



PRODUCT OVERVIEW

Your specialist for electrical solutions



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YOUR SPECIALIST FOR ELECTRONICAL SOLUTIONS |

Our product is service



OUR PRODUCT RANGE.

- | standard products
- | special relay
- | accessories
- | special solutions for control electronics

OUR BRANCH AREA OF APPLICATION.

- | car/truck sector
- | agricultural/timber and forestry industry
- | building sector - cranes, caterpillar
- | fire engine and emergency vehicle
- | caravan sector
- | commercial and special vehicles
- | train industry
- | busses



PERFORMANCE |

OUR SERVICE

Your requirements and your needs are decisive for what you receive from us. Without any detours, fast flexible and with an optimal cost-benefit ratio. Our areas of competence lies in control electronics, relays and micro process control, as well as development services for commercial, special, agricultural,

forestry and construction vehicles. We develop individual solutions for you, that are going to satisfy all your requirements. Together with our partners we will ensure a smooth production and logistic process.

Engineering

- | product idea and conception
- | development of prototypes

Production

- | Production of samples and prototypes
- | Performance test and measurements
- | Logistic of production
- | Mounting

Construction

- | circuit design and break-up
- | casing and plug construction
- | Software development and programming



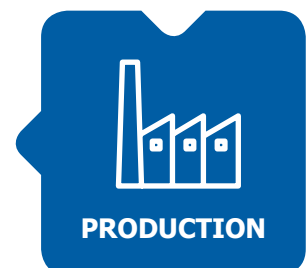
IDEA



CONCEPTION



DEVELOPMENT



PRODUCTION





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EMAIL einkauf@carsig.com

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FAX +49 741 1748979-99
EMAIL info@carsig.com

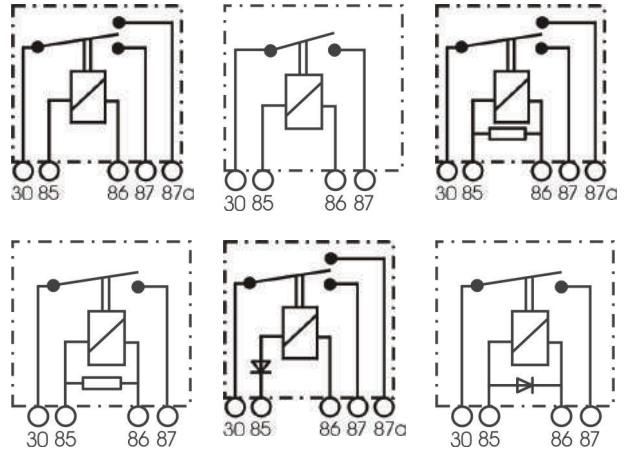
MICRORELAY 12V



TECHNICAL DATA

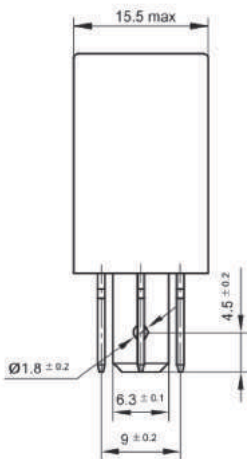
Voltage	12V
Operating voltage	9V-15V
coil current	1,8W, 150mA
Operating temperature	-40°C - 85°C
Lifetime	elektr. 10 ⁵ mech. 10 ⁷ , Avoid heat accumulation
Protection	IP67

CIRCUIT DIAGRAM

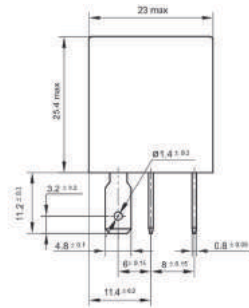


MEASUREMENTS

front view



side view



article number	Output	current	relay circuit	tab
MIR.100.800.00	Changeover	25/10A	-	No
MIR.102.800.00	changeover	20/10A	resistor	No
MIR.104.800.00	changeover	20/10A	free-running diode	No
MIR.101.800.00	relay output	30A	--	No
MIR.103.800.00	relay output	30A	resistor	No
MIR.105.800.00	relay output	30A	free-running diode	No

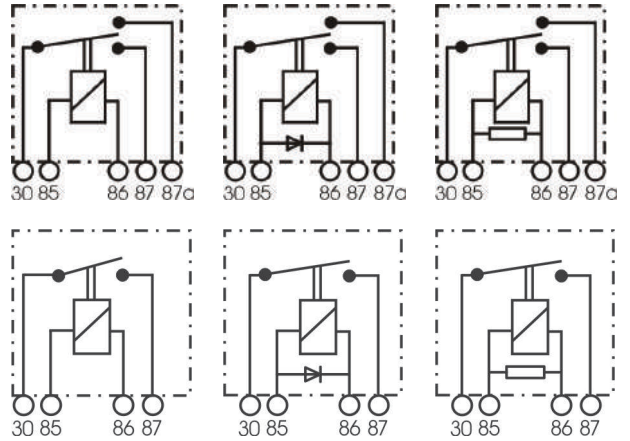
other versions on request



MICRORELAY 24V



CIRCUIT DIAGRAM

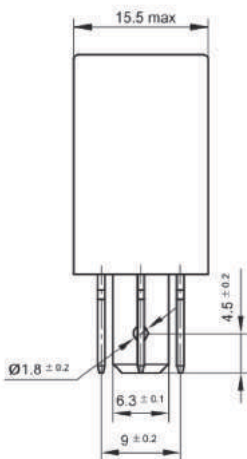


TECHNICAL DATA

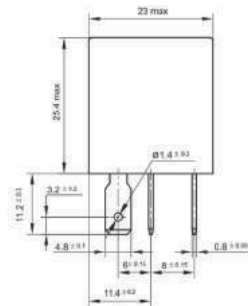
Voltage	24V
Operating voltage	18V-30V
coil current	66mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



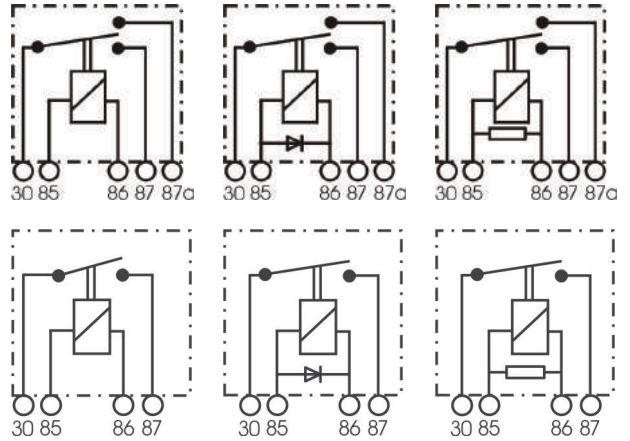
article number	Output	current	relay circuit	tab
MIR.200.800.00	changeover	20/10A	--	No
MIR.202.800.00	changeover	20/10A	resistor	No
MIR.204.800.00	changeover	20/10A	free-running diode	No
MIR.201.800.00	relay output	30A	--	No
MIR.203.800.00	relay output	30A	resistor	No
MIR.205.800.00	relay output	30A	free-running diode	No

other versions on request

RELAY 12V



CIRCUIT DIAGRAM

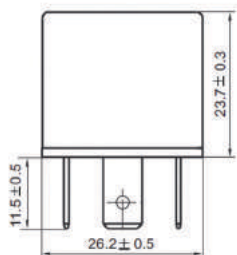


TECHNICAL DATA

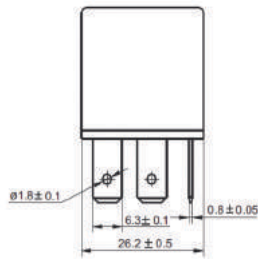
Voltage	12V
Operating voltage	9V-15V
coil current	150mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



article number	Output	current	relay circuit	tab
STR.100.800.00	Change over form C	30/40A	--	No
STR.102.800.00	Change over form C	30/40A	resistor	No
STR.104.800.00	Change over form C	30/40A	free-running diode	No
STR.101.800.00	Normally open	60A	--	No
STR.105.800.00	Normally open	60A	free-running diode	No
STR.103.800.00	Normally open	60A	resistor	No

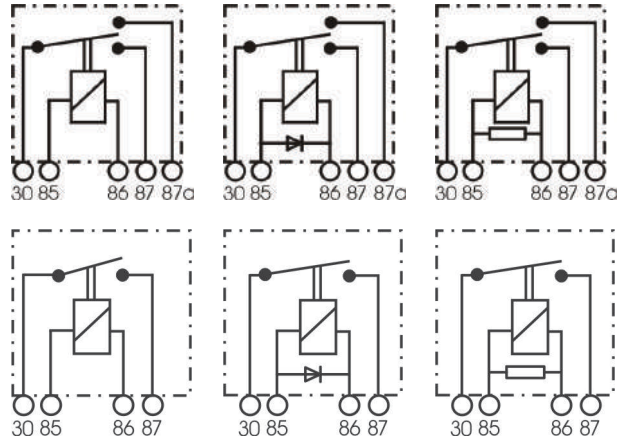
other versions on request



RELAY 12V WITH TAB



CIRCUIT DIAGRAM

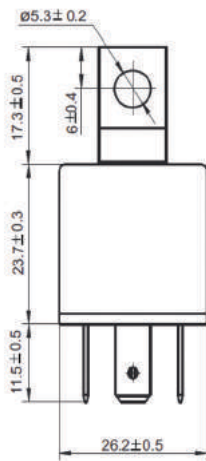


TECHNICAL DATA

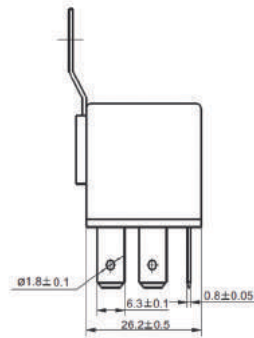
Voltage	12V
Operating voltage	9V-15V
coil current	150mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



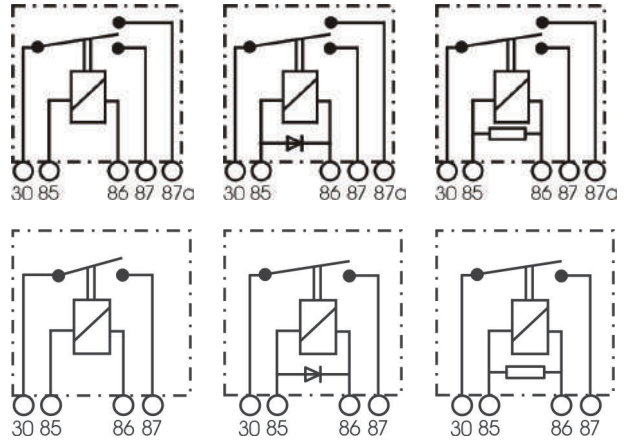
article number	Output	current	relay circuit	tab
STR.106.800.00	Change over form C	30/40A	--	Yes
STR.107.800.00	Normally open	60A	--	Yes
STR.108.800.00	Change over form C	30/40A	resistor	Yes
STR.109.800.00	Normally open	60A	resistor	Yes
STR.110.800.00	Change over form C	30/40A	free-running diode	Yes
STR.111.800.00	Normally open	60A	free-running diode	Yes

other versions on request

RELAY 24V



CIRCUIT DIAGRAM

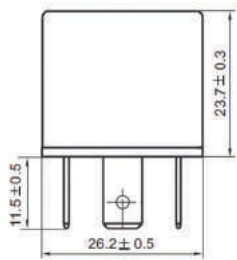


TECHNICAL DATA

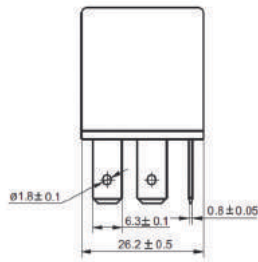
Voltage	24V
Operating voltage	18V-30V
coil current	75mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation, elektr. 10 ^{^5} mech. 10 ^{^7}
Protection	IP67

MEASUREMENTS

front view



side view



article number	Output	current	relay circuit	tab
STR.200.800.00	Change over form C	30/40A	--	No
STR.202.800.00	Change over form C	30/40A	resistor	No
STR.204.800.00	Change over / form C	30/40A	free-running diode	No
STR.201.800.00	Normally open	60A	--	No
STR.203.800.00	closer / form A	60A	resistor	No
STR.205.800.00	closer / form A	60A	free-running diode	No

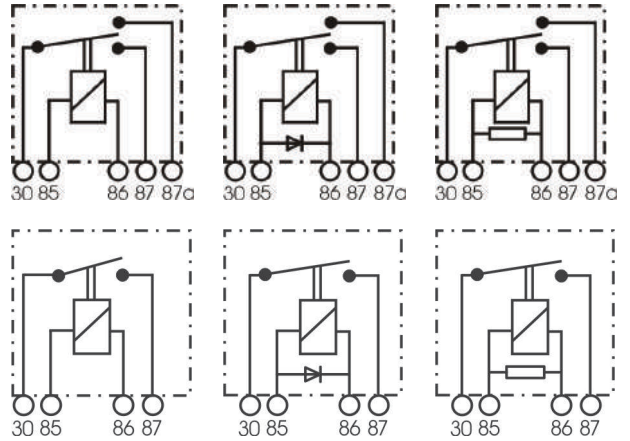
other versions on request



RELAY 24V WITH TAB



CIRCUIT DIAGRAM

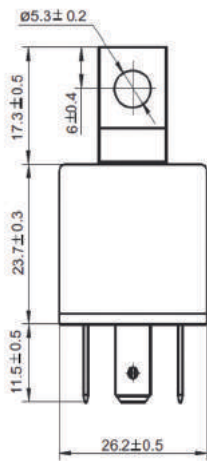


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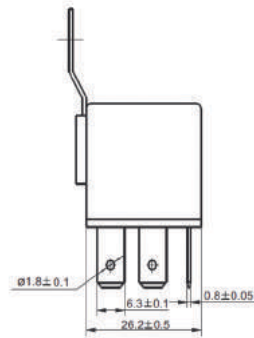
Voltage	24V
Operating voltage	18V-30V
coil current	75mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



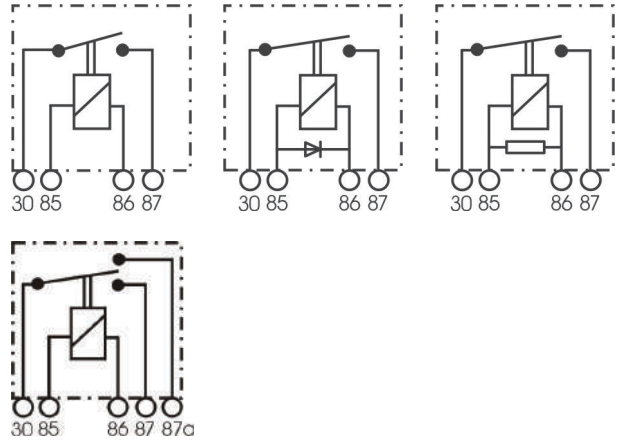
article number	Output	current	relay circuit	tab
STR.206.800.00	Change over form C	30/40A	--	Yes
STR.207.800.00	Normally open	60A	--	Yes
STR.208.800.00	Change over form C	30/40A	resistor	Yes
STR.209.800.00	Normally open	60A	resistor	Yes
STR.210.800.00	Change over form C	30/40A	free-running diode	Yes
STR.211.800.00	Normally open	60A	free-running diode	Yes

other versions on request

HIGH CURRENT RELAY 12V



CIRCUIT DIAGRAM

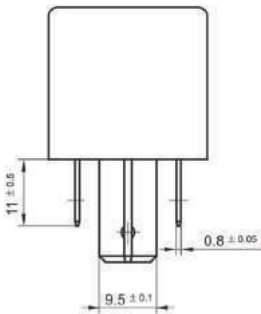


TECHNICAL DATA

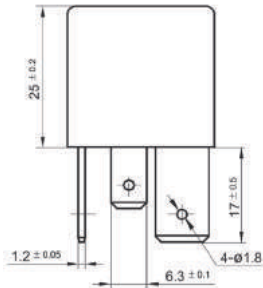
Voltage	12V
Operating voltage	9V-15V
coil current	150mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



