

Company Profile

Ningbo Forward Relay Corporation Ltd. is a Sino-foreign joint venture enterprise specialized in R&D and mass production of electromagnetic relays. As a result of exerting for more than thirty years, we have become one of the largest bases for relay R&D and production in China. We have imported and developed over 50 automatic production lines and the annual output is over 200 million pieces. We are rewarded as the National Key High-tech Enterprise and the first list of National Advanced Intellectual Property Enterprise. Forward has been appraised consecutively for over 10 years as one of Top-100 China Electronic Component Enterprises.

Our provincial relay research institute has the top engineering and technical staffs at home and abroad to develop more than 100 kinds of products with thousands of specifications, including the Telecommunication Relays, Heavy Power Relays, Control Relays, Household Appliance Relays, Automotive Relays and Latching Relays. We have obtained over 100 national patents including 11 national invention patents and 1 US invention patent and have been awarded as Zhejiang Patent Model Enterprise for consecutive years. In 2010, we were listed in National Intellectual Property Pilot Unit and later awarded as the first list of National Advanced Intellectual Property Enterprise in 2013. Forward became the first-batch with Intellectual property Management System (GB/T29490-2013) approved enterprise in 2014.

Our products are widely used in telecommunications, automobiles, automatic control, household appliances and etc. "Forward Brand" relay has been rated as "Zhejiang Famous Brand" in 2008. More than 60% of our products are exported to over 80 countries and regions for twenty five consecutive years. We have established a long-term and stable relationship with the European countries such as Germany and other countries like USA, Canada and Japan in technical cooperation and supply and demand relationship. With excellent technical level, Forward has gained customer trust and support.

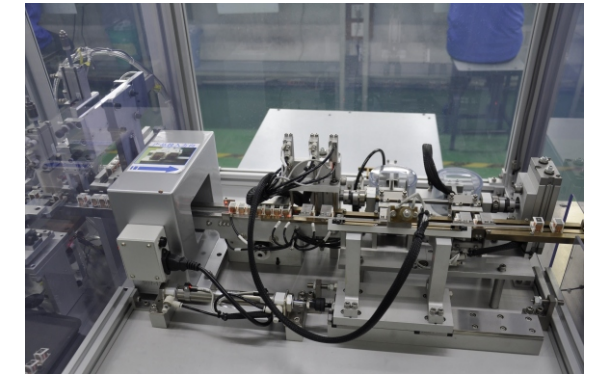
Forward has a complete set of international quality management system, the company has been certified successfully with ISO9001, ISO/TS16949 and ISO14001 system certificates. Our products have been approved by VDE, TÜV, UL/CUL and CQC safety certificates. We will continue to improve our technical level and quality control level to provide the excellent quality and perfect service to the new and old customers all over the world.

"Pursuing the continuous improvement and ensuring the customer satisfaction" have become Forward staff's conscious actions. The advanced process management, reliable performance, perfect technical service and competitive price have made the Forward to win good reputation from customers worldwide. Every Forward employee is devoted to building "Forward Relays" to be national top level and international advanced brand. Forward is expecting to cooperate with the customers domestic and overseas for mutual development.

Process of Manufacturing



Automatic assembly



Laser welding



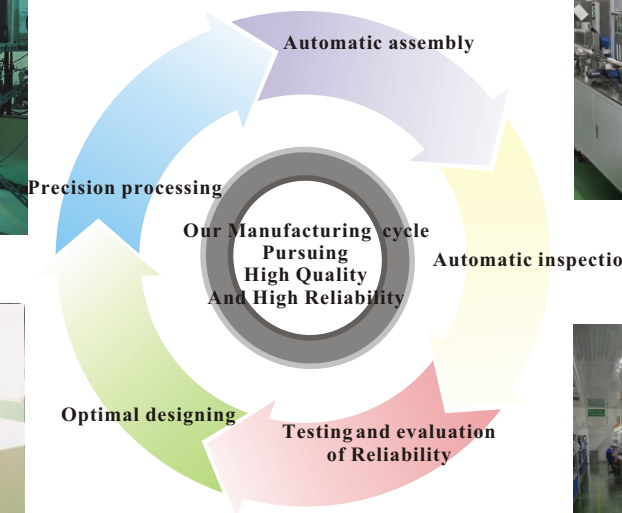
Magnetizing



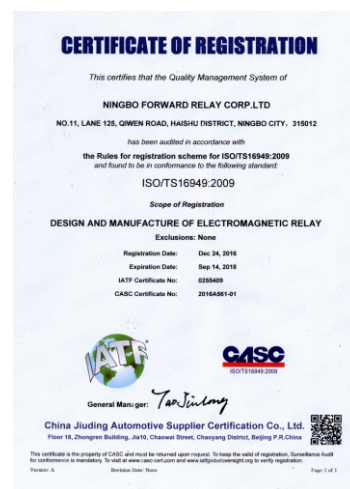
Performance check



Final inspection



ISO9001 CERTIFICATE



ISO/TS 16949 CERTIFICATE



ISO14001 CERTIFICATE



Optimal designing



Fault analysis



Contact reliability test

SELECTION GUIDE

Terminal		Coil		Relay type	Contact Form	Page	Switching Current (A)									
PCB	Plug-in	QC	Other	DC	AC		0	5	10	15	20	25	30	40	80	100
						P	1	2A								
						PS	1	2A								
						NX	2	2A								
						M4	2	1A								
						M4S	2	3A								
						M1B	2	1A								
						M1BS	2	2A								
						JRC-23F	3	1A								
						N4100F	3	5A								
						N4100F-2	3	5A								
						N4078(JRC-19F)	3	2A								
						NPA	4	5A								
						NG6D	4	5A								
						JZC-32F	4	10A								
						JZC-33F	5	10A								
						NF10	14	5A								
						N68F	5	8A								
						JZX-18FF	6	5A	10A							
						JQX-13F	7	12A	20A							
						JQX-141FF	8	20A								
						JQX-14FC ₁	8	20A								
						JQX-14FC ₂	8	8A								
						N4099(JZC-7F)	9	10A								
						NT72&NT72-2	9	12A								
						NT73-2	10	20A								
						NT73-2D	10	20A								
						NT73-3	10	10A	20A							
						NT74	11	5A	10A							
						NT75	11	8A	20A							
						NT76	12	16A								
						NT77	12	12A								
						JZC-22F	12	15A								
						JZC-22F ₂	13	20A								
						JZC-22F ₃	13	20A								
						JZC-22F ₃ (32A)	13	32A								
						JQX-54FE	14	25A								
						JQX-102F	14	20A								
						NT90	15	30A	40A	50A						
						NT90T	16	30A	40A	50A						
						NT90TP	17	30A	40A	50A						
						NT90L	18	30A	40A	50A						
						NT91L	19	40A	50A							
						NT74L	20	10A								
						NT75L	20	16A								
						NT95L	21	50A								
						NT96L	21	60A	80A							
						JMX-94F	22	40A	80A							
						JMX-94F ₂	22	60A	80A							
						NE720	22	100A								
						NT78	23	30A								
						NT79	23	40A								
						NT80	24	20A								
						4120(JQC-4)	24	30A	45A							
						4117	25	20A								

SELECTION GUIDE

Terminal		Coil		Relay type	Contact Form	Page	Switching Current (A)									
PCB	Plug-in	QC	Other	DC	AC		0	5	10	15	20	25	30	40	80	100
						4117-2	25	10A								
						NV23K	26	20A	30A							
						NV231	26	20A	30A							
						NVF4-1	27	20A	40A							
						NVF4-2	27	20A	40A							
						NVF4-2b	27	20A	40A							
						NVF4-3	28	25A	80A							
						NVF4-4	28	25A	80A							
						NVF4-6	29	150A								
						NVF4-7	29	70A								
						NVF4-8	29	70A								
						NVF5	30	50A								
						NCV	30	25A								
						NVFM	30	35A								
						NVFS	31	30A								
						NVF9	31	15A								
						NVF11	32	40A								
						NVF12	32	40A								
						NVF16	31	40A								
						NVF28	32	40A								
						NG8N & NG8NW	33	25A(motor)								
						NG8QN&NG8QW	33	20A								
						NJ70&NJ71	34	80A								
						NJ120	34	100A								



Forward Factory Buildings

Classification		Telecommunication relays	
Type	P	PS	
International Security Certificates			
Outline Dimensions(mm) L×W×H	 14×9×5	 14×9×5.3	
Features	<ul style="list-style-type: none"> High sensitivity:0.14W or 0.10W nominal power. Conforms to FCC Part 68 1.5kV surge and dielectric 1000VAC. Monostable and bistable relays, single and double coils magnetic latching types available. 		
Coil Voltage(VDC)	3,4,5,5,6,9,12,24	3,4,5,5,6,9,12,24	
Coil Power	0.1W,0.14W,0.15W,0.2W,0.30W	0.1W,0.14W,0.15W,0.2W,0.30W	
Contact Material	AgPd(Gold clad) AgNi(Gold clad)		
Contact Arrangement	2C	2C	
Contact transfer Current(A)	Max. 3A 2A 1A 0.1A	1A,2A/30VDC,0.5A/125VAC	1A,2A/30VDC,0.5A/125VAC
	Min. 0.01mA	0.01mA/10mV	0.01mA/10mV
Contact Rating	0.01mA/10mV to 1A,2A/30VDC,0.5A/125VAC Max switching:220VDC,250VAC	0.01mA/10mV to 1A,2A/30VDC,0.5A/125VAC Max switching:220VDC,250VAC	
Max.Switching power	60W 62.5VA	60W 62.5VA	
Max.Switching voltage	220VDC 250VAC	220VDC 250VAC	
Ambient Temperature	-40~70℃	-40~85℃	
Dielectric Strength	Between Contacts	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V
	Between Contact and Coil	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V
Insulation Resistance	1000MΩ	1000MΩ	
Initial Contact Resistance	≤50mΩ	≤50mΩ	
Electrical Life(operations)	2×10 ⁵ (DC,AgPd); 1×10 ⁵ (DC,Ag Ni);1×10 ⁵ (AC)	2×10 ⁵ (DC,AgPd); 1×10 ⁵ (DC,Ag Ni);1×10 ⁵ (AC)	
Mechanical Life(operations)	1×10 ⁸	1×10 ⁸	
Weight(Approx.)	1.5g	1.5g	
Mounting Layout (Bottom View) (mm)	 Tolerance:±0.1	 Tolerance:±0.1	
Wiring Diagram (Bottom View)			
Cross Reference	PANASONIC TQ; OMRON G6H; AXICOM FP2; FUJITSU A; NEC EA2;	PANASONIC TQ; OMRON G6H; AXICOM FP2; FUJITSU A;	

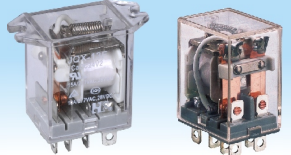
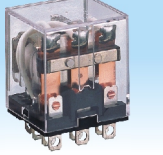

