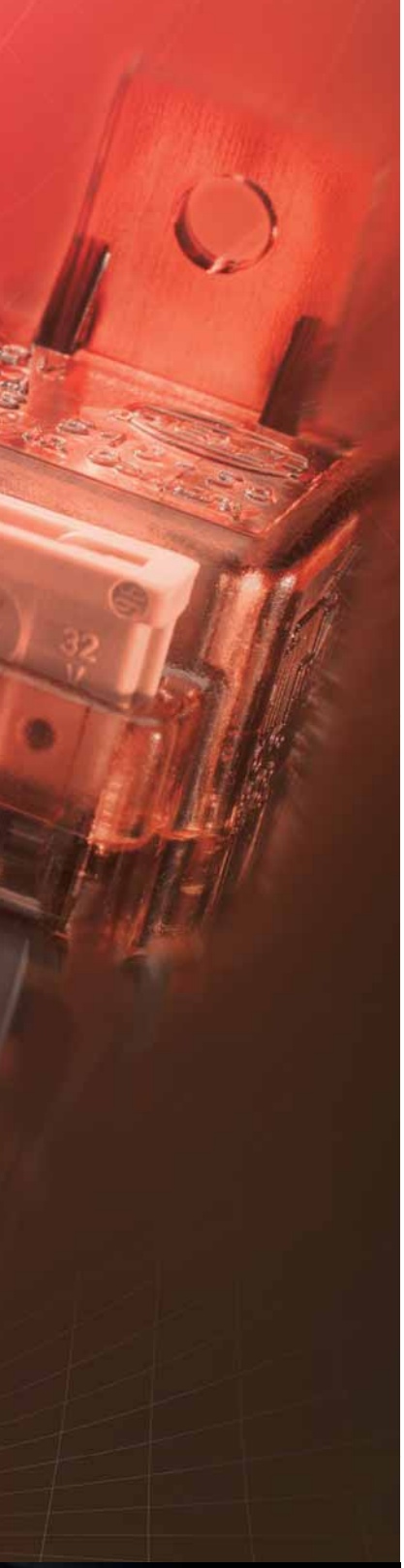
Relays and Flasher Units

Hella offers a comprehensive range of relays and flasher units to suit 12 and 24 volt applications. Quality accessories facilitate the expansion into new applications and provide customers with new solutions.



Relays and Flasher Units

HELLA®

SAFETY through Vision and Innovation

Relays and Flasher Units

Direction Indicator Lamp Monitoring with the Patented HCS (Hella Compatibility Solution)

Vehicles being driven on public roads require the operation of the direction indicator lamps to be monitored and a fault instantly signalled to the driver. Direction indicator lamps are an important road safety feature signalling the direction change intention of the driver. Failure to signal or failure to recognise a direction indicator represents a significant cause for road accidents.

In many countries, LED direction indicator lamps offering a reliable 'Fit and Forget' solution, have become the retrofit item of choice for the cost conscious transport operator. LED lamps, with much lower power consumption and Multivolt™ features, are often a challenge for existing failure detection control electronics of modern trucks and buses. Transport fleets often feature a mixture of trailer units equipped with either bulb or LED based direction indicator lamps. Each of these trailer units ideally must be freely interchangeable with any of the truck units in the fleet, including those with 12 volt or 24 volt systems.

Some manufacturers recommend to fit additional resistive loads in parallel to the LED lamps to simulate the 21 watts consumed by a bulb lamp. Such pure resistive load solutions can be problematic for the following reasons:

a) They mask the possible failure of the actual LED indicator lamp itself.

b) In many cases such pure resistive solutions do not function since they only provide a linear time/current response which is significantly different to the time/current response of a bulb filament when it heats up.

c) They consume a lot of energy and thus eliminate the desired lower power advantage of an LED lamp.

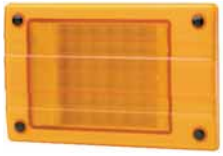
Safe conversion to LED direction indicator lamps is now possible with the patented HCS Hella Compatibility Solution.

