

RELAY- AND OPTO-COUPLED
RELAY- AND OPTO-COUPLEDERS



MICROSERIES AND PLUGSERIES MICROSERIES
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PRODUCT INFORMATION

When good enough just isn't good enough

Weidmüller 

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Advantages of the MICROSERIES

The concept

The relay coupler and optocoupler variants from the **MICROSERIES** are used in automation applications to isolate and couple digital input and output signals. Their compact design means that they are particularly suitable for use in PLC cabinets as well as in switchgear cabinets where they help the user to make optimum use of valuable switching space. With its compact design, the **MICROSERIES** elegantly combines the functionality of the classic coupling level and the terminal level.

6.1-mm mounting width

Pluggable cross-connections of four potentials in the inputs and outputs

Proven cross-connection system ZQV 4N

Wide input voltage spectrum from 5 ... 230 V

LED-indicator
reverse-connect protection
free-wheeling diode

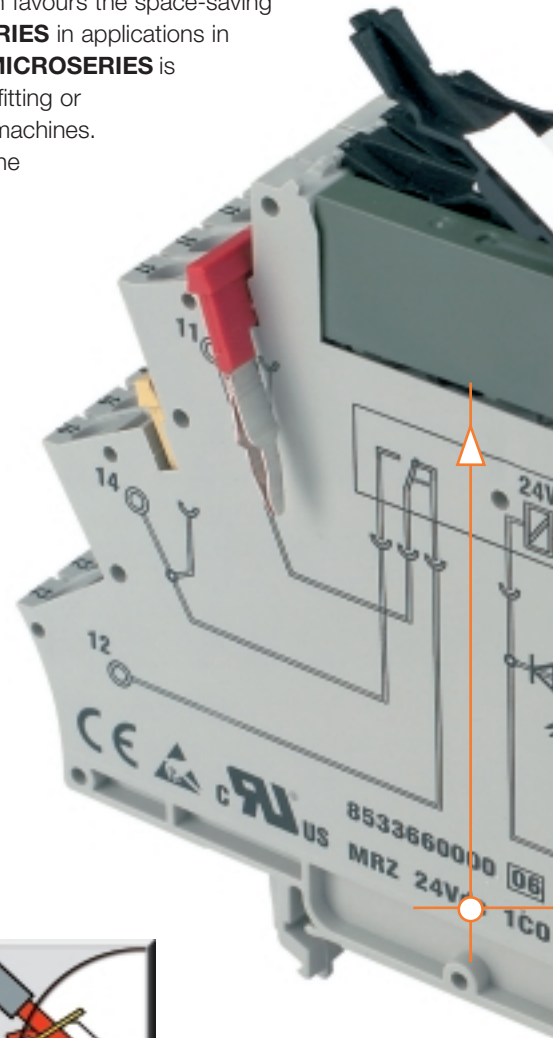
Housing material: WEMID
Flammability class: V-0 in accordance with UL 94

Innovative retaining and release system

Marking surfaces for fitting standard WS 12/6 markers

Coupling modules in terminal block format

The 6.1-mm mounting width favours the space-saving mounting of the **MICROSERIES** in applications in industrial automation. The **MICROSERIES** is particularly suitable when refitting or extending installations and machines. This is when they facilitate the optimum use of the limited space which exists in switchgear cabinets.



Connection

The greatest possible flexibility when it comes to wiring. The relay sockets are the heart of the new range of relay couplers and optocouplers. The couplers are optionally available with screw or tension clamp technology.

Retaining and release mechanism

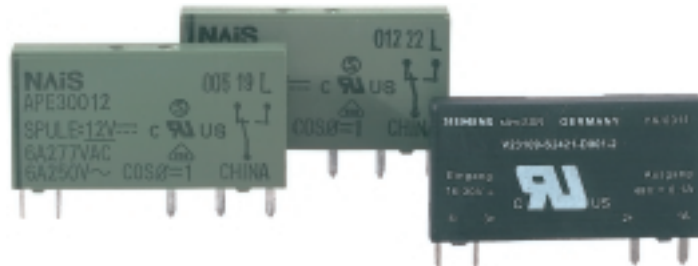
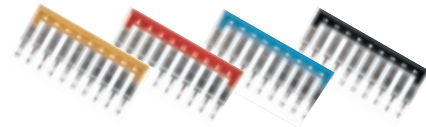
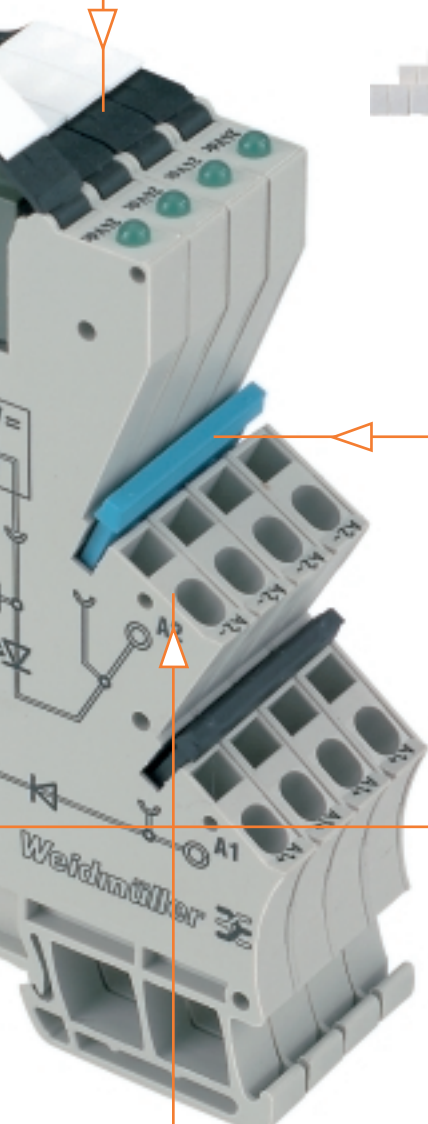
The innovative retaining and release mechanism safely secures the plugged relay on the socket base. The release function allows the plugged relay to be reliably and easily removed from the socket base. In addition, the generous marking areas ensure the clearly visible marking of electrical equipment with WS markers.

Pluggable cross-connections

The pluggable cross-connections ZQV 4N are available in different pole numbers and colors. They enable the reliable cross-connection of the four potentials in the input and output.

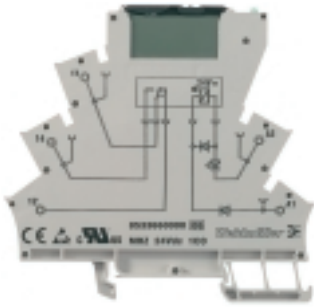
Relay and optocoupler modules

Pluggable relay couplers and optocouplers make possible the individual adaptation of the module functions. For example, there are relay couplers with AgSnO and gold contacts as well as optocouplers with different power outputs available.



Relay couplers in terminal block format

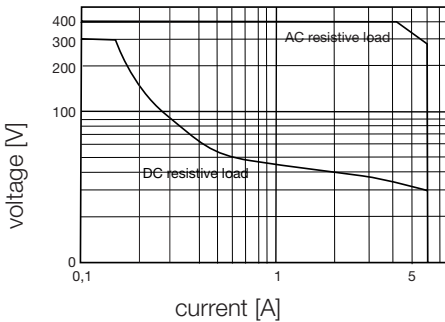
MICRORELAY MRS/MRZ



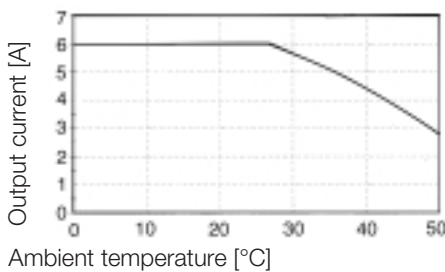
This module can be used a universal interface between the control and the actuator, for switching low and average sized loads.

- Pluggable cross-connections in the inputs and outputs minimize wiring
- 6.1 mm wide
- Flexible usage thanks to design with screw and tension clamp technology

DC-load breaking capacity



Derating curve



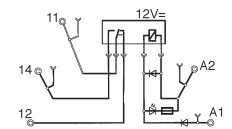
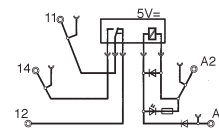
Ambient temperature [°C]

MRS 5 Vdc 1CO
MRZ 5 Vdc 1CO

MRS 12 Vdc 1CO
MRZ 12 Vdc 1CO



Block diagram



Ordering data

for TS 35

Screw connection

Tension clamp connection

Type

Cat. No.

MRS 5 Vdc 1CO **8556080000**

MRZ 5 Vdc 1CO **8556150000**

Type

Cat. No.

MRS 12 Vdc 1CO **8556070000**

MRZ 12 Vdc 1CO **8556140000**

Technical data

Input

Input voltage

Input voltage ac with U_{Nenn}

Input voltage dc with U_{Nenn}

Input power

Making threshold, (typ.)

Cut-out threshold (typ.)

Status indicator

Reaction time at U_N (typ.)

Release at U_N (typ.)

Voltage of relay coil

5 Vdc $\pm 20\%$ (4...6 V)

12 Vdc $\pm 20\%$ (9.6...14.4 V)

38.5 mAdc $\pm 10\%$

193 mW $\pm 10\%$

3.2 V / 21.6 mA

1.6 V / 8 mA

Green LED

6.2 ms

3.9 ms

5 V

17.2 mAdc $\pm 10\%$

210 mW $\pm 10\%$

6.4 V / 8.4 mA

2.5 V / 2.4 mA

Green LED

5.8 ms

6.9ms

12 V

Functionality

Operating indication

Reverse polarity protection

Free wheel diode

yes

yes

yes

yes

yes

yes

Output

Switching voltage

ac: continuous current/switching power (see derating diagram)

Switch-on current

dc: Continuous current/switching power

Min. braking capacity

Contact material

Mechanical service life

Max. switching frequency at nominal voltage

1 changeover contact

250 Vac acc. to VDE

240 Vac acc. to UL/CSA

max. 6 A / max. 1500 VA

max. 6 A

see limit diagram

12 V / 100 mA

AgSnO

20 x 10⁶ switching operations

0.1 Hz

1 changeover contact

250 Vac acc. to VDE

240 Vac acc. to UL/CSA

max. 6 A / max. 1500 VA

max. 6 A

see limit diagram

12 V / 100 mA

AgSnO

20 x 10⁶ switching operations

0.1 Hz

Ambient temperature

Storage temperature

Climate

-25 °C...+50 °C

-40 °C...+60 °C

40 °C / 93 % rel. humidity,

no condensation

-25 °C...+50 °C

-40 °C...+60 °C

40 °C / 93 % rel. humidity,

no condensation

Approvals

CE cRU_{us}

CE cRU_{us}

Insulation coordination acc. to EN 50178

Rated voltage

Rated impulse voltage

Overvoltage category

Pollution severity

Insulation coord.- and voltage proof, input/output mounting rail

Achieved clearances and creepage distances

300 V

4 kV (1.2 / 50 μ s)

III

2

4 kV_{eff} / 1 min

≥ 5.5 mm

300 V

4 kV

III

2

4 kV_{eff} / 1 min

≥ 5.5 mm

Relay couplers in terminal block format

MRS 24 Vdc 1CO

MRS 24 Vuc 1CO

MRS 48 Vuc 1CO

MRS 60 Vdc 1CO

MRS 120 Vuc 1CO

MRS 230 Vac 1CO

MRZ 24 Vdc 1CO

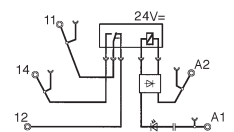
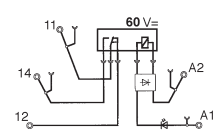
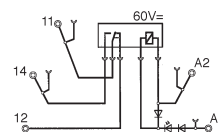
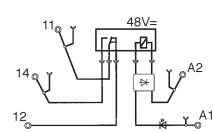
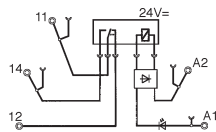
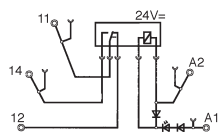
MRZ 24 Vuc 1CO