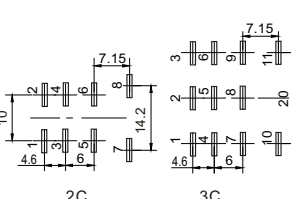
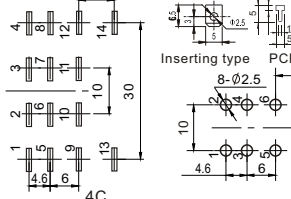
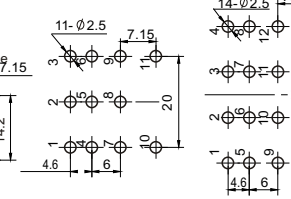
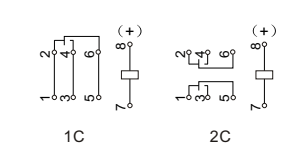
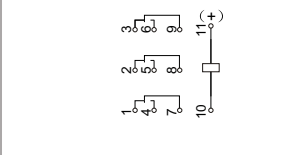
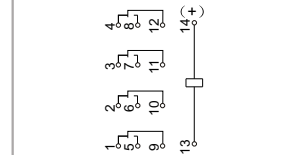
Telecommunication relays					
	NX	M4	M4S	M1B	M1BS
International Security Certificates					
Outline Dimensions(mm) L×W×H	 15×7.5×9.4	 20×10×12	 20×10×12	 20×10×11	 20×10×11
Features	<ul style="list-style-type: none"> DIL pitch terminals. Conforms to FCC Part 68 2.5kV surge and dielectric 1500VAC; High contact capacity 2A/30VDC; 	<ul style="list-style-type: none"> DIL pitch terminals,high sensitivity. Conforms to FCC Part 68 1.5kV surge and dielectric 1000VAC. Fully sealed (immersion cleaning). High reliability bifurcated contact. 	<ul style="list-style-type: none"> DIL Pitch terminals,high sensitivity. Conforms to FCC Part 68 1.5kV surge and dielectric 1000VAC. Fully sealed (immersion cleaning). High reliability bifurcated contact. 	<ul style="list-style-type: none"> DIL Pitch terminals,high sensitivity. Conforms to FCC Part 68 1.5kV surge and dielectric 1000VAC. Fully sealed (immersion cleaning). High reliability bifurcated contact. 	<ul style="list-style-type: none"> DIL Pitch terminals,high sensitivity. Conforms to FCC Part 68 1.5kV surge and dielectric 1000VAC. Fully sealed (immersion cleaning). High reliability bifurcated contact.
Coil Voltage(VDC)	3,4,5,5,6,9,12, 24	3,5,6,9,12,18,24,48	3,5,6,9,12,18,24,48	3,5,6,9,12,24,48	3,5,6,9,12,24,48
Coil Power	0.14W,0.2W	0.15W,0.2W,0.30W,0.45W	0.15W,0.2W,0.30W,	0.4W,0.55W,	0.4W,0.55W,
Contact Material	AgPd (Gold clad) AgNi(Gold clad)	AgPd(Gold clad) AgNi(Gold clad)	AgNi(Gold clad)	AgPd(Gold clad) AgNi(Gold clad)	AgNi(Gold clad)
Contact Arrangement	2C	2C	2C	2C	2C
Contact transfer Current(A)	Max. 2A	2A	3A	1A	2A
	Min. 0.01mA/10mV	0.01mA/10mV	1mA/10mV	0.01mA/10mV	1mA/10mV
Contact Rating	0.01mA/10mV to 2A/30VDC 0.5A/125VAC Max switching:220VDC,250VAC	0.01mA/10mV to 1A/24VDC, 0.5A/120VAC 2A/30VDC	1mA/10mV to 2A,3A/30VDC, 0.6A/125VAC	0.01mA/10mV to 1A/24VDC 0.5A/120VAC	1mA/10mV to 2A/30VDC 0.6A/125VAC
Max.Switching power	60W 62.5VA	60W 125VA	90W 125VA	60W 125VA	60W 125VA
Max.Switching voltage	220VDC 250VAC	220VDC 250VAC	220VDC 250VAC	220VDC 250VAC	220VDC 250VAC
Ambient Temperature	-40~85℃	-40~90℃ -40~80℃(≥0.3W)	-40~90℃ -40~80℃(0.3W)	-40~65℃ -40~70℃(0.4W)	-40~65℃ -40~70℃(0.4W)
Dielectric Strength	Between Contacts	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V
	Between Contact and Coil	50Hz 1500V surge voltage:2500V	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V	50Hz 1000V surge voltage:1500V
Insulation Resistance	1000MΩ	1000MΩ	1000MΩ	1000MΩ	1000MΩ
Initial Contact Resistance	≤70mΩ	≤50mΩ	≤100mΩ	≤50mΩ	≤100mΩ
Electrical Life(operations)	1×10 ⁵ 5×10 ⁵ (1A/30VDC)	5×10 ⁵ (DC,AgPd); 2×10 ⁵ (AC);1×10 ⁵ (AgNi);	1×10 ⁵	5×10 ⁵ (DC,AgPd) 2×10 ⁵ (A C);1×10 ⁵ (A gNi);	1×10 ⁵
Mechanical Life(operations)	1×10 ⁸	1×10 ⁸	1×10 ⁸	1×10 ⁸	1×10 ⁸
Weight(Approx.)	2g	4.5g	4.5g	4.5g	4.5g
Mounting Layout (Bottom View) (mm)	 Tolerance:±0.1	 Tolerance:±0.1			
Wiring Diagram (Bottom View)					
Cross Reference	PANASONIC TX; FUJITSUFTR-C1; OMRON G6S ; TYCO V23079;	TYCO V23105;TYCO V23042; OMRON G6A; FUJITSURA/R;Y; PANASONIC DS2Y;			



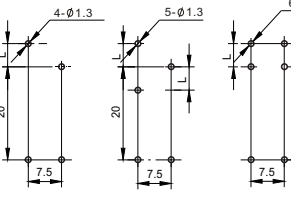
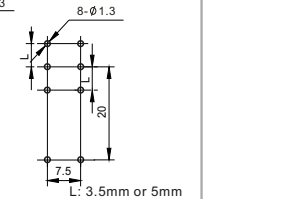
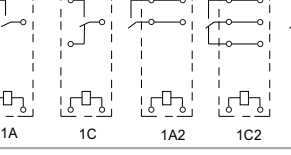
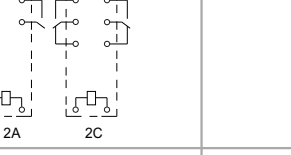
Classification		Telecommunication relays			
Type	JRC-23F	N4100(N4100F)	N4100F-2	JRC-19F(N4078)	
International Security Certificates				 	
Outline Dimensions(mm) L×W×H	 12.5×7.5×10	 15.5×11×11.5	 15.5×11×11.5	 21×10×12	
Features	<ul style="list-style-type: none"> Low coil power consumption. High sensitivity. Small size,light weight. PC board mounting. 	<ul style="list-style-type: none"> Low coil power consumption. High sensitivity. Small size,light weight. PC board mounting. 	<ul style="list-style-type: none"> Low coil power consumption. High sensitivity. Small size,light weight. PC board mounting. 	<ul style="list-style-type: none"> Small size,light weight. Low coil power consumption. PC board mounting 	
Coil Voltage(VDC)	1.5,3,5,6,9,12,24	3,5,6,9,12,18,24	3,5,6,9,12,18,24	3,4,5,5,6,12,24,48	
Coil Power	0.15W,0.2W	0.2W,0.36W,0.45W	0.2W,0.36W,0.45W	0.2W,0.36W,0.51W	
Contact Material	AgNi(Gold clad)	Ag Alloy(Gold clad)		Ag AgNi(Gold clad)	
Contact Arrangement	1C	1A,1B,1C	1A,1B,1C	2C	
Contact transfer Current(A)	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">80A 70A 50A 40A 30A 20A 15A 10A 5A 1A</div> <div style="border: 1px solid black; padding: 2px;">1A</div> </div>	5A	5A	2A	
Contact Rating	1A/30VDC 0.3A/60VDC 0.5A/125VAC	1A,2A,3A,5A /125VAC,30VDC 5A/14VDC	1A,2A,3A,5A /125VAC,30VDC 5A/14VDC 2A/250VAC	2A/30VDC, 1A/125VAC	
Max.Switching power	30W 62.5VA	150W 625VA		60W 125VA	
Max.Switching voltage	60VDC 125VAC	60VDC 220VAC		30VDC 220VAC	
Ambient Temperature	-30~70℃	-25~70℃	-25~70℃	-30~70℃	
Dielectric Strength	Between Contacts	50Hz 400V	50Hz 500V	50Hz 500V	50Hz 500V
	Between Contact and Coil	50Hz 1000V	50Hz 1000V	50Hz 1000V	50Hz 1000V
Insulation Resistance	1000MΩ	100MΩ	100MΩ	1000MΩ	
Initial Contact Resistance	≤100mΩ	≤50mΩ	≤50mΩ	≤50mΩ	
Electrical Life(operations)	1×10 ⁵	1×10 ⁵	1×10 ⁵	1×10 ⁵	
Mechanical Life(operations)	5×10 ⁶	1×10 ⁷	1×10 ⁷	1×10 ⁷	
Weight(Approx.)	2.2g	3.5g	3.5g	5g	
Mounting Layout (Bottom View) (mm)					
Wiring Diagram (Bottom View)					
Cross Reference	OMRON G5V-1; TYCO V23111; PANASONIC HY; FUJITSU SY;	OMRON G2E; TYCOV23101; FUJITSU MZ;		PANASONIC DS2Y; OMRON G5V-2; FUJITSU RY;	


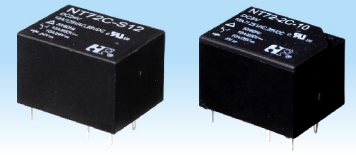
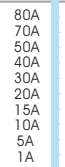
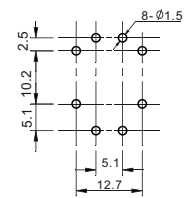
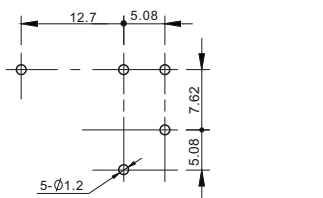
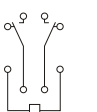
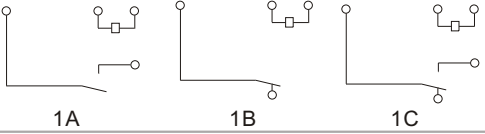
Telecommunication relays		General-purpose power relays
NPA	NG6D	JZC-32F
 20.3×5.4×12.6	 17.5×6.5×12.5	 18.8×10.6×15.3
<ul style="list-style-type: none"> Small size,light weight. Low coil power consumption 0.12W. PC board mounting, DIL terminal. 	<ul style="list-style-type: none"> Small size, lightweight. PC board mounting. Low coil power consumption 0.2W. 	<ul style="list-style-type: none"> 5A 10A switching capabilities. Subminiature,standard PC layout. Sealed &Unsealed types available.
5,6,9,12,18	24	3,5,6,9,12,18,24
0.12W	0.18W	0.2W,0.45W
Ag Alloy(Gold clad)	Ag Alloy	Ag Alloy
1A	1A	1A,1C
5A	5A	10A
3A,5A/30VDC, 250VAC	10mA/5V to 5A/30VDC, 250VAC	5A/250VAC 28VDC 10A/125VAC TV-5 ¼ HP 277VAC
150W 1250VA	150W 1250VA	150W 1250VA
110VDC 250VAC	30VDC 250VAC	30VDC 277VAC
-40~85℃	-25℃~70℃	-40~70℃
50Hz 1000V	50Hz 750V	50Hz 1000V
50Hz 2000V surge voltage:4kv	50Hz 3000V surge voltage:6kv	50Hz 2500V 4000V
1000MΩ	1000MΩ	100MΩ
≤50mΩ (10mA/6V)	≤100mΩ	≤100mΩ
1×10 ⁵ ,5×10 ⁴ (5A)	1×10 ⁵	1×10 ⁵
2×10 ⁷	2×10 ⁷	1×10 ⁷
3g	3g	6g
PANASONIC PA; FUJITSU NY; SCHRACK PCN;	OMRON G6D	FUJITSU JV; OEG OJE/OJ; P&B T77;




