

Reyrolle Protection Devices

7PG111 & 7PG112 AR

Auxiliary Relay

Answers for energy



7PG111 & 7PG112 AR

Auxiliary Relay



Description

The 7PG111 & 7PG112 AR range of electromechanical relays are available with up to eight self, hand or electrically reset contacts. They can be supplied in most combinations of contact, flag and reset arrangements. Fixed time delay models are also available.

AR relays are voltage operated from either AC or DC supplies. Heavy duty contacts are available on most devices.

Features

- Consistent positive action
- Robust design for a long, reliable, service life

Type AR relays are a range of electro-mechanical relays with up to 8 contacts and complying to BS142. They can be supplied in most combinations of contact, flag and reset arrangements and with a fixed time delay. Heavy duty contacts are available on most models.

The relays are identified by a series of numbers and letters which define important relay features.

The following comments are provided as a guide to the various features of type AR relays.

- AR 1 Up to 8 self reset contacts, in any combination of normally open or normally closed as required.
- AR 2 Up to 8 self reset contacts, in any combination of normally open or normally closed as required.
- AR 3 Electrical and hand set contacts supplied with a contact reset mechanism in the relay case cover.
- AR 4 Hand and self reset contacts, can be supplied with 2 hand reset contacts and a maximum of 4 self reset contacts. All the contacts may be either normally open or normally closed
- AR 6 Electrical reset contacts with optional self reset flag. AR - 3 & 6 Reset coils are short time rated, we recommend that reset circuits include a normally open (cut-off) contact

First Digit	Second Digit Type of flag		Third Digit Type of contact reset	
Number of	0	No flag	1	Self
identical	1	Hand reset	2	Hand
elements	2	Hand reset	3	Electrical &
		reverse acting		hand
	3	Self reset	4	Hand & self
	4	Self reset	6	Electrical
		reverse acting		

Table 1. Relay Features

Suffix letters are used to identify further features:

Suffix D – indicates a relay fitted with a suppression diode across the coil to reduce the effects of back emf on switch-off.

Suffix SB – identifies a relay with a series break contact to cut-off the operating coil, thus the relay burden becomes zero after operation of this contact. Only available with AR relays which have hand reset contacts.

Туре	Number of	Flag	Contact
	Contacts	Reset	Reset
AR101	2,4,6 or 8	N.A.	Self
AR103	4,6 or 8	N.A.	Elec & Hand
AR106	2, 4, or 6	N.A.	Elec
AR111	2,4,6 or 8	Hand	Self
AR112	2,4,6 or 8	Hand	Hand
AR113	4, 6 or 8	Hand	Elec & Hand
AR114	4 or 6	Hand	Hand & Self
AR121	2,4,6 or 8	Hand*	Self
AR124	4,or 6	Hand*	Hand & Self
AR131	2,4,or 6	Self	Self
AR133	2,4,6 or 8	Self	Elec & Hand
AR136	2,4 or 6	Self	Elec
AR141	2,4,or 6	Self*	Self
AR101T	2,4,or 6	N.A.	Self
AR111T	2,4,or 6	Hand	Self
AR112T	2,4,or 6	Hand	Hand
AR121T	2,4,or 6	Hand*	Self
AR131T	2 or 4	Self	Self
AR141T	2 or 4	Self*	Self

^{*} Indicates a reverse acting flag indicating on de-energisation.

Table 2. Relay Features

Suffix T – identifies time delayed relays. The reference is completed by adding a code number:

Delay on De-energisation				
		Number of contacts available		
Suffix	Nominal	AR101T, AR111T,	AR	AR
	Time	AR112T, AR121T	131T	141
				T
T1	Up to 100ms	6	4	4
T2	101 to 200ms	6	4	4
T3	201 to 300ms	4	2	2
T4	301 to 400ms	2	N.A.	N.A
Delay on Energisation				
T6	50ms max.	6	6	4

Table 3.Summary of Time Delayed Operation



Technical Data

Inputs and Outputs

Rated Voltage (Vn)	
A.C.	63.5, 110, 220, 240V
D.C.	12, 24, 30, 50, 125, 240V

Operating Range	
A.C.	80% to 110% of rated voltage
D.C.	70% to 115% of rated voltage

Burden	
3 to 5W/VA depending upon rating	Dependent on rating. Rectified a.c. relays nominal power factor = 0.96

Output Contacts

Make and carry continuously	1250VAa.c. or 1250Wd.c. within the limits of 660V and 5A
Make and carry for 3 seconds	7500VAa.c. or 7500Wd.c. within the limits of 660Vand 30A
Breaking Capacity (≤5 A and ≤250 V): AC Resistive DC Resistive DC Inductive	1250 VA 100 W 50 W L/R = 40ms
Minimum number of operations	1000 at maximum load
Minimum recommended load	0.5 Watt limits 10mA or 5V

Electrical Tests

Insulation

IEC 60255-5 RMS levels for 1 minute

Between contacts to earth and to the coil	2.0 kV
Between any case terminal and earth	2.0 kV
Between case terminals of independent circuits	2.0 kV
Across normally open contacts	1.0 kV

Transient Overvoltage

IEC 60255-5

Between all terminals and earth or between any two independent circuits without damage or flashover

5 kV 1.2/50 μs 0.5 J

Mechanical

Vibration (Sinusoidal)

IEC 255-21-1	The relays meet the requirements of Class 1 for vibration response and endurance
BS142 section 2.1 category S2	relays will withstand a 20G shock or impact on the panel without operating

Shock Bump

IEC 255-21-2	Class 1 severity
BS142, sub-section 1.5.2. (1989)	Class 1 severity

Mechanical Life

Durability	in excess of 10,000 operations with the contact rating at a rate of 600 operations per hour

