

# HSD

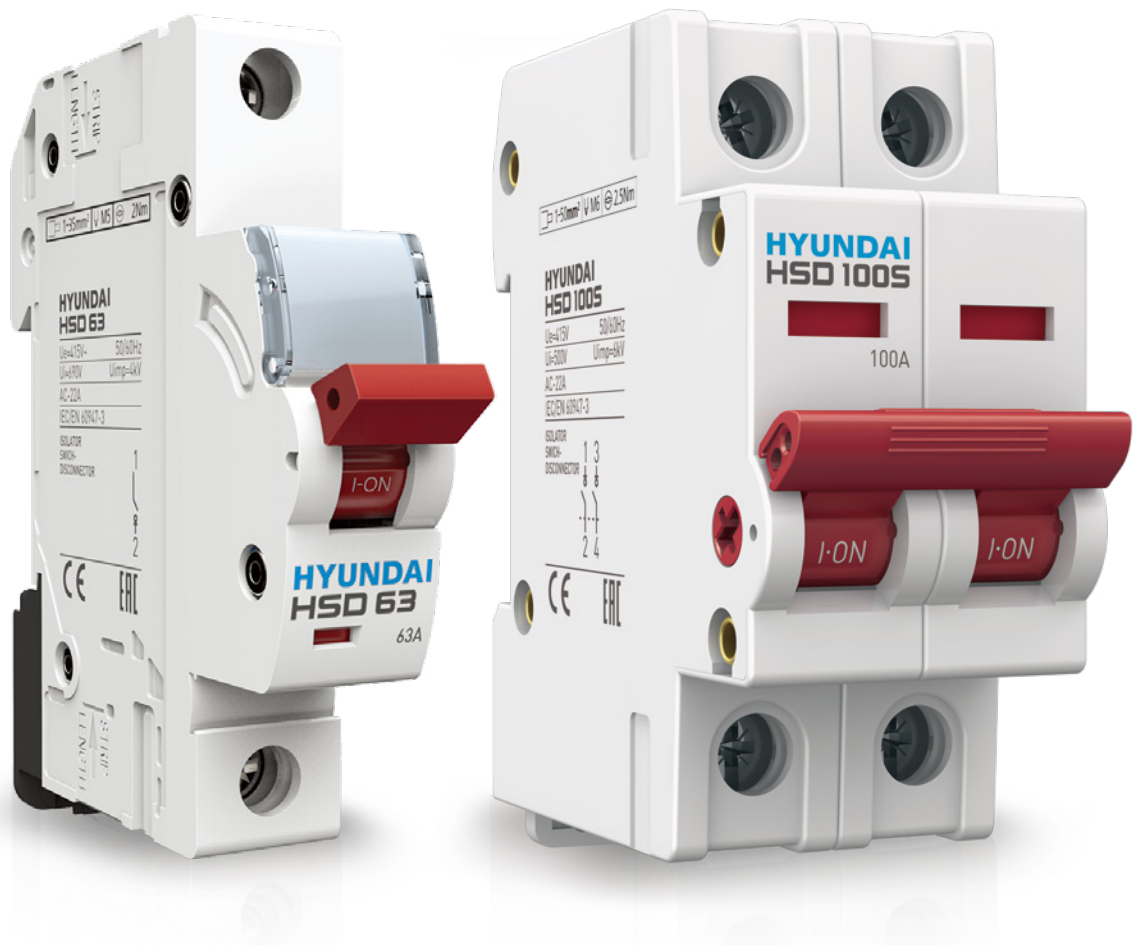
## Miniature Switch Disconnecter

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# Feature

## HSD Miniature Switch Disconnecter

HD HYUNDAI ELECTRIC introduces the HSD series of MSDs rating from 6 A to 125 A. They are switch disconnectors with independent manual operation, capable of making, carrying and breaking currents under normal circuit conditions, which may includes operating under overload condition. They also carry currents under specified abnormal circuit conditions such as those of short circuit for a specified time.





## Product Feature

Hyundai HSD type switch disconnectors are mainly used for isolation and switching in the terminal combined electric appliances under the alternating current 50/60 Hz, rated voltage AC 240 V or AC 415 V and with rated current 6 to 125 A.

The double point direct moving structure enlarges the current capacity while making full use of the electrical power supplement. In addition, power reserving handle mechanism with high on/off speed promotes the working reliability. HSD type breakers comply with IEC/EN standard, and can be applied to industry, commerce, high-rise buildings, household and other similar installations.

### Deluxe Type

### Standard Type

#### Product Performance

- Longer electrical life
- Low power consumption, thus cost effective&energy saving
- To avoid improper cable termination, the safety terminals guide the cable towards the cage terminal for systematic termination

- Low watt loss
- Wide range

#### Product Structure

- Dual termination for simultaneous connection of bus-bars and wires
- Inscription window
- Safety terminal

- Positive contact Indication
- Bi-stable clip
- Compact construction
- Large cable terminals

#### Specification

- IEC/EN 60947-3

- IEC/EN 60947-3

## Product Overview





Deluxe Type



Standard Type

# Selection Table

## HSD (Deluxe Type)

Model	HSD63, 63 AF	HSD125, 125 AF
		
Reference Standard	IEC/EN 60947-3	IEC/EN 60947-3
No. of Poles	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P
Utilization Category	AC-22 A	AC-22 A
Rated Current (In)	16, 25, 32, 40, 63 A	80, 100, 125 A
Rated Voltage (Ue)	AC 240/415 V	AC 240/415 V
Rated Frequency (F)	50/60 Hz	50/60 Hz
Rated Insulation Voltage (Ui)	500 V	500 V
Rated Impulse Voltage (Uimp)	4 kV	4 kV
Dielectric Strength	2.5 kV	2.5 kV
Electrical/Mechanical Endurance (no. of operations) Minimum	10,000/20,000	10,000/20,000
Operating Temperature	-40 °C to + 55 °C	-40 °C to + 55 °C
Humidity	95 % RH	95 % RH
Terminal Capacity (max)	35 mm <sup>2</sup>	50 mm <sup>2</sup>
Tightening Torque	2 N·m	2.5 N·m
Vibration	3 g	3 g
Shock Resistance	40 mm free fall	40 mm free fall
Protection Class	IP20	IP20
Positive Contact Indication	Red-ON, Green-OFF	Red-ON, Green-OFF
Net Weight/Pole in kg	0.079 kg	0.090 kg
Dimensions (H x D x W)/Pole in mm	87.5 x 71.7 x 17.7 mm	87.5 x 73.4 x 17.7 mm
Mounting	Clip on DIN Rail (35 mm x 7.5 mm)	Clip on DIN Rail (35 mm x 7.5 mm)
Installation Position	Vertical/Horizontal	Vertical/Horizontal
Case & Cover	Molded, flame retardant thermoplastic material	Molded, flame retardant thermoplastic material
Busbar Connections	Pin/Fork type (Bottom)	Pin/Fork type (Bottom)