MRZ 48 Vuc 1CO

MRZ 60 Vdc 1CO

MRZ 120 Vuc 1CO

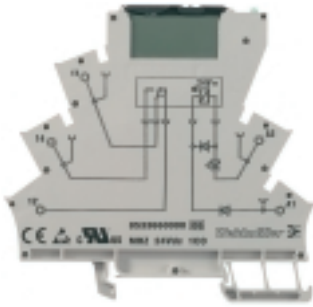
MRZ 230 Vac 1CO



Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
MRS 24 Vdc 1CO	8533640000	MRS 24 Vuc 1CO	8556050000	MRS 48 Vuc 1CO	8556040000	MRS 60 Vdc 1CO	8556060000	MRS 120 Vuc 1CO	8556030000	MRS 230 Vac 1CO	8556020000
MRZ 24 Vdc 1CO	8533660000	MRZ 24 Vuc 1CO	8556120000	MRZ 48 Vuc 1CO	8556110000	MRZ 60 Vdc 1CO	8556130000	MRZ 120 Vuc 1CO	8556100000	MRZ 230 Vac 1CO	8556090000
24 Vdc ± 20 % (19.2...28.8 V)		24 Vuc ±10% (21.6...26.4 V)		48 Vuc ±10% (43.2...52.8 V)		60 Vdc ±20% (48...72 V)		120 Vuc +10%/-15% (102...132 V)		230 Vac ±10% (207...253 V)	
6.6 mAdc ±10 %		11 mA ±10 %		5 mA ±20 %		3.3 mAdc ±20 %		3.5 mAac ±15 %		7.6 mA ±15 %	
160 mW ±10 %		6.4 mA ±20 %		4 mA ±20 %		200 mW ±10 %		0.42 VA ±15 %		1.55 VA ±15 %	
15.4 V / 4 mA		154 mW ±10 %		190 mW ±20 %		35 V / 1.6 mA		71 V / 1.8 mA		103 V / 5 mA	
6.5 V / 1.2 mA		15.8 V / 3.6 mA		29 V / 2.2 mA		11 V / 0.6 mA		22 V / 0.5 mA		49 V / 2.5 mA	
Green LED		7 V / 1.3 mA		11 V / 1.3 mA		Green LED		Green LED		Green LED	
6.6 ms		Green LED		Green LED		5.9 ms		6.7 ms		13 ms	
5.8 ms		7.3 ms		6.1 ms		6.5 ms		8.1 ms		11 ms	
24 V		9 ms		5.8 ms		60 V		60 V		24 V	
		24 V		48 V							
yes		yes		yes		yes		yes		yes	
yes		yes		yes		yes		yes		-	
yes		yes		yes		yes		yes		-	
1 changeover contact		1 changeover contact		1 changeover contact		1 changeover contact		1 changeover contact		1 changeover contact	
250 Vac acc. to VDE		250 V ~ acc. to VDE		250 Vac acc. to VDE		250 Vac acc. to VDE		250 V ~ acc. to VDE		250 V ~ acc. to VDE	
240 Vac acc. to UL/CSA		240 V ~ acc. to UL/CSA		240 Vac acc. to UL/CSA		240 Vac acc. to UL/CSA		240 V ~ acc. to UL/CSA		240 V ~ acc. to UL/CSA	
max. 6 A / max. 1500 VA		max. 6 A / max. 1500 VA		max. 6 A / max. 1500 VA		max. 6 A / max. 1500 VA		max. 6 A / max. 1500 VA		max. 6 A / max. 1500 VA	
max. 6 A		max. 6 A		max. 6 A		max. 6 A		max. 6 A		max. 6 A	
see limit diagram		see limit diagram		see limit diagram		see limit diagram		see limit diagram		see limit diagram	
12 V /100 mA		12 V /100 mA		12 V /100 mA		12 V /100 mA		12 V /100 mA		12 V /100 mA	
AgSnO		AgSnO		AgSnO		AgSnO		AgSnO		AgSnO	
20 x 10 ⁶ switching operations		20 x 10 ⁶ switching operations		20 x 10 ⁶ switching operations		20 x 10 ⁶ switching operations		20 x 10 ⁶ switching operations		20 x 10 ⁶ switching operations	
0.1 Hz		0.1 Hz		0.1 Hz		0.1 Hz		0.1 Hz		0.1 Hz	
-25 °C...+50 °C		-25 °C...+50 °C		-25 °C...+50 °C		-25 °C...+50 °C		-25 °C...+50 °C		-25 °C...+50 °C	
-40 °C...+60 °C		-40 °C...+60 °C		-40 °C...+60 °C		-40 °C...+60 °C		-40 °C...+60 °C		-40 °C...+60 °C	
40 °C / 93 % rel. humidity, no condensation		40 °C / 93 % rel. humidity, no condensation		40 °C / 93 % rel. humidity, no condensation		40 °C / 93 % rel. humidity, no condensation		40 °C / 93 % rel. humidity, no condensation		40 °C / 93 % rel. humidity, no condensation	
300 V		300 V		300 V		300 V		300 V		300 V	
4 kV		4 kV		4 kV		4 kV		4 kV		4 kV	
III		III		III		III		III		III	
2		2		2		2		2		2	
4 kV _{eff} / 1 min		4 kV _{eff} / 1 min		4 kV _{eff} / 1 min		4 kV _{eff} / 1 min		4 kV _{eff} / 1 min		4 kV _{eff} / 1 min	
≥ 5.5 mm		≥ 5.5 mm		≥ 5.5 mm		≥ 5.5 mm		≥ 5.5 mm		≥ 5.5 mm	

Relay couplers in terminal block format

MICRORELAY MRS/MRZ



MRS 24 Vdc 1CO
MRZ 24 Vdc 1CO

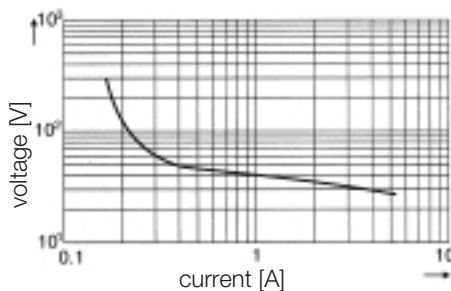
MRS 230 Vdc 1CO
MRZ 230 Vdc 1CO



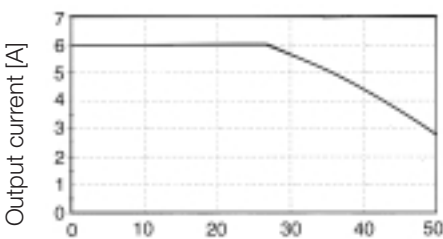
This module can be used a universal interface between the control and the actuator, for switching low and average sized loads.

- Pluggable cross-connections in the inputs and outputs minimize wiring
- 6.1 mm wide
- Flexible usage thanks to design with screw and tension clamp technology
- **gold-plated contacts**

DC-load breaking capacity

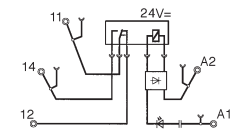
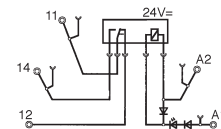


Derating curve



Ambient temperature [°C]

Prinzipschaltbild



Ordering data

for TS 35
Screw connection
Tension clamp connection

Type	Cat. No.
MRS 24 Vdc 1CO	8596060000
MRZ 24 Vdc 1CO	8596080000

Type	Cat. No.
MRS 230 Vac1CO	8596050000
MRZ 230Vac1CO	8596070000

Technical data

Input

Input voltage
Input voltage ac with U_{Nenn}
Input voltage dc with U_{Nenn}
Input power
Making threshold , (typ.)
Cut-out threshold (typ.)
Status indicator
Reaction time at U_N (typ.)
Release at U_N (typ.)
Voltage of relay coil

24 Vdc $\pm 20\%$ (19.2...28.8 V)
6.6 mAdc $\pm 10\%$
160 mW $\pm 10\%$
15.4 V / 4 mA
6.5 V / 1.2 mA
Green LED
6.6 ms
5.8 ms
24 V

230 Vac $\pm 10\%$ (207...253 V)
7.6 mA $\pm 15\%$
1.55 VA $\pm 15\%$
103 V / 5 mA
49 V / 2.5 mA
Green LED
13 ms
11 ms
24 V

Functionality

Operating indication
Reverse polarity protection
Free wheel diode

yes
yes
yes

yes
-
-

Output

Switching voltage

ac: continuous current/switching power (see derating diagram)
Switch-on current
dc: Continuous current/switching power
Min. braking capacity (reference value)
Contact material
Mechanical service life
Max. switching frequency at nominal voltage

1 changeover contact
250 Vac acc. to VDE
240 Vac acc. to UL/CSA
max. 6 A / max. 1500 VA
max. 6 A
see limit diagram
12 V / 10 mA 1)
AgSnO 5 μ m Au
20 x 10⁶ switching operations
0.1 Hz

1 changeover contact
250 V ~ acc. to VDE
240 V ~ acc. to UL/CSA
max. 6 A / max. 1500 VA
max. 6 A
see limit diagram
12 V / 10 mA 1)
AgSnO 5 μ m Au
20 x 10⁶ switching operations
0.1 Hz

Ambient temperature
Storage temperature
Climate

-25 °C...+50 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity,
no condensation

-25 °C...+50 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity,
no condensation

Approvals



Insulation coordination acc. to EN 50178

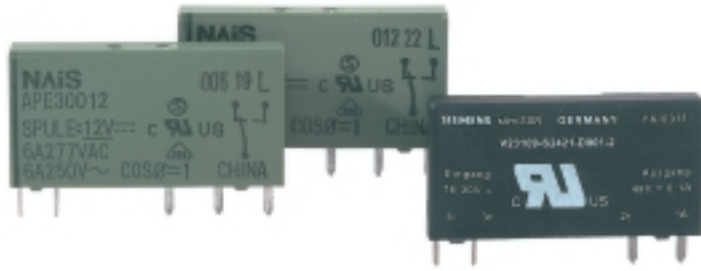
Rated voltage
Rated impulse voltage
Overvoltage category
Pollution severity
Insulation coord.- and voltage proof, input/output mounting rail
Achieved clearances and creepage distances

300 V
4 kV
III
2
4 kV_{eff} / 1 min
 ≥ 5.5 mm

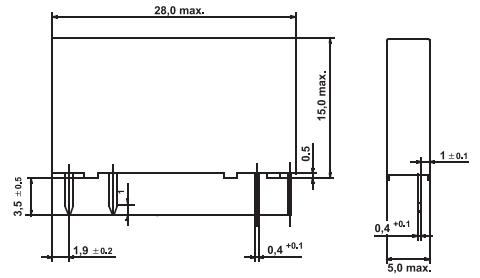
300 V
4 kV
III
2
4 kV_{eff} / 1 min
 ≥ 5.5 mm

1) recommended load: μ W to 0.25 W (depending from the load composition)
at 2.5 W the gold plate will last for app. 20,000 switching operations