Environmenta

Temperature

IEC 68-2-1/2

Operating	-10 °C to +55 °C
Storage	-25 °C to +70 °C
Humidity	

IEC 68-2-3

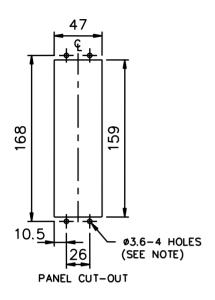
Operational test	56 days at 40 °C and 95%
	RH

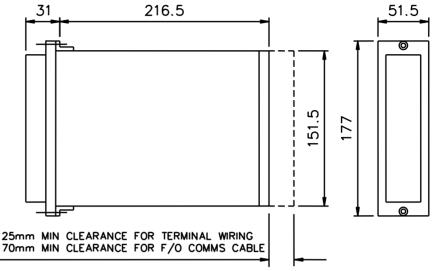
Performance

Instantaneous Operating time	e
Typically	25ms
Range	10ms to 50ms



Case Dimensions

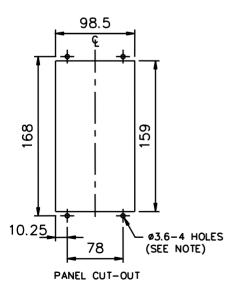


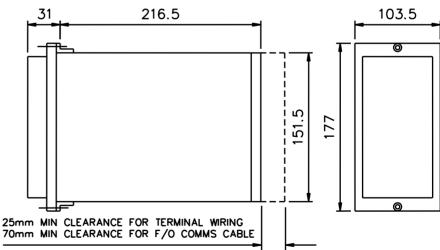


NOTE:

THE Ø3.6 HOLES ARE FOR M4 THREAD FORMING (TRILOBULAR) SCREWS. THESE ARE SUPPLIED AS STANDARD AND ARE SUITABLE FOR USE IN FERROUS/ALUMINIUM PANELS 1.6mm THICK AND ABOVE. FOR OTHER PANELS, HOLES TO BE M4 CLEARANCE (TYPICALLY Ø4.5) AND RELAYS MOUNTED USING M4 MACHINE SCREWS, NUTS AND LOCKWASHERS (SUPPLIED IN PANEL FIXING KIT).

Fig 1. E2 Case Dimensions





NOTE:

THE Ø3.6 HOLES ARE FOR M4 THREAD FORMING (TRILOBULAR) SCREWS. THESE ARE SUPPLIED AS STANDARD AND ARE SUITABLE FOR USE IN FERROUS/ALUMINIUM PANELS 1.6mm THICK AND ABOVE. FOR OTHER PANELS, HOLES TO BE M4 CLEARANCE (TYPICALLY Ø4.5) AND RELAYS MOUNTED USING M4 MACHINE SCREWS, NUTS AND LOCKWASHERS (SUPPLIED IN PANEL FIXING KIT).

Fig 2. E4 Case Dimensions

Connection Diagram 7PG11 AR

Terminal Numbering (E2 Case) Viewed from Rear

1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28

Terminal Numbering (E4 Case) Viewed from Rear

RH-	elem	nent	LH-	elem	ent
1 3 5 7 9		2 4 6 8 10	1 3 5 7 9		2 4 6 8 10
11		12 14	11		12
15 17		16 18	15 17		16 18
19 21		20 22	19 21		20
23 25		24 26	23 25		24
27		28	27		28

Fig 3. Connection Diagrams



Ordering Information – 7PG111 AR

Product description Variants Order No. Auxiliary relay (AR101, AR103) **7 P G 1 1** \square \square - \square \square \square \square \square \square A.C. or D.C. voltage operated relay. Number of elements Single element Type of flag No flag **Contact operation** Self reset contacts Hand and electrical reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO c 3 NO D 4 NO Ε 5 NO F 6 NO G 7 NO Н 8 NO Contact arrangement NC 0 NC 1 NC 2 NC C D 3 NC Ε 4 NC 5 NC F 6 NC G 7 NC Н 8 NC Number of contacts 2) Two 0 Four 1 Six 3 Eight Contact type 1) NO (Standard) / NC (Standard) Time delay No additional time delay Housing size Case size E2 (4U high) (continued on following page)

Variants Order No. **Product description** Auxiliary relay (AR101, AR103) **7 P G 1 1** \square \square - \square \square \square \square \square \square (continued from previous page) Voltage rating 12V DC 24V DC В 30V DC c 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC н | 63.5V AC Ιġ К 0 110V AC 220V AC L 0 240V AC M 0 Back emf suppression diode Not Fitted Ò Fitted



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR101T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Single element Type of flag No flag Contact operation Self reset contacts Contact arrangement - NO 0 NO 1 NO В 2 NO C D 3 NO 4 NO Ε 5 NO F G 6 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC 5 NC F G 6 NC Number of contacts 2) Two 0 Four 3) 1 Six 4) 3 Contact type 1) NO (Standard) / NC (Standard) Time delay T1 (up to 100ms) - Delay on de-energisation T2 (101 to 200ms) - Delay on de-energisation 2 3 T3 (201 to 300ms) - Delay on de-energisation T4 (301 to 400ms) - Delay on de-energisation 4 **Housing size** Case size E2 (4U high) Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Back emf suppression diode Not Fitted Fitted



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Four contact arrangements may only have a time delay of T1, T2 or T3

Six contact arrangements may only have a time delay of T1 or T2

Auxiliary relay (AR106) 7 PG11 🗆 🗆 -A.C. or D.C. voltage operated relay. Number of elements Single element Type of flag No flag **Contact operation** Electrical reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C 3 NO D Ε 4 NO F 5 NO G 6 NO Contact arrangement NC 0 NC 1 NC В 2 NC C D 3 NC Ε 4 NC 5 NC F G 6 NC Number of contacts 2) Two Ö Four 3 Six Contact type 1) NO (Standard) / NC (Standard) Time delay No additional time delay Housing size Case size E2 (4U high) Voltage rating 12V DC 24V DC 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Н 63.5V AC ΙÓ 110V AC K 0 220V AC L 0 240V AC М 0

