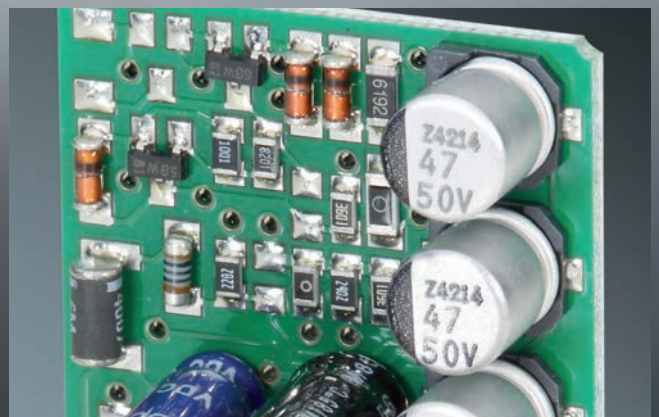
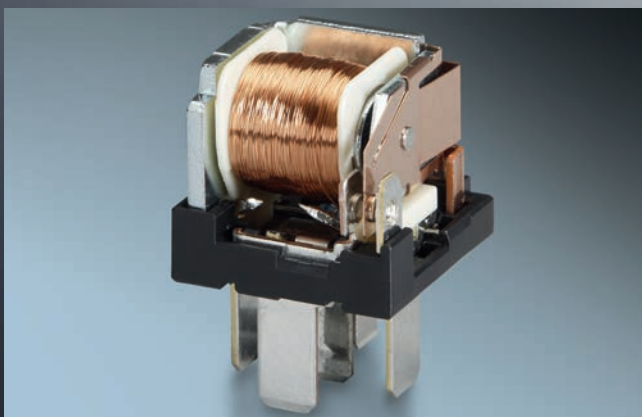




Relays and Flasher Units

HELLA manufactures more than 100 million units per year and thanks to optimised production, HELLA relay and flasher units consistently benchmark with the highest reliability in the industry.



Contents

Relays and Flasher Units

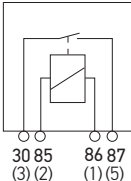
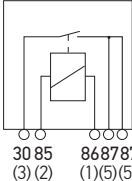
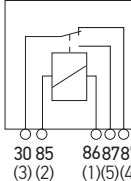
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HELLA RELAYS

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

COMMON PIN DESIGNATIONS FOR RELAYS		
Pin No.	Description	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 or resistor minimises voltage spikes.
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)	

The Different Types of Relays

The Normally Open Relay	The Normally Open Relay with Dual Output	The Change-over Relay
		
<p>A normally open relay is used to close the electric circuit between power source and electrical load, e.g. the load is switched on. Relays are operated by means of switches, pulse generators or control devices.</p> <p>Application: Headlamps, auxiliary driving lamps, auxiliary fog lamps, horns, heaters, motors for fans and power windows, air-conditioners and ignition assemblies.</p>		<p>The change-over relay changes the load path from one electrical load to another. The relay is operated by a dashboard switch.</p> <p>Application: Switching over from town horn to fanfare horn, for 2 speed appliances such as heated rear window or fan motors.</p> <p>Change-over relays can be used as:</p> <ul style="list-style-type: none">• Change-over relays• Normally open relays• Normally closed relays

Relays have been predicted to be obsolete in modern vehicles, however the automotive industry needs relays since relay functions cannot always be replaced by control units. Only relays make “galvanic isolation” possible between input and output. Semi-conductor devices cannot manage this at the moment. Another positive factor is the cost advantage relays have compared with an electronic solution.

In motor vehicles, relays are used to switch high currents. For example the engine control unit is switched by a relay. Their sturdiness allows them to be installed near electric consumers. As only low control currents are required, the cable cross-sections can be kept small. The switching/amplifier function of a relay can only be achieved with a lot more effort and a lot less reliability using “modern” electronics. An additional advantage is that the replacement of a relay is quick and easy. These characteristics guarantee that relays will have a regular place in many vehicles for a long time to come.

Trust in our Quality Relays

- Production expertise: HELLA produces more than 100 million relays per year. Thanks to optimised production we can offer a competitive price for customers. HELLA relays have an extremely low failure rate.
- OEM customers: HELLA develops and produces relays for AGCO, Claas, Daimler AG, Ford, VW, GM, JCB, Opel, Nissan, John Deere, Chrysler and Jaguar/Land Rover among others. We have been working with many customers for decades.

