

APPLICATION

Current instrument transformers are used to step-down current to the specified values and provide standardized current levels in a variety of power monitoring, measurement and protection applications, while insulating the measurement and protection equipment from high system voltage.

PERFORMANCE

- U_m : 72,5 to 800 kV
- I_n : up to 6000 A
- Top-core design
- Short circuit: up to 100 kA (I_{dyn} : 250 kA peak)
- Secondary cores: up to 10
- All measuring, protection and transient performance accuracy classes available

MAIN FEATURES

- Primary and/or secondary transformation ratio selection. Single, Dual or Multi ratio options available
- Low leakage reactance and minimal primary winding losses
- High-quality paper-oil insulation
- Partial discharge free on power-frequency withstand voltage
- Hermetically sealed with a stainless-steel bellows oil expansion system
- Standard ambient temperatures from -35°C to $+40^{\circ}\text{C}$ (extreme temperature ranges upon request)
- High-quality porcelain or composite (silicone shed) insulator, depending on customer preference
- High level of seismic performance according to the latest revision of the IEEE 693 standard. Conformance to any national or regional standard also possible
- Minimum oil design and PCB free – environment friendly
- Internal arc protection
- Advanced corrosion protection for maritime, industrial or other demanding installation locations
- Maintenance free

Included Accessories:

- Terminal for dielectric dissipation factor (tg δ) measurement
- Oil level indicator
- Transport shock indicators (standard for $U_m \geq 362$ kV, optional for other voltage levels)
- Bolt or connector for transformer earthing
- Oil sampling valve
- Provisions for lifting

Optional Accessories:

- Surge arresters on primary or secondary windings
- Revenue metering secondary terminals can be sealed separately
- Capacitive tap for voltage reading or insulation monitoring
- Internal overpressure indicator
- Terminal box heaters

STANDARD CHARACTERISTICS AND DIMENSIONS

Our units are custom made according to customer specification and preference. The table below contains indicative values referring to our standard units with porcelain insulators. Any dimension or characteristic listed can vary, depending on electrical, mechanical and environmental parameters specified in the customers' inquiry. The values are susceptible to change in the course of technical development.

TYPE	HIGHEST VOLTAGE FOR EQUIPMENT [kV]	RATED POWER-FREQUENCY WITHSTAND VOLTAGE [kV]	RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE [kV]	DIMENSIONS [mm]				WEIGHT [kg]	OIL VOLUME [l]
				TRANSFORMER HEIGHT	HEIGHT OF THE PRIMARY TERMINAL	BASE MOUNTING	CREEPAGE DISTANCE		
AGU-72,5	72,5	140	325	1950	1500	□ 400	1815	280	60
AGU-123	123	230	550	2260	1720	□ 400	3075	295	70
AGU-145	145	275	650	2650	2200	□ 400	3625	350	85
AGU-170	170	325	750	2850	2350	□ 520	4250	420	95
AGU-245	245	460	1050	3700	3050	□ 520	6125	600	180
AGU-300	300	460	1050	3700	3050	□ 520	7500	620	180
AGU-362	362	510	1175	4750	4000	□ 650	9050	1000	260
AGU-420	420	630	1425	5400	4600	□ 650	10500	1150	320
AGU-525	550	680	1550	6000	5100	□ 650	13750	1450	430
AGU-765	800	975	2100	7730	6500	□ 750	20000	2850	900

AGU

CURRENT TRANSFORMERS
72,5 to 800 kV

KONČAR

Končar - Instrument transformers, Inc.



Quality assurance

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

Product quality is assured through a certified quality standard, the ISO 9001, covering all aspects of design, production and testing.

Končar - Instrument transformers Inc. is ISO 14001 and ISO 45001 certified, ensuring compliance with environmental and occupational health standards.

Our testing facilities are accredited according to the ISO/IEC 17020 and 17025 standards, with results traceable to any ILAC signatory worldwide.

