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33

Relays & Solenoids



Reed Relays

Reed Relay Micro-Single In Line



- Rugged molded design
- Requires half the area of a standard SIL Reed Relay
- Internal suppression diode version available
- Internal magnetic shield



Products for tomorrow...

NEW

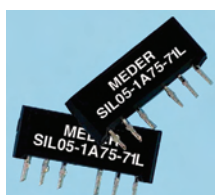
H = 6.8, W = 15.2, D = 3.81mm

Contact Form	1A	Switch carry current A (max)	1
Contact resistance mR (max)	150	Breakdown voltage V dc	225
Switch power W (max)	10	Time, operate/release ms (max)	0.5/0.1
Switch voltage V dc (max)	200	Temperature, operating °C	-20 to +70
Switching current A (max)	0.5		
Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
MS05-1A87-75L	107-9462	MS05-1A87-75D	107-9465
MS12-1A87-75L	107-9464	MS12-1A87-75D	107-9466

417759

V dc	COIL		Order Code	Price Each			
	Ω ±10%			1+	10+	25+	50+
No Diode							
5	280		107-9462	15.17	12.63	11.39	8.33
12	700		107-9464	15.88	13.25	11.91	8.76
With Diode							
5	280		107-9465	15.98	13.31	11.98	8.79
12	700		107-9466	16.34	13.61	12.27	8.98

Reed Relay Single In Line



- Approved according to EN 60950
- 4.25 kV dc breakdown voltage
- High resistance coil
- Internal suppression diode version available



Products for tomorrow...

NEW

H = 7.8, W = 19.8, D = 5.08mm

Contact Form	1A	Contact Form	1A
Contact resistance mR (max)	150	Breakdown voltage V dc	320
Switch power W (max)	20	Insulation voltage V dc	4200
Switch voltage V dc (max)	200	Time, operate/release ms (max)	0.5/0.1
Switching current A (max)	1	Temperature, operating °C	-20 to +70
Switch carry current A (max)	1.25		
Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
SIL05-1A72-71L	107-9456	SIL05-1A72-71D	107-9459
SIL12-1A72-71L	107-9457	SIL12-1A72-71D	107-9460
SIL24-1A72-71L	107-9458	SIL24-1A72-71D	107-9461

417757

V dc	COIL		Order Code	Price Each			
	Ω ±10%			1+	10+	25+	50+
No Diode							
5	500		107-9456	7.36	6.12	5.53	4.04
12	1000		107-9457	7.71	6.44	5.79	4.23
24	2000		107-9458	8.07	6.74	6.05	4.46
With Diode							
5	500		107-9459	7.71	6.44	5.79	4.23
12	1000		107-9460	8.07	6.74	6.05	4.46
24	2000		107-9461	8.37	6.97	6.25	4.59

Reed - Miniature SIL 9091 and 9092 Series



H = 8.89, W = 15.24, D = 3.81mm



H = 6.98, W = 15.24, D = 3.81mm

- Hermetically sealed contacts for long life
- High speed switching
- High insulation resistance
- Moulded thermoset body on integral lead frame
- Model 9091 UL Recognised

NEW

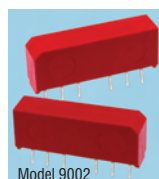
Coil suppression diode option protects coil drive circuits
Magnet shield reduces interaction

Model	9091	9092
Switch power (max)	10W	10W
Switch voltage (max)	200V	200V
Switching current (max)	0.5A	0.5A
Switch carry current (max)	1.5A	1.2A
Contact resistance (max)	125mR	140mR
Insulation resistance (Min)	1000GR	1000GR
Time, operate/release ms (max)	0.5/0.3	0.75/0.5
Life (Typical)	500 x 10 ⁶ operations	500 x 10 ⁶ operations
Temperature, operating	-20 to +85°C	-20 to +85°C

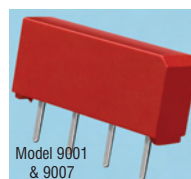
V dc	COIL		Order Code	Price Each			
	Ω ±10%			1+	10+	25+	50+
Model 9091 - 1 Form A							
5	500		108-1687	4.33	3.87	3.78	3.65
5	500		108-1625	6.22	5.73	5.24	4.98
12	1000		108-1626	6.22	5.73	5.24	4.98
Model 9092 - 2 Form A							
5	375		108-1628	12.86	11.52	11.16	10.84
5	375		108-1629	13.12	11.72	11.39	11.03
12	750		108-1630	12.99	11.62	11.29	10.94
12	750		108-1632	13.12	11.72	11.39	11.03

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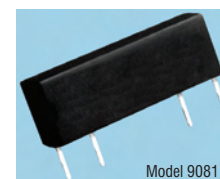
Reed - SIL 9000 Series



H = 3.18, W = 19.3, D = 5.6mm



H = 7.6, W = 19.3, D = 5.08mm



H = 8, W = 22.6, D = 6.98mm

Coil suppression diode option protects coil drive circuits
9002 version with coaxial shield for 50Ω impedance and switching of fast rise time digital pulses

NEW

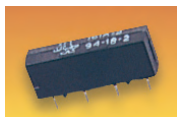
- Hermetically sealed contacts for long life
- High dielectric strength
- High speed switching
- High insulation resistance
- Moulded thermoset body on integral lead frame
- CSA Approved and UL Recognised

Model	9001, 9002	9007, 9081
Switch power (max)	10W	10W
Switch voltage (max)	200V	200V
Switching current (max)	0.5A	0.5A
Switch carry current (max)	1.5A	1.0A
Contact resistance (max)	125mR	200mR
Insulation resistance (Min)	1000GR	10GR
Time, operate/release ms (max)	0.35/0.10	0.50/0.20
Life (Typical)	1000 x 10 ⁶ operations	100 x 10 ⁶ operations
Temperature, operating	-20 to +85°C	-20 to +85°C

V dc	COIL		Order Code	Price Each			
	Ω ±10%			1+	10+	25+	50+
Model 9001							
5	500		108-1678	7.78	7.19	6.41	5.63
5	500		108-1617	8.20	7.58	6.77	5.96
5	500		108-1618	12.04	11.13	9.93	8.72
12	1000		108-1679	7.78	7.19	6.41	5.63
12	1000		108-1619	8.20	7.58	6.77	5.96
Model 9002							
5	500		108-1680	10.12	9.37	8.37	7.36
5	350		108-1620	10.48	9.70	8.66	7.62
12	1000		108-1681	10.12	9.37	8.37	7.36
12	750		108-1621	10.48	9.70	8.66	7.62
Model 9007							
5	500		108-1682	3.09	2.86	2.54	2.25
5	500		108-1622	3.32	3.06	2.73	2.41
12	1000		108-1683	3.09	2.86	2.54	2.25
12	1000		108-1623	3.32	3.06	2.73	2.41
Model 9081							
5	500		108-1684	50.97	45.86	39.09	32.29
5	500		108-1624	8.43	7.81	6.97	6.12
12	1000		108-1685	9.18	8.46	7.55	6.64
12	2000		108-1686	3.68	3.42	3.03	2.67

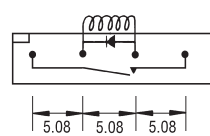
418376

Dry Reed, SIL



L=19.5, W=5.1, H=7.6

HAMLIN



Single pole normally open reed relays in single-in-line epoxy moulded package. Slim package allows relays to be mounted on 0.2" centres. Protection diode incorporated.

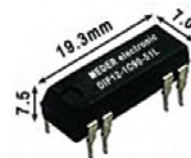
Switch voltage (max)	100V*	Contact resistance (max)	0.2Ω
Switch current (max)	0.5A	Operate/Release	0.5ms
Switch power (max)	10W	Insulation resistance	10GΩ
Hold off voltage (min)	250V	* 200V for Hamlin types	

Mfrs. List No.	Order Code
HE3621A0510	956-1927
HE3621A1210	956-1935
HE3621A2410	956-1943

207146

COIL		Order Code	Price Each			
V dc	Ω ± 10%		1+	25+	100+	250+
3.75-10	500	956-1927	9.15	6.77	6.09	4.52
8-18	1000	956-1935	10.03	7.45	6.74	5.11
16-40	2150	956-1943	10.97	8.17	7.36	5.96

Reed Relay Molded DIP



- IC-pin compatible
- Standard DIL pin configurations
- 4.25 kV dc breakdown voltage
- Internal suppression diode version available



Products for tomorrow.

Contact Form	1A	2A	1C
Contact resistance mR (max)	150	150	150
Switch power W (max)	20	20	3
Switch voltage V dc (max)	200	200	175
Switching current A (max)	1	1	0.25
Switch carry current A (max)	1.25	1.25	1.2
Breakdown voltage V dc	320	320	200
Insulation voltage V dc	1500	1500	1500
Time, operate/release ms (max)	0.5/0.1	0.5/0.1	0.7/1.5
Temperature, operating °C	-20 to +70	-20 to +70	-20 to +70

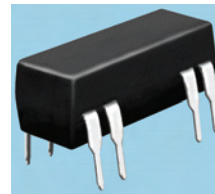


Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
DIP05-1A72-12L	107-9435	DIP05-2A72-21D	107-9446
DIP12-1A72-12L	107-9436	DIP12-2A72-21D	107-9447
DIP24-1A72-12L	107-9437	DIP24-2A72-21D	107-9448
DIP05-1A72-12D	107-9439	DIP05-1C90-51L	107-9449
DIP12-1A72-12D	107-9441	DIP12-1C90-51L	107-9450
DIP24-1A72-12D	107-9442	DIP24-1C90-51L	107-9452
DIP05-2A72-21L	107-9443	DIP05-1C90-51D	107-9453
DIP12-2A72-21L	107-9444	DIP12-1C90-51D	107-9454
DIP24-2A72-21L	107-9445	DIP24-1C90-51D	107-9455

417748

COIL		Order Code	Price Each			
V dc	Ω ± 10%		1+	10+	25+	50+
1 Form A						
No Diode						
5	500	107-9435	7.19	5.99	5.40	3.94
12	1000	107-9436	7.55	6.28	5.66	4.13
24	2000	107-9437	7.91	6.58	5.92	4.36
With Diode						
5	500	107-9439	7.71	6.44	5.79	4.23
12	1000	107-9441	8.17	6.80	6.12	4.49
24	2000	107-9442	8.43	7.03	6.31	4.65
2 Form A						
No Diode						
5	200	107-9443	5.21	4.33	3.91	2.86
12	500	107-9444	13.02	10.84	9.76	7.16
24	2000	107-9445	13.28	11.07	9.96	7.32
With Diode						
5	200	107-9446	13.22	11.00	9.90	7.26
12	500	107-9447	13.57	11.29	10.16	7.45
24	2000	107-9448	13.83	11.52	10.38	7.62
1 Form C						
No Diode						
5	200	107-9449	17.15	14.29	12.86	9.44
12	500	107-9450	17.51	14.58	13.12	9.63
24	2000	107-9452	17.87	14.88	13.41	9.83
With Diode						
5	200	107-9453	17.67	14.75	13.28	9.73
12	500	107-9454	18.13	15.10	13.61	9.96
24	2000	107-9455	18.42	15.33	13.80	10.12

Reed Relay - DIL 8L Series



- Drop-in low cost replacement for industrial standard DIL packages
- Moulded thermostat body on integral lead frame design
- Hermetically sealed contacts



Model 8L DIL package
H = 6.6, W = 19.5, D = 7.62mm

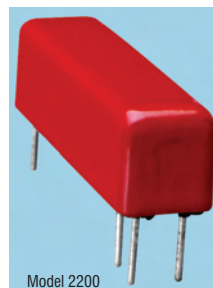
Model	8L01 & 8L02	8L41
Switch power (max)	10W	3W
Switch voltage (max)	200V	100V
Switching current (max)	0.5A	0.25A
Switch carry current (max)	1.0A	0.5A
Contact resistance (max)	150mR	200mR
Insulation resistance (Min)	10GR	1000MR
Time, operate/release ms (max)	0.5/0.5	1.0/1.0
Life (Typical) operations	500 x 10 ⁶	100 x 10 ⁶
Temperature, operating	-20 to +85°C	-20 to +85°C

Mfrs. List No.	Order Code	Feature	Mfrs. List No.	Order Code	Feature
2200-2301	108-1643	Electrostatic shield	8L02-05-11	108-1668	Electrostatic shield and Diode
8L01-05-001	108-1659		8L02-12-00	108-1669	
8L01-05-011	108-1660	Diode	8L02-12-01	108-1670	Diode
8L01-05-111	108-1661		8L02-12-11	108-1671	Electrostatic shield and Diode
8L01-12-011	108-1662		8L41-05-001	108-1672	
8L01-12-101	108-1663	Diode	8L41-05-011	108-1673	Diode
8L01-12-111	108-1665		8L41-05-111	108-1674	Electromagnetic shield and Diode
8L02-05-00	108-1666		8L41-12-001	108-1675	
8L02-05-01	108-1667	Diode	8L41-12-011	108-1677	Diode

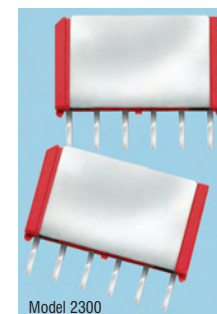
418458

COIL		Order Code	Price Each			
V dc	Ω ± 10%		1+	10+	25+	50+
Model 8L01 - 1 Form A						
5	500	108-1659	4.65	4.30	3.84	3.35
5	500	108-1660	5.11	4.69	4.20	3.68
5	500	108-1661	5.47	5.05	4.49	3.94
12	500	108-1662	5.11	4.69	4.20	3.68
12	500	108-1663	5.11	4.69	4.20	3.68
12	500	108-1665	5.47	5.05	4.49	3.94
Model 8L02 - 2 Form A						
5	200	108-1666	7.03	6.51	5.79	5.11
5	200	108-1667	7.39	6.84	6.12	5.37
5	200	108-1668	7.78	7.19	6.41	5.63
12	500	108-1669	7.03	6.51	5.79	5.11
12	500	108-1670	7.39	6.84	6.12	5.37
12	500	108-1671	7.78	7.19	6.41	5.63
Model 8L41 - 1 Form C						
5	200	108-1672	10.12	9.37	8.37	7.36
5	200	108-1673	10.48	9.70	8.66	7.62
5	200	108-1674	10.94	10.12	9.02	7.94
12	500	108-1675	10.12	9.37	8.37	7.36
12	500	108-1677	10.12	9.37	8.37	7.36

Reed Relay 2200 and 2300 Series



Model 2200
H = 5.72, W = 20.57, D = 5.33mm



Model 2300
H = 9.4, W = 20.57, D = 5.33mm

- Very small footprint
- High reliability
- Hermetically sealed contacts for long life
- Epoxy coated steel shell provides magnetic shielding



Model	2200-2301 & 2302	2204	2333 and 2341	2342
Switch power (max)	10W	10W	10W	3W
Switch voltage (max)	150V	200V	200V	100V
Switching current (max)	0.5A	0.5A	0.5A	0.25A
Switch carry current (max)	1.0A	1.0A	1.0A	0.5A
Contact resistance (max)	150mR	100mR	100mR	200mR
Insulation resistance (Min)	100GR	1000GR	1000GR	1000MR
Time, operate/release ms (max)	0.5/0.1	0.5/0.1	0.5/0.1	1.5/2.0
Life (Typical) operations	500 x 10 ⁶	500 x 10 ⁶	500 x 10 ⁶	100 x 10 ⁶
Temperature, operating	-20 to +85°C	-20 to +85°C	-20 to +85°C	-20 to +85°C

Relays & Solenoids

33

Compliant
Non-compliant
Limited stock - RoHS replacement available
RoHS



Mfrs. List No.	Order Code	Feature	Mfrs. List No.	Order Code	Feature
2200-2301	108-1643	Electrostatic shield	2333-05-000	108-1650	
2200-2302	108-1644	Coaxial shield	2333-12-000	108-1651	
			2341-05-020	108-1653	Coaxial shield
2204-05-401	108-1645		2341-12-000	108-1654	
2204-05-411	108-1646	Electrostatic shield	2341-12-010	108-1655	Electrostatic shield
2204-05-421	108-1647	Coaxial shield	2341-12-020	108-1656	Coaxial shield
2204-12-301	108-1648		2342-05-000	108-1657	
2204-12-311	108-1649	Electrostatic shield	2342-12-000	108-1658	

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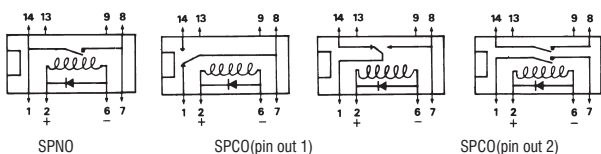
COIL		Order Code	Price Each				
V dc	$\Omega \pm 10\%$		1+	10+	25+	50+	+
Model 2200 - 1 Form A							
5	150	108-1643	17.90	16.08	13.70	11.33	--
5	150	108-1644	18.36	16.50	14.06	11.62	--
5	370	108-1645	16.14	14.55	12.40	10.25	--
5	370	108-1646	16.70	15.01	12.79	10.55	--
5	370	108-1647	17.12	15.40	13.12	10.84	--
12	1500	108-1648	16.54	14.84	12.66	10.45	--
12	1500	108-1649	16.96	15.23	12.99	10.74	--
Model 2300							
3 Form A							
5	175	108-1650	20.83	18.75	15.95	13.18	--
12	1000	108-1651	20.83	18.75	15.95	13.18	--
1 Form C							
5	230	108-1653	24.71	22.23	18.94	15.62	--
12	1000	108-1654	23.21	20.90	17.80	14.68	--
12	1000	108-1655	23.70	21.35	18.20	15.01	--
12	1000	108-1656	24.09	21.68	18.49	15.23	--
2 Form C							
5	175	108-1657	31.87	28.68	24.41	20.18	--
12	1000	108-1658	31.87	28.68	24.41	20.18	--

Dry Reed, DIL - W171/2 Series



- High reliability reed relays housed in a standard 14 pin IC package
- Ideal in circuits requiring high density packing
- Epoxy moulded with diode protection

L=20.6, W=7.2, H=8.6



Switch voltage (max)	Switch current (max)	Switch power (max)	Contact resistance (max)	Operate/Release	Insulation resistance	Pick up voltage (max.)
100V dc	0.5A	10W	0.2 Ω	0.33/0.15ms	10G Ω	75% of nominal coil voltage

Mfrs. List No.	Order	Mfrs. List No.	Order
W171DIP-7	177-452	W172DIP-147	177-455
W171DIP-9	177-453	W172DIP-5	177-458

206940

COIL		Order Code	Price Each				
V dc (nom.)	Ω +15% - 10%		1+	25+	100+	250+	+
SPNO							
5	500	177-452	14.49	12.32	10.55	7.81	--
12	1200	177-453	3.64	--	--	--	--
SPCO (Pin Out 1)							
5	200	177-455	5.87	--	--	--	--
SPCO (Pin Out 2)							
5	200	177-458	25.06	21.26	18.23	15.07	--

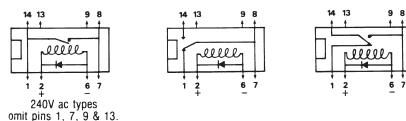
Dry Reed, DIL and DIP - HE700 Series, HE422



DIL - L=19.5, W=7, H=7
Pin spacing: 0.1" x 0.3"

DIP - L=30, W=12.5, H=9
Pin spacing: 0.1" x 1.0"

Single Pole - Top Views

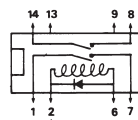


SPNO

SPCO (pin out 1)

SPCO (pin out 2)

Double Pole - Top View



DPNO (DIL)

- Transfer moulded package with diode protection
- Dual line type in standard 14 pin IC package
- 240Vac mains switching type available

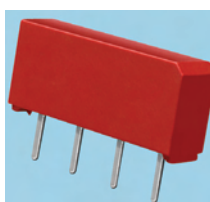
	200V dc Switching		240V ac Switching	
	SPNO/DPNO (Form A)	SPCO (Form C)	SPNO (Form A)	SPNO (Form A)
Switch voltage (max)	0.5V dc	200V dc	240V ac	
Switch current (max)	0.5A	0.25A	0.5A	
Switch power (max)	10W	3W	10W	
Hold-off voltage (min)	250V	200V	450V	
Contact resistance (max)	2000 Ω	0.20 Ω	0.20 Ω	
Operate/Release	0.5ms	1.5ms	0.5ms	
Insulation resistance	100G Ω	1G Ω	100G Ω	

Mfrs. List No.	Order Code	Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
HE721A0510	956-1757	HE721E0510	956-1790	HE722A2410	956-1838
HE721C00510	956-1765	HE721E2410	956-1803	HE751A0510	956-1951
HE721C1210	956-1773	HE722A0510	956-1811	HE751A1210	956-1846
HE721C2410	956-1781	HE722A1210	956-1820	HE751A2410	956-1854

213444

COIL		Order Code	Price Each			
V dc	$\Omega \pm 10\%$		1+	25+	100+	250+
SPNO (DIL Package)						
3.75-10	500	956-1757	8.01	5.89	5.27	3.55
SPCO (Pin-Out 1)						
3.75-10	200	956-1765	16.44	12.21	10.97	7.78
8-20	500	956-1773	15.27	12.82	9.47	7.06
16-32	2000	956-1781	18.85	15.85	11.69	8.14
SPCO (Pin-Out 2)						
3.75-10	200	956-1790	16.44	12.21	10.97	8.50
16-32	2000	956-1803	19.20	16.08	11.85	9.08
DPNO (DIL Package)						
3.75-10	200	956-1811	14.39	12.14	8.95	6.12
8-20	500	956-1820	13.70	11.56	8.53	5.79
16-32	2150	956-1838	13.70	11.56	8.53	5.79
240V ac Switching						
SPNO (DIL Package)						
3.75-10	500	956-1951	7.55	6.80	5.99	5.50
8-20	1000	956-1846	7.81	7.03	6.18	5.70
16-32	2150	956-1854	8.76	7.88	6.93	6.41

Reed - Surface Mount 9800 Series



Model 9802 J-Lead - No shield fitted
Gull wing - H = 4.31, W = 11.68, D = 4.95mm
J-Lead - H = 4.82, W = 11.18, D = 4.95mm

Model 9814/9852 J-Lead with fitted external shield
Gull wing - H = 4.57, W = 10.16, D = 4.95mm
J-Lead - H = 5.08, W = 11.17, D = 4.95mm
Axial - H = 4.31, W = 10.16, D = 4.95mm

NEW

- 3 package styles available: Axial, Gull wing and J-lead
- Hermetically sealed contacts for long life
- High insulation resistance
- Coaxial shield for 50 Ω impedance
- RF and fast rise time switching up to 6GHz
- External magnetic shield

Model	9802	9814	9852
Switch power (max)	3W	3W	3W
Switch voltage (max)	100V	100V	100V
Switching current (max)	0.25A	0.25A	0.25A
Switch carry current (max)	0.5A	0.5A	0.5A
Contact resistance (max)	125mR	125mR	125mR
Insulation resistance (Min)	1000GR	1000GR	1000GR
Time, operate/release ms (max)	0.25/0.05	0.25/0.05	0.25/0.05
Life (Typical) - Operations	250 x 10 ⁶	1000 x 10 ⁶	1000 x 10 ⁶ (N/C)
Temperature, operating	-20 to +85°C	-20 to +85°C	-20 to +85°C

Mfrs. List No.	Order Code	Package	Mfrs. List No.	Order Code	Package
9802-05-00	108-1689	Gull wing	9852-03-00	108-1692	Gull wing
9802-05-20	108-1633	J-Lead	9852-03-10	108-1637	Axial
9814-05-00	108-1691	Gull wing	9852-03-20	108-1638	J-Lead
9814-05-10	108-1634	Axial	9852-05-00	108-1693	Gull wing
9814-05-20	108-1635	J-Lead	9852-05-10	108-1641	Axial
			9852-05-20	108-1642	J-Lead

418411

COIL		Order Code	Price Each			
V dc	$\Omega \pm 10\%$		1+	10+	25+	50+
Model 9802 - 1 Form A						
5	150	SMD108-1689	22.39	20.70	18.49	16.21
5	150	SMD108-1633	16.80	15.10	12.86	10.64
Model 9814 - 1 Form A						
5	150	SMD108-1691	25.16	23.31	20.77	18.26
5	150	SMD108-1634	18.91	17.02	14.48	11.95
5	150	SMD108-1635	18.91	17.02	14.48	11.95
Model 9852 - 1 Form C						
3.3	70	SMD108-1637	50.42	45.37	38.64	31.93
3.3	70	SMD108-1638	50.42	45.37	38.64	31.93
5	110	SMD108-1693	50.42	45.37	38.64	31.93
5	110	SMD108-1641	50.42	45.37	38.64	31.93
5	110	SMD108-1642	50.42	45.37	38.64	31.93

Reed Relay

High Voltage HM Series



- Power switching up to 50W
- Breakdown voltage of 15 kV dc
- Switching up to 7.5 kV dc

H = 15.8, W = 65, D = 14.5mm

Contact Form	1A
Contact resistance mR (max)	150
Switch power W (max)	50
Switch voltage V dc (max)	7.5
Switching current A (max)	3
Switch carry current A (max)	5
Breakdown voltage kV dc	10
Insulation voltage kV dc	15
Time, operate/release ms (max)	3/1.5
Temperature, operating °C	-20 to +70

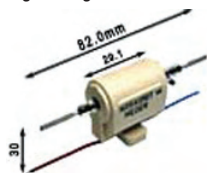
Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
HM12-1A83-02	107-9502	HM24-1A83-02	107-9503

417880

COIL		Order Code	Price Each			
V dc	$\Omega \pm 10\%$		1+	10+	25+	50+
12	250	107-9502	124.54	103.77	93.42	68.49
24	1000	107-9503	123.82	103.18	92.87	68.09

Reed Relay

High Voltage H Series



- Switching up to 7.5 kV dc
- 1000 Gigaohm between coil and contact
- Breakdown voltage of 15 kV dc
- Coil covered with a thermoplastic that meets **UL94V-0**

H = 30, W = 29.1 (body) 82 (overall), D = 18mm

Contact Form	1A / 1B
Contact resistance mR (max)	150
Switch power W (max)	50
Switch voltage kV dc (max)	7.5
Switching current A (max)	3
Switch carry current A (max)	5
Breakdown voltage kV dc	10
Insulation voltage kV dc	15
Time, operate/release ms (max)	3/1.5
Temperature, operating °C	-20 to +70

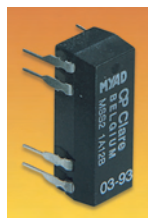
Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
H05-1A83	107-9504	H12-1B83	107-9508
H05-1B83	107-9506	H24-1A83	107-9509
H12-1A83	107-9507	H24-1B83	107-9510

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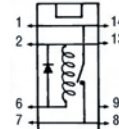
COIL		Order Code	Price Each			
V dc	$\Omega \pm 10\%$		1+	10+	25+	50+
Contact form 1A						
5	50	107-9504	104.71	87.23	78.51	57.58
12	340	107-9507	105.95	88.28	79.45	58.26
24	1500	107-9509	110.44	92.02	82.84	60.74
Contact form 1B						
5	65	107-9506	119.59	99.67	89.71	65.78
12	275	107-9508	120.86	100.71	90.65	66.47
24	650	107-9510	123.72	103.09	92.80	68.06

Mercury Wetted Contacts, DIL
MSS2 Series

C.P. CLARE



SPNO (Form A)
L=19.6, W=7, H=7.3
Top View Mount
Vertically as shown



Switch voltage (max)	350Vdc/ac (pk)	Contact resistance (max)	0.1 Ω
Switch current (max)	0.75A dc/ac (pk)	Operate/Release	1.7ms/1.50ms
Carry current (max)	2A dc/ac (pk)	Insulation resistance	10000M Ω
Switch power (max)	30W (50W @ <5Hz)	Hg (mercury) content	16mg (typical)

WARNING: THESE RELAYS SHOULD NOT BE OPENED AS THEY CONTAIN MERCURY, A TOXIC SUBSTANCE.

Mfrs. List No. MSS21A05B=678-478, MSS21A12B=678-480, MSS21A24B=678-491

REL193

COIL		Order Code	Price Each			
V dc	$\Omega \pm 10\%$		1+	25+	100+	250+
3.75-11	140	678-478	21.82	19.66	18.90	16.38
9-21	500	678-480	21.82	19.66	18.90	16.38
18-43	2150	678-491	21.82	19.66	18.90	16.38

High Voltage

D - Series 5kV, 50W

crydom



- 15kV Isolation
- Low contact resistance
- High power switching

- Choice of electrical connection method
- Form A (NO)

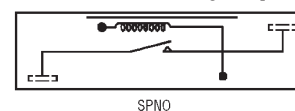
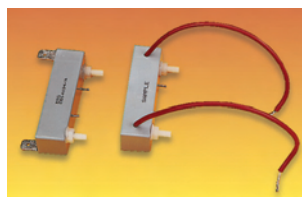
Specification	Value
Switching Voltage	7kV dc or ac peak
Voltage Isolation (Contacts)	10kV dc or ac peak
Voltage Isolation (Contact to coil)	17kV dc or ac peak
Switching Power	50W
Insulation Resistance	10 ¹⁰ R min., 10 ¹³ R typical
Operate/Release Time	3.0/2.0ms
Contact Resistance	100mR Typical, 250mR max.

347637/405685

Coil		Order Code	Price Each			
V dc	Ω		1+	10+	20+	50+
Standard PCB Mount						
12V	150R	188-2600	73.47	66.79	62.53	58.75
24V	780R	459-1306	73.47	66.79	62.53	58.75
Panel Mount 1/4" Spade Terminals						
12V	150R	778-7340	93.00	84.63	78.12	72.54
24V	780R	778-7359	93.00	84.63	78.12	72.54
Flying Lead Contact Terminals						
12V	150R	778-7375	105.00	95.55	88.20	81.90
24V	780R	427-1063	102.83	93.48	87.53	82.25

High Voltage - HVK1/2 Series

Erg Components



L=50.8 W=17 H=19

- 8kVdc Switching
- 17kVdc coil to contact isolation
- PCB and polyamide bolt mounting
- Connection via 1/4" push on terminals or flying leads
- Fully vacuum (5 ton) encapsulated

Switching voltage	8kV dc	Contact resistance	100m Ω (max.), 40m Ω (typ.)
Switching current	3A	Operate/Release	1.5/1ms
Switching power	50W	Insulation resistance	1000M Ω

207139

Relays & Solenoids

33

Compliant
Non-compliant
RoHS
Limited stock - RoHS replacement available

COIL		Order Code	Price Each				
V dc	Ω		1+	10+	20+	50+	+
SPNO - Push On Terminals							
4.5-5.5	50	910-855	103.64	97.81	93.33	88.17	--
10.8-13.2	200	910-867	103.64	97.81	93.33	88.17	--
21.6-26.4	820	910-879	99.18	93.15	88.89	83.98	--
SPNO - Flying Leads							
4.5-5.5	50	910-910	124.29	113.18	101.81	87.85	--
10.8-13.2	200	910-922	124.29	113.18	101.81	87.85	--
21.6-26.4	820	910-934	124.29	113.18	101.81	87.85	--

Load Voltage (Peak)	Case Style	Order Code	Price Each			
			1+	10+	25+	50+
400V ac	E	SMD 991-8930	6.38	5.99	5.79	5.63
400V ac	F	SMD 991-8949	9.05	8.40	8.20	7.88
60V ac	A	991-8957	6.05	5.60	5.44	5.27
60V ac	C	991-8965	7.10	6.61	6.38	6.22
60V ac	B	991-8973	6.05	5.60	5.44	5.27
60V ac	D	SMD 991-8981	7.26	6.71	6.54	6.38
60V ac	E	SMD 991-8990	5.01	4.69	4.49	4.33
60V ac	F	SMD 991-9007	6.18	5.73	5.53	5.40

Solid State Relays

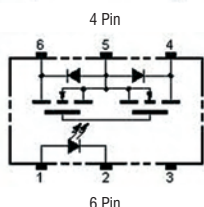
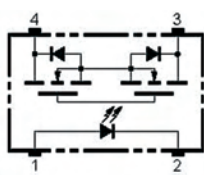
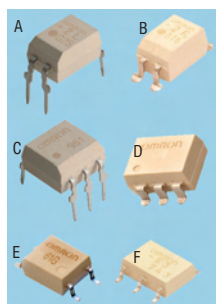
General Features

- No contacts to wear or bounce
- No contacts to arc, therefore intrinsically safe
- Higher current handling capacity
- Low power consumption - TTL & MOS circuitry
- No audible noise from contacts or coils
- Minimal electrical and RFI noise
- Higher isolation voltages
- Not effected by vibration

213426

MOSFET Relays

G3VM Series



NEW

- High load voltage capability
- Large isolation between input and output
- MOSFET design ensures fast switching
- PCB THT and SMD versions available
- UL Recognised

Output Style	Dielectric strength I/O	Time on/off (ms)	LED forward voltage (min/max)	Load current (mA)	On state Resistance (max)	Mfrs. List No.	Order Code
SPST - NO	2500 V rms	1/1	1.0/1.3	120	50R	G3VM351A	991-8779
SPST - NO	2500 V rms	1/1	1.0/1.3	120	50R	G3VM351B	991-8787
SPST - NO	2500 V rms	1/1	1.0/1.3	120	50R	G3VM351D	991-8795
SPST - NO	2500 V rms	1/1	1.0/1.3	120	50R	G3VM351E	991-8809
SPST - NO	1500 V rms	1/3	1.0/1.3	110	35R	G3VM351G	991-8817
SPST - NO	1500 V rms	1/1	1.0/1.3	110	50R	G3VM351H	991-8825
SPST - NC	2500 V rms	1/3	1.0/1.3	150	25R	G3VM353A	991-8833
SPST - NO	2500 V rms	1/3	1.0/1.3	150	25R	G3VM353B	991-8841
SPST - NC	2500 V rms	1/3	1.0/1.3	150	25R	G3VM353D	991-8850
SPST - NO	2500 V rms	1/3	1.0/1.3	150	25R	G3VM353E	991-8868
SPST - NC	1500 V rms	1/3	1.0/1.3	120	25R	G3VM353G	991-8876
SPST - NC	1500 V rms	1/3	1.0/1.3	120	25R	G3VM353H	991-8884
SPST - NO	2500 V rms	1/1	1.0/1.3	120	35R	G3VM401A	991-8892
SPST - NO	2500 V rms	1/1	1.0/1.3	120	35R	G3VM401B	991-8906
SPST - NO	2500 V rms	1/1	1.0/1.3	120	35R	G3VM401D	991-8914
SPST - NO	2500 V rms	1/3	1.0/1.3	150	35R	G3VM401E	991-8922
SPST - NO	1500 V rms	1/1	1.0/1.3	120	35R	G3VM401G	991-8930
SPST - NO	1500 V rms	1/3	1.0/1.0	120	35R	G3VM401H	991-8949
SPST - NO	2500 V rms	2/0.5	1.0/1.3	500	2R	G3VM61A1	991-8957
SPST - NO	2500 V rms	2/0.5	1.0/1.3	500	2R	G3VM61B1	991-8965
SPST - NO	2500 V rms	2/0.5	1.0/1.3	500	2R	G3VM61D1	991-8973
SPST - NO	2500 V rms	2/0.5	1.0/1.3	500	2R	G3VM61E1	991-8981
SPST - NO	1500 V rms	2/0.5	1.0/1.3	400	2R	G3VM61G1	991-8990
SPST - NO	1500 V rms	2/0.5	1.0/1.3	400	2R	G3VM61H1	991-9007

414157

Load Voltage (Peak)	Case Style	Order Code	Price Each			
			1+	10+	25+	50+
350V ac	A	991-8779	4.69	4.33	4.17	4.00
350V ac	C	991-8787	5.01	4.69	4.49	4.33
350V ac	B	991-8795	5.01	4.69	4.49	4.33
350V ac	D	SMD 991-8809	5.01	4.69	4.49	4.33
350V ac	E	SMD 991-8817	5.24	4.85	4.69	4.49
350V ac	F	SMD 991-8825	6.54	6.09	5.86	5.70
350V ac	A	991-8833	15.04	14.03	13.54	13.05
350V ac	C	991-8841	16.47	15.33	14.78	14.39
350V ac	B	991-8850	16.47	15.33	14.78	14.39
350V ac	D	SMD 991-8868	17.41	16.18	15.75	15.40
350V ac	E	SMD 991-8876	13.05	12.14	11.78	11.46
350V ac	F	SMD 991-8884	17.41	16.18	15.72	15.40
400V ac	A	991-8892	7.03	6.54	6.38	6.22
400V ac	C	991-8906	8.37	7.81	7.58	7.39
400V ac	B	991-8914	6.93	6.48	6.28	6.05
400V ac	D	SMD 991-8922	8.37	7.81	7.62	7.39

Optically Isolated Relay

1A, 80V dc



The ZD relay is designed in a compact plastic 6 pin DIP. The relay provides short circuit/overload protection. High environmental ratings such as shock and vibration are provided by the design. The compact size, rugged design, low leakage, and integral protection makes the ZD the ideal relay for demanding applications.

NEW

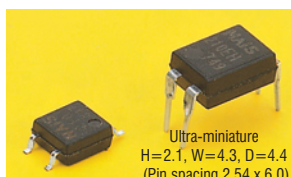
- Short circuit protected up to 60V dc
- Overload trip
- Low off-state leakage current
- Compact 6 pin DIL package

Load (Control) Voltage Range (V dc)	Current Range (mA)	Turn ON (ms)	Turn OFF (ms)	Leakage Current (μA)	Output (Load) Voltage Range (V dc)	Current Rating (A)	On state Res. (Ω)
2 to 3	8 to 20			20	0 to 80	1	

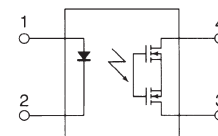
414600

Load Voltage Range (V dc)	Mfrs. List No.	Order Code	Price Each		
			1+	10+	25+
0 to 80	ZD20CDW	990-6916	106.93	99.77	83.47

Photo MOS - AQY Series



Ultra-miniature
H=2.1, W=4.3, D=4.4
(Pin spacing 2.54 x 6.0)



Sub-miniature
H=3.2, W=4.78, D=6.4 (Pin spacing 2.54 x 8.3)

- Available in ultraminiature SO and subminiature DIL packages
- Reinforced barrier gives 5000V rms I/O isolation (EH and EHA types)
- ac or dc switching capability
- Low-level off state leakage current

Load Voltage (pk)	Load Current (mA)	Isolation Voltage (ac)	Mfrs. List No.	Order Code
0 to 40V	120	1500	AQY221N2S	372-7890
0 to 350V	100	1500	AQY210S	310-5313
0 to 400V	80	1500	AQY414S	310-5325
0 to 350V	130	5000	AQY210EH	310-5337
0 to 400V	120	5000	AQY414EH	310-5349
0 to 350V	130	5000	AQY210EHA	310-5350

207082

Load Voltage Range	Order Code	Price Each			
		1+	25+	50+	100+
Single Pole, N/O - Ultra-miniature - Surface mount					
0 to 40	372-7890	10.45	--	--	--
0 to 350	310-5313	9.99	9.12	8.36	7.73
Single Pole, N/C - Ultra-miniature - Surface mount					
0 to 400	310-5325	13.05	11.85	10.88	10.03
Single Pole, N/O - Sub-miniature - Through Hole					
0 to 350	310-5337	8.10	7.39	6.79	6.24
Single Pole, N/C - Sub-miniature - Through Hole					
0 to 400	310-5349	8.92	8.12	7.45	6.88
Single Pole, N/O - Sub-miniature - Surface mount					
0 to 350	310-5350	8.10	7.39	6.79	6.24

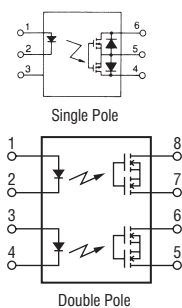
PhotoMOS - AQV/AQW21/25 Series



Single Pole (Through Hole)



Double Pole (Surface Mount)



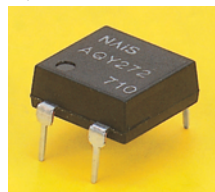
The photoMOS relay provides solid state switching for low level signals, utilising MOSFET technology for the output stage.

- Reinforced barrier gives 5000V rms I/O isolation
- High sensitivity / low power consumption
- ac or dc switching capability
- Standard 6 and 8 pin IC and SO packages
- LED version gives clear operation visibility
- **UL Recognised and CSA approved.** Conforms to **BS60950 (7002)** and **BS415**

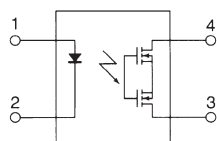
LED operate current	0.9mA (typ), 3mA (max)		
Turn on/turn off time	0.8ms (typ), 2ms (max)		
Load Voltage Range (Vpk)	Load Current (mA) max.	Mftrs. List No.	Order Code
0 to 250V	200	AQV253H	112-4062
0 to 350V ac	130	AQV210EH	117-5731
0 to 400V	150	AQV254H	112-4063
0 to 350V ac	120	AQW210EH	117-5733
0 to 350V ac	100	AQW210S	117-5734

Load Voltage Range	Order Code	1+	25+	50+	100+	+
Single Pole, ac or dc load						
0 to 250	112-4062	17.66	14.73	12.48	10.88	--
0 to 350	117-5731	10.86	10.32	9.78	8.67	--
0 to 400	112-4063	17.66	14.73	12.48	11.11	--
Double Pole, ac or dc load						
0 to 350	117-5733	13.70	12.34	11.43	10.48	--
Surface Mount, Double Pole, ac or dc load						
0 to 350	SMD117-5734	18.91	17.97	17.01	15.12	--

Photo MOS - AQY27 Series



H=3.9, W=8.8, D=9.3

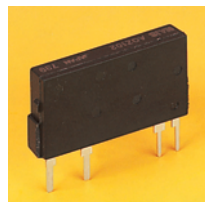


- High capacity switching
- ac or dc switching capability
- Low-level off state leakage current
- **UL Recognised and CSA approved**

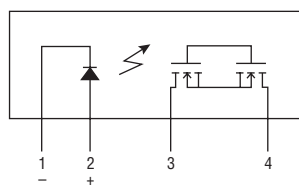
Load voltage (pk)	Load current (ma)	Isolation voltage (ac)	Mftrs. List No.	Order Code
60V	2000	2500	AQY272	310-5611
400V	350	2500	AQY274	310-5623

Load Voltage Range	Order Code	1+	25+	50+	100+	+
Single Pole, N/O - Through Hole						
60V	310-5611	26.56	24.18	22.15	20.45	--
400V	310-5623	26.56	24.18	22.15	20.45	--

PhotoMOS - AQZ Series



H=11, W=21, D=3.5



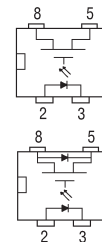
- Compact 4 pin SIL package
- High capacity AC or DC output switching
- Extremely low On-Resistance
- High isolation voltage 2500V

Load voltage (pk)	Load current (ma)	On-resistance (max.)Ω	Mftrs. List No.	Order Code
60V	3A	0.18	AQZ202	117-5735
100V	2A	0.34	AQZ205	117-5736

Photovoltaic (MOSFET) PVA and PVD Series



Pin Spacing 0.1" x 0.3"

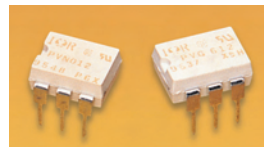


- Normally open solid state replacement for reed relays
- Utilises a unique bidirectional (ac or dc) MOSFET termed a BOSFET™ as an output switch

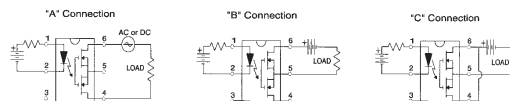
Load Voltage Range (Vpk)	On-state resistance @ 25°C (Ω) ac dc	Load Current @ 40°C (mA) (dc) Max.	Control Current (mA) (dc) Nom.	Off state Res. (Ω) Min.	Mftrs. List No.	Order Code
0 to 200	24	130	5	100MΩ	PVA2352NPBF	910-4054
0 to 300	160	160	5	100000MΩ	PVA3055NPBF	910-3970
Single Pole, dc Load only						
0 to 200	6	220	5	100MΩ	PVD2352N	331-168
0 to 200	6	220	5	100MΩ	PVD2352NPBF	910-4062

Load Voltage Range (Vpk)	Order Code	1+	25+	100+	250+	+
Single Pole, ac or dc Load						
0 to 200	910-4054	10.48	7.51	5.73	4.93	--
0 to 300	910-3970	14.62	10.48	8.00	6.88	--
Single Pole, dc Load Only						
0 to 200	910-4062	11.20	8.04	6.13	5.28	--

Photovoltaic (MOSFET) - PVG/N/T/U Series



Pin Spacing 0.1" x 0.3" L=9.39, W=6.47, D=3.42



- 735-279 and 735-280 are ideally suited for switching high currents from low voltage ac or dc sources
- 735-292 is specifically designed for worldwide telecoms applications
- 735-309 has high operating speed and low EMF voltage, ideally suited for instrumentation, Multiplexing, scanning and data acquisition applications
- HEXFET output
- Bounce free operations
- ac or dc switching capability
- Linear AC/DC operation
- 4kVrms I/O isolation
- 6 pin DIL

Load Voltage Range (Vpk)	On-state resistance @ 25°C (Ω) ac dc	Load Current (dc) Max.	Control (dc) Norm.	Off state Res. (Ω) Min.	Order Code
0 to 60	0.5	0.15	2	10	735-279
0 to 20	100	0.04	4.5	10	735-280
0 to 400	27	7	0.21	10	735-292
0 to 400	27	7	0.21	10	735-309

Load Voltage Range (V pk)	Mftrs. List No.	Order Code	1+	25+	100+	250+	+
Single Pole, ac or dc load							
0 to 60	PVG612	735-279	11.40	7.72	6.24	5.37	--
0 to 20	PVN012	735-280	11.40	8.17	6.24	5.37	--
0 to 400	PVT412	735-292	4.55	3.37	2.72	2.34	--
0 to 400	PVU414	735-309	10.61	7.61	5.81	5.00	--

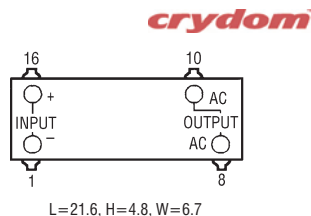
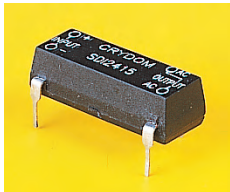
Relays & Solenoids

33

Compliant Non-compliant Limited stock - RoHS replacement available

RoHS

1.5A-SDI/SDV Series



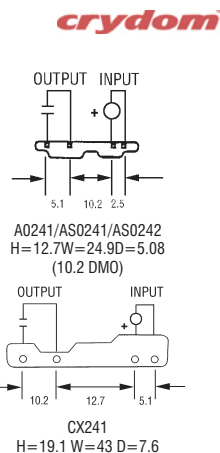
- Miniature ac SSRs in compact 16 pin DIP package
- Suitable for high density PCB mounting
- SDI is current operated, SDV is voltage operated
- Zero voltage or random switching versions available
- SCR output

Load voltage range (Vrms)	Control current (mA)	Control voltage (V dc)	Load Current (A)	Mfrs. List No.	Order Code
12 - 280	10 - 50	—	0.025 - 1.5	SDI2415	120-0272
12 - 280	—	3.5 - 10	0.025 - 1.5	SDV2415	120-0273
12 - 280	—	3.5 - 10	0.025 - 1.5	SDV2415R	120-0274

Isolation 3750V rms Off state dv/dt 500V/μs

Load Rating	Order Code	Price Each				
		1+	10+	25+	50+	+
Current Controlled Input						
1.5A zero voltage switching	120-0272	16.83	14.08	12.53	10.98	--
Voltage Controlled Input						
1.5A zero voltage switching	120-0273	18.23	18.03	16.47	16.11	--
1.5A random switching	120-0274	18.23	18.03	16.47	16.11	--

1A/1.5A/2A/3A PCB
A0241/AS0241/AS0242/DM0063/CX241



- UL recognised (CX241 pending)
- CX241 features 4KV isolation
- Compact SIL epoxy dipped pack-

- Ideal for low current ac and dc loads
- Zero voltage switching

Control voltage	Input current (typ.)	4 -10V dc	10mA (ac types)	15.2 - 20mA (dc types)	Surge Current	Load Voltage	Blocking voltage dv/dt	Output Type	Order Code
25mA - 1A rms	2500V rms	40A pk	24 - 280V rms	10 - 280V rms	10 - 280V rms	12 - 280V rms	600V pk	Triac	121-3165
25mA - 1.5A rms	2500V rms	10A pk	10 - 280V rms	10 - 280V rms	10 - 280V rms	12 - 280V rms	200V/s	Thyristor	120-0222
25mA - 1.5A rms	4000V rms	10A pk	10 - 280V rms	10 - 280V rms	10 - 280V rms	12 - 280V rms		Thyristor	120-0224
60mA - 2A rms	2500V rms	120A pk	0 - 60V dc	0 - 60V dc	0 - 60V dc	0 - 60V dc		MOSFET	120-0225

Load Current	Mfrs. List No.	Order Code	Price Each				
			1+	10+	25+	50+	+
DC Input - 240V ac Output							
1A	A0241	121-3165	18.20	16.99	16.60	16.08	--
1.5A	AS0241	120-0222	18.59	17.35	16.96	16.60	--
1.5A	CX241	120-0224	18.59	17.35	16.96	16.60	--
2A	AS0242	120-0223	21.22	19.53	19.14	18.75	--
DC Input - 60V dc Output							
3A	DM0063	120-0225	27.93	25.71	25.23	24.74	--

MP and P Series



- Lifetime Guarantee
- Zero voltage turn-on
- Zero current turn-off
- Built in snubber
- 200% tested at 0.5 power factor
- 4000 volt isolation (photo)
- TTL compatible
- High PRV rating

OPTO 22

- Operating temp -40°C to 100°C
- Input to output coupling capacitance 8PF max
- UL Recognised and CSA approved

Nominal Current Rating Amps	1 Cycle Surge Peak	Signal Pick-up Voltage	Signal Drop-out Voltage	Off Stage Leakage mA Max.	Operating AC Voltage Range	I ² t Rating t = 8.3ms	Mfrs. List No.	Order Code
2	20	3V dc* (32V allowed)	1V dc	5mA	24 - 280	2	MP240D2	722-9070
4	85	3V dc* (32V allowed)	1V dc	5mA	24 - 280	30	P240D2	722-9094
							MP240D4	722-9082
							P240D4	722-9100

*MP Series 24 Volt Max.

