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Product Catalog
Transformers and Metering Solutions

Rymel

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RELIABLE ENERGY TRANSFORMATION SOLUTIONS

RYMEL Ingeniería Eléctrica S.A.S. is a Colombian company with 48 years of experience in the design and manufacturing of equipment for energy transformation and measurement.

With a specialized production plant and a team of more than 400 professionals, RYMEL offers a comprehensive product portfolio that includes conventional transformers, CSP units, pad-mounted, dry-tpe, resin-encapsulated transformers, and CTs and PTs for low and medium voltage.

All products meet strict international standards and are supported by ISO 9001, ISO 14001, ISO 45001, BASC, and UL certifications, ensuring quality, safety, and reliability.

This catalog compiles the technical datasheets of our main products, offering clients a clear and practical tool for informed decision-making.

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CONVENTIONAL AND CSP TRANSFORMERS

Conventional and CSP transformers are essential in medium voltage power networks, serving both residential and industrial areas. Installed outdoors on poles or substation floors, they feature special bushings for overhead line connections. Immersed in dielectric oil, these transformers efficiently dissipate heat while providing excellent insulation.

Rymel's transformers feature high-quality steel tanks, coated with durable paint to ensure longevity, especially in outdoor or harsh environments.

With over 40 years of industry experience, Rymel offers a complete line of transformers designed with safety as a priority. Certified manufacturing processes guarantee reliability and adherence to quality standards, meeting ISO and BASC requirements. These transformers are crafted using advanced technology and high-quality materials to provide reliable solutions that meet customer needs.

These CSP transformers offer exceptional security and reliability for electrical networks. They are designed with built-in protection elements from the start, eliminating the need for additional protective devices and reducing installation costs. Unlike conventional transformers, self-protected models are equipped with features that isolate the transformer from the network in the event of a failure. They provide protection against overvoltages, overloads, and external short circuits, and include a pilot light that activates during switch operation or in the event of a temporary overload.

For more information, please contact a Rymel representative.

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FEATURES

TECHNICAL CHARACTERISTICS		
PHASE TYPE	**SINGLE PHASE**	**THREE PHASE**
POWER	From 5 kVA up to 500 kVA	From 15 kVA up to 5000 kVA
PHASES	1	3
VOLTAGE CLASS	Up to 46 kV	
BIL	Up to 250 kV	
WINDING MATERIAL	Aluminum or copper	
COOLING CLASS	ONAN-ONAF KNAN - KNAF	
FREQUENCY	60 / 50 Hz	
TAP CHANGER	± 2, 2.5% or according to customer requirements.	
TEMPERATURE RAISE	Typically 65/65°C, or according to customer requirements.	
K FACTOR	K1, K2, K4, K6, K9, K13, K20 or according to customer requirements.	
TYPE OF EFFICIENCY	A, B, C or D; DOE	
TYPE OF INSULATION	Mineral or Biodegradable.	
TANK	Manufactured with Cold Rolled and Hot Rolled sheet steel with a design that allows it to withstand internal pressure and mechanical stress, or stainless steel.	
PAINT SYSTEM	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive environments.	
GASKET	Highly durable and compatible with dielectric oil, to guarantee the life of the equipment.	
ACCESORIES	- High and low tension bushings - Overpressure valve - Oil level: Inside marking or sight glass - Recirculation, drainage and sampling valve - Neutral and tank grounding - Post lifting and fixing device - Nameplate made of high-strength anodized aluminum - Tap changer	
ADITIONAL ACCESORIES	- Low voltage or high voltage thermomagnetic switch. - Internal fuse on the high voltage side. - Fault indicator pilot light. - Internal fault detector device (IFD) - Operating lever for opening and closing. - Surge arresters (optional).	
STANDARD	International IEC 60076 and IEEE C57.12.00	

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PAD MOUNTED TRANSFORMERS

Pad-mounted transformers, or pedestal transformers, are used in underground distribution systems, commonly in residential, commercial, and industrial settings. The Rymel brand's transformers are known for their high safety and reliability, featuring built-in connection, protection, and maneuver elements. They come in three-phase or single-phase configurations.

For safety, they have high-voltage dead-front type terminals and are housed in cabinets with sealed compartments, equipped with doors and locks for both low-voltage and high-voltage sides. Rymel's transformers meet various standards, including IEEE and NTC standards, thanks to their high-quality materials and certified manufacturing processes.

ELEMENTS OR PROTECTION AND MANEUVER

- Removable and interchangeable Bay-O-Net type fuses protect against extreme overloads and external short circuits in the secondary network.
- Built-in limiting fuses safeguard the primary network from high current faults in the windings.
- DPS or elbow-type surge arresters shield the equipment against network-induced overvoltages.
- Breaker with opening capacity under load enables switching operations to be carried out safely.

FEATURES

TECHNICAL CHARACTERISTICS		
PHASE TYPE	**SINGLE PHASE**	**THREE PHASE**
POWER	From 25 kVA up to 500 kVA	From 30 kVA up to 5000 kVA
PHASES	1	3
VOLTAGE CLASS	Up to 36 kV	
BIL	Up to 200 kV	
WINDING MATERIAL	Aluminum or copper	
COOLING CLASS	ONAN-ONAF KNAN - KNAF	
FREQUENCY	60 / 50 Hz	
TAP CHANGER	± 2, 2.5% or according to customer requirements.	
TYPE	Radial or Loop Feed	
TEMPERATURE RAISE	Typically 65/65°C, or according to customer requirements.	
K FACTOR	K1, K2, K4, K6, K9, K13, K20 or according to customer requirements.	
TYPE OF EFFICIENCY	Class A, B, C or D; DOE	
TYPE OF INSULATION	Mineral or Biodegrable	
TANK	Manufactured with cold rolled and hot rolled sheet steel with a desing that allows it to withstand internal pressure and mechanical syress. Or with stainless steel.	
PAINT SYSTEM	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive enviroments.	
GASKETS	Highly durable and compatible with dielectric oil, to guarantee the life of the equipment.	
ACCESSORIES	- Dead front type high tension bushings (wells, inserts, elbows). - Low tension bushings - Support for parking hubs in AT - Overpressure valve - Oil level gage - Drain valve with sampling mechanism - Ground connector - Lifting and fixing devices - Nameplate made of high-strength anodized aluminum - Tap switch - High and low voltage cabinets with doors and locks - Thermometer, pressure-vacuum gauge	
STANDARD	IEEE C57.12.34, IEEE C57.12.28, IEEE C57.12.29, IEEE C57.12.38	

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SUBMERSIBLE TRANSFORMERS

Rymel's line of occasionally submersible transformers delivers highly reliable solutions for underground installations, such as vaults, that are exposed to flooding. Each unit features a tank constructed from high-quality stainless steel, coated with specialized electrostatic paint, ensuring exceptional durability and corrosion resistance in harsh, moisture-prone environments.

To support safe and efficient operation under flood conditions, these transformers are equipped with dead-front bushings and strategically positioned protection and maneuvering components on the tank lid. This design allows for surface-level operations using a hot stick, reducing the need for personnel to access submerged or hazardous areas.

Ideal for urban underground distribution networks, coastal or flood-prone regions, and any application requiring high resilience and operational safety, Rymel's submersible-ready transformers are engineered to support the future of modern electrical infrastructure.

For more information, please contact a Rymel representative.