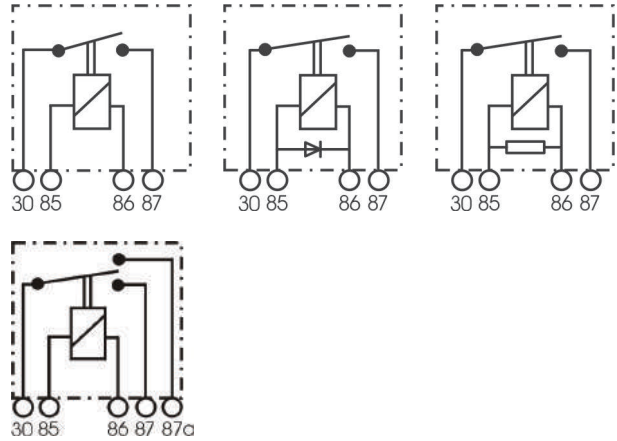
article number	Output	current	relay circuit	tab
HSR.100.800.00	Normally open	70A	--	No
HSR.102.800.00	Normally open	70A	free-running diode	No
HSR.101.800.00	Normally open	70A	resistor	No

other versions on request



HIGH CURRENT RELAY 12V WITH TAB

CIRCUIT DIAGRAM

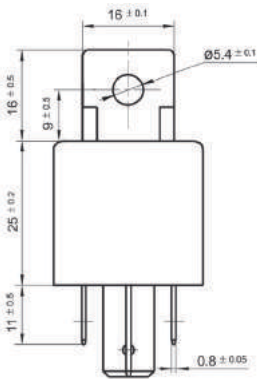


TECHNICAL DATA

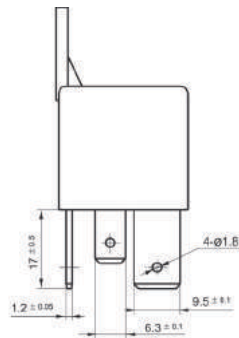
Voltage	12V
Operating voltage	9V-15V
coil current	150mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



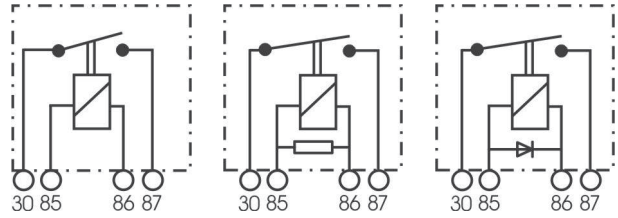
article number	Output	current	relay circuit	tab
HSR.103.800.00	Normally open	70A	--	Yes
HSR.104.800.00	Normally open	70A	resistor	Yes
HSR.105.800.00	Normally open	70A	free-running diode	Yes
HSR.107.800.00	Change over type C	80/60A	--	Yes

other versions on request

HIGH CURRENT RELAY 24V



CIRCUIT DIAGRAM

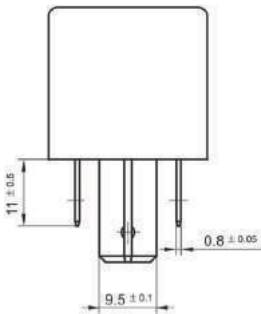


TECHNICAL DATA

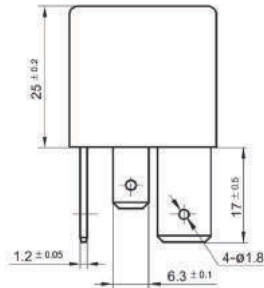
Voltage	24V
Operating voltage	18V-30V, 24V
coil current	66mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



side view



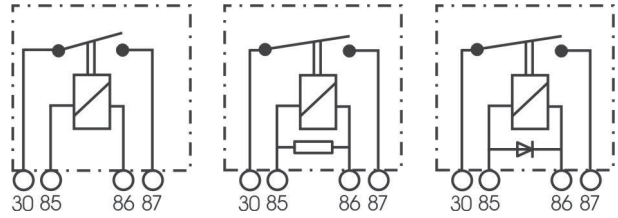
article number	Output	current	relay circuit	tab
HSR.200.800.00	Normally open	70A	--	No
HSR.202.800.00	Normally open	70A	free-running diode	No
HSR.201.800.00	Normally open	70A	resistor	No

other versions on request



HIGH CURRENT RELAY 24V WITH TAB

CIRCUIT DIAGRAM

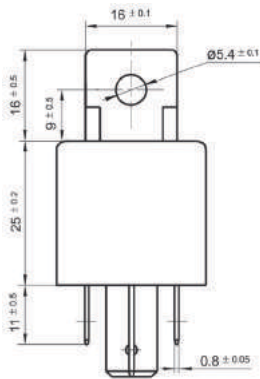


TECHNICAL DATA

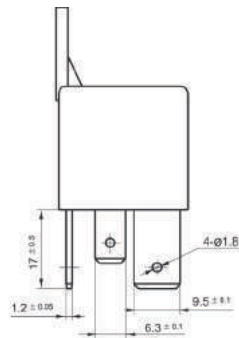
Voltage	24V, 12V
Operating voltage	18V-30V, 9V-15V
coil current	66mA
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation
Protection	IP67

MEASUREMENTS

front view



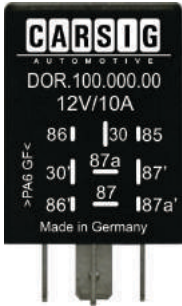
side view



article number	Output	current	relay circuit	tab
HSR.203.800.00	Normally open	70A	--	Yes
HSR.204.800.00	Normally open	70A	resistor	Yes
HSR.205.800.00	Normally open	70A	free-running diode	Yes
HSR.207.800.00	Change over form C	80/60A	--	Yes

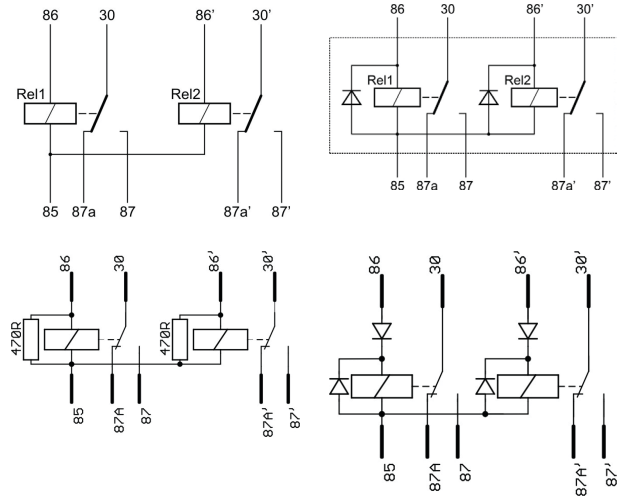
other versions on request

DOUBLE RELAY 12V



Double relay 12V 2x10A

CIRCUIT DIAGRAM

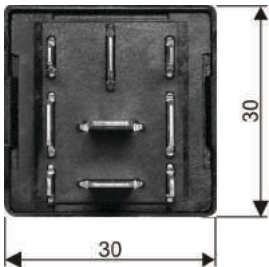


TECHNICAL DATA

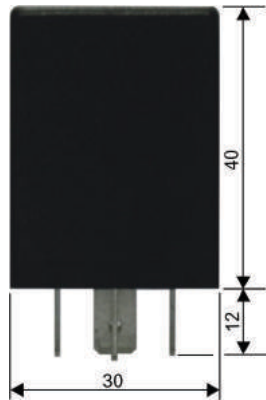
Voltage	12V
Operating voltage	9V-15V
coil current	30mA
Operating temperature	-40°C - 85°C
Lifetime	electr. 10 ⁵ (@7A/250V) mech. 10 ⁷
Protection	IP52

MEASUREMENTS

front view



side view



article number	Output	current	relay circuit	tab
DOR.100.000.00	2x change over	10A	--	optional
DOR.101.000.00	2x change over	10A	free-running diode	optional
DOR.102.000.00	2x change over	10A	resistor	optional
DOR.103.000.00	2x change over	10A	free-running/reverse polarity protection diode	optional

other versions on request

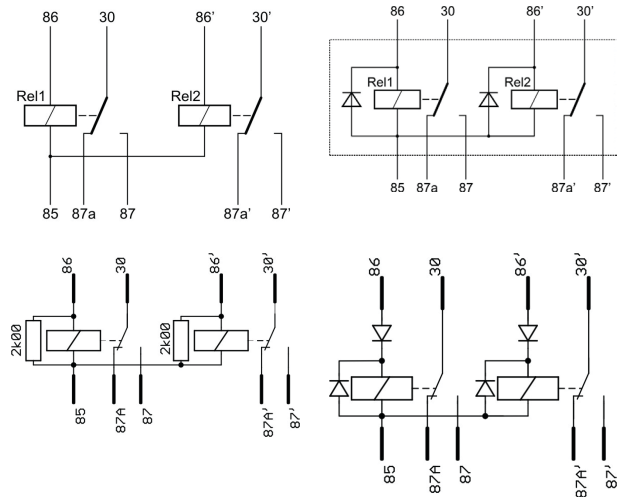


DOUBLE RELAY 24V



Double relay 24V 2x10A

CIRCUIT DIAGRAM

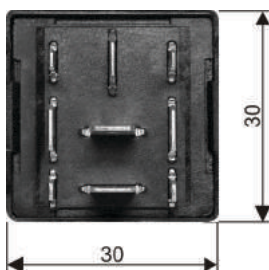


TECHNICAL DATA

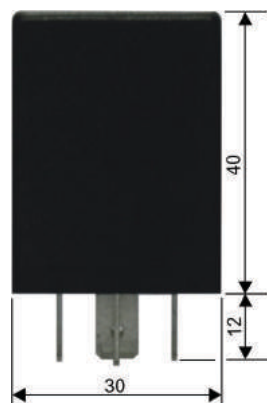
Voltage	24V
Operating voltage	9V-15V, 18V-30V, 18V-32V
coil current	15mA
Operating temperature	-40°C - 85°C
Lifetime	electr. 10 ⁵ (@7A/250V) mech. 10 ⁷
Protection	IP52

MEASUREMENTS

front view



side view



article number	Output	current	relay circuit	tab
DOR.200.000.00	2x change over	10A	--	optional
DOR.201.000.00	2x change over	10A	free-running diode	optional
DOR.202.000.00	2x change over	10A	resistor	optional
DOR.203.000.00	2x change over	10A	free-running/reverse polarity protection diode	optional
DOR.220.000.00	2x change over	10A	--	optional
DOR.221.000.00	2x change over	10A	free-running diode	optional

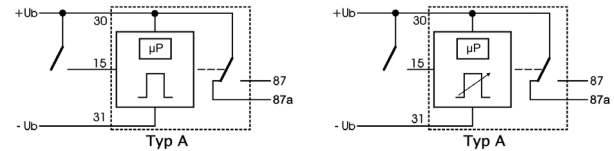
other versions on request

TIME RELAY TYPE A 24V 10A



Time relay on delay/off delay, relay common contact connected to 30, 1 input, positive triggered

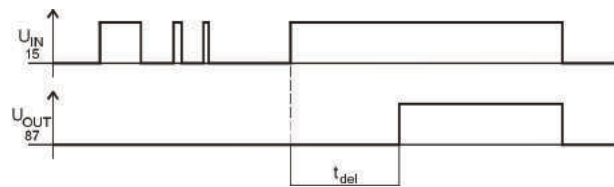
CIRCUIT DIAGRAM



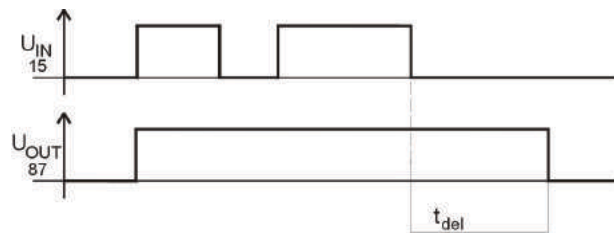
TECHNICAL DATA

Voltage	24V
Operating voltage	18V-30V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

FUNCTION DIAGRAM



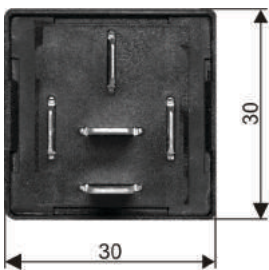
on delay



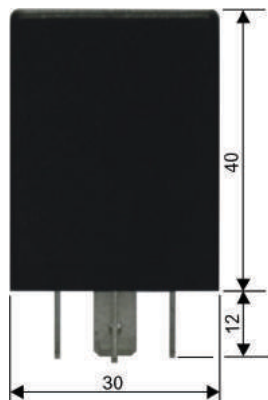
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZR.200.000.00	Typ A	on delay	optional	No	customer requirements
ZR.260.000.00	Typ A	off delay	optional	No	customer requirements
ZRP.200.000.00	Typ A	on delay	optional	Yes	customer requirements
ZRP.260.000.00	Typ A	off delay	optional	Yes	customer requirements
ZRPS.200.000.00	Typ A	on delay	optional	Yes	customer requirements
ZRPS.260.000.00	Typ A	off delay	optional	Yes	customer requirements

other versions on request

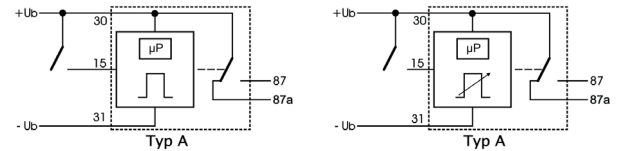


TIME RELAY TYPE A 12V 30A



Time relay on delay/off delay, relay common contact connected to 30, 1 input, positive triggered.

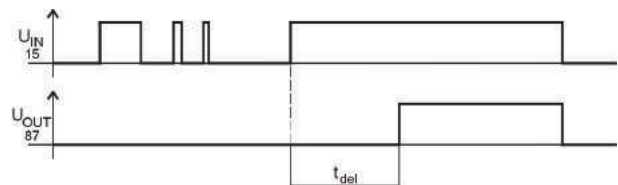
CIRCUIT DIAGRAM



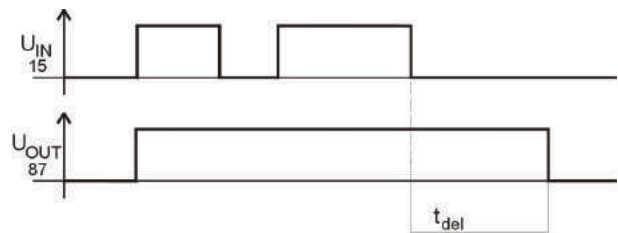
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



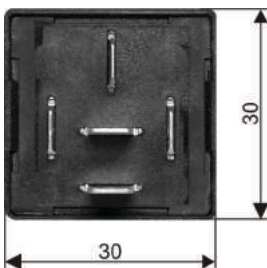
on delay



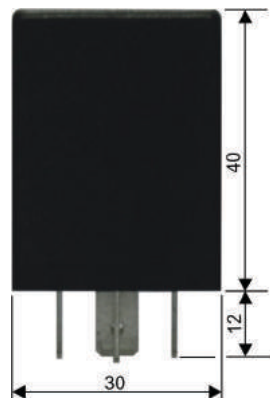
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRH.100.000.00	Typ A	on delay	optional	No	customer requirements
ZRH.160.000.00	Typ A	off delay	optional	No	customer requirements
ZRHP.100.000.00	Typ A	on delay	optional	Yes	customer requirements
ZRHP.160.000.00	Typ A	off delay	optional	Yes	customer requirements

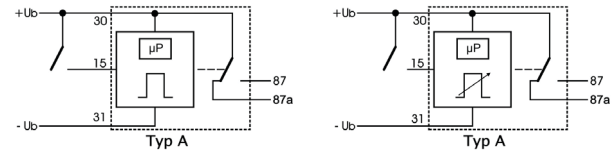
other versions on request

TIME RELAY TYPE A 24V 30A



Time relay on delay/off delay, common contact connected with 30, 1 input, positive triggered

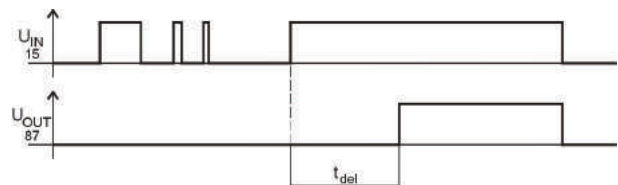
CIRCUIT DIAGRAM



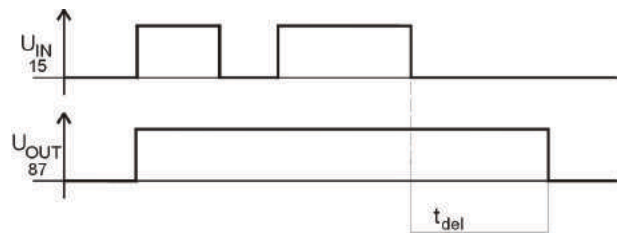
TECHNICAL DATA

Voltage	24V
Operating voltage	18V-30V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