RELAY QUICK REFERENCE CHART

MINI RELAYS - NORMALLY OPEN								
Part Number	Voltage	Pins	Function	Protection	Maximum Load	Current Draw	Bracket	Description
3078	12V	4	N/O		30A	140mA	Yes	
3078R	12V	4	N/O	Resistor	50A	140mA	Yes	Terminals 30 and 87 are 9.5mm terminals
3053	12V	4	N/O	Diode	40A	170mA	Yes	
3059	12V	4	N/O	Diode	50A	210mA	Yes	Terminals 30 and 87 are 8.1mm terminals
3082	12V	5	N/O		40A	140mA	Yes	
3055	12V	5	N/O	Diode	40A	170mA	Yes	
3079	24V	4	N/O		30A	70mA	Yes	
3079R	24V	4	N/O	Resistor	30A	90mA	Yes	
3054	24V	4	N/O	Diode	22A	90mA	Yes	
3060	24V	4	N/O	Diode	30A	90mA	Yes	Terminals 30 and 87 are 8.1mm terminals
3083	24V	5	N/O		20A	70mA	No	
3056	24V	5	N/O	Diode	22A	90mA	Yes	
MINI RELAYS - NORMALLY OPEN FUSED								
3076	12V	4	N/O		25A	140mA	Yes	
3077	24V	4	N/O		15A	80mA	Yes	
MINI RELAYS - CHANGE-OVER								
3080	12V	5	N/O-N/C		30-87, 30A/30-87a, 20A	140mA	Yes	
3080R-BULK	12V	5	N/O-N/C	Resistor	3-5, 30A/3-4, 20A	140mA	Yes	
3057	12V	5	N/O-N/C	Diode	30-87, 40A/30-87a, 15A	170mA	Yes	
3081	24V	5	N/O-N/C		30-87, 20A/30-87a, 10A	70mA	Yes	
3081R-BULK	24V	5	N/O-N/C	Resistor	3-5, 20A/3-4, 10A	70mA	Yes	
3058	24V	5	N/O-N/C	Diode	30-87, 22A/30-87a, 10A	90mA	Yes	
WEATHERPROOF RELAY - CHANGE-OVER								
3080S	12V	5	N/O-N/C	Resistor	30-87, 30A/30-87a, 20A	160mA	Yes	Connector P/N 4973S
SOLID STATE RELAY - NORMALLY OPEN								
3063	12V	4	N/O		22A		No	
HIGH CAPACITY RELAYS - NORMALLY OPEN								
3084	12V	4	N/O		60A	140mA	Yes	Terminals 30 and 87 are 9.5mm terminals
3061	12V	4	N/O		180A peak (100A continuous)	380mA	Yes	Terminals 30 and 87 are M6 studs
3085	24V	4	N/O		60A	70mA	Yes	Terminals 30 and 87 are 9.5mm terminals
3062	24V	4	N/O		80A peak (60A continuous)	180mA	Yes	Terminals 30 and 87 are M6 studs
MICRO RELAY - NORMALLY OPEN								
3064	12V	4	N/O	Resistor	20A	140mA	No	Terminals 85 and 86 are 4.8mm
MICRO RELAY - CHANGE-OVER								
3065	12V	5	N/O-N/C	Resistor	30-87, 20A/30-87a, 10A	140mA	No	Terminals 85, 86 and 87a are 4.8mm
MICRO RELAY - LATCHING								
3064L	12V	5	Latching		20A	140mA	No	Terminals 1, 2 and 6 are 4.8mm
TIME CONTROL RELAYS								
3086	12V	5	N/O-N/C	Contact opened 10A, Contact closed 20A 30min			Yes	
3087	12V	5	N/O-N/C	Contact opened 10A, Contact closed 20A 30min			Yes	
3086-24V	24V	5	N/O-N/C	Contact opened 10A, Contact closed 20A 30min			Yes	
3087-24V	24V	5	N/O-N/C	Contact opened 10A, Contact closed 20A 30min			Yes	

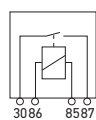
Normally Open Mini Relay



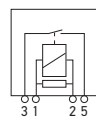
P/N 3078



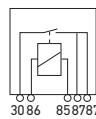
P/N 3078R



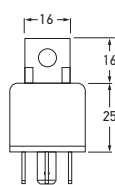
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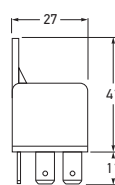
P/N 3078R



P/N 3082

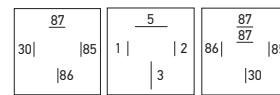
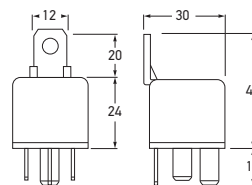


P/Ns 3078 and 3082



P/N 3078R




Terminals 30 and 87 are 9.5mm terminals



P/N 3078

P/N 3078R

P/N 3082

Part Number	3078		4 PIN	12 VOLT		
	3078-BULK (Pack of 10)					
	3078R (With resistor)					
	3082		5 PIN			
	3082-BULK (Pack of 10)					
Maximum Load	P/N 3078:	30A	P/N 3078R:	50A	P/N 3082:	40A
Current Draw	140mA					

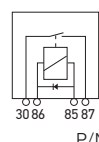
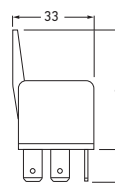
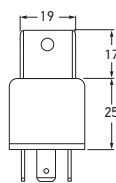
Normally Open Mini Relay with Diode



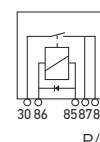
P/N 3053





P/N 3055



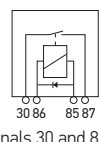
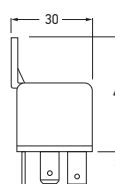
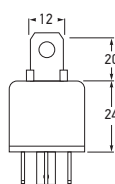
P/N 3053



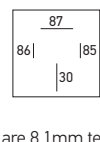
P/N 3055

Part Number	3053		4 PIN	12 VOLT
	3055		5 PIN	
Maximum Load	40A			
Protection	Diode			
Current Draw	170mA			

Normally Open Mini Relay with Diode

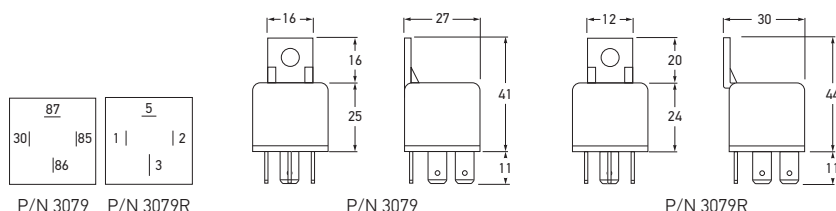




Terminals 30 and 87 are 8.1mm terminals



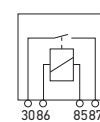
Part Number	3059	4 PIN	12 VOLT
Maximum Load	50A		
Protection	Diode		
Current Draw	210mA		