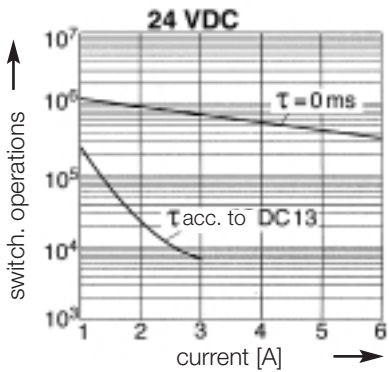
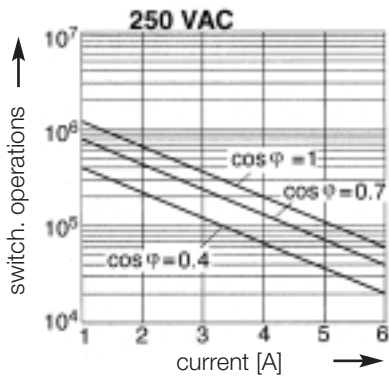
Pluggable Relays



Dimensions



Contact service life
Material AgSnO₂



Pluggable relay

Coil voltage 5 V, 1 changeover contact
Coil voltage 12 V, 1 changeover contact
Coil voltage 24 V, 1 changeover contact
Coil voltage 48 V, 1 changeover contact
Coil voltage 60 V, 1 changeover contact
Coil voltage 24 V, 1 changeover contact, 5 μAU
Coil voltage 60 V, 1 changeover contact, 5 μAU

Type NAIS APE...	Cat. No.	Qty.
... 30005V	4061580000	20
... 30012V	4061610000	20
... 30024V	4060120000	20
... 30048V	4061620000	20
... 30060V	4061630000	20
... 30124V	4061590000	20
... 30160V	4061600000	20

Technical data (of relay manufacturer)

Contact number and type	1 changeover contact
Contact version	Single contact
Switching current	6 A
Switching voltage / max. switching voltage	300 Vdc / 400 Vac
Braking capacity	1500 VA
Contact material / recommended min. load	AgSnO ₂ 12 V, 100 mA AgSnO ₂ 5μ Au 12 V, 10 mA 1)
Typ. bounce time NO contact	1 ms
Typ. bounce time normally closed contact	5 ms

1 changeover contact
Single contact
6 A
300 Vdc / 400 Vac
1500 VA
AgSnO ₂ 12 V, 100 mA
AgSnO ₂ 5μ Au 12 V, 10 mA 1)
1 ms
5 ms

Miscellaneous data

Flammability class UL	V-0
Ambient temperature	-40 ... +85 °C
Max. switching operations with rated load / without load	6/1200 switching operations per minute
Response / drop out time	5 / 2.5 ms
Bounce time NO contact / normally closed contact	1.5 / 5 ms
Protection class Housing	IP 67
For further data see also	www.matsushita.de

V-0
-40 ... +85 °C
6/1200 switching operations per minute
5 / 2.5 ms
1.5 / 5 ms
IP 67
www.matsushita.de

1) recommended load: μW to 0.25 W (depending from the load composition)
at 2.5 W the gold plate will last for app. 20,000 switching operations

Opto- couplers in terminal block format

MICROOPTO MOS/MOZ

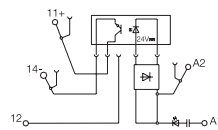
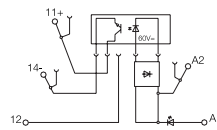
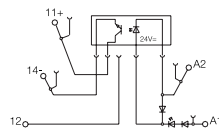
MOS 24 Vdc
MOZ 24 Vdc

MOS 120 Vuc
MOZ 120 Vuc

MOS 230 Vac
MOZ 230 Vac



Block diagram



Ordering data

Screw clamp version

Type	Cat. No.	VPE
MOS 24 Vdc/24 Vdc 0.1 A	8607340000	10

Type	Cat. No.	VPE
MOS 120 Vuc/24 Vdc 0.1 A	8607690000	10

Type	Cat. No.	VPE
MOS 230 Vac/24 Vdc 0.1 A	8607710000	10

Tension clamp version

MOZ 24 Vdc/24 Vdc 0.1 A	8607360000	10
-------------------------	-------------------	-----------

MOZ 120 Vuc/24 Vdc 0.1 A	8607730000	10
--------------------------	-------------------	-----------

MOZ 230 Vac/24 Vdc 0.1 A	8607750000	10
--------------------------	-------------------	-----------

Technical data

Input

Input voltage

24 Vdc ± 20%

120 Vuc + 10/-15%

230 Vac ± 10%

Input current dc

5.7 mA ± 10%

2.8 mAac (2.5 mA... 3.1 mA)

3.4 mA ± 10%

Input current ac

140 mW ± 10%

3.4 mAac (2.8 mA... 4 mA)

7.4 mA ± 10%

Input power dc

140 mW ± 10%

340 mW ± 20%

1.7 VA ± 20%

Input power ac

typ. 15 V/3.5 mA

0.4 VA ± 20%

1.7 VA ± 20%

Switch- on point dc

typ. 67 V/0.9 mA

typ. 69 V/1.4 mA

typ. 78 V/3.1 mA

Switch- on point ac

typ. 15 V/3.5 mA

typ. 63 V/0.76 mA

typ. 77 V/3.0 mA

Switch- off point dc

24 V

60 V

24 V

Switch- off point ac

Voltage of Solid State Relays

Functionality

Status indicator

LED green

LED green

LED green

reverse- connect protection

Diode

Rectifier

Rectifier

free- wheeling diode

yes

Rectifier

Rectifier

Output

Switching voltage

Bipolarer Transistor

Bipolarer Transistor

Bipolarer Transistor

continuous current/ switching capacity

3 V...48 Vdc

3 V...48 Vdc

3 V...48 Vdc

On state voltage drop

max. 0.1 A

max. 0.1 A

max. 0.1 A

Response time

max. 1V

max. 1V

max. 1V

Open time

<35 us

<6.5 ms

<6.5 ms

max. switching frequency at nom. load

<355 us

<10 ms

<10 ms

Attention

300 Hz

A free- wheeling diode at the load protects the output circuit efficiently

10 Hz

A free- wheeling diode at the load protects the output circuit efficiently

10 Hz

A free- wheeling diode at the load protects the output circuit efficiently

Insulation coordination/ safe isolation acc to EN 50178, 04/98

Rated voltage

300 V

300 V

300 V

Rated surge voltage

4 kV

4 kV

4 kV

Overtoltage category

III

III

III

Pollution degree

2

2

2

Voltage proof I/ O to mounting rail

≥ 5.5mm

≥ 5.5mm

≥ 5.5mm

Achieved clearance and creepage distance

2.5 kV_{eff}

2.5 kV_{eff}

2.5 kV_{eff}

General data

Ambient temperature

-25...+50 °C

-25...+50 °C

-25...+50 °C

Storage temperature

-40 °C...+60 °C

-40 °C...+60 °C

-40 °C...+60 °C

Operation conditions

40 °C / 93 % rel. humidity, without dewing

40 °C / 93 % rel. humidity, without dewing

40 °C / 93 % rel. humidity, without dewing

Approvals

CE cRU_{US}

CE cRU_{US}

CE cRU_{US}

*TU 20 °C

Opto- couplers in terminal block format

MICROOPTO MOS/MOZ

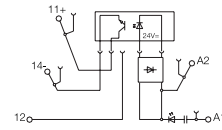
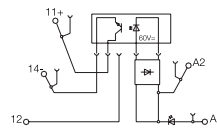
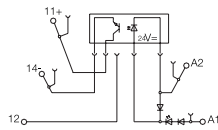
MOS 24 Vdc
MOZ 24 Vdc

MOS 120 Vuc
MOZ 120 Vuc

MOS 230 Vac
MOZ 230 Vac



Block diagram



Ordering data

Screw clamp version

Type	Cat. No.	VPE
MOS 24 Vdc/24 Vdc 2 A	8607350000	10

Type	Cat. No.	VPE
MOS 120 Vuc/24 Vdc 2 A	8607700000	10

Type	Cat. No.	VPE
MOS 230 Vac/24 Vdc 2 A	8607720000	10

Tension clamp version

MOZ 24 Vdc/24 Vdc 2 A	8607370000	10
-----------------------	-------------------	-----------

MOZ 120 Vuc/24 Vdc 2 A	8607740000	10
------------------------	-------------------	-----------

MOZ 230 Vac/24 Vdc 2 A	8607760000	10
------------------------	-------------------	-----------

Technical data*

Input

Input voltage	24 Vdc ± 20%
Input current dc	5.7 mA ± 10%
Input current ac	
Input power dc	140 mW ± 10%
Input power ac	
Switch- on point dc	typ. 15 V/3.5 mA
Switch- on point ac	
Switch- off point dc	typ. 15 V/3.5 mA
Switch- off point ac	
Voltage of Solid State Relays	24 V

24 Vdc ± 20%
5.7 mA ± 10%
140 mW ± 10%
typ. 15 V/3.5 mA
typ. 15 V/3.5 mA
24 V

120 Vuc + 10/-15%
2.8 mAdc (2.5mA...3.1mA)
3.4 mAac (2.8mA...4mA)
340 mW ± 20%
0.4 VA + 20%
typ. 67V/0.9mA
typ. 69V/1.4mA
typ. 63V/0.76mA
typ. 64V/0.86mA
60 V

230 Vac ± 10%
7.4 mA + 10%
1.7 VA + 20%
typ. 130 V/4.9 mA
typ. 126 V/4.8 mA
24 V

Functionality

Status indicator	LED green
reverse- connect protection	Diode
free- wheeling diode	yes

LED green
Diode
yes

LED green
Rectifier
Rectifier

LED green
Rectifier
Rectifier

Output

Switching voltage	3 V...33 Vdc
continuous current/ switching capacity	max. 2 A
switch-on current	15 A (10ms)
On state voltage drop	max. 120 mV
Response time	<55 us
Open time	<1.2 ms
max. switching frequency at nom. load	300 Hz

MOS-FET
3 V...33 Vdc
max. 2 A
15 A (10ms)
max. 120 mV
<55 us
<1.2 ms
300 Hz

MOS-FET
3 V...33 Vdc
max. 2 A
15 A (10ms)
max. 120 mV
<6.5 ms
<10 ms
10 Hz

MOS-FET
3 V...33 Vdc
max. 2 A
15 A (10ms)
max. 120 mV
<6.5 ms
<10 ms
10 Hz

Attention

A free- wheeling diode at the load protects the output circuit efficiently

A free- wheeling diode at the load protects the output circuit efficiently

A free- wheeling diode at the load protects the output circuit efficiently

Insulation coordination/ safe isolation acc to EN 50178, 04/98

Rated voltage	300 V
Rated surge voltage	4 kV
Overtoltage category	III
Pollution degree	2
Voltage proof I/ O to mounting rail	≥ 5.5mm
Achieved clearance andcreepage distance	2.5 kV _{eff}

300 V
4 kV
III
2
≥ 5.5mm
2.5 kV _{eff}

300 V
4 kV
III
2
≥ 5.5mm
2.5 kV _{eff}

300 V
4 kV
III
2
≥ 5.5mm
2.5 kV _{eff}

General data

Ambient temperature	-25...+50 °C
Storage temperature	-40 °C...+60 °C
Operation conditions	40 °C / 93 % rel. humidity, without dewing

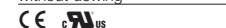
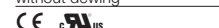
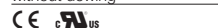
-25...+50 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity, without dewing

-25...+50 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity, without dewing

-25...+50 °C
-40 °C...+60 °C
40 °C / 93 % rel. humidity, without dewing

Approvals

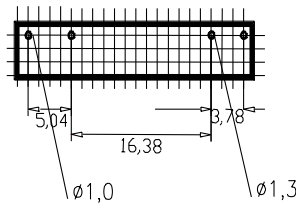
*TU 20 °C



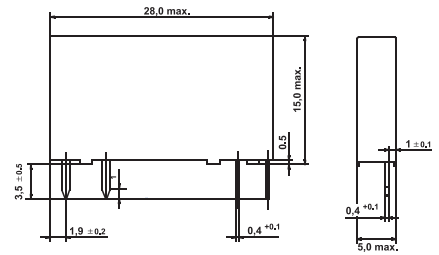
Plugable Solid-State-Relay



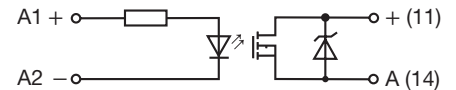
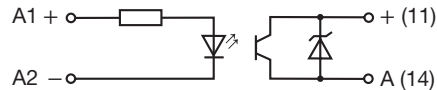
Print figure



Dimensions



Schematic circuit diagram



Ordering data

SSS Relays ...