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FEATURES

TECHNICAL CHARACTERISTICS		
PHASE TYPE	**SINGLE PHASE**	**THREE PHASE**
POWER	From 25 kVA up to 500 kVA	From 30 kVA up to 2500 kVA
PHASES	1	3
VOLTAGE CLASS	Up to 36 kV	
BIL	Up to 150 kV	
WINDING MATERIAL	Aluminum or copper	
COOLING CLASS	ONAN - KNAN	
FREQUENCY	60 / 50 Hz	
TAP CHANGER	± 2, 2.5% or according to customer requirements.	
TYPE	Radial or Loop Feed.	
TEMPERATURE RAISE	55 °C / 55 °C	
TYPE OF EFFICIENCY	Class A, B, C or D; DOE	
TYPE OF INSULATION	Mineral or Biodegradable.	
TANK	Manufactured with cold rolled and hot rolled sheet steel with a desing that allows it to withstand internal pressure and mechanical syress. Or with stainless steel.	
PAINT SYSTEM	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive enviroments.	
LID	Lid made of welded or bolted stainless steel, with a design that prevents the accumulation of water on its surface.	
ACCESSORIES	- Bushings of the dead front type, weldable well type. - Low bushings with threaded stud. - Support for parking hubs. - Low Voltage Terminal Connectors - Special overpressure valve for submersible equipment. - Oil level gauge. - Drain valve. - Grounded. - Lifting and fixing devices. - Nameplate made of high-strength anodized aluminum. - Thermometer - Tap changer.	
ELEMENTS OF PROTECTION AND MANEUVER	- Removable and interchangeable Bay-O-Net type fuses, which protect equipment against extreme network failures and overloads. - Built-in limiting fuses that protect the primary network from high current faults in the windings. - DPS or elbow-type overvoltage arresters, which protects the equipment against overvoltages produced in the network. - Disconnector with opening capacity under load, which allows maneuvering operations.	
STANDARD	NTC 4406, IEEE C57.12.24, IEEE C57.12.23, RETIE.	

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NETWORK VAULT-TYPE TRANSFORMER

Network vault-type transformers are primarily used in underground distribution networks, where they may be exposed to adverse conditions such as moisture and flooding. Rymel's submersible network-type distribution transformers are designed in compliance with NTC 380 and IEEE C57.12.40, ensuring reliable and safe energy distribution even in demanding environments.

ADVANTAGES

- Submersible transformer.
- Tank made of corrosion-resistant, lighter stainless steel.
- Dielectric material is either mineral or vegetable oil.
- Panel-type radiators with robust construction, low maintenance requirements, and minimal risk of leakage.
- Chamber for disconnecting cables.
- Network type primary disconnector.
- Dead-front primary terminals.

ACCESSORIES

- Taps changer for de-energized operation.
- Lifting devices.
- Nameplate.
- Grounding.
- Handhole: inspection or maintenance
- Network type disconnecting switch.
- Oil level indicator with or without contacts.
- Temperature indicator with or without contacts.

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FEATURES

TECHNICAL CHARACTERISTICS				
TYPE		Submersible type Network		
MODEL		TSN-15		
TERMINAL TYPE		Dead front and submersibles		
DIELECTRIC		Mineral or Biodegradable		
SYSTEM		Three Phase		
POWER	kVA	750	500	300
FREQUENCY	Hz	60		
HIGH VOLTAGE				
VOLTAGE CLASS	kV	Up to 36		
RATED VOLTAGE	V	13200		
BIL, WAVE 1.2/50 µs primary	kV	Up to 150		
SPANNER MATERIAL		Aluminum or copper		
TAPS		5 positions (+2,-2), 2.5%		
SUPPORTED VOLTAGE (1min)	kV	34		
LOW VOLTAGE				
MAXIMUM VOLTAGE	kV	1.2		
NOMINAL VOLTAGE	V	214		
SPANNER MATERIAL		Aluminum or copper		
SUPPORTED VOLTAGE (1 min)	kV	10		
CONNECTION GROUP		Dyn5		
THERMAL CLASS		Ao		
COOLING		ONAN - KNAN		
INSTALLATION HEIGHT	m	1000		
TEMPERATURE RISE	°C	65		
APPROXIMATE DIMENSIONS				
A. WIDTH	mm	2123		
B. PROFUNDIDAD	mm	1010		
C.DEPTH	mm	1517		
TOTAL WEIGHT	kg	3861		
MANUFACTURING AND TESTING STANDARD		NTC 380, IEEE C57.12.40		

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DRY TYPE TRANSFORMERS

Rymel's line of dry transformers is synonymous with confidence and safety in the distribution of electrical energy for buildings, shopping centers, hospitals, and any location that demands high fire safety and low environmental impact. Manufactured with high-temperature, fire-resistant, and self-extinguishing materials, our transformers minimize the risk of fire and allow installations close to the load, improving system regulation and reducing low voltage losses.

With ISO 9001, ISO 14001, ISO 45001, and BASC certifications, and complying with NTC 3445, NTC 3654, IEC 60076-11, and RETIE standards, Rymel dry transformers ensure quality and advanced technology.

We offer three types of dry transformers:

- Dry transformers with encapsulated windings, class FT
- Dry transformers with open windings, class HT
- Dry transformers, Low-Low class H

CAST RESIN DRY-TYPE TRANSFORMER

Rymel's cast resin dry type transformers feature windings that are encapsulated in cycloaliphatic epoxy resin through a high-tech vacuum process. Once the resin hardens, it achieves high mechanical strength, enabling the equipment to withstand significant mechanical stresses.

These transformers, designed to operate at 36 kV with thermal class F, maintain their useful life even at high temperatures up to 155°C. The special characteristics of Rymel's encapsulated dry transformers allow their installation close to the load, improving system regulation and reducing losses in the low voltage line. For this reason, they are widely used in buildings, hospitals, subway tunnels, and other places that require a high level of fire safety.

The encapsulation of the internal dielectric materials of the windings ensures that they are not in contact with the environment, making these transformers extremely durable over time. These qualities, together with their high reliability and safety, translate into low operating and installation costs, minimal maintenance, and minimal environmental impact.

Choose Rymel's line of cast resin dry-type transformers for reliable, safe, and efficient power solutions.

CAST RESIN DRY-TYPE TRANSFORMER TECHNICAL CHARACTERISTICS	
POWER	Up to 2.500 kVA
VOLTAGE CLASS	Up to 36 kV
BIL	Up to 170 kV
OVERVOLTAGE	From 38 kV up to 170 kV
WINDING MATERIAL	Aluminum
COOLING CLASS	AN - AF
FREQUENCY	60 / 50 Hz
TAP CHANGER	5 positions ± 2, 2.5%
TEMPERATURE RAISE	100 °C
THERMAL CLASS	F (155°C)
K FACTOR	K1, K2, K4, K6, K9, K13, K20 or according to customer requeriments.
TYPE OF EFICIENCY	Class A, B, C, D
IRONWORK	Manufactured with Cold Rolled and Hot Rolled sheet steel with a design that allows it to withstand internal pressure and mechanical stress, or stainless steel
PAINT SYSTEM	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive environments.
TYPE OF INSTALATION	Indoor.
TYPE OF INSULATION	cycloaliphatic epoxy resin encapsulated windings.
ACCESSORIES	- Primary and secondary terminals. - Surge arresters. - Temperature controller with three PT100 sensors. - Scroll wheels. - Ground connector. - Lifting device. - Nameplate made of high-strength anodized aluminum. - Tap switch. - Forced ventilation system (optional at the request of the client). - Cabinet or protection cell type interior or exterior (optional at the request of the client).
STANDARD	NTC 3654, NTC3445, IEC 60076, IEEE Std C57.12.01 and RETIE
ADVANTAGES	- Fire resistant and self-extinguishing materials - Low noise, low loss magnetic core with dielectric coating - Space optimization - Minimum level of partial discharges

NOTE: They are offered without cell or enclosure.

DRY TYPE TRANSFORMER WITH OPEN WINDINGS CLASS H

Open dry transformers feature exposed high-voltage windings impregnated with dielectric varnish to protect them from environmental factors. Designed for thermal class H, they can withstand temperatures up to 180°C. These transformers are built with fire-resistant, self-extinguishing materials, minimizing fire risks during operation.

Rymel open dry transformers are specially designed to provide sufficient mechanical rigidity to endure short-circuit stresses. Additionally, they incorporate ventilation ducts for effective cooling and easy maintenance, either by vacuuming or blowing with dry air. Rymel's class H dry transformers offer highly reliable equipment with low installation costs and minimal environmental impact.

DRY TYPE LOW-LOW VOLTAGE CLASS H

Low-Low dry transformers are used for transforming voltages to low levels below 1.2 kV. They feature class H dielectric materials that are fire-resistant and self-extinguishing, withstanding temperatures up to 180°C.

Rymel's Low-Low transformers have a compact design with optimized dimensions for indoor installation. They include ventilation ducts for adequate cooling and easy maintenance through vacuuming or blowing with dry air. These transformers offer safe, compact solutions with low installation costs and reduced environmental impact.

DRY TYPE LOW - LOW VOLTAGE CLASS H

DRY TYPE TRANSFORMER WITH OPEN WINDINGS CLASS H

For more information, please contact a Rymel representative.

