WangRong Group

www.wrg-elec.com

Production Bases

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WRG

General Relay

WRG strives to provide reliable solutions for its customers.

V4.0

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CONTENTS

COMPANY PROFILE

Wangrong Electronics(WRG) was founded in 2008, with its predecessor being the Shajing Branch Factory of Shenzhen Wangli Motor Co., Ltd., which was set up in 1995. Since the establishment, WRG has always adhered to the concept of focusing on quality and continuous innovation, constantly strived for excellence and has become a national high-tech enterprise integrating relay R&D, production, sales and service. WRG has a wide range of relays, including general power relays, signal relays, industrial relays and automotive relays, which are widely applied in the home appliances, smart home, communications, industry, medical service, security, automotive and new energy fields. We are committed to providing reliable solutions for our customers.

> WRG strives to provide reliable solutions for its customers

Wangrong Electronics has two manufacturing centers located in Shenzhen, Guangdong Province and Huangshan, Anhui Province, covering a total area of 98,000 square meters, with an annual capacity of 800 million pieces. WRG has acquired the certificates of ISO9001, ISO14001 and IATF16949, making the company maintain a sound quality assurance system. Our products have passed the accrediting of CQC, UL/cULus, VDE, TUV, and also conformed to the environmental protection standard of RoHS and REACH. We have a WTDP laboratory accredited by UL60947, which can provide reliable tentative data and examination reports.

The existing production capacity and management system provide a strong guarantee for the quality of products and the stability of supply. With nearly 30 years of experience in introducing, studying and practicing international advanced relays manufacturing technology and management knowledge, WRG has developed its deep expertise in R&D, tooling, injection, stamping, assembling, testing and automated production. WRG is continuously developing its marketing and sales network. Besides in Mainland, WRG has sales points in HongKong, Japan, Korea, USA, Europe and India, which formed a fast and efficient selling and service network. WRG dedicates to provide customers with technical support and sales service timely and closely.

11
Global branch offices

700+
Employees

2
Manufacturing centers

980K
Occupied area (m^2)

1000+
Product specifications

800M
Annual design capacity

Focus on Quality and Innovation

The quality is the foundation of a brand. WRG persists in detail management, from Incoming Quality Control, Input Process Quality Control, to Outgoing Quality Control, always observe the operation standard, and control quality strictly.

Innovation is our eternal pursuit. WRG has successfully obtained more than one hundred patents and become one of the most trusted partners for its customers. “Bulid a century-old enterprise and create the first-class quality”. WRG is moving towards the goal of world-class relay enterprise. Your patronage and support is our driving force.

Shenzhen Manufacturing Center

Staff: about 200
Area: 18,000 m^2
Production Capacity: 100 M pieces/year

Huangshan Manufacturing Center

Staff: about 500
Area: 80,000 m^2
Production Capacity: 700 M pieces/year

DEVELOPMENT PROCESS

2024
Shenzhen Application Center& Reliability lab was put into use.

2023
Zhejiang Wangrong Semiconductor Co., Ltd. was completed and put into production.

2021
Established Zhejiang Wangrong Semiconductor Co., Ltd.

Established Wangrong Environmental Technology (Anhui) Co., Ltd.

2020
Established Huangshan WangRong Medical Technology Co. Ltd.

2018
Technical Building in the 2nd Phrase of Huangshan WangRong industrial park was completed.

Huangshan WangRong Obatined IATF16949 Certificate.

2017
Established Huangshan WangRong automobile electronics Co., Ltd.

Set up an R&D center in Japan.

2015
Established WangRong Group: The 1st phase of Huangshan WangRong industrial park was completed and put into use.

2011
Huangshan Wangrong obtained ISO9001 and ISO14001.

Shenzhen Wangrong obtained IATF16949 and UL60947 WTDP Laboratory certification.

2010
Established Huangshan Wangrong Electronics Co.,Ltd.

2008
Separated from Oriental Wang He Established WangRong Electronics (Shenzhen) Co., Ltd.

Obtained ISO9001,IS014001 Certificate.

2000
Renamed as Oriental Wang He assembly Factory

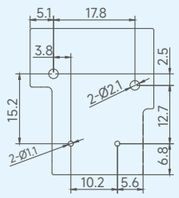
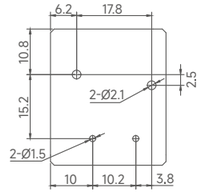
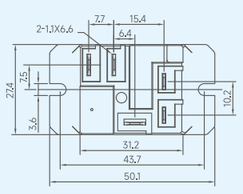
Established Wonder Propersity Co., Ltd. in HongKong.

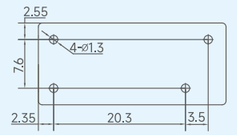
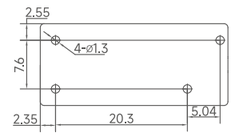
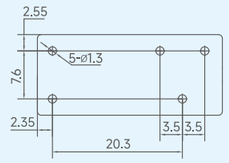
1999
Renamed as Siemens branch factory of OEG Asia EC Section.

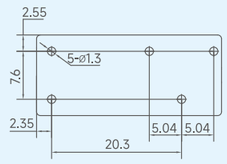
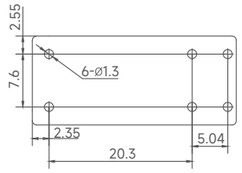
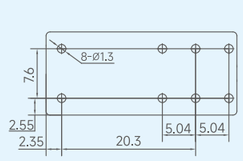
1995
Established OEG branch factory in Shajing, Shenzhen.

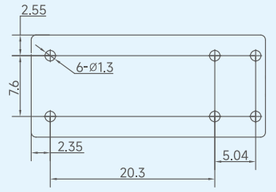
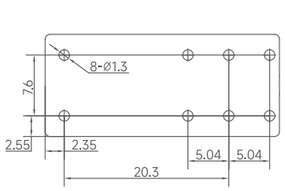
OUR CULTURE

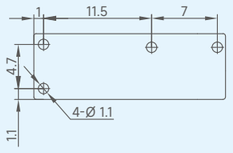
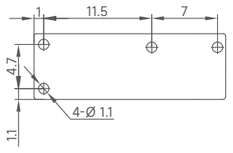
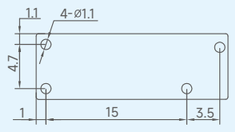
To cast brand with profession, to achieve the enterprise with brand, to benefit the world with enterprise! We insist on the business goal to make an enterprise for centuries and create a first-class brand, hold the enterprise spirit of being faithful and practical, being unified and innovative, being fair and just, being co-prosperous and coexistent, and carry out the quality policy of quality first and customer foremost, full participation and continuous improvement. Focusing on the development goals of lean manufacturing, digitalization, automation and green factory. Looking ahead based on the present, we will open up and innovate to strive for excellence!

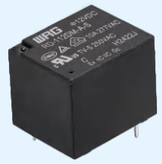
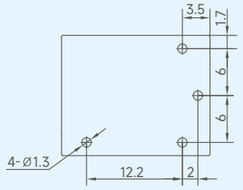
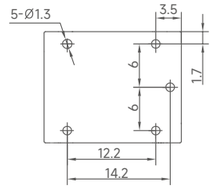
TYPE		RA1	RA2	RA5
		P20	P21	P22
Appearance				
Characteristics		High capacity, high endurance Meets IEC60079-15 Anti-explosion standard	#250 faston terminal High capacity, high endurance Meets IEC60079-15 Anti-explosion standard	#250 #187 faston terminal High capacity, high endurance Control switch has enough insulation distance
Rated current		30 A	30 A	30 A
Contact configuration		1 Form A/C	1 Form A/C	1 Form A/C
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		A Type: 30 A 250 V AC 2HP 240 V AC C Type: N.O. 20 A 250 V AC N.C. 10 A 250 V AC	A Type: 30 A 250 V AC 2HP 240 V AC C Type: N.O. 20 A 250 V AC N.C. 10 A 250 V AC	A Type: 30 A 250 V AC 2HP 240 V AC C Type: N.O. 20 A 250 V AC N.C. 10 A 250 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 5~48 V	DC: 5~48 V	DC: 5~48 V
Coil power		L: 900 mW, D: 1,000 mW	L: 900 mW, D: 1,000 mW	L: 900 mW, D: 1,000 mW
Mechanical life		1×10^7 times	1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,500 Vrms	1,500 Vrms	1,500 Vrms
	Coil & contact	4,000 Vrms	4,000 Vrms	4,000 Vrms
	Surge resistive (initial)	4,000 Vrms	4,000 Vrms	4,000 Vrms
Operating temperature		-40~85 °C	-40~85 °C	-40~85 °C
Enclosure type		Flux-proof, sealed	Flux-proof	Flux-proof
Dimension L×W×H		32.0x27.0x20.0 mm	32.5x27.0x20.4 mm	50.1×27.4×27.7 mm
Mounting		PCB	PCB & faston terminal	Faston terminal & flange type
Safety certificate		cULus, TUV, CQC	cULus, TUV, CQC	cULus, TUV, CQC
Weight		26 g	29 g	32 g
PCB layout (mm) Bottom view				

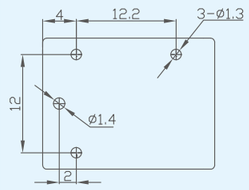
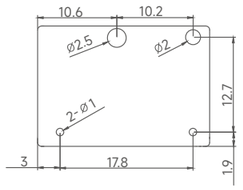
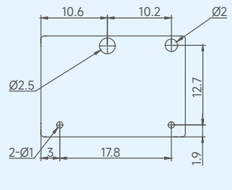
TYPE		RB(1P)	RB(1P)	RB(1P)
		P25	P27	P26
Appearance				
Characteristics		Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil	Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil	Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil
Rated current		20 A	20 A	16 A
Contact configuration		1 Form A	1 Form A	1 Form C
Contact material		AgNi, $AgSnO_2$	AgNi, $AgSnO_2$	AgNi, $AgSnO_2$
Rated load		16 A 277 V AC 20 A 250 V AC 1/2HP 120 V AC	16 A 277 V AC 20 A 250 V AC 1/2HP 120 V AC	N.O. 16 A 277 V AC N.C. 8 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC:3~48 V	DC:3~48 V	DC:3~48 V
Coil power		400 mW	400 mW	400 mW
Mechanical life		1×10^7 times	1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Coil & contact	5,000 Vrms	5,000 Vrms	5,000 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms	10,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		28.9×12.6×15.7 mm	28.9×12.6×15.7 mm	28.9×12.6×15.7 mm
Mounting		PCB	PCB	PCB
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE
Weight		14 g	14 g	14 g
PCB layout (mm) Bottom view				

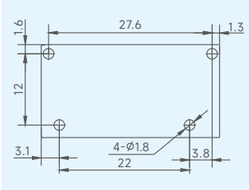
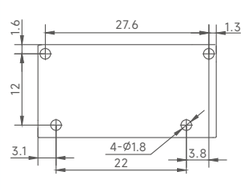
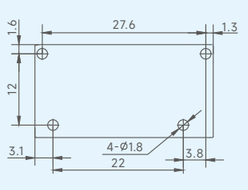
TYPE		RB (1P)	RB(1P)	RB(1P)
		P26	P25	P26
Appearance				
Characteristics		Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil	Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil	Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil
Rated current		16 A	20 A	16 A
Contact configuration		1 Form C	1 Form A	1 Form C
Contact material		AgNi, $AgSnO_2$	AgNi, $AgSnO_2$	AgNi, $AgSnO_2$
Rated load		N.O. 16 A 277 V AC N.C. 8 A 277 V AC	16 A 277 V AC 20 A 250 V AC 1/2HP 120 V AC	N.O. 16 A 277 V AC N.C. 8 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC:3~48 V	DC:3~48 V	DC:3~48 V
Coil power		400 mW	400 mW	400 mW
Mechanical life		1×10^7 times	1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Coil & contact	5,000 Vrms	5,000 Vrms	5,000 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms	10,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		28.9×12.6×15.7 mm	28.9×12.6×15.7 mm	28.9×12.6×15.7 mm
Mounting		PCB	PCB	PCB
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE
Weight		14 g	14 g	14 g
PCB layout (mm) Bottom view				

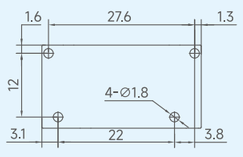
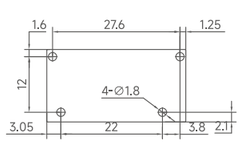
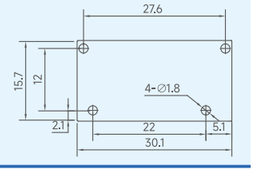
TYPE		RB(2P)	RB(2P)
		P28	P28
Appearance			
Characteristics		Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil	Meets IEC60079-15 Anti-explosion standard Dielectric strength between coil&contact: 5,000 V AC Class F coil
Rated current		8 A	8 A
Contact configuration		2 Form A	2 Form C
Contact material		AgNi, $AgSnO_2$	AgNi, $AgSnO_2$
Rated load		8 A 277 V AC 1/4HP 120 V AC	N.O. 8 A 277 V AC N.C. 4 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC:3~48 V	DC:3~48 V
Coil power		400 mW	400 mW
Mechanical life		1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	Homopolar: 1,000 Vrms Heterospolar: 2,500 Vrms	Homopolar: 1,000 Vrms Heterospolar: 2,500 Vrms
	Coil & contact	5,000 Vrms	5,000 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		28.9×12.6×15.7 mm	28.9×12.6×15.7 mm
Mounting		PCB	PCB
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE
Weight		14 g	14 g
PCB layout (mm) Bottom view			

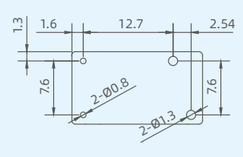
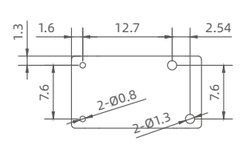
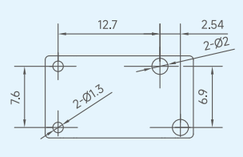
TYPE		RC(STANDARD TYPE)	RC(STANDARD TYPE)	RC(A TYPE)
		P30	P31	P32
Appearance				
Characteristics		200 mW high sensitivity type Sealed & high performance 7 mm ultra-thin relay Meets IEC60079-15 Anti-explosion standard	200 mW high sensitivity type Sealed & high performance 7 mm ultra-thin relay Meets IEC60079-15 Anti-explosion standard	200 mW high sensitivity type Sealed & high performance 7 mm ultra-thin relay Meets IEC60079-15 Anti-explosion standard
Rated current		3 A	5 A	3 A / 5 A
Contact configuration		1 Form A	1 Form A	1 Form A
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		3 A 250 V AC 3 A 30 V DC 1/8HP 240 V AC	5 A 250 V AC 5 A 30 V DC 1/8HP 240 V AC	3 A 250 V AC 3 A 30 V DC 5 A 250 V AC 5 A 30 V DC 1/8HP 240 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 5~24 V	DC: 5~24 V	DC: 5~24 V
Coil power		200 mW	200 mW	200 mW
Mechanical life		5×10^6 times	5×10^6 times	5×10^6 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	750 Vrms	750 Vrms	750 Vrms
	Coil & contact	4,000 Vrms	4,000 Vrms	4,000 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms	10,000 Vrms
Operating temperature		-40~85 °C	-40~85 °C	-40~85 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		20.4×7.0×15.1 mm	20.4×7.0×15.1 mm	20.4×7.0×15.1 mm
Mounting		PCB	PCB	PCB
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE
Weight		3 g	3 g	3 g
PCB layout (mm) Bottom view				

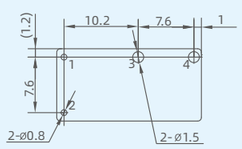
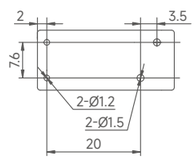
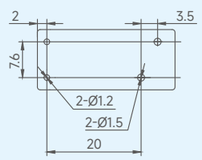
TYPE		RD(4PIN)	RD(FORM C)
		P35	P36
Appearance			
Characteristics		Compact design Class F Coil TV load is available	Compact design Class F Coil
Rated current		15 A	15 A
Contact configuration		1 Form A	1 Form C
Contact material		Ag alloy	Ag alloy
Rated load		15 A 277 V AC 10 A 277 V AC 1/4HP 240 V AC TV-5 250 V AC	N.O. 7 A 277 V AC N.C. 3 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 3~60 V	DC: 3~60 V
Coil power		360 mW	360 mW
Mechanical life		1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	750 Vrms	750 Vrms
	Coil & contact	1,500 Vrms	1,500 Vrms
	Surge resistive (initial)	2,500 Vrms	2,500 Vrms
Operating temperature		-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		19.0×15.4×15.6 mm	19.0×15.4×15.6 mm
Mounting		PCB	PCB
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC, VDE
Weight		9 g	9 g
PCB layout (mm) Bottom view			

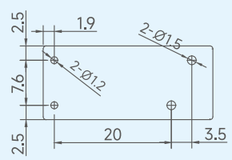
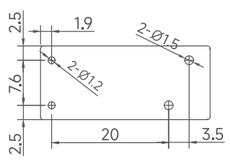
TYPE		RDH	RE(10 A)	RE(16 A)
		P38	P40	P41
Appearance				
Characteristics		Slim type with 16 mm width	Low shape Low power consumption 200 mW high sensitivity type	Low shape Low power consumption 200 mW high sensitivity type
Rated current		17 A	10 A	16 A
Contact configuration		1 Form A	1 Form A	1 Form A
Contact material		$AgSnO_2$, AgNi	Ag alloy	Ag alloy
Rated load		17 A 277 V AC, TV-10, 1HP 240 V AC	10 A 250 V AC 10 A 30 V DC 1/3HP 240 V AC	15 A 250 V AC 16 A 250 V AC 1/3HP 240 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 3~48 V	DC: 5~24 V	DC: 5~24 V
Coil power		360 mW	200 mW	200 mW
Mechanical life		1×10^7 times	1×10^6 times	1×10^6 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Coil & contact	2,500 Vrms	2,000 Vrms	2,000 Vrms
	Surge resistive (initial)	10,000 Vrms	5,000 Vrms	5,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		21.0×16.0×20.6 mm	23.0×16.1×10.2 mm	23.0×16.1×10.2 mm
Mounting		PCB	PCB	PCB
Safety certificate		CQC, TUV, UL	cULus, TUV, CQC	cULus, TUV, CQC
Weight		12.6 g	9 g	9 g
PCB layout (mm) Bottom view				