Hella supplies electronic control and flasher units which make it possible to convert the indicator failure display for various vehicles. This is necessary if the vehicle manufacturer does not guarantee indicator bulb failure control via the vehicle wiring system. The solution has been patented by Hella. Currently, there is one control and four different LED/bulb compatible flasher units available.

2151-HCS

2133-CS

2379-CS



2146-HCS

2132-CS

The innovative patented design makes the reliable, problem free conversion to Hella LED based indicator lamps possible.

LED lamps listed in this catalogue marked with the HCS symbol feature the patented control technology HCS (Hella Compatibility Solution) which allows seamless communication with the Hella HCS control flasher units.

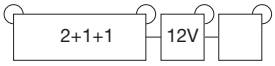
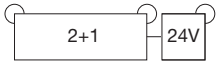
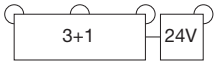
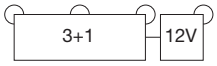
HCS symbol

1. HCS LED/Bulb compatible indicator flasher units for industry standard configurations.

For all other vehicles, where an independent Hella flasher unit can be fitted, a number of HCS flasher units are offered, covering most of the common transport industry lamp combinations.

3036 LED Flasher unit

Vehicles with Flasher Unit.

1.	HCS flasher unit 12V 2+1+1 P/N: 3036	
2.	HCS flasher unit 24V 2+1 P/N: 3037	
3.	HCS flasher unit 24V 3+1 P/N: 3038	
4.	HCS flasher unit 12V 3+1 P/N: 3039	

Refer to page 186 for specifications.

5DS 009 602-001
Control unit 24V

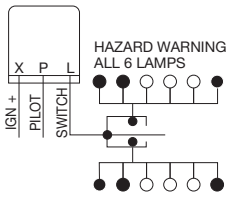
2. Vehicles that use the cold scan for indicator failure control.

Description of fault indication: Is a faulty lamp indicated when the ignition is switched on or directly when the fault occurs, or when the bulb is screwed out without the indicator being triggered?

Solution: Simulation device for cold scan P/N: 5DS 009 602-001.

Common Pin Designations

Terminal	Description
49/X	Flasher input (+)
49a/L	Flasher output (+) to lamps or indicator switch
30b	Flasher input (+) from hazard switch
31	Earth (-)
C/C1/CP/P	Vehicle pilot lamp output (+)
C2	1st trailer pilot lamp output (+)
C3	2nd trailer pilot lamp output (+)

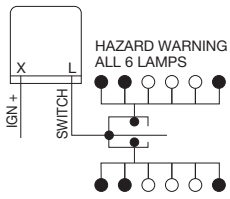


3 pin - 3007, 3027, 3028

3007 — 3 Pin Flasher Unit - 12 Volt
3008 — 2 Pin Flasher Unit - 12 Volt

DESCRIPTION High capacity flasher. Maximum 6 lamps. Suitable for hazard warning applications.

NO. OF BULBS 6 x 21W



2 pin - 3008, 3026

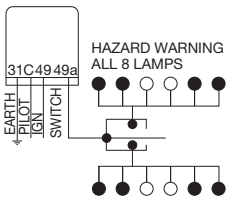
3026 — 2 Pin High Capacity Flasher Unit - 12 Volt
3027 — 3 Pin High Capacity Flasher Unit - 12 Volt
3028 — 3 Pin High Capacity Flasher Unit - 24 Volt

DESCRIPTION High capacity electronic flasher unit. Complete with bracket. Up to 210W load. Reverse polarity protected, polycarbonate cover, silver contacts. Clear audible signal.

NO. OF BULBS 1-10 x 21W

8003 — Universal Mounting Bracket

DESCRIPTION For mounting Hella flasher units: P/N's 3007, 3008, 3026, 3027, 3028 - 32mm diameter.



3014 — 4 Pin High Capacity Flasher Unit - 12 Volt
3015 — 4 Pin High Capacity Flasher Unit - 24 Volt

DESCRIPTION Heavy duty flasher unit manufactured to take up to 200W loads.

