Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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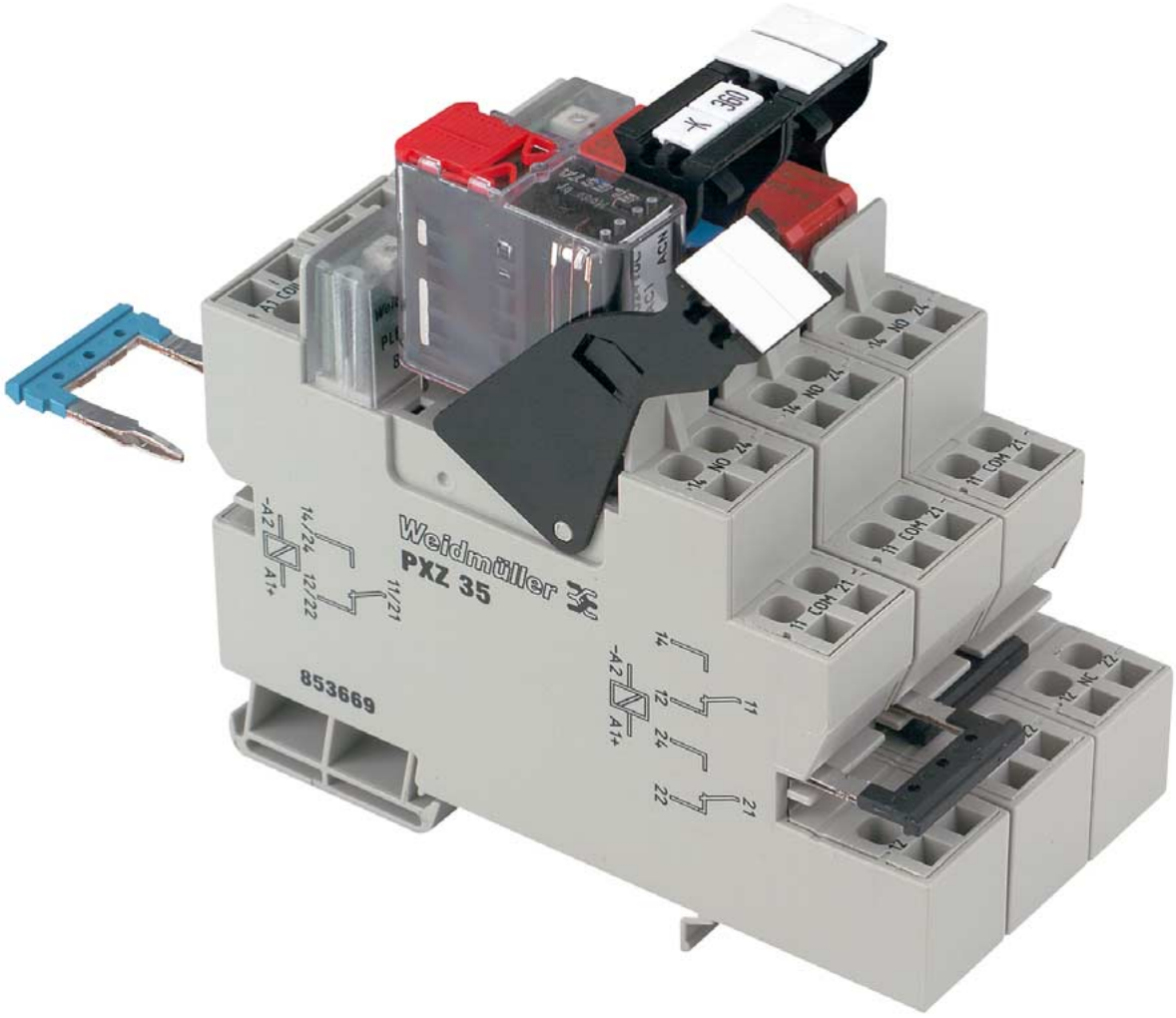

Weidmüller
PXZ 35
853669
-A2
A1+
14/24
12/22
11/21
11
12
14
21
22
24
A1 COM
14 NO 24
11 COM 21
12 NC 22

Relay Coupler

The universal foot of the Weidmüller **relay modules** allow them to be assembled on TS 32, TS 35 x 7.5 and TS 35 x 15 mounting rails in accordance with European standards EN 50 035 and EN 50 022.
An LED status indicator in the coil of the relay coupler indicates the relay switching status.

Contact material	Properties	Application	U/I
Fine silver	- inexpensive	universal use	1 V…250 V
AG 99 %	- average tendency to weld and average resistance to burn-off	up to medium-size loads	1 mA…5 A
	- subject to corrosion in sulphurous atmosphere		
Silver nickel	- high mechanical stability	universal use	≥ 12 V
● AgNi 0.15	- low tendency to weld	at medium-size loads	5 mA…10 A
	- low contact resistance		
	- high resistance to burn-off		
Hard silver	- mechanical stability > AgNi	for use with medium-size	≥ 12 V
AgCu3	- tendency to weld < AgNi	loads	10 mA…10 A
	- resistance to burn-off > AgNi		
	- contact resistance > AgNi		
Silver cadmium	- very low tendency to weld	suitable for switching	≥ 12 V
oxide	- resistance to burn-off > AgCu3/Ni	inductive loads	≥ 100 mA
● AgCdO			
Silver-tin-	- high thermal decomposition temperature	suitable for swiching	≥ 12 V
oxide	- more arc-resistant with low material transfer	inductive loads	≥ 100 mA
● $AgSnO_2$			
Tungsten	- very high resistance to burn-off	circuits with extremely	≥ 60 V
W	- high switching rate with short closed times	high on/off loads	≥ 1 A
Hard gold	- < lowest contact resistance	dry circuits in	µV…60 V
● AuNi	- best resistance to corrosion	damp atmospheres	µA…0.2 V

● = preferred materials

Types of contact

The standard range comprises numerous types and combinations of contacts.
1 NC (EGR EG2, EGR EG7, RS 30)
1 NO (EGR EG2, EGR EG7, DKR, RS 30)
1 NC and 1 NO (EGR EG2, WRS)
2 NO (WRS)
3 NO (WRS)
1 Changeover (EGR EG2, EGR/RST EG7, WRS DKR PRS/PRZ MCZ R, RS 30, RS 31)
2 Changeover (EGR EG2, WRS, RS 32, PRS/PRZ)
4/8/16 Changeover (RSM)

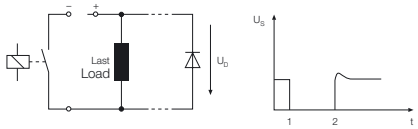
Contact material

The all-round capability of Weidmüller relay modules is achieved by the choice of the contact material.
The contact is responsible for both the reliable transmission of the control signals and for switching power contactors. Weidmüller uses gold-plated or gold-flashed AgNi contacts for most applications. Gold-plated contacts permit the switching of the low-power applications up to 40 µW with a gold-plating thicker than 2 µm. For switching higher ratings we use AgSnO2 or AgCdO contacts (RS 31).

Protective circuits of the contacts

Switching sparks may occur when switching inductive or capacitive loads that affect the operational life of the relay.
The following protective circuits offer the possibility of reducing contact wear:

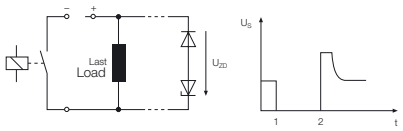
Diode:



Advantage: can be used for all ratings, low overvoltage, minimum space requirements, economic

Disadvantage: very long drop-out delay

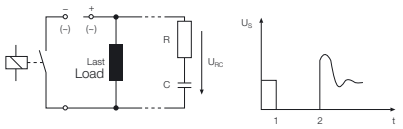
Diode and Z-diode:



Advantage: low overvoltage (determined by Z-diode), low drop-out delay

Disadvantage: not usable for high power ratings

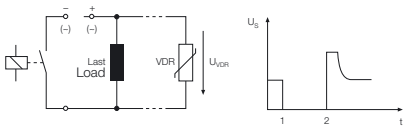
RC combination:



Advantage: low overvoltage, low drop-out delay

Disadvantage: higher current loading on contacts at switch-on, complex and expensive for increased power rating

Varistor:



Advantage: low drop-out delay, economic

Disadvantage: not for all operating voltages and power ratings

U_S	Voltage curve
1	Close
2	Open

Switching of small and large power ratings

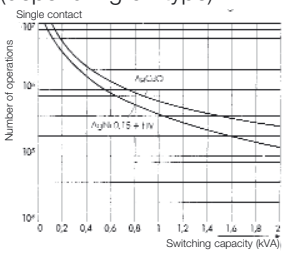
For automation technology, Weidmüller offers the EGR EGR 7 relay coupler to switch ratings up to 40 µW under resistive loads. This allows signals to be reliably relayed to control devices.
The switching of higher power ratings in power supply technology is achieved by the RS 31 relay coupler, which guarantees switching capacity up to 3.5 kVA under resistive loads.

Switching times of the relay modules

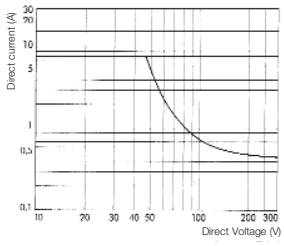
pick-up delay	typ. < 10 ms
drop-out delay	typ. < 12 ms

Switching behaviour/load limit curve

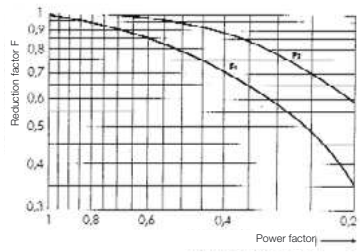
(dependimg on type)



Contact life
with resistive load



DC-limit
with resistive load



Reduction factor
with inductive load cos j < 1
Switching no. eff.
= switching no (at cos j = 1) x red. Factor F

Relay couplers with plugged relays

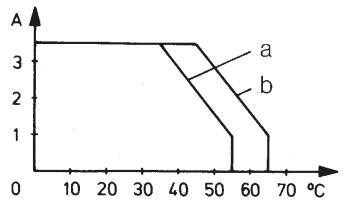
Relay couplers with plugged relays are only conditionally suitable for use in applications subject to heavy vibrations. Relay couplers with soldered relays are to be preferred.

Derating curves

The contact resistance is largely responsible for heat development within the relay. This link is demonstrated by a derating curve as a function of the permissible current subject to the ambient temperature.

We determine the current (curve a) for the following operating conditions:
- continuous operation
- rated input voltage + 10 %
- several relay modules operating under load, mounted horizontally in a row without spacing on mounting rail

A higher load is applicable when modules are mounted with a gap of 20 mm as shown in curve "b". In addition, the function of curve "b" shows the max. values for a switching or short-time operation when assembled horizontally on the mounting rail.



Notes for usage

The characteristic data of the actuation are to be meticulously observed when using UC variants in DC circuitry. UC variants have a higher current input at the moment of switching due to their series circuitry. The internal current limiter of commercially available initiators can result in the operated relay coupler not being switched through.

RC combination

Long supply cables are particularly open to electrical and electro-mechanical influences. These can lead to disturbances of the function or even failure of the relay module. A remedy for this problem is an RC combination in series that filters out unwanted disturbances. RC combinations are available for all customary relay couplers: pluggable (PLUGSERIES) or as terminal block (WDU 12C and DKU 12C).

Protective separation

All equipment required to guarantee "protective separation" must be constructed in such a way that, for example, a mechanical defect cannot reduce the level of insulation. In the case of a relay, this means that if a mechanical defect occurs (bent solder pin, break in winding conductor or broken spring), "protective separation" must be guaranteed.
Relays are specified and tested according to IEC 255 and VDE 0435. Neither standard contains any reference to
EN 50 178 (Equipping power installations with electronic equipment) nor is "protective separation" defined. To compound matters the test voltages quoted for the relays are based on different measurement conditions. The test voltages cannot be applied to EN 50 178 or DIN VDE 0106 Part 101. As more and more users employ only equipment that guarantees "protective separation", a lot of manufacturers of relays refer to DIN VDE 0106 and test their products accordingly. Consequently, the quoted values correspond to the requirements for "protective separation".

