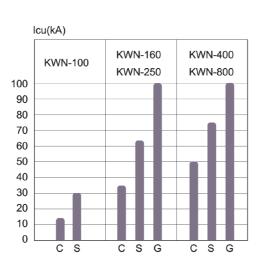


MCCB and ELCB have the same outline dimensions, and they are compatible.



MCCB with high short circuit breaking capacity

Modularized Accessories

Auxiliary contact and alarm contact, under voltage trip and shunt trip can be assembled or replaced without opening the case.



kawamura



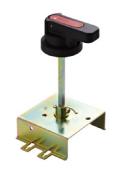




Under voltage trip

Auxiliary contact and Alarm contact





Terminal cover

Manual operating mechanism

Electrical operating mechanism

Quick Selection Table

KWN

and rated current of 80A with a. If you want to order 2 sets of KWN-100C of 3 poles shunt trip, auxiliary contact and Front Terminals. For

Scope and Intended Use

KWN series molded case circuit breaker (hereinafter referred to as MCCB) is researched and developed by our corporation with international advanced design and manufacturing technology. The rated insulation voltage of MCCB is 690V. It applies to the circuits with the rated voltage not exceeding 400V, AC 50Hz, and rated current up to 800A for infrequently transferring circuits and infrequently starting motors (KWN-800 has no motor protection). MCCB provides the function of overload and short circuit protection to prevent circuits and motors from damages. This series of MCCB has the features of compact structure, high breaking capacity, short arcing distance, and complete internal and external accessories.

Standard-compliance: IEC 60947-1, GB 14048.1 General rules IEC 60947-2, GB 14048.2 Circuit-breakers

IEC 60947-4, GB 14048.4 Contactors and motor-starters

Electromechanical contactors

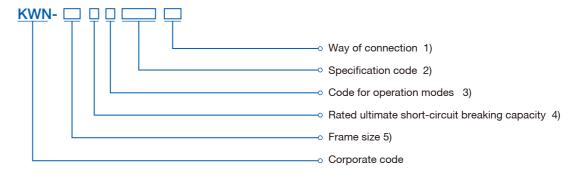
IEC 60947-5-1, GB 14048.5 Control circuit devices and switching element



Conditions for Operation and Installation

- a. Ambient temperature: $-5\,^\circ$ to $+40\,^\circ$. The average temperature does not exceed $+35\,^\circ$ within 24h
- b. Installation altitude: ≤ 2000m
- c. The relative humidity will not exceed 50% when the ambient temperature is +40°C. Under the lower temperature, it can be used at higher relative humidity. When it is +20℃, for example, it will reach 90%. Appropriate measures shall be taken for the occasional condensations out of temperature changes.
- d. Pollution class: 3
- e. Installation category: The over voltage category of a main circuit and under voltage trip are III. The over voltage category of other auxiliary circuits and control circuits are II.

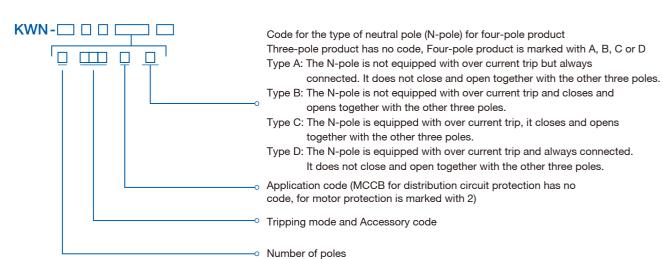
Model Indication and Meaning





Note:

- 1) There are Front Terminals, Rear Terminals, and Plug-in Type (Front Terminal has no mark)
- 2) The specification code is composed of six figures as follows:



- 3) Code for operation modes: No code for handle direct. Code Z for handle turning. Code P for electrical operating.
- 4) Classified to type C, type S and type G
- 5) Frame size (AF): 100, 160, 250, 400, and 800

