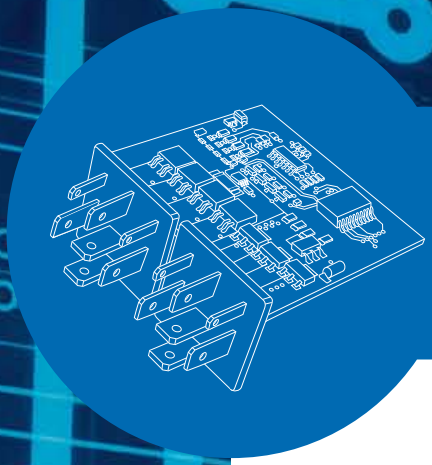


ELECTRONICS

ENGLISH

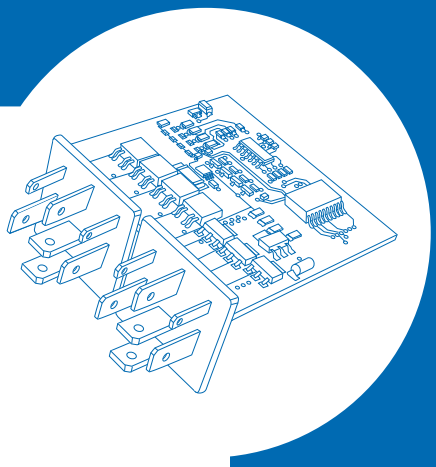
Electronic Modules with Processor

Electronic Modules without Processor

Diode and Resistor Components

miunske

SYSTEMS FOR COMMERCIAL VEHICLE ELECTRONICS



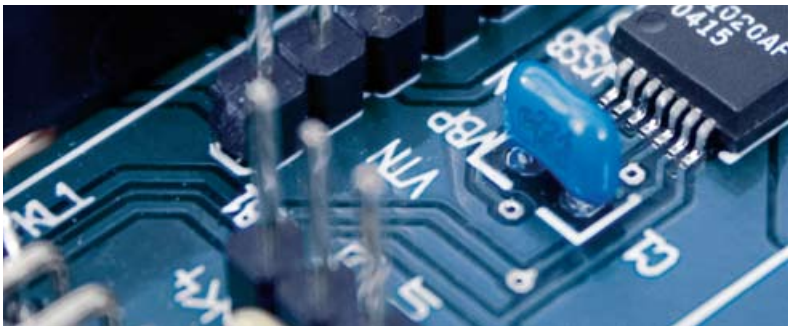
SYSTEMS FOR COMMERCIAL VEHICLE ELECTRONICS

Electronic Modules – Development and Production by Miunske

For the diverse switching and controlling tasks in commercial vehicles, Miunske offers you a comprehensive assortment of electronic modules. For simple tasks, these modules are structured conventionally, i.e. cost-optimally without processor. In case of more complex tasks mostly consisting of several single functions, our electronic modules with processor are used. Our long standing experience as supplier of commercial vehicle electronics is reflected in the multitude and choice of our electronic modules.

For the numerous standard applications, we have developed relays which have proved their robustness and reliability for years. Examples for that are relays for preheating controllers, for switching of courtesy lights, for tail lights of tractors and for many other purposes. For years, the demands for complexity and comfort rise even in case of simple commercial vehicles. Therefore, our engineers cause more and more functions to be integrated into the relays, supported by a processor. With a multitude of various, partly very complex functions, our programmable relays such as universal flashers, driving direction flashers, wiper-wash relays, relays for battery voltage-control and many other relays are used for years. Benefit from our experience in the development and production of electronic modules. We would be pleased to develop the appropriate electronic module for your individual switching and controlling task.

Phone: +49 (0) 3 59 38/98 00-0
E-mail: design@miunske.com



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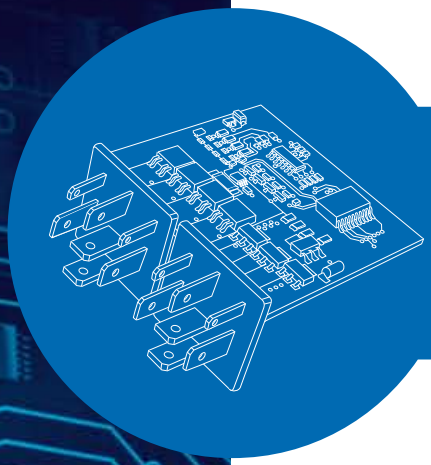
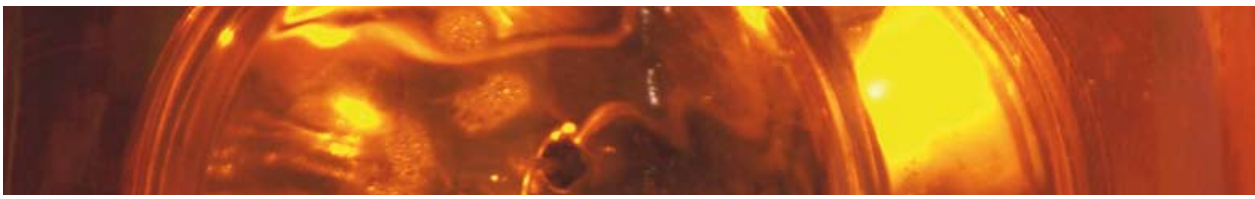
SYSTEMS FOR COMMERCIAL VEHICLE ELECTRONICS