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TECHNICAL CHARACTERISTICS		
	OPEN WINDINGS CLASS H	**LOW-LOW VOLTAGE CLASS H**
POWER	Up to 1.500 kVA	Up to 500 kVA
VOLTAGE CLASS	Up to 15 kV	Up to 1.1 kV
BIL	Up to 60 kV	-
OVERVOLTAGE	-	Up to 3 kV
WINDING MATERIAL	Aluminum or copper	Aluminum or copper
COOLING CLASS	AN - AF	AN
FREQUENCY	60 / 50 Hz	
TAP CHANGER	± 2, 2.5% or according to customer requeriments.	± 2, 2.5%
TEMPERATURE RAISE	125 °C	
THERMAL CLASS	H (180°C)	
K FACTOR	K factor according to customer requeriments.	
TYPE OF EFFICIENCY	Class A, B , C, D; DOE	
IRONWORK	Manufactured with Cold Rolled and Hot Rolled sheet steel with a design that allows it to withstand internal pressure and mechanical stress, or stainless steel.	
PAINT SYSTEM	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive environments.	
TYPE OF INSTALATION	Indoor	
TYPE OF INSULATION	Open windings with dielectric varnish coating.	
ACCESSORIES	- Primary and secondary terminals. - Surge arresters. - Temperature controller with three PT100 sensors. - Scroll wheels. - Grounded. - Lifting device. - Nameplate made of high-strength anodized aluminum. - Tap changer. - Forced ventilation system (optional at the request of the client). - Cabinet or protection cell type interior or exterior (optional at the request of the client).	- Primary and secondary terminals. - Grounded. - Lifting device. - Nameplate made of high-strength anodized aluminum. - Tap changer. - Indoor type protection cabinet or cell. - External type protection cell (optional at the request of the client).
STANDARD	NTC 3654, NTC3445, IEC 60076, IEEE Std C57.12.01 and RETIE.	
ADVANTANGES	- Fire resistant and self-extinguishing materials. - Low noise, low loss magnetic core with dielectric coating. - Space optimization.	

For more information, please contact a Rymel representative.

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SWITCHGEAR BOXES

The Rymel brand switchgear line offers highly safe, insulated, and oil-cooled equipment for medium-voltage underground systems, excelling in sectionalizing operations under load.

Available in Pedestal and submersible types for single-phase and three-phase circuits, they feature control boxes with inputs, outputs, and multiple derivations.

Equipped with On-Off type disconnectors for easy open-close operations, Rymel brand control boxes have a durable outer surface resistant to aggressive environments. Terminals of the dead front type ensure no exposed energized parts, enhancing reliability and versatility for various medium voltage network applications.

SWITCHGEAR BOX

These type of switchgear are used in underground distribution systems, installed on a base or concrete slab called a pedestal and that have built-in control elements. The equipment has dead front type terminals, that is, it does not have exposed energized parts and is located inside a cabinet, with compartments sealed with a safety plate.

SWITCHGEAR SUBMERSIBLE TYPE

This switchgear is designed for underground installations prone to flooding. Its special surface and high IP protection degree enable it to operate underwater and withstand saline and aggressive environments. Terminals and operation mechanisms are conveniently located in the upper part of the tank for easy installation. Maneuvering operations can be performed using a pole from the surface to sidewalk level, even in flooded conditions.

For more information, please contact a Rymel representative.

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TECHNICAL CHARACTERISTICS		
	SWITCHGEAR BOX	**SWITCHGEAR SUBMERSIBLE**
POWER	200 a 600 A	
WAYS	Up to 6 ways	
PHASES	1 or 3	
VOLTAGE CLASS	Up to 36 kV	
BIL	Up to 200 kV	
WINDING MATERIAL	Copper	
TEMPERATURE RAISE	Typically 65/65 °C, or according to customer requirements.	65 °C
TYPE OF INSULATION	Mineral or Biodegradable.	
TANK	Manufactured with cold rolled and hot rolled sheet steel with a desing that allows it to withstand internal pressure and mechanical syress. Or with stainless steel.	
PAINT SYSTEM	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive enviroments.	
LID	Lid manufactured from carbon steel or stainless steel, either welded or bolted to the tank, featuring a sloped design that prevents water accumulation on its surface.	Lid made of welded or bolted stainless steel, with a design that prevents the accumulation of water on its surface.
GASKETS	Highly durable and compatible with dialectric oil, to guarantee thelife of the equipment.	-
ACCESSORIES	- Dielectric Dead Front Type High Tension Bushings. (Pozuelos and inserts or integral and premolded elbows). - Support for parking hubs. - Oil level gauge. - Recirculation, drainage and sampling valve. - Grounded. - Lifting and fixing devices. - Nameplate made of high-strength anodized aluminum. - ON/OFF disconnector of 200 or 600 AMP with opening capacity under load, which allows maneuvering operations .	
	- Overpressure valve. operable under load. - Cabinets with door and security plate.	- Overpressure valve.
STANDARD	IEEE C37.74-2014, IEEE C37.30.3-2018, IEEE 386-2016, IEC 62271-102, IEC 62271-103.	
TESTS	**STANDARDS**	
VERIFICATION OF DIELECTRIC PROPERTIES (BIL AND POWER FREQUENCY).	NTC 5110:2005 - IEEE C37.71	
VERIFICATION OF TEMPERATURE RISE	IEEE C37.71	
VERIFICATION OF MECHANICAL OPERATION	IEEE C37.71	
LEAKAGE TEST	NTC 3609:2021 - IEEE C37.71	

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LOW VOLTAGE CURRENT TRANSFORMER

Rymel designs and manufactures low-voltage current transformers (CTs). These devices reduce high current levels from the power grid to low, safe, and proportional levels that can be managed by measuring or protection equipment. They provide a nominal current signal of 5A with high accuracy and near-zero phase shift.

Technical Standards

Low-voltage current transformers comply with technical standards NTC 5933, NTC 2205, IEC 61869, and IEEE C57.13, offering an efficient and safe way to monitor the electric current of the grid. All low-voltage current transformers undergo routine tests in accordance with these standards, ensuring quality and compliance with the required technical specifications.

Test Procedures

- Non-disruptive voltage test at industrial frequency on primary terminals.
- Non-disruptive voltage test at industrial frequency on secondary terminals.
- Accuracy test.
- Label verification.
- Overvoltage test between windings.

Product Scope

Measurement: Connected to measuring equipment, they saturate under moderate overcurrents, protecting the meter from short-circuit currents.

Protection: They power relays or protection devices, maintaining proportionality and current ratio under overload conditions, ensuring the quick response of connected protection equipment.

LOW VOLTAGE BUSBAR CT

TECHNICAL SPECIFICATIONS
USE: Indoor
MAXIMUM OPERATING VOLTAGE: 0.72 kV
APPLICATION: Measurement or Protection
RATED FREQUENCY: 50 or 60 Hz
INSULATION LEVEL: 3 kV
INSULATION THERMAL CLASS: E

RATIO	ACCURACY CLASS	BURDEN (VA)
50:5	0.5, 0.5S and 1.	2.5
100:5		2.5 and 5
150:5		
200:5	0.2, 0.2S, 0.5, 0.5S,1, 5P, 10P.	2.5, 5, 10
300:5		
400:5		
500:5		
600:5		

* Consult with your trusted advisor if special technical specifications are required.

General Features:

- Transformer fixing bracket.
- Nameplate protected with transparent resin.
- Polarity marking on the housing.

FOR MEASUREMENT AND PROTECTION

TECHNICAL SPECIFICATIONS
USE: Indoor or outdoor
MAXIMUM OPERATING VOLTAGE: 0.72 kV
APPLICATION: Measurement or Protection
RATED FREQUENCY: 50 or 60 Hz
INSULATION LEVEL: 3 kV
INSULATION THERMAL CLASS: E

RATIO	ACCURACY CLASS	BURDEN (VA)
From 1500:5 Up to 4000:5	0.5,0.5S, 5P, 10P	2.5 to 20

*Consult with your trusted advisor if special technical specifications are required.

WINDOW TYPE LOW VOLTAGE CT

TECHNICAL SPECIFICATIONS
USE: Indoor or outdoor
MAXIMUM OPERATING VOLTAGE: 0.72 kV
APPLICATION: Measurement or Protection
RATED FREQUENCY: 50 or 60 Hz
INSULATION LEVEL: 3 kV
INSULATION THERMAL CLASS: E

* Consult with your trusted advisor if special technical specifications are required.

