

Auxiliary Relays

- * High Speed Trip Lock out Relays (CLR-A)
- * Auxiliary Relays (CAR-A)
- * Remote Reset Relays (with both CAR-A / CLR-A)

Introduction :

The Auxiliary relay CAR-A and CLR-A series are voltage operated single element electro-mechanical, hinged armature type relay, mainly used in protection, control and alarm circuits.

These relays are provided with option of hand reset, self reset and remote reset.

The flag of both CAR-A and CLR-A are hand operated and remote reset relays are auto reset.

Application :

The Auxiliary relays are used in various application such as: -

- Switching functions in protection and control circuits
- High speed tripping functions requiring a number of simultaneous switching operation.
- Control with interlocks and inter tripping

Features & Characteristics :

- Electro-mechanical design
- Suitable for tripping, signaling in protection and control system
- Consistent repeated accuracy
- High resistance to shock and vibration
- Flexible and user friendly contacts arrangement as per customer selection from ordering information
- Self as well as Hand reset contacts
- Hand reset flag indication
- High speed operation
- Elegant & Ergonomics design
- Durable & Reliable operations
- Silver alloy contacts



Design :

The design of electro-mechanical relays is hinged armature type.

It has been ensured to have consistent electrical & magnetic qualities while designing the Armature, Yoke and the core materials.

The coil is wound with wires of high thermal rating to with stand the problems of over heating due to continuous operation. It is also ensured that the coil though rated for the very short time will tolerate the high burden to ensure the faster operation. The relay contacts will ensure the supply is cut off at a very short time.

The contacts have been designed with silver alloy to have superior contact rating with minimum wear and tear. It is also ensured in the design and construction the contact pressure is maximum to ensure superior contact rating. The contact spring is designed with superior phosphor-bronze spring quality material to have the flexible movements.

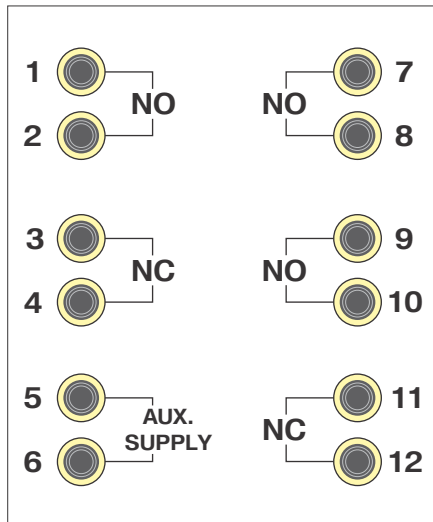
In case of high speed trip relays one break contact is connected in series with the relay elements as a cut-off contact. This reduces the burden and saves the power from the battery. The flag is always hand reset. The relay with self reset contacts may be provided without flag also.

Connection Diagram :

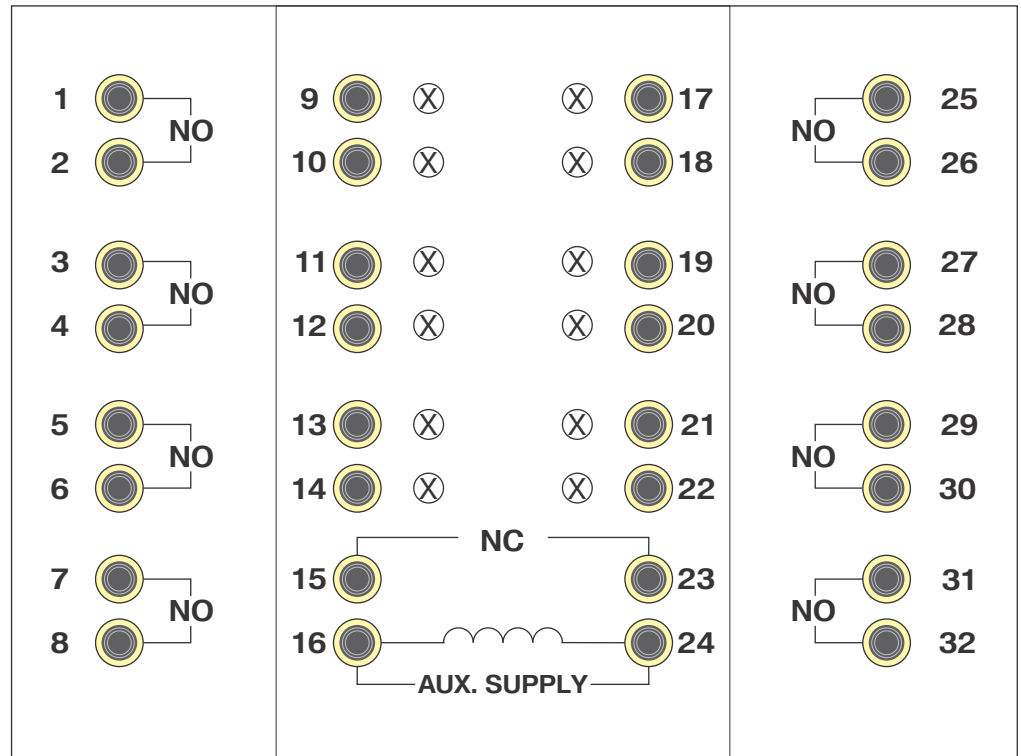
Connection diagram of supplied relay will be as per ordered relay and a sticker of connection diagram is pasted on the top side of the supplied relay itself.