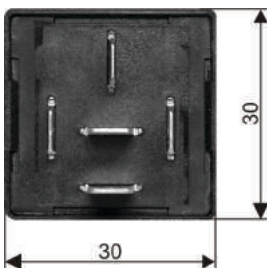
on delay



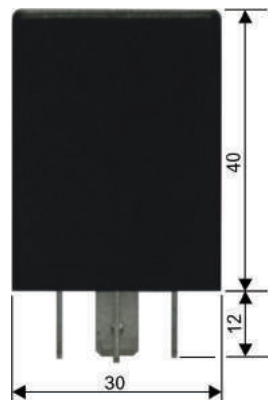
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRH.200.000.00	Typ A	on delay	optional	No	customer requirements
ZRH.260.000.00	Typ A	off delay	optional	No	customer requirements
ZRHP.200.000.00	Typ A	on delay	optional	Yes	customer requirements
ZRHP.260.000.00	Typ A	off delay	optional	Yes	customer requirements

other versions on request

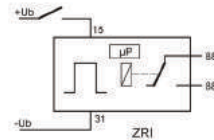


TIME RELAY TYPE A 12V 50A



Time relay on delay/off delay, contact 88 with UB+ connected, 1 input, positive triggered

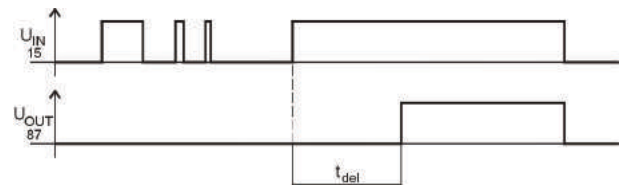
CIRCUIT DIAGRAM



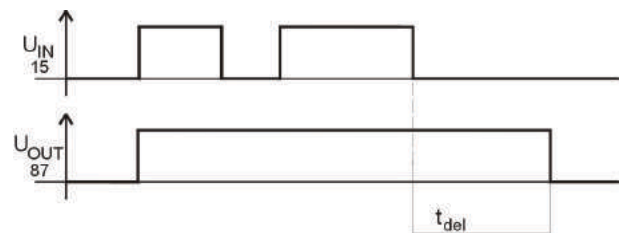
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	70A
Time Period	customer requirements
Tolerance	5%
Lifetime	electr. 10^5 mech. 10^6
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



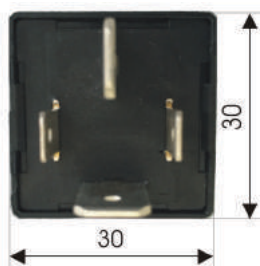
on delay



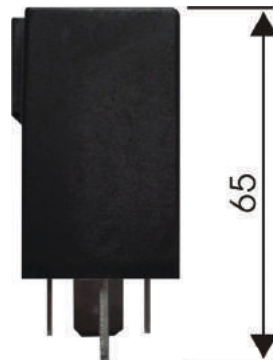
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRI.100.000.00	Typ A	on delay	optional	No	customer requirements
ZRI.160.000.00	Typ A	off delay	optional	No	customer requirements

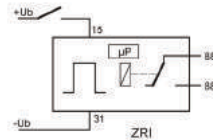
other versions on request

TIME RELAY TYPE A 24V 50A



Time relay on delay/off delay, contact 88 with UB+ connected, 1 input, positive triggered

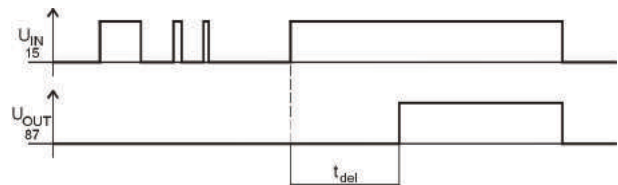
CIRCUIT DIAGRAM



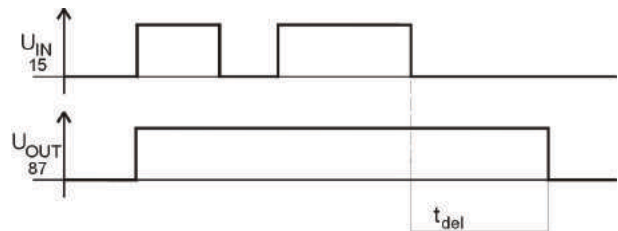
TECHNICAL DATA

Voltage	24V
Operating voltage	18V-30V
current	70A
Time Period	customer requirements
Tolerance	5%
Lifetime	electr. 10 ⁵ mech. 10 ⁶
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



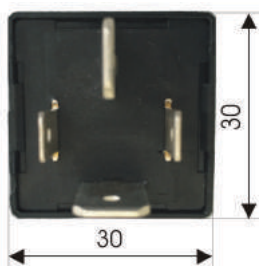
on delay



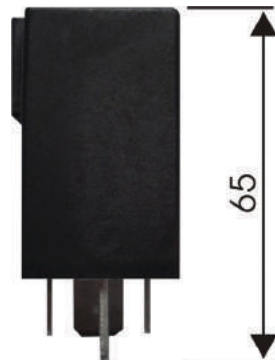
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRI.200.000.00	Typ A	on delay	optional	No	customer requirements
ZRI.260.000.00	Typ A	off delay	optional	No	customer requirements

other versions on request

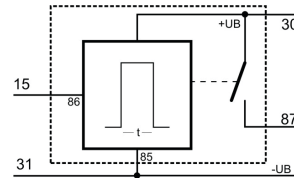


TIME RELAY TYPE A 12V 100A



Time relay on delay/off delay, contact 88 with UB+ connected, 1 input, positive triggered

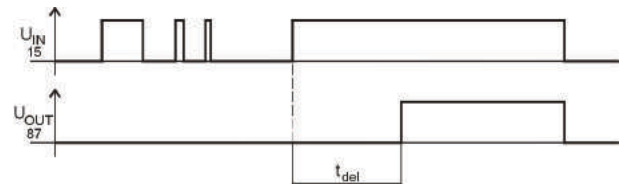
CIRCUIT DIAGRAM



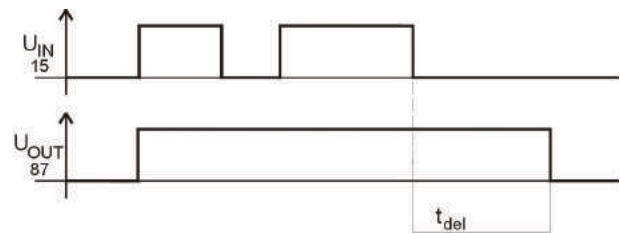
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	100A
Time Period	customer requirements
Tolerance	5%
Lifetime	electr. 10^5 mech. 10^6
Protection	IP50
E1-number	-
Weight [g]	70 Gramm

FUNCTION DIAGRAM



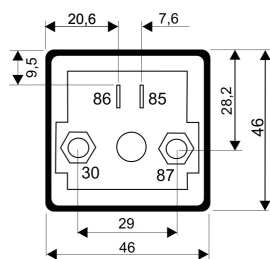
on delay



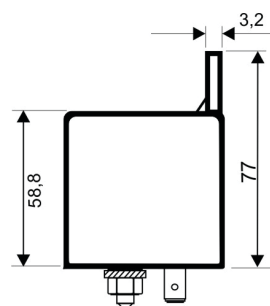
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRJ.100.000.00	Typ A	on delay	Yes	No	customer requirements
ZRJ.160.000.00	Typ A	off delay	Yes	No	customer requirements

other versions on request

TIME RELAY TYPE A 24V 100A

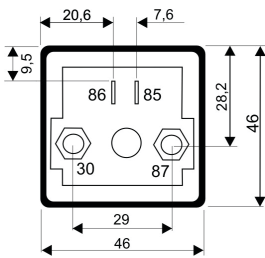


TECHNICAL DATA

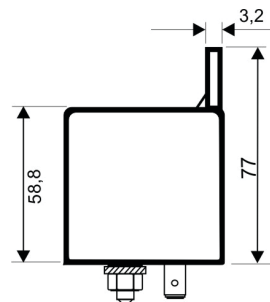
Voltage	24V
Operating voltage	18V-30V
current	100A
Time Period	customer requirements
Tolerance	5%
Lifetime	electr. 10^5 mech. 10^5
Protection	IP52
E1-number	-
Weight [g]	70 Gramm

MEASUREMENTS

bottom view

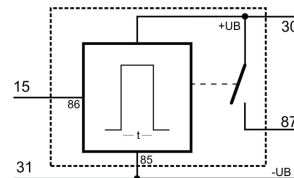


side view

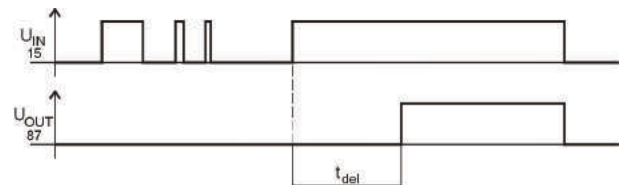


Time relay on delay, contact 87 with +UB (30) connected, positive triggered, 1 input clamp 86 (15).

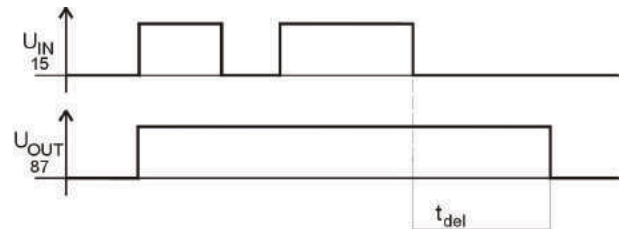
CIRCUIT DIAGRAM



FUNCTION DIAGRAM



on delay



off delay

article number	model	category	tab	adjustable	Time Period
ZRJ.200.000.00	Typ A	on delay	Yes	No	customer requirements

other versions on request

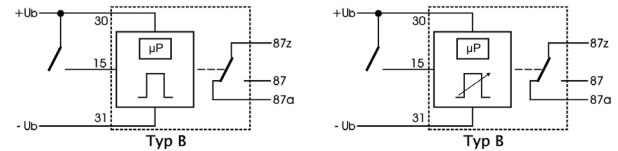


TIME RELAY TYPE B 12V 10A



Time relay on delay/off delay, relay contacts potential free, 1 input, positive triggered

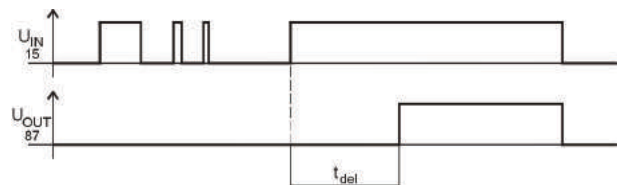
CIRCUIT DIAGRAM



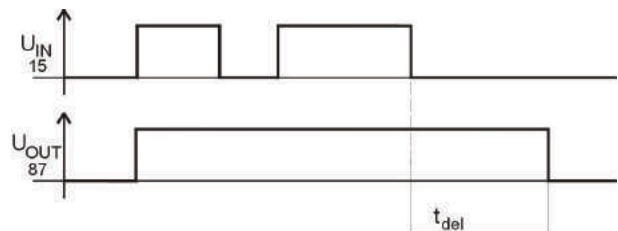
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

FUNCTION DIAGRAM



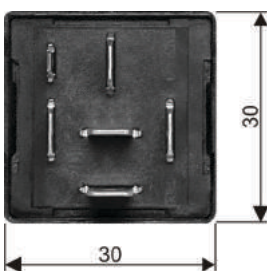
on delay



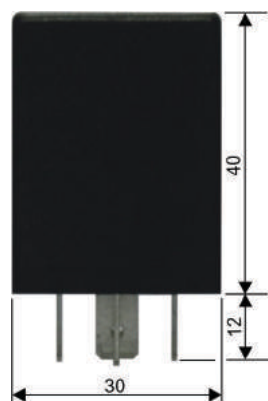
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZR.110.000.00	Typ B	on delay	optional	No	customer requirements
ZR.170.000.00	Typ B	off delay	optional	No	customer requirements
ZRPS.161.000.00	Typ B	off delay	optional	Yes	customer requirements

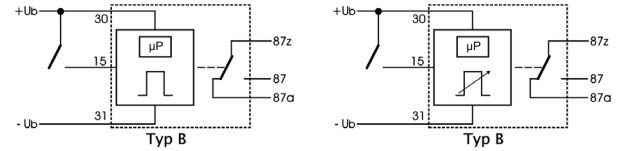
other versions on request

TIME RELAY TYPE B 24V 10A



Time relay on delay/off delay, relay contacts potential free, 1 input, positive triggered

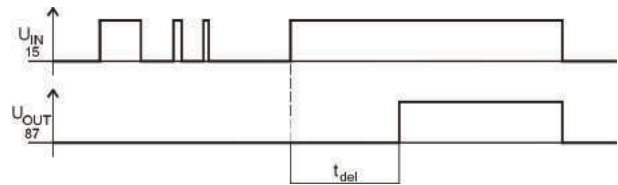
CIRCUIT DIAGRAM



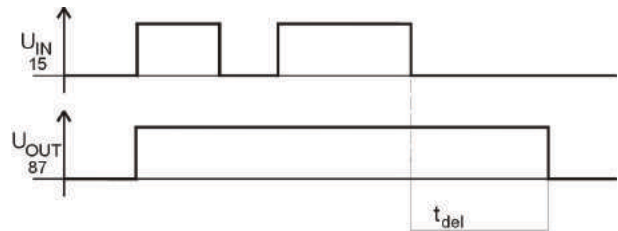
TECHNICAL DATA

Voltage	24V
Operating voltage	18V-30V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

FUNCTION DIAGRAM



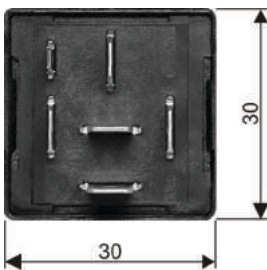
on delay



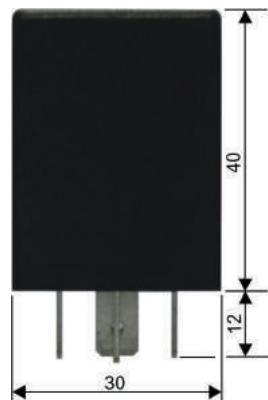
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZR.210.000.00	Typ B	on delay	optional	No	customer requirements
ZR.270.000.00	Typ B	off delay	optional	No	customer requirements

other versions on request

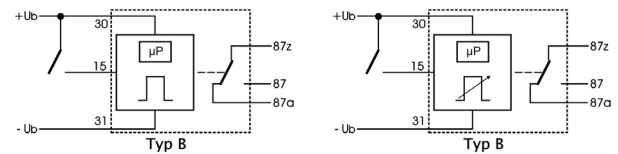


TIME RELAY TYPE B 12V 30A



Zeitrelais Anzugverzögert, Relaismittelkontakt mit 30 verbunden, pos. getriggert, 1 Eingang.