RELAYS AND FLASHER UNITS

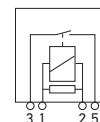


Part Number	3079 		4 PIN	24 VOLT
	3079-BULK (Pack of 10)			
	3079R (With resistor) 			
Maximum Load	30A			
Current Draw	P/N 3079:	70mA	P/N 3079R:	90mA

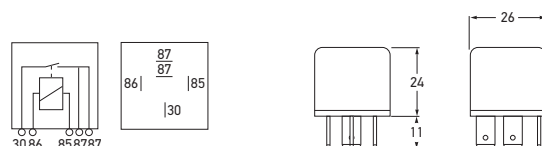
Normally Open Mini Relay




P/N 3079

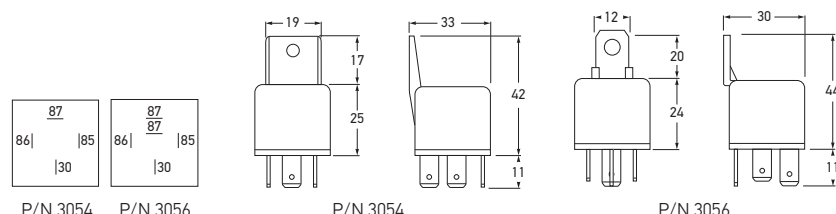




P/N 3079R



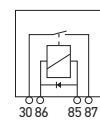
Part Number	3083 	5 PIN	24 VOLT
	3083-BULK (Pack of 10)		
Maximum Load	20A		
Current Draw	70mA		

Normally Open Mini Relay - Without Bracket

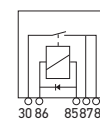


Part Number	3054		4 PIN	24 VOLT
	3056		5 PIN	
Maximum Load	22A			
Protection	Diode			
Current Draw	90mA			

Normally Open Mini Relay With Diode



P/N 3054



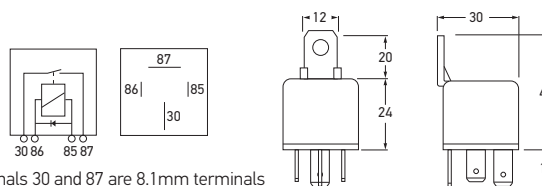
P/N 3056



P/N 3054



P/N 3056



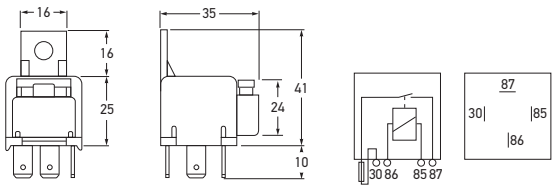
Terminals 30 and 87 are 8.1mm terminals

Part Number	3060	4 PIN	24 VOLT
Maximum Load	30A		
Protection	Diode		
Current Draw	90mA		

Normally Open Mini Relay With Diode

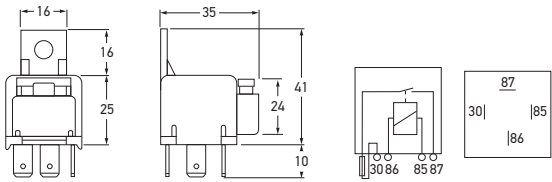


Normally Open Fused Relay
- 12 Volt



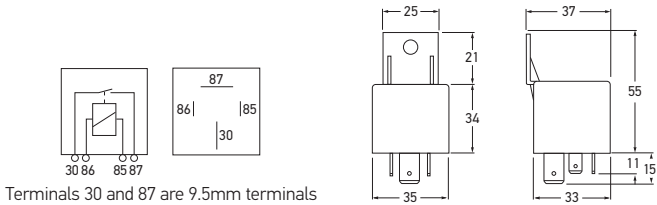
Part Number	3076		4 PIN	12 VOLT
Maximum Load	25A with 25A fuse			
Current Draw	140mA			

Normally Open Fused Relay
- 24 Volt



Part Number	3077		4 PIN	24 VOLT
Maximum Load	15A with 15A fuse			
Current Draw	80mA			

RELAYS AND FLASHER UNITS

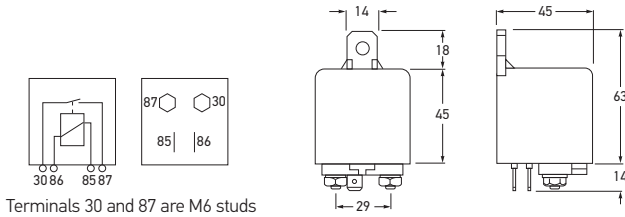


Terminals 30 and 87 are 9.5mm terminals

Part Number	3084	4 PIN	12 VOLT
Maximum Load	60A		
Current Draw	140mA		



High Capacity Normally Open Relay - 12 Volt

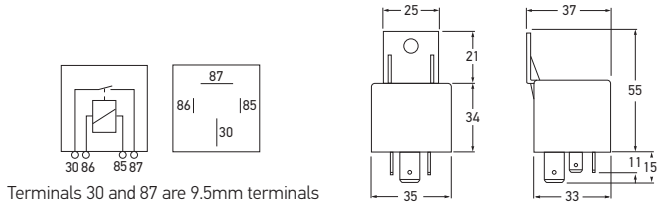


Terminals 30 and 87 are M6 studs

Part Number	3061	4 PIN	12 VOLT
Maximum Load	180A peak current (100A continuous)		
Current Draw	380mA		



