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The HV DryShield® High Voltage Current Transformers:

The new state of the art in HV Current Transformers

Built on the proven concept of finely graded condenser insulation, our high voltage current transformers (CTs) patented core insulation is composed of an inert fluoro polymer cleverly layered between capacitance screens with an outer insulation exclusively featuring silicone rubber, compounded with a uniquely uniform core electric field and superior pollution and climate resistance.

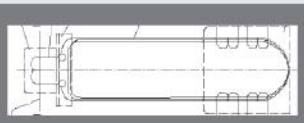
Beside the fact that they are paperless, these proprietary HV DryShield® CTs also differ from oil or gas insulated products by the fact that they don't feature any gap or open cavity in their structure. They are totally solid and dry.

As a result, there isn't any interstitial insulating filler in any open space between capacitive cores and outer insulators. Without critical seals the insulation structure is water resistant by design; and manufacturing processes are much simplified. This simplicity translates into robustness, reliability, safety and shorter lead times. Storage is also hassle free.

Consequently the HV DryShield® technology delivers four major improvements:

A totally dry type structure with superior electrical performance and a stress-free, linear electrical field profile along the primary core insulation

A simpler production process delivering consistant quality and customized designs



A construction based on a large margin and inert material system that is fully recyclable at end of life

A built-in core insulation condition sensing that can be read without any connection or crew intervention (option)

This provides our customers with key benefits:

BENEFITS

- A proven durability and dependability – 20 years in the field without a core failure reported
- Stable and sustained very low partial discharge (PD) and dielectric dissipation factor (tanδ) values
- Maintenance-free, explosion-free and environmentally-friendly operation in extreme conditions (thermal, climatic, pollution, mechanical) for long term reliability, lower cost of ownership and increased uptime
- Lower spare parts inventory thanks to shorter lead times and higher reliability
- No special long term storage conditions are required – products are stored in their crates
- Units that can be delivered with a continuous reading of the insulation's condition providing peace of mind to maintenance engineers

All products are developed and manufactured in an ISO 9001 certified plant. Quality is central to all aspects of our technologies and processes.

In short, the HV DryShield® technology uniquely reduces risks for utility operators along with their total cost of ownership.

MAIN CHARACTERISTICS

1. Performance

Highest voltage for equipment: **31.5-600 kV** **Rated frequency: 50, 60 Hz**

Rated primary current: **1-5000 A (up to 8000 A under specific conditions – please contact us)**

Rated secondary current: **5 A, 2 A, 1 A**

Rated output: **5-50 VA (B0.2-B14 for Canada standard)**

Accuracy class for measuring: **0.1, 0.2, 0.2S, 0.3, 0.5, 0.5S, 0.6**

Instrument security factor: **5, 10**

Accuracy class for relaying: **5P, 10P, PX, TPY (TPS, TPX, TPZ on demand)**

Accuracy limit factor for relaying: **5, 10, 15, 20, 25, 30, 40**

Secondary cores: **1-8**

All products can be delivered in full compliance with IEC 61869, IEEE C57.13 or CAN/CSA–C60044-1 standards.

Main electrical parameters

Highest voltage for equiptment U_m kV (r.m.s.)	Rated power-frequency withstand voltage (r.m.s.)	Rated lighting impulse withstand voltage (peak)	Rated switching impulse withstand voltage (peak)	Partial discharge (pC)	
				at U_m	at $1.2\ U_m/\sqrt{3}$
31.5	85	180	-	⩽30pC	⩽5pC
40.5	95	185	-		
72.5	140	325	-		
126 (123)	230	550	-		
145	275	650	-		
170	325	750	-		
252 (245)	460	1050	-		
315	460	1050	850		
362	575	1300	1050		
420	630	1425	1050		
550	800	1800	1300		

2. Environmental Condition

Places of operation: **indoor and outdoor**

Environmental temperature: **-50°C to 45°C**

Pollution level: **fully compliant to class IV environments (IEC category – very heavy pollution level)**

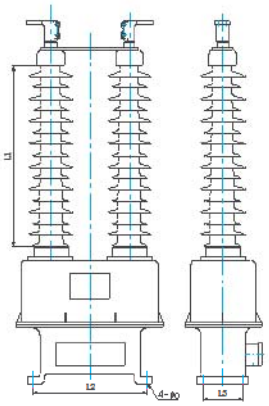
Altitude: **≤1000m above sea level (when higher than 1000m, specific design available, please contact us)**