Tripping Mode and Accessory Code

Code Accessory name Tripping mode	No accessory	Shunt trip	Auxiliary contact	Under voltage trip	Auxiliary contact Shunt trip	Two sets of auxiliary contacts	Under voltage trip Auxiliary contact
Electromagnetic tripping	200	210	220	230	240	260	270
Thermal-magnetic tripping	300	310	320	330	340	360	370

Code Accessory name Tripping mode	Alarm contact	Alarm contact Shunt trip	Alarm contact Auxiliary contact	Alarm contact Under voltage trip	Alarm contact Auxiliary contact Shunt trip	Alarm contacts Two sets of auxiliary contacts	Alarm contact Under voltage trip Auxiliary contact
Electromagnetic tripping	208	218	228	238	248	268	278
Thermal-magnetic tripping	308	318	328	338	348	368	378

Note:

No codes of 260, 360, 268 and 368 for KWN-100, KWN-160 and KWN-250.

Method of Installation

MCCB is typically mounted vertically, but it can also be mounted horizontally.

Main Technical Data

Frame size (A	F)			10	00				16	0		
Model			KWN	-100C	KWN	-100S	KWN	-160C	KWN	-160S	KWN	-160G
Rated current	In (A)		10, 16, 2	20, 25, 32,	40, 50, 63	, 80, 100	10	6, 20, 25,	32, 40, 50,	63, 80, 10	0, 125, 160)
Number of po	les		3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
Rated insulation	on voltage Ui (V)						AC 69	90				
Rated operati	ng voltage Ue (V)					AC 400					
Rated impulse	e withstand volta	ıge Uimp (V)					8000					
Arcing distance	ce (mm)						≤ 50					
Rated ultimate	Э	AC 400V	1	5	3	30	35		6	5	10	00
short-circuit breaking capa	acity Icu (kA)	AC 230V	2	0	4	15	50				15	50
Rated service		AC 400V	8	3	1	5	18		33	50		0
short-circuit breaking capa	acity Ics (kA)	AC 230V	1	0	2	3	25		50)	75	
Operational p	erformance	With current		15	500			ı	100	00		
	perating times)	Without current		85	600				700	00		
		W	75	100	75	100	90	120	90	90 120 90		120
Outline dimensions		L		13	30				15	i5	'	
(mm)	w H	Н		6	8		6	8	7000 90 120 155	8	6	
	Front Terminals	S		•		•	•	•		•		
Connection mode	Rear Terminals	;		•		•	•	•		•		
	Plug-in Type		•	•		•	•	•		•		
	Shunt trip		•	•		•	•	•	•	•	•	
	Under voltage	trip	•	•		•	•	•	•	•	•	
Accessory	Auxiliary conta	ct	•	•		•	•	•	•	•	•	
7.0063301 y	Alarm contact		•	•		•	•	•	•	•	•	
	Handle turning mechanism	operating	•	•		•	•	•	•	•	•	
	Electrical opera	ating mechanism		•		•	•	•				

58>





Frame size (A	AF)					250					40	0		
Model			KWN	I-250C	KWN	-250S	KWN-	250G	KWN	-400C	KWN	-400S	KWI	N-400G
Rated current	t In (A)			100, 12	25, 160, 1	180, 200,	225, 250			200	, 225, 25	0, 315, 3	50, 400	
Number of po	oles		3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
Rated insulat	ion voltage Ui (V)				1			AC	690	ı				
Rated operati	ing voltage Ue (V)						AC	400					
Rated impuls	e withstand volta	age Uimp (V)						80	000					
Arcing distan	ce (mm)		≤ 50											
Rated ultimat		AC 400V		35	6	65	1	00	5	0	7	75	10	00
short-circuit to capacity Icu (•	AC 230V		50	1	00	1	50	7	5	120		150	
Rated service		AC 400V		18	3	33	5	50	5	50 75			75	
short-circuit to capacity lcs (AC 230V		25	5	50	7	75	7	75 100	00	100		
Operational p	performance	With current						10	00					
	perating times)	Without current			70	000			50 75 75 100	00				
Outline		W	105	140	105 140		105	140	140	184	140	184	140	184
dimensions (mm)		L			1	65					25	57		
,	W, H,	Н		68		8	6				75 120 75 100 4000 140 184 257			
	Front Terminals	S		•	•			•		•		•		•
Connection mode	Rear Terminals	.		•	•	•		•		•	(•
	Plug-in Type			•	•			•		•	•			•
	Shunt trip			•				•		•				•
	Under voltage	trip		•	•			•		•	•			•
	Auxiliary conta	ct		•	•			•		•	•			•
Accessory	Alarm contact			•	•			•		•				•
	Handle turning mechanism	operating		•	•	•		•		•	•			•
	Electrical opera	ating mechanism		•		•		•		•		•		•