RATIO	ACCURACY CLASS	BURDEN (VA)	WINDOW DIAMETER (MM)
50:5	0.5, 0.5S and 1.	2.5	32
100:5		2.5 and 5	32
150:5			32
200:5	0.2, 0.2S, 0.5, 0.5S,1, 5P20,10P10.	2.5, 5, 10	40
300:5			55
400:5			55
500:5			55
600:5			67
800:5			73
1000:5			94
1500:5			94
2000:5			94
2500:5			94
3000:5			94
4000:5			94

General Features:

- Transformer fixing bracket.
- Nameplate protected with transparent resin.
- Polarity marking on the housing.

For both indoor and outdoor use, you can select one of the following terminal options:
Terminal block : Suitable for connection with copper or aluminum wires and transparent plastic cover with sealable screw for terminal protection.
Cables: Insulated copper with UV protection type THHN.

LOW VOLTAGE SUBMERSIBLE TYPE CT

TECHNICAL SPECIFICATIONS
USE: Indoor (submerged)
MAXIMUM OPERATING VOLTAGE: 0.72 kV
APPLICATION: Measurement or Protection
RATED FREQUENCY: 50 or 60 Hz
INSULATION LEVEL: 3 kV

*These transformers are designed according to the customer's specific requirements.

RATIO	ACCURACY CLASS	BURDEN (VA)
From 50:5 up to 4.000:5	0.5,0.5S, 5P, 10P	2.5 to 20

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INSTRUMENT TRANSFORMERS FOR MEDIUM VOLTAGE

Instrument transformers reduce high voltage and current levels in medium voltage networks to low, non-hazardous, and proportional levels suitable for measuring equipment. Rymel medium voltage instrument transformers are manufactured in accordance with the technical standards NTC 5933, NTC 2205, NTC 2207, IEC 61869, and IEEE C57.13, providing an efficient and safe way to monitor electrical variables in the network.

ACCESSORIES

- Fixing base plate with hardware and ground terminal (all in stainless steel).
- Transparent plastic terminal cover that allows monitoring the status of the connections without having to be removed.
- High and low voltage connections in stainless steel.

For more information, please contact a Rymel representative.

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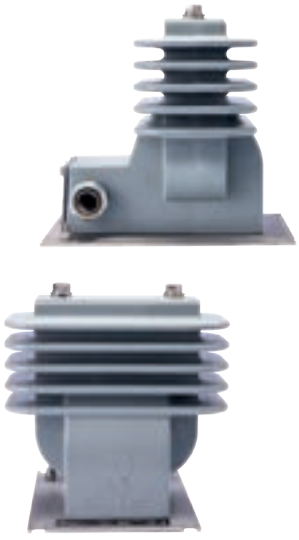
CURRENT TRANSFORMERS FOR INDOOR METERING

TYPE	kV	Interior	
MODEL	-	TCIM	
RESIN	-	Epoxy for interior use	
Ip / Is CURRENT RATIO	A	From 2.5-5/5 to 250-500/5	From 2.5-5/5 to 500/5
MEASUREMENT CLASS	-	0.5S, 0.2S,0.5,0.2	
NOMINAL BURDEN	VA	2.5, 5, 10, 15	
SHORT-TIME THERMAL CURRENT LTH	kA	8kA,16kA,4kV	
NOMINAL DYNAMIC CURRENT	kA	2.5 Ith	
FREQUENCY	Hz	50 - 60	
INSULATION CLASS	-	F	
INSULATION LEVEL	kV	17.5 / 38 / 95	
BIL, WAVE 1.2/50 µS PRIMARY	kV	95	
WINDING MATERIAL	-	Copper	
APPROXIMATE OVERALL DIMENSIONS	-	-	
A. WIDTH	mm	273	
B. LENGTH	mm	304	
C. HEIGHT	mm	283	
TOTAL WEIGHT	Kg	16	
MANUFACTURING AND TESTING STANDARDS	-	IEC61869-2 / NTC5933 / NTC2205	

CURRENT TRANSFORMERS FOR EXTERNAL METERING



TYPE	-	Exterior	
MODEL	-	TCEM	
RESIN	-	Cycloaliphatic epoxy for exterior use	
MAXIMUM INSULATION LEVEL	kV	17.5	
CURRENT RATIO Ip / Is	A	From 2.5-5/5 to 400 - 800/5	From 2.5-5/5 to 800/5
MEASUREMENT CLASS	-	0.5S, 0.2S,0.5,0.2	
NOMINAL BURDEN	VA	2.5, 5, 10, 15	
SHORT-TIME THERMAL CURRENT LTH	kA	8kA, 16kA, 4kV	
RATED DYNAMIC CURRENT	kA	2.5 Ith	
FREQUENCY	Hz	60	
INSULATION CLASS	-	F	
INSULATION LEVEL	kV	17.5 / 38 / 95	
BIL, WAVE 1.2/50 µS PRIMARY	kV	95	
WINDING MATERIAL	-	Copper	
APPROXIMATE DIMENSIONS	-	-	
A. WIDTH	mm	273	
B. LENGTH	mm	304	
C. HEIGHT	mm	283	
TOTAL WEIGHT	Kg	17	
MANUFACTURING AND TESTING STANDARDS	-	IEC61869-2 / NTC5933 / NTC2205	

Stainless steel terminal cover with sealable screws.

For more information, please contact a Rymel representative.

rymel@rymel.com.co

INDOOR MEDIUM VOLTAGE POTENTIAL TRANSFORMERS

NUMBER OF POLES	-	2	1
MODEL	-	TPIM2	TPIM1
RESIN	kV	Epoxy for interior use	Epoxy for interior use
MAXIMUM INSULATION LEVEL	kV	17.5	17.5
RATED PRIMARY VOLTAGE	V	From 4.16 to 14.4 kV	From 4.16√3 to 14.4√3kV
RATED SECONDARY VOLTAGE	%	120, 115, 110	120/√3, 115/√3, 110/√3
MEASUREMENT CLASS	VA	0.5, 0.2	0.5, 0.2
RATED BURDEN	-	50, 25, 15, 10, 5, 1	50, 25, 15, 10, 5, 1
VOLTAGE FACTOR	VA	1.2 One continuous	1.2 One continuous1.9 30s
FREQUENCY	Hz	60	60
INSULATION CLASS	-	F	F
INSULATION LEVEL	kV	17.5 / 38 / 95	17.5 / 38 / 95
BIL, WAVE 1.2/50 µS PRIMARY	kV	95	95
WINDING MATERIAL	-	Copper	Copper
APPROXIMATE DIMENSIONS:	-	-	-
A. WIDTH	mm	270	270
B. LENGTH	mm	266	266
C. HEIGHT	mm	246	246
APPROXIMATE TOTAL WEIGHT	Kg	22	22
MANUFACTURING AND TESTING STANDARDS	-	IEC61869-3 / NTC5933 / NTC2207	IEC61869-3 / NTC5933 / NTC2207

Note: It can be manufactured according to IEEE standard upon request.

OUTDOOR MEDIUM VOLTAGE POTENTIAL TRANSFORMERS

NUMBER OF POLES	-	2	1
MODEL	-	TPEM2	TPIM1
RESIN	-	Cycloaliphatic epoxy for exterior use	
MAXIMUM INSULATION LEVEL	kV	17.5	17.5
RATED PRIMARY VOLTAGE	kV	From 4.16 to 14.4 kV	From 4.16√3 to 14.4 √3 kV
RATED SECONDARY VOLTAGE	V	120, 115, 110	120/√3, 115/√3, 110/√3
MEASUREMENT CLASS	%	0.5, 0.2	0.5, 0.2
RATED BURDEN	VA	50, 25, 15, 10, 5, 1	50, 25, 15, 10, 5, 1
VOLTAGE FACTOR	-	1.2 One continuous	1.2 continuous / 1.9 for 30 s
FREQUENCY	Hz	60	60
INSULATION CLASS	-	F	F
INSULATION LEVEL	kV	17.5 / 38 / 95	17.5 / 38 / 95
BIL, WAVE 1.2/50 µS PRIMARY	kV	95	95
WINDING MATERIAL	-	Copper	Copper
APPROXIMATE DIMENSIONS	-	-	-
A. WIDTH	mm	270	270
B. LENGTH	mm	266	266
C. HEIGHT	mm	403	403
TOTAL WEIGHT	Kg	24	23
MANUFACTURING AND TESTING STANDARDS	-	IEC61869-3 / NTC5933 / NTC2207	IEC61869-3 / NTC5933 / NTC2207

For more information, please contact a Rymel representative.

rymel@rymel.com.co

Rymel

36 kV CAST RESIN FEEDER TRANSFORMER FOR RECLOSER APPLICATION (0.5 kVA)

Power transformers, constructed from cycloaliphatic epoxy resin, are designed exclusively to supply auxiliary power for the operation and control of electronic devices such as reclosers.