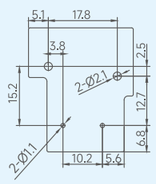
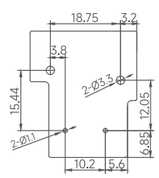
TYPE		RF(20 A)	RF(25 A)	RF(32 A)
		P43	P44	P45
Appearance				
Characteristics		#250 faston terminal High capacity,high endurance Class F Coil Meets IEC60079-15 Anti-explosion standard	#250 faston terminal High capacity,high endurance Class F Coil Meets IEC60079-15 Anti-explosion standard	#250 faston terminal High capacity,high endurance Class F Coil Meets IEC60079-15 Anti-explosion standard
Rated current		20 A	25 A	32 A
Contact configuration		1 Form A	1 Form A	1 Form A
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		20 A 250 V AC 2HP 240 V AC 20 A 277 V AC 1-1/2HP 277 V AC	25 A 250 V AC 25 A 277 V AC 2HP 240 V AC	32 A 250 V AC 32 A 277 V AC 2HP 240 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 5~24 V	DC: 5~24 V	DC: 5~24 V
Coil power		900 mW	900 mW	900 mW
Mechanical life		5×10^6 (min 2×10^6) times	5×10^6 (min 2×10^6) times	5×10^6 (min 2×10^6) times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Coil & contact	4,500 Vrms	4,500 Vrms	4,500 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms	10,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C	-40~105 °C
Enclosure type		Flux-proof	Flux-proof	Flux-proof
Dimension L×W×H		30.1×15.7×23.3 mm	30.1×15.7×23.3 mm	30.1×15.7×23.3 mm
Mounting		PCB & faston terminal	PCB & faston terminal	PCB & faston terminal
Safety certificate		cULus, TUV, CQC	cULus, TUV, CQC, VDE	cULus, TUV, CQC
Weight		22 g	22 g	22 g
PCB layout (mm) Bottom view				

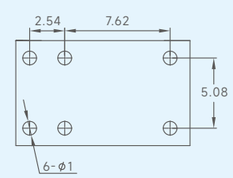
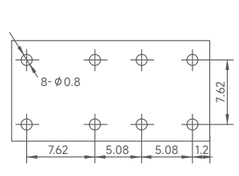
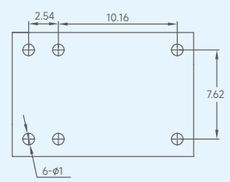
TYPE		RF(P TYPE)	RF(BIG GAP)	RFL(25 A)
		P46	P47	P49/50
Appearance				
Characteristics		High capacity, high endurance Class F Coil Meets IEC60079-15 Anti-explosion standard	High capacity, high endurance Class F Coil Meets IEC60079-15 Anti-explosion standard	High capacity, high endurance Class F Coil
Rated current		20 A / 25 A	33 A	20 A / 25 A
Contact configuration		1 Form A	1 Form A	1 Form A
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		25 A 250 V AC 25 A 277 V AC 2HP 240 V AC 20 A 250 V AC 20 A 277 V AC	33 A 250 V AC 33 A 277 V AC	20 A 250 V AC 20 A 277 V AC 2HP 240 V AC 25 A 250 V AC 25 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 5~24 V	DC: 5~24 V	DC: 5~24 V
Coil power		900 mW	1400 mW	900 mW
Mechanical life		5×10^6 (min 2×10^6) times	1×10^6 times	2×10^6 times
Electrical life (Resistive load)		1×10^5 times	3×10^4 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	2,500 Vrms	1,000 Vrms
	Coil & contact	4,500 Vrms	4,500 Vrms	4,500 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms	10,000 Vrms
Operating temperature		-40~85 °C	-40~85 °C	-40~85 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof
Dimension L×W×H		30.1×15.7×23.3 mm	30.1×15.7×32.8 mm	30.1×15.7×32.8 mm
Mounting		PCB	PCB	PCB & faston terminal
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC	cULus, TUV, CQC, VDE
Weight		20 g	20 g	30 g
PCB layout (mm) Bottom view				

TYPE		RJ(5A/8A)	RJ(10 A)	RJ(16 A)
		P53	P54	P55
Appearance				
Characteristics		High sensitivity type Dielectric strength between coil&contact: 4,000 V AC Class F Coil Meets IEC60079-15 Anti-explosion standard	High sensitivity type Dielectric strength between coil&contact: 4,000 V AC Class F Coil Meets IEC60079-15 Anti-explosion standard	High sensitivity type Dielectric strength between coil&contact: 4,000 V AC Class F Coil Meets IEC60079-15 Anti-explosion standard
Rated current		5 A / 8 A	10 A	16 A
Contact configuration		1 Form A	1 Form A	1 Form A
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		5 A 250 V AC 5 A 277 V AC 1/3 HP 240 V AC 1/6 HP 277 V AC 8 A 250 V AC 8 A 277 V AC	10 A 250 V AC 5 A 3 0V DC 10 A 277 V AC 1/3 HP 240 V AC	16 A 250 V AC 16 A 277 V AC TV-8 250 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 5~48 V	DC: 5~48 V	DC: 5~48 V
Coil power		D Type: 450 mW L Type: 200 mW	D Type: 450 mW L Type: 200 mW	D Type: 450 mW L Type: 200 mW
Mechanical life		1×10^7 times	1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	5×10^4 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Coil & contact	4,000 Vrms	4,000 Vrms	4,000 Vrms
	Surge resistive (initial)	6,000 Vrms	6,000 Vrms	6,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		18.2×10.2×15.5 mm	18.2×10.2×15.5 mm	18.4×10.2×15.5 mm
Mounting		PCB	PCB	PCB
Safety certificate		cULus, TUV, CQC	cULus, TUV, CQC	cULus, TUV, CQC
Weight		6 g	6 g	6 g
PCB layout (mm) Bottom view				

TYPE		RJE	RMI	RMIH
		P57/58	P61	P62
Appearance				
Characteristics		200 mW high sensitivity type Dielectric strength between coil&contact: 4,000 V AC Class F Coil Meets IEC60079-15 Anti-explosion standard	Flux-proof Type Dielectric strength between coil&contact: 5,000 V AC Class F Coil Meets IEC60079-15 Anti-explosion standard	High capacity, high endurance Dielectric strength between coil&contact: 5,000 V AC Class F Coil Meets IEC60079-15 Anti-explosion standard
Rated current		10 A	10 A	16 A
Contact configuration		1 Form A/C	1 Form A/C	1 Form A/C
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		A Type: 10 A 125 V AC 5 A 277 V AC 10 A 30 V DC C Type: N.O. 5 A 277 V AC N.C. 3 A 277 V AC	A Type: 10 A 277 V AC 1/4HP 250 V AC C Type: N.O. 10 A 277 V AC N.C. 5 A 277 V AC	A Type: 16 A 277 V AC 1/3HP 250 V AC C Type: N.O. 16 A 277 V AC N.C. 8 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC: 3~24 V	DC: 5~24 V	DC: 5~24 V
Coil power		D Type: 400 mW L Type: 200 mW	D Type: 720 mW L Type: 540 mW	D Type: 720 mW L Type: 540 mW
Mechanical life		1×10^7 times	1×10^6 times	1×10^6 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Coil & contact	4,000 Vrms	5,000 Vrms	5,000 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms	10,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C	-40~105 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		20.0×10.0×15.2 mm	29.2×12.8×20.6 mm	29.2×12.8×20.6 mm
Mounting		PCB	PCB	PCB
Safety certificate		cULus, TUV, CQC, VDE	cULus, TUV, CQC	cULus, TUV, CQC
Weight		7 g	14 g	14 g
PCB layout (mm) Bottom view				

TYPE		RMIF	RMIF
		P64	P65
Appearance			
Characteristics		#187 Faston terminal Dielectric strength between coil&contact: 5,000 V AC Class F coil	Without faston terminal Dielectric strength between coil&contact: 5,000 V AC Class F coil
Rated current		20 A	20 A
Contact configuration		1 Form A	1 Form A
Contact material		Ag alloy	Ag alloy
Rated load		20 A 125 V AC 17 A 277 V AC 16 A 277 V AC	20 A 125 V AC 17 A 277 V AC 16 A 277 V AC
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		DC:5~24 V	DC:5~24 V
Coil power		D Type: 720 mW L Type: 540 mW	D Type: 720 mW L Type: 540 mW
Mechanical life		1×10^6 times	1×10^6 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,000 Vrms
	Coil & contact	5,000 Vrms	5,000 Vrms
	Surge resistive (initial)	10,000 Vrms	10,000 Vrms
Operating temperature		-40~105 °C	-40~105 °C
Enclosure type		Flux-proof	Flux-proof
Dimension L×W×H		29.0×12.6×24.4 mm	29.0×12.6×24.4 mm
Mounting		PCB & faston terminal	PCB
Safety certificate		cULus, TUV, CQC	cULus, TUV, CQC
Weight		16 g	15 g
PCB layout (mm) Bottom view			

TYPE		R53G(40A)	R53G(60A)
		P67	P68
Appearance			
Characteristics		Sealed type Class F Coil	Sealed type Class F Coil
Rated current		40 A	60 A (Toggle)
Contact configuration		1 Form A/C	1 Form A
Contact material		Ag alloy	Ag alloy
Rated load		1 Form A: 40 A 250 V AC 30 A 250 V AC 1 Form C: N.O. 30 A 240 V AC N.C. 20 A 240 V AC	40 A 250 V AC 60 A 250 V AC 20 A - 60 A - 20 A (Make-Carry-Break)
Min. allowable load		100 mA, 5 V DC	100 mA, 5 V DC
Coil voltage		D Type: 5~48 V DC	D Type: 5~48 V DC
Coil power		D Type: 900 mW	D Type: 900 mW
Mechanical life		1×10^7 times	1×10^6 times
Electrical life (Resistive load)		1×10^5 times	3×10^4 times
Dielectric strength	Disconnect the contact	1,000 Vrms	1,500 Vrms
	Coil & contact	4,000 Vrms	2,500 Vrms
	Surge resistive (initial)	4,000 Vrms	4,000 Vrms
Operating temperature		-40~85 °C	-40~85 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		32.0×27.0×20.0 mm	32.0×27.0×20.0 mm
Mounting		PCB	PCB
Safety certificate		cULus, TUV, CQC	cULus, TUV, CQC
Weight		25 g	26 g
PCB layout (mm) Bottom view			

TYPE		RSA	RSB	RSC (STANDARD TYPE)
		P70	P72	P74
Appearance				
Characteristics		High sensitivity Dielectric strength between coil&contact: 1,000 V AC Class F coil	High sensitivity Dielectric strength between coil&contact: 1,000 V AC Class F coil	High sensitivity Dielectric strength between coil&contact: 1,000 V AC Class F coil
Rated current		1 A	2 A	2 A
Contact configuration		1 FormC	2 Form C	1 Form C
Contact material		Ag alloy	Ag alloy	Ag alloy
Rated load		0.5 A 125 V AC 1 A 24 V DC	1 A 125 V AC 2 A 30 V DC	1 A 125 V AC 2 A 24 V DC
Min. allowable load		1 mA, 0.1 V DC	0.5 mA, 0.1 V DC	1 mA, 0.1 V DC
Coil voltage		DC: 3~24 V	DC: 4.5~24 V DC	DC: 3~24 V DC
Coil power		D Type: 200 mW L Type: 150 mW	D Type: 360 mW L Type: 200 mW	D Type: 360 mW L Type: 200 mW
Mechanical life		1×10^7 times	1×10^7 times	1×10^7 times
Electrical life (Resistive load)		1×10^5 times	1×10^5 times	1×10^5 times
Dielectric strength	Disconnect the contact	400 Vrms	Homopolar: 500 Vrms Heterospolar: 1,000 Vrms	500 Vrms
	Coil & contact	1,000 Vrms	1,000 Vrms	1,000 Vrms
	Surge resistive (initial)	/	/	/
Operating temperature		-30~85 °C	-30~85 °C	-30~85 °C
Enclosure type		Flux-proof, sealed	Flux-proof, sealed	Flux-proof, sealed
Dimension L×W×H		12.6×7.6×10.0 mm	21.0×10.0×11.9 mm	15.5×10.6×12.0 mm
Mounting		PCB	PCB	PCB
Safety certificate		Certificate pending	cULus	cULus
Weight		2.2 g	5 g	3 g
PCB layout (mm) Bottom view				

RA SERIES POWER RELAY

1 Form A/C
Rated current: 10 to 30 A
High capacity, high endurance

Type designation

RA1	-1	12	D	M	*	F	-S	XXX

Model designation	RA1: A type case with PCB terminal RA2: B type case with PCB & faston terminal RA5: C type case with faston terminal
Number of poles	1: 1 pole
Coil voltage	05: 5 V 12: 12 V 24: 24 V 08: 8 V 18: 18 V 48: 48V only for 09: 9 V 22: 22 V AgNi contacts
Coil power	L: 900 mW D: 1000 mW
Contact configuration	M: 1 Form A Blank: 1 Form C
Contact material	Blank: $AgSnO_2$ 4: AgNi
Insulation class	Blank: class A F: class F
Enclosure type	Blank: flux-proof S: sealed
Special request	335: product in accordance IEC 60335-1 (GWT)

SSA approval rating

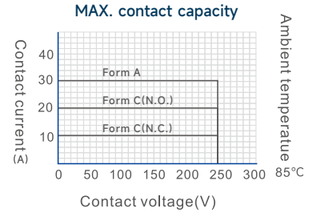
cULus	(1formA)	30 A / 250 V AC (Resistive)	85°C	100,000ops
		2 HP / 240 V AC (HP)	85°C	30,000ops
	UL508/60947	16 FLA / 96 LRA / 250 V AC	85°C	50,000ops
	IEC60730-1	20(10) A / 250 V AC	85°C	100,000ops
	(1formC)	20 A (10 A) / 250V AC (Resistive)	85°C	100,000ops
		20 A (10 A) / 28 V DC (Resistive)	85°C	100,000ops
TUV	(1formA)	30 A / 250 V AC	85°C	100,000ops
	(1formC)	20 A (10 A) / 250 V AC	85°C	100,000ops
CQC	(1formA)	30 A / 250 V AC	85°C	80,000ops
	(1formC)	20 A (10 A) / 250 V AC	85°C	80,000ops

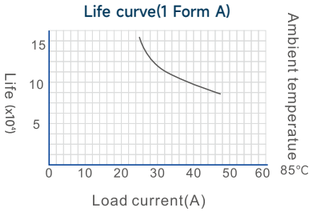
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	Dtype		
5	185.2	200	27	25	900	1000	≤3.75	≥0.25
8	112.7	125	71	64	900	1000	≤6.00	≥0.40
9	92.8	111.1	97	81	900	1000	≤6.75	≥0.45
12	77.4	83.3	155	144	900	1000	≤9.00	≥0.60
18	50	55.6	360	324	900	1000	≤13.50	≥0.90
22	41	45.5	537.8	484	900	1000	≤16.50	≥1.10
24	36.4	41.7	660	576	900	1000	≤18.00	≥1.20
48	18.8	20.8	2560	2304	900	1000	≤36.00	≥2.40

MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

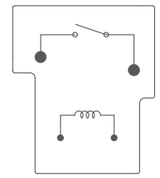




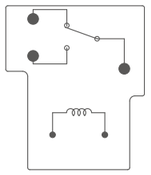
RA1

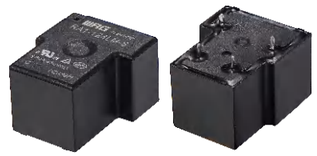
1 Form A/C, 30 A,
Meets IEC 60079-15
Anti-Explosion standard

1 Form A



1 Form C



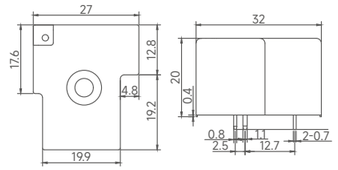


Technical parameters

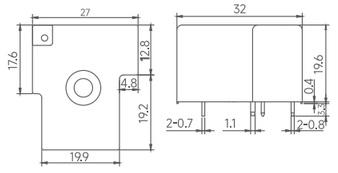
Coil data	Coil input voltage		5/8/9/12/18/22/24/48 V DC
	Coil power		L Type: 900 mW, D Type: 1,000 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 15 ms Less than 10 ms
Contact data	Contact numbers		1 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		28 V DC, 250 V AC
	Max. swiching power		A Type: 7,500 VA, C Type: N.O. 5,000 VA, N.C. 2,500 VA
	Contact ratings		A Type: 30 A 250 V AC, 2HP 240 V AC C Type: N.O. 20 A 250 V AC, N.C 10 A 250 V AC.
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		$1x10^7$ times
	Electrical Service life		$1x10^5$ times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1.5 kV AC /1 min
	Surge voltage		4 kV AC(1.2/50 μs)
	Insulation Resistance		1,000 MΩ(500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s^2 Endurance 980 m/s^2
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		32.0x27.0x20.0 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		26 g
	Compliance certification number		cULus:E345228, TUV:R50228669, CQC:CQCI2002078691

Outline dimensions

RA1 (1 Form A)

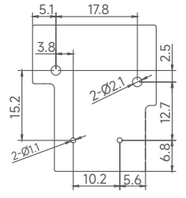


RA1 (1 Form C)

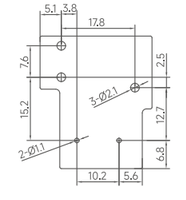


PCB board layout (Bottom view)

RA1 (1 Form A)



RA1 (1 Form C)



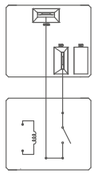
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