Type	Cat. No.	Type	Cat. No.
...24V / 24V 0.1Adc	4061180000	...60V / 24V 0.1Adc	4061230000

Type	Cat. No.	Type	Cat. No.
...24V / 24V 2Adc	4061190000	...60V / 24V 2Adc	4061200000

Technical data*

	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
Input								
Minimum Control Voltage	16Vdc		52 Vdc		18 Vdc		35 Vdc	
Nominal Control Voltage	24Vdc		60 Vdc		24 Vdc		60 Vdc	
Maximum Control Voltage	30 Vdc		72 Vdc		30 Vdc		72 Vdc	
Control Current @ U _N =24V	7 mA ± 10%		2.8 mA ± 10%		7 mA ± 10%		3 mA ± 10%	
Release Voltage	10 Vdc		40 Vdc		10 Vdc		20 Vdc	
Control Circuit Resistance	ca. 4 kOhm		ca. 20 kOhm		ca. 3.2 kOhm		ca. 16 kOhm	
Output								
Load voltage	Bipolarer Transistor		Bipolarer Transistor		MOS-FET		MOS-FET	
switching/continuous current @ U _A >5Vdc	3...48 Vdc		3...48 Vdc		3...33 Vdc		3...33 Vdc	
On State Voltage Drop	100 mAdc		100 mAdc		2 Adc		2 Adc	
	<1 Vdc		<1 Vdc		<120 mVdc		<120 mVdc	
Isolation								
Dielectric Strength between Input / Output	2.5 kV		2.5 kV		2.5 kV		2.5 kV	
Further technical data								
Operating temperature range	-20 °C...+60 °C		-20 °C...+60 °C		-20 °C...+60 °C		-20 °C...+60 °C	
Storage Temperature	-40 °C...+70 °C		-40 °C...+70 °C		-40 °C...+70 °C		-40 °C...+70 °C	
Weight	3.65 g		3.65 g		3.65 g		3.65 g	
Approvals								
*TU 20 °C								

For further data see <http://em.tycoelectronics.com>

Advantages of the PLUGSERIES

The concept

PLUGSERIES is a product range for digital switching applications in industrial / process and building automation. The basis is an universal, socket base that is snapped on to mounting rails. Electromechanical and solid-state relays from different manufacturers can be combined to make complete functional units. The relay couplers **PLUGRELAY** can switch high-power ratings with up to 4 kVA of resistive loads. The solid-state relays **PLUGOPTO** are suitable for AC and DC applications.

Easy to plug in relays

Choice of connection technology: screw or tension clamp

Robustly designed retaining and release clip

Relays with one or two changeover contacts

Solid-state relays for AC and DC applications

Cross-connections reduce wiring

Cost saving

Service-friendly modular system

Pluggable LED indicators with free-wheeling diode

RC-combination to reduce influences of long wiring

Status indicators

Weidmüller gives you the option of simply plugging an LED indicator with free-wheeling diode or RC combination on to the relay socket.



Cross-connection

Housings from the same range can be connected via cross-connections so that the input potential and the root contact can be bridged from one module to another.



Contact material

Allround flexibility is achieved by the choice of materials for the contacts. The RT relay used in the relay couplers of the **PLUGSERIES** PRS/PRZ are fitted with gold-flashed AgNi contacts. Relays with hard gold-plated contacts are optionally available for switching low power ratings.

Securely mounted

The retaining and release clip guarantees that the relay is securely mounted. It ensures that the relay can be quickly ejected when servicing is required. It is universally suitable for relays with standardised heights of 15.7 mm or 25.5 mm.



Connection

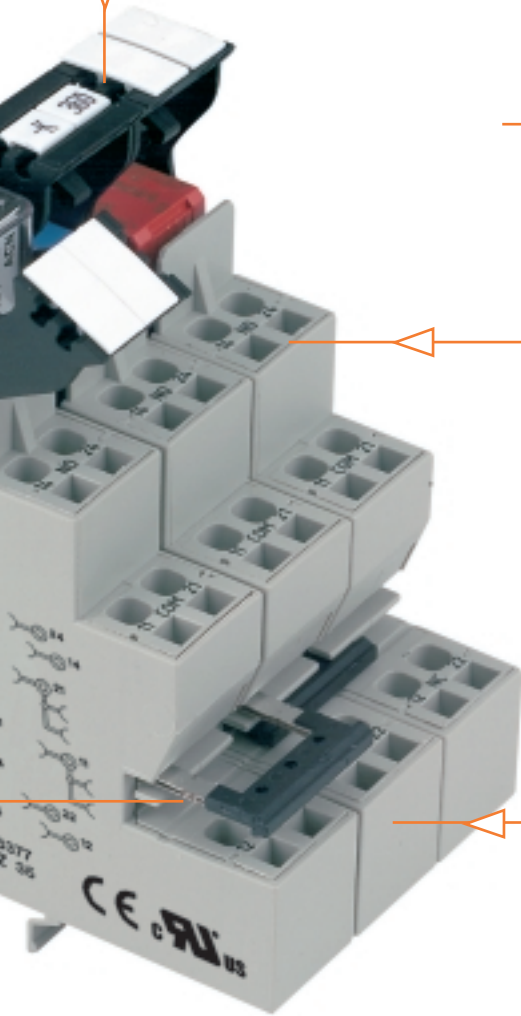
The greatest possible flexibility when it comes to wiring. The relay sockets are the heart of the range of relay couplers and optocouplers. The couplers are optionally available with screw or tension clamp technology.

Modular principle

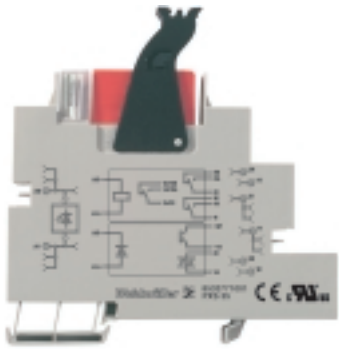
The **PLUGSERIES** is particularly service friendly. Commercially available relays can simply be plugged in, retaining and release clips guarantee that the modules are securely mounted, LED indicators with free-wheeling diodes can simply be plugged in. The distinguishing features of the **PLUGSERIES** is its economical price and fully developed product technology.

Optoelectronic switching < 4 kV eff >

The **PLUGSERIES** offers solid-state relays for AC and DC applications. Currents up to 5 A at 24 V DC and 4 A at 230 V AC can be safely switched.



Relay coupler PLUGRELAY



PRZ/PRS

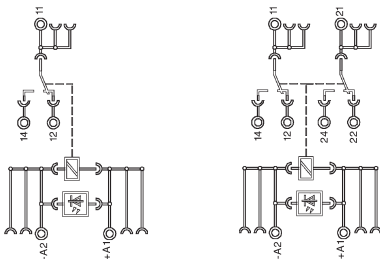


PRZ/PRS



PRS/PRZ xxx 1CO

PRS/PRZ xxx 2CO



- Modular system comprising:
 - Relay socket for mounting rails
 - LED indicator unit / RC combination
 - retaining clip
 - pluggable relay
 - marker
- Independent connection technology: screw or tension clamp technology
- Compatible with low power relays type RT / Standard with 1 or 2 CO contacts
- Coil and root-contacts cross-connectable with cross-connection type ZQV 2.5 N
- Available as complete module or as spare parts

DC-Version

Type/Version	Cat. No.	Qty.
Screw connection		
PRS 12Vdc LD 1CO	8536471001	10
PRS 12Vdc LD 2CO	8536501001	10
PRS 24Vdc LD 1CO	8530621001	10
PRS 24Vdc LD 2CO	8530631001	10
PRS 115Vdc LD 1CO	8536510000	10
PRS 115Vdc LD 2CO	8536520000	10
PRS 24Vdc LD 2CO SGR 282	8596000000	10
with gold-plated relay contacts:		
PRS 24Vdc LD 2CO AU	8561760000	10

Tension clamp connection

PRZ 12Vdc LD 1CO	8536571001	10
PRZ 12Vdc LD 2CO	8536591001	10
PRZ 24Vdc LD 1CO	8530691001	10
PRZ 24Vdc LD 2CO	8530701001	10
PRZ 115Vdc LD 1CO	8536610000	10
PRZ 115Vdc LD 2CO	8536630000	10
PRZ 24Vdc LD 2CO SGR 282	8595970000	10
with gold-plated relay contacts:		
PRZ 24Vdc LD 2CO AU	8552440000	10

Other variants on request

Technical data

Input voltage	12 V dc ... 24Vdc ... 115Vdc
Rated consumption, typ.	400 mW
Status indicator	pluggable LED-housing, green LED

Output

	1 CO / 2 CO contacts
Contact version	1 x CO / 2 x CO
Max. output voltage	250Vuc
Max. switching current	16A / 2 x 8A
Continuous current	10A
Rated breaking capacity	4kVA / 2 x 2kVA
Service life, mech.	30 x 10 ⁶

Input/output

Clearance and creepage path	> 8mm
Protective separation	DIN VDE 0106 T. 101
Dielectric strength	> 4 kV _{eff}
Insulation coordinates acc. to EN 50178	III / 2

Miscellaneous data

Ambient temperature	-40 °C ... +50 °C
Protection class	IP 20
Rated cross-section	0.5...2.5 mm ² (22 to 14 AWG)
Flammability class UL	V-0
Relay type	Schrack RT1 / RT2
Dimensions (w x h x l)	15.3 x 92 x 87/95 mm
Approvals	CE, UL recognized, cULus
Rail mounted	TS 35

Accessories

Cross-connection	
2-pole black	ZQV 2.5N/4-2 SW 1784270000 60
2-pole red	ZQV 2.5N/4-2 RT 1784280000 60
2-pole blue	ZQV 2.5N/4-2 BL 1784290000 60

Marking tags

WS 10/5	1060860000
WS 15/5	1609880000

AC-Version

Type/Version	Cat. No.	Qty.
Screw connection		
PRS 24Vac LD 1CO	8536530000	10
PRS 24Vac LD 2CO	8536560000	10
PRS 120Vac LD 1CO	8530641001	10
PRS 120Vac LD 2CO	8530661001	10
PRS 230Vac LD 1CO	8530671001	10
PRS 230Vac LD 2CO	8530681001	10
with gold-plated relay contacts:		
PRS 120Vac LD 2CO AU	8595960000	10
PRS 230Vac LD 2CO AU	8595990000	10