205767

Order Code	Price Each				
	1+	25+	100+	250+	+
MP Series 722-9070	22.77	17.51	16.29	16.18	--
MP Series 722-9082	24.41	18.81	17.45	17.34	--
P Series 722-9094	22.77	17.51	16.29	16.18	--
P Series 722-9100	24.41	18.81	17.45	17.34	--

DC Input - DC Output



- Lifetime Guarantee
- 4000 volt photo isolation
- High surge capacity
- TTL compatible
- 200% tested @ 0.5 power factor
- UL Recognised & CSA approved

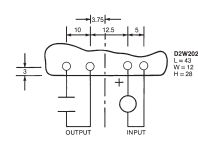
OPTO 22

Supply voltage	60V dc
Forward voltage drop	1.5V at 3 amps 1.5V at 5 amps
Nominal current rating	3A 5A
Off state blocking	60Vdc
Signal pick-up voltage	3V dc
Signal drop-out voltage	*32 volts allowed
Signal input impedance	1V dc
1 second surge	1000 ohms
Operating temp. range	-40°C to 100°C
Off state leakage	1mA max

205769

Mfrs. List No.	Order Code	1+	10+	25+	50+	+
MP Series DC60MP	722-9124	25.74	21.45	19.81	18.27	--
Power Series DC60S5	722-9136	36.76	30.62	28.29	26.09	--

2A/3A/3.5A PCB - D2W Series



- Compact SIL epoxy dipped package
- Built in snubber network (AC)

- Zero voltage switching
- UL recognised, CSA certified

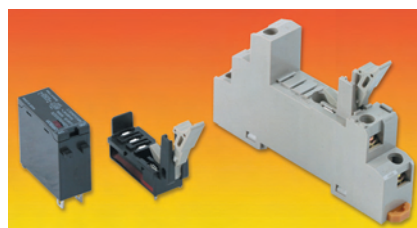
Control voltage	3 - 32V dc	Load voltage	24 - 280V rms
Input current	3mA @ 5V dc, 19mA @ 28V dc	Blocking voltage	600V pk
Isolation	4000V rms	Off-state dv/dt	200V/μs

Load Current	Surge Current (max.)	Mfrs. List No.	Order Code
60mA - 2A rms	28A pk	D2W202F	120-0279
60mA - 3A rms	70A pk	D2W203F	120-0280
60mA - 3.5A rms	80A pk	D2W203F11	120-0281

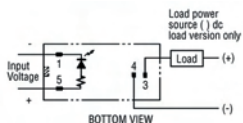
207143

Order Code	Price Each				
	1+	10+	25+	50+	+
120-0279	18.13	16.93	16.76	16.54	--
120-0280	18.98	17.84	17.48	17.12	--
120-0281	20.51	18.88	18.46	17.77	--

G3R Series Solid State Relays



G3R SSR - L = 29, W = 13, H = 28
 PCB Socket - L = 85.5, W = 16, H = 61
 DIN Socket - L = 32, W = 14, H = 41



Compact SSR's for I/O Interface with High Dielectric Strength Requirements

- High speed with optimum input ratings
- Same footprint as G2R Series relays
- Coupler approved by VDE 0884 assuring an I/O dielectric strength of 4 kV
- Incorporates an easy-to-see monitoring indicator
- UL Recognised. Approved by **CSA** and **TUV**

G3R Solid State Relays

Control Voltage	4-32V (dc)
Input resistance	1500R
Isolation	2500V
Load voltage	75-264V ac (179341) 3-52.8V dc (179342)
Load current	0.1-2A (179341) 0.01-2A (179342)
Temperature range	-30°C to 80°C

333918

Mfrs. List No.	Order Code	1+	20+	100+	250+	+
DC Input, AC Output - G3R-0A202SZN						
G3R-0A202SZN 5/24DC	118-1363	53.32	50.70	48.06	42.75	--
DC Input, DC Output - G3RD-0DX02SN						
G3R-0DX02SN 5/24DC	118-1364	49.48	47.04	44.61	39.66	--



2A Plug In SSR

5mm for Slim Relay Interface Modules



H=15, W=28, D=5mm

A range of AC and DC switching Solid State Relays in a 5mm wide package compatible with the industry standard Slim Relay Interface Module. AC and DC load currents up to 2 amps can be switched, delivering greatly improved reliability over electromechanical devices in application with a high switching frequency. This series is compatible with the common control voltages of 48 and 60V dc. An SSR has no moving parts, hence no contacts to degrade and wear out. Suitable for switching pumps, motors, lamps, solenoids and heating elements.

- 5mm Wide plug in Relay module.
- AC and DC Load Switching to 2A.
- Compatible with Slim Relay Interface
- DC Voltage Control
- Zero Cross Switching (AC models)

Input Specifications

Order Code	Nominal Input Voltage	Input Range	Drop out Voltage	Input Current
783-1617	24V dc	15 - 30V dc	10V dc	7mA
783-1625	60V dc	35 - 72V dc	20V dc	3mA
783-1633	24V dc	15 - 30V dc	10V dc	7mA
783-1641	60V dc	35 - 72V dc	20V dc	3mA
783-1650	24V dc	15 - 30V dc	<9V dc	7mA±10%
783-1668	60V dc	35 - 72V dc	<35V dc	3mA±10%

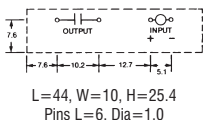
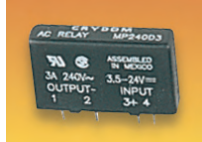
Output Specifications

Order Code	Nominal Load Voltage	Voltage Range	Max. Blocking Voltage	Load Current
783-1617	48V dc	0 to 48V dc	60V dc	100mA
783-1625	48V dc	0 to 48V dc	60V dc	100mA
783-1633	24V dc	0 to 24V dc	33V dc	2A
783-1641	24V dc	0 to 24V dc	33V dc	2A
783-1650	275V ac	12 to 275V ac		2A rms
783-1668	275V ac	12 to 275V ac		2A rms

347705

Mfrs. List No.	Order Code	1+	10+	25+
DC Output				
CR01D-0148	783-1617	15.31	13.94	12.86
CR02D-0148	783-1625	15.31	13.94	12.86
CR01D-224	783-1633	18.45	16.79	15.50
CR02D-224	783-1641	18.45	16.79	15.50
AC Output				
CR01A-2240	783-1650	21.53	19.59	18.08
CR02A-2240	783-1668	21.53	19.59	18.08

3A/4A PCB - MP Series



L=44, W=10, H=25.4
Pins L=6, Dia=1.0

- AC type Triac output with zero voltage switching
- DC type Bipolar transistor output
- SIL package
- Suitable for logic level control
- Snubber network
- UL recognised.



Control voltage	3.5 - 32V dc	Single cycle surge	80A
Input resistance	270Ω(ac), 1500Ω(dc)	Load current (min)	20mA
Isolation	4000V rms	Off-state leakage current (max)	5mA(ac), 1mA(dc)
Load voltage	24 - 280V rms	Off-state dv/dt	200V/μs
Blocking voltage	3-60Vdc (dc type)	Operating temperature	-40°C to +80°C
Mfrs. List No:	MP240D3=1200201, MP240D4=1200202, MPDCD3 = 1200204		

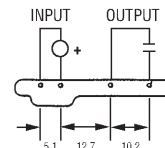
206959

Load Current	Order Code	1+	10+	25+	50+	+
DC Input - 240VAC Output						
20mA to 3A	120-0201	25.78	23.79	23.24	22.75	--
20mA to 4A	120-0202	31.20	25.40	22.79	20.35	--
DC Input - 60VDC - Output						
20mA to 3A	120-0204	29.78	27.67	27.11	26.56	--

5A/6A/10A PCB - CX/CMX Series



H=25.4
W=43
D=7.6



- High power switching in SIL package
- Extra high surge rating and extra low (off state) leakage
- UL Recognised, **CSA** and **VDE** approved
- CX240D5 conforms to **EN60950:1993**

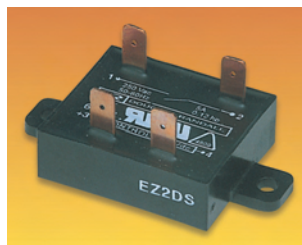
Input current	15mA @ 5V dc	Isolation	4000V rms
Load current	60mA - 5A rms	dv/dt	500V/μs
Surge current	250A pk	Off state current	0.1mA (240V rms)

Control voltage	Load Voltage	Blocking Voltage	Mfrs. List No.	Order Code
DC Input - AC Output				
3 to 15V dc	12 - 280V rms	600V pk	CX240D5	120-0213
4 to 15V dc	48 - 660V rms	1200V pk	CX480D5	120-0214
DC Input - DC Output				
3 to 10V dc	0 - 60V dc	--	CMX60D5	120-0212
3 to 10V dc	0 - 60V dc	--	CMX60D10	120-0211

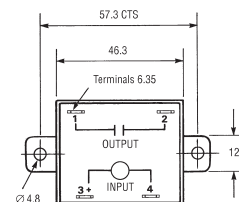
206976

Load Rating	Order Code	1+	10+	25+	50+	+
DC Input - AC Output						
Control Voltage 3/4-15V dc						
5A @ 240V ac	120-0213	21.94	20.21	19.76	19.37	--
5A @ 480V ac	120-0214	31.64	29.13	28.51	27.93	--
DC Input - DC Output						
5A @ 60V dc	120-0212	33.07	29.62	29.00	28.42	--
10A @ 60V dc	120-0211	61.94	57.03	55.79	54.65	--

5A/12A/18A Surface Mounting - EZ Series



L = 66.8, W = 38.0, H = 24.1 (incl. terminals)



- Surface mounting with SCR output
- Zero voltage switching
- 12A and 18A versions are **UL** Recognised, **VDE** and **CSA** approved
- Conforms with **EN60950:1993**

Control voltage	4 - 15V dc @ T _c = 25°C	Blocking voltage	600V peak
Input resistance	480Ω	Single cycle surge	85A (5A), 150A (12A) 200A (18A)
Isolation	4000V rms	Off-state dv/dt	500V/μs
Load voltage	28 - 280V ac		

Note: SSRs use semiconductor output devices therefore protective fuses should be semiconductor (ultra fast) type.

Mfrs. List No: E2240D5 = 120-0289, E2240D12 = 120-0286, E2240D18 = 120-0287.

222078

Load Current	Order Code	1+	10+	25+	50+
5A	120-0289	30.30	27.93	27.28	26.76
12A	120-0286	37.66	34.67	33.95	33.27
18A	120-0287	47.17	38.40	34.45	30.76

Relays & Solenoids

33

Compliant
 Non-compliant
 Limited stock - RoHS replacement available
RoHS

2.5A to 90A Surface Mounting - 1 Series



L=57.2, W=44.4, H=22.2 Fixing Centres=47.6, dia 4.4

- AC or DC control available
- UL recognised CSA and VDE approved
- Transparent safety cover available
- Zero voltage switching
- Conforms to EN60950:1993
- Thyristor output devices are suitable for inductive loads and high dv/dt applications

- TVS and LED Version**
- Overvoltage protection
 - Non degrading protection
 - ZERO voltage or random switching(AC models only)
 - Solid state reliability
 - UL Recognised, CSA and VDE approved including protection
 - Status indicating LED
 - Microprocessor compatible input

A range of AC switching SSRs with internal overvoltage protection fitted as standard. Over 50% of SSR failures are attributed to overvoltage. Traditionally, SSRs have been protected by MOVs (Metal Oxide Varistors) which degrade over a period of time. The TVS diodes fitted 'self trigger' the devices so that the overvoltage is passed harmlessly to the load. The benefits to the user are a fully protected SSR without the need for additional components or assembly whilst maintaining the Solid State Reliability and international approvals.

Applications include switching of pumps, motors, lamps, solenoids and heating elements. Zero cross types can reduce EMI.

Input status is indicated with a green LED.

Input voltage	90 - 280V ac (ac series) 3 to 32Vdc (dc series) 4.5 to 32V dc (P version)	Input resistance	60KΩ (ac series) 1500KΩ (dc series)
Isolation (input/output)	4000V rms	Off-state dv/dt	500V/μs
		Must release voltage	10V ac (ac series) 1V dc (dc series)

Load Current (A)	Load Voltage (V ac)	Output Device	Blocking Voltage (V _{DRM})	Single Cycle Surge (A)	Mfrs. List No.	Order Code
AC Input - 240V ac Output						
10	24 - 280	Thyristor	600	120	A2410	120-0226
25	24 - 280	Thyristor	600	250	A2425	120-0228
40	24 - 280	Thyristor	600	625	A2440	120-0230
50	24 - 280	Thyristor	600	625	A2450	120-0231
AC Input - 240V ac Output with TVS and LED						
25	24 - 280	Thyristor	600	250	A2425PG	120-0229
50	24 - 280	Thyristor	600	625	A2450PG	120-0232
AC Input - 480V ac Output						
25	80 - 530	Thyristor	800	250	A4825	120-0233
50	80 - 530	Thyristor	800	625	A4850	120-0234
75	80 - 530	Thyristor	800	1000	A4875	120-0235
AC Input - 480V ac Output - High Blocking Voltage						
50	48 - 530	Thyristor	1200	625	HA4850	120-0259
DC Input - 240V ac Output						
2.5	48 - 280	Thyristor	600	22.5	D2402	120-0236
10	40 - 280	Triac	500	70	TD2410	120-0267
10	48 - 280	Thyristor	600	120	D2410	120-0237
25	40 - 280	Triac	500	175	TD2425	120-0268
25	48 - 280	Thyristor	600	250	D2425	120-0241
40	48 - 280	Thyristor	600	625	D2440	120-0243
50	48 - 280	Thyristor	600	625	D2450	120-0244
75	48 - 280	Thyristor	600	1000	D2475	120-0246
90	48 - 280	Thyristor	600	1200	D2490	120-0247
DC Input - 240V ac Output with TVS and LED						
10	48 - 280	Thyristor	600	120	D2410PG	120-0238
25	48 - 280	Thyristor	600	250	D2425PG	120-0242
50	48 - 280	Thyristor	600	625	D2450PG	120-0245
DC Input - 480V ac Output						
25	80 - 530	Thyristor	800	250	D4825	120-0248
40	80 - 530	Thyristor	800	625	D4840	120-0249
50	80 - 530	Thyristor	800	625	D4850	120-0250
75	80 - 530	Thyristor	800	1000	D4875	120-0251
90	80 - 530	Thyristor	800	1200	D4890	120-0253
DC Input - 480V ac Output - High Blocking Voltage						
25	48 - 530	Thyristor	1200	250	HD4825	120-0262
50	48 - 530	Thyristor	1200	625	HD4850	120-0263
90	48 - 530	Thyristor	1200	1200	HD4890	120-0265
110	48 - 530	Thyristor	1200	1500	HD48110	120-0260
125	48 - 530	Thyristor	1200	1750	HD48125	120-0261
DC Input - 660V ac Output - High Blocking Voltage						
25	48 - 660	Thyristor	1200	250	H12WD4825	120-0254
50	48 - 660	Thyristor	1200	625	H12WD4850	120-0255
90	48 - 660	Thyristor	1200	1200	H12WD4890	120-0257
DC Input - 660V ac Output - High Blocking Voltage with TVS and LED						
50	48 - 660	Thyristor	1200	625	H12WD4850PG	120-0256
90	48 - 660	Thyristor	1200	1200	H12WD4890PG	120-0258

FOR SUITABLE HEATSINKS SEE ORDER CODES 175-647 & 175-648

Note: SSRs use semiconductor output devices therefore protective fuses should be semiconductor (ultra fast) type.

207020

Load Current	Peak Blocking Voltage	Order Code	1+	10+	25+	50+
AC Input - 240V ac Output						
10A	600V	120-0226	51.10	47.07	46.06	45.11
25A	600V	120-0228	54.46	50.16	49.15	48.14
40A	600V	120-0230	70.57	64.97	63.67	62.37
50A	600V	120-0231	73.76	69.04	63.93	58.95
AC Input - 240V ac Output with TVS and LED						
25A	600V	120-0229	68.16	63.44	62.07	60.80
50A	600V	120-0232	72.94	67.90	66.43	65.10
AC Input - 240V ac Output						
25A	800V	120-0233	72.13	65.43	64.03	54.94
50A	800V	120-0234	88.54	80.30	78.58	67.41
75A	800V	120-0235	118.45	107.42	105.14	90.23
AC Input - 480V ac Output - High Blocking Voltage						
50A	1200V	120-0259	91.14	83.88	82.19	80.56
DC Input - 240V ac Output						
2.5A	600V	120-0236	35.97	32.55	31.93	28.78
10A	500V	120-0267	36.94	35.38	35.15	34.89
10A	600V	120-0237	47.52	43.71	42.84	41.96
25A	500V	120-0268	38.64	37.01	36.75	36.49
25A	600V	120-0241	47.52	43.71	42.84	41.96
40A	600V	120-0243	44.76	42.90	42.58	42.28
50A	600V	120-0244	50.91	48.79	48.43	48.08
75A	600V	120-0246	118.24	105.93	96.85	86.47
90A	600V	120-0247	129.19	118.91	116.53	114.19
DC Input - 240V ac Output with TVS and LED						
10A	600V	120-0238	52.50	48.86	47.82	46.84
25A	600V	120-0242	63.08	58.69	57.42	56.28
50A	600V	120-0245	59.14	56.70	56.28	55.86
DC Input - 480V ac Output						
25A	800V	120-0248	52.08	49.90	49.54	
40A	800V	120-0249	58.36	55.92	55.53	
50A	800V	120-0250	60.84	58.30	57.87	
75A	800V	120-0251	89.02	85.31	84.70	
90A	800V	120-0253	98.33	94.23	93.55	
DC Input - 480V ac Output - High Blocking Voltage						
25A	1200V	120-0262	56.28	53.94	53.54	
50A	1200V	120-0263	93.32	85.90	84.17	
90A	1200V	120-0265	144.39	132.87	130.20	
110A	1200V	120-0260	152.56	146.21	145.14	
125A	1200V	120-0261	170.24	163.14	161.97	
DC Input - 660V ac Output - High Blocking Voltage						
25A	1200V	120-0254	58.72	56.28	55.89	55.47
50A	1200V	120-0255	70.76	67.83	67.35	66.86
90A	1200V	120-0257	147.19	141.04	140.03	138.99
DC Input - 660V ac Output - High Blocking Voltage with TVS and LED						
50A	1200V	120-0256	91.11	84.79	82.94	81.05
90A	1200V	120-0258	216.13	201.06	196.76	192.83
Accessories						
			1+	25+	100+	250+
Thermal transfer pad	120-0269	1.46	1.30	1.20	1.14	
Safety cover (KS100)	120-0266	3.48	2.78	2.30		

IP00 Uncovered SSR
SCR Single Phase AC Output



H = 60.2, W = 44.4, D = 32.2

A range of EMC level 3, class A compliant, surface mounting and optically coupled solid state relays in the industry standard 'hockey puck' housing. These relays offer an extended lifetime over conventional devices due to the Direct Copper Bonded Technology construction. The switching is silent and is not affected by vibration. Zero Volt switching versions have an output circuit which may be used for switching single phase resistive loads or motors where the power factor is greater than 0.8. For inductive loads (motors) with a power factor less than 0.8 therandom switching versions are recommended. These devices must be mounted on an adequate heat sink to dissipate the heat generated within the relay, caused by the internal volt drop across the output circuit.

- Current ratings from 10 to 125 Amps
- Back to back SCR's for severe inductive loads
- EMC Compliant
- LED input status indicator
- Built in overvoltage and transient protection
- UL and cUL recognised
- TUV and CSA approved
- Direct Copper Bonded substrate

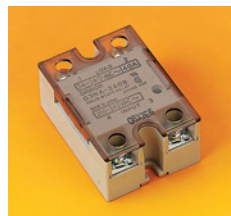
Input Circuit	84 134 **0	84 134 **1
Voltage range	4 to 32V dc	90 to 280V ac
Input current (Max)	14mA	10mA rms
Input current (Min)	7mA	5mA rms
Maximum time, turn on/off	8.33ms/8.33ms	20ms/30ms

Output Circuit	84 134 0**	84 134 1*** & 84 134 3**
Voltage range	24 to 280V ac	48 to 660V ac
Min. current	100mA	100mA
Off state leakage current	15mA	20mA
Input/Output insulation	4000 V	4000 V
Input/Output capacitance	8 pF	8 pF
Operating temperature	-20 to 80°C	-20 to 80°C

346104

Mftrs. List No.	Output Current	Order Code	1+	10+	25+	50+
Zero volt switching - Resistive loads						
84134000	10A	118-9998	33.86	30.82	28.44	26.41
84134001	10A	118-9999	44.06	40.10	37.01	34.37
84134010	25A	119-0002	39.48	35.99	--	--
84134011	25A	119-0004	46.92	42.70	39.41	36.60
84134020	50A	119-0007	57.58	52.50	--	--
84134021	50A	119-0008	61.05	55.55	51.28	47.62
84134030	75A	119-0011	96.14	87.48	80.75	74.99
84134031	75A	119-0012	99.81	90.82	83.84	77.85
84134040	100A	119-0016	105.01	95.56	88.21	81.91
84134041	100A	119-0017	118.27	107.62	99.35	92.25
84134080	125A	119-0030	147.85	134.54	124.19	115.32
84134081	125A	119-0031	151.52	137.88	127.28	118.19
84134100	10A	119-0000	63.81	58.06	53.59	49.76
84134101	10A	119-0001	67.78	61.68	56.93	52.87
84134110	25A	119-0005	70.84	64.46	59.50	55.25
84134111	25A	119-0006	74.57	67.85	62.63	58.16
84134120	50A	119-0009	64.88	59.15	--	--
84134121	50A	119-0010	85.02	77.37	71.41	66.31
84134130	75A	119-0013	113.38	103.17	95.23	88.43
84134131	75A	119-0014	116.89	106.37	98.19	91.18
84134140	100A	119-0018	136.78	124.47	114.90	106.69
84134141	100A	119-0019	140.45	127.81	117.98	109.55
84134180	125A	119-0025	217.04	197.29	187.10	180.91
84134181	125A	119-0032	173.71	158.07	145.91	135.49
Random/Instantaneous switching - Inductive loads						
84134300	10A	119-0021	63.81	58.06	53.59	49.76
84134310	25A	119-0026	90.42	82.19	77.96	73.35
84134320	50A	119-0022	81.50	74.16	68.46	63.57
84134330	75A	119-0023	113.38	103.17	95.23	88.43
84134340	100A	119-0024	136.78	124.47	114.90	106.69
84134380	125A	119-0028	217.04	197.29	187.10	180.91
Thermal joints x 25						
26532720		118-9997	1.61	1.46	1.35	1.25

5A to 40A Surface Mounting
G3NA Series



- AC or DC output switching
- AC or DC control available
- Built in varistor protection
- Operation indicator (red LED) enables monitoring
- Protective cover for greater safety
- **UL** Recognised, **CSA** approved

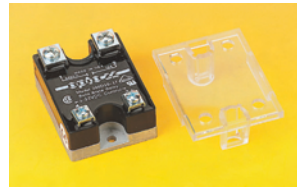
L=58, W=43, H=27
Fixing centres 47.5, dia 4.5

Input Voltage	200 - 240V ac (ac series)			
Isolation	5 - 24V dc (dc series)			
	2500V ac			
Load Current (A)	Load Voltage	Output Device	Mftrs. List No.	Order Code
AC Input - 240V ac Output				
10	19 - 264V ac	Triac	G3NA-210B 200-240VAC	118-1254
20	19 - 264V ac	Triac	G3NA-220B 200-240VAC	118-1255
40	19 - 264V ac	Triac	G3NA-240B 200-240VAC	118-1256
DC Input - 240V ac Output				
5	19 - 264V ac	Triac	G3NA-205B 5-24DC	118-1258
10	19 - 264V ac	Triac	G3NA-210B 5-24DC	118-1259
20	19 - 264V ac	Triac	G3NA-220B 5-24DC	118-1260
40	19 - 264V ac	Triac	G3NA-240B 5-24DC	118-1261
DC Input - 200V dc Output				
10	- 220V dc	Transistor	G3NA-D210B 5-24DC	118-1262

207052

Load Current	Order Code	1+	20+	100+
AC Input - 240V ac Output				
10A	118-1254	48.20	45.81	43.41
20A	118-1255	53.04	50.40	47.73
40A	118-1256	83.55	79.38	75.18
DC Input - 240V ac Output				
5A	118-1258	32.95	31.29	29.67
10A	118-1259	37.38	35.52	33.63
20A	118-1260	48.42	46.02	43.59
40A	118-1261	73.91	70.23	66.51
DC Input - 200V dc Output				
10A	118-1262	91.92	87.33	82.71

Power Series



- Lifetime Guarantee
- Zero voltage turn-on
- Zero current turn-off
- Built-in snubber
- 200% tested at 0.5 power factor
- 4000 volt isolation
- TTL compatible
- High PRV rating
- AC and DC input variants available

- Safety cover available
- Operating temp -40° to 100°C
- Input to output coupling capacitance 8PF max.
- **UL** recognised & **CSA** approved

Nominal Current Rating (Amps)	1 Cycle Surge (Amps) Peak	Signal Pick-up Voltage	Signal Drop-out Voltage	Off Stage Leakage mA max.	Operating AC Voltage Range	I ² t Rating t = 8.3 ms	Order Code
AC Input - 240V ac Output							
10	110	85V ac	10V ac	14mA	24 - 480	50	
		280 allowed					722-8960
25	250	85V ac	10V ac	14mA	24 - 480	250	
		280 allowed					722-8971
45	650	85V ac	10V ac	14mA	24 - 480	1750	
		280 allowed					722-8983
DC Input - 240V ac Output							
3	85	3V dc	1V dc	5mA	24 - 280	30	
		32V allowed					722-8995
10	110	3V dc	1V dc	14mA	24 - 280	50	
		32V allowed					722-9008
25	250	3V dc	1V dc	14mA	24 - 280	250	
		32V allowed					722-9010
45	650	3V dc	1V dc	14mA	24 - 280	1750	
		32V allowed					722-9021
DC Input - 480V ac Output							
10	110	3V dc	1V dc	11mA	100 - 530	50	
		32V allowed					722-9033
25	250	3V dc	1V dc	11mA	100 - 530	250	
		32V allowed					722-9045
DC Input - 575V ac Output							
45	650	3V dc	1V dc	15mA	100 - 600	1750	
		32V allowed					722-9057

205766

Mftrs. List No.	Order Code	1+	10+	25+	50+	+
240A10	722-8960	48.97	43.41	40.86	36.57	--
240A25	722-8971	52.25	46.68	43.56	39.03	--
240A45	722-8983	70.27	62.78	58.59	52.45	--
240D3	722-8995	37.52	31.28	28.89	26.64	--
240D10-17	722-9008	56.51	47.12	43.50	40.13	--
240D25-17	722-9010	60.45	50.40	46.53	42.92	--
240D45-17	722-9021	66.34	55.31	51.03	47.10	--
480D10-12	722-9033	70.28	58.59	54.09	49.89	--
480D25-12	722-9045	76.83	64.04	59.13	54.54	--
575D45-12	722-9057	107.13	89.30	82.44	78.31	--
SAFETY COVER	722-9069	4.26	3.52	3.24	--	--

10A to 75A Surface Mounting - CS Series



- Integrated circuit version of the D2400 Series relays
- Inverse parallel thyristor output
- Zero voltage switching, low off-state leakage current
- Conforms to **EN60950:1993**

Load voltage	24 - 280V rms	Blocking voltage	600V pk
Isolation (input/output)	4000V rms	Off-state dv/dt	200V/μs
Off-state current	1.0mA (max.)		
Input Voltage	Load Current	Surge Current	Mftrs. List No.
3.5 - 15V dc	10A rms	120A pk	CSD2410
3.5 - 15V dc	25A rms	250A pk	CSD2425
15 - 32V dc	25A rms	250A pk	CSE2425
3.5 - 15V dc	50A rms	500A pk	CSD2450

Note: SSRs use semiconductor output devices therefore protective fuses should be semiconductor (ultra fast) type.

207002

Load Current	Input Voltage	Order Code	1+	10+	25+
10A	3.5 - 15V dc	120-0218	56.28	46.02	41.29
25A	3.5 - 15V dc	120-0219	59.34	51.05	45.81
25A	15 - 32V dc	120-0221	59.34	51.05	45.81
50A	3.5 - 15V dc	120-0220	75.78	63.97	58.48
Thermal Transfer Pad		120-0269	1.46	1.30	1.20

Relays & Solenoids

33

Compliant
Non-compliant
RoHS
+ Limited stock - RoHS replacement available



25A DC Switching - High Voltage
800 to 1000V dc rated



A range of DC switching Solid State Relays in a robust panel mount package. Loads of upto 25 Amps may be switched at voltages of 1000V dc, delivering greatly improved reliability over electro-mechanical devices. 800 V rated models include over voltage protection. Available with control voltages from 12 to 36V dc. Suitable for switching pumps, motor brakes, solenoids and heating elements.

H=47.5, W=45.7, D=22.9mm

- Solid State Switch - High Reliability.
- DC Load Switching upto 1000Vdc.
- Built in Over-Voltage Protection (800V Model)
- Robust Panel Mount Construction.
- IGBT Output
- Surface Mount Technology.

Input Specifications

Nominal Voltage	12V dc	24V dc
Control voltage	8 - 16V dc	20 - 28V dc
Turn on voltage - Max	8V dc	20V dc
Turn on voltage - Min	1V dc	1V dc
Input impedance	780R	1500R
Input current @ nominal voltage	15 mA	15 mA

Output Specifications

	SSC800 Series	SSC1000 Series
Operating voltage	0 - 800V dc	0 - 1000V dc
Load current, min. (A rms)	20mA	20mA
Load current, max. (A rms)	25A	25A
Surge current	75A	75A
Leakage current	0.3mA	0.3mA
Turn on/off time	1.5/1.5ms	1.5/1.5ms

347702

Mfrs. List No.	Nominal Control voltage	Order Code	1+	5+	10+	Price Each
SSC800-25-12	12V dc	121-3173	255.29	237.45	232.73	
SSC800-25-24	24V dc	121-3170	255.29	237.45	232.73	
SSC1000-25-12	12V dc	121-3172	306.33	284.91	275.96	
SSC1000-25-24	24V dc	121-3171	306.33	284.91	275.96	

100A Panel Mount
MOSFET Output



A range of DC switching Solid State Relays in a robust panel mount package, with screw terminal connections. Load currents of up to 100A dc can be switched at up-to 60V dc, delivering greatly improved reliability over electromechanical devices. This series is compatible with control voltages of 3.5-32V dc. A SSR has no moving parts, hence no contacts to degrade and wear out. Suitable for switching pumps, motors, lamps, solenoids and heating elements, DC Bus control.

H=58.4, W=45.7, D=22.9mm

- Solid State Switch - High Reliability.
- DC Load Switching - up-to 100 amps.
- Robust Panel Mount Construction.
- DC Control.
- Surface Mount Technology.
- MosFET Output

Output Specifications

Types	D60	D80	D100
Operating voltage	0 - 60V dc	0 - 60V dc	0 - 60V dc
Load current, min.	5mA dc	5mA dc	5mA dc
Load current, max.	60A dc	80A dc	100A dc
Max. Surge Current	180A dc	220A dc	270A dc
Leakage current	0.1mA	0.2mA	0.3mA
Max. Turn-On Time	300µs	300µs	300µs
Min. Turn-On Time	1.0µs	1.0µs	1.0µs

Input Specifications

Control voltage	3.5 - 32V dc	Dielectric Strength	2500V rms
Turn on voltage - Max	3.5V dc	Insulation Resistance	10 ⁹ R
Turn on voltage - Min	1.0V dc	Operating Temperature	-30 to 80°C
Max. Input current	1.6mA @ 5V dc, 28mA @ 32V dc		

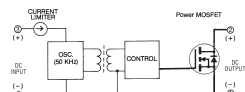
347706

Mfrs. List No.	Order Code	1+	5+	10+	Price Each
D06D60	121-3168	151.65	141.07	138.04	
D06D80	121-3169	190.84	177.46	173.72	
D06D100	121-3166	240.64	223.85	219.03	

7A to 40A DC Switching, Surface Mounting



Series 1 (DC)
MOSFET Output



- DC input/DC output solid-state relays with power MOSFET output
- Low on-state resistance, fast switching
- Control can be driven from most logic circuits requiring less than 1.6mA at 5Vdc
- DC control signal activates a 50kHz oscillator which is transformer coupled to the output

Input voltage	3.5 - 32V dc	Isolation	2500V rms
Input current (max.)	1.6mA @ 5V dc 28mA @ 32V dc	Load current (min.)	20mA dc
		Turn-on/turn-off (max.)	0.1ms/1.0ms

Load Current	Load Voltage (max.)	On-state Resistance (max.)	Surge Current (10ms)	Mfrs. List No.	Order Code
7A	100V dc	0.29Ω	15A	D1D07	120-0291
12A	100V dc	0.13Ω	28A	D1D12	120-0292
20A	100V dc	0.1Ω	42A	D1D20	120-0293
40A	100V dc	0.05Ω	106A	D1D40	120-0294
7A	200V dc	0.29Ω	22A	D2D07	120-0295
12A	200V dc	0.23Ω	27A	D2D12	120-0296
7A	500V dc	0.8Ω	19A	D5D07	120-0297
10A	500V dc	0.55Ω	29A	D5D10	120-0298
		Thermal Transfer Pad		TP01	120-0269

Note: SSRs use semiconductor output devices therefore protective fuses should be semiconductor (ultra fast) type

222081

Load Rating	Order Code	1+	10+	25+	50+	+	Price Each
7A @ 100V dc	120-0291	83.20	76.59	74.96	73.43	--	
12A @ 100V dc	120-0292	91.14	83.88	82.03	80.40	--	
20A @ 100V dc	120-0293	99.02	91.14	89.19	87.40	--	
40A @ 100V dc	120-0294	109.66	100.90	98.76	96.77	--	
7A @ 200V dc	120-0295	107.78	92.54	84.61	75.55	--	
12A @ 200V dc	120-0296	116.14	99.72	91.17	81.40	--	
7A @ 500V dc	120-0297	126.74	108.82	99.50	88.83	--	
10A @ 500V dc	120-0298	158.76	136.31	124.63	111.28	--	
Thermal Transfer Pad	120-0269	1.46	1.30	1.20	1.14	--	

30A to 63A DIN Rail Mounting - RN Series



- Solid State Contactor (IEC 158-2)
- Front mounted heatsink
- LED status indication
- IP20 Protection
- Zero volt switching
- Contactor terminal layout
- CE Marked

Note: for 2 pole versions current rating is SUM of both poles - e.g. 15A + 15A for 30A rating

H=120, W=45, D=103mm (30A)
H=120, W=90, D=103mm (50/63A)

Input Volts:	24-265VAC/DC (ac input) 5-32V dc (dc input)
Off-state leakage:	<1mA
Input Current:	<12mA
Min. Load Current:	200mA
dV/dt:	500V/µs

Load Current A	Load Voltage (Vac)	Output Device	Blocking Voltage (Vdrm)	1 cycle Surge (A)	Mfrs List No.	Order Code
AC/DC input - ac output - 1 pole						
30	42-530Vac	Thyristor	1200	250	RN1A48A30	247-418
50	42-530Vac	Thyristor	1200	600	RN1A48A50	247-431
63	42-530Vac	Thyristor	1200	1000	RN1A48A63	310-2464
DC input - 480Vac output - 1 pole						
30	42-530Vac	Thyristor	1200	250	RN1A48D30	247-406
50	42-530Vac	Thyristor	1200	600	RN1A48D50	247-420
63	42-530Vac	Thyristor	1200	1000	RN1A48D63	310-2476
AC/DC input - 480Vac output - 2 pole						
30	42-530Vac	Thyristor	1200	250	RN2A48A30	310-2981
50	42-530Vac	Thyristor	1200	600	RN2A48A50	310-2993
DC input - 480Vac output - 2 pole						
30	42-530Vac	Thyristor	1200	250	RN2A48D30	310-3006
50	42-530Vac	Thyristor	1200	600	RN2A48D50	310-3018

207087

Load Current	Order Code	1+	10+	25+	Price Each
AC/DC Input - 480Vac output - 1 pole					
30A	247-418	135.00	124.56	114.98	
50A	247-431	155.28	138.66	128.00	
63A	310-2464	221.49	199.24	183.92	
DC Input - 480Vac output - 1 pole					
30A	247-406	138.03	127.57	117.75	
50A	247-420	159.69	142.60	131.63	
63A	310-2476	195.05	174.17	160.78	

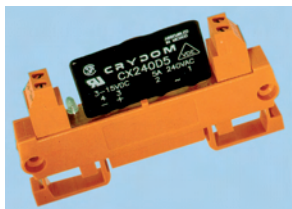
Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

Load Current	Order Code	Price Each		
		1+	10+	25+
AC/DC Input - 480Vac output - 2 pole				
30A	310-2981	210.27	187.76	173.32
50A	310-2993	223.78	203.64	187.97
DC Input - 480Vac output - 2 pole				
30A	310-3006	198.26	177.04	163.42
50A	310-3018	227.66	207.17	191.23

DIN Rail AC and DC Switching SSR Modules



AC and DC load switching



H=54, W=85, D=12.5mm

A range of AC and DC switching Solid State Relays mounted on a TS35 compatible carrier, these devices are suitable for fixing directly onto DIN rail and allow easy connection via screw terminals.

Selected versions are featured with choices of ac or dc load switching from 3 to 10 Amps with either ac or dc input control.

SSR's feature no moving parts and give better reliability than an electromechanical relay.

Suitable for switching pumps, motors, lamps, solenoids and heating elements.

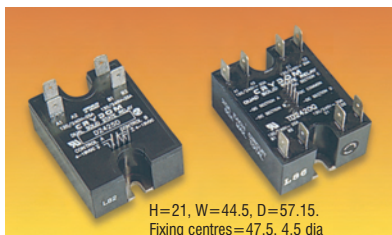
Zero-cross switching models can reduce EMC and surge current at turn-on.

- Solid State Design - High Reliability.
- AC and DC Switching models.
- Easy DIN Mount installation.
- Input Status Indicating LED.
- Zero-Cross and Random Turn-on (AC Models).
- 2500Vrms isolation

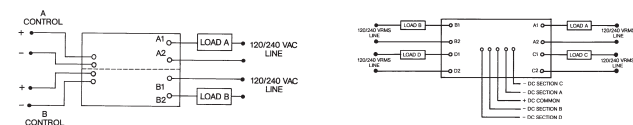
Mfrs. List No.	Input Voltage	Load Current	Load Voltage	Off State Leakage Current	Random or Zero cross
CXE240D5-MS11	15 - 32V dc	0.06 - 5A ac	12 - 280V ac	0.1mA ac	Zero Cross
CXE240D5R-MS11	15 - 32V dc	0.06 - 5A ac	12 - 280V ac	0.1mA ac	Random
MP240D3-MS11	3 - 32V dc	0.02 - 3A ac	24 - 280V ac	5mA ac	Zero Cross
MPDCD3-MS11	3 - 32V dc	0.02 - 3A dc	3 - 60V dc	1mA dc	Random
CMX60D10-MS11	5 - 10V dc	0 - 10A dc	0 - 60V dc	100µA dc	Random
CMX100D6-MS11	10 - 24V dc	0 - 6A dc	1 - 100V dc	100µA dc	Random

Mfrs. List No.	Order Code	1+	10+	25+
CX Series				
CXE240D5-MS11	121-3174	51.17	46.56	42.98
CXE240D5R-MS11	121-3175	54.55	49.64	45.82
MP Series				
MP240D3-MS11	121-3176	51.17	46.56	42.98
MPDCD3-MS11	121-3177	66.42	60.44	55.79
CMX Series				
CMX60D10-MS11	121-3178	66.42	60.44	55.79
CMX100D6-MS11	121-3181	66.30	60.33	55.69

20A to 40A Dual and Quad Output



H=21, W=44.5, D=57.15, Fixing centres=47.5, 4.5 dia



- DC controlled
- Built-in snubber network
- Zero voltage switching
- UL recognised, CSA certified

Output terminations are via 6.35mm (1/4") push on terminals. Suitable input connectors are Order Codes 143-128 or 146-256 used in conjunction with 977-3789.

Input Voltage	4-15V dc	Must release voltage	1V dc
Input resistance	310Ω	Off-state dv/dt	200V/µs
Load voltage	24-280V ac	Operating temperature	-30°to +80°
Isolation (input/output)	2500V rms		

Load Current (A)	Output Device	Blocking Voltage V _{DRM}	Single Cycle Surge (A)	Overload Current-1sec (A rms)	Mfrs. List No.	Order Code
25	Thyristor	500	350	25	D2425D	120-0196
40	Thyristor	600	500	40	D2440D	120-0199
20	Triac	500	250	20	TD2420Q	120-0200

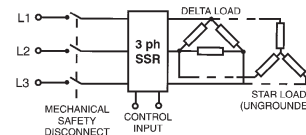
Note: SSRs use semiconductor output devices therefore protective fuses should be semiconductor (ultra fast) type.

Description	Order Code	Price Each		
		1+	10+	25+
Dual ouput 25A	120-0196	87.17	80.24	78.51
Dual ouput 40A	120-0199	105.89	97.45	95.34
Quad ouput 20A	120-0200	183.81	147.06	110.28
Thermal Transfer Pad	120-0269	1.46	1.30	1.20

25A and 50A Three Phase Modules - A53/D53 Series



L=104, W=73.5, H=22
Fixing centres=92 x 47.6, dia.=5.3



- AC and DC controlled
- Zero voltage switching
- 530Vac load switching from single logic level input or ac signal
- SCR output for excellent dv/dt characteristics
- Terminal barriers, LED indication and snubber network fitted
- Fingerproof cover available

Note: All units have CR snubber circuits, however for some inductive loads it may be necessary to use additional dv/dt suppressing eg. metal oxide varistors or silicon transient clippers.

