

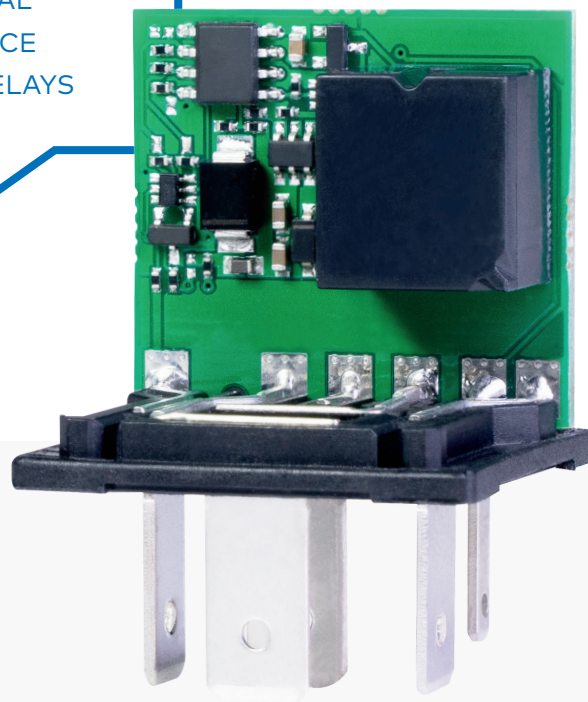
MORE THAN 1 MILLION APPLICATIONS

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
PLUS + POINTS
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

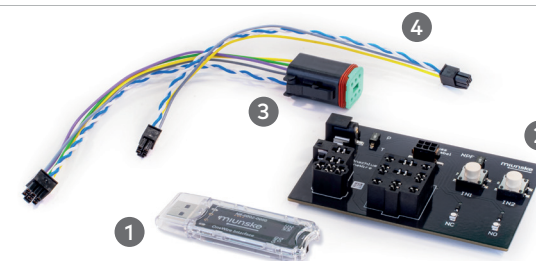
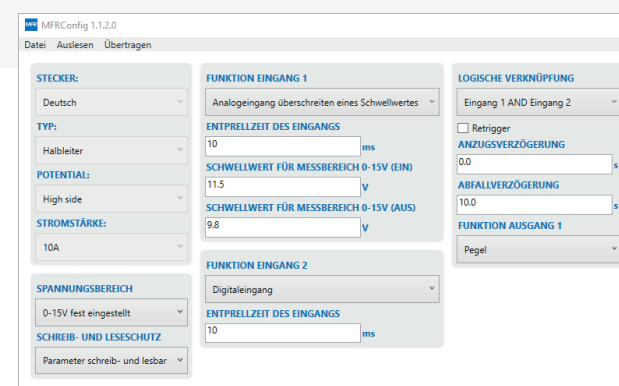
Advantage: **immediate availability** of new functions and maximum flexibility, as the functions on the MFR can be changed and, if necessary, secured against subsequent modification.

ONLINE CONFIGURATOR at miunske.com

• 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

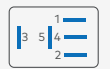
2 inputs	analogue, digital, frequency 1 - 200 kHz, PWM 1 - 200 kHz logic links can be parameterised
output	functions parameterisable
design variants:	
electromechanical relay	20 A - 12 V/24 V (9 V ... 30 V) optionally with potential separation
semi-conductor relay	20 A - 12 V/24 V (9 V ... 30 V)
versions	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

+
IN-HOUSE
DEVELOPMENT
SERVICE

+
JUST IN TIME
ENGINEERING

+
DELIVERY RELIABILITY
&
FAST AVAILABILITY

+
STORAGE &
ORDER PICKING

+
COMPREHENSIVE
TECHNICAL
SUPPORT

+
TRAINING
CENTER

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