

DMX-RELAIS 8 INRUSH

User manual



DMX[®]
4
ALL



For your own safety, please read this user manual and warnings carefully before installation.

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Description

The **DMX-RELAIS 8 INRUSH** is designed for several control tasks.

8 potential free switching outputs

The DMX-RELAIS 8 INRUSH has 8 potential free switching outputs (closer / NO) up to 8A switching capacity.

Switching contact for direct and alternating voltage

The relay interface is suitable to direct voltage (DC) or alternating voltage (AC).

DMX FAIL-Function

An adjustable DMX FAIL function offers the option to hold the current state (HOLD) or to adopt a predefined value if the DMX signal fails.

RDM support

The DMX-RELAIS 8 INRUSH allows the configuration via RDM or DMX.

Free RDM software

For setting the parameters via RDM, our free RDM Configurator software is available for download on our website www.dmx4all.de.

SubDevice-Mode

In SubDevice mode, each output is assigned its own DMX address, operating mode and DMX FAIL behavior via RDM.

LED-State Display

The DMX state is indicated via the LED status.

Several operation modes

The DMX-RELAIS 8 INRUSH offers several operating modes which can be set via RDM:

- Hysteresis 127/128
- Hysteresis 0/1
- Hysteresis 100/150
- Exclusive
- Monostable 1Second

Top hat rail mounting available

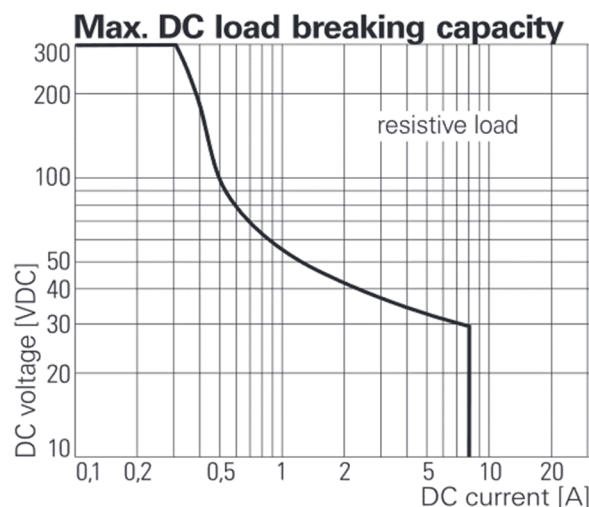
Suitable for the DMX-RELAIS 8 INRUSH the DIN rail housing 1050 is available as accessory. Together with the top-hat rail housing 1050, the interface is optimally suited for control cabinet installation.

Technical Data

| | |
|-------------------------|--|
| Power supply: | 12-24V DC (280mA @ 12V / 180mA @ 24V) (Units before 2014 only 12V CD / 400mA) |
| Protocol: | DMX512 RDM |
| DMX-Channels: | 8 DMX channels |
| DMX-FAIL: | HOLD / 0-100% |
| Operation modes: | Hysteresis 127/128 Hysteresis 0/1 Hysteresis 100/150 Exclusive Monostable 1Second |
| Output: | 8 potential-free switching output (closer / NO) 165A@20ms peak switch-on current AC: each max. 8A / 250V~ DC: According to the max. DC load graph |
| Connections: | Screw terminals |
| Dimensions: | 99mm x 82mm |

