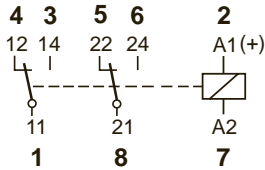


RELAYS





C2-A20

General purpose
Two pole, change-over contacts

10 A 250 V AC1 **0.5 A 110 V DC1**
10 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10µ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x **Un**
Drop-out voltage ≥0.1 x **Un**
Nominal coil power 2.2 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	433	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Table 1 Electrical Life, ops. x 10⁶

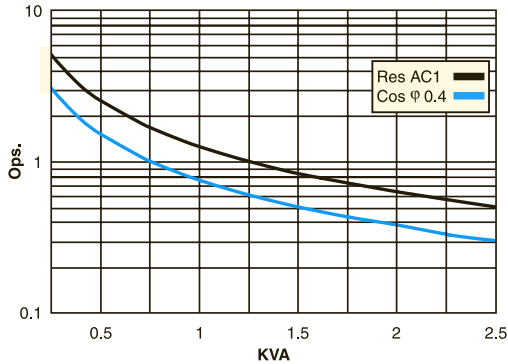
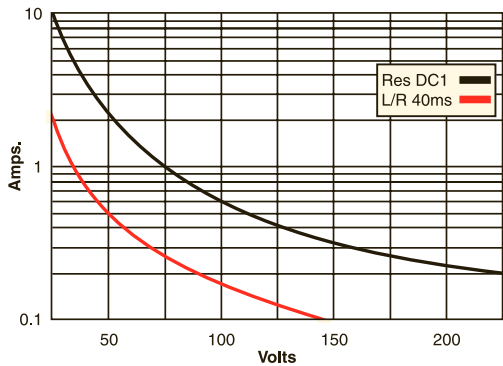
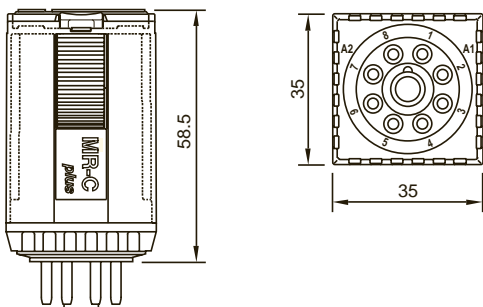


Table 2 Max. DC Load



Dimensions - mm



Insulation

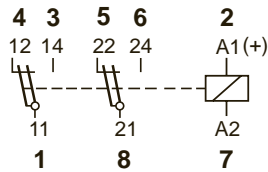
Dielectric strength (1 minute): Open contacts 1000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 2.5 KV

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) **C2-A20X VAC**
RC suppressor **C2-A20R VAC**
DC 24, 48, 110, 220
X = LED, no polarity (standard) **C2-A20X VDC**
Free-wheeling diode **C2-A20DX VDC**
Polarity and free-wheeling diodes **C2-A20FX VDC**
AC/DC bridge rectifier (24 or 48 V) **C2-A20BX VDC**



C2-T21



Low level
Two change-over bifurcated contacts

6 A 250 V AC1 **6 A 30 V DC1**
Min. contacts load: 1 mA / 5 V DC1

Contacts

Materials: Standard, code 1	AgNi + 0.3μAu
Optional, code 2	AgNi + 10μAu
Max. switching current	6 A
Max. peak inrush current (20 ms)	15 A
Max. switching voltage	250 V
Max. AC load (Table 1)	1.2 KVA
Max. DC load	See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.2 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	443	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Table 1 Electrical Life, ops. x 10⁶

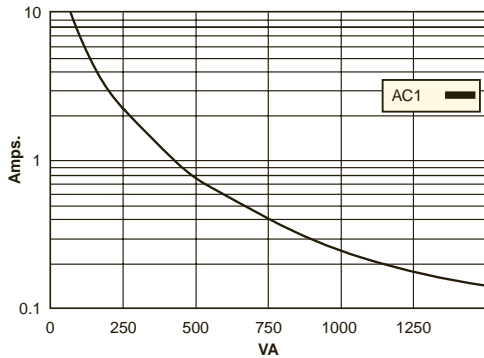
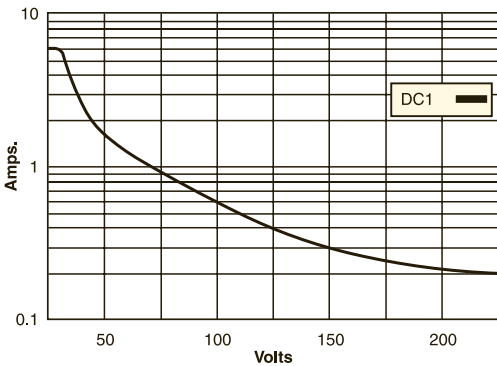


Table 2 Max. DC Load



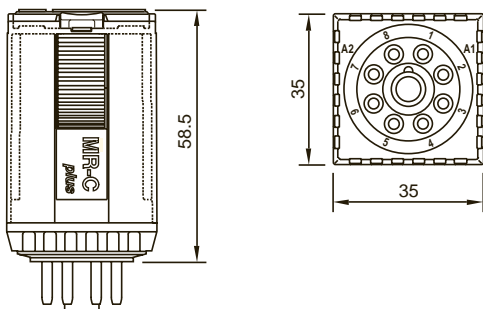
Insulation

Dielectric strength (1 minute): Open contacts	1000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

Operate time + bounce time	16 ms
Release time + bounce time	8 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1,200 / hour
Protection degree	IP 40 / RT1
Weight avg.	90 g

Dimensions - mm

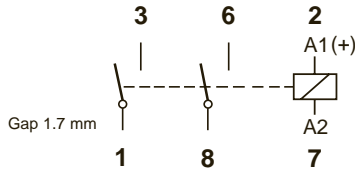


Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C2-T21X VAC
RC suppressor	C2-T21R VAC
DC 24, 48, 110, 220	
X = LED, no polarity (standard)	C2-T21X VDC
Free-wheeling diode	C2-T21DX VDC
Polarity and free-wheeling diodes	C2-T21FX VDC
AC/DC bridge rectifier (24 or 48 V)	C2-T21BX VDC



IEC 61810 EN 60947



C2-G20

General purpose, DC applications
Two pole open contacts

10 A 250 V AC1 **1.2 A 110 V DC1**
10 A 30 V DC1 **0.4 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤ 0.8 x Un
Drop-out voltage ≥ 0.1 x Un
Nominal coil power 2.4 VA (AC) / 1.6 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	360	66
48	286	50	48	1K4	34
115	1K7	21	110	7K6	15
230	6K8	10	220	30K3	7.5

Table 1 Electrical Life, ops. x 10⁶

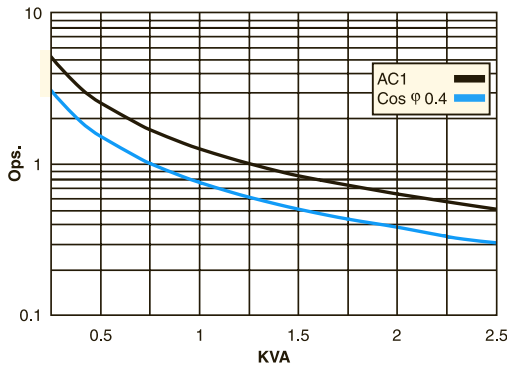
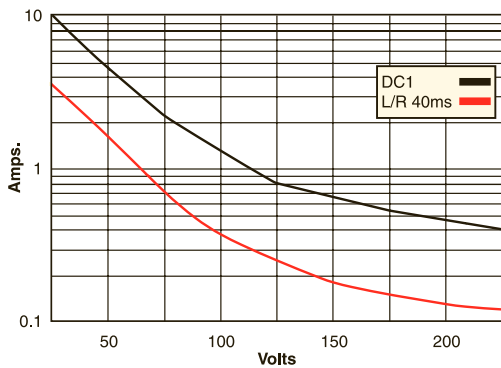
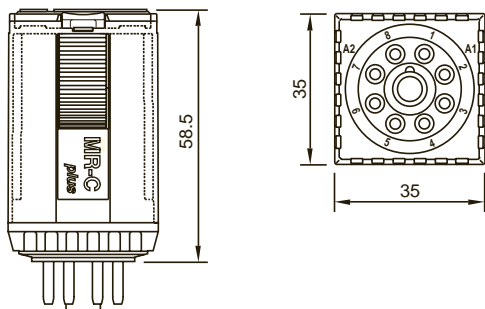


Table 2 Max. DC Load



Dimensions - mm



Insulation

Dielectric strength (1 minute): Open contacts 2000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, EN 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥ 100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 90 g

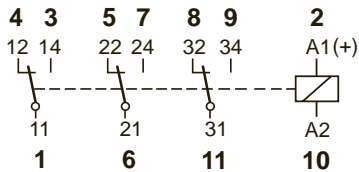
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) **C2-G20X** VAC
RC suppressor **C2-G20R** VAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) **C2-G20X** VDC
Free-wheeling diode **C2-G20DX** VDC
Polarity and free-wheeling diodes **C2-G20FX** VDC
AC/DC bridge rectifier (24 or 48 V) **C2-G20BX** VDC



IEC 61810 EN 60947



C3-A30



General purpose
Three pole, change-over contacts

10 A 250 V AC1 **0.5 A 110 V DC1**
10 A 30 V DC1 **0.5 A 220 V DC1**

Contacts

Materials : Standard, code 0 AgNi
Optional, code 8 AgNi + 10 μ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load See Table 2

Coils (Ohms $\pm 10\%$ @ 20°C)

Pull-in voltage $\leq 0.8 \times U_n$
Drop-out voltage $\geq 0.1 \times U_n$
Nominal coil power 2.2 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	443	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Table 1 Electrical Life, ops. x 10⁶

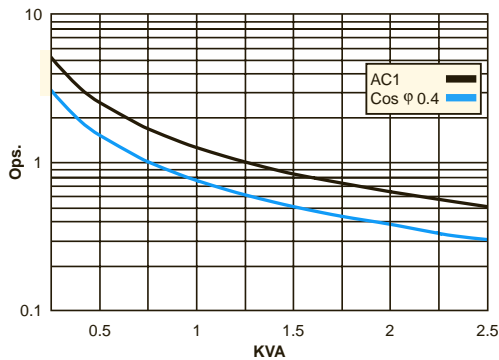
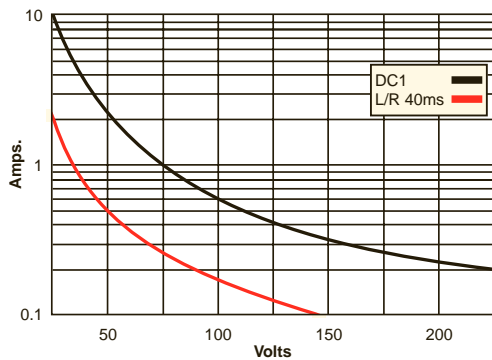


Table 2 Max. DC Load



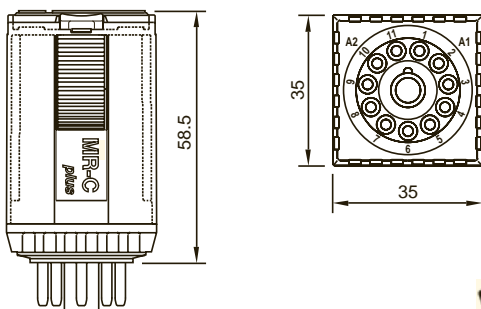
Insulation

Dielectric strength (1 minute): Open contacts 1000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V $\geq 3 \text{ G}\Omega$
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load $\geq 100,000$ ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 95 g

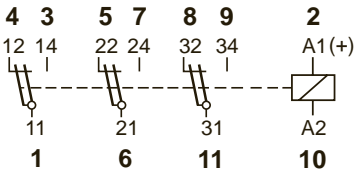
Dimensions - mm



Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) **C3-A30X** VAC
RC suppressor **C3-A30R** VAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) **C3-A30X** VDC
Free-wheeling diode **C3-A30DX** VDC
Polarity and free-wheeling diodes **C3-A30DX** VDC
AC/DC bridge rectifier (24 or 48 V) **C3-A30BX** VDC



C3-T31



Low level
Three change-over bifurcated contacts

6 A 250 V AC1 6 A 30 V DC1
Min. contacts load: 1 mA / 5 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0.3µAu
	Optional, code 2	AgNi + 10µAu
Max. switching current		6 A
Max. peak inrush current (15 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1.2 KVA
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶

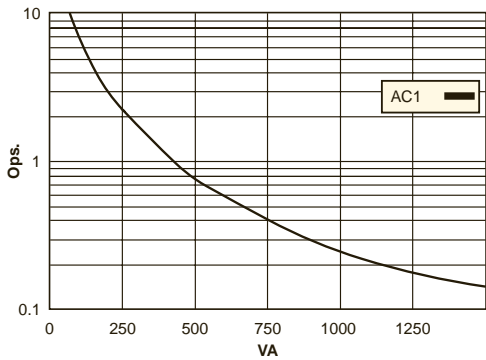
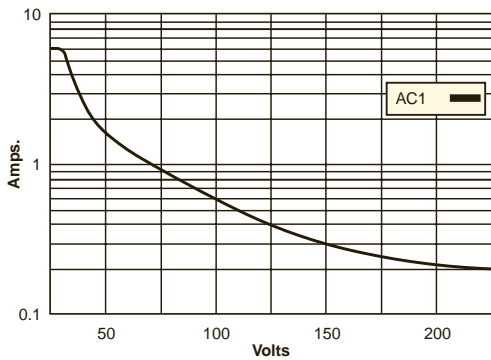
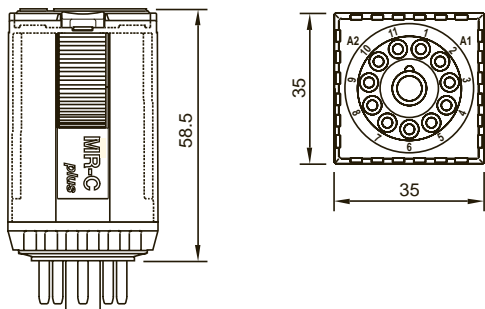


Table 2 Max. DC Load



Dimensions - mm



Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.2 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	67	92	24	443	54
48	296	46	48	1K8	27
115	1K7	19	110	9K2	12
230	7K1	9.5	220	36K1	6

Insulation

Dielectric strength (1 minute):	Open contacts	1000 V
	Between adjacent poles	2.5 KV
	Between contacts and coil	2.5 KV
Isolation resistance at 500 V		≥3 GΩ
Isolation, IEC 61810-5:		2.5 KV / 3

Specifications

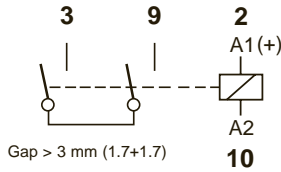
Operate time + bounce time	16 ms
Release time + bounce time	8 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥ 100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	95 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C3-T31X VAC
RC suppressor	C3-T31R VAC
DC 24, 48, 110, 220	
X = LED, no polarity (standard)	C3-T31X VDC
Free-wheeling diode	C3-T31DX VDC
Polarity and free-wheeling diodes	C3-T31FX VDC
AC/DC bridge rectifier (24 or 48 V)	C3-T31BX VDC



IEC 61810 EN 60947



C3-M10

Power relay, DC

Single pole, magnetic blow out

10 A 250 V AC1 10 A @ 220 V DC1
3.6 A @ 220 V DC13 2 A @ 220 V DC13

Contacts

Materials: Standard, code 0
 Max. switching current 10 A
 Max. peak inrush current (20 ms) 30 A
 Max. switching voltage (pollution 3) 250 V
 Max. switching voltage (pollution 2) 250 V
 Max. AC load (Table 1) 2.5 KVA
 Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x Un
 Drop-out voltage ≥0.1 x Un
 Nominal coil power 2.4 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	443	54
48	286	50	48	1K7	27
115	1K7	21	110	9K2	12
230	6K8	10	220	36K1	6

