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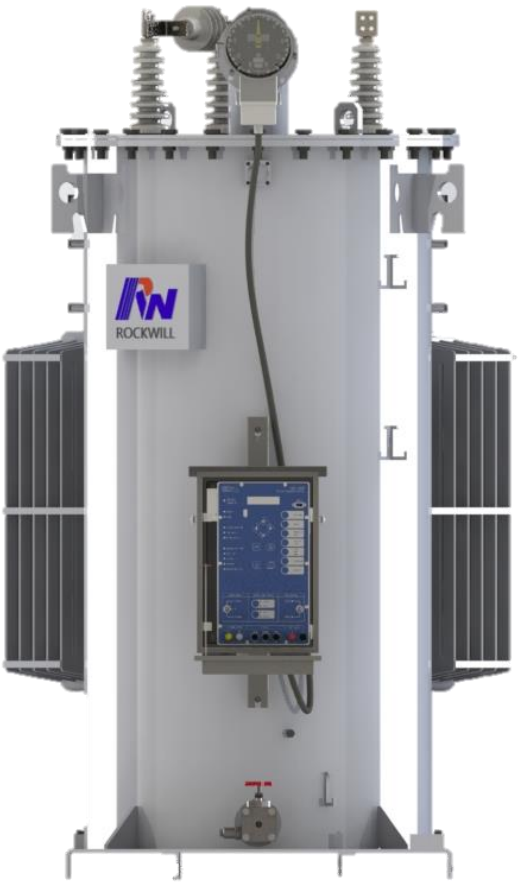
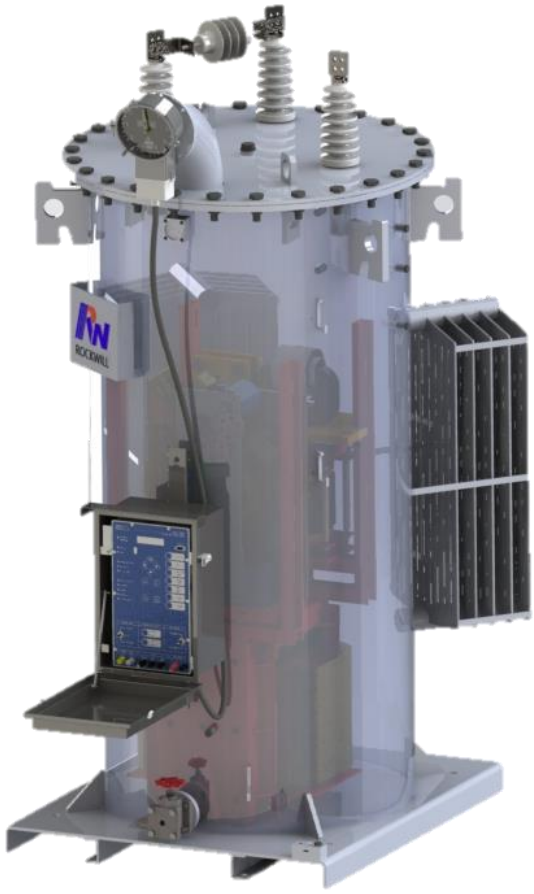
RVR-1 Type
Single Phase Automatic Voltage Regulator
6kV-34.5kV





Rockwill Group is one of the leading high technical enterprises professional deals in medium high voltage switchgear and components develop, manufacture and sales. Located in Wengyang Industrial Zone, Wenzhou, used to known as Yueqing Real Electric Works (Registered in 1986), we have more than 20 years experiences in Medium & high voltage field. We strategically cooperate with worldwide high reputation medium& high voltage switchgear manufacturer and research institute, successfully developed series of medium voltage mutually; filled the blank in China. We also teamed up with province grade intelligence high voltage switch laboratory, together developed new generation intelligence simultaneous technical vacuum switch, electronic current transformer, digital integrated substation etc. through the cooperation we obtain plenty achievements and build up experience technical team. Plentiful talent backup, advanced production equipment, perfect quality control system and reverse inspection procedure are powerful guarantee of our reliable product quality and high reputation.

