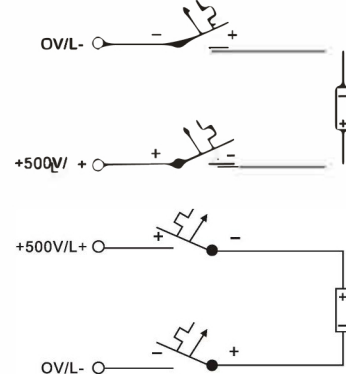


Features

- The handle equipped with padlock bracket avoids dangerous operation changes(ON/OFF)
- The handle provides a clear indication of the contact position
- Adequate printing of all data on the front provides long-term identification
- Energy limiting class: 3
- The emission of ionized gases is limited to the severest restrictions:45 mm grid distance
- This MCB may be extended with:
Full sets of additional components
Full sets of accessories
- Caution:power electrodes shall not be improperly connected,lest the current can not be effectively cut off.



250V T=4ms
one pole rated voltage 250V T=4ms



500V T=4ms
two pole rated voltage 500V T=4ms

MK1-125DC DC Miniature Circuit Breaker

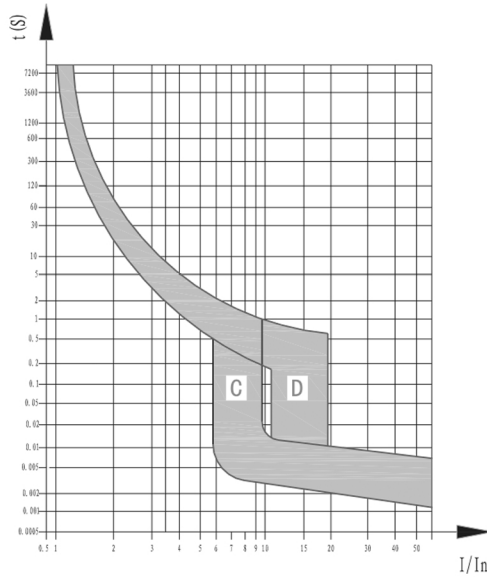
MK1-125DC the short circuit capacity of Fuse D0 or NH

1.4 high selectivity is up to 1.4kA: No selectivity

Rated current	Fuse gL rated current(A)(IEC269-1)									
	10	16	20	25	35	50	63	80	100	
C Characteristic curve	1	<0.5	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	2	<0.5	<0.5	0.5	0.7	10.0	10.0	10.0	10.0	10.0
	3	<0.5	<0.5	<0.5	0.6	1.9	5.2	10.0	10.0	10.0
	4	<0.5	<0.5	<0.5	0.6	1.6	4.0	7.6	10.0	10.0
	6		<0.5	<0.5	<0.5	1.2	2.7	4.5	10.0	10.0
	10			<0.5	<0.5	1.2	2.3	3.1	5.4	10.0
	16					1.1	2.1	2.8	5.4	9.5
	20					1.0	1.1	2.6	4.0	8.3
	25						1.0	2.5	3.8	7.8
	32							2.5	3.7	7.3
	40								3.5	7.0
50									6.5	
63									5.9	
D Characteristic curve	1	<0.5	<0.5	0.7	1.3	10.0	10.0	10.0	10.0	10.0
	2	<0.5	<0.5	0.6	0.8	2.2	6.7	10.0	10.0	10.0
	3	<0.5	<0.5	0.5	0.7	1.8	4.8	9.3	10.0	10.0
	4		<0.5	0.5	0.7	1.7	4.6	7.7	10.0	10.0
	6			<0.5	0.5	1.3	2.9	4.5	9.0	10.0
	10				0.5	1.1	2.2	3.0	5.0	10.0
	16						1.9	2.6	3.9	9.0
	20						1.7	2.3	3.5	8.0
	25							2.2	3.4	7.5
	32								2.9	6.5
	40									5.7