Table 1 Electrical Life, ops. x 10⁶

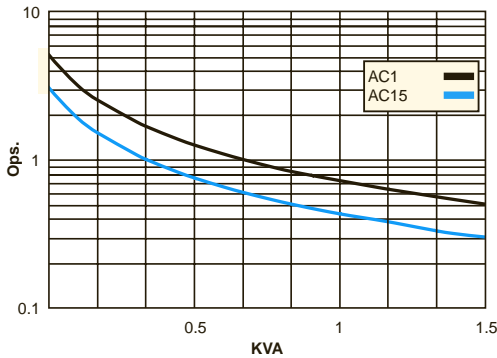
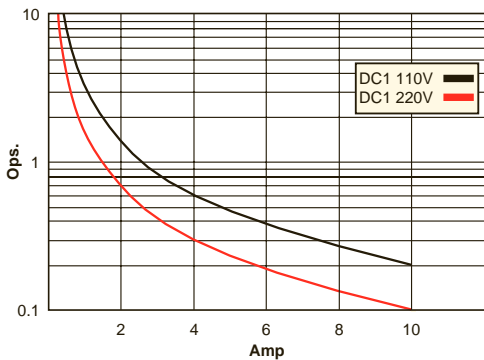
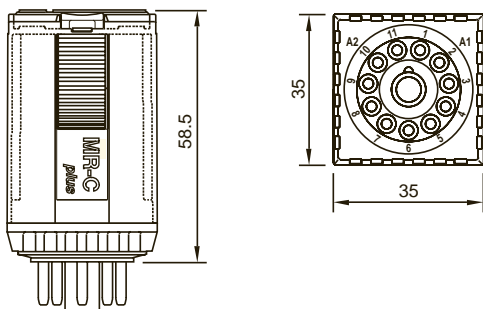


Table 2 Max. DC Load



Dimensions - mm



Insulation

Dielectric strength (1 minute):
 Open contacts 2.5 KV
 Between contacts and coil 2.5 KV
 Isolation resistance at 500 V ≥ 3 GΩ
 Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Nominal coil power 2.4 VA (AC), 1.3 W (DC)
 Operate time 20 ms
 Release time 10 ms
 Isolation: EN60947 pollution 3, Gr C 250 V
 Dielectric strength, contacts/coils 2.5 KV

Standard Types (50/60 Hz and DC)

AC 24, 48, 115, (120), 230

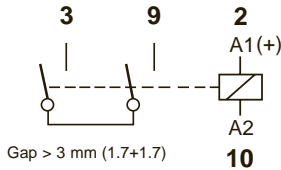
X = LED (standard) **C3-M10X** VAC
 RC suppressor **C3-M10R** VAC

DC 24, 48, 110, 220

X = LED, no polarity (standard) **C3-M10X** VDC
 Free-wheeling diode **C3-M10DX** VDC
 Polarity and free-wheeling diodes **C3-M10FX** VDC
 AC/DC bridge rectifier (60 V max.) **C3-X10BX** VDC



IEC 61810 EN 60947



C3-X10

Power relay for DC applications
Single pole, N.O., double make

10 A 250 V AC1 **7 A 110 V DC1**
10 A 30 V DC1 **1.2 A 220 V DC1**

Contacts

Materials: Standard, code 0	AgNi
Max. switching current	10 A
Max. peak inrush current (20 ms)	30 A
Max. switching voltage	250 V
Max. AC load (Table 1)	2.5 KVA
Max. DC load	See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.4 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	443	54
48	286	50	48	1K7	27
115	1K7	21	110	9K2	12
230	6K8	10	220	36K1	6

Table 1 Electrical Life, ops. x 10⁶

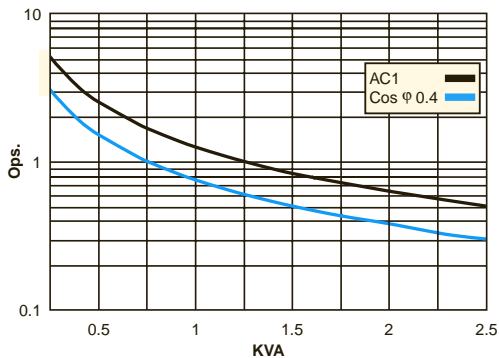
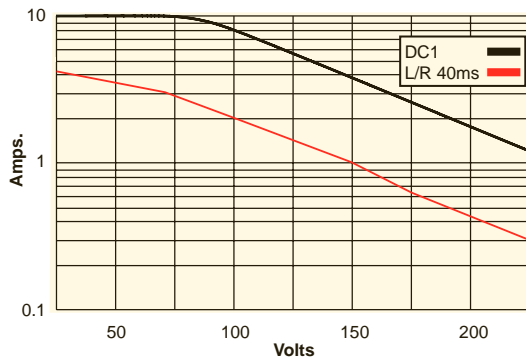


Table 2 Max. DC Load



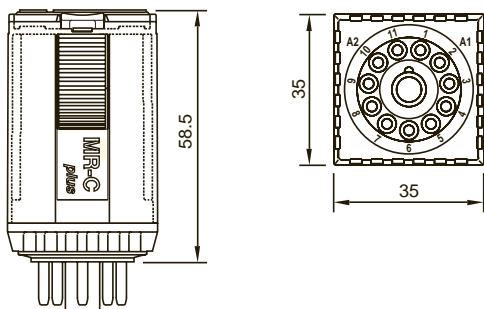
Insulation

Dielectric strength (1 minute):	
Open contacts	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

Operate time + bounce time	20 mst
Release time + bounce time	10 mst
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥ 100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP40 / RT1
Weight avg.	90 g

Dimensions - mm

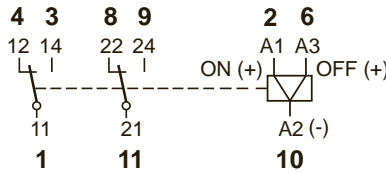


Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)		
X = LED (standard)	C3-X10X	VAC
RC suppressor	C3-X10R	VAC
DC 24, 48, 110, 220		
X = LED, no polarity (standard)	C3-X10X	VDC
Free-wheeling diode	C3-X10DX	VDC
Polarity and free-wheeling diodes	C3-X10FX	VDC
AC/DC bridge rectifier (60 V max.)	C3-X10BX	VDC



IEC 61810 EN 60947



C3-R20

Magnetic latching
Two change-over contacts

10 A 250 V AC1 **0.5 A 110 V DC1**
10 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10µ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

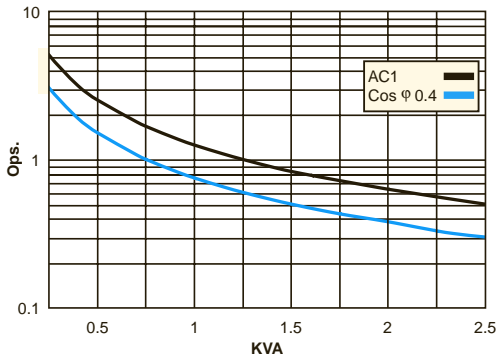
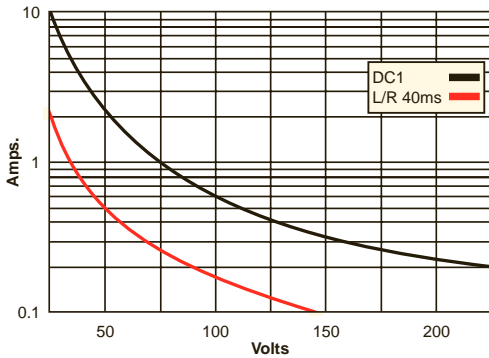
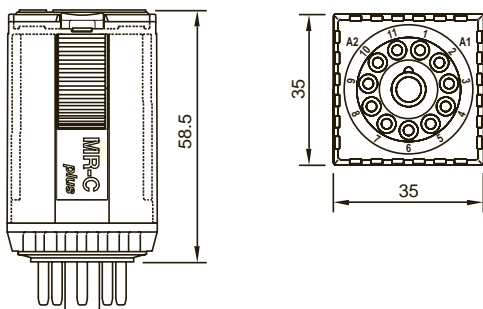


Table 2 Max. DC Load



Dimensions - mm



Coils

ON pulse power 1.5 VA / W
OFF pulse power 0.5 VA / W
One winding for AC. Two winding for DC

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
24	75	12	12	125	41
48	38	6	24	63	21
115	16	2.5	48	31	10
230	8	1.3	110	14	4.5

Insulation

Dielectric strength (1 minute): Open contacts 1,000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

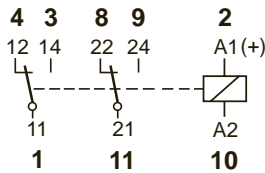
Minimum pulse length for ON / OFF 50 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥ 100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 95

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C3-R20 VAC
DC 12, 24, 48, 110
C3-R20 VDC



IEC 61810 EN 60947



C3-E24



Sensible, 500 mW
Two change-over contacts, 6 A
Operating range: 0.8 - 1.7 x U_n

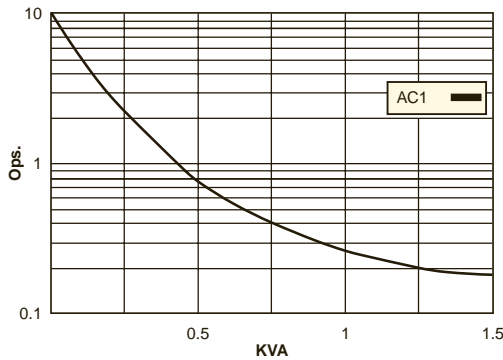
6 A 250 V AC1

6 A 30 V DC1

Contacts

Materials:	Standard, code 4	AgNi + 0.2 μ Au
	Optional, code 8	AgNi + 10 μ Au
Max. switching current		6 A
Max. peak inrush current (20 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1.5 KVA
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶

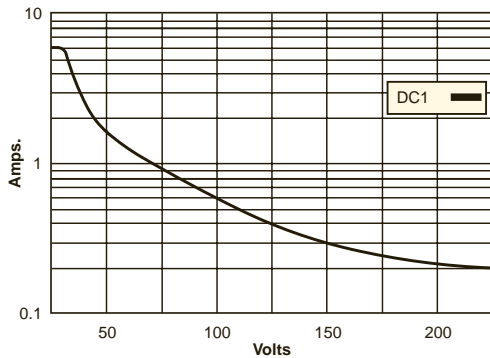


Coils (Ohms $\pm 10\%$ @ 20°C)

Pull-in voltage	$\leq 0.8 \times U_n$
Drop-out voltage	$\geq 0.1 \times U_n$
Nominal coil power	500 mW

VDC	Ω	mA
24	1K1	21
48	4K6	10
60	7K2	8.3
110	24K2	4.5

Table 2 Max. DC Load



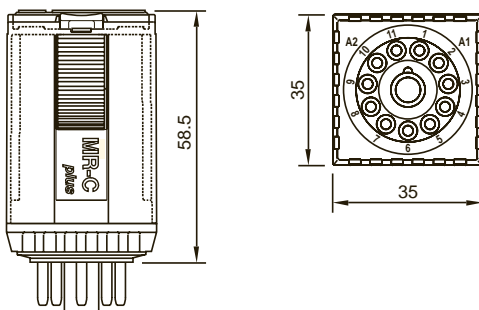
Insulation

Dielectric strength (1 minute): Open contacts	1000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	$\geq 3 \text{ G}\Omega$
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

Operate time + bounce time	18 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +60°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	$\geq 100,000$ ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	90 g

Dimensions - mm



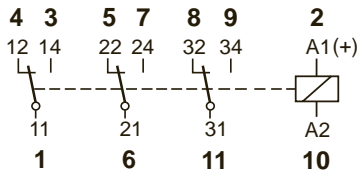
Standard Types

DC 12, 24, 48, 60, 110	C3-E24	VDC
Free-wheeling diode	C3-E24D	VDC
Polarity and free-wheeling diodes	C3-E24F	VDC

Connecting diodes to the coil will increase the release time.
LED available upon request.



IEC 61810 EN 60947



C3-N34

Sensitive, 800 mW
Three change-over contacts, 6 A
Operating range: 0.8 - 1.4 x Un

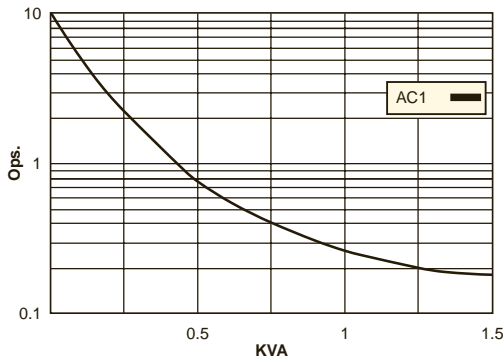
6 A 250 V AC1

6 A 30 V DC1

Contacts

Materials:	Standard, code 4	AgNi + 0,2μ Au
	Optional, code 8	AgNi + 10μ Au
Max. switching current		6 A
Max. peak inrush current (20 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1.5 KVA
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶



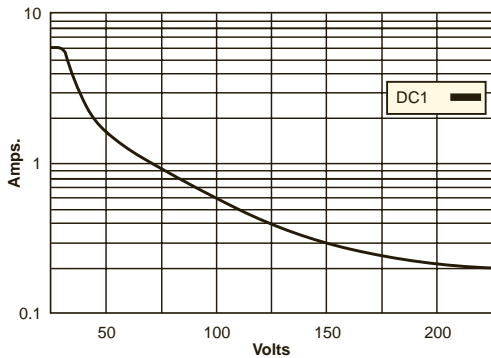
Coils

 (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	800 mW

VDC	Ω	mA
24	720	33
48	2K8	17
60	4K5	13
110	15	7

Table 2 Max. DC Load



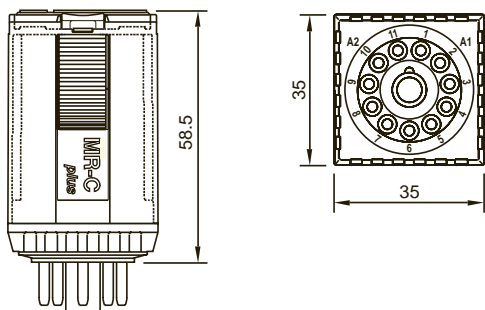
Insulation

Dielectric strength (1 minute):	Open contacts	1000 V
	Between adjacent poles	2.5 KV
	Between contacts and coil	2.5 KV
Isolation resistance at 500 V		≥3 GΩ
Isolation, IEC 61810-5:		2.5 KV / 3

Specifications

Operate time + bounce time	18 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +60°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	90 g

Dimensions - mm



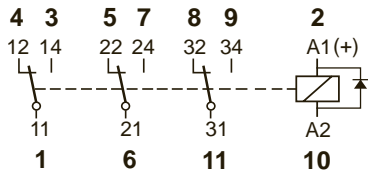
Standard Types

DC 24, 48, 60, 110	C3-N34	VAC
Free-wheeling diode	C3-N34D	VDC
Polarity and free-wheeling diodes	C3-N34F	VDC

Connecting diodes to the coil will increase the release time.
LED available upon request.