We have always insisted the faith on grow together with customers, and to provide a safe, simply, green and efficient medium & high voltage switchgear and components.

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If you have any question please consult below:

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ROCKWILL® Electric strives to bring our customers the latest technology and competitive pricing and best service for distribution automatic.

The RVR-1 type single-phase feeder automatic voltage regulator is essentially composed of a single-phase oil-immersed autotransformer, an on-load tap changer, and an intelligent controller.

The RVR-1 voltage regulator achieves automatic on-load voltage regulation by adjusting the transformer ratio through the on-load tap changer. The intelligent controller RVR samples, analyzes, judges, and processes the voltage on the line, then sends signals to drive the on-load tap changer to adjust the voltage.

The RVR-1 voltage regulator is equipped with self-protection lockout functions, including line fault, overload, overcurrent, and undervoltage protection.

The RVR-1 voltage regulator also features a unique on-load tap changer design that prevents arcing during voltage regulation, ensuring a service life of up to two million operations.

The RVR-1 voltage regulator features a fully sealed design, with a high level of protection and excellent weather resistance, allowing for long-term maintenance-free operation.

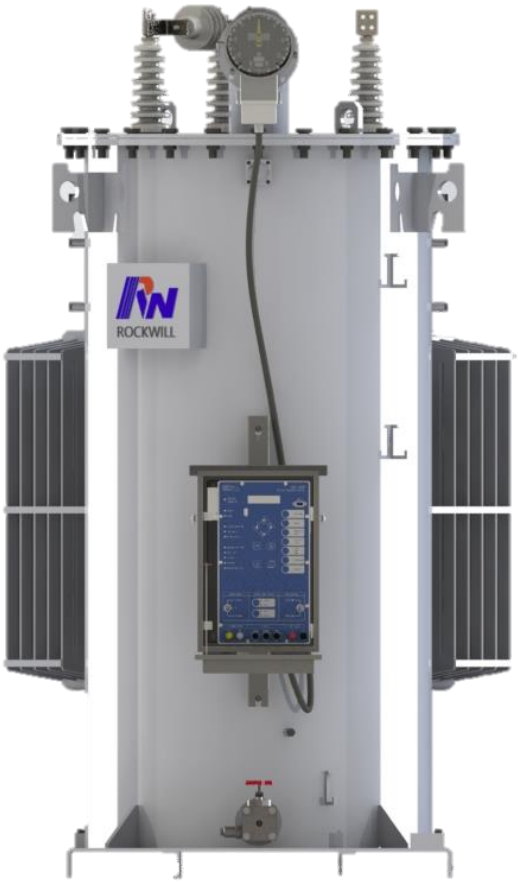
Service environment

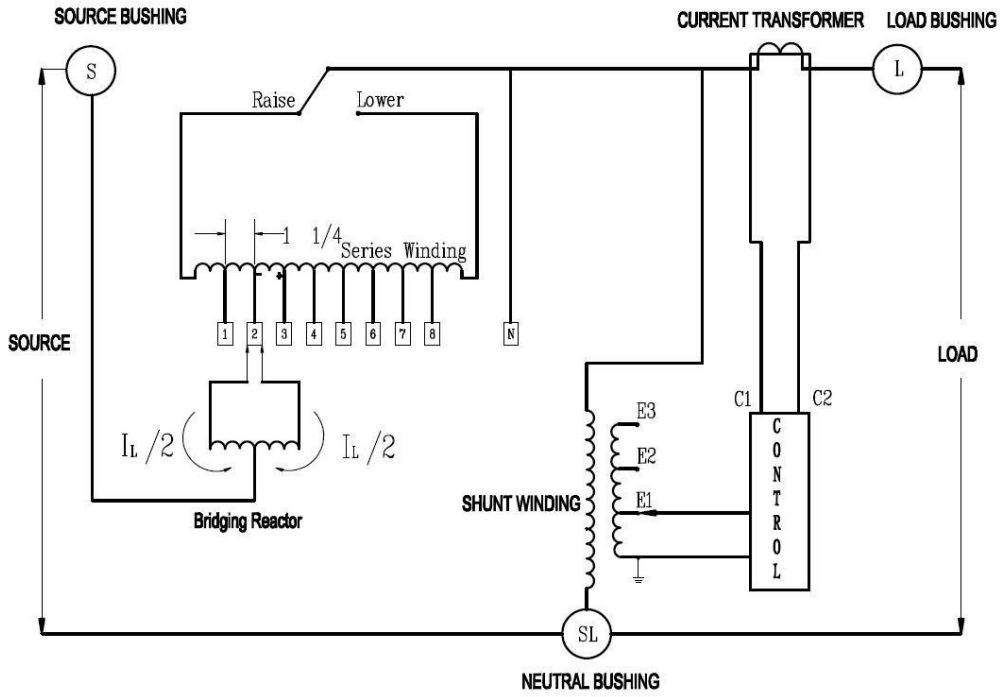
Air temperature:	Maximum temperature: +40℃; Minimum temperature: -40℃
Humidity:	Daily average humidity 100%.
Above sea level:	Maximum installation altitude: 1000m.

