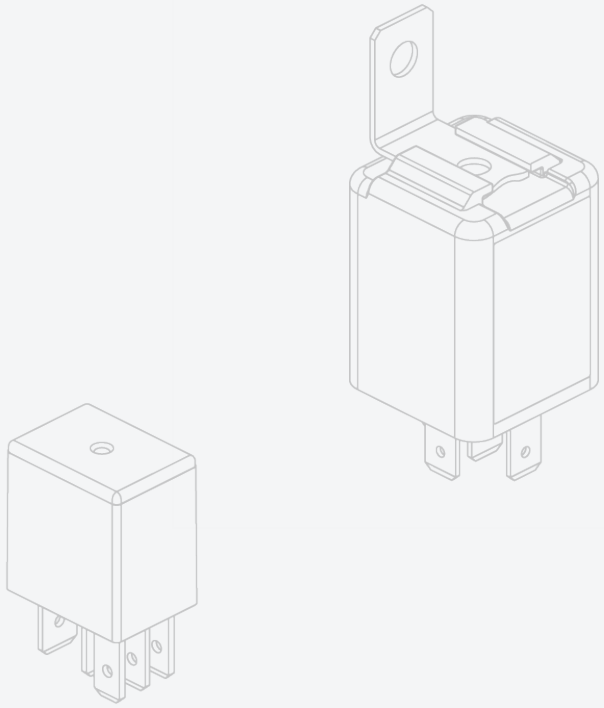
Products Catalogue 2024



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RELAYS

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FLASHER UNITS

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BASIC & PRELIMINARY NOTIONS:
- Regulation ECE R48 for failure warning of the direction indicator circuit is mandatory, it is not legal to add a resistor to the LED indicator.
- Traditional flasher units constantly monitors the power draw by the indicators circuits and detects a failure when the power drops below a defined threshold. LED indicators used in combination with flasher units for bulbs may create irregular flashing frequency and fase failure signals.
- ISO 13207-1 standardises the non-failure pulse generated by new LED indicator lamps.

CAN YOU REPLACE THE FLASHER UNIT INSTALLED IN THE VEHICLE

YES

Do you know the EXACT power consumption (W) of each new LED indicator lamp in the circuit?

YES

Use a «Tailor made» LED Flasher unit.

NO

Use an ILS LED Flasher unit, connecting an ILS booster for each LED indicator lamp in the circuit.

NO

Use an ILS LED Flasher unit & LED indicator lamps with integrated pulse as ISO 13207-1 indicates.

NO

Is the Flasher unit installed in the vehicle conform with ISO 13207-1 standard?

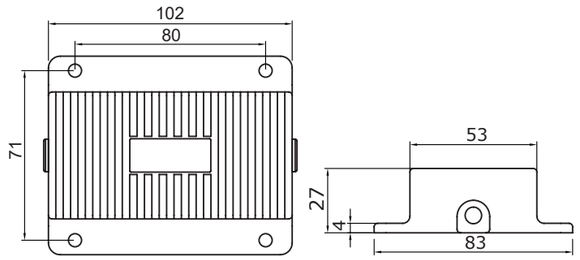
YES

Use new LED indicator lamps with integrated pulse as ISO 13207-1 indicates.

Connect a LED booster for each LED indicator lamp in the circuit.

NO

Use a single LED Light Link for one pair (RX&LX) of LED indicator lamp.



LED technology offers to fleet operators significant reliability over incandescent bulbs. However there have been issues in the market, particularly with fleets of articulated vehicles.

In many cases, the existing flasher unit is not compatible with LED lamps as they behave differently due to its low power consumption.

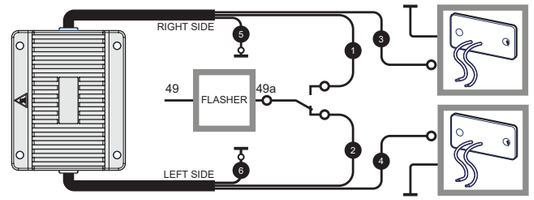
Regulation ECE 48 requires any failure of the direction indicator to be detected and indicated to the driver either visual or auditory.

This unit makes trailers with LEDs compatible with all the on-board computers/ flasher units on the towing vehicle regardless of LEDs power consumption.

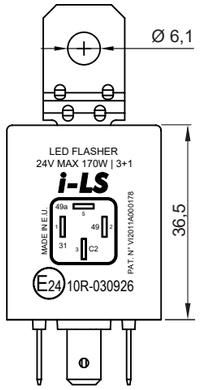
The LED Light Link has an embedded powerless trailer detection module according to the ISO 13207-1 standard.

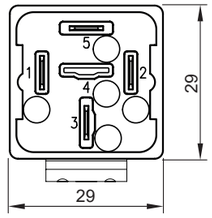
Features:
- Dual channel
- Sealed (IP67)
- Aluminum housing - screw mount
- Low heat generation
- Slim form factor – 102x82x27 mm
- ADR cables (1,5m l 3x1 mm²)

Benefits:
- ECE R48 compatible failure monitoring of the indicators
- Compatible with any LED direction indicator light on the market
- The replacement/re-programming of the existing flasher unit is not required
- Bespoke electrical connections available on request
- Easy and safe installation
- Single channel version available upon request.

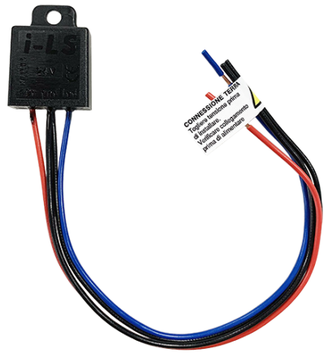
WIRE NUMBER	WIRE COLOR	DESCRIPTION	WIRING DIAGRAM
2	BROWN	Input RIGHT/LEFT 49a	
3-4	BLUE	Output RIGHT/LEFT LED Lamp	
5-6	WHITE	Ground	
49	FLASHER UNIT Input		
49a	FLASHER UNIT Output		

		PART NUMBER	
	U.M.	LLL.01.12V	LLL.01.24V
Rated Voltage	V DC	12	24
Operating Voltage Range	V DC	9 ÷ 15	18 ÷ 32
LED Operating Power Range	W	1 ÷ 10	1 ÷ 10
Power	W	2 x 21	2 x 21
Current Failure Threshold	mA	‹ 80 @ Rated Voltage	‹ 40 @ Rated Voltage
Operating Temperature Range	°C	- 40 ÷ +50	- 40 ÷ +50
Storage Temperature	°C	- 40 ÷ +110	- 40 ÷ +110
Reverse Polarity Protection	V DC	- 14	- 28
Short Circuit Protection		Yes	Yes
Output Regulated Voltage	V DC	12 ± 0,2	24 ± 0,2





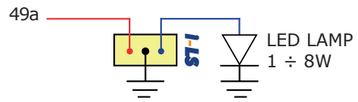
ECE 10R-030926 I ISO 13207-1:2012 Compliance I EU Patent N°2 540 570



i-LS is the intelligent and universal solution to the problem of the failure detection of a LED direction indicator lamp.
International regulations requires the Failure Detection of a lamp for vehicles driven on public roads. The flasher warns the driver by increasing the flash rate of the direction indicators lights or by switching off an indicator light on the dashboard (for trailers).
i-LS is a universal solution as it allows to detect the failure of both bulb and cluster LED, between 1W and 8W. Combined with our specific flasher unit, i-LS allows a reliable detection of LED cluster failure and prevents irregular or spurious signals. i-LS does not produce heat so it can be fitted anywhere, its power consumption is irrelevant.

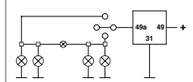
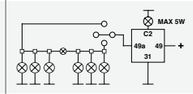
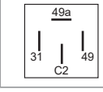
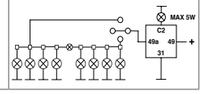
i-LS - Intelligent Led Solution

i-LS Units

PART NUMBER	DESCRIPTION DESCRIZIONE	VOLTAGE VOLTAGGIO [V]	WIRING DIAGRAM SCHEMA COLLEGAMENTO
ILS.01.H	i-LS UNIT	12	
ILS.02.H	i-LS UNIT	24	
ILS.MT	i-LS UNIT MULTIVOLTAGE	12/24	

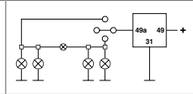
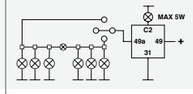
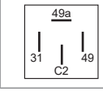
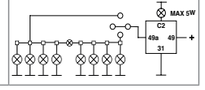
12V

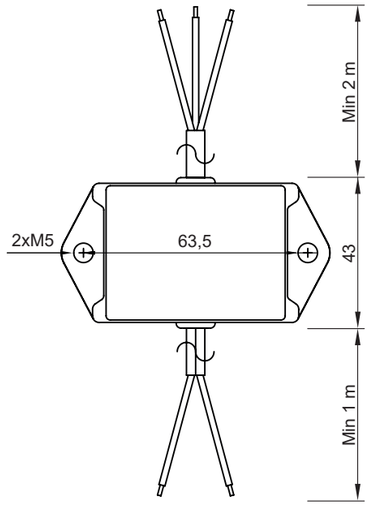
Led Flasher Units suitable for i-LS

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
202.1H3.ILS.H	i-LS LED FLASHER UNIT	3	2X21	12		
202.1H4.ILS.H	i-LS LED FLASHER UNIT	4	2+1(6)x21	12		
202.1H4.01.ILS.H	i-LS LED FLASHER UNIT	3	3+1(8)x21	12		

24V

Led Flasher Units suitable for i-LS

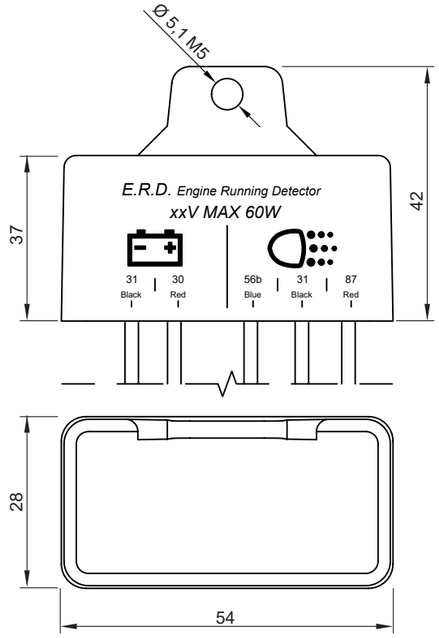
PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
202.2H3.ILS.H	i-LS LED FLASHER UNIT	3	2x21	24		
202.2H4.ILS.H	i-LS LED FLASHER UNIT	4	2+1(6)x21	24		
202.2H4.01.ILS.H	i-LS LED FLASHER UNIT	4	3+1(8)x21	24		