ADVANTAGES

- Smaller and lighter than conventional designs, these transformers are manufactured using cycloaliphatic epoxy resin, offering high resistance to weathering, corrosion, and environmental exposure.
- They offer easy installation, optimize space, and contribute to a reduced environmental impact.
- Maintenance is minimized.
- Featuring a steel bracket with an integrated pole mount.

INSTALLATION		Outdoor
INSULATING MATERIAL		Cycloaliphatic Epoxy Resin
SYSTEM		Single-phase
POLES OR BUSHING		1-2
MAXIMUM VOLTAGE	kV	36
RATED PRIMARY VOLTAGE	kV	From 7.62 To 13.2
RATED SECONDARY VOLTAGE	V	115-120
THERMAL POWER	kV	0.5 kV
INSULATION CLASS		F (155°C)
INSULATION LEVEL	kV	17.5 / 38 / 95
BIL, WAVE 1.2/50 µS primary	kV	200
FREQUENCY	Hz	50-60
WINDING MATERIAL		Copper
CREEPAGE DISTANCE	mm	585
BUSHING SPACING (F-F)	mm	250
MOUNTING SUPPORT		Including steel bracket for easy installation
MARKINGS		Embossed markings
MANUFACTURING AND TESTING STANDARDS		IEEE Std C57.6-2016

For more information, please contact a Rymel representative

rymel@rymel.com.co

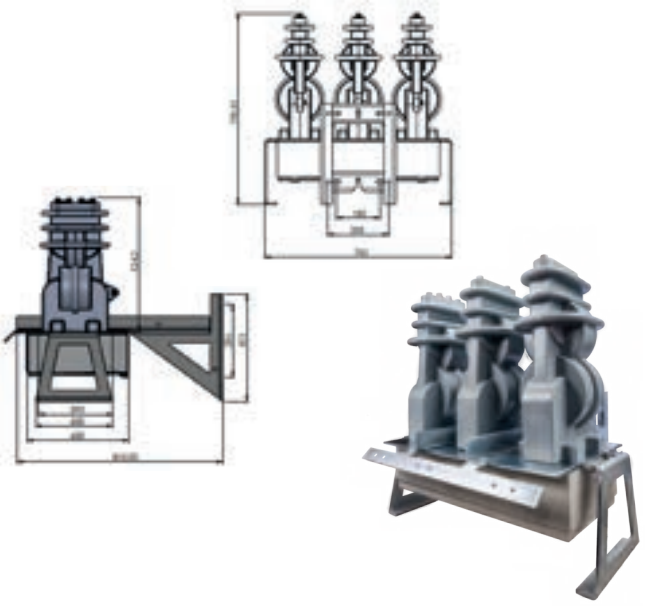
Rymel

17.5 KV MEDIUM VOLTAGE COMBINED TRANSFORMERS

The combined measurement transformers offer a streamlined solution, housing both potential and current transformers within a single element. In a three-phase system, this setup comprises three individual combined transformers and a practical support for installation. Secondary connections are securely housed in a hermetic, hinged compartment integrated into the support structure.

ADVANTAGES

- Reduced installation space requirements due to the compact design.
- High accuracy class, making it suitable for precise measurement locations.
- Resistance to extreme climatic conditions, ensuring reliability in various enviroments.
- Corrosion-resistant fasteners and stainless steel components, enhancing durability.
- Cost savings on structures, connectors, and installation.
- Includes a support system prepared for pole installation, simplifying setup.
- Internal connection between the potential and current transformers, saving time during installation.



For more information, please contact a Rymel representative.

rymel@rymel.com.co

TECHNICAL CHARACTERISTICS

TYPE		Outdoor
MODEL		TCT
CHARACTERISTICS		Terminals or Cable
RESIN		Cycloaliphatic Epoxy
SYSTEM		Three-phase
MAXIMUM INSULATION LEVEL	kV	17.5
OPERATING VOLTAGE	kV	13.2/V3
INSULATION CLASS		F
MAXIMUM VOLTAGE	kV	17.5
BIL, WAVE 1.2/50 µS PRIMARY	kV	95
INSULATION LEVEL	kV	17.5/38/95
FREQUENCY	HZ	60
WINDING MATERIAL		Copper
CREEPAGE DISTANCE		783
POTENTIAL TRANSFORMER CHARACTERISTICS		
RATED PRIMARY VOLTAGE	V	From 7,200/√3 to 14,400/√3 V
RATED SECONDARY VOLTAGE	V	110/V3 - 115/V3 - 120/V3
SECONDARY WINDING RATED		110/V3 - 115/V3 - 120/V3
CLASS	%	0.5-0.2
POWER	VA	25-15-10-5-2.5-1
SECONDARY WINDING POWER SUPPLY	V	120
POWER FACTOR		1.2 One continuous 1.9 30s
CURRENT TRANSFORMER CHARACTERISTICS		
TRANSFORMER RATIO	A	From 2.5/5 A to 500/5 A
PRIMARY CURRENT NOMINAL	A	From 2.5 To 500
RATED SECONDARY CURRENT	A	5
CLASS	%	0.5S-0.2S
THERMAL CURRENT (ITH)	kA	4-8
DYNAMIC CURRENT (ID)	kA	2.5 Ith
APPROXIMATE DIMENSIONS		
A. WIDTH	mm	2782
B. LENGTH	mm	810
C. HEIGHT	mm	798
TOTAL WEIGHT	Kg	150
MANUFACTURING AND TESTING STANDARDS		IEC61869-1-2-3-4

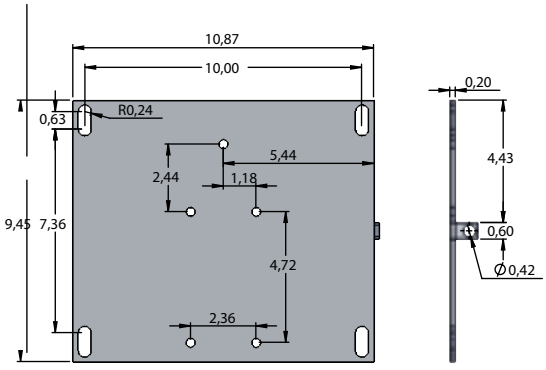
Rymel

15 kV CURRENT TRANSFORMERS

Rymel's current transformers are produced in a voltage range of 0.6 kV to 36 kV. The technical specifications for the 15 kV current transformers are provided in this document. The equipment is produced in compliance with the IEEE C57.13 standard.

Base Plate:

For simple installation, the transformer includes a stainless steel base plate with four openings. A ground connection is welded at a 90° angle to the base plate. The thickness of the foundation plate is 0.2 inches.



Construction:

Instrument transformers produced by Rymel adhere to the most stringent quality standards and comply with IEEE standards. These transformers are produced using cycloaliphatic epoxy resin, which exhibits exceptional resistance to environmental exposure and weathering.

Markings:

- The equipment includes a nameplate made of anodized Aluminum, securely attached to the base plate.
- Both primary and secondary markings are engraved with low-relief using a laser marker.
- Additionally, stickers displaying the connection relations are affixed to the terminal cover of the secondary connection, also located on one side.

For more information, please contact a Rymel representative.

rymel@rymel.com.co

Primary Terminals:

Primary terminals, which have a thickness of 0.25 in, are produced using hot-tinned copper.