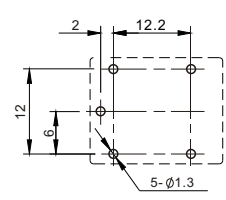
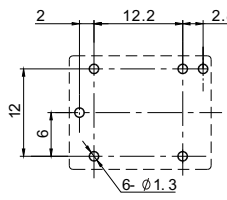
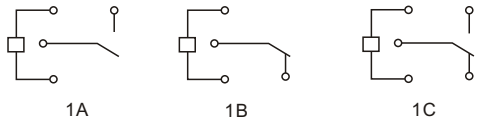
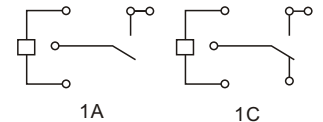
Classification	General-purpose power relays	
Type	JZC-33F	N68F
International Security Certificates		
Outline Dimensions(mm) L×W×H	 20.5×10.6×15.6	 28.5×10.1×12.3
Features	<ul style="list-style-type: none"> ▪ 10A switching capabilities. ▪ Subminiature, standard PC layout. ▪ Sealed & Unsealed types available. 	<ul style="list-style-type: none"> ▪ Slim type and small occupying area can offer high density P.C.B. technique. ▪ Employment of suitable plastic materials to be applied to high temperature and various chemical solution. ▪ Dielectric strength 5000V. ▪ Creepage distance >8mm.
Coil Voltage(VDC)	3,5,6,9,12,18,24	5,6,12,18,24,48,60
Coil Power	0.2W,0.45W	0.22W~0.25W
Contact Material	Ag Alloy	AgNi AgCdO AgSnO ₂
Contact Arrangement	1A,1C	1A,1C
Contact transfer Current(A)	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="font-size: 8px; margin-bottom: 2px;">80A</div> <div style="font-size: 8px; margin-bottom: 2px;">70A</div> <div style="font-size: 8px; margin-bottom: 2px;">50A</div> <div style="font-size: 8px; margin-bottom: 2px;">40A</div> <div style="font-size: 8px; margin-bottom: 2px;">30A</div> <div style="font-size: 8px; margin-bottom: 2px;">20A</div> <div style="font-size: 8px; margin-bottom: 2px;">15A</div> <div style="font-size: 8px; margin-bottom: 2px;">10A</div> <div style="font-size: 8px; margin-bottom: 2px;">5A</div> <div style="font-size: 8px;">1A</div> </div> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="background-color: #e0f0ff; padding: 2px;">10A</div> <div style="background-color: #e0f0ff; padding: 2px;">8A</div> </div>	<div style="display: flex; justify-content: space-around; width: 100%;"> <div style="background-color: #e0f0ff; padding: 2px;">10A</div> <div style="background-color: #e0f0ff; padding: 2px;">5A</div> </div>
Contact Rating	5A/250VAC,28VDC 10A/125VAC TV-5 ¼ HP 277VAC	8A/250VAC,30VDC
Max.Switching power	150W 1250VA	300W 2500VA
Max.Switching voltage	30VDC 277VAC	125VDC 380VAC
Ambient Temperature	-40~70°C	-40°C~85°C
Dielectric Strength	Between Contacts	50Hz 1000V
	Between Contact and Coil	50Hz 4000V
Insulation Resistance	100MΩ	1000MΩ
Initial Contact Resistance	≤100mΩ	≤100mΩ
Electrical Life(operations)	1×10 ⁵	1×10 ⁵
Mechanical Life(Operations)	1×10 ⁷	1×10 ⁷
Weight(Approx.)	7g	8.2g
Mounting Layout (Bottom View) (mm)		
Wiring Diagram (Bottom View)		
Cross Reference	PANASONIC JQ; OMRON G5S; OEG PCH;	OMRON G6RN; FUJITSU JS; SCHRACK RYII;

General-purpose power relays	
JZX-18FF	
 28×21.5×35.5	
<ul style="list-style-type: none"> ▪ Small size, light weight, heavy reverse power. ▪ Optional mounting ways. ▪ Firm structure. 	
DC:6,12,24,36,48,110	AC:6,12,24, 36,48,110,120,220
0.9W	1.2VA
AgCdO Ag Alloy	
2A,2B,2C,3A,3B,3C,4A,4B,4C	
<div style="display: flex; justify-content: space-around; width: 100%;"> <div style="background-color: #e0f0ff; padding: 2px;">10A</div> <div style="background-color: #e0f0ff; padding: 2px;">5A</div> </div>	
2A,2B,2C & 3A,3B,3C:5A,7A/220VAC,28VDC Heavy Load:10A/220VAC,28VDC 4A,4B,4C:3A/220VAC,28VDC Heavy Load:5A/220VAC,28VDC	
280W 2500VA	
150VDC 380VAC	
-55°C~70°C	
50Hz 1000V	
50Hz 1500V	
1000MΩ	
≤50mΩ	
5×10 ⁵ ; 2×10 ⁵ ; 1×10 ⁵	
2×10 ⁷ Heavy Load; 1×10 ⁷	
37g	
OMRON MY2/3/4; PANASONIC HC;	

Classification		General-purpose power relays							
Type		JQX-13F							
International Security Certificates		cULus E158859		R50126378		cQC 10002045756			
Outline Dimensions(mm) L×W×H		28×21.5×35.5			28×31.5×36			28×41.5×36	
	Features	<ul style="list-style-type: none"> Small size, lightweight, heavy reverse power. Optional mounting ways. Firm structure. 							
	Coil Voltage(VDC)	DC: 6,12,24 36,48,110	AC: 6,12,24,36,48 110,120,220,240	DC: 6,12,24 36,48,110	AC: 6,12,24,36,48 110,120,220,240	DC: 6,12,24 36,48,110	AC: 6,12,24,36,48 110,120,220,240		
Coil Power	0.9W	1.2VA	1.4W	2VA	1.5W	2.5VA			
Contact Material	AgCdO AgSnO ₂								
Contact Arrangement	1A,1B,1C,2A,2B,2C		3A,3B,3C		4A,4B,4C				
Contact transfer Current(A)	80A 70A 50A 40A 30A 20A 15A 10A 5A 1A	20A	12A	12A	12A	12A			
	Contact Rating	1A,1B,1C: 15A,20A/277VAC,28VDC 2A,2B,2C: 10A/277VAC,28VDC 12A/250VAC,28VDC 1/3 HP 120VAC 240VAC 1/2 HP 125VAC		10A/277VAC,28VDC 12A/28VDC,250VAC 1/2 HP 125VAC		10A/277VAC,28VDC 12A/28VDC,250VAC 1/2 HP 125VAC			
Max.Switching power	560W 5540VA								
Max.Switching voltage	30VDC 300VAC								
Ambient Temperature	-40°C~70°C			-25°C~70°C					
Dielectric Strength	Between Contacts	50Hz 1000V				50Hz 1000V			
	Between Contact and Coil	50Hz 1500V				50Hz 1500V			
Insulation Resistance	1000MΩ			1000MΩ					
Initial Contact Resistance	≤50mΩ			≤50mΩ					
Electrical Life(operations)	1×10 ⁵			1×10 ⁵					
Mechanical Life(Operations)	2×10 ⁷			1×10 ⁷					
Weight(Approx.)	37g		50g		70g				
Mounting Layout (Bottom View) (mm)									
	Inserting type		PCB type		PCB type				
Wiring Diagram (Bottom View)									
	1C		2C		3C				
Cross Reference	OMRON LY1/2/3/4; PANASONIC HL;								




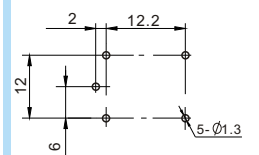
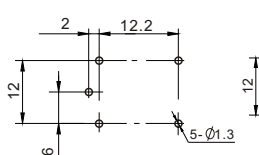
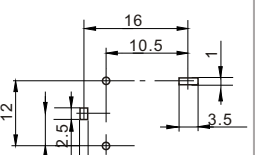
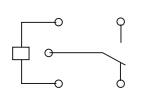
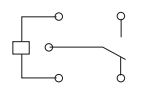
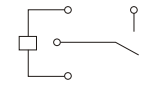
Classification		General-purpose power relays				
Type		JQX-14FC ₁ &JQX-14FC ₂		JQX-141FF		
International Security Certificates		cULus E160644 cQC 13002098869		cULus E158859 cQC 13002098867		
Outline Dimensions(mm) L×W×H		29×12.8×26			29×12.6×20.6	
	Features	<ul style="list-style-type: none"> Heavy load,suitable for heavy power reverse. Small size,suitable for high-density mounting. Up to 5000VAC dielectric strength. 		<ul style="list-style-type: none"> Slim type and small occupying area can offer high density P.C.B Technique. Relay covers switching capacity from 10A to 20A. Switching capacity by 5A available with 2 transfer contact form. 		
	Coil Voltage(VDC)	3,5,6,9,12,24,48		3,5,6,9,12,24,48		
Coil Power	0.53W,0.8W		0.54W,0.72W			
Contact Material	AgCdO AgSnO ₂		AgCdO AgSnO ₂			
Contact Arrangement	1A,1C		2A,2C			
Contact transfer Current(A)	20A	8A	20A	10A	5A	
	Contact Rating	10A,16A,20A/250VAC,30VDC 10A/250VAC,14VDC (20A application for 5mm pole-distance only)		5A,8A/250VAC,30VDC		
Max.Switching power	1/2 HP 125VAC,1HP 250VAC,TV-5 600W 5000VA		480W 4000VA			
Max.Switching voltage	110VDC 380VAC		125VDC 380VAC			
Ambient Temperature	-40°C~70°C		0.54W: -30°C~70°C,0.72W: -30°C~55°C			
Dielectric Strength	Between Contacts	50Hz 1000V		50Hz 1000V		
	Between Contact and Coil	50Hz 5000V		50Hz 5000V		
Insulation Resistance	1000MΩ		1000MΩ			
Initial Contact Resistance	≤50mΩ		≤100mΩ			
Electrical Life(operations)	1×10 ⁵		1×10 ⁵			
Mechanical Life(Operations)	1×10 ⁷		1×10 ⁷			
Weight(Approx.)	17g~20g		13g			
Mounting Layout (Bottom View) (mm)						
	L: 3.5mm or 5mm					
Wiring Diagram (Bottom View)						
	1A 1C		2A 2C			
Cross Reference	FUJITSU VS; OMRON G2R;		OEG OMI; PANASONIC JW; OMRON G2R			

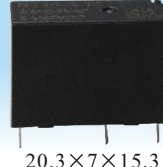

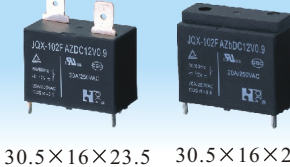
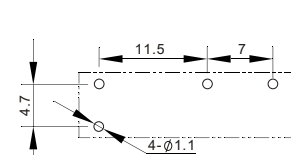
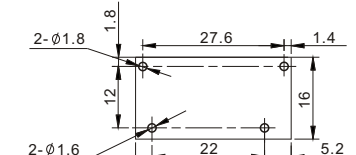
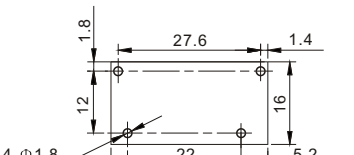

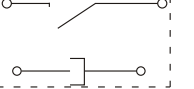
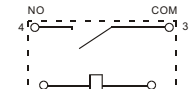
Classification		General-purpose power relays	
Type	N4099(JZC-7F)	NT72(4459) NT72-2	
International Security Certificates	UL E158859 CQC 06001015743	UL E158859 R50142630 CQC 13002098868	
Outline Dimensions(mm) L×W×H	 22×16.5×16.5	 22.3×17.3×15 21.4×16.5×15(NT72-2)	
Features	<ul style="list-style-type: none"> Small size, light weight, low price. Sensitive operation, good synchronism. Low coil power consumption. PC board mounting. 	<ul style="list-style-type: none"> Small size, light weight. Reliable quality. PC board mounting. 	
Coil Voltage(VDC)	3, 6, 9, 12, 24, 48	3, 5, 6, 9, 12, 18, 24, 48 48	
Coil Power	0.45W, 0.5W, 0.6W	0.36W, 0.45W 0.51W	
Contact Material	Ag Alloy(Gold clad)	AgCdO AgSnO ₂	
Contact Arrangement	2A, 2B, 2C	1A, 1B, 1C	
Contact transfer Current(A)	 10A	12A	
Contact Rating	2A, 3A/277VAC, 30VDC 0.6W: 5A/277VAC, 30VDC 10A/277VAC, 30VDC 6A/125VAC	3A, 5A, 10A, 12A/125VAC, 28VDC 3A, 5A, 10A/250VAC 6A/300VAC 1/3 HP 120VAC, 240VAC	
Max.Switching power	0.5W:90W 850VA; 0.6W:300W 2770VA	336W 2500VA	
Max.Switching voltage	50VDC 380VAC	110VDC 380VAC	
Ambient Temperature	-40°C~70°C	-40°C~85°C	
Dielectric Strength	Between Contacts	50Hz 750V	
	Between Contact and Coil	50Hz 1000V	
Insulation Resistance	100MΩ	500MΩ	
Initial Contact Resistance	≤50mΩ	≤50mΩ	
Electrical Life(operations)	1×10 ⁵	1×10 ⁵	
Mechanical Life(operations)	1×10 ⁷	1×10 ⁷	
Weight(Approx.)	12g	11g	
Mounting Layout (Bottom View) (mm)			
Wiring Diagram (Bottom View)			
Cross Reference	ZETTLER 946	TYCO V23148 TAKAMISAWA LZ	