Tension clamp connection

PRZ 24Vac LD 1CO	8536651001	10
PRZ 24Vac LD 2CO	8536681001	10
PRZ 120Vac LD 1CO	8530710000	10
PRZ 120Vac LD 2CO	8530720000	10
PRZ 230Vac LD 1CO	8530731001	10
PRZ 230Vac LD 2CO	8530741001	10
with gold-plated relay contacts:		
PRZ 120Vac LD 2CO AU	8575940000	10
PRZ 230Vac LD 2CO AU	8575950000	10

Other variants on request

Technical data

Input voltage	24Vac ... 120Vac ... 230Vac
Rated consumption, typ.	0.75 VA
Status indicator	pluggable LED-housing, green LED

Output

	1 CO / 2 CO contacts
Contact version	1 x CO / 2 x CO
Max. output voltage	250 Vuc
Max. switching current	16A / 2 x 8A
Continuous current	10A
Rated breaking capacity	4kVA / 2 x 2kVA
Service life, mech.	5 x 10 ⁶

Input/output

Clearance and creepage path	> 8mm
Protective separation	DIN VDE 0106 T. 101
Dielectric strength	> 4kV eff
Insulation coordinates acc. to EN 50178	III / 2

Miscellaneous data

Ambient temperature	-40°C ... +50°C
Protection class	IP 20
Rated cross-section 0.5 mm ²	0.5...2.5mm ² (22 to 14 AWG)
Flammability class UL	V-0
Relay type	Schrack RT1 / RT2
Dimensions (w x h x l)	15.3 x 92 x 87/95 mm
Approvals	CE, UL recognized, cULus
Rail mounted	TS 35

Accessories

Cross-connection	
2-pole black	ZQV 2.5N/4-2 SW 1784270000 60
2-pole red	ZQV 2.5N/4-2 RT 1784280000 60
2-pole blue	ZQV 2.5N/4-2 BL 1784290000 60

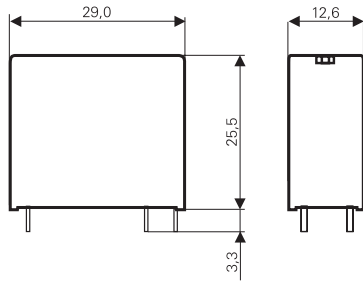
Marking tags

WS 10/5	1060860000
WS 15/5	1609880000

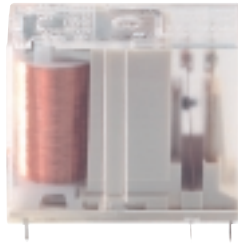
Relay coupler PLUGRELAY

Accessories Pluggable relay types

Dimensions for RP 3SL



RP 3SL Relays for high inrush current



ELESTA SGR Relays with test button



Pluggable relay

24 Vdc 1 changeover contact with test button

24 Vdc 2 changeover contacts with test button

24 Vdc 1 normally-open contact

Technical data

Contact number and type

Contact material

Switching current

Peak inrush current

Switching voltage

Breaking capacity

Min. switching current / breaking capacity

Rated consumption

Dielectric strength coil / contact

Response / drop out time: DC coil

Bounce time NO contact/NC contact

Mechanical service life: DC coil

Miscellaneous data

Protection class

Flammability class UL

Ambient temperature DC coil

Weight

Approvals

Type **Schrack RP 3SL** Cat. No. Qty.

RP3SL 24 Vdc 1NO **8588510000** 20

1 normally-open contact

AgSnO₂

25 A

120 A / 20 ms

250 V

4 kVA

500 mW

4 kV

typ. 8/2 ms

typ. 2 ms

30 x 10⁶ switching operations

IP 40

-40°C ... +70°C

18 g



Type **ELESTA SGR** Cat. No. Qty.

SGR 662 24 Vdc T **8550510000** 10

SGR 282 24 Vdc T **8550520000** 10

2 changeover contacts with test button

AgCuNi

16 A 1Co/2 x 8 A 2Co

250 Vac

4 kVA

10 mA / 100 mW

500 mW

5 kV

typ. 10/3 ms

typ. 0.5/5 ms

> 30 x 10⁶ switching operations

IP 40

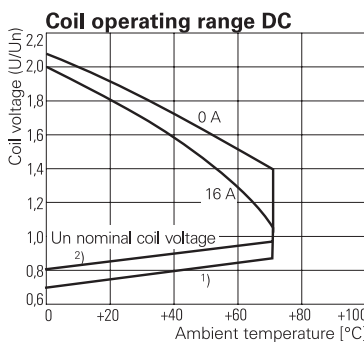
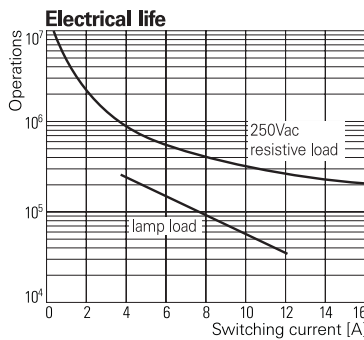
V-1

-25°C ... +70°C

20 g



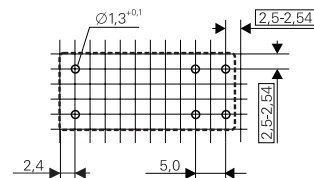
Power relay RP 3SL



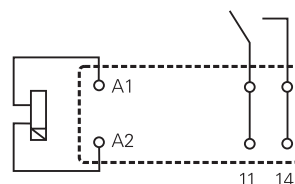
Contact service life

Type	Load	switch. oper.	Regulation
RP3SL	12 A, 250 V~, cosφ=1	3x10 ⁵	
RP3SL	TV 8	25x10 ³	UL 508
RP3SL	2500 W, 230 V~, halogene lamps	>10 ⁴	
RP3SL	1000 W, 250 V~, glow lamps	2.3x10 ⁵	
RP3SL	3000 W, 250 V~, glow lamps	3.6x10 ⁴	
RP3SL	1500 VA, fluorescent tubes 163 μF	10 ⁴	

Print figure / Relay type RP 3SL



Circuit diagram / Relay type RP 3SL



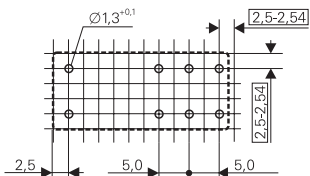
Relay coupler PLUGRELAY

Accessories Pluggable relay types

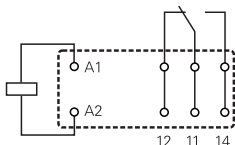
SCHRACK RT1 1 changeover contact



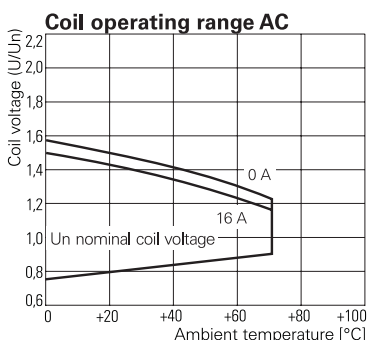
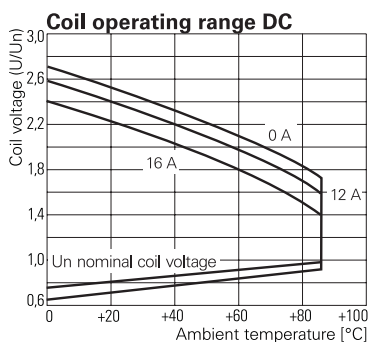
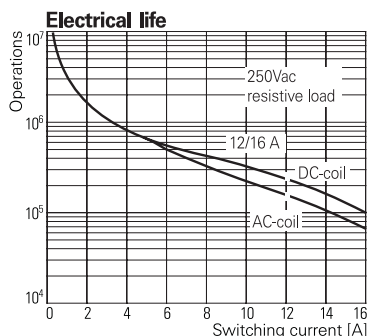
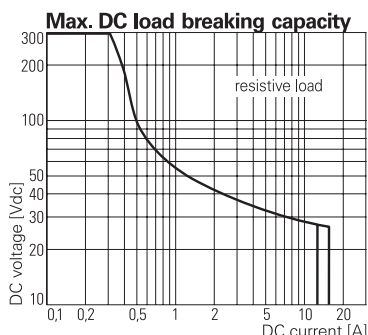
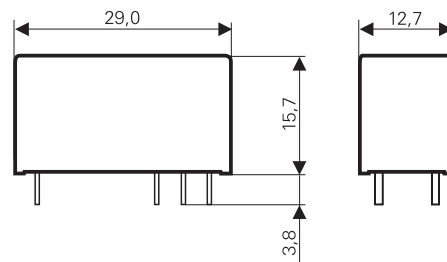
Print figure



circuit diagram



Dimensions



Pluggable relay
12 Vdc 1 changeover contact
24 Vdc 1 changeover contact
24 Vdc 1 changeover contact AU
48 Vdc 1 changeover contact
110 Vdc 1 changeover contact
110 Vdc 1 changeover contact AU
24 Vac 1 changeover contact
115 Vac 1 changeover contact
115 Vac 1 changeover contact AU
230 Vac 1 changeover contact
230 Vac 1 changeover contact AU

Type Schrack RT	Cat. No.	Qty.
RT 314012	4058470000	20
RT 314024	4058480000	20
RT 315024	4058490000	20
RT 314048	4058740000	20
RT 314110	4058500000	20
RT 315110	4065800000	20
RT 315524	4058510000	20
RT 314615	4058520000	20
RT 315615	4058530000	20
RT 314730	4058540000	20
RT 315730	4058550000	20

Technical data

Contact number and type	1 changeover contact
Contact material	AgNi 90/10, AgNi 0.15 htv
Switching current	16 A 1Co
Switching voltage	250 V ac
Breaking capacity	4 kVA
Min. switching current / breaking capacity	10 mA / 100 mW
Min. breaking capacity AU contact	40 µW
Rated consumption	400 mW dc/0.75 VA ac
Dielectric strength coil / contact	5 kV
Response / drop out time:	DC coil typ. 7/3 ms AC coil 9/45 ms
Bounce time NO contact/NC contact	typ. 1/3 ms
Mechanical service life:	DC coil > 30 x 10 ⁶ switching operations AC coil > 10 x 10 ⁶ switching operations
Breaking capacity	1-pole DC 13 1,25A, L/R = 80 ms 2,3 x 10 ⁶ 2-pole DC 13 1,25A, L/R = 80 ms 2,8 x 10 ⁶ 2-pole AC 15 1,2A, cosL/R = 0,3 6050x

Miscellaneous data

Protection class	IP 40
Flammability class UL	V-0
Ambient temperature	DC coil -40°C ... +85°C AC coil -40°C ... +70°C
Weight	14 g
Approvals	UL, CE, RoHS, BEAB

