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7PG18 - TR-A

High speed tripping Relay

Answers for energy

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7PG18 – TR-A

High speed tripping relay



Features

High speed, positive action
Can be supplied in modular and drawout type case
Robust design for a long, reliable, service life

Description

Type TR-A relays are a range of volt age operated multi-contact attracted armature relays designed to both IEC 255-5 and to BS142. A wide range of models is available to meet the requirements of the electric supply industry.

TR-A2 – High burden to ESI 48-4 EB2 & NGTS 3.6.15, ESI 2.

Table 1 shows the standard relays available.

High burden, TR-A2 series

High burden relays with immunity to capacitance discharge currents. They are also suitable for certain applications where they are remote from the initiation signal. A high burden also permits reliable operation of current operated series repeat relays. TR relays can be provided with a time delayed economy feature, either instantaneous or time delayed, see Table 1.

Technical Information

TR-A2 series relays

Operating time 12.5ms at rated voltage
Rated voltage Vn 24V, 30V, 48V, 125V, 240Vd.c
Note. 24V and 240V ratings are not part of ESI 48-4
Operating range 50% to 120% of rated voltage

Operating coils of self-reset and economy cut-off relays are rated at 120% of rated voltage. All other operate and reset coils are short time rated well in excess of the operating time of their cut-off contacts. Self-reset relays will reset at not less than 5% rated voltage.

Nominal burdens

Rated Voltage V.d.c	TR2 -
30	43
48	52
125	<150
Reset coil	50

Relays with economy circuits reduce to approximately 14W

Type	No. of contacts	Contact Reset	Operating coil cut-off	Spec	Burden	Case size
TR-A212	20	Self	Economy	EB2	High	4
TR-A214	20	Self	Economy 2s delay	EB2	High	4
TR-A221	20	Hand	Instantaneous	EB2	High	4
TR-A223	20	Hand	40/60ms delay	EB2	High	4
TR-A231	20	Electrical	Instantaneous	EB2	High	4
TR-A233	20	Electrical	40/60ms delay	EB2	High	4
TR-A241	20	Hand and Electrical	Instantaneous	EB2	High	4
TR-A243	20	Hand and Electrical	40/60ms delay	EB2	High	4

Table 1

Ratings

Make and carry continuously:
1250VAa.c. or 1250Wd.c. within limits of 660V and 5A
Make and carry for 3 seconds:
7500VAa.c. or 7500Wd.c. within limits of 660V and 30A

Break;

1250VAa.c. or 100W (resistive) d.c. or 50W (inductive) d.c. within limits of 250V and 5A
Maximum rate of operation, 600 per hour
Indication
TR-A2 relays have a hand reset mechanical flag indicator

Environmental

Temperature

IEC68-2-1/2 and BS2011 (1977)

Operating -10°C to +55°C

Storage -25°C to +70°C

Humidity IEC 68-2-3

56 days at 95% RH and 40°C

Vibration IEC 255-21-1 Class I.

Shock and bump

IEC 255-21-2 and BS142, 1.5.2 (1989). Relays meet the requirements with respect to shock and bump testing for Class 1 severity.

Operational/mechanical life

Relays will withstand in excess of 10,000 operations, within the maximum contact loading specified, at a rate of 600 operations per hour.

Insulation

Relays will withstand:

5kV 1.2/50µs waveform as IEC 255-4

2kV rms 50Hz for 1minute (2.5kV for 1s) between all terminals and earth

1kV rms 50Hz for 1 minute across normally open contacts to IEC 255-5 and BS142

Ordering Information – 7PG18

Product description	Variants	Order No.
Tripping relay		7 P G 1 8 2 1 - 2 □ □ 8 0 - 1 C □ 0
EPSILON		↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
TR-A212, TR-A214 (20 CONTACT)		8 8 6 2 7 1 8 2 4
	<u>Alpha range</u>	
	TR-A Tripping	
	<u>TR-A Tripping</u>	
	TR-A2-- : high burden, EB2	
	<u>Contact operation</u>	
	Self reset contacts	
	<u>Operating coil cut-off</u>	
	Economy	
	Economy and 2 second delay on reset	
	<u>Contact arrangement - NO</u>	
	0 NO	9 A W
	1 NO	B V
	2 NO	C U
	3 NO	D T
	4 NO	E S
	5 NO	F R
	6 NO	G Q
	7 NO	H P
	8 NO	J N
	9 NO	K M
	10 NO	L L
	11 NO	M K
	12 NO	N J
	13 NO	P H
	14 NO	Q G
	15 NO	R F
	16 NO	S E
	17 NO	T D
	18 NO	U C
	19 NO	V B
	20 NO	W A
	<u>Contact arrangement NC</u>	
	0 NC	10 A
	1 NC	B
	2 NC	C
	3 NC	D
	4 NC	E
	5 NC	F
	6 NC	G
	7 NC	H
	8 NC	J
	9 NC	K
	10 NC	L
	11 NC	M
	12 NC	N
	13 NC	P
	14 NC	Q
	15 NC	R

(Continued on following page)

Product description	Variants	Order No.
Tripping relay		□ 8 0 - 1 C □ 0
EPSILON	16 NC	S
TR-A212, TR-A214 (20 CONTACT)	17 NC	T
	18 NC	U
	19 NC	V
	20 NC	W
	<u>Number of contacts</u>	11
	Twenty	8
	<u>Contact type</u>	12
	NO (Standard) / NC (Standard)	0
	<u>Type of flag</u>	13
	Hand reset flag	1
	<u>Housing size</u>	14
	Case size E4 (4U high)	C
	<u>Voltage Rating</u>	15
	24V dc	B
	30V dc	C
	50V dc	D
	125V dc	F
	240V dc	H
	<u>Back emf suppression diode</u>	16
	Not Fitted	0

Ordering Information – 7PG18

Product description	Variants	Order No.
Tripping relay		7 P G 1 8 2 2 - 1 □ □ 8 0 - 1 C □ 0
EPSILON TR-A221 (20 CONTACT)		↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
	<u>Alpha range</u> TR-A Tripping	5 8
	<u>TR-A Tripping</u> TR-A2-- : high burden, EB2	6 2
	<u>Contact operation</u> Hand reset contacts	7 2
	<u>Operating coil cut-off</u> Instantaneous	8 1
	<u>Contact arrangement - NO</u>	9
	0 NO	A W
	1 NO	B V
	2 NO	C U
	3 NO	D T
	4 NO	E S
	5 NO	F R
	6 NO	G Q
	7 NO	H P
	8 NO	J N
	9 NO	K M
	10 NO	L L
	11 NO	M K
	12 NO	N J
	13 NO	P H
	14 NO	Q G
	15 NO	R F
	16 NO	S E
	17 NO	T D
	18 NO	U C
	19 NO	V B
	20 NO	W A
	<u>Contact arrangement NC</u>	10
	0 NC	A
	1 NC	B
	2 NC	C
	3 NC	D
	4 NC	E
	5 NC	F
	6 NC	G
	7 NC	H
	8 NC	J
	9 NC	K
	10 NC	L
	11 NC	M
	12 NC	N
	13 NC	P
	14 NC	Q
	15 NC	R

(Continued on following page)

Product description	Variants	Order No.
Tripping relay		□ 8 0 - 1 □ C 0
EPSILON TR-A221 (20 CONTACT)	16 NC	S
	17 NC	T
	18 NC	U
	19 NC	V
	20 NC	W
	<u>Number of contacts</u>	11
	Twenty	8
	<u>Contact type</u>	12
	NO (Standard) / NC (Standard)	0
	<u>Type of flag</u>	13
	Hand reset flag	1
	<u>Housing size</u>	14
	Case size E4 (4U high)	C
	<u>Voltage Rating</u>	15
	24V dc	B
	30V dc	C
	50V dc	D
	125V dc	F
	240V dc	H
	<u>Back emf suppression diode</u>	16
	Not Fitted	0