General-purpose power relays		
NT73-2(European type NF8)	NT73-2D(European type NF8)	NT73-3
UL E158859 R50142718 40038727 CQC 13002099051	UL E158859 R50142718 40038727 CQC 13002099051	UL E160644 08001023923 DE 40014769
		
19.5×15.6×15.3		
<ul style="list-style-type: none"> Small size, light weight, heavy reverse power. Low coil power consumption. PC board mounting. 	<ul style="list-style-type: none"> Small size, light weight, heavy reverse power. Low coil power consumption. PC board mounting. Suitable for automation control, telecommunication equipment, household electrical appliances and machinery electrical facilities. 	<ul style="list-style-type: none"> Superminiature, high power. Low coil power consumption. PC board mounting.
3, 5, 6, 9, 12, 24, 48		
0.36W, 0.45W, 0.8W		
AgCdO AgSnO ₂		
1A, 1B, 1C		1A, 1C
20A		12A
5A, 6A, 10A, 12A/125VAC, 28VDC; 20A/125VAC, 16VDC; 10A/250VAC; 6A/250VAC, 277VAC, 6A/400VAC; 10A/250VAC; 15A/125VAC; (15A:0.45W; 20A:0.8W) Motor load: 1/3HP 125VAC/ 277VAC		7A, 16A/277VAC; 5A, 10A/250VAC 12A, 20A/125VAC TV-8 NO: 1HP 250VAC 125VAC NC: 1/2HP 250VAC 125VAC
420W 2500VA 110VDC 380VAC		3000VA 380VAC
4450VA		300VAC
-55°C~85°C		
50Hz 750V		
50Hz 1500V		
250MΩ		250MΩ min (at 500VDC)
≤100mΩ		
1×10 ⁵		
1×10 ⁷		
9.5g		
		
		
OMRON G5LA/G5LC		—

Classification		General-purpose power relays																																																		
Type	NT 74		NT75																																																	
International Security Certificates																																																				
Outline Dimensions(mm) L×W×H	 28.5×10.1×12.5		 29×12.7×16.1																																																	
Features	<ul style="list-style-type: none"> Small size, light weight. Low coil consumption. PC board mounting. 		<ul style="list-style-type: none"> Small size, light weight. Low coil consumption. Switching capacity up to 20A. PC board mounting. 																																																	
Coil Voltage(VDC)	5, 6, 9, 12, 18, 24, 48, 60		DC: 5, 6, 9, 12, 24, 48, 60, 110 AC: 24, 115, 230																																																	
Coil Power	0.22W, 0.23W, 0.25W, 0.29W		0.25W, 0.41W, 0.72W 0.75VA																																																	
Contact Material	AgNi AgSnO ₂		AgCdO AgNi AgSnO ₂																																																	
Contact Arrangement	1A, 1B, 1C 2A, 2B, 2C		1A, 1C 2A, 2C																																																	
Contact transfer Current(A)	<table border="1"> <tr><td>80A</td><td></td><td></td><td></td></tr> <tr><td>70A</td><td></td><td></td><td></td></tr> <tr><td>50A</td><td></td><td></td><td></td></tr> <tr><td>40A</td><td></td><td></td><td></td></tr> <tr><td>30A</td><td></td><td></td><td></td></tr> <tr><td>20A</td><td></td><td></td><td></td></tr> <tr><td>15A</td><td></td><td></td><td></td></tr> <tr><td>10A</td><td></td><td></td><td></td></tr> <tr><td>5A</td><td></td><td></td><td></td></tr> <tr><td>1A</td><td></td><td></td><td></td></tr> </table>		80A				70A				50A				40A				30A				20A				15A				10A				5A				1A				<table border="1"> <tr><td>20A</td><td></td><td></td><td></td></tr> <tr><td>8A</td><td></td><td></td><td></td></tr> </table>		20A				8A			
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20A																																																				
8A																																																				
Contact Rating	8A, 10A /250VAC, 30VDC 5A/250VAC, 30VDC		12A, 16A /250VAC, 30VDC NO: 20A/277VAC NC: 16A/277VAC 8A/250VAC, 30VDC 8A/277VAC																																																	
Max.Switching power	300W 2500VA 150W 1250VA		480W 5600VA 240W 2800VA																																																	
Max.Switching voltage	440VAC 125VDC		125VDC 440VAC																																																	
Ambient Temperature	-40°C~85°C		-40°C~85°C -40°C~85°C																																																	
Dielectric Strength	Between Contacts	50Hz 1000V		50Hz 1000V																																																
	Between Contact and Coil	50Hz 5000V		50Hz 5000V																																																
Insulation Resistance	1000MΩ		1000MΩ 1000MΩ																																																	
Initial Contact Resistance	≤100mΩ		≤100mΩ ≤100mΩ																																																	
Electrical Life(operations)	1×10 ⁵		1×10 ⁵ 1×10 ⁵																																																	
Mechanical Life(operations)	1×10 ⁷		1×10 ⁷ 1×10 ⁷																																																	
Weight(Approx.)	8g		11g 12g																																																	
Mounting Layout (Bottom View) (mm)																																																				
Wiring Diagram (Bottom View)																																																				
Cross Reference	OMRON:G6RN SCHRACK:RY II TAKAMISAWA:JS FEME:M15E		SCHRACK RT OMRON G2RL ZETTLER AZ761																																																	

Classification				General-purpose power relays																	
Type	NT76		NT77		JZC-22F																
International Security Certificates																					
Outline Dimensions(mm) L×W×H	 22.3×16.6×11		 18.4×15.2×10.2		 20.3×16.8×20.2																
Features	<ul style="list-style-type: none"> Super light in weight. High sensitivity. Switching capacity up to 16A. PC board mounting. 		<ul style="list-style-type: none"> Super light in weight. High sensitivity. Switching capacity up to 12A. PC board mounting. 		<ul style="list-style-type: none"> Small size, light weight. Low coil power consumption. Switching capacity can reach. PC board mounting. 																
Coil Voltage(VDC)	5, 6, 9, 12, 18, 24 48 100		3, 5, 6, 9, 12, 18, 24		3, 6, 9, 12, 24, 48																
Coil Power	0.2W, 0.45W 0.25W, 0.45W 0.6W		0.45W		0.36W, 0.45W																
Contact Material	AgCdO AgSnO ₂		AgCdO AgSnO ₂		AgCdO AgSnO ₂																
Contact Arrangement	1A 1C		1A		1A, 1B, 1C																
Contact transfer Current(A)	<table border="1"> <tr><td>16A</td><td></td><td></td><td></td></tr> <tr><td>16A</td><td></td><td></td><td></td></tr> </table>		16A				16A				<table border="1"> <tr><td>12A</td><td></td><td></td><td></td></tr> </table>		12A				<table border="1"> <tr><td>15A</td><td></td><td></td><td></td></tr> </table>	15A			
16A																					
16A																					
12A																					
15A																					
Contact Rating	10A, 16A/250VAC, 30VDC NO: 16A/250VAC, 30VDC NC: 10A/250VAC, 30VDC		12A/125VAC, 250VAC, 30VDC 10A/277VAC, 30VDC		5A, 7A, 12A, 15A/125VAC, 28VDC 3A, 6A, 7A/220VAC; 6A/250VAC TV-5, 120VAC, 240VAC																
Max.Switching power	480W 4000VA 110VDC 380VAC		300W 2770VA 30VDC 300VAC		420W 2200VA 110VDC 380VAC																
Max.Switching voltage	-40°C~85°C		-40°C~70°C		-40°C~70°C																
Dielectric Strength	Between Contacts	50Hz 750V		50Hz 1000V	50Hz 750V																
	Between Contact and Coil	50Hz 1500V		50Hz 2500V	50Hz 1500V																
Insulation Resistance	100MΩ		100MΩ		100MΩ																
Initial Contact Resistance	≤50mΩ		≤50mΩ		≤100mΩ																
Electrical Life(operations)	1×10 ⁵		1×10 ⁵		1×10 ⁵																
Mechanical Life(operations)	1×10 ⁷		1×10 ⁷		1×10 ⁷																
Weight(Approx.)	10g		7g		13g																
Mounting Layout (Bottom View) (mm)																					
Wiring Diagram (Bottom View)																					
Cross Reference	PANASONIC JV OMRON G5C-1		AMERICAN ZETTLER AZ 766		TYCO SRU OMRON G5L FUJITSU FBR100																

Classification		General-purpose power relays																						
Type	JZC-22F ₂	JZC-22F ₃ (European NF7)	JZC-22F ₃ (High Load)																					
International Security Certificates	UL E158859 CE 40025435 CCC 06001015742	UL E160644 CE 40027380 CCC 08001023385	—																					
Outline Dimensions(mm) L×W×H	 22.5×16.8×20.2	 21.3×16.2×20.8	 21.3×16.2×20.8																					
Features	<ul style="list-style-type: none"> Small size, light weight. Low coil power consumption. Switching capacity can reach. PC board mounting. High dielectric strength(JZC-22F₃). 																							
Coil Voltage(VDC)	3, 6, 9, 12, 24, 48		9, 24																					
Coil Power	0.36W, 0.45W		1.0W, 2.8W																					
Contact Material	AgCdO AgSnO ₂		AgSnO ₂																					
Contact Arrangement	1A, 1B, 1C		1A																					
Contact transfer Current(A)	<table border="1"> <tr><td>80A</td><td></td></tr> <tr><td>70A</td><td></td></tr> <tr><td>50A</td><td></td></tr> <tr><td>40A</td><td></td></tr> <tr><td>30A</td><td></td></tr> <tr><td>20A</td><td></td></tr> <tr><td>15A</td><td></td></tr> <tr><td>10A</td><td></td></tr> <tr><td>5A</td><td></td></tr> <tr><td>1A</td><td></td></tr> </table>	80A		70A		50A		40A		30A		20A		15A		10A		5A		1A		20A	20A	32A
80A																								
70A																								
50A																								
40A																								
30A																								
20A																								
15A																								
10A																								
5A																								
1A																								
Contact Rating	5A, 7A, 12A, 15A/125VAC, 28VDC 20A/125VAC, 28VDC 10A/250VAC 16A/250VAC(1A) 1/4HP 120VAC TV-10 120VAC	10A, 16A/250VAC 20A/125VAC, 28VDC 16A/277VAC 7A/400VAC TV-8, 120VAC 1HP 125VAC 250VAC	32A/277VAC																					
Max.Switching power	560W 4000VA	560W 4450VA	8864VA																					
Max.Switching voltage	110VDC 380VAC		380VAC																					
Ambient Temperature	-40°C~85°C	-40°C~105°C	-40°C~100°C																					
Dielectric Strength	Between Contacts	50Hz 750V	50Hz 1000V	50Hz 2000V																				
	Between Contact and Coil	50Hz 2500V	50Hz 2500V surge voltage:4000V	50Hz 4000V																				
Insulation Resistance	100MΩ																							
Initial Contact Resistance	≤100mΩ																							
Electrical Life(operations)	1×10 ⁵																							
Mechanical Life(operations)	1×10 ⁷																							
Weight(Approx.)	16g	14g	16g																					
Mounting Layout (Bottom View) (mm)		 D Type																						
Wiring Diagram (Bottom View)		 22F ₃ D Type																						
Cross Reference	TYCO SRU OMRON G5L FUJITSU FBR100		—																					

General-purpose power relays		
NT10	JQX-54FE	JQX-102F
—	UL E160644 R50126381 CCC 15002122515	UL E158859 R50126381 CCC 09002028962
 20.3×7×15.3	 30.4×16.0×26.0(26.5)	 30.5×16×23.5 30.5×16×26.5
<ul style="list-style-type: none"> Small size, lightweight, low coil. PC board mounting. Suitable for automobile control, telecommunication equipment household electrical appliances and machinery electrical facilities. 	<ul style="list-style-type: none"> Can be welded directly onto PCB. Used in household appliances like air conditioning, heater and instruments etc. The relay is with large capacity and inductive load, the inrush current can reach 70A, and the stable current can achieve 20A. 	<ul style="list-style-type: none"> Can be welded directly onto PCB. Used in household appliances like air conditioning, heater and instruments etc.
5, 12, 18, 24	6, 9, 12, 24, 48	5, 12, 24, 48
0.2W, 0.36W	0.9W	0.9W
AgNi AgSnO ₂	AgSnO ₂ AgCdO	AgSnO ₂ AgCdO
1A	1A	1A
5A	25A	25A
5A/250VAC 5A/30VDC	resistive:25A/250VAC; 20A/277VAC inductive:20A/250VAC cosφ=0.4 1/2HP 250VAC	25A/250VAC
150W 1250VA 300VAC	6380VA 300VAC	6250VA 300VAC
-40°C~85°C	-30°C~85°C	-25°C~85°C
50Hz 750V	50Hz 1000V	50Hz 1500V
50Hz 4000V surge voltage:10kV	50Hz 5000V surge voltage:10kV	50Hz 4500V surge voltage:10kV
1000MΩ	1000MΩ	1000MΩ
≤100mΩ	≤50mΩ	≤30mΩ (1A/14VDC)
1×10 ⁵	1×10 ⁵	1×10 ⁵
5×10 ⁶	1×10 ⁷	2×10 ⁶
4g	28g	23g
		
