



Scope of Application

The CBRM5Kd series moulded case circuit breaker (hereinafter referred to as the MCCB) has a rated insulation voltage of 1000V. It is suitable for circuits with AC 50Hz/60Hz, rated working voltage of 415V (690V for frame size 160-800), and rated working current up to 800A for infrequent circuit switching and infrequent motor starting. CBRM5Kd series MCCB has with overload, short-circuit and under-voltage protection functions, which can protect lines and power supply equipment from damage.

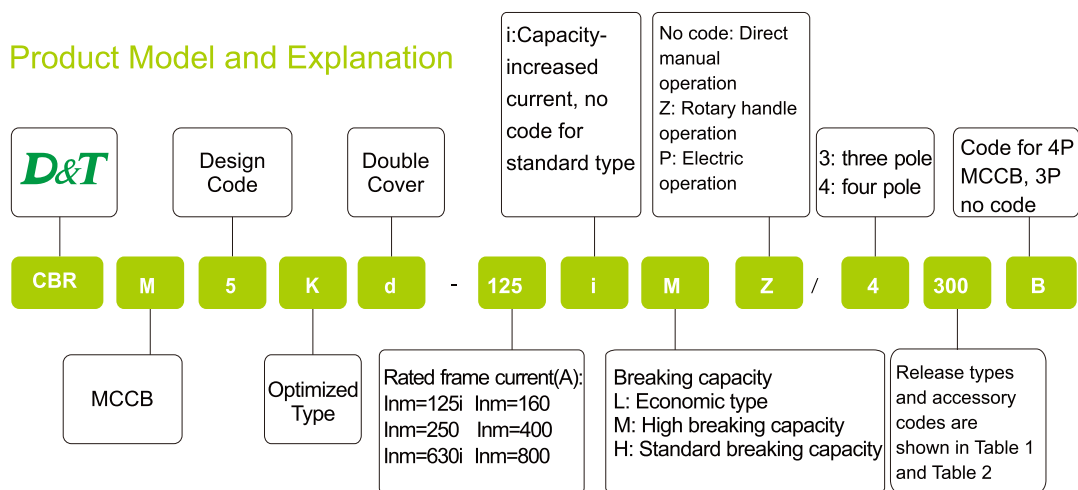
The breaker can be installed vertically or horizontally.

The breaker has isolation function with the corresponding symbol:

The breaker product complies with the following standards:

- ◆ IEC60947-1 Low-voltage switchgear and controlgear - Part 1: General rules
- ◆ IEC60947-2 Low-voltage switchgear and controlgear - Part 2: Circuit-breakers

Product Model and Explanation



Four-pole Product Codes

- ◆ Type A: N pole without overcurrent release element, and the N pole remains closed at all times and does not open or close with the other three poles.
- ◆ Type B: N pole without overcurrent release element, and the N pole opens and closes with the other three poles (the N pole closes first and opens later).

Operating Environment

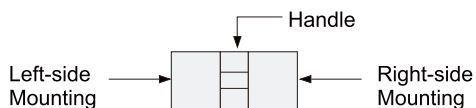
Normal Service Conditions

- ◆ Ambient air temperature: The upper limit shall not exceed +40°C; the lower limit shall not be lower than -5°C; the average value within 24 hours shall not exceed +35°C.
(Note: Circuit breakers intended for use at ambient air temperatures exceeding +40°C or below -5°C shall consult manufacturer to customize.)
- ◆ Altitude of the installation site: Not exceeding 2000 m.
- ◆ Relative humidity of the atmosphere: Not exceeding 50% at the maximum ambient temperature of +40°C. Higher relative humidity is permissible at lower temperatures (e.g., 90% at 20°C), provided that condensation on the product surface due to temperature changes is taken into account.

Normal Mounting Conditions

- ◆ Installation category: Category III for the main circuit of the circuit breaker; Category II for the control and auxiliary circuits.
- ◆ Mounting orientation: Vertical mounting is recommended for general applications; horizontal mounting is also acceptable.
- ◆ Pollution degree: Degree 3.
- ◆ External magnetic fields: The external magnetic field at the installation site shall not exceed 5 times the Earth's magnetic field in any direction.

