

Manufactured by:



Instrument Transformers



- Dry-type (cycloaliphatic epoxy resin insulated), Outdoor Current and Voltage Transformers for all types of weather condition
- ANSI/IEEE or IEC Standards, depends on customer's preference
- Indoor Type also available

pazifik
power

www.ppi.ph

DESCRIPTION

RITZ (WTW) Outdoor Voltage Transformers are epoxy resin insulated. Primary windings as well as the cores with secondary winding(s) are moulded in one single process with epoxy resin that has been processed under vacuum. The secondary terminals are located in a sturdy terminal box can be sealed.



Primary terminals are optional inserts, bolts, terminal pads or clamp type connectors. RITZ (WTW) offers single and double pole insulated voltage transformers for Urn=12, 24 and 36 kV as well as a single pole insulated voltage transformer for Urn=72 kV.



THE OUTDOOR-EPOXY RESIN

The insulating material is a cycloaliphatic epoxy resin. This material has been used since 1967 for outdoor applications and service experience with this material is excellent for application in the cold Canadian winters as well as in the humid, sunny climate of Thailand, Philippines and Indonesia.

ROUTINE TESTS

The routine test comprises ratio error and phase angle-test, included and applied voltage test and partial discharge test. These tests are done in accordance with VDE 0414 or IEC 185 and IEC 44-4 except when other standards have been agreed upon.

RITZ (WTW) this name stands for a maximum in production and product quality of the total range of RITZ (WTW) products.



Concentrating on epoxy resin insulated instrument transformers and power transformers, RITZ (WTW) became a high-efficient manufacturer in this field and a recognized supplier of utilities and OEMs worldwide.

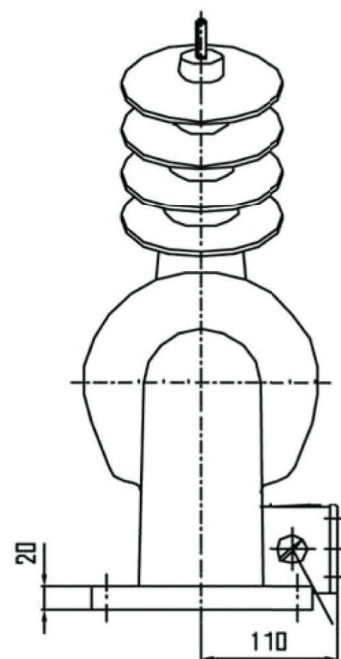
Qualified specialists are working in sales, engineering, production control, production and testing. Their work is supported by a modern, high, integrated computer system.

RITZ (WTW) uses exclusively epoxy resin as an insulating material. Bisphenol resin for indoor use as well as cycloaliphatic resins for outdoor use are processed in two different computer controlled plants. Appr. 1200 tons of resin can be processed per year in this way. RITZ (WTW) products qualified design sage in operation.