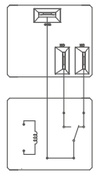
RA2

1 Form A/C, 30 A,
#250 faston terminal,
Meets IEC 60079-15 Anti-Explosion standard

1 Form A



1 Form C

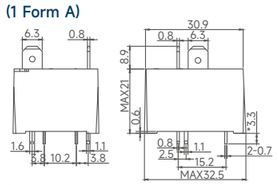


Technical parameters

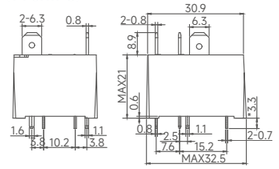
Coil data	Coil input voltage		5/8/9/12/18/22/24/48 V DC
	Coil power		L Type: 900 mW D Type: 1,000 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 15 ms Less than 10 ms
Contact data	Contact numbers		1 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		28 V DC, 250 V AC
	Max. swiching power		A Type: 7,500 VA, C Type: N.O. 5,000 VA, N.C. 2,500 VA
	Contact ratings		A Type: 30 A 250 V AC, 2HP 240 V AC C Type: N.O. 20 A 250 V AC N.C. 10 A 250 V AC.
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1.5 kV AC / 1 min
	Surge voltage		4 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
			Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		32.5x27.0x20.4 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB & faston terminal
	Weight		29 g
	Compliance certification number		cULus:E345228, TUV:R50228669, CQC:CQCI2002078691

Outline dimensions

RA2 (1 Form A)

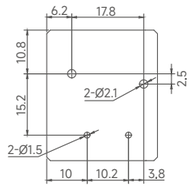


RA2 (1 Form C)

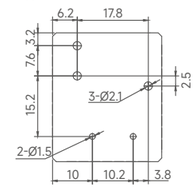


PCB board layout (Bottom view)

RA2 (1 Form A)



RA2 (1 Form C)



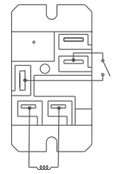
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

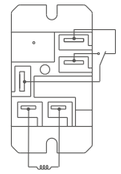
RA5

1 Form A/C, 30 A,
#250 #187 faston terminal,
control switch has enough
insulation distance

1 Form A



1 Form C

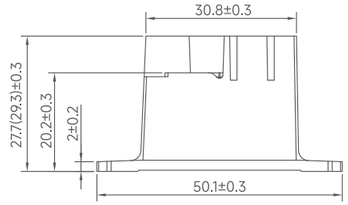


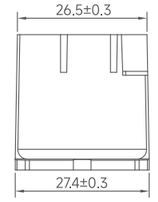
Technical parameters

Coil data	Coil input voltage		5/8/9/12/18/22/24/48 V DC
	Coil power		L Type: 900 mW, D Type: 1,000 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 15 ms Less than 10 ms
Contact data	Contact numbers		1 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		28 V DC, 250 V AC
	Max. swiching power		A Type: 7,500 VA, C Type: N.O. 5,000 VA, N.C. 2,500 VA
	Contact ratings		A Type: 30 A 250 V AC, 2HP 240 V AC C Type: N.O. 20 A 250 V AC, N.C. 10 A 250 V AC.
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1.5 kV AC / 1 min
	Surge voltage		4 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
			Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		50.1×27.4×27.7 mm
	Enclosure type		Flux-proof, sealed
	Mounting		Faston terminal & flange type
	Weight		32 g
	Compliance certification number		cULus:E345228, TUV:R50228669, CQC:CQCI2002078691

Outline dimensions

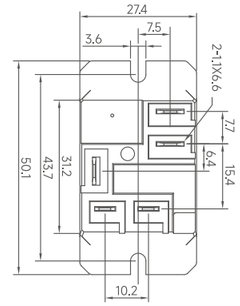
RA5





PCB board layout (Bottom view)

RA5



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RB SERIES POWER RELAY

- 1 Form A/C, 2 Form A/C
- Rated current: 8 to 20 A(1P)/4 to 8 A(2P)
- Small high-capability relay
- Meets IEC 60079-15 Anti-explosion Standard
- Dielectric strength between coil & contact 5,000 V AC
- Class F coil insulation
- Control switch has enough insulation distance
- TV Load is available

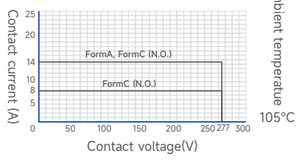
Type designation

RB	-1	12	D	M	*	F	1	-1	-S	XXX

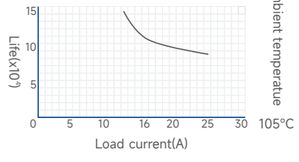
Model designation	RB
Number of poles	1: 1 pole 2: 2 poles
Coil voltage	03: 3V 06: 6 V 12: 12 V 24: 24 V 05: 5 V 09: 9 V 18: 18 V 48: 48 V
Coil power	D: 400 mW
Contact configuration	M: Form A Blank: Form C B: Form B
Contact material	Blank: AgNi 1: $AgSnO_2$
Insulation class	Blank: class A F: class F
Distance between different terminals	1: 3.5 mm(4Pins FormA) 4: 5.0 mm(5Pins FormC) 7: 3.5 mm(4Pins FormB) 2: 5.0 mm(4Pins FormA) 5: 5.0 mm(6Pins FormA) 8: 5.0 mm(4Pins FormB) 3: 3.5 mm(5Pins FormC) 6: 5.0 mm(8Pins FormC) 9: 5.0 mm(6Pins FormB)
Contact dimension (Only for 1P)	1: Φ4.5 mm Blank: Φ3.5 mm
Enclosure type	Blank: flux-proof S: sealed
Special request	335: Stands for product in accordance with IEC 60335-1 (GWT)

Reference data

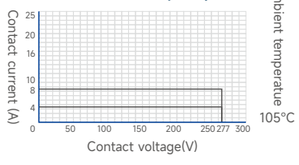
MAX.contact capacity(1P)



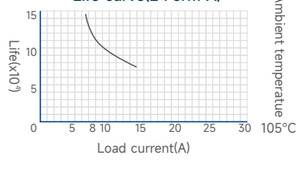
Life curve(1 Form A)



MAX.contact capacity(2P)



Life curve(2 Form A)



SSA approval rating

cULus	(1formA)	16A/277VAC (Resistive)	105°C	100,000ops
		1/2HP120VAC (HP)	105°C	30,000ops
		20A/250VAC (Resistive)	105°C	30,000ops
		TV-10 250VAC (TV)	40°C	25,000ops
		B300/250VAC (Pilot Duty)	105°C	50,000ops
		10FLA/60LRA/250VAC (Motor)	105°C	50,000ops
		1/1.5HP 250VAC	105°C	50,000ops
		IEC60730-1:		
		10(6)A/250VAC	105°C	100,000ops
		10(10)A/250VAC	105°C	30,000ops
	(1formB)	16A/277VAC (Resistive)	105°C	100,000ops
		20A/250VAC (Resistive)	105°C	30,000ops
		TV-5 250VAC	40°C	25,000ops
	(1formC)	N.O. 16A/277VAC	105°C	100,000ops
		N.C. 8A/277VAC	105°C	100,000ops
		N.O. TV-10 250VAC	40°C	25,000ops
		N.C. 16A 250VAC	105°C	30,000ops
		N.C. TV-5 250VAC	40°C	25,000ops
		N.O. 1/2HP 120VAC (HP)	105°C	30,000ops
		N.O. B300/250VAC (Pilot Duty)	105°C	50,000ops
		N.O. 10FLA/60LRA/250VAC(Motor)	105°C	50,000ops
		N.O. 1/1.5HP 250VAC	105°C	50,000ops
		IEC60730-1:		
		N.O. 10(6)A/250VAC	105°C	100,000ops
		N.O. 10(10)A/250VAC	105°C	30,000ops
	(2formA)	8A/277VAC (Resistive)	105°C	100,000ops
		1/4HP 120VAC (HP)	105°C	30,000ops
		TV-5 250VAC	40°C	25,000ops
	(2formB)	8A/277VAC (Resistive)	105°C	100,000ops
	(2formC)	N.O. 8A/277VAC	105°C	100,000ops
		N.C. 4A/277VAC	105°C	100,000ops
		N.O. 1/4HP 120VAC (HP)	105°C	30,000ops

TUV	(1formA)	16A/277VAC	105°C	100,000ops
	(1formC)	N.O. 16A/277VAC	105°C	100,000ops
		N.C. 8A/277VAC	105°C	100,000ops
	(2formA)	8A/277VAC	105°C	100,000ops
	(2formC)	N.O. 8A/277VAC	105°C	100,000ops
		N.C. 4A/277VAC	105°C	100,000ops
CQC	(1formA)	16A/277VAC	105°C	100,000ops
	(1formC)	N.O. 16A/277VAC	105°C	100,000ops
		N.C. 8A/277VAC	105°C	100,000ops
	(2formA)	10A/277VAC	105°C	100,000ops
		8A/277VAC	105°C	100,000ops
	(2formC)	N.O. 8A/277VAC	105°C	100,000ops
		N.C. 4A/277VAC	105°C	100,000ops
VDE	(1formA)	16A/277VAC	105°C	20,000ops
	(1formA)1	16A/277VAC	105°C	40,000ops
	(1formA)	22A/277VAC	85°C	15,000ops
	(1formA)	24A/277VAC	85°C	5,000ops
	(1formA)1	20A/277VAC	105°C	20,000ops
	(1formA)1	10A/277VAC cosφ=0.4	105°C	50,000ops
	(1formC)a	16A/277VAC	105°C	20,000ops
	(1formC)1a	16A/277VAC	105°C	40,000ops
	(1formC)a	20A/277VAC	105°C	5,000ops
	(1formC)1a	20A/277VAC	105°C	20,000ops
	(2formC)	8A/4A/277VAC	105°C	20,000ops
	(2formC)1	8A/4A/277VAC	105°C	25,000ops
	(2formC)	8A/8A/277VAC	105°C	30,000ops
	(2formC)1	8A/8A/277VAC	70°C	10,000ops
	(2formC)1	5A/3A/277VAC cosφ=0.4	105°C	45,000ops

no numbers: Only with AgNi contact.
1: Only with $AgSnO_2$ contact.
a: Only NO circuit being tested.

Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
3	133.3	22.5	400	≤2.25	≥0.15
5	80.6	62	400	≤3.75	≥0.25
6	66.7	90	400	≤4.50	≥0.30
9	45	200	400	≤6.75	≥0.45
12	33.3	360	400	≤9.00	≥0.60
18	22.2	810	400	≤13.50	≥0.90
24	16.7	1440	400	≤18.00	≥1.20
48	8.3	5760	400	≤36.00	≥2.40

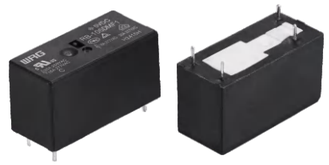
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

RB (1P)

1 Form A, 20 A

4Pins 1 Form A

6Pins 1 Form A

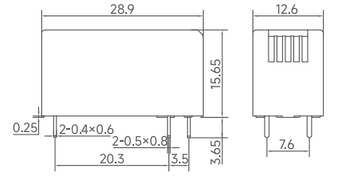


Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/18/24/48 VDC
	Coil power		DC 400 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time / Release time		Less than 15 ms / Less than 8 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		5,000 VA
	Contact ratings		16 A 277 VAC, 20 A 250 V AC, 1/2HP 120 V AC,TV-10① 250 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil / Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2 / 50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s², Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H (mm)		28.9×12.6×15.7 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		14 g
	Compliance certification number		cULus:E345228, TUV:R50249912, CQC:CQC12002086471, VDE:40048321

① TV-10 means the inrush current is 191A/20ms at overload test.

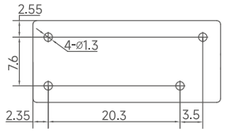
Outline dimensions



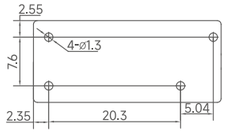
Tolerance	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm

PCB board layout (Bottom view)

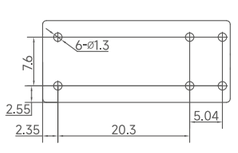
RB-___*_1_-X (1 Form A)



RB-___*_2_-X (1 Form A)



RB-___*_5_-X (1/2 Form A)

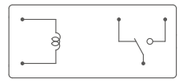


Tolerance	Pitch-row : ±0.1mm	Aperture : +0.1mm

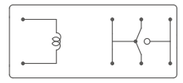
RB (1P)

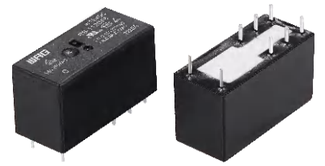
1 Form C, 16 A

5Pins 1 Form C



8Pins 1 Form C



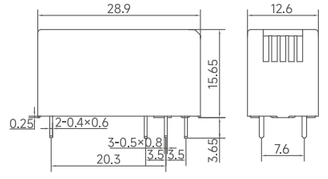


Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/18/24/48 VDC
	Coil power		400 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time / Release time		Less than 15 ms / Less than 8 ms
Contact data	Contact numbers		1 Form C
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		N.O. 4,432 VA, N.C. 2, 216 VA
	Contact ratings		N.O. 16 A 277 V AC, N.C. 8 A 277 V AC, N.O. TV-10① 250 V AC, N.C. TV-5② 250 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil / Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2 / 50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s², Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H (mm)		28.9×12.6×15.7 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		14 g
	Compliance certification number		cULus:E345228, TUV:R50249912, CQC:CQC12002086471, VDE:40048321

① TV-10 means the inrush current is 191A/20ms at overload test. ② TV-5 means the inrush current is 111A/20ms at overload test.

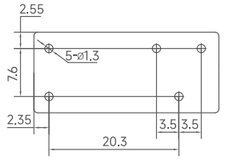
Outline dimensions



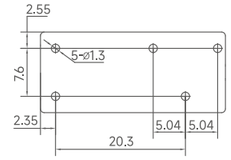
Tolerance	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm

PCB board layout (Bottom view)

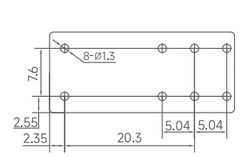
RB-___*_3_-X (1 Form C)



RB-___*_4_-X (1 Form C)



RB-___*_6_-X (1/2 Form C)

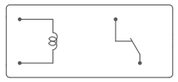


Tolerance	Pitch-row : ±0.1mm	Aperture : +0.1mm

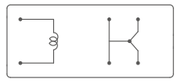
RB (1P)

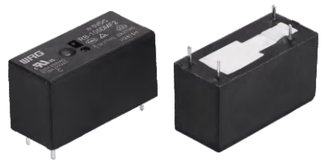
1 Form B, 20 A

4Pins 1 Form B



6Pins 1 Form B

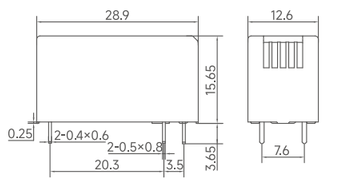




Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/18/24/48 VDC
	Coil power		400 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time / Release time		Less than 15 ms / Less than 8 ms
Contact data	Contact numbers		1 Form B
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		5,000 VA
	Contact ratings		16 A 277 VAC, 20 A 250 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil / Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2 / 50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s², Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H (mm)		28.9×12.6×15.7 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		14 g
	Compliance certification number		cULus:E345228, TUV:R50249912, CQC:CQC12002086471, VDE:40048321

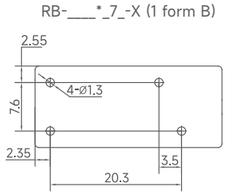
Outline dimensions



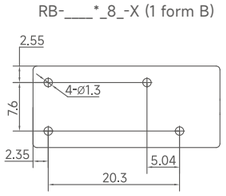
Tolerance		
	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm

PCB board layout (Bottom view)

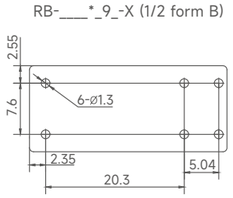
RB-____*_7_-X (1 form B)



RB-____*_8_-X (1 form B)



RB-____*_9_-X (1/2 form B)

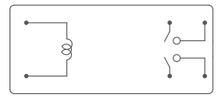


Tolerance	Pitch-row : ±0.1mm	Aperture : +0.1mm

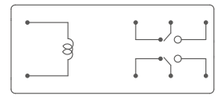
RB (2P)

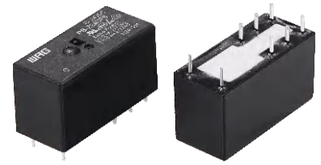
2 Form A/C, 8 A

2 Form A



2 Form C



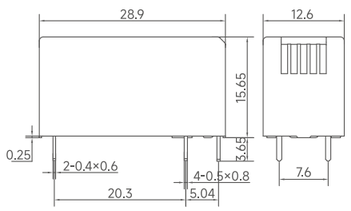


Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/18/24/48 VDC
	Coil power		400 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time / Release time		Less than 15 ms / Less than 8 ms
Contact data	Contact numbers		2 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		A Type: 2, 216 VA, C Type: N.O. 2, 216 VA, N.C. 1, 108 VA
	Contact ratings		A Type: 8 A 277 V AC, 1/4HP 120 V AC, TV-5① 250 V AC C Type: N.O. 8 A 277 V AC, 1/4HP 120 V AC, TV-5 250 V AC, N.C. 4 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil / Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min (same contact group), 2.5 kV AC / 1 min (different contact group)
	Surge voltage		10 kV AC (1.2 / 50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s², Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		28.9×12.6×15.7 mm
	Enclosure type		Flux-proof,sealed
	Mounting		PCB
	Weight		14 g
	Compliance certification number		cULus:E345228, TUV:R50249912, CQC:CQC12002086471, VDE:40048321

① TV-5 means the inrush current is 111A/20ms at overload test.