TERMINAL ARRANGEMENT VIEWED FROM REAR

(e.g. 1 : 3 NO + 2 NC)



(e.g. 2 : 8 NO + 1 NC)



⊗ NOT CONNECTED

Technical Specifications :

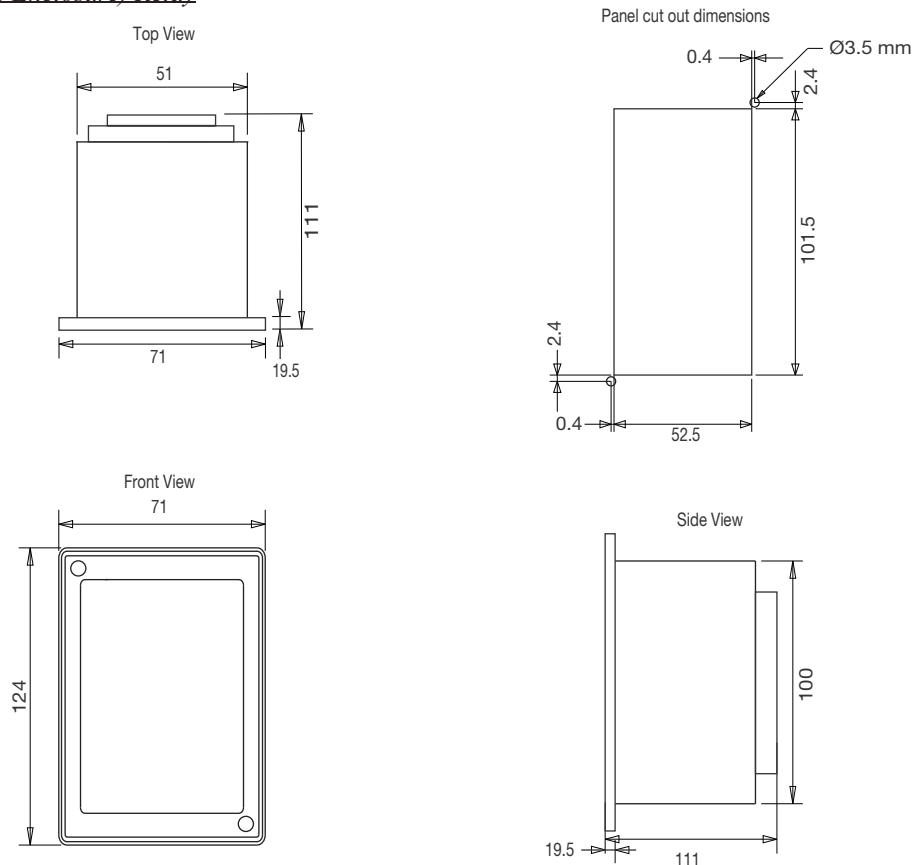
Type	:	CLR-A / CAR-A
Design	:	Flush mounting plastic case
Duty	:	Continuous operation
Rated Voltage	:	DC : 24V, 30V, 48V, 110V, 220V
	:	AC : 24V, 63.5V, 110V, 230V
Operating Range	:	40% to 120% of Rated voltage
Burden	:	Depends upon series / type of relay, operating voltage, number of contacts & number of elements. For example the burden of CAR-A relay with 24V DC and 3 NO / 2 NC contacts in single element is < 8 W. Also another example of CLR-A relay with 24V DC and 3 NO / 2 NC contacts in single element is < 20 W.
Operating Time	:	CLR-A : < 10 milli Sec at rated voltage CAR-A : < 20 milli Sec at rated voltage
Flag	:	Hand / Electrical reset mechanical flag
Insulation	:	2KV RMS, 50Hz for 1 min/2.5KV for 1 sec between all terminals & case as per IS:3231 and 1 KV RMS, 50Hz for 1 min across open contacts.
Operating Temperature	:	-10 deg to +55 deg celsius
Contact configuration	:	As per product ordering code

Contact Rating :

	AC	DC
Make & carry continuously	1250 VA AC within limits of 660V & 5A	1250W DC within limits of 660V & 5A
Make & carry for 3 sec	7500 VA AC within limits of 660V & 30A	7500W DC within limits of 660V & 30A
Break	1250 VA AC within limits of 250V & 5A	100W (resistive) 50W (inductive) (L/Ratio=0.04) within limits of 250V & 5A