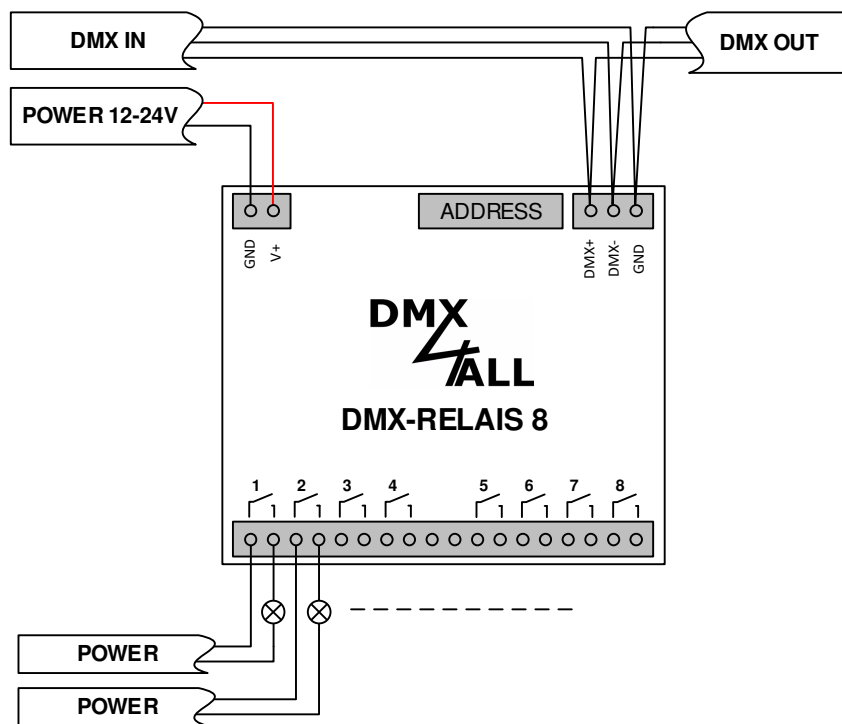
Max. DC load

The maximum current the switch contacts of the **DMX RELAIS 8 INRUSH** can switch is shown in the following graph depending on the switching voltage:



(Source: Data sheet RTS3T012)

Connection



Switch contact

AC: each max. 8A / 250V~

DC: According to the max. DC load graph

(165A@20ms peak switch-on current)

LED-Display-Codes

The integrated green LED is a multi-function display.

During to the normal operation mode the LED lights permanently. In this case the device is working.

Furthermore, the LED shows the current status. In this case the LED lights up in short pitches and then is missing for longer time.

The number of the flashing lights is equal to the status number.

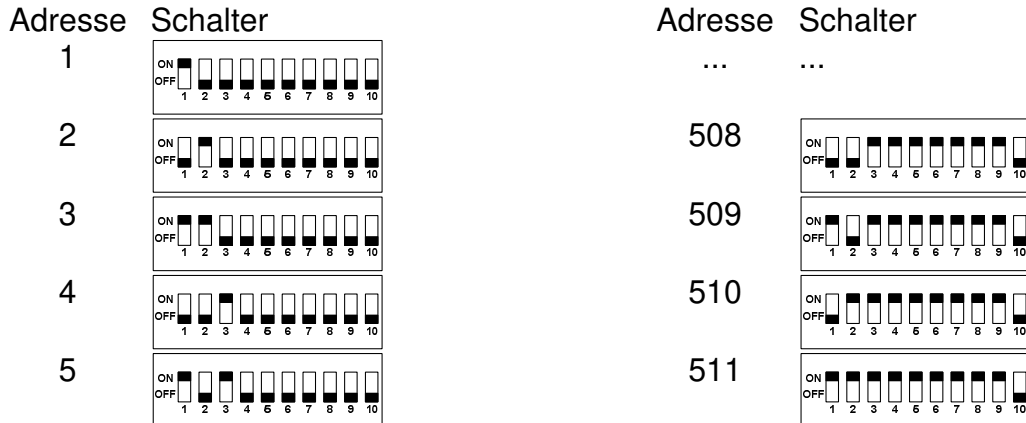
| Event-number | Error | Description |
|--------------|---------------|----------------------------------|
| 1 | NO DMX | There is no DMX signal |
| 2 | Address error | Please check the set DMX address |

DMX-Addressing

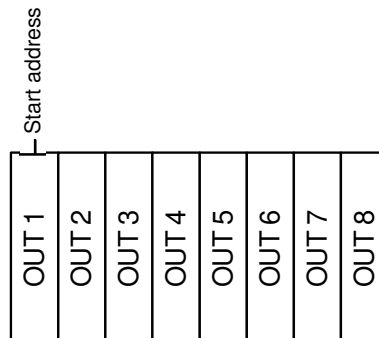
The start address is adjustable about DIP switch 1-9.

Thereby switch 1 has the valency 2^0 (=1), switch 2 the valency 2^1 (=2) and so on, up to switch 9 with the valency 2^8 (=256).

The sum of the values of the switches set to ON corresponds to the start address.



