

Auxiliary Relay

Type P8n, PQ8n, PN8n

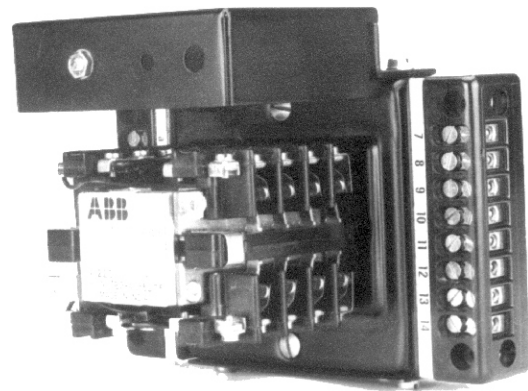
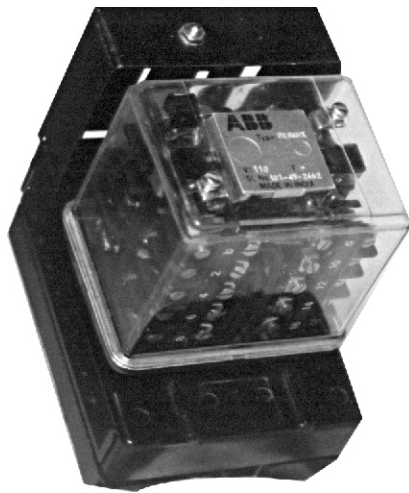
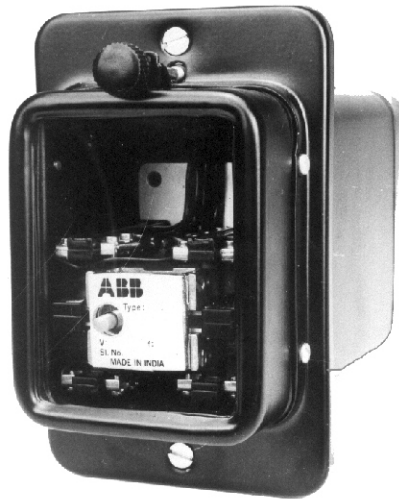


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Features

- 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
 - PN8n..... With drop-off operation indicator
 - PQ8n..... High speed locking relay with hand reset.

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.

Type designation of auxiliary relays:

P					Basic auxiliary relay
PQ					with mechanical latching and high speed operation
PN					with high drop-out rating and drop-off operation indicator.
	8n				with 7 free contacts and 1 late opening NC contact for FWR
		A			without operation indicator
		C			with operation indicator
			H		with field weakening resistor
				X	mounted on plug-in base
				2Y	mounted on sheet-metal base
				2J	mounted in '1/2S' size, flush mounting case

Example: P8nAH2Y denotes a P type auxiliary relay with 7 free contacts, without operation indicator, with field weakening resistor mounted on sheet-metal base.

Available types:

P8nAH2Y,
PN8nCH2J,

P8nAHX,
PN8nAH2Y

P8nCH2J,
PQ8nCH2J.

They are 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 PQ8n.... is specially designed for high speed operation and 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 2.5mm². 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.

Technical data

Rated voltage (U_N)	: 24,30, 48, 110, 125, 220, 250 DC 24,30,48,110,240 AC (with Rectifier) available only in 1/2'S' size mounting case
Operating range	: Type P8n....., PN8n..... ; + 10% to - 20% of U_N Type PQ8n..... ; + 10% to -50% of U_N
Frequency	: 50 Hz +/-5%

Pick-up voltage (% U_N)	: P8n....	PN8n....	PQ8n....
Drop-off voltage (% U_N)	: < 80%	<80%	<50%
Pick-up time at U_N (typical)	: >4%	> 20%	NA
Maximum power consumption	: 20-30ms	20-30ms	12-15ms
	: dc; 3.5W	6.3W	7.5W
	: ac; 3.0VA	5.5 VA	6.2 VA

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

Mechanical life

Switching rate	: 5×10^6 switching operations. as per IEC-60255-6
	: Up to 500 times per hour at full breaking current, or 5000 times per hour with reduced breaking current.

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		
Contacts	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

Electromagnetic compatibility requirements

High frequency disturbance test	: IEC 60255-22-1 1MHz 2.5kV common mode, and 1 kV differential mode.
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Weight:

TypeX	: 0.80 Kg. Approx.
Type2Y	: 0.75 Kg. Approx.
Type2J	: 0.95 Kg. Approx.

