

# Power<sup>IT</sup> Voltage Transformer Indoor, UMZ

Catalogue 1YMV642001-en



**Industrial<sup>IT</sup>**  
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**ABB**

## GENERAL INFORMATION

Voltage transformers UMZ type are manufactured in three versions:

- 1) one insulated pole: UMZ 12-1, UMZ 17-1, UMZ 24-1;
- 2) one insulated pole with fuse holder: UMZ 12-1F, UMZ 17-1F, UMZ 24-1F, UMZ 12-1P, UMZ 17-1P, UMZ 24-1P;
- 3) two insulated poles: UMZ 12, UMZ 17, UMZ 24. Versions are differential in consideration of:
  - dimensions
  - rated primary voltage (insulation level)
  - secondary voltage
  - burden in given accuracy class.

## APPLICATION

Voltage transformers UMZ type are intended for supplying measuring and protective circuits of electrical power devices with rated voltages from 1 to 24 [kV] and frequency 50 or 60 Hz separate measuring and protective equipment from the high voltage side. These voltage transformers are designed for operation in indoor equipment, in temperate (N3) or tropical (T3) climate conditions.

## OPERATING CONDITIONS

Voltage transformers can operate at altitudes up to 1000 m above sea level, in the range of ambient temperatures from 263 K (-10°C) to 328 K (55°C) with humidity up to 90%. The lowest permissible temperature during transportation and storage is 243 K (-30°C).

## DESIGN

Voltage transformers UMZ type are the single-phase, low power transformers working in conditions close to the no-load state, transforming the incoming voltage (primary voltage) into the outgoing voltage (secondary voltage) with the accuracy according to their class.

The primary and the secondary windings and core are fully cast in epoxy resin which makes the main insulation and a housing of transformers. There are the terminal plates with connected the leads of the secondary windings installed in the terminal box. Voltage transformers are equipped with the tap screws, which enable the connection of particular leads of secondary windings to the ground. The „N” terminal of primary winding of the transformer is earthed by the manufacturer by means of the bolt with the special head, which makes the unintentionally unscrewing impossible. The terminal box is provided with the secondary glands Pg16. Each of three possible secondary windings can be sealed separately.

## NOTE

In the case of starting of new-actuating station, which is supplied by means of power lines with capacitive character and without connected loads or when the connected load have a clearly capacitive character, the resistor with value from 20 to 50 Ω shall be connected to the terminals of the additional secondary winding da-dn in order to attain of ferro-resonance effect in the phase-to-earth transformers with one insulated pole. The power of the resistor  $P=U^2/R$  ( $P \geq 60$  W is recommended).

## COMPLIANCE WITH STANDARDS

Voltage transformers meet requirements following standards:

- PN-EN 60044-2
- IEC 60044-2
- VDE 0414
- GOST 1983-89
- BS 7625:1993

## WAY OF ORDERING

In your order please specify:

- type of transformers
- primary voltage
- secondary voltage / voltages
- burden
- accuracy class
- climatic conditions
- quantity
- the others parameters which are not given in table

## EXAMPLE OF ORDER

Voltage transformers type UMZ 12                    6000/100V/V; 50 VA; cl. 0,5; T3; 9 pieces

## WARRANTY

The manufacturer warranty is 24 months since the day of putting the apparatus into operation but not longer than 36 months since the day of purchase.

## TECHNICAL PARAMETERS

Common parameters for all voltage transformers UMZ type.

Permissible thermal current of rated secondary voltages  $U_{sn}=100$  [V] and  $U_{sn} = 110$  [V];

- One insulated pole transformers:            4[A] for measuring winding  
    6 [A], 8h,  $U = 1,9 \times U_n$
- Two insulated pole transformers:            4 [A] for measuring winding.

Type of transformers	UMZ 12-1, UMZ 12-1F, UMZ 12-1P	UMZ 17-1, UMZ 17-1F, UMZ 17-1P	UMZ 12	UMZ 17
Insulation level	3,6/10/40 or 7,2/20/60 or 12/28/75			
Rated primary voltage	3,6/10/40 or 7,2/20/60 or 12/28/75 1; 1,3; 1,5; 2; 2,2; 2,5; 3; 3,3; 3,5; 4; 5 5,5; 6; 6,3; 6,6; 10			
Marking of primary terminals	A-B			
Rated secondary voltage	One winding	Two windings		Two windings
		Measuring	Protecting	Measuring
Marking of secondary terminals	100: $\sqrt{3}$	100: $\sqrt{3}$	100	100
	110: $\sqrt{3}$	110: $\sqrt{3}$	110	110
Burden / accuracy class (measuring winding)	a-n	2a-2n	1a-1b	1a-1b
	20 (25*)/0,2; 50 (60*)/0,5; 100 (120*)/1			
Burden / accuracy class (protection winding)	25/3P; 50/6P			
Thermal current	4	2	2	2
Voltage factor	1,9 / 8h			
Insulation class	E			
Weight	19-23			

