

Power engineering



Catalogue card

UR 90

RESEARCH NETWORK
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TELE AND RADIO RESEARCH INSTITUTE





The device can be used with a 50 or 60 Hz grid.



The device was manufactured in conformity with ROHS Directive 2011/65/EU.

Comments



The national and industry safety regulations must be observed during installation and operation.



If the transformer is improperly used or used not for its intended purpose, the user shall be fully responsible for any possible risks to safety and resulting damage.



Before connecting to a bushing or surge arrester, the voltage transformer must be covered with a suitable silicone grease.



Operating a damaged device may result in the improper functioning of the protected unit, which may result in risks to life or health.



Correct and trouble-free operation of the device requires proper transport, storage, assembly, installation and commissioning as well as proper operation, maintenance and service.



The installation and operation of the equipment should only be carried out by qualified personnel.



To maintain the measurement parameters, the connection cable delivered together with the transformer must be used and its length should not be altered.



The UR 90 voltage transformer is designed for supervision and monitoring in industrial facilities.



We reserve the right to introduce changes to the device.

Intended use

The UR 90 low-power voltage transformer is intended for use in an industrial environment for measuring voltage in MV networks equipped with bushings compliant with PN-EN 50180 and PN-EN 50181 standards, interface C.

The UR 90 is made in the form of a highly stable resistance divider with linear characteristics, in accordance with the standards: PE EN 61869-6: 2017-03, PN-EN IEC 61869-11: 2018-07. Therefore, a very high accuracy of the division coefficient, thermal stability in a very wide range of working temperatures and a wide measuring band have been achieved.

UR 90 is supplied with a special connection cable with a length of 3/5/8/10 m. The transformer has capacity compensation. It can operate with a load of 200 kΩ, 2 MΩ or 10 MΩ.

Assembly

The assembly of the transformer involves screwing it into a bushing or surge arrester by means of a hexagonal M24 holder. The connection cable with an M8 3-pin female connector is terminated with free wires.

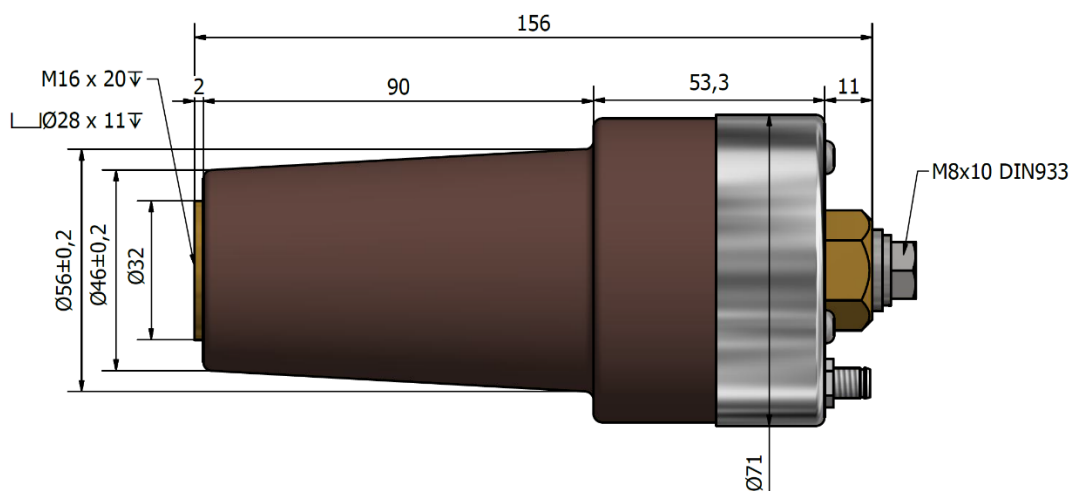
The transformer should be earthed using an M8 screw located in the hexagonal holder or using the attached earthing cable terminated with an M8 eye terminal.

The transformer is designed for installation only in bushings compliant with PN-EN 50180 and PN-EN 50181 standards, interface C.