High Capacity Normally Open Relay - 12 Volt

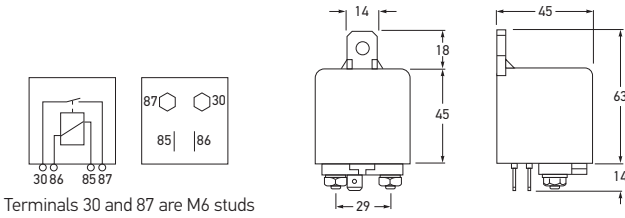


Terminals 30 and 87 are 9.5mm terminals

Part Number	3085	4 PIN	24 VOLT
Maximum Load	60A		
Current Draw	70mA		



High Capacity Normally Open Relay - 24 Volt



Terminals 30 and 87 are M6 studs

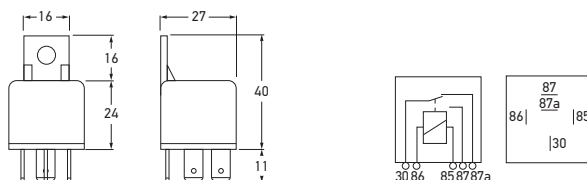
Part Number	3062	4 PIN	24 VOLT
Maximum Load	80A peak current (60A continuous)		
Current Draw	180mA		



High Capacity Normally Open Relay - 24 Volt

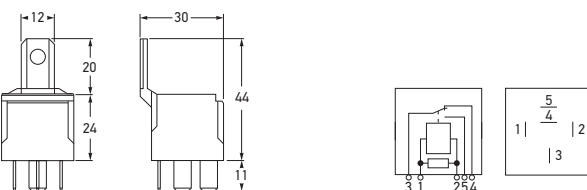
RELAYS

Change-over Relay



Part Number	3080	5 PIN	12 VOLT
	3080-BULK		
Maximum Load	30-87, 30A/30-87a, 20A		
Current Draw	140mA		

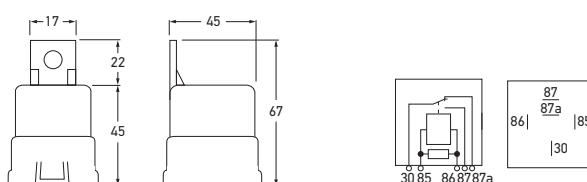
Change-over Relay with Resistor



Part Number	3080R-BULK	5 PIN	12 VOLT
Maximum Load	3-5, 30A/3-4 20A		
Current Draw	140mA		

Weatherproof Change-over Relay

Change-over relay with matching plug to form a dust and weatherproof seal. Pre-wired connector with 300mm of 3 x 2.90mm² cable and 2 smaller signal cables (to be purchased separately).

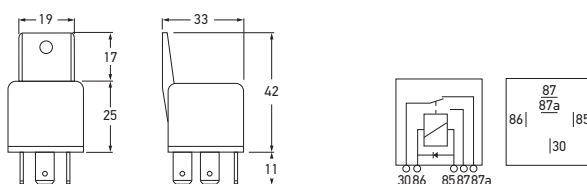


Part Number	3080S	5 PIN	12 VOLT
Maximum Load	30-87, 30A, 30-87a, 20A		
Current Draw	160mA		
Spare Part	4973S	Connector with cable	
Protection	Resistor		



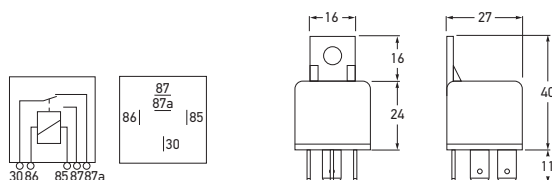
P/N 4973S

Change-over Relay with Diode



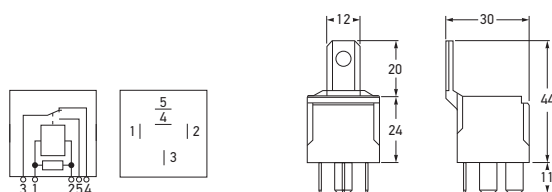
Part Number	3057	5 PIN	12 VOLT
Maximum Load	30-87, 40A/30-87a, 15A		
Protection	Diode		
Current Draw	170mA		

RELAYS AND FLASHER UNITS



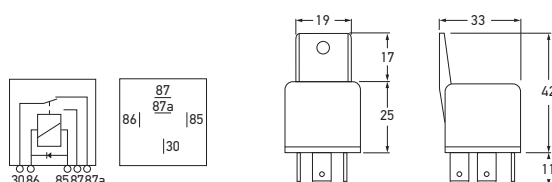
Part Number	3081	5 PIN	24 VOLT	
	3081-BULK			
Maximum Load	30-87, 20A/30-87a, 10A			
Current Draw	70mA			


Change-over Relay



Part Number	3081R-BULK	5 PIN	24 VOLT
Maximum Load	3-5, 20A/3-4 10A		
Current Draw	70mA		


Change-over Relay with Resistor



Part Number	3058		5 PIN	24 VOLT
Maximum Load	30-87, 22A/ 30-87a, 10A			
Protection	Diode			
Current Draw	90mA			

Change-over Relay with Diode



Part Number	4973		
	4973-BULK		PACK OF 50
Mounting	Single screw mounting.		
To Suit	4 and 5 pin relays with 6.3mm flat pin connectors.		

P/Ns 3076 and 3077 are not suitable for multiple installation using this connector.

P/Ns 3076 and 3077 are not suitable for multiple installation using this connector.