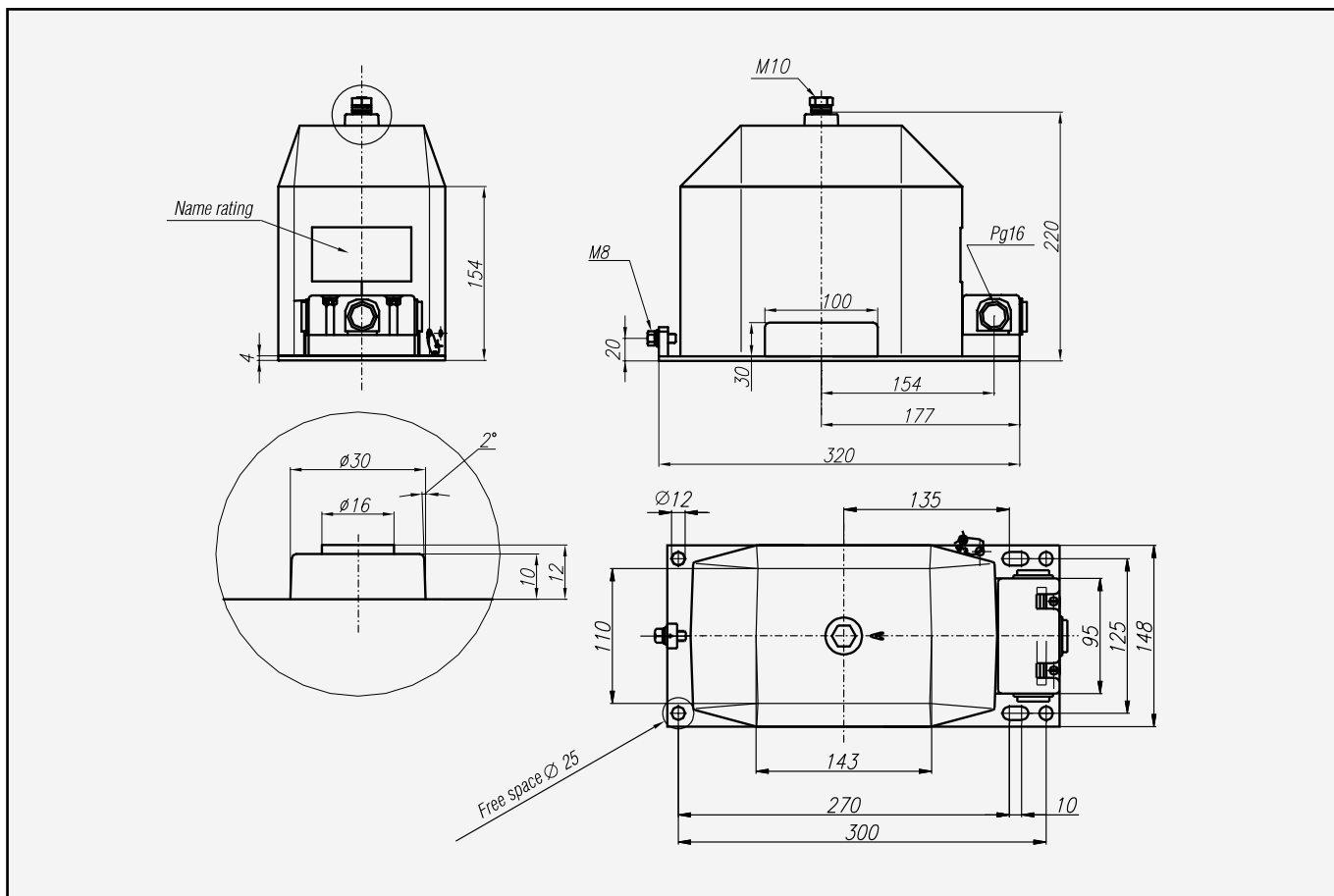
Type of transformers	UMZ 24-1, UMZ 24-1F, UMZ 24-1P			
Insulation level	12/28/75 or 17,5/38/95 or 24/50/125			
Rated primary voltage	(10; 11; 12; 12,5; 13; 13,3; 13,8; 14; 15; 16; 20; 22); $\sqrt{3}$ 10; 11; 12; 12,5; 13; 13,3; 13,8; 14; 15; 16; 20; 22			
Marking of primary terminals	A-B			
Rated secondary voltage	One winding	Two windings		Two windings
		Measuring	Protecting	Measuring
Marking of secondary terminals	100: $\sqrt{3}$	100: $\sqrt{3}$	100	100
	110: $\sqrt{3}$	110: $\sqrt{3}$	110	110
Burden / accuracy class (measuring winding)	a-n	2a-2n	1a-1b	1a-1b
	30/0,2; 50 (75*)/0,5; 100 (150*)/1			
Burden / accuracy class (protection winding)	25 / 3P; 50 / 6P			
Thermal current	4	2	2	2
Voltage factor	1,9 / 8h			
Insulation class	E			
Weight	31,5			

It is possible to order:

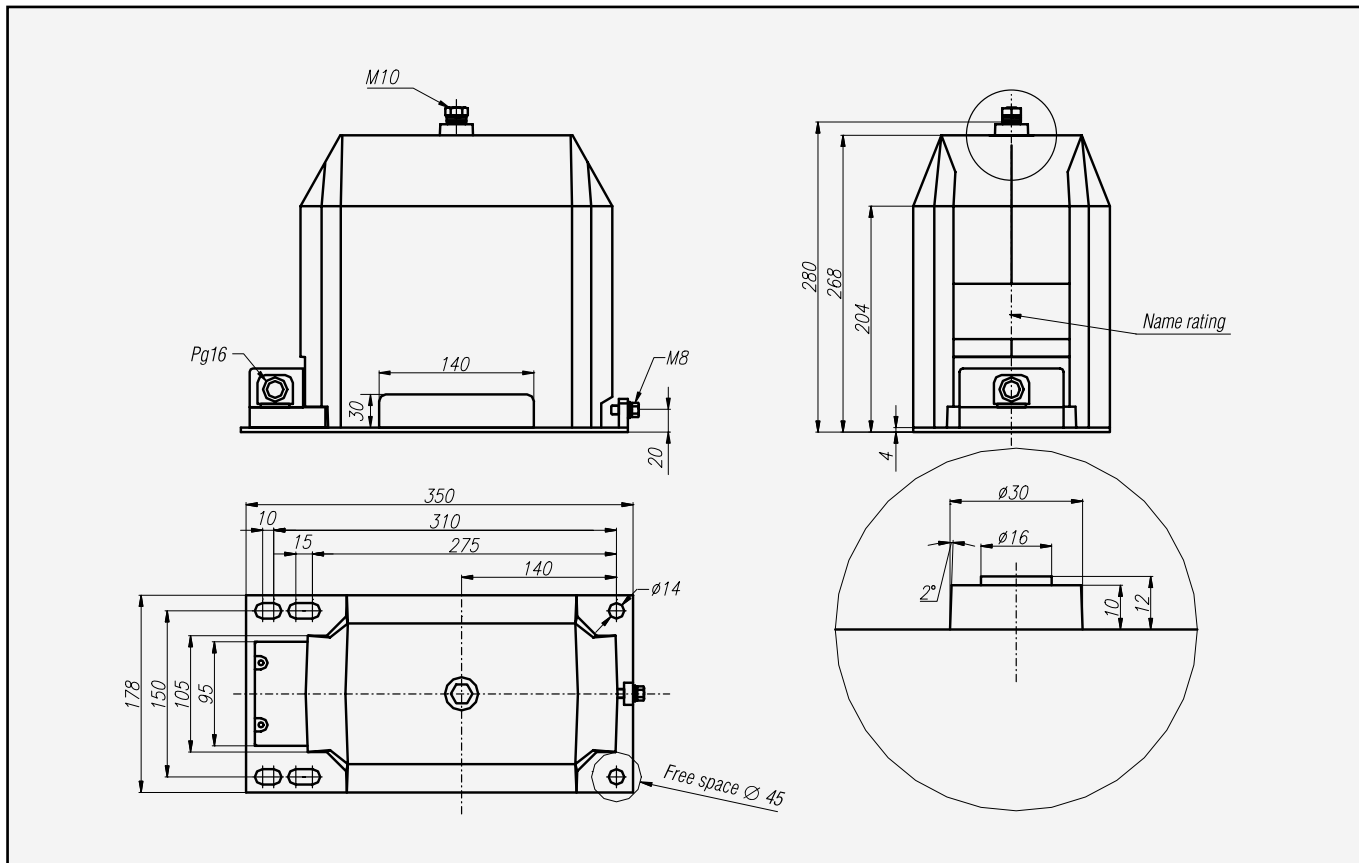
- Different secondary voltage (up to 400 [V])
- Different primary voltage
- Different burden – sum of windings should not exceeds: 20 [VA] cl. 0,2; 50 [VA] cl. 0,5 and 100 [VA] cl. 1;
- Different voltage factor