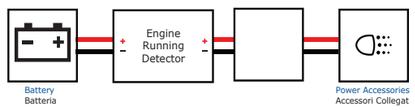
Homologation n. E49 10R-05 0102

According to the ECE Regulation 48, Rev. 6, for vehicles of categories O3 and O4, homologated after 10/2017, the sidemarker lamps must flash in sync with the direction indicators.
This unit allow to retrofit the trailer/semi-trailer to the new regulation.
The flashing side-marker's main purpose is to increase the visibility of the vehicle to pedestrian and bike commuters while the truck is turning thus preventing hazardous situations.
- 1 kit made by 2 Side Marker's Unit for each trailer
- Multi-voltage
- Max. current 2A

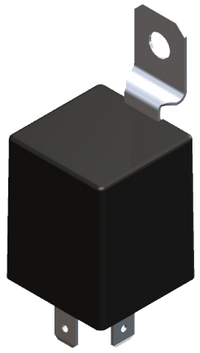
PART NUMBER	DESCRIPTION	MOUNTING	CONNECTION	PROTECTION GRADE UNIT	PROTECTION GRADE CONNECTION
SMU.01	SIDE MARKER UNIT	2 M5 screws	ADR cables	IP65	



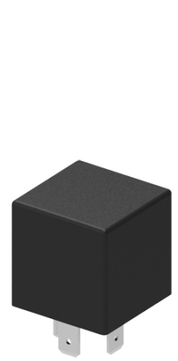
The ERD unit simplifies the installation and power of accessories on the vehicle. The unit determines when the engine is running, and when running, it turns on a relay to automatically power accessories directly from the vehicle battery. The unit is mounted on the engine compartment where it's easy to access to the battery vehicle. When the engine stop the relay is switched to its off state and disconnects the accessory, then ERD stand in powered up in low power mode to prevent battery discharge.
Typical installation: Daytime Running Lamps.

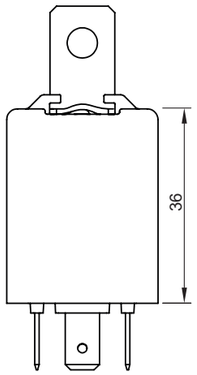
PART NUMBER	DESCRIPTION	CURRENT [A]	VOLTAGE [V]	WIRING DIAGRAM
ERD 12V	ENGINE RUNNING DETECTOR	5	12	
ERD 24V	ENGINE RUNNING DETECTOR	5	24	

N TYPE
(H:36)



S TYPE
(H:30)





Flasher units are designed to control the flashing rate of motor vehicles indicators or hazard flashing lights. The unit basically consists of a pulse generator and a relay.

International public road regulations require the detection and an audible or visual indication of a faulty indicator on the vehicle. The failure detection is achieved by a load sensitive electronic circuit.

		DIN	JAPAN	SAE	
	BATTERIA Battery	49	B	X	(+)
	LAMPADA Lamp	49a	L	L	C
	SPIA Vehicle Control Lamp	C		P	R
	MASSA Earth/Ground	31	E	(-)	(-)
	SPIA RIMORCHIO Trailer Control Lamp	C2		R2	R2

	DIN	JAPAN	SAE	
TERMINALS 2	49a / 49	L / B	X / L	
TERMINALS 3	49a / 31 / 49	L / B / E	P / X / L	R / + / C
TERMINALS 4	49a / 31 / C / 49		P / X / L	R / + / C
TERMINALS 5	49a / C / 31 / C2 / 49		P / X / L / R2	R / + / C / R2

12V — Without Failure Detection

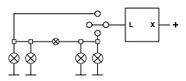
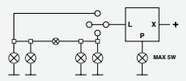
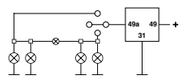
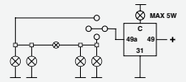
PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.102.01	FLASHER UNIT NO GROUND	2	MAX. 180	12	X / L	
100.103.01	FLASHER UNIT NO GROUND	3	MAX. 180	12	P / X / L	
100.213.01	FLASHER UNIT	3	MAX. 170	12	49a / 31 / 49	
100.214.01	FLASHER UNIT	4	10÷200	12	C / 49 / 31 / 49a	

12V — With Failure Detection

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.203.01	FLASHER UNIT	3	2(4)x21	12	49a / 31 / 49	
100.213.01	FLASHER UNIT	3	2(4)x21	12	49a / 49 / 31	
100.204.01	FLASHER UNIT SAE	4	2(4)x21	12	R / + / - / C	
100.204.03	FLASHER UNIT C2	4	2+1(6)x21	12	49a / 31 / C2 / 49	
100.205.01	FLASHER UNIT C/C2	5	2+1+1(8)x21	12	C / 31 / C2 / 49 / 49a	
S.100.203.01.A1	FLASHER UNIT	3	2(4)x21	12	49a / 31 / 49	
S.100.203.03.A1	FLASHER UNIT	3	2(4)x21	24	- / + / L	
S.100.204.01.A1	FLASHER UNIT	4	2(4)x21	12	R / + / - / C	

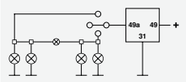
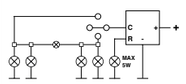
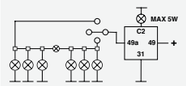
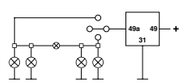
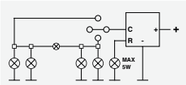
24V

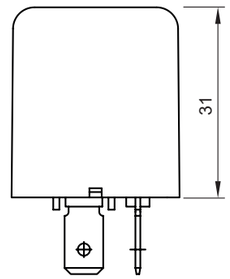
Without Failure Detection

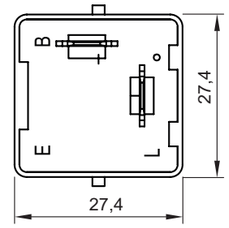
PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.102.02	FLASHER UNIT NO GROUND	2	MAX. 180	24		
100.103.04	FLASHER UNIT NO GROUND	3	MAX. 180	24		
100.213.02	FLASHER UNIT	3	MAX. 170	24		
100.214.02	FLASHER UNIT	4	10÷200	24		

24V

With Failure Detection

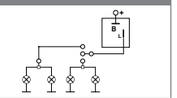
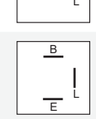
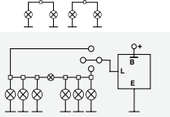
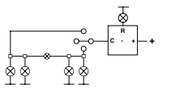
PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.203.02	FLASHER UNIT	3	2(4)x21	24		
100.204.02	FLASHER UNIT	4	2(4)x21	24		
100.204.04	FLASHER UNIT C2	4	2+1(6)x21	24		
S.100.203.02.A1	FLASHER UNIT	3	2(4)x21	24		
S.100.204.02.A1	FLASHER UNIT	4	2(4)x21	24		



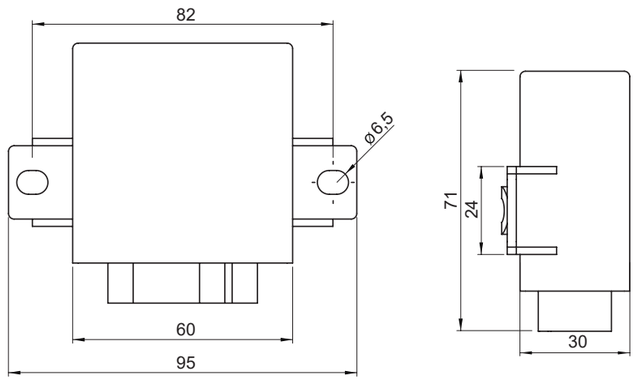


12V

With Failure Detection

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
AP8124235	FLASHER UNIT	2	2 (4) x10W	12		
81980	FLASHER UNIT	3	2 (4) x10W	12		
290267	FLASHER UNIT	4	2 (4) x10W	12		

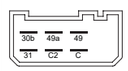
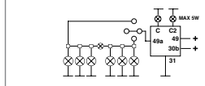
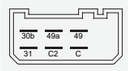
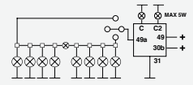
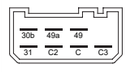
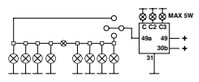
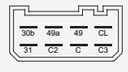
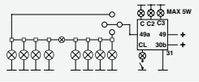
i-LS
compatible
ISO 13207-1:2012 Compliance



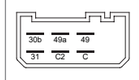
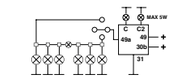
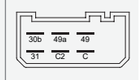
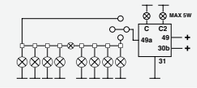
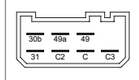
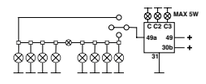
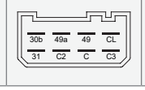
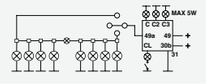
We offer a wide range of flasher for heavy duty vehicles to operate up to 3 indicators on either side of the prime mover plus an additional lamp on either side of each of 2 trailers.

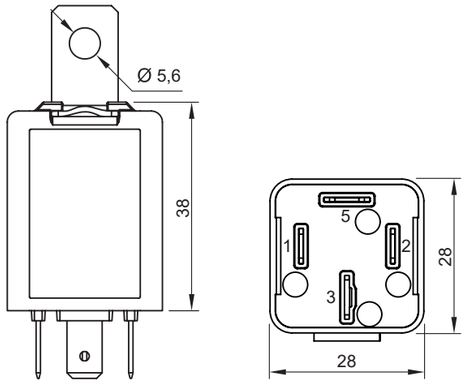
The flashers for heavy duty vehicles incorporates visual failure dash indicators on the towing vehicle and the trailers and it is compatible with our i-LS patented solution to monitor LED indicators also.

