GT5Y Series — ON Delay Timers

Key features of the GT5Y series include:

- **4PDT, 3A or DPDT, 5A contacts**
- **4 time ranges**
- **Repeat error ±0.2% maximum**
- **Control settings by hand or screwdriver**
- **Power ON and timing out LED indicators**
- **Uses the same sockets and hold-down clips as IDEC's RY4S and RU series relays**

UL, c-uL Listed
File No. E55996

Specifications

		GT5Y-2	
Rated Operating Voltage		100 to 120V AC (50/60Hz) 200 to 240V AC (50/60Hz) 24V DC 24V AC 12V DC	
Contact Form		DPDT	4PDT
Rated Load	Resistive Load	220V AC, 5A 30V DC, 5A	220V AC, 3A 30V DC, 3A
	Inductive Load	220V AC, 2A 30V DC, 2.5A	220V AC, 0.8A 30V DC, 1.5A
Allowable Contact Power	Resistive Load	1100VA AC 150W DC	660VA AC 90W DC
	Inductive Load Cos Ø = 0.3 L/r = 7msec	440VA AC 75W DC	176VA AC 45W DC
Allowable Voltage		250V AC, 125V DC	
Allowable Current		5A	3A
Temperature Error		±3% maximum (over –10 to 50°C, reference temperature 20°C)	
Setting Error		±10% maximum	
Reset Time		When turning power off after time up: 0.1 second maximum When turning power off before time up: 1 second maximum	
Insulation Resistance		100MΩ minimum	
Dielectric Strength		2,000V AC, 1 minute (except between contacts of the same pole)	
Vibration Resistance		100N (approximate 10G)	
Shock Resistance		Operating extremes: 100N (approximate 10G) Damage limits: 500N (approximate 50G)	
Power Consumption		100V AC type: 1.5VA (at 50Hz) 200V AC type: 1.6VA (at 50Hz) 24V DC type: 0.9W	
Electrical Life		500,000 operations minimum (220V AC, 5A)	200,000 operations minimum (110V AC, 3A)
Mechanical Life		50,000,000 operations minimum	50,000,000 operations minimum
Operating Temperature		–10 to +50°C	
Operating Humidity		45 to 85% RH	

1. Minimum applicable load: GT5Y-2: 5V DC, 20mA (reference value); GT5Y-4: 5V DC, 10mA (reference value).
2. Inductive load: cosθ =.3, L/R=7msec.

GT5Y Table of Contents

Part Numbering List

Mode of Operation	Contact	Output	Rated Voltage	Time Range	Complete Part No.
ON-Delay	DPDT	220V AC/ 30V DC, 5A	100 to 120V AC	1S/10S/1M/10M	GT5Y-2SN1A100
				3S/30S/3M/30M	GT5Y-2SN3A100
				6S/60S/6M/60M	GT5Y-2SN6A100
			200 to 240V AC	1S/10S/1M/10M	GT5Y-2SN1A200
				3S/30S/3M/30M	GT5Y-2SN3A200
				6S/60S/6M/60M	GT5Y-2SN6A200
			12V DC	1S/10S/1M/10M	GT5Y-2SN1D12
				3S/30S/3M/30M	GT5Y-2SN3D12
				6S/60S/6M/60M	GT5Y-2SN6D12
			24V DC	1S/10S/1M/10M	GT5Y-2SN1D24
				3S/30S/3M/30M	GT5Y-2SN3D24
				6S/60S/6M/60M	GT5Y-2SN6D24
			24V AC	1S/10S/1M/10M	GT5Y-2SN1A24
				3S/30S/3M/30M	GT5Y-2SN3A24
				6S/60S/6M/60M	GT5Y-2SN6A24
	4PDT	220V AC/ 30V DC, 3A		1S/10S/1M/10M	GT5Y-4SN1A100
				6S/60S/6M/60M	GT5Y-4SN6A100
			200 to 240V AC	1S/10S/1M/10M	GT5Y-4SN1A200
				3S/30S/3M/30M	GT5Y-4SN3A200
				6S/60S/6M/60M	GT5Y-4SN6A200
			12V DC	1S/10S/1M/10M	—
				3S/30S/3M/30M	GT5Y-4SN3D12
				6S/60S/6M/60M	—
			24V DC	1S/10S/1M/10M	GT5Y-4SN1D24
				3S/30S/3M/30M	GT5Y-4SN3D24
				6S/60S/6M/60M	GT5Y-4SN6D24
			24V AC	1S/10S/1M/10M	GT5Y-4SN1A24
				3S/30S/3M/30M	GT5Y-4SN3A24
				6S/60S/6M/60M	GT5Y-4SN6A24