Frame size (A	ıF)				80	00					
Model			KWN-	800C	KWN-8	300S	KWN	I-800G			
Rated current	t In (A)				400, 500, 63	30, 700, 800					
Number of po	oles		3P	4P	3P	4P	3P	4P			
Rated insulat	ion voltage Ui (V)				AC	690					
Rated operati	ing voltage Ue (V)				AC	400					
Rated impuls	e withstand volta	ge Uimp (V)			80	000					
Arcing distan	ce (mm)				≤	50					
Rated ultimat	e	AC 400V		50	7	75	10	00			
short-circuit b capacity Icu (AC 230V		75	1:	20	15	50			
Rated service	•	AC 400V		50		75	7:	5			
short-circuit b	oreaking	AC 230V		75		00	100				
		With current									
Operational p (Number of o	erformance perating times)	Without current				500 2500					
Outline		W	210	280	210	280	210 2				
dimensions (mm)	W	L			2	75					
	WH	Н			10	03					
	Front Terminals	S	•	•	•	•	•	•			
Connection mode	Rear Terminals	•	•	•	•	•	•	•			
	Plug-in Type		•	•	•	•	•	•			
	Shunt trip		•	•	•	•	•	•			
	Under voltage	trip	•	•	•	•	•	•			
	Auxiliary conta	ct	•	•	•	•	•	•			
Accessory	Alarm contact		•	•	•	•	•	•			
	Handle turning mechanism	operating	•	•	•	•	•	•			
		ating mechanism	•	•	•	•	•	•			

Attachments



T	Model	KWN	-100	KWN-	-160	KWN	N-250	KWI	N-400	KWN-	800
Tripping mode and Accessories code	Number of poles Accessories name	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
208, 308	Alarm contact	- -						-	<u> </u>	- -	<u> </u>
210, 310	Shunt trip		•		•		•	•	•	•	•
220, 320	Auxiliary contact	-				-				-	
230, 330	Under voltage trip		0		0 -		0	0	0		0 -
240, 340	Auxiliary contact Shunt trip	-	•		•		•	 ■•	•=		•=
260, 360	Two sets of auxiliary contacts										•
270, 370	Under voltage trip Auxiliary contact	-	0		0		0	-	0		○■
218, 318	Alarm contact Shunt trip		•		•		•		•□-		•□
238, 338	Alarm contact Auxiliary contact										
228, 328	Alarm contact Under voltage trip	-	0		0		0	- 8	-	- 8	-
248, 348	Alarm contact Auxiliary contact Shunt trip		•		•		•		•		•-
268, 368	Alarm contact Two sets of auxiliary contacts								-		
278, 378	Alarm contact Under voltage trip Auxiliary contact		0		0		0	-	o □ -		0

- The code of 200's means that MCCB has only electromagnetic trip
 The code of 300's means that MCCB has both thermal and electromagnetic trip