Heatsink Order Code	Mounting Method	Relay Load Current			
		25A		50A	
175-648	Cage nut	AC1 18A	AC3 16A	AC1 27A	AC3 24A
150-019	Self tapping screw	25A	22A	36A	36A
Input Voltage	90-280V ac (ac series) 3-32V dc (dc series)	Off state dv/dt	500V/µs		
Input resistance	16.7Ω	Single cycle surge	300A (25A series) 500A (25A series)		
Must release voltage	100V rms/1V dc	Overload current (per phase)			
Load voltage	48-530V ac	25A series	45 @ 1 sec, 32A @ 5sec		
Insulation	4000V rms	50A series	74 @ 1 sec, 32A @ 5sec		
Blocking voltage	100V dc	1 ¹ t rating	450 A ² s (25A series)		
Operating frequency	25 to 65Hz		1250 A ² s (25A series)		
Operating temperature	-40°Cto + 100°C				

Note: SSRs use semiconductor output devices therefore protective fuses should be semiconductor (ultra fast) type.

FOR SUITABLE HEATSINK SEE ORDER CODES 175-648 AND 150-019

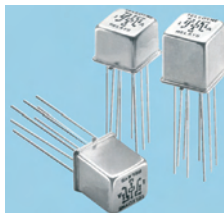
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Input Voltage	Load Current	Mfrs. List No.	Order Code	1+	10+	25+
90-280V ac	25A	A53TP25D	120-0205	226.91	208.81	204.25
90-280V ac	50A	A53TP50D	120-0206	271.41	237.48	210.92
3-32V dc	25A	D53TP25D	120-0207	196.67	180.98	177.07
3-32V dc	50A	D53TP50D	120-0208	219.39	201.81	196.50
Safety cover		KS300	120-0209	7.99	6.39	5.27
Thermal Transfer Pad		KS100	120-0266	3.48	2.78	2.30

High Frequency Relays



DPDT High Repeatability 0.3 MHz to 4 GHz - RF100 Series



Designed to provide improved RF insertion loss repeatability over the frequency range by balancing the aggregate insertion loss elements of the relays' design. Suitable for use in all high performance applications in which high speed signals must be transferred. The relays feature broad bandwidth, metal enclosure for EMI shielding to ensure that control and signal paths are highly resistant to ESD. Applications include attenuators and other precision RF circuits

NEW

- High repeatability
- Broad bandwidth
- EMI shielded
- High resistance to ESD
- High isolation between control and signal paths

Contact arrangement	DPDT	Insulation resistance	1000MR
Contact rating	10 to 50µA / 10 to 50mV	Operate time	4.0ms
Contact resistance	100mR	Temperature range	-55°C to +85°C
Coil consumption	500mW	Interconnect capacitance	0.4pF

Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
990-6762	RF100-5	990-6770	RF100-12

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V dc	50	990-6762	89.51	84.50	74.38
12V	390	990-6770	89.51	84.50	74.38

Relays & Solenoids

33

Compliant
Non-compliant
Limited stock - RoHS replacement available
RoHS

DPDT Surface Mount

2.5 GHz - GRF172



NEW

The GRF172 surface-mount relay is an ultraminiature, hermetically sealed, armature relay for 2.5 GHz RF applications. Its low profile height (8.38mm) and small (2.54mm) grid spaced terminals make it an ideal choice where extreme packaging density and/or close PC board spacing are required. The GRF172 features a unique ground shield that isolates and shields each lead to ensure excellent contact-to-contact and pole-to-pole isolation. This ground shield produces improved high-frequency performance as well as parametric repeatability.

- All welded construction
- High magnetic efficiency and mechanical rigidity
- High resistance to mechanical shock and vibration
- High isolation between control and signal paths

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	1A @ 28V dc	Operate time	6.0ms
Contact resistance	150mR	Temperature range	-55°C to +85°C
Coil consumption	360mW	Interconnect capacitance	0.4pF

Order Code 990-6800 Mfrs. List No. GRF172-12

414550

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
12V	400	SMD990-6800	59.47	55.43	50.45

DPDT Low Profile

ER114 Series



Low inter-contact capacitance and contact circuit losses allows for reliable signal transfer well into the UHF spectrum. The 114 series relays are low profile (6.9mm), ultra-miniature, hermetically sealed, armature relay with 2.54mm grid spaced terminals. Gold plated precious metal alloy contacts assure reliable switching from low level to full rated load. These relays are ideal for switching high frequency ac or high speed digital signals.

NEW

- High reliability
- Low inter-contact capacitance
- High resistance to shock and vibration
- All welded construction

Contact arrangement	DPDT / 2 Form C	Insulation resistance	10000MR
Contact rating	1A @ 28V dc	Operate/Release time	2.0 / 1.5ms
Contact resistance	100mR	Temperature range	-65°C to +125°C
Contact life	10,000,000 cycles	Interconnect capacitance	0.4pF

Order Code 990-6819 Mfrs. List No. ER114-5

Order Code 990-6827 Mfrs. List No. ER114-12

414555

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V	50	990-6819	70.96	67.44	59.24
12V	390	990-6827	70.96	67.44	59.24

SPDT 0.5A - High Frequency

2.5 GHz Band - G6W Series



- Isolation of 60 dB min.
- Insertion loss of 0.2 dB max.
- VSWR of 1.2 max. at 2.5 GHz
- Y-shaped terminal arrangement for simplified wiring to PCB's

THT - H = 8.9, W = 20, D = 9.4mm

SMD - H = 9.2, W = 20, D = 9.4mm

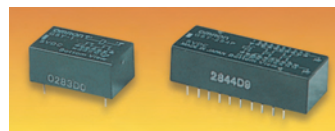
Contact arrangement	SPDT
Mechanical life	1,000,000 Operations
Electrical life	300,000 operations min. (rated load)
Coil power	200mW
Contact resistance (initial)	100mR max.
Rated carry current	0.5A
Max. switched voltage	30V ac, 30V dc
Max. switched current	0.5A
Rated load	10mA @ 30V ac, 10mA @ 30V dc
Operating temperature	-40 to 70°C

Order Code 444-6367 Mfrs. List No. G6W1F12DC Rated Current 16.7mA
Order Code 444-6379 Mfrs. List No. G6W1F24DC Rated Current 8.3mA

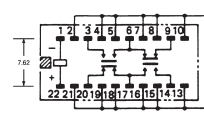
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COIL		Order Code	Price Each			
Volts	Ω		1+	25+	50+	100+
Single-sided stable						
12V	720	SMD444-6367	118.82	106.94	96.24	86.74
24V	2880	SMD444-6379	118.82	106.94	96.24	86.74
12V	720	444-6380	118.82	106.94	96.24	87.65

UHF/VHF Signal - G5Y Series



G5Y-1 L=20.5, W=11.5, H=9.0 Pins on 2.54 pitch
G5Y-254P-1 L=32.5, W=12.5, H=9.0 Pins on 2.54 pitch



- SPCO and DPCO contacts
- Suitable for UHF/VHF signal switching 1μW to 15W
- Typical insertion loss of less than 0.25dB @ 900MHz
- Low 110mW coil pick up power and VSWR of 1.38(typ) @ 900MHz
- Fully sealed
- Correct coil polarity must be observed

Contact arrangement	SPCO/DPCO	Isolation	60dB @ 900MHz
Contact rating	0.01A @ 24V ac/dc	Operate/Release	10ms/5ms
Contact material	Copper alloy, Gold plated	Coil operating range	85 - 110%
VSWR	1.8 max. @ 900MHz	Temperature range	-30°C to +70°C
Coil consumption	360mW-G5Y-1 360mW-G5Y-254P-1		

207141

COIL		Order Code	Price Each				
Volts	Ω		1+	20+	100+	250+	+
SPCO - G5Y-1 Series							
24V dc	1920	257-138	21.65	20.00	19.06	16.22	--
DPCO - G5Y-254P-1 Series							
5V dc	69.5	257-140	22.23	20.86	19.79	18.49	--
12V dc	400	257-151	27.75	25.51	23.78	20.48	--
24V dc	1600	257-163	28.03	25.77	24.02	21.90	--
5V dc	69.5	994-9518	22.23	20.86	19.79	18.49	--
12V dc	400	994-9526	27.75	25.51	23.78	20.48	--
24V dc	1600	994-9534	28.03	25.77	24.02	21.90	--

DPDT High Repeatability T0-5

3 GHz - RF300 Series



Designed to provide improved RF insertion loss repeatability over the entire frequency range by balancing the aggregate insertion loss elements of the relays design. Suitable for use in all high performance applications in which high speed signals must be transferred. These relays feature broad bandwidth, metal enclosure for EMI shielding, ground pin option to aid in case grounding. Unique construction features and manufacturing techniques provide excellent resistance to environmental extremes and high reliability.

NEW

- High repeatability
- Broad bandwidth
- EMI shielded
- High resistance to ESD
- High isolation between control and signal paths

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	1A @ 28V dc	Operate time	4.0ms
Contact resistance	150mR	Temperature range	-55°C to +85°C
Coil consumption	450mW	Interconnect capacitance	0.4pF

Order Code 990-6789 Mfrs. List No. RF300-5

Order Code 990-6797 Mfrs. List No. RF300-12

414548

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V dc	50	990-6789	95.37	90.98	76.20
12V	390	990-6797	95.37	90.98	76.20

DPDT Magnetic Latching

4.5 GHz - RF180 Series



Ultraminiature, hermetically sealed, magnetic-latching relay featuring extremely low intercontact capacitance for exceptional R.F. performance over the full UHF spectrum. Its low profile height (7.62mm) and 2.54mm grid spaced terminals make it ideal for applications where extreme packaging density and/or close PC board spacing are required. The RF180 relay is designed where power dissipation must be minimized. The relay can be operated with short-duration coil voltage pulse. After the contacts have transferred, no coil power is required. The magnetic-latching feature provides a nonvolatile memory capability since the relay will not reset upon removal of coil power.

NEW

- All welded construction
- High resistance to shock and vibration
- Minimal power dissipation
- Low intercontact capacitance

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	0.25A @ 28V dc	Operate time	2.0ms
Contact overload rating	0.5A @ 28V dc resistive	Temperature range	-55°C to +85°C
Coil consumption	290mW	Interconnect capacitance	0.02pF

Order Code 990-6738 Mfrs. List No. RF180-5

Order Code 990-6754 Mfrs. List No. RF180-12

414531

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V dc	61	990-6738	147.29	135.51	120.11
12V	11	990-6754	147.29	135.51	120.11

DPDT Standard
172 Series



The 172 relay is an ultra miniature, hermetically sealed, armature relay for commercial applications. Its low profile height of 7.11mm and 2.54mm grid spaced terminals, makes it an ideal choice where extreme packaging density and/or close PCB spacing are required. The relay operates well into the UHF spectrum making it ideal for applications including telecommunications, test equipment, mobile communications and attenuators.

NEW

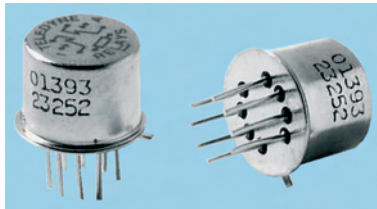
- High reliability
- Compact size
- Low coil power consumption
- High resistance to shock and vibration
- All welded construction

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	1A @ 28V dc	Operate/Release time	6 / 3ms
Contact resistance	150mR	Temperature range	-55°C to +85°C
Contact life	5,000,000 cycles	Interconnect capacitance	0.4pF
Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
990-6894	172-5	990-6908	172-12

414582

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V	64	990-6894	60.22	55.66	51.59
12V	400	990-6908	60.22	55.66	51.59

DPDT - T05
ER412 Series



NEW

The TO-5 style relay has become one of the industry standards for switching from low level to 1 ampere. Gold plated precious metal alloy contacts assure reliable switching from low level to full rated load. These relays are ideal for switching high frequency ac or high speed digital signals with applications wherever transmit receive switching is required.

- High reliability
- Low inter-contact capacitance
- High magnetic efficiency
- High resistance to shock and vibration
- All welded construction

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	1A @ 28V dc	Operate/Release time	2.0 / 1.5ms
Contact resistance	100mR	Temperature range	-65°C to +125°C
Contact life	10,000,000 cycles	Interconnect capacitance	0.4pF
Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
990-6835	ER412-5	990-6843	ER412-12

414569

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V	50	990-6835	73.07	70.89	59.79
12V	390	990-6843	73.07	70.89	59.79

DPDT Standard - T05
712 Series



DPDT Standard T0-5 style relay with gold plated precious metal alloy contacts to ensure reliable switching from low level to full rated load. Designed for high-density PCB mounting they are among the most versatile ultraminiature relays available because of their compact size and low coil power dissipation.

NEW

- High reliability
- Compact size
- Low coil power consumption
- High resistance to shock and vibration
- All welded construction

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	1A @ 28V dc	Operate/Release time	4 / 3ms
Contact resistance	150mR	Temperature range	-55°C to +85°C
Contact life	10,000,000 cycles	Interconnect capacitance	0.4pF
Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
990-6878	712-5	990-6886	712-12

414574

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V	50	990-6878	70.96	65.88	58.79
12V	390	990-6886	70.96	65.88	58.79

DPDT Sensitive Coil - T05
732 Series



The TO-5 style relay has become one of the industry standards for switching from low level to 1 ampere. This sensitive coil version has gold plated precious metal alloy contacts that ensure reliable switching from low level to full rated load. By virtue of the low intercontact capacitance and circuit losses these relays are ideal for switching frequency ranges well into the UHF spectrum. Applications are to be found wherever transmit receive switching is required and space is at a premium.

NEW

- High reliability
- Small size
- Low coil power consumption
- Low inter-contact capacitance
- High resistance to shock and vibration
- All welded construction

Contact arrangement	DPDT / 2 Form C	Insulation resistance	1000MR
Contact rating	1A @ 28V dc	Operate/Release time	6.0 / 3ms
Contact resistance	150mR	Temperature range	-55°C to +85°C
Contact life	10,000,000 cycles	Interconnect capacitance	0.4pF
Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
990-6851	732-5	990-6860	732-12

414572

COIL		Order Code	Price Each		
Volts	Ω		1+	10+	25+
5V	100	990-6851	72.98	70.44	62.33
12V	850	990-6860	72.98	70.44	62.33

PCB Relays

SPST 1A
G6L Series



THT - H = 3.8, W = 10.6, D = 7mm
SMD - H = 4.2, W = 10.6, D = 7mm

- High density mounting
- Dielectric strength of 1000V ac between coil and contacts
- High dielectric strength of 750V ac between contacts of the same polarity
- Conforms to FCC Part 68
- Approved to CSA C22.2 No. 60950 and UL Recognised
- Use of lead completely eliminated

Contact arrangement	Single-side Stable	Mechanical life	5,000,000 Operations
Electrical life	100,000 operations min. (rated load)	Coil power	180mW
Contact resistance (initial)	100mR max.	Rated carry current	1A
Max. switched voltage	125V ac, 60V dc	Max. switched current	1A
Rated load	0.3A @ 125V ac, 1A @ 24V dc	Operating temperature	-40 to 70°C
Order Code	Mfrs. List No.	Rated Current	Order Code
444-6264	G6L1P3DC	60mA	444-6320
444-6276	G6L1P4.5DC	40mA	444-6331
444-6288	G6L1P5DC	36mA	444-6343
444-6290	G6L1P12DC	15mA	444-6355
444-6306	G6L1P24DC	9.6mA	
			G6L1F4.5DC
			G6L1F5DC
			G6L1F12DC
			G6L1F24DC

311839

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	50+	100+	+
Single-sided stable							
3V	50	444-6264	12.94	11.64	10.48	9.44	--
4.5V	112.5	444-6276	12.94	11.64	10.48	9.44	--
5V	139	444-6288	12.94	11.64	10.48	9.44	--
12V	800	444-6290	12.94	11.64	10.48	9.44	--
24V	2504	444-6306	12.94	11.64	10.48	9.44	--
4.5V	112.5	SMD 444-6320	12.94	11.64	10.48	9.44	--
5V	139	SMD 444-6331	12.94	11.64	10.48	9.44	--
12V	800	SMD 444-6343	12.94	11.64	10.48	9.44	--
24V	2504	SMD 444-6355	12.94	11.64	10.48	9.44	--

Relays & Solenoids

33

Compliant
Non-compliant
+ Limited stock - RoHS replacement available
RoHS



**DPDT 1A
G6K Series**



- Low profile and weight for improved mounting efficiency
- Low power consumption
- Dielectric strength of 1500V ac
- Conforms to FCC Part 68
- Approved to **CSA C22.2 No. 950** and **UL Recognised**

THT - H = 5, W = 10, D = 6.5mm
SMD - H = 5.2, W = 10, D = 6.5mm

Contact arrangement DPDT
Mechanical life 50,000,000 Operations
Electrical life 100,000 operations min. (rated load)
Coil power 100mW
Contact resistance (initial) 100mR max.
Rated carry current 1A
Max. switched voltage 125V ac, 60V dc
Max. switched current 1A
Rated load 0.3A @ 125V ac, 1A @ 30V dc
Operating temperature -40 to 70°C

Order Code	Mfrs. List No.	Rated Current	Order Code	Mfrs. List No.	Rated Current
444-6069	G6K2P3DC	33mA	444-6161	G6K2F3DC	33mA
444-6070	G6K2P4.5DC	23.2mA	444-6173	G6K2F4.5DC	23.2mA
444-6082	G6K2P5DC	21.1mA	444-6185	G6K2F5DC	21.1mA
444-6094	G6K2P12DC	9.1mA	444-6197	G6K2F12DC	9.1mA
444-6100	G6K2P24DC	4.6mA	444-6203	G6K2F24DC	4.6mA
444-6112	G6K2PY3DC	33mA	444-6215	G6K2FY3DC	33mA
444-6124	G6K2PY4.5DC	23.2mA	444-6227	G6K2FY4.5DC	23.2mA
444-6136	G6K2PY5DC	21.1mA	444-6239	G6K2FY5DC	21.1mA
444-6148	G6K2PY12DC	9.1mA	444-6240	G6K2FY12DC	9.1mA
444-6150	G6K2PY24DC	4.6mA	444-6252	G6K2FY24DC	4.6mA
118-1065	G6KU-2PY 3DC	33mA	118-1070	G6KU-2FY 3DC	33mA
118-1066	G6KU-2PY 4.5DC	23.2mA	118-1071	G6KU-2FY 4.5DC	23.2mA
118-1067	G6KU-2PY 5DC	21.1mA	118-1072	G6KU-2FY 5DC	21.1mA
118-1068	G6KU-2PY 12DC	9.1mA	118-1073	G6KU-2FY 12DC	9.1mA
118-1069	G6KU-2PY 24DC	4.6mA	118-1074	G6KU-2FY 24DC	4.6mA

311836

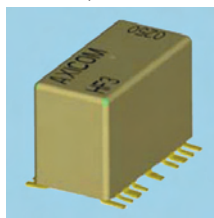
Contact arrangement DPCO, bifurcated contacts
Contact rating 0.5A @ 125V ac, 1A @ 30V dc
Max. switching voltage 125V ac, 110V dc
Contact material Silver, Gold plated
Coil consumption (nominal) 140mW, (24V dc 200mW)
Operate/Release (max.) 3ms/2ms
Coil operated range 75-150% (@ 23°C)
Temperature range -40°C to +70°C (PCB type)
-40°C to +85°C (SM type)

206943

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	250+
Surface Mount - DPCO Single Coil - G6H-2F Series						
5V dc	178	SMD994-9607	14.42	13.04	11.75	9.54
12V dc	1028	SMD994-9615	14.42	13.04	11.75	9.54
24V dc	2880	SMD994-9623	14.42	13.04	11.75	9.54
PCB - DPCO Single Coil - G6H-2100 Series						
5V dc	178	994-9194	11.20	10.11	9.54	8.47
12V dc	1028	994-9208	11.20	10.11	9.54	8.47
24V dc	2880	994-9216	11.20	10.11	9.54	8.47
PCB - DPCO Single Coil Latching - G6HU-2 Series						
5V	250	118-1058	18.72	17.35	16.63	15.56
12V	1440	118-1059	18.72	17.35	16.63	15.56
24V	3840	118-1060	18.72	17.35	16.63	15.56
PCB - DPCO Double Coil Latching - G6HK-2 Series						
5V	125 + 125	118-1061	18.72	17.35	16.63	15.56
12V	720 + 720	118-1062	18.72	17.35	16.63	15.56
24V	1920 + 1920	118-1064	18.72	17.35	16.63	15.56

1A Single Pole

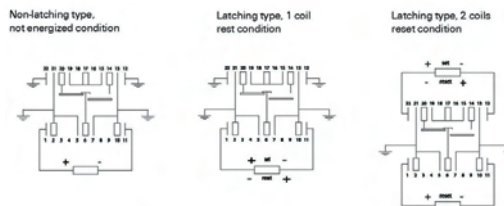
HF3 Series, 50Ω



H=10, W=14.6, D=7.2mm

- DC to 3 GHz frequency range
- 2A maximum switching current
- Polarized coil
- Low power consumption ≤140 mW
- Immersion cleanable

NEW



Contact arrangement SPDT - 1 form C
Frequency range 100mA
Impedance 50R
VSWR @ 3 GHz 1.2
Continuous contact current 1A @ max. ambient temperature
Switching capacity 100mA
Contact Material Gold
Coil consumption 140mW
Operate/Release 3 / 3ms typical
Temperature range -55 to 85°C

Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
991-3580	HF3-52	991-3610	HF3-76
991-3599	HF3-56	991-3629	HF3-92
991-3602	HF3-72	991-3637	HF3-96

414018

COIL		Order Code	Price Each			
Volts	Ω		1+	25+	50+	100+
Single-sided stable						
3V	91	444-6069	13.40	12.06	10.85	9.78
4.5V	194	444-6070	13.40	12.06	10.85	9.78
5V	237	444-6082	13.40	12.06	10.85	9.78
12V	1315	444-6094	13.40	12.06	10.85	9.78
24V	5220	444-6100	13.40	12.06	10.85	9.78
3V	91	SMD444-6161	13.40	12.06	10.85	9.78
4.5V	194	SMD444-6173	13.40	12.06	10.85	9.78
5V	237	SMD444-6185	13.40	12.06	10.85	9.78
12V	1315	SMD444-6197	13.40	12.06	10.85	9.78
24V	5220	SMD444-6203	13.40	12.06	10.85	9.78
Single-side stable Bellcore						
3V	91	444-6112	13.40	12.06	10.85	9.78
4.5V	194	444-6124	13.40	12.06	10.85	9.78
5V	237	444-6136	13.40	12.06	10.85	9.78
12V	1315	444-6148	13.40	12.06	10.85	9.78
24V	5220	444-6150	13.40	12.06	10.85	9.78
3V	91	SMD444-6215	13.40	12.06	10.85	9.78
4.5V	194	SMD444-6227	13.40	12.06	10.85	9.78
5V	237	SMD444-6239	13.40	12.06	10.85	9.78
12V	1315	SMD444-6240	13.40	12.06	10.85	9.78
24V	5220	SMD444-6252	13.40	12.06	10.85	9.78
Single Winding Latching						
3V	91	118-1065	15.04	14.06	13.51	12.40
4.5V	194	118-1066	15.04	14.06	13.51	12.40
5V	237	118-1067	15.04	14.06	13.51	12.40
12V	1315	118-1068	15.04	14.06	13.51	12.40
24V	5220	118-1069	15.04	14.06	13.51	12.40
3V	91	SMD118-1070	15.04	14.06	13.51	12.40
4.5V	194	SMD118-1071	15.04	14.06	13.51	12.40
5V	237	SMD118-1072	15.04	14.06	13.51	12.40
12V	1315	SMD118-1073	15.04	14.06	13.51	12.40
24V	5220	SMD118-1074	15.04	14.06	13.51	12.40

Subminiature - High Sensitivity - G6H Series



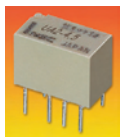
L=14.0, W=9.0, H=5.0
Pin spacing=2.54

- DPDT high sensitivity relay
- Gold plated crossbar contacts
- 80mW coil pick up power
- Sealed to **IP67**
- Low level switching with high operating speed
- Ideal for telecom and instrumentation applications
- Surface mount version available
- **UL Recognised** and **CSA approved**
- Conforms to **FCC Part 68**

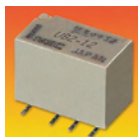
COIL		Order Code	Price Each			
Volts	Ω		1+	10+	25+	50+
Non-Latching Single coil						
4.5V	145	SMD991-3580	21.26	19.63	17.09	15.72
12V dc	1028	SMD991-3599	21.26	19.63	17.09	15.72
Latching Single coil						
4.5V	289	SMD991-3602	21.26	19.63	17.09	15.72
12V dc	2057	SMD991-3610	21.26	19.63	17.09	15.72
Latching Twin coil						
4.5V	145	SMD991-3629	21.26	19.63	17.09	15.72
12V dc	1028	SMD991-3637	21.26	19.63	17.09	15.72

Subminiature - Signal
DPDT - 1A, 110V dc/120V ac

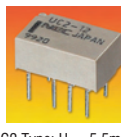
NEC



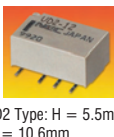
UA2 Type: H = 8.0mm,
W = 10.6mm,
D = 5.7mm



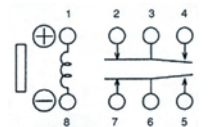
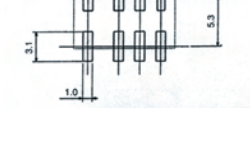
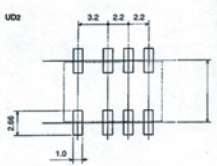
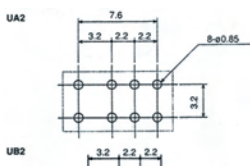
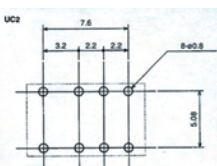
UB2 Type: H = 8.8mm,
W = 10.6mm,
D = 5.7mm



UC2 Type: H = 5.5mm,
W = 10.6mm,
D = 6.5mm



UD2 Type: H = 5.5mm,
W = 10.6mm,
D = 6.5mm



- Compact and light weight
- 2 Form C contact arrangement
- Low power consumption (140mW)
- UL recognised, CSA certified
- Super high density mounting
- Meets Bell-Core standard requirements
- Meets IEC950/UL1950/EN60950 insulation distance

Contact arrangement DPDT
Current, switching (max) 1A @ 110Vdc/125Vac
Voltage, switching (max) 110Vdc/125Vac
Power, switching (max) 37.5
Material, contacts Silver alloy, gold overlay

Time, operate/release 4ms/4ms (without diode)
Resistance, contact 100mR max.
Operating range, temp. -40°C to 85°C
Consumption, coil 1000mR

Order Code	Mfrs. List No.	Coil Voltage (V dc)	Coil Resistance (Ω's)
109-4048	UA2-5NU	5	178
109-4049	UA2-12NU	12	1028
109-4050	UA2-24NU	24	2504
109-4052	UB2-5NU	5	178
109-4053	UB2-12NU	12	1028
109-4054	UB2-24NU	24	2504
109-4055	UC2-5NU	5	178
109-4056	UC2-12NU	12	1028
109-4057	UC2-24NU	5	178
109-4058	UD2-5NU	5	178
109-4059	UD2-12NU	12	1028
109-4060	UD2-24NU	24	2504

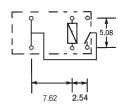
Order Code	Price Each				
	1+	50+	100+	250+	+
DPDT - Through Hole UA2 type					
109-4048	9.89	9.01	8.10	6.30	--
109-4049	9.89	9.01	8.10	6.30	--
109-4050	9.89	9.01	8.10	6.30	--
DPDT - Surface Mount UB2 type					
SMD 109-4052	10.80	9.92	9.07	6.39	--
SMD 109-4053	10.80	9.92	9.07	6.39	--
SMD 109-4054	10.80	9.92	9.07	6.39	--
DPDT - Through Hole UC2 type					
109-4055	9.89	9.01	8.10	6.30	--
109-4056	9.89	9.01	8.10	6.30	--
109-4057	9.89	9.01	8.10	6.30	--
DPDT - Surface Mount UD2 type					
SMD 109-4058	10.80	9.92	9.07	6.39	--
SMD 109-4059	10.80	9.92	9.07	6.39	--
SMD 109-4060	10.80	9.92	9.07	6.39	--

Subminiature - High Sensitivity - G5V-1 Series

OMRON



L=12.3, W=7.3, H=9.9



- SPCO contacts
- High sensitivity 150mW coil
- Wide switching capacity of 1mA to 1A
- Fully sealed
- UL Recognised and CSA approved
- Conforms to FCC Part 68

Contact arrangement SPCO
Contact rating 1A @ 24V dc,
0.5A @ 125V ac
Contact material Silver, Gold clad

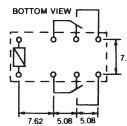
Coil consumption (nom.) 150mW
Operate/Release (max.) 5ms/5ms
Coil operating range 80% - 200% (@ 55°C)
Temperature range -40°C to +70°C

206983

COIL	Volts	Ω	Order Code	Price Each				
				1+	20+	100+	250+	+
SPCO - G5V-1 Series								
5V dc	167		994-9577	4.95	4.54	4.25	3.75	--
12V dc	960		994-9585	4.95	4.54	4.25	3.75	--
24V dc	3840		994-9593	4.95	4.54	4.25	3.75	--

Subminiature - G5V-2 Series

OMRON



- DPCO contacts
- Fully sealed
- 10mA to 2A switching
- Bifurcated contacts ideal for signal switching
- UL Recognised and CSA approved
- Conforms to FCC Part 68

Contact arrangement DPCO
Contact rating 2A @ 30V dc,
0.5A @ 125V ac
Contact material Silver, Gold clad
Dielectric strength 1000V ac (coil-contact)

Coil consumption 500mW
High sensitivity 150mW
Operate/Release 7ms/3ms
Coil operating range 75% - 120%
Temperature range -25°C to +65°C

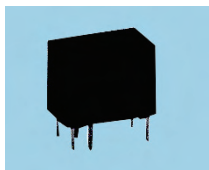
206957

COIL	Volts	Ω	Order Code	Price Each				
				1+	25+	50+	100+	+
DPCO - G5V-2 Series								
4.5V dc	40		994-9810	4.42	3.98	3.58	3.23	--
5V dc	50		994-9488	4.42	3.98	3.58	3.23	--
9V dc	162		994-9828	4.42	3.98	3.58	3.23	--
12V dc	288		994-9496	4.42	3.98	3.58	3.23	--
24V dc	1152		994-9500	4.42	3.98	3.58	3.23	--
48V dc	4000		994-9836	4.42	3.98	3.58	3.23	--
High Sensitivity DPCO - G5V-2-HI Series								
5V dc	166		994-9844	6.53	5.88	5.29	4.77	--
9V dc	540		994-9852	6.53	5.88	5.29	4.77	--
12V dc	960		994-9860	6.53	5.88	5.29	4.77	--
24V dc	2880		994-9879	6.53	5.88	5.29	4.77	--

SPDT 1A @ 120V ac / 24V dc

tyco Electronics OEG

TSC Series



H = 9.9, W = 12.3, D = 7.4mm

- 1 x Form C contact
- Low coil power, IC compatible
- Designed for thermostat, modem, computer peripherals and security applications
- CSA Approved, UL Recognised

Contact arrangement SPDT
Contact current rating 1A @ / 120V ac (resistive)
Coil current rating 30mA
Power - Coil 150mW
Surge between coil and contacts 1500V
Contact material Gold overlay Silver Nickel Alloy
Operating temperature -40 to 80°C

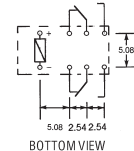
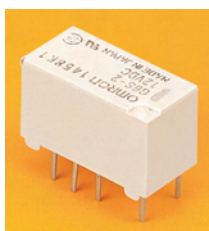
List No.	Order Code
TSC-105L3H	965-9668

411857

Coil	Voltage	Ω	Order Code	Price Each				
				1+	25+	100+	250+	+
5V	166		965-9668	5.53	4.92	4.36	4.00	--

Subminiature - High Sensitivity - G6S Series

OMRON



L=14.8, W=7.3, H=10.8

- DPCO contacts
- Satisfies BELL-CORE requirements for 2.5K coil/contact isolation
- Lower power consumption
- Fully sealed
- UL Recognised and CSA approved

Contact arrangement DPCO
Contact rating 2A @ 30V dc,
0.5A @ 125V ac
Contact material Silver, Gold plated
Max. switch voltage 220V dc, 240V ac

Coil consumption (nom.) 140mW (5V, 12V),
200mW (24V)
Operate/Release 2.5ms/1.5ms
Coil operating range 75 - 140% (@ 70°C)
Temperature range -40°C to +85°C

206980

COIL	Volts	Ω	Order Code	Price Each				
				1+	20+	100+	250+	+
DPCO - G62-2 Series								
5V dc	178		995-0052	14.77	13.29	12.54	11.21	--
12V dc	1028		995-0060	14.77	13.29	12.54	11.21	--
24V dc	2880		995-0079	14.77	13.29	12.54	11.21	--

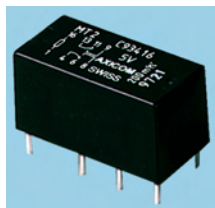
Compliant Non-compliant Limited stock - RoHS replacement available

RoHS

DPCO 2A
MT2 Series, non-latching



NEW



- 2 pole telecom/signal relay
- THT type
- Non-polarized, non-latching coil
- Bifurcated contacts
- Immersion cleanable

H=11, W=20.2, D=10mm

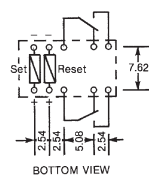
Contact arrangement	DPDT - 2 form C	Contact Material	Silver-nickel, gold covered
Switching voltage max.	220V dc / 250V ac	Coil consumption	150mW
VSWR @ 900 MHz	1.31	Operate/Release	4 / 1ms typical
Continuous contact current	2A @ max. ambient temp.	Temperature range	-55 to 85°C
Switching capacity	2A		

Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
991-3645	MT2-C93401	991-3700	MT2-C93422
991-3653	MT2-C93402	991-3718	MT2-C93424
991-3661	MT2-C93403	991-3726	MT2-C93425
991-3670	MT2-C93416	991-3734	MT2-C93450
991-3688	MT2-C93418	991-3742	MT2-C93432
991-3696	MT2-C93419	991-3750	MT2-C93431

414027

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	500+
High sensitive version (150 mW)						
5V	168	991-3645	7.03	5.63	4.92	4.17
12V dc	968	991-3653	7.03	5.63	4.92	4.17
24V dc	3872	991-3661	7.03	5.63	4.92	4.17
Sensitive version (200 mW)						
5V	125	991-3670	7.03	5.63	4.92	4.17
12V dc	720	991-3688	7.03	5.63	4.92	4.17
24V dc	2880	991-3696	7.03	5.63	4.92	4.17
Standard version (400 mW)						
5V	63	991-3700	7.03	5.63	4.92	4.17
12V dc	360	991-3718	7.03	5.63	4.92	4.17
24V dc	1440	991-3726	7.03	5.63	4.92	4.17
Standard version (550 mW)						
5V	45	991-3734	7.03	5.63	4.92	4.17
12V	280	991-3742	7.03	5.63	4.92	4.17
24V dc	1050	991-3750	7.03	5.63	4.92	4.17

High Sensitivity - G5A/G5AK Series
Latching/Non-latching



- DPCO bifurcated contacts
- BT Type 53 approved
- Low 85mW coil pick up power
- Permanent magnet construction, coil polarity must be ordered

L=16.0, W=9.9, H=8.0

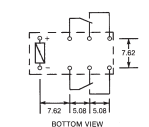
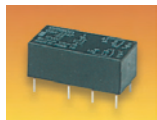
For G5A omit reset coil and pins.

Contact arrangement	DPCO	Operate/Release	5ms
Contact rating	1A @ 30V dc, 0.5A @ 120V ac	Coil operating range	Standard 70 - 160% Latching 80 - 110%
Contact material	Silver Palladium, Gold clad	Temperature range	-40°C to +70°C
Coil consumption	200mW		

206947

British Telecom Code	Volts	COIL Ω	Order Code	Price Each			
				1+	20+	100+	250+
DPCO - G5A-234P-53 Series							
53/1	4.5V dc	101	994-9267	10.48	9.51	8.95	7.43
53/3	12V dc	720	994-9275	10.48	9.51	8.95	7.43
53/5	24V dc	2880	994-9283	10.03	9.34	8.95	8.01
Latching DPCO - G5AK-234P Series							
—	5V dc	101+101	994-9291	15.44	13.61	12.16	10.11
—	12V dc	720+720	994-9305	15.44	13.61	12.16	10.11
—	24V dc	2880+2880	994-9313	15.44	13.61	12.16	10.11

High Isolation - G6A-BS Series



- DPCO contacts
- Approved to BAPT BS6301
- Fully sealed
- 2kVrms isolation coil/contact and 2.5mm creepage/clearance
- Suitable for telecoms and office equipment

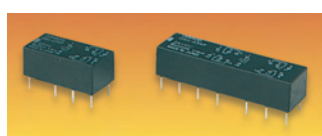
L=20.2, W=10.1, H=8.0

Contact arrangement	DPCO	Coil consumption	280mW
Contact rating	0.3A @ 110V ac 1A @ 60V dc	Operate/Release	5ms/3ms
Contact material	Gold overlay Silver Palladium	Coil operating range	70 - 150%
		Temperature range	-10°C to +70°C

207144

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	250+
DPCO - G6A-234P-BS Series						
5V dc	89	994-9100	13.27	12.00	11.34	9.99
12V dc	514	994-9119	13.27	12.00	11.34	9.99
24V dc	2057	994-9127	13.27	12.00	11.34	9.99

High Sensitivity - G6A Series



- DPCO and 4PCO bifurcated contacts
- Fully sealed, suitable for immersion cleaning
- Satisfies CCIT lighting test requirement
- Permanent magnet construction, coil polarity must be observed

G6A-234P	L=20.2, W=10.1, H=8.0	G6A-434P	L=35.4, W=10.1, H=8.0
Contact arrangement	DPCO/4PCO	Coil consumption:	G6A-234P/G6AK-234P 200mW/180mW G6A-434P/G6AK-434P 360mW/320mW
Contact rating	0.3A @ V ac 1A @ 60V dc	Operate/Release:	G6A-234P/G6AK 234P 5ms/5ms / (max.)5ms5ms G6A-434P/G6AK 234P 7ms/5ms / (max.)7ms7ms
Contact material	Ag (Au-Alloy)	Coil operating range	70 - 150%
		Temperature range	-25°C to +70°C

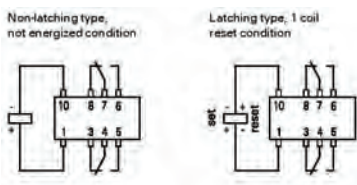
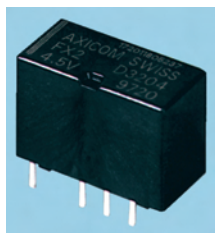
207098

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	250+
DPCO - G6A-234P Series						
4.5V dc	101	994-8988	8.35	7.72	7.25	6.80
12V dc	720	994-8996	11.04	9.95	9.39	8.32
24V dc	2880	994-9003	11.04	9.95	9.39	8.32
48V dc	11520	994-9011	11.04	9.95	9.39	8.32
4PCO - G6A-434P Series						
5V dc	69	994-9135	22.81	20.54	19.40	17.14
12V dc	400	994-9143	22.81	20.54	19.40	17.14
24V dc	1600	994-9151	22.81	20.54	19.40	17.14
DPCO Latching - G6AK-234P Series						
5V dc	139 + 139	118-1048	15.23	13.83	13.22	12.40
12V	800 + 800	118-1049	15.23	13.83	13.22	12.40
24V	3200 + 3200	118-1050	15.23	13.83	13.22	12.40
4PCO Latching - G6AK-434P Series						
5V dc	78.1 + 78.1	118-1052	26.98	24.48	23.40	21.94
12V	450 + 450	118-1053	26.98	24.48	23.40	21.94
24V	1800 + 1800	118-1054	26.98	24.48	23.40	21.94

DPDT 2A
FX2 Series, single coil



NEW



H=10.7, W=14.93, D=7.27mm

- 2 pole telecom/signal relay
- THT type
- Bifurcated contacts
- Robust construction - mechanical shock up to 300 G
- Immersion cleanable

Contact arrangement	DPDT - 2 form C	Contact Material	Palladium-ruthenium - gold covered
Switching voltage max.	220V dc / 250V ac	Coil consumption	3 / 3ms typical
VSWR @ 900 MHz	1.45	Operate/Release	2A @ max. ambient temperature
Continuous contact current	2A @ max. ambient temperature	Temperature range	-55 to 85°C
Switching capacity	2A		

Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
991-3882	FX2-D3209	991-3939	FX2-D3227
991-3890	FX2-D3202	991-3947	FX2-D3243
991-3904	FX2-D3212	991-3955	FX2-D3246
991-3912	FX2-D3223	991-3963	FX2-D3247
991-3920	FX2-D3226		

414048

COIL		Order Code	Price Each		
Volts	Ω		1+	25+	100+
Non-latching Single coil					
5V	178	991-3882	6.58	5.44	4.92
12V dc	1028	991-3890	6.58	5.44	4.92
24V dc	2880	991-3904	6.58	5.44	4.92
Non-latching Single coil - Sensitive version					
5V	313	991-3912	8.85	7.75	6.64
12V dc	1800	991-3920	8.85	7.75	6.64
24V dc	4114	991-3939	8.85	7.75	6.64
Latching Single coil					
5V	250	991-3947	7.39	6.48	5.53
12V dc	1440	991-3955	7.39	6.48	5.53
24V dc	3840	991-3963	7.39	6.48	5.53

SPDT - 5A
G5SB Series



NEW



(No coil polarity)

H = 15.8, W = 20.3, D = 10.3mm

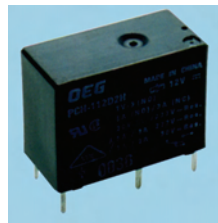
Contact arrangement SPDT
 Mechanical life 5,000,000 operations
 Electrical life 10000operations: 5A (NO) / 3A (NC) @ 30V dc resistive load
 Coil power 400mW
 Contact resistance (initial) 100mR max.
 Rated carry current 5A (NO) / 3A (NC)
 Max. switched voltage 250V ac, 30V dc
 Max. switched current 5A (NO) / 3A (NC)
 Operating temperature -40 to 70°C

Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
991-9031	G5SB145DCBYOMI	991-9023	G5SB1424DCBYOMI
991-9015	G5SB1412DCBYOMI		

414192

Coil Volts	Ω	Order Code	Price Each			
			1+	10+	25+	50+
5V	63	991-9031	4.20	3.61	3.22	2.90
12V	360	991-9015	4.20	3.61	3.22	2.90
24V	1440	991-9023	4.20	3.61	3.22	2.90

SPST-NO - 10A @ 125V ac
PCH Series



- Compact size
- High surge voltage
- Sensitive coil
- CSA and VDE Approved, UL Recognised

H = 15.2, W = 19.8, D = 9.9mm

Contact arrangement SPST
 Contact current rating 10A @ 125V ac resistive
 Contact current rating 5A @ 125V ac resistive
 Power - Coil 10A @ 125V ac resistive
 Surge between coil and contacts 200mW
 Contact material 8000V AgSnO

List No.	Order Code	List No.	Order Code
PCH-105L2MH	965-9323	PCH-124L2MH	965-9340
PCH-112L2MH	965-9331		

411692

Coil Voltage	Ω	Order Code	Price Each			
			1+	25+	100+	250+
5V dc	125	965-9323	2.80	2.51	2.25	2.05
12V	420	965-9331	2.80	2.51	2.25	2.05
24V	2800	965-9340	2.80	2.51	2.25	2.05

Miniature Signal - G6E Series



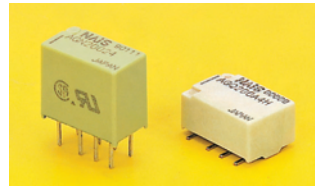
- SPCO contacts
- 98mW coil pick up power
- UL Recognised and CSA approved
- Fully sealed

Contact arrangement SPDT/SPDT
 Contact rating 2A @ 220V dc, 0.4A @ 250V ac
 Contact material Ag (Au-Alloy)
 Coil consumption: 200mW (400mW for 48V dc)
 Operate/Release: 5ms/5ms
 Temperature range -40°C to +70°C

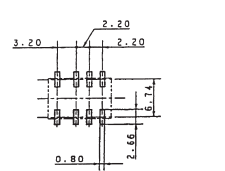
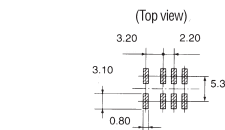
207140

COIL Volts	Ω	Order Code	Price Each			
			1+	20+	100+	250+
SPCO Single Coil - G6E-134P Series						
5V	125	994-9160	8.28	7.72	7.25	6.14
12V	720	994-9178	8.28	7.72	7.25	6.14
24V	2880	994-9186	8.36	7.80	7.32	6.20
SPDT Double Coil - G6E-134P Series						
5V	125 + 125	118-1045	12.86	12.24	11.65	10.81
12V	720 + 720	118-1046	12.86	12.24	11.65	10.81
24V	2880 + 2880	118-1047	12.86	12.24	11.65	10.81

Ultraminiature - AGN/AGQ Series

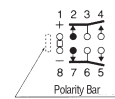


AGN L=10.6, W=5.7, D=9.00
 AGQ L=10.6, W=7.2, D=5.20

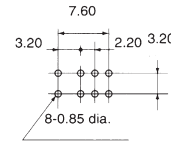


- Ultralim and Ultraflat body styles available
- Through hole or surface mount options
- Twin crossbar contacts for high reliability
- High sensitivity coil (140mW)
- Satisfies BELL-CORE requirements for 2.5kV coil/contact
- Applications include Telecomms, Measuring instruments and Multimedia TVs

Schematic Bottom View



(Bottom view)

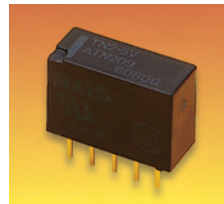


Contact arrangement DPCO
 Contact rating A @ 125V ac, 1A @ 30V dc
 Contact material Silver Palladium, Gold clad
 Coil consumption 140mW
 Operate/Release 4ms/4ms
 Temperature range -40°C to +85°C

207084

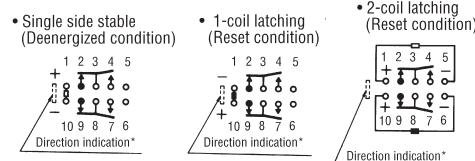
COIL Volts	Ω	Order Code	Price Each			
			1+	25+	50+	100+
DPCO Slim - AGN Series						
4.5V dc	145	310-4771	10.85	9.89	9.07	8.35
12V dc	1028	310-4783	10.96	9.99	9.16	8.43
DPCO Slim Surface Mount - AGN Series						
4.5V dc	145	310-4795	11.35	10.37	9.48	8.78
12V dc	1028	310-4801	11.65	---	---	---
DPCO Flat - AGQ Series						
4.5V dc	145	310-4813	11.82	10.76	9.86	9.10
12V dc	1028	310-4825	11.70	9.89	9.07	8.35
DPCO Flat Surface Mount - AGQ Series						
4.5V dc	145	310-4837	12.09	10.99	10.08	9.32
12V dc	1028	310-4849	12.21	11.10	10.18	9.41

Miniature - TN/TNL/TNL2 Series
Non Latching/1 Coil Latching/2 Coil Latching



L=14, W=5.6, H=9.8,
 Pin spacing 2.54,
 PCB hole dia=1.0

Schematic (Bottom view)



*Orientation stripe located on top of relay

207140

Relays & Solenoids

33

Compliant Non-compliant
 Limited stock - RoHS replacement available
RoHS



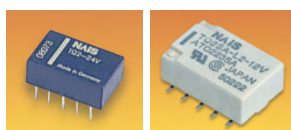
Contact arrangement DPCO
 Contact rating 0.5A @ 125V ac, 1A @ 30V dc
 Contact material Silver, Gold plated
 Coil consumption 140mW (non latching), 100mW (1 coil latching), 200mW (2 coil latching)
 Coil operating range 75 - 150%
 Operate/Release 2ms/1ms
 Temperature range -40°C to +70°C

207129

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	50+	100+	+
DPCO - TN Series							
5V dc	178	120-0955	14.78	13.57	12.11	10.71	--
12V dc	1028	120-0956	14.78	13.57	12.11	10.71	--
24V dc	2880	910-405	14.42	12.98	11.58	9.13	--
1 Coil Latching DPCO - TN-L Series							
5V dc	250	910-417	13.27	11.78	10.05	8.28	--
2 Coil Latching DPCO - TN-L2 Series							
5V dc	125	910-442	15.22	13.72	12.22	9.68	--
12V dc	720	910-454	15.22	13.72	12.22	9.68	--
24V dc	1920	910-466	16.81	15.14	13.52	10.69	--

Subminiature - TQ2/TQ2-L2 Series

Latching/Non-latching, High Sensitivity PCB and Surface Mounts



L=14.0, W=9.0, H=4.75. Pin spacing=2.54

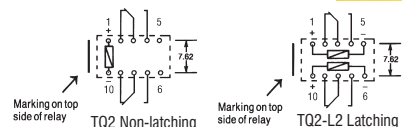


Diagram shows the 'reset' position when terminals 6 and 10 are energised. Energise terminals 1 and 5 to transfer contacts.