Standards

The following standards are fulfilled:
EN 50 178
Equipping power installations with electronic equipment
DIN VDE 0106 Part 101
Protection against flow of dangerous currents through the human body; basic requirements for protective separation within electrical equipment.
DIN VDE 0109
Insulation co-ordination within low-voltage system including clearance and creepage distances for assembled PCBs.
DIN VDE 0435
Electrical relays, all-or-nothing relays

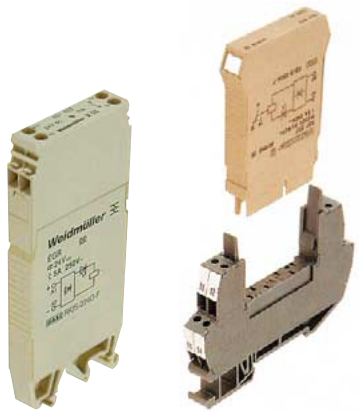
Input circuit

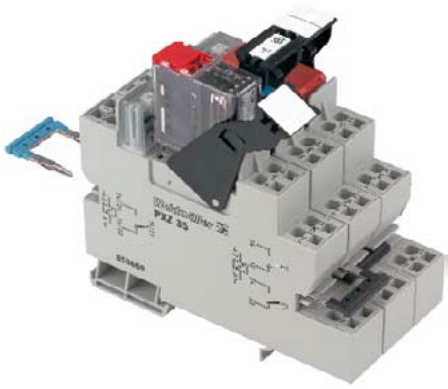
Input voltage [V]	Reference voltage at which the relay coupler operates. Typical reference voltages: => 5 V DC, 12, 24, 48, 60, 115, 230 V AC/DC
Input current [mA]	Quotient resulting from input voltage and input resistance. Input resistance => coil resistance + resistance of drive (R, LED, rect. …)
Rated power consumption [W/VA]	Input voltage x input current AC/DC with tolerance of +/- 10% or +5/-15% Typical range for relay coupler: 250 mW > Pv > 1 W 0.4 VA > Pv > 1.2 VA
Pull-in voltage [V]	Smallest input voltage that relay coupler requires in order to respond (T_{amb} = 293 K)
Pick-up current [mA]	Smallest input current required to switch relay from inoperative to operating position (T_{amb} = 293 K)
Pull-in power [W/VA]	Product of pull-in voltage and pick-up current
Drop-out voltage [V]	Voltage level at which relay has definitely released
Self reset current [mA]	Input current level at which relay has definitely released

Output circuit

Output voltage [V]	Max. voltage that can be applied to relay contact
Switching current [A]	Current that can flow for max. of 4 sec. after relay contact has closed
Continuous current [A]	Current that flows continuously after contact has closed
Switching power [W/VA]	Product of output voltage and switching current with resistive, inductive and capacitive load
Min. switching power [mW]	Smallest amount of power that can be switched via contact
Service life	Number of switching operations before contact fails - mechanical => with no electric load - electrical => with resistive or inductive AC/DC load
Pick-up lag [ms]	Length of time from application of energizing voltage until contact closes/opens
Drop-out lag [ms]	Length of time from breaking the energizing circuit until contact closes/opens
Contact bounce time [ms]	Length of time between first and last closing/opening of contact when relay picks up or drops out
Switching frequency [Hz]	Switching operations per sec. with a duty factor of 1 : 2 (t_{on} = t_{off})
Withstand voltage [kV]	Max. test voltage between input and output circuits which does not cause any discharge
Reliable separation	Feature of relay coupler that conform to VDE 0160 and VDE 0106 Part 101
Electric arc	Current flow between contact surfaces as they open, caused by ionization
Contact wear	Switching inductive loads leads to considerable changes in the composition of the materials used. The results are: => formation of pits or peaks on the surface of contacts => failure due to interlocking of contacts
Spark absorption	Limitation of transient overvoltages by connecting supplementary circuit across inductive loads => RC combinations => Z-diodes/suppressor diodes => varistors
Reduction factor	Factor by which service life is reduced when switching inductive loads

Types of Housings for Relay Coupler





Component housing EG

Weidmüller coupling modules are enclosed in housings appropriate for industrial applications. The housings are suitable for fitting onto mounting rails TS 32, TS 35 x 7.5 or TS 35 x 15 in accordance with European standards EN 50 035 and EN 50 022.

Weidmüller component housings **EG 1** and **EG 2** are 18 mm wide.

The fully enclosed EG housings are equipped with clamping yoke screw connections or push-on connections to connect conductors. Conductors with the following cross-sections can be connected:
solid core: 0.5...4 mm² or
flexible: 0.5...2.5 mm².

The component housing **EG 7** has a special status. It has been specifically designed to accommodate 10-mm slim relays and optocouplers.
EG 7 relay couplers can be optionally mounted onto TS 32 or TS 35 rails.

The RST EG 7 locking socket is also available for use with the pluggable relays couplers.

The enclosed EG 7 housing are equipped with clamping yoke screw connections. The following conductor cross-sections can be connected:
NO/NC: 0.5...1.5 mm²
Changeover (RST): 0.5...2.5 mm².

Component housing WAVEBOX

It is important to provide modern electronics components with housings suitable for the function. Setting and operating functions must be guaranteed; technical requirements with respect to heat dissipation and EMC properties are to be supported.

An ideal design saves space and wiring costs in the switchgear cabinet. In addition, ergonomics and design are becoming increasingly important for high-quality relay coupler interfaces.

The WAVEBOX fulfils these criteria and is further distinguished by the following:

- Optimal width for any application (12.5 mm, 17.5 mm, **22.5** mm)
- Large component assembly surface; SMDs mountable on solder side
- No tools required for assembly
- Pluggable PCBs
- Pluggable cross-connection via ZQV 2.5 N
- Hinged, transparent cover
- Screw/plug and socket connector BLZ 5.08
- Optional tension clamp/plug and socket connector BLFZ 5.08
- Marking option with WS tags
- Mount onto TS 35

Connection systems
BLZ screw/plug-in connectors and BLZF tension clamp/plug-in systems for flexible conductors up to 2.5 mm², to guarantee maximum wiring flexibility.
Removing printed circuit boards
Accomplished by depressing the locking clips at the side of the headpiece, and withdrawing the terminal level and PCB from the housing. This is not permitted when the supply is connected.
Cross-connection
The ZQV 2.5 N/2 cross-connector can connect housings of the same family at the base of the housing. The cross-connection can be loaded with a current of up to 8 A. This allows the supply voltage to be cross-connected from one electronics module to another.
The voltage at the cross-connection must not exceed 50 V.
Ventilation vents
Ventilation vents, arranged at an angle, temper and ventilate the lower side of the housings.

Modular system PLUGSERIES/PLUGRELAY

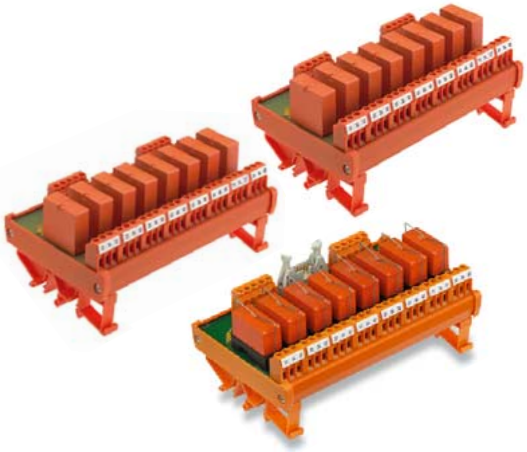
is a new generation of pluggable relay couplers. The core of this system is an innovative relay socket **PXS** or **PXZ**.
Weidmüller has combined the functionality and experience from its relay and terminal block business in this product.
The PLUGRELAY is the ideal connection technology between the relay and the application.

Modular system principle

The PLUGSERIES is particularly service friendly.
Commercially available relays are plugged; retainer and release clips ensure stability, LED indicators with free-wheeling diodes can be easily plugged.

- Relays can be easily plugged
  - suitable for small electric circuits standard design and BGD
- Independent connection technology: screw or tension clamp rated cross-section 0.5...2.5 mm²
- Robust design of retainer / release clip
- One or two changeover contacts Max. current switched 16 A
- Low wiring costs thanks to ZQV 25N cross-connectors (pluggable)
- Service-friendly modular system
  - relay socket, LED indicators, retainer clips and relays
  - mount onto TS 35
  - marking options with WS markers on retainer clips
- Pluggable LED indicator with free-wheeling diode

Types of Housings for Relay Coupler



Weidmüller RS locking socket

Locking sockets with relays RS 30, 31, 32 are either 11.2 mm or 25 mm wide depending on version. The open profile makes the use of pluggable relays possible.
Modules mounted onto the locking sockets are provided with clamping yoke screw connections or push-on connectors for wiring conductors.
Conductors with the following cross-sections can be connected:
solid core: 0.5...4 mm^2
flexible: 0.5...2.5 mm^2.

Locking sockets with multiple interfaces

RSM multiple interfaces can be optionally assembled with 4, 8 or 16 relays.
To save wiring costs on the input side, variants are offered with joint positive and negative potentials.
The PCB connectors are provided with clamping yoke screw connections for conductors with the following cross-sections:
solid core: 0.5...4 mm^2 or
flexible: 0.5...2.5 mm^2.
Some versions of the RSM coupler have a male connector block available for connecting pre-assembled cables on the input side in accordance with IEC 603-1/DIN 41 651.

Minicoupler DK

All DKR mini coupler components fulfil demands for slimmest possible design. The sensational width of only 6 mm is achieved by using state-of-the-art surface mountable components SMDs. 4 and 5 screw-connections are offered for 0.5...4 mm^2 conductor cross-sections. The mini couplers offer a wide spectrum for coupling digital sensor/actuator signals between automation devices and the field process. DKR relay couplers can receive and standardise signals with varying voltages from the field.

Miniconditioner MCZ

The 6-mm MCZ housing is one of the slimmest of its kind. It has the following distinguishing features:
- Z-spring reduces mounting costs
- integrated cross-connection options in the input and outputs minimise wiring costs

MCZR miniconditioner (relay coupler) are available with 4 or 5 Z-spring connections. The clampable conductor cross-section is 0.5...1.5 mm^2.

MICROSERIES

The relay coupler and optocoupler variants from the **MICROSERIES** are used in applications in industrial automation to isolate and couple digital input and output signals. Their compact design means that they are particularly suitable for use on sub-distribution boards 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 4 N
- Wide input voltage spectrum from 5 ... 230 V
- LED-indicator reverse-connect protection free-wheeling diode
- Housing material: WEMID Flammability class: V0 in accordance with UL 94
- Innovative retaining and release system
- Marking surfaces for fitting standard WS 12/6 markers

CE-marking

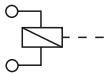
Weidmüller relay couplers are marked with the CE symbol and comply with the requirements of EN 50 081 Part 1 and EN 50 082 Part 2. They can therefore be used for both industrial as well as for applications in residential, commercial and light industry.

Appropriate ESD measures should be taken during installation. If supply cables are particularly long, overvoltage protection should be provided to prevent interference from electrical disturbance in the atmosphere.

Relay Coupler

Electromechanical switching

Output

24 V 

Housing	1	1	1	2 x	2	3 x	2 x	4 x	8 x	16 x
EG	● 0133660000 Page 72	● 0133560000 Page 72					● 0160260000 Page 73			
	● 0536260000 Page 72	● 0542660000 Page 72					● 0123060000 Page 73			
WAVESERIES WRS			● 8275350000 ● 8286280000 ● 8416210000 ● 8418220000 ● 8418230000 Page 74	● 8418240000 ● 8418250000 Page 76	● 8418270000 ● 8418280000 Page 77	● 8418330000 Page 79	● 8418300000 ● 8418310000 ● 8418320000 Page 78			
EG 7*	● 8216520000 ● 8147120000 ● 8092340000 Page 80	● 8216530000 ● 8147140000 ● 8092350000 Page 80	● 8216570000 ● 8216560000 ● 8216580000 Page 80							
PLUGSERIES **PRS / PRZ**			● 8530621001 ● 8530691001 ● 8536530000 ● 8536650000 Page 82				● 8530631001 ● 8530701001 ● 8536560000 ● 8536680000 Page 82			
RS 30	● 1101661001 ● 1101611001 ● 1101621001 ● 1101761001 ● 1101711001 ● 1101721001 Page 91	● 1100961001 ● 1100911001 ● 1100921001 ● 1101061001 ● 1101011001 ● 1101021001 Page 91	● 1181511001 ● 1181521001 ● 1100260000 ● 1100210000 ● 1100220000 ● 1100360000 Page 91							
RS 31			● 1128361001 ● 1128331001 ● 1128311001 Page 92							
RS 32							● 9406121001 ● 9406221001 Page 94			
RSM								● 1173461001 ● 1113361001 ● 1113461001 ● 1112361001 ● 1112761001 Page 97	● 1113161001 ● 1100061001 ● 1113561001 ● 1113661001 ● 1107761001 ● 1112661001 ● 1173561001 Page 97	● 1113261001 ● 1100161001 ● 1113761001 ● 8018221001 ● 1107861001 ● 1113861001 ● 1113061001 ● 1173661001 Page 97
DKR 32	● 8016620000 ● 8008110000 Page 70									
DKR 35	● 8016610000 ● 8008170000 Page 70		● 8181980000 ● 8181970000 Page 71							
	● 8215620000 Page 71									
DKR 35/32			● 9454910000 Page 71							
MCZ R			● 8365980000 ● 8442960000 ● 8390590000 Page 68							
MICROSERIES **MRS / MRZ**			● 8533640000 ● 8533660000 ● 8556050000 ● 8556120000 Page 87							