Operating Characteristics of Thermal-Magnetic Trip

a. Operating characteristics for distribution circuit protection

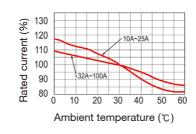
Rated current of trip (A)	Operating characteristics of inverse time	delay (Ambient temperature: +30℃)	Instantaneous operating current (A)		
nated current of trip (A)	1.05In (cold state) non-operating time (h)	1.30ln (hot state) operating time (l			
In ≤ 63	1	1	401 0007		
63 < In ≤ 630	2	2	10In±20%		
630 < In ≤ 800	2	2	6ln±17%		

b. Operating characteristic for motor protection

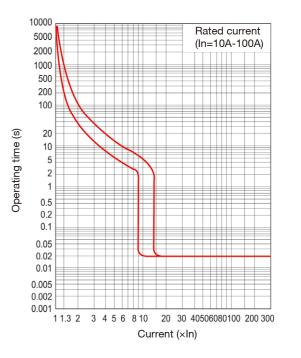
Rated current of trip (A)	Operating charact	l44				
nated current of trip (A)	1.0ln (cold state) non-operating time (h)	1.2In (hot state) operating time (h)	1.50ln (hot state) operating time (m)	7.2ln (cold state) non-operating time (s)	Instantaneous operating current (A)	
10 ≤ In≤ 225		2	4	4 < Tp ≤ 10	401 0007	
225 < In ≤ 630	2	2	8	6 < Tp ≤ 10	12In±20%	

Characteristic Curves

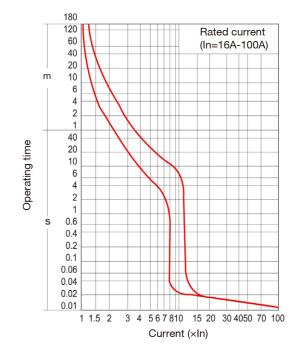
KWN-100C/S Current-Temperature Characteristic



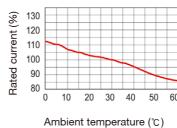
KWN-100C/S Time-Current Characteristic Curves

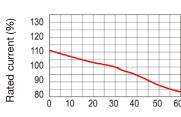


KWN-160C/S/G Time-Current Characteristic Curves



KWN-160C/S/G Current-Temperature Characteristic





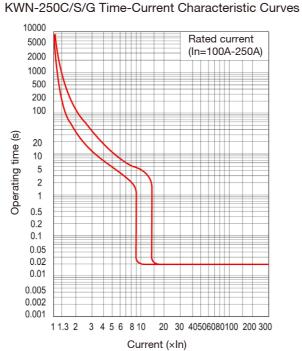
Ambient temperature (℃)

KWN-400C/S/G Current-Temperature Characteristic

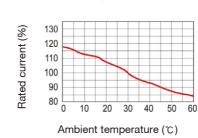
10 20 30 40 50 60

Ambient temperature (℃)

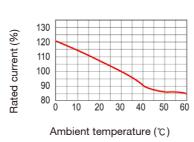
120 110 100



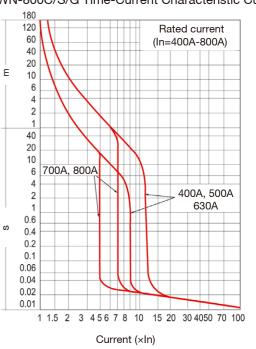
KWN-800C/S/G Current-Temperature Characteristic (In: 400A, 500A, 630A)



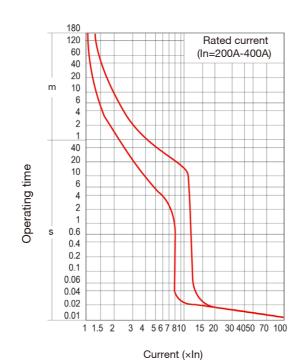
KWN-800C/S/G Current-Temperature Characteristic (In: 700A, 800A)



KWN-800C/S/G Time-Current Characteristic Curves



KWN-400C/S/G Time-Current Characteristic Curves



Power Loss

	5	Total power	loss for 3P (W)
Model	Rated current (A)	Front Terminals	Rear Terminals and Plug-in Type
KWN-100 (C, S)	100	33	38
KWN-160 (C, S, G)	160	43	51
KWN-250 (C, S, G)	250	58	66
KWN-400 (C, S, G)	400	105	118
KWN-800 (C, S, G)	800	248	268

Operating time

Test Current and Cross-Section of Wire

Wire cross-section of copper wires for the temperature rise test and the corresponding test current