12V i-LS With Failure Detection

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.206.01.A1	FLASHER UNIT	6	2+1(6)x21	12		
100.206.03.A1	FLASHER UNIT	6	3+1(8)x21	12		
100.207.01.A1	FLASHER UNIT	7	2+1+1(8)x21	12		
100.208.01.A1	FLASHER UNIT	8	2+1+1(8)x21	12		

24V i-LS compatible With Failure Detection

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.206.02.A1	FLASHER UNIT	6	2+1(6)x21	24		
100.206.04.A1	FLASHER UNIT	6	3+1(8)x21	24		
100.207.02.A1	FLASHER UNIT	7	2+1+1(8)x21	24		
100.208.02.A1	FLASHER UNIT	8	2+1+1(8)x21	24		



LED Flasher units are designed to control the flashing rate of motor vehicles indicators or hazard flashing LED lights.
LED lights have become the first choice in the automotive industry including fleet operators as they offer several benefits such as: longer lifetime, better energy efficiency, durability, smaller size.

International public road regulations require the detection and an audible or visual indication of a faulty indicator on the vehicle. The failure detection is achieved by a load sensitive electronic circuit.

Due to the extremely low energy consumption, the failure detection of a LED requires a specific Flasher, often tailor made around the indicators circuit load profile.

		DIN	JAPAN	SAE	
	BATTERY	49	B	X	(+)
	LAMP	49a	L	L	C
	VEHICLE CONTROL LAMP 1	C		P	R
	GROUND	31	E	(-)	(-)
	TRAILER CONTROL LAMP 2	C2		R2	R2

	DIN	JAPAN	SAE	
TERMINALS 2	49a / 49	L / B	L / X	
TERMINALS 3	49a / 31 / 49	L / B / E	P / X / L	R / + / C
TERMINALS 4	49a / 31 / C / 49		P / X / L	R / + / C
TERMINALS 5	49a / C / 31 / C2 / 49		P / X / R2 / L	R / + / R2 / C

12V — Without Failure Detection

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.102.01.LED	LED FLASHER UNIT	2	30	12	49a / 49	
100.103.01.LED	LED FLASHER UNIT	3	30	12	P / 49 / 49a	
200.103.01	LED FLASHER UNIT	3	30	12	49a / 31 / 49	
200.104.01	LED FLASHER UNIT	4	30	12	R / - / + / C	

12V — With Failure Detection

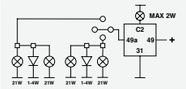
	PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
□	200.103.02	INTELLIGENT LED FLASHER UNIT	3		12	49a / 31 / 49	
□	200.104.02	INTELLIGENT LED FLASHER UNIT	4	10	12	49a / 31 / C / 49	
O	200.1H3.02	LED FLASHER UNIT	3	60	12	49a / 31 / 49	

□ LEDs consumption must be definided.

O Diagnostics on bulb only.

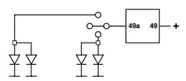
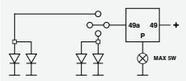
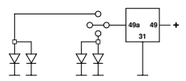
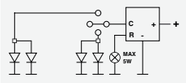
24V

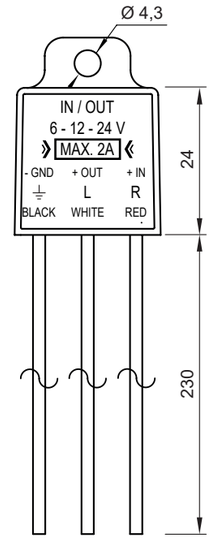
With Failure Detection on Bulbs

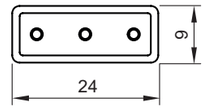
PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
200.2H3.02	LED FLASHER UNIT	3	60	24		
200.2H4.02	LED FLASHER UNIT	4	90	24		

24V

Without Failure Detection

PART NUMBER	DESCRIPTION	TERMINALS	LOAD [W]	VOLTAGE [V]	TERMINALS	DIAGRAM
100.102.02.LED	LED FLASHER UNIT	2	40	24		
100.103.02.LED	LED FLASHER UNIT	3	40	24		
200.203.01	LED FLASHER UNIT	3	40	24		
200.204.01	LED FLASHER UNIT	4	40	24		





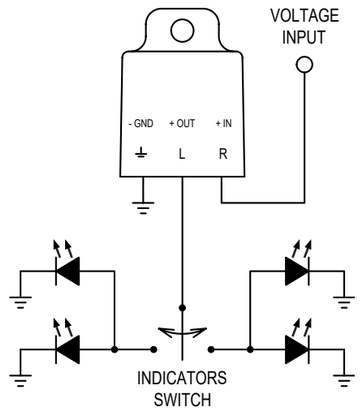
LED Lights have become the first choice in the automotive industry, including fleet operators as they offer several benefits such as: longer lifetime, better energy efficiency, durability, smaller size.

Whenever the failure detection of the lamp is not required such as for vehicle not circulating on public roads, the Led Pulse Generator can replace the traditional Led Flasher. The LED Pulse generator has a smaller footprint and can be installed anywhere in the vehicle.

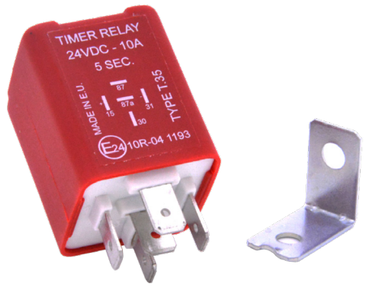
6/12/24V

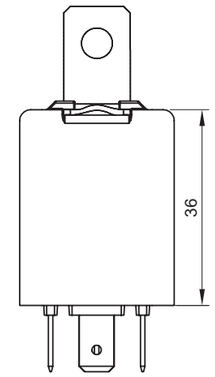
Without Failure Detection

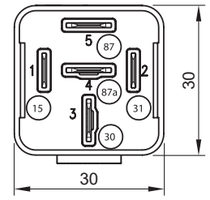
PART NUMBER	DESCRIPTION	VOLTAGE [VDC]	RATED LOAD [A]
200.003.01	LED PULSE GENERATOR LAMPEGGIATORE DI DIREZIONE ALLO STATO SOLIDO	6 ÷ 24	MAX 2



ITEM CODE STRUCTURE			T .	20 .	205 .	01M
PRODUCT	T	TIMER RELAY				
DELAY TYPE	20	DELAY ON				
	30	DELAY OFF				
	31	DELAY OFF IMPULSE ACTIVATED				
	34	DELAY OFF FALLING INPUT				
	35	DELAY OFF FALLING INPUT WITH RESET				
	36	FLIP- FLOP POSITIVE*				
	37	FLIP-FLOP NEGATIVE*				
	38	DELAY ON AND DELAY OFF*				
	39	DELAY SET / DELAY RESET*				
COIL VOLTAGE	205	12V				
	405	24V				
DELAY	T1	SECONDS				
	T1M	MINUTES				
	T2	SECONDS				
	T2M	MINUTES				



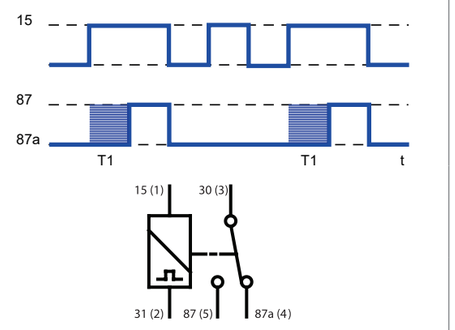




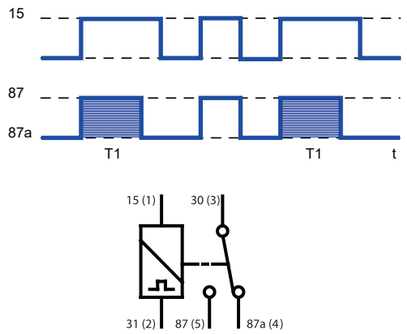
Timer relays are used to switch an accessory before or after a programmed delay time. Programming is carried out at the point of manufacture, which means that the timers can be produced quickly and in low volume with any delay time between 0,5 second and 60 minutes. The timers are designed to be plug into a standard automotive socket.

Some of the most common applications are wash wiper control, courtesy lights, rear screen heater, air conditioning systems.

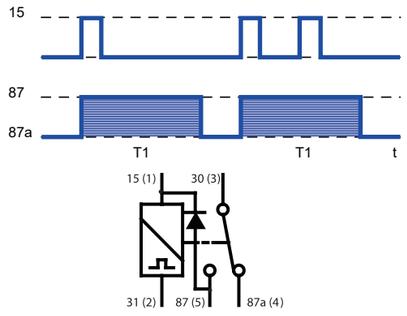
Delay On Timer Relay

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.20.205.T1	12	25A (87) /20	75	
T.20.205.T1M	12	25A (87) /20	75	
T.20.405.T1	24	15A (87) /10	75	
T.20.405.T1M	24	15A (87) /10	75	

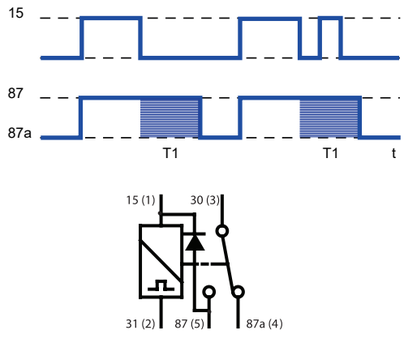
Delay OFF Timer Relay

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.30.205.T1	12	25A (87) /20	75	
T.30.205.T1M	12	25A (87) /20	75	
T.30.405.T1	24	15A (87) /10	75	
T.30.405.T1M	24	15A (87) /10	75	

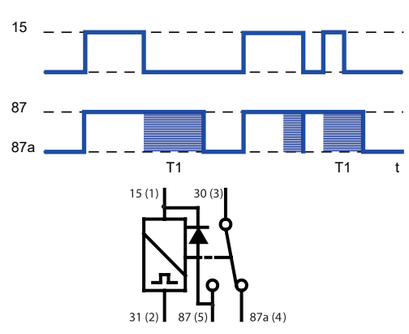
Delay OFF Impulse Activated Timer Relay

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.31.205.T1	12	25A (87) /20	12	
T.31.205.T1M	12	25A (87) /20	12	
T.31.405.T1	24	15A (87) /10	24	
T.31.405.T1M	24	15A (87) /10	24	