ELECTRONICS



ELECTRONIC MODULES WITH PROCESSOR

In the following applications, various universal modules with integrated microprocessors are used. Due to their programmability, various complex switch functions can be realized. Therefore, expensive and vulnerable external circuitry is not required.

STANDARD APPLICATIONS

Timing Relay

Brief Description

The timing relay serves for the delayed switching-on/off of consumers in the time frame of a few milliseconds up to several hours.

Areas of Application

- **Switch-on-delayed relays:** When the delay time has elapsed, the relay switches on (for example, on the realization of cascade circuits of transport systems).
- **Switch-off-delayed relays:** The relay immediately switches on when the control voltage is applied. After the switching-off, the relay stays in the on-state for the given delay time and then it switches off (for example, the delay of switching-off the courtesy light).
- **Impulse relays:** Here, instead of a static voltage level, the switching threshold of the control signal is evaluated. The relay switches on when the control voltage is applied and switches off independently of the control voltage when the delay time has elapsed (for example, on the automatic switching-off of the rear window heater).

Technical Particularities

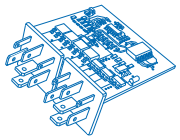
- Very low power consumption in idle state
- Relay switching capacity: Up to 30 A

Special Designs

- Switching delay relays
- Timing and impulse relays with short output impulse
- Timing relays with several control inputs
- Impulse relays with anti-repeat function
- Switch-off wiper relays
- Timing relay for lift axis controller

TIMING RELAY OPTIONS

- Dry contact to switch external circuits
- Separate control input for low control current
- Retriggerable or non-retriggerable
- Activation by negative impulse or by connecting to ground
- Combination of analogous measured quantities
- Adjustable design for prototype creation, pilot lots or special cases



STANDARD APPLICATIONS

Stepping Relay

Brief Description

An impulse at the input reverses the switching state. Independently of the switching state on switching-off, the relay starts in the idle state when it is switched on again. In this way, an erroneous startup of a load is avoided.

Areas of Application

Using a simple parallel circuit, several contact switches can control one consumer. This allows a permanent switching-on/off of consumers from different places. For example, courtesy lights can be switched from the rear door and from the side doors.

Technical Particularities

· Very low power consumption in idle state
· Relay switching capacity: Up to 30 A

STEPPING RELAY OPTIONS

· Switching with ground impulses
· Separate set and reset inputs

Frequency Relay

Brief Description

The frequency relay serves for measuring a frequency at the input. The relay switches on or off, if a frequency threshold is exceeded.

Areas of Application

The frequency relay switches in dependence on the frequency at the measuring input and, in this way, increases the functional security. For example, it prevents additional drive systems from being switched on when the engine still works at its minimal rotational speed, or it locks a repeated start when the engine is running.

Technical Particularities

· Very low power consumption in idle state
· Relay switching capacity: Up to 30 A

FREQUENCY RELAY OPTIONS

· A coupling with a further input signal is possible to take more complex tasks.

STANDARD APPLICATIONS

Wiper-Wash Relay

Brief Description

The wiper-wash relay controls the intervals of the windshield wiper as well as the complete wiping process of the windshield washing system.

Technical Particularities

· Programmable interval time of 2 to 30 s
· Very low power consumption in idle state
· Relay switching capacity: Up to 30 A

WISHER/WASHER RELAY OPTIONS

· Programming of Interval Time Using the Interval Switch or via the Switch of the Windshield Washing System

Pulser

Brief Description

When the operating voltage has been applied, the pulser switches on and off in the defined time interval.

Areas of Application

The pulser controls the lubricant pump on the automatic centralized lubrication system.

Technical Particularities

· Very low power consumption in idle state
· Relay switching capacity: Up to 30 A

PULSER OPTIONS

· Models in different interval times

Voltage Monitoring Relay

Brief Description

The voltage monitoring relay permanently monitors the applied voltage and releases switching operations when certain voltage levels are exceeded. To ignore short-time deviations, this is mostly performed in time-delayed manner. By means of logical input signal operations with times and other digital signals, complex operations can be monitored.

