QRC series

C7-A1x

5-pin, miniature relay, 1-pole, faston

Type	**C7-A1x/ ... V** Standard relay 1 change-over contact
Maximum contact load	**16 A/250 V AC-1 0,5 A/110 V DC-1** **16 A/30 V DC-1 0,2 A/220 V DC-1**

Contacts

Material	Standard	Code 0	AgNi
Rated current			16 A
Switch-on current max. (20 ms)			40 A
Switching voltage max.			250 V
AC load (Fig 1)			4 kVA
DC load			see Fig. 2
Relay compatible with socket S7-16			

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,2 VA (AC)/1,3 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	111	108
48	686	25	24	432	55
115	4K3	10,4	48	1K7	28
230	18K6	5,2	110	9K2	12

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	16 ms/≤ 3 ms
Release time/bounce time	8 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-A10/AC ... V**
LED	**C7-A10X/AC ... V**
VDC 12, 24, 48, 110	**C7-A10/DC ... V**
LED	**C7-A10X/DC ... V**
Free wheeling diode	**C7-A10DX/DC ... V**
Polarity and free wheeling diode	**C7-A10FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C7-A10BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket:	**S7-16**

Connection diagram

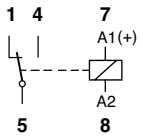


Fig. 1 AC voltage endurance

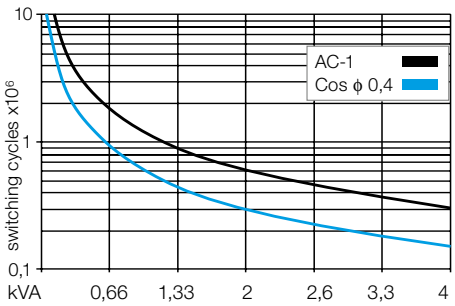
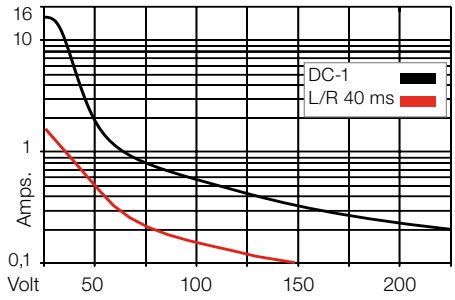
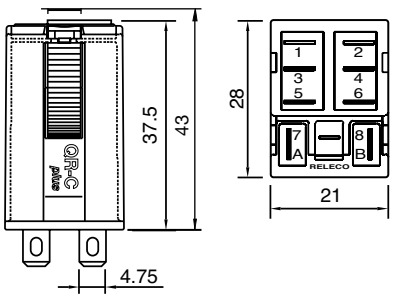


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

C7-A2x

8-pin, miniature relay, 2-poles, faston

Type	**C7-A2x/ ... V** Standard relay 2 change-over contact
Maximum contact load	**10 A/250 V AC-1 0,5 A/110 V DC-1** **10 A/30 V DC-1 0,2 A/220 V DC-1**
Recommended minimum contact load	**10 mA/10 V Code 0, 9** **5 mA/5 V Code 8**

Contacts

Material	Standard	Code 0	AgNi
	Optional	Code 8	AgNi + 10 µ Au
	Optional	Code 9	AgNi + 0,2 µ Au
Rated current			10 A
Switch-on current max. (20 ms)			30 A
Switching voltage max.			250 V
AC load (Fig 1)			2,5 kVA
DC load			see Fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,2 VA (AC)/1 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	85
48	686	25	24	594	43
115	4K3	10,4	48	2K3	21
230	18K6	5,2	110	11K4	10

Insulation

Insulation	Volt rms, 1 min
Contact open	1000 V
Contact/contact	2,5 kV
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	16 ms/≤ 3 ms
Release time/bounce time	8 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-A20/AC ... V**	**C7-A28/AC ... V**	**C7-A29/AC ... V**
LED	**C7-A20X/AC ... V**	**C7-A28X/AC ... V**	**C7-A29X/AC ...V**
VDC 12, 24, 48, 110	**C7-A20/DC ... V**	**C7-A28/DC ... V**	**C7-A29/DC ... V**
LED	**C7-A20X/DC ... V**	**C7-A28X/DC ... V**	**C7-A29X/DC ... V**
Free wheeling diode	**C7-A20DX/DC ... V**	**C7-A28DX/DC ...V**	**C7-A29DX/DC .V**
Polarity and free wheeling diode	**C7-A20FX/DC ... V**	**C7-A28FX/DC ... V**	**C7-A29FX/DC ...V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C7-A20BX/UC ... V**	**C7-A28BX/UC ... V**	**C7-A29BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket: **S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

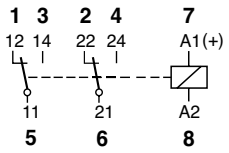


Fig. 1 AC voltage endurance

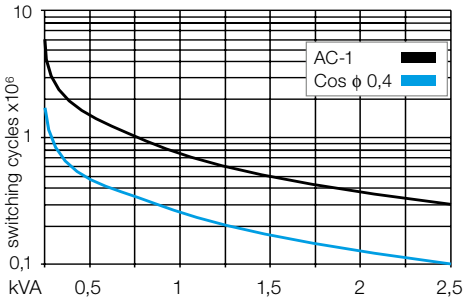
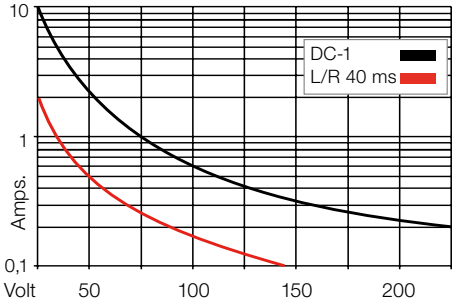
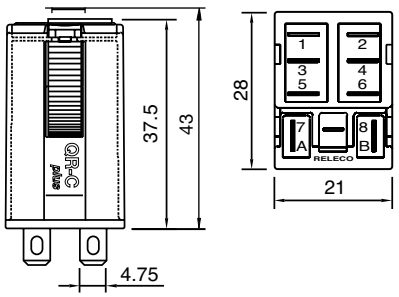


