

MCCB

With ELCB Type

Kawamura Electric Inc.

Selection Guide

■ Ordering Instructions

When ordering an ELCB, the following information must be clearly specified:

☐ Circuit breaker model, pole number and rated current

☐ Short-circuit instantaneous protection current setting value

(If not specified in the order, the product will be supplied with a default setting of $10I_n$)

☐ Tripping mode and accessory code: If not specified in the order, the circuit breaker will be supplied without additional accessories (i.e. code 3300 or 4300) by default. For circuit breakers ordered with a Shunt trip or under-voltage release, the rated control supply voltage must be clearly indicated

☐ The wiring of accessories (Shunt trip, auxiliary contact and Alarm switch) adopts the lead wire outlet mode by default.

☐ Operation mode: If not specified in the order, the product will be supplied with manual operation by default

☐ Temperature Specification: The default reference temperature is 40°C. If a reference temperature of 55°C is required, please specify this when placing your order.

■ Exclusive ELCB Residual Current Protection Parameters

☐ Rated residual operating current $I_{\Delta n}$

☐ Residual current time delay characteristic

☐ ELCB power supply mode: Internal power supply / External auxiliary power supply

☐ Alarm without Tripping Module

Example:

For an order of KWN3L-125L, 3-pole, 125A, $I_{\Delta n}=300\text{mA}$, instantaneous leakage trip, quantity 100 units, the order specification shall be written as:

KWN3L-125L/3300 3P 125A $I_{\Delta n}=300\text{mA}$ Instant ELCB, 100 units

Ratings And Specifications

MCCB With ELCB Type

Frame Size															
	125			160			250			400			630		
Model	KWN3L-125			KWN3L-160			KWN3L-250			KWN3L-400			KWN3L-630		
Number of poles	3P,3P+N			3P+N											
Rated current(A) In	32,40,50,63 70,80,100,125			63,70,80,100 125,140,160			100,125,140 160,180,200,225,250			225,250,315 320,350,400			400,500,630		
Standard	IEC/EN 60947-2														
Reference temperature	40°C/55°C														
Rated operational voltage	380/400/415V AC														
Rated insulation voltage Ui (V)	690			1000											
Rated impluse withstand voltage Uimp (kV)	6			8											
Residual-current protection	Type A (covers Type AC)														
Breaking capacity level	L			L	M		L	M		L	M	H	L	M	H
Rated ultimate short-circuit breaking capacity Icu(kA)	10			36	50		36	50		50	75	85	50	75	85
Rated service short-circuit breaking capacity Ics(kA)	7.5			25	36		25	36		36	55	65	36	55	65
Mechanical Endurance	10000			for 63–100A		for 125–160A		for 100A		for 125–250A		for 225–315A		for 320–400A	
Electrical Endurance	1500			8500 1500		7000 1000		8500 1500		7000 1000		7000 1000		4000 1000	
Electronic Trip Unit Type	Type 1 –Dedicated ASIC			Type 1 –Dedicated ASIC			Pro Type –MCU Microcontroller			Type 1 –Dedicated ASIC			Pro Type –MCU Microcontroller		
Residual Current Setting IΔn (mA)	30/100/ 300/500			30/100/ 300/500			100/300/500/ 1000/3000			100/300/ 500/1000			100/300/500/ 1000/3000		
Time Delay Setting (ms)	0/100/ 300/1000			0/100/ 300/1000			OFF/200/500/ 500/1000			0/100/ 300/1000			OFF/200/500/ 500/1000		
Limiting non-actuating time setting (ms)	100	300	1000	100	300	1000	200	500	1000	100	300	1000	200	500	1000
Maximum breaking time (ms)	300	600	2000	300	600	2000	350	750	1500	300	600	2000	350	750	1500
0 = Instantaneous Trip (No Intentional Delay, Mechanical Operating Time Only) OFF = Residual Current Protection Disabled															
Rated residual non-operating current	1/2 IΔn														
Residual Current Value	IΔn			2IΔn			5IΔn			10IΔn					
Without time delay (s)	0.3			0.15			0.04								
Selectivity category	A														
Isolating Knob	X			√			√			√			√		
Alarm without Tripping Module	X			√			√			√			√		
Certification	Listed in May 2027			Listed in April 2027			Listed in November 2026			Listed in December 2026					

Note1: Limiting non-actuating time depends on time-delay gear selection for time-delay models.