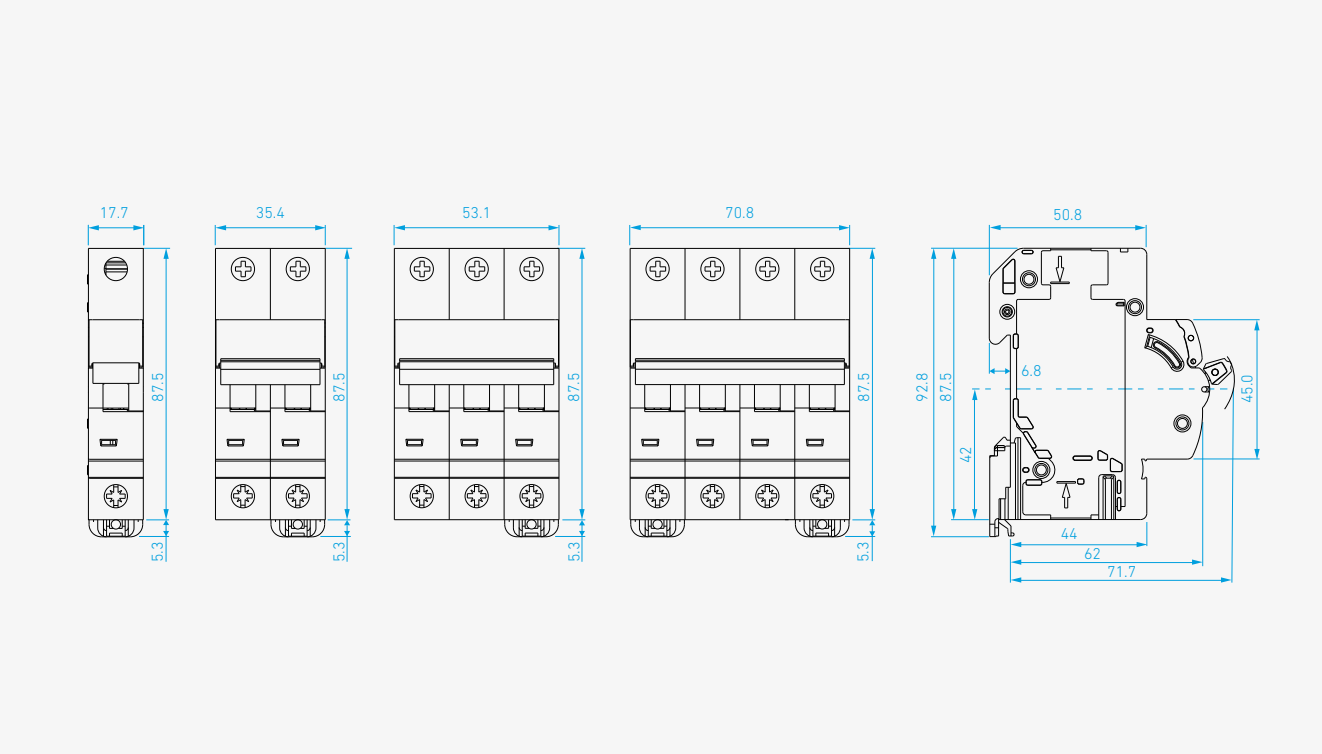
## HSD (Standard Type)

Model	HSD100S, 125 AF
	
Reference Standard	IEC/EN 60947-3
No. of Poles	1P, 2P, 3P, 4P
Utilization Category	AC-22 A
Rated Current (In)	6, 10, 16, 20, 25, 32, 40, 50, 63, 70, 80, 100, 125 A
Rated Voltage (Ue)	AC 240/415 V
Rated Frequency (F)	50/60 Hz
Rated Insulation Voltage (Ui)	690 V
Rated Impulse Voltage (Uimp)	6 kV
Dielectric Strength	2.5 kV
Electrical/Mechanical Endurance (no. of operations) Minimum	10,000/20,000
Operating Temperature	-40 °C to + 55 °C
Humidity	95 % RH
Terminal Capacity (max)	35 mm <sup>2</sup>
Tightening Torque	2.5 N·m
Vibration	3 g
Shock Resistance	40 mm free fall
Protection Class	IP20
Positive Contact Indication	Red-ON, Green-OFF
Net Weight/Pole in kg	0.080 kg
Dimensions (H x D x W)/Pole in mm	81.0 x 76.8 x 17.6 mm
Mounting	Clip on DIN Rail (35 mm x 7.5 mm)
Installation Position	Vertical/Horizontal
Case & Cover	Molded, flame retardant thermoplastic material
Busbar Connections	Pin/Fork type

