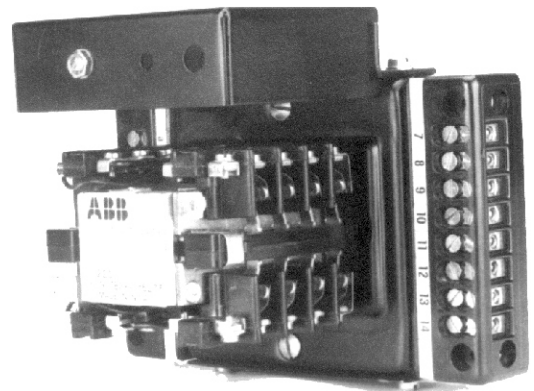
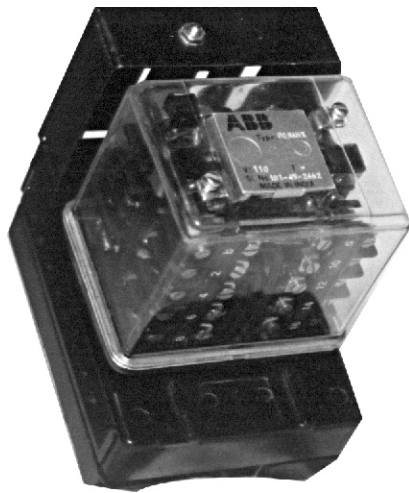
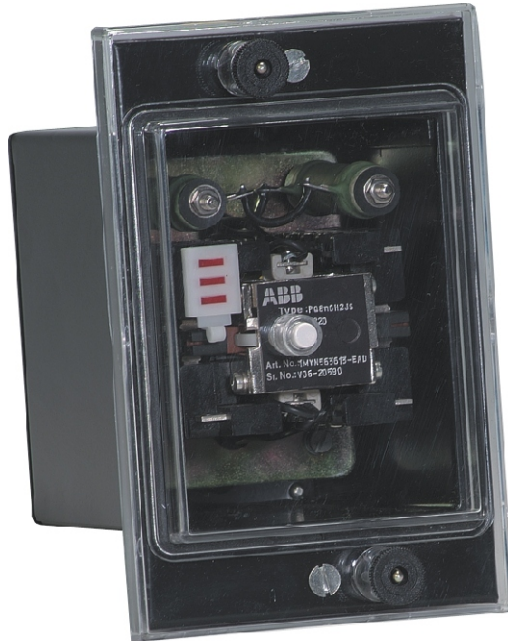


# Auxiliary Relay

## Type P8n, PQ8n, PN8n



## Features

- High degree of reliability, even when it has been idle for a long time
- 7 contacts with double interruption
- Contact configuration can be changed with ease
- Three mounting variants
- Wide range of voltage & contact configurations
- Special versions
  - PQ8n.....High speed lock-out relay. (86)
  - PN8n..... with high drop-off rating.

## Application

The auxiliary relays type P8n.... are used for all kinds of control and protection circuits in power stations and industrial installations, where a high degree of reliability and a high contact rating are stipulated, with minimal internal consumption. Acting as instantaneous switching element, it provides galvanic separation and contact multiplication in tripping and signalling circuits of protective relays.

## Design & Principle

The auxiliary relays type P8n,PN8n and PQ8n are instantaneous, plunger type relay with 7 contacts with double interruption. They are designed to operate from d.c. The relays can operate from a.c. when preceded by rectifier.

The magnet system comprises a fixed core and a moving, plunger-type armature, which actuates the contact bar directly. When the coil is de-energized, the armature of the magnet and the contact bar are forced back into their initial position by spring action. The contacts are arranged symmetrically in two rows, on either side of the magnet, clearly visible and readily accessible.

The contact system is designed for a maximum rated voltage of 250V d.c. or a.c. The material used for the contact tips is hard silver.

At the most, 3 normally closed contacts are permissible which should be distributed evenly between two sides. The field weakening resistor is cut in by means of a delayed normally closed contact on a special contact bar in series with the coil.

The operation signal pops out and becomes visible when the contact system picks up (type P8nC..., PQ8nC...) or when the contact system drops off (Type PN8nC...). It is reset by pressing the button in. The relay type PN8n... is specially designed for minimum drop-out of approximately 20% of the rated voltage. The relay is available with or without drop-off operation indicator.

The relay type P8n...,PQ8n.... is designed for high speed operation. PQ8n is specially design for mechanical latching. It has operation indicator which pops out when the relay latches. The relay can be hand reset by pressing in and resetting the operation indicator.

