









1.5 Solid State Relays

	Type	Pin	Page
CSS Series / R10 Series			
1 pole normally open solid state AC Faston	CSS-I		94
1 pole normally open solid state AC Faston	R10-Z1I		95
1 pole normally open solid state AC Faston	CSS-Z		96
1 pole normally open solid state AC Faston	R10-Z1Z		97
1 pole normally open solid state DC Faston	CSS-N		98
1 pole normally open solid state DC Faston	R10-Z1N		99
1 pole normally open solid state DC Faston	CSS-P		100
1 pole normally open solid state DC Faston	R10-Z1P		101
CRINT Series			
1 pole normally open solid state DC	CRINT-C1x5		103
1 pole normally open solid state DC	CRINT-C1x5R		104
1 pole normally open solid state AC	CRINT-C1x8		105
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SP1M Series			
SSR 1 phase NO up to 280 V AC, 25 A instantaneous Faston IP 00	SP1MXF-TIX0240-10/16/25		108
SSR 1 phase NO up to 440 V AC, 25 A instantaneous Faston IP 00	SP1MXF-TIX0380-10/16/25		109
SSR 1 phase NO up to 280 V AC, 25 A synchr zero Faston IP 00	SP1MXF-TZX0240-10/16/25		110
SSR 1 phase NO up to 440 V AC, 25 A synchr zero Faston IP 00	SP1MXF-TZX0380-10/16/25		111

	Type	Pin	Page
SSR 1 phase NO up to 280 V AC, 25 A instantaneous screw IP 00	SP1MXN-TIX0240-10/16/25		112
SSR 1 phase NO up to 440 V AC, 25 A instantaneous screw IP 00	SP1MXN-TIX0380-10/16/25		113
SSR 1 phase NO up to 280 V AC, 25 A synchr zero screw IP 00	SP1MXN-TZX0240-10/16/25		114
SSR 1 phase NO up to 440 V AC, 25 A synchr zero screw IP 00	SP1MXN-TZX0380-10/16/25		115
SP1E Series			
SSR 1 phase NO up to 280 V AC, 60 A instantaneous screw IP 20	SP1EXS-TIX0240-25/40/60		116
SSR 1 phase NO up to 280 V AC, 125 A instantaneous screw IP 20	SP1EXS-TIX0240-80/100/125		117
SSR 1 phase NO up to 530 V AC, 60 A instantaneous screw IP 20	SP1EXS-TIX0480-25/40/60		118
SSR 1 phase NO up to 530 V AC, 125 A instantaneous screw IP 20	SP1EXS-TIX0480-80/100/125		119
SSR 1 phase NO up to 660 V AC, 60 A instantaneous screw IP 20	SP1EXS-TIX0600-25/40/60		120
SSR 1 phase NO up to 660 V AC, 125 A instantaneous screw IP 20	SP1EXS-TIX0600-80/100/125		121
SSR 1 phase NO up to 280 V AC, 60 A synchr zero screw IP 20	SP1EXS-TZX0240-25/40/60		122
SSR 1 phase NO up to 280 V AC, 125 A synchr zero screw IP 20	SP1EXS-TZX0240-80/100/125		123
SSR 1 phase NO up to 530 V AC, 60 A synchr zero screw IP 20	SP1EXS-TZX0480-25/40/60		124
SSR 1 phase NO up to 530 V AC, 125 A synchr zero screw IP 20	SP1EXS-TZX0480-80/100/125		125
SSR 1 phase NO up to 660 V AC, 60 A synchr zero screw IP 20	SP1EXS-TZX0600-25/40/60		126
SSR 1 phase NO up to 660 V AC, 125 A synchr zero screw IP 20	SP1EXS-TZX0600-80/100/125		127