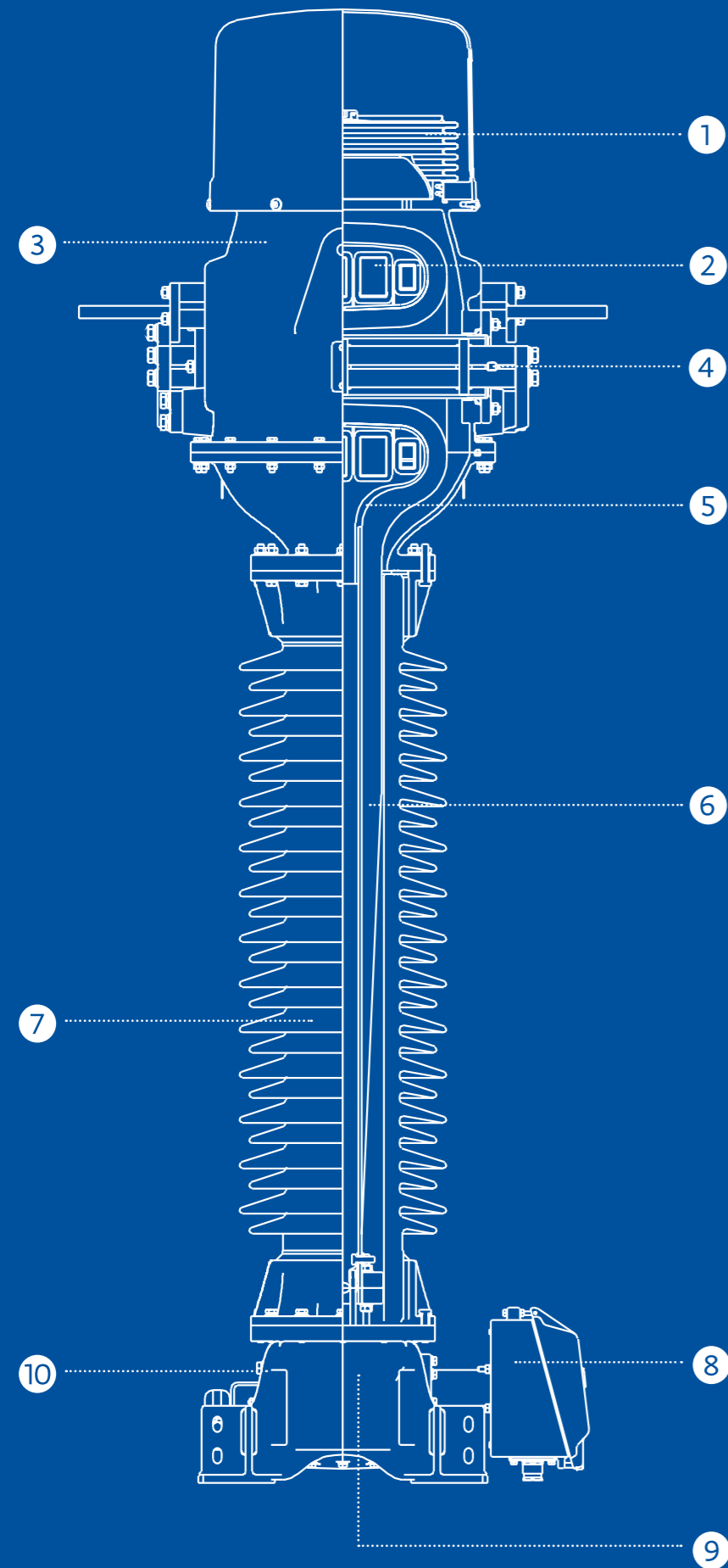


TRANSFORM EVERYDAY

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|--|---------------------------|
| 1. STAINLESS STEEL BELLOWS / OIL LEVEL INDICATOR | 6. MAIN INSULATION |
| 2. CORES WITH SECONDARY WINDINGS | 7. INSULATOR |
| 3. TRANSFORMER HEAD | 8. SECONDARY TERMINAL BOX |
| 4. PRIMARY WINDING | 9. BASE ASSEMBLY |
| 5. CORE ENCLOSURE | 10. OIL SAMPLING VALVE |



DESIGN

Primary Winding

The active part of the top-core current transformer comprises of wound toroidal cores and an aluminium or copper primary winding, with paper insulation in between.