1. For sockets and accessories, see page G-66.

Timing Ranges

Code	Scale	Time Range Indication		Time Range
1S	0 to 10	x 0.1	S	0.1 second to 1 second
10S		x 1	S	0.2 second to 10 seconds
1M		x 0.1	M	1.2 seconds to 1 minute
10M		x 1	M	12 seconds to 10 minutes
3S	0 to 3	x 1	S	0.1 second to 3 seconds
30S		x 10	S	0.5 second to 30 seconds
3M		x 1	M	3 seconds to 3 minutes
30M		x 10	M	30 seconds to 30 minutes
6S	0 to 6	x 1	S	0.1 second to 6 seconds
60S		x 10	S	1 second to 60 seconds
6M		x 1	M	6 seconds to 6 minutes
60M		x 10	M	1 minute to 60 minutes

Relay and Timer Socket Selection Guide

Relay and Timer Socket

Mounting	Series	Page	Part No.	No. of Poles	Receptacle	Terminal	Compatible IDEC Relay and Timer
DIN Rail Snap/Surface-Mount 	SU	F-6	SU2S-11L	2	8-Blade	Spring Clamp Terminals	RU2, RM2
			SU4S-11L	4	14-Blade		RU4, RU42, RY4, RY42
	SR	F-11	SR2P-05 SR2P-05C SR2P-06	2	8-Pin	M3.5 Screw	RR2P, GT5P, RTE-P1, GT3 (8-pin)
			SR3P-05 SR3P-05C SR3P-06	3	11-Pin		RR3PA, RR2KP, RTE-P2 GT3 (11-pin)
			SR3B-05	3	11-Blade		RR1BA, RR2BA, RR3B, RTE-B
	SH	F-14	SH1B-05 SH1B-05C	1	5-Blade	M3.5 Screw Coil Terminal: M3	RH1B
			SH2B-05 SH2B-05C	2	8-Blade	M3.5 Screw	RH2B
			SH3B-05 SH3B-05C	3	11-Blade		RH3B, RH2LB
			SH4B-05 SH4B-05C	4	14-Blade		RH4B
	SY	F-18	SY2S-05 SY2S-05C	2	8-Blade	M3 Screw	RY2S, RY22S
			SY4S-05 SY4S-05C	4	14-Blade		RU4S, RU42S, RY4S, RY42S, RY2KS, RM2S, GT5Y
	SM	F-20	SM2S-05 SM2S-05C	2	8-Blade	M3 Screw	RU2S, RM2S
	SJ	F-9	SJ1S-05B SJ1S-07L	1	5-Blade	M3 Screw	RJ1S
			SJ2S-05B SJ2S-07L	2	8-Blade		RJ2S
	SQ	F-10	SQ1V-07B	1	5-Blade		RQ1V-CM
			SQ2V-07B	2	8-Blade		RQ2V-CN RQ1V-CH
Through Panel Mount 	SR	F-21	SR2P-51	2	8-Pin	Solder	RR2P, GT5P, RTE-P1, GT3 (8-pin)
			SR3P-51	3	11-Pin		RR3PA, RR2KP, RTE-P2, GT3 (11-pin)
			SR3B-51	3	11-Blade		RR1BA, RR2BA, RR3B
	SH	F-22	SH1B-51	1	5-Blade		RH1B
			SH2B-51	2	8-Blade		RH2B
			SH3B-51	3	11-Blade		RH3B, RH2LB
			SH4B-51	4	14-Blade		RH4B
	SY	F-24	SY2S-51	2	8-Blade		RY2S, RY22S
			SY4S-51	4	14-Blade		RY4S, RY42S, RU4S, RU42S, RY2KS, RM2S, GT5Y
PCB Mount 	SH	F3-25	SH1B-62	1	5-Blade	PC Board	RH1B
			SH2B-62	2	8-Blade		RH2B
			SH3B-62	3	11-Blade		RH3B, RH2LB
			SH4B-62	4	14-Blade		RH4B
	SY	F3-26	SY2S-61	2	8-Blade		RY2S, RY22S
			SY4S-61	4	14-Blade		RY4S, RY42S, RU4S, RU42S, RY2KS, RM2S, GT5Y
			SY4S-62	4	14-Blade		RY4S, RY42S, RU4S, RU42S, RY2KS, RM2S, GT5Y
For Panel Mounted Timers							
	SR	F-28	SR6P-M08G	2	8-pin	M3.5 Screw	GE1A; RTE-P1; GT3 (8-pin);
			SR6P-M11G		11-pin		RTE-P2; GT3 (11-pin)