IEC 61810 EN 60947



R3-N30D



Railway Application Relay

According to EN 60077-1-2/99 - EN 61373/99

6 A 250 V AC1

6 A 30 V DC1

Contacts

Materials:	Standard, code 0	AgNi
	Optional, code 4	AgNi + 0.2µ Au
	Optional, code 8	AgNi + 10µ Au
Max. switching current		6 A
Max. peak inrush current (20 ms)		15 A
Max. switching voltage		250 V
Max. AC load		See Table 1
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶

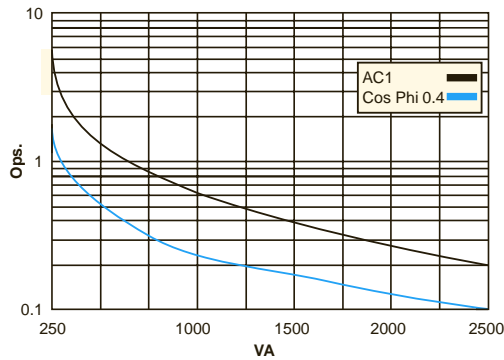
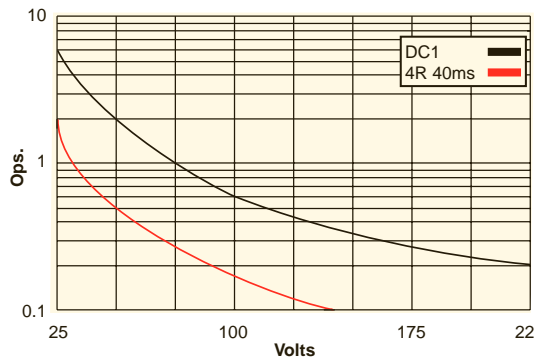
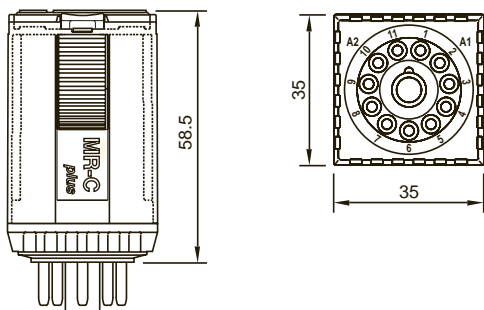


Table 1 Electrical Life, ops. x 10⁶



Dimensions - mm



Coils

Operation Range	0.7 Un @ 1.25 Un
Power Consumption	0.1 W
Generated transients	V, include FWD

Voltage	Ω ± 10%	mA
24	525	46
48	2150	22
72	4930	15
110	12900	9

Isolation

Polution grade	PD3
With voltage (1.2 / 50µs) / Dielectric strength (1 minute)	
Contact coil	4 KV / 2220 V
Between different poles	4 KV / 2220 V
Between contacts on the same pole	1550 KV / 850 V

Specifications

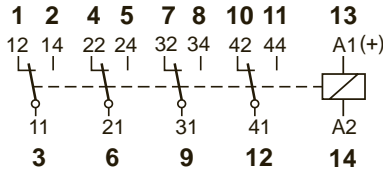
Max working temperature	40°C
Number of mechanical operations	>10 million
Thermic Class	B (130°C)
Vibration: Category / Class	1 / B Body Mounted
Vibration	5 - 150 Hz (3 axes)
Shock	5 g (3 axes)
Operation (UN) / release time	18 ms / 35 ms
Weight avg.	95 g
Weight avg. Relay + Socket	150 g
Relay Protection	IP 40

Standard Types

DC 24, 48, 72, 110

Free-wheeling diode

R3-N30D VDC



C4-A40

General purpose
Four change-over contacts

10 A 250 V AC1 **0.5 A 110 V DC1**
6 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10µ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

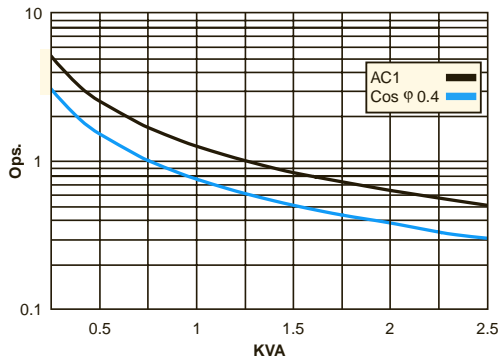
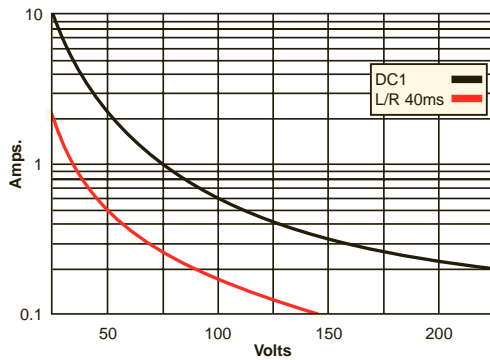
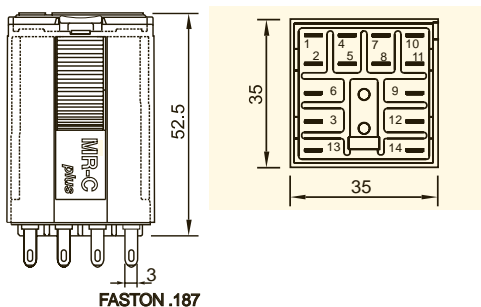


Table 2 Max. DC Load



Dimensions - mm



Coils

(Ohms ±10% @ 20°C)
Pull-in voltage ≤0.8 x Un
Drop-out voltage ≥0.1 x Un
Nominal coil power 2.4 VA (AC) / 1.4 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	58
48	286	50	48	1K6	30
115	1K7	21	110	8K1	13
230	6K8	10	220	35K7	6.2

Insulation

Dielectric strength (1 minute): Open contacts 1000 V
Between adjacent poles 2.5 KV
Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 90 g

Standard Types

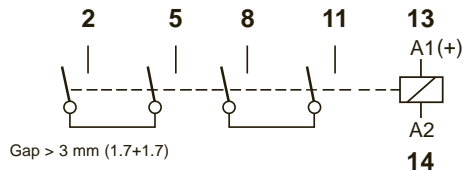
AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) **C4-A40X** VAC
RC suppressor **C4-A40R** VAC

DC 24, 48, 110, 220
X = LED no polarity (standard) **C4-A40X** VDC
Free-wheeling diode **C4-A40DX** VDC
Polarity and free-wheeling diodes **C4-A40FX** VDC
AC/DC bridge rectifier (24 or 48 V) **C4-A40BX** VDC



Lloyd's

IEC 61810 EN 60947



C4-X20



Power relay, DC applications

Two pole, N.O., double make

10 A 250 V AC1 7 A @110 V DC1
10 A 30 V DC1 1.2 A @220 V DC1

Contacts

Materials:	Standard, code 0	AgNi
Max. switching current		10 A
Max. peak inrush current (20 ms)		30 A
Max. switching voltage		250 V
Max. AC load (Table 1)		2.5 KVA
Max. DC load		See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.4 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	443	54
48	286	50	48	1K8	27
115	1K7	21	110	9K2	12
			220	36K1	6

Table 1 Electrical Life, ops. x 10⁶

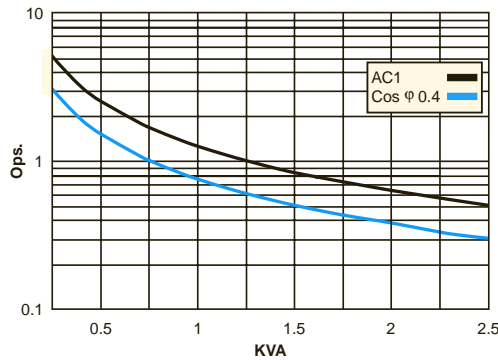
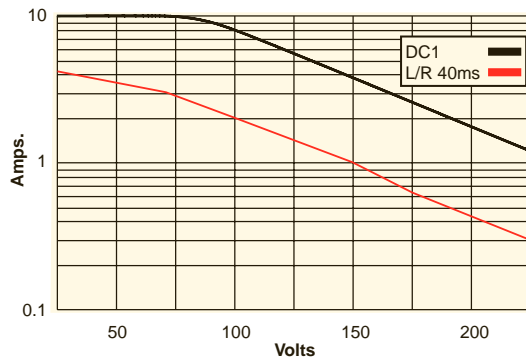
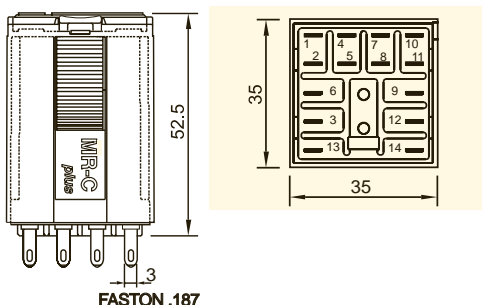


Table 2 Max. DC Load



Dimensions - mm



Insulation

Dielectric strength (1 minute): Open contacts	2.5 KV
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

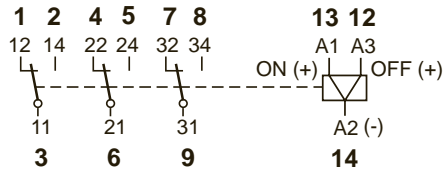
Operate time + bounce time	20 ms
Release time + bounce time	8 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	90 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C4-X20X VAC
RC suppressor	C4-X20R VAC
DC 24, 48, 110, 220	
X = LED no polarity (standard)	C4-X20XVDC
Free-wheeling diode	C4-X20DXVDC
Polarity and free-wheeling diodes	C4-X20FX VDC
AC/DC bridge rectifier (24 or 48 V)	C4-X20BX VDC



IEC 61810 EN 60947



C4-R30

Magnetic latching relay
Three change-over contacts, 10 A

10 A 250 V AC1 **0.5 A 110 V DC1**
10 A 10 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0	AgNi
Optional, code 8	AgNi + 10µAu
Max. switching current	10 A
Max. peak inrush current (20 ms)	30 A
Max. switching voltage	250 V
Max. AC load (Table 1)	2.5 KVA
Max. DC load	See Table 2

Table 1 Electrical Life, ops. x 10⁶

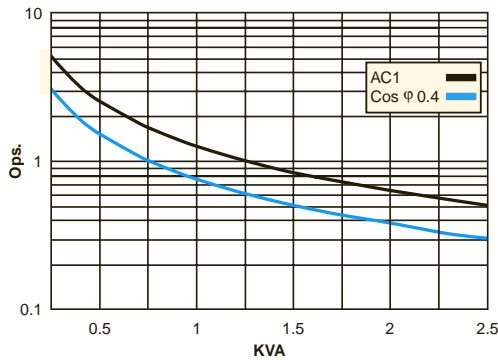
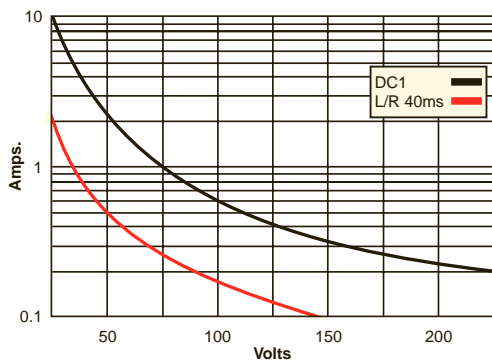
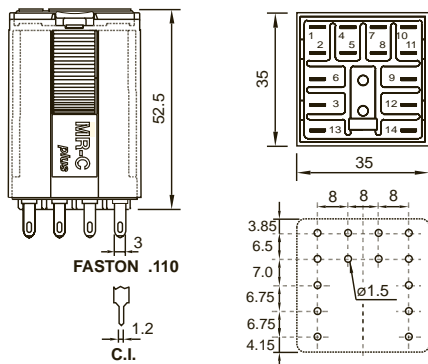


Table 2 Max. DC Load



Dimensions - mm



Coils

ON pulse power	1.5 VA / W
OFF pulse power	0.5 VA / W
One winding for AC, Two windings for DC	

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
24	75	12	12	125	41
48	38	6	24	63	21
115	16	2.5	48	31	10
230	8	1.3	110	14	4.5

Insulation

Dielectric strength (1 minute): Open contacts	1000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

Minimum, pulse length for ON / OFF	50 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	95 g

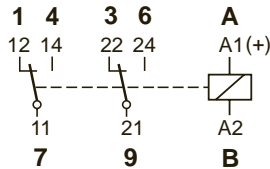
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
C4-R30 VAC

DC 12, 24, 48, 110,
C4-R30 VDC



IEC 61810



C5-A20



General purpose
Two change-over contacts

16 A 400 V AC1 **0.5 A 110 V DC1**
16 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

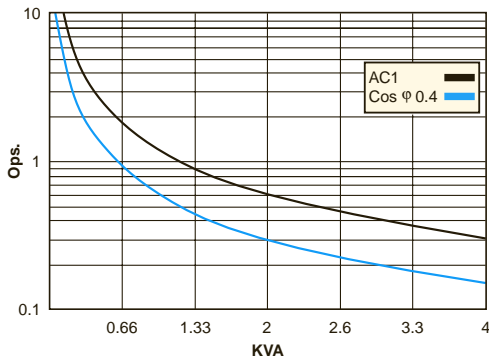
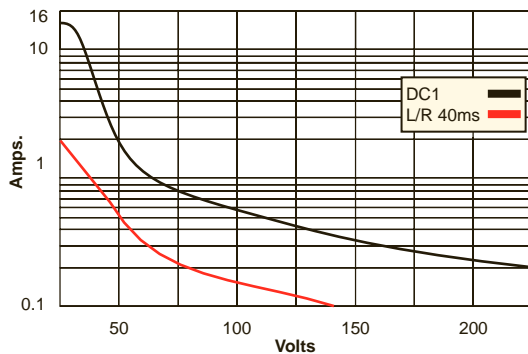
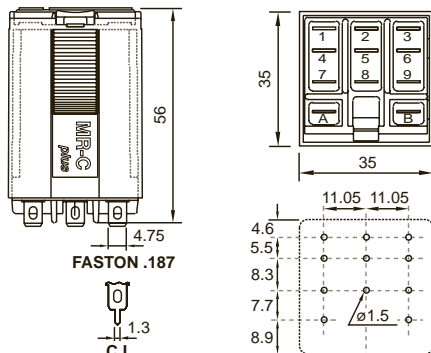


Table 2 Max. DC Load



Dimensions - mm



Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x Un
Drop-out voltage ≥0.1 x Un
Nominal coil power 2.4 VA (AC) / 1.4 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	58
48	286	50	48	1K6	30
115	1K7	21	110	8K1	13
400	18K8	6	220	34K5	6

Insulation

Dielectric strength (1 minute): Open contacts 1000 V
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 90 g

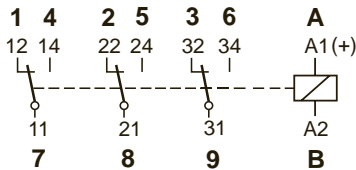
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240), 400
X = LED (standard) **C5-A20X VAC**
RC suppressor **C5-A20R VAC**

DC 24, 48, 110, 220
X = LED, no polarity (standard) **C5-A20XVDC**
Free-wheeling diode **C3-A20DXVDC**
Polarity and free-wheeling diodes **C5-A20FXVDC**
AC/DC bridge rectifier (24 or 48 V) **C5-A20BXVDC**



IEC 61810 EN 60947



C5-A30

General purpose
Three change-over contacts

16 A 400 V AC1 **0.5 A 110 V DC1**
16 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
Max. switching current 16 A
Max. peak inrush current (20 ms) 40 A
Max. switching voltage 400 V
Max. AC load (Table 1) 4 KVA
Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

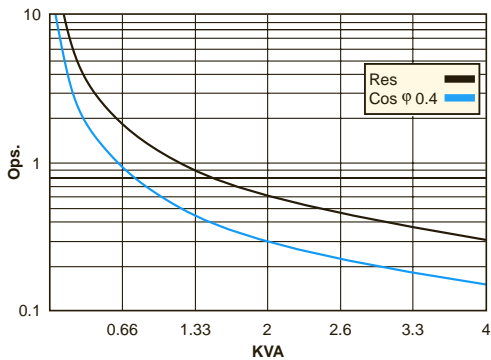
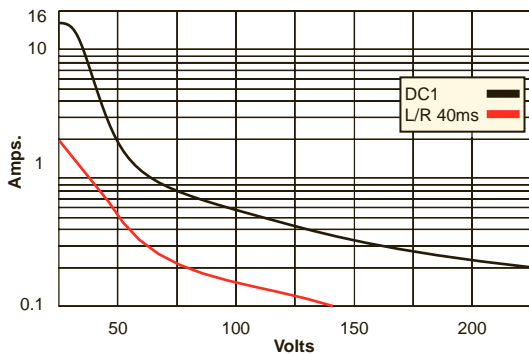
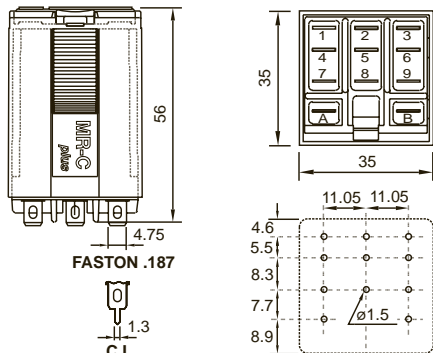


Table 2 Max. DC Load



Dimensions - mm



Coils

(Ohms ±10% @ 20°C)
Pull-in voltage ≤0.8 x Un
Drop-out voltage ≥0.1 x Un
Nominal coil power 2.4 VA (AC) / 1.4 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	24	414	58
48	286	50	48	1K6	30
115	1K7	21	110	8K1	13
230	6K8	10	220	34K5	6.5
400	18K8	6			

Insulation

Dielectric strength (1 minute): Open contacts 1000 V
Between adjacent poles 4 KV
Between contacts and coil 4 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 20 ms
Release time + bounce time 10 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 95 g

