1.1.3 Interface Relays

IRC Series

Application	Types	Pins	Contacts	AC ratings	DC ratings	Socket
C10 Series						
Interface standard relay	C10-A1x			10 A / 250 V	10 A / 30 V	S10
DC load switching	C10-G1x			10 A / 250 V	10 A / 30 V	S10
Low switching load	C10-T1xx			6 A / 250 V	6 A / 30 V	S10
Low switching load	C10-GTxx			6 A / 250 V	6 A / 30 V	S10
C12 Series						
Interface relay	C12-A2x			5 A / 250 V	5 A / 30 V	S12
Interface DC relay	C12-G2x			5 A / 250 V	5 A / 30 V	S12

IRC series

C10-A1x

5-pin, Interface relays, 1-pole, plug-in, faston

Type	**C10-A1x/ ... V**		
	Standard relay, 1 change-over contact		
	Contact Ag Sn O2 to high inrush		
Maximum contact load	**10 A/250 V**	**AC1**	**0,5 A/110 V DC1**
	10 A/30 V	**DC1**	**0,2 A/220 V DC1**
	13 A/250 V	**AC1** cULus	
Recommended minimum contact load	**10 mA/10 V**	**Code 0,5**	
	5 mA/5 V	**Code 8**	

Contacts

Material	Standard	Code 0	AgNi
	Optional	Code 8	AgNi+ 10 µ Au
	Optional	Code 5	Ag Sn O2
Rated current			10 A
Switch-on current max. (20 ms)			30 A (120 A for code 5)
Switching voltage max.			250 V
AC load (Fig 1)			2,5 kVA
DC load			see fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,1 VA (AC)/0,7 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/coil	5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	4 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)….70 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/ ≤ 1 ms
Release time/bounce time	5 ms/ ≤ 3 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	21 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C10-A10/AC ... V**	**C10-A18/AC ... V**	**C10-A15/AC ... V**
LED	**C10-A10X/AC ... V**	**C10-A18X/AC ... V**	**C10-A15X/AC ... V**
RC suppresor	**C10-A10R/AC ... V**	**C10-A18R/AC ... V**	**C10-A15R/AC ... V**
VDC 12, 24, 48, 110	**C10-A10/DC ... V**	**C10-A18/DC ... V**	**C10-A15/DC ... V**
LED	**C10-A10X/DC ... V**	**C10-A18X/DC ... V**	**C10-A15X/DC ... V**
Polarity and free wheeling diode	**C10-A10FX/DC ... V**	**C10-A18FX/DC ... V**	**C10-A15FX/DC ... V**
VAC/DC bridge rectifier 24 V, 48 V	**C10-A10BX/UC ... V**	**C10-A18BX/UC ... V**	**C10-A15BX/UC ... V**

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

Accessories

Socket:	**S10, S10-M, S10-P**

Connection diagram

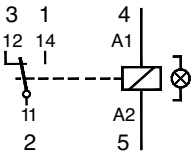


Fig. 1 AC voltage endurance

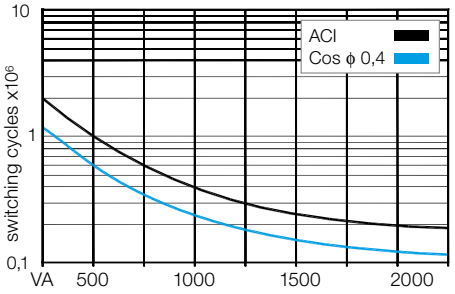
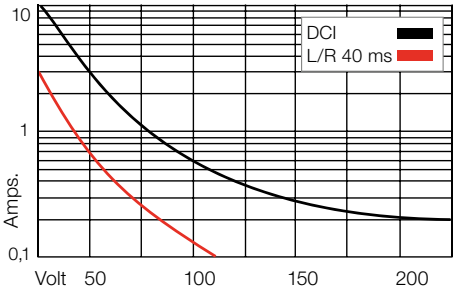
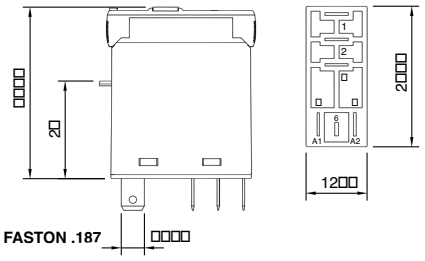


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

C10-G1x

4-pin, Interface relays, 1-pole, normally open plug-in, faston

Type			**C10-G1X/ ... V** Standard relay 1 open contact for high DC load Contact Ag Sn O2 to high inrush
Maximum contact load			**10 A/250 V AC1** **0,8 A/110 V DC1** **10 A/30 V DC1** **0,4 A/220 V DC1**
Recommended minimum contact load			**10 mA/10 V Code 0,5** **5 mA/5 V Code 8**
Contacts			
Material	Standard	Code 0	AgNi
	Optional	Code 8	AgNi +10 µ Au
	Optional	Code 5	Ag SnO2
Rated current			10 A
Switch-on current max. (20 ms)			30 A (120 A for code 5)
Switching voltage max.			250 V
AC load (Fig 1)			2,5 kVA
DC load			see Fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,1 VA (AC)/0,7 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation	Volt rms, 1 min
Contact open	2000 V
Contact/coil	5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	4 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)....70 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/≤ 1 ms
Release time/bounce time	8 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	21 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C10-G10/AC ... V**	**C10-G15/AC ... V**
LED	**C10-G10X/AC ... V**	**C10-G15X/AC ... V**
RC suppresor	**C10-G10R/AC...V**	**C10-G15R/AC...V**
VDC 12, 24, 48, 110	**C10-G10/DC ... V**	**C10-G15/DC ... V**
LED	**C10-G10X/DC ... V**	**C10-G15X/DC ... V**
Polarity and free wheeling diode	**C10-G10FX/DC ... V**	**C10-G15FX/DC... V**
AC/DC bridge rectifier 24 V, 48 V	**C10-G10BX/DC ... V**	**C10-G15BX/UC... V**