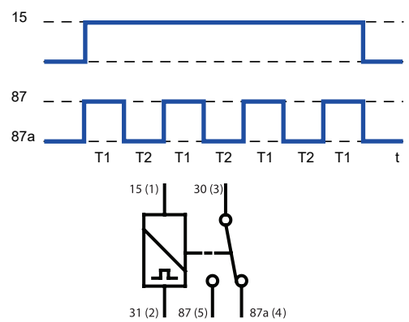
Delay OFF Falling Input Timer Relay

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.34.205.T1	12	25A (87) /20	12	
T.34.205.T1M	12	25A (87) /20	12	
T.34.405.T1	24	15A (87) /10	24	
T.34.405.T1M	24	15A (87) /10	24	

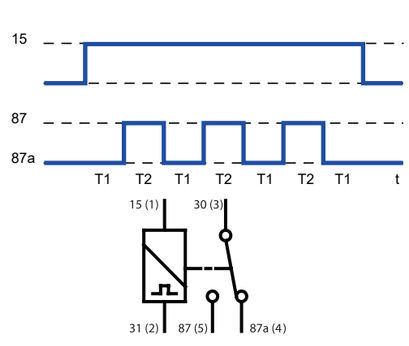
Delay OFF Falling Input Timer Relay With Reset

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.35.205.T1	12	25A (87) /20	12	
T.35.205.T1M	12	25A (87) /20	12	
T.35.405.T1	24	15A (87) /10	24	
T.35.405.T1M	24	15A (87) /10	24	

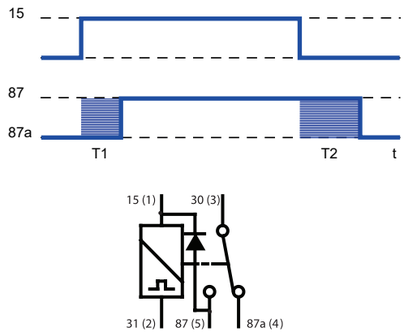
Flip-Flop Positive Timer Relay

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGEIO [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.36.205.T1.T2	12	25A (87) /20	75	
T.36.205.T1M.T2M	12	25A (87) /20	75	
T.36.405.T1.T2	24	15A (87) /10	75	
T.36.405.T1M.T2M	24	15A (87) /10	75	

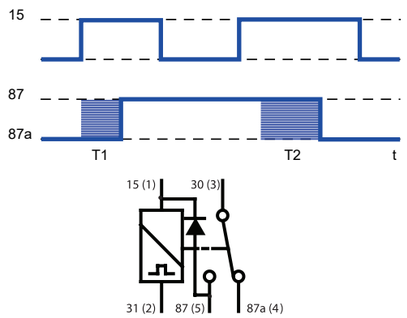
Flip-Flop Negative Timer Relay

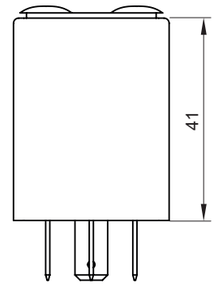
PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.37.205.T1.T2	12	25A (87) /20	75	
T.37.205.T1M.T2M	12	25A (87) /20	75	
T.37.405.T1.T2	24	15A (87) /10	75	
T.37.405.T1M.T2M	24	15A (87) /10	75	

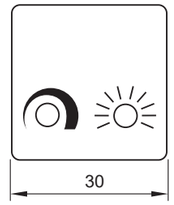
Delay ON and Delay OFF Timer Relay

PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.38.205.T1.T2	12	25A (87) /20	12	
T.38.205.T1M.T2M	12	25A (87) /20	12	
T.38.405.T1.T2	24	15A (87) /10	24	
T.38.405.T1M.T2M	24	15A (87) /10	24	

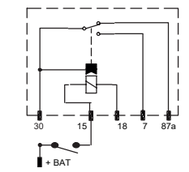
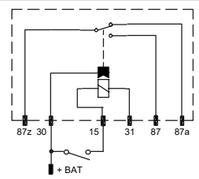
Timer Relay Delay Set/Delay Reset

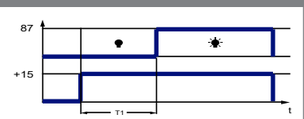
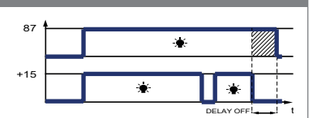
PART NUMBER	VOLTAGE [V]	LOAD [A]	MAX SWITCHING VOLTAGE [VDC]	DELAY DIAGRAM AND CIRCUIT DIAGRAM
T.39.205.T1.T2	12	25A (87) /20	12	
T.39.205.T1M.T2M	12	25A (87) /20	12	
T.39.405.T1.T2	24	15A (87) /10	24	
T.39.405.T1M.T2M	24	15A (87) /10	24	



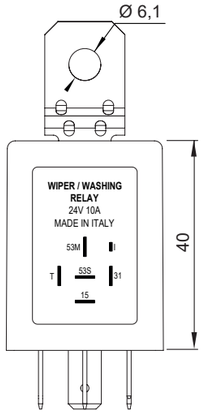


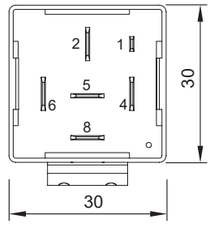
The multitimer relay combine flexibility with ease of use. Designed to plug into a standard automotive socket, the multitimer contacts operate in a similar way to a change over relay. The timer is started by a positive input on terminal 15. The delay time can be adjusted using the rotary switch (10 selectable positions), to choose the delay type/range between seconds and hours, and the potentiometer to precisely adjust the desired delay.

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TIMER DELAY	TERMINALS	DIAGRAM
T.40.205.A1	MULTITIMER RELAY	5	10	12	pos.0 = 0,5... 10'' delay OFF pos. 1 = 5... 60'' delay OFF pos. 2 = 0,5... 10' delay OFF pos. 3 = 5... 60' delay OFF pos. 4 = 0,5... 6 h delay OFF pos. 5 = 0,5... 6 h delay ON pos. 6 = 5... 60' delay ON pos. 7 = 0,5... 10' delay ON pos. 8 = 5... 60'' delay ON pos. 9 = 0,5... 10'' delay ON		
T.40.405.A1	MULTITIMER RELAY	5	10	24			
T.40.206.A1	MULTITIMER RELAY	6	10	12			
T.40.406.A1	MULTITIMER RELAY	6	10	24			

DELAY DIAGRAMS	
DELAY ON	
DELAY OFF	

AVALAIBLE WITH OPTIONAL METAL BRACKET (cod. 01.S00.19)



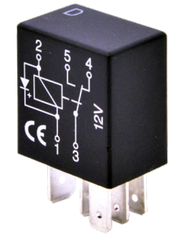


The washer-wiper relay sends an electrical signal to the module that controls the operation of the front wiper motor and gears inside the vehicle.

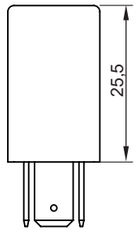
Parameters such as interval delay time are fully customizable upon request.

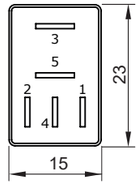
PART NUMBER	DESCRIPTION	TERMINALS	VOLTAGE [V]	WIPING TIME [X]	INTERMISSION TIME [Y]
100.205.03.LU	WASHER-WIPER RELAYS	6	12	5	3
100.205.03.HE	WASHER-WIPER RELAYS	6	12	4,75	5,5
100.405.03.BO	WASHER-WIPER RELAYS	6	24	4,75	5,5

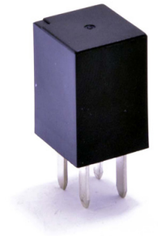
AVALAIBLE WITH OPTIONAL METAL BRACKET (cod. 01.S00.19)



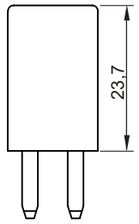
MICRORELAYS

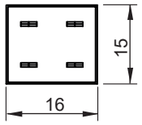




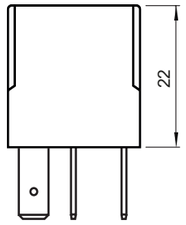


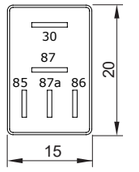
NANO RELAYS SC





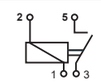
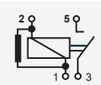
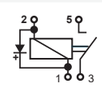
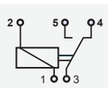
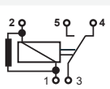
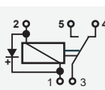
NANO RELAYS



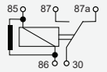
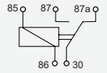
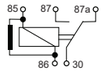
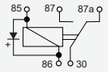


Microrelay has smaller size compared to a standard relay with a rated current up to 25A. All the microrelay can be supplied with a coil suppression diode or resistor on request.
In the nanorelay version, the dimenions are even smaller.

