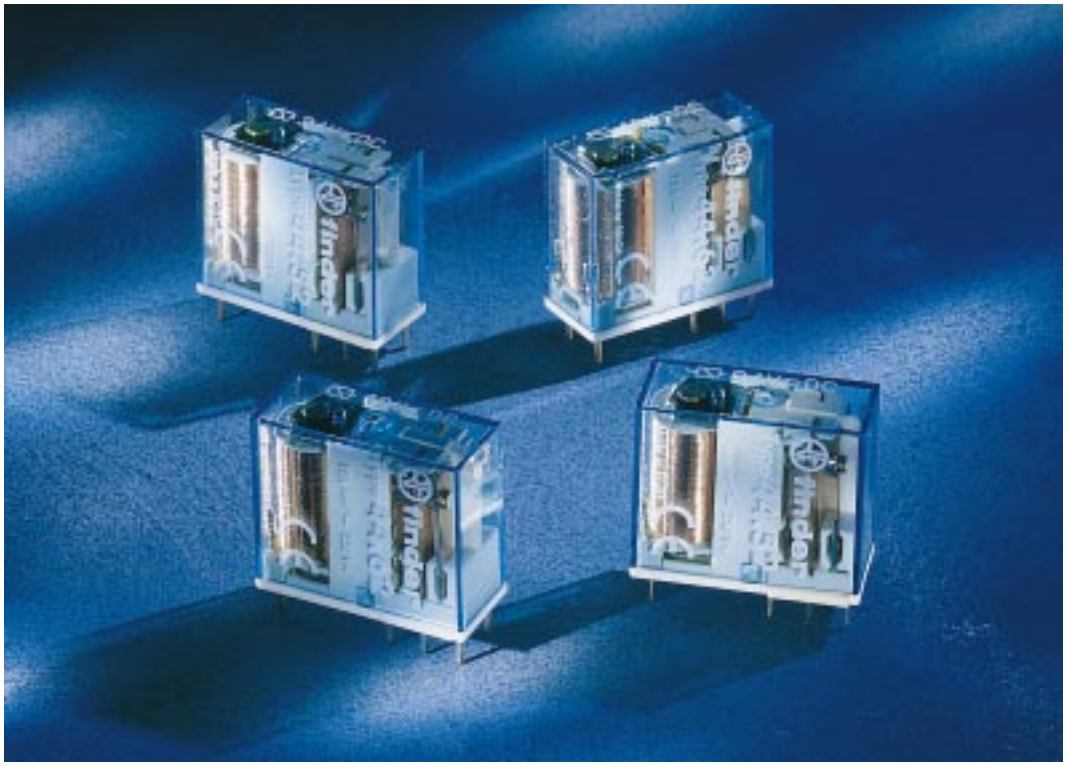
PCB power relays

Order code	Manufacturer code	Description
60-4170	4462.7006.4000	6V 10A DPCO 44.62 SERIES RELAY
60-4172	4462.7012.4000	12V 10A DPCO 44.62 SERIES REL.
60-4174	4462.7024.4000	24V 10A DPCO 44.62 SERIES REL.

Sales: 01206 751166 **Technical: 01206 835555** **Fax: 01206 7551188**
Sales@rapidelec.co.uk **Tech@rapidelec.co.uk** **www.rapidelectronics.co.uk**

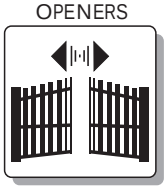
44 SERIES

MINIATURE P.C.B. RELAYS 6-10 A



- a range of miniature P.C.B. relays with 2 CO contacts
- DC and DC sensitive versions available
- "flux - free"
- 0.4 mm thick pins
- sockets and accessories: see 95 and 99 series
- approvals (according to type): IMQ - cUL -RINA - VDE