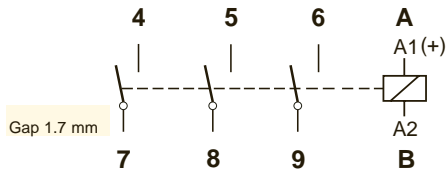
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C5-A30X VAC
RC suppressor C5-A30R VAC

DC 24, 48, 110, 220
X = LED, no polarity (standard) C5-A30X VDC
Free-wheeling diode C3-A30DX VDC
Polarity and free-wheeling diodes C5-A30FXVDC
AC/DC bridge rectifier (24 or 48 V) C5-A30BXVDC



IEC 60947 IEC 61810



C5-G30



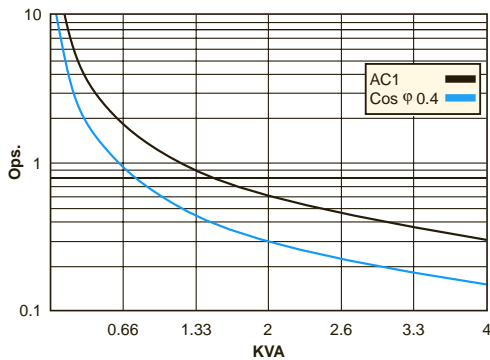
General purpose, DC applications
Three open contacts

16 A 400 V AC1 **1.2 A 110 V DC1**
16 A 30 V DC1 **0.4 A 220 V DC1**

Contacts

Materials:	Standard, code 0	AgNi
Max. switching current		16 A
Max. peak inrush current (20 ms)		40 A
Max. switching voltage		400 V
Max. AC load (Table 1)		4 KVA
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶

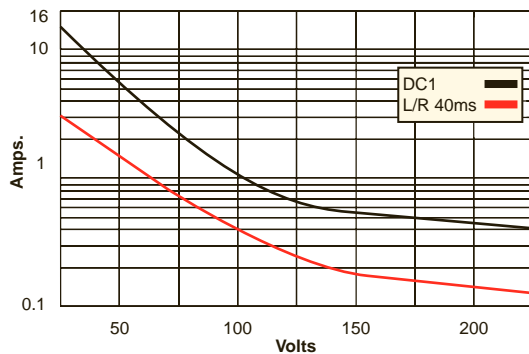


Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.4 VA (AC) / 1.6 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	90	133
48	286	50	24	360	66
115	1K7	21	48	1K4	34
230	6K8	10	110	7K6	15
400	18K8	6	220	30K3	7.5

Table 2 Max. DC Load



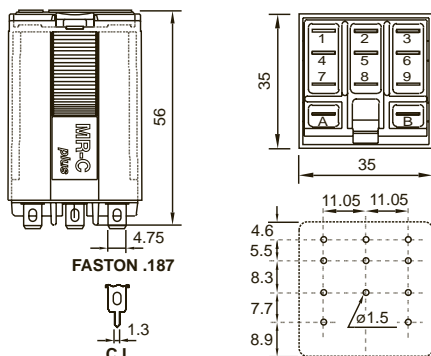
Insulation

Dielectric strength (1 minute): Open contacts	≥2000 V
Between adjacent poles	4 KV
Between contacts and coil	4 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	20 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	95 g

Dimensions - mm

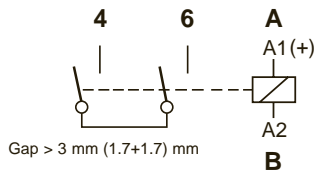


Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C5-G30X VAC
RC suppressor	C5-G30R VAC
DC 24, 48, 110, 220	
X = LED, no polarity (standard)	C5-G30X VDC
Free-wheeling diode	C3-G30DXVDC
Polarity and free-wheeling diodes	C5-G30FXVDC
AC/DC bridge rectifier (24 or 48 V)	C5-G30BX VDC



IEC 60947 IEC 61810



C5-X10

Power relay, DC applications
Single pole, N.O., double make

16 A 400 V AC1 7 A @110 V DC1
16 A 30 V DC1 1.2 A @220 V DC1

Contacts

Materials: Standard, code 0 AgNi
 Max. switching current 16 A
 Max. peak inrush current (20 ms) 40 A
 Max. switching voltage 400 V
 Max. AC load (Table 1) 4 KVA
 Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

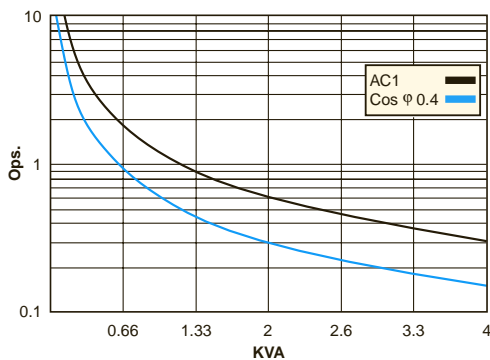
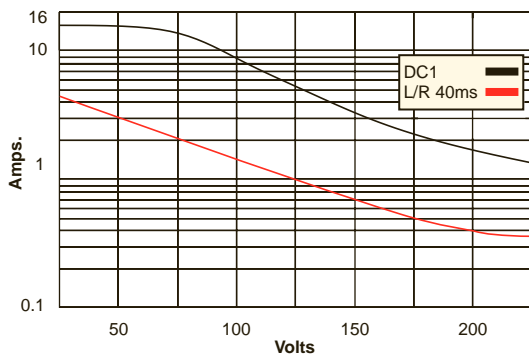
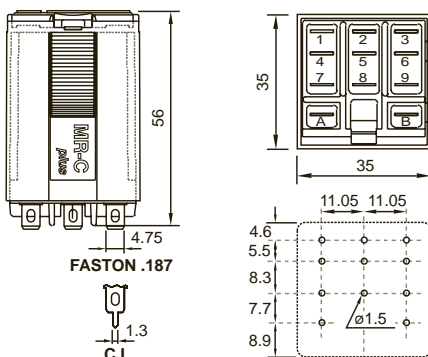


Table 2 Max. DC Load



Dimensions - mm



Coils

(Ohms ±10% @ 20°C)
 Pull-in voltage ≤0.8 x Un
 Drop-out voltage ≥0.1 x Un
 Nominal coil power 2.4 VA (AC) / 1.3 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	110	108
48	286	50	24	443	54
115	1K7	21	48	1K8	27
230	6K8	10	110	9K	12
400	18K8	6	220	34K5	65

Insulation

Dielectric strength (1 minute):
 Between adjacent poles 4 KV
 Between contacts and coil 4 KV
 Isolation resistance at 500 V ≥3 GΩ
 Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 20 ms
 Release time + bounce time 10 ms
 Ambient temperature -40°C (no ice) to +70°C
 Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
 Electrical life at nominal load ≥100,000 ops.
 Operating frequency at nominal load 1200 / hour
 Protection degree IP 40 / RT1
 Weight avg. 90 g

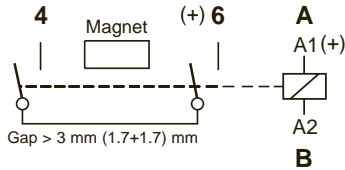
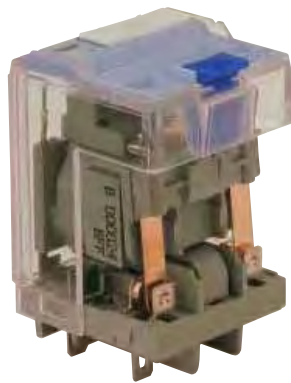
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
 X = LED (standard) **C5-X10X** VAC
 RC suppressor **C5-X10R** VAC

DC 24, 48, 110, 220
 X = LED, no polarity (standard) **C5-X10X** VDC
 Free-wheeling diode **C3-X10DX** VDC
 Polarity and free-wheeling diodes **C5-X10FX**VDC
 AC/DC bridge rectifier (24 or 48 V) **C5-X10BX** VDC



IEC 61810



C5-M10



DC power relay

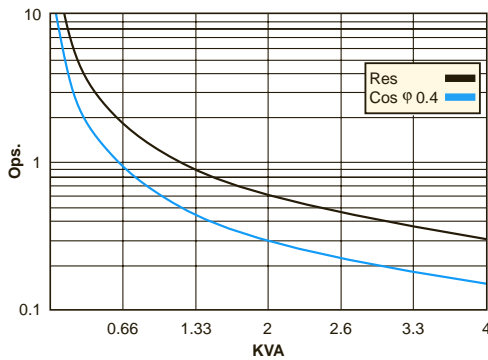
One N.O. pole, magnetic blow out

16 A 400 V AC1 10 A @110 V DC1
3.6 A 30 V DC Ind 2 A @220 V DC Ind

Contacts

Materials: Standard, code 0	AgNi
Max. switching current	16 A
Max. peak inrush current (20 ms)	40 A
Max. switching voltage	400 V
Max. AC load (Table 1)	4 KVA
Max. DC load	See Table 2

Table 1 Electrical Life, ops. x 10⁶

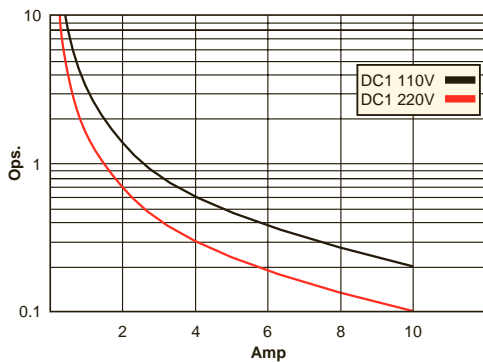


Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.4 VA (CA) / 1.3 W (CC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	110	108
48	286	50	24	443	54
115	1K7	21	48	1K8	27
230	6K8	10	110	9K	12
400	18K8	6	220	34K5	6.5

Table 2 Max. DC Load



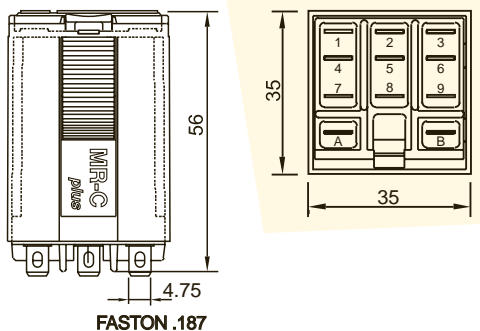
Insulation

Dielectric strength (1 minute):	
Open contacts	4000 V
Between contacts and coil	4 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, EN 60947/IEC 61810-5:	4 KV/3

Specifications

Operate time + bounce time	20 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC relays, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	90 g

Dimensions - mm

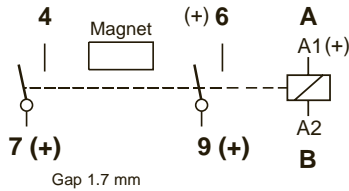


Standard Types (50 / 60 Hz and CC)

AC 24, 48, 115, (110 - 120), 230	
X = LED (standard)	C5-M10X VAC
RC suppressor	C5-M10R VAC
DC 12, 24, 48, 110, 120/125,220	
X = LED	C5-M10X VDC
Free-wheeling diodes	C5-M10DX VDC
Polarity and free-wheeling diodes	C5-M10DX VDC
AC/DC bridge rectifier (60 V max.)	C5-M10BX VDC



IEC 61810 EN 60947



C5-M20

Power relay, DC
Double pole, N.O., magnetic blow out

16 A 250 V AC1 **7 A @110 V DC1**
3 A @220 V DC1

Contacts

Materials:	Standard, code 0	AgNi
Max. switching current		16 A
Max. peak inrush current (20 ms)		40 A
Max. switching voltage		250 V
Max. AC load (Table 1)		4 KVA
Max. DC load		See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	2.4 VA (CA) / 1.6 W (CC)

VAC	Ω	mA	VDC	Ω	mA
24	65	100	12	90	133
48	286	50	24	360	66
115	1K7	21	48	1440	33
230	6K8	10.4	110	7562	15

Table 1 Electrical Life, ops. x 10⁶

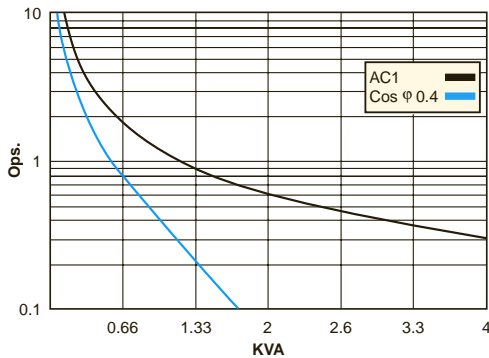
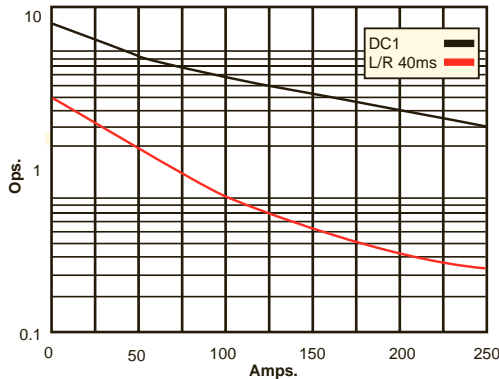
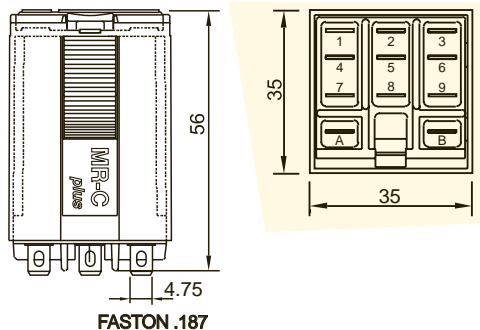


Table 2 Max. DC Load



Dimensions - mm



Insulation

Dielectric strength (1 minute):	
Open contacts	4000 V
Between adjacent poles	4 KV
Between contacts and coil	2 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, EN 60947/IEC 61810-5:	4 KV/3

Specifications

Operate time + bounce time	20 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +60°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥75,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	90 g

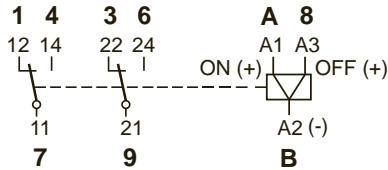
Standard Types (50 / 60 Hz and CC)

AC 24, 48, 115, (120), 230 (240)
X = LED (standard) **C5-M20X VAC**
RC suppressor **C5-M20R VAC**

DC 12, 24, 48, 110, 120/125,220
X = LED **C5-M20X VCC**
Free-wheeling diodes **C5-M20DX VCC**
Polarity and free-wheeling diodes **C5-M20DX VCC**
AC/DC bridge rectifier (60 V max.) **C5-M20BX VCC**



IEC 61810 EN 60947



C5-R20



Magnetic latching relay

Two Change-over contacts, 10 A

10 A 400 V AC1 10 A @30 V DC1
6 A 250 V AC Ind 0.5 A @110 V DC1

Contacts

Materials: Standard, code 0	AgNi
Max. switching current	10 A
Max. peak inrush current (20 ms)	30 A
Max. switching voltage	400 V
Max. AC load (Table 1)	4 KVA
Max. DC load	See Table 2

Coils (Ohms ±10% @ 20°C)

ON pulse power	1.5 VA / W
OFF pulse power	0.5 VA / W
One winding for AC, Two windings for DC	

VCA	ON mA	OFF mA	VCC	ON mA	OFF mA
24	75	12	12	125	41
48	38	6	24	63	21
115	16	2.5	48	31	10
230	8	1.3	110	14	4.5

Table 1 Electrical Life, ops. x 10⁶

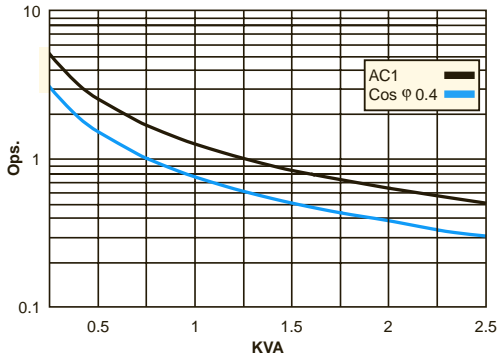
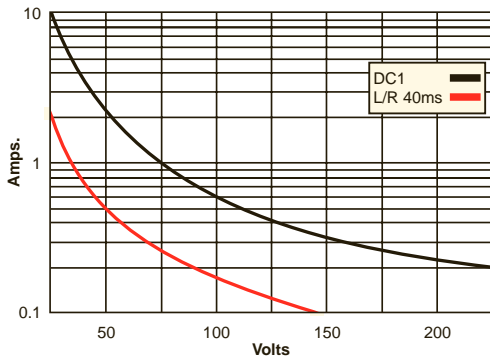


