

AV

AVERES



TECHNICAL MANUAL
Miniature circuit breakers
AV-6 DC and AV-10 DC
EKF AVERES

1 DESCRIPTION

Miniature circuit breakers AV-6 DC and AV-10 DC EKF AVERES are electro-mechanical switching devices used for close/open operations in DC electrical circuits and for protection against overload and short-circuit currents in residential and commercial buildings. AVERES miniature circuit breakers (MCB) comply with IEC 60947-2.

The MCBs of this series feature advanced design. Particularly, they enable instant switching of the power contacts, regardless of the operating handle actuation speed. This translates into the lower wear and power dissipation at the contacts, and less heat generated by miniature circuit breakers AV-6 DC and AV-10 DC EKF AVERES.

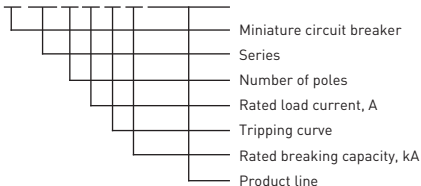
All AV-6 DC and AV-10 DC feature rigid housing reinforced with 9 rivets to prevent it from splitting.

Screw shields lock the space behind screw terminals, preventing incorrect wire connections.

The MCB is equipped with a convenient operating handle to ensure reliable operation. The MCB front panel features an indicator of contact physical position and a circuit marking plate. A two-position clamp ensures easy mounting onto a DIN rail.

TYPE CODE

AV-6 DC XX XX (X) XX EKF AVERES



2 TECHNICAL DATA

Table 1

Characteristics	Values			
	AV-6 DC		AV-10 DC	
Rated voltage Ue, V	1P: 250 V DC, 2P: 500 V DC, 3P: 750 V DC, 4P: 1000 V DC			
Current	DC			
Number of poles	1, 2, 3, 4			
Rated current In, A	1-63			
Tripping curve	C			
Rated breaking capacity Icn, kA (IEC 60898-1)	6		10	
Ultimate short-circuit breaking capacity Icu, kA (IEC 60947-2)	10			
Service short-circuit breaking capacity Ics, kA (IEC 60947-2)	75% Icu			
Energy limiting class	3			
Rated impulse withstand voltage Uimp, kV	6			
Rated insulation voltage Ui, V	500			
Mechanical endurance, O-C cycles	20 000			
Electrical endurance, O-C cycles	10 000			
Utilization category	A			
Operating temperature, °C	from -25 to +50			
Max. MCB weight, kg (depending on the number of poles)	1	2	3	4
	0,115	0,23	0,345	0,46
Minimum cross-section of connected wires, mm ²	1			
Maximum cross-section of connected wires, mm ²	25			
Tightening torque, N·m	3			
Degree of protection	IP20			

MCB can be connected with PIN- and FORK-type connecting bars.