Areas of Application

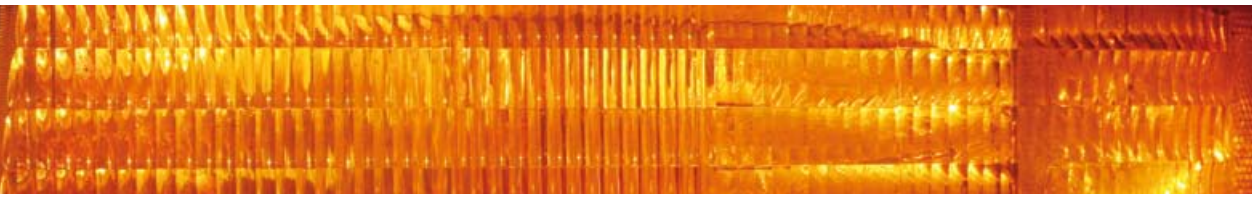
As battery monitor, the voltage monitoring relay switches off consumers in voltage-dependent manner in order to conserve the battery and to guarantee the start of the engine.

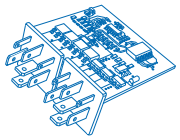
Technical Particularities

· Very low power consumption in idle state
· Relay switching capacity: Up to 30 A

VOLTAGE MONITORING RELAY OPTIONS

· Adjustable design for prototype creation, pilot lots or special cases
· Configurable for different switch-on and switch-off voltages





STANDARD APPLICATIONS

Universal Flasher

Brief Description/Areas of Application

The universal flasher serves for flashing functions on the vehicle without a monitoring of an illuminant failure.

Technical Particularities

· Voltage range: 9 to 30 V
· Overload- and short-circuit-proof output
· Fully electronic power output
· Self-protection against overtemperature

UNIVERSAL FLASHER OPTIONS

· Separate control output
· With positive or negative control inputs

Driving Direction Flasher

Brief Description/Areas of Application

The driving direction flasher controls the function of the driving-direction and hazard-warning-signal flashing in the vehicle.

Technical Particularities

· Overload- and short-circuit-proof output
· Self-protection against overtemperature
· Fully electronic power output

Special Designs

· In conventional design with mechanical switching relay

DRIVING DIRECTION FLASHER OPTIONS

· Also for the use LED flashing lights
· Separate control outputs for vehicles with 0 to 2 trailers and/or accessory equipment
· Design with switch-on delay to protect the steering-column and hazard-warning-signal flasher switch from thermal overload

Multi-Channel Flasher

Brief Description/Areas of Application

The multi-channel flasher controls the function of the driving-direction and hazard-warning-signal flashing in case of a mixed use of conventional lighting equipment and LED flashing lights.

Technical Particularities

· Load-free control inputs
· Current-monitored special outputs for LED lights
· Fully electronic short-circuit-proof power output
· Self-protection against overtemperature
· Comfort flashing function

MULTI-CHANNEL FLASHER OPTIONS

· Separate control outputs for vehicles with trailers and/or accessory equipment
· Also for pure LED or bulb use

STANDARD APPLICATIONS

Window Lifter Module

Brief Description/Areas of Application

The window lifter module controls the motor of the window lifter with force catch to avoid crushing injuries.

Technical Particularities

· Automatic movement up to top or down to bottom
· Load-dependent limit stop
· Adjustment to different motor power classes

WINDOW LIFTER MODULE OPTIONS

· Different characteristics for the moving sense of the motor

Electronic Relay

Brief Description

With the electronic relay, the conventional mechanical relay is replaced by semiconductor equipment.

Areas of Application

Can be used where relays execute switching functions (in particular, in case of high switching frequency, on peak loads and if a soundless operation is requested)

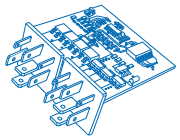
Technical Particularities

· Wear-free
· Voltage range: 9 to 30 V
· Overload- and short-circuit-proof output
· Self-protection against overtemperature

More Information

Many special designs are included in our **product catalog**.
If you need any further information, please contact our development department.

Phone: +49 (0) 3593 8/9800-0
E-mail: design@miunske.com



CUSTOMER-SPECIFIC SOLUTIONS

Headlight Flasher

In case of emergency vehicles, the headlight flasher alternatingly switches the vehicle headlamps and the auxiliary headlamps and, in this way, increases the efficiency of the emergency signals. This function is automatically deactivated as soon as the headlamps are switched on directly in case of darkness. At the same time, the signals of the rotating beacon and of the side marker lights are monitored. Faults of the system are signaled via control lamps.