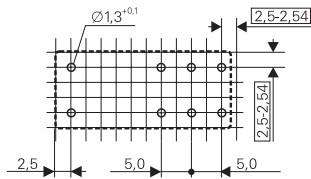
Relay coupler PLUGRELAY

Accessories Pluggable relay types

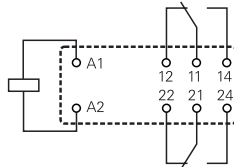
SCHRACK RT2 2 changeover contacts



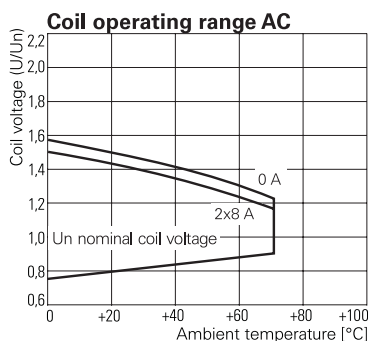
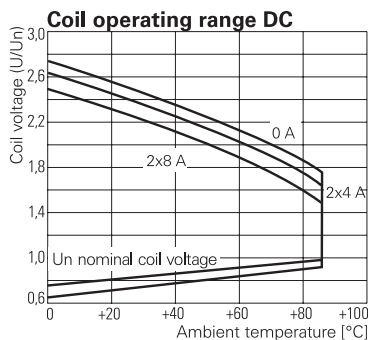
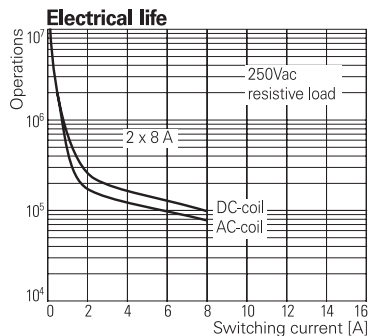
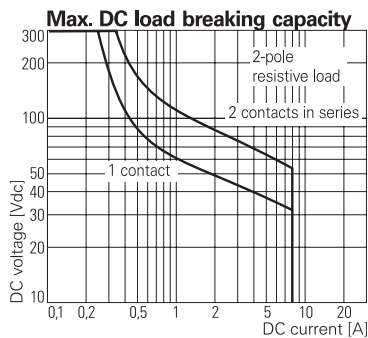
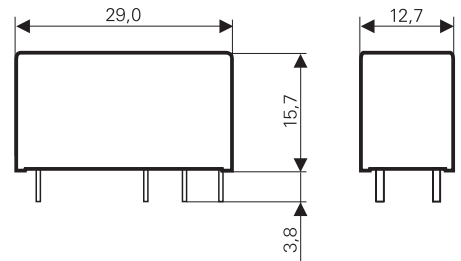
Print figure



circuit diagram



Dimensions



Pluggable relay	Type Schrack RT	Cat. No.	Qty.
12 Vdc 2 changeover contacts	RT 424012	4058560000	20
24 Vdc 2 changeover contacts	RT 424024	4058570000	20
24 Vdc 2 changeover contacts AU	RT 425024	4058580000	20
48 Vdc 2 changeover contacts	RT 424048	4058750000	20
60 Vdc 2 changeover contacts	RT 424060	4058760000	20
110 Vdc 2 changeover contacts	RT 424110	4058590000	20
24 Vac 2 changeover contacts	RT 424524	4058600000	20
115 Vac 2 changeover contacts	RT 424615	4058610000	20
115 Vac 2 changeover contacts AU	RT 425615	4058620000	20
230 Vac 2 changeover contacts	RT 424730	4058630000	20
230 Vac 2 changeover contacts AU	RT 425730	4058640000	20

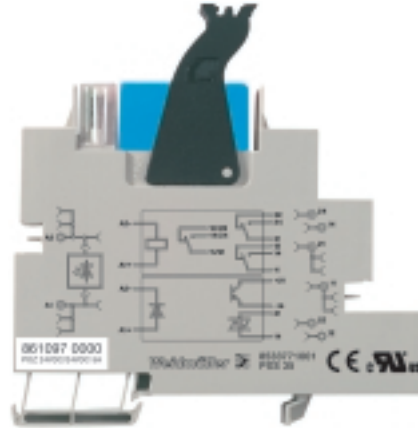
Technical data

Contact number and type	2 changeover contacts	
Contact material	AgNi 90/10, AgNi 0.15 htv	
Switching current	2 x 8 A 2Co	
Switching voltage	250 V ac	
Breaking capacity	4 kVA	
Min. switching current / breaking capacity	10 mA / 100 mW	
Min. breaking capacity AU contact	40 µW	
Rated consumption	400 mW dc/0.75 VA ac	
Dielectric strength coil / contact	DC coil	5 kV
	AC coil	typ. 7/3 ms
Response / drop out time:	DC coil	9/45 ms
	AC coil	typ. 1/3 ms
Bounce time NO contact/NC contact		> 30 x 10 ⁶ switching operations
Mechanical service life:	DC coil	> 5 x 10 ⁶ switching operations
	AC coil	1,25A, L/R = 80 ms 2.3 x 10 ⁶
Breaking capacity	1-pole DC 13	1,25A, L/R = 80 ms 2.8 x 10 ⁶
	2-pole DC 13	1,2A, cosL/R = 0.3 6050x
	2-pole AC 15	

Miscellaneous data

Protection class	IP 40	
Flammability class UL	V-0	
Ambient temperature	DC coil	-40°C ... +85°C
	AC coil	-40°C ... +70°C
Weight	14 g	
Approvals	UL, CE, BEAB	

Complete module



- Modular principle
 - rail mounted relay socket
 - LED indication unit
 - retaining clip
 - pluggable Solid State Relay
 - marker
- Flexible wiring technology: screw or tension clamp connection
- Control voltage 24 Vdc, 24 Vac
- Cross-connection of control and switching circuits
- Available as complete module or spare parts
- Zero voltage switching

Cat. No.	Type	input voltage	switching voltage	max. switching current	Qty.
Screw connection					
POS 24VDC/24VDC 2.5A	8610840000	24 Vdc	24 Vdc	2.5 A	10
POS 24VDC/230VAC 2.0A	8610860000	24 Vdc	230 Vac	2.0 A	10
POS 24VDC/24VUC 1.0A	8610890000	24 Vdc	24 Vuc	1.0 A	10
POS 24VDC/24VDC 5.0A	8610900000	24 Vdc	24 Vdc	5.0 A	10
POS 24VDC/230VAC 4.0A	8610910000	24 Vdc	230 Vac	4.0 A	10
Tension clamp connection					
POS 24VAC/24VDC 2.5A	8615600000	24 Vac	24 Vdc	2.5 A	10
POS 24VAC/24VDC 5.0A	8615620000	24 Vac	24 Vdc	5.0 A	10
POS 24VAC/230VAC 4.0A	8615580000	24 Vac	230 Vac	4.0 A	10
Other variants on request					
Tension clamp connection					
POZ 24VDC/24VDC 2.5A	8610920000	24 Vdc	24 Vdc	2.5 A	10
POZ 24VDC/230VAC 2.0A	8610930000	24 Vdc	230 Vac	2.0 A	10
POZ 24VDC/24VUC 1.0A	8610960000	24 Vdc	24 Vuc	1.0 A	10
POZ 24VDC/24VDC 5.0A	8610970000	24 Vdc	24 Vdc	5.0 A	10
POZ 24VDC/230VAC 4.0A	8610980000	24 Vdc	230 Vac	4.0 A	10
Other variants on request					
POZ 24VAC/24VDC 2.5A	8615640000	24 Vac	24 Vdc	2.5 A	10
POZ 24VAC/24VDC 5.0A	8615650000	24 Vac	24 Vdc	5.0 A	10
POZ 24VAC/230VAC 4.0A	8615630000	24 Vac	230 Vac	4.0 A	10

DC version

Technical data	
Input (typical values at 20 °C)	
Input voltage min. AC/DC	15 V
Input voltage max. AC/DC	30 V
Input current min. AC/DC	6.1 mA
Input current max. AC/DC	12 mA
Drop out voltage AC/DC	2.5 V
Resistance	2.1 kΩ
Input/output	
Coupling	SSR
Electrical strength in-/output	2.5 kV _{eff}
Output	
technical data	
see page 21 and 22	
Further technical data	
Ambient temperature	-40°C ... +50°C
Protection class	IP 20
Rated connection	0.5...2.5mm ²
Relay type	Celduc SSR
Dimensions (w x h x l)	15.3 x 92 x 87/95 mm
Approvals	CE RoHS recognized, cRoHS
Rail mounted	TS 35
Accessories	
Cross-connection	
2-pole black	ZQV 2.5N/4-2 SW 1784270000 60
2-pole red	ZQV 2.5N/4-2 RT 1784280000 60
2-pole blue	ZQV 2.5N/4-2 BL 1784290000 60
Marking tags	
WS 10/5	1060860000
WS 15/5	1609880000

AC version

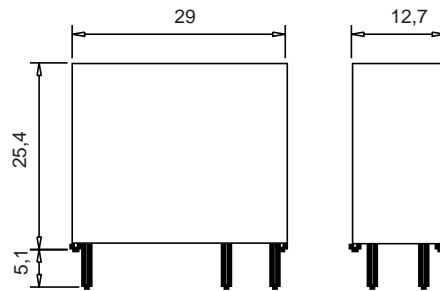
Technical data	
Input (typical values at 20 °C)	
Input voltage min. AC/DC	15 V
Input voltage max. AC/DC	30 V
Input current min. AC/DC	6.1 mA
Input current max. AC/DC	12 mA
Drop out voltage AC/DC	2.5 V
Resistance	2.1 kΩ
Input/output	
Coupling	SSR
Electrical strength in-/output	4 kV _{eff}
Output	
technical data	
see page 21 and 22	
Further technical data	
Ambient temperature	-40°C ... +50°C
Protection class	IP 20
Rated connection	0.5...2.5mm ²
Relay type	Celduc SSR
Dimensions (w x h x l)	15.3 x 92 x 87/95 mm
Approvals	CE RoHS recognized, cRoHS
Rail mounted	TS 35
Accessories	
Cross-connection	
2-pole black	ZQV 2.5N/4-2 SW 1784270000 60
2-pole red	ZQV 2.5N/4-2 RT 1784280000 60
2-pole blue	ZQV 2.5N/4-2 BL 1784290000 60
Marking tags	
WS 10/5	1060860000
WS 15/5	1609880000

Solid State Relays PLUGOPTO

Accessories SSR Standard

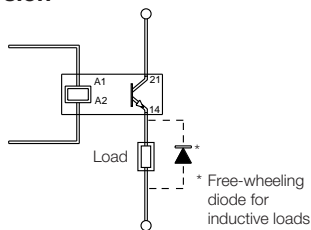


Dimensions

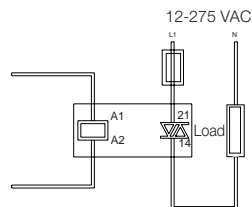


- Compact dimensions (29 x 25.4 x 12.7 mm)
- Combines to a complete functional unit with PLUGSERIES component housings PXS / PXZ, LED indicators PLED and retaining clip PRC
- Fully compatible with electromechanical standard relays
- Control voltage 24 VAC/DC
- Nominal switching voltage 24 VDC or 230 VAC
- Up to 5 A continuous current
- Suitable for mounting on printed-circuit boards or socket bases
- Optimum mounting density
- Zero voltage switching

DC version



AC version



Ordering data

SSR 24 VUC/24VDC 5A
8576350000

Type	Cat. No.	Type	Cat. No.
SSR 24 VUC/230VAC 4A			
	8576360000		

Technical data

Input (typical values at 20 °C)

Input voltage min. AC/DC	15 V
Input voltage max. AC/DC	30 V
Input current min. AC/DC	6.1 mA
Input current max. AC/DC	12 mA
Drop-out voltage AC/DC	2.5 V
Resistance	2.1 kΩ

Output

Max. switching current DC	5 A
Max. switching current AC	
Min. switching current DC	1 mA
Min. switching current AC	
Nominal switching voltage DC	24 V
Nominal switching voltage AC	
Switching-voltage range DC	0...30 V
Switching-voltage range AC	

Max. on-state voltage at max. switching current DC	0.3 V
Max. on-state voltage at max. switching current AC	

Max. make time DC	2 ms
Max. make time AC (50 Hz)	

Max. break time DC	18 ms
Max. break time AC (50 Hz)	

Isolation

Test voltage control circuit - switching circuit DC	2.5 kV _{eff}
Test voltage control circuit - switching circuit AC	

Further technical data

Operating temperature range	-40 °C...+50 °C
Weight	approx 18 g
Approvals	recognized
Celduc	SPD07505