Mini Relay Connector

Single screw mounting. Sturdy plastic casing. Supplied with 5 blade terminals. Several holders may be joined together or mated with fuse holder P/N 8704.

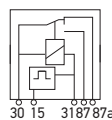
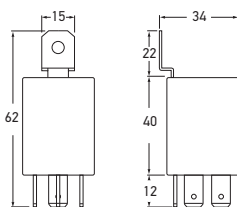




Time Control Unit with Drop-out Delay

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



Switch view



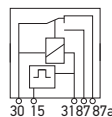
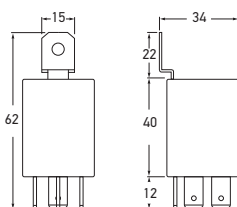
Part Number	3086		5 PIN	12 VOLT
	3086-24V			
Maximum Load	Contact opened 10A Contact closed 20A/ 30min			
Protection	IP 50 (Protection against dust)			
Switching terminal 15 starts timing.				


Time Control Unit with Pick-up Delay

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



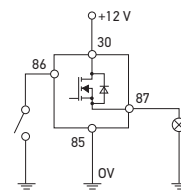
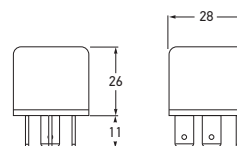
Switch view



Part Number	3087		5 PIN	12 VOLT
	3087-24V			24 VOLT
Maximum Load	Contact opened 10A Contact closed 20A/30min			
Protection	IP 50 (Protection against dust)			
Switching terminal 15 starts timing.				

Normally Open (Solid State) Relay

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.

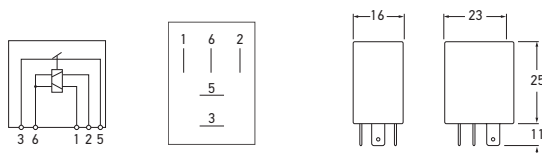


Part Number	3063	4 PIN	12 VOLT
Maximum Load	22A @ 12V		
Protection	IP 67 (Protection against dust and temporary water immersion)		

FEATURES

- 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.
- Protection against polarity reversal and earth disconnection.
- Shock and vibration-resistant.
- Water-proof, potted design.
- Protection against overheating.
- Low quiescent current.

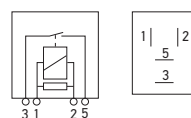
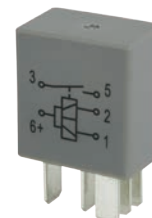
RELAYS AND FLASHER UNITS



Part Number	3064L		5 PIN	12 VOLT
Maximum Load	20A			
Current Draw	0.15A			

Latching On/Off Micro Relay

Latching relay that will remain in its open or closed state when power is removed, i.e. it will remain on or off and not automatically return to off. A negative (-) voltage pulse is required on either terminal 1 or 2 to switch on or off.



Part Number	NORMALLY OPEN		
	3064	4 PIN	12 VOLT
Maximum Load	20A @ 12V		
Protection	Resistor		

Micro Relay

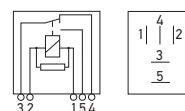
Micro relay with parallel resistor. P/N 3064 features two 4.8mm and two 6.3mm blade terminal contacts (terminals 3 and 5). Change-over relay P/N 3065 features three 4.8mm and two 6.3mm blade terminal contacts (terminals 3 and 5).



P/N 3064



P/N 3065




Part Number	CHANGE-OVER		
	3065	5 PIN	12 VOLT
Maximum Load	3-5 20A/3-4 10A		
Protection	Resistor		

Terminal designations: 1 = 86, 2 = 85, 3 = 30, 4 = 87a, 5 = 87.

Micro Relay Connector

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.



Part Number	4973-M		5 POLE
Socket	5 pole		
To Suit	P/Ns 3064, 3064L and 3065.		

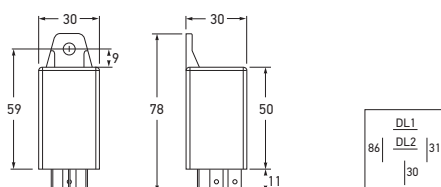
Safety DayLights™ Smart Controller - Advanced*

This smart controller is designed to simplify the installation of HELLA's LED Safety DayLights™ range by eliminating the need to wire the lamp, or changeover relay to ignition terminal 15.

The Safety DayLights™ Smart Controller can be wired directly to the positive terminal of the battery, which saves the difficult and often time consuming task of finding the ignition feed.

The smart controller monitors the voltage supply from the battery and will automatically switch the Safety DayLights™ on when the engine is started, and automatically switch them off when the headlamps are activated, or the engine is turned off.

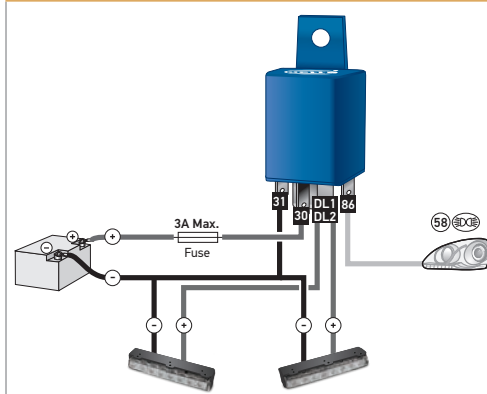
*Advanced version with vibration monitor for installation in vehicles with fuel saving alternators.



Part Number	3090
	3090-BULK
Voltage	Multivolt™, suitable for 12 and 24 volt systems.
Maximum Continuous Load	20W
To Suit	HELLA LED Safety DayLights™ range.
Features a Safety DayLights™ OFF delay of approximately 10 seconds.	