For relay mounting accessories, see page F-29.

Specifications

SU, SR, SH, SM, SY

Specifications	
Rated Insulation Voltage	300V; except SH1B, SU and SY4S-62: 250V
Rated Current	SU2/SR/SH/SM: 10A, SY: 7A, SU4: 6A with RU4, SU4: 10A with RU2 (SH1B: 7A)
Insulation Resistance	100M¤ minimum
Dielectric Strength	2,000V AC, 1 minute
Material Grade	UL94V-0
Terminal Torque	3.5mm Screws, 9-11.5 in•lbs 3mm screws, 5.5-9 in•lbs

1. * *Applicable to DIN rail sockets only.*

UL Recognized
File No. E62437

CSA Certified
File No.LR35144

TÜV PRODUCT SERVICE
File No. BL950813332307

CE

SJ, SQ

Specifications	SJ Series	SQ Series
Rated Current	SJ1S: 12A Max; SJ2S: 8A Max	SQ1V: 12A Max; SQ2V: 10A Max
Rated Voltage	250V	300V
Applicable Wire	2x #14 (2.5mm^2)	2x #14 (2.5mm^2)
Applicable Crimping Terminal	2mm^2 x 2	1.5mm^2 x 2
Terminal Torque	0.6 to 1.0Nm	1.0Nm Max
Screw Size	M3 Slotted Phillip Captive Screw	M3 Slotted Phillip Captive Screw
Dielectric Strength (Coil/Contact)	4,000VAC	3,000VAC
Insulation Resistance	¤100 M¤ Minimum	¤100 M¤ Minimum
Operating Temperature	-40 to 70°C (no freezing)	-25 to +85°C
Operating Humidity	5~85% RH (no condensation)	45~85% RH

CSA Certified
File No.LR84913

UL Recognized
File No. E141060

UL Recognized
File No. E62437

CE

F Sockets

RU Series — General Purpose Relays

Key features of the RU series include:

- **Non-polarized LED indicator standard**
- **Solder-free construction (spot welded, no solder points, lead-free)**
- **No internal wires**
- **Mechanical flag indicator standard**
- **Manual latching lever with color coding for AC or DC coil**
- **Available without latching lever (or with momentary check button)**
- **Snap-on marking plate standard**
- **Cadmium-free contacts - RoHS compliant**
- **Color coded coils for visual distinction**
- **Contact rating 6A: 4PDT**
  10A: DPDT

Specifications

	RU2	
Contact Material	AgSnOIn (silver tin oxide indium)	AuAg/Ag (gold-silver alloy on silver)
Contact Resistance	50 mΩ maximum	
Minimum Applicable Load	24VDC, 5mA (reference value)	1V DC, 1mA (standard) 1V DC, 0.1mA (bifurcated)
Operating Time	20 msec maximum	
Release Time	20 msec maximum	
Maximum Continuous Applied Voltage (AC/DC) at 20°C	110%	
Minimum Operating Voltage (AC/DC) at 20°C	80%	
Drop-Out Voltage (AC) at 20°C	30%	
Drop-Out Voltage (DC) at 20°C	10%	
Power Consumption	1.1-1.4VA (AC); 0.9-1.0W (DC)	
Dielectric Strength	Between contact and coil: 2,500VAC, 1 minute Between poles: 2,500VAC, 1 minute Between contacts of the same pole: 1,000VAC, 1 minute	Between contact and coil: 2,500VAC, 1 minute Between poles: 2,000VAC, 1 minute Between contacts of the same pole: 1,000VAC, 1 minute
Frequency Response	1,800 operations/hr	
Vibration Resistance	Operating extremes: 10 to 55Hz, Amplitude 1.0 mm p-p Damage limits: 10 to 55Hz, Amplitude 1.0 mm p-p	
Shock Resistance	Operating extremes: 150 m/s^2 (15G) Damage limits: 1,000 m/s^2 (100G)	
Life Expectancy	Mechanical: AC: 20,000,000 operations minimum DC: 30,000,000 operations minimum Electrical: see electrical life curve	
Degree of Protection	IP40	
Operating Temperature	-55 to +70°C (no freezing)	
Weight	35g	