* Approval by Germanischer Lloyd

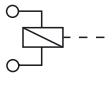
Reliable separation

● 24 V dc
● 24 Vuc/ac

Relay Coupler

Electromechanical switching

Output

Housing		 2 x	 3 x	 2 x	 4 x	 8 x	 16 x
48 V							
EG	● **0662660000** Page 72	● **0662460000** Page 72		● **0160360000** ● **0123260000** Page 73			
WAVESERIES WRS		● **8286280000** Page 74	● **8418250000** Page 76	● **8418280000** Page 77		● **8418310000** Page 78			
EG 7*	● **8092370000** Page 81	● **8092380000** Page 81	● **8216590000** Page 81						
RS 30	● **1101861001** ● **1101811001** ● **1101821001** ● **1101961001** ● **1101911001** ● **1101921001** Page 91	● **1101161001** ● **1101111001** ● **1101121001** ● **1101261001** ● **1101211001** ● **1101221001** Page 91	● **1100460000** ● **1100410000** ● **1100420000** ● **1100560000** Page 91						
RS 31			● **1150761001** Page 92						
RS 32						● **9406321001** Page 94			
						● **9406421001** ● **1122661001** Page 95			
RSM							● **1114061001** ● **1113961001** ● **1112461001** ● **1173761001** Page 97	● **1114161001** ● **1114261001** Page 97	● **1114361001** ● **1114461001** Page 97
MICROSERIES **MRS / MRZ**			● **8556040000** ● **8556110000** Page 87						
115 V							
EG						● **0141360000** ● **0160460000** Page 73			
WAVESERIES WRS			● **8418220000** Page 75	● **8418260000** Page 76	● **8418290000** Page 77				
EG 7*	● **8092430000** Page 81	● **8092440000** Page 81	● **8216610000** Page 81						
PLUGSERIES **PRS / PRZ**			● **8536510000** ● **8536610000** ● **8530640000** ● **8530790000** Page 82			● **8536520000** ● **8536630000** ● **8530660000** ● **8530720000** Page 82			
RS 30	● **1155161001** ● **1155111001** ● **1155121001** ● **1102161001** ● **1102111001** ● **1102121001** Page 91	● **1155211001** ● **1155261001** ● **1155221001** ● **1101461001** ● **1101411001** ● **1101421001** Page 91							
RS 31			● **1150361001** ● **1150461001** Page 92						
RS 32						● **1122761001** ● **9406621001** Page 95			
RSM							● **1114561001** Page 97	● **1114661001** Page 97	● **1114761001** Page 97
MCZ R			● **8420880000** ● **8467470000** Page 61						
MICROSERIES **MRS / MRZ**			● **8556030000** ● **8556100000** Page 87						

* Approval by Germanischer Lloyd

Reliable separation

● Vdc
● Vuc/ac

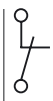
Digital signal processing

Relay Coupler

Electromechanical switching

Output

230 V

Housing				 2 x		 3 x	 2 x	 4 x	 8 x	 16 x
EG	● **0543860000** Page 72	● **0543660000** Page 72					● **0142460000** Page 73			
WAVESERIES WRS			● **8418230000** Page 75	● **8418260000** Page 76	● **8418290000** Page 77	● **8418340000** Page 79	● **8418320000** Page 78			
EG 7*	● **8092460000** ● **8178200000** Page 81	● **8092470000** Page 81	● **8216620000** ● **8216630000** Page 81							
PLUGSERIES PRS / PRZ			● **8530671001** ● **8530731001** Page 82				● **8530681001** ● **8530741001** Page 82			
RS 30	● **1102261001** ● **1102211001** ● **1102221001** Page 91	● **1101561001** ● **1101511001** ● **1101521001** Page 91	● **1100860000** Page 91							
RS 31			● **1128461001** ● **1128431001** ● **1128411001** Page 93							
RS 32							● **9406721001** ● **1122761001** Page 95			
RSM								● **1114861001** ● **1123461001** Page 97	● **1114961001** ● **1108061001** Page 97	● **1115061001** ● **1108261001** Page 97
MCZ R			● **8237710000** Page 69							
MICROSERIES MRS / MRZ			● **8556020000** ● **8556090000** Page 87							
240 V										
RS 30	● **1128561001** ● **1128511001** ● **1128521001** Page 91	● **1128661001** ● **1128611001** ● **1128621001** Page 91								

* Approval by Germanischer Lloyd

Reliable separation

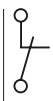
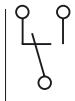
● 230 Vuc/ac

Relay Coupler

Electromechanical switching

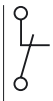
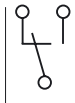
12 V

Output

Housing				 2 x		 3 x	 2 x	 4 x	 8 x	 16 x
EG							● **0160160000** Page 73			
WAVESERIES WRS				● **8418240000** Page 76	● **8418270000** Page 77		● **8418300000** Page 78			
EG 7*	● **8092310000** Page 80	● **8092320000** Page 80	● **8216550000** Page 80							
PLUGSERIES PRS / PRZ			● **8536471001** ● **8536571001** Page 82				● **8536501001** ● **8536591001** Page 82			
RS 30	● **1129421001** Page 91	● **1129521001** Page 91	● **1129660000** Page 91							
RS 32							● **9406021001** Page 94			
DKR 35	● **8171100000** Page 70									
MICROSERIES MRS / MRZ			● **8556070000** ● **8556140000** Page 86							

4…60 V

Output

Housing				 2 x		 3 x	 2 x	 4 x	 8 x	 16 x
WAVESERIES WRS 2, 4…24 V			● **8275320000** Page 74							
WAVESERIES WRS 60 V			● **8418210000** Page 74							
EG 7*, 60 V	● **8092400000** Page 81	● **8092410000** Page 81	● **8216600000** Page 81							
RS 30, 60 V	● **1102061001** ● **1102011001** ● **1102021001** Page 91		● **1100660000** ● **1100610000** ● **1100620000** Page 91				● **9406521001** Page 94			
DKR 32, 5 V	● **8019600000** Page 70									
DKR 35, 5 V	● **8019610000** Page 70									
MCZ R, 60 V			● **8470380000** Page 68							
MICROSERIES MRS / MRZ, 5 V			● **8556080000** ● **8556150000** Page 86							
MICROSERIES MRS / MRZ, 60 V			● **8556060000** ● **8556130000** Page 87							

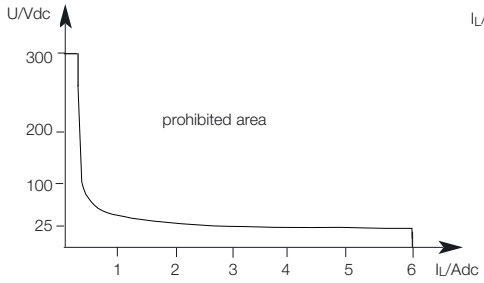
* Approval by Germanischer Lloyd

Reliable separation

● Vdc
● Vuc/ac

Miniconditioners MCZ R

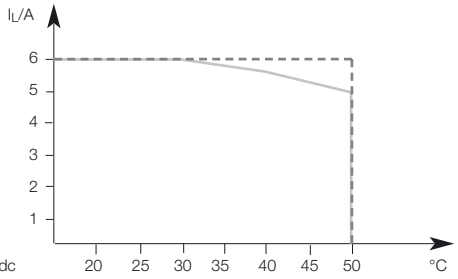
Limit diagram

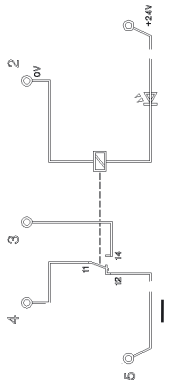
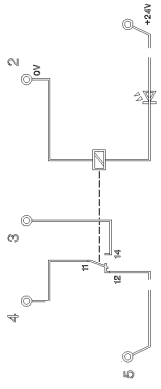
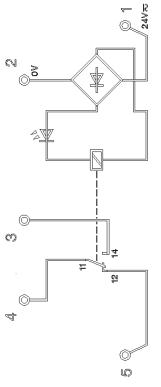
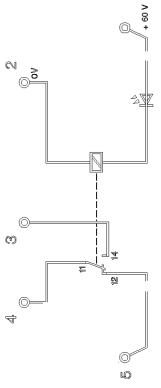


Derating curve

rowed without clearances on the mounting rail

rowed with 20 mm spacing on the mounting rail



	MCZ R 24 Vdc	MCZ R 24 Vdc/Au	MCZ R 24 Vac/dc	MCZ R 60 Vdc
Schematic circuit diagram				
				
Ordering data	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
for TS 35	MCZ R 24 Vdc **8365980000**	MCZ R 24 Vdc/Au **8442960000**	MCZ R 24 Vac/dc **8390590000**	MCZ R 60 Vdc **8470380000**
Technical data				
Input				
Input voltage	24 Vdc ±20 % (19.2...28.8 V)	24 Vdc ±20 % (19.2...28.8 V)	24 Vac/dc ±10% (21.6...26.4 V)	60 Vdc ±20% (48...72 V)
Input current at U_N	6.3 mA ±10 % (5.7...6.9 mA)	6.3 mA ±10 % (5.7...6.9 mA)	ac: 10.8 mA±15% (9.2...12.4 mA)	3 mA ±20 % (12.4...3.6 mA)
			dc: 6.1 mA ±15% (5.2...7.1 mA)	
Max. input power	156 mW ±10%	156 mW ±10%	ac: 160 mVA ±10 %	180 mW ±45 %
			dc: 151 mW ±10 %	
Making threshold	12 V...19 V	12 V...19 V	ac: ca. 17 V / dc: ca. 19 V	ca. 38 V
Cut-out threshold	4 V...5.5 V	4 V...5.5 V	ac: ca. 7 V / dc: ca. 4 V	ca. 14 V
Reaction time at U_N (typ.)	4.5 ms	4.5 ms	5 ms	4.5 ms
Release at U_N (typ.)	10 ms	10 ms	30 ms	10 ms
Capacity working resistance to reduction at dissipated energy	no	no	no	no
Functionality	operating indication	operating indication	operating indication	operating indication
	reverse polarity protect. diode	reverse polarity protect. diode	bridge rectifier	reverse polarity protect. diode
	free wheel diode	free wheel diode		free wheel diode
Cross-connection on pin	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4
Output	1 changeo. cont. ($AgSnO_2$)	1 changeo. cont. (5 µ Au)	1 changeo. cont. ($AgSnO_2$)	1 changeo. cont. ($AgSnO_2$)
Switching voltage	max. 300 Vdc / 400 Vac	max. 300 Vdc / 400 Vac	max. 300 Vdc / 400 Vac	max. 300 Vdc / 400 Vac
ac: continuous current/switching power (see derating diagram)	max. 6 A / max. 1500 VA	max. 6 A* / max. 1500 VA	max. 6 A / max. 1500 VA	max. 6 A / max. 1500 VA
Min. switching current	100 mA (at U = 10 V)	[1] 0.1 mA	100 mA (at U = 10 V)	100 mA (at U = 10 V)
Switch-on current	max. 6 A	max. 6 A*	max. 6 A	max. 6 A
dc: Continuous current/switching power	see limit diagram	see limit diagram	see limit diagram	see limit diagram
Mechanical service life	20 x 10^6 switching operations	20 x 10^6 switching operations	20 x 10^6 switching operations	20 x 10^6 switching operations
Max. switching frequency at nominal load	0.1 Hz	0.1 Hz	0.1 Hz	0.1 Hz
Insulation coordination acc. to EN 50178				
Rated voltage	300 V	300 V	300 V	300 V
Rated impulse voltage	4 kV	4 kV	4 kV	4 kV
Overvoltage category	III	III	III	III
Pollution severity	2	2	2	2
Clearances and creepage distances	≥ 5.5 mm	≥ 5.5 mm	≥ 5.5 mm	≥ 5.5 mm
Insulation coord.- and voltage proof, input/output mounting rail	4 kV_{eff} / 1 min	4 kV_{eff} / 1 min	4 kV_{eff} / 1 min	4 kV_{eff} / 1 min
Ambient temperature	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C
Storage temperature	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C
Conductor	AWG 22...12	AWG 22...12	AWG 22...12	AWG 22...12
Conductor cross-section	1.5 mm^2	1.5 mm^2	1.5 mm^2	1.5 mm^2
Approvals	CE, UL, CSA, GL	CE, UL, CSA, GL	CE, UL, CSA, GL	CE, UL, CSA
Overall width	6 mm	6 mm	6 mm	6 mm
Accessories	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
End plate	AP MCZ 1.5 **8389030000**	AP MCZ 1.5 **8389030000**	AP MCZ 1.5 **8389030000**	AP MCZ 1.5 **8389030000**
Further accessories, dimensions and connection data see	Page 305	Page 305	Page 305	Page 305

This module can be used as a universal interface between the controller and actuator for switching medium-sized loads.

