

# Power relays for utility vehicles

## Product overview



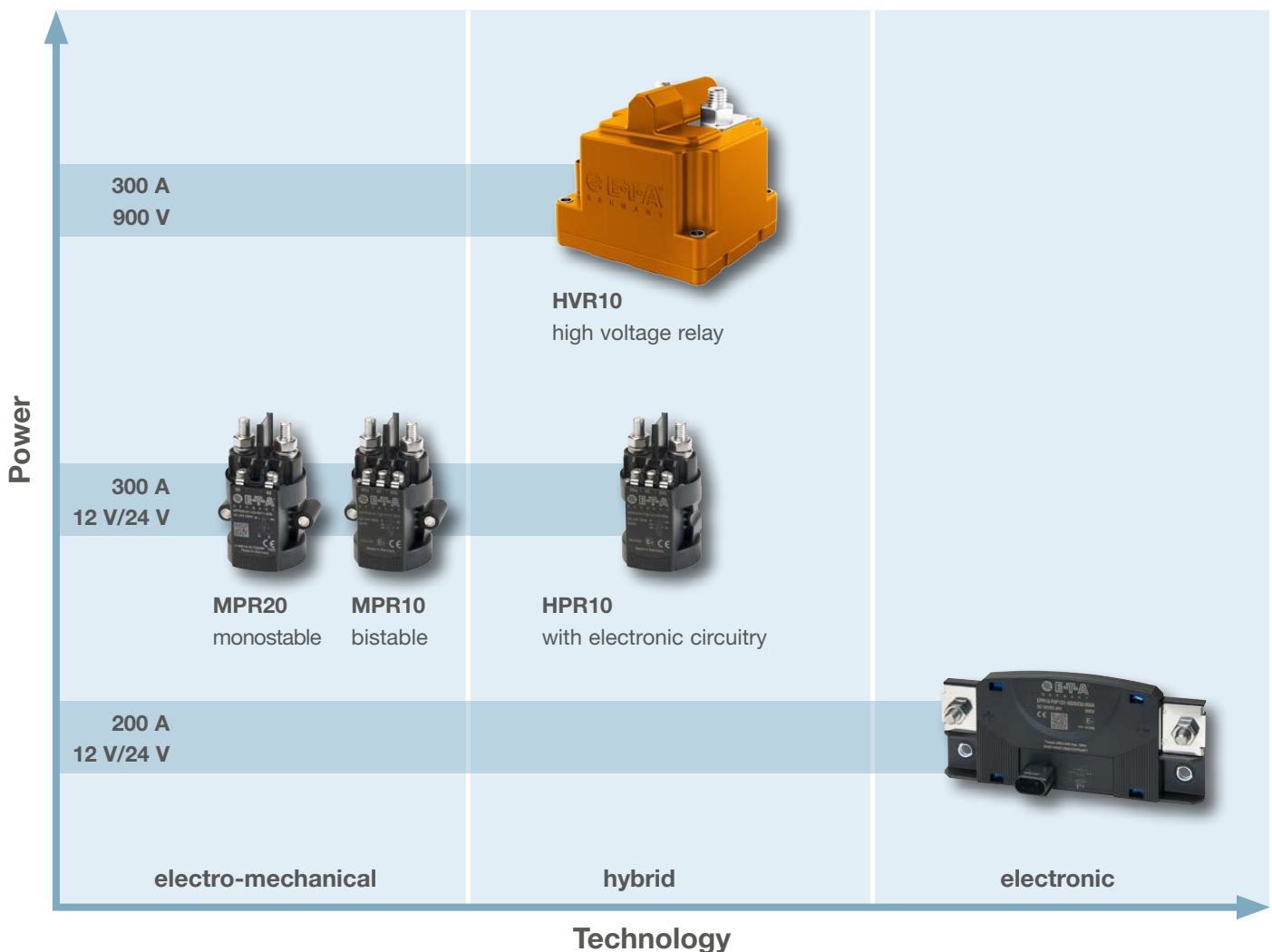
# Portfolio of power relays for the utility vehicles industry

E-T-A's product range of power relays comprises a wealth of products for the utility vehicles industry – from electro-mechanical power relays to electronically controlled power relays and extremely powerful high voltage relays. These innovative products offer a true value of benefit and are used whenever

high current loads have to be switched or batteries have to be disconnected from the on-board electrical system.