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

Lloyd's

IEC 61810;
EN 60947

QRC series

C7-T2x

8-pin, miniature relay, 2-poles, twin contact, faston

Type			**C7-T2x/ ... V** Standard relays for low level 2 change-over bifurcated contacts			
Maximum contact load			**6 A/250 V**	**AC-1**	**6 A/30 V**	**DC-1**
Recommended minimum contact load			**5 mA/5 V** **1 mA/5 V**	**Code 1** **Code 2**		
Contacts						
Material	Standard	Code 1	AgNi + 0,2 µ Au			
	Optional	Code 2	AgNi + 10 µ Au			
Rated current			6 A			
Switch-on current max. (20 ms)			15 A			
Switching voltage max.			250 V			
AC load (Fig 1)			1,2 kVA			
DC load			see fig. 2			
Coil						
Coil resistance			see table; tolerance ± 10 %			
Pick-up voltage			≤ 0,8 x U_N			
Release voltage			≥ 0,1 x U_N			
Nominal power			1,2 VA (AC)/1 W (DC)			

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	85
48	686	25	24	594	43
115	4K3	10,4	48	2K3	21
230	18K6	5,2	110	11K4	10

Insulation	Volt rms, 1 min
Contact open	1000 V
Contact/contact	2,5 kV
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3
Specifications	
Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	16 ms/≤ 3 ms
Release time/bounce time	8 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types		
VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-T21/AC ... V**	**C7-T22/AC ... V**
LED	**C7-T21X/AC ... V**	**C7-T22X/AC ... V**
VDC 12, 24, 48, 110	**C7-T21/DC ... V**	**C7-T22/DC ... V**
LED	**C7-T21X/DC ... V**	**C7-T22X/DC ... V**
Free wheeling diode	**C7-T21DX/DC ... V**	**C7-T22DX/DC ...V**
Polarity and free wheeling diode	**C7-T21FX/DC ... V**	**C7-T22FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C7-T21BX/UC ... V**	**C7-T22BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket: **S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

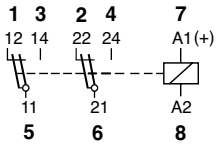


Fig. 1 AC voltage endurance

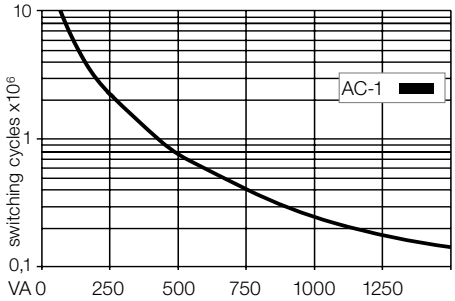
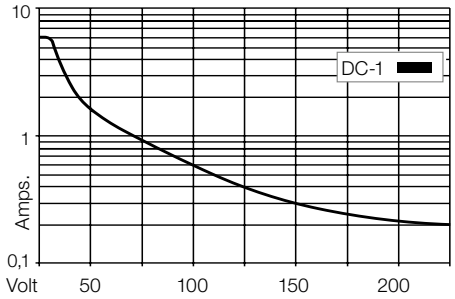
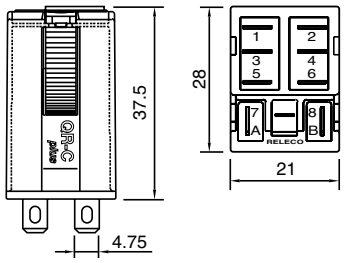


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

C7-G2x

6-pin, miniature power relay, 2-poles, faston

Type			**C7-G2x/ ... V** Power relay, DC application 2 open contacts, gap 1,5mm
Maximum contact load			**10 A/250 V AC-1 0,8 A/110 V DC-1** **10 A/30 V DC-1 0,4 A/220 V DC-1**
Contacts			
Material	Standard	Code 0	AgNi
Rated current			10 A
Switch-on current max. (20 ms)			30 A
Switching voltage max			250 V
AC load (Fig 1)			2,5 kVA
DC load			see fig. 2
Coil			
Coil resistance			see table; tolerance ± 10 %
Pick-up voltage			≤ 0,8 x U_N
Release voltage			≥ 0,1 x U_N
Nominal power			1,5 VA (AC)/1,5 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	153	62	12	99	121
48	611	31	24	388	61
115	3K6	13	48	1K5	32
230	14K6	6,5	110	8K	14

Insulation	Volt rms, 1 min
Contact open	2000 V
Contact/contact	2,5 kV
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3
Specifications	
Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	20 ms/≤ 3 ms
Release time/bounce time	10 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types	
VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-G20/AC ... V**
LED	**C7-G20X/AC ... V**
VDC 12, 24, 48, 110	**C7-G20/DC ... V**
LED	**C7-G20X/DC ... V**
Free wheeling diode	**C7-G20DX/DC ... V**
Polarity and free wheeling diode	**C7-G20FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C7-G20BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories	
Socket:	**S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

Gap: 1,5 mm

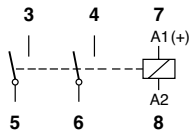


Fig. 1 AC voltage endurance

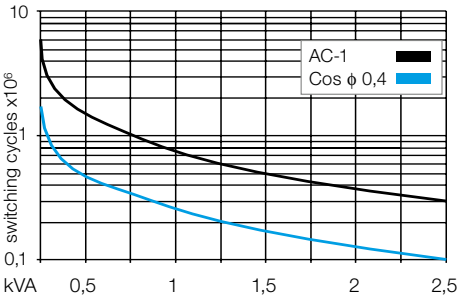
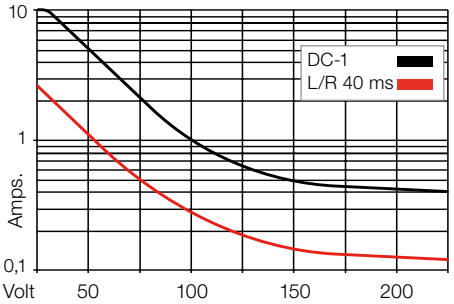
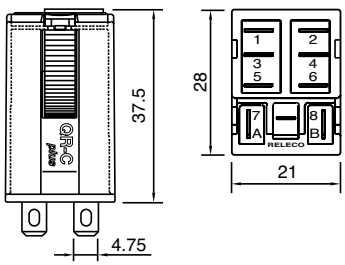


