EMA-ELESTER

ZAKŁADY APARATURY ELEKTRYCZNEJ

"EMA-ELESTER"

ul. LODOWA 86 92-313 ŁÓDŹ

INSTALLATION AND OPERATING INSTRUCTION

for

AB DE-ION Circuit Breakers

Types FB and HFB 150 Amperes

WAFB 0972

PSP Łódź — z. [illegible] 500

APPLICATION

The moulded case FB and HFB types circuit breakers are designed for accurate protection of a.c. low voltage three-phase equipment and conductors against short-circuit effects and overload.
They also provide making and breaking of the electrical equipment.Each circuit breaker is suitable for application in d.c. circuits within the range of the current resulted from technical parameters.

DESIGN FEATURES

The circuit breakers are provided with a combined overcurrent release units containing an instaneous electromagnet trip element to protect the circuit against short-circuit effects and a thermal trip providing overload effects protection of the circuit.
The circuit breaker is equiped with a single-break contact configuration.The electric arc is quenched in the arc extinguishers provided with splitter plates.
The driving and quick-make and quick-break trip-free mechanism is contained within an all-insulated moulded case.
The enclosure of the circuit breakers is moulded from electrically insulating compound remarkable for high mechanical strength and insulation.

OPERATING CONDITIONS.

The FB and HFB types circuit-breakers can be safe and reliable operated only in indoor locations free of vapours,explosive and chemically active gases and dusty conditions.
The ambient temperature may range from -5°C to + 40°C/extreme temperature/ and maximum mean temperature of + 35°C.
The relative ambient humidity must not exceed 90% at temp. + 20°C.

INSTALLATION

The circuit breakers should be mounted on the vertical construction as it is in fig.1.
Before installing special attention should be paid to the plane of the surface to which it is to be fitted.
In the contrary case when we screw tight the fixing scews the enclosure will be exposed to the bending stress.
The circuit breaker is to be fixed to the supporting construction with the fixing holes arrengement acc. to fig.2,by means of 4 screws of M4x81 being supplied with the circuit breaker.

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The energizing cables must be connected to the upper terminals on the enclosure face marked ZASILANIE-LINE .Diameters of the cables as well as the moment of screwing tight force are to be found in Table 1.

The fixed circuit breaker should be covered with the protecting plate according to fig.4 or with the fixed to the circuit breaker guard/acc.to fig.1/ made of difficult flamable material e.g.fibre. The fixing is carried by means of three screws to metal sheets B Gb 3,5 PN-79/M-83106.Length of the screws according to the guard thickness.

T a b l e 1

Diameters of copper cables in the polyvinyl insulation and most of the force moments to tighten the clamping screws.

Rated continuous current of c.breaker Inc in A.	Cables diameter in mm^2 /sections/	Force moment kGm/kGcm + 15%
15	4,0	
20	4,0	
25	6,0	0,3/30
30	6,0	
35	6,0	
40	10,0	
50	16,0	
60	25,0	0,35/35
70	25,0	
90	35,0	0,5/50
100	50,0	
125	50,0	0,6/60
150	70,0	

OPERATION

The circuit breaker is manually-operated by operating handle. The positions of the circuit breaker contacts are indicated by the respective positions of the operating handle,as follows:

I-extreme upper /"ON"/ position:the circuit breaker contacts are closed and in the opening of the enclosure shows"I."

O-Mid position:the circuit breaker contacts are open following an automatic breaking operation.

O-extreme lower position:the circuit breaker contacts are open following a manual breaking operation.In the opening shows "O".

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Automatical tripping is realized if practicable in at least one of the trips a fault current is flowing.If the circuit breaker has been tripped automatically and the latch must be reset by moving the operating handlete the extreme lower /OFF/ position, before attempting to restore the service, the handle must be then removed to the extreme upper position.

SERVICE AND MAINTENANCE

Under normal operating conditions the circuit breaker requires no maintenance proceedings.In case of damage the faulty or worn circuit braker should be replaced, for a new one.

There is neither regulation nor calibration of the circuit breaker admitted.To protect your people you must keep in mind that at no time the operation of the apparatus can follow under the cover removed.Obviously if the overload trips are claimed not to provide a reliable function it means you should check the performance of the circuit breaker mounting against this Installation Instruction, giving special attention to the connectors diameters and clamping screws tightening moments to be compatable with the required ones. Every circuit breaker disadvantaged with a continue unreliable service must be replaced for a new apparatus.