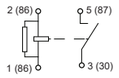
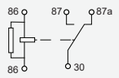
12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
M.10.204.101.A1	MICRORELAY NORMALLY OPEN	4	25	12		
M.1R.204.101.A1	MICRORELAY NORMALLY OPEN	4	25	12		
M.1D.204.101.A1	MICRORELAY NORMALLY OPEN	4	25	12		
M.20.205.101.A1	MICRORELAY CHANGE OVER	5	25/15	12		
M.2R.205.101.A1	MICRORELAY CHANGE OVER	5	25/15	12		
M.2D.205.101.A1	MICRORELAY CHANGE OVER	5	25/15	12		

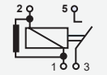
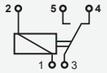
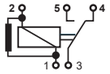
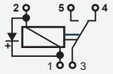
12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
N.10.204.101.A1	NANORELAY	4	25	12		
N.1R.204.101.A1	NANORELAY	4	25	12		
N.1D.204.101.A1	NANORELAY	4	25	12		
N.20.205.101.A1	NANORELAY	5	15/25	12		
N.2R.205.101.A1	NANORELAY	5	15/25	12		
N.2D.205.101.A1	NANORELAY	5	15/25	12		

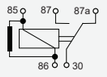
12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
N.10.204.SC.A1	NANORELAY N.O. WITH FLAT TERMINAL	4	25	12		
N.1R.204.SC.A1	NANORELAY N.O. WITH FLAT TERMINAL	4	25	12		
N.1D.204.SC.A1	NANORELAY N.O. WITH FLAT TERMINAL	4	25	12		
N.1I.204.SC.A1	NANORELAY N.O. WITH FLAT TERMINAL	4	25	12		
M.1R.204.SC.A1	NANORELAY N.O. WITH FLAT TERMINAL	4	25	12		
M.2R.205.SC.A1	NANORELAY N.O. WITH FLAT TERMINAL	5	15/25	12		

24V

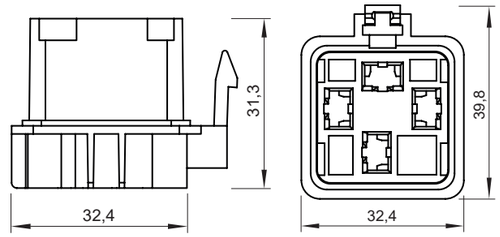
PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
M.10.404.101.A1	MICRORELAY NORMALLY OPEN	4	15	24		
M.1R.404.101.A1	MICRORELAY NORMALLY OPEN	4	15	24		
M.1D.404.101.A1	MICRORELAY NORMALLY OPEN	4	15	24		
M.20.405.101.A1	MICRORELAY CHANGE OVER	5	15/10	24		
M.2R.405.101.A1	MICRORELAY CHANGE OVER	5	15/10	24		
M.2D.405.101.A1	MICRORELAY CHANGE OVER	5	15/10	24		

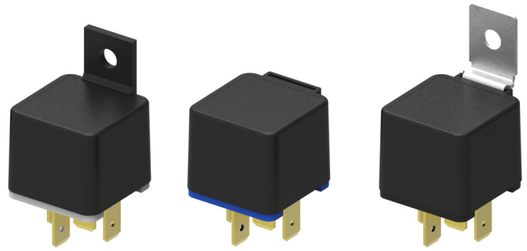
24V

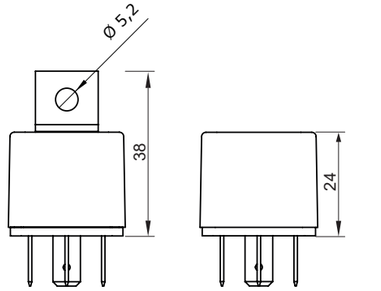
PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
N.10.404.101.A1	NANORELAY	4	15A	24		
N.1R.404.101.A1	NANORELAY	4	15	24		
N.1D.404.101.A1	NANORELAY	4	15A	24		
N.20.405.101.A1	NANORELAY	5	10/15	24		
N.2R.405.101.A1	NANORELAY	5	10/15	24		
N.2D.405.101.A1	NANORELAY	5	10/15	24		

		CODE STRUCTURE	O .	2	0 .	2	04	101 .	30
PRODUCT	O	HOMOLOGATED RELAY							
CONTACTS ARRANGEMENT	10	NORMALLY OPEN							
	20	CHANGE OVER							
	50	NORMALLY OPEN TYPE A							
	51	CHANGE OVER TYPE A							
	60	NORMALLY OPEN SILVER CONTACTS							
	61	NORMALLY OPEN TYPE A SILVER CONTACTS							
COIL SUPPRESSION	0	NO SUPPRESSION							
X	R	RESISTANCE							
	D	DIODE							
COIL VOLTAGE	2	12V DC							
	4	24V DC							
TERMINALS	04	4 TERMINALS							
	05	5 TERMINALS							
VERSION	001	PLASTIC BRACKET							
	101	OPTIONAL METAL BRACKET							
CHANGE OVER HIGH CURRENT CONTACTS	30	CHANGE OVER 24V SILVER CONTACTS							
	40	CHANGE OVER 12V SILVER CONTACTS							

AVALAIBLE WITH OPTIONAL METAL BRACKET (cod. 01.S00.12)







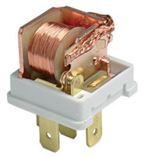
AVALAIBLE WITH OPTIONAL METAL BRACKET (cod. 01.S00.12)

AVAILABLE COLOURS

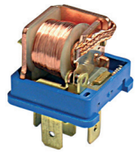
RE D GREY BLACK BLUE GREEN

Plug-in automotive relay for 12V or 24V system and rated current up to 40A. Available in make, contact structure change over contact structure and with coil transient suppression diode or resistor.

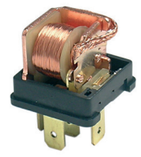
The relays feature also three mounting options and terminals footprint designed according to ISO 7588-1 to fit into a standard relay socket.



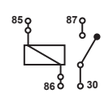
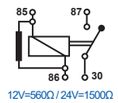
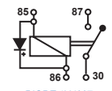
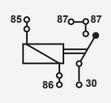
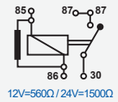
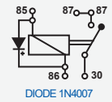
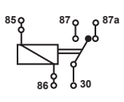
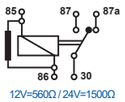
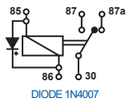
RELAYS CHANGE OVER TYPE B



NORMALLY OPEN RELAYS TYPE A

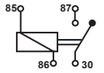
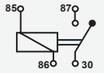
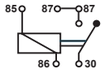
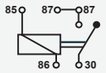
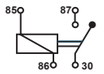
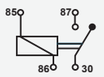
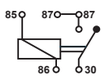
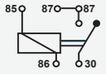
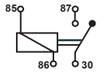
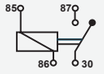
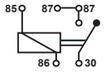
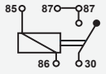
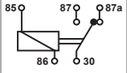


NORMALLY OPEN RELAYS TYPE B

PIN CONFIGURATION TYPE A	PIN CONFIGURATION TYPE B	APPLICATION INFORMATION		WITH RESISTOR CON RESISTENZA R	WITH DIODE CON DIODO D
 NORMALLY OPEN	 NORMALLY OPEN	Normally open contact close the circuit (30-87) when the relay is activated (85-86).		 12V=560Ω / 24V=1500Ω	 DIODE 1N4007
 NORMALLY OPEN	 NORMALLY OPEN	Normally open contacts close the circuit (30-87) when the relay is activated (85-86).		 12V=560Ω / 24V=1500Ω	 DIODE 1N4007
 CHANGE OVER	 CHANGE OVER	Change over contacts activates two circuits, normally open (30-87) and normally closed (30-87a). When the relay is activated (85-86) the relay close the circuit to 30-87.		 12V=560Ω / 24V=1500Ω	 DIODE 1N4007

Pin configuration A: BMW, Ford, Opel, Volvo, Jaguar

12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
O.1X.204.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	30	12	B			
O.1X.204.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	30	12	B			
O.1X.205.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	30	12	B			
O.1X.205.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	30	12	B			
O.5X.204.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	30	12	A			
O.5X.204.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	30	12	A			
O.5X.205.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	30	12	A			
O.5X.205.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	30	12	A			
O.6X.204.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	40	12	B			
O.6X.204.101.A1	HHOMOLOGATED RELAY NORMALLY OPEN	4	40	12	B			
O.6X.205.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	40	12	B			
O.6X.205.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	40	12	B			
O.2X.205.001.A1	HOMOLOGATED RELAY CHANGE OVER	5	20/30	12	B			
O.2X.205.101.A1	HOMOLOGATED RELAY CHANGE OVER	5	20/30	12	B			
O.2X.205.001.40.A1	HOMOLOGATED RELAY CHANGE OVER	5	30/40	12	B			
O.2X.205.101.40.A1	HOMOLOGATED RELAY CHANGE OVER	5	30/40	12	B			

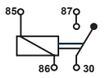
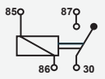
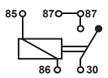
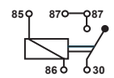
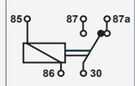
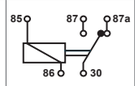
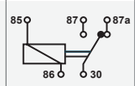
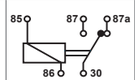
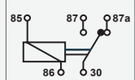
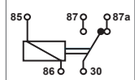
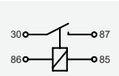
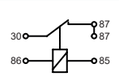
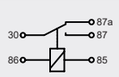
12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
O.51X.205.001.A1	HOMOLOGATED RELAY CHANGE OVER	5	20/30	12	A			
O.51X.205.101.A1	HOMOLOGATED RELAY CHANGE OVER	5	20/30	12	A			
O.52X.205.101.A1	HOMOLOGATED RELAY CHANGE OVER	5	30/40	12	A			
O.1X.2W4.001.A1	RELAY N.O. WATERPROOF	4	40	12	-			
O.1X.2W5.001.A1	RELAY N.O. WATERPROOF	5	40	12	-			
O.2X.2W5.001.A1	RELAY C.O. WATERPROOF	5	30/40	12	-			

24V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
O.1X.404.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	20	24	B			
O.1X.404.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	20	24	B			
O.1X.405.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	20	24	B			
O.1X.405.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	20	24	B			
O.5X.404.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	20	24	A			
O.5X.404.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	20	24	A			
O.5X.405.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	20	24	A			
O.5X.405.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	20	24	A			

24V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
O.6X.404.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	30	24	B			
O.6X.404.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	4	30	24	B			
O.6X.405.001.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	30	24	B			
O.6X.405.101.A1	HOMOLOGATED RELAY NORMALLY OPEN	5	30	24	B			
O.2X.405.001.A1	HOMOLOGATED RELAY CHANGE OVER	5	10/20	24	B			
O.2X.405.101.A1	HOMOLOGATED RELAY CHANGE OVER	5	10/20	24	B			
O.2X.405.001.30.A1	HOMOLOGATED RELAY CHANGE OVER	5	20/30	24	B			
O.2X.405.101.30.A1	HOMOLOGATED RELAY CHANGE OVER	5	20/30	24	B			
O.51X.405.001.A1	HOMOLOGATED RELAY CHANGE OVER	5	10/20	24	A			
O.51X.405.101.A1	HOMOLOGATED RELAY CHANGE OVER	5	10/20	24	A			
O.1X.4W4.001.A1	RELAY N.O. WATERPROOF	4	20	24	-			
O.1X.4W5.001.A1	RELAY N.O. WATERPROOF	5	20	24	-			
O.2X.4W5.001.A1	RELAY C.O. WATERPROOF	5	10/20	24	-			

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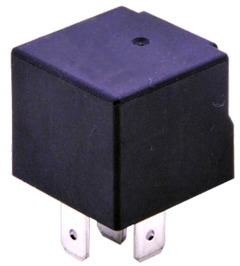
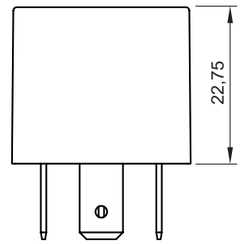
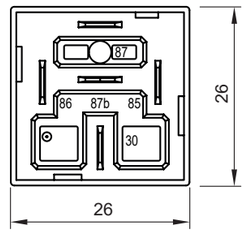






Relay for automotive applications available at the rated voltage of 12V and 24V DC with double contact.