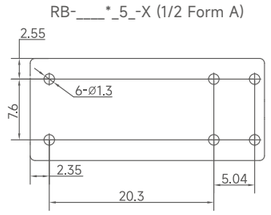
Outline dimensions



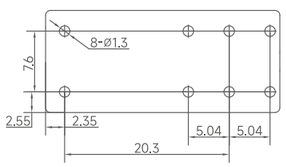
Tolerance		
	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm

PCB board layout (Bottom view)

RB-____*_5_-X (1/2 Form A)



RB-____*_6_-X (1/2 Form C)



Tolerance	Pitch-row : ±0.1mm	Aperture : +0.1mm

RC SERIES POWER RELAY

1 Form A
Rated current: 3 to 5A
Small power relay
200 mW sensitive coil
Safety approval: CQC, cULus, TUV,VDE
Sealed high spec. version
7 mm ultra-thin width
Meets IEC 60079-15 Anti-explosion standard

Type designation

RC	-1	12	D	M	1	*	F	H	-A	-XXX

Model designation	RC
Number of poles	1: 1 pole
Coil voltage	05: 5 V 12: 12 V 09: 9 V 24: 24 V
Coil power	D: 200 mW
Contact configuration	M: Form A
Contact rating	Blank: 3 A 1: 5 A
Contact material	Blank: $AgSnO_2$ 4: AgNi
Insulation class	Blank: class A F: class F
Enclosure type	Blank: Flux-proof H: Sealed
PCB Board layout	Blank: Standard A: A type
Special request	335: Stands for product in accordance with IEC 60335-1 (GWT)

SSA approval rating

cULus	only for AgNi	5A/250VAC (Resistive)	85 °C	100,000ops
		3A/250VAC (Resistive)	85 °C	100,000ops
		1/8HP/240VAC (HP)	85 °C	30,000ops
		5A/30VDC (Resistive)	85 °C	100,000ops
		3A/250VAC	105 °C	100,000ops
		3A/30VDC	105 °C	100,000ops
		5A/250VAC	105 °C	100,000ops
		5A/30VDC	105 °C	100,000ops
		1/4HP/240VAC	105 °C	50,000ops
TUV		5A/250VAC	85 °C	100,000ops
		3A/250VAC	85 °C	100,000ops
CQC		5A/250VAC	85 °C	100,000ops
		3A/250VAC	85 °C	100,000ops
VDE		5A/250VAC	85 °C	100,000ops
		3A/250VAC	85 °C	100,000ops

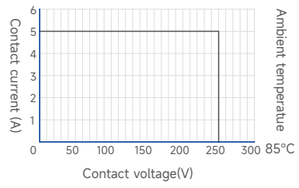
Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
5	40	125	200	≤3.75	≥0.25
9	22.2	405	200	≤6.75	≥0.45
12	16.7	720	200	≤9.00	≥0.60
24	8.3	2880	200	≤18.00	≥1.20

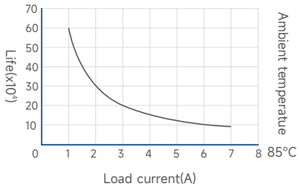
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity



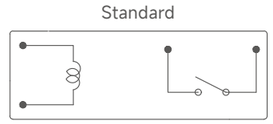
Life curve



RC

1 Form A, 3 A, standard type

Standard

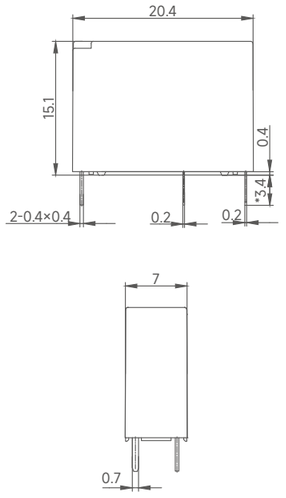


Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 10 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 250 V AC
	Max. swiching power		750 VA
	Contact ratings		3 A 250 V AC, 3 A 30 V DC, 1/8HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		5×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	750 V AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s^2 Endurance 980 m/s^2
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		20.4×7.0×15.1 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		3 g
	Compliance certification number		cULus:E345228, TUV:R50220640, CQC:CQC12002067898, VDE:40034781

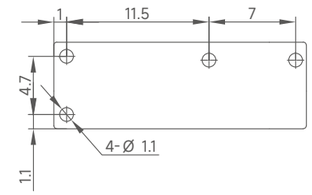
Outline dimensions

Standard



PCB board layout (Bottom view)

Standard



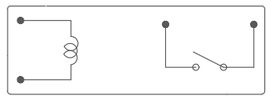
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RC

1 Form A, 5 A, standard type

Standard

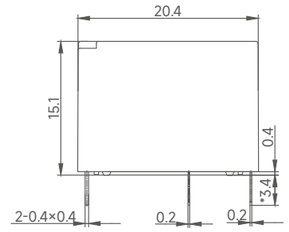


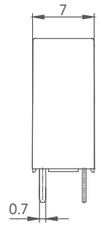
Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 10 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 250 V AC
	Max. swiching power		1250 VA
	Contact ratings		5 A 250 V AC,5 A 30 V DC, 1/8HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		5×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	750 V AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		20.4×7.0×15.1 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		3 g
	Compliance certification number		cULus:E345228, TUV:R50220640, CQC:CQC12002067898, VDE:40034781

Outline dimensions

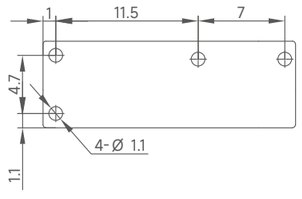
Standard





PCB board layout (Bottom view)

Standard



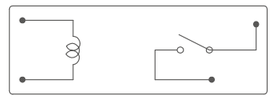
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RC

1 Form A, 3 A /5 A, A type

A type

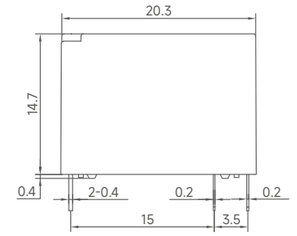


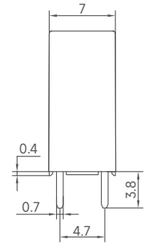
Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 10 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 250 V AC
	Max. swiching power		750VA/1250 VA
	Contact ratings		3 A / 5 A 250 V AC, 3 A / 5 A 30 V DC, 1/8HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		5×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	750 V AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		20.4×7.0×15.1 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		3 g
	Compliance certification number		cULus:E345228, TUV:R50220640, CQC:CQC12002067898, VDE:40034781

Outline dimensions

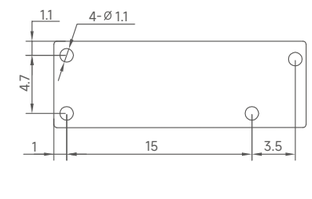
A type





PCB board layout (Bottom view)

A type



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RD SERIES POWER RELAY

1 Form A and 1 Form C
Rated current: 3 to 15 A
Compact design
Control switch has enough insulation distance
Class F Coil
Meets IEC 60079-15 Anti-explosion Standard (Pending)
TV-5 Load is available
Contact clearance ≥0.8mm products are available

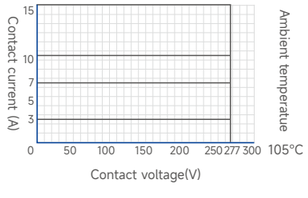
Type designation

RD | -1 | 12 | D | M | * | F | -A | -S | XXX

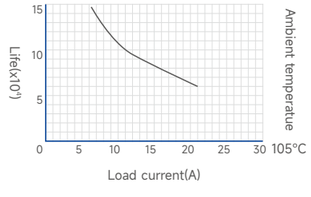
Model designation	RD
Number of poles	1: 1 pole
Coil voltage	03: 3 V 09: 9 V 48: 48 V 05: 5 V 12: 12 V 60: 60 V 06: 6 V 24: 24 V
Coil power	D: 360 mW
Contact configuration	M: 1 Form A Blank: 1 Form C
Contact material	Blank: $AgSnO_2$ Other numbers: other materials
Insulation class	Blank: class A F: class F
PCB Terminal structure	Blank: Standard type (5 pins) A: 4pins
Enclosure type	Blank: Flux-proof S: sealed
Special request	Blank: PBT (Only for A type) 335: Stands for product in accordance with IEC 60335-1 (GWT) H: PBT(Special type) 335H: Stands for product in accord to IEC 60335-1 (GWT) H1: PBT, (Only for C type) 335H1: Conform to IEC60335-1(GWT), (Only for C type)

Reference data

MAX.contact capacity



Life curve(1 form A)



SSA approval rating

cULus	(1formA)	10A/277VAC (Resistive)	105 °C	100,000ops
		10A/125VAC (Resistive)	105 °C	100,000ops
		12A/125/250VAC (Resistive)	105 °C	50,000ops
		15A/125/250VAC (Resistive)	105 °C	50,000ops
		TV-5/125/250VAC (TV)	85 °C	25,000ops
		1/4HP/240VAC (HP)	105 °C	30,000ops
	(1formC)	7A(3A)/277VAC(Resistive)	105 °C	100,000ops
		12A/125/250VAC	105 °C	50,000ops
		15A/125/250VAC	105 °C	50,000ops
		NO:TV-5/125/250VAC (TV)	85 °C	25,000ops
TUV	(1formA)	10A/277VAC	105 °C	100,000ops
		15A/277VAC	85 °C	5,000ops
		12A/277VAC	85 °C	5,000ops
		15A/12A/250VAC	85 °C	14,000ops
		15A/12A/10A/125VAC	85 °C	14,000ops
	(1formC)	7A(3A)/277VAC	105 °C	100,000ops
		15A(15A)/277VAC	85 °C	50,000ops
		12A(12A)/277VAC	85 °C	6,000ops
		10A(10A)/125VAC	85 °C	6,000ops
		15A(15A)/125VAC	85 °C	5,000ops
		12A(12A)/125VAC	85 °C	6,000ops
		10A(10A)/125VAC	85 °C	6,000ops
CQC	(1formA)	10A/277VAC	105 °C	100,000ops
		10A/250VAC	105 °C	100,000ops
	(1formC)	7A(3A)/277VAC	105 °C	100,000ops
		7A(3A)/250VAC	105 °C	100,000ops
VDE	(1formA)	10A/277VAC	105 °C	100,000ops
	(1formA)	12A/277VAC	85 °C	25,000ops
	(1formA)	15A/277VAC	85 °C	25,000ops
	(1formC)a	10A/277VAC	105 °C	100,000ops
	(1formC)a	12A/277VAC	85 °C	25,000ops
	(1formC)a	15A/277VAC	85 °C	25,000ops
	(1formC)b	6A/277VAC	85 °C	50,000ops
	(1formC)	7A/3A/277VAC	85 °C	100,000ops
	(1formB)	6A/277VAC	85 °C	50,000ops
	(1formA)	6A/277VAC	105 °C	100,000ops

a: Only NO circuit being tested. b: Only NC circuit being tested.

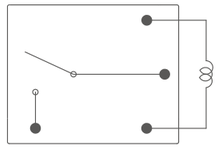
Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
3	120	25	360	≤2.25	≥0.15
5	72	69.4	360	≤3.75	≥0.25
6	60	100	360	≤4.50	≥0.30
9	40	225	360	≤6.75	≥0.45
12	30	400	360	≤9.00	≥0.60
24	15	1600	360	≤18.00	≥1.20
48	7.5	6400	360	≤36.00	≥2.40
60	6.0	10000	360	≤45.00	≥3.00

MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.
The VDE contains 3V, 48V, and 60V coil voltages.

RD

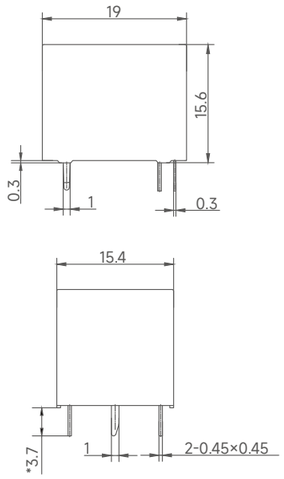
1 Form A, 15 A, 4 pin,
TV Load is available



Technical parameters

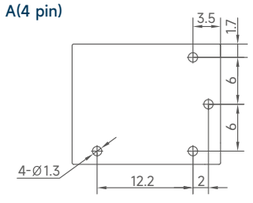
Coil data	Coil input voltage		3/5/6/9/12/24/48/60 V DC
	Coil power		360 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 10 ms Less than 5 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		4155 VA
	Contact ratings		15 A 277 V AC, 10 A 277 V AC, 1/4HP 240 V AC, TV-5① 250 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	1.5 kV AC / 1 min, 3.0 kV AC / 1 min(GAP≥0.8)
		Disconnect the contact	750 V AC / 1 min, 2.0 kV AC / 1 min(GAP≥0.8)
	Surge voltage		2.5 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		19.0×15.4×15.6 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		9 g
	Compliance certification number		cULus:E345228, TUV:R50244311, CQC:CQC12002082387, VDE:40047206

Outline dimensions



PCB board layout (Bottom view)

Form A(4 pin)



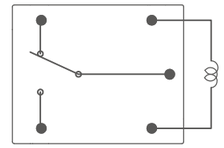
Tolerance

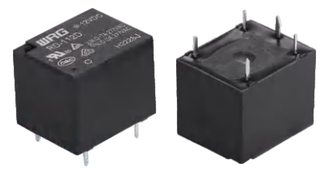
Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

① TV-5 means the inrush current is 111A/20ms at overload test.
② If you request Big GAP products, details can consult the factory.

RD

1 Form C, 15 A

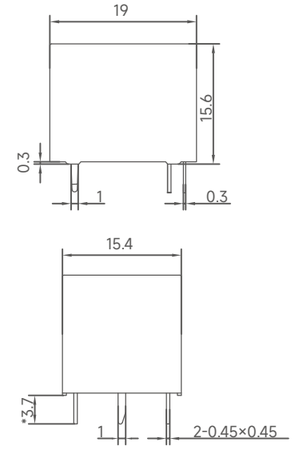




Technical parameters

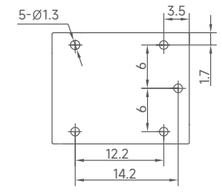
Coil data	Coil input voltage		3/5/6/9/12/24/48/60 V DC
	Coil power		360 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 10 ms Less than 5 ms
Contact data	Contact numbers		1 Form C
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		N.O. 1,939 VA, N.C. 831 VA
	Contact ratings		N.O. 15 A 277 V AC, 7 A 277 V AC, TV-5① 250 V AC, 1/4HP 240 V AC, N.C. 15 A 277 V AC, 3 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	1.5 kV AC / 1 min
		Disconnect the contact	750 V AC / 1 min
	Surge voltage		2.5 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		19.0×15.4×15.6 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		9 g
	Compliance certification number		cULus:E345228, TUV:R50244311, CQC:CQC12002082387, VDE:40047206

Outline dimensions



PCB board layout (Bottom view)

Form C



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

① TV-5 means the inrush current is 111A/20ms at overload test.

RDH

SERIES
POWER RELAY

1 Form A
Rated current: 17 A
Slim type with 16 mm width
High sensitivity: 360 mW
Dielectric strength between coil and contact: 2500 V AC
Product compliance for IEC60335-1 availabe

Type designation

RDH	-1	12	D	M	3	F	-S	XXX

Model designation	RDH
Number of poles	1: 1 pole
Coil voltage	03: 3 V 09: 9 V 24: 24 V 05: 5 V 12: 12 V 36: 36 V 06: 6 V 18: 18 V 48: 48 V
Coil power	D: 360 mW
Contact configuration	M: 1 Form A
Contact material	Blank: $AgSnO_2$ 3: $AgNi+AgSnO_2$
Insulation class	Blank or F: Class F
Enclosure type	Blank: Flux-proof S: sealed
Special request	

SSA approval rating

CQC	17A 125 VAC	105 °C	100,000ops
	17A 250 VAC	105 °C	100,000ops
	17A 277 VAC	105 °C	100,000ops
cULus	17A 125 VAC	105 °C	100,000ops
	17A 250VAC	105 °C	100,000ops
	17A 277VAC	105 °C	100,000ops
	TV-10 125VAC	105 °C	25,000ops
	TV-10 250VAC	105 °C	25,000ops
	1HP 240VAC	105 °C	30,000ops
	1HP 250VAC	105 °C	30,000ops
	1HP 277VAC	105 °C	30,000ops
TUV	17A 125VAC	105 °C	100,000ops
	17A 250VAC	105 °C	100,000ops
	17A 277VAC	105 °C	100,000ops

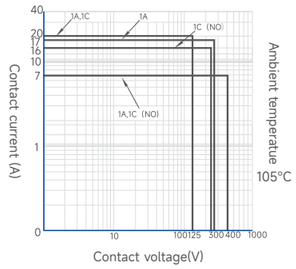
Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
3	120	25	360	≤2.25	≥0.15
5	72	69.4	360	≤3.75	≥0.25
6	60	100	360	≤4.50	≥0.30
9	40	225	360	≤6.75	≥0.45
12	30	400	360	≤9.00	≥0.60
18	20	900	360	≤13.5	≥0.90
24	15	1600	360	≤18.00	≥1.20
36	10	3600	360	≤27.00	≥1.80
48	7.5	6400	360	≤36.00	≥2.40

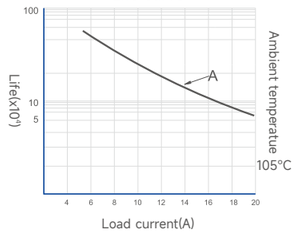
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX. contact capacity



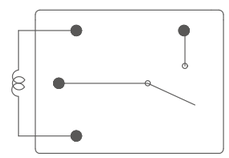
Life curve

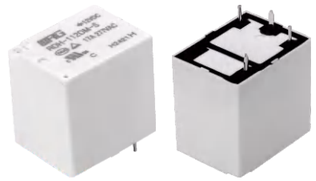


RDH

1 Form A, 17 A

Standard

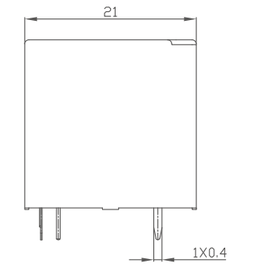


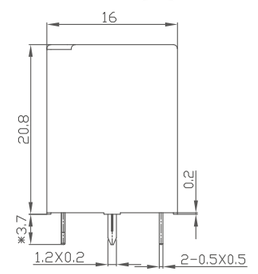


Technical parameters

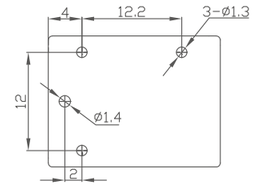
Coil data	Coil input voltage		3/5/6/9/12/18/24/36/48 V DC
	Coil power		200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 10 ms Less than 10 ms
Contact data	Contact numbers		1 form A
	Contact material		$AgSnO_2$, AgNi
	Min. switching voltage		5 V DC
	Max. switching voltage		277 V AC
	Max. swiching power		4709 VA
	Contact ratings		17 A 277 V AC, TV-10, 1HP 240 V AC
	Min. switching current		100 mA 5 V DC
	Contact resistence		Max. 100mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	2500kV AC / 1 min
		Disconnect the contact	1000 V AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 mΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s^2 Endurance 980 m/s^2
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%RH
	Dimension L×W×H		21.0×16.0×20.6 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		12.6 g
	Compliance certification number		CQC: CQC20002262466 cULus:E345228 TUV:R50478030