# DIMENSIONAL DRAWINGS

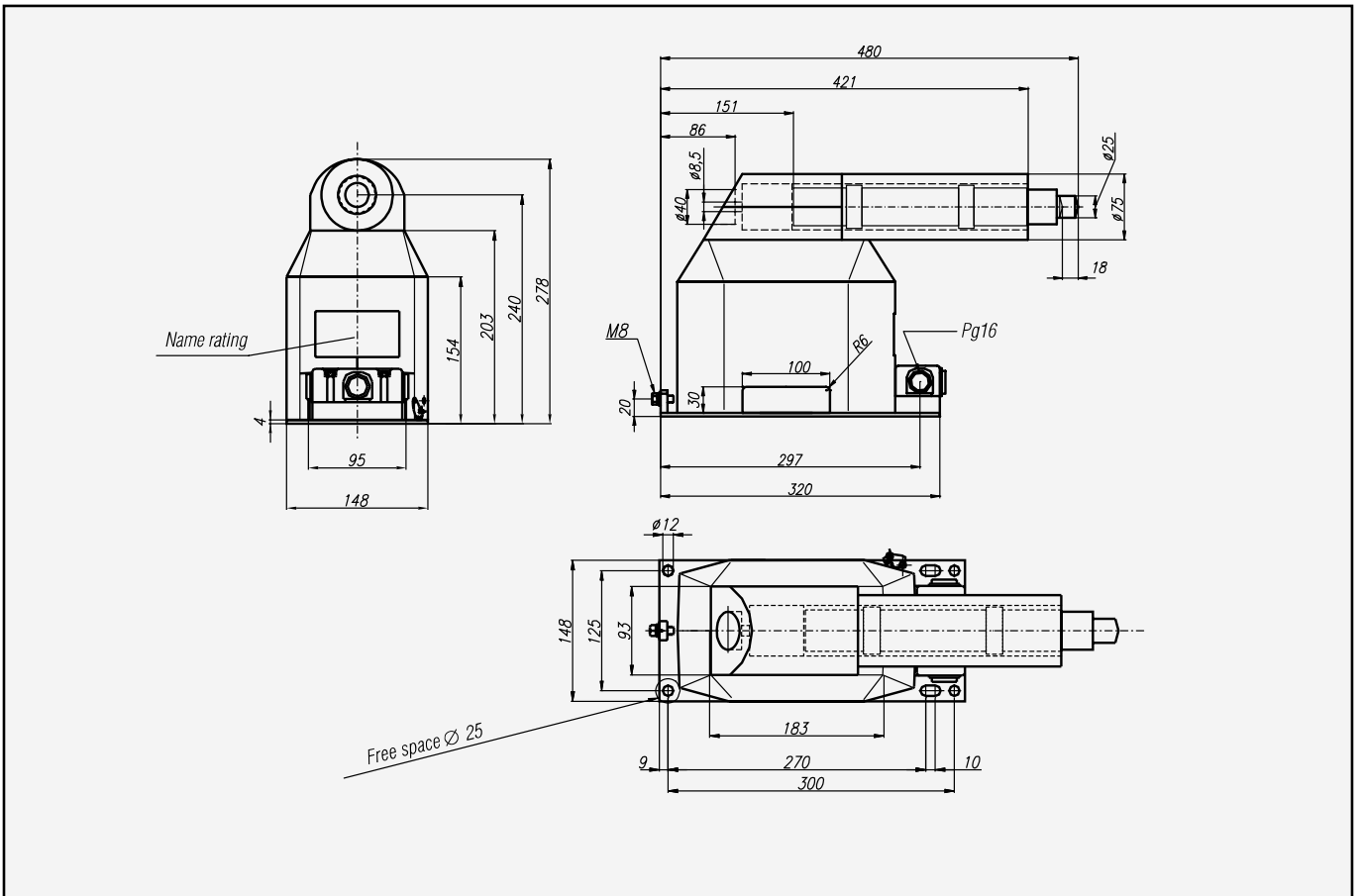
## UMZ 12-1 or UMZ 17-1



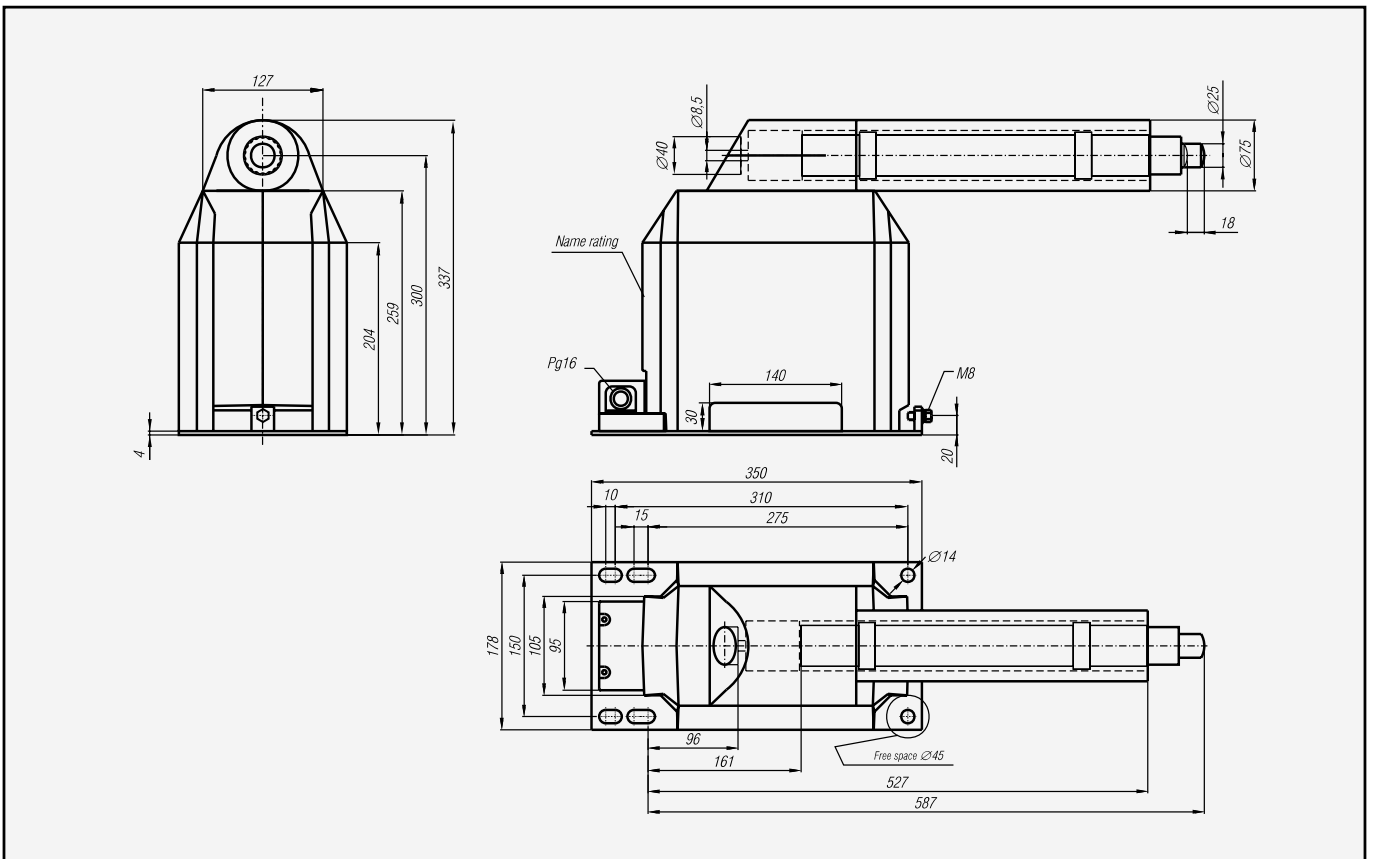