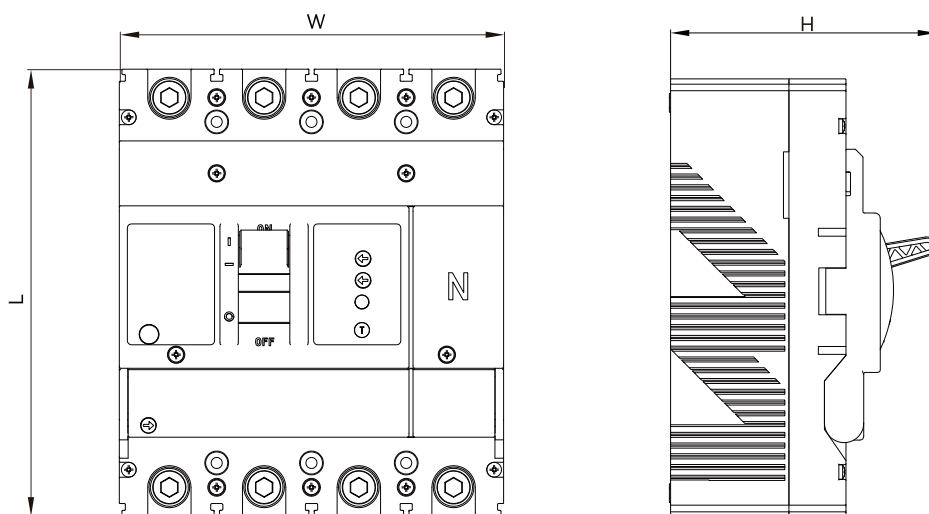
Note2: Thermal adjustable residual-current model is available with multi-gear operating current and time settings.