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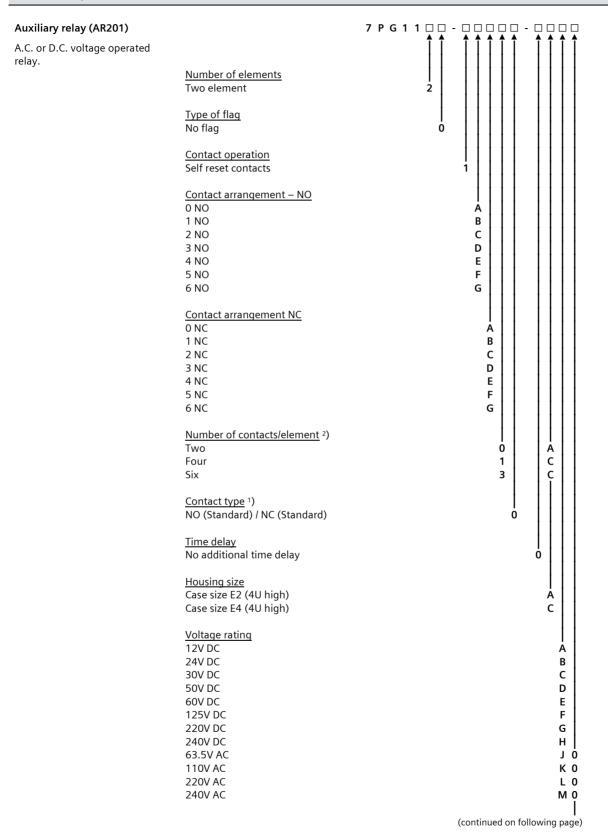


Product description	Variants	Order No.
Auxiliary relay (AR106)		7 P G 1 1 🗆 - 🗆 🗆 🗆 - 🗆 🗖
(continued from previous page)	Back emf suppression diode Not Fitted Fitted	Î 0 1



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

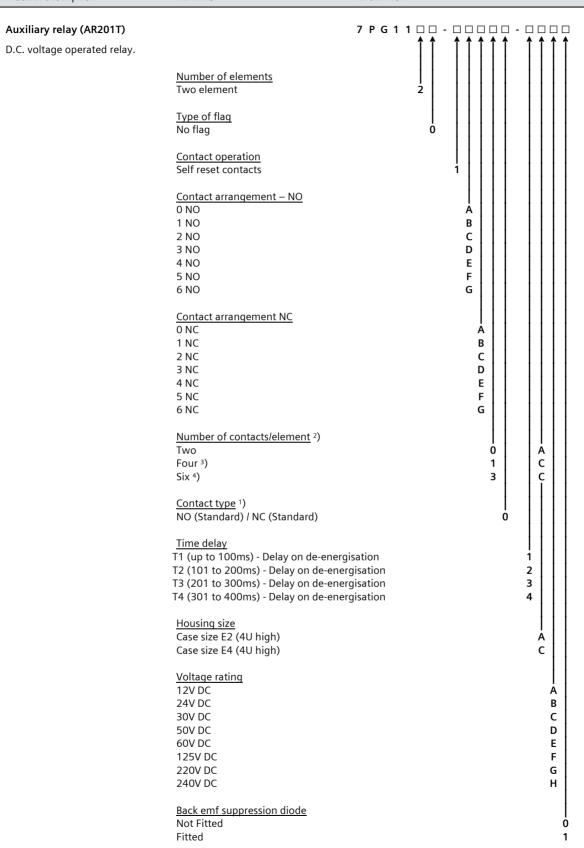


Product description	Variants	Order No.
Auxiliary relay (AR201)		7 P G 1 1
(continued from previous page)	Back emf suppression diode Not Fitted Fitted	



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement



Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed 1) there please contact the factory.

Number of contacts must match selected contact arrangement

Four contact arrangements may only have a time delay of T1, T2 or T3



Six contact arrangements may only have a time delay of T1 or T2

7 PG 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 Auxiliary relay (AR111, AR112) A.C. or D.C. voltage operated. relay Number of elements Single element Type of flag Hand reset flag **Contact operation** Self reset contacts Hand reset contacts Contact arrangement - NO 0 NO 1 NO В 2 NO C D E 3 NO 4 NO F 5 NO 6 NO G 7 NO Н 8 NO Contact arrangement NC 0 NC В 1 NC 2 NC C D 3 NC Ε 4 NC F 5 NC 6 NC G Н 7 NC 8 NC Number of contacts 2) Two Four 1 3 Six Eight Contact type 1) NO (Standard) / NC (Standard) No additional time delay **Housing size** Case size E2 (4U high)

(continued on following page)

Variants **Product description** Order No. Auxiliary relay (AR111, AR112) (continued from previous page) Voltage rating 12V DC 24V DC В 30V DC c 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC н | 63.5V AC Ιġ К 0 110V AC 220V AC L 0 240V AC M 0 Back emf suppression diode Not Fitted Ó Fitted



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR111T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Single element Type of flag Hand reset flag Contact operation Self reset contacts Contact arrangement - NO 0 NO 1 NO В 2 NO C D 3 NO 4 NO Ε 5 NO F G 6 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC 5 NC F G 6 NC Number of contacts 2) Two 0 Four 3) 1 Six 4) 3 Contact type 1) NO (Standard) / NC (Standard) Time delay T1 (up to 100ms) - Delay on de-energisation T2 (101 to 200ms) - Delay on de-energisation 2 3 T3 (201 to 300ms) - Delay on de-energisation T4 (301 to 400ms) - Delay on de-energisation 4 **Housing size** Case size E2 (4U high) Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Back emf suppression diode Not Fitted Fitted