Note:

If it needs to be installed in plateau areas with an altitude higher than 1,000 meters, it is essential to consult with the manufacturer to take necessary measures to strengthen insulation during the ordering process.

The RVR-1 single phase automatic voltage regulators are tap changing autotransformers. They regulate distribution line voltages from 10% raise (boost) to 10% lower (buck) in thirty-two steps of approximately 5/8% each. Voltage ratings are available from 2400 volts (60kV BIL) to 34,500 volts (200kV BIL) for 50Hz and 60Hz systems. Internal potential winding taps and an external ratio correction transformer are provided on all ratings so that each regulator may be applied to more than one system voltage. Smaller KVA sizes are supplied with support lugs for pole mounting and with substation or platform tie down provisions. Larger sizes are provided with substation bases with pad-mounting provisions.





The current transformer is a toroid, through which the load current passes. It furnishes a current proportional to load current to the line-drop compensator circuit in the control and to optional metering packages.

Internal potential winding taps are provided on all ratings so that each regulator may be applied within a range of system voltages.

All RVR-1 voltage regulators are equipped with a bypass arrester connected across the series winding between the source (S) and load (L) bushings. This bypass arrester limits the voltage developed across the series winding during lightning strikes, switching surges and line faults.

Product Standards

◇IEEE Std C57.15™ Part 21: Standard requirements, terminology, and test code for step voltage regulators

◇IEC 60076-21 2018 version Part 21

◇IEEE C57.12.00-2015™ General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers

◇IEEE C57.12.90-2015 IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformer

Operating taps comply to IEEE requirements

Main Features

◇Regulator Controller

◇Tap changer with motor and power supply

◇Position indicator with ADD-AMP adjustment

◇Nameplates

◇Lifting lugs

◇Oil drain valve and sampling device

◇Oil sight gauge

◇High-creep bushings with NEMA connectors

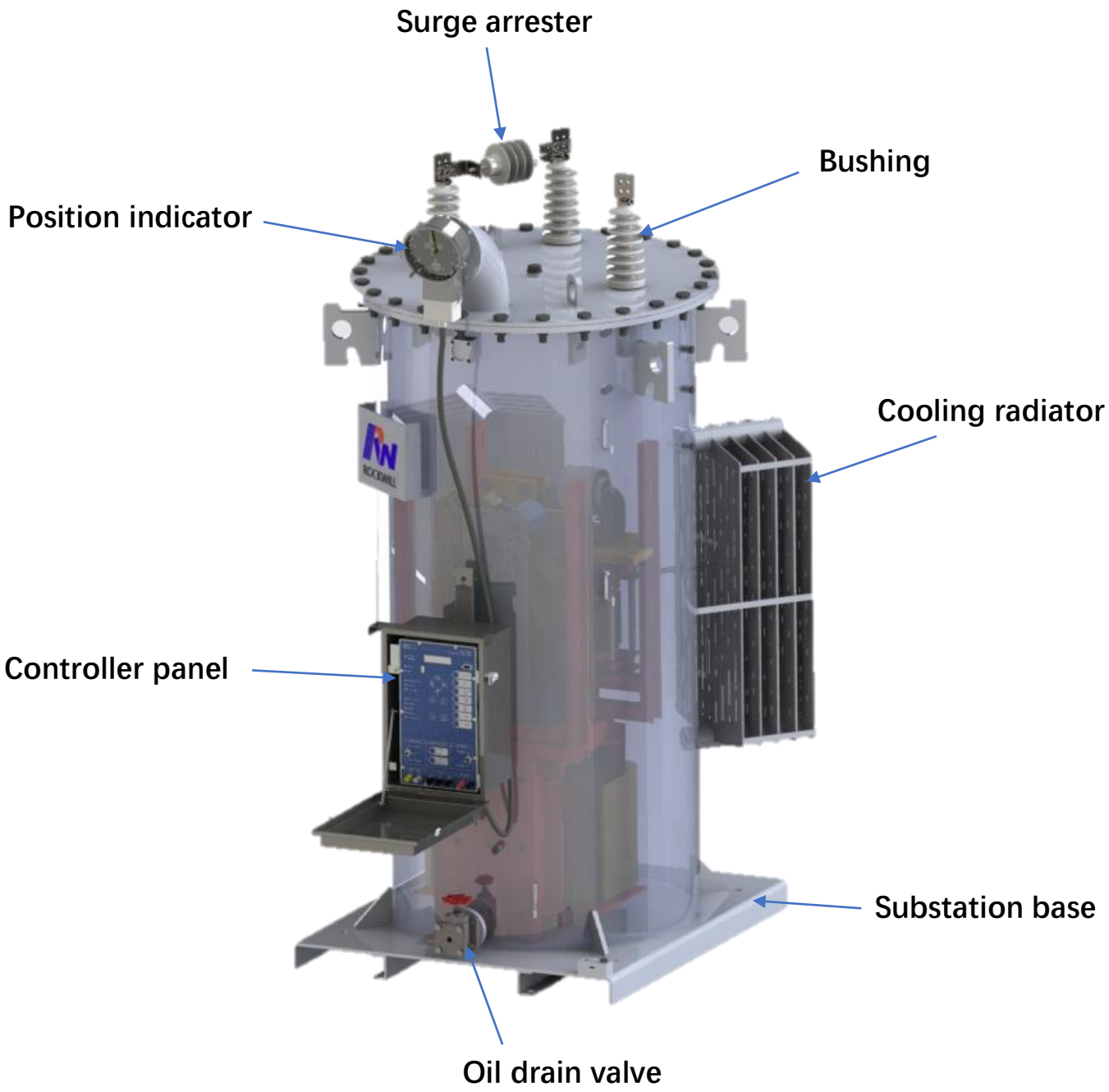
◇Pole-type mounting brackets

◇Substation base (substation units)