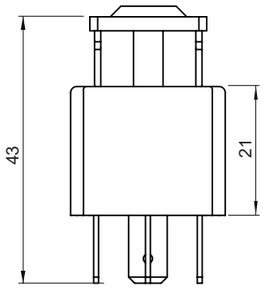
Plug-in terminals are designed according to ISO-8092 to fit into a standard automotive socket.

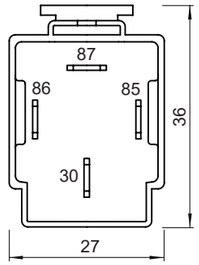
12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	BRACKET	TERMINALS	DIAGRAM
BO.205.101.20.A1	DOUBLE CONTACT RELAY NORMALLY OPEN	5	2x20	12			
BR.205.101.20.A1	DOUBLE CONTACT RELAY NORMALLY OPEN	5	2x20	12			

24V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	BRACKET	TERMINALS	DIAGRAM
BO.405.101.10.A1	DOUBLE CONTACT RELAY NORMALLY OPEN	5	2x10	24			

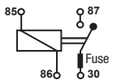
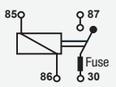




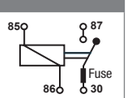
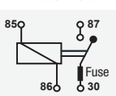
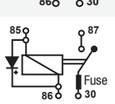
Relay designed to accommodate regular blade fuses and available in make contact structure with coil transient suppression diode or resistor.

The relay feature also two mounting options, and terminals footprint designed according to ISO 7588-1 to fit into a standard relay socket.

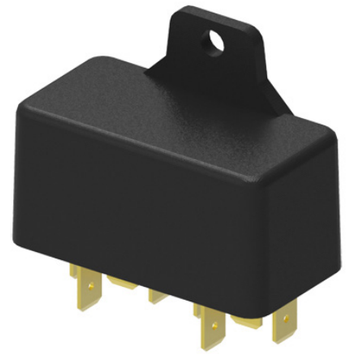
12V

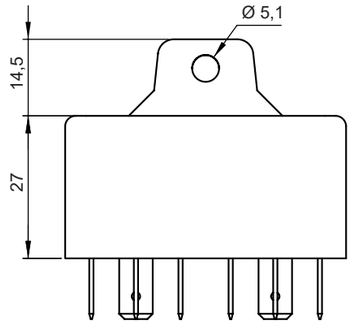
PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	BRACKET	TERMINALS	DIAGRAM
1F.204.101.15.A1	FUSE RELAY NORMALLY OPEN	4	15	12			
1F.204.101.30.A1	FUSE RELAY NORMALLY OPEN	4	30	12			

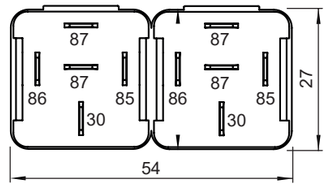
24V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	BRACKET	TERMINALS	DIAGRAM
1F.404.101.15.A1	FUSE RELAY NORMALLY OPEN	4	15	24			
1F.404.101.20.A1	RFUSE RELAY NORMALLY OPEN	4	20	24			
1FD.404.101.20.A1	FUSE RELAY NORMALLY OPEN WITH DIODE	4	20	24			

AVALAIBLE WITH OPTIONAL METAL BRACKET (cod. 01.S00.14)





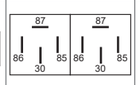
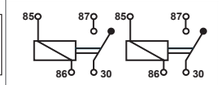
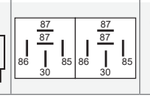
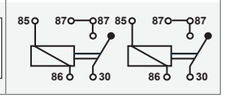


Relay for automotive applications available at the rated voltage of 12V and 24V DC and rated current interruption up to 30A.

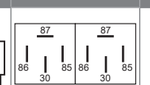
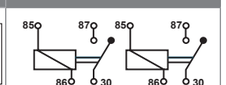
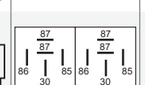
The relay can be supplied with a coil suppression diode o resistor on request (in parallel to the coil) to reduce voltage spikes and the noise and interference.

Plug-in terminals are designed according to ISO-8092 to fit into a standard automotive socket. Double relays pair two homologated relays (page number 38-39-40-41).

12V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
O.80.204.001.A1	DOUBLE RELAY NORMALLY OPEN	4x2	2x30	12	B			
O.80.205.001.A1	DOUBLE RELAY NORMALLY OPEN	5x2	2x30	12	B			

24V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
O.80.404.001.A1	DOUBLE RELAY NORMALLY OPEN	4x2	2x20	24	B			
O.80.405.001.A1	DOUBLE RELAY NORMALLY OPEN	5x2	2x20	24	B			

PCB Relays

AUTOMOTIVE PCB RELAYS

INDUSTRIAL RELAYS

PCB POWER RELAYS

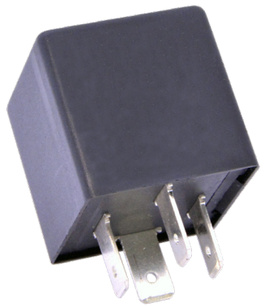
SIGNAL RELAYS

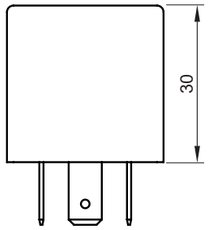
TYPE	CATEGORY	OVERALL DIMENSION (mm)	CONTACT FORM	COIL POWER (W)	LOAD CONDITIONS
ZDCA	AUTOMOTIVE PCB RELAYS	12x13x10 24x13.5x10	1H 1D 1Z 2H 2Z	0.55W/0.8	30A 16VDC
ZDCB	AUTOMOTIVE PCB RELAYS	13.5x7.2x14 13.5x15.4x14	1H 1D 1Z 2H 2Z	0.64/0.8	25A 16VDC
ZDCG	AUTOMOTIVE PCB RELAYS	26.2x26.2x23.2	1H 1D 1Z 2H	1.6/1.8	40A / 70A 14VDC
ZDCH	AUTOMOTIVE PCB RELAYS	15.7x12.2x13.7	1H 1D 1Z 2H	0.6/0.8/0.36	20A 14VDC
ZDCY	AUTOMOTIVE PCB RELAYS	26.5x22x22.3	1H 1D 1Z	1.6	30A 14VDC

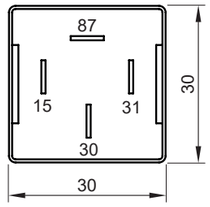
TYPE	CATEGORY	OVERALL DIMENSION (mm)	CONTACT FORM	COIL POWER (W)	LOAD CONDITIONS
ZDSA	SIGNAL RELAYS	15.5x10.5x11.8	1H 1Z	0.2/0.36/0.45	3A 125VAC
ZDSC	SIGNAL RELAYS	12.3x7.3x10.2	1H 1Z	0.2	1H 120VAC
ZDSE	SIGNAL RELAYS	21x10x12	2Z	0.15/0.2/0.36	1H 120VAC

TYPE	CATEGORY	OVERALL DIMENSION (mm)	CONTACT FORM	COIL POWER (W)	LOAD CONDITIONS
ZD3FF	PCB POWER RELAYS	19x15.5x15.8	1H 1D 1Z	0.36/0.45/ 0.6/0.8	10A 250VAC
ZD4115	PCB POWER RELAYS	32.4x27.5x21	1H 1D 1Z	0.9/1.5	30A / 40A 250VAC
ZD4115P/K	PCB POWER RELAYS	32.4X27.5x28	1H 1D 1Z	0.9/1.5	30A / 40A 250VAC
ZDHA	PCB POWER RELAYS	23x16x10.2	1H	0.2	10A / 16A 250VAC
ZDHB	PCB POWER RELAYS	20.3x16.6x20.6	1H 1D 1Z	0.36/0.45	25A 250VAC
ZDHC	PCB POWER RELAYS	19.8x9.9x15.2	1H 1Z	0.45	5A 250VAC
ZDHD	PCB POWER RELAYS	20.5x7.0x15.3	1H	0.2	5A 250VAC
ZDHE	PCB POWER RELAYS	21.2x16x20.6	1H 1D 1Z	0.36	10A / 16A 250VAC
ZDHF	PCB POWER RELAYS	18x10.2x15.3	1H 1Z	0.2/0.45	5A / 10A / 16A / 250VAC
ZDHG	PCB POWER RELAYS	30.5x16x23.5	1H	0.9	25A 250VAC

TYPE	CATEGORY	OVERALL DIMENSION (mm)	CONTACT FORM	COIL POWER (W)	LOAD CONDITIONS
ZDIM	INDUSTRIAL RELAYS	29x20.6x13	1H 1Z 2H 2Z	0.53	5A / 10A / 16A 250VAC
ZDIH	INDUSTRIAL RELAYS	29x12.7x15.7	1H 1D 1Z 2H 2D 2Z	0.4/0.25	8A / 16A 250VAC
ZDIX (LY)	INDUSTRIAL RELAYS	28x21.5x35	1Z 2Z 4Z	0.9/1.2	5A / 7A / 10A 250VAC
ZDIY (MY)	INDUSTRIAL RELAYS	28x21.5x35	2Z 3Z 4Z	0.9/1.2	10A / 15A 250VAC