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

Accessories

Socket: **S10, S10-M, S10-P**

Connection diagram

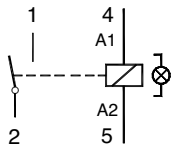


Fig. 1 AC voltage endurance

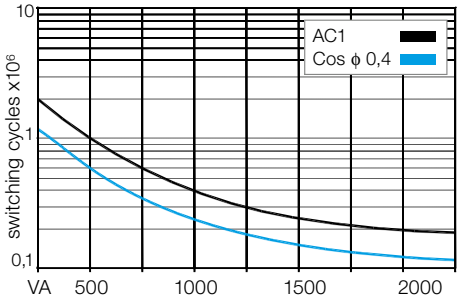
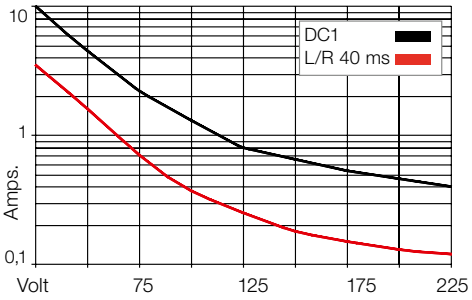
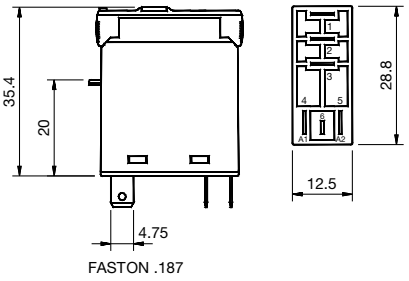


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

IRC series

C10-T1x

5-pin, Interface relays, 1-pole, twin contact, plug-in faston

Type	**C10-T1x/ ... V**				
	Standard relay for low power application				
Maximum contact load	**6 A/250 V**	**AC1**	**0,5 A/110 V**	**DC1**	
	6 A/30 V	**DC1**	**0,2 A/220 V**	**DC1**	
Recommended minimum contact load	**5 mA/5 V**	**Code 1**			
	1 mA/5 V	**Code 2**			

Contacts

Material	Standard	Code 1	AgNi + 0,2 µ Au
	Optional	Code 2	AgNi + 5 µ Au
Rated current			6 A
Switch-on current max. (20 ms)			15 A
Switching voltage max			250 V
AC load (Fig 1)			1,5 kVA
DC load			see fig. 2

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,1 VA (AC)/0,7 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/coil	5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	4 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)…70 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/≤ 1 ms
Release time/bounce time	5 ms/≤ 3 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	1200/h
Protection class	IP40
Weight	21 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C10-T11/AC ... V**	**C10-T12/AC ... V**
LED	**C10-T11X/AC ... V**	**C10-T12X/AC ... V**
RC suppresor	**C10-T11R/AC...V**	**C10-T12R/AC...V**
VDC12, 24, 48, 110	**C10-T11/DC ... V**	**C10-T12/DC ... V**
LED	**C10-T11X/DC ... V**	**C10-T12X/DC ... V**
Polarity and free wheeling diode	**C10-T11FX/DC ... V**	**C10-T12FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V	**C10-T11BX/UC ... V**	**C10-T12BX/UC ... V**

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

Accessories

Socket: **S10, S10-P**

Connection diagram

Gap: 0,5 mm

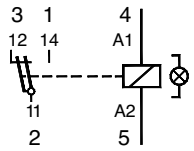


Fig. 1 AC voltage endurance

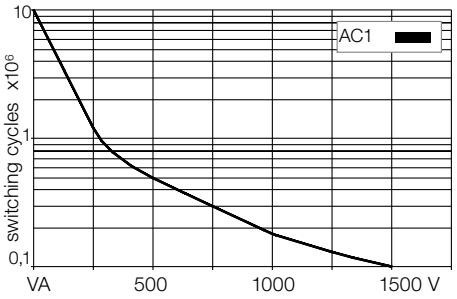
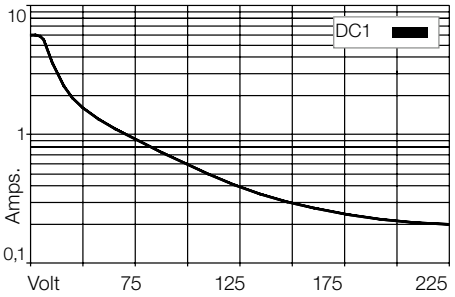
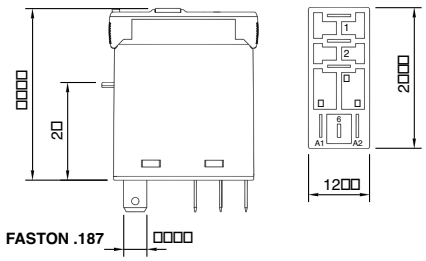


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

C10-GT1x

4-pin, Interface relays, 1-pole, twin open contact, plug-in faston

Type			**C10-GT1x/ ... V**			
			Standard relay for low power application			
			1 open contact			
Maximum contact load			**6 A/250 V**	**AC1**	**0,8 A/110 V**	**DC1**
			6 A/30 V	**DC1**	**0,4 A/220 V**	**DC1**
Recommended minimum contact load			**5 mA/5 V**	**Code 3**		
			1 mA/5 V	**Code 2**		
Contacts						
Material	Standard	Code 3	AgNi + 3 µ			
	Optional	Code 2	AgNi + 10 µ Au			
Rated current			6 A			
Switch-on current max. (20 ms)			15 A			
Switching voltage max			250 V			
AC load (Fig 1)			1,5 kVA			
DC load			see Fig. 2			
Coil						
Coil resistance			see table; tolerance ± 10 %			
Pick-up voltage			≤ 0,8 x U_N			
Release voltage			≥ 0,1 x U_N			
Nominal power			1,1 VA (AC)/0,7 W (DC)			

