

RELAYS - SERIES 30GENERAL PURPOSE TYPEFEATURES

- Low Reluctance core/yoke junction.
- Positive lock cover.
- Brass or phosphor bronze spring blades.
- Large contact area.
- Single or twin contacts.
- 2, 4 or 6 changeovers.
- Standard, P.C. in line or 0.1 matrix mounting.

DESCRIPTION

This range of General Purpose Relays are fully interchangeable with all other British and Continental types, but incorporate significant improvements over existing relays. These relays are offered with up to 6 changeover contacts and a range of coils up to 110V. Conventional wired or printed circuit sockets are available.

RESISTANCE TO CLIMATIC CONDITIONS

Up to 40°C maximum - 80% RH

Up to 80°C maximum - 60% RH

SHOCK - 50G

VIBRATION AT .030" AMPLITUDE

Up to 55 CPS

MECHANICAL LIFE (CONTACTS UNLOADED)

10⁸ operations.

SWITCHING SPEED* - 25 per sec. maximum

OPERATE TIME* - 10 ms

RELEASE TIME* - 5 ms

*Depending on the operating conditions set by coil and circuit.

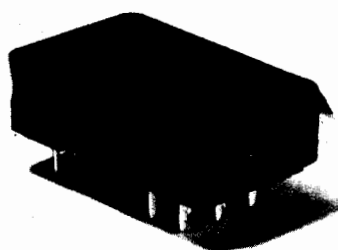
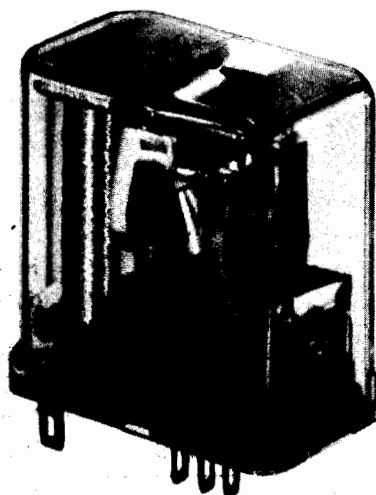
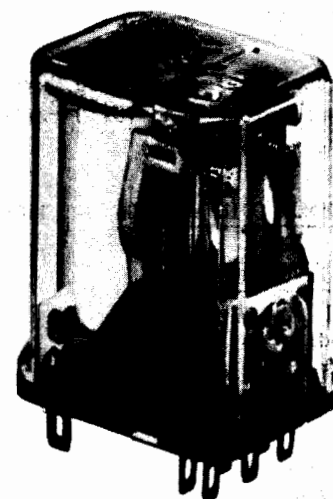
COIL

Power loading of coil up to an ambient of 50°C 1.0W maximum.

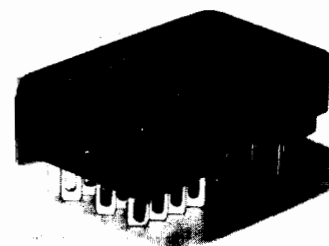
MAXIMUM PERMISSIBLE AMBIENT TEMPERATURE

85°C

INDUCTANCE /



PCB SOCKET



SOLDER TAG SOCK

RELAYS - SERIES 30 (contd.)**CONTACT MATERIALS TABLE 3**

CONTACT MATERIALS		TABLE 3			Switching Capacity		Characteristics and Special Adjustments
Code	Material		Supply Volts	Current	Power		
Single Contacts							
A	Fine Silver	d/c	110	1A	30 Watts	High conductivity but tends to tarnish in adverse conditions	
		a/c	120	2.5A	100 V/A		
B	Fine Silver—Gold Plated 10µ	d/c	110	0.1A	10 Watts	Resistant to tarnish at low power usage	
		a/c	120	0.25A	30 V/A		
C	Silver/Palladium 70/30	d/c	110	1A	50 Watts	Hard, arc and wear resistant. Will tarnish in organic vapours.	
		a/c	120	2.5A	100 V/A		
D	Platinum/Silver 3/97	d/c	110	1A	30 Watts	As 'A' but more resistant to tarnish	
		a/c	120	2.5A	100 V/A		
E	Gold/Nickel 95/5	d/c	110	0.1A	10 Watts	Arc, wear and tarnish resistant in all atmospheres	
		a/c	120	0.25A	30 V/A		
F	Silver/Cadmium Oxide 90/10	d/c	110	3A	80 Watts	Suitable for inductive (low current) loads. Contact pressures 10 grms and gaps 0.010" (0.25 mm)	
		a/c	120	3A	100 V/A		
G	Fine Silver—Gold Flashed (Large contact)	d/c	110	5A	50 Watts	Suitable for resistive (higher current) loads. Contact pressures 10 grms and gaps 0.010" (0.25 mm)	
		a/c	120	5A	100 V/A		
H	Silver/Cadmium Oxide 90/10	d/c	110	5A	100 Watts	Suitable for inductive (higher current) loads. Contact pressures 10 grms and gaps 0.010" (0.25 mm)	
		a/c	120	5A	120 V/A		
Twin Contacts							
A	{ As for single contacts above	As for single contacts above				As for single contacts above with improved contact reliability	
B							
E							
C	Silver/Palladium 40/60	As for single contacts above				As for single contacts above with improved contact reliability	
Heavy Duty							
A	Hard Silver	d/c	250	3A	80 Watts	Suitable for higher voltage applications	
	Gold Flashed	a/c	250	3A	200 V/A		