Release types & Accessory codes



- Alarm contact (AI) ○ Under-voltage release(UV)
- Auxiliary contact (Aux) → Direction of Leads
- Shunt release (ST)

Table 2

Double cover	Release type & internal acc. code		Accessory mounting side and lead direction					
Name	Electro-magnetic Release	Combination Release	125i	160	250	400	630i	800
No acc.	200	300						
AI	208	308						
ST	210	310						
Aux	220	320						
UV	230	330						
ST+Aux	240	340						
ST+UV	250	350	—					
2*Aux	260	360						
Aux+UV	270	370						
ST+AI	218	318						
Aux+AI	228	328						
UV+AI	238	338						
ST+Aux+AI	248	348						
2*Aux+AI	268	368						
Aux+UV+AI	278	378						

Main Technical Parameters

Model	CBRM5Kd-125i			CBRM5Kd-160			CBRM5Kd-250			CBRM5Kd-400 CBRM5Kd-630i			CBRM5Kd-800		
Rated frame current I_{nm} (A)	125			160			250			400, 630			800		
Rated operational current I_n (A)	10, 16, 20, 25, 30, 32, 40, 50, 63, 70, 75, 80, 90, 100, 125			16, 20, 25, 30, 32, 40, 50, 63, 70, 75, 80, 90, 100, 125, 140, 150, 160			100, 125, 140, 150, 160, 175, 180, 200, 225, 250			225, 250, 280, 300, 315, 350, 400, 500, 550, 630			630, 700, 800		
Number of poles	3	4		3	4		3	4		3	4		3	4	
Rated insulation voltage U_i (V)	1000														
Rated working voltage U_e (V)	AC380, AC400, AC415			AC380, AC400, AC415, AC660, AC690											
Rated impulse withstand voltage $U_{imp}(kV)$	8									12					
Arc flash distance (mm)	50									100					
Breaking capacity class	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
Ultimate short-circuit breaking capacity $I_{cu}(kA)$ AC380V/AC400V/AC415V	18	36	50	25	36	50	36	50	70	50	70	100	50	70	100
Operating short-circuit breaking capacity $I_{cs}(kA)$ AC380V/AC400V/AC415V	18	36	50	25	36	50	36	50	70	50	70	100	50	70	100
Ultimate short-circuit breaking capacity $I_{cu}(kA)$ AC660V/AC690V	—	—	—	8	10	10	10	10	10	10	15	20	15	20	25
Operating short-circuit breaking capacity $I_{cs}(kA)$ AC660V/AC690V	—	—	—	8	10	10	10	10	10	10	15	20	13	15	20
Number of operating cycles	With current	1500			1500			1000			1000			500	
	Without current	8500			8500			7000			4000			2500	
	Total	10000			10000			8000			5000			3000	

Protection Characteristics

For Power Distribution

Rated Current (A)	Thermal release (at an ambient temperature of +40°C)		Magnetic Release Operating Current (A)
	1.05 I_n (cold state) non-tripping time (h)	1.3 I_n (hot state) tripping time (h)	
$10 \leq I_n \leq 63$	No tripping within 1h	Tripping within 1h	$10I_n \pm 20\%$
$63 < I_n \leq 800$	No tripping within 2h	Tripping within 2h	160 frame, 16–32A: $400A \pm 20\%$

For Motor Protection

Rated Current (A)	Thermal release (at an ambient temperature of +40°C)					Magnetic Release Operating Current (A)
	1.0 I_n (cold state) non-tripping time (h)	1.2 I_n (hot state) tripping time (h)	1.5 I_n (hot state) tripping time (h)	7.2 I_n (cold state) tripping time (h)	Tripping Class	
$10 \leq I_n \leq 25$	No tripping within 2h	=2	$\leq 2\text{min}$	$0.5s < T_p \leq 5s$	5	$12I_n \pm 20\%$ 160 frame, 16–32A: $400A \pm 20\%$
$25 < I_n \leq 250$			$\leq 4\text{min}$	$4s < T_p \leq 10s$	10	
$250 < I_n \leq 800$			$\leq 8\text{min}$	$6s < T_p \leq 20s$	20	

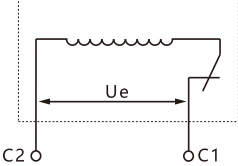
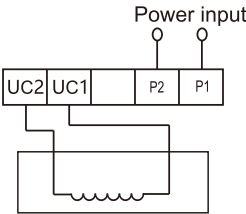
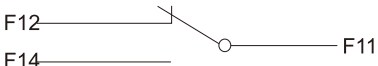
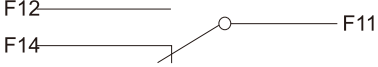
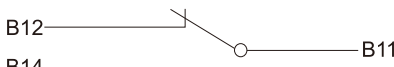
MCCB Classification