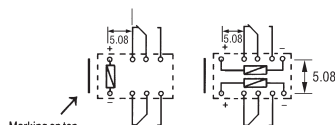
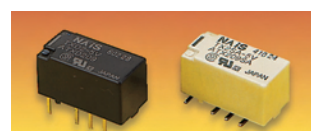
- DPCO subminiature relay fully sealed to IP67
- Gold plated crossbar contacts ensure maximum reliability
- Insertion loss below 0.1dB at 100MHz
- Sealed to IP67
- UL Recognised and CSA approved
- Surface mount version available

Contact arrangement DPCO, bifurcated contacts
 Contact rating 0.5A @ 125V ac, 1A @ 30V dc
 Switched current range 10µA - 1A
 Switched voltage range 10mV - 125V
 Max. power 300W/100VA
 Contact material Silver, Gold plated
 Coil consumption (nom.) 140mW (non latching), 200mW (latching)
 Operate/Release 3ms/3ms
 Coil operating range 75 - 130% @ 40°C
 Temperature range -40°C to +70°C (PCB type) -40°C to +85°C (SM type)

207158

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	50+	100+	+
DPCO - TQ2 Series							
5V dc	178	117-5716	8.37	7.52	6.97	6.38	--
12V dc	1028	120-0949	9.57	8.59	7.94	7.32	--
24V dc	2880	117-5717	9.50	8.57	8.22	6.87	--
Latching DPCO - TQ2-L2 Series							
5V dc	125+125	117-5718	10.45	9.41	8.69	8.01	--
12V dc	720+720	117-5719	17.52	14.93	12.41	9.23	--
24V dc	1920+1920	117-5720	11.16	10.03	9.28	8.53	--
Surface Mount - DPCO - TQ2SA Series							
5V dc	178	SMD112-4054	11.45	9.87	9.38	8.28	--
12V dc	1028	SMD112-4056	11.45	10.18	9.38	8.60	--
24V dc	2880	SMD112-4057	15.11	13.23	11.68	10.00	--
Surface Mount - Latching DPCO - TQ2SA-L2 Series							
5V dc	178+178	SMD625-760	15.28	13.20	11.62	10.60	--
12V dc	1028+1028	SMD112-4058	15.01	13.18	11.59	10.68	--
24V dc	2880+2880	SMD625-784	18.23	15.91	14.03	11.93	--

Subminiature - High Sensitivity - TX2 Series
PCB and Surface Mount



L=15, W=7.4, H=8.2 PCB hole dia=1.0 Pin Spacing=2.54

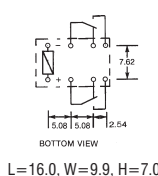
- High contact capacity : 2A 30V dc
- High coil/contact breakdown voltage 2kV
- High insulation version conforming to EN41003 available
- Surface mount versions available with gull wing contacts

Contact arrangement DPCO
 Contact rating 2A @ 30V dc, 0.5A @ 125V ac
 Max. switching power (res) 60W
 Min. switching capability 10µA - 10mV dc
 Contact material Silver alloy, Gold clad
 Coil consumption (nom.) Non-Latching: 140mW Latching: 200mW
 Operate/Release 4ms/4ms
 Coil operating range 75 - 150%
 Temperature range -40°C to +85°C

207013

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	50+	100+	+
DPCO - TX2 Series							
5V dc	178	120-0950	13.48	11.75	10.35	9.47	--
12V dc	1028	120-0952	13.48	11.75	10.35	9.47	--
24V dc	4114	112-4059	13.17	11.26	9.93	8.40	--
Surface Mount - DPCO - TX2SA Series							
5V dc	178	120-0957	12.40	11.65	10.64	9.34	--
12V dc	1028	910-480	12.09	11.13	10.18	8.27	--
Latching DPCO - TX2-L2 Series							
5V dc	125	625-826	10.94	10.52	9.76	9.17	--
12V dc	720+720	112-4060	10.94	9.92	9.10	8.70	--
24V dc	2880+2880	112-4061	12.77	11.58	10.63	9.86	--

BT53 Approved, High Sensitivity - DF2 Series



L=16.0, W=9.9, H=7.0

- DPCO contacts
- Fully sealed
- Ideal for high density packing in telecom switching
- BT Type 53 approval
- Permanent magnet construction, coil polarity must be observed
- Vent hole can be pierced for maximum contact life

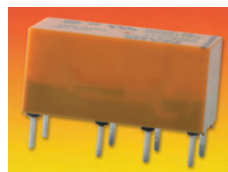
Contact arrangement DPCO
 Coil consumption (nom.) 200mW
 Max. switched power 30W/30VA
 Max. switched current 1A
 Max. switched voltage 125V dc/V ac
 Contact material Silver, Gold clad
 Operate/Release 5ms/5ms
 Coil operating range 70 - 140%
 Temperature range -25°C to +70°C

206945

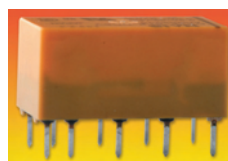
British Telecom Code	COIL		Order Code	Price Each		
	Volts	Ω		1+	25+	+
DPCO - DF2 Series						
53/1	4.5V dc	101	280-525	8.30	8.23	--
53/3	12V dc	720	280-537	8.30	8.28	--
53/5	24V dc	2880	280-549	8.30	8.28	--

Subminiature - DS2ES/DS2ESL2 Series

Latching/Non-latching

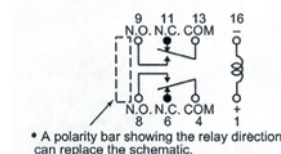


H=9.8, W=20, D=9.9mm S Series - Single Side Stable

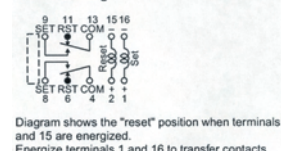


SL2 Series - 2 Coil Latching H=9.8, W=20, D=9.9mm

Schematic (Bottom view) Single side stable Deenergized condition



2 coil latching



- High sensitivity
- High switching capacity
- High breakdown voltage

- Can be used with 16 pin IC socket
- UL Recognised, CSA & BSI approved

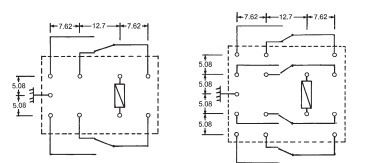
Contact arrangement DPCO
 Switching voltage max. 220V dc, 250V dc
 Switching power max. 60W/125VA
 Carrying current max. 3A ac & dc
 Contact material Silver, Gold clad
 Coil consumption 200mW Single Sided 180mW 2 Coil
 Operate/Release 3ms/2ms
 Breakdown voltage 1500V FCC (between open contacts)
 Temperature range -40°C to +70°C

272334

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	50+	100+	+
DPCO (2 Form C) - DS2E-S Series							
5V	125	438-9920	27.16	21.37	18.67	16.97	--
12V	720	438-9931	27.16	21.37	18.67	16.97	--
24V	2880	438-9943	27.16	21.37	18.67	16.97	--
2 coil latching DPCO (2 Form C) - DS2E-SL2 Series							
5V	139+139	438-9955	33.11	26.01	22.32	19.62	--
12V	800+800	438-9967	33.11	26.01	22.32	19.62	--
24V	3200+3200	438-9979	33.11	26.01	22.32	19.62	--

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

Low Profile - NF2EB/4EB Series
Sealed



NF2EB L=29.6, W=19.6, H=10.8
NF4EB L=29.6, W=24.2, H=10.8

- DPCO and 4PCO contacts
- Fully sealed
- UL Recognised

- CSA and VDE approved
- Fully sealed

Contact arrangement	DPCO/4PCO	Operate/Release	15ms/10ms
Contact rating	2A @ 30V dc, 50V ac	Coil operating range	70 - 175%
Contact material	Silver, Gold clad	Temperature range	-40°C to +65°C
Coil consumption	DPCO 290mW 4PCO 400mW		

207103

COIL	Volts	Ω	Order Code	1+	50+	100+	250+	+
DPCO - NF2EB Series								
12V dc	500		120-0946	30.50	27.47	25.39	23.34	--
24V dc	2000		117-5714	24.10	23.15	21.55	19.40	--
Latching DPCO - NC2D Series								
12V dc	180 + 180		117-5709	48.01	43.36	39.11	--	--
4PCO - NF4EB Series								
5V dc	53		120-0947	38.02	34.21	31.64	29.10	--
12V dc	330		117-5715	32.70	31.75	29.05	23.19	--
24V dc	1200		120-0948	38.02	34.21	31.64	29.10	--

Miniature - S2/S4 Series

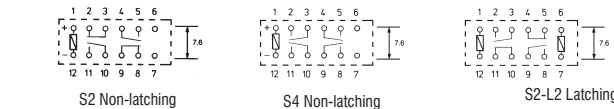


Latching/Non-latching



- Available as a monostable or bistable device with bifurcated contacts ensuring low contact resistance
- Unique five layer contact design permits load switching between 1nW and 1KVA
- Pivoting rotating armature ensures high shock and vibration resistance
- Permanent magnet field is used in conjunction with the coil force resulting in a high reliability, high sensitivity relay

- High frequency characteristics exhibit insertion losses of below 0.5dB at 100MHz
- Sealed to **IP67**



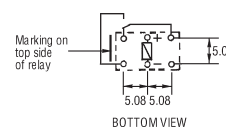
Correct coil polarity must be observed.

Contact arrangement	2NO+2NC, 4NO
Contact rating	4A @ 250V ac, 3A @ 30V dc
Max. power	90W/1000VA
Contact material	Silver alloy
Coil consumption (nom.)	192mW
Operate/Release	15ms/10ms (S2), 9ms/5ms (S3), 10ms/5ms (S4)
Coil operating range	65 - 140%
Temperature range	-55°C to +65°C

207159

COIL	Volts	Ω	Order Code	1+	25+	50+	100+	+
DPNO + DPNC - S2 Series								
5V dc	130		117-5721	29.84	23.47	20.51	19.30	--
12V dc	720		117-5722	29.83	23.47	20.51	19.02	--
24V dc	2850		117-5723	32.63	25.61	22.43	20.48	--
4PNO - S4 Series								
5V dc	130		117-5724	29.84	23.47	20.51	19.30	--
12V dc	720		117-5726	29.84	23.47	20.51	18.96	--
24V dc	2850		117-5727	32.63	25.61	22.43	21.14	--
Latching DPNO + DPNC - S2-L2 Series								
5V dc	130 + 130		117-5728	36.20	28.94	25.32	22.92	--
12V dc	720 + 720		117-5729	34.96	27.41	23.97	23.04	--
24V dc	2850 + 2850		117-5730	44.92	40.43	37.40	34.37	--

1A Subminiature - V23026 Series



L=13.0, W=7.62, H=6.9 PCB hole dia=0.8

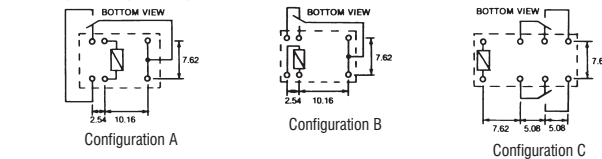
Contact arrangement	SPDT, 1 Form C	Coil consumption	60mW to 130mW
Contact rating	1A @ 30V dc (30W), 0.5A @ 110V ac (60VA)	Operate/Release	1ms/1ms
Contact material	Rhodium	Coil operating range	75 - 200%
Mfrs. List No:	V23026-A1001-B201 = 117-4999 V23026-A1004-B201 = 117-5001 V23026-A1002-B201 = 117-5000 V23026-C1051-B201 = 121-8832	Temperature range	40°C to +70°C
	V23026-C1052-B201 = 421-9235 V23026-C1054-B201 = 421-9247 V23026-B1101-B201 = 421-9259 V23026-B1102-B201 = 421-9260		

COIL	Volts	Ω	Order Code	1+	10+	25+	50+	+
Monostable Single coil								
5V dc	370		117-4999	17.76	13.92	12.63	10.17	--
12V dc	2250		117-5000	17.79	13.92	12.63	10.17	--
24V dc	4500		117-5001	20.06	15.75	14.19	11.48	--
Bistable Single coil								
5V dc	740		121-8832	9.64	8.44	7.50	6.11	--
12V dc	4500		421-9235	9.64	8.44	7.50	6.11	--
24V dc	4500		421-9247	10.30	9.01	8.00	6.55	--
Bistable Double coil								
5V dc	390		421-9259	10.17	8.95	7.94	6.49	--
12V dc	1500		421-9260	10.17	8.95	7.94	6.49	--

Subminiature - V23101/5 Series



V23101D L=15.6, W=10.6, H=11.5, PCB hole dia.=1
V123102C L=20.2, W=10.0, H=10.7, PCB hole dia.=0.8



- SPCO or DPCO bifurcated contacts
- Sealed to **IP67** suitable for immersion cleaning

Contact arrangement	SPCO	DPCO
Contact rating		
Max. current	2A (switching)/1A (continuous)	2A (switching)/1.25A (continuous)
Max. voltage	60V dc/125V ac	150V dc/125V ac
Max. power	30W/60VA	30W/60VA
Contact material	Silver Palladium, gold plated	Silver palladium, gold plated
Operate time		
Standard/Sensitive	3ms/5ms	4ms/6ms
Release time	2ms	1ms
Coil consumption		
Standard/Sensitive	450mW/200mW	550mW/300mW
Coil operating range		
Standard/Sensitive	75 - 143%/70 - 240%	70 - 150%/76 - 200%
Temperature range		
Standard/Sensitive	-25°C to +55°C/-25°C to +75°C	-30°C to +55°C/-30°C to +75°C

Coil Voltage	Sensitive/Standard	Terminal Config. Diagram	Mfrs. List No.	Order Code
SPCO Relays:				
12V dc	Standard	A	V23101-D0006-A201	117-5003
12V dc	Standard	B	V23101-D0006-B201	117-5004
12V dc	Sensitive	A	V23101-D0106-A201	117-5005
24V dc	Standard	A	V23101-D0007-A201	117-5006
24V dc	Standard	B	V23101-D0007-B201	117-5007
DPCO Relay:				
12V dc	Standard	C	V23105-A5503-A201	117-4992

Relays & Solenoids

33

Compliant
Non-compliant
RoHS
Limited stock - RoHS replacement available



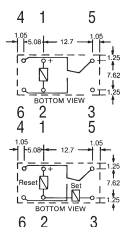
206975

COIL		Price Each						
Volts	Ω	Order Code	1+	5+	50+	100+	+	
SPCO - V23101-D Series								
12V dc	320	117-5003	11.08	8.73	7.43	5.86	--	
12V dc	320	117-5004	11.08	8.73	7.47	5.86	--	
12V dc	700	117-5005	12.16	9.58	8.22	6.43	--	
24V dc	1280	117-5006	12.16	9.58	8.22	6.43	--	
24V dc	1280	117-5007	12.16	9.58	8.22	6.43	--	
DPCO - V23105-A Series								
12V dc	280	117-4992	14.51	11.37	9.80	7.65	--	

High Sensitivity - V23040 Series
Latching/Non-latching



V23040A L=20.0,
W=10.0, H=8.2
PCB hole dia.=1.0



V23040B L=20.0,
W=10.0, H=8.2 PCB
hole dia.=1.0

Connections on latching type:
When pin 2 is more +ve than pin 1 then the re-
lay assumes the off position (contacts 4/5
closed). When pin 1 is more +ve than pin 2 (or
pin 2 more than pin 3) the relay switches to the
on position (contacts 5/6 closed).

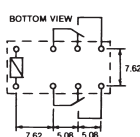
- SPCO bifurcated contacts
- "Getter" protected chamber gives exceptional life 10⁸ operations
- Low profile, fully encapsulated metal case
- UL Recognised and CSA approved

Contact arrangement	SPCO	Contact material	Rhodium
Contact rating:		Coil consumption	From 80mW - 5V version
Max. current	2A	Operate/Release	2ms/1ms
Max. voltage	150V dc/125V ac	Coil operating range	70 - 180%
Max. power	35W/60VA	Temperature range	-40°C to +70°C

207100

COIL		Price Each						
Volts	Ω	Order Code	1+	25+	50+	100+	+	
SPCO - V23040-A B201 Series								
5V dc	320	117-4993	21.56	19.47	18.02	15.03	--	
12V dc	1140	117-4994	21.56	19.47	17.17	15.03	--	
24V dc	4370	117-4995	24.44	22.05	18.18	15.53	--	
Latching SPCO - V23040-B B201 Series								
5V dc	315+315	117-4996	23.46	21.14	19.56	16.32	--	
12V dc	1100+1100	117-4997	23.46	20.95	19.56	16.32	--	
24V dc	2800+2800	117-4998	28.99	26.12	24.18	20.14	--	

High Sensitivity - V23105-3 Series



L=20.3, W=10.4,
H=11.4

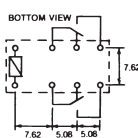
- DPCO contacts
- Identical to the PED BT47W 2A Series but with a sensitive 200mW coil
- Fully sealed
- UL Recognised and CSA approved

Contact arrangement	DPCO	Coil consumption	200mW / 400mW
Contact rating	1A @ 30V dc, 0.3A @ 150V ac	Operate/Release	10ms/10ms
Contact material	Gold silver alloy on silver palladium	Coil operating range	70 - 150%
		Temperature range	-25°C to +70°C

206982

COIL		Price Each						
Volts	Ω	Order Code	1+	10+	50+	100+	+	
DPCO - V23105-3 Series - 200mW								
5V dc	125	117-4983	7.86	5.29	4.85	4.47	--	
12V dc	720	117-4984	7.86	5.29	4.85	4.47	--	
24V dc	2880	117-4985	9.37	6.62	6.24	5.80	--	
DPCO - V23105-3 Series - 400mW								
5V dc	62	421-9582	4.28	3.78	3.34	2.74	--	
12V dc	360	421-9594	4.28	3.78	3.34	2.74	--	
24V dc	1440	421-9600	4.47	3.94	3.50	2.84	--	
48V dc	5760	421-9612	6.36	5.58	4.95	4.06	--	

BT47W Approved - V23105-4 Series



- DPCO contacts
- Approved to BT Type 47W and CSA, UL Recognised
- Suitable for private and public tele-coms
- Sealed housing

L = 20.3, W = 10.4,
H = 11.4

Contact arrangement	DPCO	Coil consumption	500mW
Contact rating	1A @ 30V dc, 0.3A @ 150V ac	Operate/Release	10ms/10ms
Contact material	Gold silver alloy on silver palladium	Coil operating range	70 - 150%
		Temperature range	-25°C to +70°C

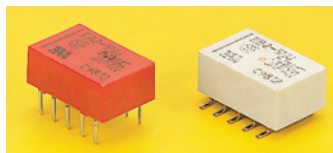
206954

British Telecom Code		COIL		Price Each				
Volts	Ω	Order Code	1+	20+	100+	250+	+	
DPCO - V23105-4 Series								
47W/5	5V dc	36	117-4986	5.18	4.47	4.00	3.28	
47W/6	12V dc	280	117-4987	5.18	4.47	4.00	3.28	
47W/7	24V dc	1050	117-4989	5.18	4.47	4.00	3.28	
47W/8	48V dc	4000	117-4991	5.44	4.72	4.19	3.43	

Subminiature Telecom - EA2 Series

NEC

PCB and Surface Mount



- 1500V FCC surge
- High sensitivity (140mW)
- Fully sealed
- UL Recognised & CSA approved

Contact arrangement	DPCO	Contact material	Silver alloy Gold overlay
Contact rating:		Coil consumption	140mW
Max. current	1A	Operate/Release	2ms/1ms
Max. voltage	220V dc/250V ac	Coil operating range	75 - 150%
Max. power	30W/62.5VA	Temperature range	-40°C to +85°C

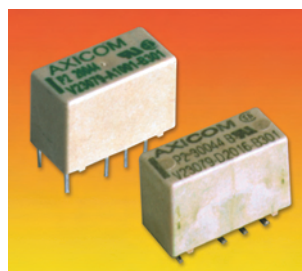
REL238/207064

COIL		Price Each						
Volts	Ω	Order Code	1+	50+	100+	250+	+	
DPCO - EA2 Series								
5V dc	178	109-4030	6.38	5.76	5.48	4.95	--	
12V dc	1028	109-4031	6.38	5.76	5.48	4.95	--	
24V dc	2880	109-4032	6.38	5.76	5.48	4.95	--	
Surface Mount-DPCO - EB2 Series								
5V dc	178	109-4033	6.62	5.92	5.64	5.07	--	
12V dc	1028	109-4034	6.62	5.92	5.64	5.07	--	
24V dc	2880	109-4035	7.40	6.68	6.33	5.70	--	

2A, Subminiature



V23079 Series



- Through Hole Type and Surface Mount Type available
- 5A maximum switching current
- High sensitivity - 140mW
- High mechanical shock resistance - 150G
- UL Recognised

L=15mm, B=7.5mm, H=9.9mm

Contact arrangement	DPDT - 2 C/0 (2 Form C)
Contact rating	5A@ 125V ac resistive, 10A @ 24V dc resistive
Switching capacity	62.5 VA, 60W/240W
Contact Material	Silver Nickel, Gold Overlay
Coil consumption	140 mW
Operate/Release	3/4 ms typical
Temperature range	-40°C to +85°C

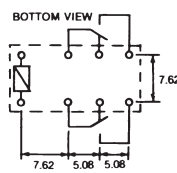
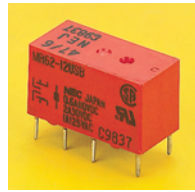
Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
421-9960	V23079-A1001-B301	422-0018	V23079B1205B301
117-5081	V23079-A1003-B301	422-0020	V23079C1101B301
117-5082	V23079-A1005-B301	422-0031	V23079C1103B301
421-9995	V23079B1201B301		
422-0006	V23079B1203B301		

240021

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
Polarized - Monostable Single coil							
5V	178	421-9960	5.61	4.91	4.35	3.56	--
12V dc	1029	117-5081	10.21	9.45	8.79	6.71	--
24V dc	4114	117-5082	12.10	11.15	10.14	7.75	--
Polarized - Bistable Double coil							
5V	178	421-9995	6.55	5.73	5.10	4.16	--
12V dc	1029	422-0006	6.55	5.73	5.10	4.16	--
24V dc	4114	422-0018	7.12	6.24	5.54	4.54	--
Polarized - Bistable Single coil							
5V	357	422-0020	6.55	5.73	5.10	4.16	--
12V dc	2057	422-0031	6.27	5.51	4.88	4.00	--

Miniature Telecom - MR62 Series

NEC



- DIL Terminal Package
- 1500V FCC surge
- Fully sealed
- UL Recognised and CSA approved

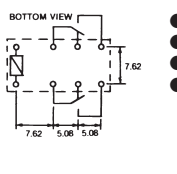
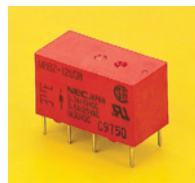
Contact arrangement	DPCO	Contact material	Silver alloy Gold overlay
Contact rating:		Coil consumption	550mW
Max. current	2A	Operate/Release	3ms/2ms
Max. voltage	220V dc/250V ac	Coil operating range	30 - 125%
Max. power	60W/125VA	Temperature range	-40°C to +70°C

207062

COIL		Order Code	Price Each			
Volts	Ω		1+	50+	100+	250+
DPCO - MR62 Series						
4.5V dc	36	109-4023	4.65	4.06	3.59	2.93
12V dc	280	109-4024	4.65	4.06	3.59	2.93
24V dc	1050	109-4025	4.65	4.06	3.59	2.93

Miniature Telecom - MR82 Series

NEC



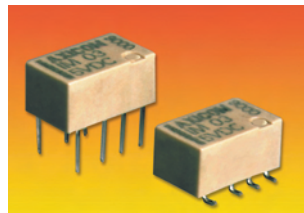
- DIL Terminal Package
- High Sensitivity (200mW)
- Fully sealed
- UL Recognised and CSA approved

Contact arrangement	DPCO	Contact material	Silver alloy Gold overlay
Contact rating:		Coil consumption	200mW
Max. current	2A	Operate/Release	5.5ms/2ms
Max. voltage	220V dc/250V ac	Coil operating range	80 - 125%
Max. power	60W/125VA	Temperature range	-40°C to +85°C

207068

COIL		Order Code	Price Each			
Volts	Ω		1+	50+	100+	250+
DPCO - MR82 Series						
5V dc	125	109-4027	5.47	4.88	4.19	3.53
12V dc	720	109-4028	5.47	4.88	4.19	3.53
24V dc	2880	109-4029	5.47	4.88	4.19	3.53

2A, Ultraminiature IM Series



L = 10, W = 6, H = 5.65 mm

- Slim line and low profile
- Through Hole Type (THT) and Surface Mount Type (SMT) available
- Occupy minimum board-space, 60mm²
- High sensitivity, 140mW
- High surge capacity, 1500V between open contacts
- High mechanical shock resistance, 300G
- UL Recognised, CSA, CECC, IEC/EN60950 approved

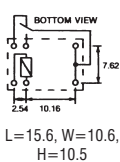
Contact arrangement	SPST-NO (1 Form A)	Coil consumption	200 mW
Contact rating	2A	Operate/Release	15 ms/8 ms max.
Switching capacity	1800VA/240W	Coil operating range	75% to 10%
Contact Material	AgSnO	Temperature range	-30°C to +70°C

Order Code	Mfrs. List No.	Type	Order Code	Mfrs. List No.	Type
117-5065	1-1462037-3	IM02TS	117-5068	0-1462037-9	IM02GR
117-5066	1-1462037-8	IM03TS	117-5069	1-1462037-4	IM03GR
117-5067	2-1462037-7	IM06TS	117-5070	2-1462037-3	IM06GR

239930

COIL		Order Code	Price Each			
Volts	Ω		1+	10+	50+	100+
DPDT C/O contacts - IM Series						
4.5V dc	145	117-5065	10.77	9.99	9.14	7.40
5V dc	178	117-5066	10.88	10.09	9.23	7.47
12V dc	1028	117-5067	10.77	9.99	9.14	7.40
4.5V dc	145	SMD 117-5068	10.88	10.09	9.23	7.47
5V dc	178	SMD 117-5069	10.77	9.99	9.14	7.40
12V dc	1028	SMD 117-5070	10.77	9.99	9.14	7.40

Subminiature - FBR211 Series.



- SPCO relay, ideal for dry circuit switching
- Flux sealed

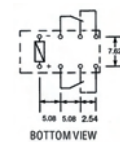
L=15.6, W=10.6, H=10.5

Contact arrangement	SPCO	Coil consumption	450mW
Contact rating	1A @ 24V dc, 0.5A @ 100V ac	Operate/Release	5ms/5ms
Contact material	Gold overlay Silver palladium	Coil operating range	80 - 110%
		Temperature range	-25°C to +50°C

207055

COIL		Order Code	Price Each			
Volts	Ω		1+	25+	100+	250+
SPCO - FBR211SB Series						
5V dc	56	113-1435	5.45	4.95	4.66	4.38
12V dc	320	113-1437	5.45	4.95	4.66	4.38

BT53 Approved, High Sensitivity - 53W Series



L=16.0, W=9.9, H=8.0

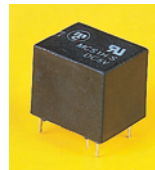
- DPCO bifurcated contacts
- Fully sealed, suitable for immersion cleaning
- Permanent magnet construction, coil polarity must be observed
- Low 160mW coil pick up power
- Two formed pins for temporary mounting

Contact arrangement	DPCO	Coil consumption	250mW
Contact rating	1A @ 30V dc, 0.5A @ 120V ac	Operate/Release	5ms/5ms
Contact material	Silver palladium alloy	Coil operating range	65 - 160%
		Temperature range	-30°C to +70°C

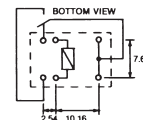
207142

British Telecom Code		COIL		Order Code	Price Each			
Volts	Ω	1+	25+		100+	250+	+	
DPCO - BT53W Series								
53/1	4.5V dc	81	113-1438	8.88	7.89	7.00	5.34	
53/3	12V dc	576	113-1439	8.79	7.81	6.93	5.29	
53/5	24V dc	2304	113-1440	7.00	6.22	5.63	5.05	

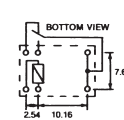
Subminiature High Sensitivity - MCS1H Series



L=16, W=11, H=11.5



MCS1HS



MCS1KHS

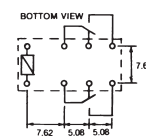
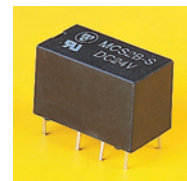
- Low profile
- High coil sensitivity
- Fully sealed
- UL Recognised

Contact arrangement	SPCO	Coil consumption	200mW
Contact rating	1A @ 24V dc/120V ac	Operate/Release	5ms/5ms
Contact material	AgAu	Temperature range	-40°C to +85°C
Dielectric strength	1000V ac (coil-contact)		

207036/405690

COIL		Order Code	Price Each			
Volts	Ω		1+	25+	50+	+
5V dc	120	948-0269	5.30	4.71	3.60	--
12V dc	700	948-0277	5.30	4.71	3.60	--
24V dc	2800	948-0285	4.72	4.17	3.19	--
5V dc	120	948-0293	4.72	4.17	3.19	--
12V dc	700	948-0307	5.35	4.76	3.64	--
24V dc	2800	948-0315	5.30	4.71	3.60	--

Subminiature



L=21.2, W=10.8, H=12

- Low profile
- Fully sealed
- Standard and sensitive coil versions available
- UL Recognised

Contact arrangement	DPCO	Coil consumption	550mW standard/ 200mW sensitive
Contact rating	1A @ 24V dc/120V ac	Operate/Release	6ms/4ms
Contact material	Gold clad Silver	Temperature range	-40°C to +85°C
Dielectric strength	1000V ac (coil-contact)		

Relays & Solenoids

33

Compliant
Non-compliant
RoHS
Limited stock - RoHS replacement available

207035

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	50+	+	+
Standard - DPCO							
5V dc	45	948-0234	4.18	3.78	3.27	--	--
12V dc	280	948-0242	4.22	3.82	3.30	--	--
24V dc	1070	948-0250	4.22	3.82	3.30	--	--
High Sensitivity - DPCO							
5V dc	125	948-0196	4.43	4.05	3.39	--	--
9V dc	405	948-0200	4.43	4.05	3.39	--	--
12V dc	720	948-0218	4.43	4.05	3.39	--	--
24V dc	2880	948-0226	4.43	4.05	3.39	--	--

5A, Miniature PCH Series



- Low cost Change Over relay
- PCB Through Hole Type (THT) mounting
- UL recognised, CSA certified, VDE component mark

Contact arrangement DPDT - changeover (2 Form C)
 Contact rating 5A
 Contact Material Silver-nickel, gold covered
 Coil consumption 400 mW

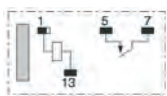
L=20, W=10, H=15.20 mm

Order Code 117-5073	Mfrs. List No. PCH-112D2H	Order Code 117-5074	Mfrs. List No. PCH-124D2H
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239948

COIL		Order Code	Price Each				
Volts	Ω		1+	10+	50+	100+	+
SPDT C/O contacts - PCH Series							
12V dc	360	117-5073	2.68	2.17	1.95	1.64	--
24V dc	1440	117-5074	2.68	2.17	1.95	1.64	--

5A Subminiature - G6D Series



L=17.5, W=6.5, H=12.5
 Socket L=19.7, W=6.9, H=6.0 (above PCB)

- SPNO contacts
- Dielectric strength of 3KV
- Low power consumption, 200mW
- Fully sealed
- UL Recognised and CSA approved

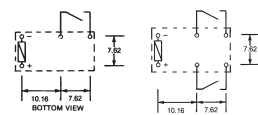
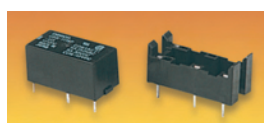
Mfrs. List No. Mfrs. TypRef. Fab. P6D-04P = 994-9631 G6D-1A-ASI-12VDC = 981-2679
 G6D-1A-ASI-5VDC = 981-2660 G6D-1A-ASI-24VDC = 981-2687

Contact arrangement SPNO Operate/release 10ms/5ms
 Contact rating 5A @ 250V ac ac, 30V ac dc Coil operating range 70 - 130%
 Switching capacity 1250VA, 150W Temperature range -25°C to +70°C
 Coil consumption (nom.) 200mW

206979

Coil		Order Code	Price Each				
Volts	Ω		1+	20+	100+	250+	+
SPNO - G6D Series							
5V	125	981-2660	12.05	10.87	10.27	8.44	--
12V	720	981-2679	12.05	10.87	10.27	8.44	--
24V	2880	981-2687	12.05	10.87	10.27	8.44	--
PCB Socket		994-9631	6.61	5.94	5.62	4.65	--

5A/8A Subminiature - G6B Series



G6B-2214P
 L=20, W=11, H=11

G6B-1114P L=20, W=10, H=10
 P6B-04P L=24, W=10, H=7
 G6B-1174P (above PCB)
 L=20, W=10, H=12.5

- SPNO and DPNO contacts
- Fully sealed
- Permanent magnet construction, requires correct coil polarity
- UL Recognised and CSA approved
- PCB socket available for SPNO version

	SPNO	SPNO	DPNO
Contact arrangement	5A @ 250V ac, 30V dc	5A @ 250V ac, 30V dc	8A @ 250V ac, 30V dc
Contact rating (resistive)	1250VA, 150W	1250VA, 150W	2000VA, 240W
Contact material	200mW	300mW	200mW
Switching capacity (max.)	10ms	10ms	10ms
Coil consumption (normal)	80 - 110%	80 - 110%	70 - 130%
Operate/Release (max.)	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Coil operating range (@23°C)			
Temperature range			

Mfrs. List No. P6B-04P=994-9259 (Single Pole Socket)

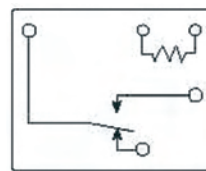
207108

Coil		Order Code	Price Each				
Volts	Ω		1+	20+	100+	250+	+
SPNO, 5A - G6B-1114P Series							
5V	125	994-9089	8.78	8.03	7.88	7.56	--
12V	720	994-9097	8.78	8.03	7.88	7.56	--
SPNO, 8A - G6B-1174P Series							
5V	125	994-9542	11.24	10.11	9.54	7.43	--
12V	720	994-9550	11.24	10.11	9.54	7.43	--
24V	2880	994-9569	11.95	--	--	--	--
DPNO, 5A - G6B-2214P Series							
5V	83	994-9224	12.64	11.40	10.77	8.35	--
12V	480	994-9232	12.64	11.40	10.77	8.35	--
24V	1920	994-9240	12.64	11.40	10.77	8.35	--
Relay Sockets							
Single Pole Relay		994-9259	4.08	3.60	3.43	2.66	--
G6B-2 Relays		118-1039	4.39	4.00	3.91	3.22	--

7A - SPCO



OU DH Series - Sensitive



NEW

H=15.3, W=21.8, D=17.1 mm

- Low profile
- Vented (Flux-tight) plastic cover
- Sensitive coil
- 4000V coil to contact dielectric
- AgNi gold flashed contacts
- cUL Recognised

Contact arrangement SPCO Breaking voltage (max) 1750V ac
 Type of contact Bifurcated Contact Material AgNi + Au flash
 Contact rating 7A Temperature range -30 to 70°C
 Rated voltage 250V ac

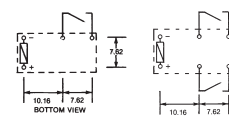
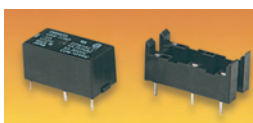
Order Code 991-7373	Mfrs. List No. OUDH-SS-105L4F	Order Code 991-7373	Mfrs. List No. OUDH-SS-105L4F	Order Code 965-9226	Mfrs. List No. OUDH-SS-112L4F
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411336

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	100+	250+	+
5V	80	991-7373	3.81	3.39	3.03	2.77	--
12V	440	965-9226	3.81	3.39	3.03	2.77	--
24V	1780	965-9218	3.81	3.39	3.03	2.77	--

PCB Power Relays

5A/8A Subminiature - G6B Series



G6B-2214P
 L=20, W=11, H=11

G6B-1114P L=20, W=10, H=10
 P6B-04P L=24, W=10, H=7
 G6B-1174P (above PCB)
 L=20, W=10, H=12.5

- SPNO and DPNO contacts
- Fully sealed
- Permanent magnet construction, requires correct coil polarity
- UL Recognised and CSA approved
- PCB socket available for SPNO version

	SPNO	SPNO	DPNO
Contact arrangement	5A @ 250V ac, 30V dc	5A @ 250V ac, 30V dc	8A @ 250V ac, 30V dc
Contact rating (resistive)	1250VA, 150W	1250VA, 150W	2000VA, 240W
Contact material	200mW	300mW	200mW
Switching capacity (max.)	10ms	10ms	10ms
Coil consumption (normal)	80 - 110%	80 - 110%	70 - 130%
Operate/Release (max.)	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Coil operating range (@23°C)			
Temperature range			

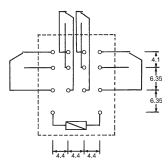
Mfrs. List No. P6B-04P=994-9259 (Single Pole Socket)

207108

Coil		Order Code	Price Each				
Volts	Ω		1+	20+	100+	250+	+
SPNO, 5A - G6B-1114P Series							
5V	125	994-9089	8.78	8.03	7.88	7.56	--
12V	720	994-9097	8.78	8.03	7.88	7.56	--
SPNO, 8A - G6B-1174P Series							
5V	125	994-9542	11.24	10.11	9.54	7.43	--
12V	720	994-9550	11.24	10.11	9.54	7.43	--
24V	2880	994-9569	11.95	--	--	--	--
DPNO, 5A - G6B-2214P Series							
5V	83	994-9224	12.64	11.40	10.77	8.35	--
12V	480	994-9232	12.64	11.40	10.77	8.35	--
24V	1920	994-9240	12.64	11.40	10.77	8.35	--
Relay Sockets							
Single Pole Relay		994-9259	4.08	3.60	3.43	2.66	--
G6B-2 Relays		118-1039	4.39	4.00	3.91	3.22	--

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

5A Miniature - MY4-02 Series



- Direct PCB mounting version of the Omron MY4 power relay
- **UL Recognised**

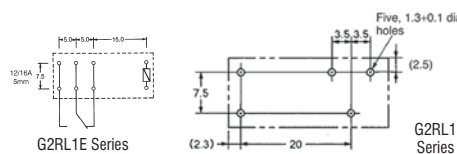
L = 28.0, W = 21.5, H 35.5

Contact arrangement	4PCO	Operate/Release	20ms max
Contact rating	5A @ 240V ac, 30V dc (resistive)	Coil operating range	80 - 110%
Contact material	Silver, Gold plated	Temperature range	-25°C to +70°C
Coil consumption	0.9W1.2VA ac		

207106

Coil		Price Each					
Volts	Ω	Order Code	1+	20+	100+	250+	+
4PCO - MY4-02 Series							
12V dc	160	170-906 ▲	17.56	15.53	12.98	11.02	--
24V dc	650	170-907 ▲	17.56	15.53	12.98	11.02	--
110V ac	—	170-908 ▲	17.56	15.53	12.98	11.02	--
240V ac	—	170-909 ▲	18.90	16.66	13.99	12.10	--

8A/12A/16A



H=15.7, W=12.7, D=29

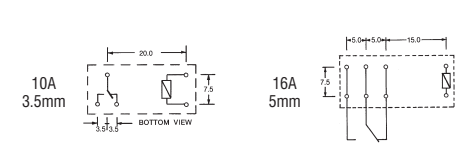
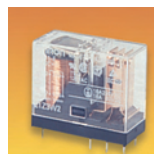
- SPCO and DCPO contacts
- Low profile 15.7mm in height
- High sensitivity 400mW coil
- Cadmium free contacts
- 10mm Creepage and clearance distance
- **UL Recognised, CSA and VDE approved**

Contact arrangement	SPCO/DCPO	Coil consumption	5/12/24V 400mW, 48V 400mW
Contact rating	SPCO 12A @ 240V ac, 30Vdc 16A @ 240V ac, 30Vdc DCPO 8A @ 240V ac, 30Vdc	Operate/Release	7ms/5ms Coil operating range 70 - 130%
Contact material	12A/16A 8A AgNi	Temperature range	-40°C to 85°C

207090

COIL		Price Each					
Volts	Ω	Order Code	1+	20+	100+	250+	+
SPCO, 12A - G2RL1 Series							
5V dc	62.5	995-0087 ●	7.60	6.84	6.46	5.80	--
12V dc	360	995-0095 ●	7.60	6.84	6.46	5.80	--
24V dc	1440	995-0109 ●	7.60	6.84	6.46	5.80	--
48V dc	5358	995-0117 ●	7.60	6.84	6.46	5.80	--
SPCO, 16A - G2RL1E Series							
5V dc	62.5	995-0125 ●	8.65	7.75	7.37	6.62	--
12V dc	360	995-0133 ●	8.65	7.75	7.37	6.62	--
24V dc	1440	995-0141 ●	8.65	7.75	7.37	6.62	--
48V dc	5358	995-0150 ●	8.65	7.75	7.37	6.62	--
DCPO, 8A - G2RL2 Series							
5V dc	62.5	995-0168 ●	9.18	8.25	7.81	7.02	--
12V dc	360	995-0176 ●	9.18	8.25	7.81	7.02	--
24V dc	1440	995-0184 ●	9.18	8.25	7.81	7.02	--
48V dc	5358	995-0192 ●	9.18	8.25	7.81	7.02	--

5A/10A/16A Vertical - G2R Series



L=29.0, W=13.0, H=25.5

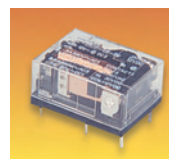
- SPCO contacts
- Dielectric strength 5kV ac coil/contacts with creepage distance 8mm minimum
- Pin sealed base to facilitate flow soldering
- **UL Recognised, CSA, SEMKO and SEV approved**

Rating, contact	SPCO 10A @ 240V ac, 30V dc	Consumption, coil	530mW
	16A @ 240V ac, 30Vdc	Operate/Release	15ms/15ms
Material, contacts	DCPO 5A @ 240V ac, 30V dc	Operating Range, coil	70 - 110%
	10A/16A	Temperature, operating	-40°C to +70°C
	5A Silver		

207116

COIL		Price Each					
Volts	Ω	Order Code	1+	20+	100+	250+	+
SPCO, 10A - G2R-1 Series							
24V	260	994-9720 ●	12.48	10.99	9.83	8.03	--
110V ac	5500	994-9739 ●	13.99	12.35	11.02	9.01	--
230V	26850	994-9747 ●	22.08	19.50	17.39	14.21	--
5V dc	47	994-9372 ●	7.60	6.87	6.49	5.73	--
12V dc	275	124-3025 ●	7.60	6.87	6.49	5.73	--
24V dc	1100	994-9380 ●	7.60	6.87	6.49	5.73	--
48V dc	4170	994-9399 ●	7.60	6.87	6.49	5.73	--
SPCO, 16A - G2R-1E Series							
5V dc	47	994-9402 ●	8.65	7.81	7.40	6.58	--
12V dc	275	994-9410 ●	8.65	7.81	7.40	6.58	--
24V dc	1100	994-9429 ●	8.65	7.81	7.40	6.58	--
48V dc	4170	994-9437 ●	8.65	7.81	7.40	6.58	--
DCPO, 5A - G2R-2 Series							
24V	260	994-9755 ●	14.25	12.57	11.25	9.17	--
110V ac	5500	994-9763 ●	16.94	14.96	13.36	10.90	--
5V dc	47	994-9445 ●	9.18	8.28	7.88	6.90	--
12V dc	275	994-9453 ●	9.18	8.28	7.88	6.90	--
24V dc	1100	994-9461 ●	9.18	8.28	7.88	6.90	--
48V dc	4170	994-9470 ●	9.18	8.28	7.88	6.90	--