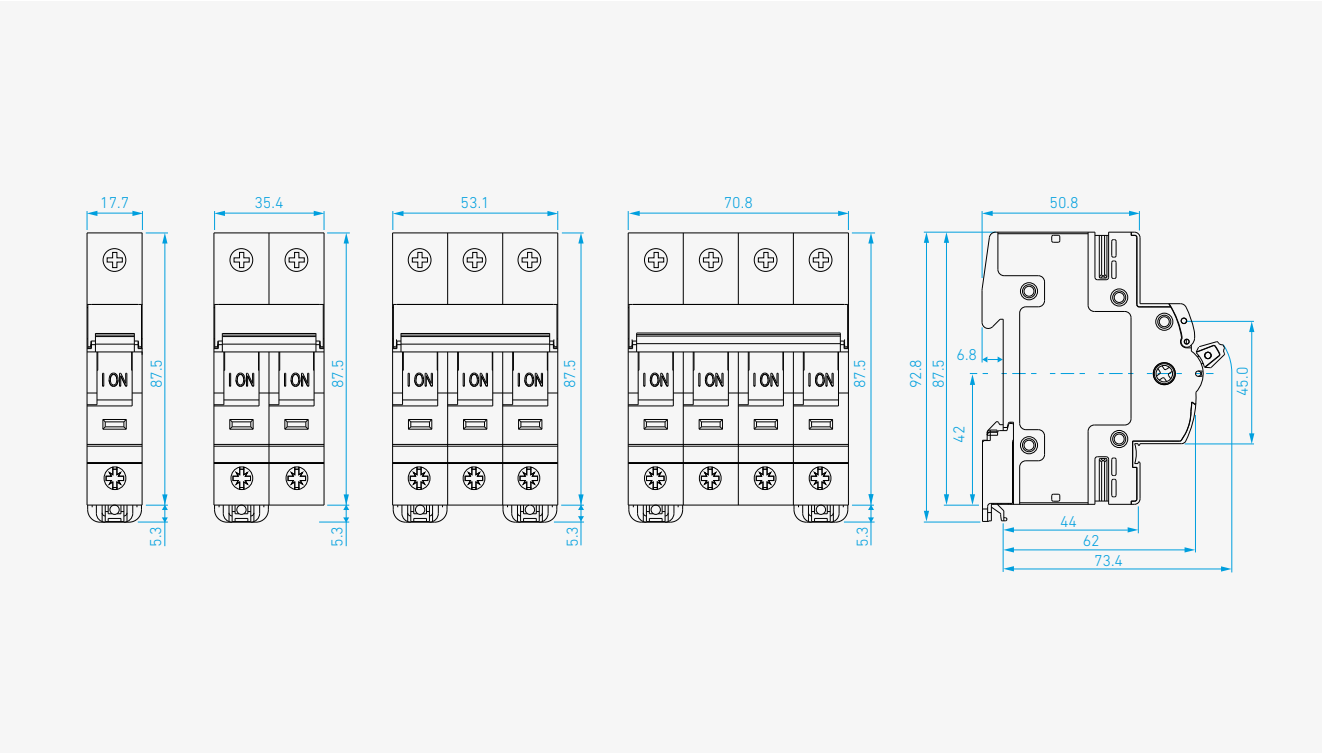
# Dimension

## HSD (Deluxe Type)

### HSD63, 63 AF

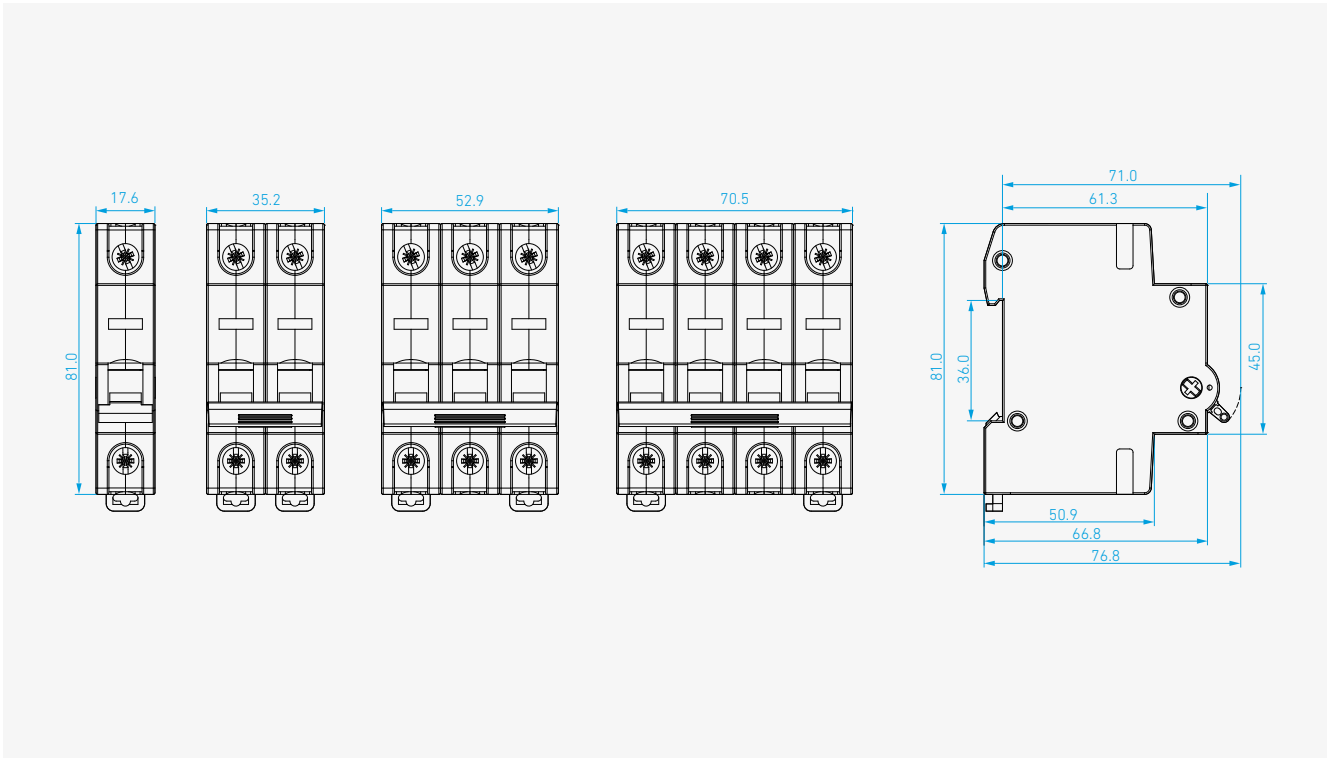


### HSD125, 125 AF



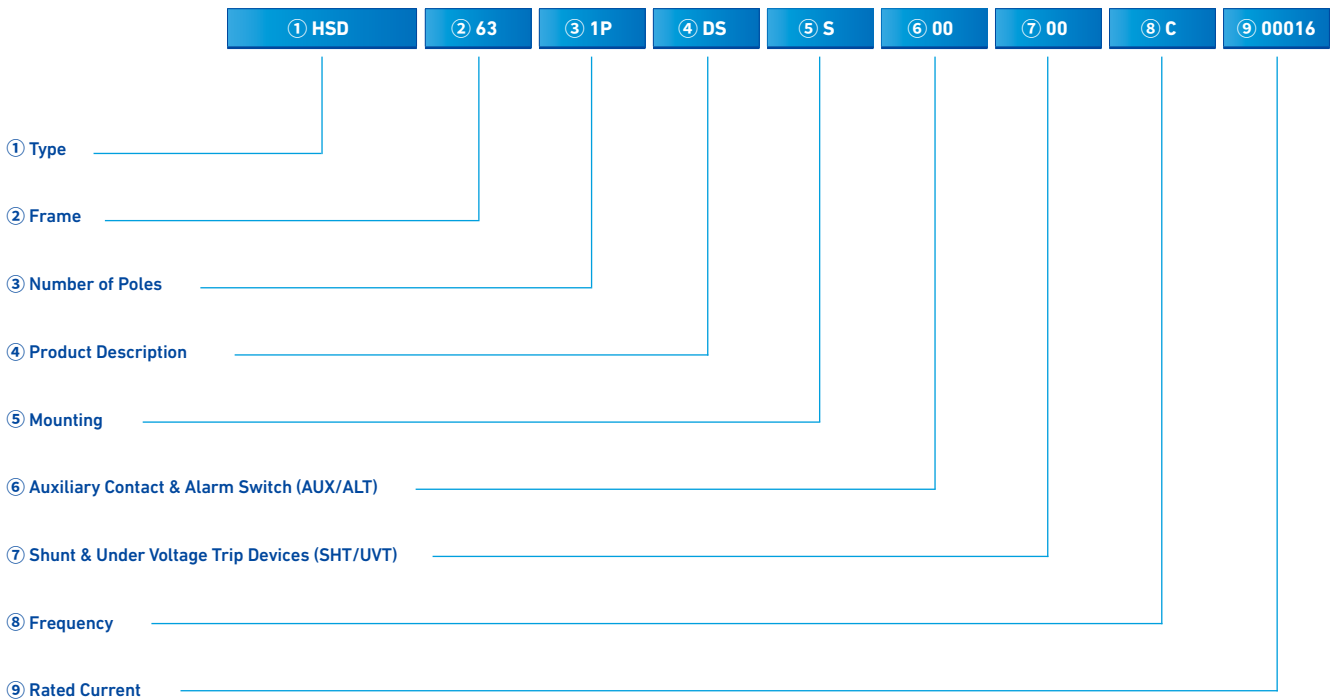
## HSD (Standard Type)