By number of poles: 3 pole, 4 pole

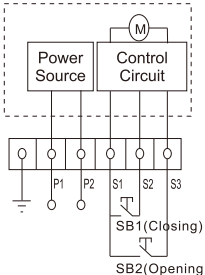
By application: For power distribution, For motor protection

By operation mode: Direct handle operation, Electric operation (P), Rotary handle operation (Z for switchgear)

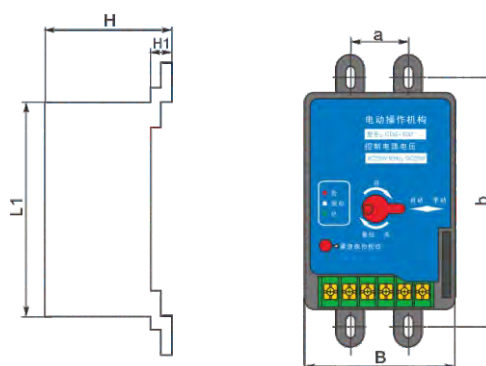
**MCCB
Accessories**

Rated control supply voltage U_s (V)	AC230V、AC400V; DC24V
Operating voltage (V)	$(0.7 \sim 1.1)U_s$
Shunt release 	 Note: K - The micro switch in series with the coil inside the shunt release is a normally closed contact, when the breaker trips, it opens automatically and closes when the circuit breaker is switched on.
Rated control supply voltage U_s (V)	AC230V、AC400V
Operating voltage (V)	The circuit breaker shall trip reliably at 35%~70% of the rated operating voltage; it shall be ensured to close at 85%~110%, and closing shall be prevented below 35%.
Under-voltage release 	 Note: P1, P2, UC2 and UC1 are terminal numbers.
Conventional thermal current $I_{th}(A)$	3A
Rated operational current I_e (A)	0.26 A at $I_n = 250$ A; 0.3 A at $I_n = 400$ A
Auxiliary contact 	 MCCB status in "OFF" position  MCCB status in "ON" position
Conventional thermal current $I_{th}(A)$	3A
Rated operational current I_e (A)	0.26 A at $I_n = 250$ A; 0.3 A at $I_n = 400$ A
Alarm contact 	 MCCB status in "OFF" "ON" position  MCCB status in the free-trip position (alarm)

Conventional thermal current $I_{th}(A)$	3A	
Rated operational current I_e (A)	0.26 A at $I_n = 250$ A; 0.3 A at $I_n = 400$ A	
Auxiliary + Alarm contact	 F12 ———— F11 F14 ———— MCCB status in "OFF" position F12 ———— F11 F14 ———— MCCB status in "ON" position	B12 ———— B11 B14 ———— MCCB status in "OFF" "ON" position B12 ———— B11 B14 ———— MCCB status in the free-trip position (alarm)

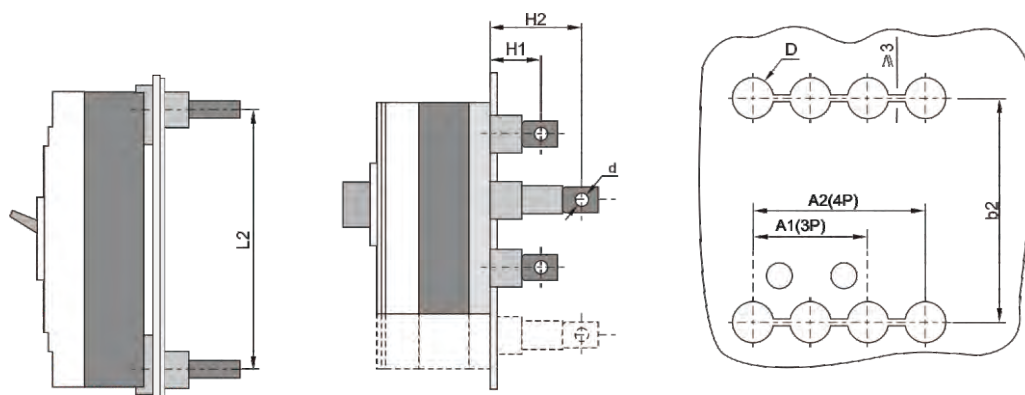
Input voltage (V)	AC230V、AC400V; DC110V、DC230V、DC24V	
Motor operating mechanism	  Note: P1-P2: External power supply input; SB1, SB2: Control pushbuttons (user-supplied) Note: Wiring diagram of the circuit breaker internal accessories is shown within the dashed box.	