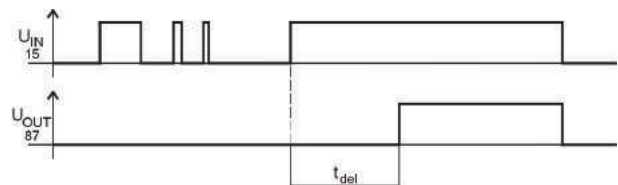
CIRCUIT DIAGRAM



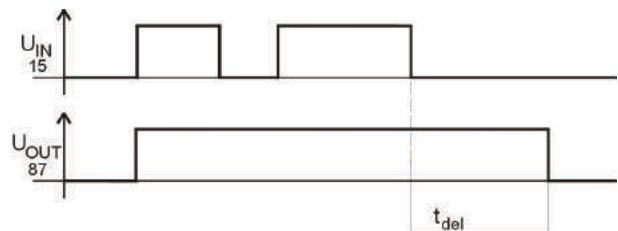
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	elektr. 10^5 mech. 10^7
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



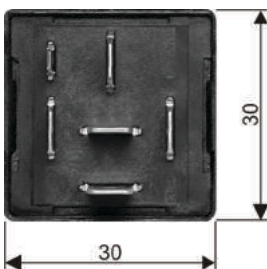
on delay



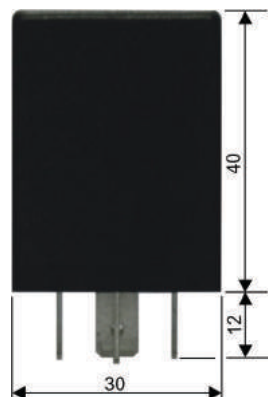
off delay

MEASUREMENTS

bottom view



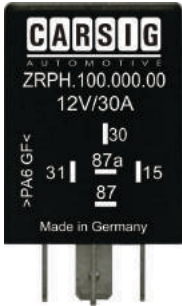
side view



article number	model	category	tab	adjustable	Time Period
ZRH.110.000.00	Typ B	on delay	optional	No	customer requirements
ZRH.170.000.00	Typ B	off delay	optional	No	customer requirements
ZRHP.110.000.00	Typ B	on delay	optional	Yes	customer requirements
ZRHP.170.000.00	Typ B	off delay	optional	Yes	customer requirements

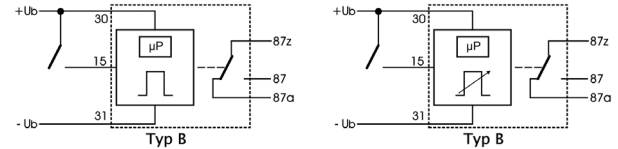
other versions on request

TIME RELAY TYPE B 24V 30A



Time relay on delay/off delay, relay contacts potential free, 1 input, positive triggered

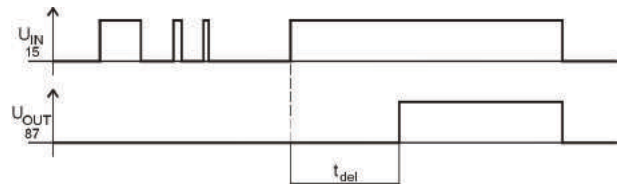
CIRCUIT DIAGRAM



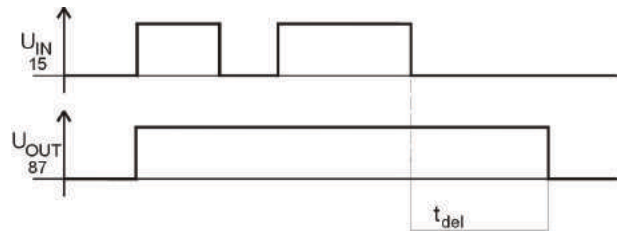
TECHNICAL DATA

Voltage	12V, 24V
Operating voltage	18V-30V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	elektr. 10^5 mech. 10^7
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



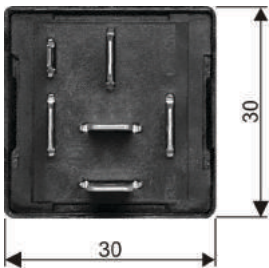
on delay



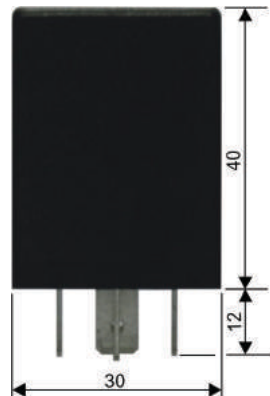
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRH.210.000.00	Typ B	on delay	optional	Yes	customer requirements
ZRH.270.000.00	Typ B	off delay	optional	No	customer requirements
ZRHP.210.000.00	Typ B	on delay	optional	Yes	customer requirements
ZRHP.270.000.00	Typ B	off delay	optional	Yes	customer requirements

other versions on request

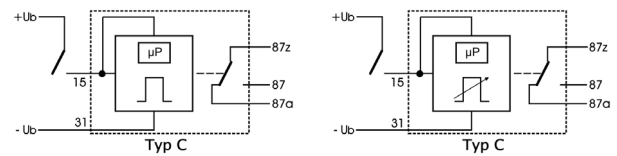


TIME RELAY TYPE C 12V 10A



Time relay off delay, adjustable with potentiometer and switch, power supply via 15, relay contacts potential free, 1 input, positive triggered

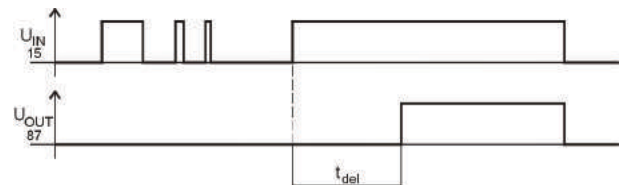
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

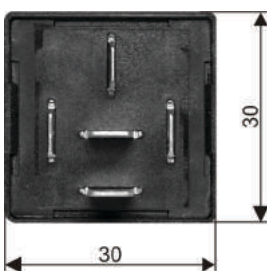
FUNCTION DIAGRAM



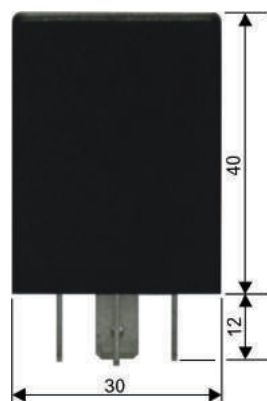
on delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZR.120.000.00	Typ C	on delay	optional	No	customer requirements
ZRP.102.000.00	Typ C	on delay	optional	Yes	customer requirements
ZRPS.102.000.00	Typ C	on delay	optional	Yes	customer requirements

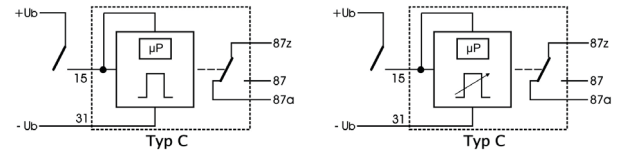
other versions on request

TIME RELAY TYPE C 24V 10A



Time relay on delay, power supply via 15, relay contacts potential free, 1 input, positive triggered

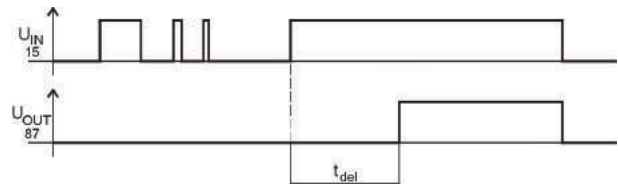
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	24V
Operating voltage	18V-30V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

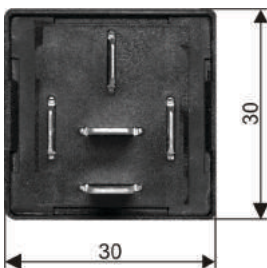
FUNCTION DIAGRAM



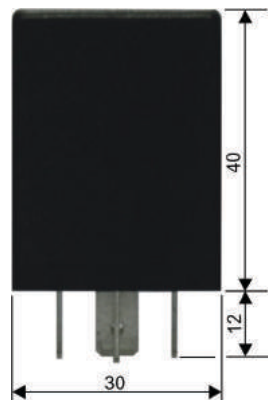
on delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZR.220.000.00	Typ C	on delay	optional	No	customer requirements
ZRP.202.000.00	Typ C	on delay	optional	Yes	customer requirements
ZRPS.202.000.00	Typ C	on delay	optional	Yes	customer requirements

other versions on request

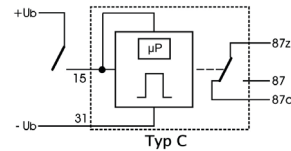


TIME RELAY TYPE C 12V 30A



Time relay on delay, power supply via 15, relay contacts potential free, 1 input, positive triggered

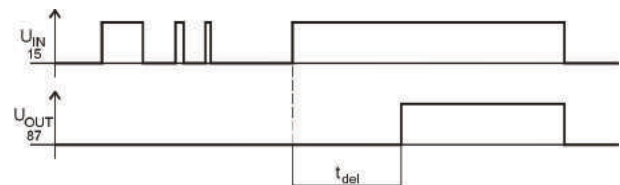
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	elektr. 10 ⁵ mech. 10 ⁷
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

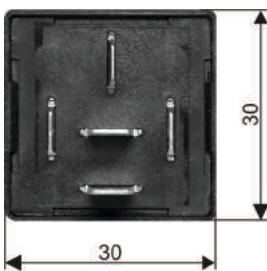
FUNCTION DIAGRAM



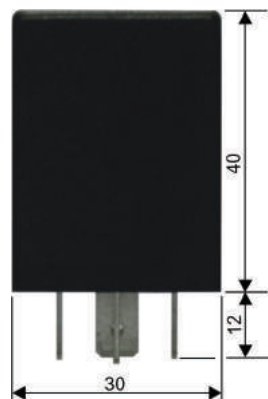
on delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRH.120.000.00	Typ C	on delay	optional	No	customer requirements
ZRHP.120.000.00	Typ C	on delay	optional	Yes	customer requirements

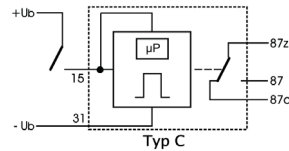
other versions on request

TIME RELAY TYPE C 24V 30A



Time relay on delay, power supply via 15, relay contacts potential free, 1 input, positive triggered

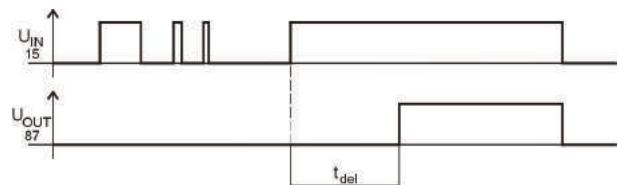
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	24V
Operating voltage	18V-30V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	elektr. 10^5 mech. 10^7
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm, 35 Gramm

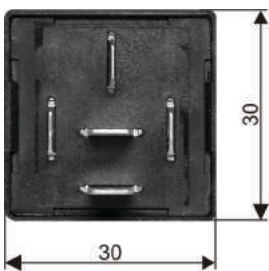
FUNCTION DIAGRAM



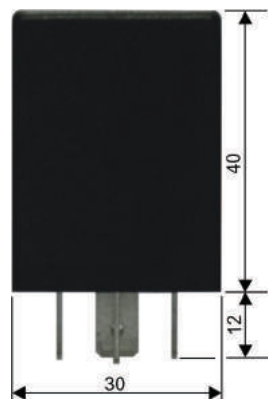
on delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRH.220.000.00	Typ C	on delay	optional	No	customer requirements
ZRHP.220.000.00	Typ C	on delay	optional	Yes	customer requirements

other versions on request

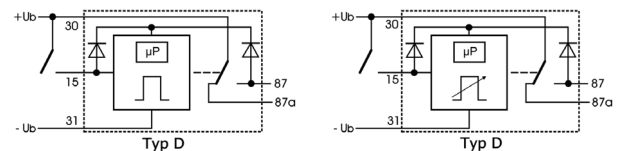


TIME RELAY TYPE D 12V 10A



Time relay on delay/off delay, supply coupled via 15 or 87. Relay common contact to +UB, 1 input, positive triggered

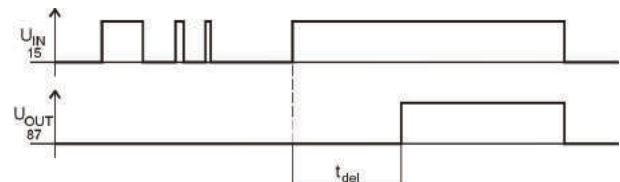
CIRCUIT DIAGRAM



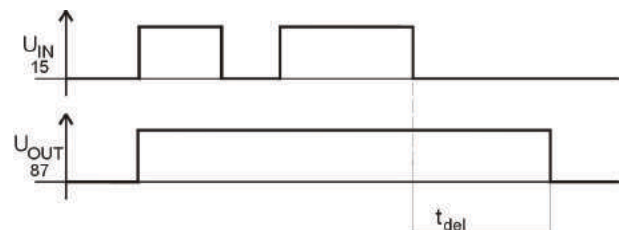
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

FUNCTION DIAGRAM

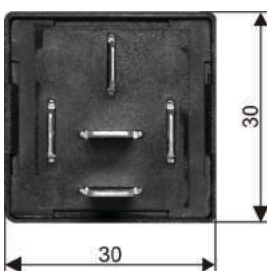


on delay

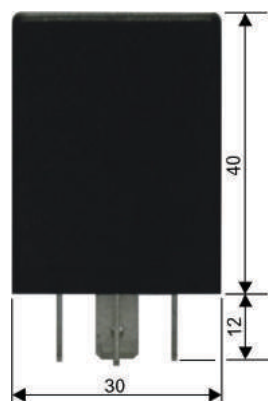


off delay

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZR.130.000.00	Typ D	on delay	optional	No	customer requirements
ZR.190.000.00	Typ D	off delay	optional	No	customer requirements
ZRP.103.000.00	Typ D	on delay	optional	Yes	customer requirements
ZRP.163.000.00	Typ D	off delay	optional	Yes	customer requirements
ZRPS.103.000.00	Typ D	on delay	optional	Yes	customer requirements
ZRPS.163.000.00	Typ D	off delay	optional	Yes	customer requirements

other versions on request

TIME RELAY TYPE D 24V 10A

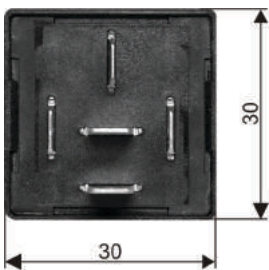


TECHNICAL DATA

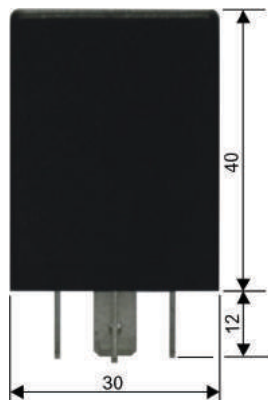
Voltage	24V
Operating voltage	18V-30V
current	10A
Time Period	customer requirements
Tolerance	5%
Lifetime	Avoid heat accumulation
Protection	IP50
E1-number	03 5102
Weight [g]	30 Gramm

MEASUREMENTS

bottom view

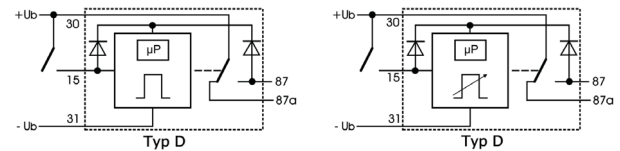


side view

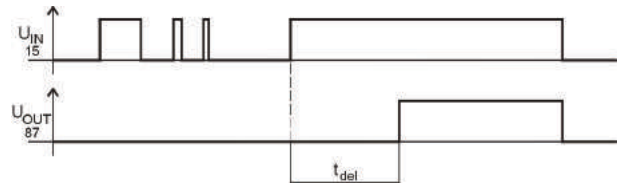


Time relay on delay/off delay, power supply coupled via 15 and 87. Relay common contact at +UB, 1 input, positive triggered

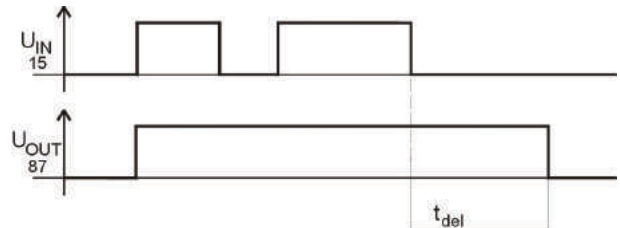
CIRCUIT DIAGRAM



FUNCTION DIAGRAM



on delay



off delay

article number	model	category	tab	adjustable	Time Period
ZR.230.000.00	Typ D	on delay	optional	No	customer requirements
ZR.290.000.00	Typ D	off delay	optional	No	customer requirements
ZRP.203.000.00	Typ D	on delay	optional	Yes	customer requirements
ZRP.263.000.00	Typ D	off delay	optional	Yes	customer requirements
ZRPS.203.000.00	Typ D	on delay	optional	Yes	customer requirements
ZRPS.263.000.00	Typ D	off delay	optional	Yes	customer requirements

other versions on request

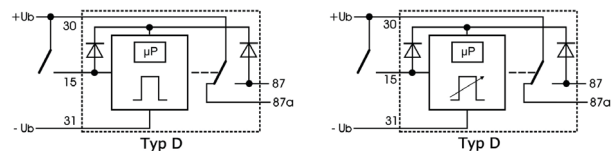


TIME RELAY TYPE D 12V 30A



Zeitrelais Anzugverzögert, Versorgung über 15, Relaiskontakte potentialfrei, pos. getriggert, 1 Eingang.