HSD100S, 125 AF



# HSD Ordering Information

## Ordering Guidelines (Deluxe Type)



① Type	
HSD	Miniature switch disconnecter

② Frame	
63	63 AF (Deluxe type)
125	125 AF (Deluxe type)

③ Number of Poles	
1P	1 Pole
2P	2 Pole
3P	3 Pole
4P	4 Pole

④ Product Description	
DS	Disconnection switch

⑤ Mounting	
S	Front connection

⑥ Auxiliary Contact & Alarm Switch	
00	Non-attachment

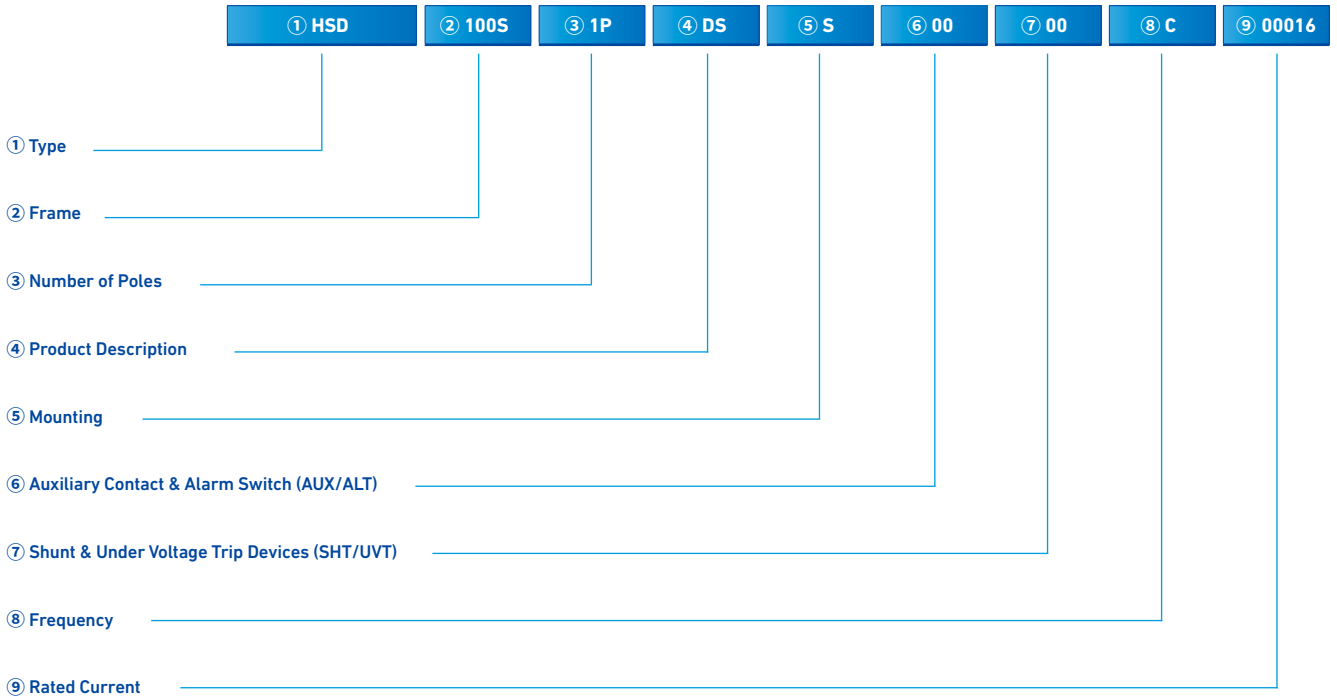
⑦ Shunt & Under Voltage Trip Devices	
00	Non-attachment

⑧ Frequency	
C	50/60 Hz

⑨ Rated Current	
00016	16 A
00025	25 A
00032	32 A
00040	40 A
00063	63 A
00080	80 A
00100	100 A
00125	125 A



## Ordering Guidelines (Standard Type)



① Type	
HSD	Miniature switch disconnecter

② Frame	
100S	125 AF (Standard type)

③ Number of Poles	
1P	1 Pole
2P	2 Pole
3P	3 Pole
4P	4 Pole

④ Product Description	
DS	Disconnection switch

⑤ Mounting	
S	Front connection

⑥ Auxiliary Contact & Alarm Switch	
00	Non-attachment

⑦ Shunt & Under Voltage Trip Devices	
00	Non-attachment

⑧ Frequency	
C	50/60 Hz

⑨ Rated Current	
00016	16 A
00025	25 A
00032	32 A
00040	40 A
00063	63 A
00080	80 A
00100	100 A
00125	125 A