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation			Volt rms, 1 min
Contact open			2000 V
Contact/coil			5 kV
Insulation resistance at 500 V			≥1 GΩ
Insulation, IEC 61810-1			4 kV/3
Specifications			
Ambient temperature operation/storage			-40 (no ice)…70 °C /-40 ... 80 °C
Pick-up time/bounce time			10 ms/≤ 1 ms
Release time/bounce time			5 ms/≤ 3 ms
Mechanical life ops			AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load			≥100000 switching cycles
Switching frequency at rated load			≤ 1200/h
Protection class			IP40
Weight			21 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115, (120), 230, (240)	**C10-GT13/AC ... V**	**C10-GT12/AC ... V**
LED	**C10-GT13X/AC ... V**	**C10-GT12X/AC ... V**
RC suppresor	**C10-GT13R/AC ... V**	**C10-GT12R/AC ...V**
VDC 12, 24, 48, 110	**C10-GT13/DC ... V**	**C10-GT12/DC ... V**
LED	**C10-GT13X/DC ... V**	**C10-GT12X/DC ... V**
Polarity and free wheeling diode	**C10-GT13FX/DC ... V**	**C10-GT12FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V	**C10-GT13BX/UC ... V**	**C10-GT12BX/UC ... V**

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

Accessories

Socket: **S10, S10-M, S10-P**

Connection diagram

Gap: 1 mm

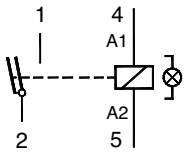


Fig. 1 AC voltage endurance

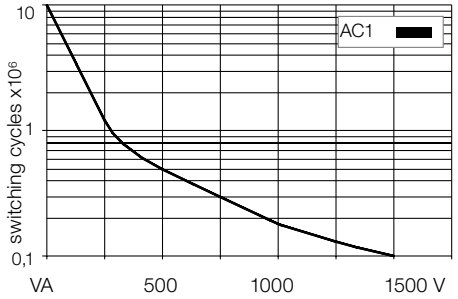
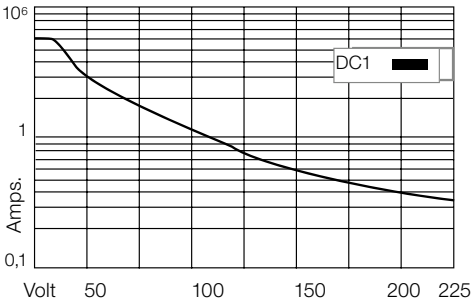
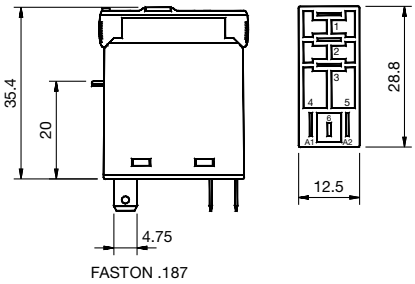


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

IRC series

C12-A2x

8-pin, Interface relays, 2-pole, plug-in faston

Type	**C12-A2x/ ... V**		
	Standard relay		
	2 change-over contact		
Maximum contact load	**5 A/250 V**	**AC1**	**0,5 A/110 V DC1**
	5 A/30 V	**DC1**	**0,2 A/220 V DC1**
Recommended minimum contact load	**10 mA/10 V**	**Code 1**	
	5 mA/5 V	**Code 2**	

Contacts

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

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≤ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,1 VA (AC)/0,7 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

	Volt rms, 1 min
Contact open	1000 V
Contact/contact	3000 V
Contact/coil	5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	4 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)….60 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/≤ 1 ms
Release time/bounce time	5 ms/≤ 3 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	21 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115 (120), 230 (240)	**C12-A21/AC ... V**	**C12-A22/AC ... V**
LED	**C12-A21X/AC ... V**	**C12-A22X/AC ... V**
RC suppresor	**C12-A21R/AC ... V**	**C12-A22R/AC ... V**
VDC 12, 24, 48, 110	**C12-A21/DC ... V**	**C12-A22/DC ... V**
LED	**C12-A21X/DC ... V**	**C12-A22X/DC ... V**
Polarity and free wheeling diode	**C12-A21FX/DC ... V**	**C12-A22FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V	**C12-A21BX/UC ... V**	**C12-A22BX/UC ... V**

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

Accessories

Socket:	**S12, S12-P**

Connection diagram

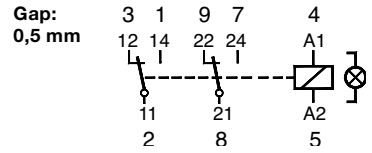


Fig. 1 AC voltage endurance

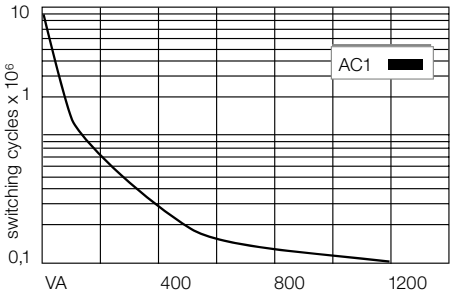
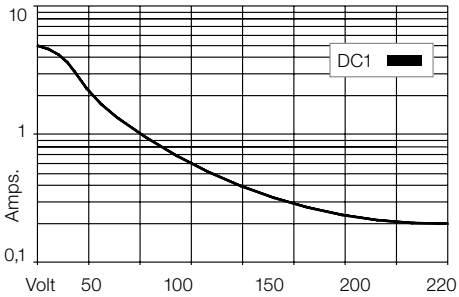
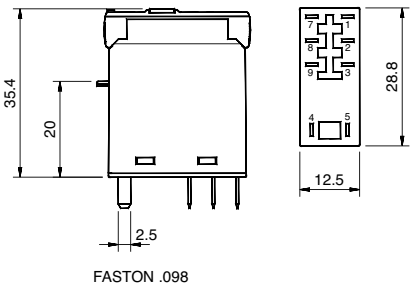