If in a case of periodic checking the excess of a temperature encrease on the terminals happens to reveal you have to tighten the screws on the terminals and the surface of the contacts must be eventually filed away.

Particulary in the interest of the overall reliability of the circuit breaker you should always keep in mind to file away the contacts of the main circuits when the short-circuit current is cleared.

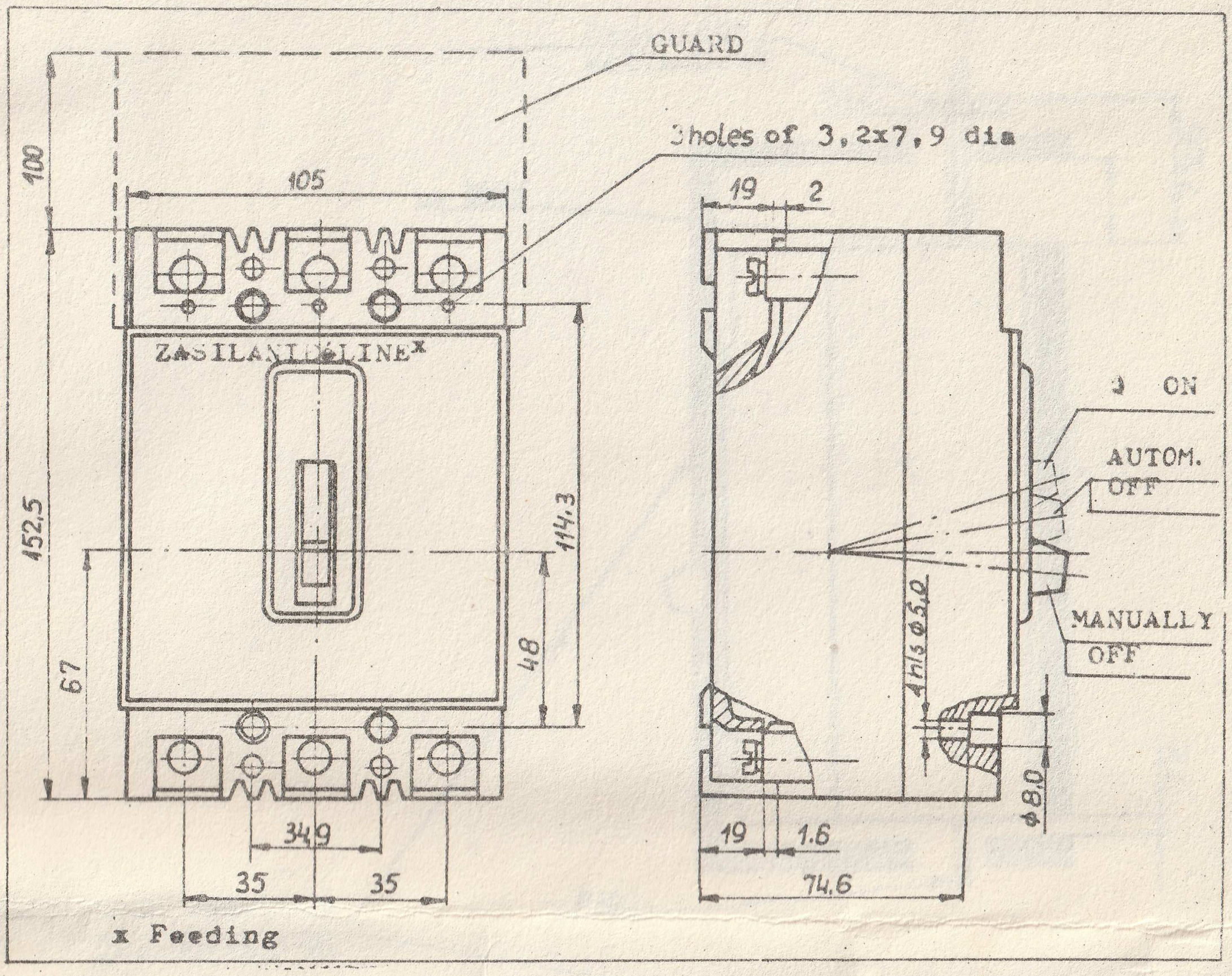
SPARE PARTS

The breakeability of FB and HFB circuit breakers does not demand any spare parts to deliverd.