CSS SSR

Product Key & general information

CSS product key

1		2	3	4	5		6	7
CSS	-	P	1	1	X	/	DC	5-48V

1. Solid State Relay

CSS = C-Series (Plug-in)
solid state

2. Logic

P = PNP, Instantaneous (DC)
N = NPN, Instantaneous (DC)
I = Random-on, Instantaneous (AC)
Z = Zero crossing (AC)

3. Channels

1 = Single-channel relay

4. Semiconductor type

2 = TRIAC
3 = MOSFET

5. Indication

X = LED

6. Control circuit voltage

DC = DC Voltage

7. Control circuit rated voltage



5 ... 48 V

Type
CSS-P13X/DC5-48V
CSS-N13X/DC5-48V
CSS-I12X/DC5-48V
CSS-Z12X/DC5-48V

CSS-I

1 pole | normally open solid state AC | Faston

Main circuit

Output type	  TRIAC
Type	Instantaneous
Output voltage range	24 ... 250 V AC
Recommended minimum contact load	35 mA
Residual current	1 mA
Maximum voltage drop	≤ 1.1 V AC
Rated current	3 A
Inrush current	150 A, 10 ms
Rated limit load I ² t	210 A ² s
Rated load AC	750 VA

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	10 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	0.06 ms
Release time	0.06 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA / PC

Product references

Description	Type	5-48
DC	CSS-I12X/DC...V	✓

«...» List control voltage to complete product references

Optional Accessories

Socket	S10, S10-P, S10-PI
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fig. 1. Wiring diagram

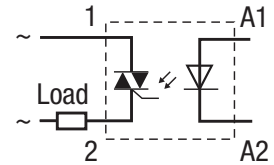


fig. 2. AC derating curve

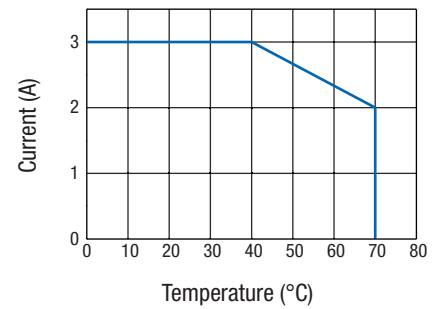
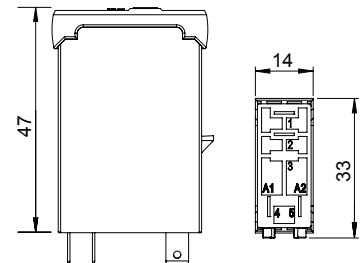


fig. 3. Dimensions (mm)



Technical approvals, conformities



Standards IEC/EN 60947

Approvals   

R10-Z1I

1 pole | normally open solid state AC | Faston

Main circuit

Output type	  TRIAC
Type	Instantaneous
Output voltage range	24 ... 250 V AC
Recommended minimum contact load	35 mA
Residual current	1 mA
Maximum voltage drop	≤ 1.1 V AC
Rated current	3 A
Inrush current	150 A, 10 ms
Rated limit load I ² t	210 A ² s
Rated load AC	750 VA

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	10 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	0.06 ms
Release time	0.06 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA

Product references

Description	Type	5-48
DC	R10-Z1IX/DC...V	✓

«...» List coil voltage to complete product references

Accessories

Socket	S10-GR, S10-PIR
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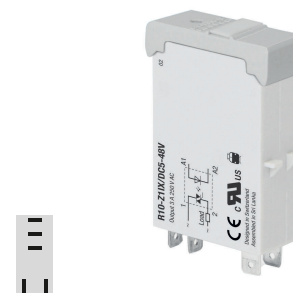