# HIC

## Installation Contactor

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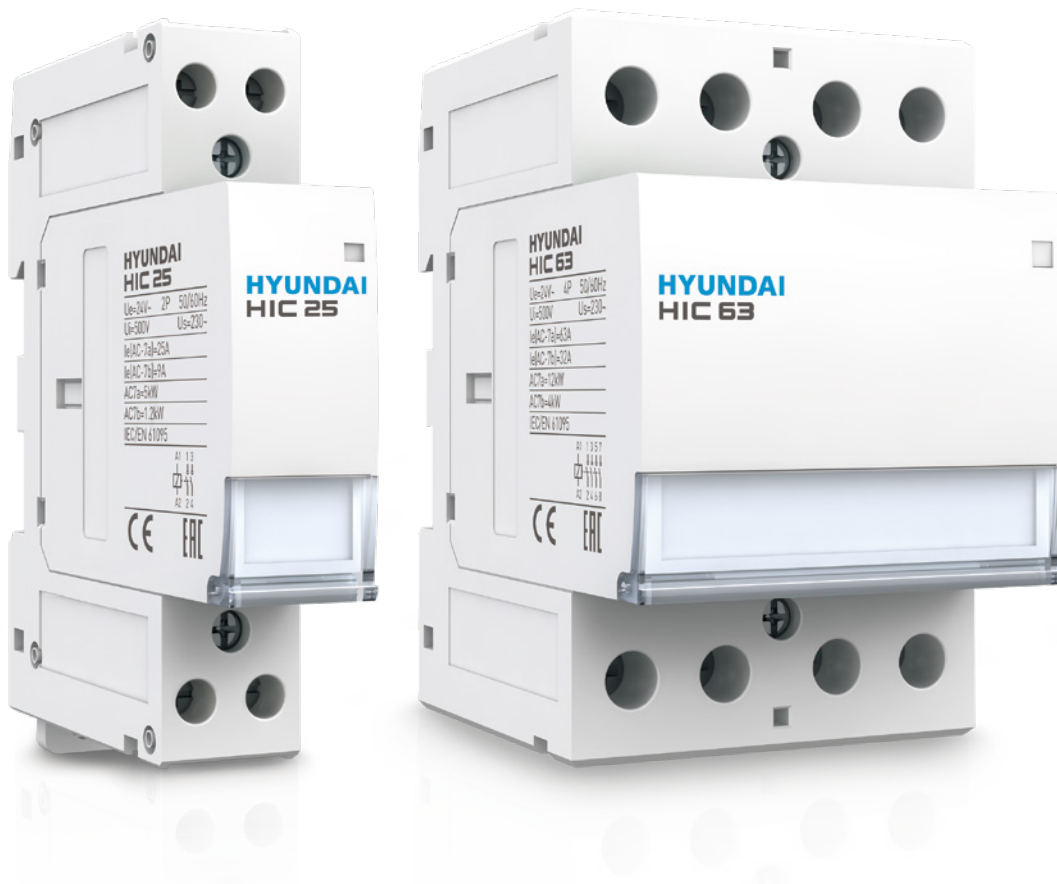
# Feature



## HIC Installation Contactor

HD HYUNDAI ELECTRIC introduces the HIC series of Installation contactor rating from 25 A to 63 A.

HIC series AC household contactor (herinafter contactor) is suitable for using in the circuit up to the rated working voltage 400 V AC 50 Hz (or 60 Hz), rated working current up to 63 A, to control household electric appliances and low inductive reactance load and micro inductive reactance load of similar usage, can also bounded to control household motor load of which the controlling power needs to be relatively decreased.





## Product Feature

- Hyundai HIC applies to places such as household, hotels, apartments, etc to realize the automation of large-scale produced household electric appliances.
- It can be used to control various loads, for example, building automation, ventilation, heating, fire prevention system, small pump and so on.
- The switching noise is quiet and suitable for especially residential space.
- The customer can choose from various models with different rated currents and control circuit voltage.

## HIC Type



### Product Performance

- The ambient air temperature:  $-40 \sim +55$  °C, average not more than  $+35$  °C within 24 hours
- Altitude (m): Not exceed 2,000 meters
- Atmospheric conditions: When the highest temperature is  $+40$  °C, the air relative humidity should not be higher than 50 %. The higher relative humidity should be allowed at the lower temperature, for instance, 90 % humidity when  $20$  °C. Special measures should be taken when condensate dew happens occasionally due to temperature changes.
- Pollution degree: Class 2
- Installation category: II
- Mounting: Din Rail TH35-7.5 mounting rail installation
- Protection degree: IP20
- Inscription window