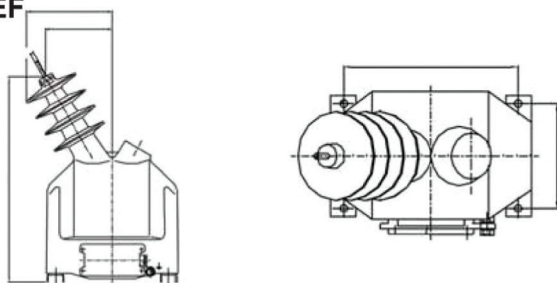




Type VEF



Type VEF

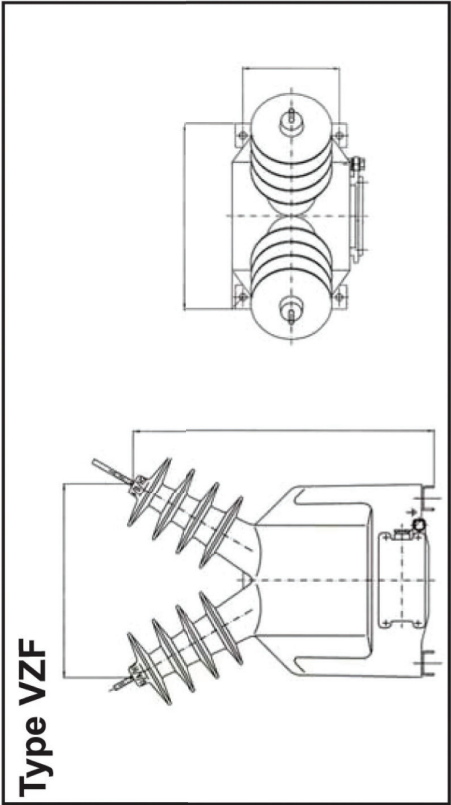


Type VEF Single pole insulated Voltage Transformer for Line to Ground connection				
Type	VEF 24 Series	VEF 24 Series	VEF 36 series	VEF 72.5 series
Voltage Level	15 kV	Up to 24 kV	Up to 36 kV	Up to 72.5 kV
Test Voltages/ BIL	110 kV	125 kV	200 kV	350 kV
Rated Primary Voltage	8,400	14,400	20, 125	40,250
Ratio	70:1	120:1	300/175:1	600/350:1
Rated Secondary Voltage	120 V	120 V	115 V	115 V
Thermal Burden per Coil	690 VA	690 VA	750 VA	690 VA
Accuracy class (ANSI)	0.3 W, X, Y	0.3 W, X, Y	0.3 W,X,Y	0.3 W, X, Y
Frequency	60 Hz	60 Hz	60 Hz	60 Hz
Weight (approx)	35.3 kg	35.5 kg	51 kg	240 kg
Creepage	745 mm	745 mm	900 mm	2,786 mm
Height, H (approx)	490 mm	490 mm	622 mm	1,462 mm
Installation	Outdoor/Horizontal or Vertical mounting	Outdoor/Horizontal or Vertical mounting	Outdoor/ Horizontal or Vertical Mounting	Outdoor / Horizontal Mounting
Fixing dimensions, A x B	270 x 160 mm	270 x 160 mm	270 x 200 mm	175 x 300 mm

Designation: W= 12.5 VA M = 35 VA Z = 200 VA

 X= 25.0 VA Y = 75 VA ZZ = 400 VA

Note: The above technical specifications are only the typical technical specifications of RITZ (WTW) Voltage Transformers. Voltage Transformers with different rating can be manufactured according to customer's specifications.



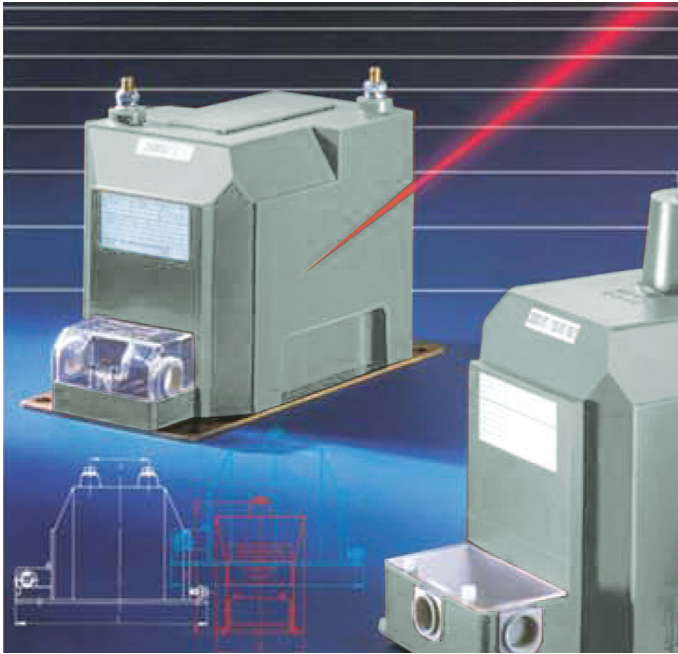
Type VZF Double pole insulated Voltage Transformer for Line connection			
Type	VZF 24 series	VZF 24 series	VZF 36 series
Voltage Level	15 kV	Up to 24 kV	Up to 36 kV
Test Voltages/ BIL	110 kV	125 kv	200 kV
Rated Primary Voltage	14,400 V/ 8,400 V	24,000 V/ 14,400 V	20,125 kV
Ratio	120/ 70:1	200/ 120:1	300/ 175:1
Rated Secondary Voltage	120 V	120 V	115 V
Thermal Burden per Coil	400 VA	690 VA	750 VA
Accuracy class (ANSI)	0.3 W, X, Y	0.3 W,X, Y	0.3 W, X, Y
Frequency	60 Hz	60 Hz	60 Hz
Weight (approx)	37 kg	37 kg	53 kg
Creepage	785 mm	785 mm	≥ 900 mm
Height, H (approx)	490 mm	490 mm	490 mm
Installation	Outdoor / Horizontal or Vertical Mounting	Outdoor/ Horizontal or Vertical Mounting	Outdoor/ Horizontal or Vertical Mounting
Fixing dimensions, A x B	270 x 160 mm	270 x 160 mm	270 x 160 mm

Designation:	W = 12.5 VA	M = 35 VA	Z = 200 VA
	X = 25.0 VA	Y = 75 VA	ZZ = 400 VA

Note: The above technical specifications are only the typical technical specifications of RITZ (WTW) Voltage Transformers. Voltage Transformers with different rating can be manufactured according to customer's specifications.