Outline Dimensional Details : *All the dim are in mm (Gen. Tol: +1 mm)*

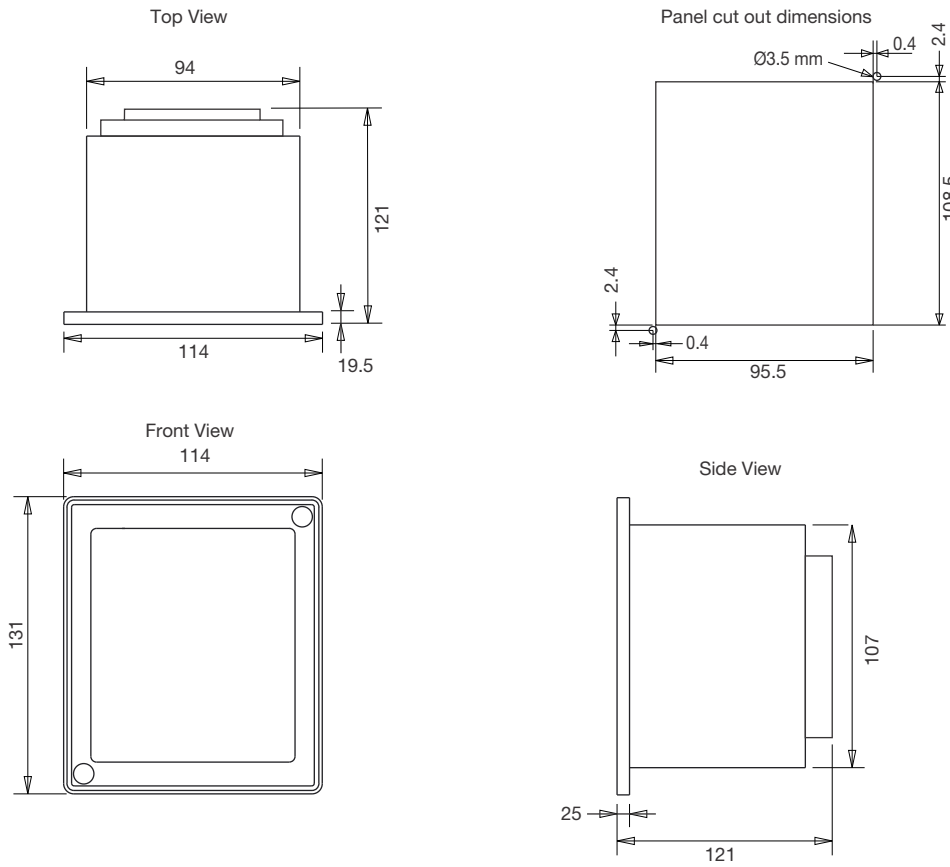
Single Element (Small Size Enclosure) Relay



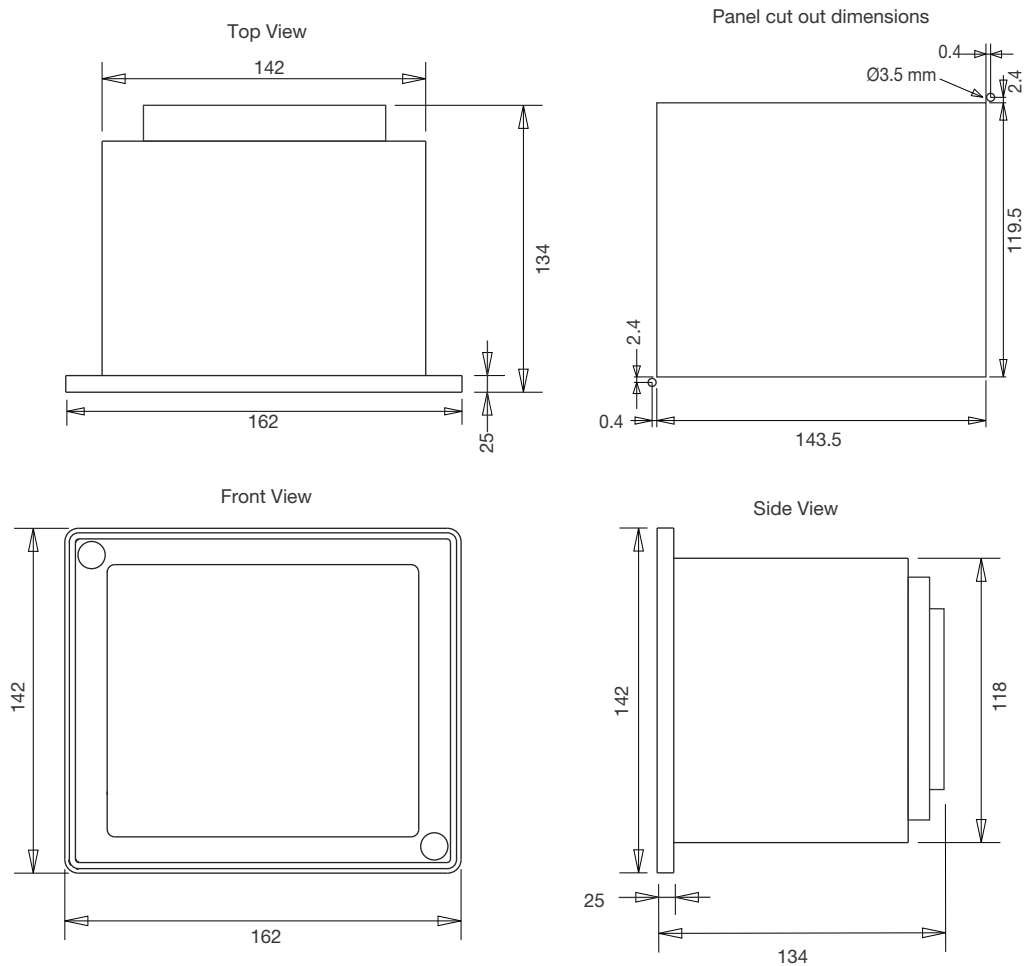
Outline Dimensional Details :