Outline dimensions





PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~3mm	±0.3mm
	>3mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RE SERIES POWER RELAY

1 Form A
Rated current: 10 to 16 A
Low shape
Low power consumption
200 mW high sensitive coil

Type designation

RE	-1	12	D	M	1	F	-S	XXX

Model designation	RE: A type, base with PCB terminal
Number of poles	1: 1 pole
Coil voltage	05: 5 V 18: 18 V 09: 9 V 24: 24 V 12: 12 V
Coil power	D: 200 mW
Contact configuration	M: 1 Form A
Contact rating	Blank: 10 A 1: 15 A/16 A
Insulation class	Blank: class A F: class F
Enclosure type	Blank: flux-proof S: sealed
Special request	335: Stands for product in accordance with IEC 60335-1 (GWT)

SSA approval rating

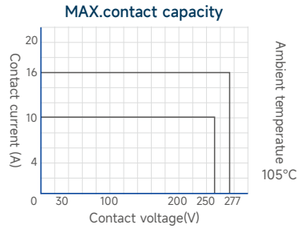
cULus	10A/250VAC (Resistive)	105 °C	100,000ops
	10A/30VDC (Resistive)	105 °C	100,000ops
	15A/250VAC (Resistive)	105 °C	100,000ops
	16A/120/250/277VAC	105 °C	100,000ops
	1/3HP 240VAC (HP)	105 °C	30,000ops
	1/2HP 120VAC (HP)	105 °C	30,000ops
	1.5HP 240VAC (HP)	105 °C	30,000ops
TUV	10A/250VAC	105 °C	100,000ops
	15A/250VAC	105 °C	100,000ops
	16A/250VAC	105 °C	100,000ops
CQC	10A/250VAC	105 °C	100,000ops
	15A/250VAC	105 °C	100,000ops
	16A/250VAC	105 °C	100,000ops
	16A/277VDC	105 °C	100,000ops

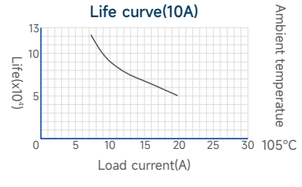
Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
5	40	125	200	≤3.75	≥0.25
9	22.2	405	200	≤6.75	≥0.45
12	16.7	720	200	≤9.00	≥0.60
18	11.1	1620	200	≤13.50	≥0.90
24	8.3	2880	200	≤18.00	≥1.20

MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

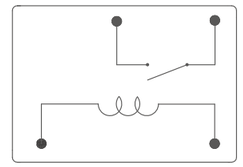
Reference data





RE

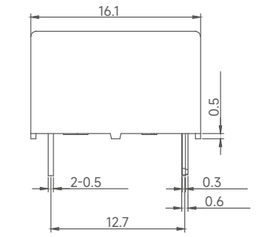
1 Form A, 10 A



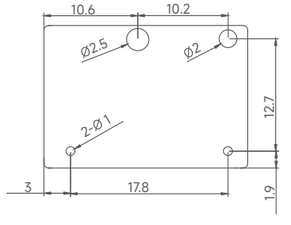
Technical parameters

Coil data	Coil input voltage	5/9/12/18/24 V DC
	Coil power	200 mW
	Response voltage	≤75% (Room temp.)
	Drop out voltage	≥5% (Room temp.)
	Operation time Release time	Less than 15 ms Less than 5 ms
Contact data	Contact numbers	1 Form A
	Contact material	Ag alloy
	Max. switching voltage	250 V AC
	Max. swiching power	2500 VA
	Contact ratings	10 A 250 V AC, 10 A 30 V DC, 1/3HP 240 V AC
	Contact resistence	Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life	1×10^6 times
	Electrical Service life	1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage — Coil/Contact	2 kV AC / 1 min
	Rated withstand impulse voltage — Disconnect the contact	1 kV AC / 1 min
	Surge voltage	5 kV AC (1.2/50 μs)
	Insulation Resistance	1000 MΩ (500 V DC)
	Vibration	Malfunction 10~55 Hz (Amplitude 1.5 mm)
		Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock	Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)	-40~105 °C (No condensation)
	Operating humidity	20~85%
	Dimension L×W×H	23.0×16.1×10.2 mm
	Enclosure type	Flux-proof, sealed
	Mounting	PCB
	Weight	9 g
	Compliance certification number	cULus:E345228, TUV:R50250866, CQC:CQC12002086474

Outline dimensions



PCB board layout (Bottom view)

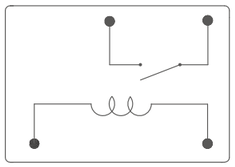


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RE

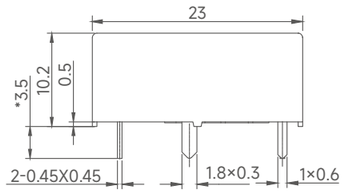
1 Form A, 16 A



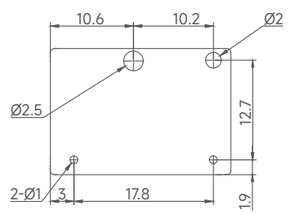
Technical parameters

Coil data	Coil input voltage		5/9/12/18/24 V DC
	Coil power		200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 15 ms Less than 5 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		250 V AC
	Max. swiching power		4000 VA
	Contact ratings		15 A 250 V AC, 16 A 250 V AC, 1/3HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	2 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		5 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		23.0×16.1×10.2 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		9 g
	Compliance certification number		cULus:E345228, TUV:R50250866, CQC:CQC12002086474

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RF SERIES POWER RELAY

1 Form A
Rated current: 20 to 32 A
High capacity, high endurance
Control switch has enough insulation distance
Class F Coil
Meets IEC 60079-15 Anti-explosion Standard
Flux-proof type, sealed type

Type designation

RF	-SS	-1	12	D	M	F	*	-F	-XXX

Model designation	RF
Enclosure type	SS: Flux-proof
Number of poles	1: 1 pole
Coil voltage	05: 5 V 09: 9 V 12: 12 V 24: 24 V
Coil power	D: 0.9 W H: 1.4W
Contact configuration	M: 1 Form A
Terminal	Blank: Without faston terminal F: With faston terminal (only for standard type)
Contact material	Blank: $AgSnO_2$
Insulation class	Blank: class A F: class F
Special request	Blank: 20 A A: 25 A B: 32 A 335: Stands for product in accordance with IEC 60335-1 (GWT),20 A 335 A: Stands for product in accordance with IEC 60335-1 (GWT),25 A 335 B: Stands for product in accordance with IEC 60335-1 (GWT),32 A G1: large gap

SSA approval rating

cULus	2HP/240VAC (HP)	65 °C	100,000ops
	20A/25A/250VAC (Resistive)	85 °C	100,000ops
	20A/25A/277VAC (Resistive)	85 °C	100,000ops
	20A/277VAC (Resistive)	105 °C	100,000ops
	1-1/2HP/277VAC (HP)	105 °C	100,000ops
	20A/25A/277VAC	105 °C	100,000ops
	#33A/277/250VAC	85 °C	30,000ops
TUV	20A/250VAC	85 °C	100,000ops

TUV	25A/250VAC	85 °C	100,000ops
	32A/250VAC	85 °C	100,000ops
	33A/277/250VAC	85°C	30,000ops
CQC	16A/250VAC	85 °C	100,000ops
	20A/250VAC	85 °C	100,000ops
	25A/250VAC	85 °C	100,000ops
	33A/277/250VAC	85 °C	30,000ops
VDE	25A/250VAC	65 °C	100,000ops

Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
5	179	28	900	≤3.75	≥0.25
9	100	90	900	≤6.75	≥0.45
12	75	160	900	≤9.00	≥0.60
24	37.5	640	900	≤18.00	≥1.20

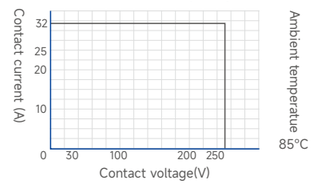
Coil rating(BIG GAP)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
5	277.8	18	1400	≤3.75	≥0.25
9	155.17	58	1400	≤6.3	≥0.45
12	116.5	103	1400	≤8.4	≥0.60
24	58.54	410	1400	≤16.8	≥1.20

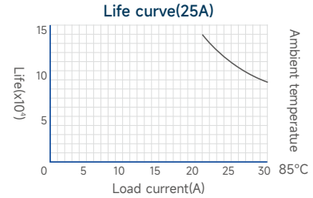
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity

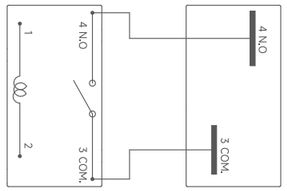


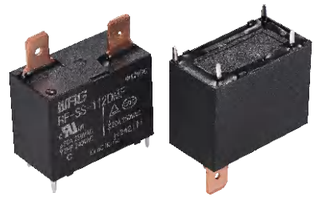
Life curve(25A)



RF

1 Form A, 20 A, #250 faston terminal



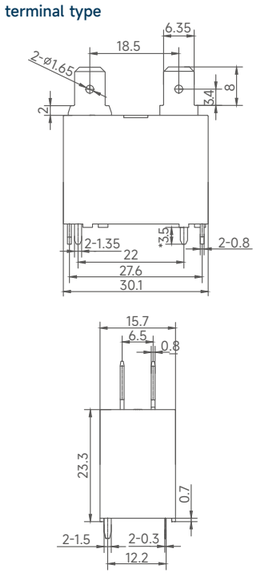


Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		900 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		5540 VA
	Contact ratings		20 A 250 V AC, 2HP 240 V AC, 20 A 277 V AC, 1-1/2HP 277 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		5×10^6 (min 2×10^6) times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
	Ambient temperature (Operation)		-40~85°C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×23.3 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB & faston terminal
	Weight		22 g
	Compliance certification number		cULus:E345228, TUV:R50194013, CQC:CQC10002052738

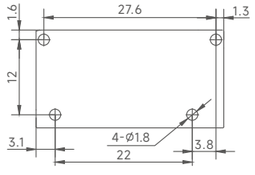
Outline dimensions

Fast terminal type



PCB board layout (Bottom view)

Fast terminal type

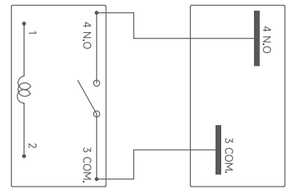


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RF

1 Form A, 25 A, #250 faston terminal

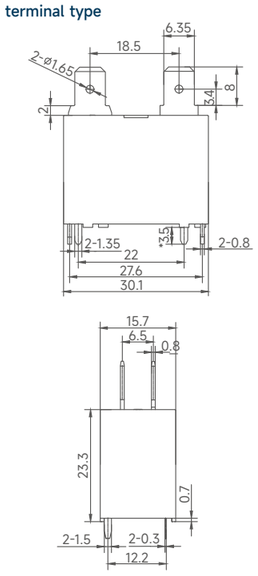


Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		900 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		6925 VA
	Contact ratings		25 A 250 V AC, 25 A 277 V AC, 2HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		5×10^6 (min 2×10^6) times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
	Ambient temperature (Operation)		-40~85°C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×23.3 mm
	Enclosure type		Flux-proof
	Mounting		PCB & faston terminal
	Weight		22 g
	Compliance certification number		cULus:E345228, TUV:R50194013, CQC:CQC10002052738,VDE:40032929

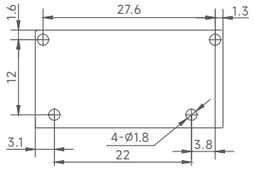
Outline dimensions

Fast terminal type



PCB board layout (Bottom view)

Fast terminal type

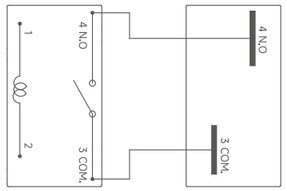


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RF

1 Form A, 32 A, #250 faston terminal

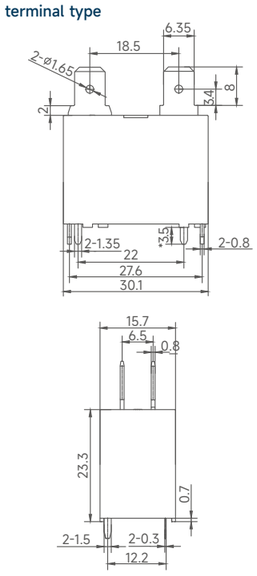


Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		900 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		8864 VA
	Contact ratings		32 A 250 V AC, 32 A 277 V AC, 2HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		5×10^6 (min 2×10^6) times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s^2
	Ambient temperature (Operation)		-40~85°C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×23.3 mm
	Enclosure type		Flux-proof
	Mounting		PCB & faston terminal
	Weight		22 g
	Compliance certification number		cULus:E345228, TUV:R50194013, CQC:CQC10002052738

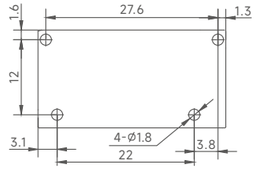
Outline dimensions

Fast terminal type



PCB board layout (Bottom view)

Fast terminal type

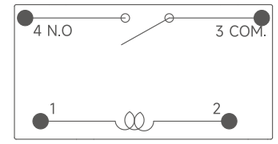


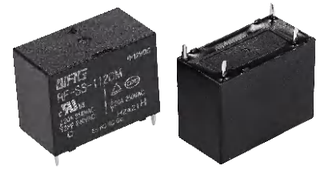
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RF

1 Form A, 25 A, P type



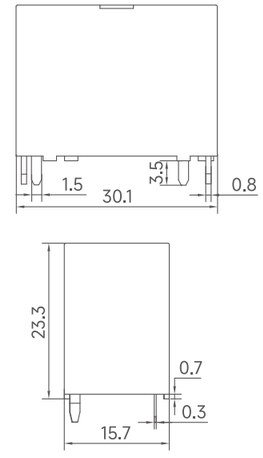


Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		900 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		6925 VA
	Contact ratings		25 A 250 V AC, 25 A 277 V AC, 2HP 240VAC, 20 A 250 V AC, 20 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		5×10^6 (min 2×10^6) times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s^2
	Ambient temperature (Operation)		-40~85°C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×23.3 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		20 g
	Compliance certification number		cULus:E345228, TUV:R50194013, CQC:CQC10002052738, VDE:40032929

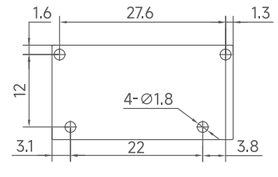
Outline dimensions

P type



PCB board layout (Bottom view)

P type

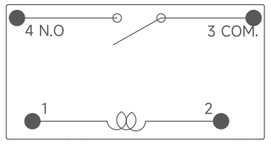


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RF (BIG GAP)

1 Form A，33 A，P type

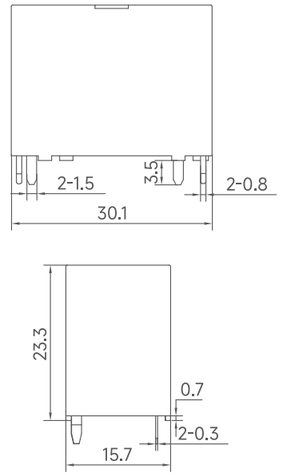


Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		1400 mW
	Response voltage		≤75%（Indoor temperature）
	Drop out voltage		≥5%（Indoor temperature）
	Operation time Release time		＜20 ms / ＜10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		9141 VA
	Contact ratings		33 A 250 / 277 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		5×10^6 (min 2×10^6) times
	Electrical Service life		3×10^4 times（Resistive load）
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	2.5 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
	Ambient temperature (Operation)		-40~85°C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×23.3 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		20 g
	Compliance certification number		cULus:E345228, TUV:R50194013, CQC:CQC10002052738

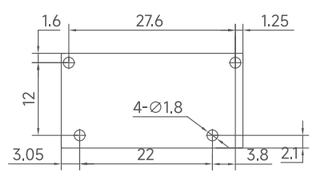
Outline dimensions

P type



PCB board layout (Bottom view)

P type



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RFL

SERIES POWER RELAY

1 Form A
Rated current: 20 to 25 A
High capacity, high endurance
Control switch has enough insulation distance
Class F Coil
Flux-proof type

Type designation

RFL	-SS	-1	12	D	M	F	*	-F	-1	-XXX

Model designation	RFL
Enclosure type	SS: Flux-proof
Number of poles	1: 1 pole
Coil voltage	05: 5 V　09: 9 V　12: 12 V　24: 24 V
Coil power	D: 900 mW
Contact configuration	M: 1 Form A
Terminal	Blank: Without Faston terminal　F: With Faston terminal
Contact material	Blank: $AgSnO_2$　Other numbers: other materials
Insulation class	Blank: class A　F: class F
Contact dimension	1: A type white　2: A type black　3: A type yellow　4: A type blue　Blank: B type blank
Special request	Blank: 20 A　A: 25 A

SSA approval rating

cULus	20A/250VAC (Resistive)	65 °C	100,000ops
	2HP/240VAC (HP)	65 °C	100,000ops
	20A/25A/250VAC (Resistive)	85 °C	100,000ops
	20A/25A/277VAC (Resistive)	85 °C	100,000ops
	20A/25A/250VAC (Resistive)	105 °C	100,000ops
	20A/25A/277VAC (Resistive)	105 °C	100,000ops
	1-1/2HP/277VAC (HP)	105 °C	100,000ops
TUV	20A/250VAC	85 °C	100,000ops
	25A/250VAC	85 °C	100,000ops
	32A/250VAC	85 °C	100,000ops
VDE	25A/250VAC	65 °C	100,000ops