cULus UL Recognized
File No. E66043, Vol 8, sec. 1
Vol 8, sec. 2

TÜV PRODUCT SERVICE B020813332451

CSA Certified
File No. LR35144-135844

CE

Ordering Information

Consult factory for other voltages.

Basic Part No. **Coil Voltage:**

RU 4 S – ( ) – D12

# of Contacts
2 = DPDT
42 = 4PDT bifurcated contacts

Option*
(Blank) = with latching check button
C = without check button
M = momentary check button
D = surge suppression diode (DC coils only)

Coil Voltage Code**
D12 = 12V DC
D24 = 24V DC
D110 = 110V DC
A24 = 24V AC
A220 = 220-240V AC

*1. *All come with bi-polar LED, mechanical flag indicator, marking plate.*
*2. **Contact IDEC for other voltages.*

Part Numbers

Part Numbers: RU Series with Options

Termination		Contact Configuration	Standard	Without Latching Lever	With Momentary Check Button	With Diode*
S: Solder/plugin	Standard	DPDT	RU2S	RU2S-C	RU2S-M	RU2S-D
		4PDT	[redacted]	RU4S-C	RU4S-M	RU4S-D
	Bifurcated	4PDT	RU42S	RU42S-C	RU42S-M	RU42S-D

*DC coils only.

Part Numbers: Sockets

Relays	Spring Clamp DIN Rail Mount	Standard DIN Rail Mount	Finger-Safe DIN Rail Mount	Panel Mount	PC Mount
RU2S	SU2S-11L	SM2S-05	SM2S-05C	SY4S-51	SY4S-61 SY4S-62
RU4S	SU4S-11L	SY4S-05	SY4S-05C		

See Section F for details on sockets. All DIN rail mount sockets shown above can be mounted using DIN rail BNDN1000.

Springs & Clips (optional)	
Part Number	Use With
SFA-101① SFA-202② SY4S-02F1③	use with SY4S-05, -05C SM2S-05, -05C SU4S-11L, SU2S-11L
SFA-301① SFA-302② SY4S-51F1③	use with SY4S-51, -61

① *Top latch*
② *Side latch*
③ *Pullover spring*

Part Numbers: Marking Strip

Item	Part Number	Quantity
RU Marking Strip	RU9Z-P①PN10,	10 pieces per package

In place of ①, insert color code from chart at right.

Marking Strip Color Code

Color	Code
Yellow*	Y
Green	G
Amber	A

Color	Code
Blue	S
White	W

yellow marking strip standard on all RU relays.

Ratings

Coil Ratings

Rated Voltage		Voltage Code	Coil Tape Colors	Rated Current ±15% at 20°C	Coil Resistance ±10% at 20°C	Inrush Current	Inductance	
							Energizing	De-Energizing
AC	24V	A24	white	37.5mA	164 Ω	60mA	1.8H	0.96H
	110-120V	A[redacted]	dark blue	8.4mA	4,550 Ω	14mA	36H	22H
	220-240V	A220	red	4.2mA	18,230Ω	7mA	144H	87H
DC	12V	D12	yellow*	83.3mA	160 Ω	N/A		
	24V	D24	green	41.7mA	605 Ω			
	110V	D110	yellow*	9.1mA	12, 100 Ω			

Voltage printed in black.