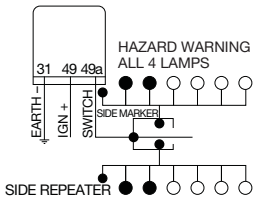
LOAD 10-200W

FLASHER UNITS

3016 — 3 Pin Electronic Flasher Unit - 12 Volt

DESCRIPTION To operate 2 or 3 lamps on either side of vehicle. Incorporates hazard warning flasher system when used in conjunction with Hella switch P/N 5227.

NO. OF BULBS 2(4) x 21W + 0 - 5W



3016LED1 — 3 Pin Electronic Flasher Unit - 12 Volt

DESCRIPTION Modified version of 3016 electronic flasher unit specifically designed for use with DuraLed® rear direction indicator lamps on motor vehicles, such as prime movers, trucks and motor homes, maintaining the mandatory ADR specified bulb failure warning signal function.

VOLTAGE 12V

NO. OF BULBS

Front direction indicator lamp	1(2) x 21W
DuraLed® direction indicator lamp	1(2) x 9W

3016LED2 — 3 Pin Electronic Flasher Unit - 12 Volt

DESCRIPTION Modified version of 3016 electronic flasher unit specifically designed for use with DuraLed® rear direction indicator lamps on motor vehicles, such as prime movers, trucks and motor homes, maintaining the mandatory ADR specified bulb failure warning signal function.

VOLTAGE 12V

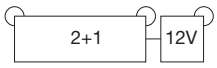
NO. OF BULBS

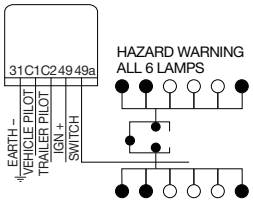
Front direction indicator lamp	1(2) x 21W
Supplementary side direction indicator lamp	1(2) x 5W
DuraLed® direction indicator lamp	1(2) x 9W

3017 — 5 Pin Electronic Flasher Unit, 2+1 - 12 Volt

DESCRIPTION Caravan or trailer flasher unit. To operate 2 or 3 lamps on either side of the vehicle. With mounting bracket. Separate pilot lamp indicates operation of flasher lamp on the trailer. Incorporates hazard warning flasher system when used in conjunction with Hella switch P/N 5227.

NO. OF BULBS 2 + 1(6) x 21W

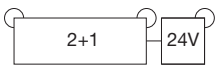


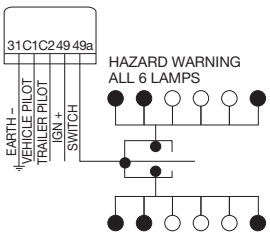


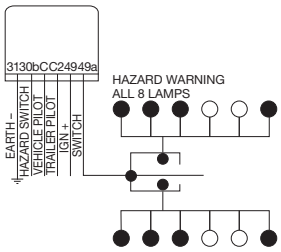
3018 — 5 Pin Electronic Flasher Unit, 2+1 - 24 Volt

DESCRIPTION Caravan or trailer flasher unit. To operate 2 or 3 lamps on either side of the vehicle. With mounting bracket. Separate pilot lamp indicates operation of flasher lamp on the trailer. Incorporates hazard warning flasher system when used in conjunction with Hella switch P/N 5227.

NO. OF BULBS 2 + 1(6) x 21W



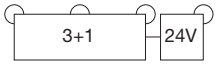


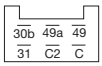


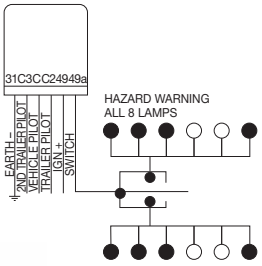
3032 6 Pin Electronic Flasher Unit, 3+1 - 24 Volt

DESCRIPTION For heavy trucks with trailers. With mounting bracket. To operate 3 lamps on either side of towing vehicle, plus an additional lamp on either side of a trailer. Separate pilot lamp indicates operation of flasher lamp on the trailer. Incorporates hazard warning flasher system when used in conjunction with Hella switch P/N 5227.