COIL INFORMATION TABLE 4

Recommended minimum working volts and maximum coil volts at nominal resistance at 20°C.

Coil code	Resistance ±10%	2C	2C HD 2CT 4C	4CT 6C	6CT	Max. V all relay
110	* 15000	42.5	65.2	88.4	120.0	177.5
90	* 9000	33.2	51.0	69.1	93.9	136.2
70	* 5800	26.8	41.1	55.8	75.7	109.7
60	* 3600	21.1	32.4	43.9	59.6	86.4
48	2500	17.3	26.5	36.0	48.8	72.0
44	1800	14.3	21.9	29.7	40.4	59.6
36	1250	11.5	17.7	24.0	32.6	51.5
30	1000	10.9	16.7	22.7	30.8	44.5
27	700	8.85	13.6	18.4	25.0	36.2
24	600	8.51	13.1	17.7	24.1	34.5
21	430	6.92	10.6	14.4	19.5	28.2
18	280	5.52	8.47	11.5	15.6	23.6
16	230	4.72	7.25	9.83	13.3	21.4
12	185	4.46	6.84	9.28	12.6	19.5
10	130	3.62	5.56	7.54	10.2	16.05
9	90	2.96	4.54	6.16	8.36	13.35
6	52	2.29	3.52	4.77	6.48	10.25
5	41	2.01	3.09	4.19	5.68	9.04
4.5	25	1.56	2.39	3.25	4.41	7.05
3	16	1.18	1.81	2.46	3.34	5.64

* Resistance tolerance ±15%.

Double wound coils available on request.

RELAYS - SERIES 30 (contd.)

The resistance varies according to the ambient temperature as follows:

Temperature °C	-55	-30	-5	+7.5	+20	+32.5	+45	+70	+85
Resistance change %	-30%	-20%	-10%	-5%	0	+5%	+10%	+20%	+26%

ORDERING INFORMATION TABLE 5

RELAY TYPE		CONTACT DESCRIPTION			TERMINATIONS			
Silver Plated Terminals	Gold Flashed Terminals	Single Contact	Twin Contact	Heavy Duty	Solderable Plug In or Push On	Printed In Line	Circuit 0.1" Matrix	Fixing Thread
2 changeover size								
301	311	2C	2CT	—	Yes	—	—	M 2.3
303	313	2C	2CT	—	—	Yes	—	—
333	343	2C	2CT	—	—	—	Yes	—
307	317	2C	2CT	—	Yes	—	—	3-48 NC
4 changeover size								
302	312	4C	4CT	2CHD	Yes	—	—	M 2.3
304	314	4C	4CT	2CHD	—	Yes	—	—
334	344	4C	4CT	2CHD	—	—	Yes	—
308	318	4C	4CT	2CHD	Yes	—	—	3-48 NC
6 changeover size								
309	319	6C	6CT	4CHD	Yes	—	—	M 2.3
329	339	6C	6CT	4CHD	—	Yes	—	—
349	359	6C	6CT	—	Yes	—	—	3-48 NC

EXAMPLE 303/2CT/48A See TABLE 5 - 303 - RELAY TYPE - printed circuit in-line tag
 See TABLE 5 - 2CT - CONTACT ACTION - 2 changeover, twin
 See TABLE 4 - 48 - COIL - 2,500 ohm
 See TABLE 3 - A - CONTACT MATERIAL - Fine Silver, Gold Flashed.

Please use this Table 5 to check the type Relay you require is available in the form you require.

Note: 304/2C with solderable terminations is not available.
 The closest alternative would be 301/2C.

RELAYS - SERIES 301/302

PYE PRODUCT CODE

302 / 2C HD / 12A

1 2 3 4 5 6

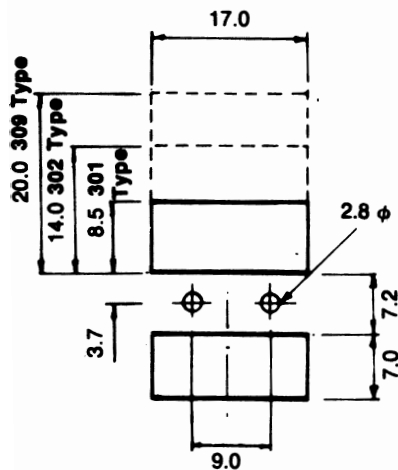
1. Series Type.
2. Size and termination type.
3. Poles: C = changeover.
4. May be omitted. HD = heavy duty.
5. Coil code - refer to Table 2.
6. Contact material - refer Table 1.