## UMZ 24-1



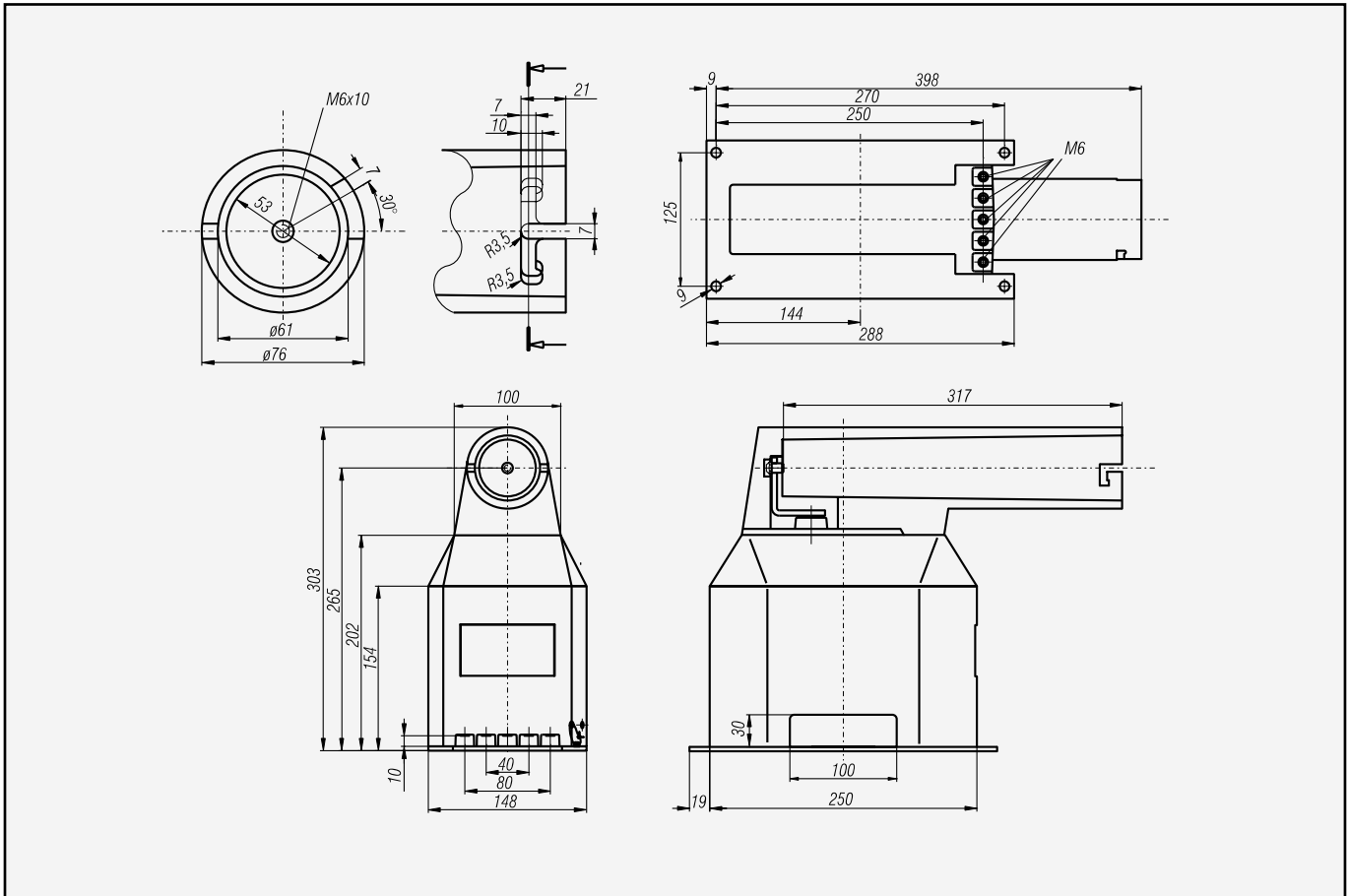
**UMZ 12-1F or UMZ 17-1F (for ZS1; UniGear)**