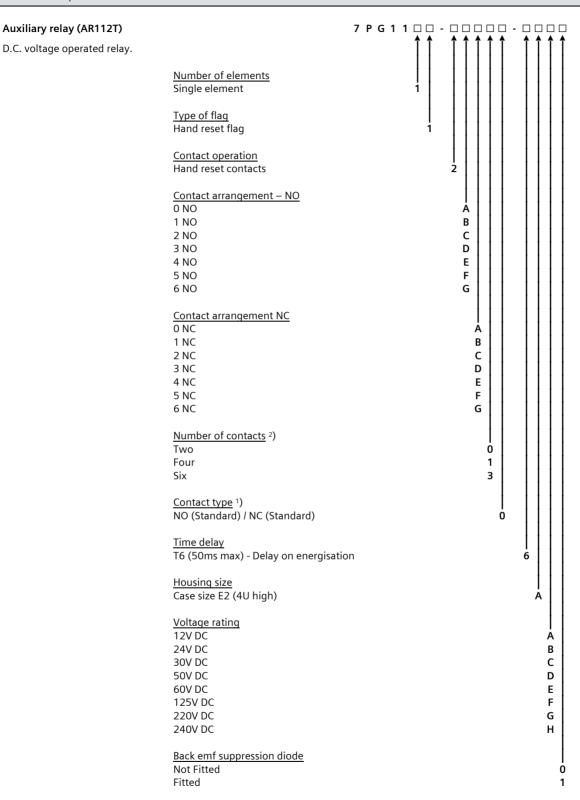


¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Four contact arrangements may only have a time delay of T1, T2 or T3

Six contact arrangements may only have a time delay of T1 or T2



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.



²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR112SB) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay with series break contact to reduce relay burden to zero after Number of elements Single element operation. Type of flag Hand reset flag **Contact operation** Hand reset contacts Contact arrangement - NO 0 NO В 1 NO c 2 NO D 3 NO 4 NO E 5 NO F G 6 NO н 7 NO Contact arrangement NC 0 NC 1 NC В C 2 NC D 3 NC Ε 4 NC 5 NC F 6 NC G 7 NC Н 8 NC Number of contacts 2) Two 0 Four 1 Six 3 Eight Contact type 1) NO (Standard) / NC (Standard / 1 SB) Time delay

No additional time delay

<u>Housing size</u> Case size E2 (4U high)

(continued on following page)

Product description Variants Order No. Auxiliary relay (AR112SB) **7 P G 1 1** \square \square - \square \square \square \square \square \square (continued from previous page) Voltage rating 12V DC A B 24V DC 30V DC c D 50V DC 60V DC Ε 125V DC F 220V DC G нΙ 240V DC 63.5V AC Ιġ Κ 0 110V AC 220V AC L 0 240V AC М 0 Back emf suppression diode Not Fitted Ó Fitted



¹⁾ One NO contact allocated for series break

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR113) 7 P G 1 1 🗆 🗆 – 🗆 🗆 🗆 – 🗆 – 🗆 A.C. or D.C. voltage operated. relay Number of elements Single element Type of flag Hand reset flag **Contact operation** Hand and electrical reset contacts Contact arrangement - NO 0 NO В 1 NO c 2 NO D 3 NO 4 NO E 5 NO F G 6 NO Н 7 NO 8 NO Contact arrangement NC 0 NC 1 NC c 2 NC D 3 NC 4 NC Ε 5 NC F 6 NC G 7 NC Н 8 NC Number of contacts 2) Four Six 3 Eight Contact type 1) NO (Standard) / NC (Standard) Time delay No additional time delay Housing size Case size E2 (4U high)

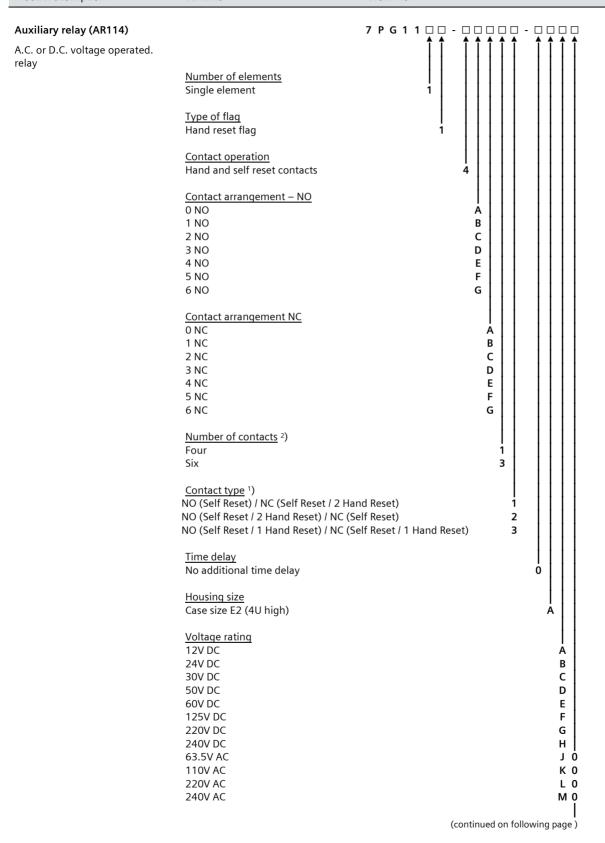
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Product description	Variants	Order No.
Auxiliary relay (AR113)		7 P G 1 1 🗆 - 🗆 🗆 🗆 - 🗆 📥
(continued from previous page)		ĪĪ
	Voltage rating	
	12V DC	Α
	24V DC	В
	30V DC	С
	50V DC	D
	60V DC	E
	125V DC	F
	220V DC	G
	240V DC	н
	63.5V AC	J Ó
	110V AC	К 0
	220V AC	L 0
	240V AC	M 0
	Back emf suppression diode	
	Not Fitted	Ó
	Fitted	1