DESCRIPTION

RITZ (former WTW) – Outdoor Current Transformers are cast resin insulated. Primary winding as well as the core(s) with secondary winding moulded in one single process with epoxy resin which has been processed under vacuum. The secondary terminals are located in a sturdy terminal box made of cast aluminum. For metering transformers this terminal box can be sealable. Primary terminals are optionally inserts, bolts, terminal pads or clamp type connectors. RITZ (WTW) offers three types of transformers depending on their application. The types are described in the following.



OUTDOOR EPOXY RESIN

The insulating material is a cycloaliphatic epoxy resin. This material has been used since 1967 for outdoor applications and service experience with this material is excellent for application in the cold Canadian winters as well as in the humid, sunny climate of Thailand, Indonesia and Philippines.

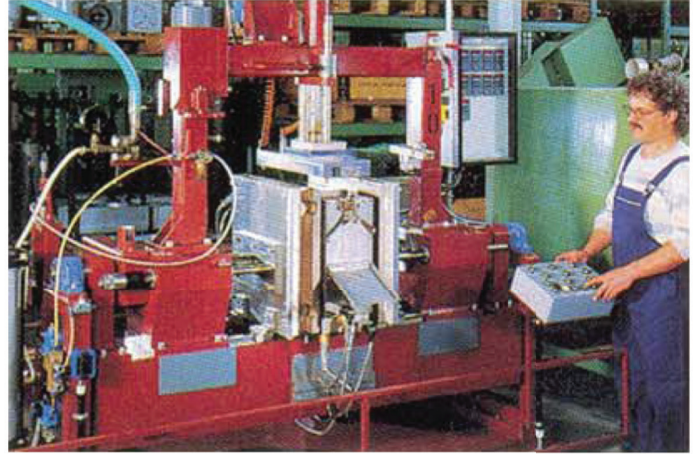
ROUTINE TESTS

The routine test comprises ratio error and phase angle-test, induced and applied voltage test and partial discharge test. These tests are done in accordance with VDE 0414 or IEC 185 and IEC 44-4 except when other standards have been agreed upon.



TYPE GIFK

Single core Current Transformer, low rating for metering or protection purposes. A primary reconnection 1:2 is available (up to 2 x 300A).



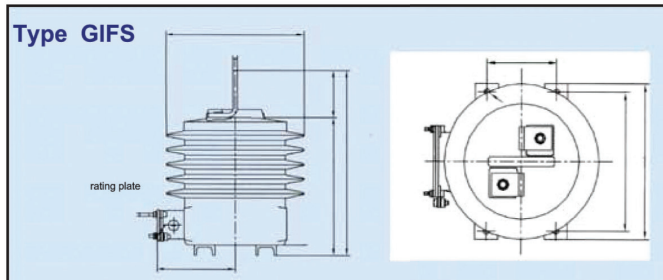
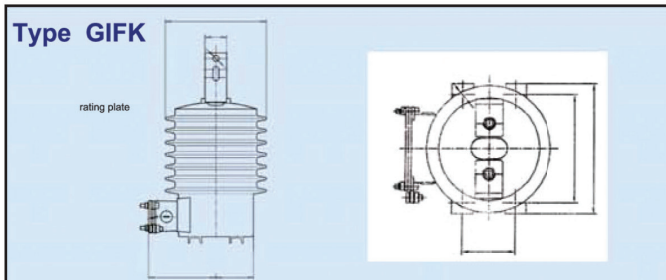
TYPE GIFS

Double core Current Transformer for metering and protection purposes and rated currents up to 1250 Amps. A primary reconnection 1:2 is available (up to 2 x 300 A).



TYPE GIF

Current transformers with a large housing capacity for high rating protection cores and for currents up to 3000 A. The cores of this transformer are located in the top. A primary reconnection 1:2 is available. The secondary terminals of multi-ratio windings may be located in two terminal boxes.