Product Dimension Drawing

MCCB With ELCB Type

KWN3L

125,160,250,400,630

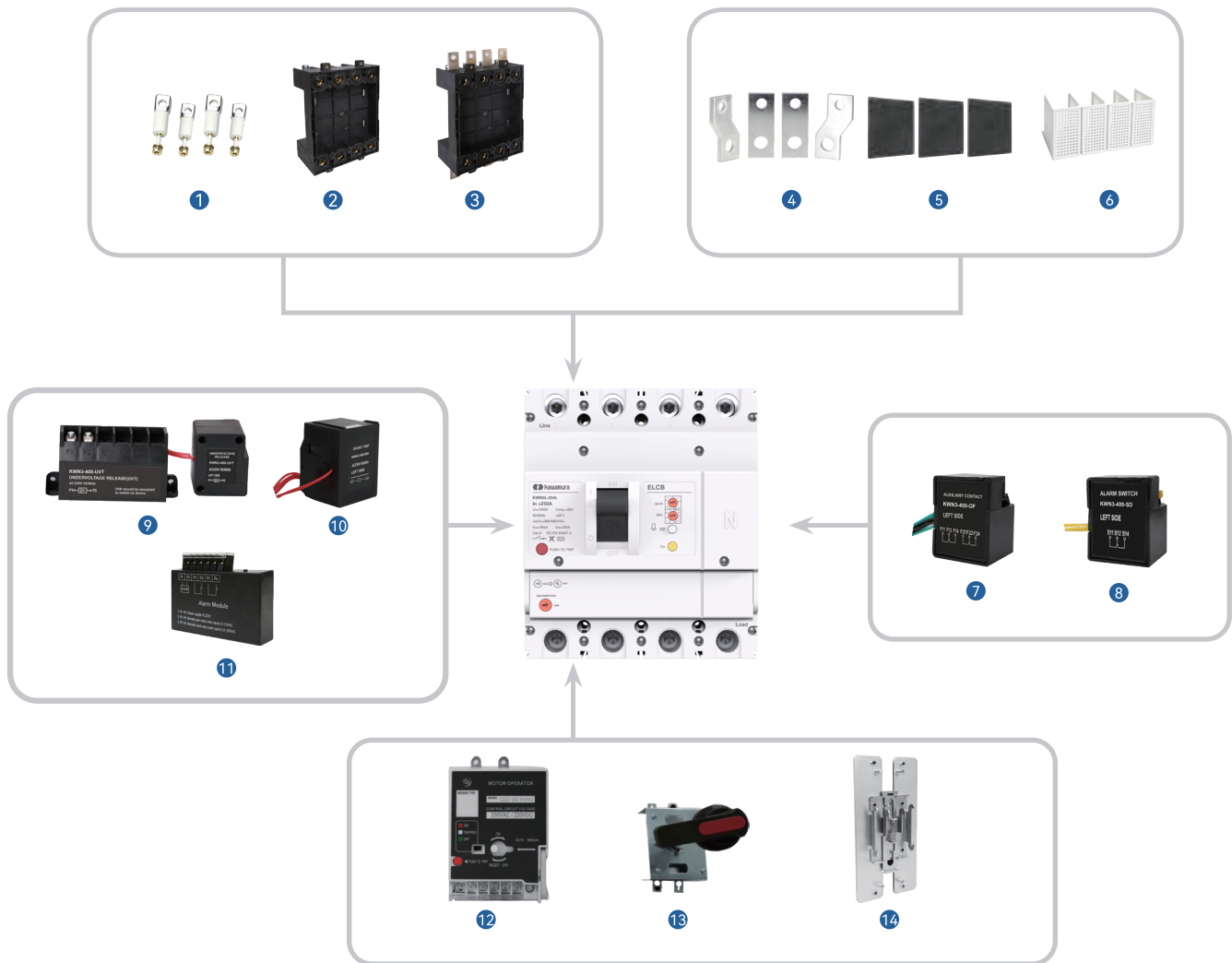


KWN3L Dimensions mm(L×W×H)

Frame Size	125		160	250	400	630
Number of poles	3P	3P+N	3P+N	3P+N	3P+N	3P+N
Length	150	150	155	165	267	267
Width	75	100	122	142	197	197
Height	81	81	99	100.5	152	152

Accessories

Overview of Accessories



1	Fixed rear connection (RC)	8	Alarm switch (SD)
2	Plug-in rear connection (PR)	9	Under-voltage release (MN)
3	Plug-in front connection (RF)	10	Shunt trip (MX)
4	Spreader links (C3/C4)	11	Alarm without Tripping Module (ALM)
5	Interphase barriers (IB)	12	Motor (M)
6	Terminal cover (TC)	13	Rotary handle operating mechanism (HL)
7	Auxiliary contact (OF)	14	DIN Rail adaptor (DR)

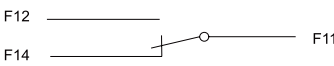
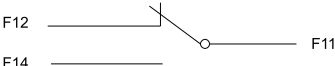
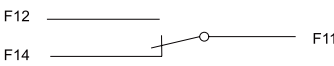
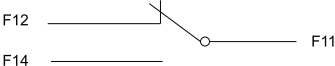
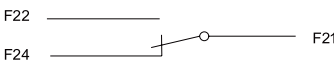
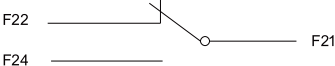
Internal Accessories

■ Auxiliary contact with Wire (OF)



An accessory that is connected to the auxiliary contact of the switching device to indicate whether the circuit breaker is in the ON position or not.

Electrical wiring diagram

Accessory name		ON	OFF/TRIP
Auxiliary contact	OF		
	TWO OF		
			

Electrical parameters

Conventional Thermal Current		3A	
Use category		AC 15	DC 13
Working electricity 50Hz	AC 400V	0.3A	
	DC 220V		0.15A

Auxiliary contact	Frame size	Contact	Left	Right
	KWN3L-125	OF	KWN3125OF11L	KWN3125OF11R
		TWO OF	KWN3125OF21L	KWN3125OF21R
	KWN3L-160	OF	KWN3160OF11L	KWN3160OF11R
		TWO OF	KWN3160OF21L	KWN3160OF21R
	KWN3L-250	OF	KWN3250OF11L	KWN3250OF11R
		TWO OF	KWN3250OF21L	KWN3250OF21R
	KWN3L-400/630	OF	KWN3630OF11L	KWN3630OF11R
		TWO OF	KWN3630OF21L	KWN3630OF21R

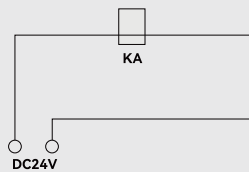
Internal Accessories

■ Shunt trip with Wire (MX)

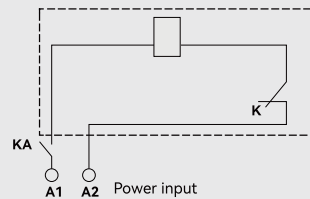


- The Shunt trip shall reliably trip the circuit breaker at the voltage between 70% and 110% of the rated control power voltage U_e .
- The circuit breaker shall be reset on the site after tripping through the Shunt trip.