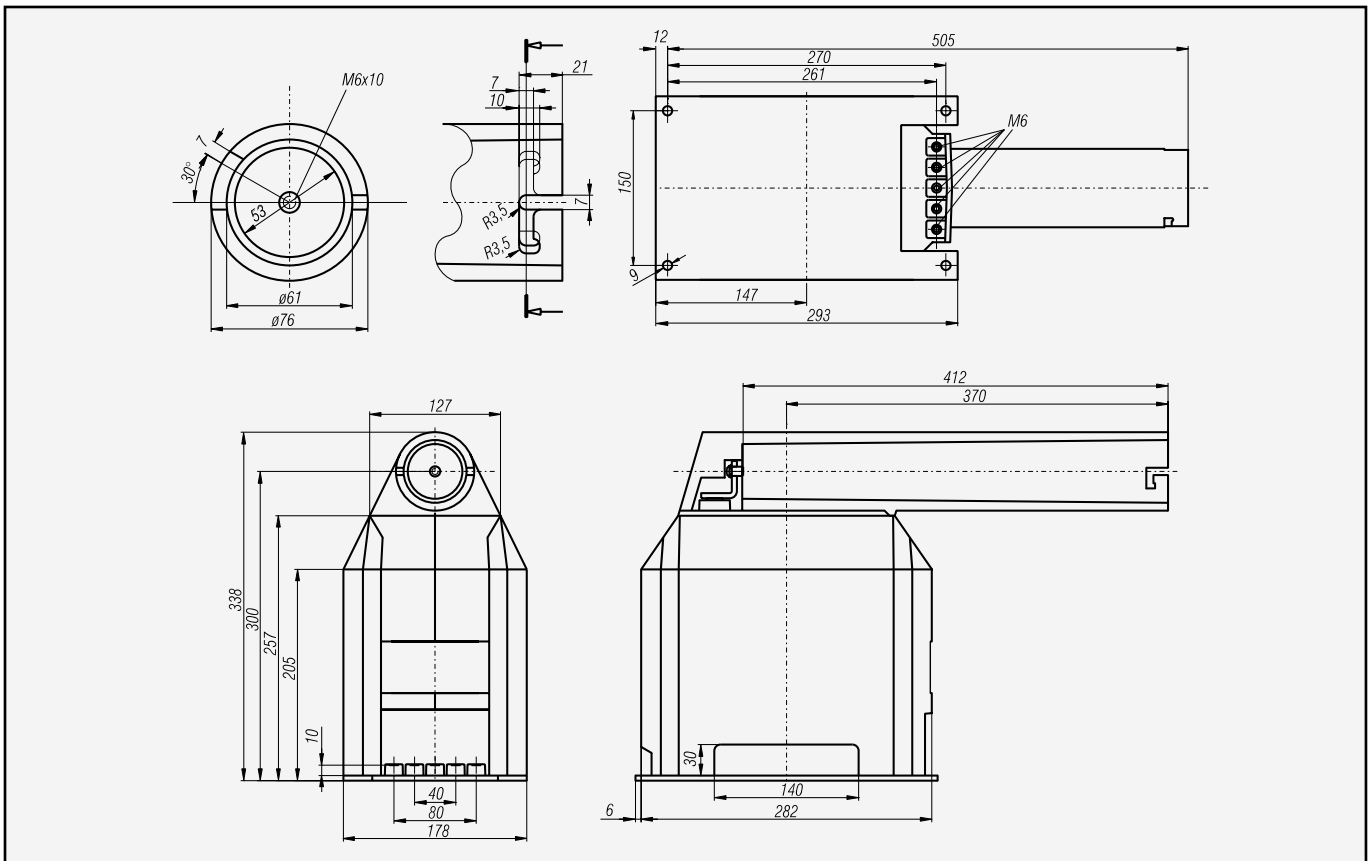
**UMZ 24-1F (for ZS1; UniGear)**



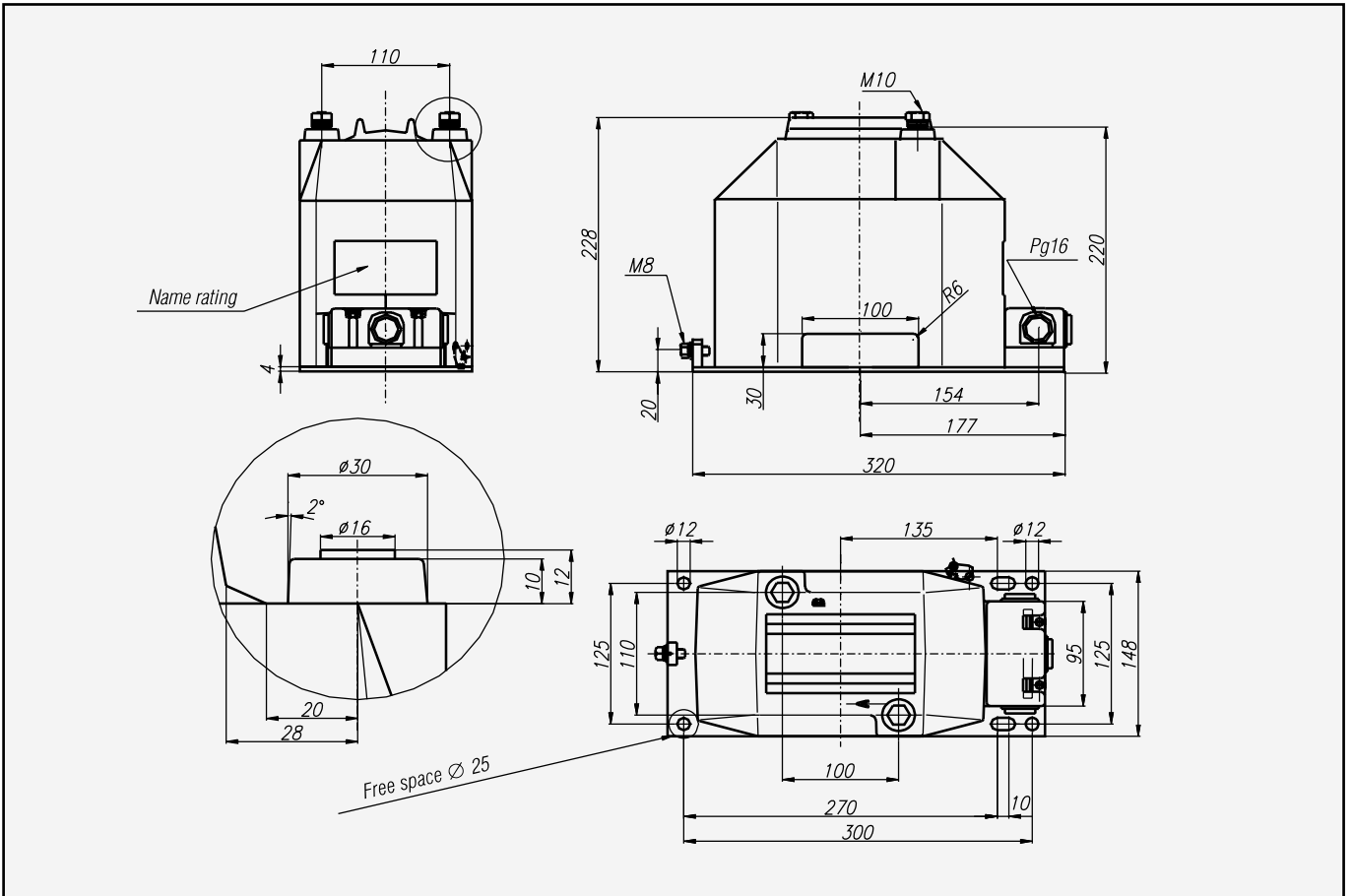
**UMZ 12-1P or UMZ 17-1P (for UniSafe)**