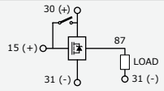
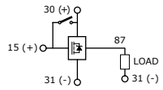
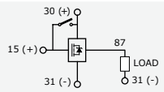
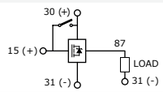
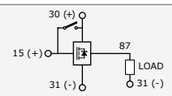
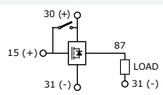
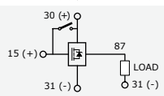
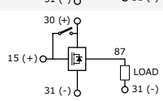


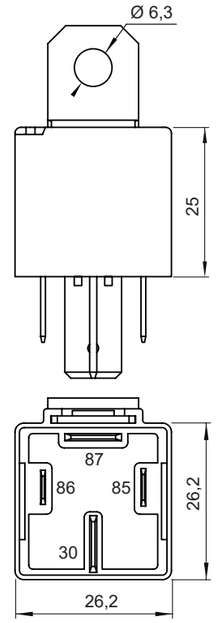


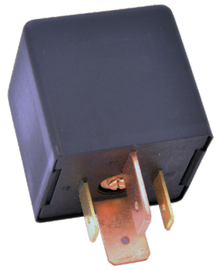


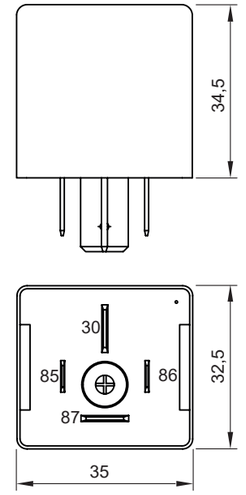
Electronic relay available at the rated voltage of 12V and 24V DC. The SSR works as an electromechanical relay but without moving parts.
The solid state relay uses mosfet transistor instead of contacts to switch current loads up to 25A.

Advantages: switching speed, reliability, unlimited lifespan, vibrations immunity.

PART NUMBER	DESCRIPTION	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
E.1.4.4P	SOLID STATE RELAY POSITIVE IMPULSE	4	12/24		
E.1.4.10P	SOLID STATE RELAY POSITIVE IMPULSE	10	12/24		
E.1.4.15P	SOLID STATE RELAY POSITIVE IMPULSE	15	12/24		
E.1.4.25P	SOLID STATE RELAY POSITIVE IMPULSE	25	12/24		
E.1.4.4N	SOLID STATE RELAY NEGATIVE IMPULSE	4	12/24		
E.1.4.10N	SOLID STATE RELAY NEGATIVE IMPULSE	10	12/24		
E.1.4.15N	SOLID STATE RELAY NEGATIVE IMPULSE	15	12/24		
E.1.4.25N	SOLID STATE RELAY NEGATIVE IMPULSE	25	12/24		



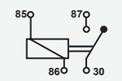
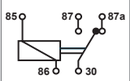




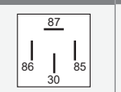
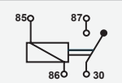
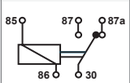
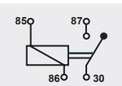
High Power plug-in automotive relay for 12V or 24V system and rated current up to 70A.

Available in make, change over contact structure and with coil transient suppression (diode or resistor).
The relays feature also two mounting options, and terminals footprint designed according to ISO 7588-1 to fit into a standard relay socket.

12V

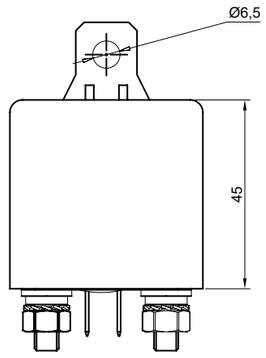
PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE TIPO	BRACKET	TERMINALS	DIAGRAM
03X.204.101.A1	POWER RELAY NORMALLY OPEN	4	70	12	B			
03X.224.101.A1	POWER RELAY CHANGE OVER	5	60/70	12	B			

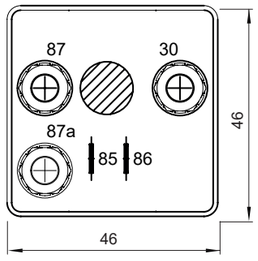
24V

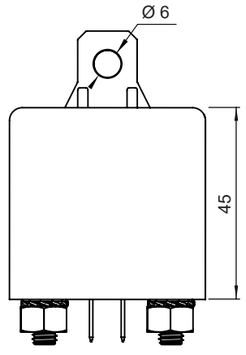
PART NUMBER	DESCRIPTION DESCRIZIONE	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TYPE	BRACKET	TERMINALS	DIAGRAM
03X.404.101.50.A1	POWER RELAY CHANGE OVER	4	50	24	B			
03X.424.101.A1	POWER RELAY CHANGE OVER	5	40/50	24	B			
03X.404.101.70.A1*	POWER RELAY NORMALLY OPEN	4	70	24	B			

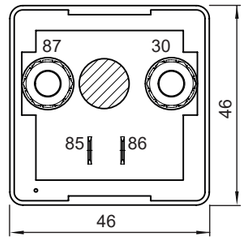
AVALAIBLE WITH OPTIONAL METAL BRACKET (cod. 01.S00.13)

* NO METAL BRACKET





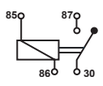
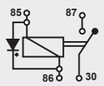
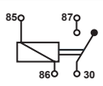
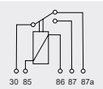




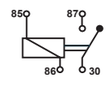
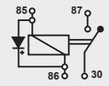
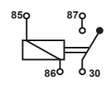
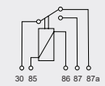
Heavy Duty relay available at the rated voltage of 12V and 24V DC with a switching capability up to 200A. Recommend for demanding applications this product is available in the normally open configuration with M6 bolt fastening on the power terminals 30 - 87.

The Heavy Duty relay can be supplied with a coil suppression diode o resistor on request to reduce voltage spikes, noise and interferences.

12V

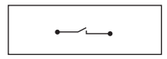
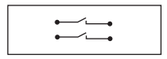
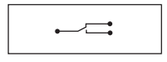
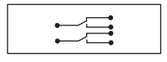
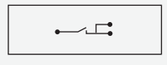
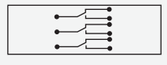
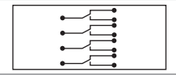
PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
R12V200.A1	HEAVY DUTY RELAY NORMALLY OPEN	4	200	12		
R12V200D.A1	HEAVY DUTY RELAY NORMALLY OPEN WITH DIODE	4	200	12		
R12V230.A1	HEAVY DUTY RELAY NORMALLY OPEN	4	230	12		
R12V200CO.A1	HEAVY DUTY RELAY CHANGE OVER	5	220/180	12		

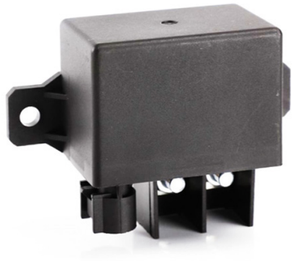
24V

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [A]	VOLTAGE [V]	TERMINALS	DIAGRAM
R24V100.A1	HEAVY DUTY RELAY NORMALLY OPEN	4	100	24		
R24V100D.A1	HEAVY DUTY RELAY NORMALLY OPEN WITH DIODE	4	100	24		
R24V180.A1	HEAVY DUTY RELAY NORMALLY OPEN	4	180	24		
R24V100CO.A1	HEAVY DUTY RELAY CHANGE OVER	5	160/120	24		

High-current relays are contactors used for car starters, power control, load switching, spark plugs, heating, air conditioning, and more. The range provides items with nominal voltage of 12V, 24V and 48V DC with NOISPST with contact voltage up to 180A and with a maximum SWITCH current of 300A. They can be supplied with added diode or resistor for the SRS-H series, while the SRS-S series is supplied with resistor only.

Contacts Arrangement Available

1H	NO / SPST		2H	NO / DPST	
1D	NC / SPST		2D	NC / DPST	
1Z	CO / SPDT		2Z	2CO / DPDT	
1U	NO / SPDT		3Z	3CO / DPDT	
			4Z	4CO / DPDT	



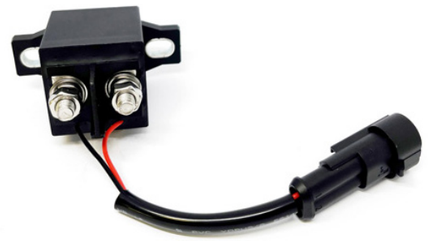
SRS-S

12V

PART NUMBER	DESCRIPTION	TERMINALS	CONTACTS ARRANGEMENT	RATED CURRENT	CONNECTOR
SRS-S-12-N-R-A1	HIGH CURRENT RELAY WITH RESISTOR	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 180A	TYCO Superseal 1.5 series 282080-1 Load Terminal: 2xM6

24V

PART NUMBER	DESCRIPTION	TERMINALS	CONTACTS ARRANGEMENTI	RATED CURRENT	CONNECTOR
SRS-S-24-N-R-A1	HIGH CURRENT RELAY WITH RESISTOR	4	2H / NO / DPST	Switch 300A for 1sec. Continuous 180A	TYCO Superseal 1.5 series 282080-1 Load Terminal: 2xM6



SRS-H

12V

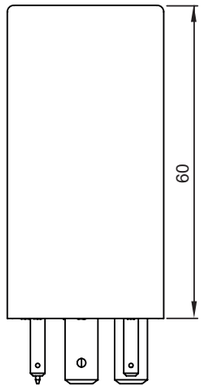
PART NUMBER	DESCRIPTION	TERMINALS	CONTACTS ARRANGEMENT	RATED CURRENT	CONNECTOR
SRS-H-12-N-A1	HIGH CURRENT RELAY	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6
SRS-H-12-N-R-A1	HIGH CURRENT RELAY WITH RESISTOR	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6
SRS-H-12-N-D-A1	HIGH CURRENT RELAY WITH DIODE	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6

