

AV

AVERES



TECHNICAL MANUAL

Miniature circuit
breakers AV-6 and AV-10
EKF AVERES

1 DESCRIPTION

Miniature circuit breakers AV-6 and AV-10 EKF AVERES are electromechanical switching devices used for close/open operations in AC electrical circuits and for protection against overload and short-circuit currents in residential and commercial buildings. AVERES miniature circuit breakers (MCB) comply with IEC 60898-1 and IEC 60947-2.

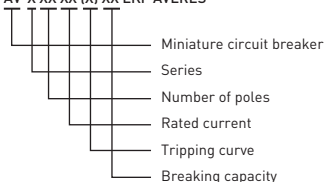
The MCBs of this series feature advanced design. Particularly, they enable instant switching of the power contacts, regardless of the operating handle actuation speed. This translates into lower wear and power dissipation at the contacts, and less heat generated by miniature circuit breakers AV-6 and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

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

Miniature circuit breakers are equipped with a comfortable operating handle to ensure reliable operation. The MCB front panel features an indicator of contact physical position and a circuit marking plate.

TYPE CODE

AV-X XX XX (X) XX EKF AVERES



2 TECHNICAL DATA

Characteristics		Value			
		AV-6		AV-10	
Rated operating voltage U_e , V		230 / 400			
Frequency, Hz		50 / 60			
Number of poles		1, 2, 3, 4			
Rated current I_n , A		1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63			
Tripping curve (refer to Figure 1)	B	4 $I_n \pm 20\%$			
	C	8 $I_n \pm 20\%$			
	D	12 $I_n \pm 20\%$			
Rated breaking capacity I_{cn} , kA (IEC 60898-1)		6		10	
Ultimate short-circuit breaking capacity I_{cu} , kA (IEC 60947-2)	380–415 V AC	10			
Service short-circuit breaking capacity I_{cs} , kA (IEC 60947-2)		75% I_{cu}			
Energy limiting class		3			
Rated impulse withstand voltage U_{imp} , kV		6			
Rated insulation voltage U_i , V		500			
Mechanical endurance, O-C cycles		20 000			
Electrical endurance, O-C cycles		10 000			
Utilization category		A			
Operating temperature, °C		from -40 to +60			
Max. MCB weight, kg (depending on the number of poles)		1	2	3	4
		0,1	0,2	0,3	0,4
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

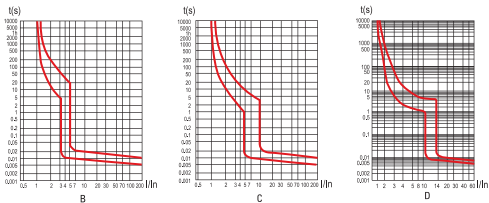


Figure 1. Tripping curves

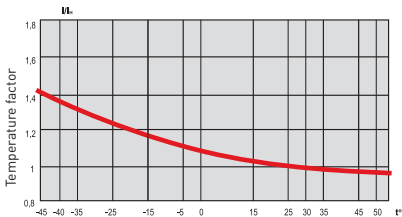
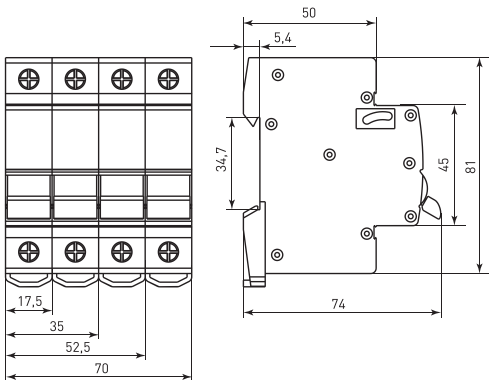


Figure 2. MCB temperature derating chart

4 OVERALL DIMENSIONS



POWER DISSIPATION

Rated current I_n , A	Max. power dissipation/pole, W
$I_n \leq 10$	3
$10 < I_n \leq 16$	3.5
$16 < I_n \leq 25$	4.5
$25 < I_n \leq 32$	6
$32 < I_n \leq 40$	7.5
$40 < I_n \leq 50$	9
$50 < I_n \leq 63$	13

5 INSTALLATION AND CONNECTION

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. MCB power supply can be connected both from terminals 1, 3, 5, 7 and from terminals 2, 4, 6, 8.

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.

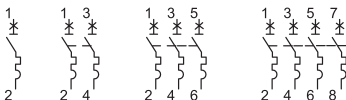


Figure 3. Wiring diagrams

6 OPERATION CONDITIONS

Operating temperature: from -40 to +60°C

Max. altitude above sea level: 2000m.

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.

7 DELIVERY SCOPE

Miniature circuit breakers AV-6 and AV-10 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 MCBs 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

Miniature circuit breakers can be transported by any means of enclosed transport that ensures protection of packed products from mechanical impacts and weather exposure. Miniature circuit breakers shall be stored indoors in the original package at the ambient temperature from -40° C to +60° C and relative humidity of max. 80% at +25°C.

11 DISPOSAL

Life-expired and failed miniature circuit breakers 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 the products 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.

10 ЛЕТ ГАРАНТИЯ YEAR WARRANTY

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.

CERTIFICATE OF ACCEPTANCE

The miniature circuit breakers AV-6 and AV-10 EKF AVERES have been approved for operation.

Date of manufacture:

for information, refer to the product package.

Quality control stamp



ekfgroup.com

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