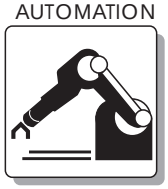
DOOR, GATE OPENERS



WHITE GOODS

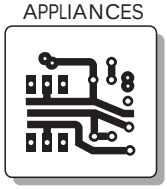
ALARM SYSTEMS

INDUSTRIAL AUTOMATION



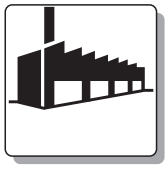
BURNERS

ELECTRONIC APPLIANCES

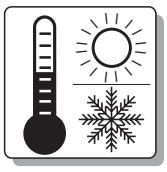


TIMERS

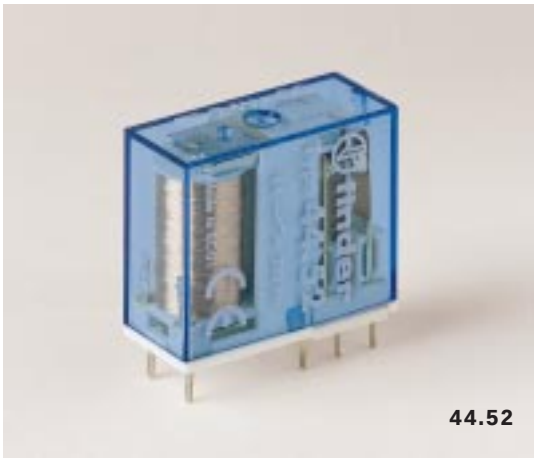
INDUSTRIAL APPLIANCES



THERMAL CONTROLS

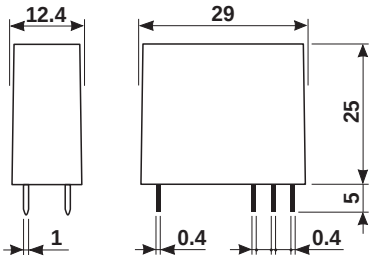


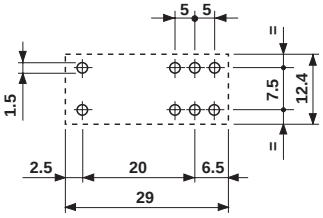
MEDICAL EQUIPMENT

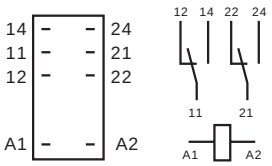


MINIATURE P.C.B. RELAY

TYPE 44.52 2 CO (DPDT) 6 A - 5 mm pinning
- tin plated pins for P.C.B.
- standard contact material: Ag Ni
- ordering information: see page 20

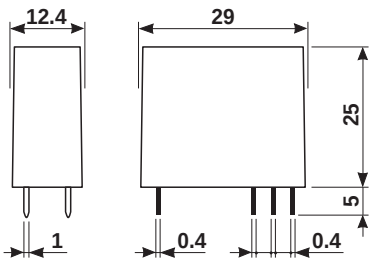


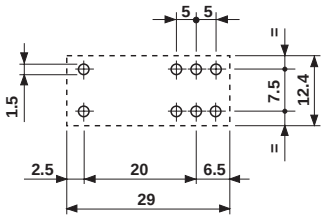


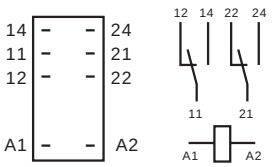


MINIATURE P.C.B. RELAY

TYPE 44.62 2 CO (DPDT) 10 A - 5 mm pinning
- tin plated pins for P.C.B.
- standard contact material: Ag Ni
- option: see coding table page 20
- ordering information: see page 20







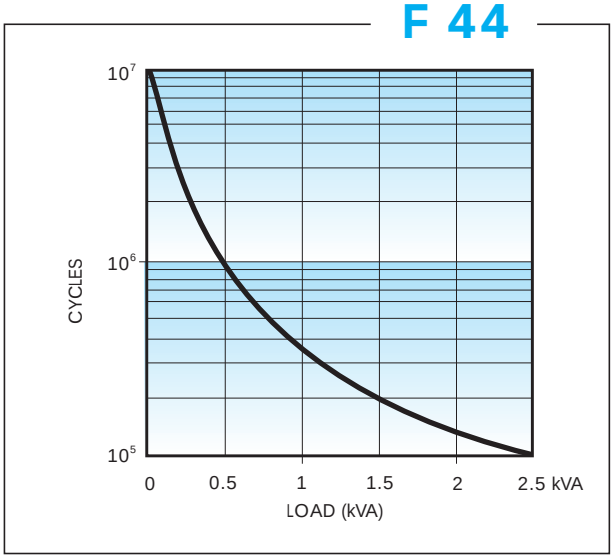
TECHNICAL DATA

DIELECTRIC STRENGTH tested at leakage current ≤ 10 mA for 1 min at 50 Hz	between coil and contacts	4000 V
	between open contacts	1000V
	between adjacent contacts	2000 V
	between frame and live parts	relay without external ground
SURGE TEST (1.2/50 µs) voltage between coil and contacts	6000 V	
INSULATION RESISTANCE	≥ 20 · 10^3 MΩ	
INSULATION GROUP	C 250	
INSULATION DISTANCES	≥ 8 mm between coil and contacts according to VDE 0700	
MECHANICAL LIFE	20 · 10^6 cycles	
MAXIMUM SWITCHING FREQUENCY - without load - at rated load	 36000 cycles/h 900 cycles/h	
AMBIENT TEMPERATURE	– 40 to + 85° C	
PROTECTION CATEGORY OF ENCLOSURES	IP 40	
OPERATE AND RELEASE TIME: - pick-up time (from 0 to U_N) - drop-out time (from U_N to 0)	 ≤ 15 ms (including contact bounce) ≤ 20 ms (including contact bounce)	
TYPE OF DUTY	continuous	
PICK-UP CLASS	C (according to IEC 255)	
DIELECTRIC TEST		
TYPE OF RELAY	all - or - nothing	