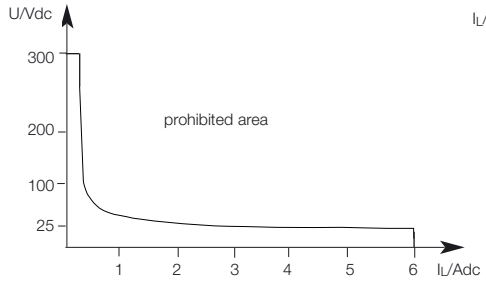
- Reduces installation and commissioning times by use of the proven Z-spring connection technology
- Pluggable cross-connections in input and output minimise wiring costs
- 6-mm width

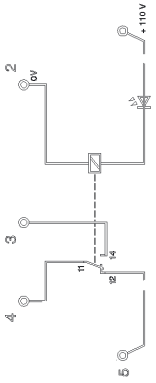
[1]) depends on load conditions

* the hard-gold plating is resistant for parameters 36 Vdc, 50 mA with 10^6 cycles

MCZ R 110 Vdc

Limit diagram





Type	Cat. No.
MCZ R 110 Vdc	**8467470000**

110 Vdc ±10%	
2.85 mA ±25%	
340 mW ±25%	
ca. 68 V / 1.6 mA	
ca. 19 V / 0.4 mA	
4.5 ms	
10 ms	
no	
operating indication	
bridge rectifier	
2, 3, 4	
1 changeo. cont. ($AgSnO_2$)	
max. 300 Vdc / 400 Vac	
max. 6 A / max. 1500 VA	
100 mA (at U = 10 V)	
max. 6 A	
see limit diagram	
20 x 10^6 switching operations	
0.1 Hz	
300 V	
4 kV	
III	
2	
≥ 5.5 mm	
4 kV_{eff} / 1 min	
-25 °C…+50 °C	
-40 °C...+60 °C	
AWG 22...12	
1.5 mm^2	
CE, UL, CSA	
6 mm	

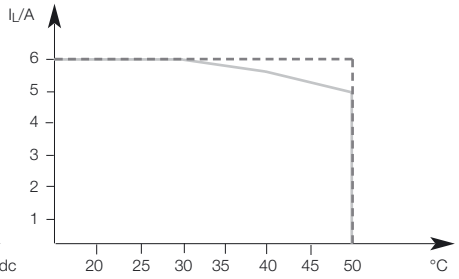
Type	Cat. No.
AP MCZ 1.5	**8389030000**
Page 305	

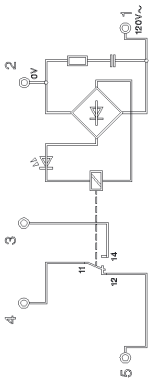
MCZ R 120 Vac

Derating curve

rowed without clearances on the mounting rail

rowed with 20 mm spacing



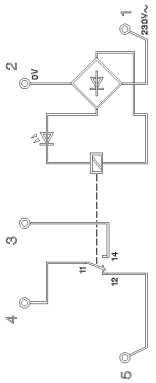


Type	Cat. No.
MCZ R 120 Vac	**8420880000**

120 Vac -15 %/+10 %	
7 mA ±15 %	
0.85 VA ±15 %	
(380 mW ± 15 %)	
ca. 70 V / 4 mA	
ca. 22 V / 1.3 mA	
8 ms	
30 ms	
yes	
operating indication	
bridge rectifier	
2.3, 4	
1 changeo. cont. ($AgSnO_2$)	
max. 300 Vdc / 400 Vac	
max. 6 mA / max. 1500 VA	
100 mA (at U = 10 V)	
max. 6 A	
see limit diagram	
20 x 10^6 switching operations	
0.1 Hz	
300 V	
4 kV	
III	
2	
≥ 5.5 mm	
4 kV_{eff} / 1 min	
-25 °C…+50 °C	
-40 °C...+60 °C	
AWG 22...12	
1.5 mm^2	
CE, UL, CSA	
6 mm	

Type	Cat. No.
AP MCZ 1.5	**8389030000**
Page 305	

MCZ R 230 Vac



Type	Cat. No.
MCZ R 230 Vac	**8237710000**

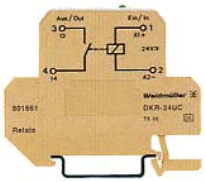
230 Vac ±10%	
9.5 mA ±15 % (8...11mA)	
2.1 VA ±15 %	
ca. 115 V / 5 mA	
ca. 60 V / 2.5 mA	
8 ms	
30 ms	
no	
operating indication	
bridge rectifier	
2.3, 4	
1 changeo. cont. ($AgSnO_2$)	
max. 300 Vdc / 400 Vac	
max. 6 A / max. 1500 VA	
100 mA (at U = 10 V)	
max. 6 A	
see limit diagram	
20 x 10^6 switching operations	
0.1 Hz	
300 V	
4 kV	
III	
2	
≥ 5.5 mm	
4 kV_{eff} / 1 min	
-25 °C…+50 °C	
-40 °C...+60 °C	
AWG 22...12	
1.5 mm^2	
CE, UL, CSA	
6 mm	

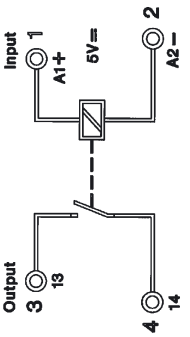
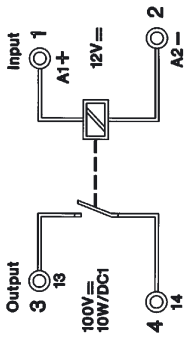
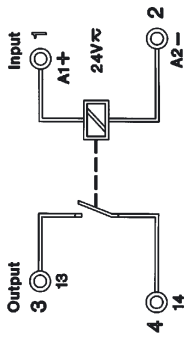
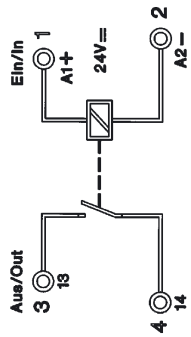
Type	Cat. No.
AP MCZ 1.5	**8389030000**
Page 305	

Relay Couplers in Component Housings Mini coupler DKR

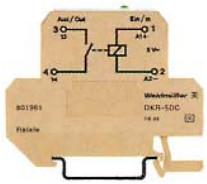
These modules are used for protective separation of input signals and adjustment of signal levels

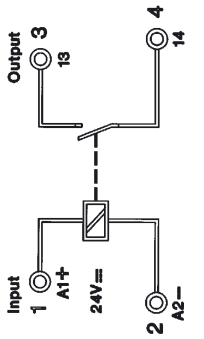
- Cost-effective solution for adjustment of power and potential
- Low input power
- Screw connection technology
- 6-mm width



	DKR 5 Vdc	DKR 12 Vdc	DKR 24 Vac/dc	DKR 24 Vdc
Schematic circuit diagram				
Ordering data	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
for TS 32 Y	DKR 5 Vdc **8019600000**		DKR 24 Vac/dc **8008110000**	DKR 24 Vdc **8016620000**
for TS 35 W	DKR 5 Vdc **8019610000**	DKR 12 Vdc **8171100000**	DKR 24 Vac/dc **8016610000**	DKR 24 Vdc **8008170000**
With combination foot TS 32/TS 35				
Technical data	Input: bottom	Input: bottom	Input: bottom	Input: bottom
Input voltage	5 Vdc ±5 %	12 Vdc ±10 %	24 Vac/dc ±20 %	24 Vdc ±20 %
Input current	12.5 mA	12 mA	11.5 mAac/9 mAdc	9.3 mA
Input current, limited = SPS able				
Input power	65 mW	144 mW	300 mVA/220 mW	225 mW
Pick-up lag	typ. 0.7…2.5 ms	typ. 0.7…2.5 ms	0.6…4.5 ms ac/0.9…1.3 ms dc	typ. 0.7…2.5 ms
Turn off delay	typ. 0.2…2.0 ms	typ. 0.2…2.0 ms	12.7…25 ms ac/14.4…16.4 ms dc	typ. 0.2…2.0 ms
Max. switch-on current	500 mA	500 mA	500 mA	500 mA
Max. switching capacity	10 W/10 VA	10 W/10 VA	10 W/10 VA	10 W/10 VA
Max. output voltage	100 V	175 V	170 V	100 V
Max. output current	500 mA	500 mA	500 mA	500 mA
Min. output current				
Max. switching frequency	200 Hz	25 Hz	5 Hz	20 Hz
Contact material	RH/RU	RH/RU	RH/RU	RH/RU
Contacts	1 normally-open contact	1 normally-open contact	1 normally-open contact	1 normally-open contact
Service life mechanical	10^9 switching operations	10^9 switching operations	10^9 switching operations	10^9 switching operations
at I_L= 10 mA	5×10^8 switching operations	5×10^8 switching operations	5×10^8 switching operations	5×10^8 switching operations
Insulation coordination acc. to EN 50178				
Rated voltage	150 V	150 V	150 V	150 V
Rated impulse voltage	1.5 kV	1.5 kV	1.5 kV	1.5 kV
Overvoltage category	III	III	III	III
Pollution severity	2	2	2	2
Clearances and creepage distances	≥3 mm	≥3 mm	≥3 mm	≥3 mm
Operating temperature without clearance	-25 °C…+40 °C	-25 °C…+40 °C	-25 °C…+40 °C	-25 °C…+40 °C
with clearance	-25 °C…+50 °C	-25 °C…+50 °C	-25 °C…+50 °C	-25 °C…+50 °C
Storage temperature	-40 °C…+60 °C	-40 °C…+60 °C	-40 °C…+60 °C	-40 °C…+60 °C
Conductor	AWG 22…12	AWG 22…12	AWG 22…12	AWG 22…12
Conductor cross-section	0.5…4 mm^2	0.5…4 mm^2	0.5…4 mm^2	0.5…4 mm^2
Overall width	6 mm	6 mm	6 mm	6 mm
Accessories	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
End plate	AP DKT4 **0687560000**	AP DKT4 **0687560000**	AP DKT4 **0687560000**	AP DKT4 **0687560000**
Further accessories, dimensions and connection data see	Page 305	Page 305	Page 305	Page 305

DKR 24 Vac/dc

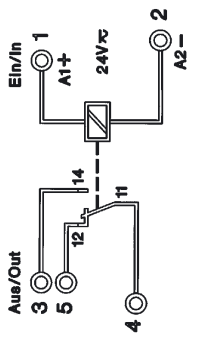




Type	Cat. No.
DKR 24 Vdc	**8215620000**
Input: top	
24 Vdc ±20 %	
9.3 mA	
225 mW	
typ. 0.7…2.5 ms	
typ. 0.2…2.0 ms	
500 mA	
10 W/10 VA	
175 Vac/dc	
500 mA	
25 Hz	
RH/RU	
1 normally-open contact	
10^9 switching operations	
5×10^8 switching operations	
150 V	
1.5 kV	
III	
2	
≥3 mm	
-25 °C…+40 °C	
-25 °C…+50 °C	
-40 °C…+60 °C	
AWG 22…12	
0.5…4 mm^2	
6 mm	

Type	Cat. No.
AP DKT4	**0687560000**
Page 305	

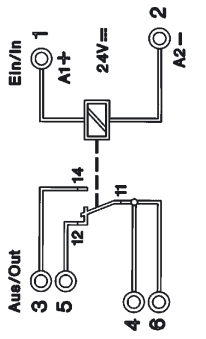
DK5R-1U



Type	Cat. No.
DK5R-1U	**9454910000**
Input: bottom	
24 Vac/dc ±20 %	
9 mAac/7 mAdc	
max. 240 mA	
6 ms	
15 ms ac/dc	
4 A	
1.5 kVA/140 W	
250 Vac/dc	
6 A	
20 Hz	
Ag Ni	
1 changeover contact	
2x10^7 switching operations	
300 V	
4 kV	
III	
2	
≥8 mm	
-40 °C...+60 °C	
-40 °C...+60 °C	
-40 °C...+60 °C	
AWG 22…12	
0.5…4 mm^2	
6 mm	

Type	Cat. No.
AP DK5	**8268870000**
Page 305	

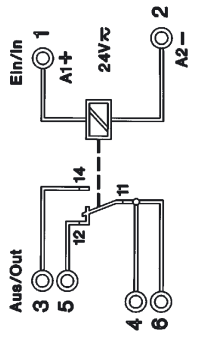
DKR 24 Vdc



Type	Cat. No.
DKR 24 Vdc	**8181980000**
Input: bottom	
24 Vdc ±20 %	
11.5 mA	
384 mW	
5 A	
2 kVA/192 W	
250 Vac/dc	
8 A	
100 mA	
25 Hz	
AgCdO	
1 changeover contact	
≥10^7 switching operations	
≥3×10^6 switching operations	
300 V	
6 kV	
IV	
2	
≥8 mm	
-25 °C…+40 °C	
-25 °C…+50 °C	
-40 °C…+60 °C	
AWG 22…12	
0.5…4 mm^2	
18 mm	

Type	Cat. No.
AP DKT4	**0687560000**
Page 305	

DKR 24 Vac/dc

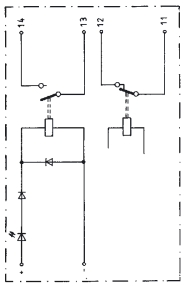
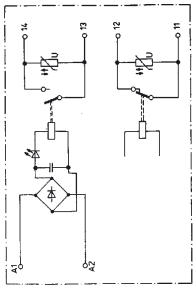
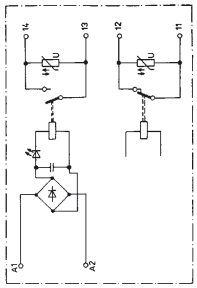


Type	Cat. No.
DKR 24 Vac/dc	**8181970000**
Input: bottom	
24 Vac/dc ±20 %	
20 mAac/16 mAdc	
max. 100 mA	
480 mWac/400 mWdc	
5 A	
2 kVA/192 W	
250 Vac/dc	
8 A	
100 mA	
ac: 5 Hz dc: 25 Hz	
AgCdO	
1 changeover contact	
≥10^7 switching operations	
≥3×10^6 switching operations	
300 V	
6 kV	
IV	
2	
≥8 mm	
-25 °C…+40 °C	
-25 °C…+50 °C	
-40 °C…+60 °C	
AWG 22…12	
0.5…4 mm^2	
18 mm	

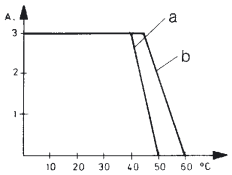
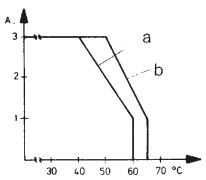
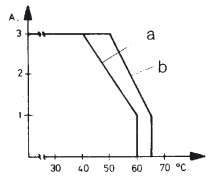
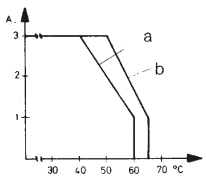
Type	Cat. No.
AP DKT4	**0687560000**
Page 305	

Relay Coupler in Component Housings EG 2

with 1 NO or 1 NC

	EGR EG 2 24 V AC/DC voltage	**EGR EG 2** 24 V Direct and alternating voltage	**EGR EG 2** 48 V	**EGR EG 2** 230 V AC voltage
				