Fig. 2 DC load limit curve



Dimensions [mm]



Technical approvals, conformities

IEC 61810; EN 60947

C12-G2x

6-pin, Interface relays, 2-pole, plug-in faston

Type	**C12-G2x/ ... V**		
	Standard relay		
	2 open contacts		
Maximum contact load	**5 A/250 V**	**AC1**	**0,8 A/110 V** **DC1**
	5 A/30 V	**DC1**	**0,4 A/220 V** **DC1**
Recommended minimum contact load	**10 mA/10 V**	**Code 1**	
	5 mA/5 V	**Code 2**	

Contacts

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

Coil

Coil resistance	see table; tolerance ± 10 %
Pick-up voltage	≥ 0,8 x U_N
Release voltage	≥ 0,1 x U_N
Nominal power	1,1 VA (AC)/0,7 W (DC)

Coil table

VAC	Ω	mA	VDC	Ω	mA
24	290	45	12	224	53
48	1200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

	Volt rms, 1 min
Contact open	2000 V
Contact/contact	3000 V
Contact/coil	5 kV
Insulation resistance at 500 V	≥1 GΩ
Insulation, IEC 61810-1	4 kV/3

Specifications

Ambient temperature operation/storage	-40 (no ice)....60 °C /-40 ... 80 °C
Pick-up time/bounce time	10 ms/≤ 1 ms
Release time/bounce time	5 ms/≤ 3 ms
Mechanical life ops	AC: 10 Mill./DC: 20 Mill.
DC voltage endurance at rated load	≥100000 switching cycles
Switching frequency at rated load	≤ 1200/h
Protection class	IP40
Weight	21 g

Standard types

VAC 50 Hz/60 Hz: 24, 48, 115, (120), 230, (240)	**C12-G21/AC ... V**	**C12-G22/AC ... V**
LED	**C12-G21X/AC ... V**	**C12-G22X/AC ... V**
RC suppresor	**C12-G21R/AC ... V**	**C12-G22R/AC ... V**
VDC 12, 24, 48, 110	**C12-G21/DC ... V**	**C12-G22/DC ... V**
LED	**C12G21X/DC ... V**	**C12-G22X/DC ... V**
Polarity and free wheeling diode	**C12-G21FX/DC ... V**	**C12-G22FX/DC ... V**
AC/DC bridge rectifier 24 V, 48 V	**C12-G21BX/UC ... V**	**C12-G22BX/UC ... V**

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

Accessories

Socket:	**S12, S12-P**

Connection diagram

Gap: 1 mm

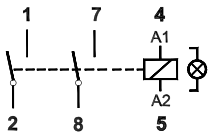


Fig. 1 AC voltage endurance

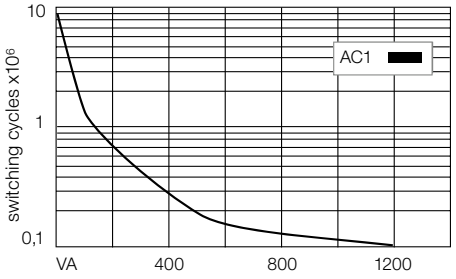
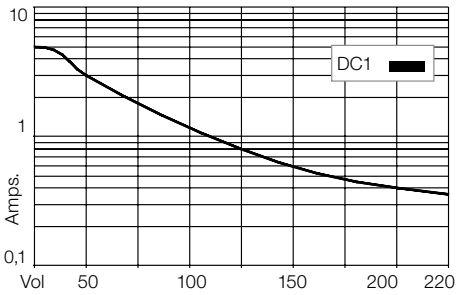
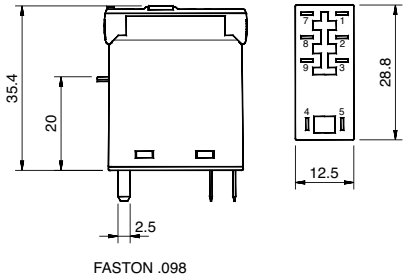


Fig. 2 DC load limit curve



Dimensions [mm]



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Technical approvals, conformities

IEC 61810; EN 60947

Notes

1.1.4 Solid State Relays

CSS Series

Application	Types	Pins	Contacts	AC ratings	DC ratings	Socket
CSS Series						
AC Solid state relay, Instantaneous switching	CSS-AC			3 A / 250 V		S10
AC Solid state relay synch. to zero crossing	CSS-AZ			3 A / 250 V		S10
NPN Solid state relay	CSS-DCN				2 A / 50 V	S10
PNP Solid state relay	CSS-DCP				2 A / 50 V	S10