Electrical wiring diagram



KA: DC24V intermediate relay with the contact current capacity of 1A



Electrical parameters

Frame size	Shunt trip power loss(W)		
	AC400V	AC230V	DC24V
KWN3L-125	152	161	180
KWN3L-160	116	225	165
KWN3L-250	220	161	108
KWN3L-400/630	108	179	98

Shunt trip	Frame size	Voltage	Left
	KWN3L-125	AC230V	KWN3125MXAC2L
		AC400V	KWN3125MXAC3L
		DC110V	KWN3125MXDC1L
		DC220V	KWN3125MXDC2L
		DC24V	KWN3125MXDC3L
	KWN3L-160	AC230V	KWN3160MXAC2L
		AC400V	KWN3160MXAC3L
		DC110V	KWN3160MXDC1L
		DC220V	KWN3160MXDC2L
		DC24V	KWN3160MXDC3L
	KWN3L-250	AC230V	KWN3250MXAC2L
		AC400V	KWN3250MXAC3L
		DC110V	KWN3250MXDC1L
		DC220V	KWN3250MXDC2L
		DC24V	KWN3250MXDC3L
	KWN3L-400/630	AC230V	KWN3630MXAC2L
		AC400V	KWN3630MXAC3L
		DC110V	KWN3630MXDC1L
		DC220V	KWN3630MXDC2L
		DC24V	KWN3630MXDC3L

Internal Accessories

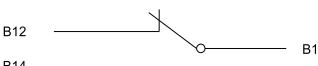
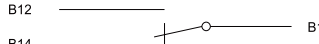
■ Alarm switch with Wire (SD)



An accessory used to indicate whether the circuit breaker has tripped. When the Alarm switch indicates that the circuit breaker is at Trip status, there are the following five possibilities.

- Overload or short circuit fault.
- Residual current fault.
- Shunt trip action.
- Line fault and undervoltage release action.

Electrical wiring diagram

Accessory name	ON/OFF	TRIP
Alarm		

Electrical parameters

Conventional Thermal Current	3A		
Use category		AC 15	DC 13
Working electricity 50Hz	AC 400V	0.3A	
	DC 220V		0.15A

Alarm switch	Frame size	Left	Right
	KWN3L-125	KWN3125SD1L	KWN3125SD1R
	KWN3L-160	KWN3160SD1L	KWN3160SD1R
	KWN3L-250	KWN3250SD1L	KWN3250SD1R
	KWN3L-400/630	KWN3630SD1L	KWN3630SD1R

■ Auxiliary + Alarm with Wire

Auxiliary + Alarm	Frame size	Left	Right
	KWN3L-125	KWN3125OFSD1L	KWN3125OFSD1R
	KWN3L-160	KWN3160OFSD1L	KWN3160OFSD1R
	KWN3L-250	KWN3250OFSD1L	KWN3250OFSD1R
	KWN3L-400/630	KWN3630OFSD1L	KWN3630OFSD1R

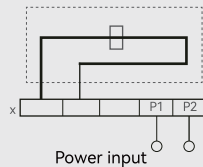
Internal Accessories

■ Under-voltage release with Terminal (MN)



- The Under-voltage release shall reliably trip the circuit breaker at the voltage between 35% and 70% of the rated operational voltage;
- The Under-voltage release shall ensure that the circuit breaker can be switched on at the voltage between 85% and 110% of the rated operational voltage;
- The Under-voltage release shall prevent the circuit breaker from switching on when voltage is below 35% of the rated operational voltage.

Electric wiring diagram



Note: X- terminal block

Note: In the dashed box, it is the wiring diagram of accessories in the circuit breaker.