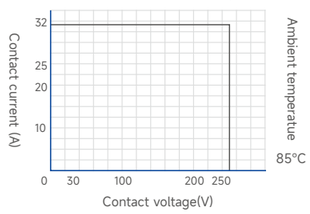
Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
5	179	28	900	≤3.75	≥0.25
9	100	90	900	≤6.75	≥0.45
12	75	160	900	≤9.00	≥0.60
24	37.5	640	900	≤18.00	≥1.80

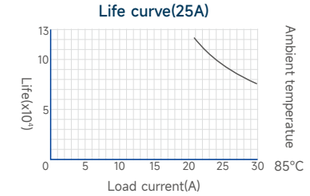
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity

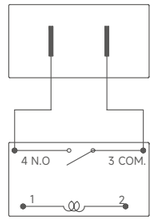


Life curve(25A)



RFL

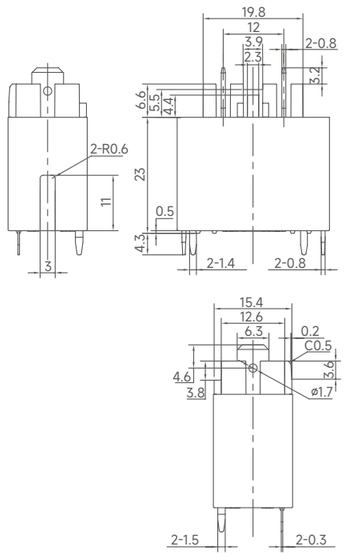
1 Form A, 20 A



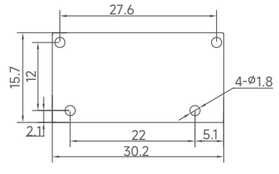
Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		900 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		5540VA
	Contact ratings		20 A 250 V AC, 2HP 240 V AC, 20 A 277 V AC, 1-1/2HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×32.8 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		30 g
	Compliance certification number		cULus:E345228, TUV:R50194013

Outline dimensions



PCB board layout (Bottom view)

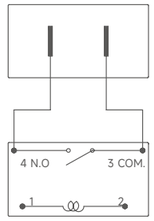


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RFL

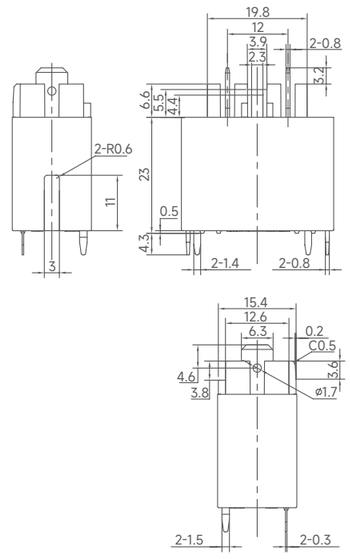
1 Form A, 25 A



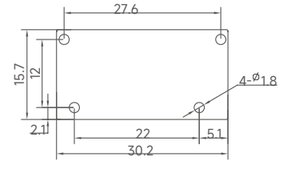
Technical parameters

Coil data	Coil input voltage		5/9/12/24 V DC
	Coil power		900 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		6925 VA
	Contact ratings		25 A 250 V AC, 25 A 277 V AC, 2HP 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4.5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		30.1×15.7×32.8 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB & faston terminal
	Weight		30 g
	Compliance certification number		cULus:E345228, TUV:R50194013, VDE:40032929

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RJ SERIES POWER RELAY

1 Form A
Rated current: 5 to 16 A
200 mW sensitive coil
Dielectric strength between coil & contact: 4000 V AC
Class F coil insulation
Meets IEC 60079-15 Anti-explosion Standard

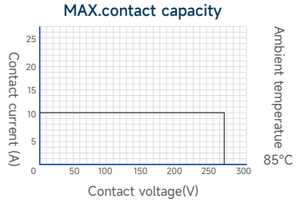
Type designation

RJ -SS -1 12 D M 1 * -F -S XXX

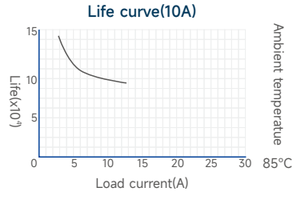
Model designation	RJ
Construction type	SS:Flux-proof
Number of poles	1: 1 pole
Coil voltage	05: 5 V 12: 12 V 36: 36 V 09: 9 V 24: 24 V 48: 48 V
Coil power	D: 450 mW L: 200 mW
Contact configuration	M: 1 Form A
Contact rating	Blank: 5 A 1: 10 A 2: 8 A 6: 16 A
Contact material	Blank: $AgSnO_2$ 4: AgNi 3: $AgSnO_2$+AgNi
Insulation class	Blank: class A F: class F
Enclosure type	Blank: flux-proof S: sealed
Special request	335: Stands for product in accordance with IEC 60335-1 (GWT)

Reference data

MAX.contact capacity



Life curve(10A)



SSA approval rating

cULus	(DM1)	10A/250VAC (Resistive)	85 °C / 105 °C	100,000ops
		10A/277VAC (Resistive)	105 °C	100,000ops
		1/3HP/240/277VAC (HP)	65 °C	30,000ops
		5A/30VDC (Resistive)	65 °C	80,000ops
	(LM1)	10A/250VAC (Resistive)	105 °C	100,000ops
		10A/277VAC (Resistive)	105 °C	100,000ops
	(LM2)	8A/250VAC (Resistive)	105 °C	100,000ops
		8A/277VAC (Resistive)	105 °C	100,000ops
	(DM/LM)	5A/250VAC (Resistive)	85 °C / 105 °C	100,000ops
		5A/277VAC (Resistive)	105 °C	100,000ops
		1/6HP/277VAC (HP)	105 °C	100,000ops
		8(4)A/250/277VAC	-40-85°C	100,000ops
		14A/250/277VAC(Resistive/General Use)	85°C	100,000ops
		5FLA 30LRA/250/277VAC	85°C	30,000ops
		B300/240VAC	85°C	30,000ops
	(DM)	1/3HP/240VAC (HP)	65 °C	30,000ops
	(DM6/LM6)	16A/250/277VAC	105 °C	50,000ops
		TV-8 /250VAC	40°C	25,000ops
		5A/30VDC (Resistive)	65 °C	80,000ops
	(DM2)	8A/250VAC (Resistive)	85 °C / 105 °C	100,000ops
		8A/277VAC (Resistive)	105 °C	100,000ops
	(LM)	1/4HP/240VAC (HP)	65 °C	30,000ops
		3A/30VDC (Resistive)	65 °C	80,000ops
TUV	(DM1/LM1)	10A/250VAC	105 °C	100,000ops
	(DM/LM)	5A/250VAC	85 °C	100,000ops
	(DM2/LM2)	8A/250VAC	105 °C	100,000ops
	(DM6/LM6)	16A/250/277VAC	105 °C	100,000ops
CQC	(DM1)	10A/250VAC	85 °C	100,000ops
	(DM/LM)	5A/250VAC	85 °C	100,000ops
	(DM2/LM2)	8A/250VAC	85 °C	100,000ops
	(DM6/LM6)	16A/250/277VAC	105 °C	50,000ops

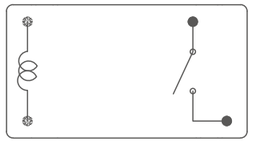
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	Dtype		
5	40	89	125	56	200	450	≤3.75	≥0.25
9	22.2	50	405	180	200	450	≤6.75	≥0.45
12	16.7	37.5	720	320	200	450	≤9.00	≥0.60
24	8.3	18.8	2880	1280	200	450	≤18.00	≥1.20
36	5.5	12.5	6545	2880	200	450	≤27.00	≥1.80
48	4.2	9.4	11428	5106	200	450	≤36.00	≥2.40

MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

RJ

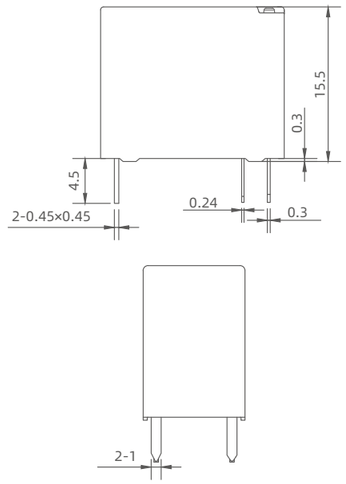
1 Form A, 5A/8A



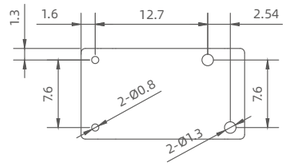
Technical parameters

Coil data	Coil input voltage		5/9/12/24/36/48 V DC
	Coil power		D Type: 450 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 8 ms Less than 5 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		1385 VA /2216 VA
	Contact ratings		5A/8A 277 V AC, 1/3HP 240 V AC, 1/6HP 277 V AC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		6 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		18.2×10.2×15.5 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		6 g
	Compliance certification number		cULus:E345228, TUV:R50222701, CQC:CQC10002052739

Outline dimensions



PCB board layout (Bottom view)

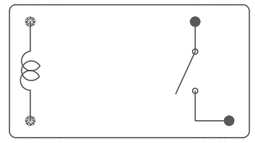


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RJ

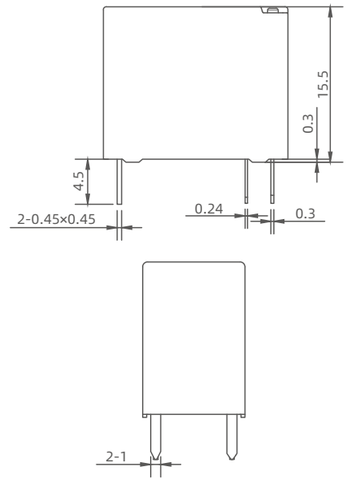
1 Form A, 10 A



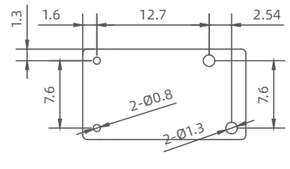
Technical parameters

Coil data	Coil input voltage		5/9/12/24/36/48 V DC
	Coil power		D Type: 450 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 8 ms Less than 5 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		2,770 VA
	Contact ratings		10 A 277 V AC, 5A 30VDC 1/3HP 240VAC
	Contact resistence		Max. 100 mΩ (1 A/ 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		6 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		18.2×10.2×15.5 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		6 g
	Compliance certification number		cULus:E345228, TUV:R50222701, CQC:CQC10002052739

Outline dimensions



PCB board layout (Bottom view)

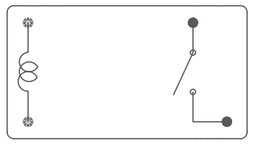


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RJ

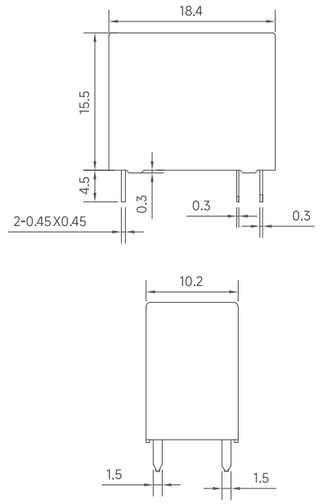
1 Form A, 16 A



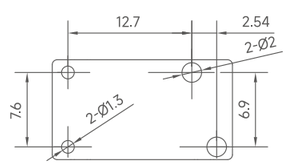
Technical parameters

Coil data	Coil input voltage		5/9/12/24/36/48 V DC
	Coil power		D Type: 450 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 8 ms Less than 5 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		4432 VA
	Contact ratings		16A 250 VAC/277 VAC, TV-8/250VAC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		5×10^4 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		6 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		18.4×10.2×15.5 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		6 g
	Compliance certification number		cULus:E345228, TUV:R50222701, CQC:CQC10002052739

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RJE

SERIES POWER RELAY

- 1 Form A/C
- Rated current: 10 A
- High sensitivity type
- Dielectric strength between coil & contact: 4,000 V AC
- Class F Coil
- Meets IEC 60079-15 Anti-explosion Standard

Type designation

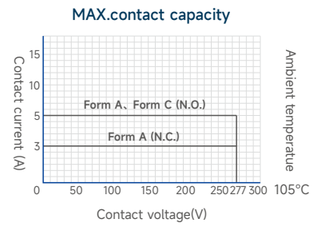
RJE	-1	12	D	M	*	F	-S	XXX

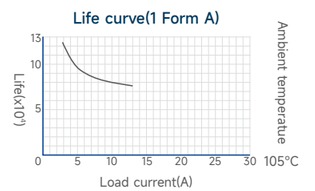
Model designation	RJE
Number of poles	1: 1 pole
Coil voltage	03: 3 V 06: 6 V 12: 12 V 05: 5 V 09: 9 V 24: 24 V
Coil power	D: 400 mW L: 200 mW
Contact configuration	M: 1 Form A Blank: 1 Form C
Contact material	Blank: $AgSnO_2$
Insulation class	Blank: class A F: class F
Enclosure type	Blank: flux-proof S: sealed
Special request	335: Stands for material in accordance with IEC 60335-1 (GWT)

SSA approval rating

cULus	(1formA)	5A/277VAC (Resistive)	105 °C	100,000ops
		5A/30VDC (Resistive)	105 °C	100,000ops
		10A/125VAC (Resistive)	105 °C	100,000ops
		1/6HP/277VAC (HP)	105 °C	30,000ops
	(1formC)	N.O.5A/277VAC (Resistive)	105 °C	100,000ops
		N.C.3A/277VAC (Resistive)	105 °C	100,000ops
		N.O.5A/30VDC (Resistive)	105 °C	100,000ops
		N.O.5A/30VDC	105 °C	100,000ops
TUV	(1formA)	5A/277VAC	105 °C	100,000ops
		10A/277VAC	105 °C	100,000ops
	(1formC)	N.O.5A/277VAC	105 °C	100,000ops
		N.C.3A/277VAC	105 °C	100,000ops
CQC	(1formA)	5A/277VAC	105 °C	100,000ops
		10A/125VAC	105 °C	100,000ops
	(1formC)	N.O.5A/277VAC	105 °C	100,000ops
		N.C.3A/277VAC	105 °C	100,000ops
VDE	(1formA)	5A/277VAC cosφ=0.4	85 °C	100,000ops
		10A/277VAC	85 °C	20,000ops
		5A/30VDC	105 °C	50,000ops
	(1formC)	5A/3A/277VAC cosφ=0.4	85 °C	50,000ops

Reference data





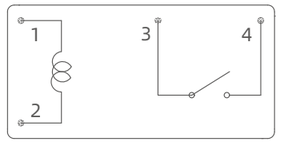
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	Dtype		
3	66.7	133.3	45	22.5	200	400	≤2.25	≥0.15
5	40.0	79.4	125	63	200	400	≤3.75	≥0.25
6	33.3	66.7	180	90	200	400	≤4.50	≥0.30
9	22.2	44.6	405	202	200	400	≤6.75	≥0.45
12	16.7	33.3	720	360	200	400	≤9.00	≥0.60
24	8.3	16.7	2880	1440	200	400	≤18.00	≥1.20

MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

RJE

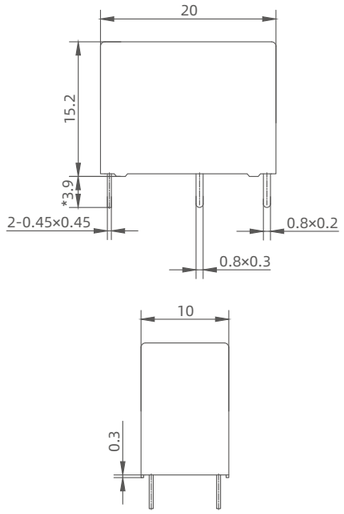
1 Form A, 10 A



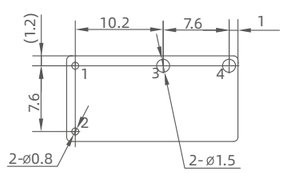
Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/24 V DC
	Coil power		D Type: 400 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 8 ms Less than 5 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		2770 VA
	Contact ratings		10 A 125 V AC, 5 A 277 V AC, 10 A 30 V DC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times times （Resistive load）
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		20.0×10.0×15.2 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		7 g
	Compliance certification number		cULus:E345228, TUV:R50246903, CQC:CQC12002084196, VDE:40045973

Outline dimensions



PCB board layout (Bottom view)

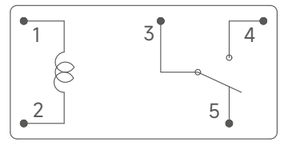


Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RJE

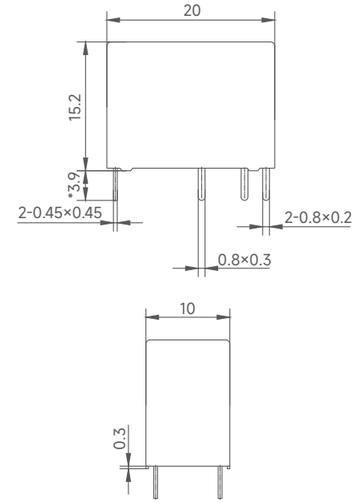
1 Form C, 10 A



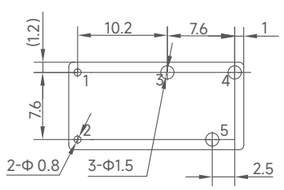
Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/24 V DC
	Coil power		D Type: 400 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 8 ms Less than 5 ms
Contact data	Contact numbers		1 Form C
	Contact material		Ag alloy
	Max. switching voltage		30 V DC, 277 V AC
	Max. swiching power		N.O. 1,385 VA, N.C. 831 VA
	Contact ratings		N.O. 5 A 277 V AC, N.C. 3 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times times （Resistive load）
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		20.0×10.0×15.2 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		7 g
	Compliance certification number		cULus:E345228, TUV:R50246903, CQC:CQC12002084196, VDE:40045973

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RMI/RMIH
SERIES
POWER RELAY

1 Form A/C
Rated current: 10A(RMI); 16A(RMIH)
Dielectric strength between coil & contact: 5,000 V AC
Class F Coil
Flux-proof Type
Meets IEC 60079-15 Anti-explosion Standard
High capacity, high endurance(RMIH)