3 TRIPPING CHARACTERISTICS

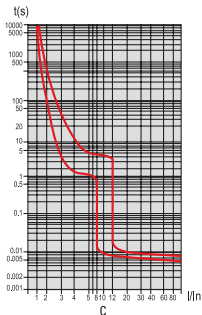


Figure 1. Tripping curves

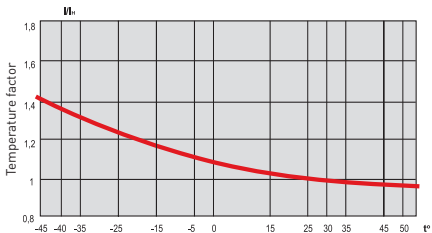


Figure 2. MCB temperature derating chart

4 OVERALL DIMENSIONS

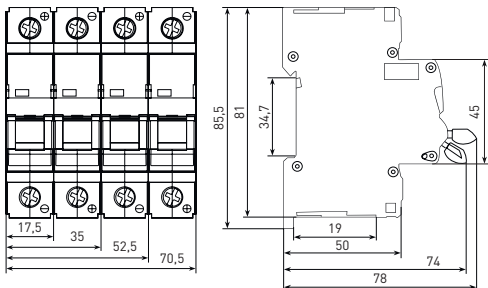


Figure 3. Overall dimensions

5 INSTALLATION AND CONNECTION

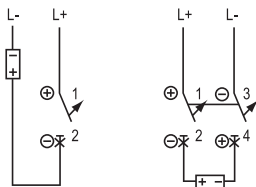


Figure 4. Wiring diagrams

Miniature circuit breakers shall be installed and connected by qualified electrical personnel. Copper and aluminum wire connection options are supported. Do not connect copper and aluminum wires to one terminal concurrently. Always connect anode (+) and cathode (-) to the respective terminals of the circuit breakers (figure 4).

MCB shall be mounted onto 35 mm DIN rail.

Tightening torque: max. 3 N·m for copper wires; max. 2,2 N·m for aluminum-alloy series 8000 wires.

Position in space: vertical or horizontal on a vertical plane. If vertically installed, the upper position of the operating handle shall correspond to the MCB ON status, while the handle lower position shall correspond to the MCB OFF status in compliance with IEC 60447.

If horizontally installed, the handle right position shall correspond to the MCB ON status, while the handle left position shall correspond to the MCB OFF status.

6 OPERATION CONDITIONS

Operating temperature: from -25°C to $+50^{\circ}\text{C}$.

Attitude above sea level: max. 2000 m.

7 DELIVERY SCOPE

Miniature circuit breakers AV-6 DC and AV-10 DC are supplied in a group package.

For all available documentation, scan the QR-code on the insert or on the inside of the package.

8 SAFETY REQUIREMENTS

Do not operate miniature circuit breakers with visual mechanical damage.

MCBs conform to IEC 61140 Class 0 for protection against electrical shock and shall be installed in distribution enclosures with Class 1 protection or higher.

9 MAINTENANCE

For MCB maintenance, follow national safety rules for operation of electrical Installations.

Under normal operating conditions, visually inspect MCBs, check «ON/OFF» operations, and tighten screw terminals every 6 months.

Do not operate miniature circuit breakers with visibly damaged housing.

10 STORAGE AND TRANSPORTATION

The miniature circuit breakers can be transported by any means of enclosed transport that ensures protection of packed products from mechanical impact and weather exposure.

The MCBs shall be stored indoors in the original package at the ambient temperature from -40°C to $+55^{\circ}\text{C}$ and relative humidity of max. 80% at $+25^{\circ}\text{C}$.

11 DISPOSAL

Life-expired and failed MCBs shall be disposed of in compliance with the national and local laws and regulations in force.

To dispose of the product, send it to an authorized company for recycling in compliance with the national and local laws and regulations in force.

12 MANUFACTURER'S WARRANTY

The manufacturer guarantees miniature circuit breakers comply with the declared characteristics, provided that consumers follow the operation, transportation and storage conditions.

Warranty period: 10 years from the date of sale specified in the sales receipt.

Shelf life: 10 years from the date of manufacture specified on the product package or housing.

Service life: 25 years.

Manufacturer: for information, refer to the product package.

Importer and EKF trademark service representative: EKF ELECTRICAL SOLUTION – FZCO, Dubai Silicon Oasis, DDP, Building A2, Dubai, United Arab Emirates.

Importer and EKF trademark service representative on the territory of the Russian Federation: OOO «Electroresheniya», Otradnaya st., 2b bld. 9, 5th floor, 127273, Moscow, Russia. Tel.: +7 (495) 788-88-15.

Importer and EKF trademark service representative on the territory of the Republic of Kazakhstan: TOO «Energoresheniya Kazakhstan», Kazakhstan, Almaty, Bostandyk district, Turgut Ozal st., 247, apt 4.

13 CERTIFICATE OF ACCEPTANCE

Miniature circuit breakers AV-6 DC and AV-10 DC EKF AVERES have been approved for operation.

Date of manufacture: for information, refer to the product package.

Quality control stamp



EAC



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