### Specification

- Standard: IEC/EN 61095

## Product Overview



HIC25



HIC40

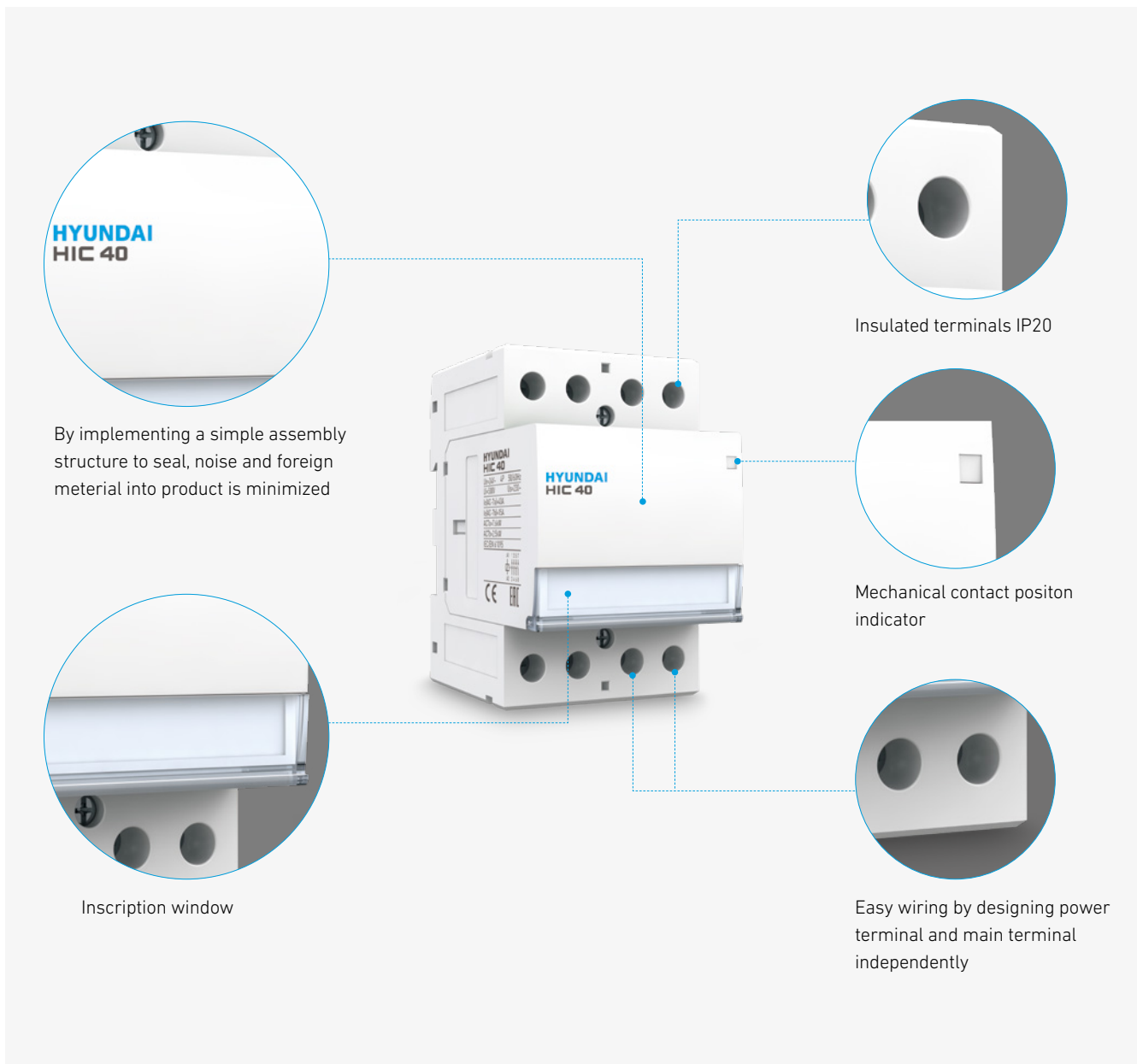


HIC63

# Product Feature

## External Structure

- By implementing a simple assembly structure to seal, noise and foreign material into product is minimized.
- They guide the cable towards the cage terminal and avoid improper cable termination.
- Easy wiring by designing power terminal and main terminal independently.
- Ensures circuit identification and hence reduces maintenance downtime.
- Inscription window
- Mechanical contact position indicator
- Insulated terminals IP20



# Selection Table

## HIC Type

Model	HIC25	HIC40	HIC63
			
<b>Reference Standard</b>	IEC/EN 61095	IEC/EN 61095	IEC/EN 61095
<b>No. of Poles</b>	2P, 4P	2P, 4P	2P, 4P
<b>Rated Current (In)</b>	25 A	40 A	63 A
<b>Rated Voltage (Ue)</b>	2P: 230 V 4P: 400 V	2P: 230 V 4P: 400 V	2P: 230 V 4P: 400 V
<b>Rated Insulation Voltage (Ui)</b>	500 V	500 V	500 V
<b>Rated Control Voltage (Uc)</b>	24 V, 48 V, 230 V	24 V, 48 V, 230 V	24 V, 48 V, 230 V
<b>Rated Frequency (F)</b>	50/60 Hz	50/60 Hz	50/60 Hz
<b>Using Category</b>	AC-1 AC-7a AC-7b	AC-1 AC-7a AC-7b	AC-1 AC-7a AC-7b
<b>Electrical Endurance</b>	100,000 cycles	100,000 cycles	100,000 cycles
<b>Mechanical Endurance</b>	1,000,000 cycles	1,000,000 cycles	1,000,000 cycles
<b>Rated Power</b>	2P - 5 kW (AC-7a) - 1.2 kW (AC-7b)  4P 4NO/3NO + 1NC/4NC: - 14 kW (AC-7a) - 4 kW (AC-7b) 2NO + 2NC - 5 kW (AC-7a) - 1.2 kW (AC-7b)	2P - 7.6 kW (AC-7a) - 2.5 kW (AC-7b)  4P 4NO/3NO + 1NC/4NC: - 26.5 kW (AC-7a) - 6.5 kW (AC-7b) 2NO + 2NC - 7.6 kW (AC-7a) - 2.5 kW (AC-7b)	2P - 12 kW (AC-7a) - 4 kW (AC-7b)  4P 4NO/3NO + 1NC/4NC: - 40 kW (AC-7a) - 14 kW (AC-7b) 2NO + 2NC - 12 kW (AC-7a) - 4 kW (AC-7b)
<b>Rated Operation Current (Ie)</b>	25 A (AC-1/AC-7a) 9 A (AC-7b)	40 A (AC-1/AC-7a) 15 A (AC-7b)	63 A (AC-1/AC-7a) 32 A (AC-7b)
<b>Operating Temperature</b>	-40 °C to + 55 °C	-40 °C to + 55 °C	-40 °C to + 55 °C
<b>Humidity</b>	90 % (@ 20 °C) 50 % (@ 40 °C)	90 % (@ 20 °C) 50 % (@ 40 °C)	90 % (@ 20 °C) 50 % (@ 40 °C)
<b>Terminal Capacity (max)</b>	6 mm <sup>2</sup>	25 mm <sup>2</sup>	25 mm <sup>2</sup>
<b>Tightening Torque</b>	1.2 N·m	2.5 N·m	2.5 N·m
<b>Protection Class</b>	IP20	IP20	IP20
<b>Net Weight/Pole in kg</b>	2P: 134.8 g; 4P: 235.6 g	2P: 242.6 g; 4P: 340.4 g	2P: 242.6 g; 4P: 340.4 g
<b>Dimensions (H x D x W)/Pole in mm</b>	2P 18 x 85 x 62.5 mm 4P 36 x 85 x 62.5 mm	2P 36 x 85 x 62.5 mm 4P 54 x 85 x 62.5 mm	2P 36 x 85 x 62.5 mm 4P 54 x 85 x 62.5 mm
<b>Mounting</b>	Clip on DIN Rail (35 mm x 7.5 mm) At least 6mm gap needed between contactors		
<b>Busbar Connection Top/Bottom Side</b>	Pin type	Pin type	Pin type

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# Technical Data

## Power Consumption

Model Number	Poles	Value (V/A)
HIC25	2	2.5
	4	5
HIC40	2	5
	4	6.6
HIC63	2	5
	4	6.6

## Installation Precautions

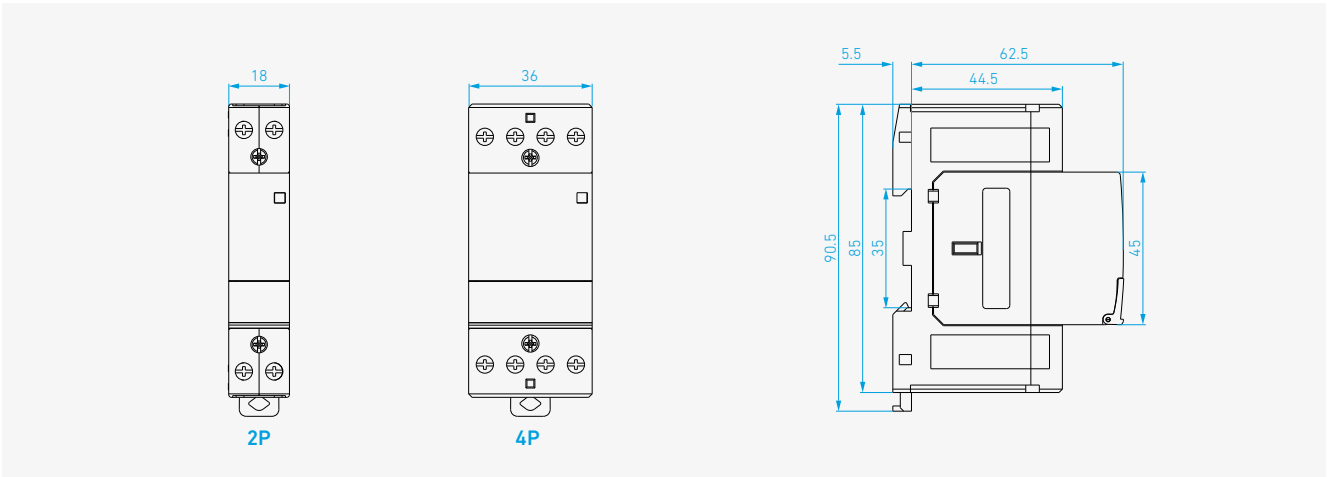
1. The installation angle shall not exceed  $\pm 5^\circ$
2. At least 6mm gap needed between contactors