Accessories:

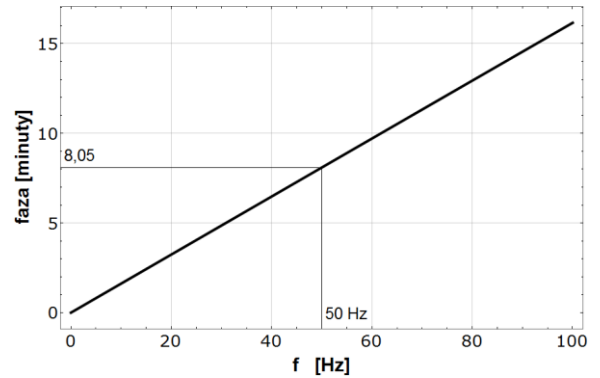
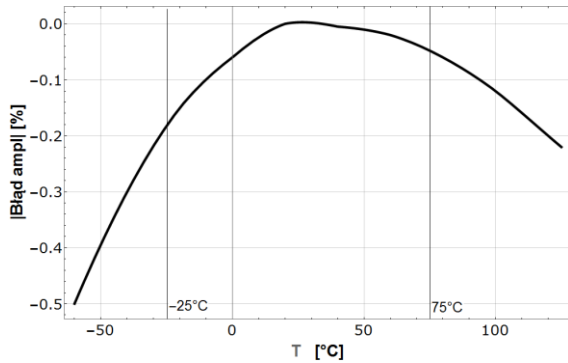
- WAD_41542 - Nexans installation kit;
- WAD_41543 - Cellpack installation kit;
- WAD_44954 - Raychem installation kit

Dimensions



Characteristics

Below we present the characteristics of voltage transformers showing the impact of temperature changes on the accuracy of the amplitude and the phase shift value measurements as a function of frequency.



Technical parameters

Input/output circuit

Rated primary voltage U_n	24/ $\sqrt{3}$ kV 20/ $\sqrt{3}$ kV 15/ $\sqrt{3}$ kV 10/ $\sqrt{3}$ kV 6/ $\sqrt{3}$ kV
Rated secondary voltage U_n	3,25/ $\sqrt{3}$ V
Insulation level	24 / 50 / 125 kV
Maximum operating voltage	24/ $\sqrt{3}$ kV
Rated voltage factor	1,2 U_n / cont. 1,9 U_n / 8h
Rated frequency	50/60Hz
Measuring frequency range	DC ... 2 kHz
Nominal load	200 k Ω , 300 pF 2 M Ω , 50pF 10 M Ω , 300 pF
Accuracy class	0.5/3P

Environmental conditions

Operating temperature	-25°C ... +75°C
Storage temperature	-40°C ... +85°C
Air humidity	no condensation of water vapour and no frost formation
Insulation class after installation	1
Installation category	III
Industrial environment class	B
Contamination degree	2

Connectors

Connector type	M8 3-pin male
Conductor type	With M8 connector, shielded, terminals 2 x 0.34..0.8 mm ²
Leads	a – brown n – black
Weight	900 g

Order specification

	A	B	C
Rated primary voltage U_n			
$U_n = 24/\sqrt{3}$ kV	24		
$U_n = 20/\sqrt{3}$ kV	20		
$U_n = 15/\sqrt{3}$ kV	15		
$U_n = 10/\sqrt{3}$ kV	10		
$U_n = 6/\sqrt{3}$ kV	6		
Cable length			
3 m cable		3	
5 m cable		5	
8 m cable		8	
10 m cable		10	
Nominal load			
200 k Ω , 300 pF			200
2 M Ω , 50 pF			2
10 M Ω , 300 pF			10

Example of an order: UR90-20-5-200-C

UR 90	low power voltage transformer UR 90
A-20	rated primary voltage U_n 20/ $\sqrt{3}$ kV
B-5	5 m connection cable
C-200	nominal load 200 k Ω , 300 pF



When placing an order, please specify the manufacturer of the bushing with which the transformer will be operated so that appropriate installation accessories can be supplied.



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