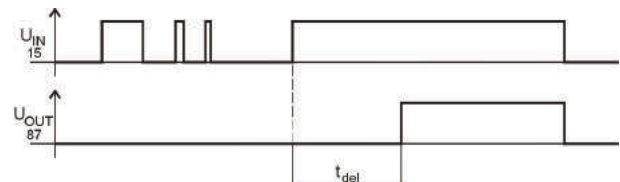
CIRCUIT DIAGRAM



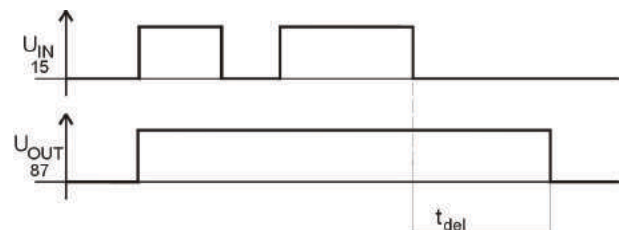
TECHNICAL DATA

Voltage	12V
Operating voltage	9V-15V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	elektr. 10^5 mech. 10^7
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

FUNCTION DIAGRAM



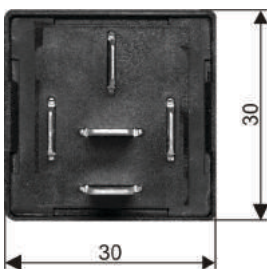
on delay



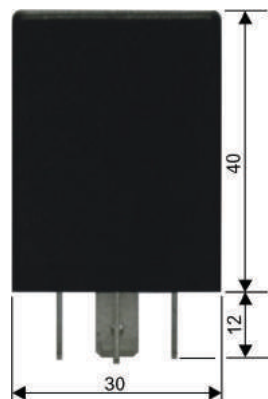
off delay

MEASUREMENTS

bottom view



side view



article number	model	category	tab	adjustable	Time Period
ZRH.130.000.00	Typ D	on delay	optional	No	customer requirements
ZRH.190.000.00	Typ D	off delay	optional	No	customer requirements
ZRHP.130.000.00	Typ B	on delay	optional	Yes	customer requirements
ZRHP.190.000.00	Typ D	on delay	optional	Yes	customer requirements

other versions on request

TIME RELAY TYPE D 24V 30A

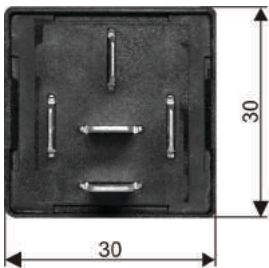


TECHNICAL DATA

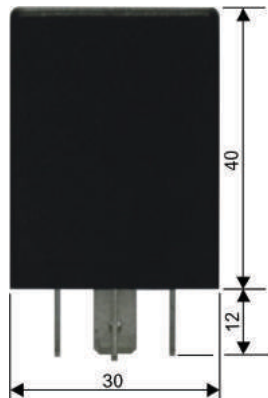
Voltage	24V
Operating voltage	18V-30V
current	30A
Time Period	customer requirements
Tolerance	5%
Lifetime	elektr. 10^5 mech. 10^7
Protection	IP50
E1-number	035421
Weight [g]	30 Gramm

MEASUREMENTS

bottom view

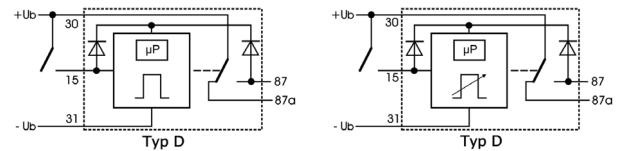


side view

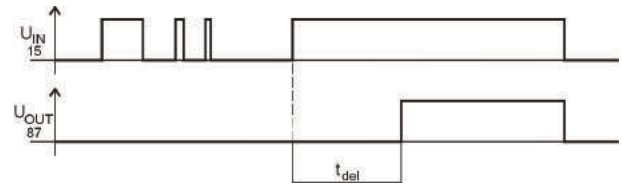


Zeitrelais Anzugverzögert, Versorgung über 15, Relaiskontakte potentialfrei, pos. getriggert, 1 Eingang.

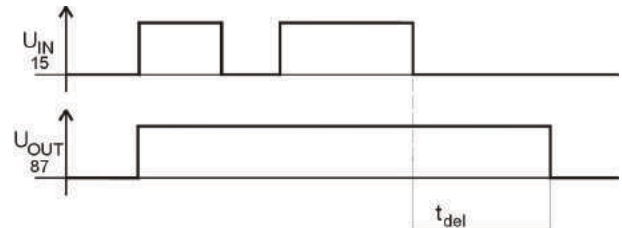
CIRCUIT DIAGRAM



FUNCTION DIAGRAM



on delay



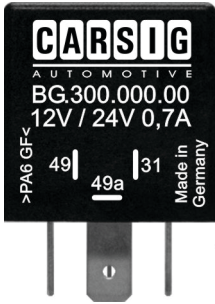
off delay

article number	model	category	tab	adjustable	Time Period
ZRH.230.000.00	Typ D	on delay	optional	No	customer requirements
ZRH.290.000.00	Typ D	off delay	optional	No	customer requirements
ZRHP.230.000.00	Typ D	off delay	optional	Yes	customer requirements
ZRHP.290.000.00	Typ D	off delay	optional	Yes	customer requirements

other versions on request



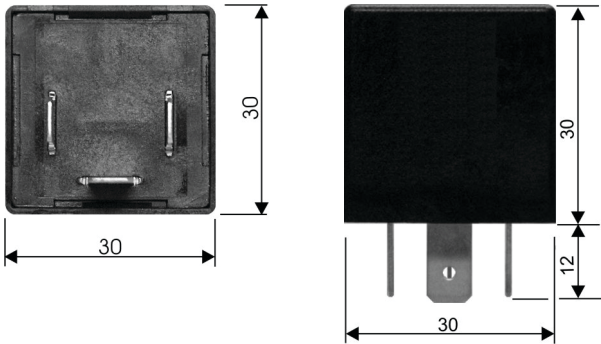
FLASHER



TECHNICAL DATA

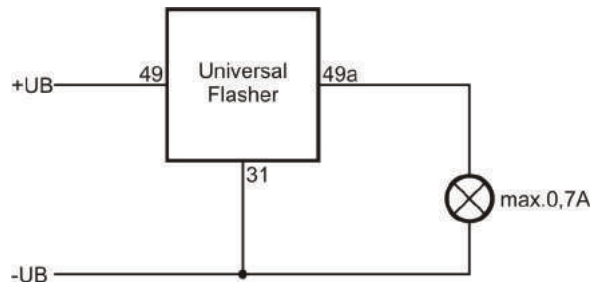
Voltage	12V/24V
Operating voltage	9-30V

MEASUREMENTS



Universal flasher 12V / 24V for driving the hazard lights with LEDs e.g. at the trail gate. The output is protected against short-circuit and overload.

CIRCUIT DIAGRAM



article number	BG_model	current	model	flashing frequency	control light	tab
BG.300.000.00	universal	-	Schließer	90 Imp/min +/-10	--	optional
BG.301.000.00	universal	5A	Schließer	90 Imp/min +/-10	--	optional
BG.302.000.00	universal	10A	Schließer	90 Imp/min +/-10	--	optional
BG.303.000.00	universal	5A	Schließer	50/min +/-20%	--	optional

other versions on request

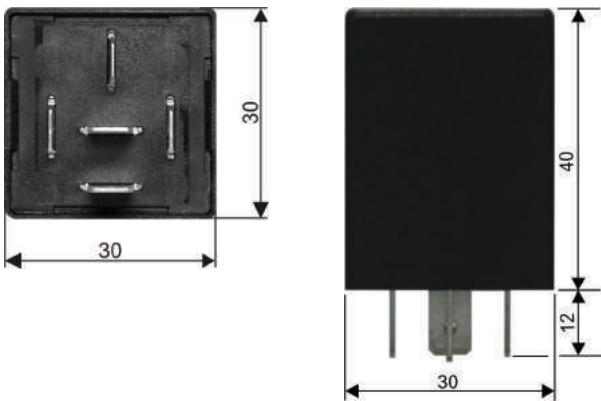
FLASHER 12V



TECHNICAL DATA

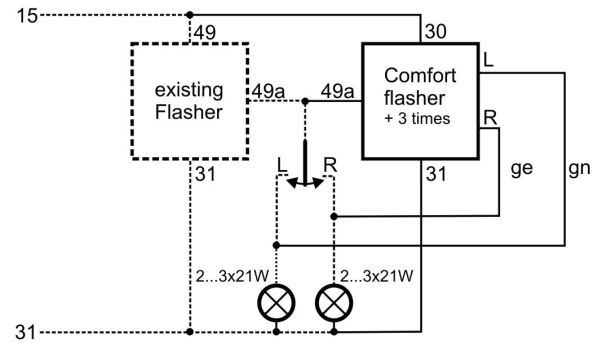
Voltage	12V
Operating voltage	9V-15V

MEASUREMENTS



Comfort flasher Is the indicator stalk touched shortly either LH or RH side, the comfort flasher is flashing three times for the previously chosen side RH or LH.

CIRCUIT DIAGRAM



article number	BG_model	current	model	flashing frequency	control light	tab
BG.100.002.00	-	5A	Schließer	90 Imp/min +/-10	C	optional
BG.100.004.00	(2+1)*21W	5A	Schließer	90 Imp/min +/-10	C2	optional

other versions on request

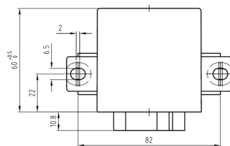
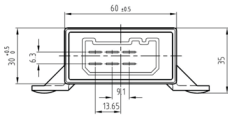
FLASHER 24V



TECHNICAL DATA

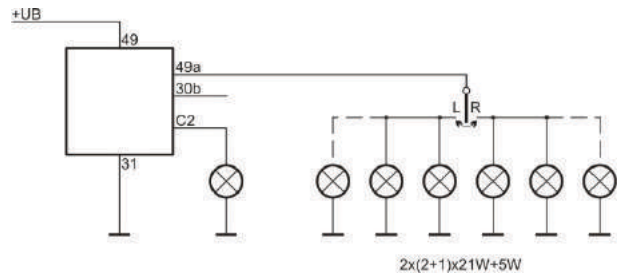
Voltage	24V
Operating voltage	18V-30V

MEASUREMENTS



Flasher unit 24V (2+1)/8x21W Electronic flasher for the turn signals and hazard lights. The flasher can be used for different vehicle types. A lamp failure is displayed at output C and will flash at the flash rate (default display).

CIRCUIT DIAGRAM



article number	BG_model	current	model	flashing frequency	control light	tab
BG.200.000.00	(2+1)*21W	5A	Schließer	90 Imp/min +/-10	C+C2	optional
BG.200.001.00	(3+1)*21W	5A	Schließer	90 Imp/min +/-10	C+C2	optional

other versions on request



KSR-CAN



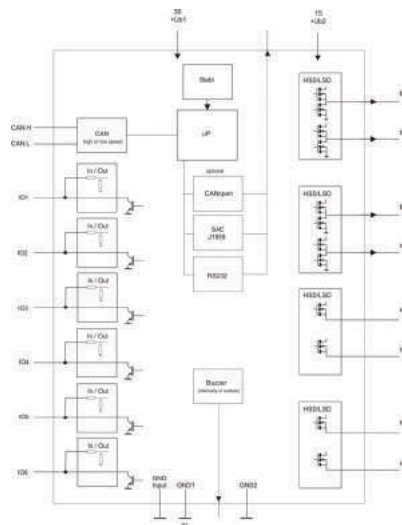
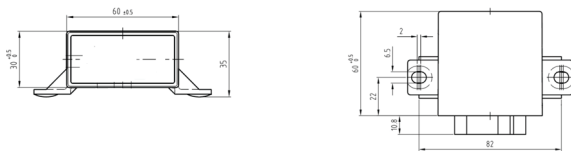
Mini CAN Controller, universally applicable, can be used as a power cluster or metering device. It is applicable in vehicles of all types: machines, cranes, agricultural- and forestry machinery as well as construction machinery. All input and output ports are freely programmable. CAN-bus high- or low-speed.

CIRCUIT DIAGRAM

TECHNICAL DATA

Voltage	12V/24V
Operating voltage	9-30V, 24V
interface	CAN
E1-number	-
Protection	IP52
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation

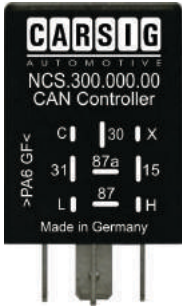
MEASUREMENTS



article number	additional output	number of inputs	current	interface	Output	tab
KSR.500.000.00	6	8	3A	CAN	2x bridge 2A bzw. 4x2A@25°C	optional
KSR.550.000.00	6	8	3A	-	2x bridge 4A bzw. 4x2A@25°C	optional
KSR.600.000.00	6	6	10A	CAN	2x bridge 10A bzw. 4x10A@25°C	optional

other versions on request

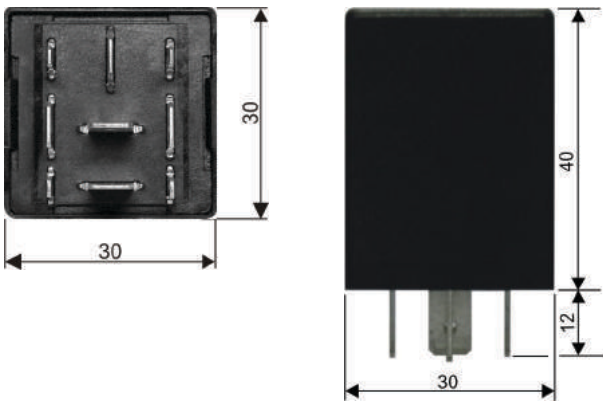
NANO-CAN



TECHNICAL DATA

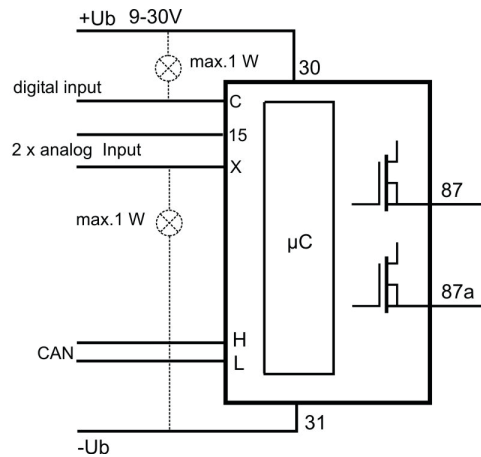
Voltage	12V/24V
Operating voltage	9-30V
interface	CAN
E1-number	-
Protection	IP52
Operating temperature	-40°C - 85°C
Lifetime	Avoid heat accumulation

MEASUREMENTS



Multifunction / small controller PLC with 3 inputs / outputs and 2 outputs, HSD, and CAN bus. Suitable for automotive and PLC applications. Possibility of the customer's own programming using graphical programming interface CarsGraf©. The functions are freely programmable.

CIRCUIT DIAGRAM

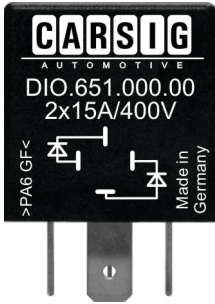


article number	additional output	number of inputs	current	interface	Output	tab
NCS.300.000.00	2	3	-	CAN	2 x 2A @ 12V	optional
NCS.300.500.00	2	3	-	CAN	2 x 5A @ 12V	optional

other versions on request



DIODES

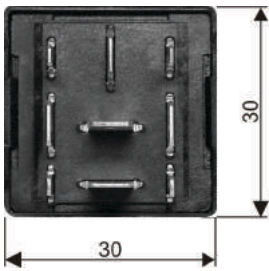


TECHNICAL DATA

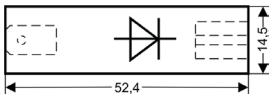
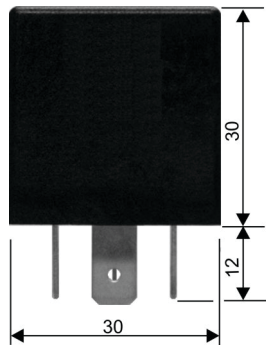
Voltage	12V/24V
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MEASUREMENTS

bottom view

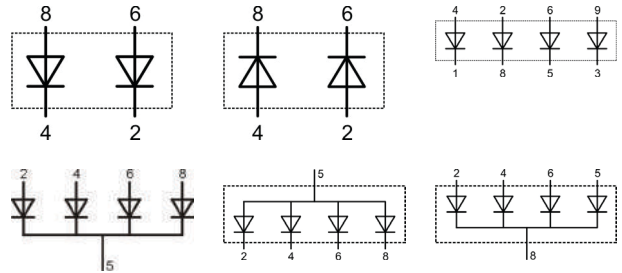


side view



Diode combination The diodes are not connected with each other. Anode and cathode of the diodes are accessible via blade terminals. Used for commutating diodes, headlamps, logical links.