Schematic circuit diagram				

Ordering data	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
	NC	**0133560000**[1]	NC	**0542660000**	NC	**0662460000**	NC	**0543660000**
	NO	**0133660000**[1]	NO	**0536260000**	NO	**0662660000**	NO	**0543860000**

Rated data				
Input voltage	**24 V–, ±10 %**	**24 V0, ±10 %**	**48 V0, ±10 %**	**230 V~, +5 % –15 %**
Rated consumption – (W)	0.36 W	0.35 W	0.8 W	–
Rated consumption ~ (VA)	–	0.6 VA	0.9 VA	3.2 VA
Drop-out current of the relay** (at 20 °C)	1.5 mA	1.5 mA–/4 mA~	1.5 mA–/3.5 mA~	4 mA
Max. output voltage	240 V~/100 V–	240 V~/100 V–	240 V~/100 V–	240 V~/100 V–
Continuous current	3 A	3 A	1 A	1 A
Derating curve a = mounted horizontally on rail without clearance b = mounted horizontally on rail with clearance x 20 mm				
Continuous current / Ambient temperature				
Switch-on current	5 A	5 A	5 A	5 A
Max. switching capacity with resistor load	600 VA/120 W	600 VA/120 W	600 VA/120 W	600 VA/120 W
Min. switching capacity/switching current	40 µW	40 µW	40 µW	40 µW
Bounce times	< 2 ms	< 2 ms	< 2 ms	< 2 ms
Switching times, typical				
–, pick-up lag	< 5.3 ms	< 8 ms	< 9 ms	< 5 ms
–, turn off delay	< 8.3 ms	< 22 ms	< 12 ms	< 7 ms
Max. switching frequency	50 Hz	30 Hz	37 Hz	40 Hz
Contact material	AgNi, gold-plated	AgNi, gold-plated	AgNi, gold-plated	AgNi, gold-plated
Service life, mechanical	> 10^7 switching operations	> 10^7 switching operations	> 10^7 switching operations	> 10^7 switching operations
–, 24 V–, 1 A, resistive load	> 6 x 10^5 switching operations	> 6 x 10^5 switching operations	> 6 x 10^5 switching operations	> 6 x 10^5 switching operations
–, 230 V~, 3 A, resistive load	> 10^5 switching operations	> 10^5 switching operations	> 10^5 switching operations	> 10^5 switching operations
Status indicator	Green LED	Green LED	Green LED	Green LED
Storage temperature	–40 °C…+60 °C	–40 °C…+60 °C	–40 °C…+60 °C	–40 °C…+60 °C
Ambient temperature				
–, mounted on rail without clearance	–25 °C…+40 °C	–25 °C…+40 °C	–25 °C…+40 °C	–25 °C…+40 °C
–, mounted on rail with clearance ≥ 20 mm	–25 °C…+50 °C	–25 °C…+50 °C	–25 °C…+50 °C	–25 °C…+50 °C
Approvals	CSA (013366)			
Insulation coordination acc. to EN 50178				
Overvoltage category	III	III	III	III
Pollution severity	3	3	2	2
Accessories, dimensions and connection data see	Page 306, Fig. II	Page 306, Fig. II	Page 306, Fig. II	Page 306, Fig. II

** Larger values on request

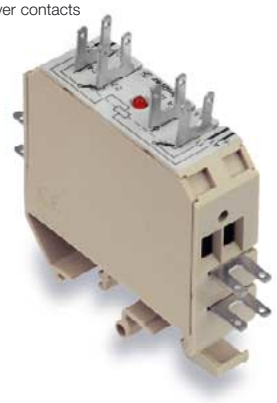
[1]) no output varistor

Relay Coupler in Component Housings EG 2

with 2.8-mm tab connection

EGR EG 2

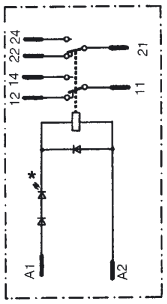
DC voltage
2 changeover contacts



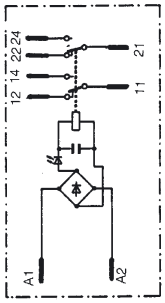
EGR EG 2

AC/DC voltage
2 changeover contacts

Schematic circuit diagram



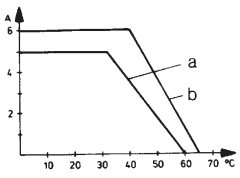
LED is parallel to coil in 12 V DC and 24 V DC versions

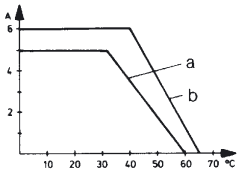


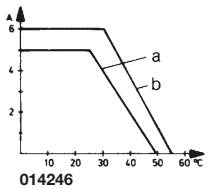
Ordering data	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
	EGR 2 RT (12 V–)	**0160160000**	EGR 2 RT (48 V–)	**0160360000**	EGR 2 RT (24 V0)	**0123060000**	EGR 2 RT (115 V0)	**0141360000**
	EGR 2 RT (24 V–)	**0160260000**	EGR 2 RT (115 V–)	**0160460000**	EGR 2 RT (48 V0)	**0123260000**	EGR 2 RT (230 V0)	**0142460000**

Rated data								
Input voltage	**12 V–**	**24 V–**	**48 V–**	**115 V–**	**24 V0**	**48 V0**	**115 V0**	**230 V0**
Rated consumption – (W)	0.61 W	0.54 W	0.65 W	0.6 W	0.7 W	0.7 W	0.6 W	1.2 W
Rated consumption ~ (VA)	–	–	–	–	1 VA	0.9 VA	0.6 VA	1.2 VA
Drop-out current of the relay** (at 20 °C)	12 mA	5.5 mA	2.5 mA	1 mA	3.5 mA–/8 mA~	2 mA–/3.5 mA~	1 mA–/1 mA~	1 mA
Max. output voltage	250 V		250 V		250 V		250 V	
Continuous current	5 A		5 A		5 A		5 A	

Derating curve
a = mounted horizontally on rail without clearance
b = mounted horizontally on rail with clearance x 20 mm







014246

Switch-on current	15 A/200 ms		15 A/200 ms		15 A/200 ms		15 A/200 ms	
Max. switching capacity with resistor load	1100 VA/144 W		1100 VA/144 W		1100 VA/144 W		1100 VA/144 W	
Min. braking capacity/switching current	5 A		5 A		5 A		5 A	
Bounce times	4 ms		4 ms		4 ms		4 ms	
Switching times, typical								
–, pick-up lag	16 ms	22 ms	18 ms	14 ms	23 ms	18 ms	17 ms	13 ms
–, turn off delay	20 ms	15 ms	16 ms	23 ms	25 ms	19 ms	17 ms	18 ms
Max. switching frequency	20 Hz	20 Hz	27 Hz	24 Hz	19 Hz	21 Hz	24 Hz	22 Hz
Contact material	Ag, gold-flashed		Ag, gold-flashed		Ag, gold-flashed		Ag, gold-flashed	
Service life, mechanical	30 x 10^6		30 x 10^6		30 x 10^6		30 x 10^6	
–, 24 V–, 1 A, resistive load	10^5 (1100 VA, cos ⁚= 1)		10^5 (1100 VA, cos ⁚= 1)		10^5 (1100 VA, cos ⁚= 1)		10^5 (1100 VA, cos ⁚= 1)	
–, 230 V~, 3 A, resistive load								
Status indicator	Red LED		Red LED		Red LED		Red LED	
Storage temperature	–40 °C…+85 °C		–40 °C…+85 °C		–40 °C…+85 °C		–40 °C…+85 °C	
Ambient temperature								
–, mounted on rail without clearance	–25 °C…+40 °C		–25 °C…+40 °C		–25 °C…+40 °C		–25 °C…+40 °C	
–, mounted on rail with clearance ≥ 20 mm								

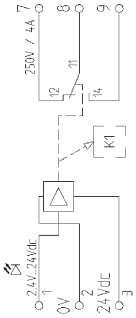
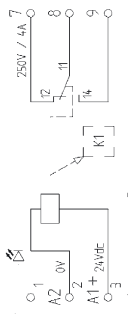
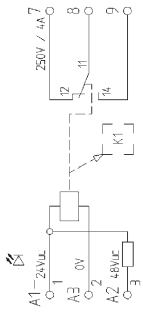
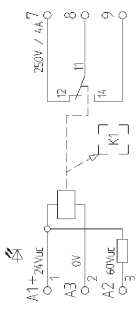
Insulation coordination acc. to EN 50178								
Overvoltage category	III		III		III		III	
Pollution severity	2		2		2		2	
Accessories, dimensions and connection data see	Page 306, Fig. III		Page 306, Fig. III		Page 306, Fig. III		Page 306, Fig. III	

** Larger values on request

WAVESERIES Relay Coupler in Component Housings

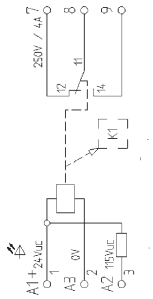
With 1 changeover contact

Relay couplers in the WAVEBOX
- Independent connection technology
  - pluggable connection unit screw or tension clamp technology
- Fast commissioning and after-sales-service service
  - pluggable PCBs
- Save wiring tasks
  - cross-connections possible at input and output

	WRS 1 2.4-24 VDC	WRS 1 24 VDC	WRS 1 24/48 VUC	WRS 1 24/60 VUC
				
Schematic circuit diagram				
				
Ordering data	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
Screw connection	WRS 1 2.4-24 Vdc **8275320000**	WRS 1 24 Vdc **8275350000**	WRS 1 24/48 Vuc **8286280000**	WRS 1 24/60 Vuc **8418210000**
Tension clamp connection	WRZ 1 **8430170000**	WRZ 1 **8430180000**	WRZ 1 **8430190000**	WRZ 1 **8430200000**
Input				
Input voltage	2.4…24 Vdc +10 %	24 Vdc±10 %	24 Vuc±10 % /48 Vuc±10%	24 Vuc±10% / 60 Vuc±10%
Input current	4.6 mAdc ±15% at Ue 12 V	9 mAdc±15%	14 mAuc±15% at Ue 24 V 14 mAuc±15% at Ue 48V	11 mAac±15% at Ue=60 V 10 mAdc±15% at Ue=60 V 10.2 mAac±15% at Ue=24 V 9 mAdc±15% at Ue=24 V
Input power	6 mW ±15% at Ue 2.4 V	220 mW±15%	0.5 VA (W)±15% at Ue=48V 0.35 VA (W)±15% at Ue=24V	0.7 VA ±15% at Ue=60 V 0.34 VA±15% at Ue=24 V 0.6 W ±15% at Ue=60 V 0.22 W±15% at Ue=24 V
Output				
Switching voltage	max. 150 Vdc /250 Vac	max. 150 Vdc /250 Vac	max. 150 Vdc /250 Vac	max. 150 Vdc/250 Vac
Continuous current AC / Switching power AC	max. 5 A /max. 1250 VA*	max. 5 A /max. 1250 VA*	max. 5A /max. 1250 VA*	max. 5 A/max. 1250 VA*
Switch-on current	max. 10 A	max. 10 A	max. 10 A	max. 10 A
Min. switching	100 mA/5 Vdc	100 mA/5 Vdc	100 mA/5Vdc	100 mA/5 Vdc
Contact material	Ag-alloy	Ag-alloy	Ag-alloy	Ag-alloy
Contact resistance (when new)	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A / 6 Vdc
Pick-up delay at nominal voltage	typ. 7 ms (NO) / 4.5 ms (NC)	typ. 7 ms (NO) / 4.5 ms (NC)	typ. 7 ms (NO) / 4.5 ms (NC)	typ. 5.4 ms (NO) / 4.2 ms (NC)
Turn off delay	typ. 6.3 ms (NO) / 5.5 ms (NC)	typ. 6.3 ms (NO) / 5.5 ms (NC)	typ. 6.3 ms (NO) / 5.5 ms (NC)	typ. 4.4 ms (NO) / 5.4 ms (NC)
Mechanical service life	20 x 10^6 switching operations	20 x 10^6 switching operations	20 x 10^6 switching operations	20 x 10^6 switching operations
Electrical service life	150 x 10^3 switching operations	150 x 10^3 switching operations	1.5 x 10^5 switching operations	150 x 10^3 switching operations
Max. switching frequency at nominal voltage	0.1 Hz	0.1 Hz	0.1 Hz	0.1 Hz
Ambient temperature	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C
Storage temperature	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C
Approvals	UL/CSA	UL/CSA	UL/CSA	UL/CSA
Insulation coordination acc. to EN 50178				
Rated voltage	300 V	300 V	300 V	300 V
Rated impulse voltage	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)
Overvoltage category	III	III	III	III
Pollution severity	2	2	2	2
Implemented clearance and creepage path	≥ 5.5 mm	≥ 5.5 mm	≥ 5.5 mm	≥ 5.5 mm
Insulation and voltage strength				
Insulation and voltage strength of entire circuit to mounting rail	4 kV_{eff} 1 min	4 kV_{eff} 1 min	4 kV_{eff} 1 min	4 kV_{eff} 1 min
Testing				
Input/output high voltage test	4 kVeff 1 s	4 kVeff 1 s	4 kVeff 1 s	4 kVeff 1 s
Accessories, dimensions and connection data see	Page 298 + 308	Page 298 + 308	Page 298 + 308	Page 298 + 308