The assignment of the DMX addresses is as follows:



The RDM parameter `DMX_STARTADDRESS` can also be used to set the DMX start address.

A DMX start address set via the DIP switches has priority over the start address set via RDM.

DMX-FAIL Function

The DMX-RELAIS 8 INRUSH has a DMX-FAIL function keeping the last DMX value (HOLD) or uses a predefined value set by RDM in case of a failed DMX-Signal.

The HOLD function can be activated via RDM or switch 10:

- Switch 10 ON → DMX-HOLD activated
- Switch 10 OFF → DMX-HOLD not activated
(RDM configuration is used)

If HOLD is switched on (switch 10 = ON), the last received DMX values are remained in case of a DMX signal failure.

If HOLD is switched off (switch 10 = OFF), the DMX values are replaced with a value set by RDM in case of a DMX signal failure. In the delivery state this value is 0, so that the relays switch off.



In case of a power failure the DMX values held with HOLD are discarded!



A value set by RDM is deleted when HOLD is selected. After switching off the HOLD function, the default value 0 is used.

Select operating mode

Hysteresis 127/128

In this operating mode, the relays switch independently of each other each via one DMX channel.

The switching threshold (Hysteresis) is 127/128 which means that the relay is switched off when the DMX value is 127 or less and that the relay is switched on when the DMX value is 128 or greater.

| DMX Channel | DMX Value | Function |
|-------------|-----------|--------------|
| 1 | 0-127 | Output 1 OFF |
| | 128-255 | Output 1 ON |
| 2 | 0-127 | Output 2 OFF |
| | 128-255 | Output 2 ON |
| 3 | 0-127 | Output 3 OFF |
| | 128-255 | Output 3 ON |
| 4 | 0-127 | Output 4 OFF |
| | 128-255 | Output 4 ON |
| 5 | 0-127 | Output 5 OFF |
| | 128-255 | Output 5 ON |
| 6 | 0-127 | Output 6 OFF |
| | 128-255 | Output 6 ON |
| 7 | 0-127 | Output 7 OFF |
| | 128-255 | Output 7 ON |
| 8 | 0-127 | Output 8 OFF |
| | 128-255 | Output 8 ON |

For this operation mode choose via RDM the Personality 1.

Hysteresis 0/1

In this operating mode, the relays switch independently of each other each via one DMX channel.

The switching threshold (Hysteresis) is 0/1 which means that the relay is switched off when the DMX value is 0 and that the relay is switched on when the DMX value is 1 or greater.

| DMX Channel | DMX Value | Function |
|-------------|-----------|--------------|
| 1 | 0 | Output 1 OFF |
| | 1-255 | Output 1 ON |
| 2 | 0 | Output 2 OFF |
| | 1-255 | Output 2 ON |
| 3 | 0 | Output 3 OFF |
| | 1-255 | Output 3 ON |
| 4 | 0 | Output 4 OFF |
| | 1-255 | Output 4 ON |
| 5 | 0 | Output 5 OFF |
| | 1-255 | Output 5 ON |
| 6 | 0 | Output 6 OFF |
| | 1-255 | Output 6 ON |
| 7 | 0 | Output 7 OFF |
| | 1-255 | Output 7 ON |
| 8 | 0 | Output 8 OFF |
| | 1-255 | Output 8 ON |

For this operation mode choose via RDM the Personality 2.

Hysteresis 100/150

In this operating mode, the relays switch independently of each other each via one DMX channel.

The switching threshold (Hysteresis) is 100/150 which means that the relay is switched off when the DMX value is 100 or less and that the relay is switched on when the DMX value is 150 or greater.