CIRCUIT DIAGRAM



article number	Drop-out voltage	number	Reverse voltage	current	tab
DIO.651.000.00	0,75@60A	2	40V	15A	optional
DIO.652.000.00	1,0V@3A	2	1300V	3A	optional
DIO.653.000.00	1,0V@3A	2	1300V	3A	optional
DIO.660.000.00	1,0V@3A	4	1300V	3A	optional
DIO.661.000.00	1,0V@3A	4	1300V	3A	optional
DIO.662.000.00	1,0V@3A	4	1300V	3A	optional
DIO.663.000.00	1,0V@3A	4	1300V	3A	optional
DIO.664.000.00	1,0V@3A	4	1300V	3A	optional
DIO.670.000.00	1,0V@3A	1	1000V	3A	optional
DIO.674.000.00	1,0V@10A	1	600V	10A	optional

other versions on request



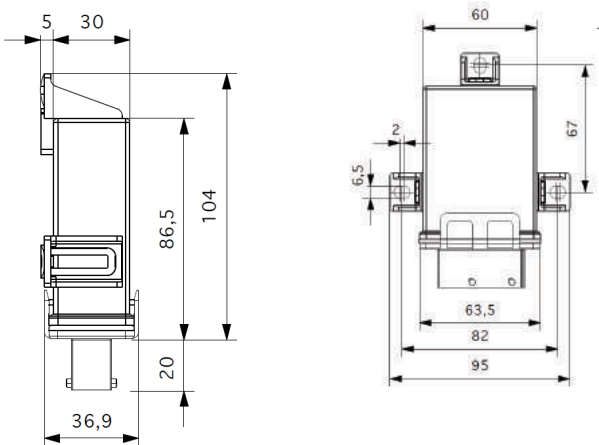
LIGHTING MODULE



TECHNICAL DATA

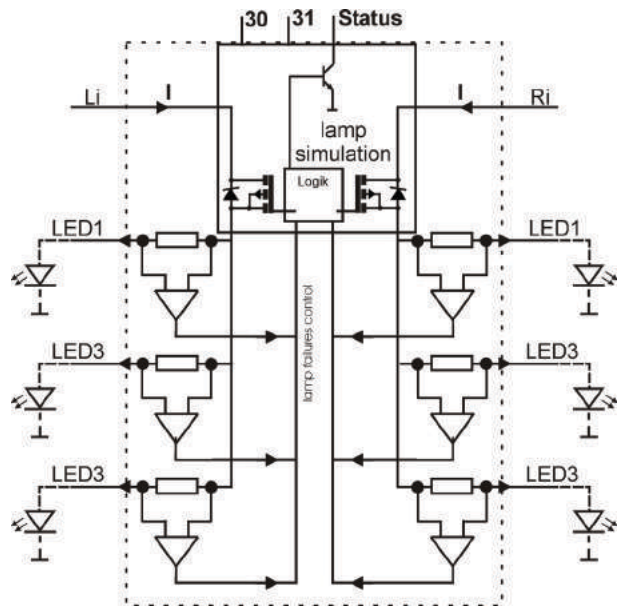
Voltage	24V, 9-30V
Lifetime	20.000h
Protection	IP67

MEASUREMENTS



Lighting module This module is required in order to ensure the function of the vehicle mounted light failure check in retrofitting LED headlights, rear lights and direction indicators.

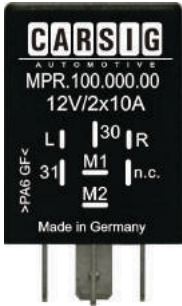
CIRCUIT DIAGRAM



article number	current	tab	control light	additional output	number of inputs
BEL.200.000.00	-	optional	--	10	5
BEL.301.000.00	-	optional	--	2	2
BEL.305.000.00	-	optional	--	6	2

other versions on request

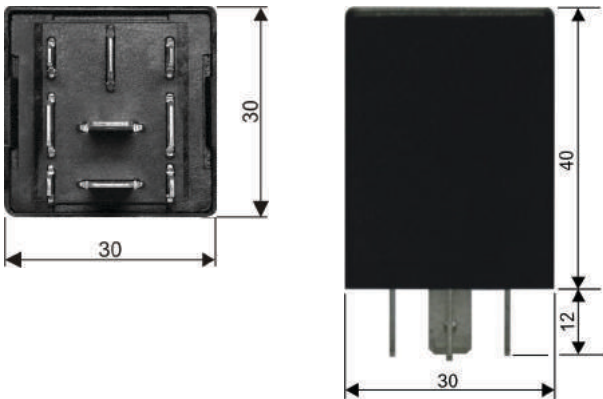
MOTOR POLE REVERSAL



TECHNICAL DATA

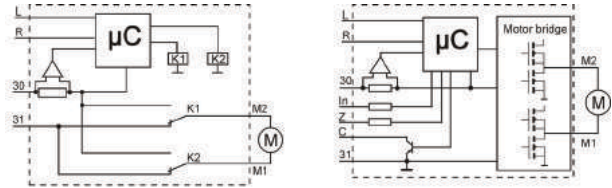
Voltage	12V, 24V, 9-30V
E1-number	035103
Lifetime	Avoid heat accumulation
Protection	IP52

MEASUREMENTS

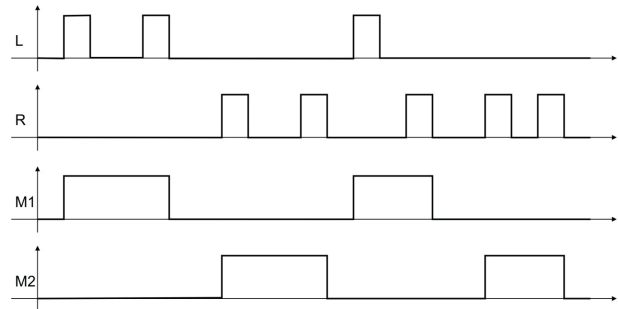


motor pole reverse control is used to reverse the polarity of the electric motors and switching off in case of overload. The overload threshold can be set between about 0,5A-5A +/-0,5A

CIRCUIT DIAGRAM



FUNCTION DIAGRAM



article number	tab	model	Output	Output	adjustable	current
MPR.100.000.00	optional	changeover	10A Change-over	Changeover	Yes	5A
MPR.200.000.00	optional	changeover	10A Change-over	Changeover	Yes	5A
MPR.300.000.00	optional	changeover	4A	solid state	Yes	3A

other versions on request

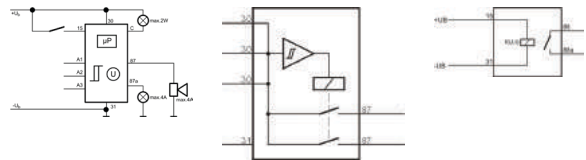


OVERVOLTAGE MONITOR



Overvoltage monitor with 3 measuring input A1, A2 and A3, 3 signal outputs 87, 87a and C and one reset input 15. Output 87 can be reset with input 15.

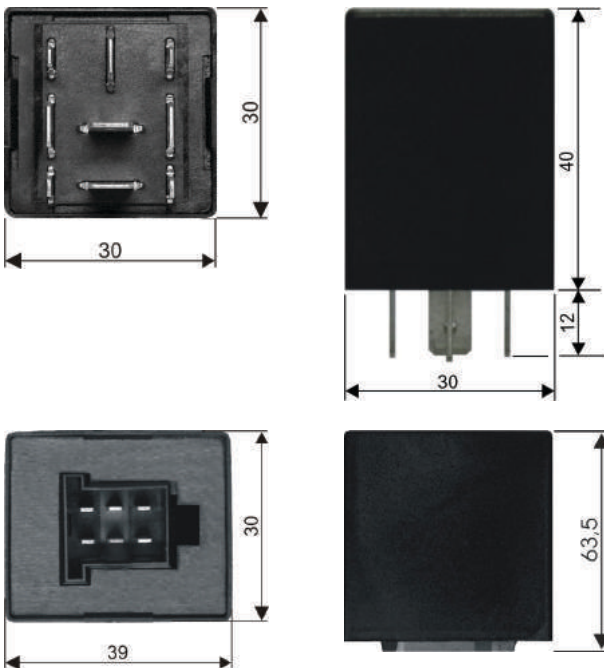
CIRCUIT DIAGRAM



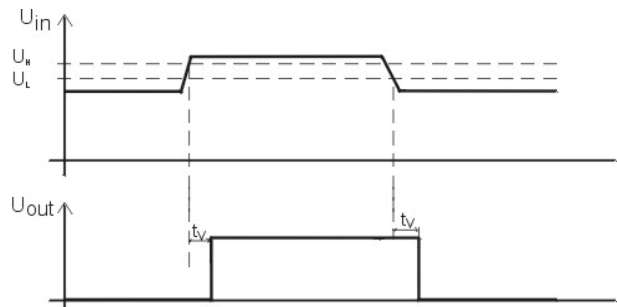
TECHNICAL DATA

Voltage	12V, 24V
Lifetime	elektr. 10^5 mech. 10^7 , --
Protection	IP54

MEASUREMENTS



FUNCTION DIAGRAM



article number	Input	current	adjustable	tab	Output	Output
SPWP.110.000.00	12-13,5V	10A	Yes	optional	10A	Changeover
SPW.100.000.00	11,5V / 12,5V +/-0,5V	10A	No	optional	short-circuit and over-load protected	solid state
SPW.150.000.00	11,8V +/-0,1V	10A	No	optional	2x20A	normally open
SPW.200.000.00	23V / 25V +/-0,5V	10A	No	optional	short-circuit and over-load protected	solid state
SPWI.200.001.00	25,6 / 26,4 / 30V	70A	No	optional	40A NOC @25°C	normally open

other versions on request

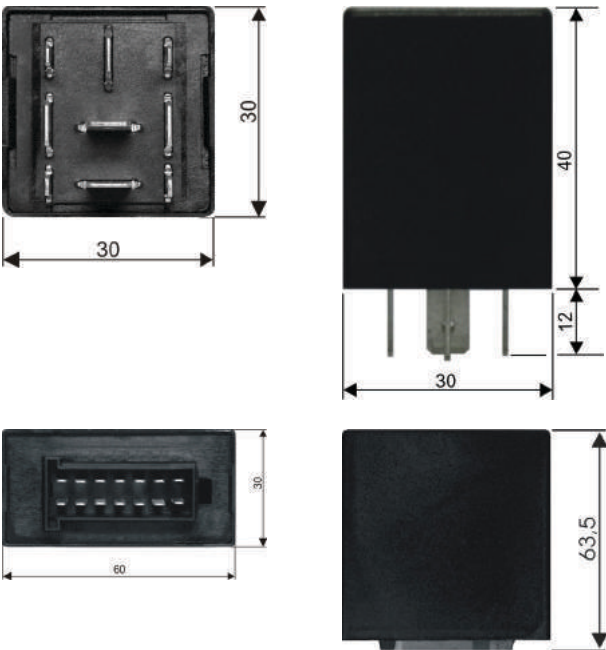
STEP-UP/DOWN



TECHNICAL DATA

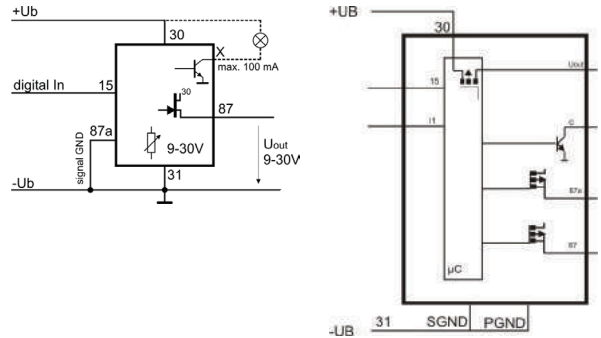
Voltage	12V/24V
Operating voltage	9-30V
Tolerance	5%
E1-number	-
Protection	IP52
Weight [g]	50 Gramm, 40 Gramm

MEASUREMENTS



Step-Up/Step-Down DC-DC-converter with internal overtemperature protection and optional undervoltage protection. Output voltage adjustable by internal potentiometer in the range 9V-30V.

CIRCUIT DIAGRAM

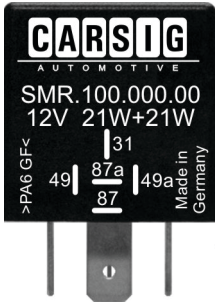


article number	Input	current	additional output	adjustable	tab
STP.350.100.00	6-30V	5A	3	Yes	optional
STP.300.000.00	9-30V	3A	1	Yes	optional

other versions on request

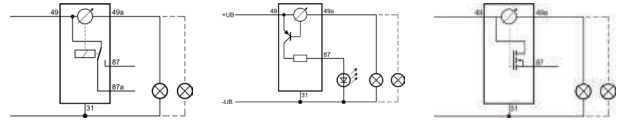


CURRENT MONITORING RELAY



Current monitoring relay bi-directional, Application: Monitoring of warning or flashing lights

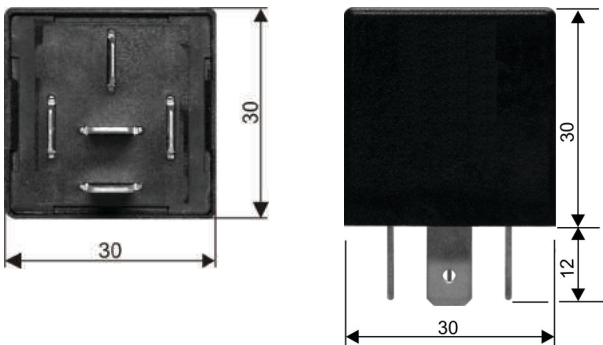
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V, 24V, 12V/24V
Lifetime	elektr. 10 ⁵ mech. 10 ⁷
Protection	IP52

MEASUREMENTS



article number	current	adjustable	tab
SMR.100.000.00	-	No	optional
SMR.200.000.00	-	No	optional
SMR.300.000.00	-	No	optional

other versions on request

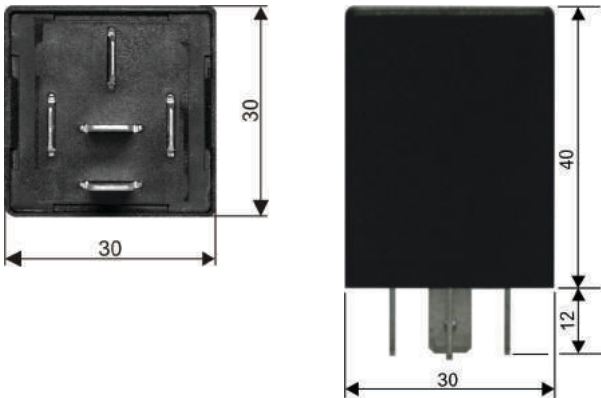
FLIP-FLOP RELAY 12V



TECHNICAL DATA

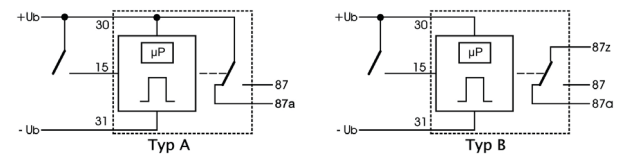
Voltage	12V
Operating voltage	9V-15V
Total power	100A/30A Change-over, 100A/30A Change over, 240W
Lifetime	Avoid heat accumulation
E1-number	035104, 03 5102
Protection	IP54
Weight [g]	35 Gramm, 30 Gramm

MEASUREMENTS

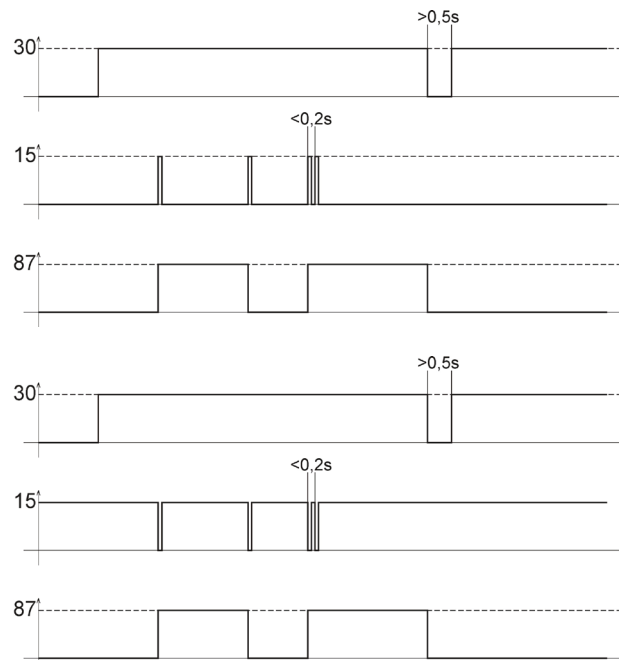


Toggle relay 12V, positive/negative triggered. Toggle relays are used where load is switched on and off, example: lamps, motors etc.