IRC series

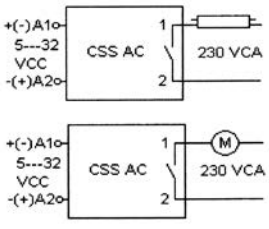
CSS-AC

4-pin, Interface solid state relay, 1-pole, plug-in faston

Type	**CSS-AC** Solid state relay For switching resistive and inductive AC loads Instantaneous
Output	**1 N/O contact**
Operating range	**3 A, 24 ... 250 VAC, 50/60 Hz**
Minimum contact load	**50 mA**
Control circuit	
Input voltage range	5 ... 32 VDC
Release voltage	< 2,5 VDC
Input current	5 ... 15 mA
Stabilised current regulator	yes
Input voltage protection	IEC-1000-4-5 level 1
Output circuit	Instantaneous
Max. output current	3 A
Min. output current	50 mA
Output voltage range	24...250 VAC
Inrush current	30 A/10 ms
Max. release voltage	< 1,5 VAC
Residual current	≤ 0,55 mA
di / dt	≤ 50 A / µs
I^2t value	50 A^2s
Specifications	
Ambient temperature operation/storage	-25 ... 60 °C /-40 ... 80 °C
Test voltage between input/output	4 kV rms/1min
Pick-up time	max. 1/2 wave
Release time	2 ms + 1/2 wave
Weight	28 g

Applications

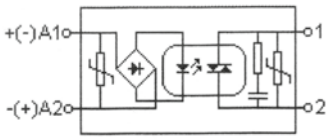
It is specially suitable to switch inductive loads up to 3A/250 VAC.
For switching loads with a high inrush or overcurrent (max. Di/dt 50A/µs) as transformers, motors or fluorescents, the maximum output current will limit to 2 A.



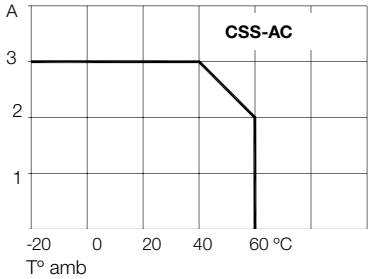
Accessories

Socket:	**S10, S10-M, S10-P**

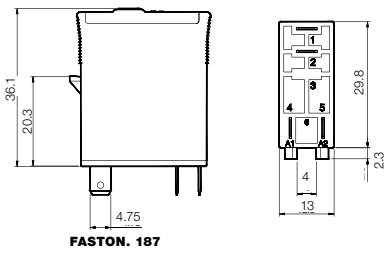
Fig. 1 CSS-AC diagram



Tab. 2 AC derating curve



Dimensions [mm]



Technical approvals, conformities

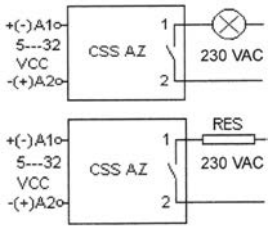
CSS-AZ

4-pin, Interface solid state relay, 1-pole, plug-in faston

Type	**CSS-AZ** Solid state relay For switching resistive lamps and AC loads Synchronized to zero crossing
Output	**1 N/O contact**
Operating range	**3 A, 24 ... 250 VAC, 50/60 Hz**
Minimum contact load	**50 mA**
Control parameters	
Input voltage range	5 ... 32 VDC
Release voltage	< 2,5 VDC
Input current	5 ... 15 mA
Stabilised current regulator	yes
Input voltage protection	IEC-1000-4-5 Level 1
Output	Synchronized zero
Max. output current	3 A
Min. output current	50 mA
Output voltage range	24 ... 250 VAC
Inrush current	30 A/10 ms
Max. release voltage	< 1,5 VAC
Residual current	≤ 0,55 mA
di / dt	≤ 50 A / µs
I^2t value	50 A^2s
Specifications	
Ambient temperature operation/storage	-25….60 ºC /-40 ... 80 °C
Test voltage between input/output	4 kV rms/1min
Pick-up time	max. 1/2 cycle
Release time	2 ms + 1/2 cycle
Weight	28 g

Applications

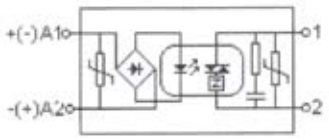
Switches ohmic AC loads up to 3 A/250 VAC in the zero-point of the tension and avoids any overcurrent peak in the connection.
Suitable for switching resistors, incandescent lamps, signalling equipment, etc. Not suitable for inductive loads



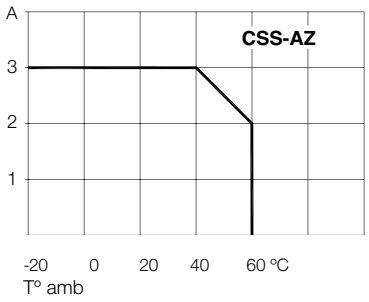
Accessories

Socket:	**S10, S10-M, S10-P**

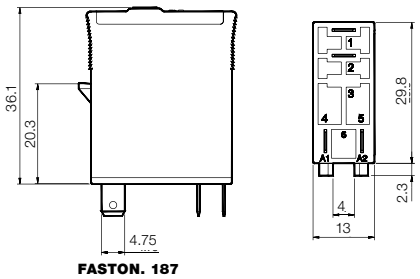
Fig. 1 CSS-AZ diagram



Tab. 2 AC derating curve



Dimensions [mm]



Technical approvals, conformities

IRC series

CSS-DCN

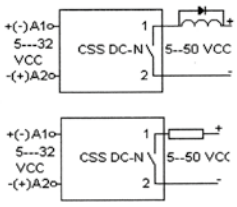
4-pin, Interface solid state relay, 1-pole, plug-in faston

Type	**CSS-DCN** NPN solid state relay Terminal commun 2 negative (S10 socket)
Output	1 N/O contact
Operating range	**2 A, 5 ... 50 VDC**
Minimum contact load	**1 mA**
Control parameters	
Input voltage range	5 ... 32 VDC
Release voltage	< 2,5 VDC
Input current	3 ± 1 mA
Stabilised current regulator	yes
Input voltage protection	IEC-1000-4-5 Level 1
Output	
Type	NPN
Max. output current	2 A
Output voltage range	5 ... 50 VDC
Switch-on current max.	5 A/ 350µs
Max. voltage drop	≤ 1,3 VDC
Residual current	< 100 µA/48 VDC
EMC protection	IEC-1000-4-5 Level 1
Inverse current	≤ 1 A
Specifications	
Ambient temperature operation/storage	-25 ... 60 °C/-40 ... 80 °C
Test voltage between input/output	4 kV rms/1 min.
Turn-on delay	1 ms
Release delay	≤ 2 ms
Weight	28 g

Applications

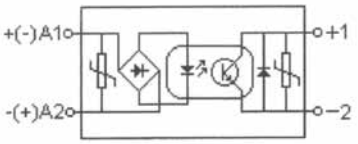
For switching heating elements, electro valves, motors, PLC input/output signals, solenoids, incandescent and fluorescent lamps, etc. (up to 50 VDC).