A transparent protective hood of material that does not burn readily provides good protection against dust. The auxiliary relay mounted in a casing is not provided with a hood.

The terminals on the sheet-metal base and 1/2'S' flush mounting case have an opening of dia 3.8 mm for external connections. Those of the plug-in sockets can accommodate two wires with a cross-section of 2.5mm<sup>2</sup>. The different methods of mounting are illustrated in Fig 4-6. The auxiliary relays should always be mounted with their contact bar horizontal.

A method of mounting that is ideal for installation and servicing is the plug-in mounting. Guide pins prevent the relay from being plugged in the wrong way round. The marking of the terminals on the base agrees with that of the relay contacts.

### Type designation of auxiliary relays:

P8n					Basic auxiliary relay with high speed operation
PQ8n					with mechanical latching
PN8n					with high drop-out rating
	A				without operation indicator
	C				with operation indicator
		H			with field weakening resistor
			XS		with plug-in base
			2YS		with sheet-metal base
			2JS		with '1/2S' size, flush mounting case

Example: P8nAH2S denotes a P type auxiliary high speed relay with 7 free contacts, without operation indicator, with field weakening resistor mounted on sheet-metal base.

Available types: P8nAHXS, P8nAH2YS, P8nCH2JS,  
 PN8nAH2YS, PQ8nCH2JS,  
 PN8nCH2JS.

## Technical data

Rated voltage ( $U_N$ )	: 24,30, 48, 110, 125, 220, 250 DC 110,240 AC (with Rectifier) available only in $\frac{1}{2}$ 'S' size mounting case
Operating range	: Type P8n....., PN8n..... ; -20% to +10% of $U_N$ Type PQ8n..... ; -30% to +10% of $U_N$
Frequency	: 50 Hz +/-5%
Pick-up voltage (% $U_N$ )	: P8n.... < 80%      PN8n.... < 80%      PQ8n.... < 70%
Drop-off voltage (% $U_N$ )	: P8n.... > 4%      PN8n.... > 20%      PQ8n.... NA
Pick-up time at $U_N$ (typical)	: P8n.... max.16 ms      PN8n.... 20-30ms      PQ8n.... max.16ms
Maximum power consumption	: dc; 9.0W      6.3W      9.0W ac; 7.5VA      5.5 VA      7.5 VA
Mechanical life	: P8n.... $5 \times 10^6$ PN8n.... $5 \times 10^6$ PQ8n.... $1 \times 10^4$
Switching rate	: Up to 500 times per hour at full breaking current, or 5000 times per hour with reduced breaking current.
Insulation tests	
Dielectric test	: 2kV, 50Hz, 1min. as per IEC 60255-5
Impulse voltage test	: 5kV, 1.2/50micro sec. 0.5J., as per IEC 60255-5
Insulation resistance	: >100 M ohms at 500V dc. as per IEC 60255-5
Contacts	
Rated voltage	: 250V dc/ac
Rated current	: 5 A
Max. making current	: 50 A, 0.5 sec,
Max. Breaking capacities	

Voltage	24V		48V		110V		250V		
	1	2 in parallel	1	2 in parallel	1	2 in parallel	1	2 in parallel	2 in series
DC resistive load	5A	10A	5A	10A	5A	7A	1A	-	5A
DC inductive. L/R =15ms	5A	10 A	5 A	8 A	4 A	-	1 A	-	4 A
DC inductive, L/R =40ms	4 A	8 A	4 A	8 A	3 A	-	0.5A	-	2 A
AC resistive & inductive	10 A	-	10 A	-	10 A	-	10A	-	-

Environment tests	
Dry heat test	: IEC 60068-2-2 +55°C and +70°C
Dry cold test	: IEC 60068-2-1 -10°C and -25°C
Damp heat cyclic test	: IEC 60068-2-30 12hrs+12hrs cycle at+55°C / +25°C with RH98% for 6days
Storage test	: IEC 60068-2-8 +70°C for 72hrs and -25°C for 72 hrs.
Vibrations test	
Vibration response	: IEC 60255-21-1 Class-1 10-150Hz; 0.5g; 3 axis
Endurance test	: IEC 60255-21-1 Class-1 10-150Hz; 1.0g; 3 axis
Shock and Bump test (flush mounting case)	
Shock response test	: IEC 60255-22-2 Class-2 10g,11 ms
Shock withstand test	: IEC 60255-22-2 Class-1 15g,11 ms
Bump test	: IEC 60255-22-2 Class-1 10g,16 ms

Weight:	
Type .....XS :	0.80 Kg. Approx.
Type .....2YS :	0.75 Kg. Approx.
Type .....2JS :	0.95 Kg. Approx.