Ordering Information – 7PG18

Product description	Variants	Order No.
Tripping relay		7 P G 1 8 2 3 - 1 □ □ 8 0 - 1 C □ 0
EPSILON TR-A231 (20 CONTACT)		↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
	<u>Alpha range</u> TR-A Tripping	5 8
	<u>TR-A Tripping</u> TR-A2-- : high burden, EB2	6 2
	<u>Contact operation</u> Electrical reset contacts	7 3
	<u>Operating coil cut-off</u> Instantaneous	8 1
	<u>Contact arrangement - NO</u>	9
	0 NO	A W
	1 NO	B V
	2 NO	C U
	3 NO	D T
	4 NO	E S
	5 NO	F R
	6 NO	G Q
	7 NO	H P
	8 NO	J N
	9 NO	K M
	10 NO	L L
	11 NO	M K
	12 NO	N J
	13 NO	P H
	14 NO	Q G
	15 NO	R F
	16 NO	S E
	17 NO	T D
	18 NO	U C
	19 NO	V B
	20 NO	W A
	<u>Contact arrangement NC</u>	10
	0 NC	A
	1 NC	B
	2 NC	C
	3 NC	D
	4 NC	E
	5 NC	F
	6 NC	G
	7 NC	H
	8 NC	J
	9 NC	K
	10 NC	L
	11 NC	M
	12 NC	N
	13 NC	P
	14 NC	Q
	15 NC	R

(Continued on following page)

Product description	Variants	Order No.
Tripping relay		□ 8 0 - 1 C □ 0
EPSILON TR-A231 (20 CONTACT)	16 NC	S
	17 NC	T
	18 NC	U
	19 NC	V
	20 NC	W
	<u>Number of contacts</u>	11
	Twenty	8
	<u>Contact type</u>	12
	NO (Standard) / NC (Standard)	0
	<u>Type of flag</u>	13
	Hand reset flag	1
	<u>Housing size</u>	14
	Case size E4 (4U high)	C
	<u>Voltage Rating</u>	15
	24V dc	B
	30V dc	C
	50V dc	D
	125V dc	F
	240V dc	H
	<u>Back emf suppression diode</u>	16
	Not Fitted	0

Ordering Information – 7PG18

Product description	Variants	Order No.
Tripping relay		7 P G 1 8 2 4 - 1 □ □ 8 0 - 1 C □ 0
EPSILON TR-A241 (20 CONTACT)		↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
	<u>Alpha range</u> TR-A Tripping	5 8
	<u>TR-A Tripping</u> TR-A2-- : high burden, EB2	6 2
	<u>Contact operation</u> Hand and electrical reset contacts	7 4
	<u>Operating coil cut-off</u> Instantaneous	8 1
	<u>Contact arrangement - NO</u>	9
	0 NO	A W
	1 NO	B V
	2 NO	C U
	3 NO	D T
	4 NO	E S
	5 NO	F R
	6 NO	G Q
	7 NO	H P
	8 NO	J N
	9 NO	K M
	10 NO	L L
	11 NO	M K
	12 NO	N J
	13 NO	P H
	14 NO	Q G
	15 NO	R F
	16 NO	S E
	17 NO	T D
	18 NO	U C
	19 NO	V B
	20 NO	W A
	<u>Contact arrangement NC</u>	10
	0 NC	A
	1 NC	B
	2 NC	C
	3 NC	D
	4 NC	E
	5 NC	F
	6 NC	G
	7 NC	H
	8 NC	J
	9 NC	K
	10 NC	L
	11 NC	M
	12 NC	N
	13 NC	P
	14 NC	Q
	15 NC	R

(Continued on following page)

Product description	Variants	Order No.
Tripping relay		□ 8 0 - 1 C □ 0
EPSILON TR-A241 (20 CONTACT)	16 NC	S
	17 NC	T
	18 NC	U
	19 NC	V
	20 NC	W
	<u>Number of contacts</u>	11
	Twenty	8
	<u>Contact type</u>	12
	NO (Standard) / NC (Standard)	0
	<u>Type of flag</u>	13
	Hand reset flag	1
	<u>Housing size</u>	14
	Case size E4 (4U high)	C
	<u>Voltage Rating</u>	15
	24V dc	B
	30V dc	C
	50V dc	D
	125V dc	F
	240V dc	H
	<u>Back emf suppression diode</u>	16
	Not Fitted	0

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