Inductive loads must be shunted with an antiparallel diode.



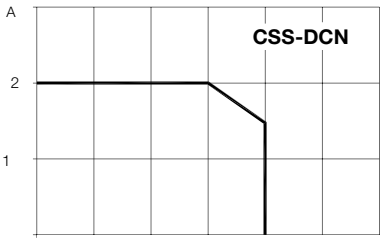
Accessories	
Socket:	**S10, S10-M, S10-P**

Fig. 1 CSS-DCN diagram

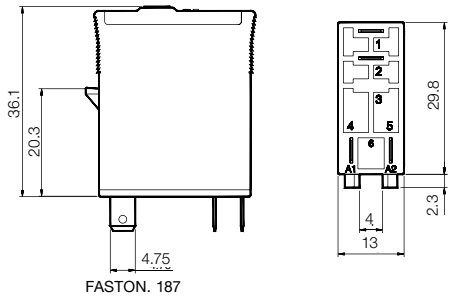


Negative common

Tab. 2 DC derating curve



Dimensions [mm]



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Technical approvals, conformities

CSS-DCP

4-pin, Interface solid state relay, 1-pole, plug-in faston

Type	**CSS-DCP** PNP solid state relay Terminal commun 2 positive (S10 socket)
Output	1 N/O contact
Operating range	**2 A, 5 ... 50 VDC**
Minimum contact load	**1 mA**

Control parameters	
Input voltage range	5 ... 32 VDC
Release voltage	< 2,5 VDC
Input current	3 ± 1 mA
Stabilised current regulator	yes
Input voltage protection	IEC-1000-4-5 Level 1

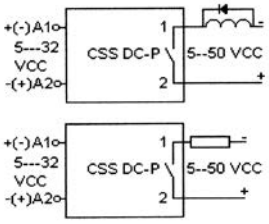
Output	
Type	PNP
Max. output current	2 A
Output voltage range	5 ... 50 VDC
Max. switch-on current	5 A/ 350µs
Max. voltage drop	≤ 1,3 VDC
Residual current	< 100 µA/48 VDC
EMC protection	IEC-1000-4-5 Level 1
Inverse current	≤ 1 A

Specifications	
Ambient temperature operation/storage	-25....60 °C /-40 ... 80 °C
Test voltage between input/output	4 kV rms/1 min.
Turn-on delay	1 ms
Release delay	≤ 2 ms
Weight	28 g

Applications

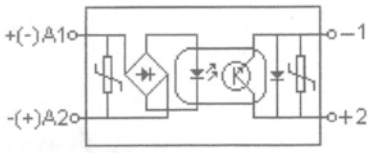
For switching heating elements, electro valves, motors, PLC input/output signals, solenoids, incandescent and fluorescent lamps, etc. (up to 50 VDC).

Inductive loads must be shunted with an antiparallel diode.



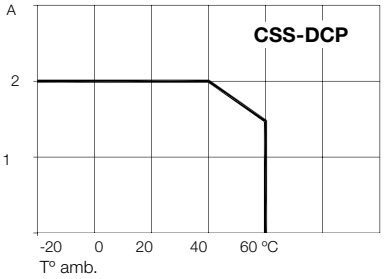
Accessories	
Socket:	**S10, S10-M, S10-P**

Fig. 1 CSS-DCP diagram

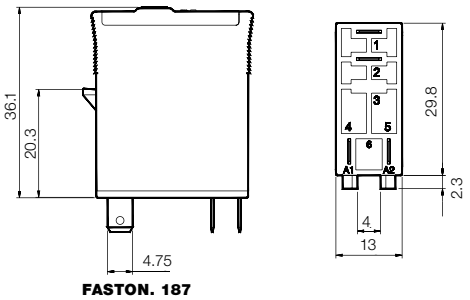


Positive common

Tab. 2 DC derating curve



Dimensions [mm]



Technical approvals, conformities

In combination with I/O sockets and the plug-in jumpers, the IRC relay series permits low-cost, clearly arranged and reliable realisation of interface circuits for the input and output ends of PLC and control systems.

S10-M and S12 sockets with one and two contacts, with inputs in series and identical arrangement of the contacts.

Identical order of coil and contacts on both sockets.

Coil terminal at level 1:
(A2, A2, A1)

Power terminals at level 1:
(12, 11, 14)

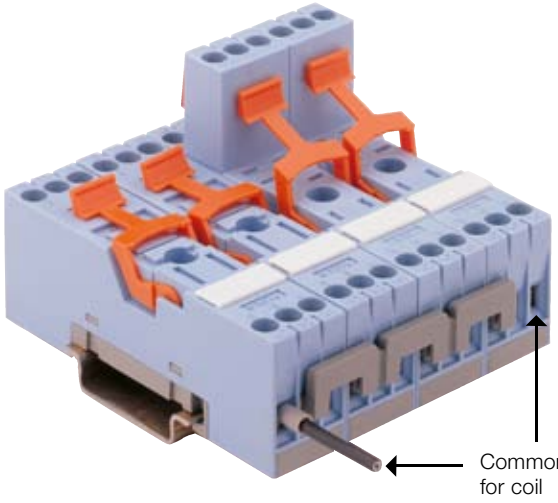
Power terminals at level 2:
(22, 21, 24)