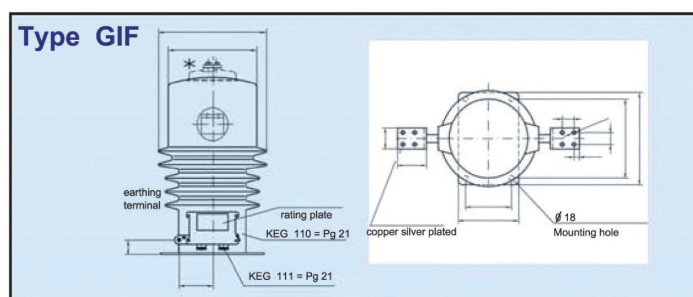
Metering Cores:

B-0.1 $\approx$ 2.5 VA
 B-0.2 $\approx$ 5.0 VA
 B-0.5 $\approx$ 12.5 VA
 B-0.9 $\approx$ 22.5 VA
 B-1.0 $\approx$ 25.0 VA
 B-1.8 $\approx$ 45.0 VA
 B-2.0 $\approx$ 50.0 VA



Protection Cores:

C100 $\approx$ 25 VA
 C200 $\approx$ 50 VA
 C400 $\approx$ 100 VA
 C800 $\approx$ 200 VA



Technical Specification for RITZ (WTW) Dry-type Current Transformers

	GIFS-Double Core		GIF-Multi Core		
Type	GIFS-15/24	GIFS-36	GIFK-15/24	GIF-36	GIF-69
Voltage	15/24 kV	36 kV	15/24 kV	36 kV	72.5 kV
B.I.L.	110/125 kV	200 kV	110/ 125 kV	200 kV	350 kV
Rated Current	Up to 1,250 Amperes		Up to 3,000 Amperes		
Ith/ Idyn	100/250 X IN, maximum 100/ 100 kA		100/250 X IN, maximum 100/ 100 kA		
Cores	Depending on the housing capability of the CT-frame and ratio: 4-cores is the standard up to 5 cores on request		Depending on the housing capability of the CT-frame and ratio: 3-cores is the standard up to 5 cores on request		
Frequency	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Weight	40 Kg	60 Kg	24 Kg	60 Kg	190/240 Kg
Creepage	575 mm	926 mm	446 mm	926 mm	2150 mm
Height (approx.)	355 mm	439 mm	449 mm	439 mm	1462 mm
Diameter (approx.)	335 mm	335 mm	235 mm	335 mm	450 mm
L at 1250/ stud (approx.)	300 mm	300 mm	560 mm	300 mm	660/760 mm
L at 1250/ terminal pad (approx.)	404 mm	404 mm	640 mm	404 mm	740/840 mm
L2 at 3,000 A (approx.)	640 mm	690 mm	640 mm	690 mm	740/840 mm
Fixing dimension (approx.)	150 x 300 mm	150 x 300 mm	100 x 200 mm	150 x 300 mm	175 x 300 mm

Note: The above are just the typical specifications of RITZ (WTW) Current Transformers with different ratings can be manufactured according to customer's specifications.

Extended Range Current Transformer (ERCT)

How much income is your company losing over “INCORRECTLY SIZED CURRENT TRANSFORMERS?”

PROBLEM

For primary metered customers, it is common for the load during off peak hours and weekends to be 5% or less of what is rated current of the CT is. If the load is 5% of the rated current CT, what’s the accuracy of the CT at that point? UNDEFINED... You don’t know. The fact is that as the current gets lower, most CT’s ratio drifts more and more negative. That’s more and more in your customer’s favor, or in other terms, less and less income for your utility. At currents lower than 5% of rated current, the accuracy of most CT’s can be 1% to 3% or even worse.

SOLUTION

Clearly, if you want better performing CT’s you need to buy units designed to outperform the ANSI/IEEE metering class of 0,3. To answer this metering challenge, WTW has developed an Extended Range Current Transformer for applications at 3kV up to 69kV. The designated CT has an accuracy rating of 0, 15% for standard burden up to B 1,8. The accuracy rating is 150% of rated current.

Calculation Example

Here’s an example of how income can be increased by applying the ERCT to a typical metering point.

Load Profile

2242 kW (100) for 16 hours on weekends.
224 kW (10A) for 8 hours on weekdays and on weekends.

Rating of Service Transformer:

5 MW (200 A max.)

Existing CT Rating:

200/5 A, 0, 3 B1, 8, RF 1, 5

System:

4 wire, 3-phase, 14400 V

Price of Energy

Euro 0, 08/ kWh

ADVANTAGE

According to ANSI/IEEE, the class 0,3 defines the accuracy from rated current (200 A in this case) to the rating factor (1, 5 300 A in this case) to be 0.3% at 100% of the rated current and then 0,6% accuracy at 10% of the rated current (20 A in this case). Since the load of 10 A is below any defined level for the ANSI metering class, it can be assumed that the



CT error is 1% to the customer’s favor which is extremely conservative.