Outline and mounting dimensions of the motor operating mechanism



Model	Overall size(mm)				Mounting size(mm)	
	L1	B	H	H1	a	b
125i	102	73	92	14	25	117
160	116	90	97	16	30	129
250	116	90	95	16	35	126
400、630i	176	130	151	34.5	44	194
800	176	130	146	31	70	243

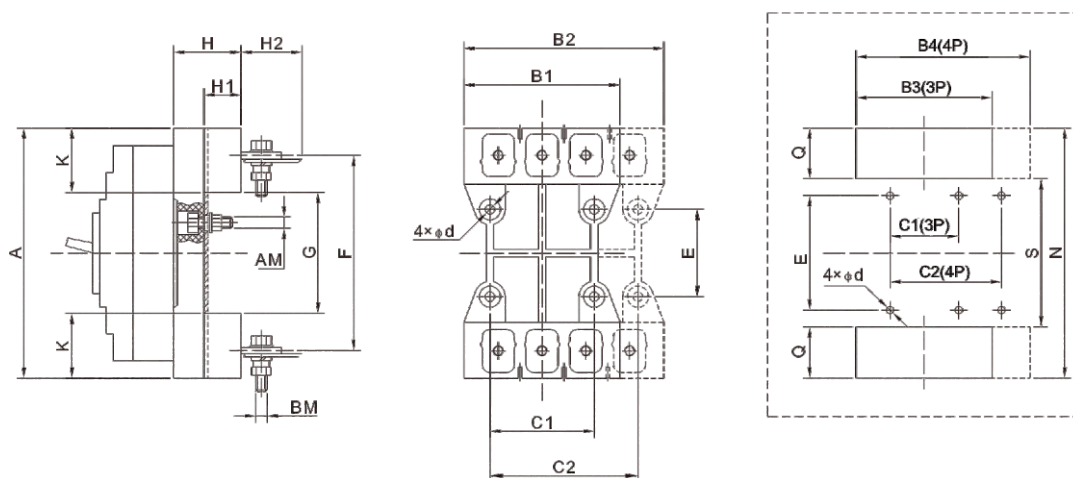
Outline and mounting dimensions for rear wiring of the circuit breaker



Cutout dimensions for rear connection mounting plate

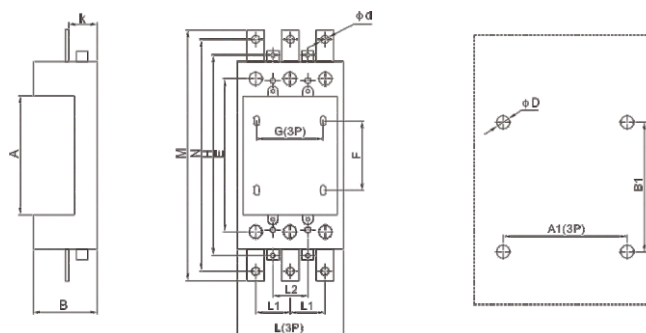
Model	Overall size(mm)			Mounting size(mm)				
	L2	H1	H2	A1	A2	b2	D	d
125i	121	45	65	50	75	121	F11.8	-
160	132	42	75	60	90	132	F24	Φ8.5
250	144	39	73	70	105	144	F24	Φ8.5
400、630i	226	34	69	87	130.5	226	F32	F12.5
800	243	62	84	140	210	243	Φ48	F14

