

Auxiliary Relay

Type P8n, PQ8n, PN8n



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- ✓ Unparalleled domain competence
- ✓ Global experience
- ✓ Complete solution capabilities
- ✓ Large installed base
- ✓ Environment-friendly technologies



Auxiliary relay type P8n, PQ8n, PN8n

Features

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

The contact system is designed for a maximum rated voltage of 250V DC or AC. 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 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.

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 an instantaneous switching element, it provides galvanic separation and contact multiplication in tripping and signalling circuits of protective relays.

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

Design and principle

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

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

The magnet system comprises of 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 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 (Figs. 4-6). The auxiliary relays should always be mounted with the contact bar in horizontal position.

The contacts are arranged symmetrically in two rows, on either side of the magnet, clearly visible and readily accessible.

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 their 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 1/2'S' size, flush mounting case

Example: P8nAH2YS 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 ½ '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)	> 4%	> 20%	NA
Pick-up time at U_N (typical)	max.16 ms	20-30ms	max.16ms
Maximum power consumption	DC; 9.0W AC; 7.5VA	6.3W 5.5 VA	9.0W 7.5 VA
Mechanical life	5×10^6	5×10^6	1×10^4
Switching rate	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		
	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	-	-

Insulation tests

Dielectric test	2kV, 50Hz, 1min. as per IEC 60255-5
Impulse voltage test	5kV,1.2/50 μ s. 0.5J., as per IEC 60255-5
Insulation resistance	>100 M ohms at 500V DC. as per IEC 60255-5