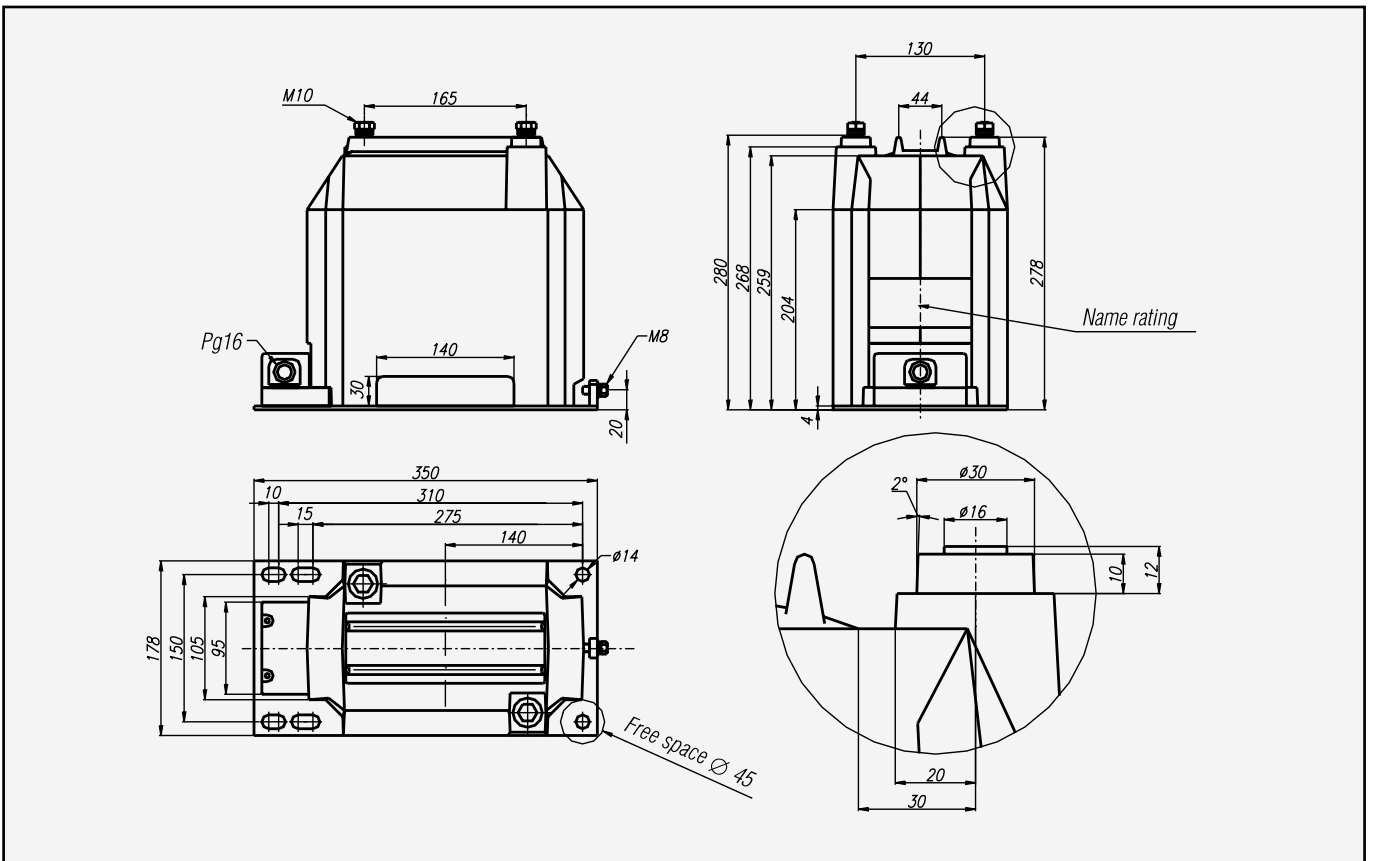
**UMZ 24-1P (for UniSafe)**



UMZ 12 or UMZ 17

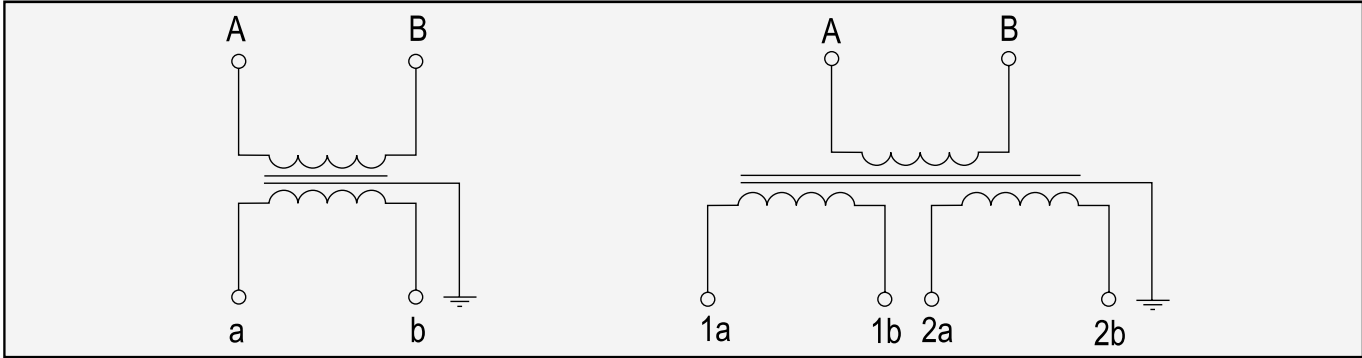


UMZ 24

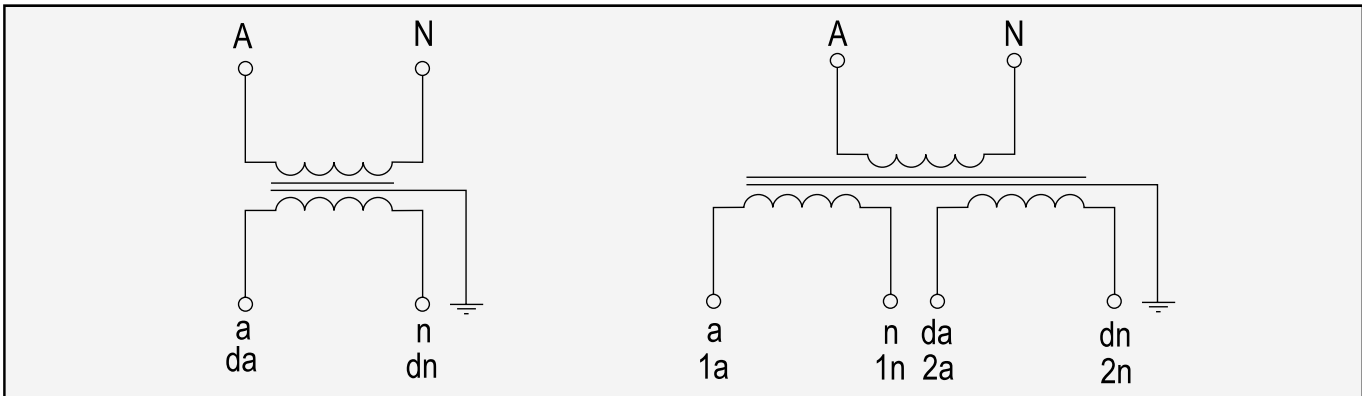