		
OMRON G5NB	PANASONIC JM OEG PCF	OMRON G4A

Classification	General-purpose power relays											
Type	NT90(T90)											
International Security Certificates												
Outline Dimensions(mm) L×W×H	 30.5×24.2×17			 32.5×27.6×20.5			 32.5×27.6×20.5					
Features	<ul style="list-style-type: none"> Small size, light weight, low coil power. consumption, heavy contact load. Strong anti-shock and anti-vibration, high reliability, long life. 1.1W version with contact gap to 2.0mm. 											
Coil Voltage(VDC)	DC:3,5,6,9,12,15,18,24,48,110 AC:12,24,110,120,220,240,277						3,5,6,9,12,15,18,24,48,110					
Coil Power	0.6W,0.9W,2VA,1.1W						1.5W					
Contact Material	AgCdO AgSnO ₂						AgSnO ₂					
Contact Arrangement	1A	1B	1C			1A	1B	1C			1A	1C
Contact transfer Current(A)	30A	20A	30A	20A	40A	30A	40A	30A	50A	50A	35A	
Contact Rating	30A/240VAC 30A/30VDC	20A/240VAC 20A/14VDC	NO 30A/240VAC 30A/14VDC	NC 20A/240VAC 20A/14VDC	40A/240VAC 40A/30VDC	30A/240VAC 30A/30VDC	NO 40A/240VAC 40A/30VDC	NC 30A/240VAC 30A/30VDC	50A/240VAC 50A/30VDC	NO 50A/240VAC 50A/30VDC	NC 35A/240VAC 35A/30VDC	
Max.Switching power	1200W 7200VA (10000VA)						1500W 12000VA					
Max.Switching voltage	110VDC 300VAC											
Ambient Temperature	-55°C~100°C, -55°C~125°C											
Dielectric Strength	50Hz 1500V											
Insulation Resistance	50Hz 4000V(without pin 6) 2500V											
Initial Contact Resistance	1000MΩ											
Electrical Life(operations)	≤30mΩ											
Mechanical Life(operations)	1×10 ⁵			2×10 ⁴ (for NT90R1.1)			3×10 ⁴					
Weight(Approx.)	1×10 ⁷ 5×10 ⁶ (for NT90R1.1) 1×10 ⁷											
Mounting Layout (Bottom View) (mm)	25.7g(Open Type),30g											
Wiring Diagram (Bottom View)												
Cross Reference	PANASONIC JT TYCO T90 OMRON G8P											

Classification	General-purpose power relays											
Type	NT90T(T91)											
International Security Certificates												
Outline Dimensions(mm) L×W×H	 32.4×27.5×28			 32.4×27.5×20			 32.4×27.5×28		 32.4×27.5×20			
Features	<ul style="list-style-type: none"> Small size, light weight. Low coil power consumption, heavy contact load. Strong anti-shock and anti-vibration, high reliability, long life. PC board mounting and flat quick-connect. 											
Coil Voltage(VDC)	DC:3,5,6,9,12,15,18,24,48,110 AC:12,24,110,120,220,240,277						3,5,6,9,12,15,18,24,48,110					
Coil Power	0.6W,0.9W,2VA,1.1W						1.5W					
Contact Material	AgCdO AgSnO ₂						AgSnO ₂					
Contact Arrangement	1A	1B	1C			1A	1B	1C			1A	1C
Contact transfer Current(A)	30A	20A	30A	20A	40A	30A	40A	30A	50A	50A	35A	
Contact Rating	30A/240VAC 30A/14VDC	20A/240VAC 20A/14VDC	NO 30A/240VAC 30A/14VDC	NC 20A/240VAC 20A/14VDC	40A/240VAC 40A/30VDC	30A/240VAC 30A/30VDC	NO 40A/240VAC 40A/30VDC	NC 30A/240VAC 30A/30VDC	50A/240VAC 50A/30VDC	NO 50A/240VAC 50A/30VDC	NC 35A/240VAC 35A/30VDC	
Max.Switching power	1200W 7200VA(10000VA)						1500W 12000VA					
Max.Switching voltage	110VDC 300VAC											
Ambient Temperature	-55°C~100°C, -55°C~125°C											
Dielectric Strength	50Hz 1500V											
Insulation Resistance	50Hz 2500V											
Initial Contact Resistance	1000MΩ											
Electrical Life(operations)	≤30mΩ											
Mechanical Life(operations)	1×10 ⁵			2×10 ⁴ (for NT90R1.1)			3×10 ⁴					
Weight(Approx.)	1×10 ⁷			5×10 ⁶ (for NT90R1.1)			1×10 ⁷					
Mounting Layout (Bottom View) (mm)	31g(Low profile Type) 35g											
Wiring Diagram (Bottom View)												
Cross Reference	PANASONIC JT TYCO T90 OMRON G8P											

Classification	General-purpose power relays										
Type	NT90TP(T92)										
International Security Certificates											
Outline Dimensions(mm) L×W×H	 32.5(50.2)×27.5×28.2			 32.5(50.2)×27.5×20			 32.5(50.2)×27.5×28.2				
Features	<ul style="list-style-type: none"> Small size, light weight. Low coil power consumption, heavy contact load. Strong anti-shock and anti-vibration, high reliability, long life. 										
Coil Voltage(VDC)	DC: 3, 5, 6, 9, 12, 15, 18, 24, 48, 110 AC: 12, 24, 110, 120, 220, 240, 277						3, 5, 6, 9, 12, 15, 18, 24, 48, 110				
Coil Power	0.6W, 0.9W, 2VA						1.5W				
Contact Material	AgCdO AgSnO ₂						AgSnO ₂				
Contact Arrangement	1A	1B	1C		1A	1B	1C	1A	1C		
Contact transfer Current(A)	30A	30A	30A	40A	30A	40A	50A	50A	35A		
Contact Rating	30A/ 240VAC 30A/ 14VDC	20A/ 240VAC 30A/ 14VDC	NO 30A/ 240VAC 14VDC	NC 20A/ 240VAC 30A/ 14VDC	40A/ 240VAC 40A/ 30VDC	30A/ 240VAC 30A/ 30VDC	NO 40A/ 240VAC 30VDC	NC 30A/ 240VAC 30A/ 30VDC	50A/ 240VAC 50A/ 30VDC	NO 50A/ 240VAC 50A/ 30VDC	NC 35A/ 240VAC 35A/ 30VDC
	NO: 30A/277VAC; NC: 20A/277VAC; NO: 2HP 250VAC; NC: 1.5HP 250VAC TV-5, 5A/280VAC (Ballast)						1HP, NO: 16FLA/120V NC: 30LRA/120VAC 2HP, NO: 12FLA/240V NC: 30LRA/240VAC				
Max.Switching power	1200W 7200VA (10000VA)						1500W 12000VA				
Max.Switching voltage	110VDC 300VAC										
Ambient Temperature	-55°C~100°C, -55°C~125°C										
Dielectric Strength	Between Contacts	50Hz 1500V									
	Between Contact and Coil	50Hz 2500V									
Insulation Resistance	1000MΩ										
Initial Contact Resistance	≤30mΩ										
Electrical Life(operations)	1×10 ⁵						3×10 ⁴				
Mechanical Life(operations)	1×10 ⁷						1×10 ⁷				
Weight(Approx.)	35g(Low profile Type) 37g										
Mounting Layout (Bottom View) (mm)											
Wiring Diagram (Bottom View)											
Cross Reference	PANASONIC JT TYCO T90 OMRON G8P										


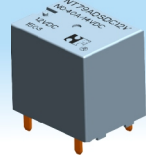
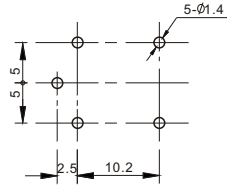
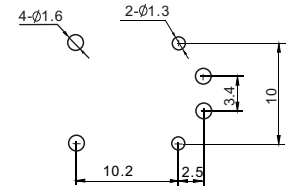
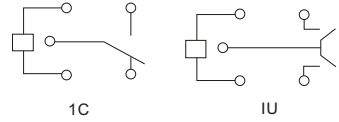
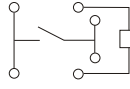
Latching relays										
NT90L										
 32.5×27.6×20.5					 32.5×27.6×20.5					
<ul style="list-style-type: none"> Single and double coils magnetic latching relay available. Switching capacity up to 40A. Energy saving and environmental friendly product. 										
5, 12, 24, 48										
0.9W 2×1.8W					1.5W 2×3W					
AgSnO ₂										
1A	1B	1C		1A	1B	1C	1A	1B	1C	
40A	40A	40A	50A	50A	35A					
30A, 40A/277VAC, 28VDC 3×10 ⁴ OPS (Resistive load) 3000W 240VAC 1×10 ⁵ OPS (Incandescent Lamp) 5A/280VAC 6000 OPS (Electronic ballast) 2HP 250VAC 2×10 ⁴ OPS (Motor load)					50A/277VAC 5×10 ⁴ OPS (Resistive load) 3000W 240VAC 3×10 ⁵ OPS (Incandescent Lamp) 16A/280VAC 6000 OPS (Electronic ballast) 5HP 250VAC 3×10 ⁴ OPS (Motor load)					
1200W 12000VA					1500W 14000VA					
110VDC 300VAC										
-40°C~85°C										
50Hz 1500V										
50Hz 4000V(without pin6) 2500V										
1000MΩ										
≤20mΩ										
See contact rating										
1×10 ⁶										
28g										
1A 1B 1C					1A (D type) 1B(D type) 1C(D type)					

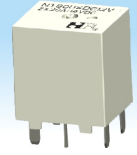


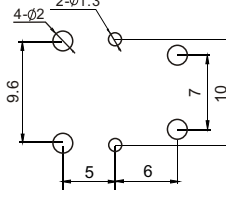
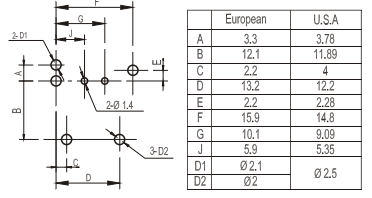
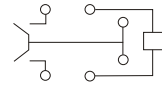
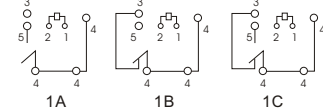
Classification		Latching relays				
Type		NT91L				
International Security Certificates						
Outline Dimensions(mm) L×W×H		 32.5 × 27.4 × 28.5(20)		 32.5 × 27.4 × 28.5(20)		
Features		<ul style="list-style-type: none"> Single and double coils magnetic latching relay available. Switching capacity up to 50A. Energy saving and environmental friendly product. 				
Coil Voltage(VDC)		5,12,24,48				
Coil Power		0.9W 2×1.8W		1.5W 2×3W		
Contact Material		AgSnO ₂				
Contact Arrangement		1A	1B	1C	1A 1B 1C	
Contact transfer Current(A)		40A	40A	40A	50A	
Contact Rating		30A,40A/277VAC,28VDC 3×10 ⁴ OPS (Resistive load) 3000W 240VAC 1×10 ⁴ OPS (Incandescent Lamp) 5A/280VAC 6000OPS (Electronic ballast) 2HP 250VAC 2×10 ⁴ OPS (Motor load)		50A/277VAC 5×10 ⁴ OPS (Resistive load) 3000W 240VAC 3×10 ⁴ OPS (Incandescent Lamp) 16A/280VAC 6000OPS (Electronic ballast) 5HP 250VAC 3×10 ⁴ OPS (Motor load)		
Max.Switching power		1200W 12000VA		1500W 14000VA		
Max.Switching voltage		110VDC 300VAC				
Ambient Temperature		-40℃~85℃				
Dielectric Strength	Between Contacts	50Hz 1500V				
	Between Contact and Coil	50Hz 2500V				
Insulation Resistance		1000MΩ				
Initial Contact Resistance		≤20mΩ				
Electrical Life(operations)		See contact rating				
Mechanical Life(operations)		1×10 ⁶				
Weight(Approx.)		26g(Low profile Type) 28g				
Mounting Layout (Bottom View) (mm)						
Wiring Diagram (Bottom View)						
Cross Reference		—				