fig. 1. Wiring diagram

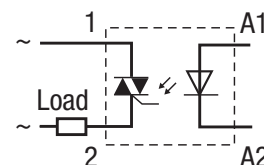


fig. 2. AC derating curve

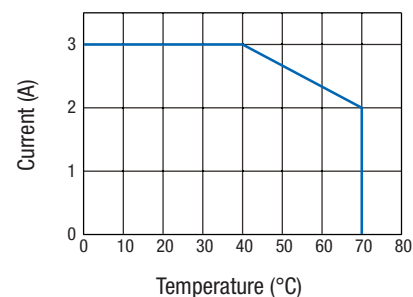
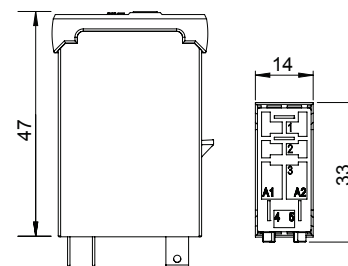


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards IEC/EN 60947
 Railway EN 45545-2; EN 50155

Approvals  

CSS-Z

1 pole | normally open solid state AC | Faston



Main circuit

Output type	TRIAC
Type	Synchronized zero
Output voltage range	24...250 V AC
Recommended minimum contact load	35 mA
Residual current	1 mA
Maximum voltage drop	≤ 1.1 V AC
Rated current	3 A
Inrush current	150 A, 10 ms
Rated limit load I ² t	210 A ² s
Rated load AC	750 VA

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	10 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	10 ms
Release time	10 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA / PC

Product references

Description	Type	5-48
DC	CSS-Z12X/DC...V	✓

«...» List control voltage to complete product references

Optional Accessories

Socket	S10, S10-P, S10-PI
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fig. 1. Wiring diagram

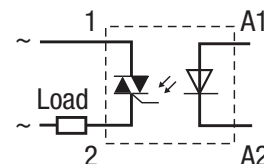


fig. 2. AC derating curve

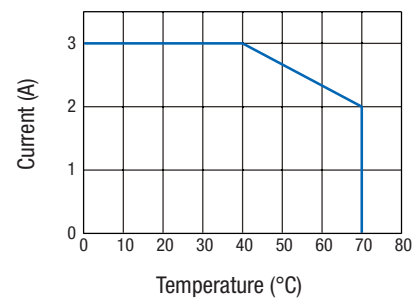
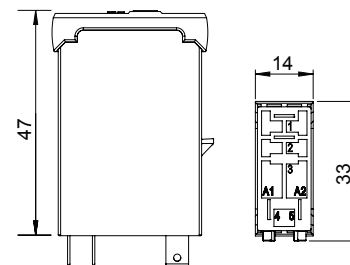


fig. 3. Dimensions (mm)



Technical approvals, conformities



Standards IEC/EN 60947

Approvals

R10-Z1Z

1 pole | normally open solid state AC | Faston

Main circuit

Output type	  TRIAC
Type	Synchronized zero
Output voltage range	24 ... 250 V AC
Recommended minimum contact load	35 mA
Residual current	1 mA
Maximum voltage drop	≤ 1.1 V AC
Rated current	3 A
Inrush current	150 A, 10 ms
Rated limit load I ² t	210 A ² s
Rated load AC	750 VA

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	10 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	10 ms
Release time	10 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA

Product references

Description	Type	5-48
DC	R10-Z1ZX/DC...V	✓

«...» List coil voltage to complete product references

Accessories

Socket	S10-GR, S10-PIR
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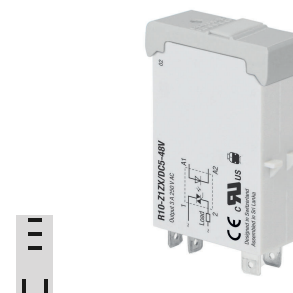


fig. 1. Wiring diagram

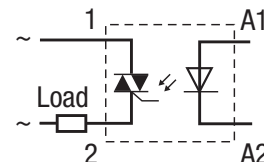


fig. 2. AC derating curve

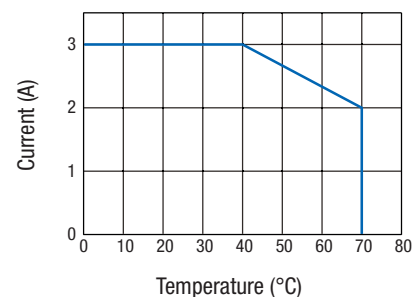
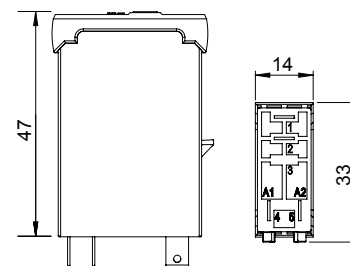