| DMX Channel | DMX Value | Function |
|-------------|-----------|--------------------|
| 1 | 0-100 | Output 1 OFF |
| | 101-149 | Output 1 NO ACTION |
| | 150-255 | Output 1 ON |
| 2 | 0-100 | Output 2 OFF |
| | 101-149 | Output 2 NO ACTION |
| | 150-255 | Output 2 ON |
| 3 | 0-100 | Output 3 OFF |
| | 101-149 | Output 3 NO ACTION |
| | 150-255 | Output 3 ON |
| 4 | 0-100 | Output 4 OFF |
| | 101-149 | Output 4 NO ACTION |
| | 150-255 | Output 4 ON |
| 5 | 0-100 | Output 5 OFF |
| | 101-149 | Output 5 NO ACTION |
| | 150-255 | Output 5 ON |
| 6 | 0-100 | Output 6 OFF |
| | 101-149 | Output 6 NO ACTION |
| | 150-255 | Output 6 ON |
| 7 | 0-100 | Output 7 OFF |
| | 101-149 | Output 7 NO ACTION |
| | 150-255 | Output 7 ON |
| 8 | 0-100 | Output 8 OFF |
| | 101-149 | Output 8 NO ACTION |
| | 150-255 | Output 8 ON |

For this operation mode choose via RDM the Personality 3.

Exclusive

In this operating mode, 2 relays are linked to one another so that only one relay can switch at a time.

The switching threshold (hysteresis) is 127/128, which means that the relay is switched off when the DMX value is 127 or less. The relay is switched on when the DMX value is 128 or greater.

However, two linked relays (1 + 2/3 + 4/5 + 6/7 + 8) cannot be switched on at the same time.

| DMX Channel | DMX Value | Function |
|-------------|-----------|------------------------------|
| 1 | 0-127 | Output 1 OFF |
| | 128-255 | Output 1 ON, if output 2 OFF |
| 2 | 0-127 | Output 2 OFF |
| | 128-255 | Output 2 ON, if output 1 OFF |
| 3 | 0-127 | Output 3 OFF |
| | 128-255 | Output 3 ON, if output 2 OFF |
| 4 | 0-127 | Output 4 OFF |
| | 128-255 | Output 4 ON, if output 3 OFF |
| 5 | 0-127 | Output 5 OFF |
| | 128-255 | Output 5 ON, if output 4 OFF |
| 6 | 0-127 | Output 6 OFF |
| | 128-255 | Output 6 ON, if output 5 OFF |
| 7 | 0-127 | Output 7 OFF |
| | 128-255 | Output 7 ON, if output 6 OFF |
| 8 | 0-127 | Output 8 OFF |
| | 128-255 | Output 8 ON, if output 7 OFF |

For this operation mode choose via RDM the Personality 4.

Monostable 1Second (Impulse)

In this operating mode, the relays switch independently of each other each via one DMX channel.

As soon as the DMX value is 128 or greater, the relay switches for 1 second. After that, the DMX value must first drop below 128 in order to trigger another switching pulse.

| DMX Channel | DMX Value | Function |
|-------------|-----------|--------------------------|
| 1 | 0-127 | Output 1 OFF |
| | 128-255 | Output 1 1x 1-second ON |
| 2 | 0-127 | Output 2 OFF |
| | 128-255 | Output 2 1x 1- second ON |
| 3 | 0-127 | Output 3 OFF |
| | 128-255 | Output 3 1x 1- second ON |
| 4 | 0-127 | Output 4 OFF |
| | 128-255 | Output 4 1x 1- second ON |
| 5 | 0-127 | Output 5 OFF |
| | 128-255 | Output 5 1x 1- second ON |
| 6 | 0-127 | Output 6 OFF |
| | 128-255 | Output 6 1x 1- second ON |
| 7 | 0-127 | Output 7 OFF |
| | 128-255 | Output 7 1x 1- second ON |
| 8 | 0-127 | Output 8 OFF |
| | 128-255 | Output 8 1x 1- second ON |

For this operation mode choose via RDM the Personality 5.

RDM

RDM is the short form for **R**emote **D**evice **M**anagement.

As soon as the device is within the system, device-dependent settings can occur remotely via RDM command due to the uniquely assigned UID. A direct access to the device is not necessary.



If the DMX start address is set via RDM, all address switches must be set to OFF! A DMX start address set by the address switches is always prior !