NO. OF BULBS 3 + 1(8) x 21W



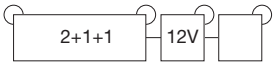


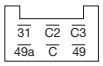


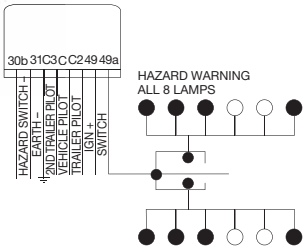
3033 6 Pin Electronic Flasher Unit, 2+1+1 - 12 Volt

DESCRIPTION To operate 2 lamps on either side of a towing vehicle plus an additional lamp on either side of each of two trailers. Separate pilot lamp indicates operation of flasher lamp on the trailer.

NO. OF BULBS 2 + 1 + 1(8) x 21W



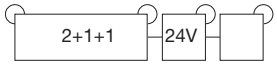


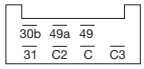


3034 7 Pin Electronic Flasher Unit, 2+1+1 - 24 Volt

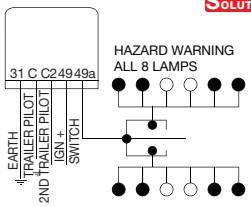
DESCRIPTION To operate 2 lamps on either side of a towing vehicle plus an additional lamp on either side of each of two trailers. Separate pilot lamp indicates operation of flasher lamp on the trailer. Incorporates hazard warning flasher system when used in conjunction with Hella switch P/N 5227.

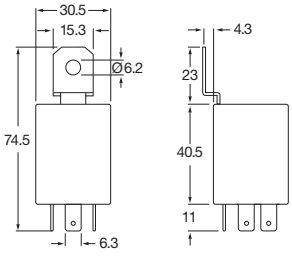
NO. OF BULBS 2 + 1 + 1(8) x 21W





3036





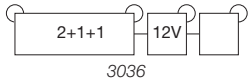
3036 HCS Electronic Flasher Unit, 2+1+1 - 12 Volt
3037 HCS Electronic Flasher Unit, 2+1 - 24 Volt
3038 HCS Electronic Flasher Unit, 3+1 - 24 Volt
3039 HCS Electronic Flasher Unit, 3+1 - 12 Volt

DESCRIPTION HCS (Hella Compatibility Solution) flasher units suitable for use with either bulb lamps or HCS LED direction indicator lamps. The flasher units have two modes of warning while the indicators are operating.

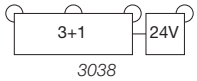
1) Prime mover
- Lamps will flash rapidly to indicate a failure.

2) Prime mover plus trailer
- Separate pilot lamp will not illuminate to indicate a failure.

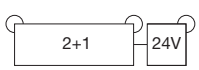
Note *Refer to page 38 for further information on HCS Technology.*



3036

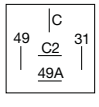


3038



3037

3039



Common Pin Designations for Relays

Pin No.	Description
85/2	Earth (end of winding to ground or negative)
86/1	Positive
87/5	Output (to consumer e.g: driving lamp)
87a/4	Alternative output (1st output, break side)
30/3	Positive supply (Input from + battery terminal, direct)
Note:	*For correct polarity connections of the diode protected relay ensure terminals 85 and 86 are connected as shown.*

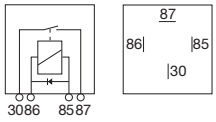
Eliminating Voltage Spikes

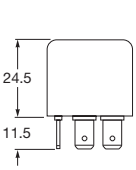
Voltage spikes from 300V to 500V can occur momentarily when a relay is switched off. Sensitive electronic equipment can be damaged or malfunctions can occur if these spikes reach the vehicle electrical network without suppression. A relay with a diode eliminates voltage spikes completely.

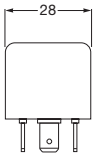
12 Volt

3053 — Normally Open Relay, 4 Pin - 12 Volt

MAXIMUM LOAD 40A
PROTECTION Diode
CURRENT DRAW 140mA

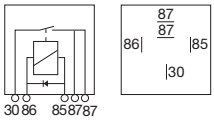






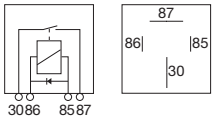
3055 — Normally Open Relay, 5 Pin - 12 Volt

MAXIMUM LOAD 40A
PROTECTION Diode
CURRENT DRAW 140mA



3059 — Normally Open Relay, 4 Pin - 12 Volt

MAXIMUM LOAD 50A
PROTECTION Diode
CURRENT DRAW 140mA

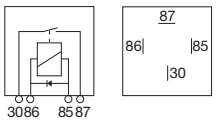


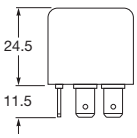
Terminals 30 and 87 are 9.5mm terminals.