Outline and mounting dimensions of circuit breaker with plug-in rear connection

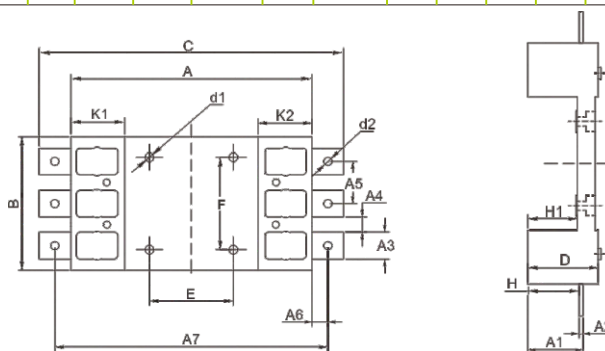


Model	A	B1	B2	C1	C2	E	F	G	K	H	H1	H2	N	S	Q	B3	B4	AM	BM	φd
125i	145	75	100	50	75	60	121	92	27	27	16	15	142	87	26	80	110	M5	M5	Φ6.5
160	169	91	125	60	90	54	132	92	46	50	33	28	179	83	48	101	135	M6	M8	Φ6.5
250	186	107	145	70	105	145	145	94	50	50	33	37	196	84	56	117	155	M6	M8	Φ6.5
400、630i	280	144	188	88	132	142	224	180	63	60	38	46	290	170	60	154	198	M8	M12	Φ8.5
800	300	210	280	90	160		243	174		87	61	21	315	170	73	220	290	M10	M14	Φ10

Outline and mounting dimensions of circuit breaker with plug-in front connection

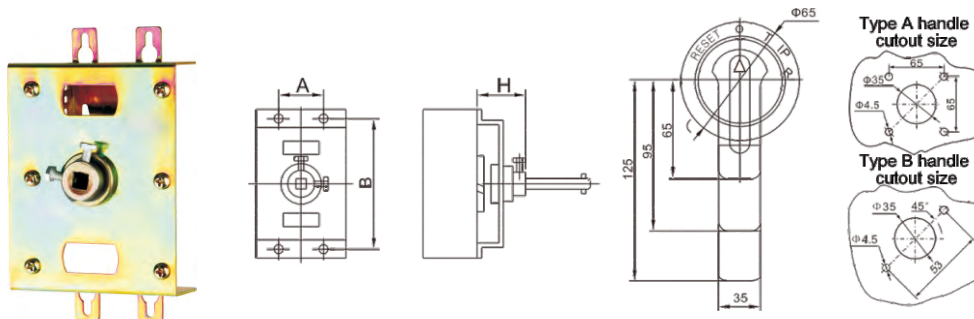


Model	Overall mounting size(mm)															
	A	B	E	F	G(3P)	H	L(3P)	L1	L2	M	N	K	d	A1(3P)	B1	D
125i	96	48	121	55	50	150	78	25	25	193	176	23	Φ6	25	112	Φ3.5



Model	Overall mounting size(mm)																		
	A	B	C	D	E	F	H	H1	K1	K2	d1	d2	A1	A2	A3	A4	A5	A6	A7
160	172	96	216	50	61	66	15	35	38	38	F6.5	M8	18	3	19	10.5	30	10.5	196
250	183	110	261	51.5	64	70	42.5	35	44	44	F6.5	M8	49	3	22	13.5	35	22	227
400、630i	282	144	362	82	146	88	20	59	50	50	F8.5	F11	26	6	30	14.5	44	25	331
800	305	210	409	87	144	90	16	61	62	62	F11	F13	24	8	35	35	70	36	377

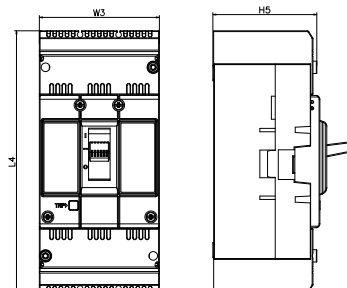
Outline and mounting dimensions of the rotary handle operating mechanism



Model	125i	160	250	400、630i	800
Mounting Dimension H (mm)	54	60	60	97	90
A	25	30	35	44	70
B	95	120	142	195	243

Note: Connecting rod: 150 mm as standard.