E-T-A's power relays are practice-oriented and highly profitable problem solvers for a great number of tasks in the application range of protecting, switching

and controlling. We provide you with tailor-made solutions for demanding applications and will support you with our expertise to increase your vehicles' uptime and enhance user safety and convenience.



# Power relays

# MPR20 Mechanical Power Relay

## The most energy-efficient monostable power relay

The **MPR20** is a monostable electro-mechanical high current relay. Its wide range input allows installation and operation in both 12V and 24V on-board electrical systems without change of the hardware and it carries 300A continuously. In the event of a power disruption, the relay

will at once go into its original state due to its monostable design.

Reduction of holding power by 80 % and of pull-in power by 50 % allows direct connection to the controlgear and provides additional cost reduction and

environmental advantages in spite of a monostable design. By using standard termination technologies and mounting dimensions, the **MPR20** can easily and quickly replace conventional relays.

### Typical applications

- Buses, trucks, construction machinery, agricultural vehicles and forestry equipment as well as special vehicles
- Air-conditioning, compressor units, battery isolation switches and applications in accordance with Machinery Directives

### Standards

- ISO 16750
- IATF 16949
- ECE R118
- ECE R10
- ASIL upon request

Technical data	
Voltage ratings	DC 12 V/DC 24 V
Current ratings	100 A/200 A/300 A
Degree of protection	IP6k9k (IP67)
Ambient temperature	-40 °C ... +85 °C
Pull-in current	DC 12 V: 2.5 A/DC 24 V: 3 A
Holding current	DC 12 V: 0.12 A/DC 24 V: 0.7 A

## Your benefits

- **Reduced fuel consumption and CO<sub>2</sub> emission** due to an 90 % lower holding power
- **Flexible installation for demanding applications** due to a robust, water- and dust-proof design
- **Reduced installation time** through direct connection to the controlgear

Subject to technical changes.

Available August 2019



# MPR10 Mechanical Power Relay

## The lightest bistable power relay

The **MPR10** is a single pole, bistable power relay. It was designed for switching high current loads and for disconnecting the battery from the on-board electrical system.

For the switching operation, the MPR10 only requires a short current pulse.

Afterwards, the permanent magnets hold the contact reliably closed at no load. Materials of superior quality make the MPR10 the lightest water-proof and dust-proof power relay in the market. It offers extremely flexible installation options in utility vehicles.

A range of mounting versions allows direct replacement of standard relays. The **MPR10** can carry or switch up to 300 A continuous current at DC 12 V and 24 V.

300 A continuous current

### Typical applications

- Buses, trucks, construction machinery, agricultural vehicles and forestry equipment as well as special vehicles
- Air-conditioning, compressor units, battery isolation switches and dual battery systems

### Standards

- ISO 16750
- IATF 16949
- ECE R118
- ECE R10
- ASIL upon request



### Technical data

Voltage ratings	DC 12 V/DC 24 V
Current ratings	100 A/200 A/300 A
Degree of protection	IP6k9k (IP67)
Ambient temperature	-40 °C ... +85 °C
Mass	approx. 280 g

## Your benefits

- **Robust reliability** over the entire life span through the use of corrosion-proof materials
- **Improved CO<sub>2</sub> emission values** through a holding power reduced to 0%
- **Space savings up to 40 %** through a particularly compact design



# EPR10 Electronic Power Relay

## The most durable power relay

The **EPR10** electronic power relay is a solid state relay for high continuous currents. It is suitable for use in utility vehicles and special vehicles where reliability and functional safety are at a

premium. The **EPR10** allows a continuous load up to 200 A at DC 12 V and 24 V. It is therefore particularly suitable for the use with powerful loads which have to be switched frequently.