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement



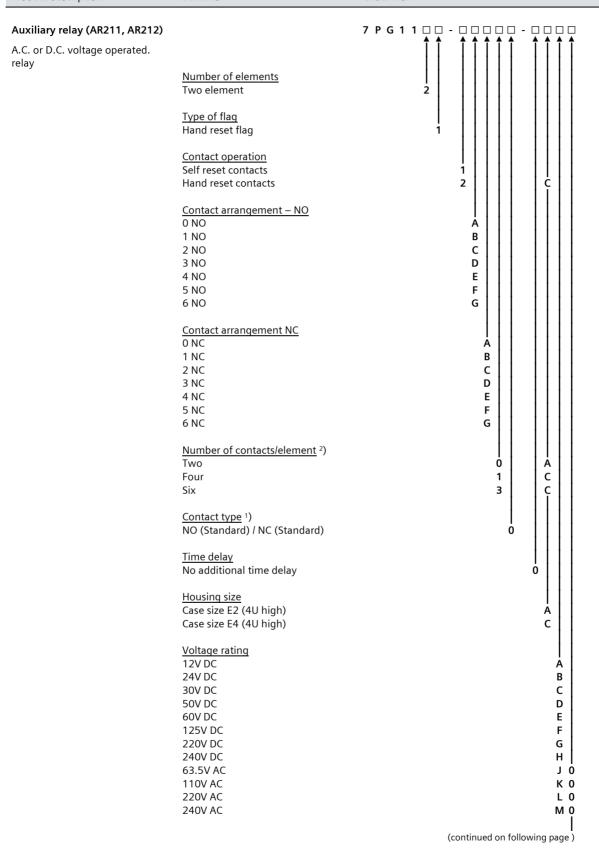


Product description	Variants	Order No.
Auxiliam relay (AP114)		7 P G 1 1 00 - 00000 - 0000
Auxiliary relay (AR114)		/ P G T T L L L L L L L L L L L L L L L L L
(continued from previous page)	Back emf suppression diode	
	Not Fitted	Ó
	Fitted	1



¹⁾ Hand reset contacts are fitted as 2NO, 2NC or 1NO/1NC, remaining contacts are self reset in any combination

²) Number of contacts must match selected contact arrangement





Product description	Variants	Order No.
Auxiliary relay (AR211, AR212)		7 P G 1 1 🗆 - 🗆 🗆 🗖
(continued from previous page)	<u>Back emf suppression diode</u> Not Fitted Fitted	



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR211T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Two element Type of flag Hand reset flag Contact operation Self reset contacts Contact arrangement - NO 0 NO 1 NO В 2 NO C D 3 NO 4 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC Number of contacts/element 2) Two Ó Four 3) Contact type 1) NO (Standard) / NC (Standard) ò Time delay T1 (up to 100ms) - Delay on de-energisation 2 T2 (101 to 200ms) - Delay on de-energisation T3 (201 to 300ms) - Delay on de-energisation 3 T4 (301 to 400ms) - Delay on de-energisation 4 Housing size Case size E2 (4U high) Α c Case size E4 (4U high) Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε F 125V DC 220V DC G 240V DC Back emf suppression diode Not Fitted Fitted

- 1) Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.
- 2) Number of contacts must match selected contact arrangement
- Four contact arrangements may only have a time delay of T1, T2 or T3



Auxiliary relay (AR212T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Two element Type of flag Hand reset flag Contact operation Hand reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC Number of contacts/element 2) Two Ó Four Contact type 1) NO (Standard) / NC (Standard) Time delay T6 (50ms max) - Delay on energisation **Housing size** ċ Case size E4 (4U high) Voltage rating 12V DC В 24V DC 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Н Back emf suppression diode Not Fitted

Fitted



¹⁾ Heavy duty contact arrangements available at extra cost. Refer Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR212SB) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay with series break contact to reduce relay burden to zero after. Number of elements operation Two element Type of flag Hand reset flag **Contact operation** Hand reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Ε 5 NO Contact arrangement NC 0 NC 1 NC В C 2 NC 3 NC D 4 NC Ε F 5 NC 6 NC G Number of contacts/element 2) Two 0 Four 1 Six Contact type 1) NO (Standard) / NC (Standard / 1 SB) Time delay No additional time delay **Housing size** Case size E4 (4U high) Ċ Voltage rating 12V DC 24V DC В 30V DC c 50V DC D Ε 60V DC F 125V DC G 220V DC 240V DC Н 63.5V AC ΙÓ Κ 0 110V AC 220V AC L 0 240V AC M 0

-) One NO contact allocated for series break
- 2) Number of contacts must match selected contact arrangement