Rated current	Fuse gL rated current(A)(IEC269-1)											
	10	16	20	25	35	50	63	80	100	125	150	
C Characteristic curve	1	0.9	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	2	<0.5	0.6	1.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	3	<0.5	<0.5	0.7	1.8	2.6	4.7	6.6	10.0	10.0	10.0	10.0
	4	<0.5	<0.5	0.7	1.5	2.1	3.6	5.0	10.0	10.0	10.0	10.0
	6	<0.5	<0.5	0.5	1.2	1.5	2.5	3.3	5.7	10.0	10.0	10.0
	10			0.5	1.0	1.4	2.0	2.5	3.8	8.0	10.0	10.0
	16				1.0	1.3	1.8	2.3	3.3	6.0	8.8	10.0
	20				1.0	1.2	1.7	2.2	3.2	5.5	7.7	10.0
	25						1.6	2.1	3.0	5.2	7.3	10.0
	32							2.1	2.9	5.0	7.0	10.0
	40								2.8	4.8	6.7	10.0
50									4.5	6.3	9.5	
63										5.9	8.4	
D Characteristic curve	1	<0.5	<0.6	1.4	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	2	<0.5	<0.5	0.8	2.1	3.1	6.0	8.6	10.0	10.0	10.0	10.0
	3	<0.5	<0.5	0.7	1.7	2.4	4.3	6.0	10.0	10.0	10.0	10.0
	4	<0.5	<0.5	0.4	1.6	2.2	3.8	5.2	10.0	10.0	10.0	10.0
	6		<0.5	0.5	1.2	1.6	2.6	3.3	5.5	10.0	10.0	10.0
	10			0.5	1.0	1.3	1.9	2.5	3.6	7.2	10.0	10.0
	16					1.1	1.6	2.0	3.0	5.5	8.0	10.0
	20						1.4	1.8	2.8	5.0	7.5	10.0
	25							1.8	2.7	4.8	7.0	10.0
	32								2.4	4.1	6.2	9.3
	40									4.0	6.0	9.0

- Tripping characters comply the standard of IEC 60947-2
- C character curve: usually used for lighting distribution, socket loop and some power distribution systems.
- D character curve: usually used for power load or other inductive load circuit

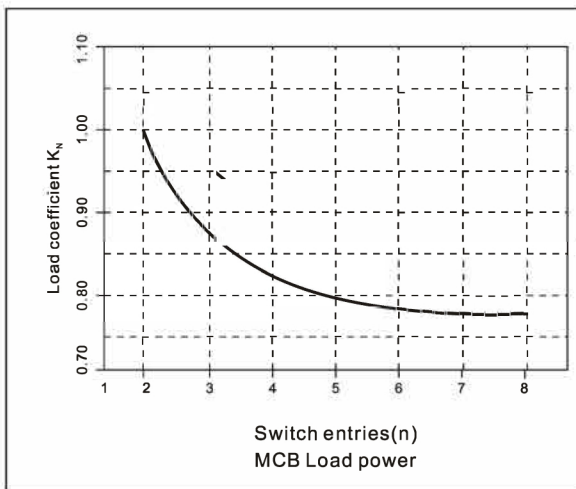


Practice experience

To adjust the tripping current from 5-10In to 7-9.5In could avoid the false tripping when the equipment isn't easy to start

Load power

- Corresponding temperature and the permissible working load of n switches : $I_{DL} = I_n K_T(T) K_n(N)$



In [A]	Environment T [° C]												
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8
3	3.4	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9
15	18	18	17	17	16	16	15	15	15	14	14	14	13
16	20	19	19	18	17	17	16	16	16	15	15	14	14
20	24	24	23	22	22	21	20	20	19	19	19	18	18
25	31	30	29	28	27	26	25	25	24	24	23	23	22
32	39	38	37	36	35	33	32	32	31	30	30	29	28
40	49	48	47	45	43	42	40	39	39	38	37	36	35
50	61	60	58	56	54	52	50	49	48	47	46	45	44
63	77	76	73	71	68	66	63	62	61	60	58	57	56