CIRCUIT DIAGRAM



FUNCTION DIAGRAM



article number	Input	Output	Output	current	model	tab
SHR.100.000.00	pos.	60A/30A Change-over	Changeover	20/10A	Typ A	optional
SHR.101.000.00	neg.	60A/30A Change-over	Changeover	20/10A	Typ A	optional
SHR.102.000.00	pos.	60A/30A Change-over	Changeover	20/10A	Typ B	optional
SHR.105.000.00	pos.	10A/15A	Changeover	15/10A	Typ A	optional

other versions on request



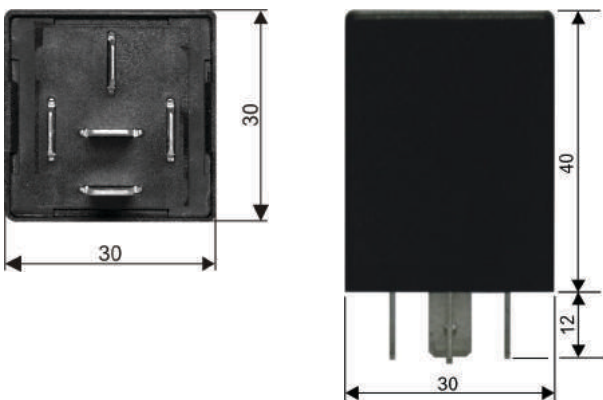
FLIP-FLOP RELAY 24V



TECHNICAL DATA

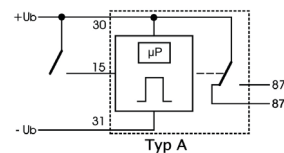
Voltage	24V
Operating voltage	18V-30V, 18V-32V
Total power	100A/30A Change over
Lifetime	Avoid heat accumulation
E1-number	035104, 03 5102
Protection	IP52
Weight [g]	35 Gramm, 30 Gramm

MEASUREMENTS

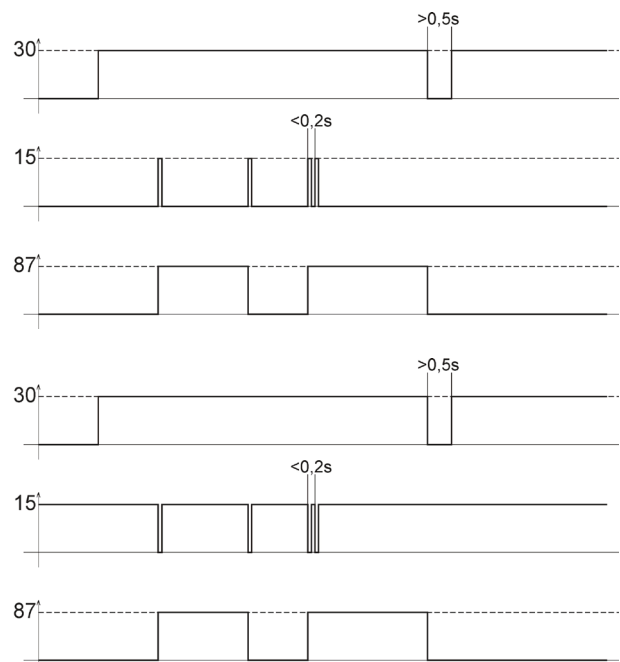


Toggle relay 24V positive/negative triggered. Toggle relays are used where load is switched on and off, example: lamps, motors etc.

CIRCUIT DIAGRAM



FUNCTION DIAGRAM



article number	Input	Output	Output	current	model	tab
SHR.200.000.00	pos.	60A/30A Change-over	Changeover	25/10A	Typ A	optional
SHR.201.000.00	neg.	60A/30A Change-over	Changeover	25/10A	Typ A	optional
SHR.205.000.00	neg.	10A/10A	Changeover	15/10A	Typ A	optional

other versions on request

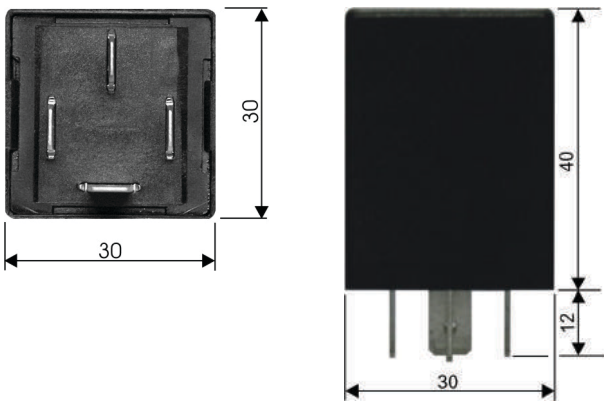
FLIP-FLOP RELAY 9-30V



TECHNICAL DATA

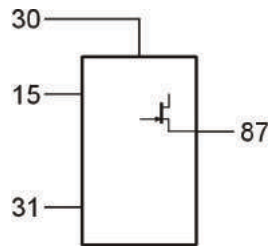
Voltage	12V/24V
Operating voltage	9-30V
Total power	10A, 30A
Lifetime	Avoid heat accumulation
E1-number	-
Protection	IP52
Weight [g]	30 Gramm

MEASUREMENTS

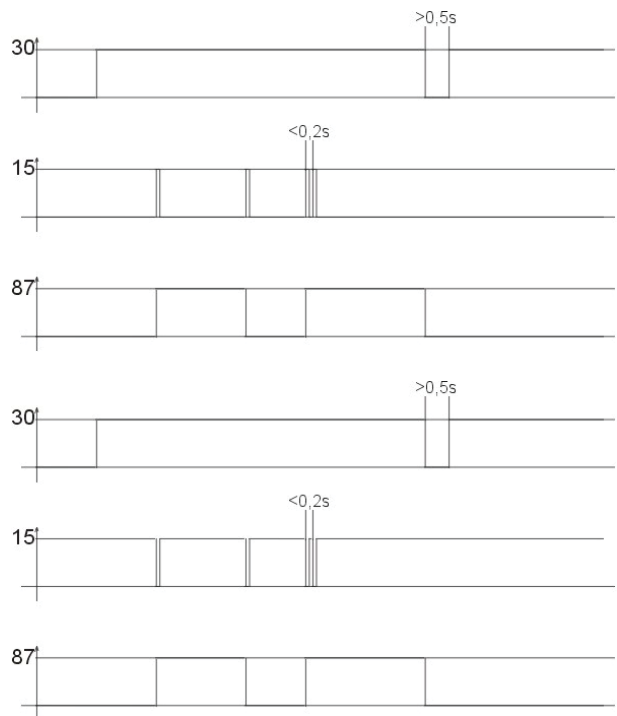


Toggle relay, electronic outputs protected against short-circuit and overload, positive triggered. Toggle relays are used where load is switched on and off, example: lamps, motors, etc.

CIRCUIT DIAGRAM



FUNCTION DIAGRAM



article number	Input	Output	Output	current	model	tab
SHR.300.000.00	pos.	4A	solid state	4A	closer	optional
SHR.301.000.00	neg.	4A	solid state	4A	closer	optional
SHR.302.000.00	pos.	10A Change-over	solid state	10A	closer	optional
SHR.303.000.00	neg.	10A Change-over	solid state	10A	closer	optional

other versions on request

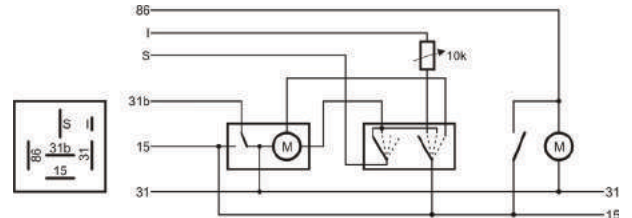


WIPER WASHER INTERVAL RELAY 12V



Wiper Washer Interval Relay 12V Interval pause adjustable, after wiping time approx. 5 sec.

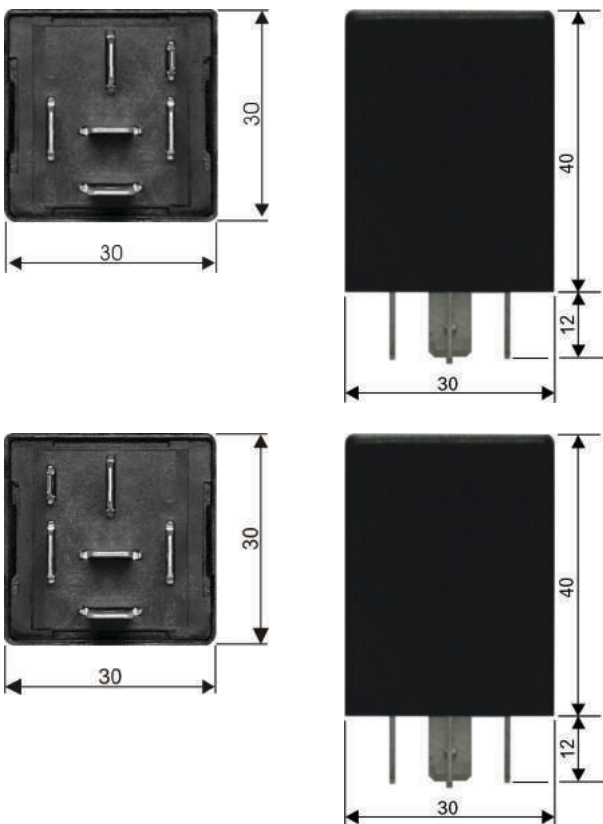
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V
E1-number	035314
Weight [g]	40 Gramm
Lifetime	Avoid heat accumulation
Protection	IP52

MEASUREMENTS



article number	model	Interval time	tab	adjustable	current
WWI.102.000.00	changeover	3-20sec.	optional	Yes	30A
WWI.101.000.00	changeover	4-20sec.	optional	Yes	15A

other versions on request

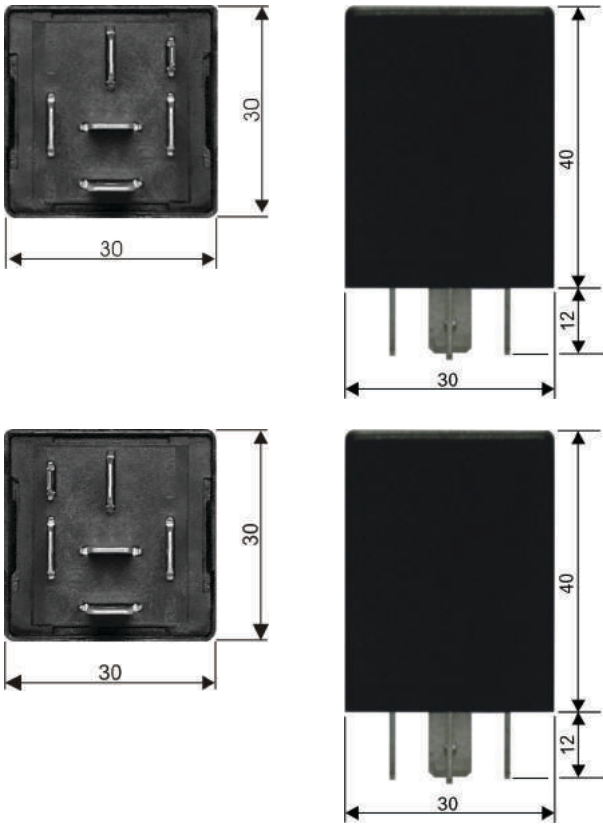
WIPER WASHER INTERVAL RELAY 24V



TECHNICAL DATA

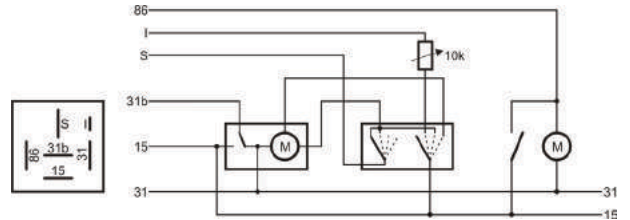
Voltage	24V
E1-number	035314
Weight [g]	35 Gramm
Lifetime	Avoid heat accumulation
Protection	IP52

MEASUREMENTS



Wipe-wash interval relay 24V interval pause adjustable, after wiping time approx. 5 sec.

CIRCUIT DIAGRAM



article number	model	Interval time	tab	adjustable	current
WWI.202.000.00	changeover	3-20sec.	optional	Yes	30A
WWI.201.000.00	changeover	4-20sec.	optional	Yes	15A

other versions on request



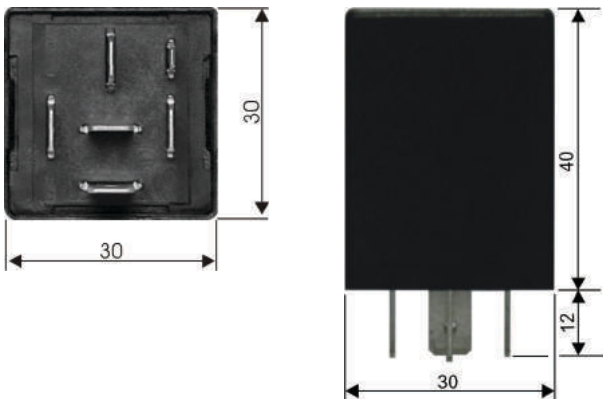
WIPER WASHER INTERVAL RELAY 9-30V



TECHNICAL DATA

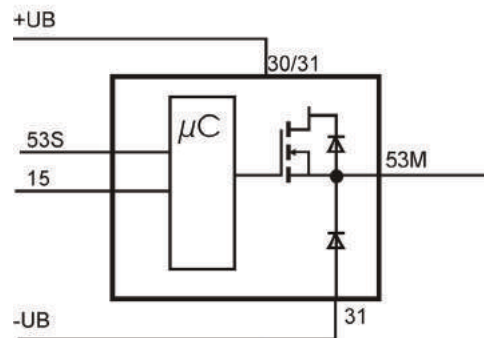
Voltage	9-30V
E1-number	-
Weight [g]	30 Gramm
Lifetime	electr. 10 ⁶
Protection	IP52

MEASUREMENTS



Wipe-wash interval relay interval pause adjustable, after wiping time approx. 5 sec.
The wipe-wash interval relay is used wherever there is a high risk of wipers freezing on the windows.