Ordering details

Relay type
Auxiliary Voltage
Contacts configuration

Connection diagram and Contact configuration

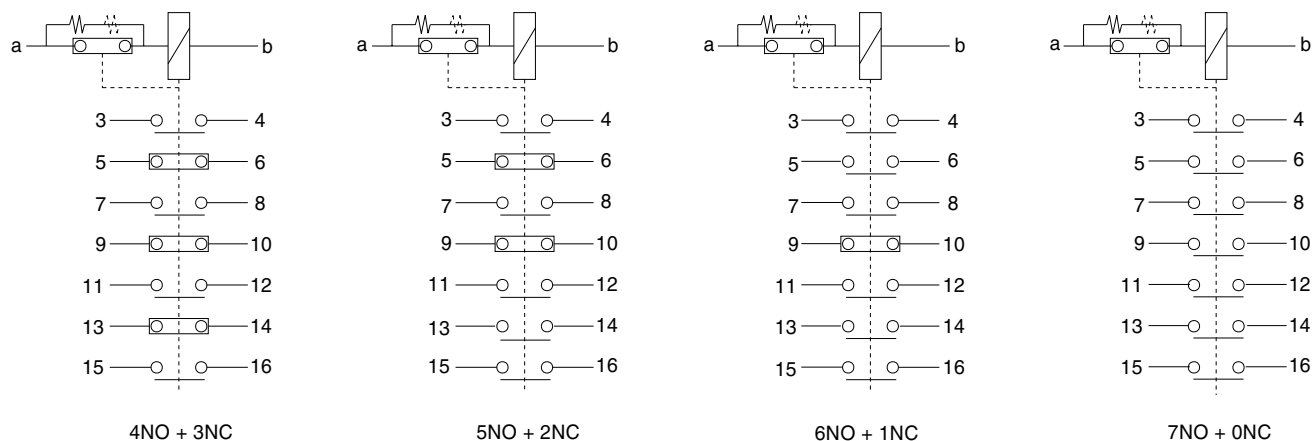


Fig. 1- Relay on plug-in base mounting

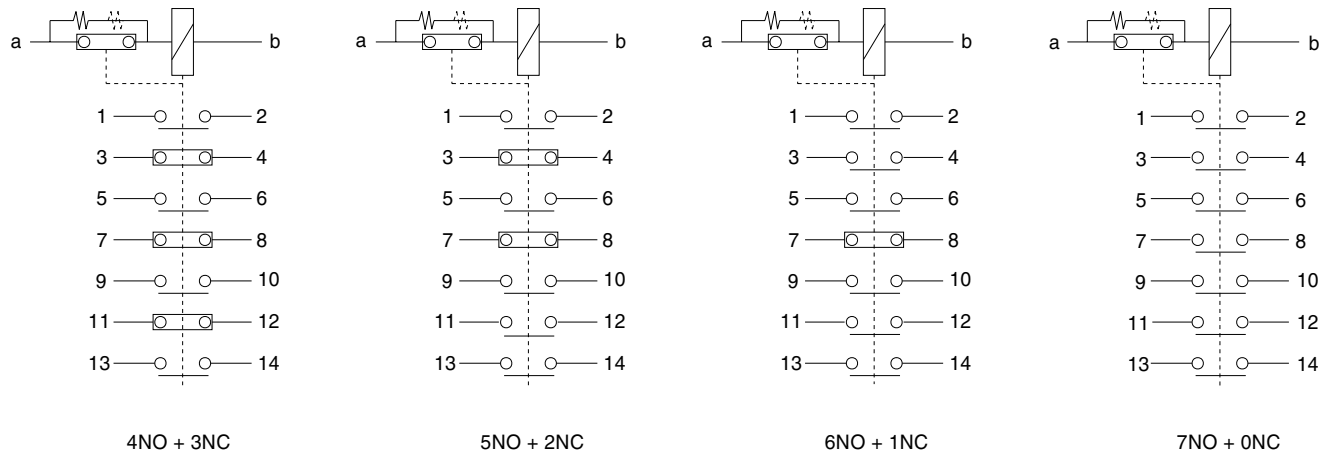


Fig. 2 - Relay in 1/2 'S' case mounting or on sheet-metal base mounting

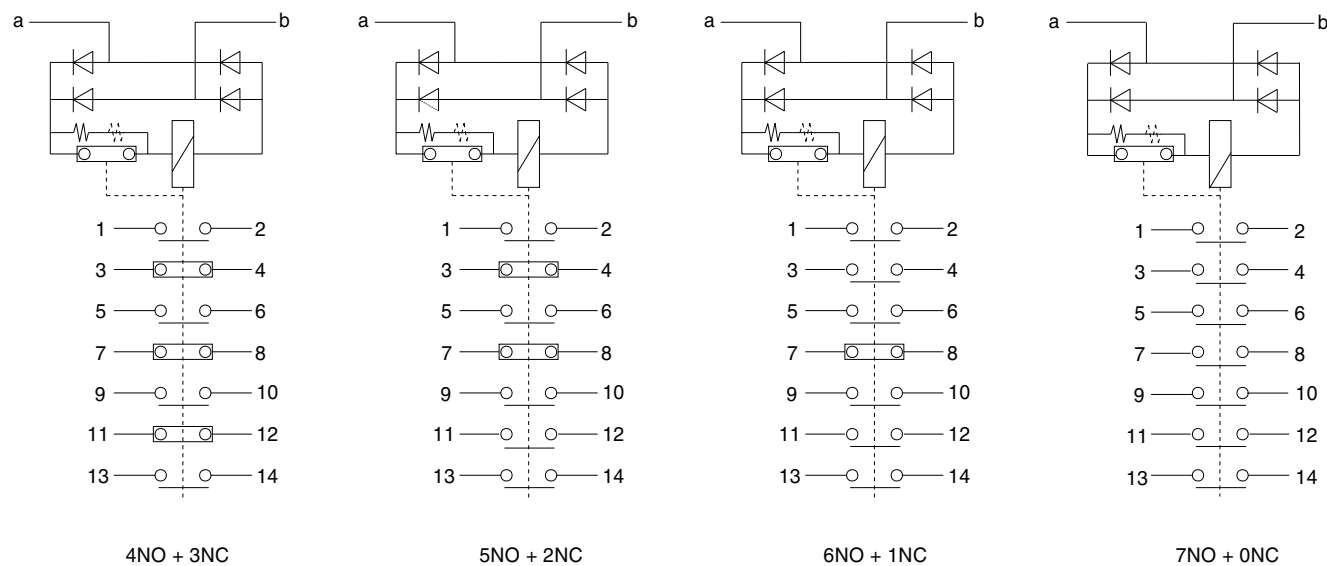


Fig. 3 - Relay for ac voltage in 1/2 'S' case mounting

Dimensions

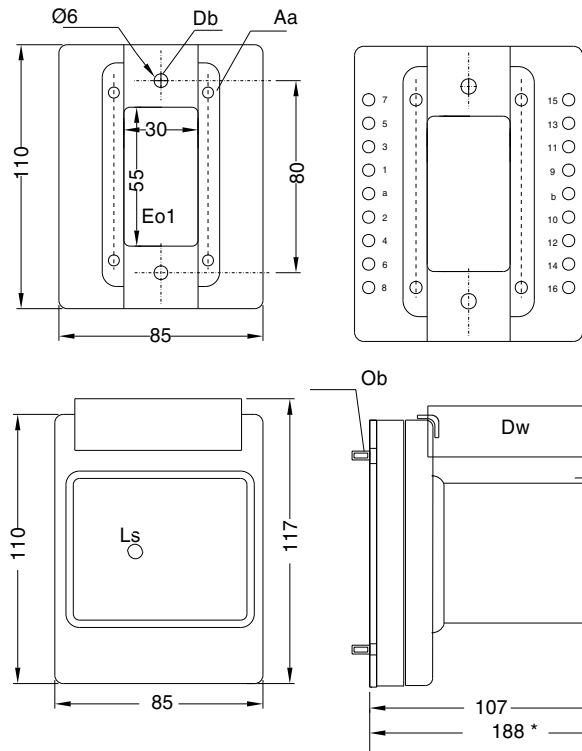


Fig.4 Plug-in base mounting

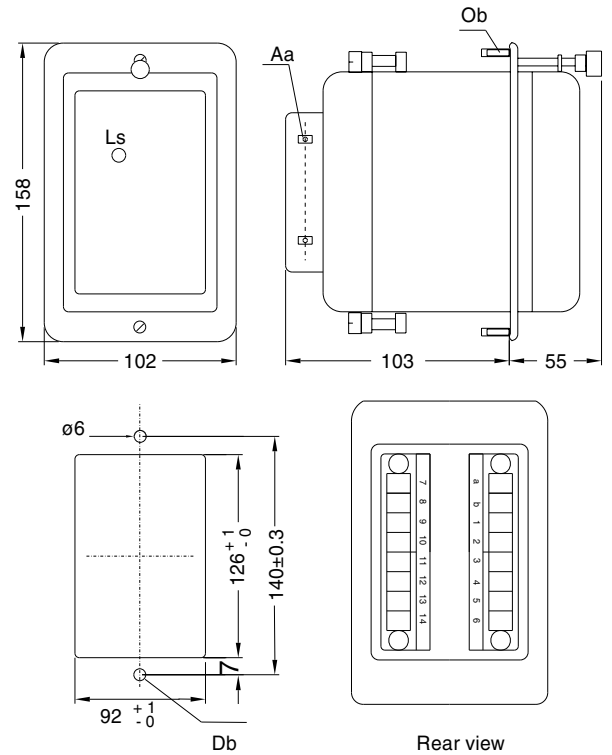


Fig. 5 1/2'S' case mounting.

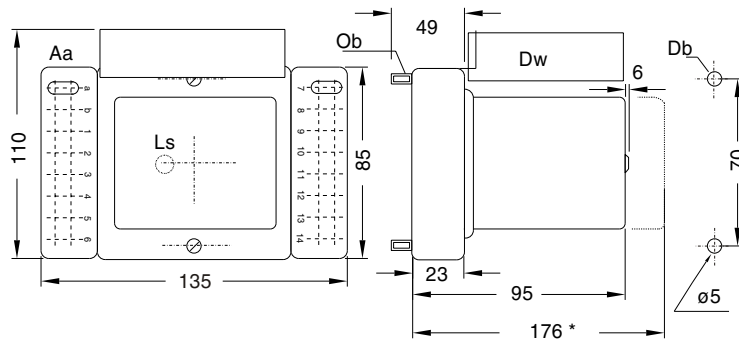


Fig 6. Sheet-metal base mounting.

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 mark (✓) appropriate boxes

Type : P8nAH2Y ☐ Qty..... Item no.....
 P8nAHX ☐ Qty..... Item no.....