Table 2 Max. DC Load



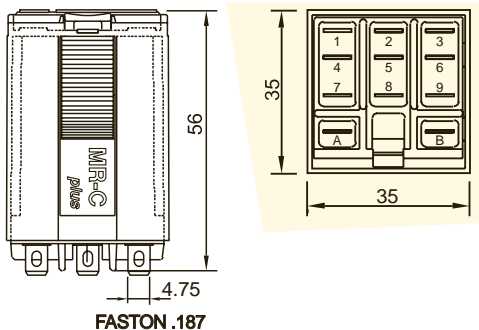
Insulation

Dielectric strength (1 minute):	
Open contacts	1000 V
Between adjacent poles	4 KV
Between contacts and coil	4 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, EN 60947/IEC 61810-5:	4 KV/3

Specifications

Minimum, pulse length for ON / OFF	50 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	95 g

Dimensions - mm



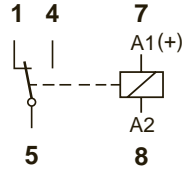
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (110 - 120), 230, (240)
C5-R20 VAC

DC 12, 24, 48, 110
C5-R20 VDC



IEC 61810 EN 60947



C7-A10

General purpose

One change-over contact, 16 A

16 A 250 V AC1 **0.5 A 110 V DC1**
16 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 0 AgNi
 Max. switching current 16 A
 Max. peak inrush current (20 ms) 40 A
 Max. switching voltage 250 V
 Max. AC load (Table 1) 4 KVA
 Max. DC load See table 2

Plug only in S7-16 socket

Table 1 Electrical Life, ops. x 10⁶

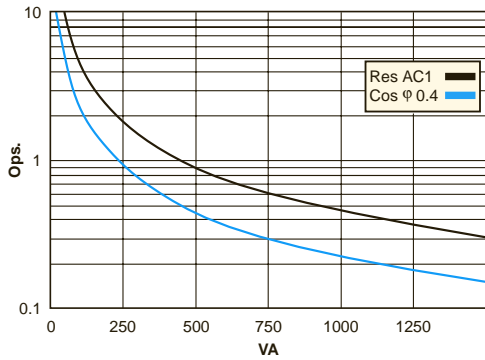
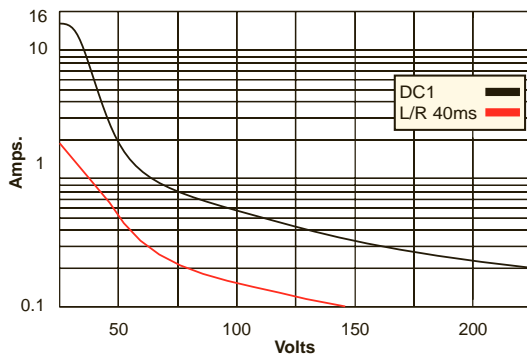
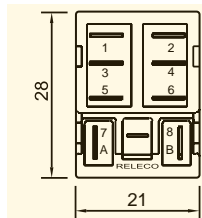
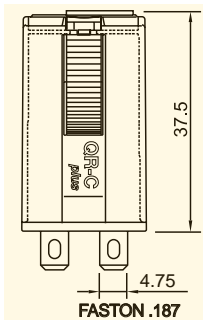


Table 2 Max. DC Load



Dimensions - mm



Coils

(Ohms ±10% @ 20°C)
 Pull-in voltage ≤0.8 x Un
 Drop-out voltage ≥0.1 x Un
 Nominal coil power 1.2 VA (AC) / 1.3 W (DC)

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

Dielectric strength (1 minute): Open contacts 1000 V
 Between contacts and coil 2.5 KV
 Isolation resistance at 500 V ≥3 GΩ
 Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 16 ms
 Release time + bounce time 8 ms
 Ambient temperature -40°C (no ice) to +70°C
 Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
 Electrical life at nominal load ≥100,000 ops.
 Operating frequency at nominal load 1200 / hour
 Protection degree IP 40 / RT1
 Weight avg. 43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
 X = LED (standard) C7-A10X VAC

DC 12, 24, 48, 110,
 X = LED, no polarity (standard) C7-A10X VDC
 Free-wheeling diode C7-A10DX VDC
 Polarity and free-wheeling diodes C7-A10FX VDC
 AC/DC bridge rectifier (24 or 48 V) C7-A10BX VDC



IEC 61810 EN 60947

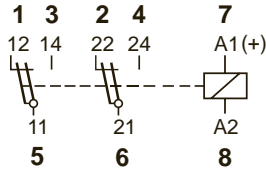


Table 1 Electrical Life, ops. x 10⁶

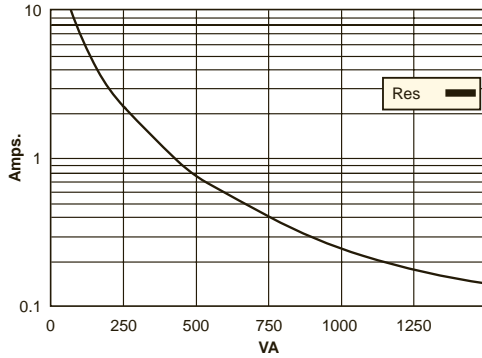
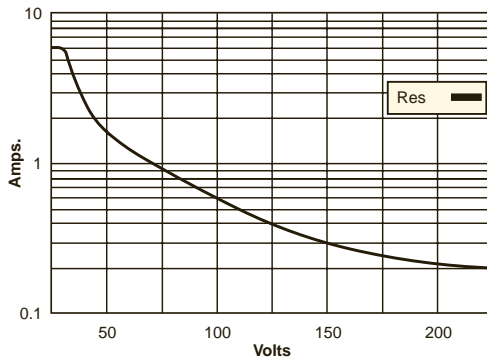
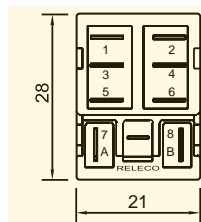
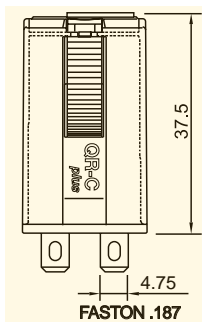


Table 2 Max. DC Load



Dimensions - mm



C7-T21



Low level
Two change-over bifurcated contacts
6 A 250 V Res 6 A 250 V DC1
Min. contacts load: 1 mA / 5 V DC1

Contacts

Materials: Standard, code 1 AgNi + 0.3μ Au
 Optional, code 8 AgNi + 10μ Au
Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.2 KVA
Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x Un
Drop-out voltage ≥0.1 x Un
Nominal coil power 1.2 VA (AC) / 1 W (DC)

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	11

Insulation

Dielectric strength (1 minute): Open contacts 1000 V
 Between adjacent poles 2.5 KV
 Between contacts and coil 2.5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

Operate time + bounce time 16 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 43 g

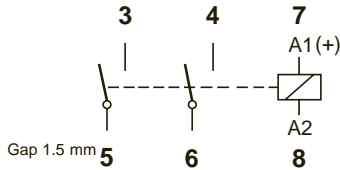
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C7-T21X VAC

DC 12, 24, 48, 110,
X = LED, no polarity (standard) C7-T21X VDC
Free-wheeling diode C7-T21DX VDC
Polarity and free-wheeling diodes C7-T21FX VDC
AC/DC bridge rectifier (24 of 48 V) C7-T21BX VDC



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C7-G20

Power relay, DC application
Two open contacts, Gap 1.5 mm

10 A 50 V AC1 0.8 A 110 V DC1
10A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 0	AgNi
Max. switching current	10 A
Max. peak inrush current (20 ms)	30 A
Max. switching voltage	250 V
Max. AC load (Table 1)	2.5 KVA
Max. DC load	See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	1.5 VA (AC) / 1.5 W (DC)

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

Table 1 Electrical Life, ops. x 10⁶

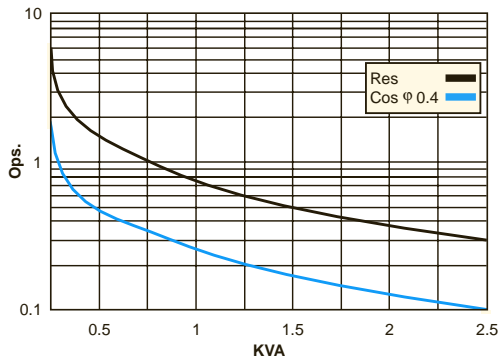
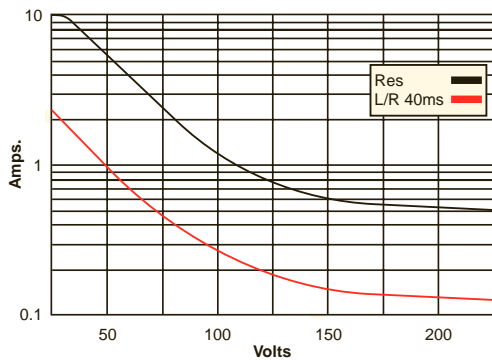
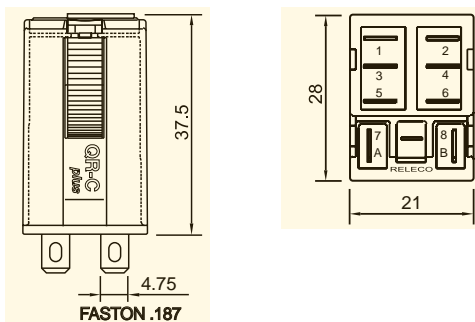


Table 2 Max. DC Load



Dimensions - mm



Insulation

Dielectric strength (1 minute): Open contacts	2000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

Operate time + bounce time	20 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	43 g

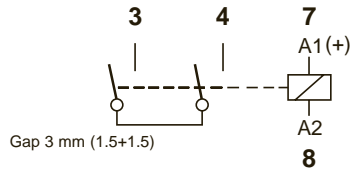
Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C7-G20X VAC

DC 12, 24, 48, 110,
X = LED, no polarity (standard) C7-G20X VDC
 Free-wheeling diode **C7-G20DXVDC**
 Polarity and free-wheeling diodes **C7-G20FXVDC**
 AC/DC bridge rectifier (24 or 48 V) **C7-G20BXVDC**



IEC 61810 EN 60947



C7-X10

Power relay, DC application
Single pole, NO, double make

10 A 250 V AC1 6 A 110 V DC1
10 A 30V DC1 1 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
 Max. switching current 10 A
 Max. peak inrush current (20 ms) 30 A
 Max. switching voltage 250 V
 Max. AC load (Table 1) 2.5 KVA
 Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x Un
 Drop-out voltage ≥0.1 x Un
 Nominal coil power 1.5 VA (AC) / 1.3 W (DC)

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

Table 1 Electrical Life, ops. x 10⁶

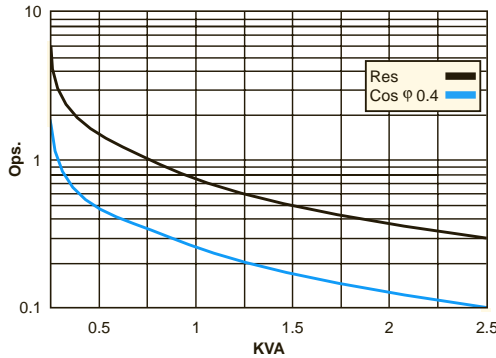
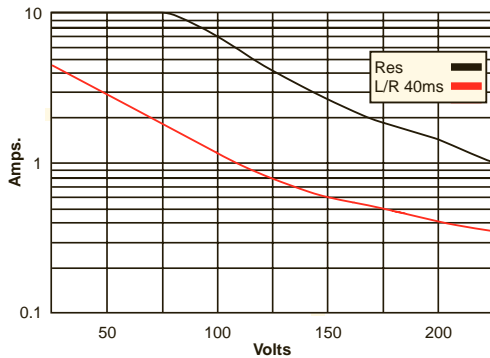
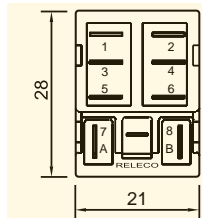
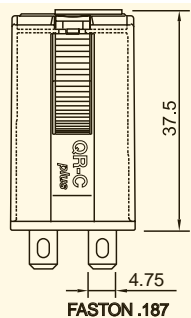


Table 2 Max. DC Load



Dimensions - mm



Insulation

Dielectric strength (1 minute):
 Open contacts 2.5 KV
 Between contacts and coil 2.5 KV
 Isolation resistance at 500 V ≥3 GΩ
 Isolation, IEC 61810-5: 2.5 KV / 3

Specifications

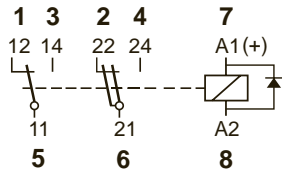
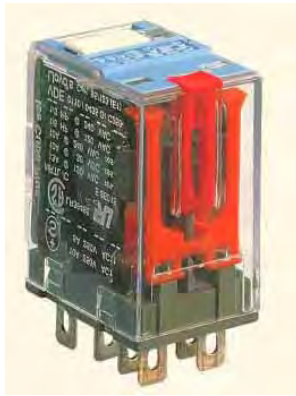
Operate time + bounce time 20 ms
 Release time + bounce time 10 ms
 Ambient temperature -40°C (no ice) to +70°C
 Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
 Electrical life at nominal load ≥100,000 ops.
 Operating frequency at nominal load 1200 / hour
 Protection degree IP 40 / RT1
 Weight avg. 43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
 X = LED (standard) **C7-X10X** VAC
DC 12, 24, 48, 110,
 X = LED, no polarity (standard) **C7-X10X** VDC
 Free-wheeling diode **C7-X10DX** VDC
 Polarity and free-wheeling diodes **C7-X10FX** VDC
 AC/DC bridge rectifier (24 or 48 V) **C7-X10BX** VDC



IEC 61810 EN 60947



C7-H23



Power contact 10 A and bifurcated contact for current level

10 A 400 V AC1 10 A 30 V DC1
6 A 250 V DC1 6 A 30 V DC1

Contacts

Power Contacts

Standard material	AgNi
Max. switching current	10 A
Max. peak inrush current (20 ms)	30 A
Max. switching voltage	250 V
Max. AC load (Table 1)	2.5 KVA
Max. DC load	See Table 2

Bifurcated Contact

Standard material	AgNi + 0.3µ Au
Max. switching current	6 A
Max. peak inrush current (20 ms)	15 A
Max. switching voltage	250 V
Minimum current	1 mA 5 V
Max. DC load	See Table 2

Table 1 Electrical Life, ops. x 10⁶

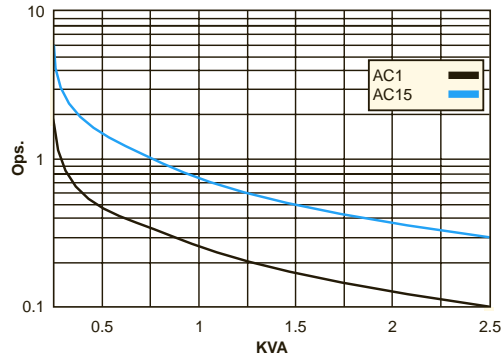
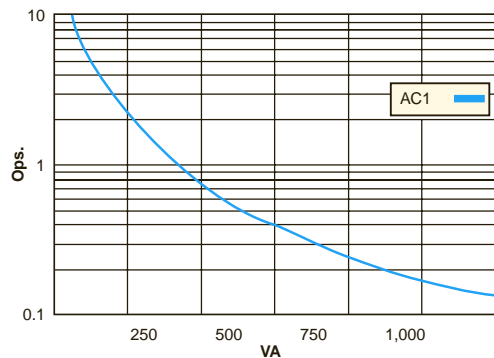


Table 2 Max. DC Load



Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	1.5 VA (AC) / 1.5 W (DC)