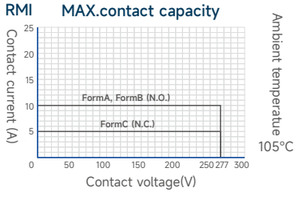
Type designation

RMI	-SS	-1	12	D	M	*	F	-S	XXX

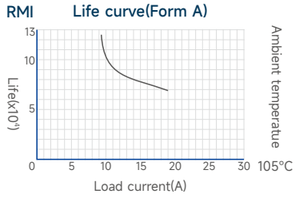
Model designation	RMI / RMIH
Construction type	SS: Flux-proof
Number of poles	1: 1 pole
Coil voltage	05: 5 V 12: 12 V 36: 36 V 09: 9 V 24: 24 V 48: 48 V
Coil power	D: 720 mW L: 540 mW
Contact configuration	M: 1 Form A Blank: 1 Form C
Contact material	Blank: $AgSnO_2$
Insulation class	Blank: class A F: class F
Enclosure type	Blank: flux-proof S: sealed
Special request	335: Stands for product in accordance with IEC 60335-1 (GWT)

Reference data

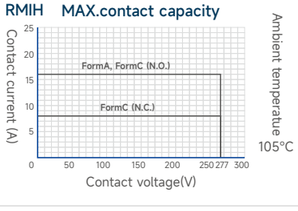
RMI MAX.contact capacity



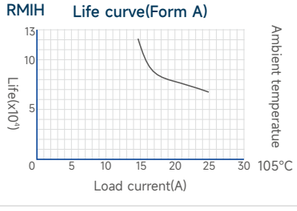
RMI Life curve(Form A)



RMIH MAX.contact capacity



RMIH Life curve(Form A)



RMI SSA approval rating

cULus	(1formA)	10A/277VAC (Resistive)	105 °C	100,000ops
		1/4HP250VAC (HP)	105 °C	30,000ops
	(1formC)	N.O.10A/277VAC (Resistive)	105 °C	100,000ops
		N.C.5A/277VAC (Resistive)	105 °C	100,000ops
TUV	(1formA)	10A/277VAC	105 °C	100,000ops
	(1formC)	N.O.10A/277VAC	105 °C	100,000ops
		N.C.5A/277VAC	105 °C	100,000ops
		N.O.5A/277VAC	105 °C	50,000ops
		N.C.5A/277VAC	105 °C	50,000ops
CQC	(1formA)	10A/277VAC	105 °C	100,000ops
		10A/250VAC	105 °C	100,000ops
	(1formC)	N.O.10A/277VAC	105 °C	100,000ops
		N.C.5A/277VAC	105 °C	100,000ops
		N.O.10A/250VAC	105 °C	100,000ops
		N.C.5A/250VAC	105 °C	100,000ops

RMIH SSA approval rating

cULus	(1formA)	16A/277VAC (Resistive)	105 °C	100,000ops
		1/3HP250VAC (HP)	105 °C	30,000ops
	(1formC)	N.O.16A/277VAC (Resistive)	105 °C	100,000ops
		N.C.8A/277VAC (Resistive)	105 °C	100,000ops
TUV	(1formA)	16A/277VAC	105 °C	100,000ops
	(1formC)	N.O.16A/277VAC	105 °C	100,000ops
		N.C.8A/277VAC	105 °C	100,000ops
CQC	(1formA)	16A/277VAC	105 °C	100,000ops
		16A/250VAC	105 °C	100,000ops
	(1formC)	N.O.16A/277VAC	105 °C	100,000ops
		N.C.8A/277VAC	105 °C	100,000ops
		N.O.16A/250VAC	105 °C	100,000ops
		N.C.8A/250VAC	105 °C	100,000ops

Coil rating

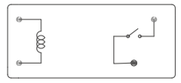
Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	Dtype		
5	108	138.9	46	36	540	720	≤3.75	≤0.25
9	60	78.3	150	115	540	720	≤6.75	≤0.45
12	44.9	60	267	200	540	720	≤9.00	≤0.60
18	30	40	600	450	540	720	≤13.50	≥0.90
24	22.5	29.3	1065	820	540	720	≤18.00	≥1.20

MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature ~ 85°C).
PWM coil driving to be verified in the working conditions range and approved by WRG.

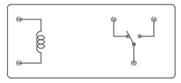
RMI

1 Form A/C, 10 A

1 form A



1 form C

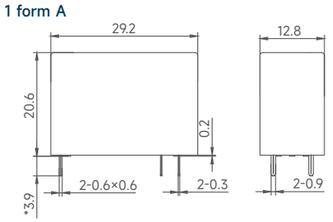


Technical parameters

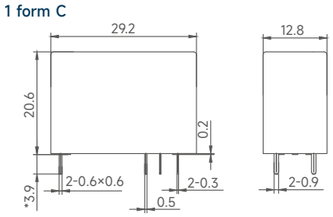
Coil data	Coil input voltage		5/9/12/18/24 V DC
	Coil power		D Type: 720 mW, L Type: 540 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		A Type: 2,770 VA, C Type: N.O. 2,770 VA, N.C. 1,385 VA
	Contact ratings		A Type: 10 A 277 V AC, 1/4HP 250 V AC, C Type: N.O. 10 A 277 V AC, N.C. 5 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		29.2×12.8×20.6 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		14 g
	Compliance certification number		cULus:E345228, TUV:R50242245, CQC:CQC11002066332

Outline dimensions

1 form A

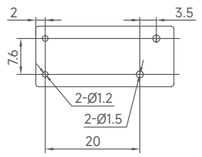


1 form C

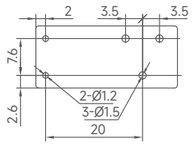


PCB board layout (Bottom view)

1 form A



1 form C



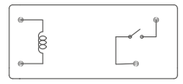
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RMIH

1 Form A/C, 16 A

1 form A



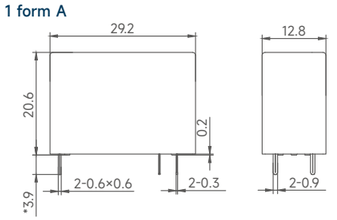
1 form C

Technical parameters

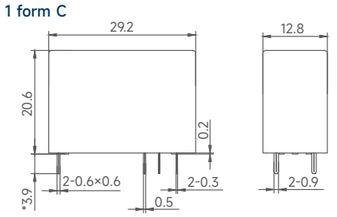
Coil data	Coil input voltage		5/9/12/18/24 V DC
	Coil power		D Type: 720 mW, L Type: 540 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		A Type: 4,432 VA, C Type: N.O. 4,432 VA, N.C. 2,216 VA
	Contact ratings		A Type: 16 A 277 V AC, 1/3HP 250 V AC, C Type: N.O. 16 A 277 V AC, N.C. 8 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		29.2×12.8×20.6 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		14 g
	Compliance certification number		cULus:E345228, TUV:R50242245, CQC:CQC11002066332

Outline dimensions

1 form A

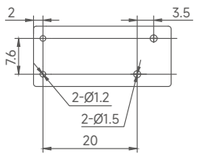


1 form C

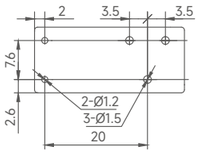


PCB board layout (Bottom view)

1 form A



1 form C



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RMIF

SERIES
POWER RELAY

1 Form A
Rated current: 16 to 20 A
High capacity, high endurance
Dielectric strength between coil & contact: 5,000 V AC
Class F coil
Flux-proof type

Type designation

RMIF	-1	12	D	M	*	F	-A	XXX

Model designation	RMIF
Number of poles	1: 1 pole
Coil voltage	05: 5 V 12: 12 V 24: 24 V 09: 9 V 18: 18 V
Coil power	D: 720 mW L: 540 mW
Contact configuration	M: 1 Form A
Contact material	Blank: $AgSnO_2$ Other numbers: other materials
Insulation class	Blank: class A F: class F
PCB terminal pin	Blank: Standard type A: Without Movable Contact Terminal and Stationary Contact Terminal B: Stationary Contact Terminal Only C: Movable Contact Terminal Only D: With Dummy Movable Contact Terminal and Stationary Contact Terminal P: PCB Terminal Only
Special request	335: Stands for product in accordance with IEC 60335-1(GWT)

SSA approval rating

cULus	16A/277VAC (Resistive)	105 °C	100,000ops
	17A/277VAC (Resistive)	105 °C	100,000ops
	20A/125VAC (Resistive)	105 °C	100,000ops
TUV	16A/250VAC	105 °C	100,000ops
	17A/250VAC	105 °C	100,000ops
	20A/125VAC	105 °C	60,000ops
CQC	16A/277VAC	105 °C	100,000ops
	17A/277VAC	105 °C	100,000ops
	20A/125VAC	105 °C	60,000ops

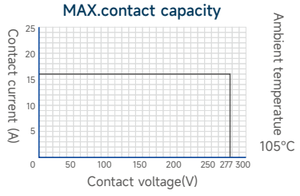
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	Dtype		
5	108	138.9	46.3	36	540	720	≤3.75	≥0.25
9	60	78.3	150	115	540	720	≤6.75	≥0.45
12	44.9	60	267	200	540	720	≤9.00	≥0.60
18	30	40	600	450	540	720	≤13.50	≥0.90
24	22.5	29.3	1067	820	540	720	≤18.00	≥1.20

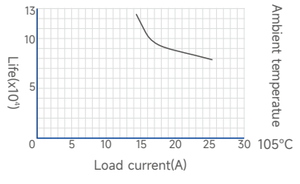
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity

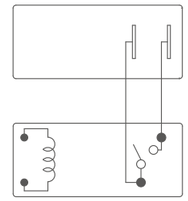


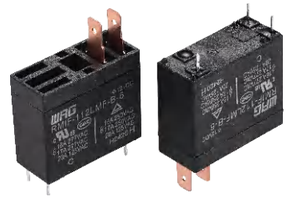
Life curve(Form A)



RMIF

1 Form A, 20 A,
#187 Faston terminal

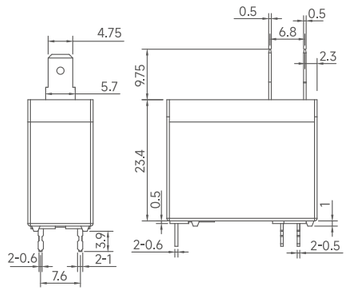




Technical parameters

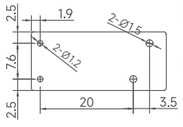
Coil data	Coil input voltage		5/9/12/18/24 V DC
	Coil power		D Type: 720 mW, L Type: 540 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		4432 VA
	Contact ratings		20 A 125 V AC, 17 A 277 V AC, 16 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s^2 Endurance 980 m/s^2
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		29.0×12.6×24.4 mm
	Enclosure type		Flux-proof
	Mounting		PCB & faston termina
	Weight		16 g
	Compliance certification number		cULus:E345228, TUV:R50227054, CQC:CQC12002076605

Outline dimensions

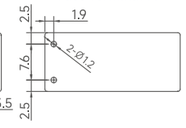


PCB board layout (Bottom view)

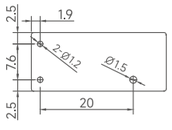
Fast terminal-Standard



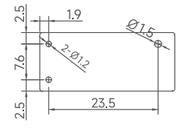
Fast Terminal-A



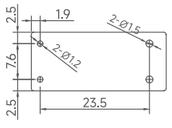
Fast Terminal-B



Fast Terminal-C



Fast Terminal-D



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

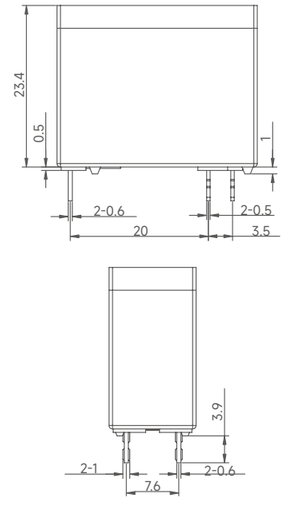
RMIF

1 Form A, 20 A,
Without faston terminal

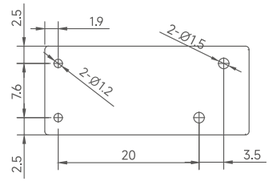
Technical parameters

Coil data	Coil input voltage		5/9/12/18/24 V DC
	Coil power		D Type: 720 mW, L Type: 540 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥5% (Room temp.)
	Operation time Release time		Less than 20 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		277 V AC
	Max. swiching power		4432 VA
	Contact ratings		20 A 125 V AC, 17 A 277 V AC, 16 A 277 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^6 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	5 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		10 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~105 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		29.0×12.6×24.4 mm
	Enclosure type		Flux-proof
	Mounting		PCB
	Weight		15 g
	Compliance certification number		cULus:E345228 TUV:R50227054

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

R53G

SERIES POWER RELAY

- 1 Form A/C
- Rated current: 40 to 60 A
- High capacity, high endurance
- Various Mouting Methods
- Multiple pin structures
- Class F Coil

Type designation

R53G -1 12 D M F -1 -P -S -XXX

Model designation	R53G: Standard (With Dust Cover)
Number of poles	1: 1 pole
Coil voltage	DC: 5V, 6V, 9V, 12V, 18V, 24V, 36V, 48V
Coil type	D: DC (900 mW)
Contact configuration	M: 1 Form A Blank: 1 Form C
Insulation class	Blank: class A F: class F
COM Terminal type	1: one COM Terminal (No co-terminal between the Coil Terminals)
Suspension type	Blank: Standard
Enclosure type	Blank: Standard S: sealed
Special request	Blank: 40A (60A): 60A

SSA approval rating

cULus	1formA	20A/277VAC, 20A/30VDC, 30A/30VDC, 40A/277VAC,15A/277VAC (Resistive)
	FLA	12A/250VAC 2HP (HP)
		16A/125VAC 1HP (HP)
		16.0FLA/96.0LRA 240VAC (Resistive)
	1formB	15A/277VAC, 10A/30VDC, 15A/30VDC,8A/277VAC (Resistive)
	FLA	4.9A/250VAC 1/2HP (HP)
		5.8A/125VAC 1/4HP (HP)
		10.0FLA/58.0LRA 240VAC (Resistive)
	1formC	NO/NC:11.2FLA/67.2LRA, 10.3FLA/61.8LRA (Resistive)
		NO/NC:19.8A/277VAC, 30A/240VAC 30A/277VAC (Resistive)

TUV	1formA	30A/250VAC	85 °C	10,000ops
		20A/30VDC	85 °C	50,000ops
		10A/30VDC	85 °C	100,000ops
		60A/ 277VAC	85 °C	30,000ops
	1formB	10A/250VAC	85 °C	10,000ops
		10A/30VDC	85 °C	50,000ops
		8A/30VDC	85 °C	100,000ops
	1formC	NO:30A/NC:10A/250VAC	85 °C	10,000ops
		NO:20A/NC:10A/30VDC	85 °C	50,000ops
		NO:10A/NC:8A/30VDC	85 °C	100,000ops
CQC	1formA	30A/240VAC	85 °C	20,000ops
		60A/ 277VAC	85 °C	30,000ops
	1formB	20A/240VAC	85 °C	20,000ops
	1formC	NO:30A/NC:20A/240VAC	85 °C	20,000ops

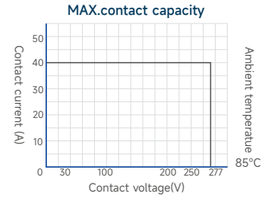
Coil rating

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω±10%)	Operating power (mW)	Operating voltage (VDC)	Release voltage (VDC)
5	185	27	900	≤3.75	≥0.25
6	150	40	900	≤4.50	≥0.30
9	93	97	900	≤6.75	≥0.45
12	77	155	900	≤9.00	≥0.60
18	47	380	900	≤13.50	≥0.90
24	36	660	900	≤18.00	≥1.20
36	15	1440	900	≤27.00	≥1.80
48	19	2560	900	≤36.00	≥2.40

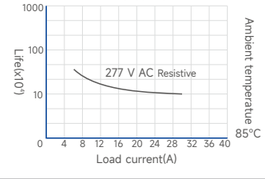
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity

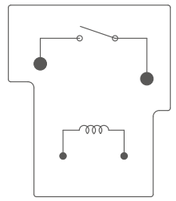


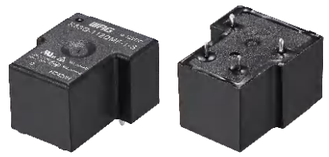
Life curve



R53G

1 Form A/C, 40 A, sealed type

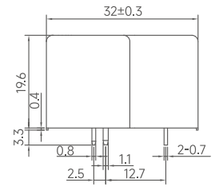


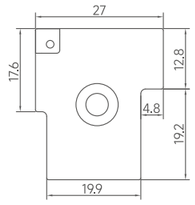


Technical parameters

Coil data	Coil input voltage		5/6/9/12/18/24/36/48 V DC
	Coil power		D Type: 900 mW
	Response voltage		DC: ≤75% (Room temp.)
	Drop out voltage		DC: ≥5% (Room temp.)
	Operation time Release time		Less than 15 ms Less than 10 ms
Contact data	Contact numbers		1 Form A/C
	Contact material		Ag alloy
	Max. switching voltage		250 V AC
	Max. swiching power		10000 VA
	Contact ratings		1Form A: 40 A 250 V AC, 30 A 250 V AC, 1Form C: N.O. 30 A 240 V AC, N.C. 20 A 240 V AC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		4 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		32.0×27.0×20.0 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		25 g
	Compliance certification number		cULus:E345228, TUV:R 50228669, CQC:CQC21002314659

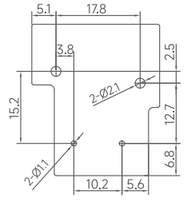
Outline dimensions



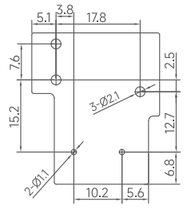


PCB board layout (Bottom view)

1 Form A



1 Form C

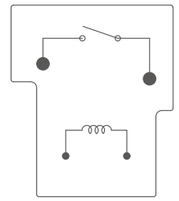


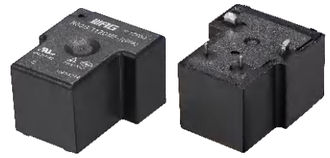
Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