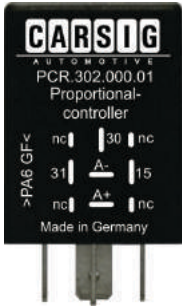
CIRCUIT DIAGRAM



article number	model	Intervall time	tab	adjustable	current
WWI.300.000.00	closer	3-20sec.	optional	-	10A

other versions on request

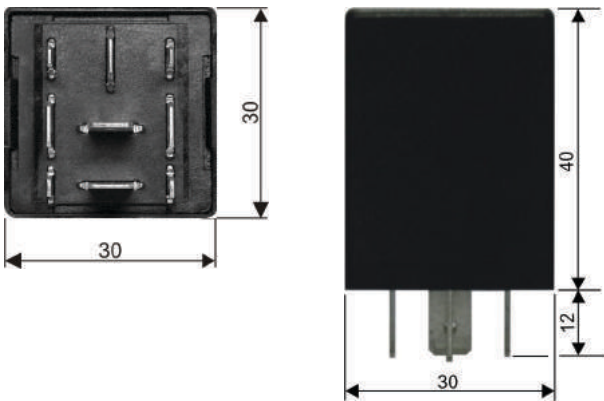
PROPORTIONAL CONTROLLER



TECHNICAL DATA

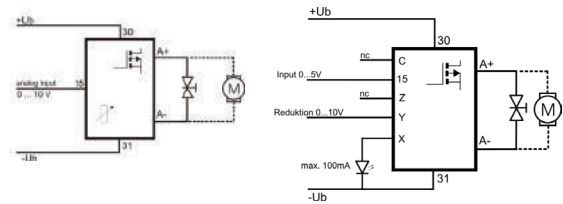
Voltage	9-30V
Lifetime	Avoid heat accumulation
PWM Frequenz	5000
E1-number	-
Protection	IP52

MEASUREMENTS

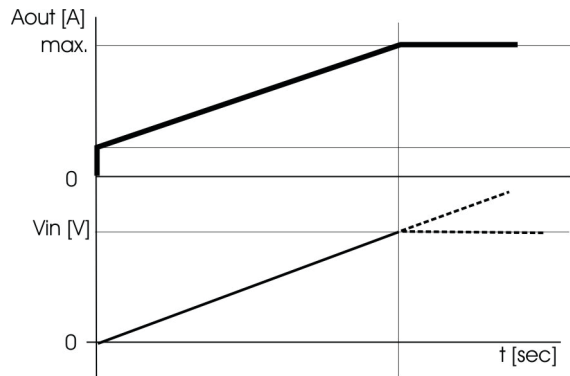


proportional controller serves to control the flow volume of valves and is used in hydraulic applications. The optimal CAN bus enables a data flow between CAN modules. CAN high speed or low speed (RS232 optional) ensures an easy integration into existing CAN systems.

CIRCUIT DIAGRAM



FUNCTION DIAGRAM



article number	Input	model	current	serial interface	tab
PCR.301.000.00	0 ... 10V	closer	3A	CAN	optional
PCR.302.000.00	0 ... 10V	closer	3A	-	optional

other versions on request

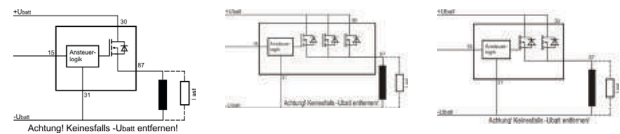


SOLID-STATE-RELAY POS



Solid state relay 12V/ 24V 1 HSD, output protected against overload and short-circuit, positive triggered. To supply inductive loads. PWM control possible. No switching noise. Vibration-resistant. Typical application: switching inductive loads, e.g. lamps, fans, motors, etc.

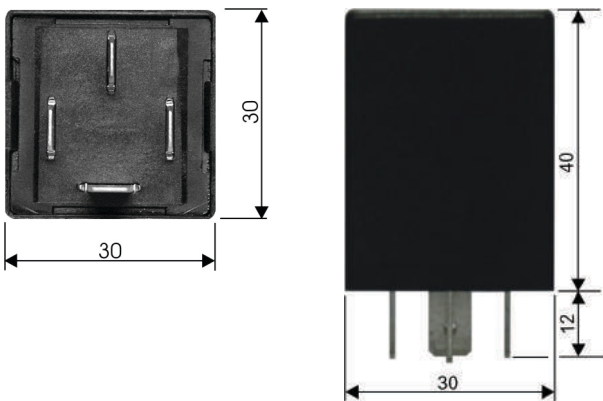
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V/24V
Output	solid state
Lifetime	Avoid heat accumulation
Operating voltage	9-30V
Operating temperature	-40°C - 85°C
Protection	IP52

MEASUREMENTS



article number	Input	tab	current
SSR.300.000.00	pos.	optional	4A
SSR.301.000.00	pos.	optional	10A
SSR.302.000.00	pos.	optional	15A
SSR.303.000.00	pos.	optional	25A
SSR.304.000.00	pos.	optional	35A

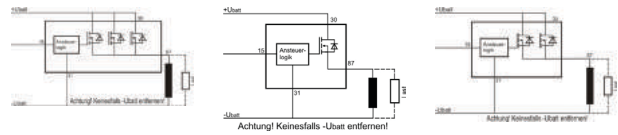
other versions on request

SOLID-STATE-RELAY NEG



Solid state relay 12V / 24V 10A with 1 HSD output protected against overload and short-circuit, negative triggered. To supply inductive loads. PWM control possible. No switching noise. Insensitive against vibrations. Typical applied fields: lamps, fans, motors, etc.

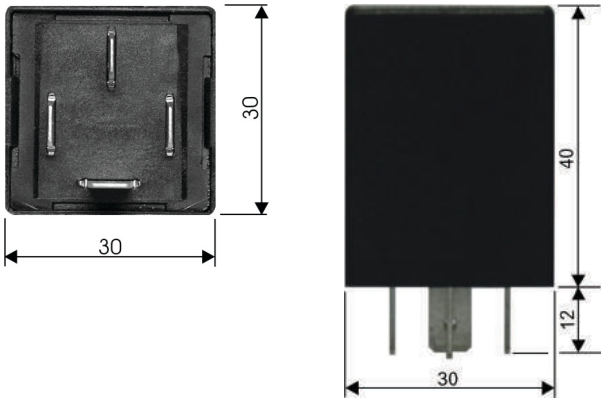
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V/24V
Output	solid state
Lifetime	Avoid heat accumulation
Operating voltage	9-30V
Operating temperature	-40°C - 85°C
Protection	IP52

MEASUREMENTS



article number	Input	tab	current
SSR.310.000.00	neg.	optional	4A
SSR.311.000.00	neg.	optional	10A
SSR.312.000.00	neg.	optional	15A
SSR.313.000.00	neg.	optional	25A
SSR.314.000.00	neg.	optional	35A

other versions on request

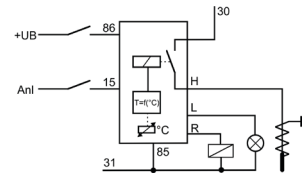
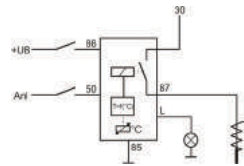


PREHEATING RELAY



preheating relay controls the preheating unit for a diesel motor. A temperature sensor measures the present temperature and determines the necessary preheating time.

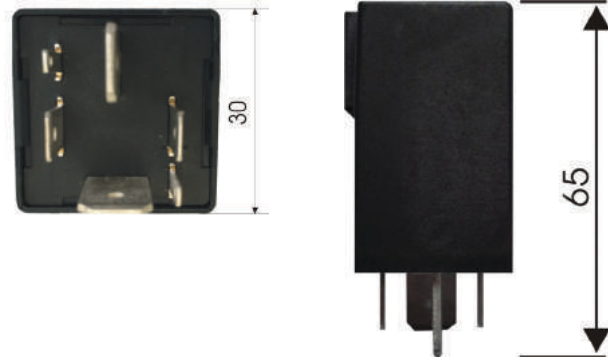
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V, 24V
Operating voltage	9V-15V, 18V-30V
Lifetime	electr. 10^5 mech. 10^6
Operating temperature	-40°C - 85°C
Protection	IP52

MEASUREMENTS

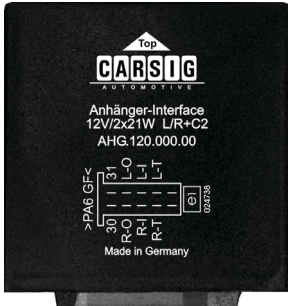


article number	current	preheating time	additional output	tab
GL.100.000.00	70A	customer requirements	1	optional
GL.150.000.00	70A	customer requirements	2	optional
GL.200.000.00	70A	customer requirements	1	optional

other versions on request

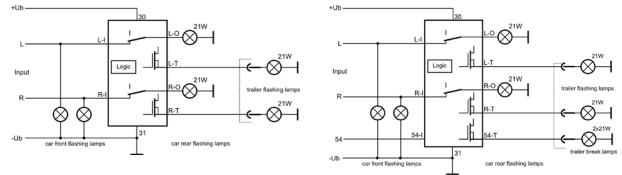


TRAILER FLASHING MODULE



trailer flashing module is used to control and to monitor indicator lights

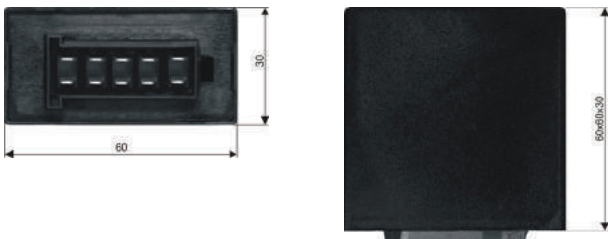
CIRCUIT DIAGRAM



TECHNICAL DATA

Voltage	12V
Lifetime	elektr. 10 ⁵ mech. 10 ⁷
Protection	IP52, IP54

MEASUREMENTS



article number	current	tab	control light	additional output	number of inputs
AHG.120.000.00	-	optional	C2	2	2
AHG.120.010.00	-	optional	C2	3	3

other versions on request

RELAY SOCKET



Kontakts:
ZUB0020
ZUB0023
ZUB000335
ZUB000336

TECHNICAL DATA

Housing material	PA6GF
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article number	version description	number	tab
SKL.000.000.00	socket 5pol. for micro relay 2x6,3mm/3x4,8mm	5	Yes
SKL.001.000.00	socket 9pol. for performance relay 2x9,5/3x6,3/4x2,8mm	9	Yes
SKL.002.000.00	socket 9pol. for standard relay 5x6,3/4x2,8mm	9	Yes
SKL.005.000.00	socket 9pol. for standard relay 5x6,3/4x2,8mm 180° turned	9	Yes
SKL.006.000.00	socket 5pol. for standard relay 5x6,3/4x2,8mm with 3 protections	9	Yes
SKL.009.000.00	socket 9pol. For standard relay 5x6,3/4x2,8mm 180° turned, without tab	9	No
SKL.010.000.00	socket 7pol. For performance relay 3x9,5/2x6,3/2x2,8mm without tab	7	No

other versions on request



1. GENERAL

The below listed conditions apply to all purchase, exchange and supply contracts, unless otherwise agreed in writing. The customer terms and conditions apply only if we agree to them written.

2. CONCLUSION OF CONTRACT

Our quotations are non engagement. A mandatory sales contract is only concluded, once you get a confirmation of the order from our side. At which the content of the order confirmation is decisive. Order confirmations generated by our EDP-system are legally effective without a signature.

Technical datas, illustrations, drawings, weights and measurements are only mandatory once they are confirmed in written form. We reserve the right of construction modifications. Details in brochures and instruction manuals are not considered as warranted property. The customer has to examine the usability of the goods in his own responsibility.

Verbal, telephonic, telegraphic or through different electronic messaging systems written agreements are only mandatory, once they are subsequent written confirmed from our side. Costs caused by change or cancellation of confirmed orders have to be borne by the buyer.

3. CONSIGNMENTS

For contracts and transactions between us and foreign customers the right of the Federal Republic of Germany is agreed without exception for the entire business, no matter on what legal basis they are based. In case the german law isn't applicable, the relevant rules and regulations of the European Union are applicable to the exclusion of the EU purchase law.

The delivery period begins with the order confirmation. If we are due to unexpected circumstances which we couldn't head off, unable to fulfill our commitments, the delivery period will be extended by the period of delay. Should such circumstances make the delivery partly or completely impossible, we will get partly or completely free of the delivery commitment and can withdraw in accordance with the contract.

We are entitled to partial deliveries. Each partial delivery can be invoiced separately.

4. FORCE MAJEURE

Force majeure, operational disruptions, strikes and other events we are not liable for at our company or our suppliers release us, for the duration of the disruption and its effects, from the commitment of delivery.

For the delivery we choose at our discretion the most cost effective and secure solution. Deliveries are made ex works.

The risk passes to the customer as soon as we have transferred the goods to the transport company or made available to the customer. Will the shipment be delayed due to circumstances for which the customer is responsible, the risk is going to pass to the customer with the message of readiness to ship. In this case, we store the goods at the customer's expense; during storage at the factory, we calculate 0,5% of the invoice value of the delivery stored.

5. PRICE; TERMS OF PAYMENT

To the mentioned prices the statutory value added tax will be charged additionally. From the third month after signing the contract, we reserve the right to increase the agreed prices, if cost increases occur due to collective agreements or material price increases. The client has the right to appropriate evidence.

The prices are understood excluding packaging and freight. Our invoices are payable to the conditions of payment noted in the invoice.

At first deliveries we reserve dispatch against cash on delivery or prepayment. Payments shall only be deemed effected to the extent to which we can freely dispose over them at our bank.

In case of delayed payment we charge without warning maturity interest of 12% per anno.

Payments will be charged independent of any payment terms of the purchase regarding §366,367 BGB. Bills of exchange are accepted only if previously agreed. If reasonable doubts arise to the customer ability to pay or if there will be a request for the opening of insolvency proceedings, we shall have the right at our option to make our demands payable or to request down payments or securities. The customer may only offset undisputed or lawfully established counterclaims against our claims. He is not entitled to withhold or cut payment of invoice amounts in complaints of the goods.

6. RETENTION OF TITLE

We retain the ownership to all of the goods supplied until the customer has settled all claims and answered to all bills of the business relation.

Adapting and processing of goods is carried out for us as manufacturer, without obligating us. When processing and connecting with other goods we acquire ownership of the new goods according to the ratio of the invoice value of our goods to other materials.

The customer is allowed to sell the reserved goods only in the regular business activities, and isn't allowed to pledge or assign them as security. He has to inform us immediately of any access by third parties. At our request he has to insure the reserved goods at his own expense against loss and damage, he hereby assigns his claims as long as he fulfills his payment obligation towards us. If we deem the realisation of our claims to be at risk, the customer must enable us to take back the reserved goods upon request or notify its purchasers of the claim assignments and provide us with all necessary information and documentation

We are entitled to disclose the assignments to his customers. Taking back of the reserved goods shall not constitute withdrawal from the contract.

If the value of the securities exceed the amount of our claims by more than 20% we will upon request release securities at our choice. Ownership and copyright to our drawings and other documents will definitely stay with us. It's not allowed to make them accessible to third parties.

7. COMPLAINTS AND GUARANTEES

The contractor is liable without legitimization in accordance with the regulations of the Product Liability Law, in cases of the ex-



press acceptance of a guarantee or a procurement risk as well as intentional or grossly negligent breach of duty. Likewise, the contractor is liable for intentional or negligent injury to life, limb or health. In case of any damage to property or financial loss due to negligence the contractor is only liable, once the contractual obligations shall be violated (cardinal obligations) but limited to the damages which are foreseeable when the contract is concluded.

When a contracting authority claims damages instead of performance, in case of a slightly negligent delayed delivery of the contractor after expiry of a reasonable period, the amount of damages is limited to the amount of the additional costs, but maximal limited to the amount of the contract value.

8. SAMPLE

Samples are handmade models, on which we claim the copy-right. It's not allowed to copy or to make these samples accessible to our competitors without our agreement. The samples remain our ownership as long as there wasn't a calculation or release from our side. In case of none procurement, the samples have to be returned to us unrequested. Production related deviations can not be rejected.

9. CLAIMS FOR DAMAGE

Claims for damages of any kind against us arise only if promised features are missing, essential contractual duties are infringed or a damage is caused deliberately or grossly negligent by us or by our direction assistant. As a result of the fault our liability is limited to the foreseeable damage. Claims for damages shall be excluded. Claims after the Product Liability Law remain unaffected by this regulation. If the customer withdraws from the contract without any reason or does not fulfill its part of the contract, we may request 25% of the contract price as damages. The right is reserved to assert a claim for verifiably higher damage. The customer has the right to prove that less damage or no damage than claimed was in fact suffered.

10. SUPPLIERS

The supplier guarantees that his deliveries comply with the generally accepted engineering standards, the safety and other rules, the legal requirements, the agreed technical data (including DIN standards) as well as the promised properties. Changes to the delivery item require our prior consent. In addition the CDA banned list and the list of declarable substances is also applying.

11. PLACE OF JURISDICTION

Our place of business is the place of execution and of jurisdiction. The law of the Federal Republic of Germany exclusively applies, also for business with foreign companies or deliveries abroad.

Our sales partner

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