STORAGE

The future reliable operation requires the circuit breakers to be stored in the factory made packing, in dry and free from dust and chemically active gases locations.

Finaly a due protection against occasional mechanical damages shouldbe also provided.



x Feeding

FIG.1 OVERALL DIMENSIONS OF CIRCUIT BREAKER

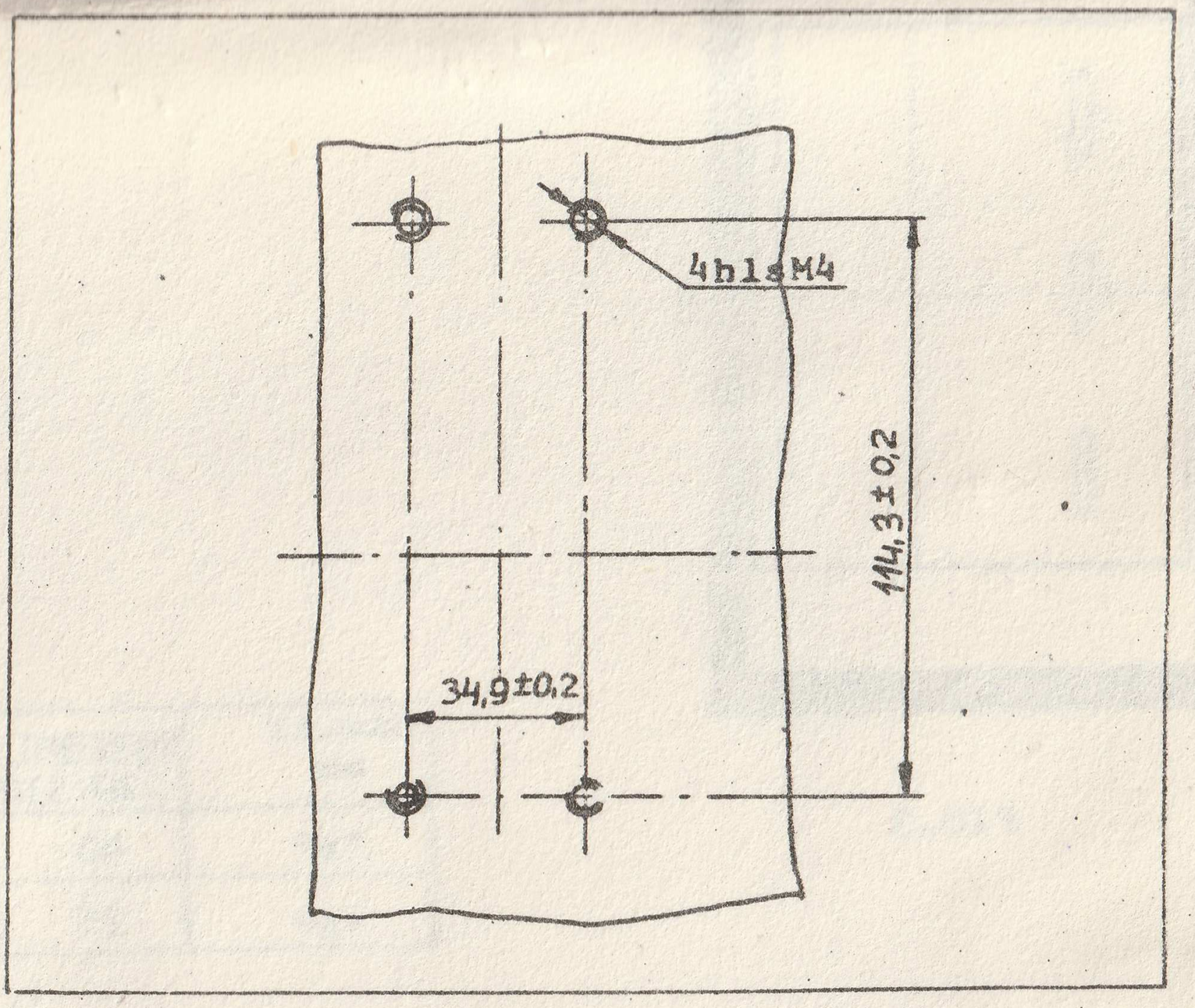


FIG.2 FIXING HOLES ARRANGEMENT to fitting of FB c.breaker

INSTALLATION AND OPERATING INSTRUCTION
