BATTERY PROTECTOR

BP01

KEY FEATURES

- **Maximizes Battery Lifespan** by Preventing Deep Discharge
- Automatic **Undervoltage Disconnect**
- Instant **Overvoltage Protection**
- **Control of Mono- or Bi-Stable** Power Relay (Zero Standby Consumption)
- Dedicated **Alarm Output**
- **Single or Dual** Battery Setups

The **Battery Protector** is a microprocessor-controlled protection system designed to prevent vehicle auxiliary batteries from being discharged below or charged above their permissible operating limits. The device continuous monitors system voltage and ensures reliable power availability for superstructure equipment while maximising battery lifetime.

High-current power relay, available either as a bi-stable (latched) solenoid or an mono-stable version – both supplied separately – serving as the primary power disconnect element for the superstructure equipment.

Alarm output, used for signalling critical voltage conditions (configurable for buzzer, lamp or other low-current signalling devices).

SPECIFICATIONS

POWER	
Supply Voltage	8-32 V DC
Current	0.2 A maximum, no outputs active
Electrical Protection	overvoltage, transients, reverse polarity, load dump
INTERFACES	
CAN	1x CAN
CAN termination	120 ohm, DIP switch
ON BOARD CONFIGURATIONS	
Rotary switch	10 pos.
DIP switch	8 pos.
I/O	
Analog Input AIN1	0-32 V
Digital Input IN1-IN2	active high levels 0..Ub protected
Digital Output OUT1 - OUT4	positive switching (high-side), max. 2 A
Loads	inductive, capacitive, resistive
Miscellaneous	Protection from short circuit and overload
ENVIROMENT	
IP Class (IEC529)	IP20
EMC Conformity	EN61000-6-2 noise immunity EN61000-6·4 radiation of interference
Temperature Range	storage -40° to +85°C (-40° to 185°F) operating -40° to +85°C (-40° to 185°F)
ENCLOSURE	
Housing Material	GP ABS
Mounting	4 mounting holes for screws M4 or max. 4.5 mm tapping screws
Mating Connector	Deutsch DT06-12S
SIZE & WEIGHT	
W x H x D	125 x 38 x 50 mm, 46 mm height with mating connector
Weight	0.1 kg

Undervoltage Protection
The controller monitors the battery terminal voltage in real time with high-resolution A/D conversion. When the battery voltage drops to the predefined undervoltage threshold, the Battery protector triggers Alarm output activation (buzzer or indicator lamp) and Start of the protection countdown.

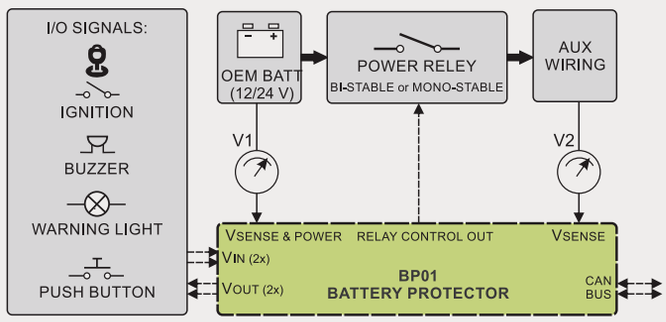
Delayed Power Disconnect - If the voltage remains below the threshold for the next 60 seconds (configurable on request), the controller commands the bi-stable solenoid to disconnect the auxiliary load from the vehicle batteries. After disconnection the alarm output is deactivated and the load remains disconnected until a manual reset or a defined recovery condition.

Overvoltage Protection
The system also protects connected equipment from excessive charging voltage: If the measured voltage exceeds the defined overvoltage limit, the controller immediately activates the alarm output and Instantly disconnects the auxiliary consumers. This protects sensitive electronic equipment from alternator or charger malfunctions.

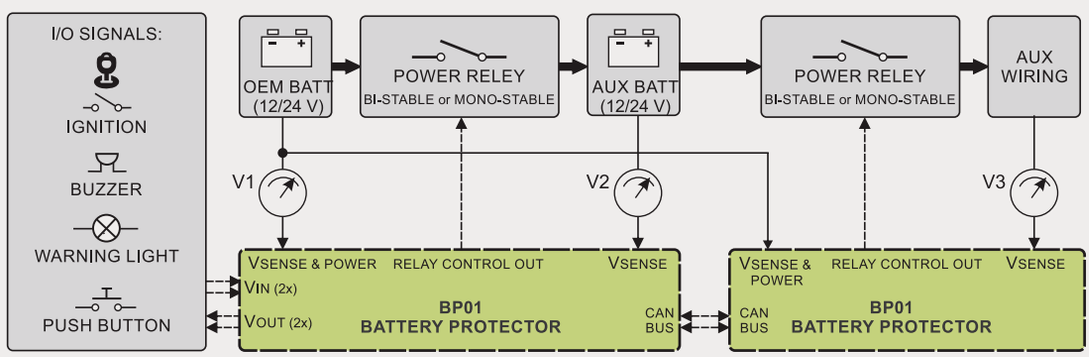
Depending on configuration, reconnecting the superstructure power can be done by manual reset (external push button), ignition signal logic or automatic reconnection when voltage returns to a safe range (optional feature).

DIMENSIONS

Single battery setup example



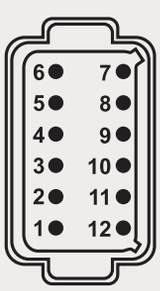
Dual battery setup example



CONNECTIONS

CONNECTION DEUTSCH DT06-12S

PIN	Description	PIN	
1	BATT+ POWER	**7**	OUT 4 (ALARM BUZZER)
2	CAN L	**8**	INPUT 1 (KEY)
3	N/A	**9**	INPUT 2 (IGNITION)
4	OUT 1 (RELAY CLOSE)	**10**	AIN1 [BATT SENSE V]
5	OUT 2 (RELEY OPEN)	**11**	CAN H
6	OUT 3 (WARN. LAMP)	**12**	BATT-/GND



PRODUCT CODE

BP01-BS	Battery protector, bi-stable operation mode
BP01-MS	Battery protector, mono-stable operation mode
	For more options please contact the supplier.