VAC	Ω ± 10%	mA	VDC	Ω ± 10%	mA
24	174	50	12	148	85
115	4K3	10.4	48	2K3	21
230	18K6	5.2	110	11K4	11

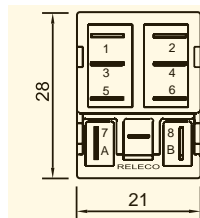
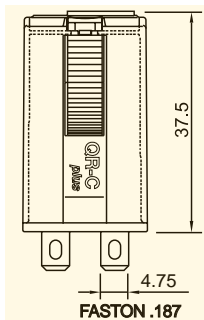
Insulation

Dielectric strength (1 minute):	
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation, IEC 61810-5:	2.5 KV / 3

Specifications

Max. working temperature	60°C
Mechanical life ops.	≥10 million
Protection degree	IP 40
Weight avg.	43 g

Dimensions - mm

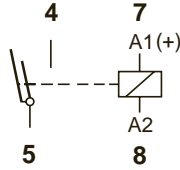


Standard Types

AC 24, 115, 230	C7-H23 VAC
DC 12, 24, 48, 110	C7-H23 VDC



IEC 61810 EN 60947



C7-W10

High inrush current
Single pole, wolfram and silver contacts

10 A 250 V Ind

250 V AC5a/b

Contacts

Materials:	Standard, code 0	AgNi
Max. switching current		10 A
Max. peak inrush current (2.5 ms)		500 A
Max. switching voltage		250 V
Max. AC load (Table 1)		2.5 KVA
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶

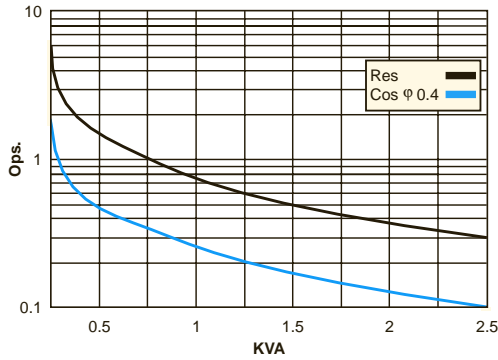
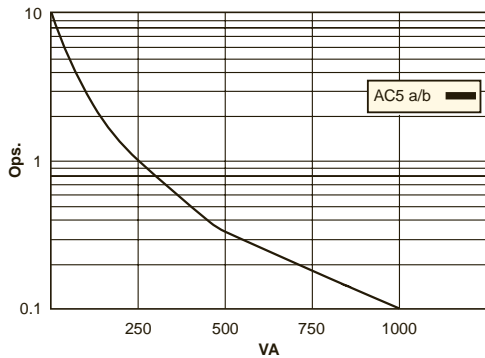
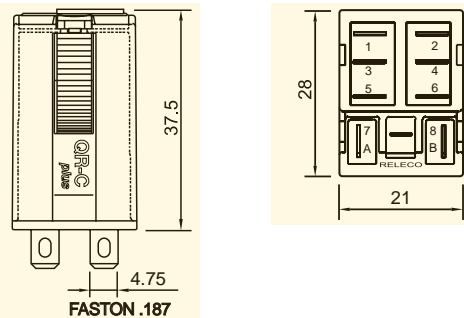


Table 2 Max. DC Load



Dimensions - mm



Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	1.5 VA (AC) / 1.5 W (DC)

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	4.5	110	8K	14

Insulation

Dielectric strength (1 minute):		
Open contacts		1000 V
Between contacts and coil		2.5 KV
Isolation resistance at 500 V		≥3 GΩ
Isolation, IEC 61810-5:		2.5 KV

Specifications

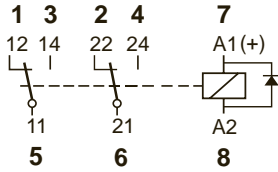
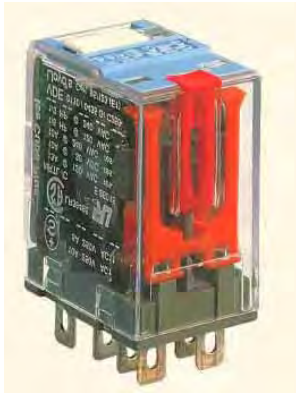
Operate time + bounce time	20 ms
Release time + bounce time	10 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥ 100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C7-W10X VAC
DC 12, 24, 48, 110,	
X = LED, no polarity (standard)	C7-W10X VDC
Free-wheeling diode	C7-W10DXVDC
Polarity and free-wheeling diodes	C7-W10FX VDC
AC/DC bridge rectifier (24 or 48 V)	C7-W10BX VDC



IEC 61810 EN 60947



R7-A20D



Railway Application Relay

According to EN 60077-1-2/99 - EN 61373/99

10 A 250 V AC1

10 A 30 V DC1

Contacts

Materials:	Standard, code 0	AgNi
	Optional, code 4	AgNi + 0.2μ Au
	Optional, code 8	AgNi + 10μ Au
Max. switching current		10 A
Max. peak inrush current (20 ms)		30 A
Max. switching voltage		250 V
Max. AC load		See Table 1
Max. DC load		See Table 2

Coils

Operation Range	0.7 Un @ 1.25 Un
Power Consumption	>0.1 Un
Power Consumption	1.07 W
Generated transients	OV, include FWD

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

Table 1 Electrical Life, ops. x 10⁶

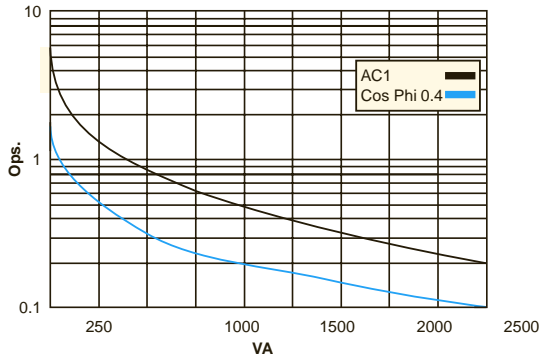
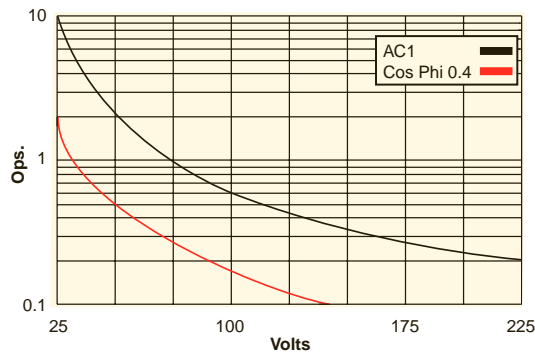
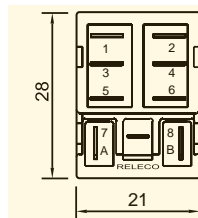
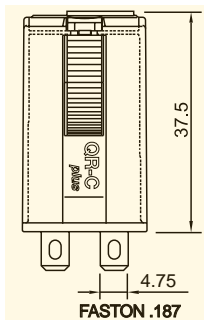


Table 1 Electrical Life, ops. x 10⁶



Dimensions - mm



Isolation

Polution grade	PD3
With voltage (1.2 / 50μs) / Dielectric strength (1 minute)	
Contact coil	4 KV / 2220 V
Between different poles	4 KV / 2220 V
Between contacts on the same pole	1550 V

Specifications

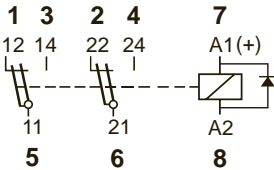
Max working temperature	40°C
Number of mechanical operations	20 million
Thermic Class	B (130°C)
Vibration: Category / Class	1 / B Body Mounted
Vibration	5 - 150 Hz (3 axes)
Shock	5 g (3 axes)
Operation (UN) / release time	10 ms / 15 ms
Weight avg.	35 g
Weight avg. Relay + Socket	75 g
Relay Protection	IP 40

Standard Types

DC 24, 48, 72, 110

Free-wheeling diode

R7-A20D VDC



R7-T21D

Railway Application Relay

According to EN 60077-1-2/99 - EN 61373/99

6 A 250 V AC1

6 A 30 V DC1

Contacts

Materials: Standard, code 1	AgNi + 0.2μ Au
Optional, code 4	AgNi + 10μ Au
Max. switching current	6 A
Max. peak inrush current (20 ms)	15 A
Max. switching voltage	250 V
Max. AC load	See Table 1
Max. DC load	100,000 ops.

Table 1 Electrical Life, ops. x 10⁶

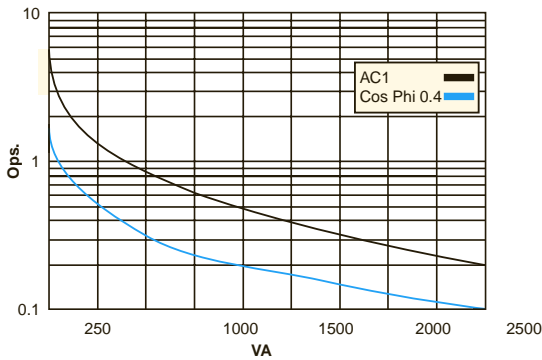
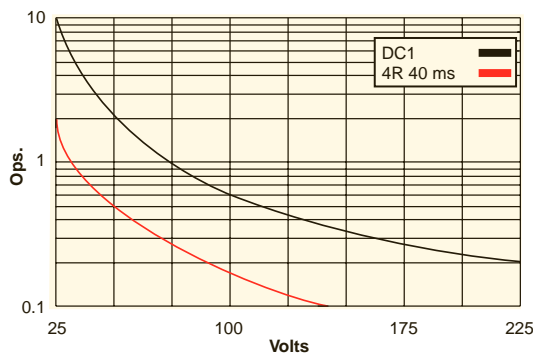
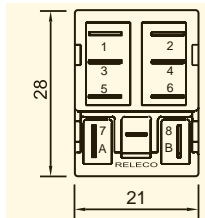
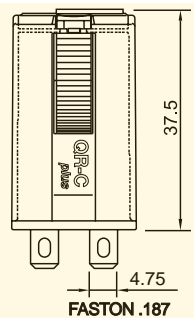


Table 1 Electrical Life, ops. x 10⁶



Dimensions - mm



Coils

Operation Range	0.7 Un @ 1.25 Un
Power Consumption	>0.1 Un
Power Consumption	1.07 W
Generated transients	OV, include FWD

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

Isolation

Polution grade	PD3
With voltage (1.2 / 50μs) / Dielectric strength (1 minute)	
Contact coil	4 KV / 2220 V
Between different poles	4 KV / 2220 V
Between contacts on the same pole	1550 V

Specifications

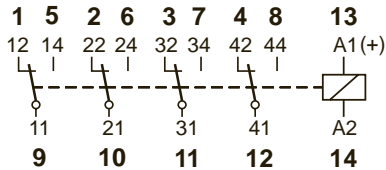
Max working temperature	40°C
Number of mechanical operations	20 million
Thermic Class	B (130°C)
Vibration: Category / Class	1 / B Body Mounted
Vibration	5 - 150 Hz (3 axes)
Shock	5 g (3 axes)
Operation (UN) / release time	10 ms / 15 ms
Weight avg.	35 g
Weight avg. Relay + Socket	75 g
Relay Protection	IP 40

Standard Types

DC 24, 48, 72, 110

Free-wheeling diode

R7-T21D VDC



C9-A41



General purpose
Four pole, change-over contacts

5 A 250 V AC1

5 A 30 V DC1

0.2 A 110 V DC1

Contacts

Materials: Standard, code 1	AgNi + 0.2μAu
Optional, code 2	AgNi + 10μAu
Max. switching current	5 A
Max. peak inrush current (2.5 ms)	15 A
Max. switching voltage	250 V
Max. AC load (Table 1)	1250 KVA
Max. DC load	See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	1.2 VA (AC) / 1 W (DC)

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	11

Table 1 Electrical Life, ops. x 10⁶

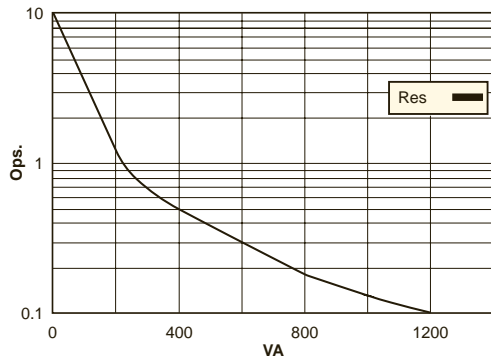
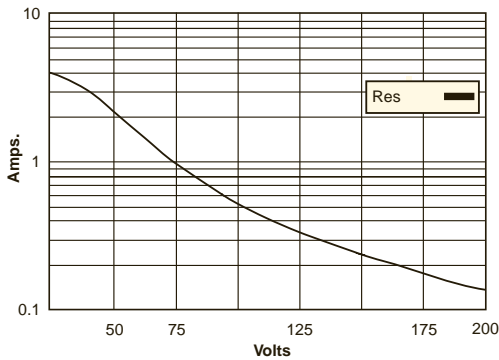


Table 2 Max. DC Load



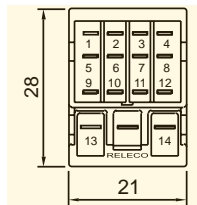
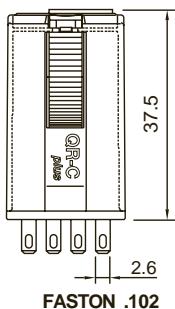
Insulation

Dielectric strength (1 minute): Open contacts	1000 V
Between adjacent poles	2 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV/

Specifications

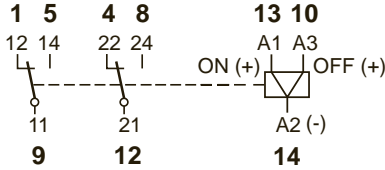
Operate time + bounce time	10 ms
Release time + bounce time	6 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	43 g

Dimensions - mm



Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C9-A41X VAC
DC 12, 24, 48, 110,	
X = LED, no polarity (standard)	C9-A41X VDC
Free-wheeling diode	C9-A41DX VDC
Polarity and free-wheeling diodes	C9-A41FX VDC
AC/DC bridge rectifier (24 or 48 V)	C9-A41BX VDC



C9-R21

Magnetic latching relay
Two change-over contacts, 5 A

5 A 250 V AC1

5 A 30 V DC1

0.2 A @110 V DC1

Contacts

Materials:	Standard, code 1	AgNi + 0.2μAu
Max. switching current		5 A
Max. peak inrush current (10 ms)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1200 KVA
Max. DC load		See Table 2

Table 1 Electrical Life, ops. x 10⁶

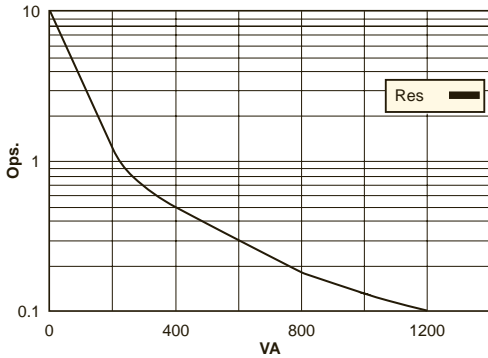
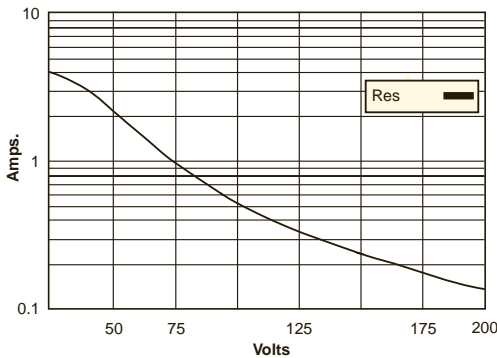
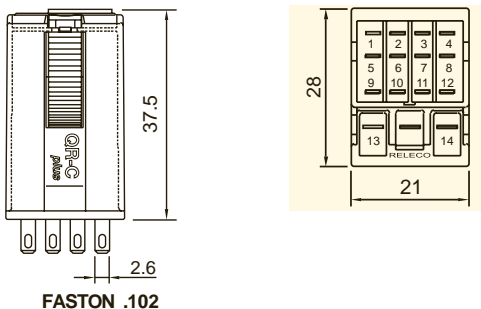


Table 2 Max. DC Load



Dimensions - mm



Coils

ON pulse power	1.2 VA / W
OFF pulse power	0.3 VA / W
One winding for AC. Two windings for DC.	