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

Lloyd´s

IEC 61810; EN 60947

QRC series

C7-X1x

4-pin, miniature power relay, 1-pole, double make contact, faston

Type	**C7-X1x/ ... V** Power relay, DC application 1 pole, NO, double make
Maximum contact load	**10 A/250 V AC-1 6 A/110 V DC-1** **10 A/30 V DC-1 1 A/220 V DC-1**

Contacts

Material	Standard	Code 0	AgNi
Rated current			10 A
Switch-on current max. (20 ms)			30 A
Switching voltage max.			250 V
AC load			2,5 kVA
DC load			see Fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,5 VA (AC)/1,3 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	153	62	12	111	108
48	611	31	24	432	55
115	3K6	13	48	1K7	27
230	14K6	6,5	110	9K2	12

Insulation

	Volt rms, 1 min
Contact open	2,5 kV
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	20 ms/≤ 3 ms
Release time/bounce time	10 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-X10/AC ... V**
LED	**C7-X10X/AC ... V**
VDC 12, 24, 48, 110	**C7-X10/DC ... V**
LED	**C7-X10X/DC ... V**
Free wheeling diode	**C7-X10DX/DC ... V**
Polarity and free wheeling diode	**C7-X10FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C7-X10BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket:	**S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

Gap:
3 mm (1,5 + 1,5)

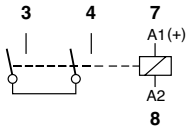


Fig. 1 AC voltage endurance

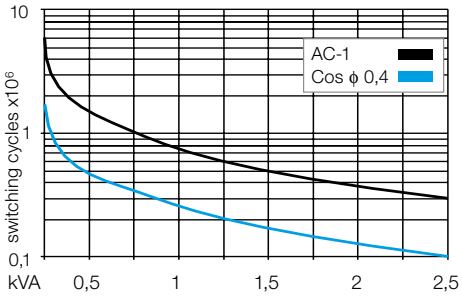
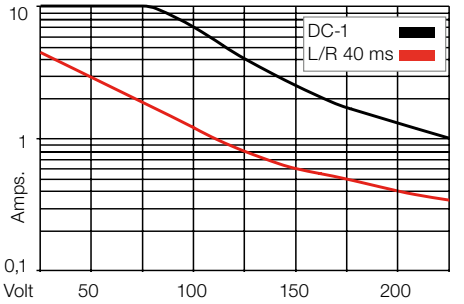
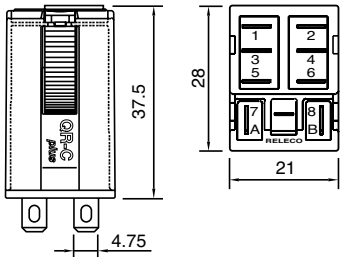


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

Lloyd's

IEC 61810; EN 60947

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

C7-H23

8-pin, miniature relay, 2-pole, faston

Type	**C7-H23/ ... V** Special relays 1 x CO power contact 1 x CO twin contact
Maximum contact load	**10 A / 250 V AC-1 6 A / 250 V AC-1** **10 A / 30 V DC-1 6 A / 30 V DC-1**
Recommended minimum contact load	**10 mA/10 V (Power contacts)** **5 mA/5V (twin contacts)**

Contacts

Power contact

Standard material	AgNi
Rated current	10 A
Switch-on current max. (20 ms)	30 A
Switching voltage max.	2,5 kV
AC load (Fig 1)	2,5 VA
DC load	see fig. 2

*Power contact only

Twin contact

Standard material	AgNi + 0,2 µ Au
Rated current	6 A
Switch-on current max. (20 ms)	15 A
Switching voltage max.	250 V

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,2 VA (AC) /1 W (DC)

Coil table

VAC	Ω ± 10%	mA	VDC	Ω ± 10%	mA
24	174	50	12	148	81
48	686	25	24	594	40
115	4K3	10.4	48	2K3	21
230	18K6	5.2	110	11K4	10

Insulation	Volt rms, 1 min
Contact open	1000 V
Contact/contact	2,5 kV
Contact/coil	2,5 kV
Insulation, IEC 61810-1:	2,5 kV/3

Specifications

Ambient temperature operation/storage	40 (no ice)….60 °C /-40 ... 80 °C
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
Protection class	IP40
Weight	43 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-H23/AC ... V**
LED	**C7-H23X/AC ... V**
VDC 12,24, 48, 110	**C7-H23/DC ... V**
LED	**C7-H23X/DC ... V**
Free wheeling diode	**C7-H23DX/DC ... V**
Polarity and free wheeling diode	**C7-H23FX/DC ... V**
UC 24 V, 48 V, 60 V	**C7-H23BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket: **S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