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

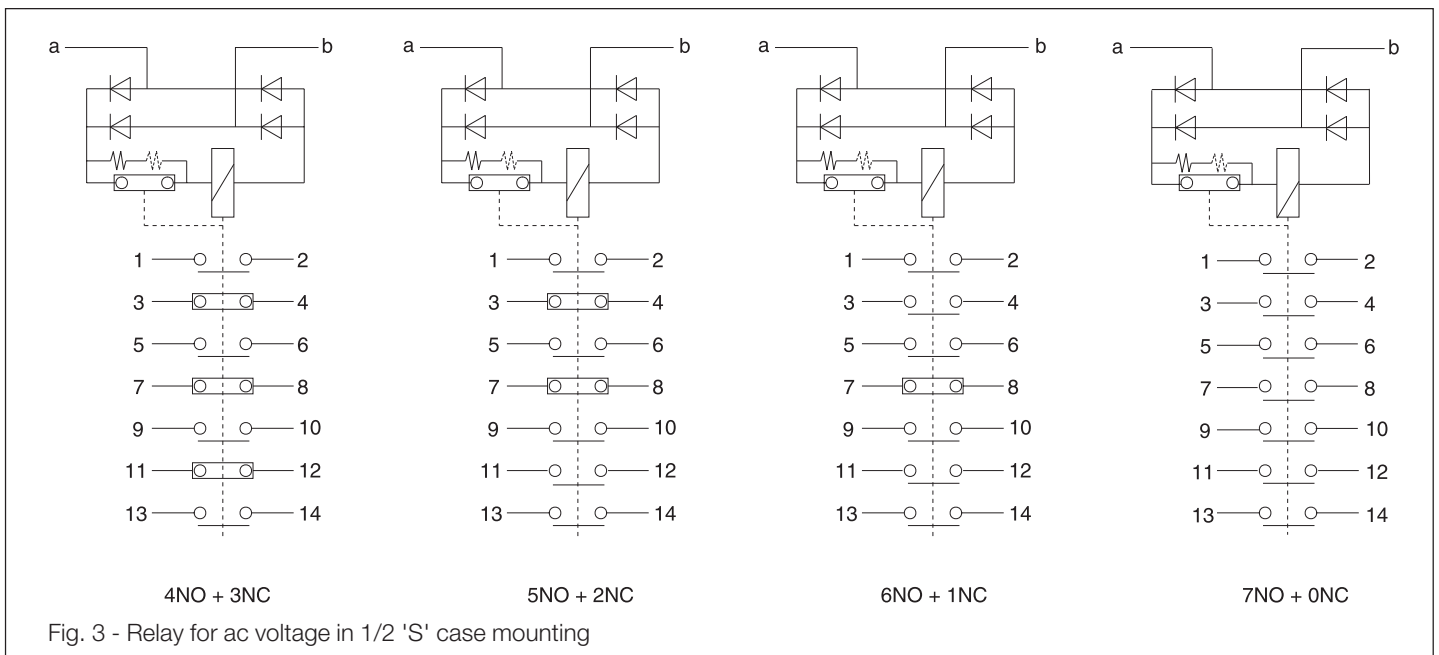