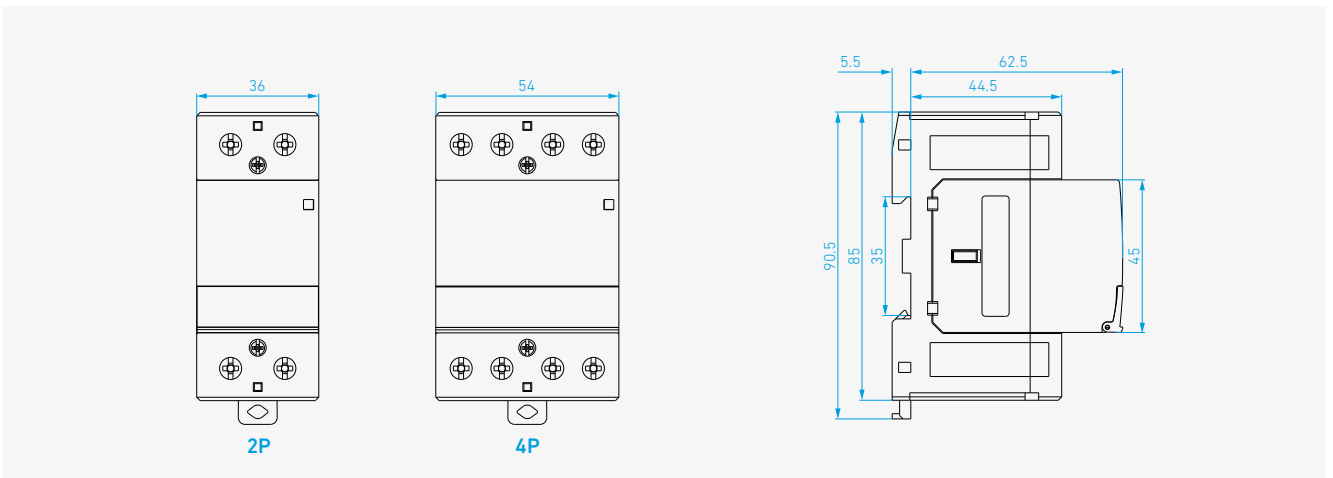
# Dimension

## HIC

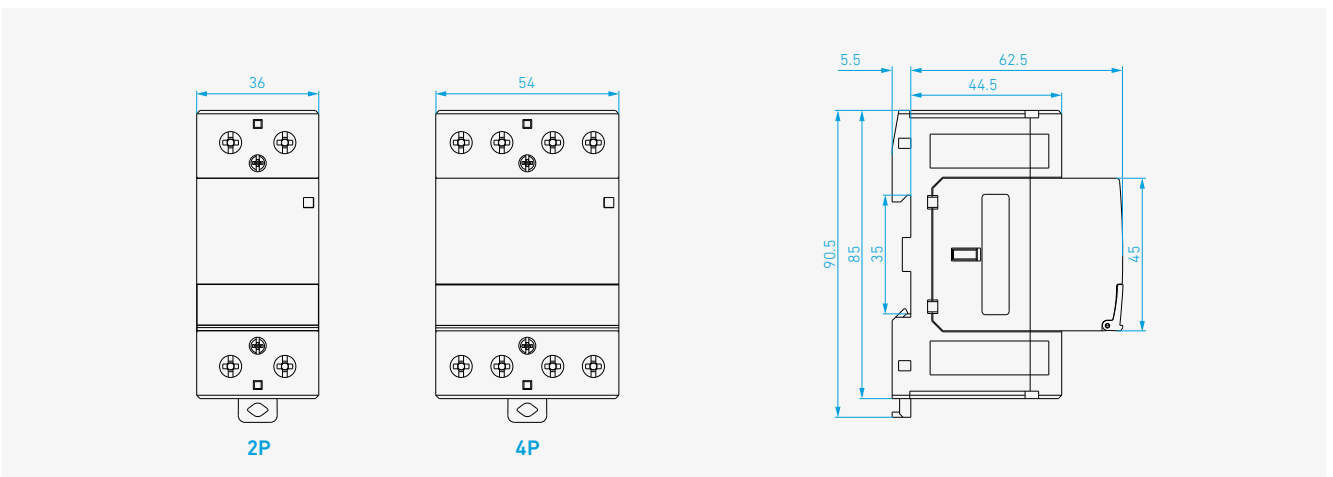
### HIC25, 25 AF



### HIC40, 40 AF



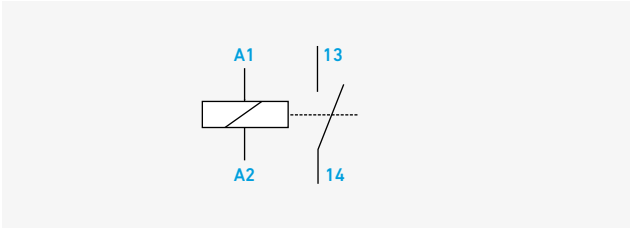
### HIC63, 63 AF



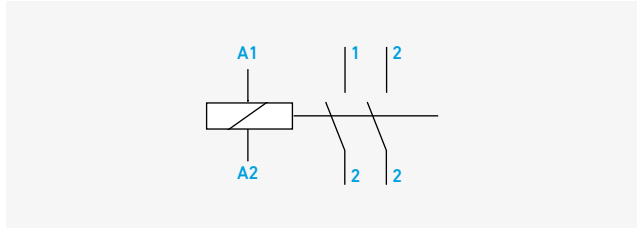
# Circuit Diagram

## HIC 2P

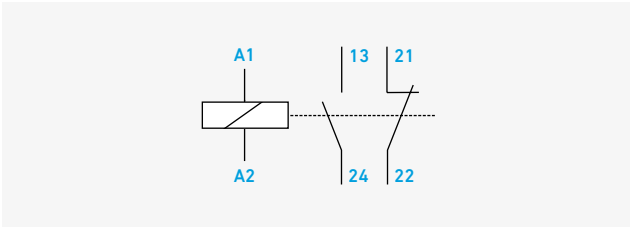
1NO



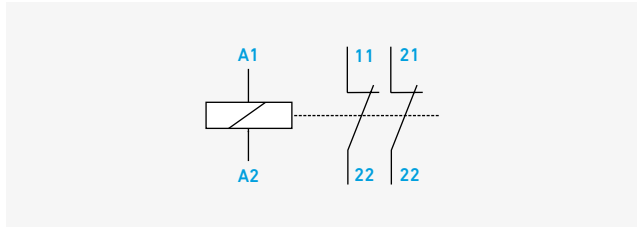
2NO



1NO + 1NC

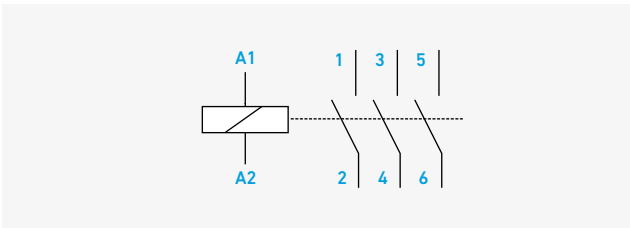


2NC

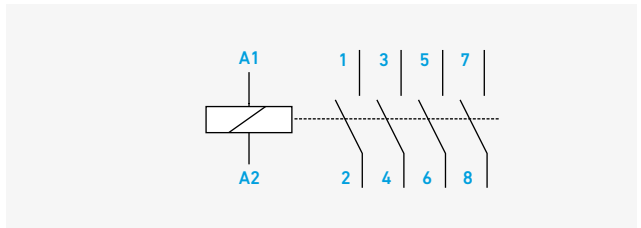


## HIC 4P

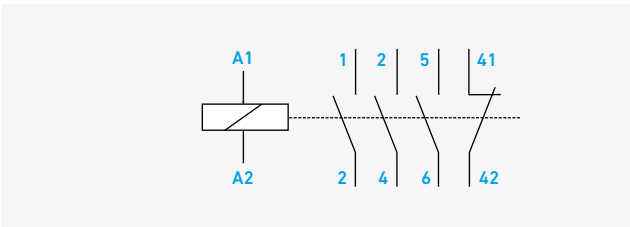
3NO



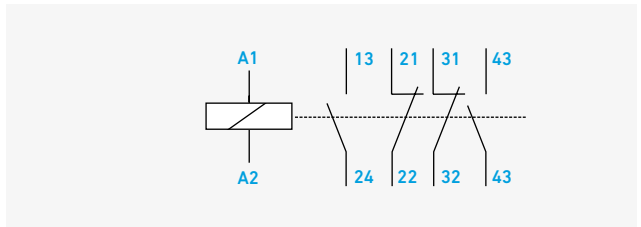