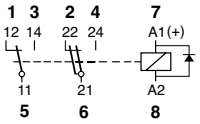


*Fig. 1 AC voltage endurance

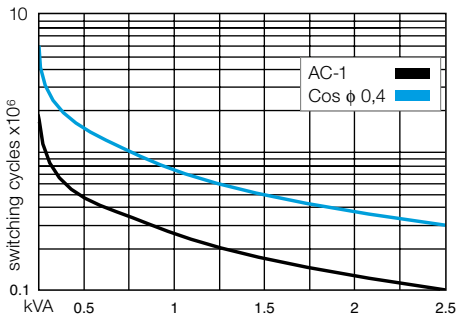
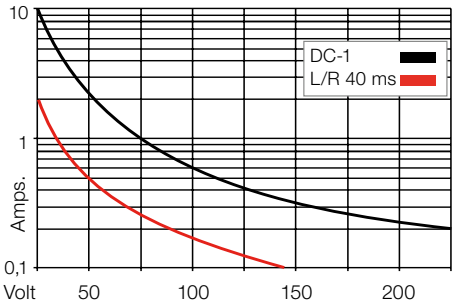
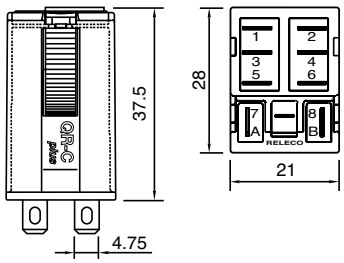


*Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

QRC series

C7-W1x

4-pin, miniature relay, 1-pole, tungsten contact, faston

Type:	**C7-W1x/ ... V** Power relay for high inrush current 1 pole normally open
Maximum contact load:	**10 A/250 V AC-1 6 A/250 V AC-5a/b**
Recommended minimum contact load:	**10 mA/10 V**

Contacts

Material	Standard	Code 0	AgNi/W
Rated current			10 A
Switch-on current max. (2,5 ms)			500 A
Switching voltage max.			250 V
AC load (Fig 1)			2,5 kVA
DC load			see fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,5 VA (AC)/1,5 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	153	62	12	99	121
48	611	31	24	388	61
115	3K6	13	48	1K5	32
230	14K5	6,5	110	8K	14

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	20 ms/≤ 3 ms
Release time/bounce time	10 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C7-W10/AC ... V**
LED	**C7-W10X/AC ... V**
VDC 12, 24, 48, 110	**C7-W10/DC ... V**
LED	**C7-W10X/DC ... V**
Free wheeling diode	**C7-W10DX/DC ... V**
Polarity and free wheeling diode	**C7-W10FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C7-W10BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket:	**S7-C, S7-I/O, S7-L, S7-P, S7-P0**
Optional accessories (blanking plug):	**S9-NP, S9-OP**

Connection diagram

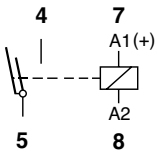


Fig. 1 AC voltage endurance

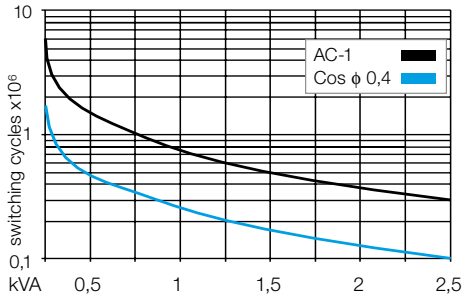
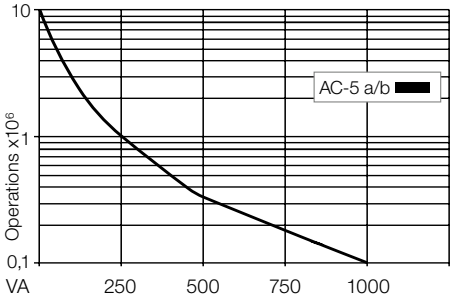
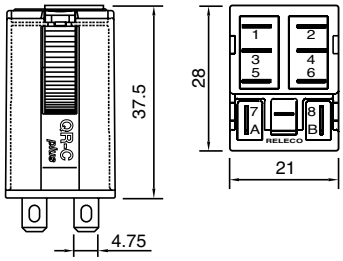


Fig. 2 AC voltage endurance



Dimensions [mm]



Technical approvals, conformities

Lloyd's

IEC 61810; EN 60947

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

R7-A2x

8-pin, miniature standard relay, 2-pole, plug-in
Relay approval: EN 60077-1-2/99 - EN 61373/99 for Railway application

Type	**R7-A2x/DC ... V** Railway application Sensitive, 2 change-over contacts
Maximum contact load:	**10 A/250 V AC-1 10A/30V DC-1**
Recommended minimum contact load	**10 mA/10 V Code 0, 4** **5 mA/5 V Code 8**

Contacts

Material	Standard	Code 0	AgNi
	Optional	Code 4	AgNi + 0,2µ Au
	Optional	Code 8	AgNi + 10µ Au
Rated current			10 A
Switch-on current max. (20 ms)			30 A
Switching voltage max.			250 V
AC load			see fig. 1
DC load			see fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Release voltage	0,7 U_N ... 1,25 U_N
Pick-up voltage	≥ 0,1 x U_N
Nominal power	1,07 W

Coil table

Voltage	Ω ± 10%	mA
24	535	45
48	2004	24
72	4750	15
110	11337	10

Insulation	Volt rms, 1 min
Pollution grade	PD3
Pulse (1,2 /50µs) Dielectric strenght (1Minute/V rms)	
Contact/coil	4KV / 2200V
Between different poles	4KV / 2200V
Between contact and the same pole	1550 / 850V

Specifications

Ambient temperature operation/storage	-25 (no ice)....70 °C /-40 ... 80 °C
Number of mechanical operations	>20millions
Thermic class	B (130° C)
Vibration : category / class	1 / B Body mounted
Vibration	5-150Hz (3 axes)
Shock	5g (3 axes)
Operation (UN) / release time	10 ms/ 15 ms
Weight	35 g
Weight avg. Relay + Socket (S7-M)	75g
Protection class	IP40

Standard types

VDC 24, 48, 72, 110	**R7-A20/DC ... V**	**R7-A24/DC ... V**	**R7-A28/DC ... V**
LED	**R7-A20X/DC ... V**	**R7-A24X/DC ... V**	**R7-A28X/DC ... V**
Free wheeling diode	**R7-A20D/DC ... V**	**R7-A24D/DC ... V**	**R7-A28D/DC ... V**
LED + free wheeling diode	**R7-A20DX/DC ... V**	**R7-A24DX/DC ... V**	**R7-A28DX/DC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket: **S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

