



## 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 encapsulated dry transformers feature windings that are encapsulated in dielectric 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 encapsulated dry-type transformers for reliable, safe, and efficient power solutions.

CAST RESIN DRY-TYPE TRANSFORMER TECHNICAL CHARACTERISTICS	
<b>CAPACITY</b>	Up to 2.500 kVA
<b>TENSION</b>	Up to 36 kV
<b>BIL</b>	Up to 170 kV
<b>OVERVOLTAGE</b>	From 38 kV up to 170 kV
<b>WINDING MATERIAL</b>	Aluminum
<b>COOLING CLASS</b>	AN - AF
<b>FREQUENCY</b>	60 / 50 Hz
<b>TAP CHANGER</b>	5 positions $\pm$ 2, 2.5%
<b>TEMPERATURE RAISE</b>	100 °C
<b>THERMAL CLASS</b>	F (155°C)
<b>K FACTOR</b>	K1, K2, K4, K6, K9, K13, K20 or according to customer requirements.
<b>TYPE OF EFFICIENCY</b>	Class A, B, C, D
<b>IRONWORK</b>	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
<b>PAINT SYSTEM</b>	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive environments.
<b>TYPE OF INSTALATION</b>	Indoor.
<b>TYPE OF INSULATION</b>	Epoxy resin encapsulated windings.
<b>ACCESSORIES</b>	<ul style="list-style-type: none"> <li>- Primary and secondary terminals.</li> <li>- Surge arresters.</li> <li>- Temperature controller with three PT100 sensors.</li> <li>- Scroll wheels.</li> <li>- Ground connector.</li> <li>- Lifting device.</li> <li>- Nameplate made of high-strength anodized aluminum.</li> <li>- Tap switch.</li> <li>- Forced ventilation system (optional at the request of the client).</li> <li>- Cabinet or protection cell type interior or exterior (optional at the request of the client).</li> </ul>
<b>STANDARD</b>	NTC 3654, NTC3445, IEC 60076, IEEE Std C57.12.01 and RETIE
<b>ADVANTAGES</b>	<ul style="list-style-type: none"> <li>- Fire resistant and self-extinguishing materials</li> <li>- Low noise, low loss magnetic core with dielectric coating</li> <li>- Space optimization</li> <li>- Minimum level of partial discharges</li> </ul>

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.



## TECHNICAL CHARACTERISTICS

	OPEN WINDINGS CLASS H	LOW-LOW VOLTAGE CLASS H
<b>CAPACITY</b>	Up to 1.500 kVA	Up to 500 kVA
<b>TENSION</b>	Up to 15 kV	Up to 11 kV
<b>BIL</b>	Up to 60 kV	-
<b>OVERVOLTAGE</b>	-	Up to 3 kV
<b>WINDING MATERIAL</b>	Aluminum or copper	Aluminum
<b>COOLING CLASS</b>	AN - AF	AN
<b>FREQUENCY</b>	60 / 50 Hz	
<b>TAP CHANGER</b>	± 2, 2.5% or according to customer requirements.	± 2, 2.5%
<b>TEMPERATURE RAISE</b>	125 °C	
<b>THERMAL CLASS</b>	H (180°C)	
<b>K FACTOR</b>	K factor according to customer requirements.	
<b>TYPE OF EFFICIENCY</b>	Class A, B, C, D; DOE	
<b>IRONWORK</b>	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.	
<b>PAINT SYSTEM</b>	Special electrostatic paint of great resistance and durability, especially for outdoors and corrosive environments.	
<b>TYPE OF INSTALATION</b>	Indoor	
<b>TYPE OF INSULATION</b>	Open windings with dielectric varnish coating.	
<b>ACCESSORIES</b>	<ul style="list-style-type: none"> <li>- Primary and secondary terminals.</li> <li>- Surge arresters.</li> <li>- Temperature controller with three PT100 sensors.</li> <li>- Scroll wheels.</li> <li>- Grounded.</li> <li>- Lifting device.</li> <li>- Nameplate made of high-strength anodized aluminum.</li> <li>- Tap changer.</li> <li>- Forced ventilation system (optional at the request of the client).</li> <li>- Cabinet or protection cell type interior or exterior (optional at the request of the client).</li> </ul>	<ul style="list-style-type: none"> <li>- Primary and secondary terminals.</li> <li>- Grounded.</li> <li>- Lifting device.</li> <li>- Nameplate made of high-strength anodized aluminum.</li> <li>- Tap changer.</li> <li>- Indoor type protection cabinet or cell.</li> <li>- External type protection cell (optional at the request of the client).</li> </ul>
<b>STANDARD</b>	NTC 3654, NTC3445, IEC 60076, IEEE Std C57.12.01 and RETIE.	
<b>ADVANTANGES</b>	<ul style="list-style-type: none"> <li>- Fire resistant and self-extinguishing materials.</li> <li>- Low noise, low loss magnetic core with dielectric coating.</li> <li>- Space optimization.</li> </ul>	