Electrical parameters

Frame size	Under-voltage release power loss(W)	
	AC400V	AC230V
KWN3L-125	124	41
KWN3L-160	4	2.4
KWN3L-400/630	224	184

Under-voltage release	Frame size	Voltage	Left
	KWN3L-125	AC230V	KWN3125MNAC2L
		AC400V	KWN3125MNAC3L
		DC110V	KWN3125MNDC1L
		DC220V	KWN3125MNDC2L
		DC24V	KWN3125MNDC3L
	KWN3L-160	AC230V	KWN3160MNAC2L
		AC400V	KWN3160MNAC3L
		DC110V	KWN3160MNDC1L
		DC220V	KWN3160MNDC2L
		DC24V	KWN3160MNDC3L
	KWN3L-400/630	AC230V	KWN3630MNAC2L
		AC400V	KWN3630MNAC3L
		DC110V	KWN3630MNDC1L
		DC220V	KWN3630MNDC2L
		DC24V	KWN3630MNDC3L

External Accessories

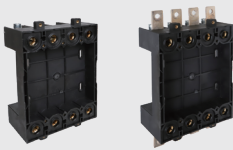
■ Fixed rear connection (RC)



Easy to install and connect the products in the rear connection.

Fixed rear connection	Frame size	3P+N(8pcs)
	KWN3L-160	KWN3160RC4
	KWN3L-250	KWN3250RC4
	KWN3L-400	KWN3400RC4
	KWN3L-630	KWN3630RC4

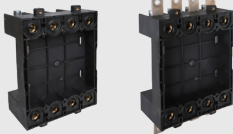
■ Plug-in (PF/PR)



Plug-in

The wiring type is divided into plug-in Rear Connection and plug-in Front Connection.
The plug-in connection for the products is easy for maintenance and replacement, but plug-in and plug-out cannot be done with the electricity.

Frame size	Fixed front	Fixed rear	Plug-in front	Plug-in rear
KWN3L-160	■	■	■	■
KWN3L-250	■	■	■	■

Plug-in	Frame size	Connection type	3P+N
	KWN3L-160	Front connection	KWN3L160PF4
		Rear connection	KWN3L160PR4
	KWN3L-250	Front connection	KWN3L250PF4
		Rear connection	KWN3L250PR4

External Accessories

■ Rotary handle operating mechanism (HL)



The circuit breaker can be operated by the rotation of the handle and the ergonomically designed rotation handle makes the operation of the circuit breaker more flexible.

User visualization information/settings:

- 3 position indications: OFF, ON and TRIP
- The circuit breaker cannot be switched on when the door is open
- The door cannot be opened when the circuit breaker is switched on
- The axial length of the extended handle can be custom made according to the distance from the back of the circuit breaker to the door.

Rotary handle operating mechanism	Frame size	Handle shape	Extended
	KWN3L-250	Round	KWN3L250HL1
	KWN3L-400	Round	KWN3L400HL1
	KWN3L-630	Round	KWN3L630HL1

■ DIN Rail adaptor (DR)

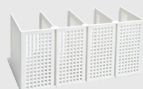


It is an adapter plate that allows ELCB mounting on a DIN rail.

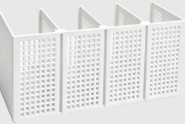
DIN Rail adaptor	Frame size	3P+N
	KWN3L-160	KWN3160DR3
	KWN3L-250	KWN3250DR3

External Accessories

■ Terminal cover (TC)



Protection Degree: IP40
Protect from being contacted with main circuit.

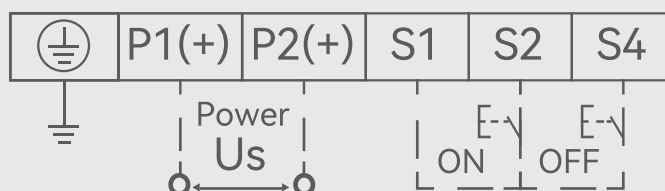
Terminal cover	Frame size	3P(2pcs)	3P+N(2pcs)
	KWN3L-125	KWN3125TC3	KWN3125TC4
	KWN3L-160	-	KWN3160TC4
	KWN3L-250	-	KWN3250TC4 (Top only, no bottom)
	KWN3L-400	-	KWN3400TC4
	KWN3L-630	-	KWN3630TC4

■ Motor (M)



- Apply to remote electric connection, disconnection and re-trip of the circuit breaker and the automation control occasions.
- Rated voltage of electric operating mechanism: AC400V;AC230V/DC220V;AC/DC110V;DC24V
- Operating voltage range of electric operating mechanism: 85%-110% U_e.