7A/10A Low Profile - G6C Series



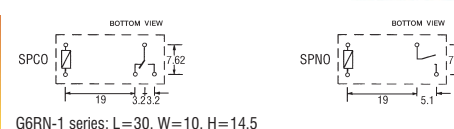
- SPNO and SPNO+SPNC contacts
- Permanent magnet construction correct coil polarity must be observed
- **UL Recognised, CSA and SEV approved**

Contact arrangement	SPNO + SPNC/SPNO	Coil consumption	200mW
Contact rating (resis)	SPNO: 10A @ 240V ac SPNO + SPNC: 7A @ 240V ac	Operate/Release	10ms
Contact material	Ag Alloy	Coil operating range	70 - 130%
		Temperature range	-10°C to +70°C

207133

Coil		Price Each					
Volts	Ω	Order Code	1+	20+	100+	250+	+
Single Coil							
SPNO - G6C-1117P Series							
5V dc	125	994-9020 ●	13.14	11.59	10.36	8.44	--
12V dc	720	994-9038 ●	13.14	11.59	10.36	8.44	--
24V dc	2880	994-9046 ●	13.14	11.59	10.36	8.44	--
SPNO + SPNC - G6C-2117P Series							
5V dc	125	994-9054 ●	15.00	13.23	11.81	9.64	--
12V dc	720	994-9062 ●	15.00	13.23	11.81	9.64	--
24V dc	2880	994-9070 ●	15.00	13.23	11.81	9.64	--
Double Coil Latching							
SPNO - G6CK-1117P Series							
5V dc	89.3	118-1027 ●	14.81	13.64	11.85	10.77	--
12V dc	514	118-1028 ●	14.81	13.64	11.85	10.77	--
24V dc	2056	118-1029 ●	14.81	13.64	11.85	10.77	--
SPNO + SPNC - G6CK-2117P Series							
5V dc	89.3	118-1030 ●	16.93	15.20	13.54	12.37	--
12V dc	514	118-1031 ●	16.93	15.20	13.54	12.37	--
24V dc	2056	118-1032 ●	16.93	15.20	13.54	12.37	--

8A Low Profile - G6RN Series



- SPCO and SPNO contacts
- 4kV isolation and 8mm creepage/clearance
- Low power consumption, 220mW
- Fully sealed
- **VDE, IEC and CENELEC approved**

Contact arrangement	SPCO/SPNO	Coil consumption	220mW
Contact rating	8A @ 240V ac ac	Operate/Release	15ms/5ms
Contact material	AgNi + Gold plating	Coil operating range	70 - 110%
Switching capacity	2000VA	Temperature range	-40°C to +85°C

206987

COIL		Price Each					
Volts	Ω	Order Code	1+	20+	100+	250+	+
SPCO - G6RN1 Series							
5V dc	114	994-9933 ●	8.98	8.10	7.62	7.09	--
12V dc	655	994-9941 ●	8.98	8.10	7.62	7.09	--
24V dc	2620	994-9950 ●	8.98	8.10	7.62	7.09	--
SPNO - G6RN-1A Series							
5V dc	114	994-9968 ●	8.82	8.19	7.72	6.93	--
12V dc	655	994-9976 ●	8.98	8.10	7.62	7.09	--
24V dc	2620	994-9984 ●	8.98	8.10	7.62	7.09	--

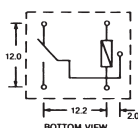
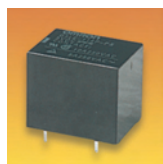
Relays & Solenoids

33

Compliant
Non-compliant
RoHS
+ Limited stock - RoHS replacement available



10A Miniature - G5LE Series



- SPCO contacts
- High impulse withstand voltage of 4.5kV coil/contacts
- Fully sealed or flux sealed construction
- UL Recognised and CSA approved

L = 21.6, W = 15.6, H = 18.5
PCB hole dia.=1.3

Contact arrangement SPCO
Contact rating Standard 8A @ 120V ac/30V dc
High capacity 10A @ 120V ac,
8A @ 30V dc
Contact material AgSnO2

Switching voltage 250V ac,125V dc
(max.)
Coil consumption 400mW
Operate/Release 10ms/5ms
Coil operating range 75 - 130%
Temperature range -25°C to +70°C

206955

COIL	Volts	Ω	Order Code	Price Each				
				1+	20+	100+	250+	+
SPCO, 10A-G5LE-1 Series								
5V dc	63		635-625▲	5.90	5.39	5.01	4.32	--
12V dc	360		635-637▲	5.90	5.39	5.01	4.32	--
24V dc	1440		635-649▲	5.90	5.39	5.01	4.32	--
5V dc	63		994-9887●	5.90	5.39	5.01	4.32	--
12V dc	360		994-9895●	5.90	5.39	5.01	4.32	--
24V dc	1440		994-9909●	5.90	5.39	5.01	4.32	--
Sealed SPCO, 10A-G5LE-14 Series								
5V dc	63		635-480▲	5.90	5.39	5.01	4.32	--
12V dc	360		635-492▲	5.90	5.39	5.01	4.32	--
24V dc	1440		635-509▲	5.90	5.39	5.01	4.32	--
5V dc	63		994-9780●	5.90	5.39	5.01	4.32	--
12V dc	360		994-9798●	5.90	5.39	5.01	4.32	--
24V dc	1440		994-9801●	5.90	5.39	5.01	4.32	--

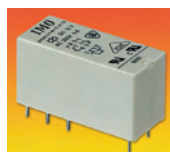
Relays & Solenoids

33

Power - Low Profile

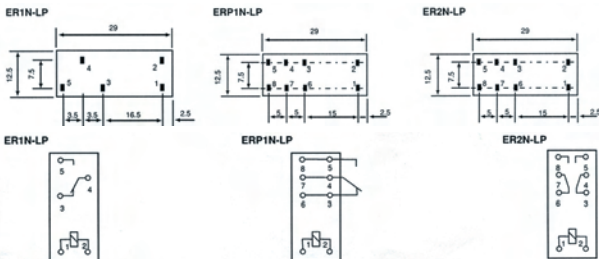


SPCO & DPCO - 16A 4000VA, 8A 2000VA



- Low profile, only 15.7mm high
- ac and dc coil voltages
- 400mW coil
- Insulation distance 10mm between coil and contact
- Dielectric strength 5kV
- Fully sealed
- UL/CSA recognised

H = 15.7, W = 29, D = 12.5mm



Contact arrangement Rating, contactPower, switching max Voltage, switching max Current, switching max Current, carrying max Resistance, contact Resistance, insulation Temperature, operating

SPDT ERP1N Series 4000VA/384W 250/400V ac, 250V dc 16A 16A 50mR - Maximum 10000MR @ 500V dc -40 to 70°C

DPDT ER2N Series 2000VA/192W 250/400V ac, 250V dc 8A 8A

Order Code	Mfrs. List No.	Coil Voltage	Resistance (Ω's)
109-4061	ERP1N-LP-N-CS-5VDC	5 dc	63
109-4062	ERP1N-LP-N-CS-12VDC	12 dc	370
109-4064	ERP1N-LP-N-CS-24VDC	24 dc	1440
109-4065	ER2N-LP-N-CS-5VDC	5 dc	63
109-4066	ER2N-LP-N-CS-12VDC	12 dc	370
109-4067	ER2N-LP-N-CS-24VDC	24 dc	1440
109-4068	ER2N-LP-N-CS-48VDC	48 dc	5600
109-4069	ER2N-LP-N-CS-230VAC	230 ac	37380

246108

Order Code	1+	50+	100+	250+	+
SPDT - 16A					
109-4061●	7.09	5.29	4.73	3.53	--
109-4062●	7.09	5.29	4.73	3.53	--
109-4064●	7.09	5.29	4.73	3.53	--
DPDT - 8A					
109-4065●	6.99	6.30	5.58	4.19	--
109-4066●	6.99	6.30	5.58	4.19	--
109-4067●	6.99	6.30	5.58	4.19	--
109-4068●	7.81	7.02	6.30	4.69	--
109-4069●	13.04	11.59	10.14	8.69	--

8A/12A/16A RX Series



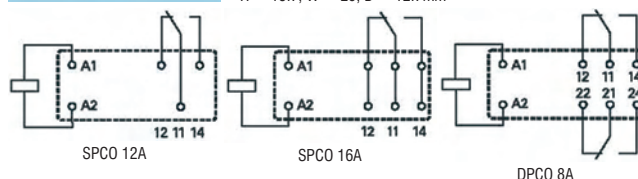
AC and DC Versions of SPCO and DPCO



- 4 kV/8 mm coil-contact
- Reinforced insulation (protection class II)
- Flux-tight case
- Transparent cover

NEW

H = 15.7, W = 29, D = 12.7mm



Contact arrangement SPCO/DPCO
Contact Rating 8 / 12 / 16A @ 250V ac
Contact Material AgNi 90/10
Coil Consumption - ac coil/dc coil 500mW / 0.75VA
Operate/ Release time - dc coil 7ms/2ms
Temperature Range - SPCO dc coil -40°C to 85°C
Temperature Range - All other versions -40°C to 70°C

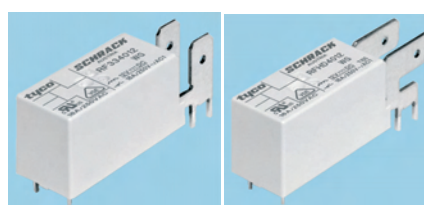
411370

Volts	COIL Ω	Order Code	Price Each			
			1+	25+	100+	250+
SPCO - 12A, 3.5mm pinning						
12V	274	965-9234●	4.52	4.04	3.65	3.35
24V	1095	965-9242●	4.52	4.04	3.65	3.35
230V	32500	965-9250●	8.92	7.91	7.10	6.48
SPCO - 16A, 5mm pinning						
12V	274	965-9269●	4.92	4.33	3.91	3.58
24V	1095	965-9277●	4.92	4.33	3.91	3.58
230V	32500	965-9285●	9.24	8.20	7.39	6.74
DPCO - 8A, 5mm pinning						
12V	274	965-9293●	5.70	5.05	4.49	4.10
24V	1095	965-9307●	5.70	5.05	4.49	4.10
230V	32500	965-9315●	10.09	8.98	8.04	7.36

SPST-NO - 16A @ 240V ac



Quick Connect Terminals - RF Series



NEW

- Vertical terminals H=16, W=29, D=13.2mm (Body)
- Horizontal terminals H=16, W=29, D=13.2mm (Body)
- Single Pole 16A NO contact
 - Switching capacity 4000 VA
 - Coil power 400 mW
 - Quick connect terminals for load side
 - Reinforced insulation

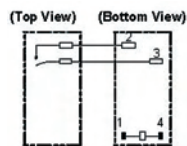
Contact arrangement SPST - NO
Contact current rating 16A @ 240V ac
Maximum switching voltage 400V ac
Maximum breaking capacity (ac) 4000 VA
Power - Coil 400mW
Dielectric voltage between coil and contacts 4000V ac
Dielectric voltage between and contacts 1500V ac
Contact material AgNi90/10

List No.	Order Code	List No.	Order Code
RFH34012WG	965-9587	RFHD4012WG	965-9617
RFH34024WG	965-9595	RFHD4024WG	965-9625
RFH34048WG	965-9609	RFHD4048WG	965-9633

411792

Coil Voltage	Ω	Order Code	Price Each			
			1+	25+	100+	250+
Vertical terminals						
12V	360	965-9587●	6.93	6.22	5.57	5.11
24V	1440	965-9595●	6.93	6.22	5.57	5.11
48V dc	5520	965-9609●	7.88	7.00	6.31	5.76
Horizontal terminals						
12V	360	965-9617●	6.93	6.22	5.57	5.11
24V	1440	965-9625●	6.93	6.22	5.57	5.11
48V dc	5520	965-9633●	7.88	7.00	6.31	5.76

16A with Quick Connect Terminals
G5J Series



L=29, W=13, D=30 (case)
Output terminals 4.75 x 0.5

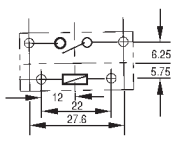
- SPNO contacts
- Extremely high impulse withstand voltage of 10kV between coil/contact
- Applications include motor load and heating control

Contact arrangement	SPNO	Operate/Release	15ms/5ms
Contact rating	16A @ 250V ac ac/30V dc	Coil operating range	70 - 110%
Dielectric strength	1000V (contact and contact)	Temperature range	-40°C to +85°C
Coil consumption	530mW		

206988

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	250+
SPNO — G5JS Series						
12V	271.7	981-2695	8.39	7.59	7.15	6.33
24V	1086.8	981-2709	8.39	7.59	7.15	6.33

20A with Quick Connect Terminals
G4A Series



Bottom View
PCB hole dia.=1.8

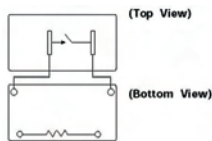
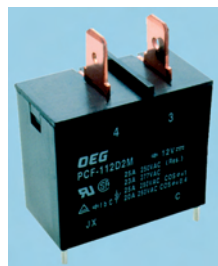
- SPNO contacts
- 5000VA switching capability
- Dielectric withstand voltage of 4.5kV with 80A surge current capacity
- Ideal for motor load and high power switching
- **CSA and TUV approved, UL Recognised**

Contact arrangement	SPST-NO	Operate/Release	20ms/10ms
Contact Rating	20A@ 250V ac/30V dc	Coil Consumption	900mW
Dielectric Strength	4500V ac(coil/contact)	Coil Operating Range	70%-160%
Contact Material	1000V/m(contact/contact)	Operating Temperature	-20°C to 60°C

206989

COIL		Order Code	Price Each			
Volts	Ω		1+	25+	50+	100+
SPNO - G4A-1A Series						
12V dc	160	995-0249	8.51	7.65	6.89	6.23
24V dc	640	995-0257	8.51	7.65	6.89	6.23

SPST-NO - 25A @ 250V ac
Quick connect - PCF Series



NEW

- Compact size
- High surge voltage
- Sensitive coil
- **CSA and TUV Approved, UL Recognised**

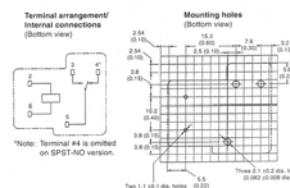
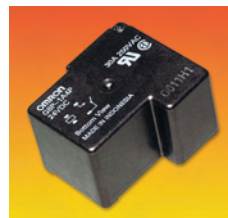
Contact arrangement	SPST - NO	Operate/Release	6ms/3ms
Contact current rating	25A @ 250V ac resistive	Coil operating range	70 - 120%
Contact current rating	20A @ 250V ac inductive	Temperature range	-40°C to +70°C
Power - Coil	900mW		
Surge between coil and contacts	10,000V		
Dielectric voltage between coil and contacts	5,000V		
Contact material	AgSnO		

List No.	Order Code	List No.	Order Code
PCF-112D2M	965-9447	PCF-124D2M	965-9455

411723

Coil		Order Code	Price Each			
Voltage	Ω		1+	25+	100+	250+
12V	160	965-9447	5.70	5.05	4.49	4.10
24V	640	965-9455	5.70	5.05	4.49	4.10

30A SPNO/SPCO
G8P Series



Overall Dimensions L=32.1, W=27.7, H=20.1

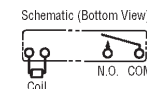
- Heavy duty, capable of switching up to 30A loads
- SPNO or SPCO contact configuration
- Minimum 6kV impulse surge withstand
- Temperature range -55°C to +105°C
- **UL Recognised and CSA approved**

Contact arrangement	SPST-NO/SPDT	Contact Material	15ms/10ms
Contact Rating	30A@ 250V ac SPNO,SPCO	Operate/Release	70 - 110%
Dielectric Strength	30A@ 250V ac/30V dc NC/NO	Coil Consumption	900mW
	1.5kV @ 50/60Hz	Operating Temperature	-55°C to 105°C

241558

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	250+
SPNO G8P Series - PCB						
5V	27	118-1033	11.39	10.38	9.60	8.46
12V	155	995-0206	9.54	9.07	8.63	7.62
24V	660	995-0214	9.54	9.07	8.63	7.62
SPCO G8P Series - PCB						
5V	27	118-1034	11.39	10.38	9.60	8.46
12V	155	995-0222	9.54	9.07	8.63	7.62
24V	660	995-0230	9.54	9.07	8.63	7.62
SPCO G8P Series - Quick Connect & PCB						
5V	27	118-1035	13.44	11.88	11.33	9.44
12V	155	118-1036	13.44	11.88	11.33	9.44
24V	660	118-1037	13.44	11.88	11.33	9.44

3A- Ultra Slim - PA Series.



L=20, W=5, H=12.5
PCB hole dia=1.0 (coil), 1.2 (contacts)

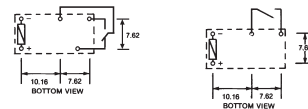
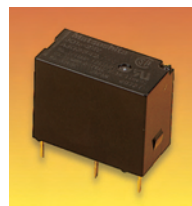
- Ultra slim package permits higher density mounting
- Wide switching capacity - 100mA, 100mV to 3A 250Vac
- High surge voltage resistance 4000V between coil and contacts
- SIL terminal layout
- **UL Recognised and CSA approved**

Contact arrangement	SPNO	Operate/Release	6ms/3ms
Contact rating	3A @ 250V ac/30Vdc	Coil operating range	70 - 120%
Contact material	Silver alloy, Gold plated	Temperature range	-40°C to +70°C
Coil consumption	12V 120mW, 24V 180mW		

206952

COIL		Order Code	Price Each			
Volts	Ω		1+	10+	50+	100+
SPNO — PA Series						
12V dc	1200	910-363	17.87	16.16	14.67	12.40
24V dc	3200	910-375	17.87	16.16	14.67	12.40

5A Miniature - JQ Series



L=20, W=10, H=15.6
PCB Hole dia=1.3

- Mains switching SPNO/SPCO relays in a compact package
- High electrical noise immunity
- High surge voltage resistance - 8000V between coil and contact
- High coil sensitivity - 200mW(NO), 400mW(CO)
- **UL Recognised, CSA, TUV and SEMKO approved**

Contact arrangement	SPNO/SPCO	Operate/Release	6ms/4ms
Contact rating	5A @ 125Vac/2A @ 240Vac	Coil operating range	SPNO 75 - 130%
Contact material	Silver alloy		SPCO 75-110%
Coil consumption	200mW SPNO/400mW SPCO	Temperature range	-40°C to +70°C

Relays & Solenoids

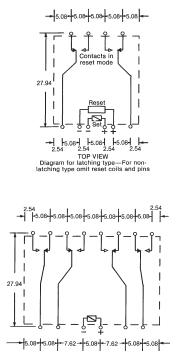
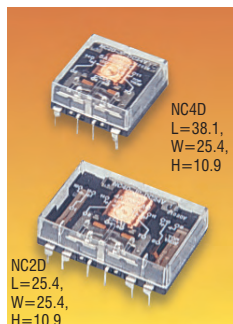
33

Compliant
Non-compliant
RoHS
Limited stock - RoHS replacement available

207136

Coil		Order Code	Price Each				
Volts	Ω		1+	25+	50+	100+	+
SPNO - JQ1A Series							
5V dc	125	119-1227	5.53	4.92	4.43	4.00	--
12V dc	720	119-1228	5.53	4.92	4.43	4.00	--
24V dc	2880	119-1229	7.71	6.94	6.14	4.65	--
SPCO - JQ1 Series							
12V dc	360	119-1230	6.88	6.17	5.50	4.14	--
24V dc	1440	119-1231	7.09	6.39	5.67	4.32	--

4A/5A Low Profile - NC2D/4D Series
Latching/Non-latching

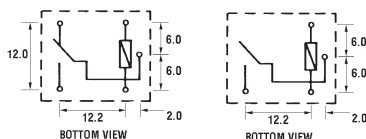


- DPCO and 4PCO bifurcated contacts
 - Flux protected
- | | | | |
|---------------------|---|----------------------|--|
| Contact arrangement | DPCO/4PCO | Operate/Release | 10ms/5ms |
| Contact rating | DPCO 5A @ 250V ac
4PCO 4A @ 250V ac | Coil operating range | DPCO 80-135%
4PCO 80-110% |
| Contact material | Silver Nickel alloy, Gold clad | Temperature range | DPCO -40°C to +70°C
4PCO -40°C to +55°C |
| Coil consumption | DPCO 200mW, 4PCO 400mW
DPCO latching 450mW-200mW | | |

207112

COIL		Order Code	Price Each		
Volts	Ω		1+	50+	100+
DPCO - NC2D JP Series					
12V dc	400	117-5707	36.57	32.85	27.76
24V dc	1600	117-5708	35.91	32.26	26.65
Latching DPCO - NC2D JP L2 Series					
12V dc	180+ 180	117-5709	48.01	43.36	39.11
24V dc	720+ 180	117-5710	37.12	--	--
4PCO - NC4D JP Series					
12V dc	200	117-5711	44.57	39.96	34.46
24V dc	800	117-5712	44.57	39.96	34.22

6A/10A/15A Miniature - JS/JSM Series



L=22, W=16.4, H=16.4 (16 JSM)
PCB hole dia=1.3

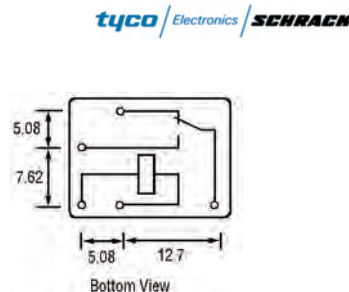
- Miniature size with universal terminal footprint
- High switching capacity 10A @ 125Vac/6A 277Vac
- Fully sealed construction
- Automotive version available for high capacity DC switching 15A 16Vdc
- Approvals include **UL** and **CSA** and **TUV** for JS Series

Contact arrangement	SPNO/SPCO	Operate/Release	10ms/10ms
Contact rating	JS:-6A @ 277V ac /10A @ 125V JSM:-6A @ 30V dc	Coil operating range	JS: 70 - 130% JSM: 53-133%
Contact material	Silver alloy	Temperature range	JS:-40°C to +70°C JSM:-40°C to +85°C
Coil consumption	JS:-360mW; JSM:360mW		

207130

COIL		Order Code	Price Each			
Volts	Ω		1+	25+	50+	100+
SPNO,6A - JS1A Series						
12V dc	400	119-1232	5.70	5.07	4.44	3.46
SPCO,6A - JS1 Series						
5V dc	69.4	119-1233	5.54	4.95	4.44	3.75
12V dc	400	120-0953	6.38	5.66	5.11	4.62
24V dc	1600	120-0954	6.38	5.66	5.11	4.62
12V dc	225	910-338	5.92	5.22	4.65	3.60
SPCO Automotive 15A - JSM1 Series						
12V dc	225	910-351	5.37	4.74	4.23	4.14

5A Miniature - V23148 Series



L=21.2, W=16.5, H=14.9
PCB hole dia =1.5 (contacts), 1.2 (coil)

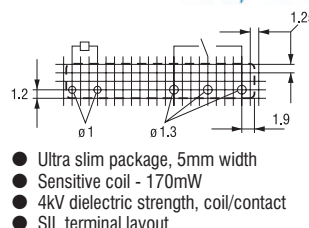
- Compact, low cost PCB mounting relays for switching supply voltages
- High switching capacity up to 1250VA
- Dielectric strength of 4000Vac
- Creepage and clearance distances in excess of 2.3mm
- Fully sealed

Contact arrangement	SPCO	Operate/ Release	7ms/3ms
Contact Rating	5A @ 250V/26Vdc	Coil Operating Range	70-120%
Contact Material	AgNi 10	Temperature Range	-25°C to +70°C
Coil Consumption	330mW		

206944

COIL		Order Code	Price Each			
Volts	Ω		1+	10+	25+	50+
SPCO - V23148 Series						
12V dc	440	117-5042	6.81	6.36	5.70	4.69
24V dc	1780	117-5043	6.81	6.36	5.70	4.69

6A - Ultra Slim - V23092 Series



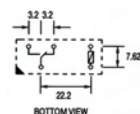
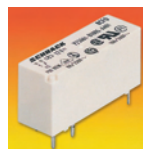
L=28, W=5, H=15
PCB hole dia 1.3=contact,
1=coil

Contact arrangement	SPNO/SPCO	Operate/ Release	5ms/2.5ms
Contact Rating	6A @ 250V ac	Coil Operating Range	65-160%
Contact Material	AgSnO2	Temperature Range	-40°C to +85°C
Coil Consumption	170mW		

207026

COIL		Order Code	Price Each			
Volts	Ω		1+	10+	25+	50+
SPNO - V23092-A1xxx-A302 Series						
5V dc	148	117-5047	13.92	11.91	10.30	8.32
12V dc	848	117-5048	13.92	11.91	10.30	8.32
24V dc	3390	117-5049	13.66	11.66	10.08	8.16
SPCO - V23092-A1xxx-A301 Series						
5V dc	148	117-5050	12.81	12.13	11.66	11.02
12V dc	848	117-5052	12.81	12.13	11.66	11.02
24V dc	3390	117-5053	12.81	12.13	11.66	11.02
Accessories for V23092 Relays						
Mounting frame for relay & DIN socket		117-5053	12.81	12.13	11.66	11.02
xxx = coil voltage						

8A Low Profile - V23061 Series



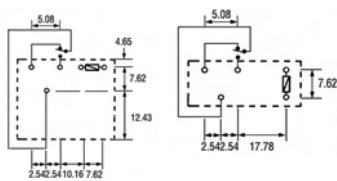
L=30, W=10, H=15
PCB hole dia.=1.3

Contact arrangement	SPCO	Operate/Release	6ms/2.5ms
Contact rating	8A @ 250V ac/30V dc	Coil operating range	70 - 230%
Contact material	Silver Cadmium oxide	Temperature range	-40°C to +85°C
Coil consumption	210 to 260mW		

206962

COIL Volts	Ω	Order Code	Price Each					+	+
			1+	10+	25+	50+	+		
SPCO - V23061-B100X-A401 Series									
6V dc	165	102-3957	11.56	10.71	9.70	9.41	--	--	
12V dc	650	102-3958	11.56	10.71	9.70	9.41	--	--	
24V dc	2270	102-3959	11.56	10.71	9.70	9.41	--	--	
Gold Plated Contacts SPCO - V23061-B100X-A601 Series									
5V dc	118	102-4037	10.52	9.67	8.82	7.28	--	--	
12V dc	650	102-4038	10.52	9.67	8.82	7.25	--	--	

8A and 5A Low Profile/Vertical - V23057 Series



- SPCO contacts
- Low profile or vertical packages
- 4kV coil-contact isolation

- Wash tight
- VDE & CSA approved, UL Recognised

Contact arrangement	SPCO	Operate/Release	7ms/6ms
Max. continuous current	8A/5A with AgNi 0.15 contacts	Coil operating range	65 - 175%
Contact material	AgNi 20/AgNi 0.15	Temperature range	-40°C to +70°C
Coil consumption	500mW		

207057

COIL Volts	Ω	Order Code	Price Each					+	+
			1+	10+	25+	50+	+		
Low Profile - Fine Silver Nickel (AgNi 0.15) Contacts-V23057-AX-A101 Series (5A)									
12V dc	330	117-5010	8.48	7.24	6.36	5.80	--	--	
24V dc	1200	119-7650	8.48	7.24	6.36	5.80	--	--	
Low Profile - Silver Nickel (AgNi 20) Contacts - V23057-AX-A201 Series (8A)									
12V dc	330	119-7651	8.84	7.50	6.62	6.02	--	--	
Vertical - Fine Silver Nickel (AgNi 0.15) Contacts - V23057-BX-A101 Series (5A)									
12V dc	330	119-7648	9.89	8.41	7.43	6.74	--	--	
24V dc	1200	119-7649	9.89	8.41	7.43	6.74	--	--	
Vertical - Silver Nickel (AgNi 20) Contacts - V23057-BX-A201 Series (8A)									
12V dc	330	119-7652	9.37	8.00	7.02	6.21	--	--	
24V dc	1200	119-7653	9.60	8.16	7.18	6.49	--	--	

10A SPDT G5LB Series



- UL Class B insulation
- CTI 175 Tracking index
- Must operate at 75% of rated voltage
- Must release at 10% of rated voltage
- CSA and VDE Approved, UL Recognised

NEW

H = 15.2, W = 19.6, D = 15.6mm

Contact arrangement	SPDT	Order Code	Mfrs. List No.
Switching voltage (max)	250V ac, 30V dc	992-0250	G5LB14DC12BYOMB
Switching/Carrying current (max)	10A ac, 8A dc	992-0277	G5LB14DC5BYOMB
Contact resistance (max)	100mR		
Insulation resistance (at 500V dc)	100MR		
Contact material	Silver Tin Oxide		
Coil consumption	360mW		
Time Operate/Release	10ms/5ms		
Temperature operating	-40°C to +85°C		

414359

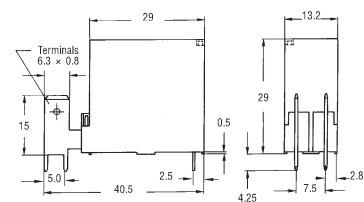
COIL Volts	Ω	Order Code	Price Each			
			1+	25+	50+	100+
5V	69.4	992-0277	3.42	2.99	2.77	2.51
12V	390.6	992-0250	3.42	2.99	2.77	2.51
24V	1575.4	992-0269	3.42	2.99	2.77	2.51

Product Watch

- FREE to all account holders
- Notification of obsolete, end of line and end of stock items
- Replacement or upgrade recommendations

Advanced warning of obsolete components

16A with Quick Connect Terminals



Output terminals=6.3 x 0.8
PCB hole dia.=6 x 1.3 dia.

L=41, W=13, H=29

- SPNO contacts
- Quick connect power output terminals allows high mains current to be handled off the PCB
- High switching capacity of 4000VA, high ambient temperature of 125°C
- Low power consumption and clearance distance of 8mm between coil/contacts
- VDE approved

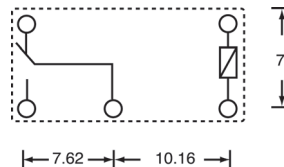
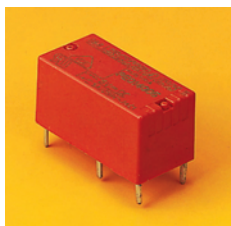
Contact arrangement	SPNO	Coil consumption	360mW
Contact rating:		Operate/Release	10ms/10ms
Max. Current	16A(Continuous)	Coil operating range	70 - 270%
Max. Voltage	300Vdc/250Vac (group C)	Temperature range	-40°C to +125°C
Max. Power	500W/4000VA	Dielectric Strength	1500Vac (contact/contact)
Contact material	Silver Cadmium oxide		

Mfrs. List Nos: V23077-A1005-A402. = 284-312, V23077-A1007-A402. = 284-324

206974

COIL Volts	Ω	Order Code	Price Each				+	+
			1+	5+	50+	100+		
SPNO - V23077-A 402 Series								
12V dc	400	284-312	14.29	12.66	11.19	8.46	--	--
24V dc	1600	284-324	14.99	13.29	11.75	9.94	--	--

5A Miniature - PE Series



L=20, W=10, H=1
PCB hole dia.=1.3

- SPCO contacts
- Low profile
- Cadmium free contacts
- Flux proof package
- VDE and CSA approved UL Recognised

Contact arrangement	SPCO
Contact Rating	5A @250V ac
Contact Material	Silver/nickel
Coil Consumption	200mW
Operate/Release	5ms/2ms
Temperature Range	-40°C to +70°C

Mfrs. List No. 414-8678=PE014005, PE014012=312-721, PE014024=312-733

207051

COIL Volts	Ω	Order Code	Price Each				+	+
			1+	10+	50+	100+		
SPCO - PE Series								
5V dc	125	117-5088	10.84	9.58	8.66	7.09	--	--
12V dc	685	117-5008	10.18	8.66	7.62	7.09	--	--
24V dc	2725	117-5009	12.05	10.17	7.62	7.09	--	--

5A Miniature - PE Series Bistable



NEW

- SPCO contacts
- Low profile, 10mm height
- 4 kV coil/contact insulation
- Sensitive coil, 200mW
- VDE approved, UL Recognised

L=20, W=10, H=1
PCB hole dia.=1.3

Contact arrangement	SPCO
Contact Rating	5A @240V ac
Contact Material	AgNi90/10
Coil Consumption	200mW
Mechanical life	5 x 10 ⁶ operations
Temperature Range	-40°C to +85°C

Mfrs. List No. PE014F05=991-3440
PE014F12=991-3459
PE014F12=991-3459

Relays & Solenoids

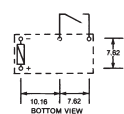
33

Compliant
Non-compliant
RoHS
Limited stock - RoHS replacement available

413956

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPCO - PE bistable							
5V	125	991-3440	14.71	12.53	11.07	10.22	--
12V	650	991-3459	14.71	12.53	11.07	10.22	--
24V	2750	991-3467	14.71	12.53	11.07	10.22	--

6A Miniature - RE Series.



- SPNO contacts
- Low profile 10.6mm package, ideal for 3 unit module pattern racking systems according to DIN41494

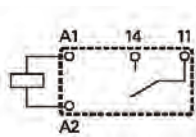
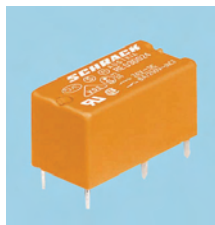
L=20.0, W=10.0, H=10.6
PCB hole dia.=1.3

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPNO - RE Series							
5V dc (3.5-11)	125	515-838	8.95	7.59	6.71		
12V dc (8.4-27.6)	720	515-840	8.95	7.59	6.68		
24V dc (16.8-55.2)	2880	515-851	8.95	8.03	7.59		

Mfrs. List No. RE030005=515-838, RE030012=515-840, RE030024=515-851

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPNO - RE Series							
5V dc (3.5-11)	125	515-838	8.95	7.59	6.71		
12V dc (8.4-27.6)	720	515-840	8.95	7.59	6.68		
24V dc (16.8-55.2)	2880	515-851	8.95	8.03	7.59		

SPST-NO - 6A @ 240V ac RE Series - Sensitive Coil



- Single Pole, 1 NO contact
- Sensitive coil 200 mW
- 4 kV coil-contact dielectric strength
- Wash tight
- Only occupies 200 mm² PCB area

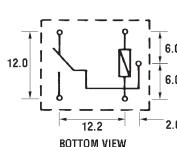
H = 10.6, W = 20, D = 10mm

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPNO - RE Series							
5V dc (3.5-11)	125	515-838	8.95	7.59	6.71		
12V dc (8.4-27.6)	720	515-840	8.95	7.59	6.68		
24V dc (16.8-55.2)	2880	515-851	8.95	8.03	7.59		

Mfrs. List No. RE032005=965-9676, RE032012=965-9684

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPNO - RE Series							
5V dc	125	965-9676	5.21	4.56	4.10	3.74	--
12V	720	965-9684	5.21	4.56	4.10	3.74	--
24V	2880	965-9692	5.21	4.56	4.10	3.74	--

10A Miniature - SPCO T7N Series



- Popular footprint, lower height package
- Cadmium-free contacts
- Flux-proof package
- Vent hole which can be pierced after assembly
- VDE and CSA approvals, UL Recognised

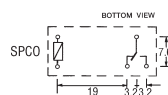
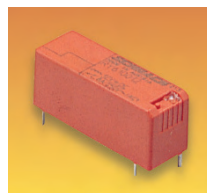
L=21, W=16, H=16.3
PCB hole dia=1.3

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPCO - T7N Series							
6V dc	100	965-9641	3.12	2.80	2.51	2.31	--
12V dc	320	117-5012	3.01	2.58	2.27	1.95	--
24V dc	1280	121-8837	3.62	3.21	2.84	2.33	--
48V dc	6400	965-9650	3.12	2.80	2.51	2.31	--

Mfrs. List No. RE032005=965-9676, RE032012=965-9684

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPCO - T7N Series							
6V dc	100	965-9641	3.12	2.80	2.51	2.31	--
12V dc	320	117-5012	3.01	2.58	2.27	1.95	--
24V dc	1280	121-8837	3.62	3.21	2.84	2.33	--
48V dc	6400	965-9650	3.12	2.80	2.51	2.31	--

8A Low Profile - RY2 Series



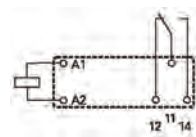
L=28.5, W=10.1, H=12.0
PCB hole dia.=1.3

- SPCO contacts
- Exceeds the 4kV/8mm international requirements for isolation, creepage and clearance
- Low profile, 12mm height
- Sealed to IP67

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	50+	250+	+
SPCO - RY2 Series							
5V dc (3.5-11)	113	515-863	8.72	7.84	7.40	6.68	
12V dc (8.4-24)	620	515-875	8.72	7.84	7.40	6.68	
24V dc (16.8-48)	2350	515-887	8.72	7.84	7.40	6.68	

Mfrs. List No. RY610005=515-863, RY610012=515-875, RY610024=515-887

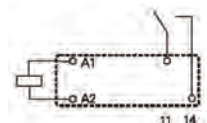
Single Pole CO or NO - 8A @ 240V ac RY Series



1 x CO contact

H = 12.3, W = 28.5, D = 10.1mm

- Single Pole 8A, 1 x CO or 1 x NO contact
- Low height 12.3mm
- Reinforced insulation
- Wash tight



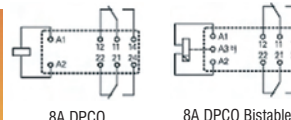
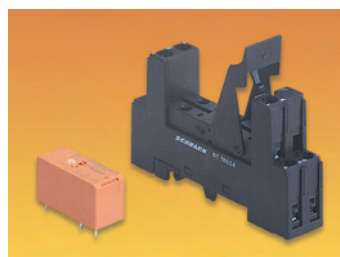
1 x NO contact

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPCO - RY2 Series							
5V dc (3.5-11)	113	515-863	8.72	7.84	7.40	6.68	
12V dc (8.4-24)	620	515-875	8.72	7.84	7.40	6.68	
24V dc (16.8-48)	2350	515-887	8.72	7.84	7.40	6.68	

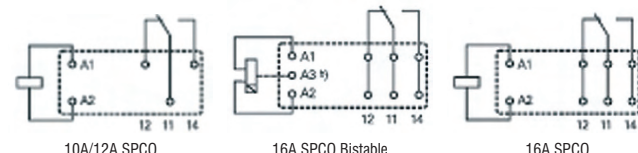
COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
SPCO - RY2 Series							
5V dc (3.5-11)	113	515-863	8.72	7.84	7.40	6.68	
12V dc (8.4-24)	620	515-875	8.72	7.84	7.40	6.68	
24V dc (16.8-48)	2350	515-887	8.72	7.84	7.40	6.68	

COIL		Price Each					
Volts	Ω	Order Code	1+	25+	100+	250+	+
1 x CO contact - 3.2mm pinning							
5V dc	112	965-9706	5.01	4.43	3.97	3.65	--
12V	627	965-9714	5.01	4.43	3.97	3.65	--
24V	2350	965-9722	5.01	4.43	3.97	3.65	--
1 x NO contact - 5mm pinning							
5V dc	112	965-9730	5.01	4.43	3.97	3.65	--
12V	627	965-9749	5.01	4.43	3.97	3.65	--
24V	2350	965-9757	5.01	4.43	3.97	3.65	--

8A/10A/12A/16A/ - RT Series



Relay: L=29, W=12.7, H=15.7
Socket: L=75.5, W=15.5,
H (overall, incl. ejector)=60



- Relays:
- Fully sealed construction
 - Cadmium-free contact material
 - IP20 protected terminals
 - Coil/contact 5kV/10mm
 - Sensitive coil 400mW(250mW high sensitivity)

- Sockets:
- Supplied with relay retainer/ejector
 - 15.5mm width only
 - Protection category 2 to VDE0700

10/12A and 16A SPCO and 8A DPCO power relays with industry standard '3.5mm' and '5mm' footprints, but with a height of only 15.7mm. Approvals to **VDE, OVE, SEV, UL** and pending to **CSA, BEAB**. DIN rail sockets available for panel mount applications.

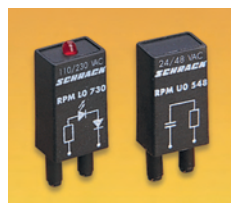
Contact arrangement	SPCO/SPCO	Operate/Release	7ms/3ms
Contact Rating	SPCO 12/12/12A @ 250Vac	Coil Consumption	400mW(250mW high sensitivity)
	DPCO 12A @ 250Vac	Temperature Range	-40°C to +70°C
Contact Material	Silver Nickel 90/10	Coil Operating Range	70-175%

Order Code	Mfrs. List No.	Pinning (mm)	Contact Configuration
117-5013	RTB14012	3.5	SPCO
117-5015	RTB14024	3.5	SPCO
117-5034	RTB14524	3.5	SPCO
117-5035	RTB14615	3.5	SPCO
117-5036	RTB14730	3.5	SPCO
117-5044	RTB74005	3.5	SPCO
117-5045	RTB74012	3.5	SPCO
117-5046	RTB74024	3.5	SPCO
117-5016	RTD14012	5.0	SPCO
117-5017	RTD14024	5.0	SPCO
117-5018	RTD14048	5.0	SPCO
117-5083	RT314F12	5	SPCO
117-5084	RT314F24	5	SPCO
117-5019	RTE24006	5.0	DPCO
117-5020	RTE24012	5.0	DPCO
117-5021	RTE24024	5.0	DPCO
117-5022	RTE24048	5.0	DPCO
117-5037	RTE24524	5.0	DPCO
117-5039	RTE24615	5.0	DPCO
117-5041	RTE24730	5.0	DPCO
117-5085	RT424F12	5	DPCO
117-5086	RT424F24	5	DPCO
991-3513	RT78724		
119-7685	RT78625+RT16016		
991-3530	RT17016		
991-3548	RT17040		

272823

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	100+	250+	+
SPCO, 12A - RTB14 Series							
12V dc	360	117-5013	7.40	6.77	6.24	5.67	--
24V dc	1440	117-5015	7.40	6.77	6.24	5.67	--
24V ac	350	117-5034	9.67	8.57	7.97	6.60	--
115V ac	8100	117-5035	11.40	10.05	9.26	7.81	--
230V ac	23500	117-5036	15.12	13.70	11.97	10.87	--
High Sensitivity SPCO, 10A - RTB74 Series							
5V dc	100	117-5044	9.14	8.51	7.72	6.14	--
12V dc	576	117-5045	9.14	8.51	7.72	6.14	--
24V dc	2304	117-5046	9.14	8.51	7.72	6.14	--
SPCO, 16A - RTD14 Series							
12V dc	360	117-5016	7.31	6.58	6.24	5.61	--
24V dc	1440	117-5017	7.31	6.58	6.24	5.61	--
48V dc	5520	117-5018	8.58	7.53	7.28	6.52	--
SPCO, 16A - RT31 Series - Bistable							
12V dc	240	117-5083	12.00	9.45	8.57	7.09	--
24V dc	886	117-5084	12.00	9.45	8.57	7.09	--
DPCO, 8A - RTE24 Series							
6V dc	90	117-5019	8.25	7.40	7.02	6.36	--
12V dc	360	117-5020	8.19	7.34	6.93	6.30	--
24V dc	1440	117-5021	8.19	7.34	6.93	6.30	--
48V dc	5520	117-5022	9.53	8.54	8.10	7.25	--
ac	350	117-5037	8.19	7.56	7.25	--	--
ac	8100	117-5039	12.28	11.18	9.61	8.46	--
ac	32500	117-5041	13.67	11.97	11.02	10.14	--
DPCO, 8A - RT42 Series - Bistable							
12V dc	360	117-5085	13.04	9.86	9.14	7.53	--
24V dc	360	117-5086	13.04	9.86	9.14	7.53	--
DIN Rail Sockets with Retainer/Ejector							
3.5mm		991-3513	8.72	7.55	6.64	--	--
5mm		119-7685	10.38	9.54	8.82	7.32	--
PCB Sockets and Clips							
3.5mm		119-7679	1.90	1.61	1.41	1.22	--
5mm		119-7681	2.47	2.05	1.83	1.57	--
			5+	25+	100+	250+	+
Metal Clip		119-7682	0.79	0.66	0.60	0.56	--
Plastic Clip		119-7683	0.79	0.66	0.60	0.54	--
Plastic Clip		991-3530	0.98	0.81	0.68	--	--
Marking Tag		991-3548	0.27	0.23	0.22	--	--

Protection and Indication Modules



H=23, W=13, D=9

Mfrs. List No. PTMT00A0=991-3556
PTMLO524=991-3564

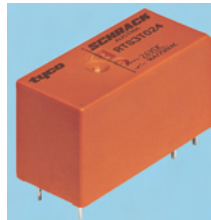
PTMLO730=991-3572

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- Plug-in modules for use with sockets Order Codes 625-619 and 625-620 detailed above
- Diode version provides protection for DC coils
- LED versions provide indication for commissioning and monitoring purposes
- Modules are securely held in place once the relay is fitted

Type	Operating Voltage	Order Code	1+	25+	100+	+	+
Diode	A1+, A2-	991-3556	3.74	3.06	2.70	--	--
LED	6 to 24V ac/dc	991-3564	9.70	8.89	7.94	--	--
LED	110 to 230V ac	991-3572	9.70	8.89	7.94	--	--

SPST-NO - 16A @ 240V ac
Pre-make contact - RT1 Series



NEW

- Single Pole, 1 NO contact
- 16A / 240V ac making and breaking capacity
- 165A / 20 ms inrush peak current
- 5 kV / 10mm coil-contact
- Reinforced insulation

H = 15.7, W = 29, D = 12.7mm

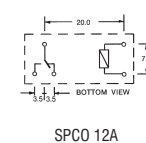
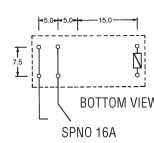
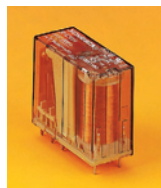
Contact arrangement	SPST - NO
Contact current rating	16A @ 240V ac
Inrush peak current rating	165A / 20 ms
Power - Coil	400mW
Dielectric voltage between coil and contacts	4000V ac
Dielectric voltage between and contacts	1250V ac
Contact material	AgSnO

Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
RTS3T012	965-9560	RTS3T024	965-9579

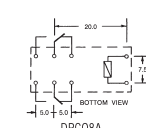
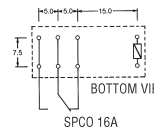
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Coil		Order Code	Price Each				
Volts	Ω		1+	25+	100+	250+	+
12V	360	965-9560	6.93	6.22	5.57	5.11	--
24V	1440	965-9579	6.93	6.22	5.57	5.11	--

8A/12A/16A Vertical - RP Series



L=29, W=12.6, H=25.5



- SPNO/SPCO or DPCO contacts
- Flux-tight or IP67 sealed version
- 4kV/8mm coil-contact isolation
- Vent hole which can be pierced after assembly

Contact arrangement	SPNO/SPCO/DPCO	Contact Material	Silver Cadmium oxide
Contact Rating	SPNO, 16A@250Vac SPCO, 12A@250Vac SPCO, 16A@250Vac DPCO, 8A@250Vac	Operate/Release	8ms/2ms
		Temperature Range	-40°C to +70°C

207050

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	100+	250+	+
SPNO - 16A - RP33 Series							
12V dc	270	388-178	6.78	5.73	5.07	4.38	--
24V dc	1100	388-180	6.78	5.73	5.07	4.38	--
SPCO - 12A - RP41 Series							
12V dc	270	388-191	6.81	5.76	5.07	4.41	--
24V dc	1100	388-221	6.81	5.76	5.07	4.41	--
SPCO - 12A, Sealed - RP81 Series							
12V dc	270	388-270	6.81	6.11	5.76	4.79	--
24V dc	1100	388-282	6.81	6.11	5.76	4.79	--
SPCO - 16A - RP31 Series							
12V dc	270	388-294	7.11	6.05	5.36	4.66	--
24V dc	1100	388-300	7.11	6.05	5.36	4.66	--
SPCO - 16A Sealed - RP71 Series							
12V dc	270	388-312	7.11	6.39	6.05	5.04	--
24V dc	1100	388-324	7.11	6.39	6.05	5.04	--
DPCO - 8A - RP42 Series							
12V dc	270	388-336	7.70	6.58	5.76	5.01	--
24V dc	1100	388-348	7.70	6.58	5.76	5.01	--
DPCO-8A - Sealed RP82 Series							
12V dc	270	117-5011	7.70	6.93	6.58	5.45	--
24V dc	1100	119-7647	7.70	6.93	6.58	5.45	--

Relays & Solenoids

33

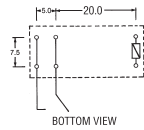
Compliant
Non-compliant
+
RoHS
Limited stock - RoHS replacement available



12A, Special Load - RP3SL Series



L=29
W=12.6
H=25.5



- High inrush capability, 120A for 20ms
- Standard 5mm pinning
- Rated carry current of 12A@250Vac
- Protection category II to VDE 0631 and VDE 0700
- Ideal for switching incandescent and fluorescent lamps and highly inductive/ capacitive loads
- UL Recognised, VDE approved

Contact arrangement	SPNO	Coil Consumption	500mW
Contact Rating	12A@250Vac/24Vdc	Inrush Current (max)	120A (20 ms)
Contact Material	AgSnO	Temperature Range	-40°C to +70°C
Operate/ Release	8ms/2ms		

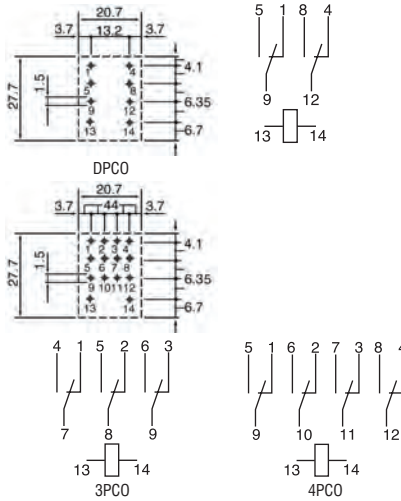
207027

COIL	Volts	Ω	Order Code	Price Each				
				1+	10+	25+	50+	+
SPNO - RP3SL Series								
12V dc (8.6-23.4)	270	117-5054	10.18	9.14	8.69	7.18	--	--
24V dc(17.3-46.8)	1100	117-5055	10.18	9.14	8.69	7.18	--	--

7A/10A Miniature - 5512, 5513, 5514 Series



L=27.7, W=20.7, H=35.8
Terminals=1.2 0.5



- Direct PCB mounting version of the Finder 55 Series miniature power relay
- Approved to VDE, CSA, SEMKO, SEV and IMQ, UL Recognised

Contact arrangement	DPCO/3PCO/4PCO	Contact material	Silver Nickel
Contact rating	DPCO and 3PCO: 10A @ 250V ac 4PCO: 5A @ 250V ac	Coil consumption	1.5VA, 1W
		Coil operating range	80 - 110%

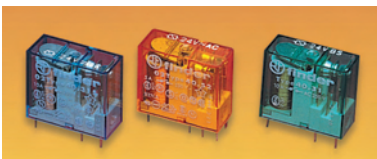
Mftrs. List No.