<b>Ordering details</b>
Relay type
Auxiliary Voltage
Contacts configuration

### Connection diagram and Contact configuration

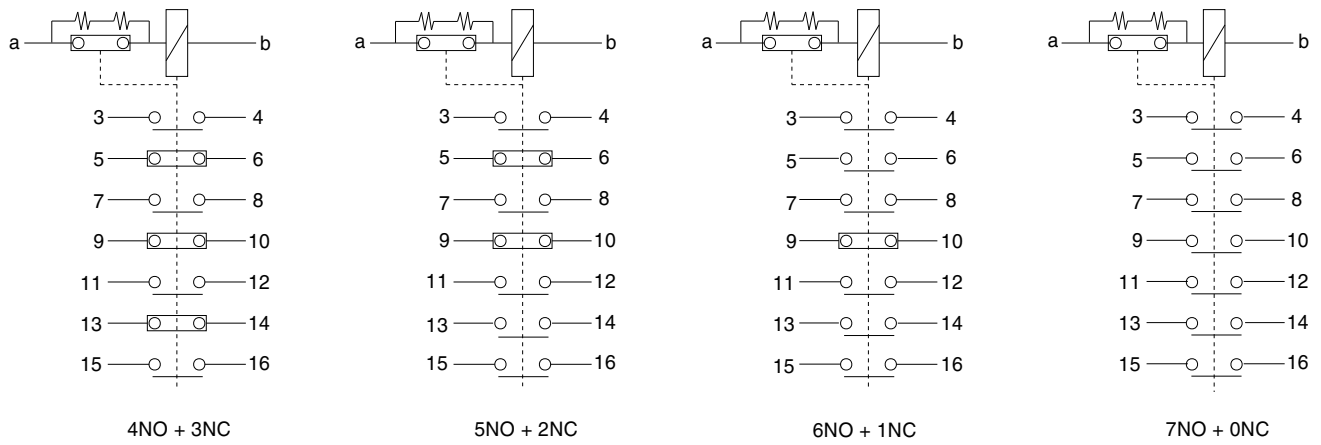


Fig. 1 - Relay on plug-in base mounting for dc voltage

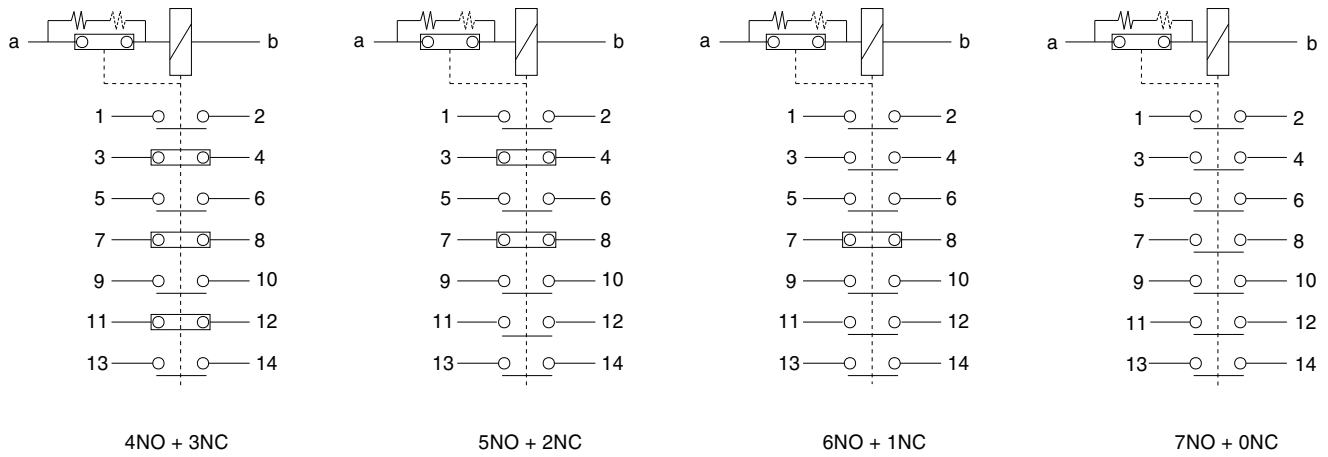


Fig. 2 - Relay in 1/2 'S' case mounting or on sheet-metal base mounting for dc voltage