Vegetable Oil Controller

The vegetable oil controller controls the switch-over between vegetable oil and diesel in case of a two-tank vegetable oil system (in dependence on operating temperature, engine load and tank contents). Moreover, the vegetable oil controller enforces a cleaning of the system at the end of the trip and, via an additional controller, causes status signals to be sent by SMS.

Driving Alarm Controller

The driving alarm controller monitors the driving function of a specific construction vehicle and controls the acoustic warning to the environment when the vehicle starts its motion. After a specified time, this warning may be deactivated. The controller gets the signal from the vehicle driver and stores it appropriately.

Relief Relay

The relief relay controls an according hydraulic valve that, after the completion of the operation, ensures that the system is in a depressurized state. For that purpose, the system is relieved through the specific valve when the hydraulic system has been switched off.

Filter Vibrator Controller

Using appropriate sensors, the filter vibrator controller monitors the pollution degree of a dust filter. If a cleaning becomes necessary, it repeatedly switches on and off a powerful vibrator motor so that the dust is removed from the filter.

Fan Controller

In dependence on different sensors for temperature and pressure, the fan controller switches off a fan motor in case of high pollution and, then, causes it to run in reverse direction for a specified time in order to blow free the intake hole. After this process, the motor resumes its normal operation. In addition, this process can be initiated by the user.

Roll Controller

The individual roll controllers each monitor one conveyor belt. On the start, they control the sequence of the belt startup. When a blocking is detected, they accordingly switch off the belts and let them move until they have been emptied completely. After that, the belts are automatically restarted in the correct sequence.

Seat-Switch Monitoring Module

The seat-switch monitoring module permanently monitors the driving function, the seat switch, the voltage and the speed in a vehicle. If the seat switch is in the switched-on state over a too long time period or if there are inadmissible connections between the input signals, the controller outputs a warning or can deactivate the engine of the vehicle. The warnings are maintained even in case of a standstill.

ELECTRONIC MODULES WITHOUT PROCESSOR

Stepping Relay

Brief Description

An impulse at the input reverses the switching state. Using a simple parallel circuit, several control switches can control on load.

Areas of Application

The stepping relay allows a permanent switching-on/off of consumers from different places. For example, courtesy lights can be switched from the rear door and from the side doors.

Technical Particularities

The stepping relay is started in case of a reconnection in the idle state (independently of switching state on switching-off). In this way, an erroneous startup of a consumer is avoided.

Special Designs

· Dimmed headlight relay with headlight flasher controller

STEPPING RELAY OPTIONS

· Switching with ground impulses

Preheating Controller

Brief Description/Areas of Application

The preheating controller directly controls the preheating function of diesel engines and signals the driver a sufficient preheating time.

Technical Particularities

· Switching capacity: Up to 70 A
· Temperature-dependent characteristic

PREHEATING CONTROLLER OPTIONS

· With different preheating characteristics
· With postheating function

Current Monitoring Relay

Brief Description

Monitoring, controlling and displaying of serviceability of electrical consumers

Areas of Application

The current monitoring relay can be used for switching-off the rear fog light on a tractor. In many cases, it is used in case of emergency vehicles with electrical accessory equipment (in particular, in case of safety-relevant modules).

Technical Particularities

Advantages in comparison with conventional designs due to the use of electronic components:
· Short-circuit-proof electronic output
· Low fault liability and long life because there are no mechanical wear and tear parts
· Measurement of small currents due to higher measuring accuracy
· Monitoring of several consumers through configurable switching threshold

CURRENT MONITORING RELAY OPTIONS

· Control and signal output loadable with up to 5 A (for example, to switch rear fog lights at tractors with trailer without to have an additional relay)
· Negated output signal

DIODE AND RESISTOR COMPONENTS

We manufacture a wide standard product spectrum as well as customer-specific combinations and components with resistors and diodes. Our standard articles are shown in our product catalog. Designs deviating from that can be easily realized.
Simply ask us!

Made in Germany - Made by Miunske

Electronic systems consist of a multitude of single parts, individual components and modules. You can expect that the Miunske systems offer a full reliability even under hardest use and environmental conditions, Miunske applies appropriate production and quality standards. For all systems manufactured in our house or on our behalf, this is documented by the Miunske quality seal you can see on these components:
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SYSTEMS FOR COMMERCIAL VEHICLE ELECTRONICS

Fahrzeugtechnik Miunske GmbH · Oberlausitzer Straße 28 · 02692 Großpostwitz · Germany
Phone +49 (0) 35938/9800-0 · Fax +49 (0) 35938/9800-98 · info@miunske.com · www.miunske.com