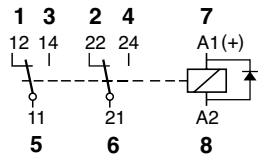


Fig. 1 AC voltage endurance

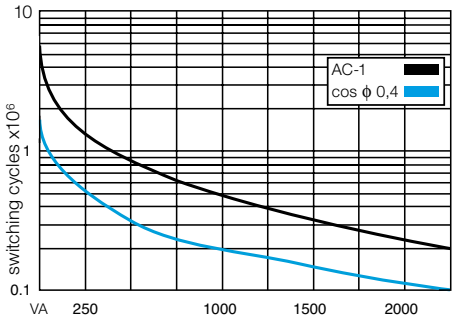
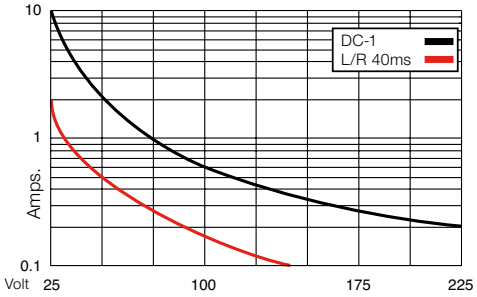
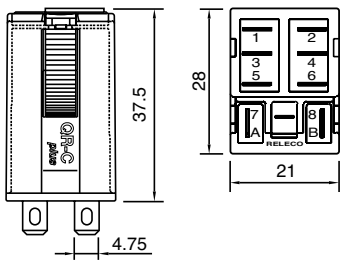


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

EN 60077-1-2/99; EN 61373/99

QRC series

R7-T2x

8-pin, miniature industrial relay, 2-pole, change-over contact, faston
Relay approval: EN 60077-1-2/99 - EN 61373/99 for Railway application

Type		**R7-T2x/DC ... V**		
		Railway application		
		Sensitive, 2 change-over contact		
Maximum contact load		**6 A/250 V**	**AC-1**	**6 A /30 V DC-1**
Recommended minimum contact load		**5 mA/5 V**	**Code 1**	
		1 mA/5 V	**Code 2**	
Contacts				
Material	Standard	Code 1	AgNi + 0,2µ Au	
	Optional	Code 2	AgNi + 10µ Au	
Rated current			6 A	
Switch-on current max. (20 ms)			15 A	
Switching voltage max.			250 V	
AC load			see fig. 1	
DC load			see fig. 2	
Coil				
Coil resistance			see table; tolerance ± 10 %	
Operation range			0,7 U_N ... 1,25 U_N	
Contact open			≥ 0,1 x U_N	
Nominal power			1,07 W	

Coil table

Voltage	Ω ± 10%	mA
24	535	45
48	2004	24
72	4750	15
110	11337	10

Insulation	Volt rms, 1 min
Pollution grade	PD3
Pulse (1,2 /50µs) Dielectric strenght (1Minute/V rms)	
Contact/coil	4KV / 2200V
Between different poles	4KV / 2200V
Between contact and the same pole	1550 / 850V
Specifications	
Ambient temperature operation/storage	-25 (no ice)....70 °C /-40 ... 80 °C
Number of mechanical operations	≥ 20 millions
Thermic class	B (130° C)
Vibration : category / class	1 / B Body mounted
Vibration	5-150Hz (3 axes)
Shock	5g (3 axes)
Operation (UN) / release time	10 ms/ 15 ms
Weight	35 g
Weight avg. Relay + Socket (S7-M)	75g
Protection class	IP40

Standard types

VDC 24, 48, 72, 110	**R7-T21/DC ... V**	**R7-T22/DC ... V**
LED	**R7-T21X/DC ... V**	**R7-T22X/DC ... V**
Free wheeling diode	**R7-T21D/DC ... V**	**R7-T22D/DC ... V**
LED + free wheeling diode	**R7-T21DX/DC ... V**	**R7-T22DX/DC ... V**

"..." Enter the voltage for full type designation

Accessories	
Socket:	**S7-C, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

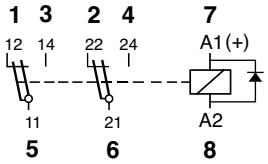


Fig. 1 AC voltage endurance

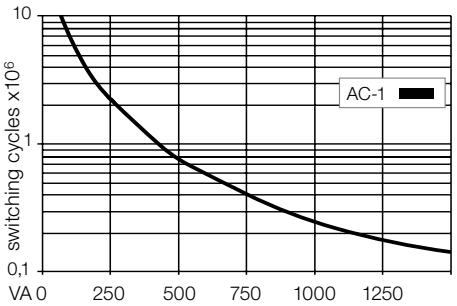
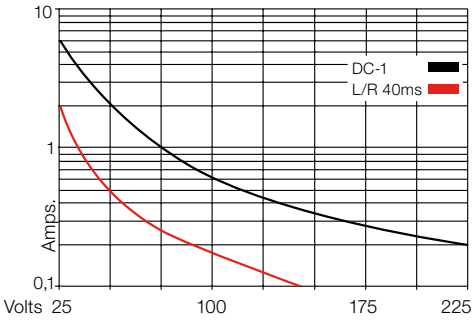


Fig. 2 DC load limit curve



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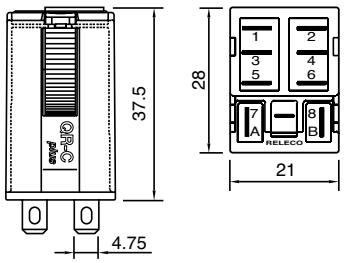


Technical approvals, conformities

IEC 60077; EN 60077-1-2/99; EN 61373/99

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

QRC series

C70-A2x

8-pin, miniature relay, 2-poles, faston

Type	**C70-A20/…V** Standard relay 2 change-over contact	
Maximum contact load	**10 A / 250 V AC1** **10 A / 30 V DC1**	**0,5 A / 110 V DC1** **0,2 A / 220 V DC1**
Recommended minimum contact load	**10 mA / 10 V**	