Since most CT errors at the rated currents and below are negative ratio errors (the customer’s favor), for the times when the customer load is 100 A, the ERCT would offer an accuracy improvement of 0, 45% (0,6%-0, 15%) and an improvement of 0, 85% (1%-0, 15%) when the load is at 10 A. Working out the math, the ERCT could allow a utility to accurately bill for an additional 50,682 kWh per year, which corresponds to approximately Euro 4,054 per year added revenue.

STOCK-ADVANTAGE

Another advantage of the ERCT is that it allows a utility to standardize on one-possible two-metering CT designs per voltage class. Most medium-to-large sized utilities stock many different ratio CT’s for each voltage class they have to service. By standardizing on one or two designs per voltage class, the utility can slash the total money held in inventory, while at the same time, improving the overall accuracies of all metering installations.

It’s that simple!

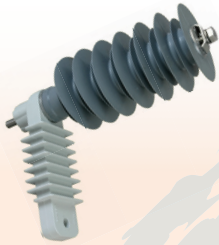
Whether you’re out to cut inventory expenses or improve the quality of your primary metered loads or both, WTW-Extended-Range CTs are for you.

Comparison of Limits of Current Error for different Standards

Ir%	Accuracy ANSI 0, 3	Accuracy IEC 0, 2s	Accuracy IEC 0, 1	WTW ERCT (36...69kV)	WTW ERCT (15...24kV)
150%	x	x	x	0, 15%	0, 30%
120%	x	±0, 2%	±0, 1%	0, 15%	0, 30%
100%	±0, 3%	±0, 2%	±0, 1%	0, 15%	0, 30%
20%	x	±0, 2%	±0, 2%	0, 15%	0, 30%
10%	±0, 6%	x	x	0, 15%	0, 30%
5%	x	±0, 35%	±0, 4%	0, 15%	0, 30%
1%	x	±0, 75%	x	0, 15%	0, 30%

x= undefined

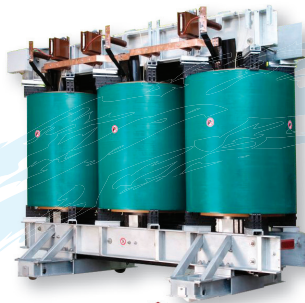
DISTRIBUTION EQUIPMENT



ENSTO

Surge Arrester

Distribution Type Surge Arrester in polymeric housed gapless design up to 36 kV

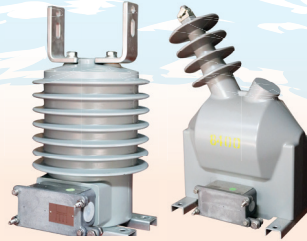


RITZ

Instrument Transformers

Dry-type Cast Resin Transformers

Glass Fibre Reinforced Vacuum Technology (GVT) up to 36 kV and capacity up to 30 MVA



RITZ

Instrument Transformers

Instrument Transformers

Indoor/Outdoor Current and Potential Transformers from 15kV up to 69kV



SCADA FLEX

Substation Automation System

Solution package for system integration, automation and energy management



ORMAZABAL

Focus on Medium Voltage

Medium Voltage Switchgears

Hermetically sealed and SF6 Insulated Compact Switchgear Voltage rating up to 36 kV and current rating up to 2,500 A



ORMAZABAL

Focus on Medium Voltage

Organic Transformer

ORGANIC transformers with biodegradable dielectric with a power range from 25kVA to 5MVA



Ingeteam

Spain

Protection Relay

Complete Protection Solutions Control and Measurement



Turnkey Substation

Design construction and energization of substation up to 500 MVA

Efficient Electricity Solutions

PPI Pazifik Power, Inc. (PPI) is a company with more than twenty (20) years of successful operation in the Philippines.

Over the years, PPI has developed and actively supplied an extensive and full power line of products and services from the best manufactures in Europe. Among its most sought top-of-the-line products are: Turnkey projects in the supply of substations with rated voltage of up to 230kV, electricity meters, meter test equipment, instrument transformers, power transformers, disconnectors, fault indicators, surge arresters, switchgears, oil testers, cable diagnostics, batteries, harmonic filters, and automation systems among others.

PPI's commitment is to establish closer customer relationship to understand its customers' power solution requirements. More importantly, PPI's cutting edge is its high quality, durable and innovative power solution equipment coupled with its unparalleled delivery of reliable on-time service performance by its seasoned professional Electrical Engineers.

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