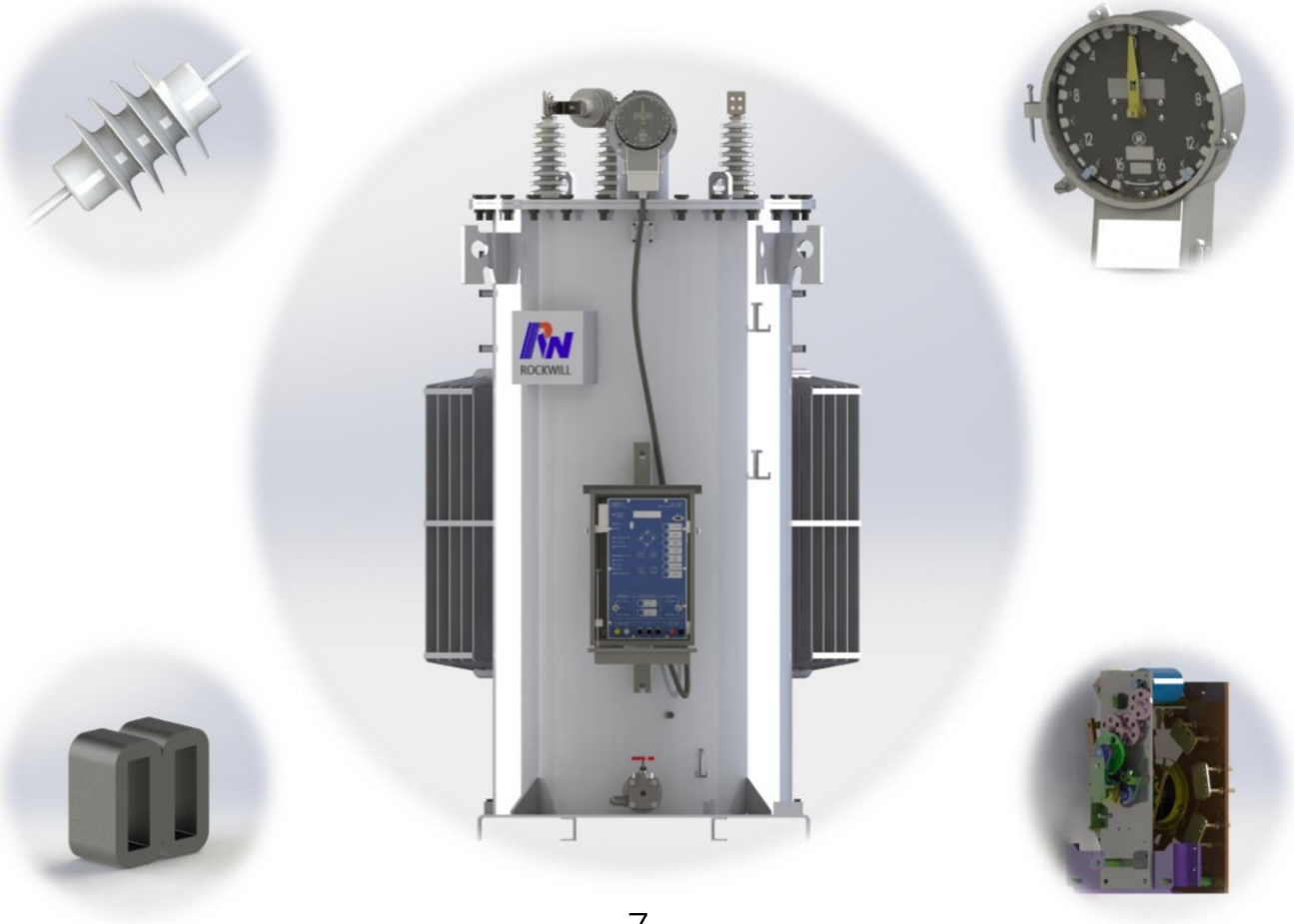
◇External series arrester

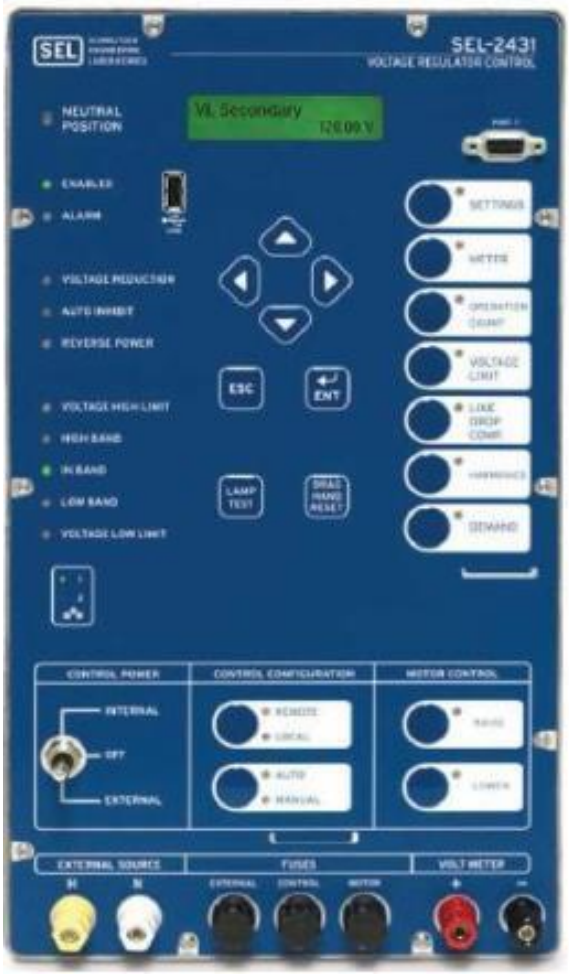
◇Automatic pressure relief device

◇Control cabinet with removable front panel



- **High precision:** Within the set voltage regulator range, it automatically adjusts the voltage in 32 loaded steps.
- **Long service life:** The unique voltage-tapping switch design prevents arcing during voltage adjustment, ensuring a mechanical operational lifespan of 1 million cycles.
- **Low maintenance:** Fully sealed design with high protection rating, excellent weather resistance, allowing for long-term maintenance-free operation, with a design life of 20 years.
- **Low loss:** The single-phase design can minimize iron losses and reduce no-load losses, with total losses being less than 0.1%.
