

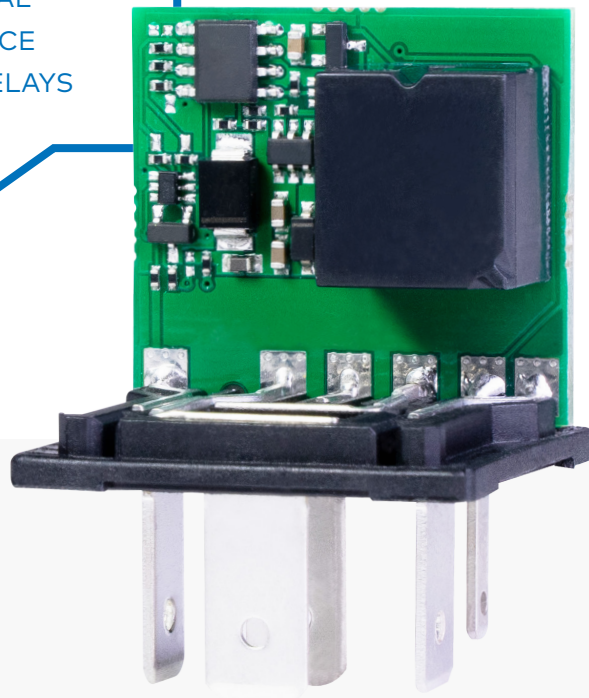
# MORE THAN 1 MILLION APPLICATIONS

Now also  
available  
as **micro**  
version

## MULTIFUNCTIONAL RELAY

### TURN 3 INTO 1

1 MULTIFUNCTIONAL  
RELAY CAN REPLACE  
UP TO 3 SIMPLE RELAYS



- + INCREASED SAFETY
- + HIGHER ENERGY EFFICIENCY
- + SPACE & WEIGHT REDUCTION





miunske  
PLUS + POINTS

**1 million**  
applications -  
2 inputs, 6 logic functions

## MULTIFUNCTIONAL RELAY

Highest flexibility through fast configuration

The MFR is an intelligent **mini control in the form of a relay equipped with a controller**. It combines two inputs with different signal forms via six logic functions (AND, NAND, OR, NOR, XOR, NXOR) and therefore allows you a significantly higher range of functions than with conventional relays.

It is possible to realize:

- **standard functions:** stepping, delay and pulse functions
- **complex special functions:** e. g. control of the doors or rear window heating, leaving-home function, frequency and voltage monitoring

The MFR is unbeatably efficient: it can **replace up to three „simple“ relays**. This not only **reduces the initial costs**. It allows to **minimise installation space** and **reduce weight** while **increasing the safety** of your vehicle system.

## PRODUCT BENEFITS

- + fast availability of new functions
- + **increased economic efficiency:** one MFR can replace up to three function-specific relays and enables:
  - **minimisation of installation space and weight**
  - **higher energy efficiency**
  - **increased safety due to lower risk of failure**
- + **multivoltage:** works for voltage ranges between 12 V and 24 V
- + no minimum purchase quantities: **production starting at 1 piece**
- + **low price even for small quantities:** miunske® is specialised in the realisation of small and medium-sized series and can realise them at a favourable price
- + **robust hardware:** water- and dustproof versions



## INDIVIDUALISATION IN THE SHORTEST TIME

The functions of the MFR can be quickly and easily adapted to your individual needs. There are two ways to do this:

- you stock up with the desired hardware version and parameterise the MFR yourself with the help of our MFR programming kit.
- you save yourself trouble of searching for a suitable component and enter your desired parameters conveniently in our online configurator - we will then parameterise the MFR with your data and it will be with you.

miunske  
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availability of  
individual special relay  
in shortest time

### OFFLINE PARAMETERISATION with programming kit

• parameters can be changed

- 1 You have unparameterised, neutral miunske-MFR in stock.
- 2 If necessary, connect these relays to your PC via the MFR programming kit.
- 3 Via the miunske programming interface the desired functionalities can be set up quickly and conveniently on the MFR.

**download:** at [www.miunske.com](http://www.miunske.com)

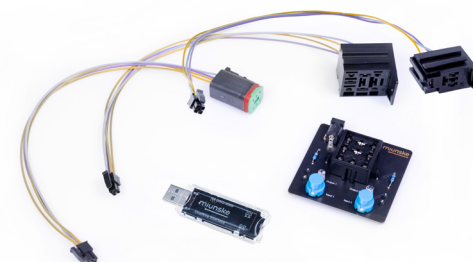
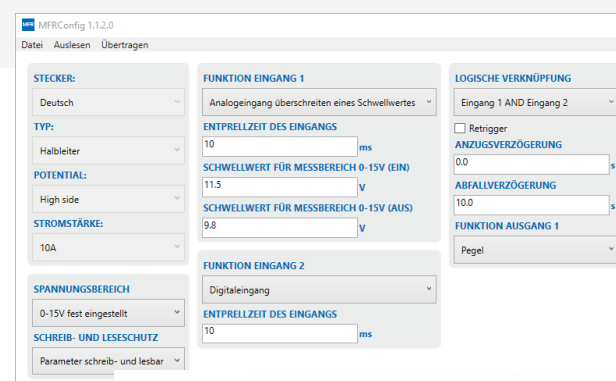
**Advantage:** immediate availability of new functions and maximum flexibility, as the functions on the MFR can be changed and, if necessary, secured against subsequent modification.

### ONLINE CONFIGURATOR at [miunske.com](http://miunske.com)

• parameters are fixed

- 1 You enter your function parameters.
- 2 Then you will receive our offer as well as a data sheet with the exact description of the desired MFR function range.
- 3 After the order has been placed, the parameter set generated is listed under a unique article number and programmed on the MFR.

**Advantage:** you will promptly receive your individual special relay **with clear identification** and the corresponding parameter documentation.



- 1 miunske OneWire Interface • for connection to the PC
- 2 Evalboard • for checking the parameterised data



- 3 adapter cable for DEUTSCH plug connection
- 4 adapter cable for MFR micro & mini design

# EQUIPMENT OPTIONS

- two versions of the switches: **mechanical** and **semiconductor**
- mechanical versions also with **potential separation**
- two connection variants: **micro- / mini relay socket** and **DEUTSCH DT (IP68)**
- **two inputs** (analog, digital, frequency and PWM) can be linked via logic functions
- **two switching functions** (pulse, level) can be combined with switch-on and switch-off delay

## TECHNICAL DATA

2 inputs

analogue, digital, frequency 1 - 200 kHz, PWM 1 - 200 kHz  
logic links can be parameterised

output

functions parameterisable

design variants:

electromechanical relay

20 A - 12 V/24 V (9 V ... 30 V)  
optionally with potential separation

semi-conductor relay

20 A - 12 V/24 V (9 V ... 30 V)

versions

1. DEUTSCH DT grouted, IP68
2. mini relay design according to ISO 7588
3. micro relay (only as semiconductor), design according to ISO 7588



**version 1**  
DEUTSCH DT/IP68



**version 2**  
mini  
relay socket



**version 3**  
micro  
relay socket

## miunske® PLUS + POINTS

**+**  
FIXED  
CONTACT PERSON

**+**  
JUST IN TIME  
ENGINEERING

**+**  
IN-HOUSE  
DEVELOPMENT  
SERVICE

**+**  
DELIVERY RELIABILITY  
&  
FAST AVAILABILITY

**+**  
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ORDER PICKING

**+**  
TRAINING  
CENTER

**+**  
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