R53G

1 Form A, 60 A, sealed type

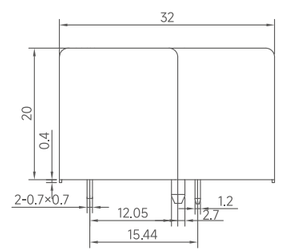




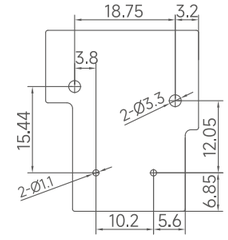
Technical parameters

Coil data	Coil input voltage		5/6/9/12/18/24/36/48 V DC
	Coil power		D Type: 900 mW
	Response voltage		DC: ≤75% (Room temp.)
	Drop out voltage		DC: ≥5% (Room temp.)
	Operation time Release time		Less than 15 ms Less than 10 ms
Contact data	Contact numbers		1 Form A
	Contact material		Ag alloy
	Max. switching voltage		250 V AC
	Max. swiching power		15000 VA
	Contact ratings		1Form A: 40 A 250 V AC, 60 A 250 V AC, 20A-60A-20A(Make-Carry-Break)
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		3×10^4 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	4 kV AC / 1 min
		Disconnect the contact	1 kV AC / 1 min
	Surge voltage		4 kV AC (1.2/50 μs)
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-40~85 °C (No condensation)
	Operating humidity		20~85%
	Dimension L×W×H		32.0×27.0×20.0 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		26 g
	Compliance certification number		cULus:E345228, CQC:CQC21002314659 TUV:R50228669

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RSA

SERIES
SIGNAL RELAY

1 Form C
Rated current: 1 A
150 mW sensitive coil
Dielectric strength between coil & contact: 1,000 VAC
Class F coil

Type designation

RSA	-1	12	D	*	F	-S	-XXX

Model designation	RSA
Number of poles	1: 1 pole
Coil voltage	03: 3 V 06: 6 V 12: 12 V 05: 5 V 09: 9 V 24: 24 V
Coil power	D: 200 mW L: 150 mW
Contact configuration	Blank: 1 Form C
Insulation class	Blank: class A F: class F
Enclosure type	Blank: Standard S: sealed
Special request	

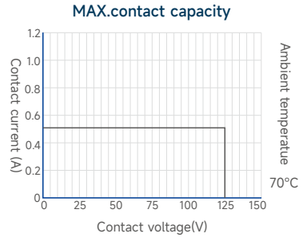
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	D type		
3	50.0	66.7	60	45	150	200	≤2.40	≥0.30
5	29.9	40.0	167	125	150	200	≤4.00	≥0.50
6	25.0	33.3	240	180	150	200	≤4.80	≥0.60
9	16.7	22.2	540	405	150	200	≤7.20	≥0.90
12	12.5	16.6	960	720	150	200	≤9.60	≥1.20
24	6.3	8.3	3840	2880	150	200	≤19.20	≥2.40

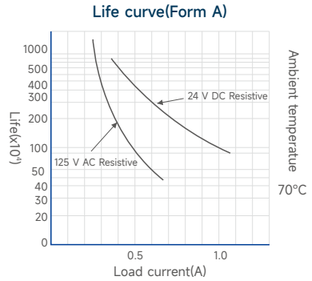
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity

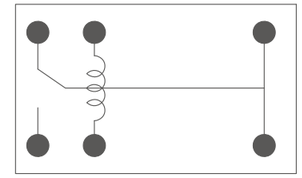


Life curve(Form A)



RSA

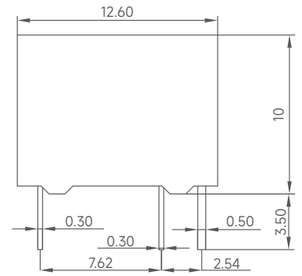
1 Form C, 1 A

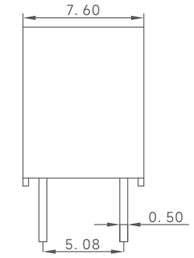


Technical parameters

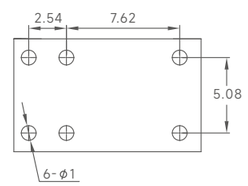
Coil data	Coil input voltage		3/5/6/9/12/24 V DC
	Coil power		D Type: 200 mW, L Type: 150 mW
	Response voltage		≤80% (Room temp.)
	Drop out voltage		≥10% (Room temp.)
	Operation time Release time		Less than 5 ms Less than 5 ms
Contact data	Contact numbers		1 Form C
	Contact material		Ag alloy
	Max. switching voltage		125 V AC
	Max. swiching power		62.5 VA
	Contact ratings		0.5 A 125 V AC, 1 A 24 V DC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	1 kV AC / 1 min
		Disconnect the contact	400 V AC / 1 min
	Surge voltage		/
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s² Endurance 980 m/s²
	Ambient temperature (Operation)		-30~85 °C (No condensation)
	Operating humidity		35~85%
	Dimension L×W×H		12.6×7.6×10.0 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		2.2 g
	Compliance certification number		Certificate pending

Outline dimensions





PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RSB
SERIES
SIGNAL RELAY

2 Form C
Rated current: 2 A
200 mW sensitive coil
Dielectric strength between coil & contact: 1,000 VAC
Class F coil
Small light product, is applicable to intensive installatiion

Type designation

RSB	-2	12	D	*	*	-S	-XXX

Model designation	RSB
Number of poles	2: 2 poles
Coil voltage	03: 3 V 06: 6 V 12: 12 V 05: 5 V 09: 9 V 24: 24 V
Coil power	D: 360 mW L: 200 mW
Contact configuration	Blank: 1 Form C
Insulation class	Blank: class A F: class F
Enclosure type	S: sealed
Special request	

SSA approval rating

cULus	1A/125VAC	85 °C	100,000ops
	2A/30VDC	85 °C	100,000ops

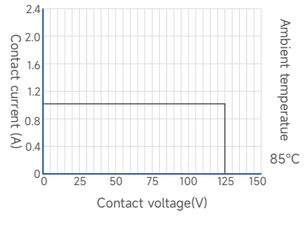
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	D type		
4.5	44.6	80.4	101	56	200	360	≤3.36	≥0.45
5	40.0	71.4	125	125	200	360	≤3.75	≥0.50
6	33.3	60.0	180	180	200	360	≤4.50	≥0.60
12	16.7	30.0	720	405	200	360	≤9.00	≥1.20
24	8.3	15.0	2880	720	200	360	≤18.0	≥2.40

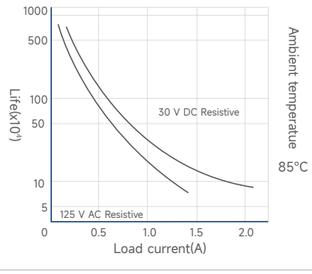
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity



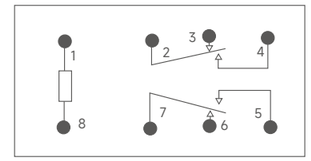
Life curve(Form A)

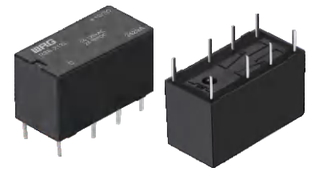


RSB (2P)

cULus

2 Form C, 2 A

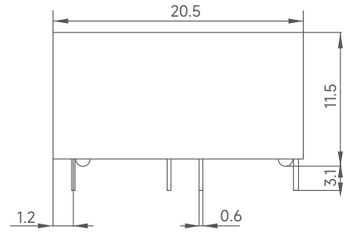


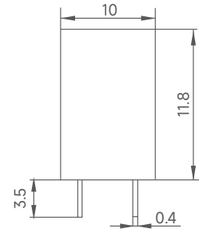


Technical parameters

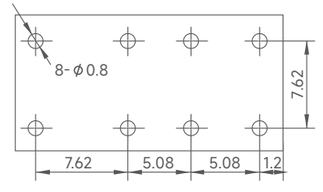
Coil data	Coil input voltage		4.5/5/6/12/24 V DC
	Coil power		D Type: 360 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥10% (Room temp.)
	Operation time Release time		Less than 6 ms Less than 4 ms
Contact data	Contact numbers		2 Form C
	Contact material		Ag alloy
	Max. switching voltage		125 V AC
	Max. swiching power		125 VA
	Contact ratings		1 A 125 V AC, 2 A 30 V DC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	1 kV AC / 1 min
		Disconnect the contact	700 V AC / 1 min (same contact group), 1 kV AC / 1 min (different contact group)
	Surge voltage		/
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
			Endurance 980 m/s²
	Ambient temperature (Operation)		-30~85 °C (No condensation)
	Operating humidity		35~95%
	Dimension L×W×H		21.0×10.0×11.9 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		5 g
	Compliance certification number		cULus:E341569

Outline dimensions





PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

RSC

SERIES
SIGNAL RELAY

1 Form C
Rated current: 2 A
200 mW sensitive coil
Dielectric strength between coil & contact: 1,000 V AC
Class F coil

Type designation

RSC	-1	12	D	*	F	-A	-XXX

Model designation	RSC
Number of poles	1: 1 pole
Coil voltage	03: 3 V 06: 6 V 12: 12 V 05: 5 V 09: 9 V 24: 24 V
Coil power	D: 360 mW L: 200 mW
Contact configuration	Blank: 1 Form C
Insulation class	Blank: class A F: class F
Terminal pin position	Blank: Standard A: Special version
Special request	

SSA approval rating

cULus	1A/125VAC (Resistive)	40 °C	100,000ops
	2A/24VDC (Resistive)	40 °C	100,000ops

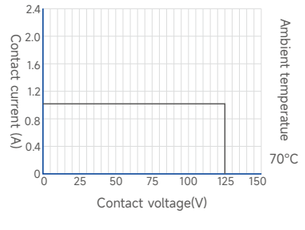
Coil rating

Rated voltage (VDC)	Rated current (mA)		Coil resistance (Ω±10%)		Operating power (mW)		Operating voltage (VDC)	Release voltage (VDC)
	L type	D type	L type	D type	L type	D type		
3	66.7	120.0	45	25	200	360	≤2.25	≥0.30
5	40.0	71.4	125	70	200	360	≤3.75	≥0.50
6	33.3	60.0	180	100	200	360	≤4.50	≥0.60
9	22.2	40.9	405	220	200	360	≤6.75	≥0.90
12	16.7	30.0	720	400	200	360	≤9.00	≥1.20
24	8.3	15.0	2880	1600	200	360	≤18.0	≥2.40

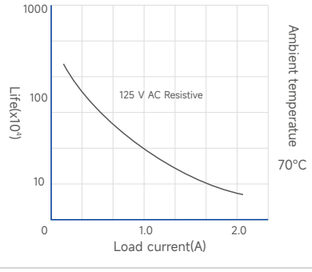
MAX. allowable coil voltage: 130% of rated coil voltage (Room temperature).
PWM coil driving to be verified in the working conditions range and approved by WRG.

Reference data

MAX.contact capacity

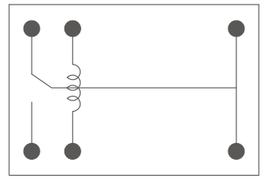


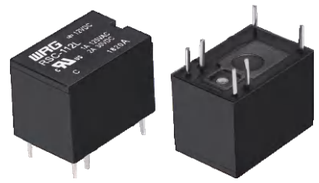
Life curve(Form A)



RSC (1P)

1 Form C, 2 A

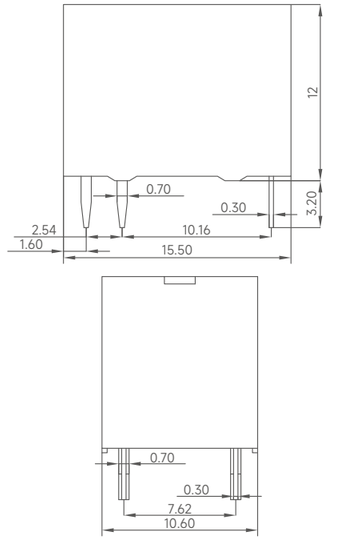




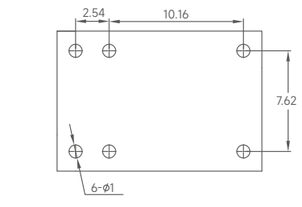
Technical parameters

Coil data	Coil input voltage		3/5/6/9/12/24 V DC
	Coil power		D Type: 360 mW, L Type: 200 mW
	Response voltage		≤75% (Room temp.)
	Drop out voltage		≥10% (Room temp.)
	Operation time Release time		Less than 6 ms Less than 3 ms
Contact data	Contact numbers		1 Form C
	Contact material		Ag alloy
	Max. switching voltage		125 V AC
	Max. swiching power		125 VA
	Contact ratings		1 A 125 V AC, 2 A 24 V DC
	Contact resistence		Max. 100 mΩ (1 A / 6 V DC)
	Mechanical service life		1×10^7 times
	Electrical Service life		1×10^5 times (Resistive load)
General data	Rated withstand impulse voltage	Coil/Contact	1 kV AC / 1 min
		Disconnect the contact	500 V AC / 1 min
	Surge voltage		/
	Insulation Resistance		1000 MΩ (500 V DC)
	Vibration		Malfunction 10~55 Hz (Amplitude 1.5 mm)
			Endurance 10~55 Hz (Amplitude 1.5 mm)
	Shock		Malfunction 98 m/s²
	Ambient temperature (Operation)		-30~85 °C (No condensation)
	Operating humidity		35~85%
	Dimension L×W×H		15.5×10.6×12.0 mm
	Enclosure type		Flux-proof, sealed
	Mounting		PCB
	Weight		3 g
	Compliance certification number		cULus:E341569

Outline dimensions



PCB board layout (Bottom view)



Tolerance

Outline dimension	<1mm	±0.2mm
	1~5mm	±0.3mm
	>5mm	±0.4mm
PCB board layout	Pitch-row	±0.1mm
	Aperture	+0.1mm

CROSS REFERENCE GUIDE

WRG	HONGFA	OMRON	PANASONIC	TE	FUJITSU	SANYOU	SONGCHUAN
RA1	HF105F-1	G8P	JTN/JTV	T9A	-	SLA/SLC	832
RB	HF115F	G2RL	JW1/JW2/DJ	RT	FTR-K1	SM	881/888/845
RC	HF46F	G5NB/G5T	LD	PCJ	FTR-F3	SRB	202
RD	HF3FA	G5LA	JS	T7S/ORWH	-	SRD	801
RDH	HF152FD	G5LE	-	-	-	-	899
RE	HF7520	G5CA	JV/JVN	PCD	-	-	201
RF	HF102F/HF161F-W	G4A	LF	PCFN	-	-	891
RJ	HF32F	-	-	OJ/OJE	JV	SJ	835
RJE	HF33F	G5Q	JQ	PCH	JY	SJE	892
RMI	HF14FF/HF141FF	G2R	JR1-JR1A	OMI	VS	SMI	845/1P
RMIH	HF14FF/HF141FF	G2R	JW	OMIH	FTR-F1	SMIH	-
RMIF	HF62F	G5J	JR1AF-TMP	OMIF	VR	-	302
R53G	HF165	G8P	JTN/JTV	T9-T9A-T9C	-	SLA-SLC	832
RSA	HFD23	G5V-1	HY	V23111	SY	SYS	-
RSB	HFD27	G5V-2	DS2Y	V23105	FBR244-FTR-C2	DSY2Y	876
RSC	HFD41/HFD41A	G2E	-	V23101	FBR211SC	SYS1K	842

This table is just for reference. If you have any questions, please contact our local agent or send e-mail to service@wrg-elec.com.

PACKING LIST

Type	Packing method	Carton Size L×W×H (cm)	QTY / CTN (PCS)	Approx.N.W.(kg)	Approx.G.W.(kg)
RA1/R53G	40pcs/tray	38.0×27.0×29.0	400	12	13.5
	25pcs/tray	40.0×27.5×21.0	250	7.5	9
RA2	25pcs/tray	40.0×27.5×21.0	250	7.3	8.8
RB	80pcs/tray	32.7×23.6×24.0	800	11.2	12.5
	50pcs/tray	37.0×22.5×17.5	500	7	8.5
RC	70pcs/tube	58.5×28.5×13.5	2800	8.4	10.5
	50pcs/tray	35.0×21.5×14.5	1000	3	4.2
RD	25pcs/tube	43.5×20.2×16.4	1000	9	11
	34pcs/tube	60.9×25.0×15.9	1700	15.3	17.3
	30pcs/tube	51.7×13.3×15.1	750	6.8	8.3
	100pcs/tray	36.5×26.0×24.5	2000	18	20
	50pcs/tray	39.6×38.2×15.3	1000	9	10.5
RDH	25pcs/tube	47.0×16.0×16.0	500	6.5	7.8
RE	50pcs/tray	31.2×29.3×21.2	1000	9	10.5
RF	25pcs/tray	41.2×27.0×20.2	500	11	12.5
	50pcs/tray(P type)	40.0×29.7×18.8	500	11	12.5
	50pcs/tray(F type)	40.0×29.7×24.5	500	10	11.5
RJ	100pcs/tray	33.5×26.5×14.2	1000	6	7.5
	50pcs/tube	56.5×19.0×14.0	1000	6	8
RJE	100pcs/tray	32.5×22.2×23.8	1000	7	8.5
	100pcs/tray	33.5×26.5×14.8	1000	7	8.5
RMIH	40pcs/tube	56.5×17.0×15.5	1000	14	16
	50pcs/tray	40.0×33.7×19.0	500	7	8.5
RMI	50pcs/tray	36.8×22.8×17.8	500	7	8.5
RMIF	105pcs/tray	47.5×34.0×19.7	840	13.5	15
	50pcs/tray	40.8×28.3×16.4	500	8	9.5
RSA	25pcs/tube	47.0×30.5×13.0	2000	4.4	6
RSB	20pcs/tube	47.0×31.0×15.5	2000	10	11.5
RSC	20pcs/tube	39.0×30.1×14.8	2000	7	8.5

This list above is the typical packing specification. Packing specifications and dimensions in this catalogue are subject to change without notice.