Secondary Terminals:

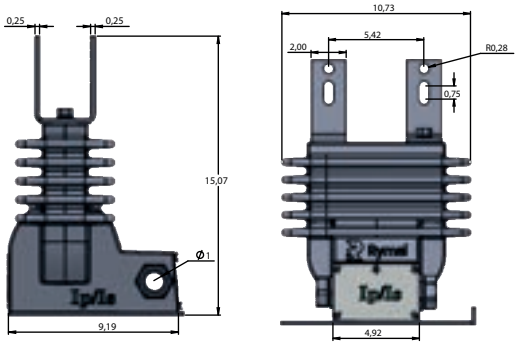
- The secondary terminals are made of stainless steel, 0.25".
- The screws of the secondary terminal block cover are butterfly-type terminals.
- It includes a short-circuit device for the secondary, made of tinned copper, with a thickness of 0.125".
- Designed to short-circuit the equipment between X1 and X2 (when necessary) and also between X2 and Ground.

Installation:

The current transformers are designed for outdoor installation and may be mounted in either vertical or horizontal positions.

Testing:

The equipment is 100% tested in accordance with IEEE C57.13. Standard testing.



Transformation Relations:

CURRENT RATIO (A)	RATING FACTOR [30°C]
2.5/5	3.0
5/5	3.0
10/5	3.0
15/5	3.0
20/5	3.0
25/5	3.0
30/5	3.0
40/5	3.0
50/5	3.0
60/5	3.0
75/5	3.0
100/5	3.0
150/5	3.0
200/5	3.0
300/5	3.0
400/5	3.0
500/5	3.0
600/5	3.0
800/5	1.5
1000/5	1.5

OUTDOOR MEASUREMENT CURRENT TRANSFORMERS		
Type		Outdoor
Model		TCEM
Resin		Cycloaliphatic Epoxy for Outdoor Use
Maximum Insulation Level	kV	15.5
Applied Voltage	kV	34
BIL, Full Wave	kV	110
Creepage Distance	in	27.5"
Weight	Lbs	32
Frequency	Hz	50-60
Insulation Class		F
Winding Material		Copper
Metering Class		0.15, 0.3, 0.6, 1.2
Nominal Burden	VA	B-0.1, B-0.2, B-0.5, B-0.9, B-1.8
Short-time thermal current	kA	2,4,8,16,32
Nominal dynamic current	kA	2.5 Ith

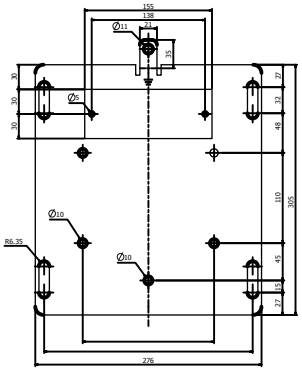
For more information, please contact a Rymel representative.

rymel@rymel.com.co

Rymel

15 kV OUTDOOR MEDIUM-VOLTAGE POTENTIAL TRANSFORMER

Rymel manufactures potential transformers within a voltage range from 15 kV to 36 kV. This document outlines the technical specifications of the 15 kV Potential Transformer series. Our equipment adheres strictly to the IEEE C57.13 standard, ensuring quality and reliability.



Base Plate:

The transformer comes with a stainless steel base plate designed for easy installation, featuring four pre-drilled holes. Additionally, the base plate is equipped with a 90° ground connection, welded securely in place. Its sturdy construction ensures reliability, with a base plate thickness of 0.2 inches.

Construction:

Rymel upholds the highest quality standards and ensures IEEE compliance in the manufacture of instrument transformers.

Our transformers are crafted using cycloaliphatic epoxy resin, renowned for its resilience against weathering and environmental exposure.

Testing:

The equipment is 100% tested in accordance with IEEE C57.13.

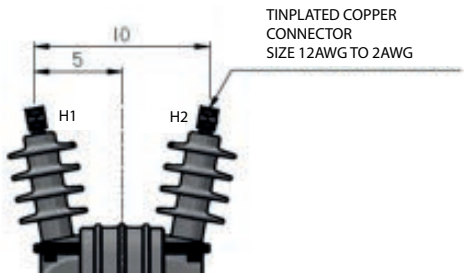
For more information, please contact a Rymel representative.

rymel@rymel.com.co

TYPE		Outdoor
MODEL		TPEM
RESIN		Cycloaliphatic epoxy for exterior use
MAXIMUM INSULATION LEVEL	kV	15.5
APPLIED VOLTAGE	kV	34
MEASUREMENT CLASS		0.3, 0.6, 1.2
NOMINAL BURDEN	VA	W, X
FREQUENCY	Hz	50 - 60
INSULATION CLASS		F
BIL, WAVE	kV	110
CREEPAGE DISTANCE	in	23"
WINDING MATERIAL		Copper
WEIGHT	Lbs	50.7
TRANSFORMER RATIOS	V	7200/120V
		8400/120V
		12000/120V
		14400/120V
		Other combinations

Primary Terminals:

The primary terminals accommodate conductors from 2 AWG to 12 AWG and are easily replaceable for flexibility and convenience.



Secondary Terminals:

The screws of the secondary terminal block cover are of the butterfly type. The secondary terminals are ¼" screws.

Markings:

The equipment comes equipped with an anodized aluminum nameplate affixed to the base plate.

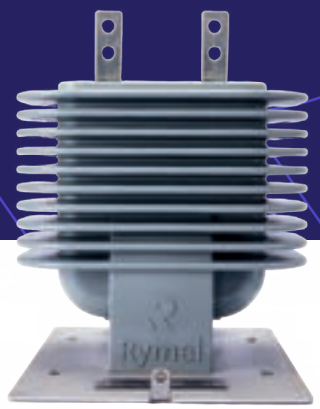
Primary and secondary markings, made with a laser marker, are in low relief for clear identification. Additionally, stickers indicating the connections are provided on the terminal cover of the secondary connection.

Installation:

The transformers are designed for outdoor installation and may be mounted in either vertical or horizontal positions.

Rymel

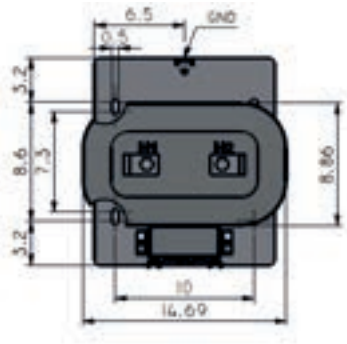
36 kV OUTDOOR MEDIUM-VOLTAGE CURRENT TRANSFORMER



Rymel manufactures current transformers within a voltage range spanning from 0.6 kV to 36 kV. This document outlines the technical specifications of the 36 kV current transformer series. All equipment is manufactured in accordance with the IEEE C57.13 standard.

Base Plate:

The transformer is equipped with a stainless steel base plate featuring four holes for convenient installation. Additionally, it incorporates a 90° ground connection that is welded to the plate. The plate itself boasts a thickness of 0.2 inches.



Construction:

Rymel manufactures measuring transformers with the highest quality standards and in compliance with the IEEE regulations. Our transformers are made with cycloaliphatic epoxy resin, which is resistant to weather and environmental exposure.

Markings:

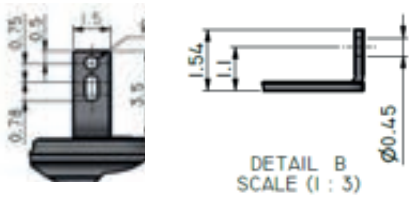
- The transformer comes equipped with an anodized aluminum nameplate securely affixed to the base plate of the equipment.
- Both primary and secondary markings are engraved in low relief using a laser marker.
- Additionally, stickers displaying the markings of the connections are provided on the terminal cover of the secondary connection for ease of identification.

For more information, please contact a Rymel representative.

rymel@rymel.com.co

Primary Terminals:

The primary terminals are crafted from copper and are hot-tinned, boasting a thickness of 0.4 inches.



Secondary Terminals:

The secondary terminal cover screws feature a butterfly-type terminals. Additionally, they incorporate a shorting device made of tinned copper, with a thickness of 0.125 inches. This design is specifically engineered to short-circuit the equipment between X1 and X2 when necessary, as well as between X2 and Ground.

Transformation Relations:

CURRENT RATIO (A)	RATING FACTOR [30°C]
5/5	3.0
10/5	3.0
15/5	3.0
20/5	3.0
25/5	3.0
30/5	3.0
40/5	3.0
50/5	3.0
60/5	3.0
75/5	3.0
100/5	3.0
150/5	3.0
200/5	3.0
300/5	3.0
400/5	2.0
500/5	2.0
600/5	2.0
800/5	1.5

Testing:

The equipments are 100% tested in accordance with the IEEE C57.13 Standard testing.