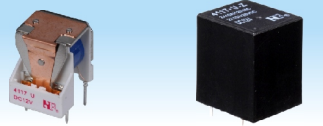
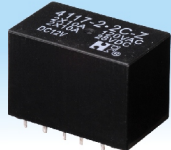
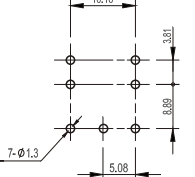
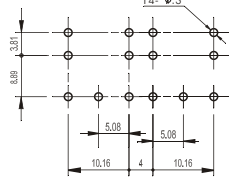
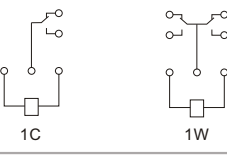
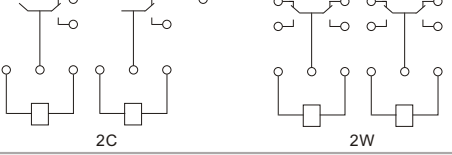
Classification		Latching relays	
Type		NT74L	NT75L
International Security Certificates			
Outline Dimensions(mm) L×W×H		 28.6×10.1×12.6	 29×12.7×15.7
Features		<ul style="list-style-type: none"> Single and double coils magnetic latching relay available. Small size, lightweight. Low coil consumption. Switching current upto 10A. PC board mounting. 	<ul style="list-style-type: none"> Single and double coils magnetic latching relay available. Small size, light weight. Low coil consumption. Switching capacity up to 20A. PC board mounting.
Coil Voltage(VDC)		3,5,12,24	3,5,6,9,12,24
Coil Power		0.22W,0.48W	0.4W,0.6W
Contact Material		AgCdO AgSnO ₂	AgSnO ₂
Contact Arrangement		1A,1C	1A2,1C2
Contact transfer Current(A)		10A	16A
Contact Rating		8A/250VAC,24VDC 1A:10A/250VAC,24VDC	resistive: 16A/250VAC; motor load:1HP 240VAC; Incandescent lamp 360W 125VAC(1A); TV-5 120VAC(1A)
Max.Switching power		240W 2500VA	4000VA
Max.Switching voltage		150VDC 400VAC	440VAC
Ambient Temperature		-40℃~85℃	
Dielectric Strength	Between Contacts	50Hz 1000V	
	Between Contact and Coil	50Hz 5000V	
Insulation Resistance		1000MΩ	
Initial Contact Resistance		≤100mΩ	
Electrical Life(operations)		5×10 ⁴	
Mechanical Life(operations)		5×10 ⁶	
Weight(Approx.)		8g	13g
Mounting Layout (Bottom View) (mm)			
Wiring Diagram (Bottom View)			
Cross Reference		FUJITSUFTR-JSL	TYCO RT1; PANASONIC DJ; FUJITSU FTR-KIL;HF 115F-L; HFE20;



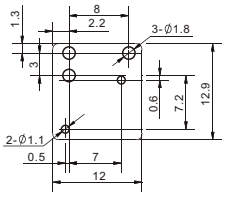
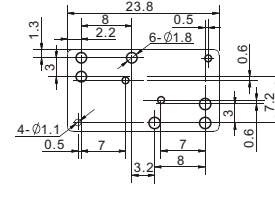
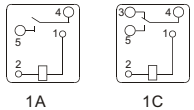
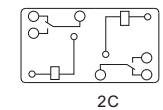
Classification		Latching relays	
Type		NT95L	NT96L
International Security Certificates			
Outline Dimensions(mm) L×W×H		 39×15×25	 39×15×29
Features		<ul style="list-style-type: none"> Single and double coils magnetic latching relay available. Switching capacity up to 50A. PC board mounting. 	<ul style="list-style-type: none"> Magnetic latching relay. High sensitivity & reliability. Strong anti-shock and anti-vibration, high reliability. Contact load (80A).
Coil Voltage(VDC)		DC:6,9,12,,24,48	6, 12, 24, 48
Coil Power		1.5W 2×3W	1.5W
Contact Material		AgSnO ₂	AgSnO ₂
Contact Arrangement		1A	1A
Contact transfer Current(A)			
Contact Rating		resistive: 50A/277VAC; motor load:5HP 240VAC; Incandescent lamp 5000W 240VAC; 16A/277VAC	60A/277VAC 80A/277VAC
Max.Switching power		12500VA	23000VA
Max.Switching voltage		440VAC	350VAC
Ambient Temperature		-40℃~70℃	-40℃~70℃
Dielectric Strength	Between Contacts	50Hz 1500V	50Hz 1500V
	Between Contact and Coil	50Hz 4000V	50Hz 4000V
Insulation Resistance		1000M Ω	1000M Ω
Initial Contact Resistance		≤20m Ω	≤20m Ω
Electrical Life(operations)		1×10 ⁵	1×10 ⁵ (60A); 5×10 ⁴ (80A)
Mechanical Life(operations)		5×10 ⁶	5×10 ⁶
Weight(Approx.)		25g	30g
Mounting Layout (Bottom View) (mm)			
Wiring Diagram (Bottom View)			
Cross Reference		HFE10	—



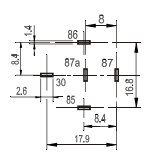
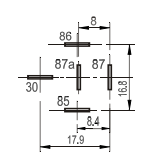
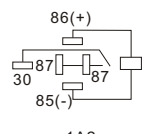
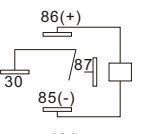
Latching relays		
NE720	JMX-94F	JMX-94F ₂
 60×40×22	 39×30×17.5	 38.6×34×17.2
<ul style="list-style-type: none"> Magnetic latching relay. High sensitivity & reliability. Well anti-shock and anti-vibration. Heavy contact load (100A). 	<ul style="list-style-type: none"> Magnetic latching relay. High sensitivity & reliability. Well anti-shock and anti-vibration. Heavy contact load (80A). 	<ul style="list-style-type: none"> Magnetic latching relay. High sensitivity & reliability. Well anti-shock and anti-vibration. Heavy contact load (80A).
6,12,24,48	9,12,24	9,12,24
2.25W 2×4.5W	1W 2×2W	1W 2×2W
AgSnO ₂	AgCdO	AgCdO AgSnO ₂
1A,1B	1A,1B	1A,1B
100Amax/240VAC	40A/250VAC 60A/250VAC 80A/250VAC	60A/250VAC 80A/250VAC
23000VA(COSΦ=1) 2300VA(COSΦ=0.4)	20000VA 15000VA 10000VA	20000VA 15000VA
400VAC	300VAC	300VAC
-40℃~85℃	-25℃~70℃	-40℃~70℃
50Hz 2000V Surge Voltage 4000V	50Hz 1500V	50Hz 1500V
50Hz 4000V Surge Voltage 12000V	50Hz 4000V	50Hz 4000V
1000M Ω	1000M Ω	1000M Ω
≤1m Ω	≤5m Ω (at 1A, 24VDC) ≤100mV (at rated load)	≤5m Ω (at 1A, 24VDC) ≤100mV (at 40A)
1×10 ⁴	1×10 ⁴	1×10 ⁴
1×10 ⁶	1×10 ⁶	1×10 ⁶
82g	40g	38g
GRUNER 720	GRUNER 704	GRUNER 704

Classification		Automotive relays	
Type		NT78	NT79
International Security Certificates		UL E160644 ISO 13002099050	—
Outline Dimensions(mm) L×W×H		 15.7×12.3×14	 15.5×12×14
Features		<ul style="list-style-type: none"> Small size, light weight. Low coil consumption. PC board mounting. 	<ul style="list-style-type: none"> Small size, light weight & heavy load. High-temperature resistance, micro-evaporation. Application for various lamps, driving power control and motor such as power steering equipment, wiper and etc.
Coil Voltage(VDC)		6, 9, 12, 24	9, 12
Coil Power		0.6W, 0.8W	0.64W
Contact Material		AgCdO AgSnO ₂	AgCdO AgSnO ₂
Contact Arrangement		1A, 1B, 1C, 1U	1A2
Contact transfer Current(A)	80A	30A	40A
	70A		
Contact Rating		1A: 30A/14VDC; 1U: 2×10A/14VDC NO: 20A/14VDC 10A/120VAC, 5A/250VAC NC: 15A/14VDC 1, 0A/120VAC, 5A/250VAC 1/2HP 125VAC TV-5	40A/14VDC
Max. Switching power		280W 1250VA	560W
Max. Switching voltage		42VDC 380VAC	14VDC
Ambient Temperature		-40°C~85°C	-40°C~125°C
Dielectric Strength	Between Contacts	50Hz 500V	50Hz 500V
	Between Contact and Coil	50Hz 500V	50Hz 500V
Insulation Resistance		100MΩ	100MΩ
Initial Contact Resistance		≤50mΩ	≤20mΩ
Electrical Life(operations)		1×10 ⁵	1×10 ⁵
Mechanical Life(operations)		1×10 ⁷	1×10 ⁷
Weight(Approx.)		6g	8g
Mounting Layout (Bottom View) (mm)			
Wiring Diagram (Bottom View)			
Cross Reference		FUJITSU FBR51; PANASONIC JJM; OMRON G8QN;	NEC EX1



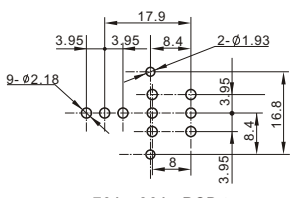
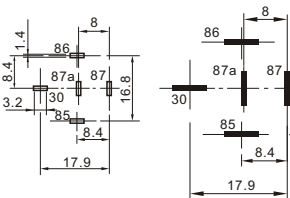
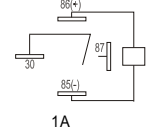
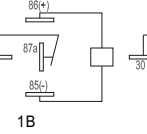
Automotive relays				
NT80		4120(JQC-4)		
—		—		
 14.4×12.4×15		 24×19×20	 26.8×21.5×22.3	
<ul style="list-style-type: none"> Small size, light weight & heavy load. High-temperature resistance. Plastic sealed. Suitable for a various lamp, CR circuit, power-controlled steering device and wind control and etc. 		<ul style="list-style-type: none"> Small size, heavy contact load, capable of withstanding strong current of 45A at 14VDC. PC board mounting. Both European 11mm pole distance and American 8mm pole distance available. 		
12		6, 9		12, 18, 24
0.64W		1.9W		1.6W
AgCdO AgSnO ₂		AgNi AgSnO ₂ AgCdO		
1U		1A	1B	1C
20A		45A	30A	40A
2×20A/14VDC		45A/14VDC	30A/14VDC	NO: 40A/14VDC NC: 30A/14VDC 20A/120VAC 15A/28VDC
560W		630W 2400VA		
16VDC		75VDC 380VAC		
-40°C~125°C		-40°C~125°C		
50Hz 500V		50Hz 500V		
50Hz 500V		50Hz 750V		
100MΩ		100MΩ		
≤20mΩ		≤30mΩ		
1×10 ⁵		1×10 ⁵		
1×10 ⁵		1×10 ⁷		
8g		Open 19g Sealed 21g		
				
				
NEC EM1		TYCO V23076; OMRON G8PE;		