Electrical wiring diagram



- When operating manually, operate 180° clockwise and do not operate counter clockwise.
- Withstand voltage test: it should be between the incoming terminals P1 and P2 (excluding S1, S2 and S4) of the power supply and the installation screws of electric operation that can withstand 50Hz AC, power Frequency withstand voltage test of 1890V (withstand voltage test is prohibited when rated voltage is DC24V).
- P1 and P2 are forbidden to be connected to S1, S2 and S4 during electrical operation.

Electrical parameters

Frame size	IP degree	Current	Voltage	Switch on/off time	Electric life
KWN3L-160	20	≤0.8 DC24V≤3	AC110V/DC110V AC230V/DC220V AC400V DC24V	≤0.7	10000

External Accessories

Motor	Frame size	AC110V	AC230V	AC400V	DC110V	DC220V	DC24V
	KWN3L-160	KWN3160MAC1	KWN3160MAC2	KWN3160MAC3	KWN3160MDC1	KWN3160MDC2	KWN3160MDC3

■ Spreader links (C3/C4)



The spreader links are connected to the terminal of the circuit breaker, in order to provide many other wiring schemes in the limited space:

- Direct spreader links
- Spreader link with inter-electrode distance

The busbar and extension terminal can be connected to the inlet or outlet terminal of the circuit breaker.

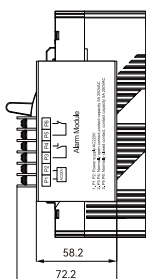
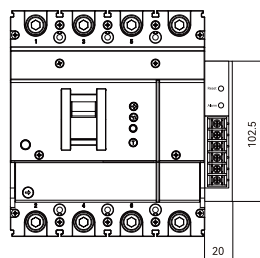
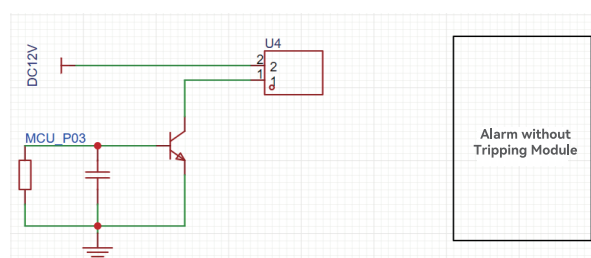
Spreader links	Frame size	3P(6pcs)	3P+N(8pcs)
	KWN3L-125	KWN3125C3	KWN3125C4
	KWN3L-160	-	KWN3160C4
	KWN3L-250	-	KWN3250C4
	KWN3L-400	-	KWN3400C4
	KWN3L-630	-	KWN3630C4

■ Alarm without Tripping Module (ALM)



· When the residual-current circuit-breaker is set to alarm-without-trip mode, if the applied residual current value reaches the threshold and the sum of delay time exceeds the limiting non-actuating time, the MCU output pin (MCU_P03) goes high, driving the transistor to generate a signal transition. The alarm module detects this transition signal and triggers internal relay commutation (normally-open contacts turn to normally-closed; normally-closed contacts turn to normally-open), meanwhile the alarm indicator lights up.

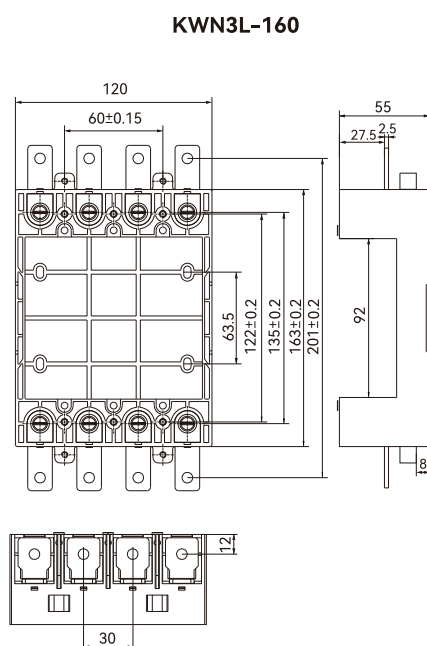
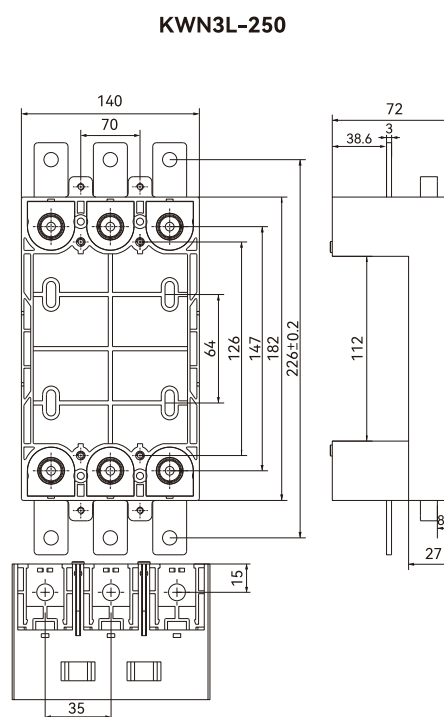
Alarm without Tripping Module	Frame size	3P+N
	KWN3L-160	KWN3160ALM4
	KWN3L-250	KWN3250ALM4
	KWN3L-400	KWN3400ALM4
	KWN3L-630	KWN3630ALM4