MAIN CHARACTERISTICS

3. Maintenance: Maintenance is not required on HV DrySHield® dry type current transformers

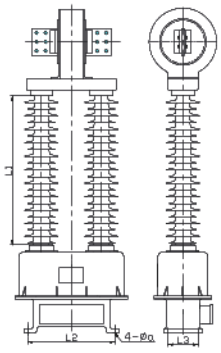
Standard Current Transformer LRGBJ

Model & specification	Highest voltage for equiptment U_m (kV)	Rated Current (A)	Dimensions (mm)			Creepage Distance (mm)	Weight (kg/lb)
			L1	L2	L3		
LRGBJ-27.5	31.5	100-2500	360	580	200	788	75/165
LRGBJ-35	40.5		400	580	200	1015	90/198
LRGBJ-66	72.5		675	580	200	1813	200/441
LRGBJ-110	126 (123)		990	580	200	3150	240/529
LRGBJ-145	145		1170	580	200	3625	300/661
LRGBJ-170	170		1270	580	200	4250	350/772
LRGBJ-220	252 (245)		2000	860	350	6300	440/970
LRGBJ-287	315		2400	940	430	7875	1350/2976
Primary terminal: 4-hole NEMA pad for rated current less than 2000A; 6-hole NEMA pad for rated current 2000-2500A							



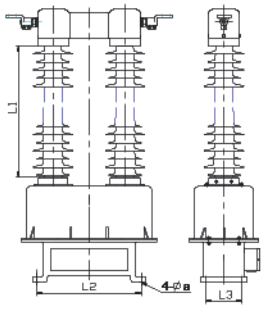
High Current Transformer LRGBJ-ZHD for Generation Stations

Model & specification	Highest voltage for equiptment U_m (kV)	Rated Current (A)	Dimensions (mm)			Creepage Distance (mm)	Weight (kg/lb)
			L1	L2	L3		
LRGBJ-ZHD-66	72.5	2500~8000	675	580	200	1813	250/551
LRGBJ-ZHD-110	126 (123)		990	580	200	3150	290/639
LRGBJ-ZHD-145	145		1170	580	200	3625	250/772
LRGBJ-ZHD-170	170		1270	580	200	4250	400/882
LRGBJ-ZHD-220	252 (245)		2000	860	350	6300	490/1080
Primary terminal: 6-hole NEMA pad							



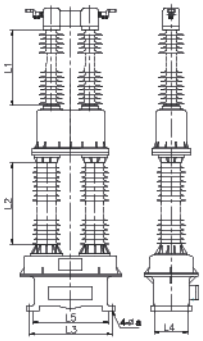
Unbalance Current Transformer LRGBJ for Capacitor Banks (very small current ratios)

Model & specification	Highest voltage for equiptment U_m (kV)	Rated Current (A)	Thermal short-time current (kA, 1s)	Dimensions (mm)			Creepage Distance (mm)	Weight (kg/lb)
				L1	L2	L3		
LRGBJ-35	40.5	1~10	1.5	400	580	200	1015	90/198
LRGBJ-66	72.5			675	580	200	1813	200/441
LRGBJ-110	126 (123)			990	580	200	3150	240/529
LRGBJ-145	145			1170	580	200	3625	350/772
LRGBJ-170	170			1270	580	200	4250	400/882
LRGBJ-220	252 (245)			2000	860	350	6000	550/1213
Primary terminal: 4-hole NEMA pad								



Cascade Current Transformer LRGBJ-ZH for Very High Voltages

Model & specification	Highest voltage for equiptment U_m (kV)	Rated Current (A)	Dimensions (mm)						Creepage Distance (mm)	Weight (kg/lb)
			L1	L2	L3	L4	L5	a		
LRGBJ-ZH-220	252 (245)	1200-2000	1000	1000	860	350	-	19	6300	600/1323
LRGBJ-ZH-300	362	1200-2000	1650	1650	860	350	-	19	9075	800/1764
LRGBJ-ZH-420	420	1200-2000	1650	1650	860	350	-	19	10500	1000/2205
LRGBJ-ZH-600	600	2000-4000	2200	2200	1270	700	830	26	15000	4000/8818
Primary terminal: 4-hole NEMA pad for rated current less than 2000A; 6-hole NEMA pad for rated current 2000-4000A										



4. Type Tests and Special Tests Include:

- Measurement of capacitance and dielectric dissipation under Um/√3 and 10kV, the dielectric dissipation factor (tanδ) is less than 0.004
- Short-time current tests:
  - Thermal short-time current (Ith): 50kA, 3s or 63kA, 1s
  - Rated dynamic current (Idyn): 150kA (peak value)
- Temperature rise test: 85K (class B)
- Mechanical test (see load class ratings below)
- Determination of errors
- Insulation and thermal stability test (36h according to standard but test 72h for 500kV)
- Temperature cycle test on LRGBJ-110: up to -50°C, 20 cycles

Highest voltage for equiptment U_m kV (r.m.s.)	Static Forces (N)	
	Load Class I	Load Class II
72.5-100	1250	2500
123-170	2000	3000
245-362	2500	4000
⩾420	4000	6000

5. Routine Tests

Before leaving the factory the following tests are completed on every single unit:

Primary Winding:

- Power-frequency withstand test
- Power-frequency withstand test between sections of primary
- Partial discharge measurement
- Capacitance and dielectric dissipation factor measurement
- Verification of terminal markings

Secondary Winding:

- Power-frequency withstand test
- Power-frequency withstand test between windings
- Inter-turn over-voltage test
- Determination of errors

RHM International considers all inquiries, worldwide.

For any inquiries about the products and their availability, please call or email us at:

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