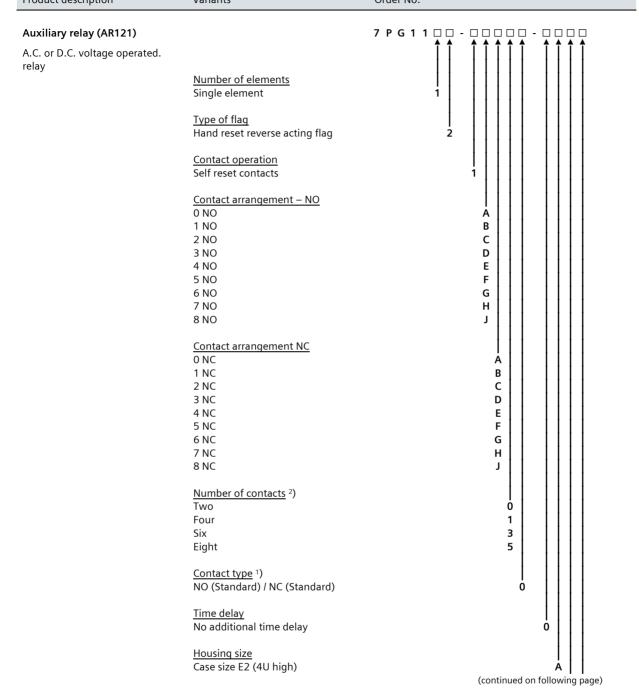
Back emf suppression diode

Not Fitted

Fitted



Ó





Product description	Variants	Order No.
Auxiliary relay (AR121)		7 P G 1 1
(continued from previous page)	<u>Voltage rating</u>	
	12V DC 24V DC 30V DC	A B C
	50V DC 50V DC 60V DC	D E
	125V DC 220V DC	F G
	240V DC 63.5V AC 110V AC	к о н
	220V AC 240V AC	L 0 M 0
	Back emf suppression diode Not Fitted	
	Fitted	1



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR121T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Single element Type of flag Hand reset reverse acting flag Contact operation Self reset contacts Contact arrangement - NO 0 NO 1 NO В 2 NO C D 3 NO 4 NO Ε 5 NO F G 6 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC 5 NC F G 6 NC Number of contacts 2) Two 0 Four 3) 1 Six 4) 3 Contact type 1) NO (Standard) / NC (Standard) Time delay T1 (up to 100ms) - Delay on de-energisation T2 (101 to 200ms) - Delay on de-energisation 2 3 T3 (201 to 300ms) - Delay on de-energisation T4 (301 to 400ms) - Delay on de-energisation 4 **Housing size** Case size E2 (4U high) Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Back emf suppression diode Not Fitted Fitted

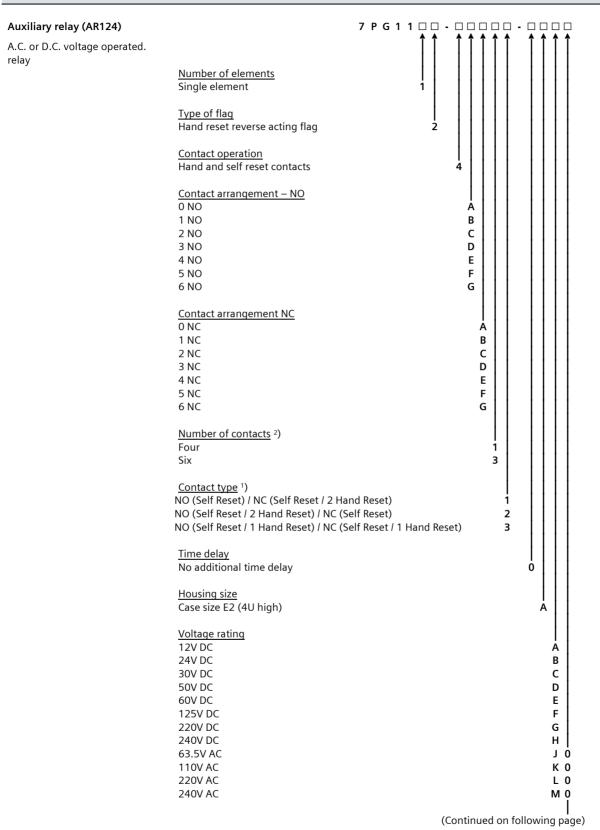


¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Four contact arrangements may only have a time delay of T1, T2 or T3

Six contact arrangements may only have a time delay of T1 or T2





Product description	Variants	Order No.
Auxiliary relay (AR124)		7 P G 1 1 🗆 - 🗆 🗆 🗆 - 🗖
(continued from previous page)	Back emf suppression diode	Ī
	Not Fitted	Ó
	Fitted	1



¹⁾ Hand reset contacts are fitted as 2NO, 2NC or 1NO/1NC, remaining contacts are self reset in any combination

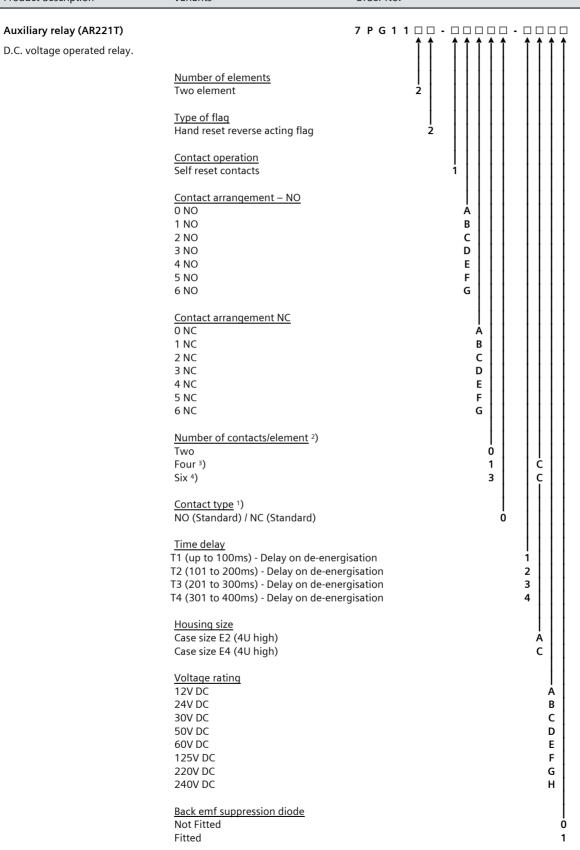
²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR221) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 A.C. or D.C. voltage operated. Number of elements relay Two element Type of flag Hand reset reverse acting flag **Contact operation** Self reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C 3 NO D 4 NO Ε 5 NO F 6 NO G Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D 4 NC Ε F 5 NC 6 NC G Number of contacts/element 2) Two 0 Α Four C 1 Six C Contact type 1) NO (Standard) / NC (Standard) Time delay No additional time delay Ó **Housing size** Case size E2 (4U high) Α c Case size E4 (4U high) Voltage rating 12V DC 24V DC В 30V DC C 50V DC D Ε 60V DC 125V DC F 220V DC G 240V DC Н 63.5V AC JÓ 110V AC K 0 220V AC L 0 M 0 240V AC Back emf suppression diode Not Fitted Ó Fitted



Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

Number of contacts must match selected contact arrangement



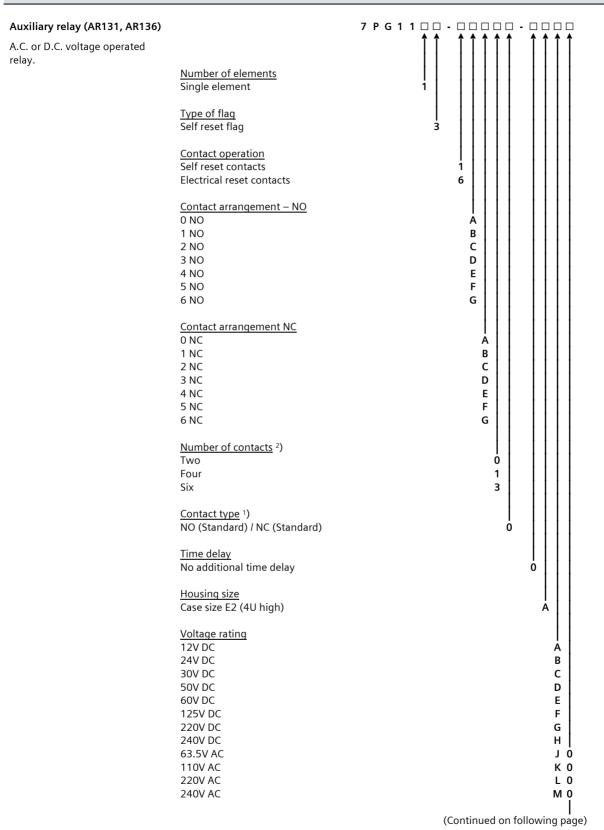
Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed 1) there please contact the factory.

Number of contacts must match selected contact arrangement

Four contact arrangements may only have a time delay of T1, T2 or T3



Six contact arrangements may only have a time delay of T1 or T2



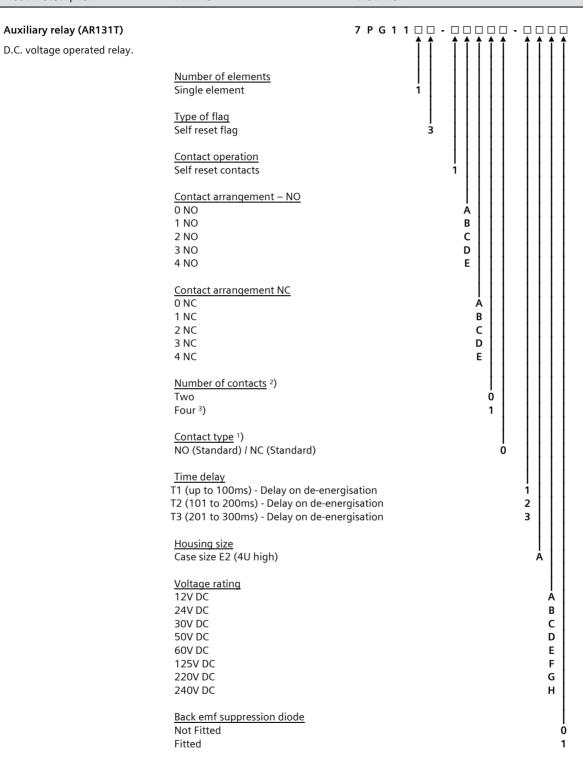


Product description	Variants	Order No.
Auxiliary relay (AR131, AR136)		7 P G 1 1
(continued from previous page)	Back emf suppression diode Not Fitted Fitted	



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

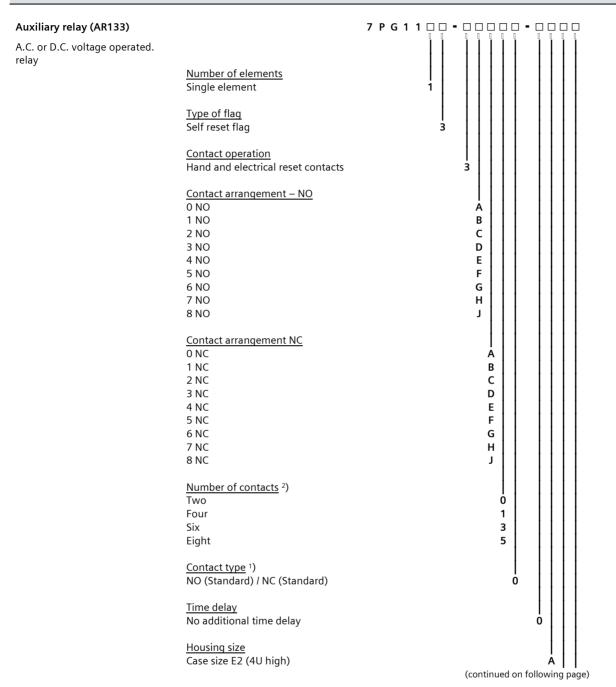




¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

³⁾ Four contact arrangements may only have a time delay of T1 or T 2





Product description	Variants	Order No.
Auxiliary relay (AR133)		7 P G 1 1
(continued from previous page)		ÎÎ
	<u>Voltage rating</u> 12V DC	A
	24V DC	B
	30V DC	c
	50V DC	D
	60V DC	E
	125V DC	F
	220V DC	G
	240V DC	н
	63.5V AC	J Ó
	110V AC	К 0
	220V AC	L 0
	240V AC	M 0
	Back emf suppression diode	
	Not Fitted	Ö
	Fitted	1