Ex stock types available below - other types available on indent with min. order value.

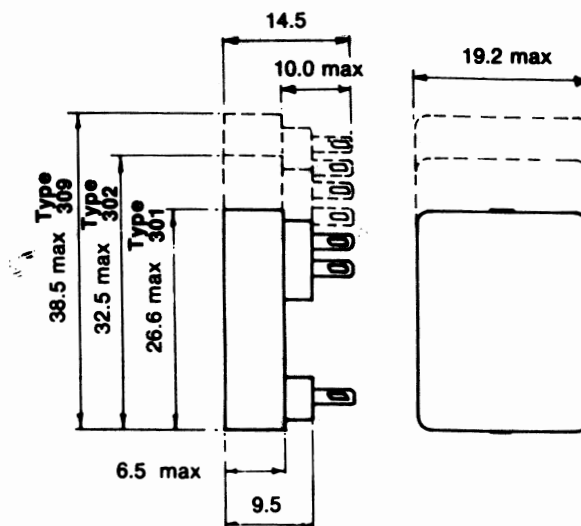
<u>Philips Ordering Code</u>	<u>Category</u>	<u>Pye Code</u>	<u>Product Marking</u>	<u>e</u>	<u>New Supplier Cod</u>
4823 280 22401	1	301/2C/9A	30/642/252/594		30 642 252 594
4823 280 22414	1	301/2C/12A	S590101		30 642 252 624
4823 280 22402	1	301/2C/18A	30/642/252/684		30 642 252 684
4823 280 22403	1	301/2C/30A	(S590545 (VP2 CAB 1000E		30 642 252 804
4823 280 22404	1	Socket	Solder or wire in type for 301 Relay		S590130
4823 280 22405	1	Socket	PCB type for 301 Relay		S590538
4823 280 22406	1	302/4C/6A	(S590120 (VP4 CAB6 52E		30 644 452 564
4823 280 22411	1	302/4C/16A	VP4 PB CAB 13 230E		30 644 452 664
4823 280 22407	1	302/4C/18A	(S590563 (VP4 CAB 13 230E		30 644 452 684
4823 280 22408	1	302/4C/30A	(S602017 (Varley 532 1000E		30 644 452 804
4823 280 22501	1	302/2CHD/6A	(S590110 (VP2 MD CAB6 52E (Varley 601/52/6		30 644 255 564
4823 280 22507	1	302/2CHD/16A	VP2 HD CAB 13 230E		30 644 255 664
4823 280 22502	1	302/2CHD/18A	(S591027 (VP2 HD CAB 13 230E		30 644 255 684
4823 280 22503	1	302/2CHD/30A	VP2 HD CAB 1000E		30 644 255 804
4823 280 22506	1	302/6M/30A			30 644 642 804
4823 280 22504	1	Socket	Solder or wire in type for 302 Relay		S590131
4823 280 22505	1	Socket	PCB type for 302 Relay		S590539

Socket Dimensions

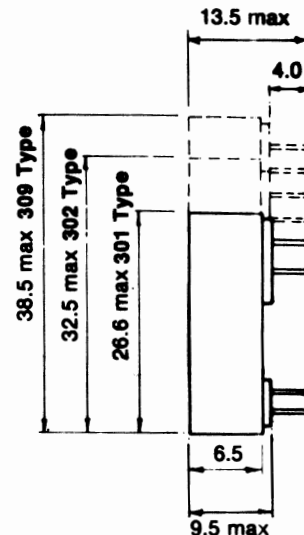
Panel cutout (socket)



Wire terminations

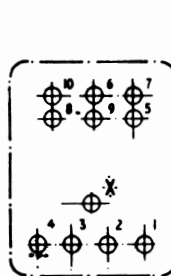
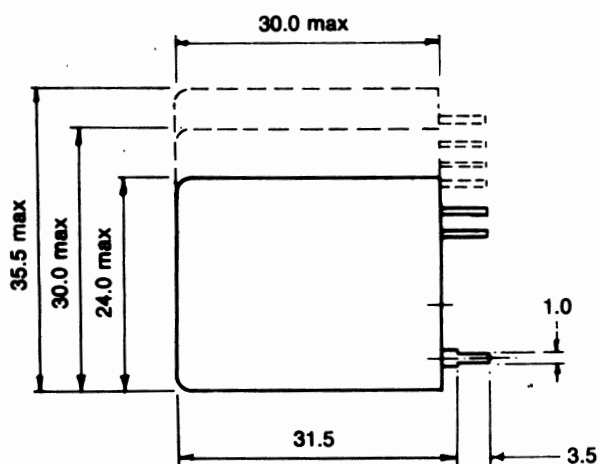


Printed circuit terminations

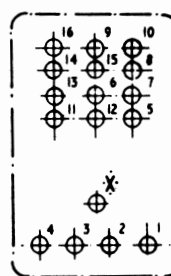


Below are details of other types of Series 30 Relays available on indent.