The **EPR10** electronic power relay is available in two different versions:

- The **EPR10-N** is a switching relay with a long life span thanks to arc-free switching operations.
- The **EPR10-P** additionally features a protective function for monitoring of the charging current.



with protective function

Technical data	
Voltage ratings	DC 12 V/DC 24 V
Max. continuous current	<b>EPR10-N</b> 100 A or 200 A
Current ratings	<b>EPR10-P</b> with protective function 75 A, 100 A, 125 A, 150 A, 175 A, 200 A
Protective function	3 trip curves: fast, medium delay, long delay
Degree of protection	IP57
Ambient temperature	-40 °C ... +85 °C

### Typical applications

- Emergency cars and special vehicles such as ambulances or aircraft towers
- Pumps, fans, cooling systems

### Standards

- ISO 16750
- IATF 16949
- ECE R118
- ECE R10
- ASIL upon request

## Your benefits

- **Maximum life span** and **minimum maintenance** through wear-free switching
- **Tremendous space-savings** through a flat design with a sophisticated heat management without additional heat sink
- **Flexible use** due to silent switching – also suitable for installation in the passenger cabin



# HPR10 Hybrid Power Relay

## The smartest power relay

The **HPR10** hybrid power relay belongs to the group of electro-mechanical high current relays. The hybrid version also features the electro-mechanical relay system plus an active electronic control unit for signal conditioning. This electronic circuitry ensures

intelligent activation of the bistable electro-mechanical mechanism. This can be a level-controlled or time-controlled activation.

The hybrid power relay is available for the usual voltage ratings DC 12 V and

DC 24 V. All other functions such as level or pulse control, voltage monitoring etc. can be configured individually as per customer's request.

Just visit our online relay configurator at [www.e-t-a.de/relais\\_konfigurator](http://www.e-t-a.de/relais_konfigurator)

Create your individual configuration at [relaiskonfigurator.e-t-a.com](http://relaiskonfigurator.e-t-a.com)

### Typical applications

- Buses, trucks, construction machinery, agricultural vehicles and forestry equipment as well as special vehicles
- Air-conditioning, compressor units, exhaust aftertreatment (SCRT) and battery management

### Standards

- ISO 16750
- IATF 16949
- ECE R118
- ECE R10
- ASIL upon request



### Technical data

Voltage ratings	DC 12 V/DC 24 V
Current ratings	100 A/200 A/300 A
Degree of protection	IP6k9k (IP67)
Ambient temperature	-40 °C ... +85 °C

## Your benefits

- **Active battery management** through undervoltage and overvoltage monitoring and optional load shedding
- **Controlled voltage supply** for exhaust aftertreatment systems (SCRT) by means of delayed disconnection
- **Custom designed and individual configuration** of the functions by way of a configurable software



# HVR10 – High Voltage Relay

## The most powerful high voltage relay up to 1000 V

The **HVR10** is a hybrid and powerful high voltage relay in a compact design. It combines physical isolation of an electro-mechanical contact with the capabilities of ultramodern semi-conductor technology.

The hybrid, arc-free switching system allows repeated and reliable disconnection, even in the event of an overload, of up to 2 megawatts – 2,000 A/1,000 V. The **HVR10** withstands high short circuit currents up to 5,000 A until the fast high voltage

fuse trips. The fist-sized unit can switch and permanently carry 300 A up to 100,000 times, arc-free and wear-free. The innovative self-monitoring function immediately signals critical operating conditions to the controlgear.

### Typical applications

- Buses, trucks, construction machinery and special vehicles with electrical drivetrain
- Charging stations, power storage and main relays in the vehicle

### Standards

- ISO 16750
- IATF 16949
- ECE R10
- ASIL upon request

Available October 2019



Technical data	
Voltage ratings	900 V
Max. voltage	1,000 V DC
Continuous current	300 A
Switching capacity I <sub>max</sub> off	2,000 A
Max. holding current	5,000 A for 25 ms
Degree of protection	IP54
Ambient temperature	-40 °C ... +85 °C

## Your benefits

- **Multiple disconnections** even in critical conditions up to 2,000 A at 1,000 V.
- **Enhanced protection of the on-board electrical system** through integral fault detection and indication
- **Minimum wear** through arc-free switching

Subject to technical changes.



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