Contact Ratings (Standard)

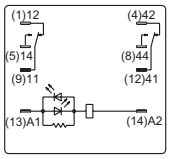
Voltage		Resistive	Inductive
30V DC	DPDT	10A	5A
	4PDT	6A	3A
110V DC	DPDT	0.6A	0.3A
	4PDT	0.4A	0.2A
120V AC	DPDT	10A	5A
	4PDT	6A	3A
240V AC	DPDT	10A	5A
	4PDT	6A	3A

Contact Ratings (Bifurcated)

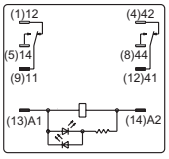
Voltage		Resistive	Inductive
30V DC	4PDT	3A	1.5A
110V DC	4PDT	–	–
120V AC	4PDT	3A	0.8A
250V AC	4PDT	3A	0.8A

Internal Circuit*

RU2S Standard

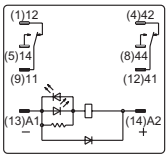


Over 24V AC/DC

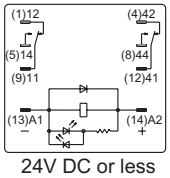


24V AC/DC or less

RU2S-D with Diode

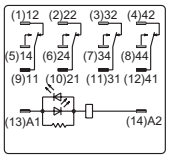


Over 24V DC

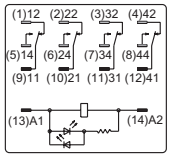


24V DC or less

RU4S/RU42S Standard

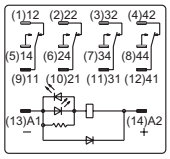


Over 24V AC/DC

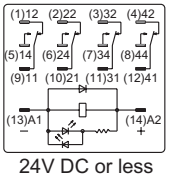


24V AC/DC or less

RU4S-D/RU42S-D with Diode



Over 24V DC



24V DC or less

Image as viewed from bottom of relay. Refer to socket for exact wiring layout (Section F).

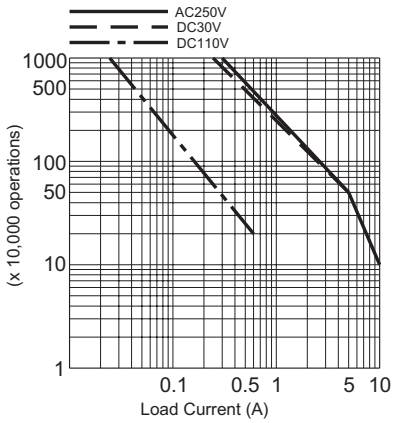
Numbers not in parenthesis follow international system of labeling terminals.

E

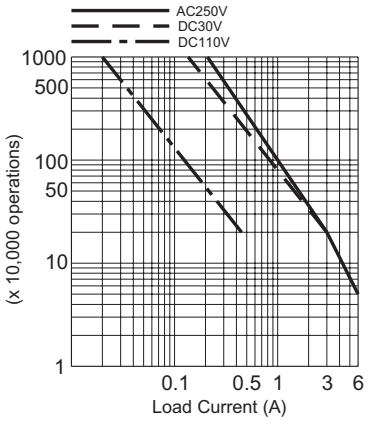
Relays

Electrical Life Curves

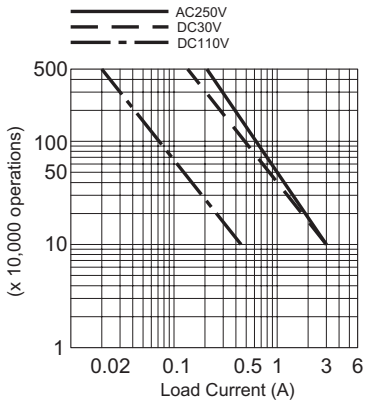
RU2 (Resistive Load)



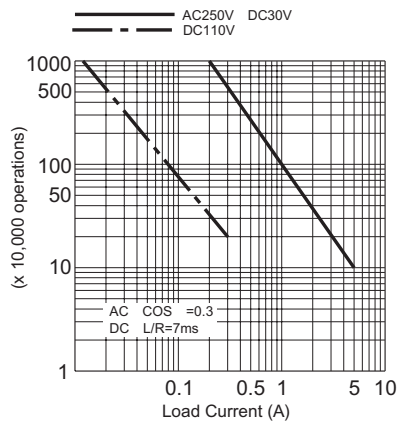
RU4 (Resistive Load)