5512-8230-0000=116-9249	5513-8230-0000=116-9252	5514-8230-0000=116-9255
5512-9012-0000=116-9250	5513-9012-0000=116-9253	5514-9012-0000=116-9256
5512-9024-0000=116-9251	5513-9024-0000=116-9254	5514-9024-0000=116-9258

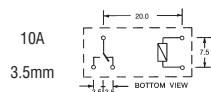
207096

COIL	Volts	Ω	Order Code	Price Each				
				1+	25+	100+	250+	+
DPCO, 10A - 5512 Series								
230V ac	-	116-9249	14.88	14.06	--	--	--	--
12V dc	140	116-9250	14.52	13.08	11.64	9.42	--	--
24V dc	600	116-9251	12.79	11.51	10.24	8.30	--	--
3PCO, 10A - 5513 Series								
230V ac	-	116-9252	16.63	14.91	13.23	10.77	--	--
12V dc	140	116-9253	15.39	13.83	12.30	10.02	--	--
24V dc	600	116-9254	15.39	13.83	12.30	10.02	--	--
4PCO, 7A - 5514 Series								
230V ac	-	116-9255	16.63	14.91	13.23	10.77	--	--
12V dc	140	116-9256	15.39	13.83	12.30	10.02	--	--
24V dc	600	116-9258	15.54	13.97	12.42	10.12	--	--

8A/10A/16A Vertical - 40 Series

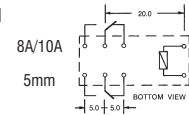
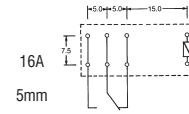


DC type AC type Latching
L=29.0, W=12.4, H=25.0 PCB hol dia.=1.5



- SPCO and DPCO contacts
- Low cost power relays with a 4kV-8mm isolation between coil and contacts
- Flux proof terminals facilitate flow soldering (44.62 series)
- Dustproof IP40/RTI (40 series)
- UL Recognised

VDE, BEAB, CSA, SEV, NF, IMQ, SEMKO, DEMKO approved (VDE, CSA, & IMQ, 44.62 Series)



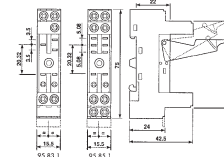
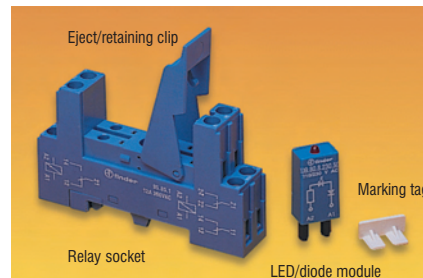
Contact arrangement	SPCO/DPCO	Coil consumption dc Std./Sensitive	650/500 mW
Contact rating	SPCO 10A @ 240V ac, 30V dc 16A @ 240V ac, 30V dc	Coil consumption ac	1.2VA
	DPCO 8A @ 240V ac, 30V dc	Operate/Release	10ms/7ms
Contact material	10A @ 240V ac, 30V dc 10A/8A Silver Nickel 16A Silver Cadmium oxide	Coil operating range	80 - 150%
		Temperature range	-20°C to +70°C

*note: latching versions require ≥50% reverse polarity to reset

222076

COIL	Volts	Ω	Order Code	Price Each				
				1+	25+	100+	250+	+
SPCO, 10A - 40.31 Series								
24V ac	320	116-9152	7.58	6.82	6.06	4.91	--	--
110V ac	6900	116-9155	9.99	9.00	7.98	6.48	--	--
240V ac	31500	116-9156	12.58	11.40	10.14	8.25	--	--
6V dc	55	116-9157	6.12	5.51	4.91	3.97	--	--
12V dc	300	116-9158	6.06	5.46	4.86	3.93	--	--
24V dc	1200	116-9159	6.06	5.46	4.86	3.93	--	--
48V dc	3500	116-9160	7.91	7.12	6.33	5.15	--	--
SPCO, 16A - 40.61 Series								
24V ac	320	116-9161	8.52	7.53	6.30	5.13	--	--
110V ac	6900	116-9162	12.81	11.37	8.37	6.81	--	--
240V ac	31500	116-9163	16.19	14.10	10.50	8.55	--	--
6V dc	55	116-9164	6.45	5.82	5.19	4.20	--	--
12V dc	300	116-9165	6.45	5.82	5.19	4.20	--	--
24V dc	1200	116-9167	6.45	5.82	5.19	4.20	--	--
48V dc	3500	116-9168	9.12	8.03	6.76	5.48	--	--
DPCO, 8A - 40.52 Series								
24V ac	320	116-9169	8.25	7.50	7.05	5.55	--	--
110V ac	6900	116-9170	9.33	8.94	8.48	6.97	--	--
240V ac	31500	116-9171	13.82	12.54	11.13	9.06	--	--
6V dc	55	116-9172	7.36	6.64	5.94	4.79	--	--
12V dc	300	116-9173	7.36	6.64	5.94	4.79	--	--
24V dc	1200	116-9174	7.36	6.64	5.94	4.79	--	--
48V dc	3500	116-9175	9.84	8.73	7.26	5.91	--	--
DPCO, 10A - 44.62 Series								
6V dc	75	116-9303	10.23	9.21	8.22	6.66	--	--
12V dc	300	116-9304	10.23	9.21	8.22	6.66	--	--
24V dc	1200	116-9305	10.23	9.21	8.22	6.66	--	--

35mm Rail Mount Socket & Accessories - 40 Series.



- A range of sockets and accessories to complement the 40 Series relays

Load Rating	10A @ 250V ac	Housing Blue	PA66
Mftrs. List Nos:	95.83.3SXA = 116-9369 95.85.3SXA = 116-9370 095.91.3 = 116-9371 095.80.3 = 913-7696	9980-3000-00 = 116-9333 9980-0230-08 = 116-9334 9980-0230-50 = 116-9335 9980-9024-90 = 116-9302	

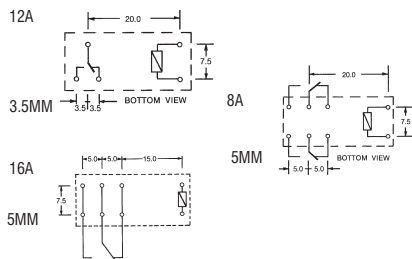
207023

Sockets	Order Code	Price Each			
		1+	25+	100+	250+
3.5mm socket for 4031 relay	116-9369	10.68	9.83	9.08	7.75
5mm socket for 4052 4061 relay	116-9370	11.43	10.45	9.67	8.17
Accessories					
Eject retaining clip for sockets	116-9371	0.88	0.78	0.75	0.62
Marking tag for sockets	913-7696	0.23	0.20	0.17	0.15
Order Multiple = 1		1+	25+	100+	250+
Diode Module, 6 - 220V dc	116-9333	2.95	2.63	2.34	1.89
Varistor Module, 110 - 230V ac/dc	116-9334	9.85	8.89	7.86	6.42
LED Module, 110 - 230V ac/dc	116-9335	8.28	7.45	6.61	5.36
Diode and LED Module, 6 - 24V	116-9302	5.26	4.78	4.17	3.28

8A/12A/16A Low Profile 41 Series



H=15.7 W=12.7 D=29



- Low profile only 15.7mm high
- SPCO and DPCO options
- 8mm between coil and contacts in accordance with VDE0700
- CSA and VDE approved, UL Recognised

Contact arrangement	SPCO/DPCO	Contact Material	AgNi
Contact Rating	SPCO 12A @ 240Vac, 30Vdc SPCO 16A @ 240Vac, 30Vdc DPCO 8A @ 240Vac, 30Vdc	Coil Operating Range	75 - 150%
Coil consumption	400mW	Operate/ Release	5ms/4ms
		Temperature Range	-40°C to +85°C

Volts	COIL Ω	Order Code	Price Each				+
			1+	25+	100+	250+	
SPCO, 12A - 41.31 Series							
6V	90	116-9306	6.75	6.06	5.40	4.41	--
12V	360	116-9307	6.82	6.12	5.45	4.45	--
24V	1440	116-9308	6.75	6.06	5.40	4.41	--
SPCO, 16A - 41.61 Series							
12V	360	116-9309	7.02	6.33	5.64	4.56	--
24V	1440	116-9310	7.09	6.39	5.70	4.61	--
DPCO, 8A - 41.52 Series							
12V	360	116-9311	8.04	7.26	6.45	5.25	--
24V	1440	116-9313	8.04	7.26	6.45	5.25	--

14 Watt - W24 Series



L=53.5, Dia=8.0, Lead length=30 min, Lead dia=0.88

- Fully approved to styles M BS9114-N001 and MB CECC 40 201-002
- Available with BS-CECC release.

Power rating @ 25°C	14W	Voltage rating	750V
Power rating @ 70°C	12W	Operating temperature	-55°C to +350°C
Resistance tolerance	±5%	Temperature coefficient	±75ppm/°C

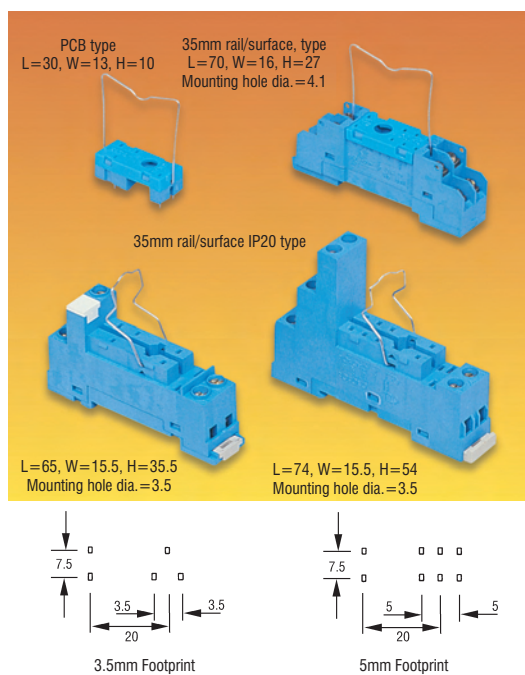
Stocked in the following OHMIC Values:

1R = 950-5601	22R = 950-5636	470R = 950-5660	10K = 950-5571
2R = 950-5652	47R = 950-5687	1K = 950-5598	22K = 950-5628
4R7 = 950-5709	100R = 950-5563	2K2 = 950-5644	47K = 950-5679
10R = 950-5580	220R = 950-5610	4K7 = 950-5695	100K = 950-5555

Mfrs. List No. W24 + OHMIC Value

Order Code	1+	25+	100+	+	+
Values 1R to 4.7R	2.46	2.05	1.82	--	--
Values 10R to 4.7kR	1.86	1.77	1.60	--	--
Values 10kR to 47kR	3.78	3.59	2.76	--	--
100kR	3.78	3.59	2.93	--	--

35mm Rail Bases and Clips



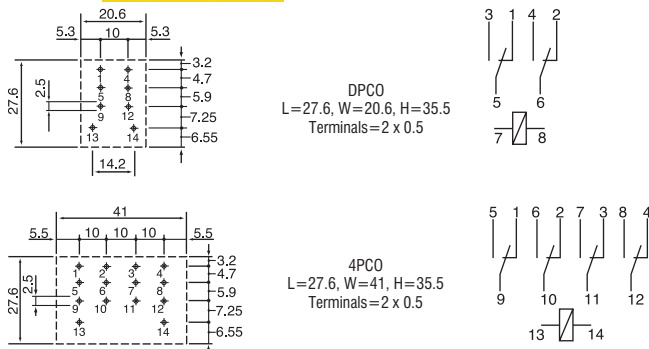
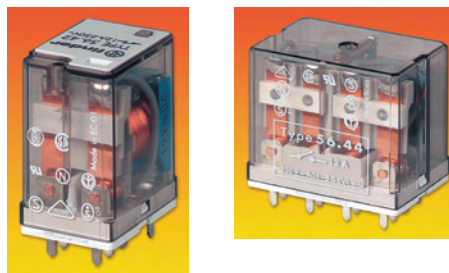
- Sockets and clips for use with 3.5mm and 5mm pin spacing 'Vertical' style PCB power relays, including Finder 40 series
- PCB sockets are UL Recognised and CSA (10A) approved
- DIN rail/surface sockets Order Codes 116-9176 and 116-9177 are UL Recognised and CSA (5A) approved
- DIN rail/surface sockets Order Codes 116-9216 and 116-9230 have touchproof terminals to IP20. Both will accept an additional module to give the facilities of protection diode and/or LED indication, 116-9216 has an identification tab. Both are approved to CSA, VL & FI.

Load Rating	116-9217, 116-9518, 116-9176, 116-9177:	10A 250V ac (5A max. each circuit)
	116-9216, 116-9230:	10A 250V ac
Housing	Blue noryl, UL94V-08	

Mfrs. List No.	9513.1=116-9217	Mfrs. List No.	9545=116-9177
	9515.1=116-9218		9563SMA=116-9216
	9543=116-9176		9575SMA=116-9230

	Order Code	Price Each				+
		1+	25+	100+	250+	
3.5mm, PCB	116-9217	1.89	1.70	1.51	1.22	--
5mm, PCB	116-9218	2.60	2.33	2.07	1.72	--
3.5mm 35mm rail/surface	116-9176	10.85	9.79	8.67	7.03	--
5mm, 35mm rail/surface	116-9177	11.24	10.11	8.99	7.32	--
3.5mm 35mm rail/surface, IP20	116-9216	9.86	8.89	7.88	6.42	--
5mm, 35mm rail/surface, IP20	116-9230	10.46	9.37	8.35	6.77	--

12A - 5642, 5644 Series



Relays & Solenoids

33

Compliant
Non-compliant
+ Limited stock - RoHS replacement available
RoHS



- Direct PCB mounting version of the Finder 56 Series power relay
- Approvals include VDE, CSA, IMQ, LCIE and SEV
- UL Recognised

Contact arrangement	DPCO/4PCO	Coil Consumption	DPCO 1.5VA, 1W
Contact Rating	12A@250Vac		4PCO 2VA, 1.3W
Contact Material	Silver Nickel	Coil Operating range	80-110%

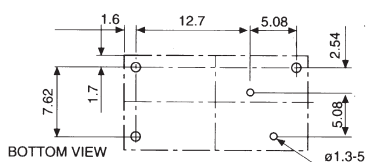
Mfrs. List No.

5642-8230-0000 = 116-92725642-9024-0000 = 116-92745644-9024-0000 = 116-9276
 5642-9012-0000 = 116-92735644-9012-0000 = 116-9275

207101

COIL Volts	Ω	Order Code	Price Each				
			1+	25+	100+	250+	+
DPCO-5642 Series							
230V ac	—	116-9272	18.51	16.65	14.79	12.03	--
12V dc	140	116-9273	17.27	15.57	13.82	11.24	--
24V dc	600	116-9274	17.10	15.42	13.68	11.13	--
4PCO - 5644 Series							
12V dc	123	116-9275	29.39	26.48	23.51	19.12	--
24V dc	490	116-9276	25.57	23.03	20.45	16.63	--

5A, High Sensitivity - SRB Series



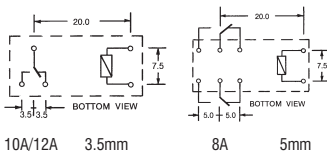
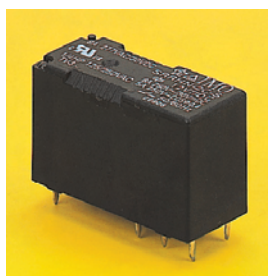
- SPCO contacts
- Flux tight sealing
- 250mW coil
- CSA & TUV approved, UL Recognised

Contact arrangement	SPCO	Operate/Release	10ms/5ms
Contact rating	5A @ 250V ac	Contact Material	Silver alloy
Coil consumption	250mW	Coil operating range	75 - 130%
Switching capacity	1200VA/150W	Temperature range	-40°C to +85°C

207071

COIL Volts	Ω	Order Code	Price Each				
			1+	50+	100+	250+	+
SPCO - 5A SRBN Series							
12V dc	575	109-4021	5.11	4.10	3.53	2.93	--
24V dc	2310	109-4022	5.11	4.10	3.53	2.93	--

8A/12A Low Profile - SRRHN Series



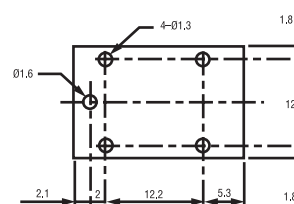
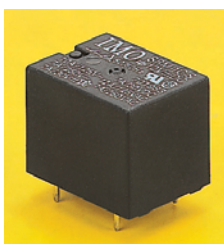
- SPCO or DPCO contacts
- VDE 4kV isolation
- Fully sealed
- UL Recognised & CSA approved

Contact arrangement	SPCO/ DPCO	Coil Consumption	530mW
Contact Rating	SPCO, 12A@250Vac	Operate/ Release Time	20ms/10ms
	DPCO, 8A@250Vac	Coil Operating Range	80% to 130%
Switching Capacity	SPCO 2880VA/360W	Temperature Range	-40°C to +70°C
	DPCO 1920VA/240W		
Contact Material	Silver Tin Indium oxide		

207060

COILS Volts	Ω	Order Code	Price Each				
			1+	50+	100+	250+	+
SPCO, 12A - SRRHN - 1C Series							
5V dc	47.7	109-4011	5.80	5.04	4.60	3.78	--
12V dc	275	109-4012	5.94	5.17	4.71	3.87	--
24V dc	1100	109-4013	5.97	--	--	--	--
DPCO, 8A - SRRHN - 2C Series							
5V dc	47.7	109-4015	6.72	5.83	5.29	4.41	--
12V dc	275	109-4016	6.72	5.83	5.29	4.41	--
24V dc	1100	109-4017	6.89	5.98	5.42	4.52	--

12A, Miniature Power SRM Series



BOTTOM VIEW

- Low profile
- Light weight

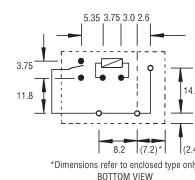
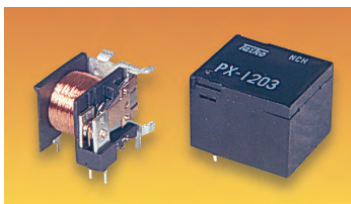
- Fully sealed
- UL Recognised, CSA, TUV approved

Contact arrangement	SPCO	Operate/Release time	15ms/5ms
Contact rating	12A @ 250V ac	Contact Material	Silver Tin Indium oxide
Coil consumption	360mW	Coil operating range	75% - 130%
Switching capacity	1750VA/210W	Temperature range	-30°C to +60°C

207065

COIL Volts	Ω	Order Code	Price Each				
			1+	50+	100+	250+	+
SPCO - 12A, SRM Series							
5V dc	69	109-4018	2.78	2.39	2.14	1.83	--
12V dc	400	109-4019	2.78	2.39	2.14	1.83	--
24V dc	1600	109-4020	2.78	2.39	2.14	1.83	--

30A SPCO Open or Enclosed-PXC/PX Series



BOTTOM VIEW

L=24.5, W=21, H=19.5

PCB drilling
4 holes=1.5 dia, 3 holes=2.4 dia

- PCB type automobile relays with high switching power
- Available with or without cover

Contact arrangement	SPCO	Operate/Release	10ms
Contact rating	30A @ 12V dc (resistive)	Coil consumption	1W
Switching current (max)	30A	Pull-in-voltage	80% of nominal
Contact material	Silver alloy	Temperature range	-30°C to +80°C
Dielectric strength	750V ac		

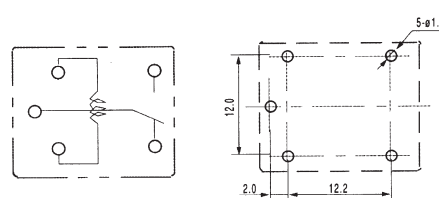
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COIL Volts	Ω	Order Code	Price Each				
			1+	10+	50+	100+	+
Open SPNO - PXC Series							
12V dc	140	176-587	7.69	5.64	5.45	5.18	--
24V dc	500	176-588	7.77	5.70	5.50	5.40	--
Enclosed SPCO - PX Series							
12V dc	140	176-589	11.40	8.88	7.50	6.02	--
24V dc	500	176-590	11.51	8.97	7.58	6.08	--

5A/10A Vertical - MCHRS4 Series



MCHRS4 H=15.8, W=15.5, D=19.0
 MCHRS4E H=17.0, W=15.5, D=21.5



- SPCO contacts
- Sealed to allow washing after flow soldering

Contact rating	MCHRS4 Series 5A 240V ac / 24V dc	Operate/release time	8ms/5ms
	MCHRS4E Series 5A 240V ac / 24V dc		10ms/5ms
Operating temperature range	-30°C to 70°C	Coil power consumption	720 mW

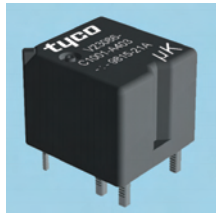
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COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	250+
SPCO, 5A - MCHRS4 Series						
5V dc	50	948-0102	2.22	1.89	1.44	0.96
12V dc	320	948-0110	2.24	1.91	1.45	0.97
24V dc	820	948-0129	2.22	1.89	1.44	0.96
SPCO, 10A - MCHRS4E Series						
5V dc	70	947-9970	2.54	2.22	1.77	1.23
12V dc	400	947-9988	2.54	2.22	1.77	1.23
24V dc	1600	947-9996	1.95	1.73	1.40	1.14

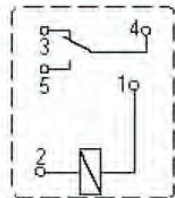
Micro Power K - 30A
V23086 Series



NEW



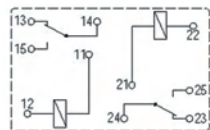
H = 9.9, W = 12, D = 12.9 mm



Single



H = 9.9, W = 23.6, D = 12.9 mm



Double

- Sealed to IP67
 - PCB Terminals
 - Immersion cleanable
 - Small size with minimum weight
 - Double version with two separate systems
- Continuous current (NC @ 23°C) 25A @ 85°C 15A
 Switching current (on/off) 40A / 30A Max. switching rate 50Hz
 Power consumption (single/double) 0.55W / 0.57W Operating temperature -40 to 105°C
 Contact Material AgSnO₂ Protection class IP 67
- Order Code Mfrs. List No. Type
 965-9013 V23086C1001A403 Single
 965-9021 V23086C2001A403 Single
 965-9030 V23086M1011A403 Double

Coil		Order Code	Price Each			
Volts	Ω		1+	25+	100+	250+
12V	254	965-9013	5.76	5.18	4.56	4.17
12V	254	965-9021	8.92	7.91	7.10	6.48
12V	254	SMD 965-9030	9.47	8.43	7.58	6.90

Automotive Relays

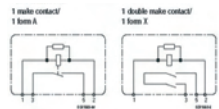
High Current - 150A
V23132 Series



NEW



H=45, W=63, D=40 mm (Body)



- Dust proof
- Heat, moisture and vibration resistant
- Immersion cleanable
- Terminals: Quick connect (coil), Screw (load)

Contact rating	150A	Operating temperature	-40 to 125°C
Continuous current @ 23°C	150A (Form A), 130A (Form X)		
Power consumption (nominal)	3.3W	Flammability	UL94-HB
Contact Material	AgNi0.15	Protection class	IP 67
Order Code	Mfrs. List No.	Contact configuration	
965-9048	V23132A2001B100	1 make contact/1 Form A	
965-9056	V23132B2002B100	1 double make contact/1 Form X	

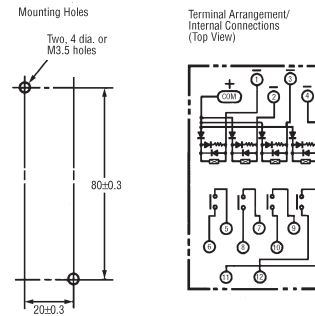
COIL		Order Code	Price Each			
Volts	Ω		1+	25+	100+	250+
12V	43.5	965-9048	186.32	165.61	149.01	135.51
24V	178	965-9056	187.16	166.36	149.70	136.12

Terminal Relays

3A, 4 x SPNO Relay Modules
G6D-4B Series



H=94 W=28 D=45



Note: Do not reverse the coil polarity.

- Compact terminal relay with 4 x SPNO Outputs
 - Equipped with 4 G6D-1A relays providing 3A switching capability
 - LED operation indicator
 - Equipped with diode to absorb coil surge
 - DIN rail or screw mountable
 - Individual relays are UL Recognised and CSA approved
- Contact arrangement 4 SPNO Coil consumption 200mW
 Contact rating 3A @ 250Vac/30Vdc Coil operating range 70-130%
 Contact material Silver

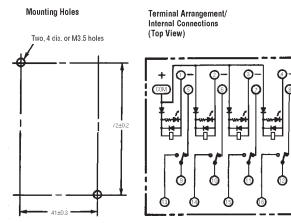
207124

COIL		Order Code	Price Each			
Volts	Ω		1+	5+	10+	20+
4 SPNO-G6D-4B Series						
12V dc	720	994-5458	136.24	122.60	107.01	91.89
24V dc	2880	994-5466	137.60	123.83	108.08	92.81
Replacement Relays						
12V dc	720	981-2679	12.05	10.87	10.27	8.44
24V dc	2880	981-2687	12.05	10.87	10.27	8.44

5A, 4 x SPCO Relay Modules
G6B-4CB Series



H=84 W=48 D=31



- Terminal relay with double-throw operation
 - Equipped with 4 G6B-2114P-US pluggable relays providing 5A switching capability
 - LED operation indicator
 - Equipped with diode to absorb coil surge
 - DIN rail or screw mountable
 - Individual relays are UL Recognised and CSA approved
- Contact arrangement 4 4PST-NO Coil consumption 300mW
 Contact rating 5A @ 250Vac/125Vdc Coil operating range 80-110%
 Contact material Silver Cadmium oxide

207120

COIL		Order Code	Price Each			
Volts	Ω		1+	5+	10+	25+
4 SPNO-G6B-4CB Series						
12V dc	480Ω	994-9917	150.84	--	--	--
24V dc	1920Ω	994-9925	142.00	138.85	134.91	128.21
Replacement relays						
12V dc	720Ω	994-9550	11.24	10.11	9.54	7.43

Single Pole Change Over - 6A
ST Relay Package



NEW



H = 94, W = 80, D = 6.2mm

- Package consists of DIN-rail socket and ST relay
- Electrical indicator LED standard
- AC and DC versions
- Protection circuit
- Screw or Cage clamp terminals
- VDE Approved and UL (United States and Canada) Recognised

For individual ST relays see the V23092 Series relay section of the main catalogue

Contact arrangement	SPCO
Contact current rating	6A
Dielectric strength - coil to contacts	4 kV / 8mm
Contact material	AgSnO ₂
Contact plating (9659463 & 9659510 only)	Gold

Relays & Solenoids

33

Compliant
 Non-compliant
 Limited stock - RoHS replacement available
RoHS

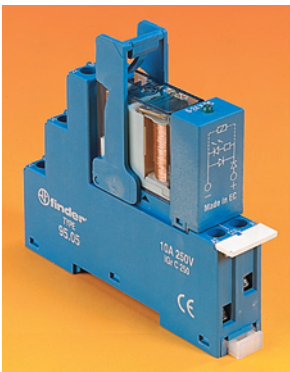


List No.	Order Code	List No.	Order Code
ST3P2LC4	965-9463	ST4P2LC4	965-9510
ST3P3LB2	965-9471	ST4P3LB2	965-9528
ST3P3LC4	965-9480	ST4P3LC4	965-9536
ST3P3SM5	965-9498	ST4P3SM5	965-9544
ST3P3TP0	965-9501	ST4P3TP0	965-9552

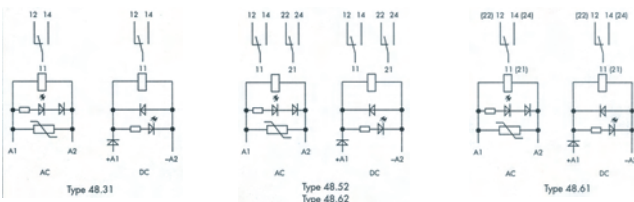
411415

Coil Voltage	Order Code	1+	25+	100+	250+	+
Screw terminals						
24V	965-9463	23.66	21.06	18.94	17.25	--
12V	965-9471	22.82	20.28	18.26	16.60	--
24V	965-9480	22.82	20.28	18.26	16.60	--
115V/dc	965-9498	27.90	24.80	22.33	20.28	--
230V	965-9501	28.77	25.55	22.98	20.93	--
Cage clamp terminals						
24V	965-9510	25.36	22.56	20.28	18.49	--
12V	965-9528	25.29	22.49	20.21	18.39	--
24V	965-9536	24.48	21.81	19.63	17.84	--
115V/dc	965-9544	29.59	26.30	23.66	21.52	--
230V/dc	965-9552	29.59	26.30	23.66	21.52	--

**8A/10A/16A SPCO & DPCO
48 Series Relay Interface Module**



- 35mm DIN rail (EN 50022) mount
- DC version complete with LED and protection diode
- AC version complete with LED and varistor module
- Sensitive coil
- 4kV/8mm isolation between coil and contacts
- Relays approved to **CSA, VDE, SEV, SETI, BEAB, SEMKO, DEMKO, IMQ,** and **UL** Recognised



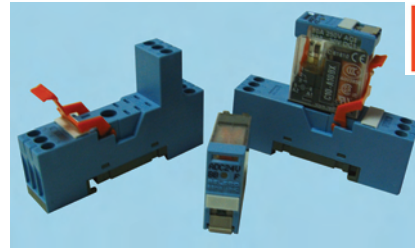
Contact arrangement	SPCO 10A	SPCO 16A	DPCO 8A	DPCO 10A
Current rating Max/peak	10/20A	16/30A	8/15A	10/20A
Voltage Rating/switching max	250/400	250/400	250/250	250/400
Load rating AC1/AC15	2500/500 VA	4000/750 VA	2000/400 VA	2500/500 VA
Load switching min.	300mW	500mW	300mW	300mW
Temperature Range	-40°C to 70°C			
Category protection	IP 20			

Order Code	Mfrs. List No.	Order Code	Mfrs. List No.
116-9362	483180240060	116-9325	486182300060
116-9363	483182300060	116-9363	483182300060
116-9359	483170120050	116-9327	486170240050
116-9360	483170240050	116-9321	485282300060
116-9318	485182300060	116-9323	485270240050
116-9319	485170120050	116-9364	486270120050
116-9320	485170240050	116-9365	486270240050

248947

COIL	Volts	Ω	Order Code	Price Each			
				1+	10+	25+	50+
SPCO, 10A - 48.31 Series - 3.5mm Pin Pitch							
24V ac	320		116-9362	19.97	18.17	16.77	15.58
230V ac	28000		116-9363	24.57	22.36	20.64	19.16
12V dc	300		116-9359	17.78	16.18	14.94	13.87
24V dc	1200		116-9360	17.78	16.18	14.94	13.87
SPCO, 10A - 48.51 Series - 5mm Pin Pitch							
230V ac	31500		116-9318	31.26	28.46	26.27	24.40
12V dc	300		116-9319	21.81	19.87	18.35	17.04
24V dc	1200		116-9320	21.81	19.87	18.35	17.04
SPCO, 16A - 48.61 Series							
230V ac	31500		116-9325	25.43	23.14	21.36	19.83
12V dc	300		116-9326	18.80	17.11	15.79	14.66
24V dc	1200		116-9327	18.80	17.11	15.79	14.66
DPCO, 8A - 48.52 Series							
230V ac ac	31500		116-9321	26.21	23.85	22.01	20.44
24V dc	1200		116-9323	19.50	17.75	16.38	15.21
DPCO, 10A - 48.62 Series							
12V dc	300		116-9364	21.29	19.38	17.89	16.61
24V dc	1200		116-9365	21.29	19.38	17.89	16.61

Signal Switching Relays
Bifurcated Contacts for Signal Switching



NEW

This range of IRC relays offer a true interface solution. When mounted on DIN rail, connection for coil is on the bottom side and connection for the output contacts is on the top. This allows the use of a bridge bar system for simple connection of the common inputs and outputs saving on installation time.

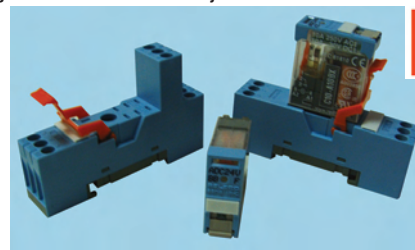
- Bifurcated contacts for switching 1mA @ 5V dc
- Flat blade industrial interface relays
- Slimline housing 12.5mm relay, 16.9mm base
- Single pole with 6A contacts
- LED indication as standard
- Colour coded "push to test" "pull to lock" test button
- Coil voltage clearly marked on top of relay
- Bridge-bar system for speed of installation
- Marking labels for relay and base

Coil Voltage	Order Code	1+	25+	100+	250+	+
24V	101-1473	18.62	16.93	15.20	14.09	
115V	101-1474	22.20	20.18	18.16	16.83	
230V	101-1475	25.78	23.44	21.09	19.53	

417317

Coil	Mfrs. List No.	Order Code	1+	20+	100+	250+
24V	C10T13X24D	101-1473	18.62	16.93	15.20	14.09
115V	C10T13X115A	101-1474	22.20	20.18	18.16	16.83
230V	C10T13X230A	101-1475	25.78	23.44	21.09	19.53
Sockets						
SPCO	S-10M	101-1476	8.40	7.65	6.90	6.38
Sockets						
Packs of 5 Bars			1+	20+	100+	250+
Coil (each bar links up to 4 relays)	S12BB					
Contact (each bar links 2 relays)	V10-G	101-1494	10.19	9.28	8.37	7.75
Contact (each bar links 2 relays)	V40-G	101-1493	9.63	8.76	7.88	7.29
Contact (each bar links 2 relays)		101-1491	11.98	10.90	9.83	9.08

Plug-In Power Relays
10A & 5A Single and 2 Pole Interface Relays



NEW

This range of IRC relays offer a true interface solution. When mounted on DIN rail, connection for coil is on the bottom side and connection for the output contacts is on the top. The two pole version has one set of contacts on the lower level and the second set on the upper level. This allows the use of a bridge bar system for simple connection of the common inputs and outputs saving on installation time.

- Flat blade industrial interface relays
- Slimline housing 12.5mm relay, 16.9mm base
- Single pole with 10A contacts
- Two pole with 5A contacts
- LED indication as standard
- Colour coded "push to test" "pull to lock" test button
- Coil voltage clearly marked on top of relay
- Bridge-bar system for speed of installation
- Marking labels for relay and base
- 24Vac/Vdc version available

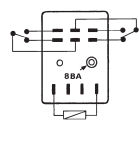
Coil Voltage	Order Code	1+	25+	100+	250+	+
24V ac	10A @ 400V AC1; 10A @ 30V DC1	10.19	9.28	8.37	7.75	
24V dc	5A @ 250V AC1; 5A @ 30V DC1	9.63	8.76	7.88	7.29	

417309

Coil	Mfrs. List No.	Order Code	Price Each			
			1+	20+	100+	250+
SPCO						
12V	C10A10X12D	101-1466	15.49	14.09	12.69	11.75
24V	C10A10X24D	101-1468	15.49	14.09	12.69	11.75
110V	C10A10X110D	101-1469	22.62	20.57	18.52	17.15
115V	C10A10X115A	101-1470	18.10	16.47	14.81	13.70
230V	C10A10X230A	101-1471	22.62	20.57	18.52	17.15
24V/dc	C10A10BX24AD	101-1472	17.97	16.34	14.68	13.61
DPCO						
12V	C12A21X12D	101-1477	21.26	19.33	17.41	16.08
24V	C12A21X24D	101-1478	17.84	16.18	14.55	13.48
110V	C12A21X110D	101-1481	27.15	24.67	22.20	20.57
115V	C12A21X115A	101-1482	22.98	20.90	18.81	17.41
230V	C12A21X230A	101-1483	27.21	24.74	22.26	20.64
24V/dc	C12A21BX24AD	101-1484	20.47	18.62	16.76	15.49
Sockets						
SPCO	S-10M	101-1476	8.40	7.65	6.90	6.38
DPCO	S-12	101-1485	10.64	9.67	8.69	8.07
Bridge Bars						
			Price Per Pack			
Packs of 5 Bars			1+	20+	100+	250+
Coil (each bar links up to 4 relays)	S12BB	101-1494	10.19	9.28	8.37	7.75
Contact (each bar links 2 relays)	V10-G	101-1493	9.63	8.76	7.88	7.29
Contact (each bar links 2 relays)	V40-G	101-1491	11.98	10.90	9.83	9.08

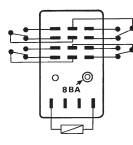
Plug-In Power Relays

1A/5A Cradle - VP2/4 Series



VP* Bottom View: L=24.4, W=18.6, H=30.2

KEYSWITCH



VP4 Bottom View: L=30.0, W=18.6, H=30.2

Contact arrangement	DPCO/DPCO		
Contact rating:			
Max current	1A, 1A	Contact material	Fine silver
Max voltage	100V ac/dc (1A contacts)	Dielectric strength	550V @ 50Hz
	100V ac/dc (1A contacts)	Operate/Release	8ms/3ms
Max power	30W/60VA (1A contacts)	Coil consumption (nominal)	600mW

207119

COIL	Volts	Ω	Order Code	Price Each			
				1+	10+	50+	100+
DPCO, 1A - VP2 CAB Series							
12V dc	185	118-1456	30.56	25.14	22.49	20.16	
26V dc	700	118-1458	30.56	25.01	22.49	20.16	
DPCO, 5A - VP2 5A CAB Series							
12V dc	185	118-1453	32.10	26.30	23.66	21.23	
26V dc	700	118-1454	32.10	26.30	23.66	21.23	
47V dc	2500	118-1455	32.10	26.30	23.66	21.23	
4PCO, 1A - VP4 CAB Series							
12V dc	185	118-1462	35.69	29.17	26.27	23.53	
26V dc	700	118-1463	35.69	29.17	26.27	23.53	
4PCO, 5A - VP4 5A CAB Series							
12V dc	185	118-1459	38.65	31.78	28.51	25.55	
26V dc	700	118-1460	38.65	31.78	28.51	25.55	
47V dc	2500	118-1461	32.10	26.30	23.66	21.23	

Cradle Relay Sockets and Accessories



2 pole PCB Socket & clip 6 pole PCB Socket & clip
4 pole PCB Socket & clip

Terminal Type	PC	Plating, Contact Mating Area	Silver
Grounding Provision	Yes	Body Material	Polycarbonate
Contact Material	Copper Tin		

241631

Cradle Socket	Order Code	1+	Price Each		
			10+	50+	100+
2 pole	119-7663	4.14	3.50	3.18	2.95
4 pole	119-7664	4.46	3.79	3.43	3.18
6 pole	119-7665	14.77	12.52	11.43	10.53
Clip, Cradle Sockets					
2 pole	117-5089	2.36	2.30	2.24	2.14
4 pole	117-5090	2.36	2.30	2.24	2.14
6 pole	117-5091	2.84	2.74	2.61	2.55

5A & 10A with Opto Indicator
G2RS Series



Slim styled relays ideal for space saving when used as an interface between a PLC and input/output devices. Relays have an LED indicator and come with a nameplate and mechanical indicator as standard. Lockable test button version available.

The plug in terminals give good electrical and mechanical connections when used with the easy eject socket. Terminals accept 4.8 x 0.5mm "fast-on" connectors. UL Recognised, CSA, VDE and LR approved.