# ELECTRICAL DRAWINGS

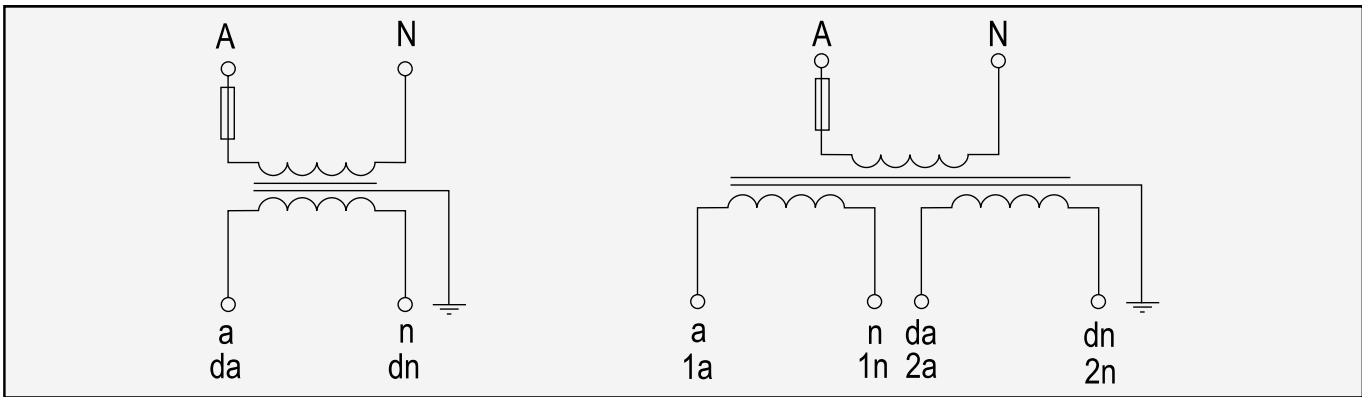
## Voltage Transformers UMZ 12; UMZ 17; UMZ 24



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