The advantage of the top-core design lies in having the primary winding uniformly and symmetrically spread around the cores. Therefore, local saturation is avoided, and minimal leakage reactance is ensured. Additionally, the top-core design results in minimal primary winding losses.

Variable transformation ratios are achieved through reconnection on either the primary (HV) and/or secondary (LV) side. Reconnection on both sides is also possible.

Cores and Secondary Windings

The transformer can accommodate up to 10 cores of various sizes and materials.

Depending on their application and the required accuracy, cores can be made of cold-rolled grain-oriented magnetic steel, soft magnetic materials or nanocrystalline alloys. An adequate material selection also allows the transformer accuracy to be maintained over an extended current range, even exceeding the requirements specified in current international standards.

High-grade enamelled wire is uniformly wound around the core to achieve minimum leakage reactance, which in turn enables an accurate software computation of CT response in transient network conditions.

The cores and the secondary winding reside inside an aluminium cast enclosure, which is designed to safely lead the fault current to the ground without the danger of an arc occurring within the external insulator.

Paper-Oil Insulation

The high-voltage primary side is insulated from the low-voltage secondary side with oil-impregnated paper of high dielectric strength.

Conductive capacitive screens are inserted between layers of paper insulation to adequately distribute the high-frequency overvoltages. The paper insulation is dried in high vacuum and impregnated with high-grade inhibited or uninhibited, degassed and dried (moisture content of no more than 2 ppm) mineral transformer oil.

The paper-oil insulation is closed in and hermetically sealed from ambient air with stainless steel bellows, which also compensate for thermal oil expansion and serve as both an expansion mechanism and an oil level indicator.

All these features ensure excellent and long-lasting dielectric properties of the transformer's main insulation system.

We guarantee the oil used in our transformers does not contain polychlorinated biphenyls and terphenyls (PCB & PCT).

Insulator

As per request, external insulation can be either porcelain or composite. Porcelain insulators are made of the highest quality C130 aluminous porcelain, while the composite insulators are composed of a glass-fibre reinforced resin tube and silicone rubber sheds.

The insulator creepage distance is based on the ambient air pollution and is to be quoted in the inquiry.

Enclosure

The transformer enclosure consists of the base assembly, insulator, head, bellows and bellows cover.

The active part of the transformer is located inside the aluminium cast head, which is designed to achieve minimal oil volume.

The transformer base is made of either cast aluminium or high-quality steel, which is hot dip galvanized and additionally painted for long-lasting corrosion resistance. It contains the secondary terminal box, oil sampling and filling valve, lifting lugs, earthing terminals and an optional oil overpressure indicator. Several levels of corrosion protection can be specified, depending on environmental conditions at the installation site.

The size and type of the earthing terminals are to be defined in the inquiry. The standard connection is bolt type (M12 x 35) or a stranded copper conductor clamp.

Every transformer is subjected to a rigorous vacuum sealing test to ensure a perfect hermetical sealing of the entire enclosure.

The AGU current transformers have been seismically tested and they meet all the requirements of the latest version of the IEEE 693 Standard or equivalent seismic standards.

Terminals

The high-voltage primary terminal can be made of aluminium or galvanic corrosion-protected electrolytic copper. Standard secondary terminals are stainless-steel threaded bolts (size M8).

Other terminal types, materials and dimensions are available on request.

Secondary terminals, along with protective devices and other additional accessories, reside in the secondary terminal box. Cable glands or plates provide entry to the box and are designed according to customer specification and preference.

KEY VALUES

EXPERIENCE

More than 70 years of experience in the design, manufacture, testing and delivery of instrument transformers

PRESENCE

Over 100 countries across all continents

EXPERTISE

We are not only manufacturers, but also engineers and researchers. Turn to us for advice, recommendations and guidance

TAILOR-MADE DESIGN

We cater to any customer requirement. Your units are being built just for you

LONGEVITY

Our insulation system design philosophy, rigorous internal testing criteria and advanced quality control allow us to declare a 50-year service life of our units

SERVICE

Continuous after-sales services are always available for any questions or doubts you may have, both technical and commercial