- **Strong overload capability**: Designed with a rated capacity for a 55°C temperature rise, it can handle an overload of 12% at a 65°C temperature rise.





➢ **Distribution Automation Ready.** Interface with either on-the-fly settings changes over DNP, or master controller direct-operate interface.

➢ **Flexible Communications.** Easily inter face with your network with the Industry's most network connectable regulator controller.

➢ **Programmable Without a Laptop.** Connect a USB flash drive to upload new settings, upgrade firmware,retrieve existing settings, or retrieve reports from the SEL-2431.

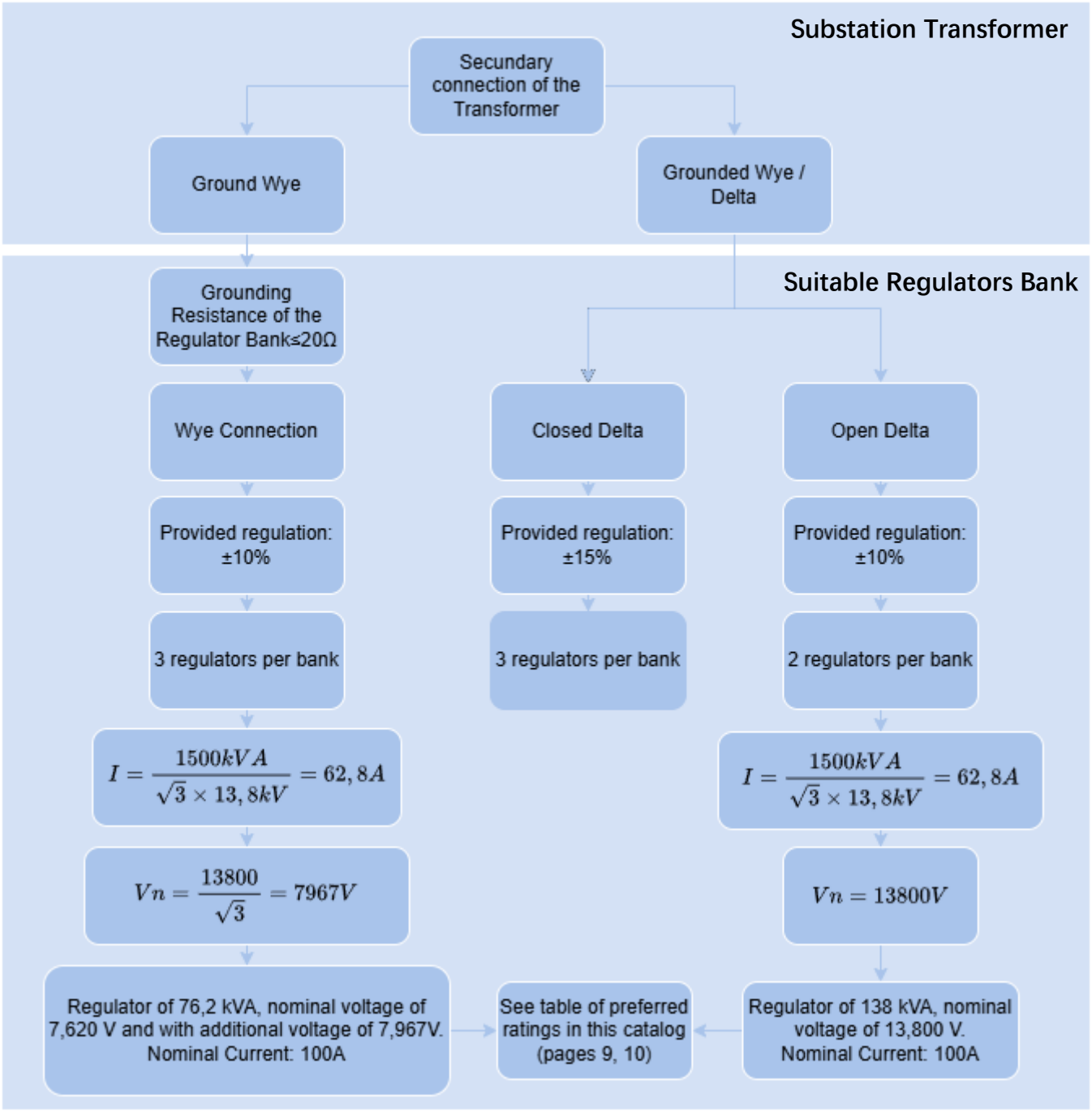
➢ **Expandable, Removable Memory.** Connect a USB flash drive and enable Automatic Backup to write all common reports to the USB for long-term storage and easy retrieval.

