

# VPV1, VLA1, VPV

## OUTDOOR EPOXY RESIN VOLTAGE TRANSFORMERS

### HIGHEST VOLTAGE FOR EQUIPMENT UP TO 36 kV

#### Application

Voltage instrument transformers are used to insulate measurement and protection equipment from high system voltage and to step-down primary voltages to defined values, and thus provide standardized, useable voltage in a variety of power system measurement and protection applications.

VPV1 and VLA1 type transformers are single pole insulated while VPV type transformers are double pole insulated.

#### Description of Main Parts

Cores are made of cold-rolled grain-oriented magnetic steel sheets.

Primary and secondary windings are made of high quality enamelled copper wire.

Special multilayer insulating material is used as interlayer insulation.

The main insulation is a mixture of quartz flour and two-component resin. After cross-linking at high temperatures, the mixture takes on excellent insulating characteristics and required mechanical features. Mixture preparation and casting of the active part is performed using gravity and under vacuum. Surface of resin is resistant to all climate impacts and UV radiation.

High voltage terminals are made of stainless steel (Inox DIN/ISO A2). Other materials are available on request.

Secondary terminals are placed in a sealed box with two cable glands. They are M8 in size and are of stainless steel threaded bolt type. The protection level is IP55.

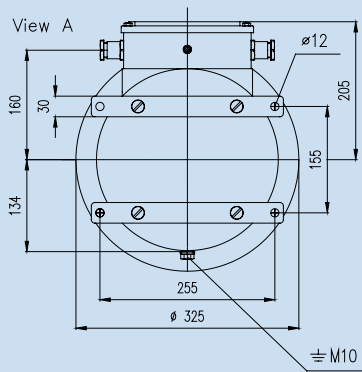
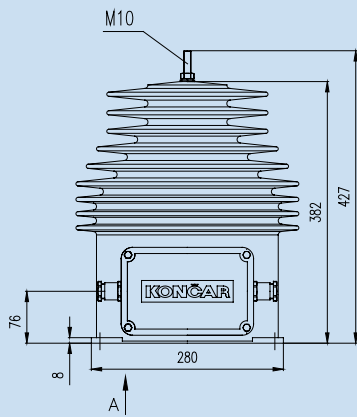
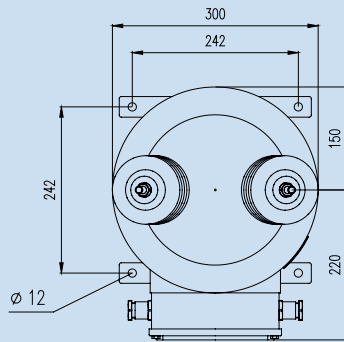
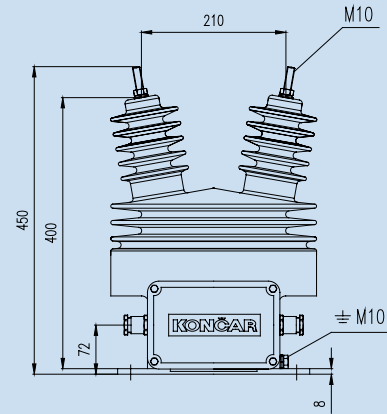
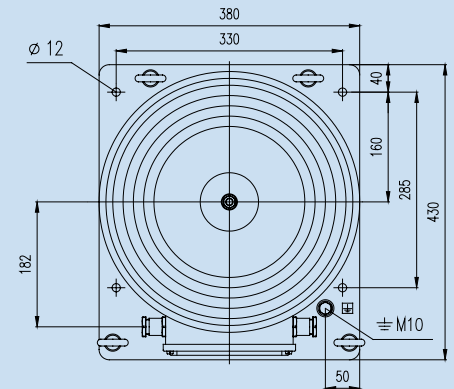
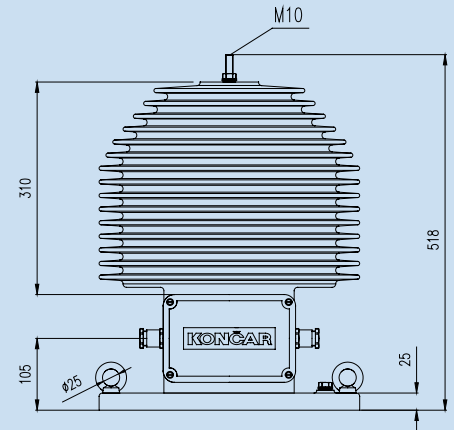
The transformers can contain one or two secondary windings for measurement or protection.

Single pole insulated voltage transformers also have an open delta winding (tertiary winding) for earth fault alert and ferroresonance damping. The ferroresonance damping resistor must be installed in the open delta winding of systems with insulated or indirectly grounded neutral point. The standard voltage for tertiary winding is 100/3 V or 110/3 V, and corresponding resistances are 11 or 13,5  $\Omega$ . The resistor's power rating is in correlation with earth fault duration. For a standard allowed duration of 8 hours a 900 W resistor is used, while for durations of 30 seconds a 300 W resistor is used.



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Končar - Instrument Transformers Inc.

**VPV1-38****VPV-24****VLA1-38****Technical Data**

Transformer type	VPV-24	VPV1-24	VPV1-38	VLA1-38
Highest voltage for equipment (kV)	24	24	38	38
Power frequency withstand voltage (kV)	50	50	70	70
Lightning impulse withstand voltage (kV)	125	125	170	170
Test voltage of secondary windings (kV)	3	3	3	3
Creepage distance (mm)	660	990	990	1140
Rated primary voltage (kV)	20 to 22	20/√3 to 22/√3	30/√3 to 35/√3	30/√3 to 35/√3
Rated secondary voltage (V)	100 or 110	100/√3 or 110/√3	100/√3 or 110/√3	100/√3 or 110/√3
Rated voltage of open delta winding (V)	-	100/3 or 110/3	100/3 or 110/3	100/3 or 110/3
Rated output of secondary windings				
For accuracy class 0.2 up to (VA)	30	30	30	30
For accuracy class 0.5 up to (VA)	75	75	75	75
For accuracy class 1 up to (VA)	180	180	180	180
Continuous thermal current of secondary winding (A)	6	6	6	6
Continuous thermal current of tertiary winding (A)	-	9	9	9
Weight (kg)	40	50	50	89

NOTE: given indicative values refer to our standard versions and vary depending on electrical, mechanical and environmental parameters specified in the customers' inquiry. The values are susceptible to change in the course of technical developments.

**KONČAR**

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**Quality Assurance**

Končar voltage transformers are designed in compliance with IEC, ANSI/IEEE, GOST, AS, IS, CAN/CSA, or any other relevant standard.

Product quality is assured through a certified quality standard, the ISO 9001. Končar - Instrument transformers Inc. is ISO 14001 and OHSAS 18001 certified, ensuring environmental and occupational health standards are met.