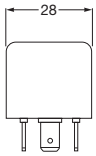
24 Volt

3054 — Normally Open Relay, 4 Pin - 24 Volt

MAXIMUM LOAD 22A
PROTECTION Diode
CURRENT DRAW 70mA

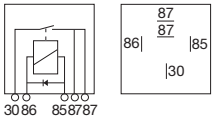






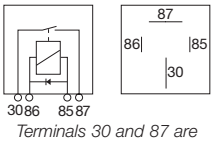
3056 — Normally Open Relay, 5 Pin - 24 Volt

MAXIMUM LOAD 22A
PROTECTION Diode
CURRENT DRAW 70mA



3060 — Normally Open Relay, 4 Pin - 24 Volt

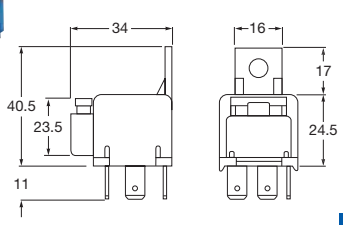
MAXIMUM LOAD 30A
PROTECTION Diode
CURRENT DRAW 70mA



Terminals 30 and 87 are 9.5mm terminals.

RELAYS

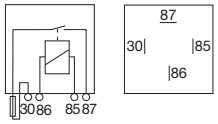
3076



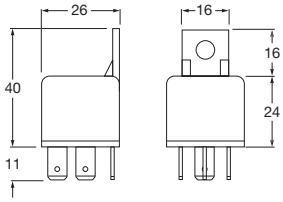
12 Volt

3076 — Normally Open Fused Relay, 4 Pin - 12 Volt

MAXIMUM LOAD 25A with 25A fuse
CURRENT DRAW 140mA



3078
3082



3078 — Normally Open Mini Relay, 4 Pin - 12 Volt

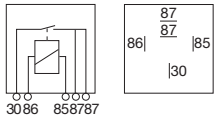
3078-BULK — Normally Open Mini Relay, 4 Pin - 12 Volt (Pack of 10)

MAXIMUM LOAD 40A
CURRENT DRAW 140mA

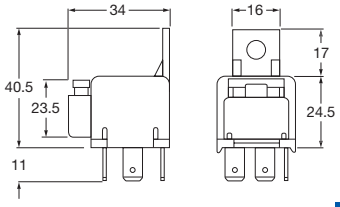
3082 — Normally Open Mini Relay, 5 Pin - 12 Volt

3082-BULK — Normally Open Mini Relay, 5 Pin - 12 Volt (Pack of 10)

MAXIMUM LOAD 40A
CURRENT DRAW 140mA



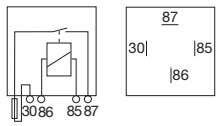
3077



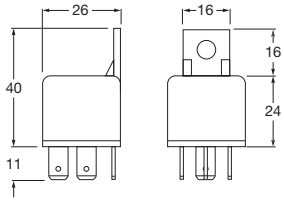
24 Volt

3077 — Normally Open Fused Relay, 4 Pin - 24 Volt

MAXIMUM LOAD 15A with 15A fuse
CURRENT DRAW 80mA



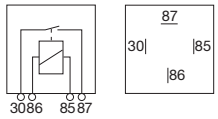
3079



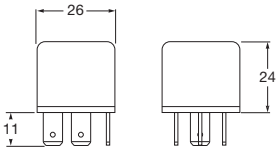
3079 — Normally Open Mini Relay, 4 Pin - 24 Volt

3079-BULK — Normally Open Mini Relay, 4 Pin - 24 Volt (Pack of 10)

MAXIMUM LOAD 30A
CURRENT DRAW 70mA



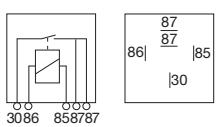
3083



3083 — Normally Open Mini Relay, 5 Pin (without bracket) - 24 Volt

3083-BULK — Normally Open Mini Relay, 5 Pin (without bracket) - 24 Volt (Pack of 10)