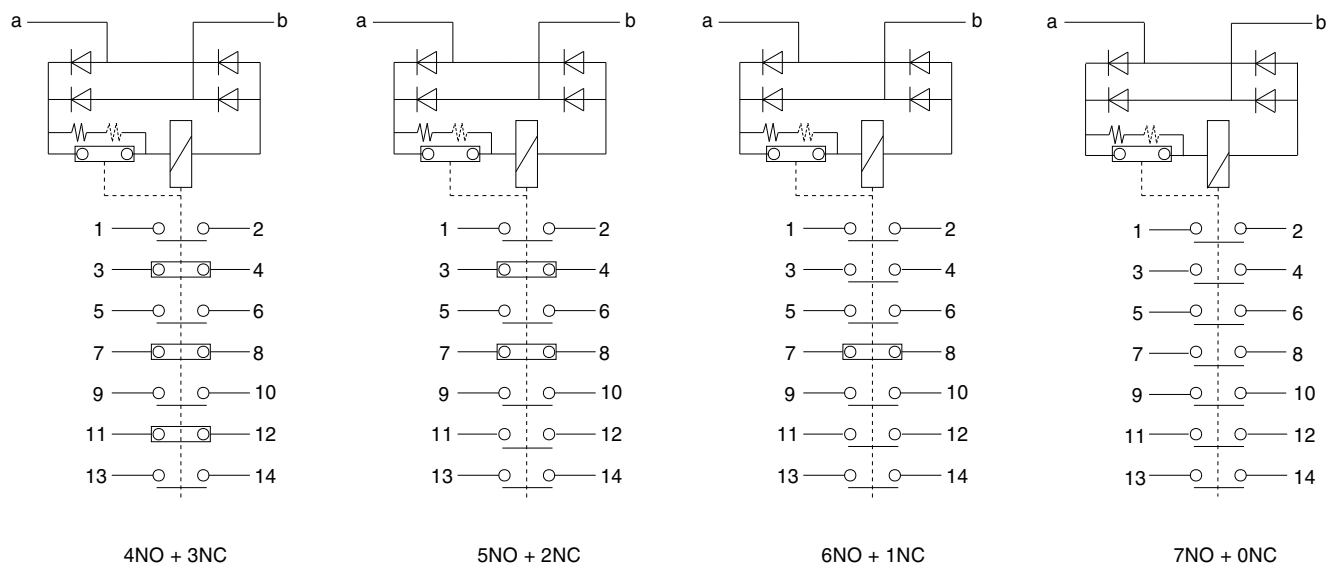


Fig. 3 - Relay for ac voltage in 1/2 'S' case mounting

## Dimensions

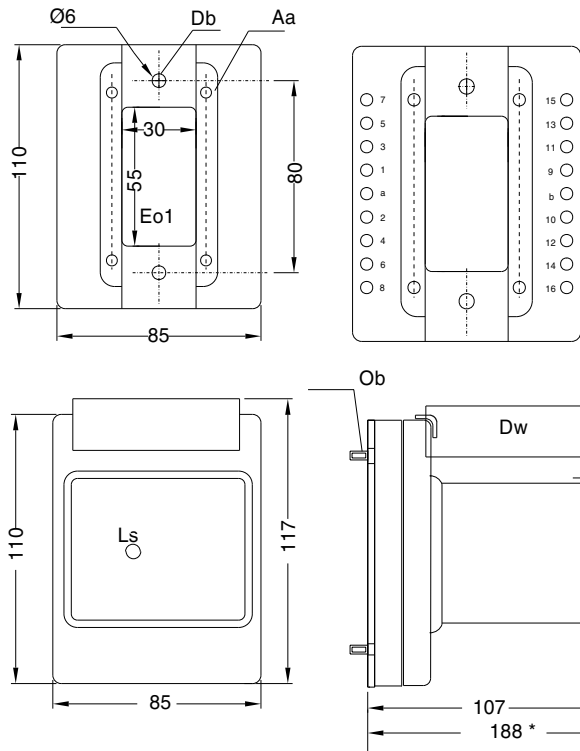


Fig.4 Plug-in base mounting

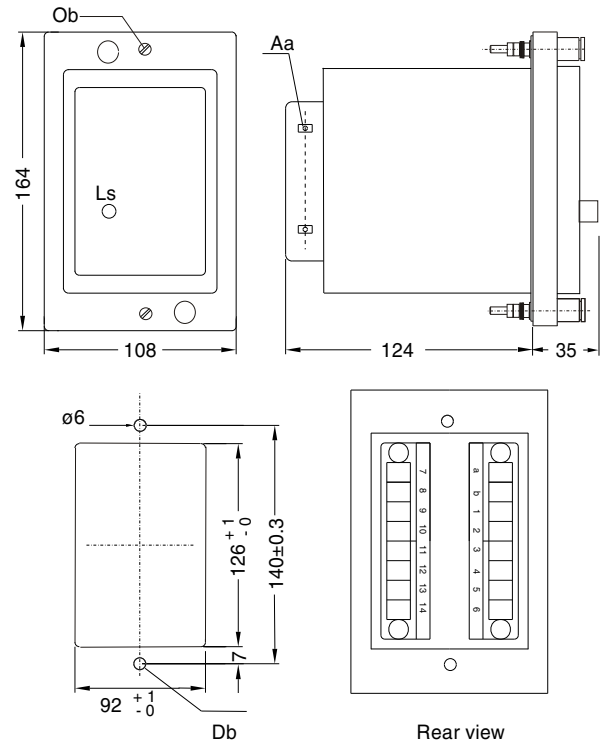


Fig. 5 1/2'S' case mounting.

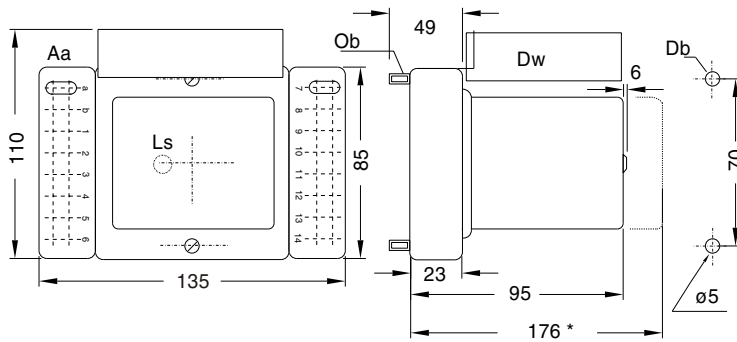


Fig 6. Sheet-metal base mounting.

### Legend

- Aa : Terminals
- Db : Mounting hole
- E01 : Cut-out for rear wiring.
- \* : Space for removing hood.
- Ls : Operation signal
- Dw : Field weakening resistor.
- Ob : Fixing screw

## Ordering Details

Refer type designation for selection and tick appropriate boxes

Type : P8nAH2YS  Qty..... Item no.....  
P8nAHXS  Qty..... Item no.....

Aux Voltage : 24VDC  Contacts 7N/O + 0N/C   
30VDC  6N/O + 1N/C   
48VDC  5N/O + 2N/C   
110VDC  4N/O + 3N/C   
125VDC   
220VDC   
250VDC

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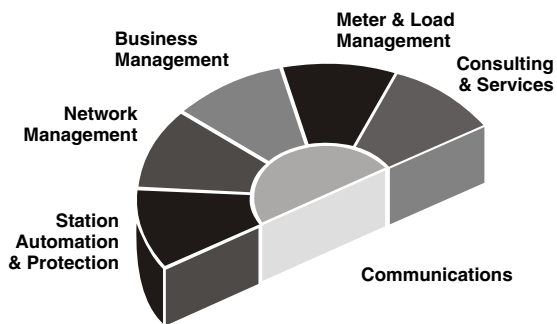
Type : PN8nAH2YS  Qty..... Item no.....

Aux Voltage : 24VDC  Contacts 7N/O + 0N/C   
30VDC  6N/O + 1N/C   
48VDC  5N/O + 2N/C   
110VDC  4N/O + 3N/C   
220VDC

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Type : P8nCH2JS  Qty..... Item no.....  
PN8nCH2JS  Qty..... Item no.....  
PQ8nCH2JS  Qty..... Item no.....

Aux Voltage : 24VDC  Contacts 7N/O + 0N/C   
30VDC  6N/O + 1N/C   
48VDC  5N/O + 2N/C   
110VDC  4N/O + 3N/C   
125VDC   
220VDC   
250VDC   
  
110VAC   
240VAC



**Panorama is the standard for a comprehensive range of integrated solutions for efficient and reliable management of power networks. Using innovative information technology, Panorama delivers total control of the power process, from generation to consumption. The Panorama standard covers six application areas, each offering specific solutions.**



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