Rated current (A)	10	16 20	25	32	40 50	63	80	100	125 140	160	180 200 225	250	315 350	400
Cross-section of wire (mm²)	1.5	2.5	4	6	10	16	25	35	50	70	95	120	185	240



Cross-section of Wire

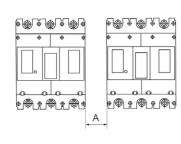
		Copper wire		Copper bus bars
Rated current (A)	Number	Cross section of wire (mm²)	Number	Cross-section of wire (mm²)
500	2	150	2	30×5
630	2	185	2	40×5
700	2	240	2	50×5
800	2	240	2	50×5

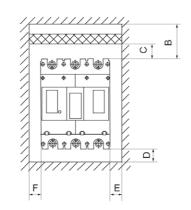
Derating Factor of Rated Current for Terminal Trip when Ambient Temperature Changes

Ambient temperature Model	+30℃	+40℃	+45℃	+50℃	+55℃	3′09+
KWN-100 (C,S)	1.0ln	0.90ln	0.87ln	0.83ln	0.80ln	0.70ln
KWN-160 (C,S,G)	1.0ln	0.93ln	0.88ln	0.83ln	0.79ln	0.71ln
KWN-250 (C,S,G)	1.0ln	0.90ln	0.84ln	0.81ln	0.78ln	0.73ln
KWN-400 (C,S,G)	1.0ln	0.89ln	0.82ln	0.79ln	0.74ln	0.69ln
KWN-800 (C,S,G)	1.0ln	0.86ln	0.81ln	0.77ln	0.72ln	0.67ln

Safety Distance

The distance between MCCB and the top, the bottom and the side walls of the enclosure should satisfy the safety distance requirements.

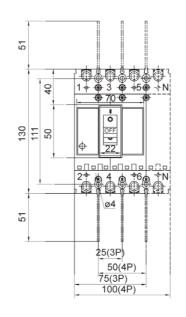


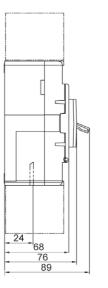


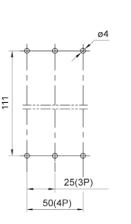
Model	Safety distance (mm)						
	А	B (to metal)	C (to insulator)	D	Е	F	
KWN-100 (C, S)	0	50	25	20	20	20	
KWN-160 (C, S, G)	0	50	25	20	20	20	
KWN-250 (C, S, G)	0	100	25	20	25	25	
KWN-400 (C, S, G)	0	100	30	20	25	25	
KWN-800 (C, S, G)	0	100	30	20	25	25	

Outline and Installation Dimensions (mm)

KWN-100 C/S Front Terminals (3P/4P)

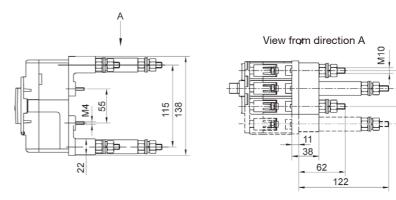


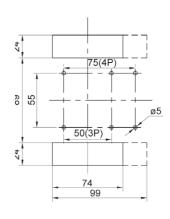




Dimensions of drilling on mounting base for Front Terminals

KWN-100 C/S Rear Terminals and Plug-in Type (3P/4P)



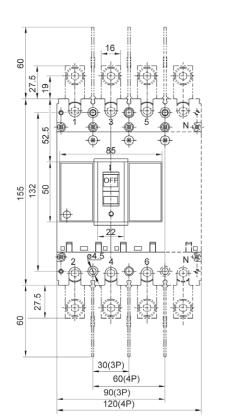


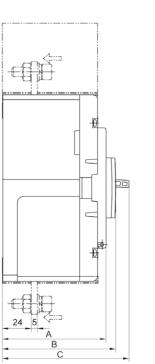
Dimensions of drilling on mounting base for Rear Terminals and Plug-in Type