CONTACT SPECIFICATION

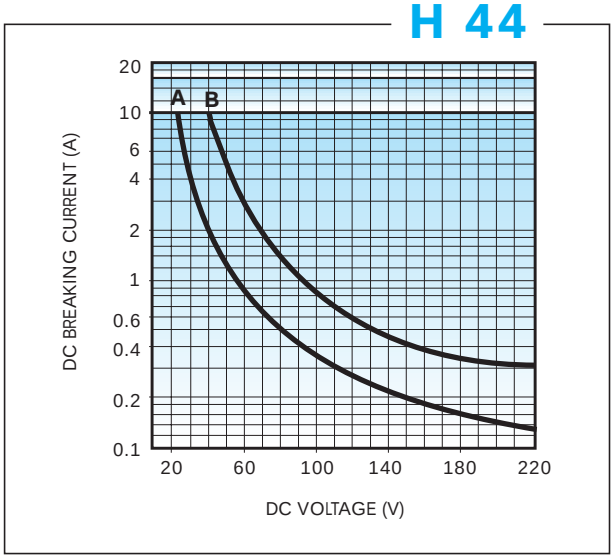
	44.52	44.62
NOMINAL RATE IN AC1	1500 VA	2500 VA
RATED CURRENT	6 A	10 A
MAXIMUM PEAK CURRENT	10 A	20 A
RATED VOLTAGE	250 V AC	250 V AC
MAXIMUM SWITCHING VOLTAGE	400 V AC	400 V AC
BREAKING CAPACITY IN DC1	see diagram H 44	
SINGLE PHASE HP MOTORS RATING	0.185 kW / 0.3 HP	0.37 kW / 0.6 HP
MINIMUM SWITCHING LOAD	300 mVA / 5 V / 5 mA	300 mVA / 5 V / 5 mA
CONTACT RESISTANCE	≤ 50 mΩ	≤ 50 mΩ
STANDARD CONTACT MATERIAL	Ag Ni	Ag Ni

F 44



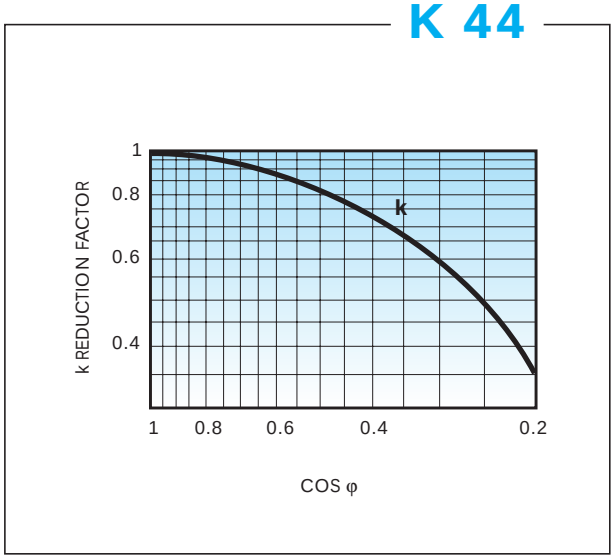
Contact life vs AC1 load at 900 cycles / h.

H 44



Breaking capacity for DC1 load.
A - load applied to 1 contact
B - load applied to 2 contacts in series

K 44



Load reduction factor vs cos φ.

COIL SPECIFICATION

VERSIONS:
DC - direct current
S sensitive direct current with low absorption

	DC	Sensitive DC coil
RATED POWER	0.65 W	0.5 W
MINIMUM POWER	0.35 W	0.25 W
OPERATING RANGE	(0.73 ÷ 1.5) U_N	44.52: (0.73 ÷ 1.75) U_N 44.62: (0.8 ÷ 1.75) U_N
HOLDING VOLTAGE	≤ 0.4 U_N	≤ 0.4 U_N
MUST DROP-OUT VOLTAGE	≥ 0.1 U_N	≥ 0.1 U_N
NOMINAL MAGNETOMOTIVE FORCE	180 A	150 A
THERMAL INSULATION CLASS OF WIRE	F (+155°C)	F (+155°C)
THERMAL RESISTANCE	68 °C/W	68 °C/W

CONTUCTED DISTURBANCE IMMUNITY	BURST (acc. to EN 61000 - 4 - 4) SURGE (acc. to EN 61000 - 4 - 5)	level 4 (4kV) level 3 (2kV)

DC VERSION DATA
(R and I values relate to +20°C. Tolerance of R and I values: ±10%.)