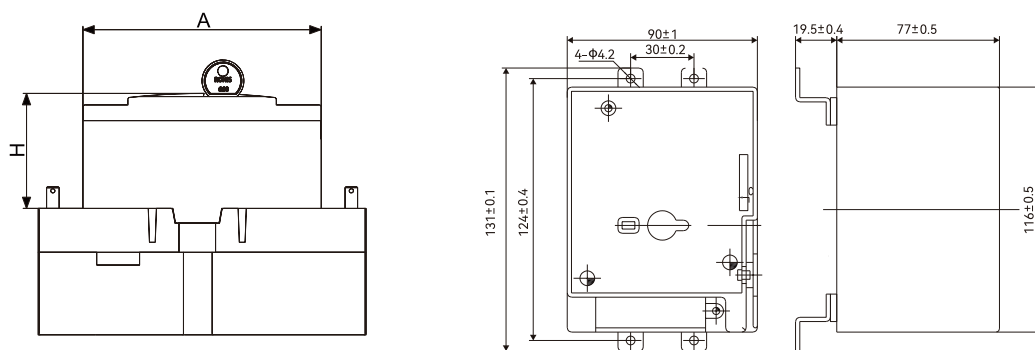
Plug-in ELCB Mounting Dimensions

■ Front connection(mm)

Note: All dimensions are in mm



Motor Mounted with ELCB Dimensions



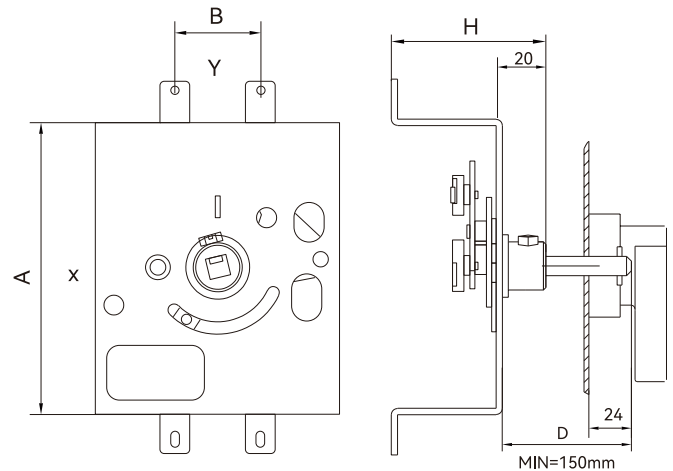
CD2-160/KWN3

Frame size	A	H
KWN3L-160	116	96.5

Rotary handle operating mechanism Dimensions

■ Mounting with ELCB dimensions(mm)

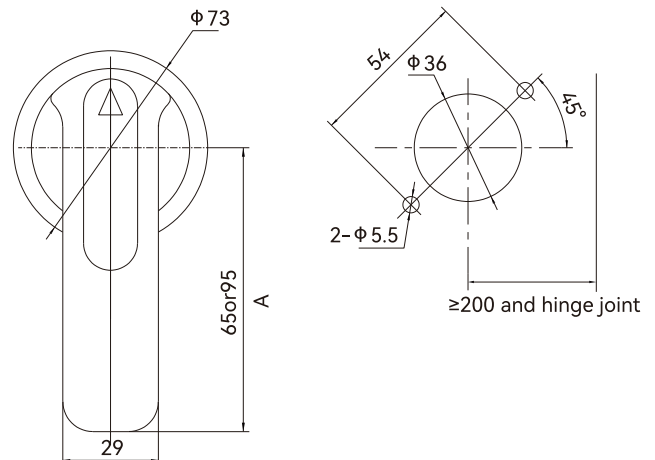
Model Number	Frame size	Installation dimensions		
		A	B	H
CS1-250/KWN3L	KWN3L-250	144	35	63
CS1-400/KWN3L	KWN3L-400	234	44	80
CS1-630/KWN3L	KWN3L-630	234	44	80