DC version

Input (typical values at 20 °C)	
Input voltage min. AC/DC	15 V
Input voltage max. AC/DC	30 V
Input current min. AC/DC	6.1 mA
Input current max. AC/DC	12 mA
Drop-out voltage AC/DC	2.5 V
Resistance	2.1 kΩ

AC version

Max. switching current DC	
Max. switching current AC	3 A (4 A at 20 °C)
Min. switching current DC	
Min. switching current AC	50 mA
Nominal switching voltage DC	
Nominal switching voltage AC	230 V ~
Switching-voltage range DC	
Switching-voltage range AC	12...275 V

Max. on-state voltage at max. switching current DC	
Max. on-state voltage at max. switching current AC	1.1 V

Max. make time DC	
Max. make time AC (50 Hz)	12 ms

Max. break time DC	
Max. break time AC (50 Hz)	20 ms

Test voltage control circuit - switching circuit DC	
Test voltage control circuit - switching circuit AC	4 kV _{eff}

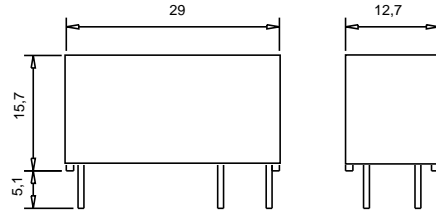
Operating temperature range	-40 °C...+50 °C
Weight	approx 18 g
Approvals	recognized
Celduc	SPA07420

Solid State Relays PLUGOPTO

Accessories SSR / RT

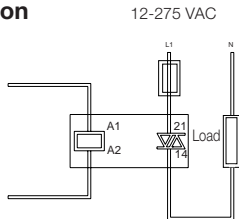


Dimensions

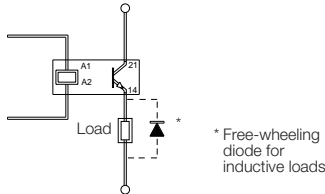


- Compact dimensions (29 x 15.7 x 12.7 mm)
- Combines to a complete unit with PLUGSERIES component housings PXS / PXZ, LED indicators PLED, and retaining clip PRC
- Fully compatible with electromechanical standard relay RT
- Control voltage 24 VAC/DC
- Nominal switching voltage 24 VDC, 24 VAC/DC or 230 VAC
- Up to 2.5 A continuous current
- Suitable for mounting on printed-circuit boards or socket bases
- Optimum mounting density
- Zero voltage switching

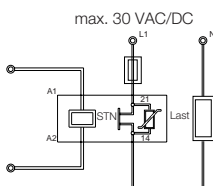
AC version



DC version



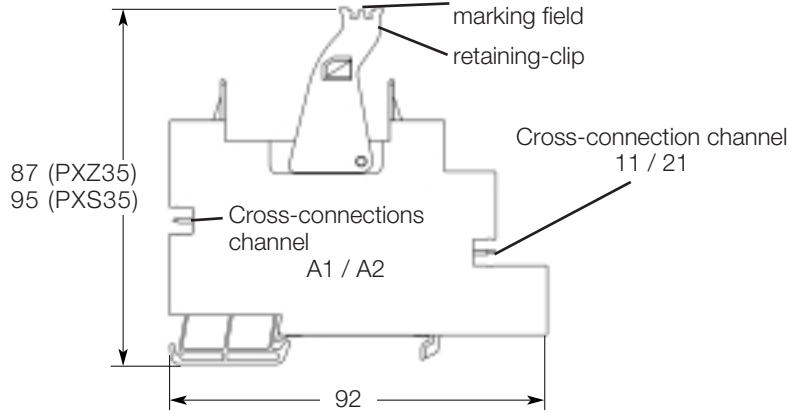
AC/DC version



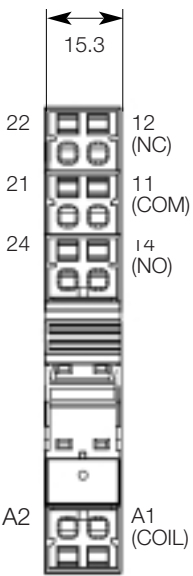
Ordering data	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
		SSR 24 VUC/24VDC 2.5A	8576340000	SSR 24 VUC/230VAC 2A	8576370000	SSR 24 VUC/24VUC 1A
Technical data	DC version		AC version		AC/DC version	
Input						
(typical values at 20 °C)						
Input voltage min. AC/DC	15 V		15 V		15 V	
Input voltage max. AC/DC	30 V		30 V		30 V	
Input current min. AC/DC	6.1 mA		6.1 mA		6.1 mA	
Input current max. AC/DC	12 mA		12 mA		12 mA	
Drop-out voltage AC/DC	2.5 V		2.5 V		2.5 V	
Resistance	2.1 kΩ		2.1 kΩ		2.1 kΩ	
Output						
Max. switching current DC	2.5 A					
Max. switching current AC			2 A			
Max. switching current AC/DC					1 A	
Min. switching current DC	1 mA					
Min. switching current AC			50 mA			
Min. switching current AC/DC					1 mA	
Nominal switching voltage DC	24 V					
Nominal switching voltage AC			230 V			
Nominal switching voltage AC/DC					24 V	
Switching-voltage range DC	0...30 V					
Switching-voltage range AC			12...275 V			
Switching-voltage range AC/DC					0...30 V	
Max. on-state voltage at max. switching current DC	0.5 V					
Max. on-state voltage at max. switching current AC			1 V			
Max. on-state voltage at max. switching current AC/DC					0.9 V	
Max. make time DC	2 ms					
Max. make time AC (50 Hz)			12 ms			
Max. make time AC/DC (50 Hz)					5 ms	
Max. break time DC	18 ms					
Max. break time AC (50 Hz)			20 ms			
Max. break time AC/DC (50 Hz)					12 ms	
Isolation						
Test voltage control circuit - switching circuit DC	2.5 kV _{eff}					
Test voltage control circuit - switching circuit AC			4 kV _{eff}			
Test voltage control circuit - switching circuit AC/DC					4 kV _{eff}	
Further technical data						
Operating temperature range	-40 °C...+50 °C		-40 °C...+50 °C		-40 °C...+50 °C	
Weight	approx. 11 g		approx. 11 g		approx. 11 g	
Approvals	recognized		recognized		recognized	
Celduc	STD07205		STA07220		STN07105	

Sockets for PLUGSERIES

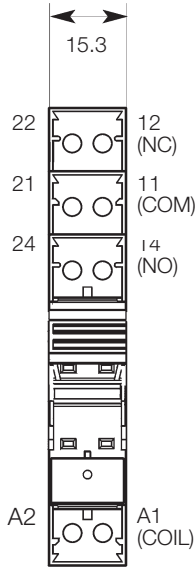
Accessories



Tension clamp



Screw connection



Empty base for rail mounted TS 35

Screw connection
Tension clamp connection

Type	Cat. No.	Qty.
PXS35	8533771001	10
PXZ35	8536691001	10

Technical data

Rated current	16 A
Rated voltage	250 V
Dielectric strength coil/contacts	> 4 kV
Protection class	IP 20
Rated cross-section	2.5 mm ²
Insulation stripping length	
- Screw connection	8 mm
- Tension clamp connection	10 mm
Ambient temperature	-40°C ... +60°C
Flammability class UL 94	V-0

Holding clamp

Type	Cat. No.	Qty.
PRC	8536700000	100

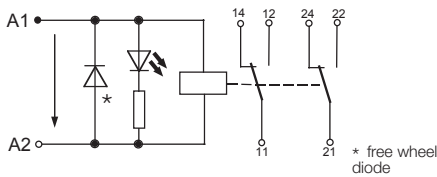
Operating indication

LED indicator with free-wheeling diode

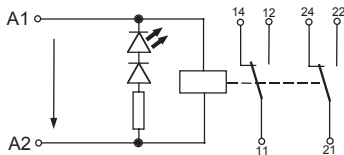
6 ... 24 Vdc	PLED 24 Vdc	8536710000	20
6 ... 24 Vdc	PLED 24 Vdc red	8611010000	20
48 ... 60 Vdc	PLED 48 Vdc	8536720000	20
115 Vdc	PLED 115 Vdc	8536730000	20
12 ... 24 Vac	PLED 24 Vac	8536750000	20
115 Vac	PLED 120 Vac	8536760000	20
230 Vac	PLED 230 Vac	8536780000	20
230 Vac	PLED 230 Vac red	8611000000	20
RC combination 120...230 VAC/DC	PLRC 200 nF/200Ω	8566530000	20

Operating indication

DC version



AC version



Pluggable cross-connection

2-pole black	ZQV 2.5N/4-2SW	1784270000	60
2-pole red	ZQV 2.5N/4-2RT	1784280000	60
2-pole blue	ZQV 2.5N/4-2BL	1784290000	60

Marking tags

10 x 5 mm

Type	Cat. No.	Qty.
WS 10/5	1060860000	200
WS 15/5	1609880000	96

Advantages of the PLUGSERIES for industrial use

The concept

The product family is specialized on digital switching applications in industrial, process and building automation. The basis is an universal, socket base that is snapped on to mounting rails. Industrial relays of different manufacture can be plugged in.

Easy to plug in relays

Compact dimension

Flexible, fully developed technology for excellent value

Choice of connection technology: screw or tension clamp

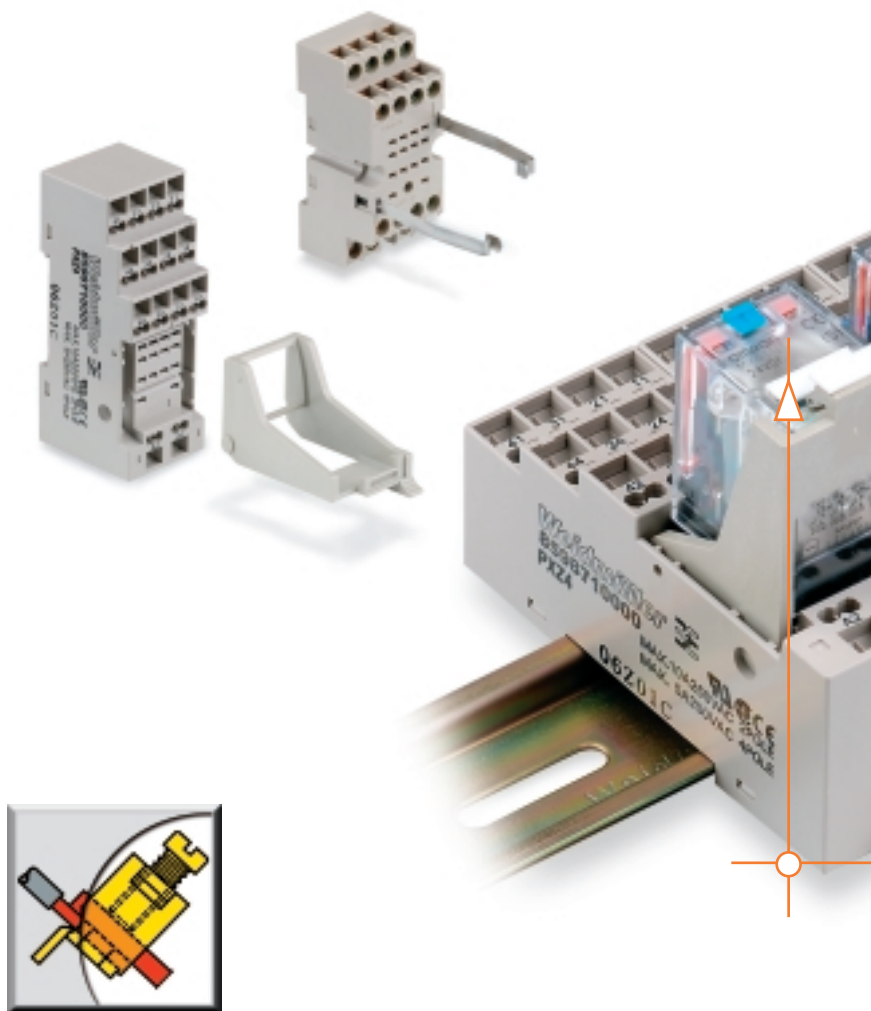
2 pole and 4 pole relays can be plugged in

Applicable wiring:
0.2...1.5 mm²

max. switching load:
10 A / 250 Vac (2 changeover contact)
5 A / 250 Vac (4 changeover contact)

Modular principle

The PLUGSERIES for industrial use is particularly service friendly. Commercially available relays can simply be plugged in, retaining and release clips guarantee that the relays are securely mounted.