All the dim are in mm (Gen. Tol : +0.5 mm)

Single Element (Medium Size Enclosure) Relay



Three Element / Remote Reset (Large Size Enclosure) Relay



Maximum number of contact pairs possible in various types of relay in our enclosures:

Relay Type	Small size enclosure one element	Medium size enclosure one element	Large size enclosure one element	Large size enclosure two element	Large size enclosure three element
CAR relays	6 pairs	8 pairs	10 pairs	8 pairs	12 pairs
CLR relays	5 pairs	7 pairs	9 pairs	NA	NA
Electrical reset relays	NA	NA	Max. 12 pairs	NA	NA

Explanation of multiplication of elements contacts in more than one element per relay:

If it is required to use three elements & each element has say 2NO & 2NC contacts, then the total contacts required in the relay will be $3 \times 2NO + 2NC = 6NO + 6NC$.

Thus the code for such a three element relay will be for example CAR-A-H-024V DC-3-6O6C-N-L

Similarly the code for such a two element relay will be for example CAR-A-H-024V DC-2-4O4C-N-L

Similarly the code for such a one element relay will be for example CAR-A-H-024V DC-1-2O2C-N-S

Ordering Information :

Model No. : **XXX-A** - **X** - **XXXX XX** - **X** - **XOYC** - **X** - **X**

MODEL
CLR-A
CAR-A

RESET
S : Self Reset
H : Hand Reset
E : Electrical (Remote) Reset

Aux Power Supply DC Rating
024V DC : 24Volts DC
030V DC : 30Volts DC
048V DC : 48Volts DC
110V DC : 110Volts DC
220V DC : 220Volts DC
Aux Power Supply AC Rating
63.5V AC : 63.5Volts AC
110V AC : 110Volts AC
230V AC : 230Volts AC

ELEMENTS
1 : Single Element
2 : Two Element
3 : Three Element

CONTACTS
XOYC

FLAG
N : Normal
R : Reverse

ENCLOSURE TYPE
S : Small size enclosure
M : Medium size enclosure
L : Large size enclosure

XXX-A - **X** - **XXXX XX** - **X** - **XOYC** - **X** - **X**

EXAMPLE 1 : CAR-A - H - 110V DC - 1 - 3O2C - N - S

Relay CAR-A type, Hand reset, 110V DC, Single element, Contacts 3 NO / 2 NC and Normal flag in small enclosure.

EXAMPLE 2 : CAR-A - S - 110V DC - 3 - 6O6C - N - L

Relay CAR-A type, Self reset, 110V DC, Three element, Contacts 6 NO / 6 NC and Normal flag in large enclosure.



Technical Question or After-sales Service

*Customer Center Quick Response
Service, Excellent Technical Support*

1800 572 2012

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Revision History

S.No.	Rev.No.	Description	Date
01	01	Change in introduction & features & characteristics, include application heading	26.11.17
02	02	Panel cut out details of all 3 types of model	29.11.17
03	03	Include one more conn. diagram for 3 NO + 2 NC on page 2	12.06.18
04	04	Change in ordering information	17.08.18
05	05	Include page for the explanation of the Aux relay enclosures	16.04.19
06	06	Add Features, burden details in Technical specification & change in ordering info	08.08.19
07	07	Change in flag heading of tech specification on page 3, Max no. of contact pairs on page 5	09.12.19