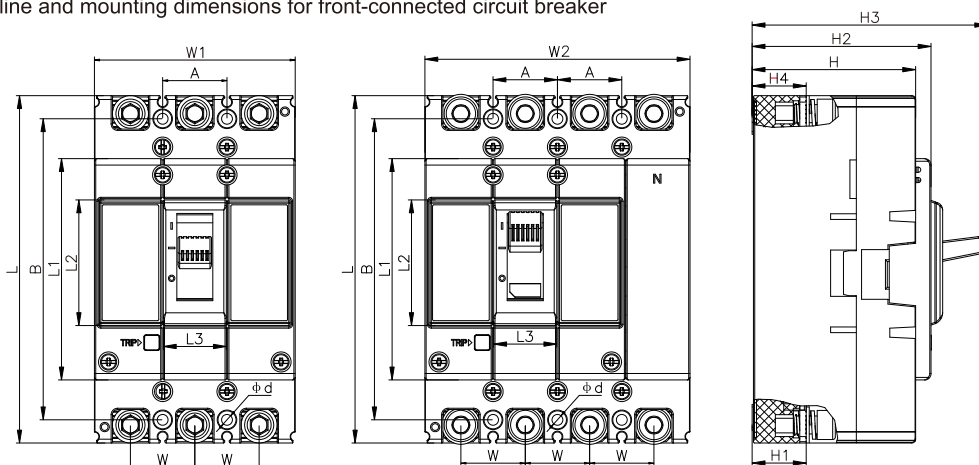
Outline dimensions of circuit breaker with protective terminal cover



Model	125i	160	250		400		630i	800	
	3P	3P	3P	4P	3P	4P	3P	3P	4P
L4	170	195	208	208	292	292	505	436	436
W3	78	92.5	107	142	140	184	186.5	234	304
H5	67.5	67.5	74	74	101.5	101.5	101.5	111	111

Overall Size & Mounting Dimensions

Outline and mounting dimensions for front-connected circuit breaker



Model	Overall size(mm)											Mounting size(mm)			
	L	L1	L2	L3	W1	W2	H	H1	H2	H3	H4	W	B	d	A
CBRM5Kd-125i	135	86	49	24.5	78	103	63.5	21	69.5	95	21	25	117	Φ4.2	25
CBRM5Kd-160	150	95	51	29	92.5	122.5	65.5	25.5	75	100	23.5	30	130	Φ4.5	30
CBRM5Kd-250	165	102	56.5	31	107	142	72	21.5	79	105	21.5	35	126	Φ5	35
CBRM5Kd-400	257	150	87.5	58	140	184	99	35	108	163	37	44	194	Φ7	44
CBRM5Kd-630i	257	150	87.5	58	140	184	99	36.5	108	163	38.5	44	194	Φ7	44
CBRM5Kd-800	280	180	86.9	64	210	280	109	38	117	170	41.5	70	243	Φ7.5	70

Operation, Use & Maintenance

- ◆ When installing the circuit breaker, carefully read the information regarding outline and mounting dimensions, and verify that the technical parameters listed on the breaker nameplate meet the application requirements.
- ◆ For circuit breakers equipped with a motor operating mechanism, do not remove the mechanism during installation, otherwise, it will affect its operating characteristics.
Operation method: After the circuit breaker trips, the motor mechanism will automatically reset the breaker to the OFF position. To close the breaker, simply issue a ON command from the upper computer; to open it, issue an OFF command.
- For manual closing and opening, set the button on the motor mechanism to MANUAL mode. If the breaker is in the free-trip position, you must first manually reset it before performing closing or opening operations.
- ◆ The internal and external accessories installed on the circuit breaker are properly adjusted to technical requirements before delivery. Users should not adjust them by themselves, and there is no need to open the cover, ; installation can be carried out directly.
- ◆ The phase conductors on the circuit breaker must be securely connected; otherwise, the internal electronic circuit will not function correctly, affecting the protection function of the breaker.
- ◆ For circuit breakers equipped with an undervoltage release, the under-voltage release must be connected to the corresponding rated working voltage first, otherwise the breaker cannot be closed.

Transportation & Storage

Transportation

During transportation, the product shall be protected from exposure to and mixed shipment with harmful liquids such as water, rain, snow, chemical solvents and corrosive fluids. Avoid severe impact and extrusion between items. Stack in accordance with the direction indicated on the package; the maximum stacking layers shall be subject to the marking on the outer carton.

Storage

- ◆ Ambient storage conditions: temperature -10 °C ~ +45 °C;
- ◆ Relative humidity ≤ 90% (at +20 °C ambient temperature);
- ◆ Storage area shall be free of dust and conductive dust;
- ◆ Free from corrosive, flammable, explosive gases and exposure to rain or snow;
- ◆ Dry and well-ventilated;
- ◆ Stack in accordance with the direction indicated on the package, and do not stack higher than the number specified on the outer carton.

Notes

- ◆ The company shall not be liable for non-quality issues caused by improper installation and use, or for burning of connection terminals due to incorrect wiring.
- ◆ If any problem occurs during product operation, please contact your local distributor or our customer service center.