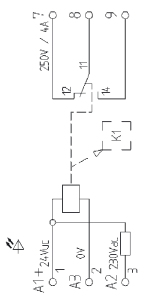
***** at ambient temperature 20°C

WRS 1 24/115 VUC

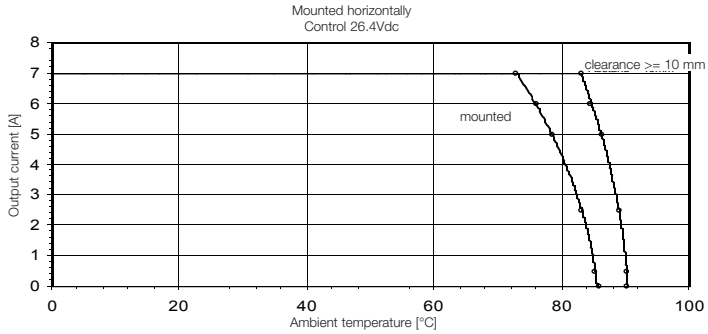


Type	Cat. No.
WRS 1 24/115 Vuc	**8418220000**
WRZ 1	**8430210000**
24 Vuc±10% / 115 Vuc±10%	
11 mAac±15% at Ue=115 V	
10.5mAdc±15% at Ue=115 V	
10.2 mAac±15% at Ue=24 V	
9 mAdc±15% at Ue=24 V	
1.3 VA ±15% at Ue=115 V	
0.34 VA±15% at Ue=24 V	
1.2 W ±15% at Ue=115 V	
0.22 W±15% at Ue=24 V	
max. 150 Vdc/250 Vac	
max. 5 A/max. 1250 VA*	
max. 10 A	
100 mA/5 Vdc	
Ag-alloy	
max. 30 mΩ/max. 100 mΩ	
at 1 A / 6 Vdc	
typ. 5.4 ms (NO) /	
4.2 ms (NC)	
typ. 4.4 ms (NO) /	
5.4 ms (NC)	
20 x 10^6 switching operations	
150 x 10^3 switching operations	
0.1 Hz	
-25 °C...+50 °C	
-40 °C...+60 °C	
UL/CSA	
300 V	
4 kV (1.2/50 µ)	
III	
2	
≥ 5.5 mm	
4 kV_{eff} 1 min	
4 kVeff 1 s	
Page 298 + 308	

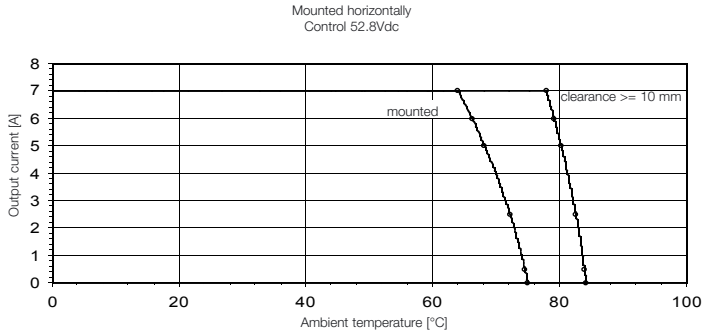
WRS 1 24 VUC 230 VAC



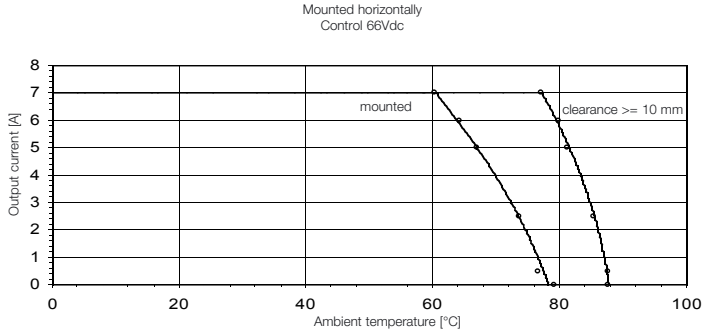
Type	Cat. No.
WRS 1 24 Vuc/230 Vac	**8418230000**
WRZ 1	**8430220000**
24 Vuc±10% / 230 Vac±10%	
15 mAac±15% at Ue=230 V	
14 mAac±15% at Ue=24 V	
13 mAdc±15% at Ue=24 V	
3.5 VA ±15% at Ue=230 V	
0.34 VA±15% at Ue=24 V	
0.32 W±15% at Ue=24 V	
max. 150 Vdc/250 Vac	
max. 5 A/max. 1250 VA*	
max. 10 A	
100 mA/5 Vdc	
Ag-alloy	
max. 30 mΩ/max. 100 mΩ	
at 1 A / 6 Vdc	
typ. 5.4 ms (NO) /	
4.2 ms (NC)	
typ. 4.4 ms (NO) /	
5.4 ms (NC)	
20 x 10^6 switching operations	
150 x 10^3 switching operations	
0.1 Hz	
-25 °C...+50 °C	
-40 °C...+60 °C	
UL/CSA	
300 V	
4 kV (1.2/50 µ)	
III	
2	
≥ 5.5 mm	
4 kV_{eff} 1 min	
4 kVeff 1 s	
Page 298 + 308	



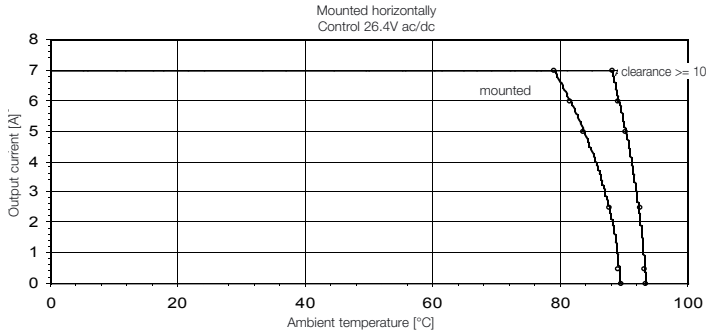
WRS 1 2.4-24 VDC • 8275320000



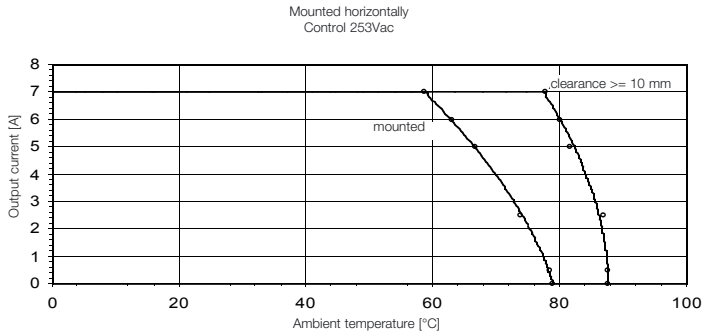
WRS 1 24/48 VUC • 8286280000



WRS 1 24/60 VUC • 8418210000



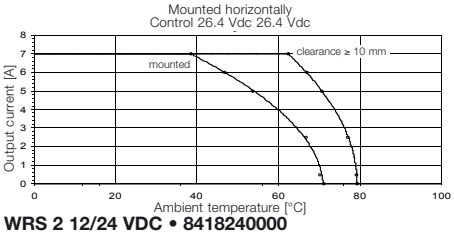
WRS 1 24/115 VUC • 8418220000



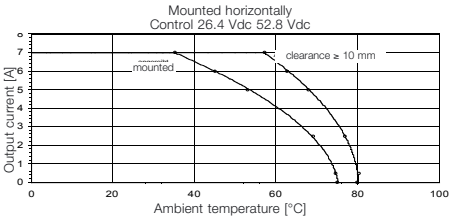
WRS 1 24 VUC/230 VAC • 8418230000

WAVESERIES Relay Coupler in Component Housings

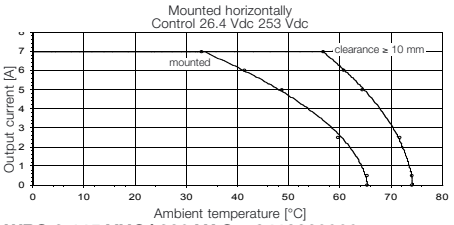
with 2 NO contacts



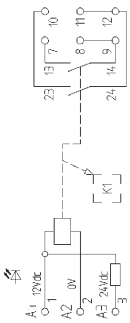
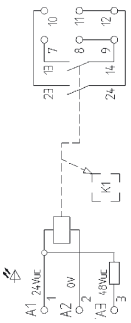
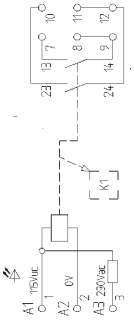
WRS 2 12/24 VDC • 8418240000



WRS 2 24/48 VUC • 8418250000



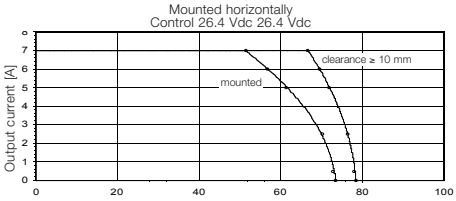
WRS 2 115 VUC/ 230 VAC • 8418260000

	WRS 2 12/24 VDC	WRS 2 24/48 VUC	WRS 2 115 VUC/ 230 VAC
			
Schematic circuit diagram			
Ordering data	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
Screw connection	WRS 2 12/24 Vdc **8418240000**	WRS 2 24/48 Vuc **8418250000**	WRS 2 115 Vuc/230 Vac **8418260000**
Tension clamp connection	WRZ 2 **8430230000**	WRZ 2 **8430240000**	WRZ 2 **8430250000**
Input			
Input voltage	12 Vdc±10 % / 24 Vdc±10 %	24 Vuc±10 % / 48 Vuc±10 %	115 Vuc±10%/ 230 Vac±10 %
Input current	21 mAdc±15% at Ue=24 V 20 mAdc±15%bei Ue=12 V	10 mAac±15% at Ue=48 V 11.5 mAac±15% at Ue=24 V 8.5 mAdc±15% at Ue=48 V 7.2 mAdc±15% at Ue=24 V	11 mAac±15% at Ue=230 V 8.5 mAuc±15% at Ue=115 V 8 mAdc±15% at Ue=115 V
Input power	0.5 W±15% at Ue=24 V 0.24 W±15% at Ue=12 V	0.48 VA±15% at Ue=48 V 0.21 VA±15% at Ue=24 V 0.4 W±15% at Ue=48 V 0.17 W±15% at Ue=24 V	2.5 VA±15% at Ue=230 V 1 VA±15% at Ue=115 V 0.9 W±15% at Ue=115 V
Output			
Switching voltage	max. 250 Vdc / 250 Vac (UL –> 13300/12300)	max. 250 Vdc / 250 Vac (UL –> 13300/12300)	max. 250 Vdc / 250 Vac (UL –> 13300/12300)
Continuous current AC / Switching power AC	max. 5 A / max. 1250 VA*	max. 5 A / max. 1250 VA*	max. 5 A / max. 1250 VA*
Switch-on current	max. 8 A	max. 8 A	max. 8 A
Min. switching	100 mA / 5 Vdc	100 mA / 5 Vdc	100 mA / 5 Vdc
Contact material	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$
Contact resistance (when new)	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc
Pick-up delay at nominal voltage	typ. 5 ms	typ. 5 ms	---
Turn off delay	typ. 6.3 ms (NO) / 5.5 ms (NC)	---	---
Mechanical service life	50 x 10^6 switching operations	50 x 10^6 switching operations	50 x 10^6 switching operations
Electrical service life	1 x 10^5 switching operations	1 x 10^5 switching operations	1 x 10^5 switching operations
Max. switching frequency at nominal voltage	0.1 Hz	0.1 Hz	0.1 Hz
Ambient temperature	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C
Storage temperature	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C
Approvals	UL/CSA	UL/CSA	UL/CSA (nur 115 Vuc)
Insulation coordination acc. to EN 50178			
Rated voltage	300 V	300 V	300 V
Rated impulse voltage	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)
Overvoltage category	III	III	III
Pollution severity	2	2	2
Implemented clearance and creepage path	≥ 8 mm	≥ 8 mm	≥ 8 mm
Insulation and voltage strength			
Insulation and voltage strength of entire circuit to mounting rail	4 kV_{eff} 1 min	4 kV_{eff} 1 min	4 kV_{eff} 1 min
Testing			
Input/output high voltage test	4 kVeff 1 s	4 kVeff 1 s	4 kVeff 1 s
Accessories, dimensions and connection data see	Page 298 + 308	Page 298 + 308	Page 298 + 308

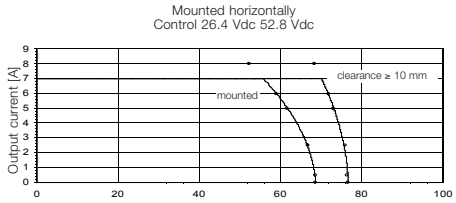
***** at ambient temperature 20°C

WAVESERIES Relay Coupler in Component Housings

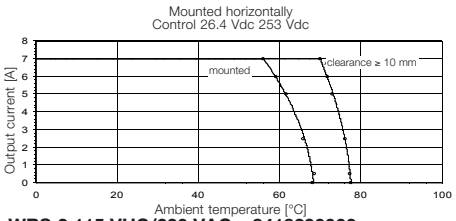
with 1NC / 1 NO



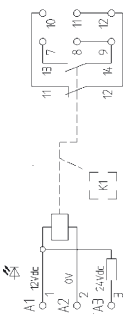
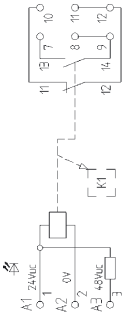
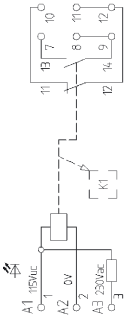
WRS 2 12/24 VDC • 8418270000