Installation:

The transformers are meticulously designed for outdoor installation, accommodating both vertical and horizontal orientations with equal efficiency.

TYPE		Outdoor
MODEL		TCEM
RESIN		Cycloaliphatic epoxy for exterior use
MAXIMUM INSULATION LEVEL	kV	36.5
APPLIED VOLTAGE	kV	70
MEASUREMENT CLASS		0.15, 0.3, 0.6, 1.2
NOMINAL BURDEN	VA	B-0.1, B-0.2, B-0.5, B-0.9, B-1.8
SHORT-TIME THERMAL CURRENT Ith	kA	2, 4, 8, 16, 32
NOMINAL DYNAMIC CURRENT	kA	2.5 Ith
FREQUENCY	Hz	50 - 60
INSULATION CLASS		F
BIL, WAVE	kV	200
CREEPAGE DISTANCE	in	44.6"
WINDING MATERIAL		Copper
WEIGHT	Lbs	83.7

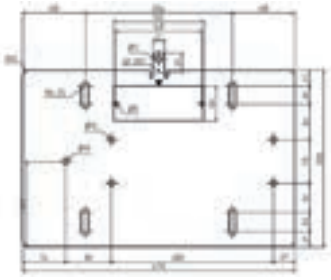
For more information, please contact a Rymel representative.

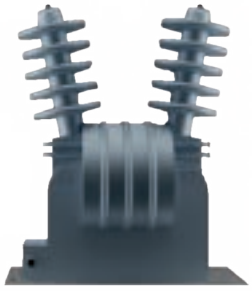
rymel@rymel.com.co

Rymel

36 kV OUTDOOR MEDIUM-VOLTAGE POTENTIAL TRANSFORMER

Rymel manufactures potential transformers within a voltage range from 15 kV to 36 kV. This document outlines the technical specifications of the 36 kV Potential Transformer series. Our equipment adheres strictly to the IEEE C57.13 standard, ensuring quality and reliability.





Base Plate:

The transformer comes with a stainless steel base plate designed for easy installation, featuring four pre-drilled holes. Additionally, the base plate is equipped with a 90° ground connection, welded securely in place. Its sturdy construction ensures reliability, with a base plate thickness of 0.2 inches.

Construction:

Rymel manufactures measuring transformers with the highest quality standards and in compliance with the IEEE standard. Our transformers are made with cycloaliphatic epoxy resin, which is resistant to weather and environmental exposure.

Testing:

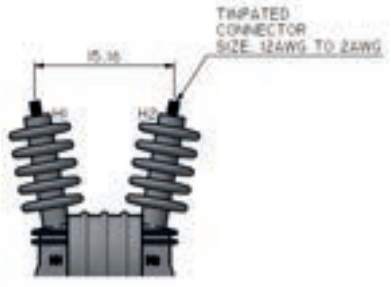
The equipment is 100% tested in accordance with IEEE C57.13.

For more information, please contact a Rymel representative.

rymel@rymel.com.co

Primary Terminals:

The primary terminals accommodate conductors from 2 AWG to 12 AWG and are easily replaceable for flexibility and convenience



Installation:

The transformers are designed for outdoor installation and may be mounted in either vertical or horizontal positions.

Secondary Terminals:

The secondary terminals feature butterfly terminal type screws, each measuring ¼ inch in size.

Markings:

The equipment comes equipped with an anodized aluminum nameplate affixed to the base plate.

Primary and secondary markings, made with a laser marker, are in low relief for clear identification. Additionally, stickers indicating the connections are provided on the terminal cover of the secondary connection.

TYPE		Outdoor
MODEL		TPEM
RESIN		Cycloaliphatic epoxy for exterior use
MAXIMUM INSULATION LEVEL	kV	36.5
APPLIED VOLTAGE	kV	70
MEASUREMENT CLASS		0.3, 0.6, 1.2
NOMINAL BURDEN	VA	W, X, Y
FREQUENCY	Hz	50 - 60
INSULATION CLASS		F
BIL, WAVE	kV	200
CREEPAGE DISTANCE	in	44.6"
WINDING MATERIAL		Copper
WEIGHT	Lbs	172
TRANSFORMER RATIOS	V	34500/115V
		27600/115V
		20125/115V
		Other combinations

Rymel

BESS TRANSFORMERS

SMART, SAFE, AND EFFICIENT SOLUTIONS FOR ENERGY STORAGE

The global energy transition is driving the rapid adoption of Battery Energy Storage Systems (BESS).

These systems allow energy to be stored and released precisely when the market, the grid, or the user requires it, helping stabilize power networks, optimize energy tariffs, and ensure operational continuity.

BESS installations require specialized equipment to connect stored energy to the electrical grid.

Rymel has developed transformers specifically designed for the integration of BESS into power networks.

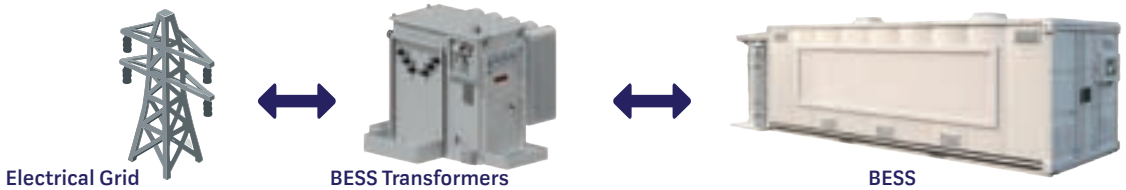
Rymel's BESS transformers are engineered to operate with bidirectional inverters, high harmonic levels, fast charge and discharge cycles, and dynamic power conditions.

BESS transformers are built to withstand dynamic operating conditions:

- High harmonic content generated by inverters
- Transient overvoltages
- Stable operation in charge/discharge mode with bidirectional power flow
- Continuous cycling with rapid thermal variations

Advantages of RYMEL Transformers for BESS

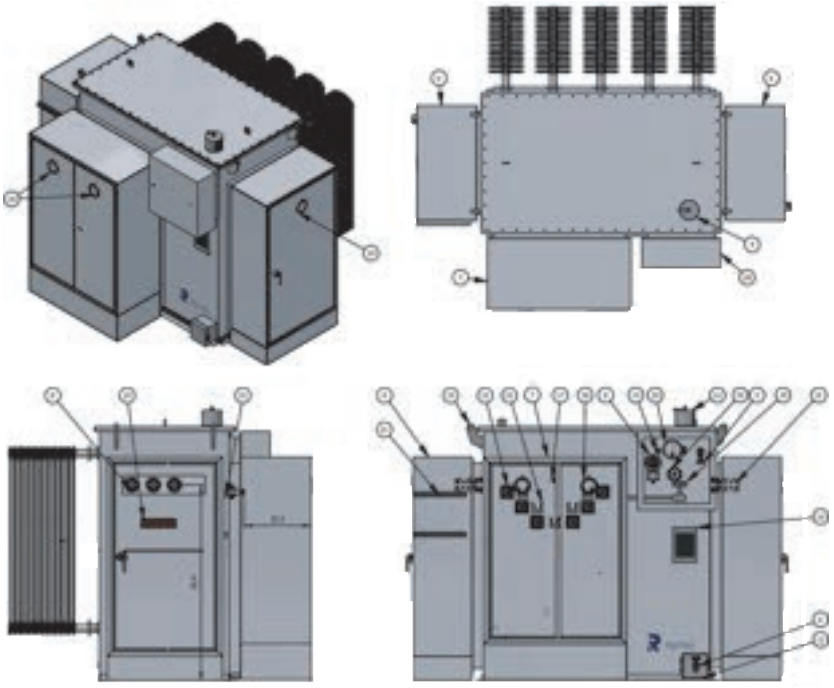
- Reinforced thermal design, suitable for cyclic operation and extended service life.
- Harmonic withstand capability with K-factor rating.
- Special insulation system designed to withstand transients up to 2400 V/µs.
- Electrostatic shield that filters dV/dt gradients and protects the windings.
- Bidirectional power flow design, allowing both charge and discharge operation.
- High tolerance to cyclic overloads, thanks to reinforced thermal design and high thermal class materials.
- Full galvanic shielding, minimizing interference propagation.
- High efficiency and low losses.
- Low audible noise level.
- Fast energy discharge capability, ideal for operation with BESS systems.
- Dead-front terminals for enhanced safety.
- Four-position switch (ON–OFF–A–B) allowing safe operation and switching under load.