- Environmentally friendly construction - Cd and Pb free
- AC type with coil disconnection self diagnostic function
- High switching power
- Lockable test button model available

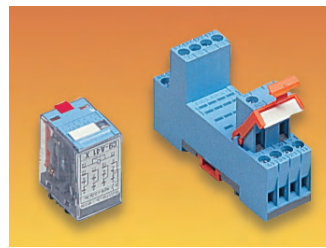
G2R Electromechanical Relay

Contact arrangement	SPCO/DPCO	Coil consumption	530mW
Contact rating (SPCO)	10A @ 250Vac / 30V dc	Operate/release	15ms/5ms (dc) 10ms (ac)
Contact rating (DPCO)	5A @ 250Vac / 30V dc	Coil operating range	80 - 120% @ 50°C
Contact material	Silver Cadmium oxide	Temperature range	-40°C - 70°C

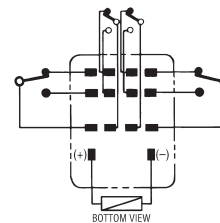
271317

COIL	Volts	Ω	Order Code	Price Each			
				1+	25+	50+	100+
SPCO, 10A - G2R-1-SN Series (with LED indicator)							
24V ac	253	437-5154	14.58	13.93	13.51	12.86	
110V ac	5566	437-5166	14.58	13.93	13.51	12.86	
230V ac	27172	437-5178	21.94	20.90	20.28	19.20	
12V dc	278	437-5180	13.15	12.60	12.14	11.56	
24V dc	1113	437-5191	13.15	12.60	12.14	11.56	
SPCO, 10A - G2R-1-SND Series (with LED indicator and Diode)							
12V dc	278	437-5208	17.48	15.82	14.32	13.61	
24V dc	1113	437-5210	15.98	15.17	14.42	13.70	
SPCO, 10A - G2R-1-SNI Series (with LED indicator and Test Button)							
24V ac	253	437-5221	15.04	13.61	12.34	11.72	
230V ac	27172	437-5245	21.19	20.15	19.14	18.16	
12V dc	278	437-5257	13.54	12.27	11.10	10.55	
24V dc	1113	437-5269	13.54	12.27	11.10	10.55	
SPCO, 10A - G2R-1-SNDI Series (with LED indicator and Diode and Test Button)							
12V dc	278	437-5270	18.03	16.24	14.78	14.00	
24V dc	1113	437-5282	18.03	16.24	14.78	14.00	
DPCO, 5A - G2R-2-SN Series (with LED indicator)							
24V ac	253	437-5294	15.88	15.23	14.75	13.93	
110V ac	5566	437-5300	15.88	15.20	14.75	13.83	
230V ac	27172	437-5312	23.53	22.49	21.78	20.57	
12V dc	278	437-5324	13.96	13.28	12.60	11.98	
24V dc	1113	437-5336	14.88	14.29	13.77	13.09	
DPCO, 5A - G2R-2-SND Series (with LED indicator and Diode)							
12V dc	278	437-5348	19.04	17.22	15.59	14.84	
24V dc	1113	437-5350	19.14	17.19	15.75	15.04	
DPCO, 5A - G2R-2-SNI Series (with LED indicator and Test Button)							
24V ac	260	437-5361	16.37	14.81	13.44	12.76	
110V ac	5566	437-5373	16.37	14.81	13.44	12.76	
230V ac	27172	437-5385	24.22	21.94	19.89	18.88	
24V dc	1113	437-5403	15.33	13.90	12.56	11.95	
DPCO, 5A - G2R-2-SNDI Series (with LED indicator and Diode and Test Button)							
12V dc	278	437-5415	19.60	17.74	16.76	15.95	
24V dc	1113	437-5427	18.39	17.48	16.60	15.75	

5A Miniature - Full Featured
QRC C9 series



H=37, W=21, D=28 H=46.5, W=22.5, L=75



A range of 4PCO relays with features including a colour lockable "Pull to test" button, lamp indication of coil status, mechanical flag indication of contact position and labelling facility.

The 24V dc version is also available with incorporated diodes to protect the relay from incorrect connection and to protect external equipment such as PLC's from spikes generated by the relay on switch off.

The sockets are a space saving 22.5mm wide allowing maximum packing density. The DIN rail socket features touch-proof terminals, retention clip with identification label, and bracket allowing surface or DIN rail mounting.

All relays and socket have CSA, NEMKO, SETI, SEMKO, DEMKO and Lloyd's approval and are UL Recognised

Contact arrangement	4PCO
Contact rating	5A
Max. switched voltage	250V ac
Max. switched power	660VA/75W
Contact material	Silver Nickel, Gold flashed
Coil consumption	1.5VA/1W
Operate/release time	10ms/6ms

Relays & Solenoids

33

Compliant
Non-compliant
RoHS
Limited stock - RoHS replacement available



Coil operating range 80% - 110%
 Temperature range -20°C to 60°C
 Cover clear polycarbonate, **UL94V-0**
 Relay base Grey valox, **UL94V-0**
 Socket Blue noryl, **UL94V-1**

213429

COIL				Price Each				
Volts	Ω	Mftrs. List No.	Order Code	1+	20+	100+	+	
4PCO								
24V ac	160	C9-A41X24A	108-6860	19.82	16.86	16.37	--	
115V ac	3500	C9-A41X115A	108-6861	20.81	17.76	17.21	--	
230V ac	13800	C9-A41X230A	108-6862	22.30	19.03	18.46	--	
24V dc	640	C9-A41X24D	108-6863	19.82	16.86	16.37	--	
24V dc (diodes)	640	C9-A41FX24D	108-6864	20.98	17.83	17.48	--	
Socket								
Surface DIN rail		S9-M	108-6865	11.74	10.12	9.53	--	

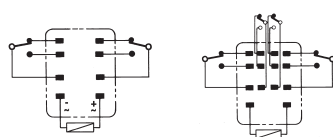
5A/10A Miniature - MY2(S), MY2N(S), MY4N(S)



With Mechanical and LED Indicators, Labelling Facility, Test Button, ac and dc Suppression



L=28, W=21.5, H=36



DPCO (LED/Neon indicators not shown)
 4PCO

- Versatile, full featured miniature power relays
- DPCO and 4PCO contact arrangements
- All relays have mechanical flag indication and label facility
- Other features include - LED indication, push to test button, CR or diode suppression
- **VDE** and **CSA** approved, **UL** Recognised

Contact arrangement DPCO/4PCO
 Contact rating DPCO, 10A @ 250V ac/30V dc
 4PCO, 5A @ 250V ac/30V dc
 Contact material DPCO, Silver/4PCO, Silver, Gold flashed
 Coil consumption 0.9-1.2VA ac, 0.9W dc
 Operate/release time 20ms
 Coil operating range 80% - 110%
 Temperature range -55°C - +70°C

207048

COIL				Price Each				
Volts	Ω	Order Code	1+	25+	50+	100+	+	
DPCO - MY2(S) Series								
12V dc	160	186-235	10.90	9.83	9.54	8.95	--	
24V dc	636	186-247	10.06	9.28	8.79	8.33	--	
12V ac	46	186-259	10.90	9.83	9.54	8.95	--	
24V ac	180	186-260	10.90	9.83	9.54	8.95	--	
110/120V ac	4430	186-272	10.90	9.83	9.54	8.95	--	
220/240V ac	18790	186-284	12.24	11.07	10.68	10.03	--	
DPCO with LED Indication - MY2N(S) Series								
12V dc	160	186-296	12.76	11.56	11.10	10.48	--	
24V dc	636	186-302	12.76	11.56	11.10	10.48	--	
12V ac	46	186-314	12.76	11.56	11.10	10.48	--	
24V ac	180	186-326	12.76	11.56	11.10	10.48	--	
120V ac	4430	186-338	12.60	11.39	10.97	10.35	--	
240V ac	18790	186-340	14.06	12.76	12.27	11.59	--	
DPCO with LED Indicator and Push to Test Button - MY2IN(S) Series								
12V dc	160	186-351	12.76	11.56	11.10	10.48	--	
24V dc	636	186-363	12.76	11.56	11.10	10.48	--	
24V ac	180	186-387	12.76	11.56	11.10	10.48	--	
240V ac	18790	186-405	14.06	12.76	12.27	11.59	--	
DPCO with LED Indicator and Diode Suppression - MY2N-D2(S) Series								
12V dc	160	186-417	19.95	18.10	17.38	16.41	--	
24V dc	636	186-429	19.95	18.10	17.38	16.41	--	
DPCO with LED Indicator and CR Suppression - MY2N-CR(S) Series								
240V ac	18790	186-442	22.98	20.77	20.05	18.85	--	
DPCO Latching -MY2(K) Series								
		Set/Reset	1+	25+	50+	100+	+	
110V ac	5400/3000	529-758	50.84	45.99	41.73	38.34	--	
24V dc	470/940	529-760	50.84	45.99	41.73	38.34	--	
4PCO - MY4(S) Series								
6V dc	39.8	315-8834	15.17	14.39	13.64	12.66	--	
12V dc	160	186-454	15.17	14.39	13.64	12.66	--	
24V dc	636	186-466	15.17	14.39	13.64	12.66	--	
48V dc	2560	315-8846	15.17	14.39	13.64	12.66	--	
110V dc	11100	315-8858	16.21	15.53	14.97	13.90	--	
6V ac	12.2	315-8810	15.17	14.39	13.64	12.66	--	
12V ac	46	186-478	15.17	14.39	13.64	12.66	--	
24V ac	180	186-480	15.17	14.39	13.64	12.66	--	
50V ac	788	315-8822	15.17	14.39	13.64	12.66	--	
120V ac	4430	186-491	15.17	14.39	13.64	12.66	--	
240V ac	18790	186-508	16.21	15.53	14.97	13.90	--	
Volts	Ω	Order Code	1+	25+	50+	100+	+	

COIL				Price Each				
Volts	Ω	Order Code	1+	25+	50+	100+	+	
4PCO with LED Indication - MY4N(S) Series								
12V dc	160	186-510	16.57	15.53	14.97	13.90	--	
24V dc	636	186-521	16.57	15.01	13.57	12.56	--	
24V ac	180	186-545	16.57	15.01	13.57	12.56	--	
120V ac	4430	186-557	16.34	14.81	13.41	12.40	--	
240V ac	18790	186-569	18.03	17.09	14.78	13.70	--	
4PCO with LED Indication and Push to Test Button - MY4N(S) Series								
12V dc	160	186-570	16.57	15.79	15.27	14.42	--	
24V dc	636	186-582	16.57	15.79	15.27	14.42	--	
24V ac	180	186-600	16.57	15.79	15.27	14.42	--	
120V ac	4430	186-612	16.57	15.79	15.27	14.42	--	
240V ac	18790	186-624	18.03	17.25	16.63	15.72	--	
4PCO with LED Indication and Diode Suppression - MY4N-D2(S) Series								
12V dc	160	186-636	25.91	23.47	22.62	21.29	--	
24V dc	636	186-648	25.91	23.47	22.62	21.29	--	
4PCO with LED Indication and CR Suppression - MY4N-CR(S) Series								
120V ac	4430	186-661	30.04	27.15	26.17	24.61	--	
4PCO Hermetically Sealed								
24V dc	650	118-1251	65.10	63.80	62.53	61.29	--	
Sockets								
DPCO Surface/DIN rail		529-734	7.06	6.71	6.38	6.05	--	
DPCO PCB		118-1252	2.77	2.57	2.47	2.41	--	
4PCO Surface/DIN rail		176-963	10.25	9.73	9.30	--	--	
4PCO PCB		118-1253	3.19	2.93	2.77	2.70	--	
Clips								
			1+	25+	50+			
DPCO Surface/DIN without test button (PK2)		103-923		1.37	1.24	1.14		
DPCO Surface/DIN with test button		186-685		0.91	0.77	0.68		
DPCO PCB		186-703		3.32	2.99	2.86		
4PCO Surface/DIN rail (PK2)		103-923		1.37	1.24	1.14		
4PCO PCB		103-736		1.17	1.01	0.91		
			1+	25+	50+	100+	+	
Mounting Rail								
		118-1250	18.51	17.58	16.67	15.84	--	

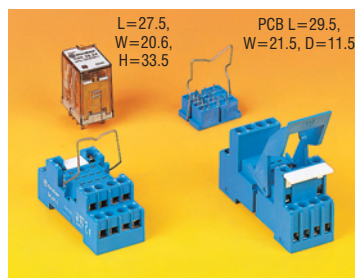
Relays & Solenoids

33

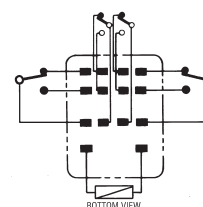
7A Miniature - 5534 Series



With Contact Indicator, Test Button, Module Facility



L=27.5, W=20.6, H=33.5
 PCB L=29.5, W=21.5, D=11.5



Standard 35mm rail/surface socket L=66, W=29.2, H=29.5
 Mounting holes=3.2 dia.
 Slimline L=75, W=27, H=43
 Mounting holes=3.2 dia

- 4 pole changeover with manual test button and mechanical flag indicator
- Standard 35mm rail/surface socket has touch proof terminals to **IP20** and accepts one module for added facilities
- Slim line 35mm rail/surface socket has rising clamp terminals, leaf connection for positive relay connection and accepts standard 40 series modules **page 735723**
- All sockets are complete with clips
- DIN rail sockets have a user legendarily removable identification tab
- Relays approved to **IMQ, SEMKO, CSA, DEMKO, VDE, SEV** and **UL** Recognised
- Sockets approved to **CSA** and **UL** Recognised. PCB type also **SEV** approved

Contact arrangement 4PCO
 Contact rating 7A @ 250V ac
 Contact material Silver Nickel
 Coil consumption 1.5VA, 1W
 Operate/release time 10ms/15ms
 Coil operating range 80% - 110%
 Temperature range -40°C - +70°C

Mftrs. List No.	5534-9012-0040=116-9219	5534-9012-0040=116-9225	9901-3000-00=116-9329
	5534-8012-0040=116-9219	5534-9024-0040=116-9226	9901-9024-90=116-9330
	5534-8024-0040=116-9220	5534-9048-0040=116-9227	9901-0024-50=116-9332
	5534-8048-0040=116-9222	5534-9110-0040=116-9228	9901-0230-50=116-9337
	5534-8110-0040=116-9223	9414SMA=116-9229	94.84.3SPA=913-7661
	5534-8230-0040=116-9224	9575SMA=116-9230	

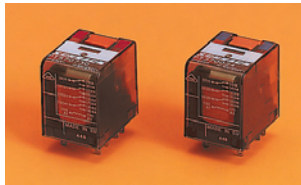
222080

COIL				Price Each				
Volts	Ω	Order Code	1+	25+	100+	250+	+	
4PCO - 5534 Series								
12V ac	—	116-9219	15.39	13.83	12.30	10.02	--	
24V ac	—	116-9220	15.54	13.97	12.42	10.12	--	
48V ac	—	116-9222	18.15	16.35	14.52	11.82	--	
110V ac	—	116-9223	15.42	13.86	12.30	10.02	--	
230V ac	—	116-9224	16.63	14.91	13.23	10.77	--	
12V dc	140	116-9225	15.54	13.97	12.42	10.12	--	
24V dc	600	116-9226	15.39	13.83	12.30	10.02	--	
48V dc	2400	116-9227	18.15	16.35	14.52	11.82	--	
110V dc	12500	116-9228	16.83	14.91	13.26	10.80	--	

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

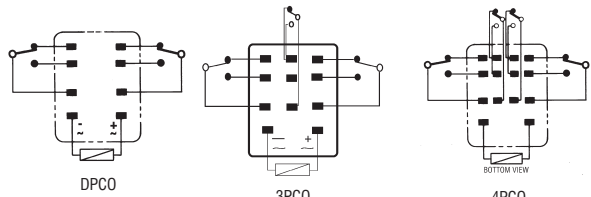
COIL Volts	Ω	Order Code	Price Each				+
			1+	25+	100+	250+	
Standard Sockets with Clips							
PCB		116-9229	3.34	2.89	2.57	2.09	--
35mm rail/surface		116-9230	10.46	9.37	8.35	6.77	--
Modules							
Diode 6 to 220V dc		116-9329	2.99	2.70	2.38	1.93	--
Diode + LED, 6 to 24V dc		116-9330	4.38	3.93	3.48	3.32	--
Diode 6 to 24V ac/dc		116-9332	4.69	4.30	3.97	3.32	--
LED, 110 to 240V ac/dc		116-9337	6.09	5.51	4.90	3.96	--
Slimline Socket with Clip Marking Tab							
		913-7661	13.31	11.43	9.99	8.92	--

6/10/12A Miniature - PT Series



- 2, 3 and 4 pole contact arrangements
- Industry standard terminal layout
- Cadmium free AgNi contacts
- Mechanical Flag
- VDE approved

L=28, W=22.5, H=29



Contact rating	DPCO, 12A @ 230V ac 3PCO, 10A @ 230V ac 4PCO, 6A @ 230V ac	Coil consumption	1VA ac, 750mW dc
Contact material	AgNi 90/10	Operate/release time	15ms
		Temperature range	-45°C to +70°C

207073

COIL Volts	Ω	Order Code	Price Each				+
			1+	20+	100+	250+	
DPCO - PT27 Series							
24V dc (18-40.8)	777	117-5056	14.19	12.06	10.65	9.49	--
24V ac (19.2-38.4)	192	117-5057	14.19	12.06	10.65	9.49	--
115V ac (92-184)	4845	307-2721	14.19	12.06	10.65	9.49	--
230V ac (184-368)	19465	117-5058	15.04	12.79	11.28	10.04	--
3PCO - PT37 Series							
24V dc (18-40.8)	777	307-2745	15.79	13.42	11.84	10.56	--
24V ac (19.2-38.4)	192	307-2757	15.79	13.42	11.84	10.56	--
115V ac (92-184)	4845	307-2769	15.79	13.42	11.84	10.56	--
230V ac (184-368)	19465	307-2770	16.74	14.21	12.54	11.16	--
4PCO - PT57 Series							
24V dc (18-40.8)	777	307-2782	12.81	11.53	9.61	8.32	--
24V ac (19.2-38.4)	192	117-5059	12.81	11.53	9.61	8.32	--
115V ac (92-184)	4845	307-2800	12.81	11.53	9.61	8.32	--
230V ac (184-368)	19465	307-2812	13.80	12.41	10.36	8.98	--
PCB Mount Socket for PT relays							
4 pole relay socket		113-2590	3.31	3.05	2.73	2.18	--
Clip for 4 pole relay socket		119-7655	0.91	0.72	0.66	0.52	--
Surface/DIN Sockets							
DPCO		307-3026	7.04	5.97	5.26	4.60	--
3PCO		307-3038	8.47	7.22	6.39	5.58	--
4PCO		307-3040	9.53	8.60	7.19	6.20	--
2PCO		991-3807	8.27	6.90	6.02	5.86	--
3PCO		991-3815	9.93	8.33	7.26	7.00	--
4PCO		991-3823	11.78	10.45	8.50	8.20	--
2PCO logical		991-3858	8.37	7.03	6.15	5.99	--
4PCO logical		991-3866	8.72	7.19	6.31	6.15	--
Clips							
Plastic		307-3051	0.94	0.82	0.72	0.65	--
Metal		307-3063	0.63	0.54	0.47	0.42	--
Marking Tab		307-3075	0.33	0.27	0.24	0.23	--
Plastic		991-3831	1.01	0.85	0.78	0.75	--
Marking Tab		991-3840	0.27	0.23	0.22	--	--
Plastic logical		991-3874	1.01	0.85	0.78	0.75	--
Modules							
Diode		991-3556	3.74	3.06	2.70	--	--
LED 24V ac/dc		991-3564	9.70	8.89	7.94	--	--
LED 155/230V ac		991-3572	9.70	8.89	7.94	--	--

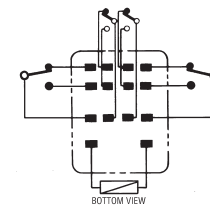


RoHS Directive

Worried about the part number lottery?
Count on us for traceability
-visit www.rohs.info

Don't risk anyone
else for RoHS

5A Miniature Plug In - SY/RV Series



- 4 Pole changeover with manual test button
- SY has LED indication, RV has mechanical flag with latching facility
- CSA, TUV, and VDE approved, UL Recognised
- Gold flashed silver nickel contacts for high reliability

Contact arrangement	4PCO	Operate/release time	10ms
Contact rating	5A @ 250V	Coil operating range	80% - 100%
Temperature range	-40°C - +70°C	Coil consumption	1.39VA/0.9W

207089

COIL Volts	Ω	Order Code	Price Each				+
			1+	20+	100+	250+	
4PCO with LED Indicator - SY Series							
12V ac	40	109-3978	12.12	10.90	10.33	9.10	--
24V ac	160	109-3979	12.12	10.90	10.33	9.10	--
110V ac	3400	109-3980	12.12	10.90	10.33	9.10	--
230V ac	160	109-3981	12.58	11.34	10.68	9.45	--
12V dc	160	109-3982	12.89	--	--	--	--
24V dc	650	109-3983	12.12	10.90	10.33	9.10	--
4PCO with Mechanical Flag - RV Series							
24V ac	197	109-3986	12.12	10.90	10.33	9.10	--
110V ac	3800	109-3987	12.12	10.90	10.33	9.10	--
230V ac	17400	109-3989	12.58	11.34	10.68	9.45	--
12V dc	160	109-3991	12.12	10.90	10.33	9.10	--
24V dc	640	109-3992	12.12	10.90	10.33	9.10	--
48V dc	2600	109-3993	12.12	10.90	10.33	9.10	--
Sockets + Clips							
PCB Clip		109-3984	0.35	0.31	0.28	0.26	--
DIN Rail Socket		993-9237	7.84	7.06	6.68	5.87	--
DIN Clip		109-3985	0.35	0.31	0.31	--	--

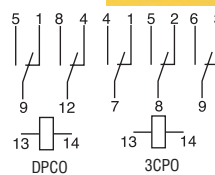
10A Miniature - 5532, 5533 Series



With Module Facility



L=27.5, W=20.6, H=33.5
Terminals=2.0 x 0.5



General purpose 2 pole and 3 pole changeover relays identical in size to Finder 5534 Series relays. The 2 pole relays are approved to IMQ, SEMKO, CSA, SEV, VDE, BEAB and UL Recognised. The 3 pole relays are approved to VDE, SEV (8A) CSA (8A) and SEMKO (8A).

The DIN rail/surface sockets have touchproof terminals to IP20 and will accept an additional module to give the extra facilities of protection diode and/or LED indication. The sockets are approved to CSA, SEV and are UL Recognised.

Contact arrangement	DPCO/3PCO	Coil consumption ac/dc	1.5 VA/1W
Contact rating	10A @ 250V	Coil operating range	80/110%
Contact material	Silver Nickel	Socket load rating	10A 250V ac

Mfrs. List No. 5532-8012-0000=116-9231 5532-8230-0000=116-9236 5533-8230-0000=116-9240
5532-8024-0000=116-9232 5532-9012-0000=116-9237 5533-9012-0000=116-9241
5532-8048-0000=116-9234 5532-9024-0000=116-9238 5533-9024-0000=116-9242
5532-8110-0000=116-9235 5533-8024-0000=116-9239

207095

COIL Volts	Ω	Order Code	Price Each				+
			1+	25+	100+	250+	
DPCO - 5532 Series							
12V ac	--	116-9231	14.67	13.21	11.76	9.51	--
24V ac	--	116-9232	14.52	13.08	11.64	9.42	--
48V ac	--	116-9234	17.28	15.54	13.83	11.22	--
110V ac	--	116-9235	14.70	13.21	11.73	9.54	--
230V ac	--	116-9236	15.78	14.19	12.63	10.26	--
12V dc	140	116-9237	14.52	13.08	11.64	9.42	--
24V dc	600	116-9238	14.52	13.08	11.64	9.42	--
3PCO - 5533 Series							
24V ac	--	116-9239	15.54	13.97	12.42	10.12	--
230V ac	--	116-9240	16.63	14.91	13.23	10.77	--
12V dc	140	116-9241	15.39	13.83	12.30	10.02	--
24V dc	600	116-9242	15.39	13.83	12.30	10.02	--

Relays & Solenoids

33

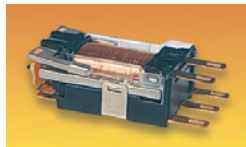
Compliant
Non-compliant
+
RoHS
Limited stock - RoHS replacement available

COIL		Order Code	Price Each			
Volts	Ω		1+	25+	100+	250+
Sockets with Clips						
DPCO PCB		116-9243	2.60	2.34	2.09	1.72
DPCO Chassis		116-9244	2.60	2.34	2.09	1.72
DPCO 35mm rail/surface		116-9246	8.30	7.45	6.65	5.38
3PCO PCB		116-9247	3.95	3.53	3.15	2.57
3PCO 35mm rail/surface		116-9248	11.31	10.21	9.08	7.39

7.5A Miniature - V23016 Series.

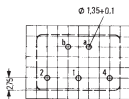


PCB or Quick Connect Terminals



Suitable for electrical separation of low-power control circuits and power load circuits. **CSA, SEV, NEMKO, DEMKO** approved, **UL** Recognised

L=31, W=20, H=19



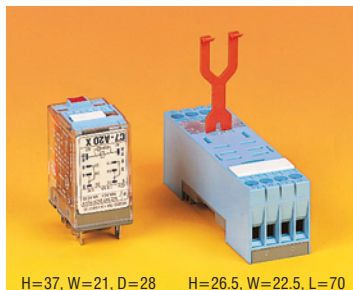
BOTTOM VIEWS

Contact arrangement	SPCO	Contact material	Silver, Gold flashed
Contact rating		Dielectric strength	2500V ac
Max. current	15A (4 secs and 10% duty)	Operate/Release	7ms/5ms
Max. current	7.5A (continuous)	Coil consumption	600mW
Max. voltage	300V dc/250V ac (group C)	Temperature range	-40°C to +70°C
Max. power	55-420W/3750VA		

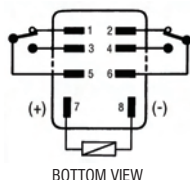
Coil Voltage	Terminal Type	Housing	Locating	Mfrs. List No.	Order Code
24V dc	PCB	PCB	Peg	V23016-B6-A101	284-737

COIL		Order Code	Price Each			
Volts	Ω		1+	5+	50+	100+
24V dc	970	284-737	47.44	37.23	31.94	25.01

10A Miniature - Full Featured QRC C7 series



H=37, W=21, D=28 H=26.5, W=22.5, L=70



A range of DPCO relays with features including a colour lockable 'Pull to test' button, lamp indication of coil status, mechanical flag indications of contact position and labelling facility.

The 24Vdc version is also available with incorporated diodes to protect the relay from incorrect connection and to protect external equipment such as PLC's from spikes generated by the relay on switch off.

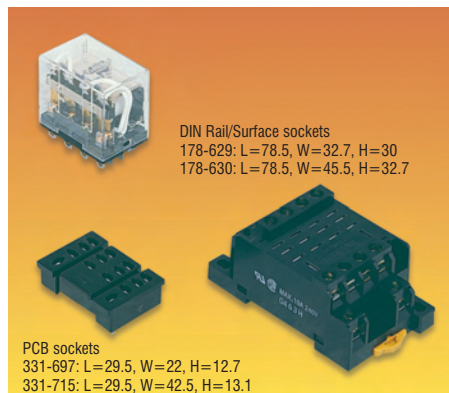
The sockets are a space saving 22.5mm wide allowing maximum packing density. The Din rail socket features touch-proof terminals, retention clip with identification label, DIN rail mounting.

All relays and sockets have **CSA** and **SEV** approval. **UL** Recognised.

Contact arrangement	DPCO	Operate/release time	10ms/6ms
Contact rating	10A	Coil operating range	80% - 110%
Max. switched voltage	250V ac	Temperature range	-20°C - +60°C
Max. switched power	2200VA/240W	Cover	Clear polycarbonate, UL94V-0
Contact material	Silver-nickel	Relay base	Grey valox, UL94V-0
Coil consumption	1.5VA/0.9W	Socket	Blue noryl, UL94V-1

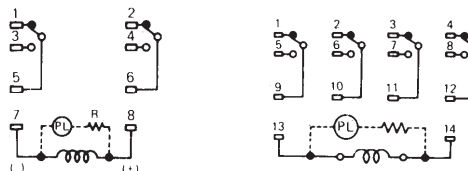
COIL		Mfrs. List No.	Order Code	Price Each			
Volts	Ω			1+	20+	100+	250+
DPCO							
24V ac	160	C7-A20X24A	108-6866	19.31	16.41	16.09	
115V ac	3500	C7-A20X115A	108-6867	20.23	17.21	16.74	
230V ac	13800	C7-A20X230A	108-6869	21.77	18.48	17.86	
24V dc	640	C7-A20X24D	108-6871	19.50	16.57	16.09	
24V dc (diodes)	640	C7-A29FX24D	108-6873	26.87	22.84	20.19	
Socket							
DIN rail		S7M	108-6872	7.52	6.48	6.09	

10A - LY2/LY4 Series



DIN Rail/Surface sockets
178-629: L=78.5, W=32.7, H=30
178-630: L=78.5, W=45.5, H=32.7

PCB sockets
331-697: L=29.5, W=22, H=12.7
331-715: L=29.5, W=42.5, H=13.1



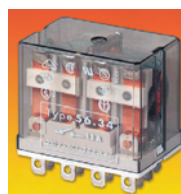
Terminals are 5.0 x 0.5mm. **VDE** and **CSA** approved, **UL** Recognised

Contact arrangement	DPCO/4PCO	Dielectric strength	2000V rms
Contact rating (resistive)	10A @ 230V ac	Coil operating range	85% - 110%
	10A @ 24V dc (resistive)	Temperature range	-5°C - +45°C
Contact material	Silver Cadmium oxide		

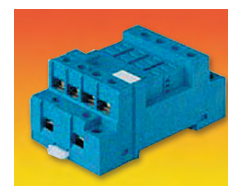
Mfrs. List No:	PTF08A-E=178-629, PYCA1=103-923, PT14-0.=331-703,	PTF14AE=178-630, PT08SOCKET=331-685, PT14-0.=331-715,	PYCP=103-736, PT08-0.=331-697
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COIL		Order Code	Price Each		
Volts	Ω		1+	20+	100+
DPCO - LY2 Series					
110V ac	4430	103-295	26.01	24.79	23.48
240V ac	15970	103-296	26.01	24.79	23.48
24V dc	650	103-298	26.01	24.79	23.48
12V dc	160	103-297	26.01	24.79	23.48
4PCO - LY4 Series					
110V ac	160	103-299	39.44	37.52	35.56
230V ac	9000	103-300	39.83	37.90	35.92
12V dc	100	103-301	39.83	37.90	35.92
24V dc	350	103-302	39.83	37.90	35.92
2 Pole Sockets					
Chassis		331-685	4.48	4.02	3.57
PCB		331-697	4.48	4.02	3.57
Surface/DIN rail		178-629	12.01	10.80	9.33
4 Pole Sockets					
Chassis		331-703	5.23	4.70	4.21
PCB		331-715	5.23	4.70	4.21
Surface/DIN rail		178-630	14.06	13.35	12.69
		1+	25+	50+	
Clips					
Chassis/PCB		103-736	1.17	1.01	0.91
Surface/DIN Rail (pair)		103-923	1.37	1.24	1.14

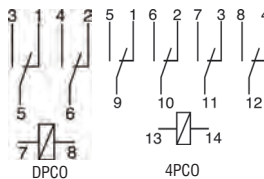
12A - 5632/5634 Series With Module Facility



L=27.6, W=41, H=35.5



L=27.6, W=20.6, H=36.5



Contact arrangement	DPCO/4PCO
Contact rating (resistive)	12A @ 250V ac
Contact material	Silver Nickel

General purpose 2-pole and 4-pole changeover power relays approved to **VDE, IMQ, CSA, NF, SEV, UL** Recognised

The 35mm rail/surface sockets have touchproof terminals to **IP20** and will accept an additional module to give the extra facilities of protection diode and/or LED indication.

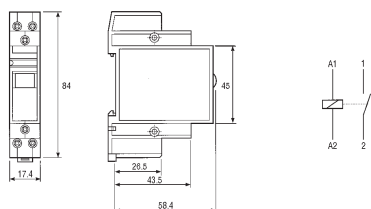
Coil consumption	DPCO : 1.5VA, 1W
Coil operating range ac/dc	4PCO : 2VA, 1.3W
Socket load rating	80 - 110%/85 - 110% 12A 250V ac

Mfrs. List No.	5632-8230-0000=116-9259	5634-8230-0000=116-9263	9672SMA=116-9267
	5632-9012-0000=116-9260	5634-9012-0000=116-9264	9614SMA=116-9268
	5632-9024-0000=116-9261	5634-9024-0000=116-9265	9674SMA=116-9271
	5634-8110-0000=116-9262	9612SMA=116-9266	

207099

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	100+	250+	+
DPCO - 5632 Series							
230V ac	—	116-9259	18.51	16.65	14.79	12.03	--
12V dc	130	116-9260	17.10	15.42	13.68	11.13	--
24V dc	640	116-9261	17.27	15.57	13.82	11.24	--
4PCO - 5634 Series							
110V ac	—	116-9262	26.36	23.72	21.09	17.15	--
230V ac	—	116-9263	30.09	27.21	24.18	19.65	--
12V dc	130	116-9264	29.39	26.48	23.51	19.12	--
24V dc	520	116-9265	29.39	26.48	23.51	19.12	--
Sockets with Clips							
DPCO PCB		116-9266	4.47	4.02	3.60	2.92	--
DPCO 35mm rail/surface		116-9267	12.51	11.28	10.02	8.14	--
4PCO PCB		116-9268	5.38	4.87	4.34	3.54	--
4PCO 35mm rail/surface		116-9271	14.44	13.03	11.56	9.41	--

20A Modular-22 Series



- EN 50022, 17.5mm wide housing
- Manual test push button
- AC or DC coil versions
- Rising clamp terminals
- IP20 rating

Contact rating	20A @ 240V ac/24V dc	Dielectric strength:	
Max. inrush current	40A	Coil to contact	3.5kV
Rated voltage	250V	Contact to contact	2kV
Max. Switch voltage	400V ac	Coil operating range ac/dc	85 - 110%/90 - 110%
		Temperature range	-40°C to +40°C

207025

COIL		Mfrs. List No.	Order Code	Price Each				
Volts	Ω			1+	25+	+	+	+
2NO-222 Series								
24V ac	41	2222-8024-0000	116-9292	23.82	23.79	--	--	--
110V ac	970	2222-8110-0000	116-9293	23.82	23.79	--	--	--
230V ac	4200	2222-8230-0000	116-9295	23.82	23.79	--	--	--
12V dc	115	2222-9012-0000	116-9296	23.82	23.79	--	--	--
24V dc	460	2222-9024-0000	116-9297	23.82	23.79	--	--	--
1NO+1NC-2223 Series								
230V ac	4200	2223-8230-0000	116-9298	23.82	23.79	--	--	--
12V dc	115	2223-9012-4000	116-9299	23.82	23.79	--	--	--
24V dc	460	2223-9024-0000	116-9301	23.82	23.79	--	--	--

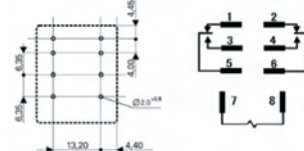
15A - Double Pole
PT Faston Series



H=29, W=28, D=22.5mm



H=28.3, W=27.8, D=21.8mm



Contact Rating	15A @ 120V ac
Contact Material	AgNi 90/10
Operate/Release	20ms/15ms
Temperature Range	-40 to +70°C

- 2 pole contact arrangement
- DC and ac coil versions
- DIN rail socket or flange mounting
- Cadmium free AgNi contacts
- Mechanical indicator
- UL Recognised

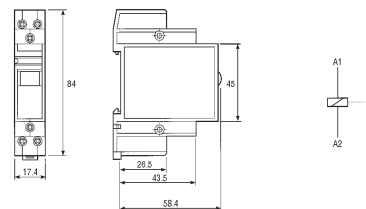
NEW

411021

COIL		Order Code	Price Each				
Volts	Ω		1+	25+	100+	250+	+
Faston Series for Socket Mounting							
24V	777	965-9358	8.92	7.91	7.10	6.48	--
24V	192	965-9366	8.92	7.91	7.10	6.48	--
115V	4845	965-9374	8.92	7.91	7.10	6.48	--
230V	19465	965-9382	9.47	8.43	7.58	6.90	--
Faston Series with Flanged Mounting							
24V	777	965-9390	10.25	9.11	8.17	7.45	--
24V	192	965-9404	10.25	9.11	8.17	7.45	--
115V	4845	965-9412	10.25	9.11	8.17	7.45	--
230V	19465	965-9420	10.90	9.70	8.76	7.94	--
Faston Series Mounting Socket							
Rated - 15A @ 120 V ac		965-9439	8.66	7.68	6.90	6.31	--

DIN Rail Mounting Power Relays

20A Modular-22 Series



- EN 50022, 17.5mm wide housing
- Manual test push button
- AC or DC coil versions
- Rising clamp terminals
- IP20 rating

Contact rating	20A @ 240V ac/24V dc	Dielectric strength:	
Max. inrush current	40A	Coil to contact	3.5kV
Rated voltage	250V	Contact to contact	2kV
Max. Switch voltage	400V ac	Coil operating range ac/dc	85 - 110%/90 - 110%
		Temperature range	-40°C to +40°C

207025

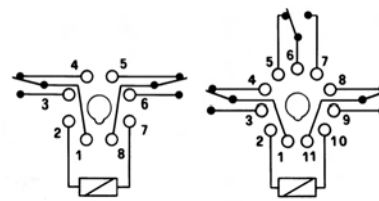
COIL		Mfrs. List No.	Order Code	Price Each				
Volts	Ω			1+	25+	+	+	+
2NO-222 Series								
24V ac	41	2222-8024-0000	116-9292	23.82	23.79	--	--	--
110V ac	970	2222-8110-0000	116-9293	23.82	23.79	--	--	--
230V ac	4200	2222-8230-0000	116-9295	23.82	23.79	--	--	--
12V dc	115	2222-9012-0000	116-9296	23.82	23.79	--	--	--
24V dc	460	2222-9024-0000	116-9297	23.82	23.79	--	--	--
1NO+1NC-2223 Series								
230V ac	4200	2223-8230-0000	116-9298	23.82	23.79	--	--	--
12V dc	115	2223-9012-4000	116-9299	23.82	23.79	--	--	--
24V dc	460	2223-9024-0000	116-9301	23.82	23.79	--	--	--

8 & 11 Pin Plug-In Power Relays

5A with Contact Indicator
MK2P, MK3P5 Series



H=52.5, W=34.5, D=34.6



MK2P-S, MK2P1

MK3P5-S, MK3P5-1

Two and three pole changeover power relays for plug-in octal and 11 bases. The relays have serrated contacts giving low contact resistance and a mechanical flag indicator to show contact operation. The relays are available either with or without a manual test button. See this section for suitable bases etc.

Contact arrangement	DPCO	Dielectric strength	2500V
Contact rating	N.O. contact 10A @ 250V ac/28V dc (resistive)	Operate/Release	ac 20ms, dc 20ms/20ms
	N.O. contact 5A @ 250V ac/28V dc	Coil consumption	2.7VA (ac), (dc)
Contact rating	N.O. contact 7A @ 250V ac (inductive pf 0.4)	Coil operating range	80% - 110%
Contact material	Silver	Temperature range	-10°C to -40°C

Compliant
Non-compliant
+ Limited stock - RoHS replacement available

RoHS

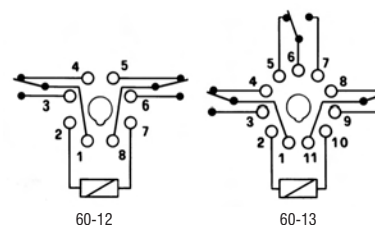


207131

COIL		Order Code	Price Each			
Volts	Ω		1+	20+	100+	500+
With Test Button and Contact Indicator						
DPCO - MK2P-S Series						
24V ac	62	471-781	15.59	14.83	14.06	12.53
110V ac	1240	471-793	15.59	14.83	14.06	12.53
230V ac	6170	471-800	16.68	15.88	15.02	13.36
24V dc	430	471-811	15.59	14.83	14.06	12.53
3PCO - MK3P5-S Series						
24V ac	62	471-823	17.40	16.60	15.69	13.97
110V ac	1240	471-835	17.40	16.60	15.69	13.97
230V ac	6170	471-847	18.17	17.31	16.38	14.60
24V dc	430	471-859	17.40	16.60	15.69	13.97
With Contact Indicator only						
DPCO - MK2P-I Series						
12V ac	17	178-091	18.17	16.07	13.49	12.15
110V ac	1240	178-093	18.17	16.07	13.49	12.15
230V ac	6170	178-094	19.42	17.21	14.44	13.01
24V dc	430	178-096	17.99	15.91	13.36	12.03
3PCO - MK3P5-I Series						
110V ac	1240	178-097	20.32	17.91	15.05	13.58
230V ac	6170	178-098	21.18	18.67	15.72	14.13
24V dc	430	178-100	20.32	17.91	15.05	13.58

COIL	Volts	Ω	Mfrs. List No.	Order Code	Price Each			
					1+	25+	100+	500+
Sockets								
Modules								
Diode			MTMT00AO	102-4019	8.78	8.41	7.80	7.19
Timer			MTMF00AO	102-4019	8.78	8.41	7.80	7.19
Timer			MTMF00AO	102-4020	123.04	116.42	113.12	107.82
Timer			MTMF00AO	102-4020	123.04	116.42	113.12	107.82

10A with Contact Indicator and Test Button - 60-12/13 Series



H=54.2 (above socket), W=32.5, D=36.4

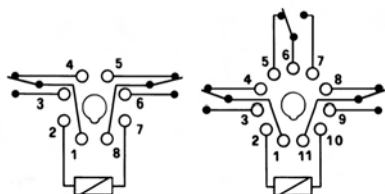
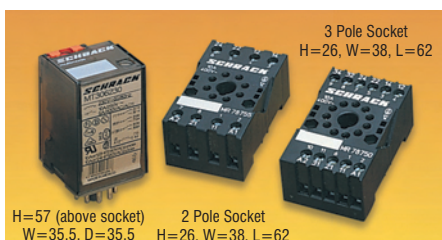
Two and three pole changeover power relays for plug-in octal and 11-pin bases. The relays have manual test button and mechanical flag contact operating indicator. AC coils are dual frequency 50/60 Hz. VDE, CSA, RINA, BEAB, IMQ, DEMKO and SEV approved, UL Recognised. The cover is flame retardant. See this section for suitable bases etc.

Contact arrangement	DPCO/3PCO	Max. Switch voltage	400V
Contact rating (resistive)	10A @ 250V ac/30V dc	Contact materials	Silver Nickel
Contact rating (inductive pf 0.4)	3A @ 250V ac 5A @ 24V dc	Dielectric strength	2000V
Switching capacity	2500VA	Operate/Release	20ms max.
Max. Inrush current	20A	Coil consumption	2.2VA (ac), 1.3W (dc)
		Coil operating range	80% - 110%
		Temperature range	-40°C to +70°C

213447

Relays & Solenoids

10A with Contact Indicator and Test Button MT2/3 Series



'Multimode' power relays for plug-in octal and 11 pin bases, incorporating a simple locking test feature. A lifting 'tab' which presents a clearly visible, orange indicator when activated, quickly and securely locks the relay test function allowing one man and long term testing.

- Contacts rated at 10A/250V ac per pole
- 'Flag' indicator gives operational status
- Colour coded coils, blue-dc and orange-ac
- Finger protected push to test button
- Din rail sockets offer finger protected terminals, clear marking and segregation of low level control circuits from the load
- Module sockets allow the use of protection and timer modules to be used with the relays
- Timer module has 24V to 240V ac/dc voltage range with Delay-On, Delay-Off, Single shot, Delay On (external trigger) and Flasher functions and time ranges from 50ms to 240 hours

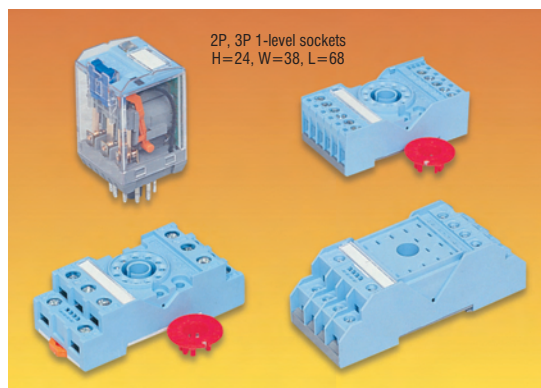
Contact arrangement	DPCO/3PCO	Dielectric strength	2500V
Contact rating	10A @ 240V ac	Operate/Release	12ms/9ms
Max. switched current	20A	Coil consumption	2.2VA (ac), 1.2W (dc)
Max. Break voltage	2500 VA	Coil operating range	80% - 140%
Switching capacity	2500VA	Temperature range	-45°C to +50°C
Contact materials	Silver-nickel alloy		

207015

COIL		Mfrs. List No.	Order Code	Price Each			
Volts	Ω			1+	25+	100+	500+
DPCO							
24V ac	86	MT226024	117-5023	15.62	13.67	12.19	10.96
115V ac	2000	MT226115	117-5024	15.62	13.67	12.19	10.96
230V ac	8300	MT226230	117-5025	15.92	13.93	12.40	11.16
12V dc	110	MT221012	117-5027	15.62	13.67	12.19	10.96
24V dc	475	MT221024	117-5028	15.62	13.67	12.19	10.96
3PCO							
24V ac	86	MT326024	117-5029	17.46	15.31	13.45	12.13
115V ac	2000	MT326115	117-5030	17.46	15.31	13.45	12.13
230V ac	8300	MT326230	117-5031	17.45	15.27	13.41	12.42
12V dc	110	MT321012	117-5032	17.46	15.31	13.45	12.13
24V dc	475	MT321024	117-5033	16.54	14.48	12.73	11.53
Sockets							
DPCO	—	MT78755	119-7643	8.58	7.58	6.64	5.68
3PCO	—	MT78750	119-7644	9.90	8.40	7.29	6.28
Module Sockets							
DPCO	—	MT78745	119-7645	7.78	7.00	6.61	6.42
3PCO	—	MT78740	119-7646	8.91	8.57	8.25	7.74

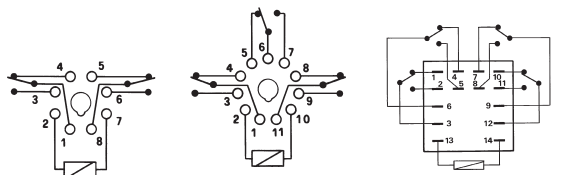
COIL		Order Code	Price Each				+
Volts	Ω		1+	20+	100+	250+	
DPCO - 60-12 Series							
12V ac	19	116-9186	18.78	16.38	14.13	12.18	--
24V ac	74	116-9187	18.78	16.38	14.13	12.18	--
48V ac	290	116-9188	17.60	15.36	13.24	11.39	--
110V ac	1600	116-9189	18.78	16.38	14.13	12.18	--
230V ac	7250	116-9190	20.07	18.06	16.05	13.05	--
12V dc	110	116-9192	18.78	16.38	14.13	12.18	--
24V dc	445	116-9193	18.78	16.38	14.13	12.18	--
48V dc	1772	116-9194	21.18	18.48	15.94	13.70	--
110V dc	9420	116-9195	20.07	17.43	15.03	12.90	--
3PCO - 60-13 Series							
24V ac	74	116-9196	20.00	17.42	15.03	13.03	--
110V ac	1600	116-9197	20.00	17.42	15.03	13.03	--
240V ac	7250	116-9198	21.27	19.12	17.03	13.85	--
12V dc	110	116-9199	20.00	17.42	15.03	13.03	--
24V dc	445	116-9200	20.00	17.42	15.03	13.03	--
48V dc	1772	116-9201	21.99	19.17	16.53	14.31	--
110V dc	9420	116-9202	20.96	18.27	15.81	13.68	--
Relay Bases							
DPCO		116-9213	9.92	8.92	7.91	6.45	--
3PCO		116-9215	10.85	9.79	8.67	7.06	--

10A with Coil and Contact Indicator and Test Button C2/C3/C4 Series



2P, 3P 2-level sockets
H=25, W=38, L=78

4P socket,
H=31, W=38, L=92



C2-A20X H (above socket)=59, W=35, D=35 Fixing centres=29.35 x 3.2 dia.
 C3-A30X H (above socket)=53, W=35, D=35 Fixing centres=M4/5 Blade size=3 x 0.5
 C4-A40X H (above socket)=53, W=35, D=35 Fixing centres=M4/5 Blade size=3 x 0.5

- 2, 3 and 4 Pole changeover relays
- Dual fail safe mechanical contact position and neon/LED indicators
- Colour coded finger proof test button (can be permanently depressed using the retaining clip and socket)
- 24V dc versions available with protection diode
- Sockets supplied with coding ring and pin which can be used to ensure dc relays are not plugged into AC sockets
- Approved to **CSA, SEV, OVE, SEMKO, DEMKO, NEMKO, FEMKO** and **LLOYDS, UL** Recognised

Contact arrangement	DPCO/3PCO/4PCO	Cover	Clear polycarbonate
Contact rating:		Socket	Blue noryl, UL94V-1
Max. current	10A	Relay base	Grey valox, UL94V-0
Max. voltage	108-6843	Operate/release time	18ms/10ms
Max. power	2200VA (2P, 3P) 1800VA (4P)	Coil consumption	2.2VA/1.3W(2P, 3P) 2.2VA/1.3W(4P)
	200W @ 24V dc	Coil operating range	80% - 110%
	45W @ 220V dc	Temperature range	-20°C - +60°C
Dielectric strength	2500V ac		
Contact material	Silver cadmium oxide (gold flashed on types with diodes)		

COIL	Volts	Ω	Mftrs. List No.	Order Code	1+	20+	100+	250+	
115V ac	1700		C2-A20X115A	108-6843	23.69	20.37	--	--	
230V ac	7400		C2-A20X230A	108-6845	25.47	21.67	--	--	
24V dc	440		C2-A20X24D	108-6846	22.94	19.56	19.48	--	
24V dc	440		(diodes) C2-A29FX24D	108-6874	35.28	29.99	26.46	25.15	
24V ac	70		C3-A30X24A	108-6847	26.15	22.27	21.62	--	
115V ac	1700		C3-A30X115A	108-6848	26.34	22.43	21.62	--	
230V ac	7400		C3-A30X230A	108-6849	27.55	23.45	22.79	--	
24V dc	440		C3-A30X24D	108-6850	26.15	22.27	21.62	--	
24V dc	440		(diodes) C3-A39FX24D	108-6875	40.64	34.49	30.46	29.22	
4PCO									
115V ac	1650		C4-A40X115A	108-6851	27.75	23.53	23.16	--	
230V ac	7200		C4-A40X230A	108-6852	29.27	24.88	24.23	--	
24V dc	384		C4-A40X24D	108-6853	27.74	23.54	22.92	--	
24V dc	440		(diodes) C4-A49FX24D	108-6876	41.44	35.22	31.15	29.81	
Surface/DIN rail Sockets with Clip and Coding Ring									
One Level Terminals									
8 Pin (DPCO)	S2-B+S2-BC+S3-C			108-6854	10.50	9.30	--	--	
11 Pin (3PCO)	S3-B+S2-BC+S3-C			108-6855	11.87	10.37	9.72	--	
Two Level Terminals									
8 Pin (DPCO)	S2+S+S2-BC+S3-C			108-6858	10.08	8.55	8.42	--	
11 Pin (3PCO)	S3-S+S3-BC+S3-C			108-6859	11.06	9.40	9.11	--	
14 Tag (4PCO)	S4-B+S3-C			108-6857	13.98	11.87	11.81	--	

Plug-In Latching Relay
C3-R Series 10 Amp



The coil of the C3-R latching relay has two windings around a magnetic core. This means that if one coil is energised, even momentarily, the contacts switch over and stay latched in one position even after power is removed. To un-latch the contacts, a voltage must be applied to the second coil.