Classification		Automotive relays			
Type		4117		4117-2	
International Security Certificates		—		—	
Outline Dimensions(mm) L×W×H		 13.2×15.3×18 17.5×15×20		 29.6×18×20	
Features		<ul style="list-style-type: none"> Superminiature, heavy power. Low coil power consumption. Switching current up to 20A. PC board mounting. 		<ul style="list-style-type: none"> Twin structure of 4117 type. Small size, light weight. Low coil power consumption. PC board mounting. 	
Coil Voltage(VDC)		3,5,6,9,12,18,24		3,5,6,9,12,18,24	
Coil Power		1W 1.2W		2×1W	
Contact Material		AgNi AgSnO ₂		AgNi AgSnO ₂	
Contact Arrangement		1A,1B,1C 1U,1V,1W		2A,2C 2U,2W	
Contact transfer Current(A)		20A 20A		20A	
Contact Rating		10A/120VAC 10A/28VDC 20A/14VDC		10A/120VAC,28VDC 20A/14VDC	
Max.Switching power		280W 1200VA		280W 1200VA	
Max.Switching voltage		75VDC 380VAC		75VDC 380VAC	
Ambient Temperature		-40°C~105°C		-40°C~105°C	
Dielectric Strength		Between Contacts 50Hz 750V		50Hz 750V	
		Between Contact and Coil 50Hz 1500V		50Hz 1500V	
Insulation Resistance		100MΩ		100MΩ	
Initial Contact Resistance		≤50mΩ		≤50mΩ	
Electrical Life(operations)		1×10 ⁵		1×10 ⁵	
Mechanical Life(operations)		1×10 ⁷		1×10 ⁷	
Weight(Approx.)		Open 9g Sealed 12g		20g	
Mounting Layout (Bottom View) (mm)					
Wiring Diagram (Bottom View)					
Cross Reference		TYCO V23072		—	



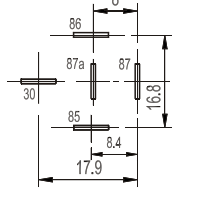
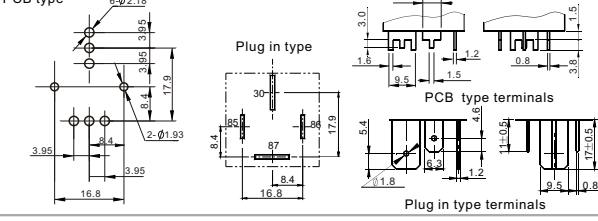
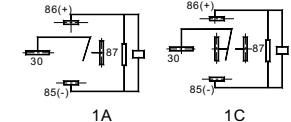
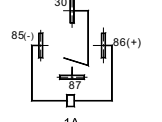
Classification		Automotive relays	
Type		NV23K	NV231
International Security Certificates		—	
Outline Dimensions(mm) L×W×H		 12×12.9×9.9	 23.6×12.9×9.9
Features		<ul style="list-style-type: none"> Small size, light weight. Withstands high temperature, operational under 105°C ambient temperature. Heavy contact load switching current up to 30A. 	
Coil Voltage(VDC)		10,12,24	10,12,24
Coil Power		0.55W,0.57W	0.55W,0.57W
Contact Material		AgSnO ₂ AgNi	AgSnO ₂ AgNi
Contact Arrangement		1A,1C	2A,2C
Contact transfer Current(A)		30A	30A
Contact Rating		1A:30A,20A/14VDC 1C:NO:30A,20A/14VDC NC:25A,15A/14VDC	2A:30A,20A/14VDC 2C:NO:30A,20A/14VDC NC:25A,15A/14VDC
Max.Switching power		420W	420W
Max.Switching voltage		24VDC	24VDC
Ambient Temperature		-40°C~105°C	-40°C~105°C
Dielectric Strength		50Hz 500V	50Hz 500V
		50Hz 500V	50Hz 500V
Insulation Resistance		1000MΩ	1000MΩ
Initial Contact Resistance		≤30mV(at 10A)	≤30mV(at 10A)
Electrical Life(operations)		1×10 ⁵	1×10 ⁵
Mechanical Life(operations)		1×10 ⁷	1×10 ⁷
Weight(Approx.)		4g(Q Type 9.5g)	8g
Mounting Layout (Bottom View) (mm)			
Wiring Diagram (Bottom View)			
Cross Reference		TYCO V23086-C ₁	TYCO V23086-C ₂




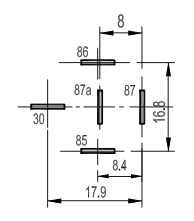
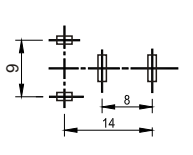
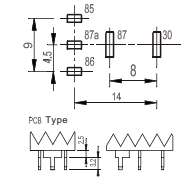
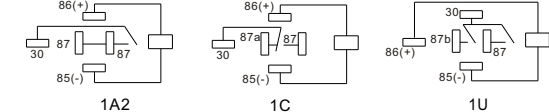
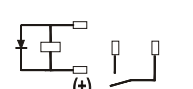
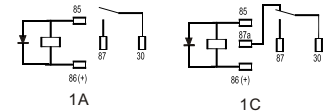
Classification		Automotive relays			
Type		NVF4-1		NVF4-2	
International Security Certificates		—		—	
Outline Dimensions(mm) L×W×H		 26.5×26.5×24.5		 26.5×26.5×24.5(+16)	
Features		<ul style="list-style-type: none"> Small size and light weight. Suitable for automobile and lamp accessories application. PC board mounting and plug-in mounting available. 			
Coil Voltage(VDC)		6,12,24,48			
Coil Power		1.6W,1.9W,2.3W,2.6W			
Contact Material		AgSnO ₂ AgNi AgCdO			
Contact Arrangement		1A		1B	
Contact transfer Current(A)		40A		40A	
Contact Rating		40A/14VDC 20A/24VDC		40A/14VDC 20A/24VDC	
Max.Switching power		630W			
Max.Switching voltage		75VDC			
Ambient Temperature		-40℃~125℃			
Dielectric Strength		50Hz 500V			
Insulation Resistance		100MΩ			
Initial Contact Resistance		≤30mΩ			
Electrical Life(operations)		1×10 ⁵			
Mechanical Life(operations)		1×10 ⁷			
Weight(Approx.)		31g		36g	
Mounting Layout (Bottom View) (mm)		 PCB type		 Plug in type	
Wiring Diagram (Bottom View)		 1A2		 1A1	
Cross Reference		PANASONIC CB;TYCO VF4 OMRON G8J/G8JN;			




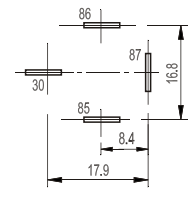
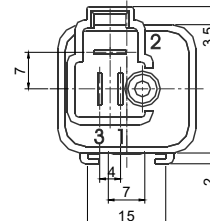
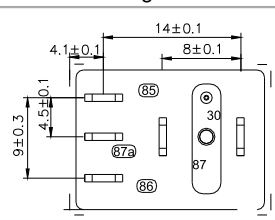
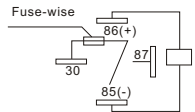
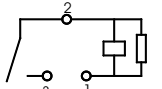
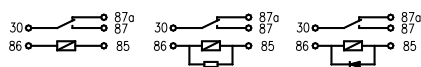
- Small size and light weight.
- Suitable for automobile and lamp accessories application.
- PC board mounting and plug-in mounting available.
- 24V versions with contact gap >0.8mm.




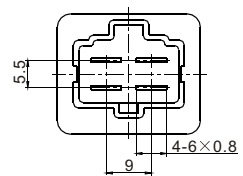
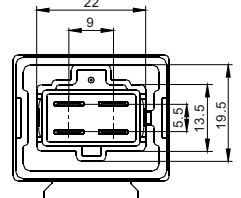
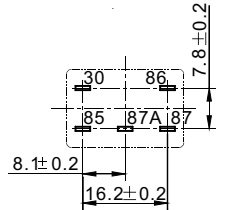
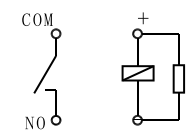
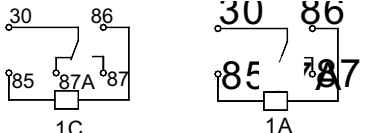
Classification		Automotive relays			
Type		NVF4-3		NVF4-4	
International Security Certificates		—		—	
Outline Dimensions(mm) L×W×H		 29×29×26.5		 29×29×26.5(+16)	
Features		<ul style="list-style-type: none"> Miniature. Contact load capacity up to 80A. PC board mounting and plug-in mounting available. 24V versions with contact gap > 0.8mm. 			
Coil Voltage(VDC)		6,12,24			
Coil Power		1.8W, 2.3W, 2.6W			
Contact Material		AgSnO ₂ AgNi AgCdO			
Contact Arrangement		1A		1B	
Contact transfer Current(A)		80A		60A	
Contact Rating		80A/14VDC 40A/24VDC		60A/14VDC 40A/24VDC	
Max.Switching power		1120W			
Max.Switching voltage		75VDC			
Ambient Temperature		-40℃~125℃		-40℃~125℃	
Dielectric Strength		50Hz 500V		50Hz 500V	
Insulation Resistance		100MΩ		100MΩ	
Initial Contact Resistance		≤30mΩ		≤30mΩ	
Electrical Life(operations)		1×10 ⁵		1×10 ⁵	
Mechanical Life(operations)		1×10 ⁷		1×10 ⁷	
Weight(Approx.)		46g		48g	
Mounting Layout (Bottom View) (mm)		 70A, 80A PCB type		 40A, 50A PCB type Plug in type	
Wiring Diagram (Bottom View)		 1A		 1B	
Cross Reference		TYCO F7;OMRON G8JR;			

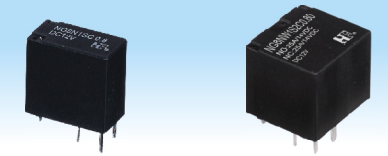
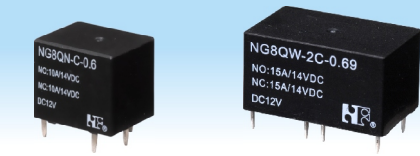
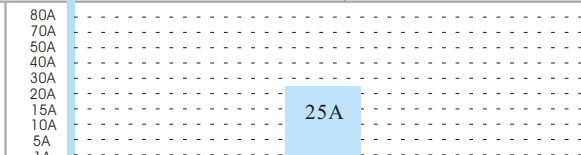
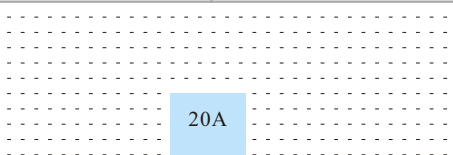
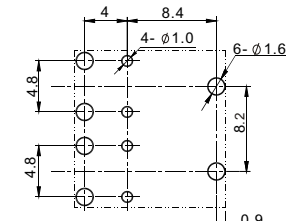
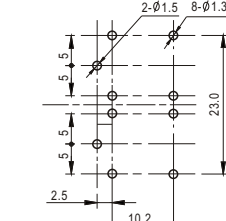
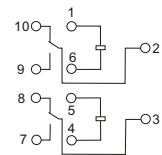
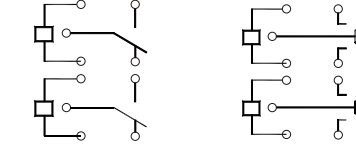
- Miniature.
- Contact load capacity up to 80A.
- PC board mounting and plug-in mounting available.
- 24V versions with contact gap > 0.8mm.

