

AV AVERES



TECHNICAL MANUAL
Motor mechanisms CD
EKF AVERES



1 DESCRIPTION

The motor mechanism CD EKF AVERES is designed for manual and remote control of the molded case circuit breakers (MCCB) AV Power: to facilitate the MCCB close/open operations and to reclose it after auto tripping.

The circuit breakers equipped with a motor mechanism feature high reliability and user-friendly control. They are used for local and remote control, automation of distribution networks, automatic transfer systems (ATS), and simultaneous tripping.

2 DESIGN AND OPERATION

2.1 DESIGN

The motor mechanism is a monoblock consisting of a housing base and a mechanism. Featuring the guides for grabber movement, the base is a supporting structure for the whole motor mechanism.

The front panel has an indication window to indicate the MCCB flag position, a switch for manual and automatic (remote) control, a red Test button to check the tripping of the circuit breaker and a handle to switch on/off the circuit breaker manually. The terminal block on the side of the motor mechanism connects power supply to the motor mechanism and control buttons. The cover closes access to the spring charging mechanism and protection unit (do not remove the cover, otherwise it can lead to the motor mechanism failure). The motor mechanism consists of a stepping motor, a protection unit, a charging motor mechanism, a worm wheel, a fan-type wheel, a ram with a running plate, grabbers, charging springs and guides. All power elements are made of galvanized steel.

2.2 OPERATION

When the OFF button (control buttons must be spring hold, the signal must be a pulse type) sends a signal to the motor mechanism or when the rotary handle is turned by 90 degrees (several times), the gear wheel is set to motion, the grabbers move down along the guides, diverging away from the centre to grasp the flag of the circuit breaker. During the return stroke, the springs move from resting to extended state and are locked by the charging mechanism at the end point. To close the circuit breaker, simply press the remote «ON» button or turn the rotary handle, the mechanism will release the springs and the circuit breaker will move to the «ON» position.

3 TECHNICAL DATA

Table 1

Parameters	Values			
	AV POWER 1/3	AV POWER 2/3	AV POWER 3/3	AV POWER 4/3
Rated voltage U_n , V	110-240			
Rated frequency, Hz	50			
Max. operating current I, A	0,5	0,5	2	2
Rated operating voltage U_e , V	[0,85-1,1] U_n			
Active power, W	35			
Time constant, ms	22			
Duty ratio, s	0,09			
Reset, s	1,2			
Tripping, s	2			
Mechanical endurance, O-C cycles	10000		5000	10000
Degree of protection	IP 30			
Maximum pulse duration of switching commands, ms	>100			
Weight, kg	1,5	2	2,2	5,5

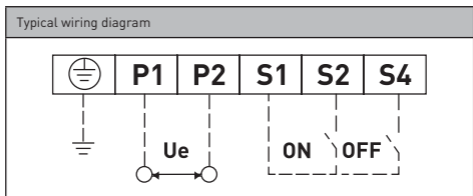
4 TECHNICAL DATA

For motor mechanism vs MCCB compatibility, refer to Table 2.

Table 2

Motor mechanism	Molded case circuit breaker size
Motor mechanism CD2 AV POWER-1	AV POWER-1/3
Motor mechanism CD2 AV POWER-2	AV POWER-2/3
Motor mechanism CD2 AV POWER-3	AV POWER-3/3
Motor mechanism CD2 AV POWER-4	AV POWER-4/3

Table 3



5 OVERALL DIMENSIONS

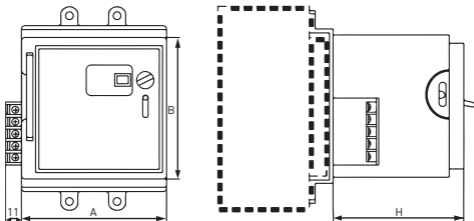


Fig. 1

Table 4

Name	A, mm	B, mm	H, mm
Motor mechanism CD2 AV POWER-1	102	154	90
Motor mechanism CD2 AV POWER-2	102	154	90
Motor mechanism CD2 AV POWER-3	150	220	130
Motor mechanism CD2 AV POWER-4	175	155	145

6 DELIVERY SCOPE

The motor mechanisms CD are supplied in an individual package. For all available documentation, scan the QR-code on the insert or on the inside of the package.

7 INSTALLATION AND CONNECTION

INSTALLATION:

1. Before installing the motor mechanism, check that the model, type, rated operating voltage correspond to the circuit breaker and that all accessories are available.

2. Remove the front panel from the circuit breaker by loosening the fastening screws covered with a narrow white plate indicating the circuit breaker type and rating.
3. Put the flag of the circuit breaker to the «OFF» position.
4. Charge the motor mechanism with the rotary handle to the distinguished click.
5. Unscrew four fastening screws from the base, at the center and bottom part of the motor mechanism front panel, remove the base.

**WARNING! The motor mechanism is charged.
Do not touch an open mechanism to avoid electric shock!**

6. Install the base on the housing of the circuit breaker and fasten with screws.
7. Remove the flag tip of the circuit breaker (if available) by removing two screws.
8. Fasten the motor mechanism housing on the base with four screws (already fastened in the housing of the molded case circuit breaker). Do not overtighten the screws to prevent base bushings from splitting.
9. Check the correct mounting: Open the hole for the handle of the motor mechanism (put the switch to the MANUAL position) on the front panel of motor mechanism. Insert and turn the handle. The motor mechanism must switch on and off the molded case circuit breaker reliably.
10. Connect power supply and control buttons according to the wiring diagram. The buttons must be spring hold. The signal must be a pulse signal.

8 SAFETY REQUIREMENTS

By protection method against electric shock, the motor mechanisms belong to protection class «0» according to IEC 61140 and shall be installed in distribution enclosures with protection class «1» and higher. Degree of protection for distribution enclosures shall be at least IP30 according to IEC 60529:2013.

9 TRANSPORTATION AND STORAGE

The motor mechanisms can be transported by any means of enclosed transport that ensures protection of packed products against mechanical and atmospheric impacts. The motor mechanisms shall be stored in the original package.

10 DISPOSAL

Life-expired and failed motor mechanisms 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.

11 MANUFACTURER'S WARRANTY

The manufacturer guarantees that motor mechanisms comply with the declared characteristics, provided that consumer 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: 10 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:

000 «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:

T00 «Energoresheniya Kazakhstan», Kazakhstan, Almaty, Bostandyk district, Turgut Ozal st., 247, apt 4.

12 CERTIFICATE OF ACCEPTANCE

The motor mechanisms CD EKF AVERES have been approved for operation.

Quality control stamp



EAC



v3

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