VAC	ON mA	OFF mA	VDC	ON mA	OFF mA
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

Dielectric strength (1 minute):	Open contacts	1000 V
	Between adjacent poles	2 KV
	Between contacts and coil	2 KV
Isolation resistance at 500 V		≥3 GΩ
Isolation, IEC 61810-5:		2.5 KV / 3

Specifications

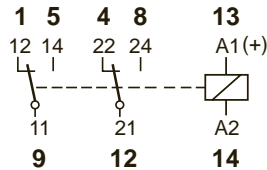
Minimum, pulse length for ON / OFF.	50 ms
Ambient temperature	-40°C (no ice) to +70°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	43 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	C9-R21 VAC
DC 12, 24, 48, 60	C9-R21 VDC



IEC 61810 EN 60947



C9-E21



General purpose. Sensitive 500 mW
Two pole, change-over contacts
DC operating range: 0.8 - 1.7 x Un

5 A 250 V AC1

5 A 30 V DC1

Contacts

Materials: Standard, code 1	AgNi + 0,2μAu
Optional, code 2	AgNi + 10μAu
Max. switching current	5 A
Max. peak inrush current (2.5 ms)	15 A
Max. switching voltage	250 V
Max. AC load (Table 1)	1200 KVA
Max. DC load	See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage	≤0.8 x Un
Drop-out voltage	≥0.1 x Un
Nominal coil power	0.8 VA (AC) / 0.5 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	1K1	21	12	288	42
48	4K6	10	24	1K1	21
115	5K9	7	48	4K6	10
230	23K9	3.5	110	24K2	4.5

Table 1 Electrical Life, ops. x 10⁶

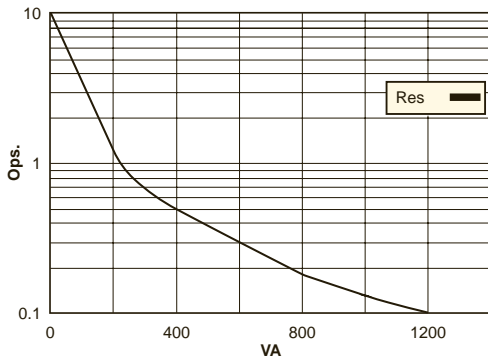
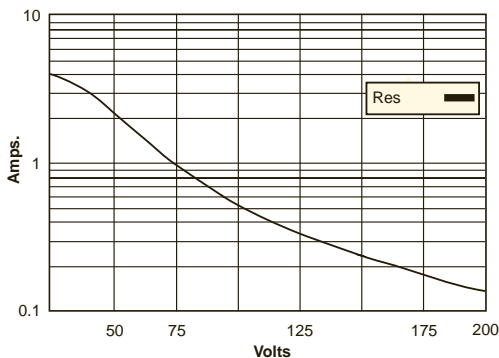
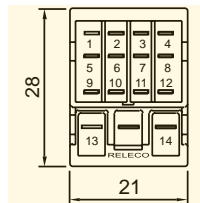
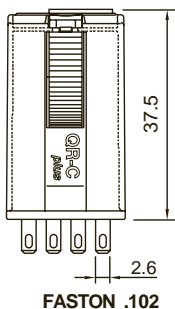


Table 2 Max. DC Load



Dimensions - mm



Insulation

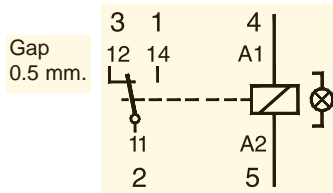
Dielectric strength (1 minute): Open contacts	1000 V
Between adjacent poles	2.5 KV
Between contacts and coil	2.5 KV
Isolation resistance at 500 V	≥3 GΩ
Isolation, IEC 61810-5:	2.5 KV/3

Specifications

Operate time + bounce time	10 ms
Release time + bounce time	6 ms
Ambient temperature	-40°C (no ice) to +60°C
Mechanical life ops.	10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load	≥100,000 ops.
Operating frequency at nominal load	1200 / hour
Protection degree	IP 40 / RT1
Weight avg.	40 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)	
X = LED (standard)	C9-E21X VAC
DC 12, 24, 48, 110,	
X = LED, no polarity (standard)	C9-E21X VDC
Free-wheeling diode	C9-E21DX VDC
Polarity and free-wheeling diodes	C9-E21FX VDC
AC/DC bridge rectifier (24 or 48 V)	C9-E21BX VDC



C10-A10

One pole, change-over contact

10 A 250 V AC1 0.5 A 110 V DC1
10 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 0 AgNi
Optional, code 8 AgNi + 10µ Au
Max. switching current 10 A
Max. peak inrush current (20 ms) 30 A
Max. switching voltage 250 V
Max. AC load (Table 1) 2.5 KVA
Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

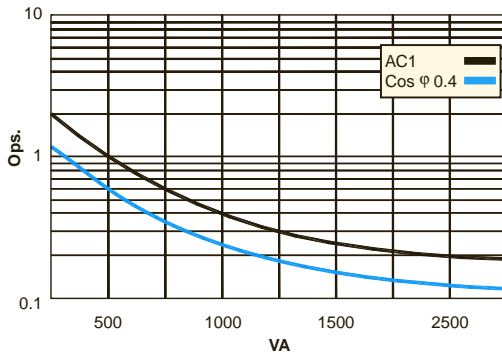
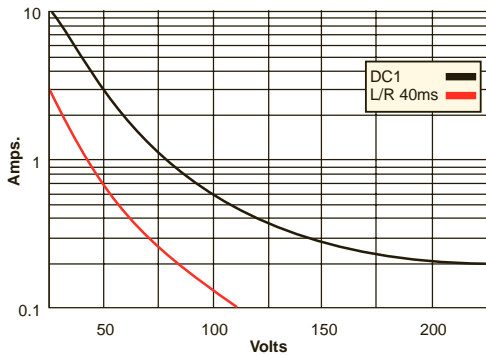
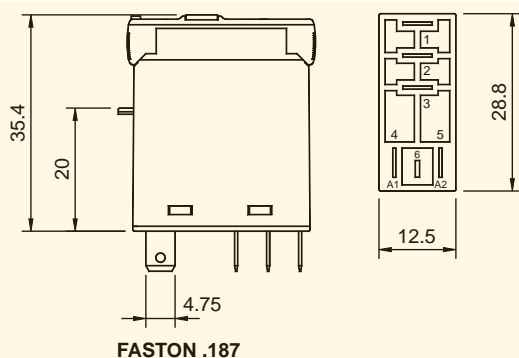


Table 2 Max. DC Load



Dimensions - mm



Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x **Un**
Drop-out voltage ≥0.1 x **Un**
Nominal coil power 1.1 VA (AC) / 0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7300	9.5	48	3500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 1000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥ 3 GΩ
Isolation, IEC 61810-5: 4 KV / 3

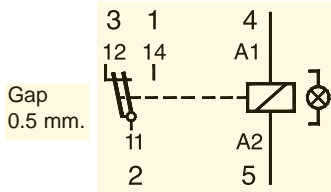
Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection grade IP 40 / RT1
Weight avg. 21 g

Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) **C10-A10X** VAC
RC suppressor **C10-A10R** VAC
DC 12, 24, 48, 110
X = LED, no polarity (standard) **C10-A10X** VDC
Options (DC coils)
Polarity and free-wheeling diodes **C10-A10FX** VDC
AC/DC bridge rectifier (24 or 48 V) **C10-A10BX** VDC





C10-T13

One change-over twin contact

6 A 250 V AC1 **0.5 A 110 V DC1**
6 A 30 V DC1 **0.2 A 220 V DC1**

Contacts

Materials: Standard, code 3 AgNi + 3μ Au
 Optional, code 2 AgNi + 10μ Au
 Max. switching current 6 A
 Max. peak inrush current (20 ms) 15 A
 Max. switching voltage 250 V
 Max. AC load (Table 1) 1.5 KVA
 Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

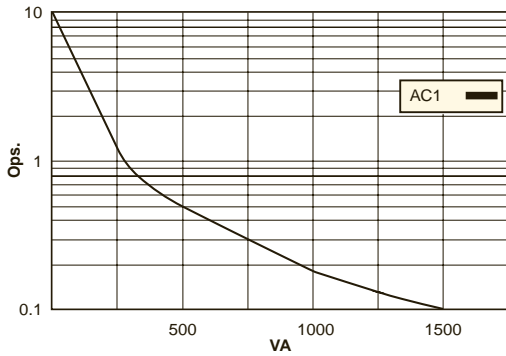
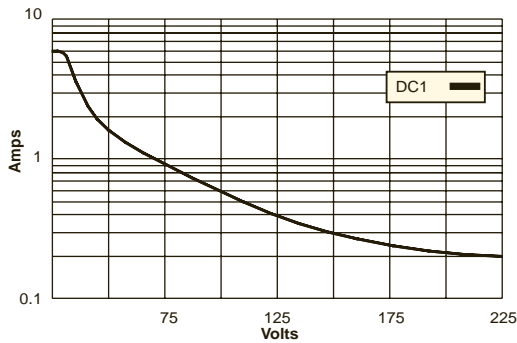
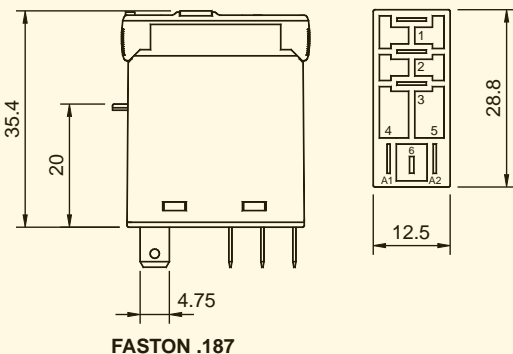


Table 2 Max. DC Load



Dimensions - mm



Coils

(Ohms ±10% @ 20°C)
 Pull-in voltage ≤0.8 x **Un**
 Drop-out voltage ≥0.1 x **Un**
 Nominal coil power 1.1 VA (AC) / 0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7300	9.5	48	3500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
 Open contacts 1000 V
 Between contact and coil 5 KV
 Isolation resistance at 500 V ≥ 3 GΩ
 Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 10 ms
 Release time + bounce time 8 ms
 Ambient temperature -40°C (no ice) to +70°C
 Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays
 Electrical life at nominal load ≥100,000 ops.
 Operating frequency at nominal load 1200 / hour
 Protection grade IP 40 / RT1
 Weight avg. 21 g

Standard Types

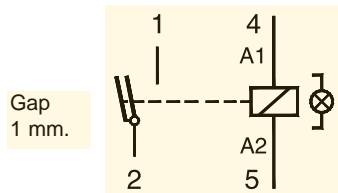
AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
 X = LED (standard) C10-T13X VAC
 RC suppressor C10-T13R VAC

DC 12, 24, 48, 110
 X = LED, no polarity (standard) C10-T13X VDC

Opciones (DC coils)
 Polarity and free-wheeling diodes C10-T13FX VDC
 AC/DC bridge rectifier (24 or 48 V) C10-T13BX VDC



IEC 61810 EN 60947



C10-GT13



One pole, twin open contact

6 A 250 V AC1 0.8 A 110 V DC1
6 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 3 AgNi + 3µ Au
 Optional, code 2 AgNi + 10µ Au

Max. switching current 6 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.5 KVA
Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x **Un**
Drop-out voltage ≥0.1 x **Un**
Nominal coil power 1.1 VA (AC) / 0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7300	9.5	48	3500	13.7
230	28,800	4.7	110	19,900	5.5

Table 1 Electrical Life, ops. x 10⁶

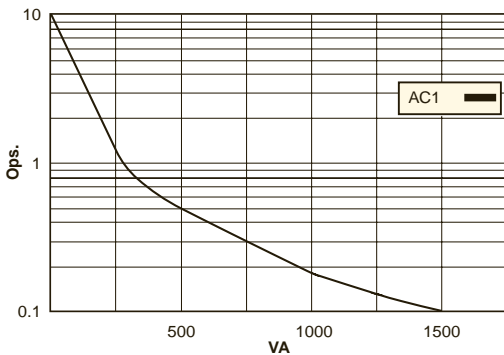
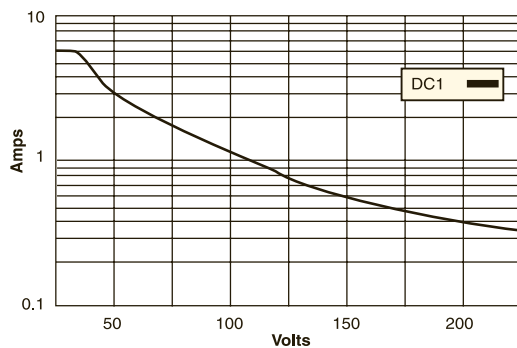


Table 2 Max. DC Load



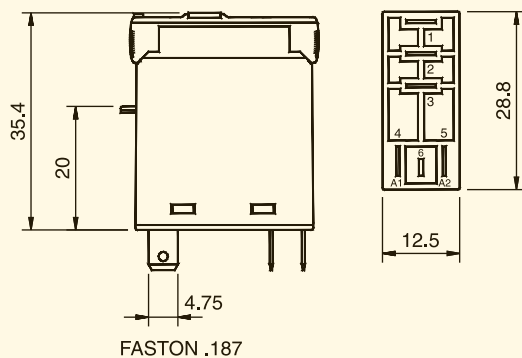
Insulation

Dielectric strength (1 minute):
Open contacts 2000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection grade IP 40 / RT1
Weight avg. 21 g

Dimensions - mm



Standard Types

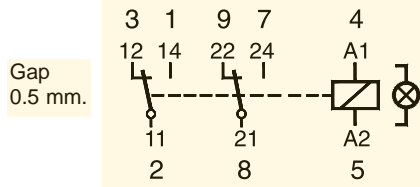
AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C10-GT13X VAC
RC suppressor C10-GT13R VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C10-GT13X VDC

Opciones (DC coils)
Polarity and free-wheeling diodes C10-GT13FX VDC
AC/DC bridge rectifier (24 or 48 V) C10-GT13BX VDC



IEC 61810 EN 60947



C12-A20

Two poles, change-over contacts

5 A 250 V AC1 0.5 A 110 V DC1
5 A 30 V DC1 0.2 A 220 V DC1

Contacts

Materials: Standard, code 1 AgNi
 Optional, code 2 AgNi + 10μ Au
Max. switching current 5 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.2 KVA
Max. DC load See Table 2

Table 1 Electrical Life, ops. x 10⁶

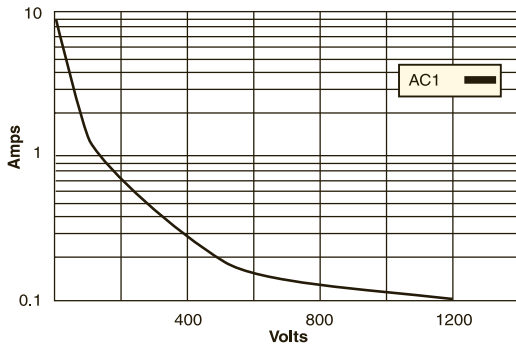
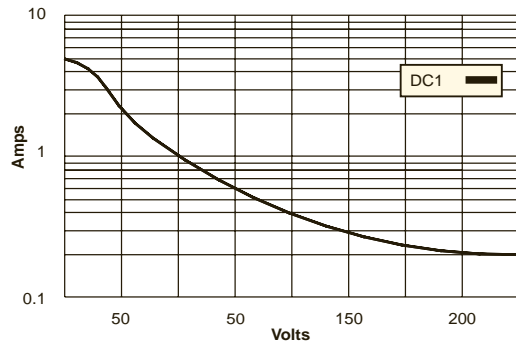
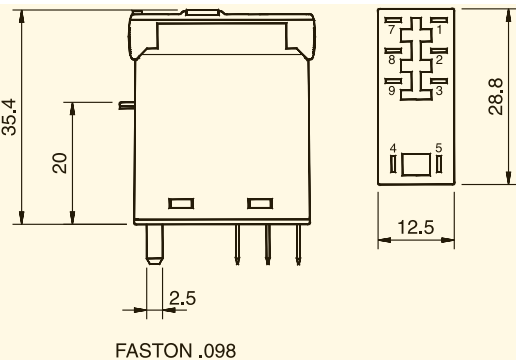


Table 2 Max. DC Load



Dimensions - mm



Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x Un
Drop-out voltage ≥0.1 x Un
Nominal coil power 1.1 VA (AC) / 0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7300	9.5	48	3500	13.7
230	28,800	4.7	110	19,900	5.5