NEW

- Magnetic latching function when power removed
- 10A DPCO contacts
- Colour coded test button
- 'Pull to lock' test button
- Coil voltage marked on top of relay
- Full technical spec on label
- 2 window mechanical flag

Contact Arrangement	DPCO Latching
Contact Rating (SPCO)	10A @ 250V ac (AC1); 6A @ 250V ac (AC15)
Contact Rating (DPCO)	10A @ 30V dc (DC1); 0.5A @ 110V dc (DC1)
Max switching voltage	250V ac
Max Switched Power	2500VA
Operating Temperature	-20 to 60°C
On Pulse Power	1.5 VA/W
Off Pulse Power	0.5 VA/W
Min. Pulse Length	50ms (coils withstand permanent connection)

417337

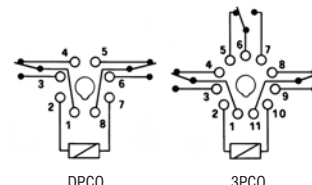
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Coil	Mftrs. List No.	Order Code	1+	20+	100+	250+
12V	C3-R2012D	101-1486	57.58	52.37	47.13	43.65
24V	C3-R2024D	101-1487	57.58	52.37	47.13	43.65
24V	C3-R2024A	101-1488	57.58	52.37	47.13	43.65
115V	C3-R20115A	101-1489	57.58	52.37	47.13	43.65
230V	C3-R20230A	101-1490	57.58	52.37	47.13	43.65
One Level Terminals						
11 Pins	S3-B+S2-BC+S3-C	108-6855	11.87	10.37	9.72	--
Two Level Terminals						
11 Pins	S3-S+S3-BC+S3-C	108-6859	11.06	9.40	9.11	--

10A with Push Button & Flag
RR Series



- 2 and 3 pole changeover plug-in power relays
- Manual test button with latch facility and mechanical flag indicator colour coded for AC/DC operation.
- Gold flashed contacts
- CSA and VDE approved, UL Recognised



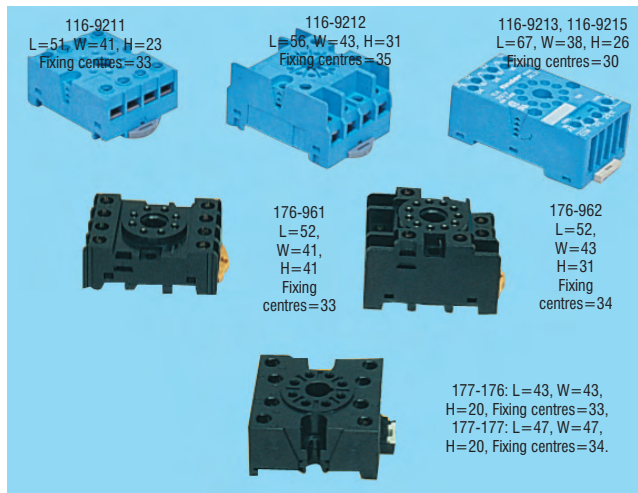
Contacts	DPCO/3PCO	Operate release time	20ms
Contact rating	10A @ 250 Vac/30Vdc	Coil range	80-110%
Temp range	-40 to +70°C	Coil consumption	1.35 WDC or 2.5VA ac

207059

COIL	Volts	Ω	Order Code	1+	20+	100+	250+	+
DPCO - RR2PI Series								
12V ac	20		302-6395	16.41	14.77	14.53	--	--
24V ac	88		302-6401	16.41	14.77	13.95	12.32	--
110V ac	2000		302-6413	16.41	14.77	13.95	12.32	--
230V ac	7900		302-6425	17.17	15.47	14.58	12.88	--
12V dc	110		302-6437	16.41	14.77	13.95	13.31	--
24V dc	430		302-6449	16.41	14.77	13.95	12.32	--
Socket DPCO SRN8			307-8863 †	6.35	5.71	5.39	4.78	--
3PCO - RR3PI Series								
12V ac	20		307-8875	18.28	16.44	15.53	13.73	--
24V ac	88		307-8887	18.74	16.85	15.92	14.07	--
110V ac	2000		307-8899	18.28	16.44	15.53	13.73	--
230V ac	7900		307-8905	19.07	17.17	16.22	14.30	--
12V ac	110		307-8917	18.28	16.44	15.53	13.73	--
24V	430		307-8929	18.28	16.44	15.53	13.73	--
Socket 3PCO SRN11			307-8930 †	7.41	6.68	6.29	5.58	--
DPCO - RR2PI Series								
Socket DPCO SRN8			992-2547	6.35	5.71	5.39	4.78	--
3PCO - RR3PI Series								
Socket 3PCO SRN11			992-2555	7.41	6.68	6.29	5.58	--

8 & 11 Pin Relays Bases & Accessories

35mm Rail/Surface Mounting



Screw terminal bases for mounting on 35mm DIN rail or for screw mounting to flat surfaces. 116-9211, 116-9212: Colour blue.

176-961, 176-962: Colour black.

116-9213, 116-9215: Sockets will accept Diode and LED modules detailed below. Colour

Relays & Solenoids

33

Compliant
Non-compliant
Limited stock - RoHS replacement available
RoHS

blue.

177-176, 177-177: Compact low profile sockets designed to take up no extra space when used with **DIN48** packages. Contact rating 10A.

Mfrs. List Nos: **Note:** All FINDER bases now supplied complete with retaining clip
 Finder: 9020SMA=116-9213 9021SMA=116-9215 9026SMA=116-9211 9027SMA=116-9212
 Omron: PF083A-E=176-961 PF113A-E=176-962
 INELCO: CDRS08=177-176 CDRS11=177-177

206949

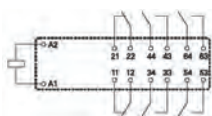
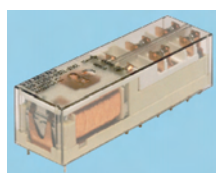
Description	Order Code	Price Each				
		1+	25+	50+	100+	+
8 pin base	116-9211	9.85	8.86	7.86	6.42	--
11 pin base	116-9212	8.66	7.78	6.94	5.65	--
8 pin base	176-961	7.26	6.90	6.54	6.22	--
11 pin base	176-962	9.08	8.63	8.20	7.78	--
8 pin base	116-9213	9.92	8.92	7.91	6.45	--
11 pin base	116-9215	10.85	9.79	8.67	7.06	--
8 pin base	177-176	8.73	7.67	6.87	5.65	--
11 pin base	177-177	9.08	8.22	7.74	6.81	--

Safety Power Relays

8A PCB - SR6 Safety Relays



Forcibly Guided Contacts



NEW

- 6 pole safety relay
- Forcibly guided contacts to EN50205
- Rated current 8A
- 6 kV surge resistance between poles
- TUV and VDE approved, UL Recognised

Contact arrangement 4 NO and 2 NC
 Contact Rating 8
 Contact Material AgSnO₂
 Coil Consumption 1200mW
 Mechanical life 10 x 10⁶ operations
 Temperature Range -25°C to +70°C
 Mfrs. List No. V23050A1012A542=991-3475
 V23050A1024A542=991-3483

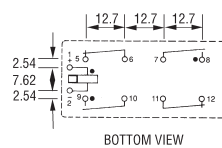
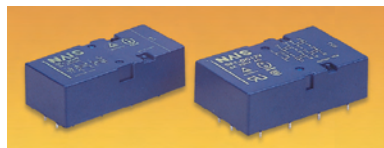
413970

COIL		Order Code	Price Each		
Volts	Ω		1+	20+	100+
12V	120	991-3475	74.64	60.84	49.02
24V	480	991-3483	74.64	60.84	49.02

10A PCB - SF2 Series



Positively Guided Contacts



SF2 Series : L=53.3, W=25, H=16.5

PCB hole dia. = 1.4

2 pole safety relays with forced operation contacts, such that in case of welding of one of the contacts, associated open contacts cannot close.

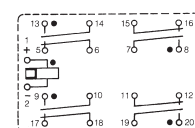
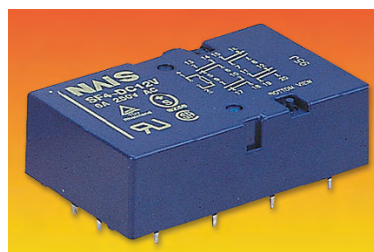
- Low profile compact packages with PCB terminals
- 2NO + 2NC contacts
- IP67 sealed
- Approved to TUV, SEV and CSA, UL Recognised
- Complies with IEC255

Contacts arrangement DPCO Max. switch frequency 10Hz
 Contact rating (max) 10A Coil operating range 75-120%
 Switch voltage (max) 440V Temperature range -40 to +70°C
 Power consumption 500mW

207011

COIL		Order Code	Price Each		
Volts	Ω		1+	25+	50+
DPCO - SF2 Series					
12Vdc	288	625-875	53.11	46.92	41.42
24Vdc	1152	112-4064	53.11	46.92	41.42

6A, SF4 Series
Positively Guided Contacts



BOTTOM VIEW

SF4 Series : L=53.3, W=33.4, H=16.5

- Low profile compact packages with PCB terminals
- Now with twin contacts (4NO + 4NC)
- IP67, IP30(breathing hole open) sealed
- Approved to TUV, SEV and CSA, UL Recognised
- Overvoltage category as per IEC 60664-1 III/4 kV
- Rated voltage in V as per IEC 60664-1 basic insulation

4 pole safety relays with forced operation contacts, such that in case of welding of one of the contacts, associated open contacts cannot close.

Contacts arrangement 4PCO Max. switch frequency 10 Hz (without load)
 Contact rating (max) 6A @ 250V ac/30V dc Coil operating range 75 - 120%
 Switch voltage (max) 440V Temperature range -40 to +70°C
 Power consumption 500mW

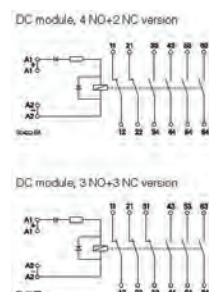
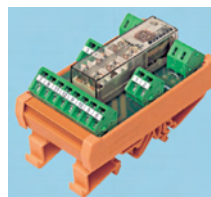
270977

COIL		Mfrs. List No.	Order Code	Price Each		
Volts	Ω			1+	20+	100+
12V	288	SF4-D-12	438-8392	73.54	69.53	60.82
24V	1152	SF4-D-24	438-8409	73.54	69.53	60.82

8A PCB - SR6Z Safety Relay on DIN Rail



Forcibly Guided Contacts



L = 87, W = 46, H = 58mm

- 6 pole safety relay
- Forcibly guided contacts to EN50205
- Rated current 8A

Contact arrangement 3 NO and 3 NC
 Contact Rating 8
 Contact Material AgSnO₂
 Breaking Capacity - ac 2000 VA
 Mechanical life 10 x 10⁶ operations
 Temperature Range -25°C to +50°C

- 6 kV surge resistance between poles
- CE approved
- Spring connectors

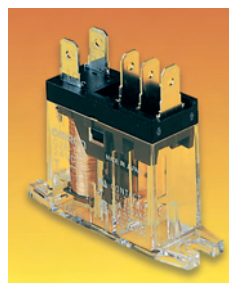
Mfrs. List No. SR6ZA024=991-3491
 SR6ZB024=991-3505

413973

Contact Configuration	Coil Volts	Order Code	Price Each		
			1+	20+	50+
3 NO and 3 NCV	24V	991-3491	256.04	209.91	172.06
4 NO and 2 NCV	24V	991-3505	256.04	209.91	172.06

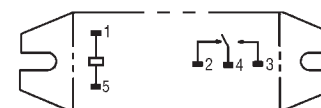
Panel Mounted Power Relays

10A-G2R-I-T Series



- SPCO relays capable of switching 10A
- Quick connect terminals, ideal for panel mounting
- Terminals accept 4.8 x 0.5 "faston" connectors
- CSA, TUV, VDE, SEMKO, NEMKO, IMQ and SETI approved, UL Recognised

Terminal Arrangement/Internal Connections (Bottom View)



H=29.5 W=45 D=14
 Fixing Centres=38

Connect arrangement SPCO Coil consumption 530mW/0.9VA
 Contact rating 10A @ 250 Vac/30Vdc Coil operating range 70-110% dc/80-110% ac
 Contact material Silver Cadmium oxide

207032

COIL		Price Each						
Volts	Mfrs. List No.	Ω	Order Code	1+	20+	100+	250+	+
SPCO -G2R-1-T-Series								
12Vdc	G2R-1-T 12VDC	275	909-956	9.93	9.44	8.98	8.53	--
24Vdc	G2R-1-T 24VDC	1100	909-968	10.48	9.45	8.38	7.49	--
24Vac	G2R-1-T 24VAC	260	909-970	13.07	11.72	10.46	9.30	--
110Vac	G2R-1-T 110VAC	5500	909-981	13.07	11.72	10.46	9.30	--
240Vac	G2R-1-T 240VAC	30000	909-993	22.38	20.16	17.89	15.90	--

General Purpose Power Relay



General purpose 10 amp power relay available in 2PCO plug-in, PCB, chassis mount.

- Arc barriers prevent flashover between contacts
- High reliability/long life expectancy
- UL/cUL approved

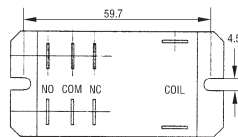


Rated Load	Resistive	Inductive
Rated Current	10A @ 240V ac/28V dc	7.5A @ 240V ac, 5A @ 28V dc
Maximum Switching Voltage	250V ac/28V dc	
Operating Time	25ms Max.	
Release Time	25ms Max.	
Dielectric Strength	1500V ac 50/60Hz for 1 min.	
Ambient Operating Temperature	-40 to 70°C	-40 to 70°C
Mechanical Service Life	20 million ops min.	
Electrical Service Life	100,000 ops at rated load	
Power Consumption	1.2VA ac, 0.9W dc	
Rated Voltage	AC Coils. Coil Resistance	DC Coils. Coil Resistance
12	160Ω	Ω
24	650Ω	Ω
24	184Ω	Ω
110	4550Ω	Ω
230	14400Ω	—
	Mfrs. List No.	Order Code
	QY21XXF12DC	100-8803
	QY21XXF24DC	100-8804
	QY21XXF24AC	100-8805
	QY21XXF110AC	100-8806
	QY21XXF230AC	100-8807

415398

Mfrs. List No.	Order Code	1+	25+	100+	200+	+
QY21XXF12DC	100-8803	19.11	16.60	14.61	14.39	--
QY21XXF24DC	100-8804	19.11	16.60	14.61	14.39	--
QY21XXF24AC	100-8805	19.11	16.60	14.61	14.39	--
QY21XXF110AC	100-8806	19.11	16.60	14.61	14.39	--
QY21XXF230AC	100-8807	19.11	16.60	14.61	14.39	--

30A - T92 Series



L=69, W=34, H (case)=26
Terminals=6.3 x 0.8

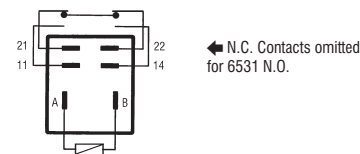
Covered relays with a make current rating of 30A and a dielectric strength of 4kV with 8mm clearance between coil and contacts. Flame retardant housings to **UL94V-0**. **UL** Recognised and **CSA** approved. Designed to meet **VDE** requirements.

Contact arrangement	DPNO-DPCO	Contact material	Silver Cadmium oxide
Contact rating	N/O-30A @ 240V ac N/O-20A @ 240V ac N/C-3A @ 240V ac	Operate/Release	15ms/10ms
Dielectric strength	4000V rms	Coil consumption	1.55W (dc), 4VA (ac)
		Coil operating range	80-110%
		Temperature range	-40 to +65°C

206970

COIL		Price Each						
Volts	Ω	Order Code	1+	20+	100+	250+	+	
DPNO - T92P7D/A22 Series								
12Vdc	93.75	270-313	22.47	20.22	17.96	13.48	--	
24Vdc	375	270-325	22.47	20.22	17.96	13.48	--	
240Vac	4083	270-337	24.55	22.11	19.66	14.73	--	
DPCO - T92P11D/A22 Series								
12Vdc	93.75	270-349	27.17	24.50	21.73	16.32	--	
24Vdc	375	270-350	27.23	24.51	21.80	16.35	--	
240Vac	4083	270-362	28.65	25.81	22.94	17.18	--	

20A/30A - 6531 Series



L=36.5, W=32.2, H=42.2
Fixing centres=52.5 (slots 3.6 dia)
Terminals=6.3 x 0.8

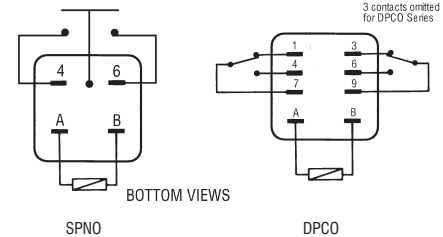
Single pole power relays with **VDE, CSA, SEV** approvals. **UL** Recognised. Transparent polycarbonate case has fixing lugs for screw mounting.

Contact arrangement	SPNO/SPCO	Dielectric strength	2000V ac
Contact rating	SPNO - 30A @ 250V ac SPCO - 20A @ 250V ac	Coil consumption	2.2VA, 1.3W
Switching capacity	SPNO-7500VA SPCO-5000VA	Coil operating range ac/dc	85-110%/80 - 110%
Max. Inrush current	SPNO-50A SPCO-40A	Operate release/time	30ms
Max. switching voltage	400V ac	Temperature range	-40°C to +70°C
Contact material	Silver Cadmium oxide(90/10%)		

207123

COIL		Price Each						
Volts	Ω	Order Code	1+	25+	100+	250+	+	
SPNO, 30A - 6531 N.O. Series								
12V dc	110	116-9203	19.54	17.57	15.60	12.70	--	
24V dc	445	116-9204	19.54	17.57	15.60	12.70	--	
230V ac	7250	116-9205	20.76	18.70	16.63	13.51	--	
SPCO + SPNC, 20A - 6531 C.O. Series								
12V dc	110	116-9206	17.06	15.36	13.64	11.09	--	
24V dc	445	116-9207	16.89	15.21	13.50	10.98	--	
230V ac	7250	116-9209	20.55	18.51	16.47	13.38	--	

16A/25A/30A - RM Series



H (case)=48.5, H (inc. fixing lugs)=73.5, W=38.5, D=35.5.Fixingcentres=64. Terminals=6.3 x 0.8

Suitable for direct control of squirrel-cage motors, heaters or electrical appliances. The RM7 and RM8 series both have a mechanical flag indicator. The RM7 series has **CSA** approvals and is **UL** Recognised. The RM8 has **VDE** (dc coils only), **SEV** and **CSA** approvals and is **UL** Recognised.

Contact arrangement	SPNO/DPCO/3PCO
Contact rating	SPNO - 30A @ 240V ac DPCO - 25A @ 240V ac 3PCO - 16A @ 380V ac
Switching capacity	SPNO-7200VA (2HP @ 240V ac) DPCO-6000VA (2HP @ 240V ac) 3PCO-6000VA (0.5HP @ 240V ac)
Contact material	Silver Cadmium oxide
Dielectric strength (min.)	1000V ac (contact/contact)
Coil consumption	SPNO/DPCO - 2.8VA, 1.2W 3PCO - 2.8VA, 1.6W
Temperature range	dc -45 to +60°C ac -45°C to +40°C
Case material	Tinted polycarbonate, UL94V-2
Base material	Polyester, UL94V-0

206967

COIL		Mfrs. List No.	Order Code	1+	25+	100+	250+
SPNO, 30A							
12Vdc	110	RMD05012.	225-678	28.60	25.48	24.03	20.38
24Vdc	475	RMD05024.	225-680	28.28	25.48	24.03	20.38
230Vac	7500	RMD05730.	225-691	29.91	26.95	25.45	21.57
DPCO, 25A							
12Vdc	110	RM805012.	225-708	28.28	25.48	24.03	20.38
24Vdc	475	RM805024.	225-710	28.83	25.99	24.51	20.73
110/120Vac	1850	RM805615.	225-721	27.50	24.53	23.13	19.59
230Vac	7500	RM805730.	225-733	30.48	27.42	25.90	21.99
3PCO, 16A							
12Vdc	86	RM705012.	225-745	24.86	22.36	21.14	17.70
24Vdc	345	RM705024.	225-757	24.37	22.36	21.14	17.36
110/120Vac	1850	RM705615.	388-580	25.26	21.45	18.90	17.70
230Vac	7500	RM705730.	225-769	26.47	23.38	22.49	18.93

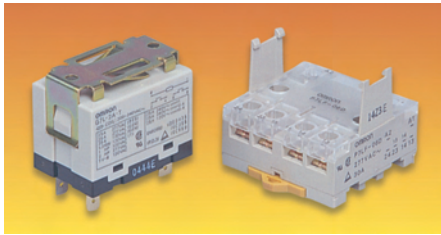
Relays & Solenoids

33

Compliant
Non-compliant
RoHS
+ Limited stock - RoHS replacement available

Heavy Duty Power Relays

25A/30A/3.0 HPMotor Load - G7L Series



Relay with mounting bracket fitted DIN rail socket
L=52.5, W=33.5, H=47 (53 with 472-530 fitted)
Terminals: 6.35 x 0.8 x 11



A heavy duty power relay available in 1 or 2 pole format with 25A inductive rating, and **UL** rated at 3.0 HP motor load at 265V ac. Typical loads include motors, heaters, lighting controllers and lamps.

The relay may be either surface mounted using bracket 472-530 or DIN rail mounted using bracket 478-015. Terminal connections are by 0.250 push-on connectors. Alternatively the DIN rail/surface socket 478-003 has finger protected screw terminals.

Approved to **CSA, VDE and IEC, UL** Recognised.

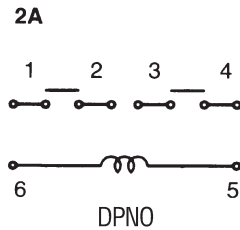
Contact arrangement	SPNO/DPNO	Isolation (coil to contact)	4.0kVA
Contact rating	SPNO 30A @ 220V ac (resistive) 25A @ 220V ac (inductive)	Coil operating range	75% to 110%
	DPNO 25A @ 220V ac (resistive) 25A @ 220V ac (inductive)	Temperature range	-25°C to +60°C
UL listing	3 HP motor load @ 265V ac	Coil consumption (nor.)	1.7 to 2.5VA, 1.9W
Max. switching capacity	5.5kVA		

Mfrs. List Nos:	G7L-2A-T 200/240AC=994-9690
G7L-1A-T 200/240VAC=994-9640	G7L-2A-T 12VDC=994-9704
G7L-1A-T 12VDC=994-9658	G7L-2A-T 24VDC=994-9712
G7L-1A-T 24VDC=994-9666	R99-07G5D=118-1247
G7L-2A-T 24VAC=994-9674	P7LF-06D=994-5431
G7L-2A-T 100/120VAC=994-9682	P7LF-D=994-5440

206978/405695

COIL	Volts	Ω	Order Code	Price Each			
				1+	20+	100+	250+
SPNO - G7L-1A-T Series	200 to 240V ac	—	994-9640	26.47	25.17	23.85	22.49
	12Vdc	75	994-9658	26.47	25.17	23.85	22.49
	24Vdc	303	994-9666	26.47	25.17	23.85	22.49
DPNO - G7L-2A-T Series	24Vac	—	994-9674	23.21	22.62	21.84	20.67
	100 to 120V ac	—	994-9682	29.13	27.69	26.21	24.79
	200 to 240V ac	—	994-9690	29.13	27.69	26.21	24.79
	12Vdc	75	994-9704	29.13	27.69	26.21	24.79
	24Vdc	303	994-9712	29.13	27.69	26.21	24.79
Accessories							
Mounting bracket			118-1247	1.86	1.67	1.44	—
DIN rail socket			994-5431	35.82	34.09	32.26	30.53
DIN rail bracket			994-5440	18.06	15.92	13.45	12.23

25/30A High Capacity Relay - GY Series



- 30A High capacity relay capable of with-standing a momentary voltage drop to 50% of rated value.
 - Manufactured to **VDE 0435**
 - High operation frequency
 - **CUR** and **TUV** approved
 - Single pole double make or double pole double make versions available
- | | |
|----------------------------------|-----------------------------------|
| Contact ratings (single pole) | 30A @ 250Vac res/25A @ 250Vsc ind |
| (double pole) | 25A @ 250Vac res/25A @ 250Vsc ind |
| Switching capacity (single pole) | 7500VA |
| (double pole) | 6250VA |
| Maximum switching voltage | 277Vac |
| Maximum operate frequency | 1800 ops per hour |

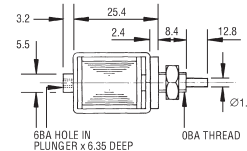
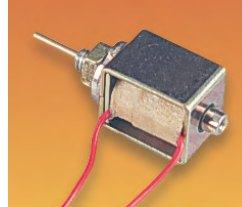
207069

COIL	Volts	Ω	Order Code	Price Each			
				1+	20+	100+	250+
SPNO - GY1 Series							
24V ac	—	—	109-3994	16.90	15.21	14.40	12.66
200/240Vac	—	—	109-3995	21.99	—	—	—
12Vdc	75	—	109-3996	16.90	15.21	14.40	12.66
24Vdc	300	—	109-3997	17.32	15.59	14.76	12.98
DPNO - GY2 Series							
24Vac	—	—	109-3998	16.93	15.59	15.07	—
200/240Vac	—	—	109-3999	24.28	22.59	—	—
12Vdc	75	—	109-4000	21.23	19.09	18.05	15.91
24Vdc	300	—	109-4001	21.23	19.09	18.05	15.91

Solenoids

Miniature - SM0012V

KEYSWITCH



H=18.3, W=15.9

A miniature solenoid designed for short stroke working in confined spaces. Pull or thrust action. Can operate at up to 2000 cycles per minute, depending on the application. Maximum stroke 9mm.

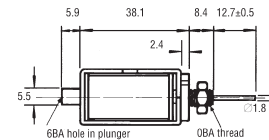
Average performances at 20°C ambient temperature
Pull force, continuous 35gf @ 3.0mm, 150gf @ 1.0mm
Pull force, 25% duty 20gf @ 8.0mm, 140gf @ 3.0mm
Coil consumption: 2.75W continuous 11W @ 25% duty

207148

Voltage	Order Code	Price Each		
		1+	10+	50+
12Vdc	118-1445	25.41	20.82	18.79

Miniature - SMO

KEYSWITCH



H=18.3, W=15.9, Leads=150

A solenoid suitable for light high speed duty and capable of operating in excess of 300 cycles/minute. Pull or thrust action. Maximum stroke 16mm.

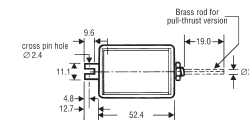
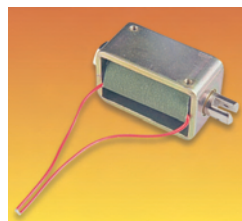
Pull force, continuous 25gf @ 8.0mm, 70gf @ 3.0mm
Pull force, 25% duty: 70gf @ 8.0mm, 300gf @ 3.0mm
Coil consumption: 3W continuous, 24W @ 25% duty

207137

Voltage	Order Code	Price Each		
		1+	10+	50+
12Vdc	118-1451	27.00	22.62	20.41

Standard - SM2 Series

KEYSWITCH



H=31.8, W=25.4, Leads=150

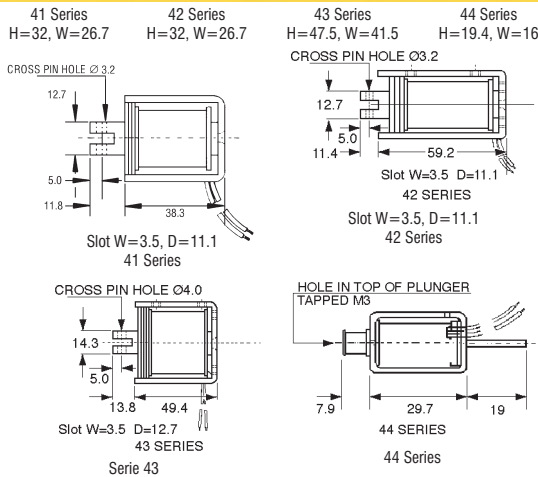
The solenoids are designed not to jam even in the event of coil collapse. Pull or pull-thrust action. The pull-thrust solenoid has a hard brass rod attached to the rear of the plunger (see diagram). Maximum stroke at continuous rating 16mm. Fixing is by 2 x 4BA tapped holes on both side and end plates.

Pull force, continuous 70gf @ 16.0mm, 150gf @ 10.0mm
Pull force, 25% duty: 250gf @ 16.0mm, 550gf @ 3.0mm
Coil consumption: 6W continuous, 24W @ 25% duty

207138

Voltage	Order Code	1+	10+	50+	100+	+
Pull Type						
12V dc	118-1448	47.91	41.79	38.61	34.65	--
24V dc	118-1449	47.91	41.79	38.61	34.65	--
Pull-Thrust Type						
24V dc	118-1449	47.91	41.79	38.61	34.65	--

Miniature and Standard Size Solenoids
Monostable - Pull Action



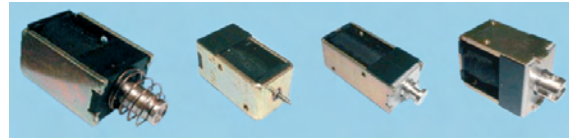
A range of general purpose, monostable, pull action solenoids designed to give a range of force/size ratios. AC and DC types are externally identical but the AC types in Series 41, 42, 43 and 44 are fitted with a copper shading ring to reduce AC vibration noise. The coils are all continuously rated at the stated voltages. The 43 series is suitable for heavy-duty applications and the 42 and 147 series provide high forces over longer strokes. The miniature 44 series offers high force for short stroke applications, where the sub-miniature 133 and 134 series are ideal for discrete small force/stroke applications where space is at a premium. 120-7155, 120-7156 and 120-7157 come complete with an anti-residual "push-off" spring.

Series	Pull force, continuous	Pull force, 25% duty	Closed power, continuous
41, dc	400gf @ 4mm, 100gf @ 8.0mm	900gf @ 16.0mm, 400gf @ 3.0mm	6.5W
41, ac	300gf @ 4mm, 200gf @ 10.0mm	1500gf @ 4.0mm, 700gf @ 10.0mm	10.5W
42, dc	350gf @ 4mm, 150gf @ 8.0mm	1250gf @ 6.0mm, 300gf @ 18.0mm	10W
42, ac	400gf @ 4mm, 200gf @ 18.0mm	1300gf @ 6.0mm, 600gf @ 18.0mm	15W
43, dc	1150gf @ 3mm, 150gf @ 9.0mm	3700gf @ 3.0mm, 1500gf @ 9.0mm	12W
43, ac	1000gf @ 3mm, 200gf @ 15.0mm	3100gf @ 3.0mm, 1700gf @ 15.0mm	20W
44, dc	80gf @ 2.0mm, 25gf @ 6.0mm	230gf @ 2.0mm, 55gf @ 6.0mm	3W
44, ac	110gf @ 2.0mm, 50gf @ 8.0mm	250gf @ 2.0mm, 125gf @ 8.0mm	4.3W

207152

Voltage	Mftrs. List No.	Order Code	1+	10+	20+	50+
41 Series						
12V dc	41 120 610 620	968-7769	30.42	28.86	27.54	24.39
24V dc	41 120 610 720	968-7777	30.42	28.86	27.54	24.39
240V ac	41 120 110 310	968-7785	30.08	26.67	23.94	22.23
42 Series						
12V dc	42-120-610-620	968-7831	32.95	28.59	25.89	23.62
12V dc	42-120-611-620	120-7156	37.43	33.72	30.66	28.64
24V dc	42-120-610-720	968-7840	32.95	28.59	25.89	23.62
240V ac	42-120-110-310	968-7858	33.85	29.40	26.58	24.88
43 Series						
12V dc	43-120-610-620	968-7866	38.12	34.93	33.20	--
24V dc	43-120-610-720	968-7874	45.74	39.90	37.17	33.29
240V ac	43-120-110-310	968-7882	47.92	41.79	38.94	35.63
44 Series						
6V dc	44A-220-620-540	968-7890	22.65	22.14	21.51	19.38
12V dc	44A-220-620-620	968-7904	23.25	22.23	21.09	18.69
12V dc	44A-220-621-620	120-7157	27.28	24.22	22.30	20.83
24V dc	44A-220-620-720	968-7912	23.25	22.23	21.09	18.69
24V dc	44A-220-621-720	120-7158	27.28	24.22	22.30	20.83

DC Pulse Operated
Pull type - Latching



65 Series H=10, W=22, D=15, Leads=203mm
66 Series H=14, W=30, D=16, Leads=203mm
67 Series H=15.5, W=40, D=19, Leads=203mm
68 Series H=21.5, W=36, D=26, Leads=203mm

A latching or bi-stable solenoid incorporates a set of permanent magnets that allows the solenoid to offer hold force even after the power has been disconnected. The term bi-stable is given to this type of solenoid because it has two stable positions. The first is when the solenoid is de-energised and the plunger is fully extended in the open position. The second position is when the solenoid is energised and the plunger is attracted into its closed position, the power can then be removed and the plunger will be held in place with the permanent magnets. The electrical force moves the solenoid from the open position to the closed position. The closed stable position can be neutralised by applying a reverse polarity across the coil, this neutralises the effects of the permanent magnets and allows the plunger to be withdrawn from the body and back into the open position by means of a spring or other external force.

- No self heating
- Can operate by a pulse signal
- Continues to hold even after the power is disconnected
- A charge / discharge of capacitor will be enough to set and reset

Series	Coil voltage	Coil consumption	Magnet holding force @ 25°C	Mftrs. List No.	Order Code
66	12V dc	3W	0.48kgf	66-120-610-620	968-7947
66	24V dc	3W	0.48kgf	66-120-610-720	968-7955
67	12V dc	5W	1.0kgf	67-120-610-620	968-7963
68	12V dc	10W	2.2kgf	68-120-610-630	968-7823

★ With push-off spring

411912

Voltage	Order Code	1+	10+	20+	50+	+
66 Series						
12V dc	968-7947	15.72	12.81	10.86	10.60	--
24V dc	968-7955	14.91	12.21	10.60	--	--
67 Series						
12V dc	968-7963	13.35	13.09	12.37	11.20	--
68 Series						
12V dc	968-7823	24.42	19.89	16.80	16.69	--

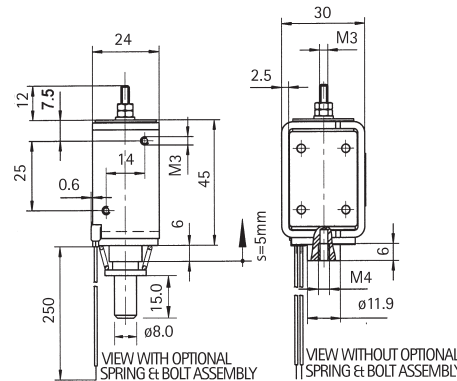
High-Performance, Long-Life Solenoids



33



GFCX 030 solenoid with optional spring return and bolt



- High-performance device for push-and-pull operation
- Armature supported by PTFE-lined bearings for arduous, long-life applications
- Vibration and shock-resistant injection-moulded coil with class F insulation
- Optimised flux-path design for maximum force from minimum electrical power in compact space envelope
- Electroplated frame, armature and pole piece for corrosion resistance
- Conical spring-return assembly / shotbolt end (accessory pack)
- Tapped armature / threaded pushrod for attachment to host mechanism

High force dc solenoid for arduous applications requiring long-term reliability and highly repeatable operation. Available with 24volt 100% or 15% rated coils (24V 15% coil can be used for 12V 100% rated applications if solenoid is mounted on a suitable heatsink).

Relays & Solenoids

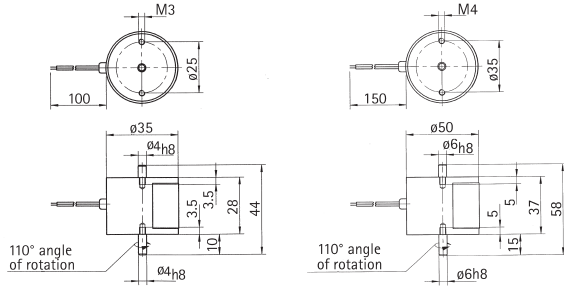
Compliant
Non-compliant
Limited stock - RoHS replacement available

RoHS

Proportional Double-Acting



35 & 50mm rotary with optional spring return assembly



- Double-acting function (by reversing polarity of supply)
- Torque output proportional to input current and constant over rotation angle
- Rapid response : function of low magnetic and mechanical inertia
- Long service life and accurate positioning through use of precision ball bearings
- Pure rotary motion through 110° angle of rotation (no axial linear movement)
- Encapsulated coil with insulation to class B
- Low temperature rise by use of voltage control
- Fail-safe mode provided by spring return (optional)

Proportional, double-acting rotary solenoid for applications requiring long service life and high reliability.

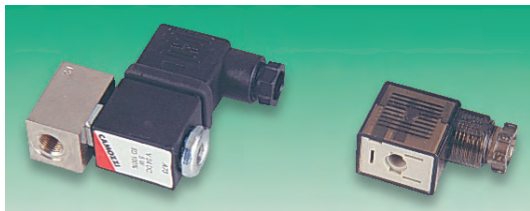
Available with 24 volt 100% or 15% rated coils (24V 15% coil can be used for 12 volt 100% rated applications, if solenoid is mounted on a heatsink).

Torque figures: ±10%, solenoid HOT condition and heat-insulated mounting, 90% of rated voltage
Power consumption figures: 20° coil temperature

Size mm	Supply Voltage v dc	Duty Rating %	Output Torque Ncm	Power Consumption W	Mfrs. List No.	Order Code
35	24	100	2.1	6.9	GDRX035X20A01,24V100%	116-2569
35	24	15	5.1	37	GDRX035X20A01,24V15%	116-2570
35mm Spring Return					GDRX03550mm Spring Return Set	116-2571
50	24	100	6	11	GDRX050X20A01,24V100%	116-2572
50	24	15	16	65	GDRX050X20A01,24V15%	116-2574
50mm Spring Return					GDRX05050mm Spring Return Set	116-2575

Description	Duty Rating	Order Code	Price Each				+
			1+	5+	10+	25+	
35mm Solenoid	100%	116-2569	350.37	327.00	306.57	304.11	--
35mm Solenoid	15%	116-2570	350.37	327.00	306.57	304.11	--
35mm Spring Return	—	116-2571	37.79	35.61	33.72	31.74	--
50mm Solenoid	100%	116-2572	431.52	402.75	377.58	374.56	--
50mm Solenoid	15%	116-2574	431.52	402.75	377.58	374.56	--
50mm Spring Return	—	116-2575	34.83	32.49	30.48	30.23	--

Miniature Solenoid Valves



Connector supplied Valve
H=22, W=58, D=30 (excl blades), D=61 (overall with connector)
Mounting holes=2 x M4 tapped., Fixing centres=134

A range of direct action, 3-way solenoid operated valves singularly mounted with 1/8" BSP ports. By inserting a 146-372 plug (M5 thread) with a 146-373 nylon washer in the venting port, the valve is converted to a 2-way valve.

The body is manufactured in brass with stainless steel inner parts and nitrile rubber seals making it ideally suited for controlling the flow of air and other non-corrosive gasses with a maximum differential pressure of 150psi (10 bar). Electrical connection is by a three pin DIN 40050 connector which is available separately.

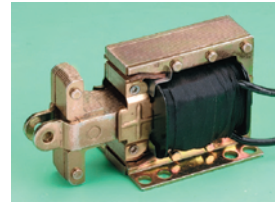
The connector is complete with sealing ring and fixing screw giving protection to IP65. Connection pins are 6.35mm blade types allowing the connection by 'Fast-On' connectors as an alternative.

Coil consumption	ac 8.5VA dc 5W	Temperature range	-10°C to +50°C
Coil operating rate	ac 85-110% dc 95-100%	Fluid temperature	50°C max
Mfrs. List No:	A331-1-C2-A73=285-079	Orifice size	1.5mm (exhaust 1.8mm)
	A331-1-C2-A7D=285-080		A331-1-C2A7M=285-092

Voltage	Order Code	Price Each		
		1+	10+	25+
Valves (including connector)				
24Vdc	285-079	103.50	91.83	82.77
110Vac	285-080	103.50	91.83	80.91
240Vac	285-092	103.50	91.83	82.77
Plug	146-372	1.67	1.44	1.16
		1+	10+	25+
Spare Connector				
Without lamp	146-374	6.01	4.94	4.24

AC Laminated SD116, SD117, SD118 & SD119 Series

MECHETRONICS



- Brass guides
- Fast response time
- Copper shading rings
- Varnish impregnated coil
- High force, small size
- Rugged design for long life
- 24V, 110V & 240V options available
- Life expectancy 100,000 operations

Series	Height (mm)	Width (frame) (mm)	Depth (mm)
SD116	36.6	41.2	33.8
SD117	52.8	63.5	46.0
SD118	52.8	63.5	52.4
SD119	74.6	72.7	60.4

	Coil Voltage	Stroke Length	Mfrs. List No.	Order Code
SD116 Series	240	15.9	SD116A99P3	380-3272
SD117 SeriesSD117 SeriesSérie SD117	110	27	SD117A99P2	380-3296
	240	27	SD117A99P3	380-3302
SD118 Series	240	27	SD118A99P3	380-3338
SD119 Series	24	34	SD119A99P1	380-3340
	240	34	SD119A99P3	380-3363

Voltage	Mfrs. List No.	Order Code	Price Each		
			1+	5+	10+
240V ac	SD116A99P3	380-3272	42.00	38.25	35.10
110V ac	SD117A99P2	380-3296	53.40	48.00	43.65
240V ac	SD117A99P3	380-3302	53.40	48.00	43.65
240V ac	SD118A99P3	380-3338	60.00	54.00	49.05
24V ac	SD119A99P1	380-3340	73.35	66.00	60.00
240V ac	SD119A99P3	380-3363	73.35	66.00	60.00

In stock and ready to despatch, 300,000 products in our Asia, US and Europe warehouses.

300,000 products at your fingertips

Relays & Solenoids

33

Compliant
Non-compliant
Limited stock - RoHS replacement available

RoHS

