NEXEM Electro Mechanical Devices for Next

EM Devices Corporation

2028 Mass Production

Mass production is planned to start in 2028.
ES samples are available now.

For detailed delivery timing, please contact your sales representative.



Automotive xEV AC Relay – Contact

Sales & Customer Support / Sales Division,
EM Devices Corporation
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E-mail: emd_sales@em-devices.com

Specifications are subject to change without notice. Before use, please refer to the datasheet and the relevant specification sheet.

Why Choose BX1

World's Smallest 60A Class

Maintains a leading 60A rating in an ultra-slim 20mm body. Achieves approx. 20% size reduction vs. competitors.

NACS Initiatives

Incorporates an insulation design that takes into consideration the North American Charging Standard (NACS, SAE J3400).

Automotive-Grade Specifications

Automotive-grade quality meeting IATF 16949 requirements. High-reliability design for operation from -40°C to +105°C, with excellent resistance to vibration and shock.

The world‘s first automotive specific product in the consumer dominated AC 60A class.

High heat and high-insulation materials, together with EM Devices' proprietary hinge design, enable the world's smallest form factor.

NEXEM Electro Mechanical Devices for Next

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AC Relay BX1

Automotive xEV AC Relay For On-Board Chargers

World's Smallest AC 60A Class

Applicable model: BX1-12xxxx



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01

World's Smallest Class with AC 60A Current Capacity

Design Challenges

Relay miniaturization to meet the demand for compact onboard chargers presents challenges in maintaining current-carrying capacity and insulation performance.

NEXEM Breakthrough

The world's smallest form factor achieved through the use of high heat-resistant and highly insulating materials, combined with a stress-resistant design incorporating EM Devices' proprietary hinge structure.
This is NEXEM technology.

SIZE IMPACT

Vs. Competitors

Mounting Area	**approx. 20% Smaller**
Volume	**approx. 20% Smaller**
Weight	**approx. 50% Lighter**

Based on our research as of September 2026.

02

NACS Initiatives

Open-contact dielectric strength: ≥ 3,000 Vac

Insulation design for EV onboard charging systems, featuring optimized creepage and clearance distances, additional resin barriers, and high-insulation materials, with consideration for the requirements of NACS (SAE J3400).

03

Automotive-Grade Specifications

Automotive quality under IATF 16949 requirements.
-40°C to +105°C operation, vibration resistance and shock resistance are assured at automotive levels.
Wear-prone resin components eliminated for a structure optimized for automotive-grade reliability.

BX1 Rated Specifications

Contact arrangement	1 form A / 1form C
Contact Rating	60A-277Vac, resistive load
Max. carrying current	60A at 105°C (when hold voltage is used)
Contact resistance	10mΩ Max. (Initial)
Coil power consumption	3.0W
Pick-up voltage	9.6Vdc Max.
Drop-out voltage	0.6Vdc Min.
Hold voltage	30–35% of Rated Voltage (105°C)
Mechanical endurance	300,000 cycles
Electrical endurance	100,000 cycles (inrush 0A, steady 60A, break 0A-277Vac at 105°C) 50,000 cycles (inrush 2A, steady 60A, break 2A-277Vac at 105°C)
Insulation resistance	1000MΩ Min. (1000Vdc)
Dielectric strength	3000Vac, 50/60Hz for 1 min (between contacts)
	4000Vac, 50/60Hz for 1 min (between coil and contacts)
Size	20.0x25.0x28.5mm
Weight	1a approx.19g 1c approx. 25g

* For details, please request and refer to the BX1 relay datasheet.