WIRING SPECIFICATIONS	
Terminal Number	Connect to
30	Battery (+)
31	Earth return (-)
86	Front position or headlamps (+)
DL1 & DL2	Safety DayLights™ (+)

RECOMMENDED INSTALLATION DIAGRAM FOR WIRING

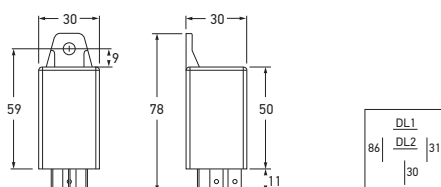


Safety DayLights™ Smart Controller - Standard

This smart controller is designed to simplify the installation of HELLA's LED Safety DayLights™ range by eliminating the need to wire the lamp, or changeover relay to ignition terminal 15.

The Safety DayLights™ Smart Controller can be wired directly to the positive terminal of the battery, which saves the difficult and often time consuming task of finding the ignition feed.

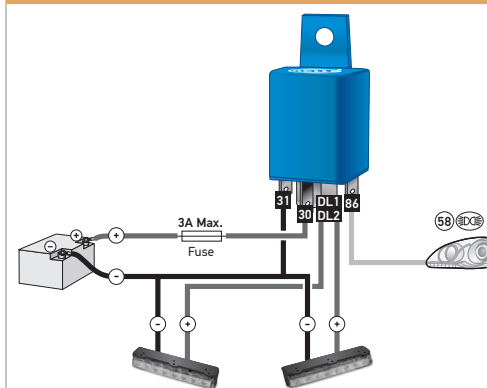
The smart controller monitors the voltage supply from the battery and will automatically switch the Safety DayLights™ on when the engine is started, and automatically switch them off when the headlamps are activated, or the engine is turned off.



Part Number	3091
	3091-BULK
Voltage	Multivolt™, suitable for 12 and 24 volt systems.
Maximum Continuous Load	20W
To Suit	HELLA LED Safety DayLights™ range.
Features a Safety DayLights™ OFF delay of approximately 10 seconds.	

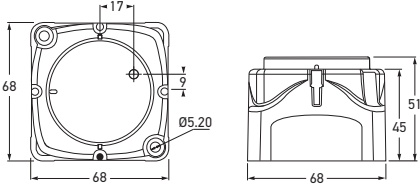
WIRING SPECIFICATIONS	
Terminal Number	Connect to
30	Battery (+)
31	Earth return (-)
86	Front position or headlamps (+)
DL1 & DL2	Safety DayLights™ (+)

RECOMMENDED INSTALLATION DIAGRAM FOR WIRING



Power Supply

MULTI VOLT



Part Number	3099
Voltage	Multivolt™, suitable for 12 and 24 volt systems.
Mounting	Recess or surface mount.
Maximum Continuous Load	140A
Termination	2 x 6mm studs

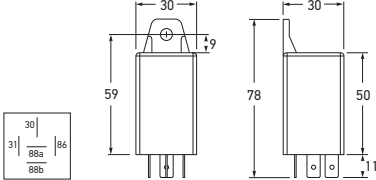
Voltage Sensitive Relay Module


Digital voltage sensitive relay with dual sensing for 12 and 24 volt systems. Suitable for boats, caravans and 4WD vehicles, this relay allows a separate battery to be used independently from another battery permitting, for example, the starting battery not to be discharged. However when either battery is charged, the relay will connect both batteries to allow dual charging. The relay automatically detects either 12 or 24 volt operation. Very low power consumption (less than 2mA) or none in power storage mode.



Power Supply

MULTI VOLT



Part Number	3101
	3101-BULK
Voltage	Multivolt™, suitable for 12 and 24 volt systems.
Maximum Continuous Load	5A
Compliance	

WIRING SPECIFICATIONS	
Terminal Number	Connect to
30	Battery (+)
31	Earth return (-)
86	Activate (+) / Deactivate VSR (- or open)
88a & 88b	Dual outputs (+)

PRE-SET VOLTAGE LIMITS AND OPERATION		
System Voltage	VSR turns outputs ON when	VSR turns outputs OFF when
12V DC	Battery voltage is above 13.4V DC	Battery voltage is below 12.8V DC
24V DC	Battery voltage is above 26.8V DC	Battery voltage is below 25.6V DC
Note	The pre-set voltage values stated above may vary by +/- 3%.	

Voltage Sensitive Relay Module

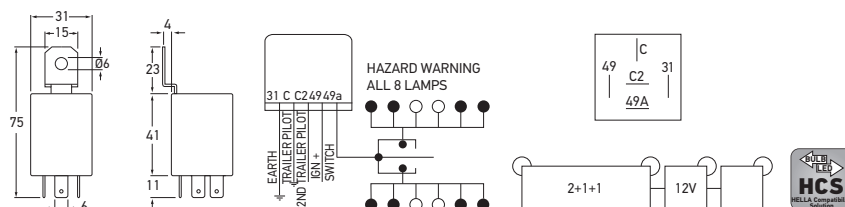
The Voltage Sensitive Relay (VSR) is designed to automatically monitor the battery condition of your vehicle through constant voltage measurements. Then depending upon the voltage level the VSR will activate or deactivate the connected load to prevent the battery from over-discharging.

The Voltage Sensitive Relay installation must be protected by a suitably rated fuse.