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards IEC/EN 60947
 Railway EN 45545-2; EN 50155


Approvals  

1.5 Solid State Relays

CSS-N

1 pole | normally open solid state DC | Faston

Main circuit

Output type	 MOSFET
Type	Instantaneous
Logic	N-Channel
Output voltage range	5 ... 48 V DC
Recommended minimum contact load	1 mA
Residual current	0.1 mA
Maximum voltage drop	≤ 0.14 V DC
Rated current	6 A
Inrush current	40 A, 10 ms
Rated load DC	360 W

Current derating curve versus operation temperature: fig. 2.

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	4 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	0.06 ms
Release time	0.06 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA / PC

Product references

Description	Type	5-48
DC	CSS-N13X/DC...V	✓

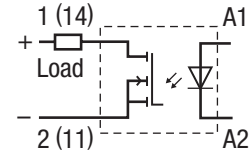
«...» List control voltage to complete product references

Optional Accessories

Socket	S10, S10-P, S10-PI
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fig. 1. Wiring diagram



Negative common

fig. 2. DC derating curve

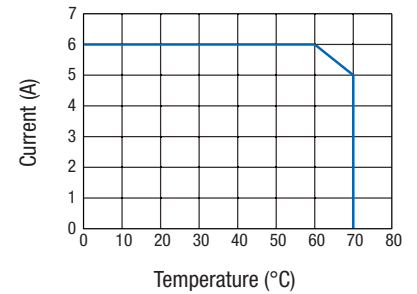
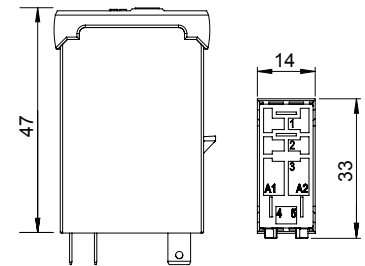


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards IEC/EN 60947

Approvals       

CSS-P

1 pole | normally open solid state DC | Faston



Main circuit

Output type	MOSFET
Type	Instantaneous
Logic	P-Channel
Output voltage range	5 ... 48 V DC
Recommended minimum contact load	1 mA
Residual current	0.1 mA
Maximum voltage drop	≤ 0.14 V DC
Rated current	6 A
Inrush current	40 A, 10 ms
Rated load DC	360 W

Current derating curve versus operation temperature: fig. 2.

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	4 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

Output current

Type	Instantaneous
Logic	P-Channel
Maximum output current	6 A
Minimum output current	1 mA
Output voltage range	5 ... 48 V DC
Residual current	0.1 mA
Maximum voltage drop	≤ 0.14 V DC

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	0.06 ms
Release time	0.06 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA / PC

Product references

Description	Type	5-48
DC	CSS-P13X/DC...V+S10-PI	✓

«...» List control voltage to complete product references

Optional Accessories

Socket	S10, S10-P, S10-PI
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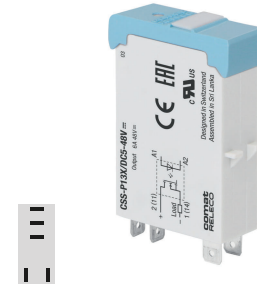
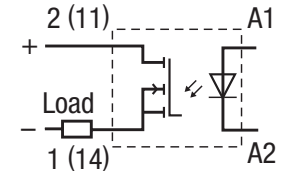