➢ **IEEE C37.118 Synchrophasor Protocol.** Identify connected phase of downstream voltage regulators by coordinating with sychrophasor measurements in the substation.

Voltage (kV)	Current (A)	Capacity (kVA)	BIL (kV)	Power Frequency Withstand Voltage (kV)	Insulation Class
6/6.35	50	30/32	75/95	28	A
	100	60/64			
	150	90/95			
	200	120/127			
	300	180/191			
	400	240/254			
	500	300/318			
	600	360/381			
11	50	55			
	100	110			
	150	165			
	200	220			
	300	330			
	400	440			
	500	550			
	600	660			
15	50	75	125/150	50	
	100	150			
	150	225			
	200	300			
	300	450			
	400	600			
	500	750			
22	50	110			
	100	220			
	150	330			
	200	440			
	300	660			
33	50	165	170/200	70	
	100	330			
	150	495			
	200	660			
	250	825			
	300	990			

Voltage (kV)	Current (A)	Capacity (kVA)	BIL (kV)	Power Frequency Withstand Voltage (kV)	Insulation Class
7.62	50	38	60/75	20	A
	100	76			
	150	114			
	219	167			
	328	250			
	438	333			
	546	416			
13.8	50	69	95/125	38	
	100	138			
	150	207			
	200	276			
	300	414			
	400	552			
14.4	50	72			
	100	144			
	200	288			
	300	432			
	400	576			
19.92	50	100	170/200	70	
	100	200			
	167	333			
	200	400			
	335	667			
34.5	50	165			
	100	330			
	150	495			
	200	660			

How to specify regulators to feed a total load of 1.5MVA, fed through a transformer of 69kV / 13.8kV.



Field service operation and warranty issues:

ROCKWILL® can provide competent, well trained field service representatives to provide technical guidance and advisory assistance for the installation, overhaul, repair and maintenance of ROCKWILL® equipment, processes and systems.

ROCKWILL® service Tel: +86 (577) 27869969
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Or check the website information: https://www.cnrockwill.com/