HCS Electronic Flasher Unit - 2+1+1

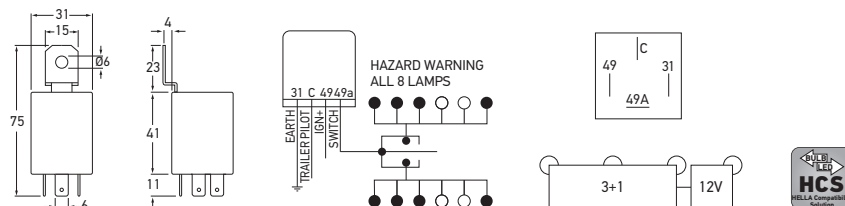
LED compatible flasher unit specifically designed for use with HCS (HELLA Compatibility Solution) LED indicator lamps. Provides stable flash rate and reliable bulb/LED lamp failure indication, for towing vehicles and trailers. Suitable to operate combinations of HCS LED and conventional 21W bulb-type lamps.



Part Number	3036	12 VOLT
Maximum Load	2+1+1(8) x HCS or 21W + 0-5W	
Frequency	90 +/- 30 flash signals per minute for direction indication and hazard warning.	
Protection	IP 53 (Protection against dust and water spray)	
See page 20 for further information on HCS technology.		

HCS Electronic Flasher Unit - 3+1

LED compatible flasher unit specifically designed for use with HCS (HELLA Compatibility Solution) LED indicator lamps. Provides stable flash rate and reliable bulb/LED lamp failure indication, for towing vehicles and trailers. Suitable to operate combinations of HCS LED and conventional 21W bulb-type lamps.

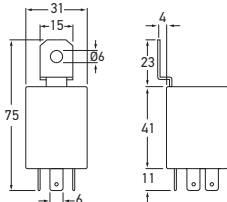
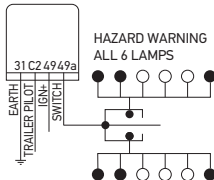
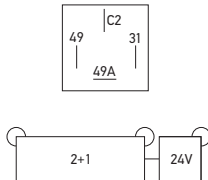



Part Number	3039	12 VOLT
Maximum Load	3+1 (8) x HCS or 21W	
Frequency	90 +/- 30 flash signals per minute for direction indication and hazard warning.	
Protection	IP 53 (Protection against dust and water spray)	
See page 20 for further information on HCS technology.		

COMMON PIN DESIGNATIONS FOR FLASHER UNITS

Terminal Number	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	Pilot lamp output (+)
C2	1st trailer pilot lamp output (+)
C3	2nd trailer pilot lamp output (+)

RELAYS AND FLASHER UNITS

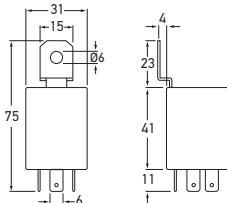
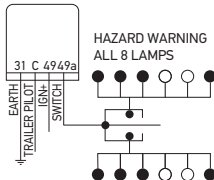
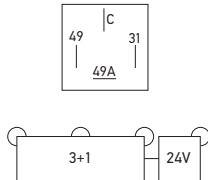



Part Number	3037	24 VOLT
Maximum Load	2+1 (6) x HCS or 21W or 0-5W	
Frequency	90 +/- 30 flash signals per minute for direction indication and hazard warning.	
Protection	IP 53 (Protection against dust and water spray)	
See page 20 for further information on HCS technology.		

HCS Electronic Flasher Unit - 2+1

LED compatible flasher unit specifically designed for use with HCS (HELLA Compatibility Solution) LED indicator lamps. Provides stable flash rate and reliable bulb/LED lamp failure indication, for towing vehicles and trailers. Suitable to operate combinations of HCS LED and conventional 21W bulb-type lamps.





Part Number	3038	24 VOLT
Maximum Load	3+1 (8) x HCS or 21W	
Frequency	90 +/- 30 flash signals per minute for direction indication and hazard warning.	
Protection	IP 53 (Protection against dust and water spray)	
See page 20 for further information on HCS technology.		

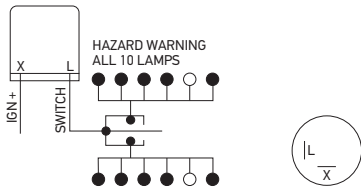
HCS Electronic Flasher Unit - 3+1

LED compatible flasher unit specifically designed for use with HCS (HELLA Compatibility Solution) LED indicator lamps. Provides stable flash rate and reliable bulb/LED lamp failure indication, for towing vehicles and trailers. Suitable to operate combinations of HCS LED and conventional 21W bulb-type lamps.



High Capacity Flasher Unit

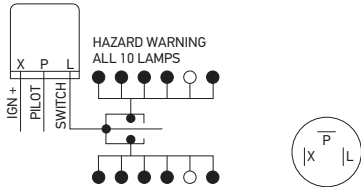
High capacity electronic flasher unit. Complete with bracket. Designed to take up to 210W loads. Reverse polarity protection, polycarbonate cover and silver contacts. Clear audible signal.



Part Number	3026	2 PIN	12 VOLT
Maximum Load	1-10 x 21W		

High Capacity Flasher Unit

High capacity electronic flasher unit. Complete with bracket. Designed to take up to 210W loads. Reverse polarity protection, polycarbonate cover and silver contacts. Clear audible signal.



Part Number	3027	3 PIN	12 VOLT
	3028		24 VOLT
Maximum Load	1-10 x 21W		

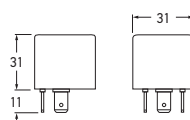
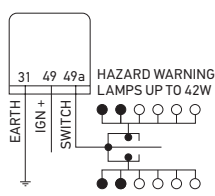
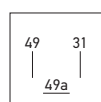
Universal Mounting Bracket

For mounting 32mm diameter HELLA flasher unit P/Ns 3026, 3027, 3028.