Contacts

Material	AgNi
Rated current	10 A
Switch-on current max. (20 ms)	20 A
Switching voltage max.	250 V
AC load (Fig. 1)	2.5 kVA
DC load	see Fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0.8 x U_N
Release voltage	≥ 0.1 x U_N
Nominal power	1.5 VA (AC) / 1 W (DC)

Coil Table

VAC	Ω	mA	VDC	Ω	mA
24	190	53	12	140	86
48	770	25	24	600	40
120	4K7	12	48	2K4	20
230	17K	6	110	12K5	8,8
240	19K1	5,3			

Insulation

Pulse (1.2 / 50 µs) / Dielectric strength (V rms, 1 minute)

Contact / coil	4 kV / 2.5 kV
Contact / contact	4 kV / 2.5 kV
Contact / open	1.5 kV / 1 kV

Specifications

Ambient temperature operation / storage	-40 (no ice) …60 °C / -40…80 °C
Pick-up time / bounce time	16 ms / ≤ 3 ms
Release time / bounce time	8 ms / ≤ 1 ms
Mechanical life ops	AC: 10 Mill. / DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Protection class	RT1
Weight	37 g

Standard types

V AC 50 Hz / 60 Hz: 24, 28, 120, 230, 240	**C70-A20/AC…V**
LED	**C70-A20X/AC…V**
V DC 50 Hz / 60 Hz: 12, 24, 48, 110	**C70-A20/DC…V**
LED	**C70-A20X/DC…V**
Free wheeling diode	**C70-A20DX/DC…V**

«…» Enter the voltage for the full type designation

Accessories

Socket: **S7-M, S7-I/O, S7-L, S7-P, S7-P0**

Connection diagram

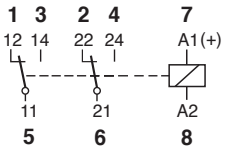


Fig. 1 AC voltage endurance

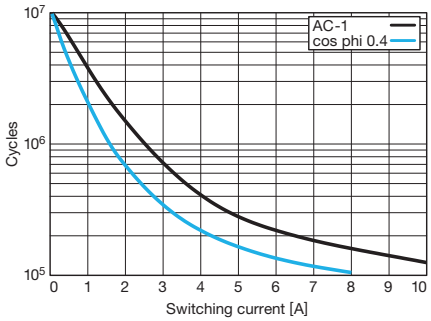
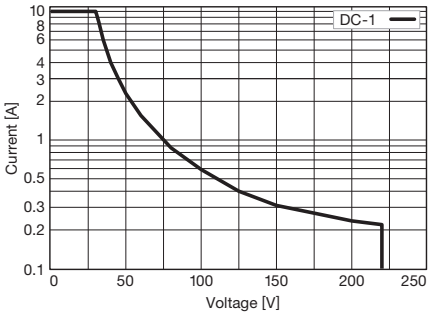
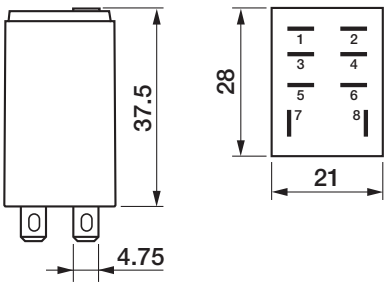


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

Lloyd´s

IEC 61810

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

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C9-A4x

14-pin, miniature relay, 4-pole, plug-in, faston

Type			**C9-A4x/ ... V** Standard relays 4 change-over contacts
Maximum contact load			**5 A/250 V AC-1 5 A/30 V DC-1**
Recommended minimum contact load			**10 mA/10 V Code 1** **5 mA/5 V Code 2**
Contacts			
Material	Standard	Code 1	AgNi + 0,2 µ Au
	Optional	Code 2	AgNi + 10 µ Au
Rated current			5 A
Switch-on current max. (20 ms)			15 A
Switching voltage max (same polarity)			250 V
AC load (Fig 1)			1,250 kVA
DC load			see Fig. 2
Coil			
Coil resistance			see table; tolerance ± 10 %
Pick-up voltage			≤ 0,8 x U_N
Release voltage			≥ 0,1 x U_N
Nominal power			1,2 VA (AC)/1 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	174	50	12	148	81
48	686	25	24	594	40
115	4K3	10,4	48	2K3	21
230	18K6	5,2	110	11K4	11

Insulation	Volt rms, 1 min
Contact open	1000 V
Contact/contact	2 kV
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3
Specifications	
Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/≤ 3 ms
Release time/bounce time	6 ms/≤ 1 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types		
VAC 50 Hz/60 Hz: 24, 48, 115, 230 (240)	**C9-A41/AC ... V**	**C9-A42/AC ... V**
LED	**C9-A41X/AC ... V**	**C9-A42X/AC ... V**
VDC 12, 24, 48, 110	**C9-A41/DC ... V**	**C9-A42/DC ... V**
LED	**C9-A41X/DC ... V**	**C9-A42X/DC ... V**
Free wheeling diode	**C9-A41DX/DC ... V**	**C9-A42DX/DC ... V**
Polarity and free wheeling diode	**C9-A41FX/DC ... V**	**C9-A42FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C9-A41BX/UC ... V**	**C9-A42BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories	
Socket:	**S9-M, S9-L, S9-P, S9-P0**
Optional accessories (blanking plug):	**S9-NP, S9-OP**