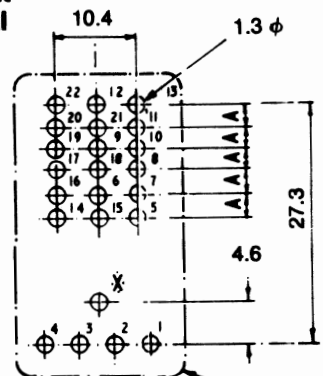
In line printed circuit terminations original



Type 303
10 terminations



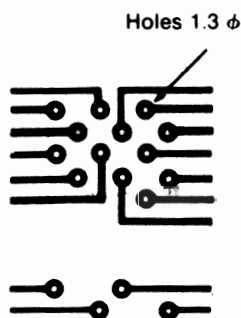
Type 304
16 terminations



Type 329
22 terminations

Outline of relay
A=2.7 B=3.9

Typical PC layout
for type 302 PC socket
or type 334 Relay.



Holes 1.3 ϕ

All dimensions in millimetres

RELAYS - SERIES 30 (contd.)

Panel cutout (relay)

INDUCTANCE (approx.)

Armature released $9 \times 10^{-8} \times N^2 H$

Armature operated $18 \times 10^{-8} \times N^2 H$

(N = No. of turns)

MAXIMUM COIL VOLTAGE - 110V

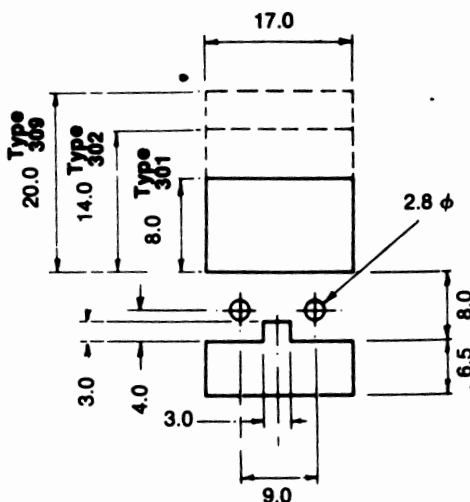
TEST VOLTAGE

Winding to

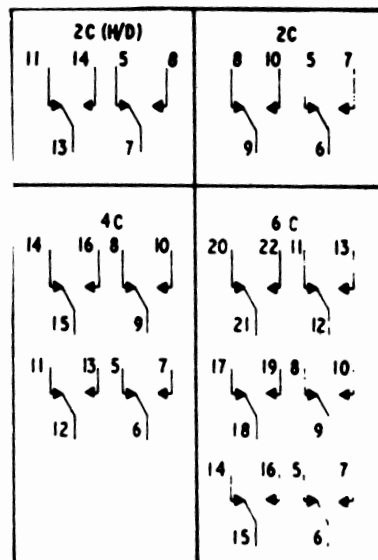
Frame L.D. 500V RMS
H.D. 1000V RMS

Winding to

Winding L.D. 500V RMS
H.D. 500V RMS



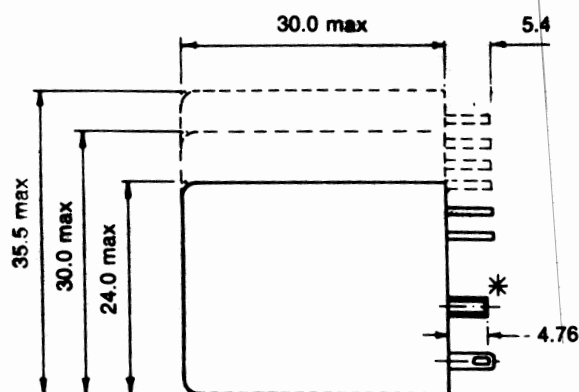
WIRING DIAGRAM



CONTACTS

Adjustments and tests	Single light duty	Twin light duty	Heavy duty
Contact force*	> 7 grms	> 8 grms	> 10 grms
Contact gap*	> 0.008"	> 0.008"	> 0.017"
Life (electrical)	10 million	10 million	1 million
Test Voltage	500V RMS	500V RMS	1000V RMS

*Unless specified otherwise in Contact Material table



*For thread see table

In line wire or plug in terminations