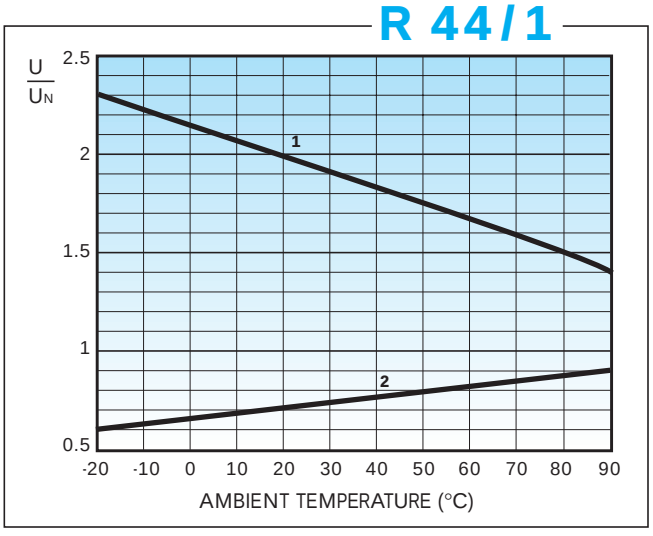
nominal voltage U_N (V)	U min (V)	U max (V)	resistance R (Ω)	nominal coil absorption I (mA)
6	4.4	9	55	109
12	8.8	18	220	55
14	10.2	21	300	47
24	17.5	36	900	27
28	20.5	42	1200	23
48	35	72	3500	14
60	43.8	90	5500	11
110	80.3	165	18000	6.1

SENSITIVE DC VERSION DATA
(R and I values relate to +20°C. Tolerance of R and I values: ±10%.)

nominal voltage U_N (V)	U min * (V)	U max (V)	resistance R (Ω)	nominal coil absorption I (mA)
6	4.4	10.5	75	80
12	8.8	21	300	40
14	10.2	24.5	400	35
24	17.5	42	1200	20
28	20.5	49	1600	17.5
48	35	84	4800	10
60	43.8	105	7200	8.3
110	80.3	192	23500	4.7

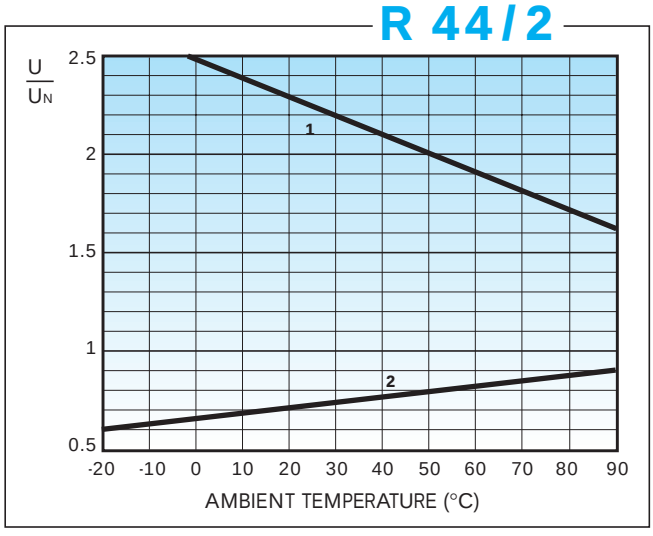
* U min = 0.8 U_N - 44.62

R 44/1



Operating range (DC type) vs ambient temperature
1 - Max coil voltage permitted
2 - Min pick-up voltage with coil at ambient temperature

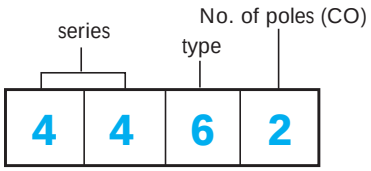
R 44/2

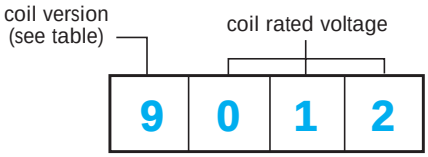


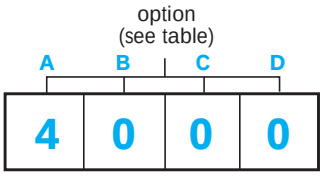
Operating range (sensitive DC type) vs ambient temperature
1 - Max coil voltage permitted
2 - Min pick-up voltage with coil at ambient temperature

ORDERING INFORMATION

Example: a 44 series P.C.B. relay with 2 CO (DPDT)10 A contacts, coil rated at 12 V DC and with Ag Sn O_2 contacts.
For standard relays with no options, use the first 8 digits only.







COIL VERSIONS

Code		Coil types
9	DC	Direct current
7	S	Sensitive - DC voltage with low consumption

OPTIONS

A	contact material	B	contact circuit	C	light and mechanical indicators	D	special applications
0	standard	0	standard	0	standard	0	standard
4*	Ag SnO_2						

* for relay type 44.62 only