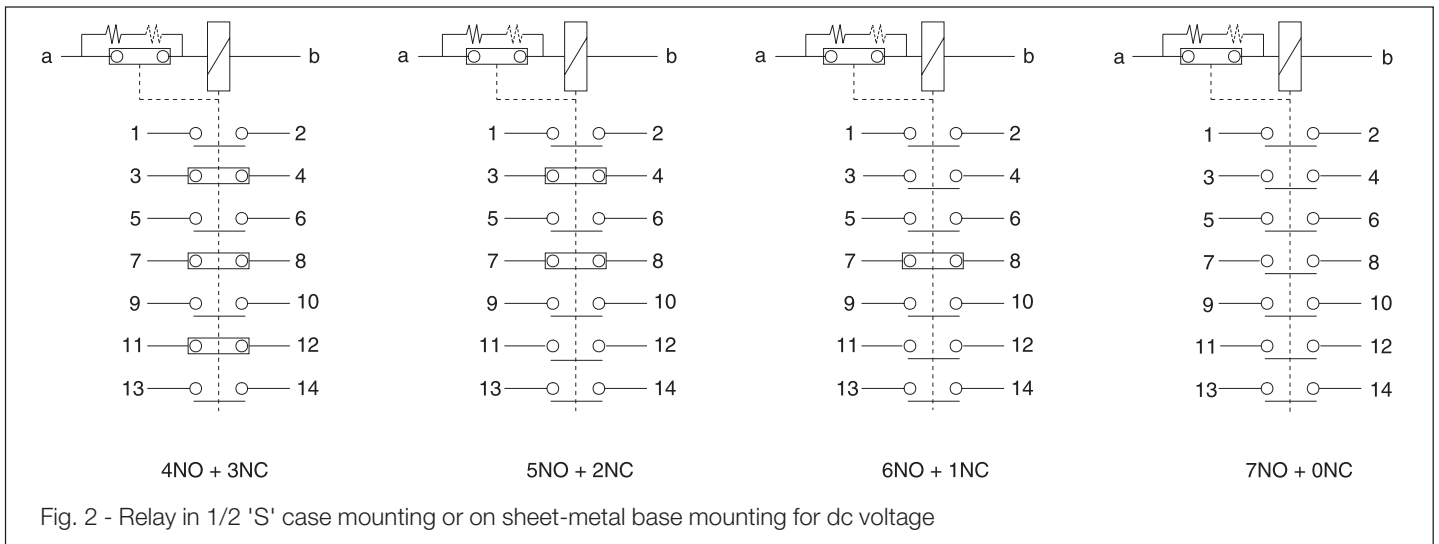
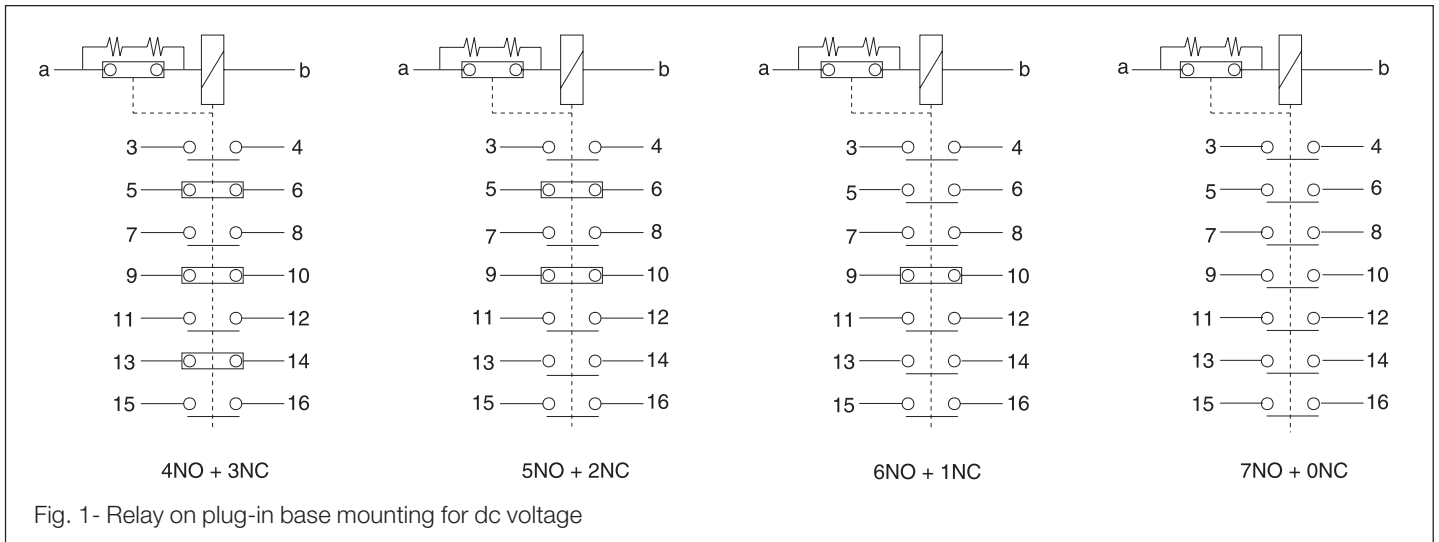
Weight:

TypeXS	: 0.80 Kg. Approx
Type2YS	: 0.75 Kg. Approx.
Type2JS	: 0.95 Kg. Approx.

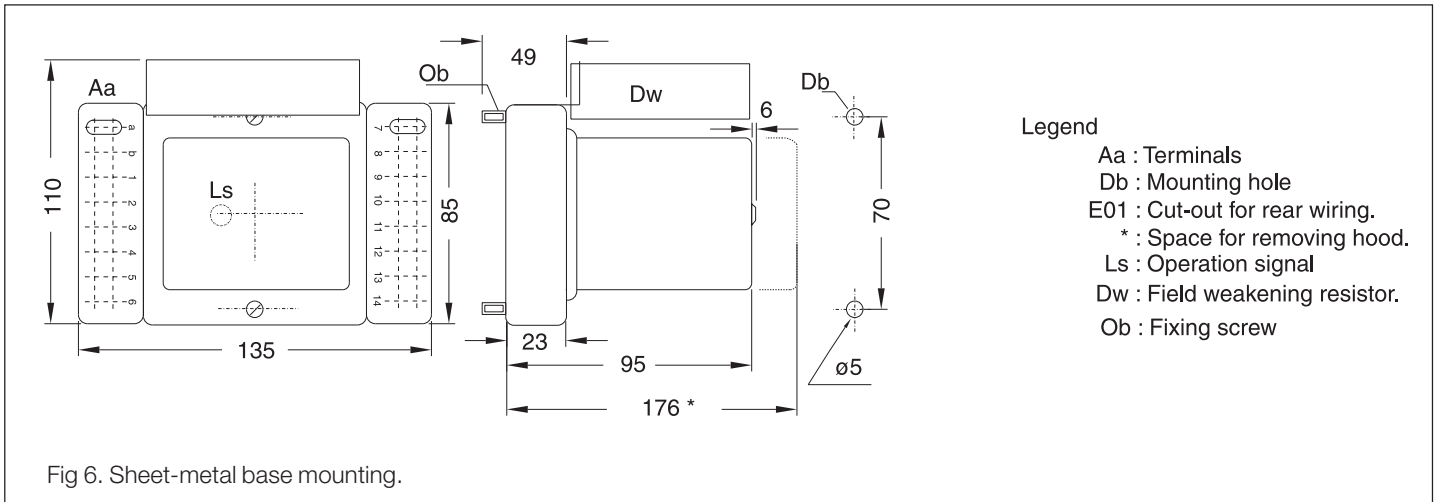
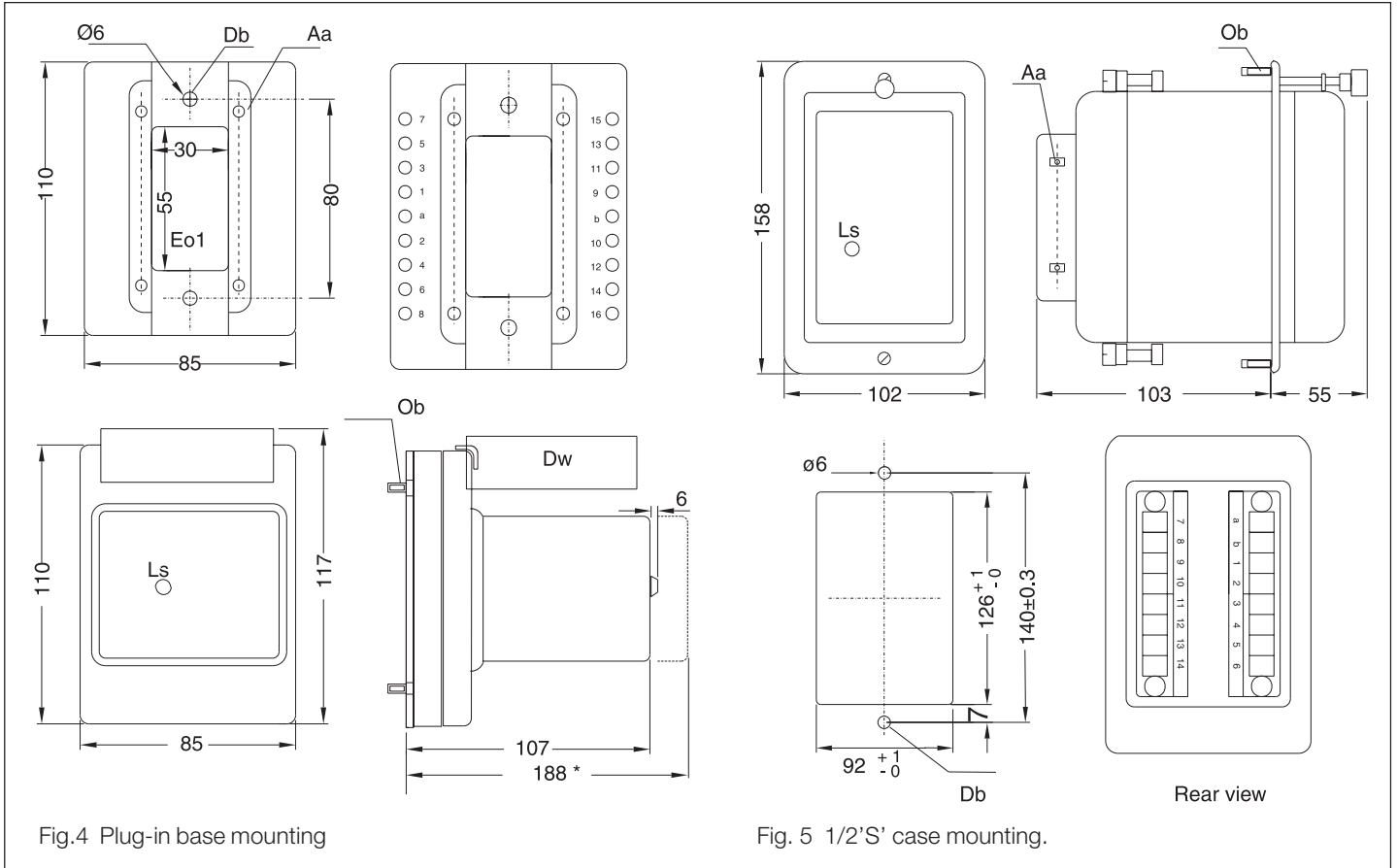
Ordering details

Relay type
Auxiliary Voltage
Contacts configuration

Connection diagram and contact configuration



Dimensions



Ordering details

Refer type designation for selection and tick appropriate boxes

Type	:	P8nAH2YS	<input type="checkbox"/>	Qty.....	Item no.....
		P8nAHXS	<input type="checkbox"/>	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"/>		

Type	:	PN8nAH2YS	<input type="checkbox"/>	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	:	P8nCH2JS	<input type="checkbox"/>	Qty.....	Item no.....
		PN8nCH2JS	<input type="checkbox"/>	Qty.....	Item no.....
		PQ8nCH2JS	<input type="checkbox"/>	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"/>		
		110VAC	<input type="checkbox"/>		
		240VAC	<input type="checkbox"/>		



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