This device supports the following RDM commands:

| Parameter ID | Discovery Command | SET Command | GET Command | ANSI/ PID |
|-----------------------------|-------------------|-------------|-------------|-----------|
| DISC_UNIQUE_BRANCH | ✓ | | | E1.20 |
| DISC_MUTE | ✓ | | | E1.20 |
| DISC_UN_MUTE | ✓ | | | E1.20 |
| DEVICE_INFO | | | ✓ | E1.20 |
| SUPPORTED_PARAMETERS | | | ✓ | E1.20 |
| PARAMETER_DESCRIPTION | | | ✓ | E1.20 |
| SOFTWARE_VERSION_LABEL | | | ✓ | E1.20 |
| DMX_START_ADDRESS | | ✓ | ✓ | E1.20 |
| DEVICE_LABEL | | ✓ | ✓ | E1.20 |
| MANUFACTURER_LABEL | | | ✓ | E1.20 |
| DEVICE_MODEL_DESCRIPTION | | | ✓ | E1.20 |
| IDENTIFY_DEVICE | | ✓ | ✓ | E1.20 |
| FACTORY_DEFAULTS | | ✓ | ✓ | E1.20 |
| DMX_PERSONALITY | | ✓ | ✓ | E1.20 |
| DMX_PERSONALITY_DESCRIPTION | | | ✓ | E1.20 |
| DISPLAY_LEVEL | | ✓ | ✓ | E1.20 |
| DMX_FAIL_MODE | | ✓ | ✓ | E1.37 |
| LOCK_STATE | | ✓ | ✓ | E1.37 |
| LOCK_STATE_DESCRIPTION | | | ✓ | E1.37 |
| LOCK_PIN | | ✓ | | E1.37 |

| Parameter ID | Discovery Command | SET Command | GET Command | ANSI/PID |
|--------------------------------|-------------------|-------------|-------------|-------------|
| SERIAL_NUMBER ¹⁾ | | | ✓ | PID: 0xD400 |
| IDENTIFY_MODE ¹⁾ | | ✓ | ✓ | PID: 0xD402 |
| SUBDEVICE_ENABLE ¹⁾ | | ✓ | ✓ | PID: 0xFF0F |

1) Manufacturer depending RDM control commands (MSC - Manufacturer Specific Type)

Manufacturer depending RDM control commands:

SERIAL_NUMBER

PID: 0xD400

Outputs a text description (ASCII-Text) of the device serial number.

GET Send: PDL=0
 Receive: PDL=21 (21 Byte ASCII-Text)

IDENTIFY_MODE

PID: 0xD402

Stellt den Mode ein der mit IDENTIFY_DEVICE ausgeführt wird.

GET Send: PDL=0
 Receive: PDL=1 (1 Byte IDENTIFY_MODE_ID)

SET Send: PDL=1 (1 Byte IDENTIFY_MODE_ID)
 Receive: PDL=0

| IDENTIFY_MODE_ID | Funktion |
|------------------|--|
| 0 | FULL Identify All relays switch ON / OFF simultaneously and the status LED flashes |
| 1 | LOUD Identify The relays switch ON / OFF one after the other and the status LED flashes |
| 2 | QUIET Identify The relays do not switch, only the status LED flashes |

SUBDEVICE_ENABLE

PID: 0xFF0F

Enable or disable the sub devices of the device.

GET Send: PDL=0
 Receive: PDL=1 (1 Byte SUBDEVICE_ENABLE_STATE)

SET Send: PDL=1 (1 Byte SUBDEVICE_ENABLE_STATE)
 Receive: PDL=0

| SUBDEVICE_ENABLE_STATE | Funktion |
|-------------------------------|----------------------|
| 0 | SUB DEVICES DISABLED |
| 1 | SUB DEVICES ENABLED |

SubDevice-Mode

In standard mode, the DMX-RELAIS 8 INRUSH has a DMX start address from which the DMX channels are used one after the other.

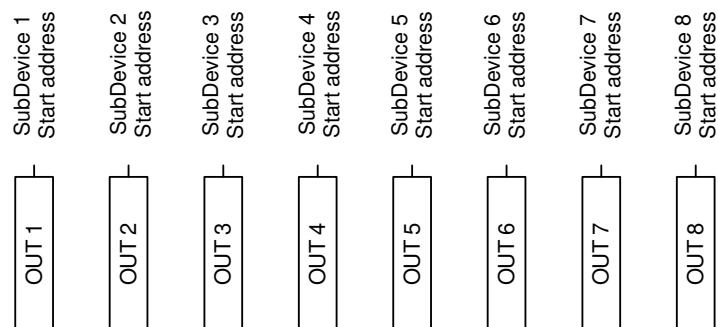
In SubDevice mode, each output is assigned its own DMX address, operation mode and DMX FAIL behavior.