4NO



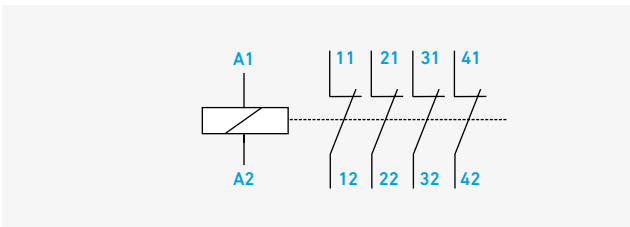
3NO + 1NC



2NO + 2NC

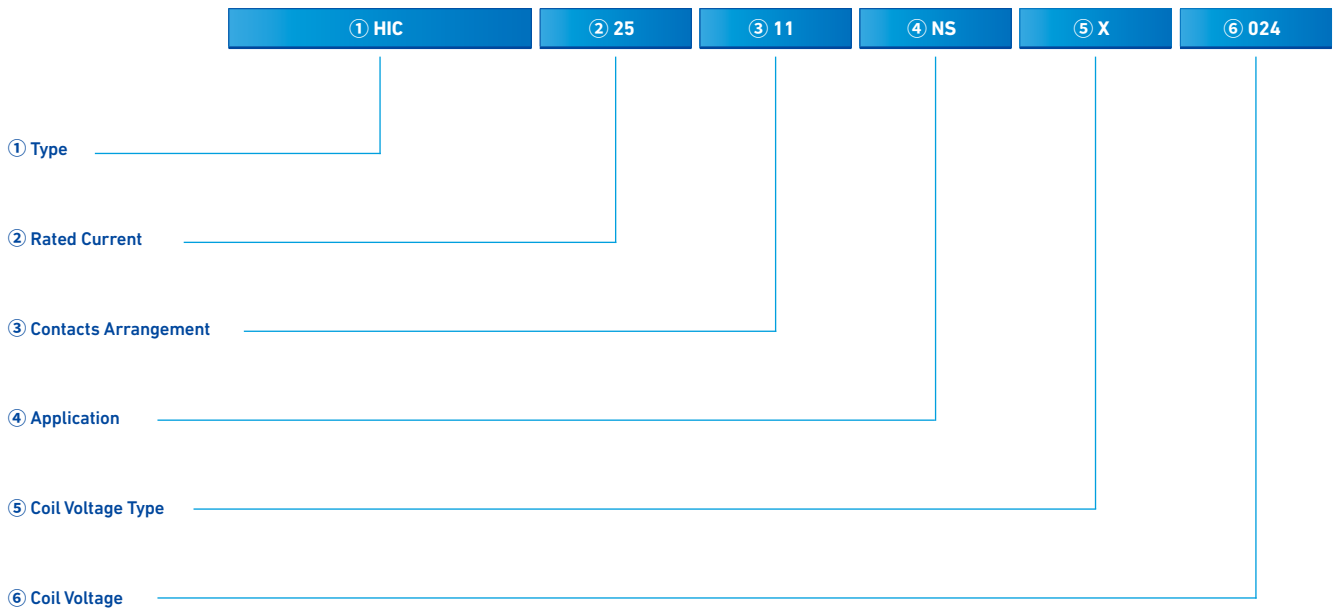


4NC



# HIC Ordering Information

## Ordering Guidelines



① Type	
HIC	Installation contactor

② Rated Current	
25	25 A
40	40 A
63	63 A

③ Main Contact Arrangement	
10	1NO + 0NC
20	2NO + 0NC
11	1NO + 1NC
02	0NO + 2NC
30	3NO + 0NC
40	4NO + 0NC
31	3NO + 1NC
22	2NO + 2NC
04	0NO + 4NC

※ N/A: 1NO + 0NC (63 AF, 2P)

⑤ Coil Voltage Type	
X	AC 50/60 Hz

⑥ Coil Voltage	
024	24 V
048	48 V
230	230 V

④ Application	
NS	Normal