fig. 1. Wiring diagram



Positive common

fig. 2. DC derating curve

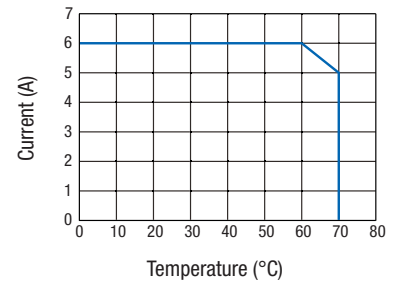
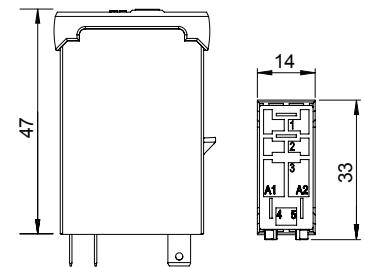


fig. 3. Dimensions (mm)



Technical approvals, conformities


Standards IEC/EN 60947

Approvals

R10-Z1P

1 pole | normally open solid state DC | Faston

Main circuit

Output type	 MOSFET
Type	Instantaneous
Logic	PNP
Output voltage range	5 ... 48 V DC
Recommended minimum contact load	1 mA
Residual current	0.1 mA
Maximum voltage drop	≤ 0.14 V DC
Rated current	6 A
Inrush current	40 A, 10 ms
Rated load DC	360 W

Control circuit

Nominal voltage	see table product references
Operating voltage range	5 ... 48 V DC
Input voltage range	4.75 ... 60 V DC
Input current	4 mA
Pick-up voltage	5 V DC
Release voltage	< 4.75 V
Power consumption DC	300 mW

Output current

Type	Instantaneous
Logic	PNP
Maximum output current	6 A
Minimum output current	1 mA
Output voltage range	5 ... 48 V DC
Residual current	0.1 mA
Maximum voltage drop	≤ 0.14 V DC

General data

Storage temperature (no ice)	-40 ... 85 °C
Operation temperature	-40 ... 70 °C
Pick-up time	0.06 ms
Release time	0.06 ms
Ingress Protection	IP 40
Weight	28 g
Housing material	PA

Product references

Description	Type	5-48
DC	R10-Z1PX/DC...V	✓

«...» List coil voltage to complete product references

Accessories

Socket	S10-GR, S10-PIR
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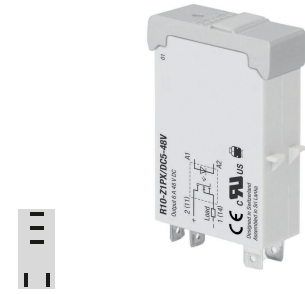


fig. 1. Wiring diagram

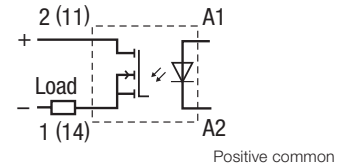


fig. 2. DC derating curve

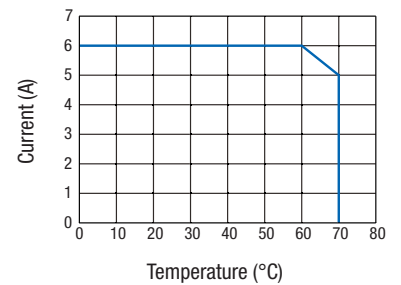
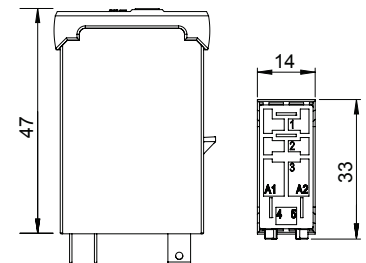


fig. 3. Dimensions (mm)



Technical approvals, conformities

Standards IEC/EN 60947
 Railway EN 45545-2; EN 50155

Approvals  