For further information, please contact a Rymel representative

rymel@rymel.com.co

BESS TRANSFORMERS

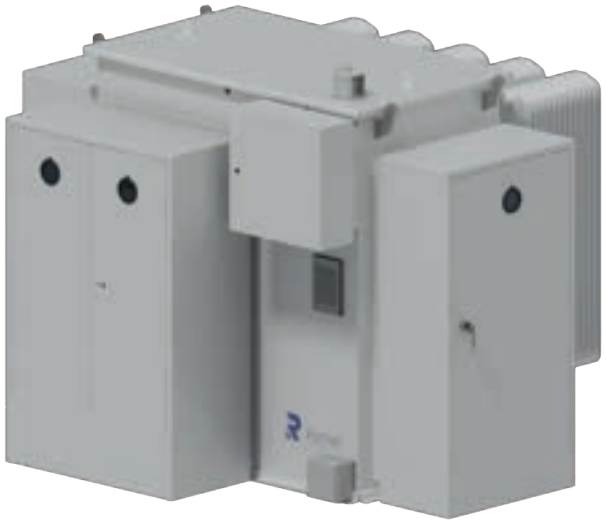


1. Seismic anchoring
2. Ground pad
3. Oil level
4. Pressure relief device
5. Oil filling / oil drain
6. LV cabinet
7. MV cabinet
8. LV bushing
9. Thermometer
10. Pressure gauge
11. Radiators
12. MV bushing
13. Oil sampling cover
14. Filter press connection
15. Lifting lugs
16. Nameplate
17. Open / close switch
18. IR window
19. Relay SEL 851
20. Cabinet accessories
21. 1-5/8" rail
22. Ground bar
23. Parking stand

TECHNICAL INFORMATION	
Power Ratings [kVA]:	500 to 5000
Series voltage [kV]:	36
Voltage HV [V]	13200 - 34500
Voltage LV [V]:	Up to 800 V
Number of Phases:	3
Operating Frequency Range [Hz]:	50 - 60
Vector Group:	DD, YY, DY
Mounting Type:	Outdoor
Standards:	IEEE
Winding Temperature Rise:	65 °C or 55 °C
BIL [kV]	Up to 200
K Factor	1 to 20
Insulation Class	120
Insulating Fluid	Mineral or Vegetable
Cooling	ONAN KNAN
Tap Changer	5 positions

Special Features:

- Load break switch
- Capability to operate with harmonics
- Electrostatic shield
- Dead-front bushings
- Low-voltage side cabinets for easy connection
- Electrostatic powder coating
- Designed for integration with BESS systems



Rymel

POWER TRANSFORMERS IN MEDIUM VOLTAGE

MAXIMUM POWER. MAXIMUM PERFORMANCE

Substation-type transformers are designed for industrial and power infrastructure applications that demand high reliability, construction flexibility, and adaptation to project-specific requirements. These units are manufactured with ratings up to 10 MVA and can be configured for both new installations and the modernization or replacement of existing equipment. Their customized designs ensure safe integration with switchgear, control panels, and special substation layouts.

Each transformer is developed through a tailored engineering process, ensuring full compliance with international standards, seamless integration with existing systems, and the option to include special accessories for operation, monitoring, and preventive maintenance.

The transformers can be supplied with natural ester insulation, ideal for applications requiring enhanced fire safety, reduced environmental impact, and extended insulation life, or with conventional mineral oil, suitable for standard applications where special safety or sustainability requirements do not apply.

Advantages of RYMEL Power Transformers

- **High operational reliability** for industrial environments and critical infrastructure.
- **Flexible construction design**, adaptable to each project—whether for new installations or replacements.
- **Designed and tested** in accordance with major international standards: IEEE, IEC, DOE, NTC, and RETIE.
- **Fully customizable up to 10 MVA**, configurable in dimensions, connections, and voltages according to project requirements.
- **Bushings mounted** on the top cover or side wall through throat-type openings, adaptable to facilitate interconnection in primary substations.
- **Reinforced tanks** with anti-corrosive coatings for long service life in harsh environments. Available with an expansion tank or air cushion.
- **Guaranteed energy efficiency.**
- **Mechanical flexibility**: core–coil assembly and tank construction adaptable to site dimensional constraints.
- **Optional forced-air cooling system** to increase power rating by +15%, +25%, or +33% above the base kVA.
- **Optional natural ester fluid**, providing increased fire safety, reduced environmental impact, and extended insulation life.

For further information, please contact a Rymel representative

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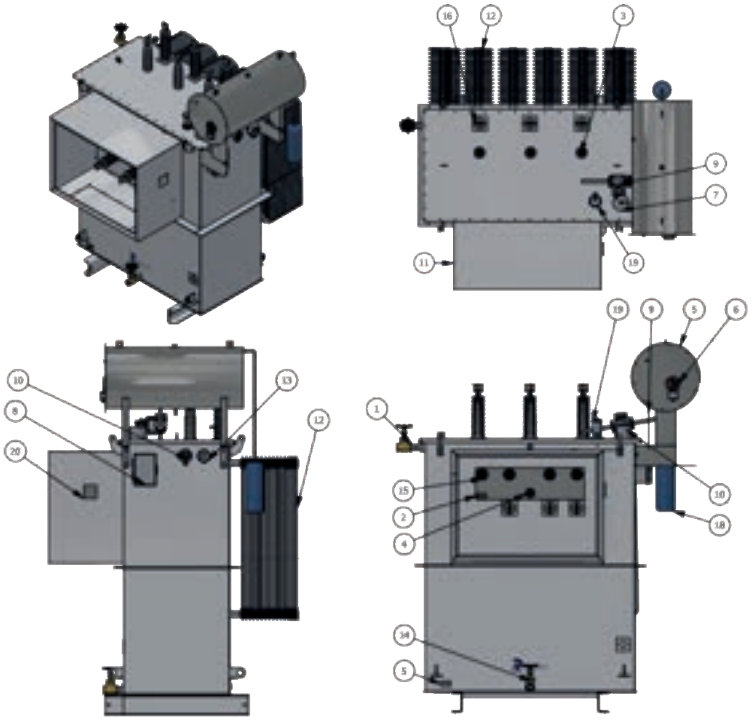

1. Oil filling valve
2. Tank Grounding Terminal
3. High-voltage bushings
4. Tap changer
5. Oil conservator
6. Oil level gauge
7. Pressure relief device
8. Control cabinet
9. Buchholz relay with contacts
10. Thermal image window
11. Low-voltage cabinet
12. Radiators
13. Thermometer
14. Oil drain valve
15. Low-voltage bushings
16. High-voltage surge arrester
17. Lifting lugs
18. Silica gel breather
19. Sudden pressure relay
20. Nameplate

TECHNICAL INFORMATION	
Power Ratings [kVA]	Up to 10 MVA
Configuration	Indoor Substation - Outdoor Substation
Maximum Voltage [HV]	Up to 36 kV
Maximum Voltage LV	Up to 15 kV
Connection Group	DD, YY, DY, Three-winding option
Operating Frequency Range [Hz]:	50 - 60
Tap Changer	5 positions
Standard	IEEE, IEC
Rise Temperature	65°C or 55°C
BIL	Up to 200 kV
K-Factor	1 to 20
Refrigeration	ONAN, ONAF - KNAN, KNAF
Insulation liquid	Mineral or Natural Ester
Thermal Class	120 C

Special Accessories:

The integration of special accessories with electrical contacts is offered for monitoring, protection, and control, such as:

- Thermometer
- Thermal Image Window
- Buchholz Relay
- Vacuum–Pressure Gauge
- Oil Level Gauge
- Sudden Pressure Relay
- Pressure Relief Device
- Built-in Current Transformers (CTs)
- Bushings Mounted on the Top Cover or Side Wall
- Surge Protection Device (SPD)
- Power Increase with Forced-Air Cooling: +15%, +25%, or +33% above the base kVA rating

Get in touch to discover our solutions.
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