To activate and deactivate the sub-device mode, the parameter SUBDEVICE_ENABLE must be activated via RDM.

Then the setting of the DMX address, operation mode and the DMX FAIL behavior for each output is made possible via RDM.

An exception is the Exclusive operating mode. If this is selected, the Exclusive operating mode is also set for the linked output.

The assignment of the DMX addresses in SubDevice mode is as follows:



The assignment of the DMX addresses to the outputs is freely possible in SubDevice mode. Several outputs can also use the same DMX address.

Factory Reset

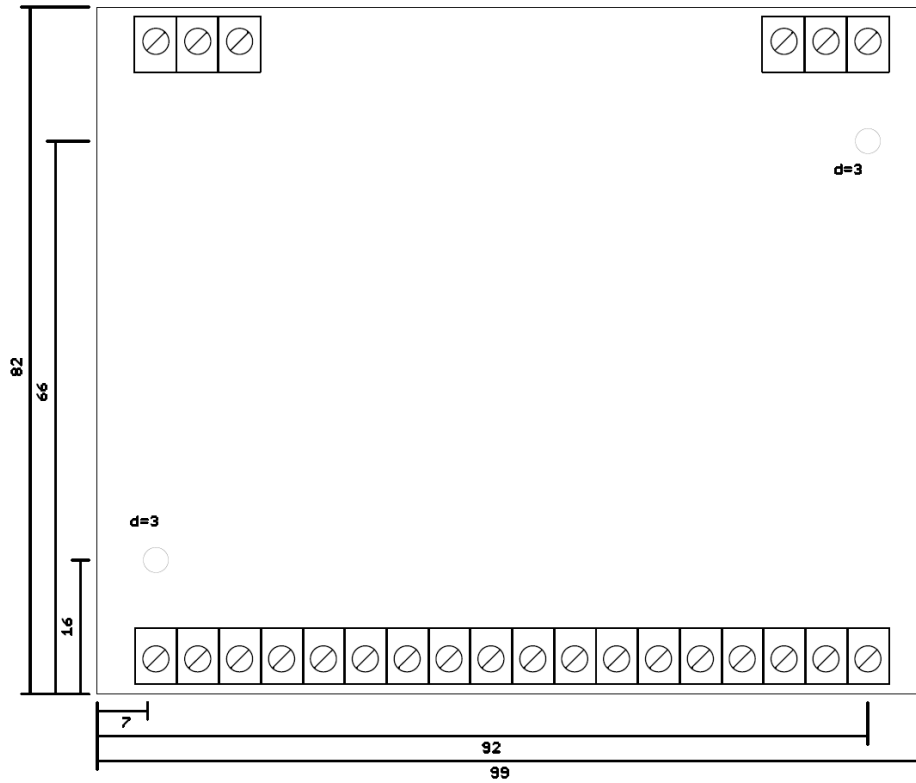


Before running the Factory Reset, read all steps carefully.

To reset the **DMX-RELAIS 8 INRUSH** to delivery state, proceed as follows:

- Turn off device (disconnect power supply !)
- Set DIP switch 1 up to 10 to ON
- Turn on device (connect power supply)
- The LED lights up 20x during ca. 3 seconds
 - ➔ While the LED lights up set DIP switch 10 to OFF
- Now, the Factory Reset is executed
 - ➔ The LED lights up with error code 4
- Turn off device (disconnect power supply !)
- Now, the device can be used

Dimensions



All details in mm

Accessories

Top-hat rail housing 1050



Power supply 12V



CE-Conformity



This assembly (board) is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

Disposal



Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations. Information on this can be obtained from your local waste disposal company.

Warning



This device is no toy. Keep out of the reach of children. Parents are liable for consequential damages caused by nonobservance for their children.

Risk-Notes



You purchased a technical product. Conforming to the best available technology the following risks should not be excluded:

Failure risk:

The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

Initiation risk:

For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

Operating risk:

The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

Misusage risk:

Any nonstandard use could cause incalculable risks and is not allowed.

Warning: It is not allowed to use the device in an operation, where the safety of persons depend on this device.



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