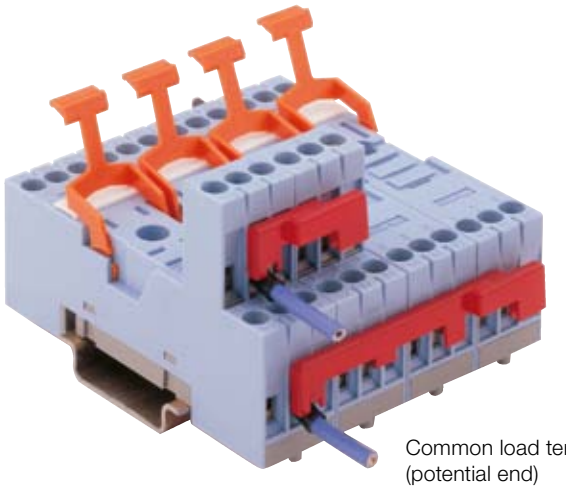
General

All plug-in jumpers are insulated. The plug-in jumpers at the drive end (coil) can be split manually to the required length, thus enabling the creation of any required interface groups.

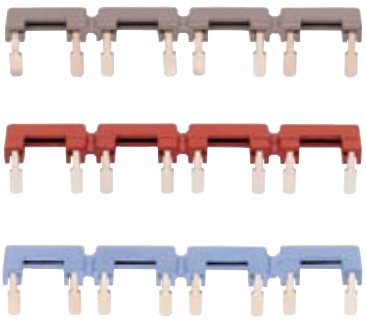
The jumpers are available in the colours grey, blue and red. .

Options:
Colours used by RELECO in the relays' test buttons:
- Blue for DC circuits
- Red for AC circuits

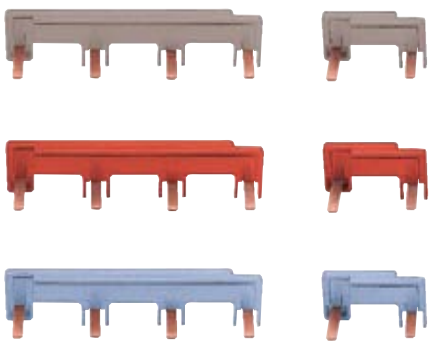




B20 plug-in jumpers for the control end



V40 and V10 plug-in jumpers for the power end



V40, V10

Power bridge bars for sockets S10-M and S12

V40 bridges join four similar points in four aside adjacent sockets. They can join up either among themselves or to V10 units, to bridge an unlimited number of sockets S10-M and S12 in any combination.

V10 bridges are units to connect a single socket to the next one, so you bridge less or more than 4 sockets.
Made of copper with a current capacity of 40 A.

B20

Coil bridge bars for sockets S10-M and S12

B20 bridges points A2, internally connected, of every aside adjacent socket S10-M or S12.

Each element connects point 6 of the first socket to point 5 of the next one, always leaving free the point 5 of the first socket and the point 6 of the last one, to connect the common polarity cable.

V40-G

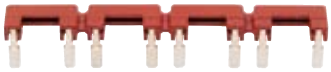
V10-G

B20-G

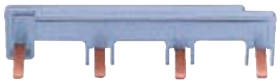
V40-R

V10-R

B20-R



V40-A



V10-A

B20-A

Jumper connection on S1O-M and S12 sockets

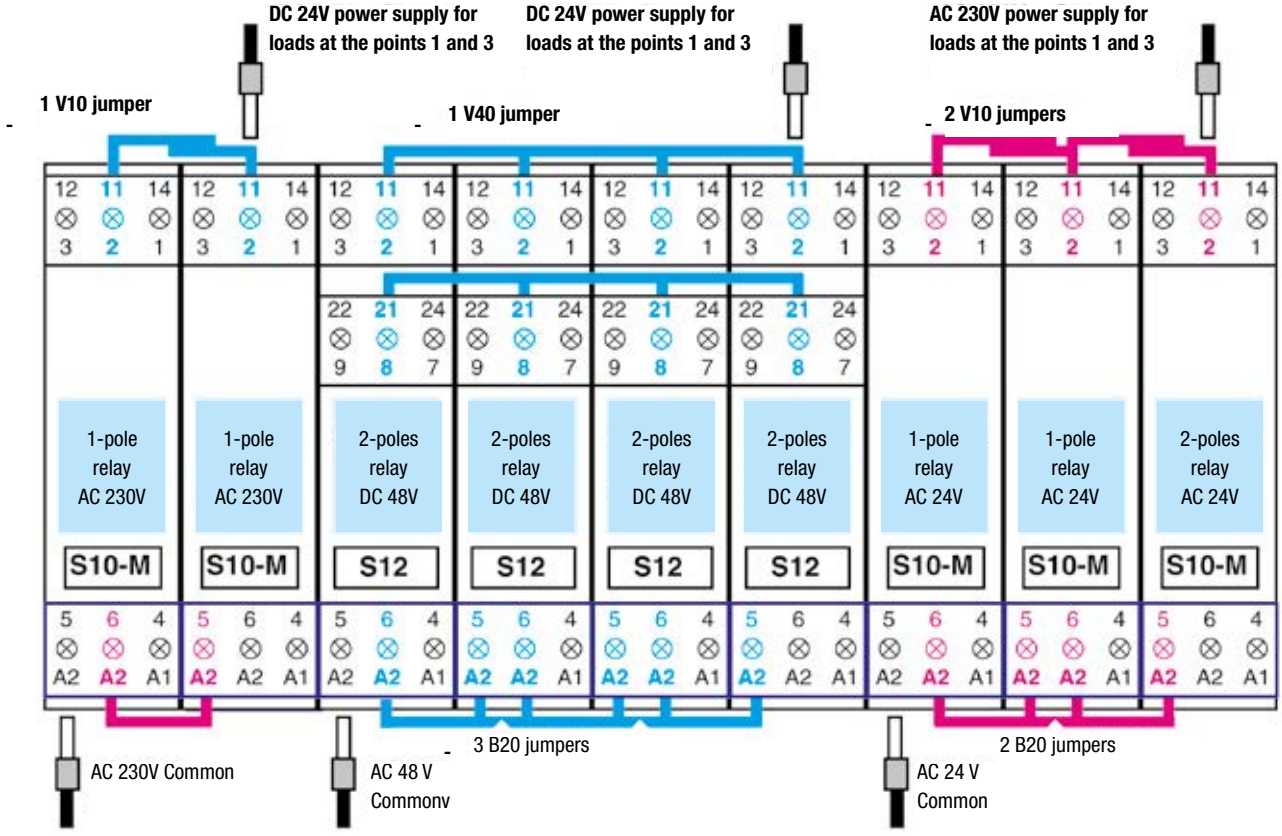
The S10-M and S12 sockets and the new connection jumpers B20, V10 and V40 enable easy and fast wiring of rows of relays. The jumpers can be used in a mixed configuration of S10-M and S12 sockets.