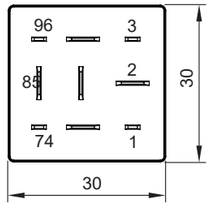
24V

PART NUMBER	DESCRIPTION	TERMINALS	CONTACTS ARRANGEMENT	RATED CURRENT	CONNECTOR
SRS-H-24-N-A1	HIGH CURRENT RELAY	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6
SRS-H-24-N-R-A1	HIGH CURRENT RELAY WITH RESISTOR	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6
SRS-H-24-N-D-A1	HIGH CURRENT RELAY WITH DIODE	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6

48V

PART NUMBER	DESCRIPTION	TERMINALS	CONTACTS ARRANGEMENT	RATED CURRENT	CONNECTOR
SRS-H-48-N-A1	HIGH CURRENT RELAY	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6
SRS-H-48-N-R-A1	HIGH CURRENT RELAY WITH RESISTOR	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6
SRS-H-48-N-D-A1	HIGH CURRENT RELAY WITH DIODE	4	1H / NO / SPST	Switch 300A for 1sec. Continuous 150A	Coil Terminal: DJ7021-1.5-11 Load Terminal: 2xM6



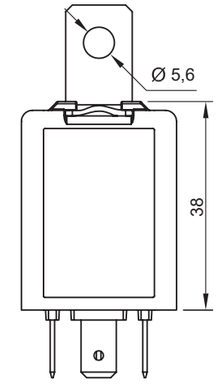


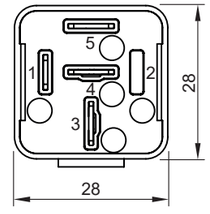
The unit controls the Daytime Running Lights operation. It's purpose is to improve visibility of direction indicators and energy efficiency.

In daylight, the unit turns OFF the DRL on the side in which the direction indicator is working.
At night, it allows to save energy by switching OFF the DRL when the headlamps are ON.

PART NUMBER	DESCRIPTION	TERMINALS	RATED LOAD [W]	VOLTAGE [V]	TERMINALS		
DRL 12V	DAYTIME RUNNING LIGHTS CONTROL UNIT	9	120	12	1 2 3 4 5 6 7 8 9	+30 + 86 - 85 + - +	Input Right low beam lamp Positive Battery Input Left low beam lamp Not connected Output Right DRL (Negative) Ground Input left direction indicator Output Left DRL (Negative) Input Right direction indicator

Day - DRL ON	Night - DRL OFF
Direction Indicator Right or Left (7-9) ON, DRL Right or Left (5-8) is switched automatically to OFF.	Low Beam H1 and H2 (1-3) are ON, DRL (5-8) are switched to OFF automatically.

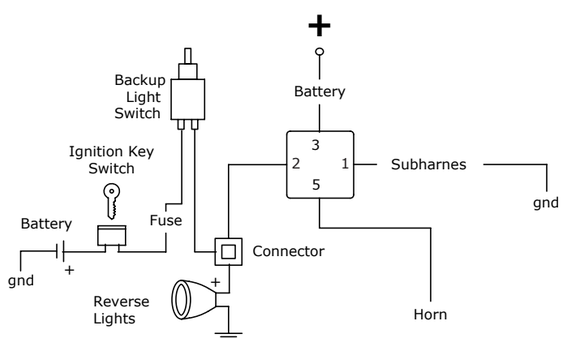


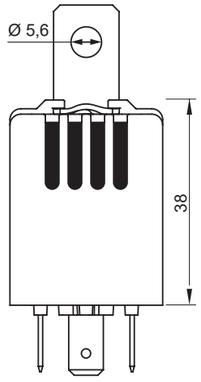


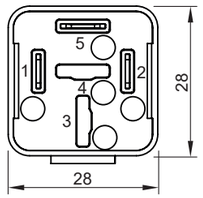
The Back-up Alarm relay is a safety signaling device developed to help keep everyone safer around moving maintenance and material handling vehicles during reversing operations.

The unit, coupled with a buzzer / sound module, produce an audible intermittent warning sound of a vehicle moving in reverse to warn passers-by operators nearby.

PART NUMBER	DESCRIPTION	TERMINALS	VOLTAGE [V]	BRACKET	TERMINALS
90.204.201	BACK UP ALARM RELAY	4	12	With metal bracket	
90.404.201	BACK UP ALARM RELAY	4	24	With metal bracket	







The Lights On Warning unit provides two urgent audible warnings: passenger compartment open door and headlights switched on to inform the driver.

PART NUMBER	DESCRIPTION	TERMINALS	VOLTAGE [V]	SOUND LEVEL	APPLICATION	TERMINALS	DIAGRAM
06.202.01	BUZZER UNIT	2	12	Continuous sound >85 dB-30 cm		31b 15	
06.203.01	LIGHT ON WARNING UNITS	3	12	Intermittent sound >85 dB-30 cm	(French cars)	30 31b 15	
06.203.02	LIGHT ON WARNING UNITS	3	12	Intermittent sound >85 dB-30 cm	(French cars)	31b 15 30	
06.402.01	LIGHT ON WARNING UNITS	3	24	Intermittent sound >100 dB-30 cm	(French cars)		

IBS Intelligent Battery System
the ultimate Battery System

A

B

The IBS Dual Battery System protects against the risk of an empty starter battery providing a reliable and safe vehicle start in every condition. The product manage the starter and auxiliary battery and connects them in automatically for charging when the vehicle is running.

In an emergency situation batteries can be connected together to ensure the vehicle start even when the starter battery is empty or defective.

IBS-DBS is available with an elegant display to show the level of charge of both batteries and connect/disconnect manually the batteries.

PART NUMBER	DESCRIPTION	VOLTAGE [V]	ADDITIONAL INFORMATION
IBS-DBS/12V	IBS WITH DISPLAY	12	- Display installation on the dashboard - Forced manually link/de-link button integrated on the display
IBS-DBS/24V	IBS WITH DISPLAY	24	- Audible low battery warning on both batteries (Picture A)
RBM/12	RELAY BOOSTER MODULE	12	- The relay booster module allow the connection to the auxiliary battery in case the starter battery fails totally not giving the IBS-DBS system the access to the auxiliary battery. (Picture B)
RMS.M400002	RUGGED MOUNTING FOR DISPLAY IBS-DBS		
RMS.M400005	RUGGED MOUNTING FOR DISPLAY IBS-DBS		
RMS.M400006	RUGGED MOUNTING FOR DISPLAY IBS-DBS		

The IBS Dual Battery System protects against the risk of an empty starter battery providing a reliable and safe vehicle start in every condition. The product manage the starter and auxiliary battery and connects them in automatically for charging when the vehicle is running.

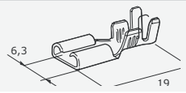
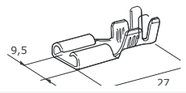
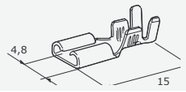
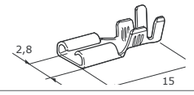
In an emergency situation batteries can be connected together to ensure the vehicle start even when the starter battery is empty or defective.

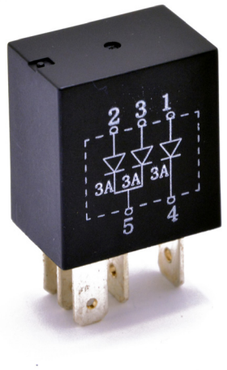
IBS-DBR comes with an external emergency switch to force the connection of the starter battery with the secondary battery.

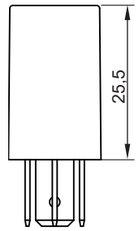
PART NUMBER	DESCRIPTION	VOLTAGE [V]	ADDITIONAL INFORMATION
IBS-DBR/12V	IBS RELAY	12	- Simple under bonnet installation. - Integrated "Relay booster module" to start the engine when the main is damaged. - External emergency switch to manually link the batteries.
IBS-DBR/24V	IBS RELAY	24	

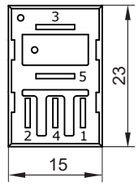
Sockets with bracket for flashers, relays, microrelays and power relays. Our range include PCB socket.

PART NUMBER	DESCRIPTION	PICTURE
PR.M00.001	SOCKET FOR MICRORELAY	
PR.N00.001	SOCKET FOR RELAY	
PR.S00.001	SOCKET FOR POWER RELAY	

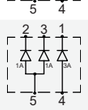
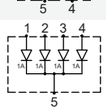
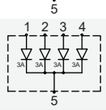
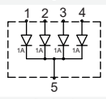
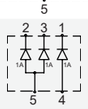
PART NUMBER	TERMINAL SIZE	WIRE SIZE	DESCRIPTION
01.FAS.10	6,3 x 0,8 mm	1 - 2,5 mm^2	
01.FAS.20	9,5 x 1,2 mm	4 - 6 mm^2	
01.FAS.30	4,8 x 0,8 mm	0,5 - 1,5 mm^2	
01.FAS.40	2,8 x 0,8 mm	1 - 2,5 mm^2	







The diode container is a protection device capable of preserving the components connected to it from reverse current / current peaks / overvoltages. Our products are able to satisfy a wide range of needs according to the voltage / amperage required by the application. The small size makes it easy to assemble inside the final application. The connection is facilitated by 5 fastons in compliance with norm ISO8092-1 (dimensions: 6,3x0,8mm e 4,8x0,8mm).

PART NUMBER	DESCRIPTION	DIODE TYPE	DIAGRAM
CD0001	DIODE CONTAINER	3x DIODES 1A - 400V	
CD0002	DIODE CONTAINER	3x DIODES 3A - 1000V	
CD0003	DIODE CONTAINER	3x DIODES 1A - 400V	
CD0004	DIODE CONTAINER	3x DIODES 3A - 1000V	
CD0005	DIODE CONTAINER	2x DIODES 1A - 400V 1x DIODE 3A - 1000V	
CD0006	DIODE CONTAINER	4x DIODES 1A - 400V	
CD0007	DIODE CONTAINER	4x DIODES 3A - 1000V	
CD0008	DIODE CONTAINER	4x DIODES 1A - 400V	
CD0009	DIODE CONTAINER	3x DIODES 1A - 400V	


breneco