WRS 2 24/48 VUC • 8418280000



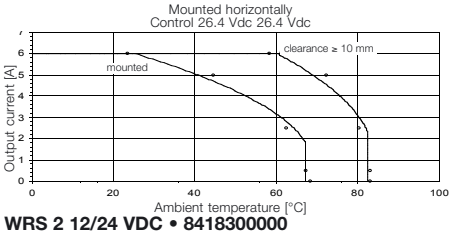
WRS 2 115 VUC/230 VAC • 8418290000

	WRS 2 12/24 VDC	WRS 2 24/48 VUC	WRS 2 115 VUC/ 230 VAC
			
Schematic circuit diagram			
Ordering data	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
Screw connection	WRS 2 12/24 Vdc **8418270000**	WRS 2 24/48 Vuc **8418280000**	WRS 2 115 Vuc/230 Vac **8418290000**
Tension clamp connection	WRZ 2 **8430260000**	WRZ 2 **8430270000**	WRZ 2 **8430280000**
Input			
Input voltage	12 Vdc±10% / 24 Vdc±10%	24 Vuc±10 % / 48 Vuc±10 %	115 Vuc±10 %/230 Vac±10 %
Input current	19.7 mAdc±15% at Ue=12 V 20.5 mAdc±15% at Ue=24 V	10 mAac±15% at Ue=48 V 11.5 mAac±15% at Ue=24 V 8.5 mAdc±15% at Ue=48 V 7.2 mAdc±15%bei Ue=24 V	11 mAac±15% at Ue=230 V 10 mAuc±15% at Ue=115 V 8 mAdc±15% at Ue=115 V
Input power	0.5 W±15% at Ue=24 V 0.24 W±15% at Ue=12 V	0.48 VA±15% at Ue=48 V 0.21 VA±15% at Ue=24 V 0.4 W±15% at Ue=48 V 0.17 W±15% at Ue=24 V	2.5 VA±15% at Ue=230 V 1 VA±15% at Ue=115 V 0.9 W±15% at Ue=115 V
Output			
Switching voltage	max. 250 Vdc/250 Vac	max. 250 Vdc/250 Vac	max. 250 Vdc/250 Vac
Continuous current AC / Switching power AC	max. 5 A/max. 1250 VA*	max. 5 A/max. 1250 VA*	max. 5 A/max. 1250 VA*
Switch-on current	max. 8 A	max. 8 A	max. 8 A
Min. switching	100 mA/5 V	100 mA/5 V	100 mA/5 V
Contact material	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$
Contact resistance (when new)	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc	max. 30 mΩ/max. 100 mΩ at 1 A/6 Vdc
Pick-up delay at nominal voltage	typ. 5ms	---	---
Turn off delay	---	---	---
Mechanical service life	50 x 10^6 switching operations	50 x 10^6 switching operations	50 x 10^6 switching operations
Electrical service life	1 x 10^5 switching operations	1 x 10^5 switching operations	1 x 10^5 switching operations
Max. switching frequency at nominal voltage	0.1 Hz	0.1 Hz	0.1 Hz
Ambient temperature	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C
Storage temperature	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C
Approvals	UL/CSA	UL/CSA	UL/CSA (nur 115 Vuc)
Insulation coordination acc. to EN 50178			
Rated voltage	300 V	300 V	300 V
Rated impulse voltage	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)
Overvoltage category	III	III	III
Pollution severity	2	2	2
Implemented clearance and creepage path	≥ 8 mm	≥ 8 mm	≥ 8 mm
Insulation and voltage strength			
Insulation and voltage strength of entire circuit to mounting rail	4 kV_{eff} 1 min	4 kV_{eff} 1 min	4 kV_{eff} 1 min
Testing			
Input/output high voltage test	4 kVeff 1 s	4 kVeff 1 s	4 kVeff 1 s
Accessories, dimensions and connection data see	Page 298 + 308	Page 298 + 308	Page 298 + 308

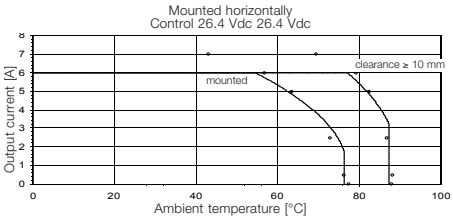
***** at ambient temperature 20°C

WAVESERIES Relay Coupler in Component Housings

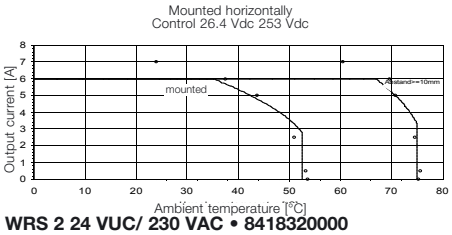
with 2 changeover contacts



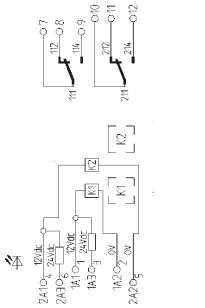
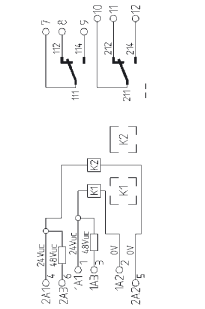
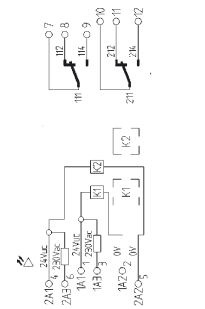
WRS 2 12/24 VDC • 8418300000



WRS 2 24/48 VUC • 8418310000



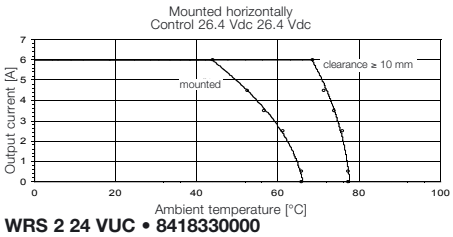
WRS 2 24 VUC/ 230 VAC • 8418320000

	WRS 2 12/24 VDC	WRS 2 24/48 VUC	WRS 2 24 VUC/ 230 VAC
			
Schematic circuit diagram			
Ordering data	Type / Cat. No.	Type / Cat. No.	Type / Cat. No.
Screw connection	WRS 2 12/24 Vdc **8418300000**	WRS 2 24/48 Vuc **8418310000**	WRS 2 24 VUC/230 Vac **8418320000**
Tension clamp connection	WRZ 2 **8430290000**	WRZ 2 **8430300000**	WRZ 2 **8430310000**
Input			
Input voltage	12 Vdc±10% /24 Vdc±10 %	24 Vuc±10% /48 Vuc±10 %	24 Vuc±10% /230 Vac±10%
Input current	21 mAdc±15% at Ue=12 V 22 mAdc±15% at Ue=24 V	14 mAuc±15% at Ue=48 V 14 mAuc±15% at Ue=24 V	15 mAac±15% at Ue=230 V 14 mAuc±15% at Ue=24 V
Input power	0.26 W±15% at Ue=12 V 0.53 W±15% at Ue=24 V	0.7 VA(W)±15% at Ue=48 V 0.35 VA(W)±15% at Ue=24 V	0.35 W±15% at Ue=24 V 3.45 VA ±15% at Ue=230 V
Output			
Switching voltage	max. 150 Vdc /250 Vac	max. 150 Vdc /250 Vac	max. 150 Vdc /250 Vac
Continuous current AC / Switching power AC	max. 5 A/max. 1250 VA*	max. 5 A/max. 1250 VA*	max. 5 A/max. 1250 VA*
Switch-on current	max. 10 A	max. 10 A	max. 10 A
Min. switching	100 mA/5 Vdc	100 mA/5 Vdc	100 mA / 5 Vdc
Contact material	Ag-alloy	Ag-alloy	Ag-alloy
Contact resistance (when new)	max. 30 mΩ / max. 100 mΩ at 1 A / 6 Vdc	max. 30 mΩ / max. 100 mΩ at 1 A / 6 Vdc	max. 30 mΩ / max. 100 mΩ at 1 A / 6 Vdc
Pick-up delay at nominal voltage	typ. 6.5 ms (NO) / 4.5 ms (NC)	typ. 6.5 ms (NO) / 4.5 ms (NC)	typ. 6 ms (NO)/4.2 ms (NC)/Eingang: 24 Vuc/230 Vac
Turn off delay	typ. 8 ms (NO) / 11 ms (NC)	typ. 8 ms (NO)/ 11 ms (NC)	typ. 4.4 ms (NO)/ 5.4 ms (NC)
Mechanical service life	20 x 10^6 switching operations	20 x 10^6 switching operations	20 x 10^6 switching operations
Electrical service life	1.5 x 10^5 switching operations	1.5 x 10^5 switching operations	150 x 10^3 switching operations
Max. switching frequency at nominal voltage	0.1 Hz	0.1 Hz	0.1 Hz
Ambient temperature	-25 °C...+50 °C	-25 °C...+50 °C	-25 °C...+50 °C
Storage temperature	-40 °C...+60 °C	-40 °C...+60 °C	-40 °C...+60 °C
Approvals	UL/CSA	UL/CSA	
Insulation coordination acc. to EN 50178			
Rated voltage	300 V	300 V	300 V
Rated impulse voltage	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)	4 kV (1.2/50 µ)
Overvoltage category	III	III	III
Pollution severity	2	2	2
Implemented clearance and creepage path	≥ 5.5 mm	≥ 5.5 mm	≥ 5.5 mm
Insulation and voltage strength			
Insulation and voltage strength of entire circuit to mounting rail	4 kV_{eff} 1 min	4 kV_{eff} 1 min	4 kV_{eff} 1 min
Testing			
Input/output high voltage test	4 kVeff 1 s	4 kVeff 1 s	4 kVeff 1 s
Accessories, dimensions and connection data see	Page 298 + 308	Page 298 + 308	Page 298 + 308

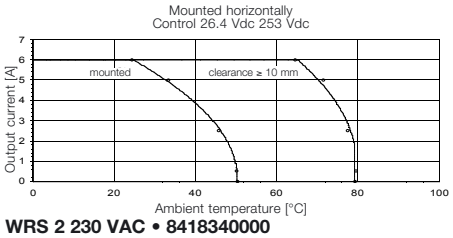
***** at ambient temperature 20°C

WAVESERIES Relay Coupler in Component Housings

with 3 NO contacts



WRS 2 24 VUC • 8418330000

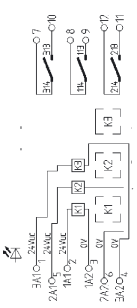


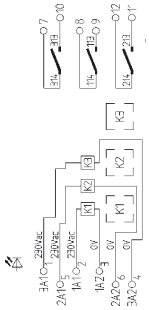
WRS 2 230 VAC • 8418340000

WRS 2 24 VUC

WRS 2 230 VAC

Schematic circuit diagram





Ordering data	Type	Cat. No.	Type	Cat. No.
Screw connection	WRS 2 24 Vuc	**8418330000**	WRS 2 230 Vac	**8418340000**
Tension clamp connection	WRZ 2	**8430320000**	WRZ 2	**8430330000**
Input				
Input voltage	3fach 24 Vac ±10 %		3 x 230 Vac ±10 %	
Input current	10.5 mAac ±15 % at U_{nenn} (per channel)		10.3 mAac ±15 % at U_{nenn} (per channel)	
Input power	0.3 VA ±15 % (per channel) 0.25 W ±15 %		2.4 VA ±15 % (per channel)	
Output				
Switching voltage	max. 250 Vdc /250 Vac		max. 250 Vdc / 250 Vac	
Continuous current AC / Switching power AC	max. 4 A/max. 1500 VA*		max. 4 A/max. 1500 VA*	
Switch-on current	max. 6 A		max. 6 A	
Min. switching	12 V/10 mA		12 V/10 mA	
Contact material	$AgSnO_2$		$AgSnO_2$	
Contact resistance (when new)	max. 100 mΩ at 1 A/24 Vdc		max. 100 mΩ at 1 A/24 Vdc	
Pick-up delay at nominal voltage	typ. 5 ms		typ. 8 ms	
Turn off delay	typ. 21 ms		typ.11 ms	
Mechanical service life	20 x 10^6 switching operations		20 x 10^6 switching operations	
Electrical service life	1 x 10^5 switching operations		1 x 10^5 switching operations	
Max. switching frequency at nominal voltage	0.1 Hz		0.1 Hz	
Ambient temperature	-25 °C...+50 °C		-25 °C...+50 °C	
Storage temperature	-40 °C...+60 °C		-40 °C...+60 °C	
Approvals	UL/CSA			
Insulation coordination acc. to EN 50178				
Rated voltage	300 V		300 V	
Rated impulse voltage	4 kV (1.2/50 µ)		4 kV (1.2/50 µ)	
Overvoltage category	III		III	
Pollution severity	2		2	
Implemented clearance and creepage path	≥ 5.5 mm		≥ 5.5 mm	
Insulation and voltage strength				
Insulation and voltage strength of entire circuit to mounting rail	4 kV_{eff} 1 min		4 kV_{eff} 1 min	
Testing				
Input/output high voltage test	4 kVeff 1 s		4 kVeff 1 s	
Accessories, dimensions and connection data see	Page 298 + 308		Page 298 + 308	