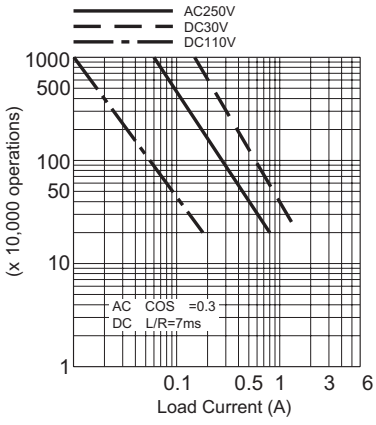
RU42 (Resistive Load)



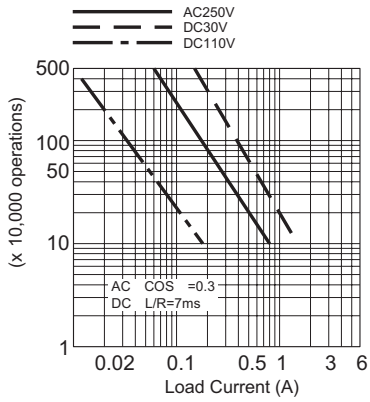
RU2 (Inductive Load)



RU4 (Inductive Load)

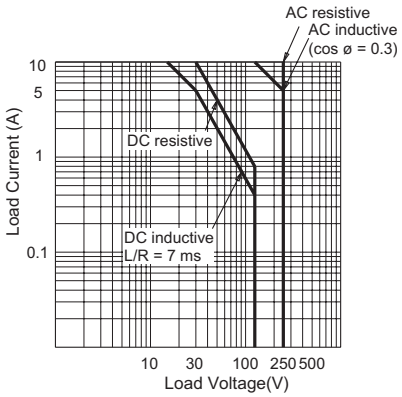


RU42 (Inductive Load)

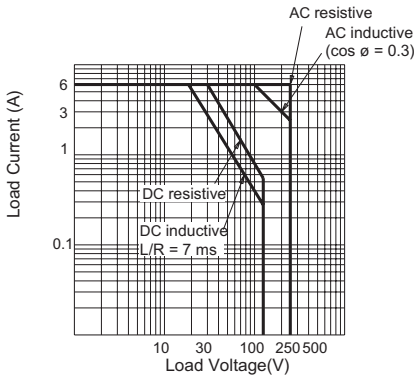


Maximum Switching Capacity

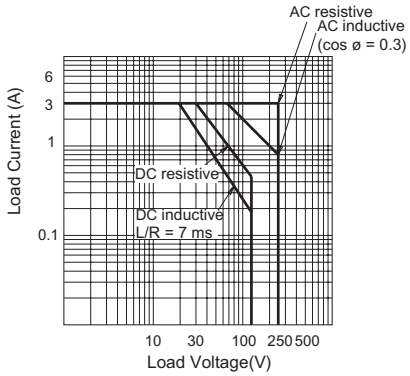
RU2 (Maximum Load)



RU4 (Maximum Load)

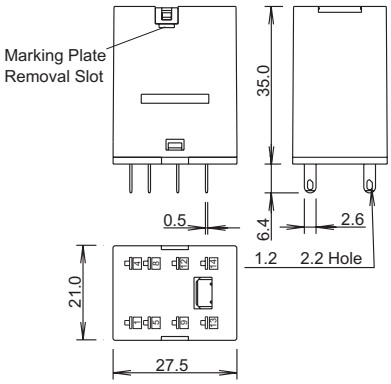


RU42 (Maximum Load)



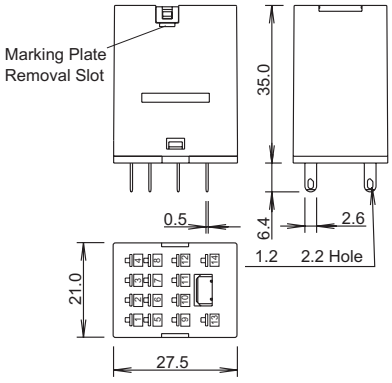
Dimensions & Mounting Hole Layouts

RU2
Dimensions



Marking plate removal slot is provided only on one side.
Insert a flat screwdriver into the slot to remove the marking plate.

RU4/RU42
Dimensions



Marking plate removal slot is provided only on one side.
Insert a flat screwdriver into the slot to remove the marking plate.

Dimensions are in mm.