MAXIMUM LOAD 30A
CURRENT DRAW 70mA

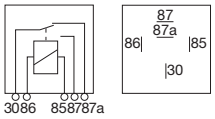


RELAYS

12 Volt

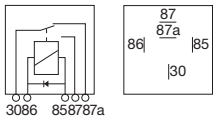
3080 — Change-over Relay, 5 Pin - 12 Volt
3080-BULK — Change-over Relay, 5 Pin - 12 Volt (Pack of 10)

MAXIMUM LOAD 30-87, 40A/30-87a, 20A
CURRENT DRAW 140mA



3057 — Change-over Relay, 5 Pin - 12 Volt

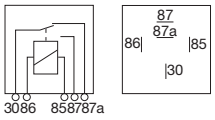
MAXIMUM LOAD 30-87, 40A/30-87, 15A
PROTECTION Diode
CURRENT DRAW 140mA



24 Volt

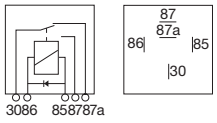
3081 — Change-over Relay, 5 Pin - 24 Volt
3081-BULK — Change-over Relay, 5 Pin - 24 Volt (Pack of 10)

MAXIMUM LOAD 30-87, 30A/30-87a, 15A
CURRENT DRAW 70mA



3058 — Change-over Relay, 5 Pin - 24 Volt

MAXIMUM LOAD 30-87, 22A/30-87, 10A
PROTECTION Diode
CURRENT DRAW 70mA



4973 — Relay Connector
4973-BULK — Relay Connector (Pack of 50)

DESCRIPTION Single screw mounting. Sturdy plastic casing. Supplied with 5 blade terminals.
APPLICATION Suits 4 and 5 pin relays with 6.3mm flat pin connectors. Hella Part No's. 3076, 3077, 3078, 3079, 3080, 3081.
MOUNTING Single screw mounting.

Note *P/N's 3076-3077 are not suitable for multiple installation using this connector.*

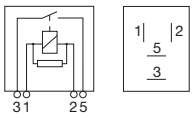
Micro Relay

3064 — Normally Open Relay (Micro Relay), 4 Pin - 12 Volt

DESCRIPTION Relay 4 pin with bracket and parallel resistor. With two 4.8mm and two 6.3mm blade terminal contacts (terminals 3 and 5).

MAXIMUM LOAD 20A @ 12V

PROTECTION Resistor



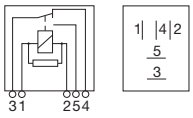
3065 — Change-over Relay (Micro Relay), 5 Pin - 12 Volt

DESCRIPTION With bracket and parallel resistor. With three 4.8mm and two 6.3mm blade terminal contacts (terminals 3 and 5).

MAXIMUM LOAD 3-5 20A/3-4 10A

PROTECTION Resistor

Note *Terminal designations:* *1 = 86*
2 = 85
3 = 30
4 = 87a
5 = 87



4973-M — Micro Relay Connector

DESCRIPTION For micro-relays with 5 pole SAE terminal arrangement. For receiving three 4.8mm and two 6.3mm blade terminal connectors.
Made of black plastic.

SOCKET 5 pole

APPLICATION Suits P/N's 3064 and 3065

High Capacity Relays

3084 — High Capacity Normally Open Relay, 4 Pin - 12 Volt

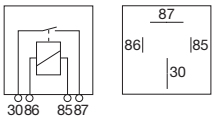
MAXIMUM LOAD 70A

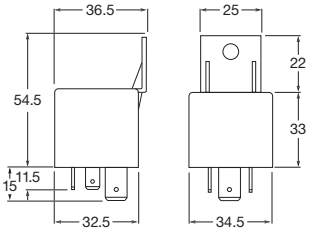
CURRENT DRAW 140mA

3085 — High Capacity Normally Open Relay, 4 Pin - 24 Volt

MAXIMUM LOAD 60A

CURRENT DRAW 70mA





3061 — Normally Open Relay, 4 Pin - 12 Volt

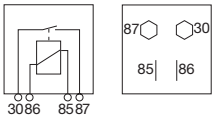
MAXIMUM LOAD 180A peak current (100A continuous)

