Technical data sheet

Semiconductor relay module

Identification

Type	OT-6011 FK DC 24/36V 40A
Part No.	816011

Product version

Hardware revision	B
Datasheet version	00

Use/Application/Properties

Description	Transistor switch for the output level. The 6 inputs are linked via a logic circuit. Additionally, 2 status outputs 24V/36V / 0.5 A are available. On the load side, a short-circuit-proof output for DC 24V/36V / 40 A is available.

Input

Input voltage	DC 24 V – 36 V
Rated current (at U_N)	<18 mA (all inputs 0 V)
Status indication LED	LED yellow (control signal), LED green (status output 1 with load current >4 A)
Protection device Input	Reverse voltage protection Suppressor diode
Rated insulation voltage	100 V
Degree of pollution	2
Over voltage category	II
Activation voltage	>9 V
Interrupting voltage	<6 V
Output current Status output	X1.1, X1.2: 0,5 A @ 25 °C (see Derating)
Signal current for U_S	Per 10 mA @ 24 V
Connection type input	Spring terminal 0.08 mm² – 2.5 mm² Strip length: 5 – 6 mm Screwdriver: 3.5 × 0.5 mm

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Output

Switching voltage	DC 24 V – 36 V
Switching current	DC 0.5 A – 40 A
Short-circuit current	175 – 420 A / 170 µs
Protection device output	Suppressor diode
therm. continuous current 100 % ON	DC 40 A
Internal resistance	0.004 Ω
Switch-on delay	typ. 2 ms
Shutdown delay	typ. 2 ms
Rated insulation voltage	100 V
Degree of pollution	2
Over voltage category	II
Leak current	25 µA typical
Connection type output	Spring terminal 1.50 mm² – 16.0 mm² Strip length: 12 – 13 mm

General

Dimensions (w × h × d)	90.0 mm × 120.0 mm × 47.0 mm
Weight/unit	0.376 kg
Mounting	horizontal Terminal X2 bottom
Housing material	Aluminum
Special functions	Thermal protection against overload

Technical data

Clearance/creepage dist. (control/ load side)	≥5.5 mm
Safe isolation	between control and load sides: yes
Rated insulation voltage	100 V
Contact type	N/O contact
Critical frequency	10 Hz @ 50 % duty factor

Environmental service conditions

Altitude	2000 m
Operating temperature class	OT4: -40 °C … +70 °C
Switch-on extended Operating temperature class	ST1: OT4 + 15 °C
Temperature variation class	H1:no requirements
Shock/Vibration	Category 1, class B
Class of supply voltage interruption	S1
Supply change-over class	C1/C2
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	1332 fit
Failure rate at +45 °C	750600 h
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year

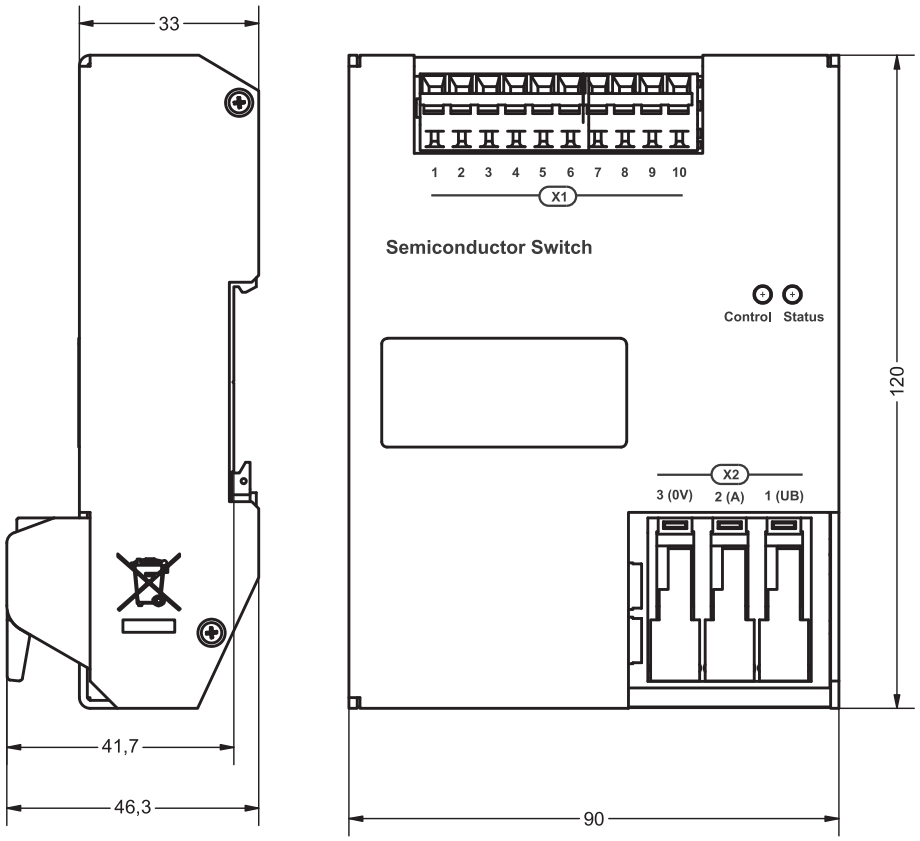
Standards/Certifications

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 **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 61373:2010:** Railway applications – Rolling stock equipment – Shock and vibration tests **EN 61373:1999:** 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

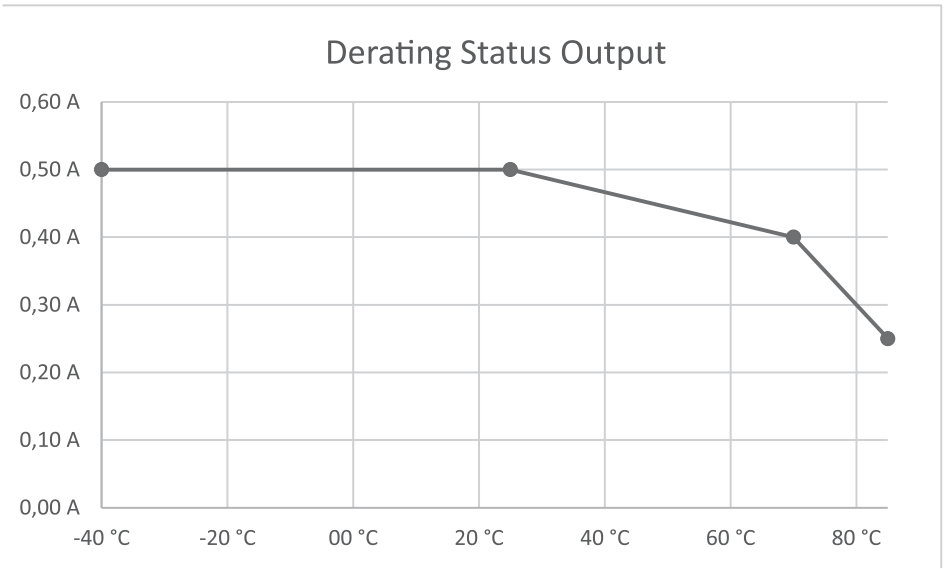
Notes and Comments

Comments	Inductive loads must be wired with a suitable suppressor element! Unused inputs must be connected to 0 V (X1.9).

Dimensions



Derating



Circuit diagram