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²) Number of contacts must match selected contact arrangement

Auxiliary relay (AR231) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 A.C. or D.C. voltage operated. relay Number of elements Two element Type of flag Self reset flag **Contact operation** Self reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC Number of contacts/element 2) Two Ó Α c Four Contact type 1) NO (Standard) / NC (Standard) ò Time delay No additional time delay 0 Housing size Case size E2 (4U high) Α Case size E4 (4U high) c Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Н 63.5V AC J 0 110V AC Κ 0 220V AC L 0 240V AC M 0 Back emf suppression diode Not Fitted 0 Fitted



¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR231T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Two element Type of flag Self reset flag Contact operation Self reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC Number of contacts/element 2) Two Ó Four 3) Contact type 1) NO (Standard) / NC (Standard) ò Time delay T1 (up to 100ms) - Delay on de-energisation 2 T2 (101 to 200ms) - Delay on de-energisation T3 (201 to 300ms) - Delay on de-energisation **Housing size** Case size E2 (4U high) Α c Case size E4 (4U high) Voltage rating 12V DC Α 24V DC В 30V DC C 50V DC D 60V DC Ε F 125V DC G 220V DC 240V DC н Back emf suppression diode Not Fitted Fitted

- 1) Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.
- 2) Number of contacts must match selected contact arrangement
- 3) Four contact arrangements may only have a time delay of T1 or T2



Auxiliary relay (AR141) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 A.C. or D.C. voltage operated relay Number of elements Single element Type of flag Self reset reverse acting flag Contact operation Self reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Ε 5 NO F G 6 NO Contact arrangement NC 0 NC 1 NC В 2 NC c 3 NC D Ε 4 NC 5 NC F G 6 NC Number of contacts 2) Two 0 Four 1 Six 3 Contact type 1) NO (Standard) / NC (Standard) Time delay No additional time delay **Housing size** Case size E2 (4U high) Voltage rating 12V DC 24V DC В 30V DC c D 50V DC Ε 60V DC 125V DC F 220V DC G 240V DC Н 63.5V AC JÓ 110V AC K 0 220V AC L 0 M 0 240V AC Back emf suppression diode Not Fitted Ó Fitted



Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

Number of contacts must match selected contact arrangement

7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 Auxiliary relay (AR141T) D.C. voltage operated relay. Number of elements Single element Type of flag Self reset reverse acting flag Contact operation Self reset contacts Contact arrangement - NO 0 NO 1 NO В 2 NO c 3 NO D 4 NO Ε Contact arrangement NC 0 NC 1 NC В c 2 NC 3 NC D 4 NC Ε Number of contacts 2) Two Ö Four 3) Contact type 1) NO (Standard) / NC (Standard) Time delay T1 (up to 100ms) - Delay on de-energisation 1 T2 (101 to 200ms) - Delay on de-energisation 2 T3 (201 to 300ms) - Delay on de-energisation 3 **Housing size** Case size E2 (4U high) Α Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Back emf suppression diode Not Fitted Fitted

- 1) Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.
- 2) Number of contacts must match selected contact arrangement
- Four contact arrangements may only have a time delay of T1 or T 2



Auxiliary relay (AR241) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 A.C. or D.C. voltage operated relay. Number of elements Two element Type of flag Self reset reverse acting flag Contact operation Self reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC Number of contacts/element 2) Two Ó Α c Four Contact type 1) NO (Standard) / NC (Standard) ò Time delay No additional time delay 0 Housing size Case size E2 (4U high) Α Case size E4 (4U high) c Voltage rating 12V DC 24V DC В 30V DC C 50V DC D 60V DC Ε 125V DC F 220V DC G 240V DC Н 63.5V AC J 0 110V AC Κ 0 220V AC L 0 240V AC M 0 Back emf suppression diode

Not Fitted

Fitted



0

¹⁾ Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.

²⁾ Number of contacts must match selected contact arrangement

Auxiliary relay (AR241T) 7 P G 1 1 🗆 🗆 - 🗆 🗆 🗆 - 🗆 🗆 🗆 D.C. voltage operated relay. Number of elements Two element Type of flag Self reset reverse acting flag Contact operation Self reset contacts Contact arrangement - NO 0 NO В 1 NO 2 NO C D 3 NO 4 NO Contact arrangement NC 0 NC 1 NC В 2 NC C 3 NC D Ε 4 NC Number of contacts/element 2) Two Ó Four 3) Contact type 1) NO (Standard) / NC (Standard) ò Time delay T1 (up to 100ms) - Delay on de-energisation 2 T2 (101 to 200ms) - Delay on de-energisation T3 (201 to 300ms) - Delay on de-energisation **Housing size** Case size E2 (4U high) Α c Case size E4 (4U high) Voltage rating 12V DC Α 24V DC В 30V DC C 50V DC D 60V DC Ε F 125V DC G 220V DC 240V DC н Back emf suppression diode Not Fitted Fitted

- 1) Heavy duty contact arrangements available at extra cost. Please see separate non-MLFB list for already defined heavy duty contact arrangements. For arrangements not listed there please contact the factory.
- 2) Number of contacts must match selected contact arrangement
- 3) Four contact arrangements may only have a time delay of T1 or T2





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