Connection diagram

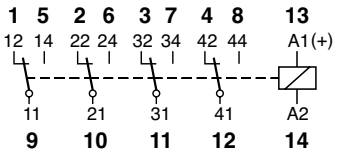


Fig. 1 AC voltage endurance

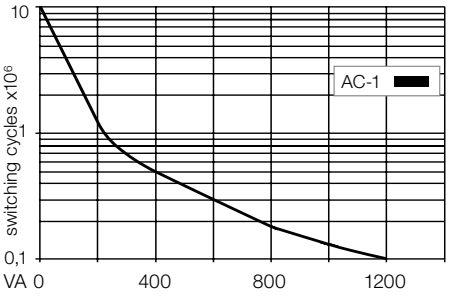
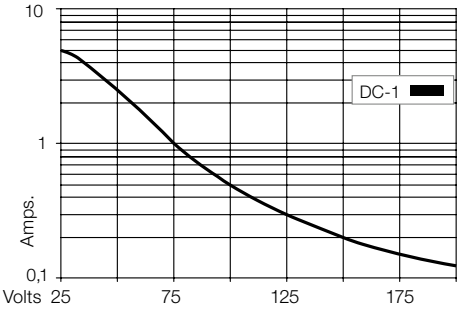


Fig. 2 DC load limit curve



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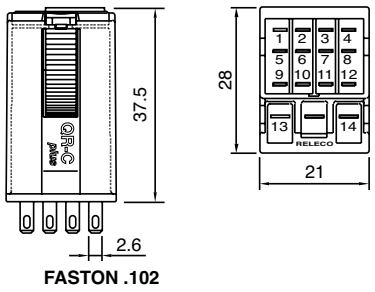


Technical approvals, conformities

IEC 61810; EN 60947

C9-E2x

8-pin, miniature relay, 2-pole, plug-in, faston

Type	**C9-E2x/ ... V** Sensitive relay, 500 mW 2 change-over contacts
DC operating range	**0,8 ...1,7 x U_N**
Maximum contact load	**5 A/250 V AC-1 5 A/30 V DC-1**
Recommended minimum contact load	**10 mA/10 V Code 1** **5 mA/5 V Code 2**

Contacts

Material	Standard	Code 1	AgNi + 0,2 µ Au
	Optional,	Code 2	AgNi + 10 µ Au
Rated current			5 A
Switch-on current max. (20 ms)			15 A
Switching voltage max.			250 V
AC load (Fig 1)			1200 VA
DC load			see fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	0,8 VA (AC)/0,5 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	238	33	12	288	42
48	1K	17	24	1K1	21
115	5K9	7	48	4K6	10
230	23K9	3,5	110	24K2	4,5

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/contact	2,5 kV
Contact/coil	2,5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/≤ 3 ms
Release time/bounce time	6 ms/≤ 1 ms
Mechanical life	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	40 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115, 230 (240)	**C9-E21/AC ... V**	**C9-E22/AC ... V**
LED	**C9-E21X/AC ... V**	**C9-E22X/AC ... V**
VDC 12, 24, 48, 110, 220	**C9-E21/DC ... V**	**C9-E22/DC ... V**
LED	**C9-E21X/DC ... V**	**C9-E22X/DC ... V**
Free wheeling diode	**C9-E21DX/DC ... V**	**C9-E22DX/DC ... V**
Polarity and free wheeling diode	**C9-E21FX/DC ... V**	**C9-E22FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V, 60 V	**C9-E21BX/UC ... V**	**C9-E22BX/UC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket:	**S9-M, S9-L, S9-P, S9-P0**
Optional accessories (blanking plug):	**S9-NP, S9-OP**

Connection diagram

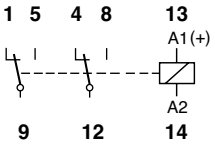


Fig. 1 AC voltage endurance

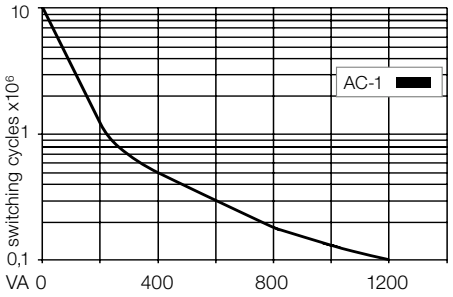
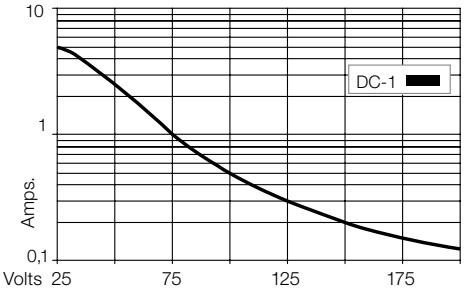
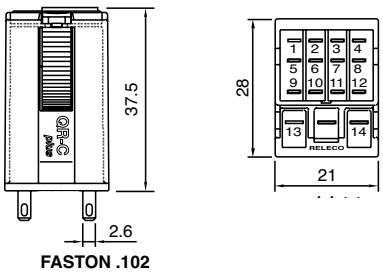


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

This issue replaces all previous issues. Availability, errors and specifications subject to change without notice.

C9-R2x

9-pin, miniature remanence relay, 2-pole, plug-in, faston

Type	**C9-R2x/ ... V** Magnetic latching relay 2 change-over contacts
Maximum contact load	**5 A/120V AC-1 5 A/30 V DC-1**
Recommended minimum contact load	**10 mA/10 V**

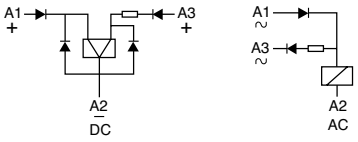
Contacts

Material	Standard	Code 1	AgNi + 0,2 µ Au
Rated current			5 A
Switch-on current max. (20 ms)			15 A
Switching voltage max.			120V
AC load			600 VA
DC load			see Fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
ON pulse power	1,2 VA/W
OFF pulse power	0,3 VA/W
1 winding for AC, 2 winding for DC	

Internal Diagram:



Coil table

VAC	mA ON	mA OFF	VDC	mA ON	mA OFF
24	50	8	12	100	25
48	25	4	24	50	12
115	10	2	48	25	6
230	5	1	60	20	5

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/contact	2 kV
Contact/coil	2 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	2,5 kV/2

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Minimum pulse ON/OFF	50 ms
Mechanical life	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	43 g