Insulation

Dielectric strength (1 minute):
Open contacts 1000 V
Between adjacents poles 3000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC relays, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection degree IP 40 / RT1
Weight avg. 21 g

Standard Types

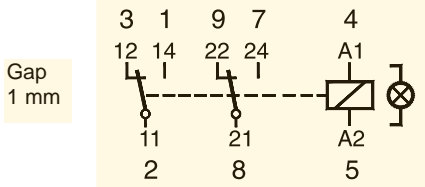
AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C12-A21X VAC
RC suppressor C12-A21R VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C12-A21X VDC

Options (DC coils)
Polarity and free-wheeling diodes C12-A21FX VDC
AC/DC bridge rectifier (24 or 48 V) C12-A21BX VDC



IEC 61810 EN 60947



C12-G20



Two poles, open contacts

5 A 250 V AC1 0.8 A 110 V DC1
5 A 30 V DC1 0.4 A 220 V DC1

Contacts

Materials: Standard, code 1 AgNi
 Optional, code 2 AgNi + 10µ Au
Max. switching current 5 A
Max. peak inrush current (20 ms) 15 A
Max. switching voltage 250 V
Max. AC load (Table 1) 1.2 KVA
Max. DC load See Table 2

Coils (Ohms ±10% @ 20°C)

Pull-in voltage ≤0.8 x **Un**
Drop-out voltage ≥0.1 x **Un**
Nominal coil power 1.1 VA (AC) / 0.7 W (DC)

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7300	9.5	48	3500	13.7
230	28,800	4.7	110	19,900	5.5

Table 1 Electrical Life, ops. x 10⁶

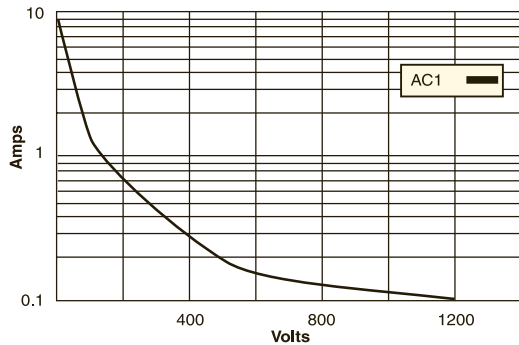
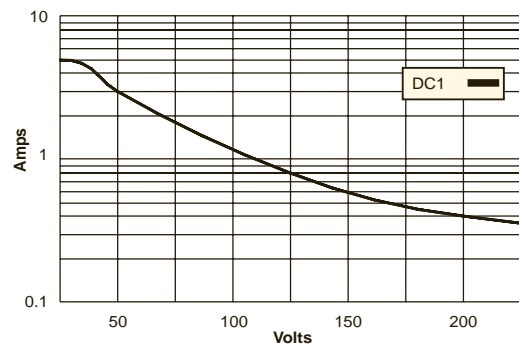


Table 2 Max. DC Load



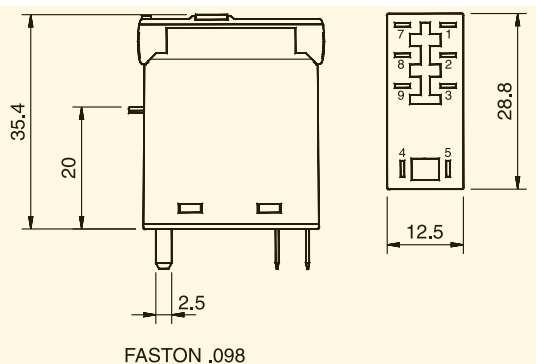
Insulation

Dielectric strength (1 minute):
Open contacts 2000 V
Between adjacent poles 3000 V
Between contact and coil 5 KV
Isolation resistance at 500 V ≥3 GΩ
Isolation, IEC 61810-5: 4 KV / 3

Specifications

Operate time + bounce time 10 ms
Release time + bounce time 8 ms
Ambient temperature -40°C (no ice) to +70°C
Mechanical life ops. 10 Mill. AC, 20 Mill. DC relays
Electrical life at nominal load ≥100,000 ops.
Operating frequency at nominal load 1200 / hour
Protection grade IP 40 / RT1
Weight avg. 21 g

Dimensions - mm



Standard Types

AC 50 Hz, (60 Hz): 24, 48, 115, (120), 230, (240)
X = LED (standard) C12-G21X VAC
RC suppressor C12-G21R VAC

DC 12, 24, 48, 110
X = LED, no polarity (standard) C12-G21X VDC

Options (DC coils)
Polarity and free-wheeling diodes C12-G21FX VDC
AC/DC bridge rectifier (24 or 48 V) C12-G21BX VDC



IEC 61810 EN 60947



CSS-DCP

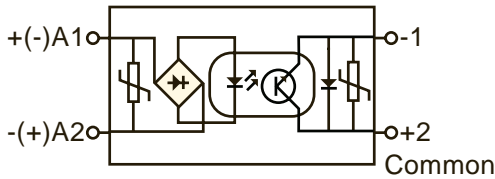
Solid state relay



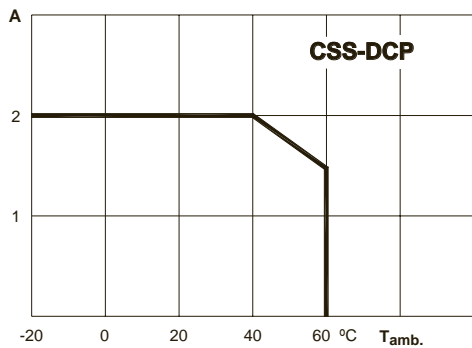
DC inductive or resistive load switching
Positive common output

One open contact
2 A @ 5 - 50 VDC

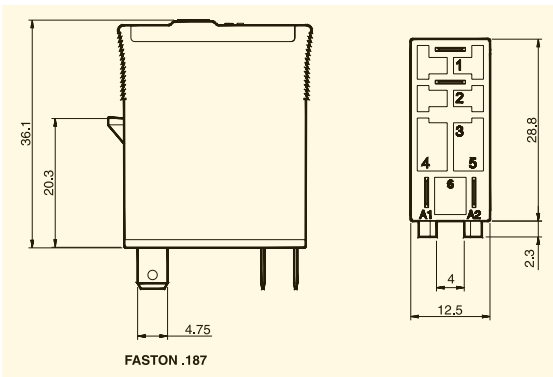
CSS-DCP Positive Common



Max. DC Load vs. Ambient Temperature



Dimensions - mm

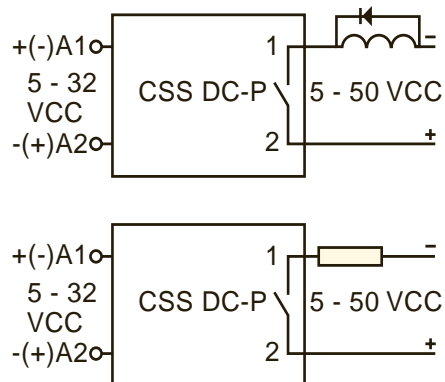


Input	Polarity Protected
Range of input voltage	5 - 32 VDC
Drop-out voltage	<2.5 VDC
Input current	3 ±1 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output, Positive Common	
Max. output current	2 A
Max. output voltage	50 VDC
Minimum output voltage	5 VDC
Max. drop voltage	1.3 VDC
Max. leakage current at 48 VDC	<100 µA
Max. overcurrent pulse	5 A, 350 µs
Pulse protection	IEC-1000-4-5 level 1
Max. current at inverse voltage	1 A

Specifications	
Dielectric strength input / output	4 KV/1 min.
Operate time	1 ms
Release time	max. 2 ms
Working temperature, max.	60°C
Storage temperature	100°C
Weight avg.	28 g

Applications
To switch up to 50 VDC, heating elements electrovalves, motors, input/output signals on PLC's, solenoids, incandescent and fluorescent lamps, etc.
Inductive loads must be shunted with an antiparallel diode.





CSS-DCN

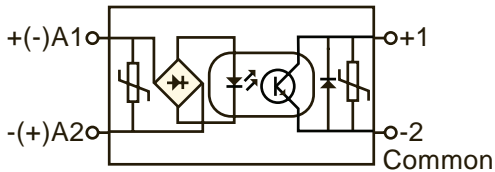
Solid state relay



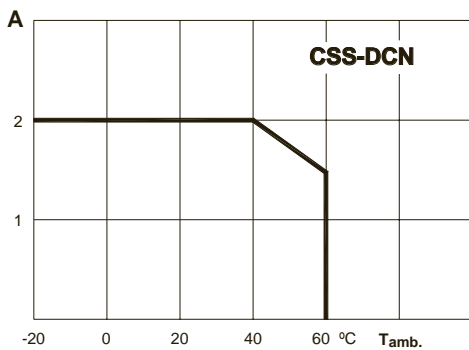
DC inductive or resistive load switching
Negative common output

One open contact
2 A @ 5 - 50 VDC

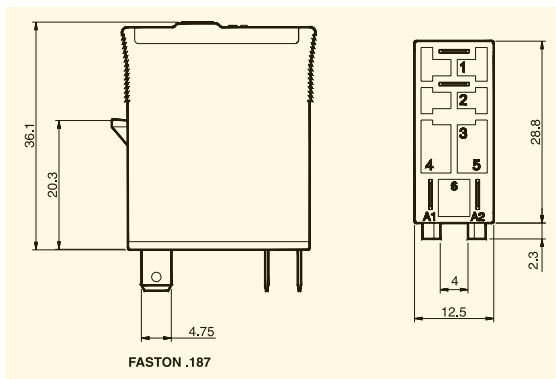
CSS-DCN Negative Common



Max. DC Load vs. Ambient Temperature



Dimensions - mm



Input

Range of input voltage	5 - 32 VDC
Drop-out voltage	<2.5 VDC
Input current	3 ±1 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Polarity Protected

Output, Positive Common

Max. output current	2 A
Max. output voltage	50 VDC
Minimum output voltage	5 VDC
Max. drop voltage	1.3 VDC
Max. leakage current at 48 VDC	<100 µA
Max. overcurrent pulse	5 A, 350 µs
Pulse protection	IEC-1000-4-5 level 1
Max. current at inverse voltage	1 A

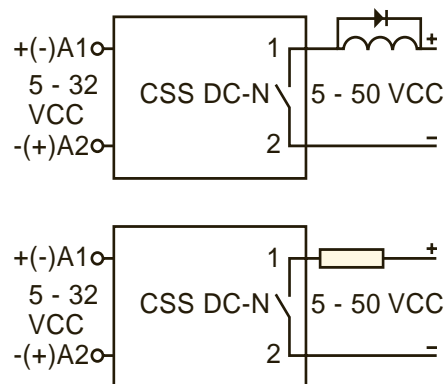
Specifications

Dielectric strength input / output	4 KV/1 min.
Operate time	1 ms
Release time	max. 2 ms
Working temperature, max.	60°C
Storage temperature	100°C
Weight avg.	28 g

Applications

To switch, up to 50 VDC, heating elements electrovalves, motors, input/output signals on PLC's, solenoids, incandescent and fluorescent lamps, etc.

Inductive loads must be shunted with an antiparallel diode.





CSS-AC

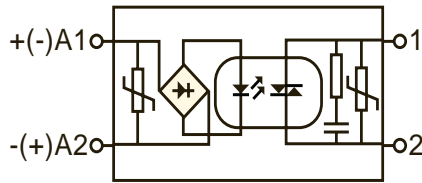
Solid state relay



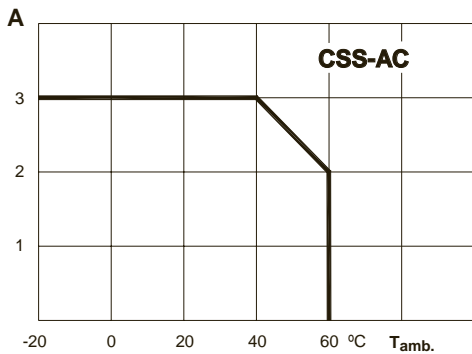
AC inductive loads switching.

One open contact
3 A @ 24 - 250 V AC, 50/60 Hz

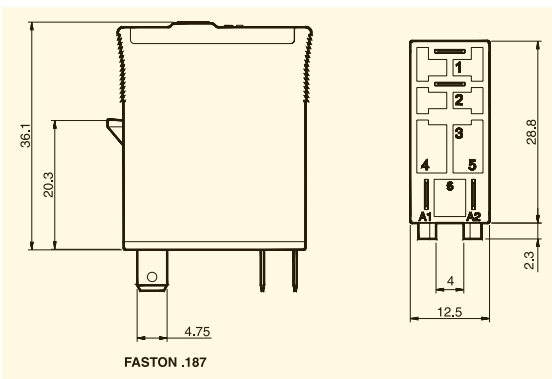
CSS-AC AC Instantaneous Output



Max. AC Load vs. Ambient Temperature



Dimensions - mm



Input	Polarity Protected
Range of input voltage	5 - 32 VDC
Drop-out voltage	<2.5 VDC
Input current	5 - 15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

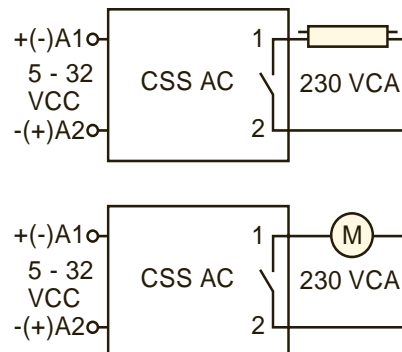
Output	Instantaneous
Max. output current	3 A
Minimum output current	50 mA
Max. output voltage	250 VAC
Minimum output voltage	24 VAC
Max. drop voltage	<1.5 VAC
Max. leakage current	0.55 mA
Max. Dv/dt	500 V/μs
I ² t for 10 ms. fuse	50 A ² /s

Specifications	
Dielectric strength input/output	4 KV / 1min.
Operate time	1/2 cycle
Release time	2 ms + 1/2 cycle
Working temperature, max.	60°C
Storage temperature, max.	100°C
Weight avg.	28 g

Applications

Suitable to switch inductive loads up to 3 A / 250 VAC.

In switching loads with a high inrush or overcurrent (max. Di/dt 50 A/μs) such as transformers, motors or fluorescents, the maximum output current limit it 2 A.





CSS-AZ

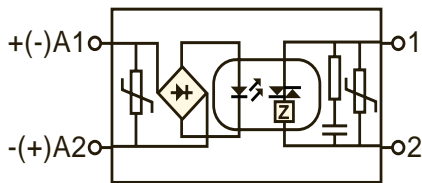
Solid state relay



AC resistive loads switching

One open contact
3 A @ 24 - 250 V AC, 50/60 Hz

CSS-AZ AC, Synchronized to Zero



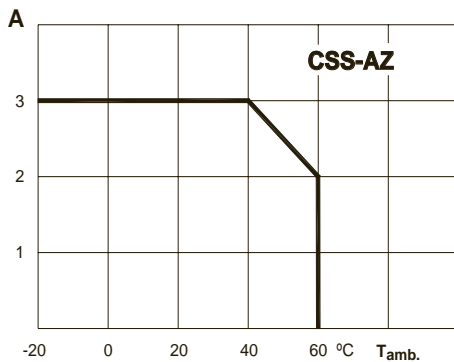
Input Polarity Protected

Range of input voltage	5 - 32 VDC
Drop-out voltage	<2.5 VDC
Input current	5 - 15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output Synchronized to Zero

Max. output current	3 A
Minimum output current	50 mA
Max. output voltage	250 VAC
Minimum output voltage	24 VAC
Max. drop voltage	<1.5 VAC
Max. leakage current	0.55 mA
Max. Dv/dt	500 V/μs
I ² t for 10 ms. fuse	50 A ² /s

Max. DC Load vs. Ambient Temperature



Specifications

Dielectric strength input/output	4 KV / 1 min.
Operate time	1/2 cycle
Release time	2 ms + 1/2 cycle
Working temperature, max.	60°C
Storage temperature, max.	100°C
Weight avg.	28 g

Applications

Switches AC resistive loads up to 3 A / 250 VAC in the zero point of the tension and avoids any overcurrent peak in the connection.

Suitable to switch resistors, incandescent lamps, signalling, etc.

Not suitable for inductive loads.

Dimensions - mm