***** at ambient temperature 20°C

Relay Couplers in Components Housings EG 7

- Plugs on to locking socket RS EG 7 with combination foot TS 32, 35
- Overall width: 10 mm
- With combination foot for TS 15, TS 32 or TS 35
- Versions with 12 V, 24 V and 48 V fulfil protective separation in accordance with VDE 0160, Part 101
- **All EGR EG 7 and RST EG 7 are approved by Germanischer Lloyd. Approval No. 35962 HH**

EGR EG 7
RST EG 7
RS EG 7

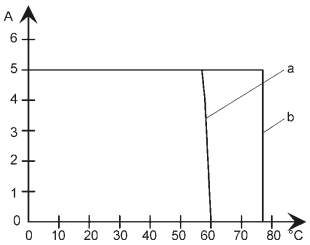
EGR EG 7

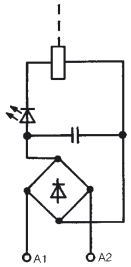
RST EG 7

RS EG 7

	12 V0	24 V–	24 V–	24 V0
Schematic circuit diagram				

Derating curve
a = mounted horizontally on rail without clearance
b = mounted horizontally on rail, rowed with clearances





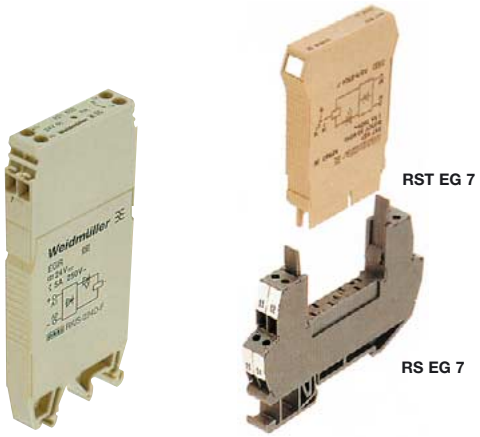
Ordering data								
Combination foot for TS 15, TS 32, TS 35	1 NO	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
	1 NC	EGR EG7	**8092310000**	EGR EG7	**8216520000**	EGR EG7	**8147120000**	EGR EG7	**8092340000**
		EGR EG7	**8092320000**	EGR EG7	**8216530000**	EGR EG7	**8147140000**	EGR EG7	**8092350000**
EGR EG 7 spare relays, without connection unit		EGR EG7	**8092330000**[1]	EGR EG7	**8218200000**[1]	EGR EG7	**8160030000**[1]	EGR EG7	**8092360000**[1]
Plug-in relay-coupl., without engagem. socket, 1 changeo. cont.		RST EG7	**8216550000**	RST EG7	**8216570000**	RST EG7	**8216560000**	RST EG7	**8216580000**
Engage.socket f. plug-in relay coupler w. combin.foot TS 32, 35		RS EG7	**8193830000**	RS EG7	**8193830000**	RS EG7	**8193830000**	RS EG7	**8193830000**
Rated data of the coil									
Input voltage		**12 V0 +15 % –10 %**		**24 V– +15 % –10 %**		**24 V– +15 % –10 %**		**24 V0 +15 % –10 %**	
Rated consumption		320 mW +20 % –10 %		280 mW +20 % –10 %		280 mW +20 % –10 %		280 mW +20 % –10 %	
Max. switch-on current		120 mA		12 mA		12 mA		240 mA	
Combination foot for drop current		≤ 3 mA		≤ 3 mA		≤ 3 mA		≤ 3 mA	
Connection	– NO and NC	Screw connection		Screw connection		Screw connection		Screw connection	
		0.5…1.5 mm²		0.5…1.5 mm²		0.5…1.5 mm²		0.5…1.5 mm²	
		AWG-Conductor 26…16		AWG-Conductor 26…16		AWG-Conductor 26…16		AWG-Conductor 26…16	
	– changeover contacts	0.5…2.5 mm²		0.5…2.5 mm²		0.5…2.5 mm²		0.5…2.5 mm²	
Rated data der Contacts									
Max. output voltage		250 V		250 V		250 V		250 V	
Continuous current		5 A		5 A		5 A		5 A	
Max. switch-on current		8 A		8 A		8 A		8 A	
Min. switching capacity/switching current		100 mW/10 mA		100 mW/10 mA		40 µW[2]		100 mW/10 mA	
Bounce times		≤ 1 ms		≤ 1 ms		≤ 1 ms		≤ 1 ms	
Contact material[2]		AgNi 0.15 gold-flashed		AgNi 0.15 gold-flashed		AgNi 0.15 **5 µ Au**		AgNi 0.15 gold-flashed	
Bounce times		≤ 1 ms		≤ 1 ms		≤ 1 ms		≤ 2.4 ms	
Switching times									
pick up delay		≤ 8 ms		≤ 8 ms		≤ 8 ms		≤ 11 ms	
drop-out delay		≤ 6 ms		≤ 6 ms		≤ 6 ms		≤ 10 ms	
Service life, mechanical		> 15 x 10⁶ switching operations		> 15 x 10⁶ switching operations		> 15 x 10⁶ switching operations		> 15 x 10⁶ switching operations	
–, 24 V–, 1.1 A, inductive load		≥ 2 x 10⁶ switching operations with free wheel diode		≥ 2 x 10⁶ switching operations with free wheel diode		≥ 2 x 10⁶ switching operations with free wheel diode		≥ 2 x 10⁶ switching operations with free wheel diode	
–, 230 V~, 5 A, resistive load		> 2 x 10⁵ switching operations		> 2 x 10⁵ switching operations		> 2 x 10⁵ switching operations		> 2 x 10⁵ switching operations	
Status indicator		Green LED		Green LED		Green LED		Green LED	
Storage temperature		–40 °C…+60 °C		–40 °C…+60 °C		–40 °C…+60 °C		–40 °C…+60 °C	
Ambient temperature		–25 °C…+60 °C		–25 °C…+60 °C		–25 °C…+60 °C		–25 °C…+60 °C	
Insulation coordination acc. to EN 50178									
Safe isolation according to VDE 0106 part 101		DIN VDE 0106		DIN VDE 0106		DIN VDE 0106		DIN VDE 0106	
Rated impulse voltage		8 kV		8 kV		8 kV		8 kV	
Clearances and creepage distances		≥ 8 mm		≥ 8 mm		≥ 8 mm		≥ 8 mm	
Overvoltage category		III		III		III		III	
Pollution severity		2		2		2		2	
Accessories									
Cross-connection comb. 16fold		QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**
Accessories, dimensions and connection data see		Page 304		Page 304		Page 304		Page 304	

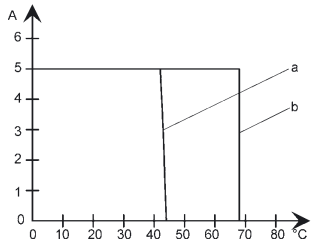
1) Serves only as a spare part for NO and NC

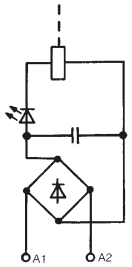
2) The following ratings can safely be switched:
a) 100 mV…60 V ac/dc/100 µA…300 mA
b) 5 V… 24 V dc/10 mA… 1.2 A
c) 24 V ... 60 V dc/10 mA... 500 mA
d) 10 V…250 V ac/10 mA… 5 A

After switching higher powers (b…d) lower powers (a) can no longer be switched.

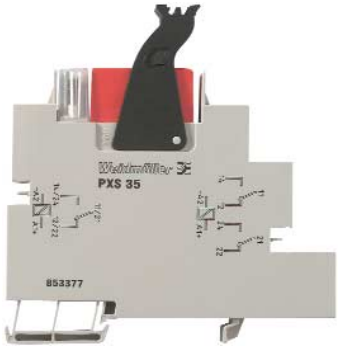
Relay Couplers in Components Housings EG 7







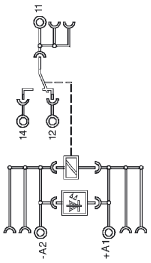
48 V0		60 V~		115 V0		230 V~		230 V~	
Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.	Type	Cat. No.
EGR EG7	**8092370000**	EGR EG7	**8092400000**	EGR EG7	**8092430000**	EGR EG7	**8092460000**	EGR EG7	**8178200000**
EGR EG7	**8092380000**	EGR EG7	**8092410000**	EGR EG7	**8092440000**	EGR EG7	**8092470000**		
EGR EG7	**8092390000**[1]	EGR EG7	**8092420000**[1]	EGR EG7	**8092450000**[1]	EGR EG7	**8092480000**[1]		
RST EG7	**8216590000**	RST EG7	**8216600000**	RST EG7	**8216610000**	RST EG7	**8216620000**	RST EG7	**8216630000**
RS EG7	**8193830000**	RS EG7	**8193830000**	RS EG7	**8193830000**	RS EG7	**8193830000**	RS EG7	**8193830000**
48 V0 +15 % –10 %		**60 V0 +15 % –10 %**		**115 V0 +15 % –10 %**		**230 V~ +15 % –10 %**		**230 V~ +15 % –10 %**	
280 mW +15 % –10 %		280 mW +15 % –10 %		330 mW +15 % –10 %		280 mW +15 % –10 %		280 mW +15 % –10 %	
480 mA		600 mA		160 mA		185 mA		185 mA	
≤ 3 mA		≤ 3 mA		≤ 3 mA		≤ 3 mA		≤ 3 mA	
Screw connection		Screw connection		Screw connection		Screw connection		Screw connection	
0.5…1.5 mm^2		0.5…1.5 mm^2		0.5…1.5 mm^2		0.5…1.5 mm^2		0.5…1.5 mm^2	
AWG-Conductor 26…16		AWG-Conductor 26…16		AWG-Conductor 26…16		AWG-Conductor 26…16		AWG-Conductor 26…16	
0.5…2.5 mm^2		0.5…2.5 mm^2		0.5…2.5 mm^2		0.5…2.5 mm^2		0.5…2.5 mm^2	
250 V		250 V		250 V		250 V		250 V	
5 A		5 A		5 A		5 A		5 A	
8 A		8 A		8 A		8 A		8 A	
100 mW/10 mA		100 mW/10 mA		100 mW/10 mA		100 mW/10 mA		40 µW[2]	
≤ 1 ms		≤ 1 ms		≤ 1 ms		≤ 1 ms		≤ 1 ms	
AgNi 0.15 gold-flashed		AgNi 0.15 gold-flashed		AgNi 0.15 gold-flashed		AgNi 0.15 gold-flashed		AgNi 0.15 **5 µ Au**	
≤ 2.5 ms		≤ 3.8 ms		≤ 3.8 ms		≤ 2 ms		≤ 2 ms	
≤ 12 ms		≤ 12 ms		≤ 12 ms		≤ 12 ms		≤ 12 ms	
≤ 10 ms		≤ 10 ms		≤ 10 ms		≤ 10 ms		≤ 10 ms	
> 15 x 10^6 switching operations		> 15 x 10^6 switching operations		> 15 x 10^6 switching operations		> 15 x 10^6 switching operations		> 15 x 10^6 switching operations	
≥ 2 x 10^6 switching operations with free wheel diode		≥ 2 x 10^6 switching operations with free wheel diode		≥ 2 x 10^6 switching operations with free wheel diode		≥ 2 x 10^6 switching operations with free wheel diode		≥ 2 x 10^6 switching operations with free wheel diode	
> 2 x 10^5 switching operations		> 2 x 10^5 switching operations		> 2 x 10^5 switching operations		> 2 x 10^5 switching operations		> 2 x 10^5 switching operations	
Green LED		Green LED		Green LED		Green LED		Green LED	
–40 °C…+60 °C		–40 °C…+60 °C		–40 °C…+60 °C		–40 °C…+60 °C		–40 °C…+60 °C	
–25 °C…+60 °C		–25 °C…+60 °C		–25 °C…+60 °C		–25 °C…+60 °C		–25 °C…+60 °C	
DIN VDE 0106									
8 kV		8 kV		8 kV		8 kV		8 kV	
≥ 8 mm		≥ 8 mm		≥ 8 mm		≥ 8 mm		≥ 8 mm	
III		III		III		III		III	
2		2		2		2		2	
QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**	QB 16/10.16	**1650330000**
Page 304		Page 304		Page 304		Page 304		Page 304	



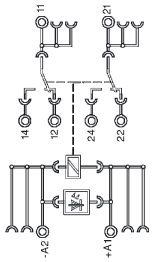
PRZ/PRS

PRZ/PRS

PRS/PRZ xxx 1CO



PRS/PRZ xxx 2CO



- Modular system comprising:
  - Relay socket for mounting rails
  - LED indicator unit / RC combination
  - retainer clip
  - pluggable relays
- 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 UM / 2 x UM	
Max. output voltage	250Vuc	
Max. switching current	16A / 2 x 8A	
Continuous current	10A	
Rated braking 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	> 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...2.5mm^2	
Flammability	V0	
Relay type	Schrack RT1 / RT2	
Dimensions WxHxT	15.2 x 91 x 85	
Approvals	CE, UL recognized, cUL	
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	760 VA	
Status indicator	pluggable LED-housing, green LED	
Output	**1 CO /2 CO contacts**	
Contact version	1 x UM / 2 x UM	
Max. output voltage	250Vuc	
Max. switching current	16A / 2 x 8A	
Continuous current	10A	
Rated braking 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	
Flammability	V0	
Relay type	Schrack RT1 / RT2	
Dimensions WxHxT	15.2 x 91 x 85	
Approvals	CE, UL recognized, cUL	
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**	