Standard types

AC 50 Hz/60 Hz: 24, 48, 115, 230	**C9-R21/AC ... V**
DC 12, 24, 48, 60	**C9-R21/DC ... V**

"..." Enter the voltage for full type designation

Accessories

Socket:	**S9-M, S9-L, S9-P, S9-P0**
Optional accessories (blanking plug):	**S9-NP, S9-OP**

Connection diagram

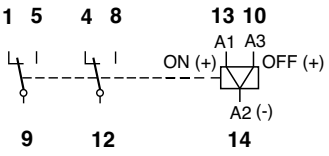


Fig. 1 AC voltage endurance

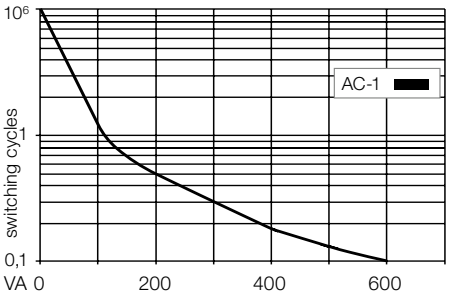
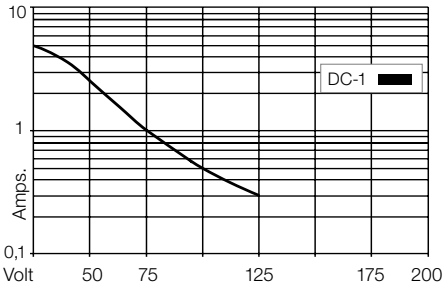
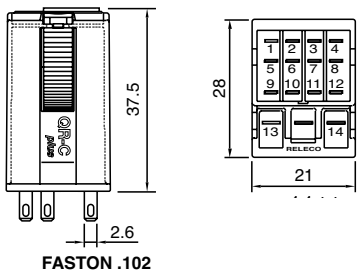


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

Lloyd´s

IEC 61810; EN 60947

QRC series

C90-A4x

14-pin, miniature relay, 4-pole, plug-in, faston

Type	**C90-A4x/…V** Standard relays 4 change-over contacts
Maximum contact load	**5 A / 50 V AC 1, 5 A / 30 V DC1**
Recommended minimum contact load	**10 mA / 10 V** C90-A4**1**/…V **5 mA / 5 V** C90-A4**2**/…V

Contacts

Material	Standard	C90-A4**1**/…V	AgNi
	Optional	C90-A4**2**/…V	AgNi + 5 µ Au
Rated current			5 A
Switch-on current max. (20 ms)			15 A
Switching voltage max (same polarity)			250 V
AC load (Fig. 1)			1.250 kVA
DC load			see Fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0.8 x U_N
Release voltage	≥ 0.1 x U_N
Nominal power	1.5 VA (AC) / 1 W (DC)

Coil Table

VAC	Ω	mA	VDC	Ω	mA
24	190	53	12	140	86
48	770	25	24	600	40
120	4K7	12	48	2K4	20
230	17K	6	110	12K5	8,8
240	19K1	5,3			

Insulation

Pulse (1.2 / 50 µs) / Dielectric strength (V rms, 1 minute)

Contact / coil	4 kV / 2 kV
Contact / contact	2.5 kV / 2 kV
Contact / open	1.5 kV / 1 kV

Specifications

Ambient temperature operation / storage	-40 (no ice) …60 °C / -40…80 °C
Pick-up time / bounce time	10 ms / ≤ 3 ms
Release time / bounce time	6 ms / ≤ 1 ms
Mechanical life ops	AC: 10 Mill. / DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Protection class	RT1
Weight	36 g

Standard types

V AC 50 Hz / 60 Hz: 24, 28, 120, 230, 240	**C90-A41/AC…V**	**C90-A42/AC…V**
LED	**C90-A41X/AC…V**	**C90-A42X/AC…V**
V DC 50 Hz / 60 Hz: 12, 24, 48, 110	**C90-A41/DC…V**	**C90-A42/DC…V**
LED	**C90-A41X/DC…V**	**C90-A42X/DC…V**
Free wheeling diode	**C90-A41DX/DC…V**	**C90-A42DX/DC…V**

«…» Enter the voltage for the full type designation

Accessories

Socket: **S9-M, S9-L, S9-P, S9-P0**

Connection diagram

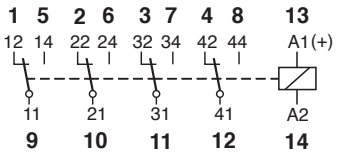


Fig. 1 AC voltage endurance

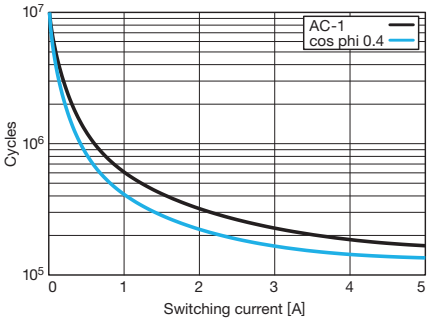
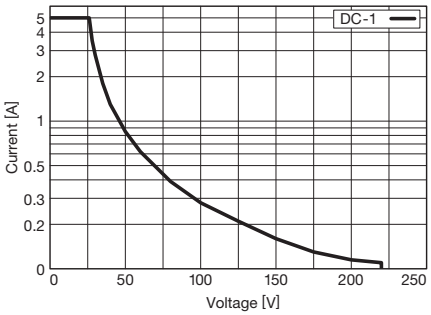
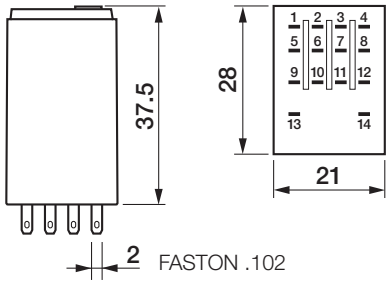


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

Lloyd´s

IEC 61810

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