CURRENT DRAW 380mA

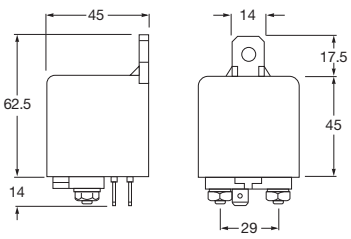
3062 — Normally Open Relay, 4 Pin - 24 Volt

MAXIMUM LOAD 80A peak current (60A continuous)

CURRENT DRAW 180mA



Terminals 30 and 87 are 6mm stud.



RELAYS

3086 Time Control Unit with Drop-out Delay, 5 Pin - 12 Volt

3086-24V Time Control Unit with Drop-out Delay, 5 Pin - 24 Volt

DESCRIPTION Relay with manually adjustable drop-out delay function, 0 – 900 seconds.

3087 Time Control Unit with Pick-up Delay - 12 Volt

3087-24V Time Control Unit with Pick-up Delay - 24 Volt

DESCRIPTION Relay with manually adjustable pick-up delay function, 0 – 900 seconds.

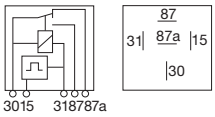
MAXIMUM LOAD Contact opened 10A
Contact closed 20A/30min

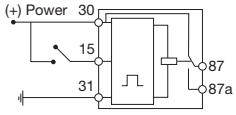
PROTECTION IP 50 (Protection against dust)

APPROVAL Type approval according to directive 95/54/EC.

Note *Switching terminal 15 starts timing.*

S1	S2	T(s)
off	off	110...900
on	on	14...110
on	off	2.5...14
off	on	0...2.5





Time Delay Adjustment Possibilities

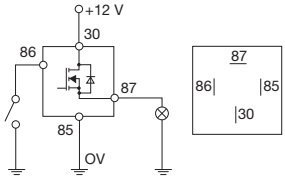
The delay interval is set by the switches S1 and S2. Adjustment exactly to the second is carried out using a screw driver.

Solid State Relay

3063 Normally Open (Solid State) Relay, 4 Pin - 12 Volt

DESCRIPTION Solid-state relays are modern semi-conductor switches. Satisfies the increasing trend of controlling loads (e.g. fan motors, glow plugs, headlamp and heaters) with power regulation.

- Suitable for resistive loads, lamp loads and inductive loads.
- Pulse width modulation allows regulation of the power for the loads.
- Maximum switching reliability, particularly suited for switching functions relevant for safety.
- Silent switching, e.g. in passenger compartment.
- Resistant to short-circuit and overload.
- Protected against polarity reversal and earth disconnection.
- Shock and vibration-resistant.
- Water-proof, potted design.
- Protected against overheating.
- Low quiescent current.



MAXIMUM LOAD 22A @ 12V

PROTECTION IP 67 (Protected against dust and temporary water immersion)

3099 Voltage Sensitive Relay - 12 Volt

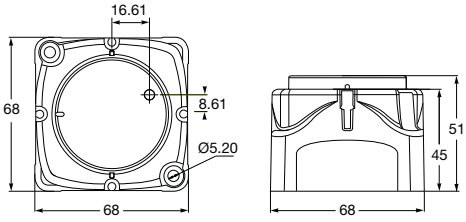
DESCRIPTION The voltage sensitive relay (VSR) allows two batteries to be charged at the same time. When the engine is started and the start battery reaches 13.7 volts, the VSR engages, allowing two battery banks (start and auxiliary) to be charged simultaneously. When the voltage drops below 12.8 volts (e.g. the engine is stopped), the VSR disengages, separating the batteries. This system eliminates the possibility of draining the start battery and protects sensitive electronic equipment powered from the auxiliary battery from harmful engine start up spikes.

MOUNTING Recess or surface mount.

VOLTAGE 12V

MAXIMUM CONTINUOUS LOAD 140A

TERMINATION 2 x 6mm studs



RELAYS