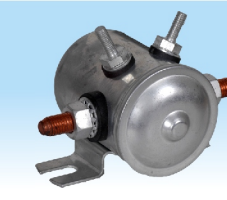

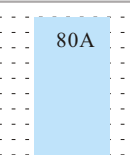
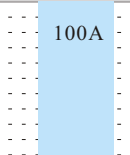
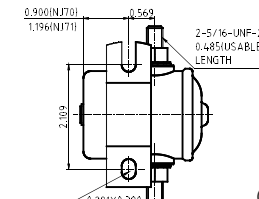
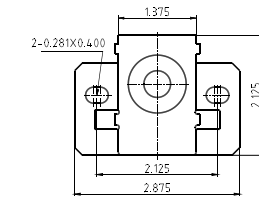
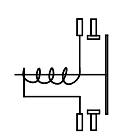
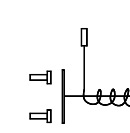
Classification		Automotive relays	
Type		NVF4-6	NVF4-7 & NVF4-8
International Security Certificates		—	—
Outline Dimensions(mm) L×W×H		 34.5×32.5×34	 26.5×26.5×25.2 26.5×26.5×25.2 (+16)
Features		<ul style="list-style-type: none"> Small size. Contact load capacity up to 150A. Terminal type as inserting. 	<ul style="list-style-type: none"> Small size and light weight. Heavy contact load (70A). Suitable for automobile and lamp accessories application. PC board mounting and plug-in mounting available.
Coil Voltage(VDC)		12,24	6,12,24
Coil Power		2.9W	1.6W 1.9W
Contact Material		AgSnO ₂ AgNi	AgSnO ₂ AgNi
Contact Arrangement		1A,1C	1A
Contact transfer Current(A)		150A	70A
Contact Rating		NO:100A,150A/12VDC 50A/24VDC NC:80A,100A/12VDC 50A/24VDC	50A,70A/14VDC
Max.Switching power		1800W	980W
Max.Switching voltage		75VDC	75VDC
Ambient Temperature		-40°C~125°C	-40°C~105°C
Dielectric Strength		Between Contacts: 50Hz 750V Between Contact and Coil: 50Hz 1000V	50Hz 500V 50Hz 500V
Insulation Resistance		100MΩ	100MΩ
Initial Contact Resistance		≤30mΩ ≤200mV(at 70A)	≤30mΩ ≤200mV(at 70A)
Electrical Life(operations)		1×10 ⁵	1×10 ⁵
Mechanical Life(operations)		1×10 ⁷	1×10 ⁷
Weight(Approx.)		65g	36g 41g
Mounting Layout (Bottom View) (mm)			
Wiring Diagram (Bottom View)			
Cross Reference		—	TYCO V23134


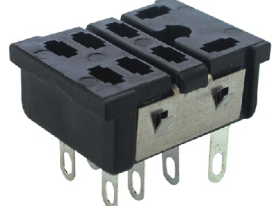












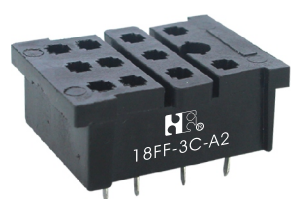
Automotive relays					
NVF5		NCV	NVFM		
International Security Certificates					
Outline Dimensions(mm) L×W×H					
 26.5×26.5×25(+16)		 22.5×15.2×16.2	 23×15.5×26		
Features		<ul style="list-style-type: none"> Low profile. Low temperature rise. Suitable for automation system and automobile auxiliary etc. 	<ul style="list-style-type: none"> Switching capacity up to 35A. PC board mounting and plug-in mounting available. 		
Coil Voltage(VDC)					
6,12,24		12	6,12,24,48		
Coil Power					
1.6W,1.9W,2.3W,2.6W		1.07W	1.2W,1.5W		
Contact Material					
AgSnO ₂ AgNi AgCdO		AgSnO ₂	AgSnO ₂ AgNi		
Contact Arrangement					
1A2 1B 1C 1U		1A	1A,1C		
Contact transfer Current(A)					
50A 40A 50A 25A		25A	35A		
Contact Rating					
50A,40A /14VDC 25A /24VDC		25A/12VDC	1A:35A/14VDC 1C:NO:35A/14VDC,25VDC NC:25A/14VDC,20VDC		
Max.Switching power					
700W		300W	490W		
Max.Switching voltage					
75VDC		75VDC	75VDC		
Ambient Temperature					
-40°C~125°C		-40°C~100°C	-40°C~125°C		
Dielectric Strength					
50Hz 500V 50Hz 750V		50Hz 500V 50Hz 500V	50Hz 500V 50Hz 1000V		
Insulation Resistance					
100MΩ		20MΩ	100MΩ		
Initial Contact Resistance					
≤30mΩ		≤50mΩ	≤50mΩ		
Electrical Life(operations)					
1×10 ⁵		1×10 ⁵	1×10 ⁵		
Mechanical Life(operations)					
1×10 ⁷		1×10 ⁶	1×10 ⁷		
Weight(Approx.)					
31g 36g		14g	18.5g		
Mounting Layout (Bottom View) (mm)					
					
Wiring Diagram (Bottom View)					
					
Cross Reference					
TYCO F7		PANASONIC CV; OMRON G8HL;	TYCO VFM;OMRON G8H; PANASONIC CM;		

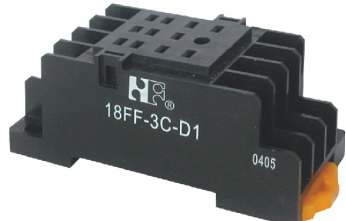
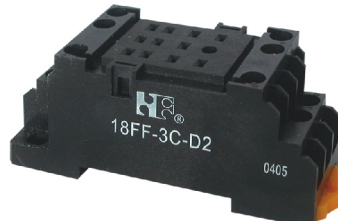

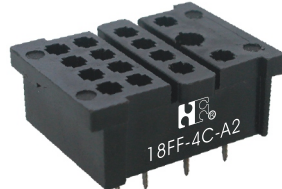




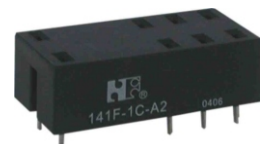




Classification		Automotive relays		
Type	NVFS	NVF9	NVF16	
International Security Certificates	—	—	—	
Outline Dimensions(mm) L×W×H				
	32.6×25.2×21	27×25×31.5(+21)	20.5×15.4×22.1	
Features	<ul style="list-style-type: none"> Small size and light weight. Heavy contact load (30A). Contact arrangement form A. Insert mounting, with metal frame. 	<ul style="list-style-type: none"> Small size, light weight. Insert mounting available. Suitable for automaiton system and automobile auxiliary etc. 	<ul style="list-style-type: none"> Switching capacity up to 40A. Small size ,lightweight. 	
Coil Voltage(VDC)	6,12,24	12	12	24
Coil Power	1.8W	4.1W	1.5W	1.8W
Contact Material	AgSnO ₂	AgSnO ₂ AgCdO	AgSnO ₂	
Contact Arrangement	1A	1A	1A,1C	
Contact transfer Current(A)	80A 70A 50A 40A 30A 20A 15A 10A 5A 1A			
	30A	15A	40A	
Contact Rating	15A,30A/14VDC	15A/14VDC	12V: NO:35A,40A/14VDC NC:20,25A/14VDC 24V: NO:15A,20A/28VDC NC:10A/28VDC	
Max.Switching power	420W	210W	560W	
Max.Switching voltage	75VDC	75VDC	28VDC	
Ambient Temperature	-40℃~105℃	-40℃~125℃	-40℃~125℃	
Dielectric Strength	Between Contacts	50Hz 500V	50Hz 500V	
	Between Contact and Coil	50Hz 750V	50Hz 500V	
Insulation Resistance	100MΩ	100MΩ	100MΩ	
Initial Contact Resistance	≤50mΩ	≤100mΩ	≤50mΩ(6VDC 1A)	
Electrical Life(operations)	1×10 ⁵	10 ⁵	1×10 ⁵	
Mechanical Life(operations)	1×10 ⁷	1×10 ⁷	1×10 ⁶	
Weight(Approx.)	32g	35g	18g	
Mounting Layout (Bottom View) (mm)				
Wiring Diagram (Bottom View)				
			Note: 1A without 87a	
Cross Reference	—	—	SONGCHUAN 871	

		Automotive relays		
	NVF11	NVF12	NVF28	
	—	—	—	
				
	24×29×30	32×26×30	22.5×15×25.4	
		<ul style="list-style-type: none"> Switching capacity up to 40A. Plug-in mounting available. Suitable for automaiton system and automobile auxiliary etc. 	<ul style="list-style-type: none"> 40A continous NO contact rating at 85C. 2.8mm quick connect terminals. Contact arrangement form A and C available. 	
		12, 24	6,12,24	
		1.5W	0.9W,1.3W	
		AgSnO ₂	AgSnO ₂ AgCdO	
		1A	1A,1C	
		40A	40A	
		30A,40A/14VDC	25A,35A,40A/14VDC 20A/27VDC	
		560W	560W	
		75VDC	75VDC	
		-40℃~105℃	-40℃~125℃	
		50Hz 500V	50Hz 500V	
		50Hz 750V	50Hz 500V	
		100MΩ	100MΩ	
		≤50mΩ	≤100mΩ(6VDC,1A)	
		1×10 ⁵	1×10 ⁵	
		1×10 ⁷	1×10 ⁷	
	35g	38g	21g	
				
				
			TYCO VJ28; OMRON G8V;	

Classification		Automotive relays			
Type		NG8N & NG8NW		NG8QN & NG8QW	
International Security Certificates		—		—	
Outline Dimensions(mm) L×W×H		 14.3×7.5×13.8 14.3×15.7×13.8		 16.0×12.5×14.4 16.0×25.5×14.4	
Features		<ul style="list-style-type: none"> Small size, lightweight. Low coil consumption. Switching capacity up to 25A motor lock load. High performance PCB relay. 		<ul style="list-style-type: none"> Small size, light weight. Low coil consumption. PC board mounting. 	
Coil Voltage(VDC)		12		12	
Coil Power		0.64W 0.80W 2×0.64W 2×0.80W		0.69W 2×0.69W	
Contact Material		AgSnO ₂		AgCdO AgSnO ₂	
Contact Arrangement		1C 2C		1C,1U 2C,2U	
Contact transfer Current(A)					
Contact Rating		25A motorlock (14VDC)		NO:20A/14VDC NC:15A/14VDC	
Max.Switching power		480W		280W	
Max.Switching voltage		16VDC		16VDC	
Ambient Temperature		-40°C~105°C		-40°C~105°C	
Dielectric Strength		Between Contacts: 50Hz 500V Between Contact and Coil: 50Hz 1000V		50Hz 500V 50Hz 500V	
Insulation Resistance		100MΩ		100MΩ	
Initial Contact Resistance		≤250mV (at 10A)		≤100mΩ	
Electrical Life(operations)		1×10 ⁵		1×10 ⁵	
Mechanical Life(operations)		1×10 ⁶		1×10 ⁷	
Weight(Approx.)		4.1g 8g		5.5g 11g	
Mounting Layout (Bottom View) (mm)					
Wiring Diagram (Bottom View)					
Cross Reference		OMRON G8N		OMRON G8QN/G8QW	

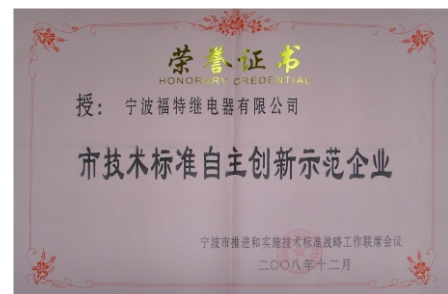
Automotive relays	
NJ70 & NJ71	NJ120
—	
 2.429×3.480×2.400(inch)	
 2.875×2.125×3.253(inch)	
<ul style="list-style-type: none"> High current capacity control(80A). Isolated or grounded coils. Enclosed in dust-resistant case. Lower temperature rise and more sensitive operation. 	
<ul style="list-style-type: none"> Water resistant. Capable of handling low and high current requirements. Various mounting and contact arrangement.. 	
6,12,18,24,36	
NJ70:23W,9W;NJ71:25W,10W	
14.4W 8.1W	
Cu Ag	
Cu Agalloy	
1A	
	
	
NO:80A/6VDC,12VDC 50A/24VDC,36VDC NC:60A/6VDC,12VDC 30A/24VDC,36VDC	
80A/12VDC 100A/12VDC,36VDC	
—	
—	
-40°C~50°C	
-29°C~66°C -29°C~49°C	
50Hz 500V	
50Hz 500V	
—	
—	
2.5×10 ⁵	
—	
1×10 ⁵	
1×10 ⁵	
398g(NJ70), 483g(NJ71)	
	
	
	
	
STANCOR TYPE 70	
STANCOR TYPE 120	

Classification	SOCKETS		
Type	13F-2C-A	13F-2C-A1	13F-2C-A2
Phtoto			
Type	13F-2C-B	13F-2C-D1	13F-2C-D2
Phtoto			
Type	13F-3C-D1	13F-4C-D1	13F-4C-D2
Phtoto			
Type	18FF-2C-A1	18FF-2C-A2	18FF-2C-D1
Phtoto			
Type	18FF-2C-D2	18FF-3C-A1	18FF-3C-A2
Phtoto			

Classification	SOCKETS		
Type	18FF-3C-D1	18FF-3C-D2	18FF-4C-A1
Phtoto			
Type	18FF-4C-A2	18FF-4C-D1	18FF-4C-D2
Phtoto			
Type	14F-1C-A2	14F-2C-A2	141FF-1C-A2
Phtoto			
Type	141FF-2C-A2	NVF4-S1	NVF4-S2
Phtoto			
Type	NVF4-S5		
Phtoto			

Appendix

Certificates



Appendix

Certificates