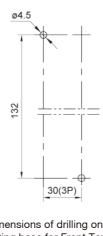
kawamura



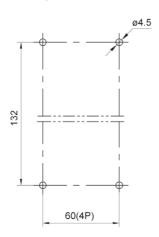
KWN-160 C/S/G Front Terminals (3P/4P)







3P dimensions of drilling on mounting base for Front Terminals

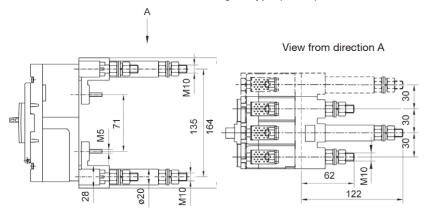


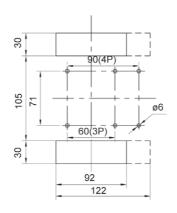
4P dimensions of drilling on mounting base for Front Terminals

Dimensions of A, B, and C by model (mm)

Model	А	В	С
KWN-160C	68	76	87
KWN-160S, G	86	94	105

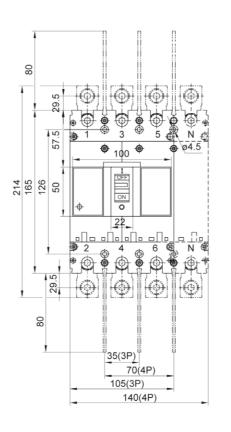
KWN-160 C/S/G Rear Terminals and Plug-in Type (3P/4P)

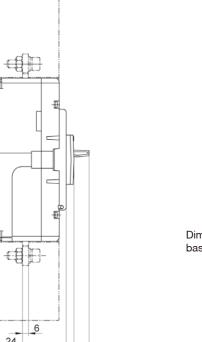


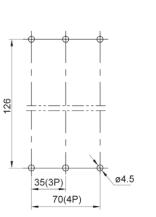


Dimensions of drilling on mounting base for Rear Terminals and Plug-in Type

KWN-250 C/S/G Front Terminals (3P/4P)







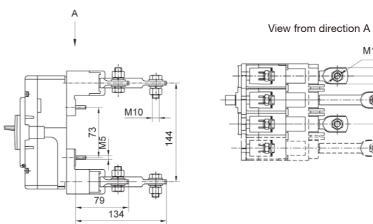
Dimensions of drilling on mounting base for Front Terminals

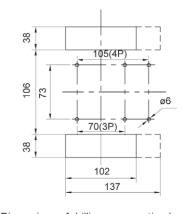
Dimensions of A, B, and C by model (mm)

M10

Model	А	В	С
KWN-250C	68	76	91
KWN-250S,G	86	94	109

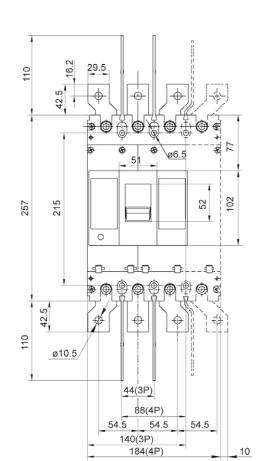
KWN-250 C/S/G Rear Terminals and Plug-in Type (3P/4P)

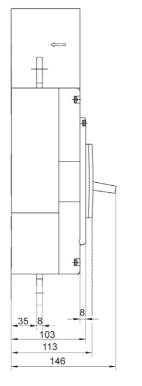


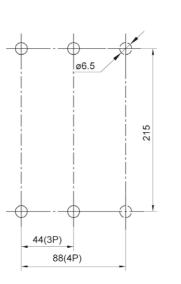


Dimensions of drilling on mounting base for Rear Terminals and Plug-in Type

KWN-400 C/S/G Front Terminals (3P/4P)