Connection

The greatest possible flexibility when it comes to wiring. The relay sockets are the heart of relay couplers. The couplers are available with screw or tension clamp technology.

Securely mounted

The retaining and release clip guarantees that the relay is securely mounted. It ensures that the relay can be quickly ejected when servicing is required.

Cross-connection

Pluggable crossconnections are available in different colours. Input potential and root contact can be bridged from one module to another.

Industrial relays

Available are different relays of Omron and Schrack. The 4 change over relays are equipped with mechanical and optical status indicator, manual test tab and cadmium-free contacts. Coil operating voltage of available relays are 6...220 Vdc and 6...230 Vac.



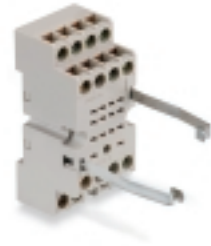
Socket for industrial relays

- choice of connection technology: screw or tension clamp
- applicable wiring up to 1.5 mm²
- for 2 pole and 4 pole relays
- insulation according to VDE 0110
- tension clamp version
 - simple wiring procedure
 - two independent terminals for each contact
 - cross-connectable connection
 - isolated construction of coil and contact terminals

PXZ4



PXS4



Ordering data
Socket for mounting rail TS 35
Tension clamp connection
Screw connection

Technical data
Nominal current
Nominal voltage
Dielectric strength coil / contacts
Clearance and creepage distance input-/output
Protection class
Applicable wire
Insulation stripping length
Ambient temperature
Flammability class UL 94

Ordering data
Retaining clip
Relay, Typ: MY4
Relay, Typ: PT5

Marker
only for PXZ4-PIRC

Cross-connection
blue
red

Screwdriver

Approvals

Type	Cat. No.	Qty.
PXZ4	8598710000	10

5 A at 70 °C (with relay MY4)
250 Vac
2000 Vac
2000 Vac
IP 20
0.2...1.5 mm ² (AWG 24...16) two wiring units
8 mm
max. 70 °C
V-1

Type	Cat. No.	Qty.
PXZ4-PIRC	8598610000	50
PT 28802	8572170000	25

WS PXZ4	8598630000	100
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ZQV PXZ4-bl	8611090000	50
ZQV PXZ4-rt	8611100000	50

SD	9009030000	1
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Type	Cat. No.	Qty.
PXS4	8614350000	10

5 A at 70 °C (with relay MY4)
250 Vac
2000 Vac
2000 Vac
IP 20
0.2...1.5 mm ² (AWG 24...16)
8 mm
max. 70 °C
V-1

Type	Cat. No.	Qty.
PXS4-PIRC	8633920000	100

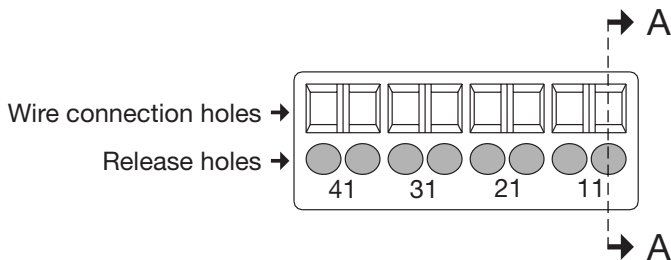
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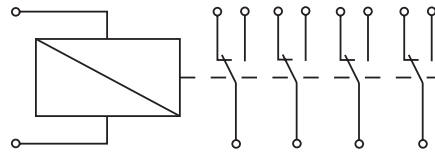
Wiring procedure

Insert the specified screwdriver into the round release hole located beside the wire connection hole where the wire is to be inserted.

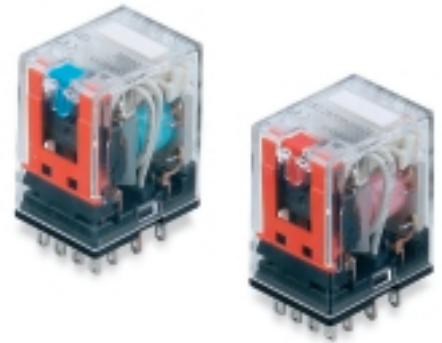


Miniature Power Relay MY4

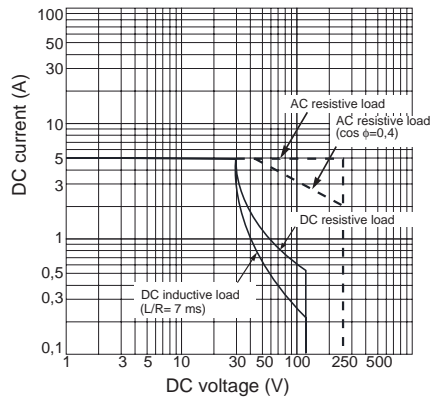
- 4 change over contacts
- choice between DC- and AC input coil
- mechanical status indicator
- optical status indicator by LED
- manual test tab
(blue = DC coil, red = AC coil)
- cadmium-free contact material with 3µm gold-plated contacts
- pluggable to Weidmüller socket PXZ4 and PXS4



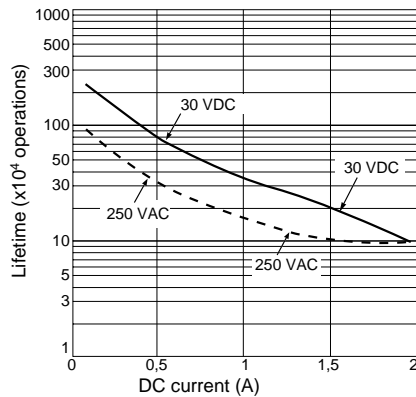
MY4 IN / MY4 IN1



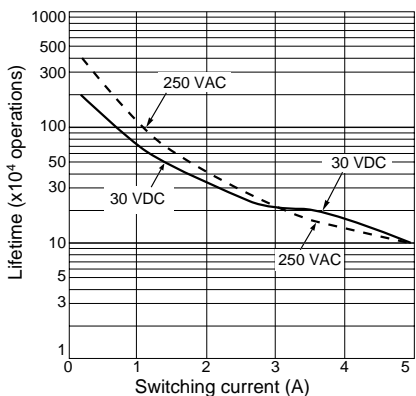
Breaking capacity



Lifetime (inductive load)



Lifetime (resistive load)



Ordering data

	12 Vdc
	24 Vdc
	110 Vdc
	24 Vac
	120 Vac
	230 Vac

Technical data

Coil data

Nominal voltage	- DC coil	12/24/110 V-
	- AC coil	24/120/230 V~
Nominal coil power	- DC coil	typ. 0.9 W
	- AC coil	typ. 1.0 VA
Response / drop-out time	- DC coil	80 / 10 (in % Nominal voltage)
	- AC coil	80 / 30 (in % Nominal voltage)

Contact data

Number of contacts	4 changeover contact	
Contact material	AgNi, 3µm Gold-plated	
Rated current	4 x 5 A	
Max. switching voltage	- DC coil	125 V-
	- AC coil	250 V~
Max. breaking capacity AC	1250 VA	
Switching current	4 x 5 A	
Minimum contact load	5 Vdc, 10 mA	

General data

Flammability class UL 94	V-2	
Ambient temperature	-55...+70 °C	
Mechanical lifetime	- DC coil	>10x10 ⁷
	- AC coil	>50x10 ⁶
Response / drop-out time	20 / 20 ms	
Bounce time	max. 20 ms	
Weight	35 g	
Dimensions (width, height, length)	21.5 x 36 x 28 mm	

Isolation

Dielectric strength coil - contacts	2000 Vac
Isolation acc. to IEC 664/VDE 0110 (1/89)	
- Rated voltage	240 V
- Pollution degree	2
- Overvoltage category	II
Isolation acc. to VDE 0110b (2/79)	
- Insulation category / ref. Voltage	A250 / B125

Accessories

- Terminal, tension clamp version	PXZ4	8598710000	10	
- Terminal, screw version	PXS4	8614350000	10	
- Retaining clip for PXZ4	PXZ4-PIRC	8598610000	50	
- Retaining clip for PXS4	PXS4-PIRC	8633920000	50	
- Marker	WS-PXZ4	8598630000	100	
- Cross-connection	blue	ZQV-PXZ4-bl	8611090000	50
	red	ZQV-PXZ4-rt	8611100000	50

Approvals

Type	Cat. No.	Qty.
MY4 IN1-12	8598660000	10
MY4 IN1-24	8598700000	10
MY4 IN1-110	8598640000	10
MY4 IN-24	8598690000	10
MY4 IN-120	8598650000	10
MY4 IN-230	8598670000	10

additional relays on request

Response / drop-out time	- DC coil	80 / 10 (in % Nominal voltage)
	- AC coil	80 / 30 (in % Nominal voltage)

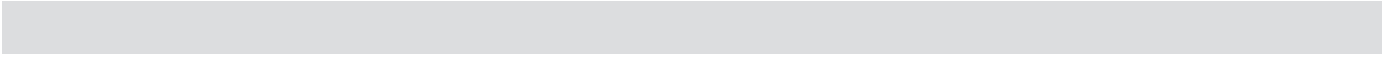
Number of contacts	4 changeover contact	
Contact material	AgNi, 3µm Gold-plated	
Rated current	4 x 5 A	
Max. switching voltage	- DC coil	125 V-
	- AC coil	250 V~
Max. breaking capacity AC	1250 VA	
Switching current	4 x 5 A	
Minimum contact load	5 Vdc, 10 mA	

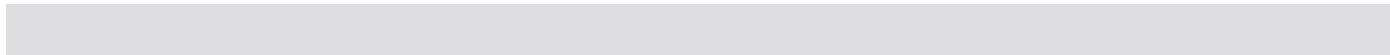
Flammability class UL 94	V-2	
Ambient temperature	-55...+70 °C	
Mechanical lifetime	- DC coil	>10x10 ⁷
	- AC coil	>50x10 ⁶
Response / drop-out time	20 / 20 ms	
Bounce time	max. 20 ms	
Weight	35 g	
Dimensions (width, height, length)	21.5 x 36 x 28 mm	

Dielectric strength coil - contacts	2000 Vac
Isolation acc. to IEC 664/VDE 0110 (1/89)	
- Rated voltage	240 V
- Pollution degree	2
- Overvoltage category	II
Isolation acc. to VDE 0110b (2/79)	
- Insulation category / ref. Voltage	A250 / B125

Type	Cat. No.	Qty.
PXZ4	8598710000	10
PXS4	8614350000	10
PXZ4-PIRC	8598610000	50
PXS4-PIRC	8633920000	50
WS-PXZ4	8598630000	100
ZQV-PXZ4-bl	8611090000	50
ZQV-PXZ4-rt	8611100000	50







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