Different jumper colours allow clear identification. This results in fewer errors, lower assembly costs and easier inspection and maintenance work. Available in grey (standard), red (AC) and blue (DC), in conformity with the colour coding used by RELECO for test buttons for relay identification.

Attention needs to be paid only to the total current. At higher currents and also for safety reasons, a current supply at the start and end of a jumpered connection is recommended.

V40 plug-in jumpers for the power end
Contacts can be linked to the power ends with the aid of these jumpers. Normally, these are the changeover contacts, terminal 11 or 21. The jumpers can also be used to jumper NC or NO plug-in terminals. V40 jumpers link four identical contacts of four neighbouring sockets. They can either be linked to one another or to V10 jumpers to jumper a number of sockets in any combination.

V10 plug-in jumpers for the power end
V10 jumpers can be used to link individual sockets to one another in groups. A combination of V40 and V10 jumpers is possible, depending on the number of sockets.



B20 plug-in jumpers for the control end The sockets S10-M and S12 are accessible via the plug-in terminals 5 and 6 for A2 (internal connection). Each element links terminal 6 of the first socket to 5 of the next socket, and 5 of the first socket and 6 of the last socket are always left free to connect the cable. The jumper B20 consists of four coherent parts, which can be separated, however.

Semiconductor relays as an interface to PLC and control systems

Input

Application

The CSS semiconductor switches have a useful life that is practically unlimited in terms of switching cycles. They operate without bounce and permit a high switching frequency

Drive

All versions feature an electrically isolated input for 5 to 32 V DC. The inputs are characterised by a minimum delay with a simultaneously high interference immunity.

DC semiconductor switches

There are two versions with identical performance data.

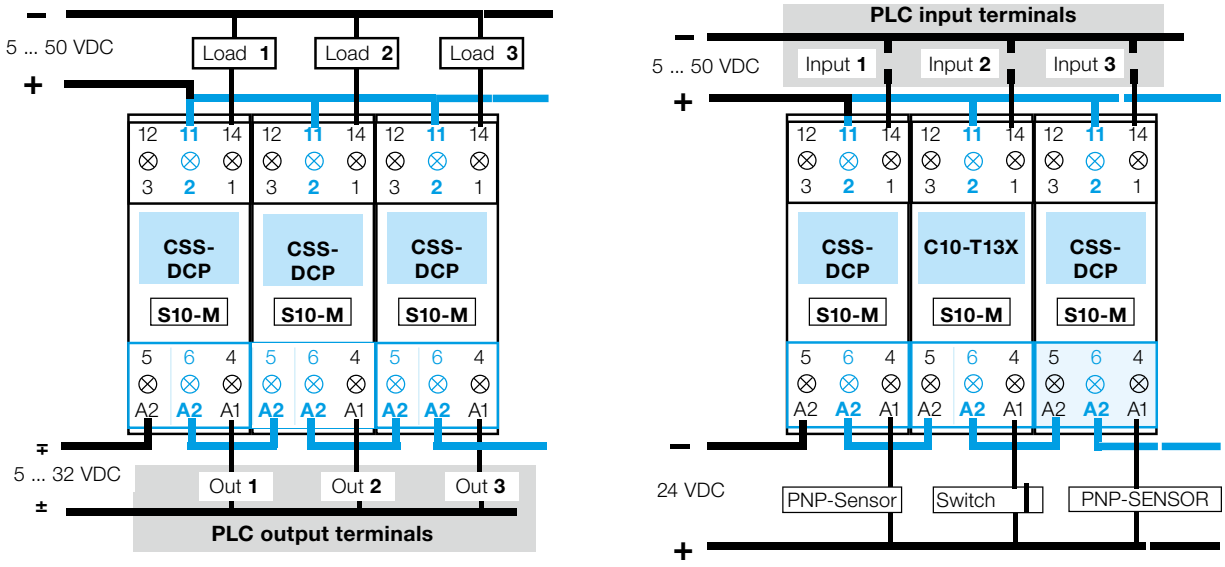
The CSS-DCN version has the common negative terminal 2, and the load is connected to terminal 1. The CSS-DCP has the common positive terminal at terminal 2. The load is connected to terminal 1. This corresponds to an NPN or PNP switch.

AC switches

The CSS-AZ version switches synchronously, i.e. it switches during the passage through zero. The CSS-AC version switches asynchronously, i.e. the semiconductor switch switches through, independently of the phase, at the moment of detected triggering.

DC applications with mixed components

DC applications with mixed components



AC applications with mixed components