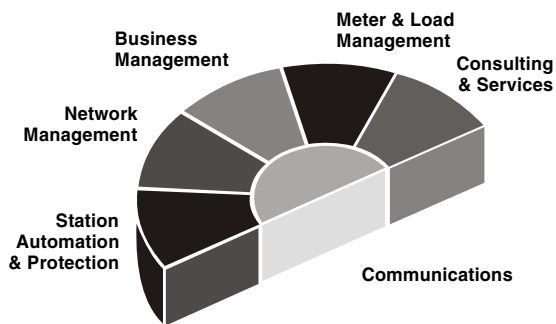
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		30VDC	<input type="checkbox"/>		6N/O + 1N/C	<input type="checkbox"/>
		48VDC	<input type="checkbox"/>		5N/O + 2N/C	<input type="checkbox"/>
		110VDC	<input type="checkbox"/>		4N/O + 3N/C	<input type="checkbox"/>
		125VDC	<input type="checkbox"/>			
		220VDC	<input type="checkbox"/>			
		250VDC	<input type="checkbox"/>			

Type : PN8nAH2Y ☐ Qty..... Item no.....

Aux Voltage :		24VDC	<input type="checkbox"/>	Contacts	7N/O + 0N/C	<input type="checkbox"/>
		30VDC	<input type="checkbox"/>		6N/O + 1N/C	<input type="checkbox"/>
		48VDC	<input type="checkbox"/>		5N/O + 2N/C	<input type="checkbox"/>
		110VDC	<input type="checkbox"/>		4N/O + 3N/C	<input type="checkbox"/>
		220VDC	<input type="checkbox"/>			

Type : P8nCH2J ☐ Qty..... Item no.....
 PN8nCH2J ☐ Qty..... Item no.....
 PQ8nCH2J ☐ Qty..... Item no.....

Aux Voltage	:	24VDC	<input type="checkbox"/>	Contacts	7N/O + 0N/C	<input type="checkbox"/>
		30VDC	<input type="checkbox"/>		6N/O + 1N/C	<input type="checkbox"/>
		48VDC	<input type="checkbox"/>		5N/O + 2N/C	<input type="checkbox"/>
		110VDC	<input type="checkbox"/>		4N/O + 3N/C	<input type="checkbox"/>
		125VDC	<input type="checkbox"/>			
		220VDC	<input type="checkbox"/>			
		250VDC	<input type="checkbox"/>			
		24VAC	<input type="checkbox"/>			
		30VAC	<input type="checkbox"/>			
		48VAC	<input type="checkbox"/>			
		110VAC	<input type="checkbox"/>			
		240VAC	<input type="checkbox"/>			



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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