■ Handle and door cutting dimensions(mm)

Round handle dimensions

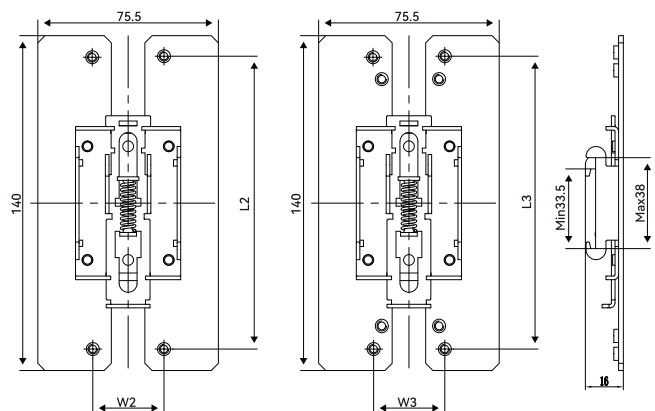
Frame size	A
KWN3L-250~630	65/95



DIN Rail adaptator with ELCB Dimensions

■ Dimensions(mm)

Frame size	KWN3L-160		KWN3L-250	
Dimensions	L2	W2	L3	W3
mm	122	30	126	35



Accessory installation and lead direction



OF (Auxiliary contact)



SD (Alarm switch)

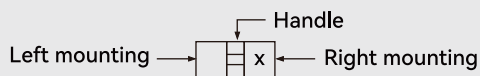
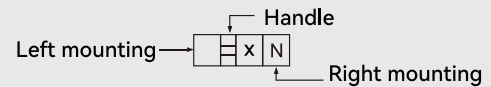


MX (Shunt trip)

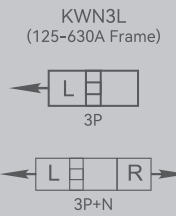
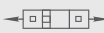
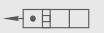
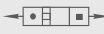
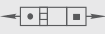
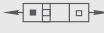
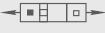
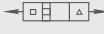
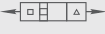
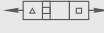
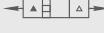
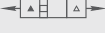


MN (Under-voltage release)

Illustrate



□ SD ■ OF ○ MN ● MX △ SD+OF ▲ TWO SETS OF → Lead direction × Residual Current Trip Unit

Item	Accessories	3P	3P+N	
		125A	250A	125A,160A,400A,630A
<div>  <p>KWN3L (125-630A Frame)</p> <p>3P</p> <p>3P+N</p> </div>	SD			
	MX			
	OF			
	MN		-	
	SD+OF			
	TWO OF			
	MX,OF	-		
	MX,SD	-		
	MX,SD+OF	-		
	MN,OF	-	-	
	MN,SD	-	-	
	MN,SD+OF	-	-	
	OF,SD	-		
	OF,SD+OF	-		
	SD,OF	-		
	SD,SD+OF	-		
	SD+OF,OF	-		
	SD+OF,SD	-		
	TWO OF,OF	-		
	TWO OF,SD	-		
	TWO OF,SD+OF	-		

Accessory Code

Accessory Name	Tripping Type	Instantaneous Release	Combined Release
None		200	300
Alarm switch		208	308
Shunt trip		210	310
Auxiliary Contact		220	320
Under-voltage Release		230 (250 frame not available)	330
Shunt trip Auxiliary Contact		240	340
Shunt trip & Under-voltage Release		250 (250 frame not available)	350
2 Sets of Auxiliary Contacts		260	360
Auxiliary Contact & Under-voltage Release		270 (250 frame not available)	370
Alarm switch & Shunt trip		218	318
Alarm switch & Auxiliary Contact		228	328
Under-voltage Release & Alarm switch		238 (250 frame not available)	338
Auxiliary Contact, Alarm switch & Shunt trip		248	348
2 Sets of Auxiliary Contacts & Alarm switch		268	368
Under-voltage Release, Auxiliary Contact & Alarm switch		278 (250 frame not available)	378