MINIMUM DISTANCES FROM METAL PARTS

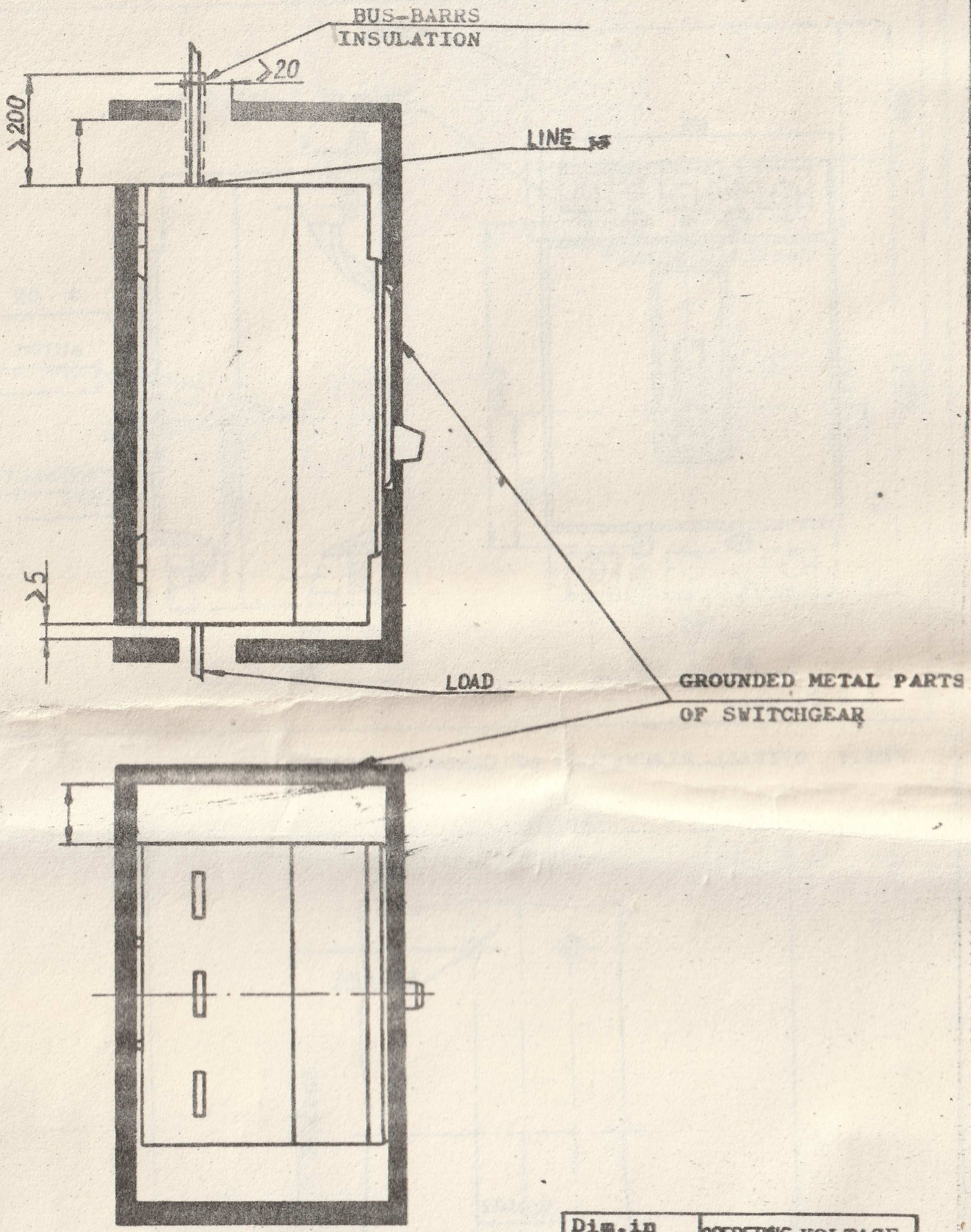


FIG.3

Dim.in mm	OPERETING VOLTAGE	
	220÷380	500÷660
"A"	40	70
"B"	25	25

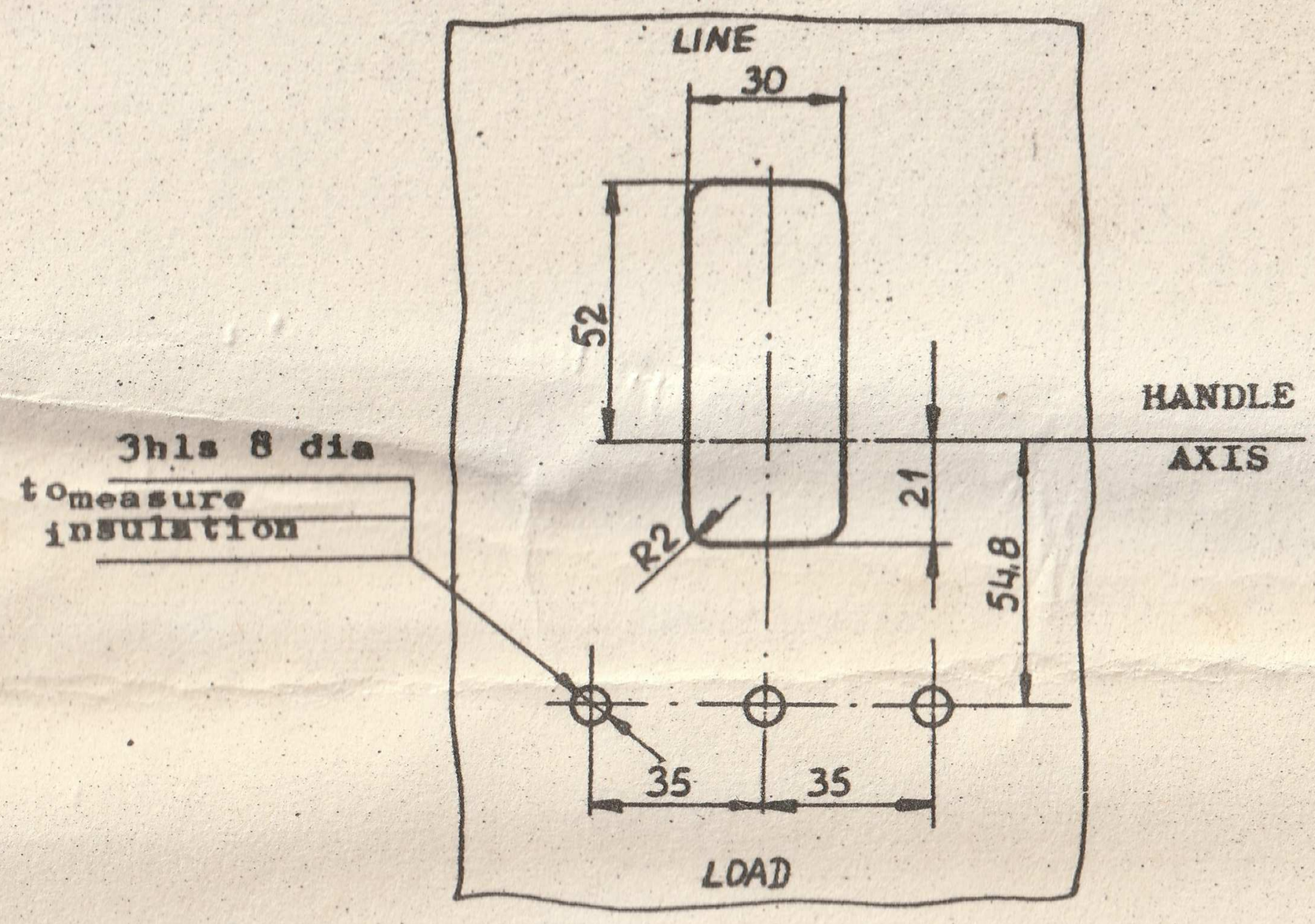


FIG.4 PROTECTING PLATE OF THE CIRCUIT BREAKER