

Technical data sheet

Relay Module



Identification

Type	RE 7-4018
Part No.	814018

Product version

Hardware revision	B
Datasheet version	04

Use/Application/Properties

Description	This universal-relay-coupler component is designed for the output-coupler level. The activation occurs via AC/DC 24–230 V. There is a 250 V / 6 A common available on the load side for the switching of small to medium loads.
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Input

Input voltage	AC/DC 16.8 V – 253 V (AC: 48 Hz – 62 Hz)
Rated voltage U_N	AC/DC 24 V – 230 V (AC: 50/60 Hz)
Rated current I_N	approx. 18 mA @ DC 24 V / approx. 4.7 mA @ DC 110 V / approx. 4 mA @ AC 230 V
Status indication LED	Yellow LED

Output

Switching voltage	AC 1 V – 250 V / DC 1 V – 140 V
Switching current	AC/DC 0.001 A – 6 A
Inrush peak current	4 s 10 A 10 % duty factor
Switch-on delay	approx. 36 ms
Shutdown delay	approx. 54 ms
Contact material	AgSnO ₂ hard-gold-plated
Capacity of hard-gold-plating	24 V / 10 mA
Switching capacity according to EN 60947-5-1	AC 15: 3 A @ 24 V / 3 A @ 115 V / 3 A @ 230 V DC 13: 1 A @ 24 V / 0.2 A @ 115 V
Switching frequency	at 50 % ED <360 / h

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06.04.2023 • Subject to technical modification

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Bounce time approx. 3 ms

General

Dimensions (w × h × d) 6.2 mm × 90.0 mm × 92.5 mm
Weight/unit 0.038 kg
Housing material PA
Color of the housing grey RAL 7035
Form Microcompact
Installation position As desired
In the case of a vertical normal position an end holder must be fitted on the first and last devices.

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Connection type Spring terminal: 0.50 – 1.5 mm²
Stripping length: 10 mm
Screwdriver: 3.5 × 0.6 mm
Clearance/creepage dist. (control/load side) 3.6 mm
Rated insulation voltage AC/DC 300 V between control- and load side
AC/DC 250 V open contacts (functional insulation)
Contact type 1 change over contact
Mechanical service life 10 × 10⁶ operations
Storage temperature range -40 °C ... +85 °C
Insulation voltage input / output 2.2 kV_{eff}

Environmental service conditions

Altitude 2000 m
Operating temperature class OT4: -40 °C ... +70 °C
Switch-on extended Operating temperature class ST1: OTx + 15 °C
Temperature variation class H1:no requirements
Shock/Vibration Category 1, class B
Class of supply voltage interruption S3: 20 ms
Supply change-over class C2: 30 ms
Useful life class L4: 20 years
Degree of pollution PD2
Over voltage category OV2
Socket and edge connector K2: Sockets for ICs and/or edge connectors are not used
Protective coating class PC2: lacquered on both sides
Degree of protection IP20

Failure Rate Prediction (MTBF)

Standards Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709
Failure Rates of Components – Expected values: SN 29500
Failure rate at +45 °C 218 fit

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Failure rate at +45 °C	4586293 h 1 fit equals one failure per 10 ⁹ component hours The indicated temperature is the mean component ambient temperature.
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances

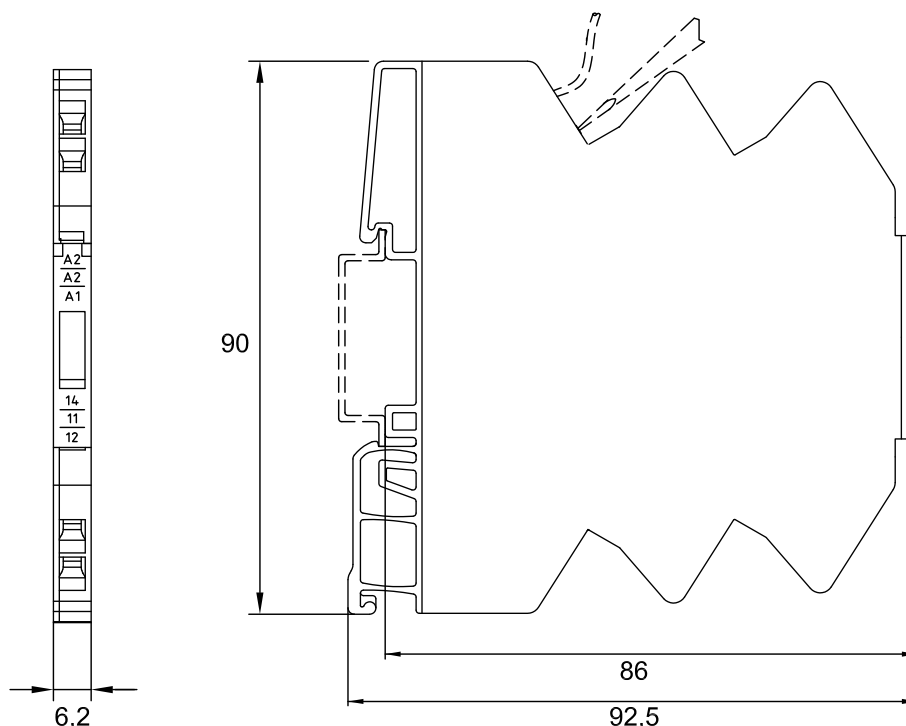
Standards/Certifications

Standards	EN 50155:2007: Railway applications – Rolling stock – Electronic equipment EN 50155:2021: Railway applications – Rolling stock – Electronic equipment – only testing according to chapter 13.3 Withstand voltage test: routine test with 1 s test duration EN 50121-3-2:2016: Railway applications – Electromagnetic compatibility – Part 3-2: Rolling stock – Apparatus EN 50124-1:2017: Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment EN 61373:1999: Railway applications – Rolling stock equipment – Shock and vibration tests EN 61373:2010: Railway applications – Rolling stock equipment – Shock and vibration tests EN 45545-2:2020: Railway applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components
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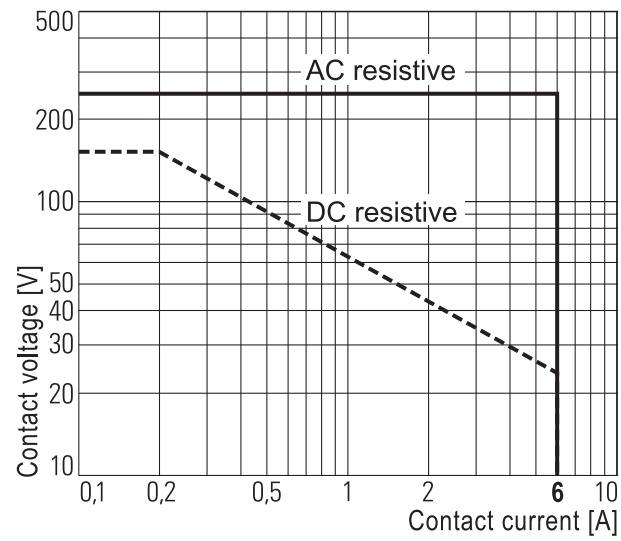
Notes and Comments

Comments	Inductive loads must be wired with a suitable suppressor element! When the module has been used once over the power limit of the hard gold plating it can no longer be used in the switching range below the power limit.
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Dimensions



Load limit curve



Circuit diagram