Part Number	8003
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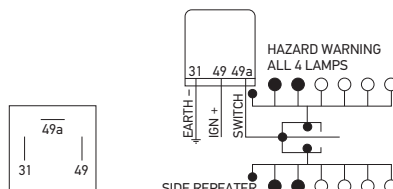
RELAYS AND FLASHER UNITS



Part Number	3040	3 PIN
Voltage	9-33V DC (suitable for 12V and 24V)	
Maximum Load	42W max.	
Frequency	90 +/- 30 flash signals per minute for direction indication and hazard warning.	
Protection	IP 53 (Protection against dust and water spray)	

Electronic Flasher Unit

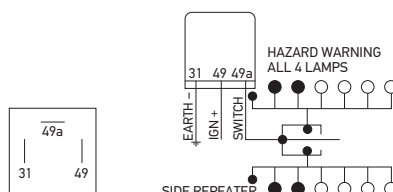
LED compatible flasher unit for universal connection of LED indicator lamps without electronic pulse. Maintains the standard flash rate of 90 +/- 30 fpm and operates on bulb and LED loads from 1W to 42W.



Part Number	3016	3 PIN	12 VOLT
No. of Bulbs	2(4) x 21W + 0 - 5W		

Electronic Flasher Unit

To operate 2 or 3 lamps on either side of vehicle.



Part Number	3016LED1	3 PIN	12 VOLT
	3016LED2		
No. of Bulbs	3016LED1	1(2) x 21W + 1(2)9W	
	3016LED2	1(2) x 21W + 1(2) x 5W + 1(2) x 9W	

LED Electronic Flasher Unit

Modified version of P/N 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 bulb failure warning signal function.

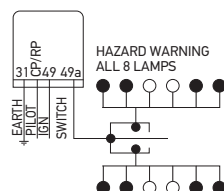


P/N 3016LED2



High Capacity Flasher Unit

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



P/N 3014

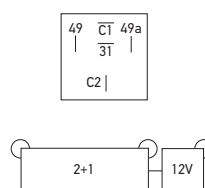
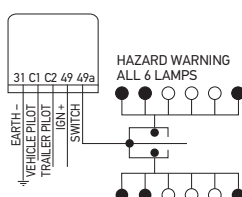


P/N 3015

Part Number	3014	4 PIN	12 VOLT
	3015		24 VOLT
Load	10-200W		

Electronic Flasher Unit - 2+1

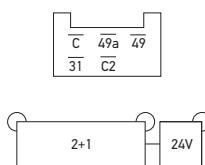
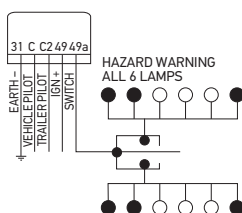
Flasher unit designed to operate 2 or 3 lamps on either side of a vehicle with caravan or trailer. Includes mounting bracket. Separate pilot lamp indicates operation of flasher lamp on the trailer.



Part Number	3017	5 PIN	12 VOLT
No. of Bulbs	2+1 (6) x 21W		

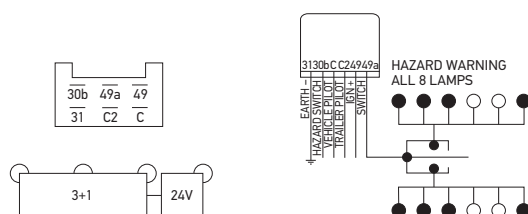
Electronic Flasher Unit - 2+1

Flasher unit designed to operate 2 or 3 lamps on either side of a vehicle with caravan or trailer. Includes mounting bracket. Separate pilot lamp indicates operation of flasher lamp on the trailer.



Part Number	3018	5 PIN	24 VOLT
No. of Bulbs	2+1 (6) x 21W		

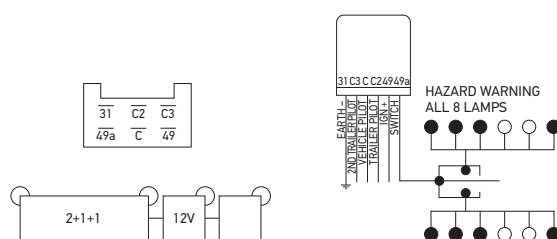
RELAYS AND FLASHER UNITS



Part Number	3032	6 PIN	24 VOLT
No. of Bulbs	3+1 (8) x 21W		

Electronic Flasher Unit - 3+1

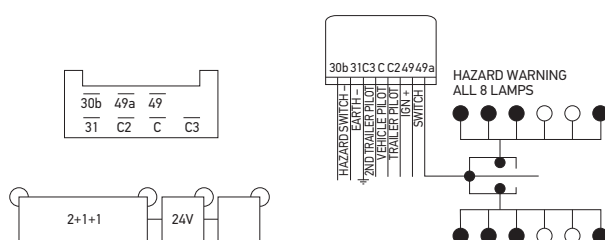
For heavy trucks with trailers. With mounting bracket. To operate 3 lamps on either side of towing vehicle, plus an additional lamp on either side of a trailer. Separate pilot lamp indicates operation of flasher lamp on the trailer.



Part Number	3033	6 PIN	12 VOLT
No. of Bulbs	2+1+1 (8) x 21W		

Electronic Flasher Unit - 2+1+1

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 lamps indicate operation of flasher lamps on the trailers.



Part Number	3034	7 PIN	24 VOLT
No. of Bulbs	2+1+1 (8) x 21W		

Electronic Flasher Unit - 2+1+1

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 lamps indicate operation of flasher lamps on the trailers.