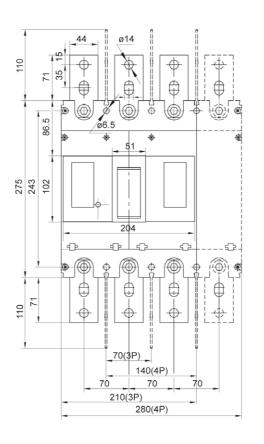


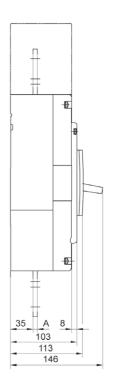


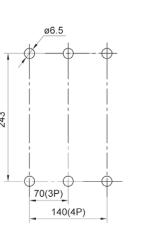


Dimensions of drilling on mounting base for Front Terminals

KWN-800 C/S/G Front Terminals (3P/4P)





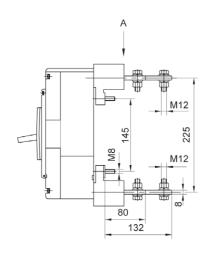


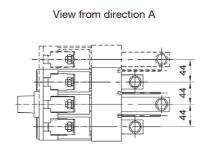
Dimensions of drilling on mounting base for Front Terminals

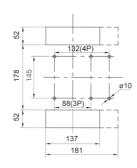
Dimensions A by rated current (mm)

(,				
Rat	Rated current			
400A,	500A, 630A	8		
70	00A, 800A	12		

KWN-400 C/S/G Rear Terminals and Plug-in Type (3P/4P)

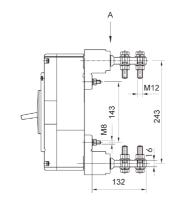


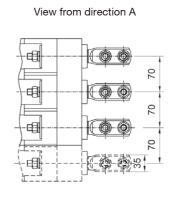


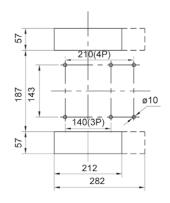


Dimensions of drilling on mounting base for Rear Terminals and Plug-in Type

KWN-800 C/S/G Rear Terminals and Plug-in Type (3P/4P)







Dimensions of drilling on mounting base for Rear Terminals and Plug-in Type





Order Form

(Please fill value in ____ and tick $\sqrt{\ }$ in \square)

User name			Order qty.		Order date		
Model		KWN /					
Rated current (A)		In= A					
Way of connection		Front Terminals Rear Terminals Plug-in Type					
	Under voltage trip	Type C	AC 400V □ AC 230V □				
	Shunt trip		AC 400V □ AC 230V □ DC 220V □				
Accessory	Electrical operating mechanism		AC 230V \square AC 110V \square DC 110V \square DC 220V \square				
	Manual operating mechanism		SK 🗆				
	Wiring block □		Handle mechanism Square □ Round □ Terminal covers Long □ S		rs Long Short		
Remarks							

KWN2L Series Earth Leakage Circuit Breaker



Scope and Intended Use

KWN2L series earth leakage circuit breaker (hereinafter referred to as ELCB), of which the rated insulation voltage is 800V, is intended for infrequent conversion and motor protection in circuits with AC 50Hz, the rated working voltage at 400V and the rated current up to 400A.

Standard-compliance: IEC 60947-1 and GB14048.1 General

IEC 60947-2 and GB14048.2 Circuit breaker and annex B - Circuit breaker with residual current protection IEC 60947-4-1 and GB14048.4 Electromechanical contactors and motor-starters

Certificate: CCC (China Compulsory Certification) and CB certification

Product Features

- a. ELCB has overload, short-circuit and under voltage protection functions, which can protect lines and power equipments from damages, provide personnel with protection against indirect contact, and protect against potential fire hazards resulting from long-standing earth fault of current protection that can not be detected.
- b. According to the rated ultimate short-circuit breaking capacity (lcu), ELCB is classified as type M (medium) or type H (high). It is characterized by small size, high breaking, short arcing distance and anti-vibration.
- c. ELCB can be mounted vertically and horizontally.
- d. For ELCB, power lines can not be connected from the load side, meaning that only terminals 1, 3 and 5 are allowed for power, while terminals 2, 4 and 6 for loads.
- e. ELCB has isolation function.
- f. ELCB can be connected by front terminals, rear terminals or plug-in methods.

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