

TYPES VXE 15 AND VXE 27 RECLOSERS AND CONTROLS

EQUIPMENT SPECIFICATIONS: Types VXE 15 & VXE 27

Single-phase electronic automatic circuit recloser.

STANDARDS

The reclosers covered by this specification shall be designed, manufactured and tested in accordance with ANSI C37.60 and ANSI C37.61.

VOLTAGE RATINGS

	<u>VXE15</u>	<u>VXE27</u>
Maximum Design Voltage, kV	15.5	27.0
Nominal Operating Voltage, kV	2.4-14.4	24.9
Basic Insulation Level (BIL), kV	110	150
60 Hertz Withstand Voltage, kV		
Dry, One Minute	50	60
Wet, Ten Seconds	45	50
Maximum Radio Influence Voltage at 1.0 MHz/9.41 kV (μ V)	100 μ V @ 9.4kV	100 μ V @ 23kV

CURRENT RATINGS

	<u>VXE15</u>	<u>VXE27</u>
Continuous Current Rating, Amps	400	400
Interrupting Rating, Symmetric Amps	8,000	8,000
Cable Charging Current, Amps	5	25
Magnetizing Current, Amps	14	14
3 Second Current, Symmetric Amps	8,000	8,000
Surge Current, kA	65	65
Overload Capability		
125% - 4 hours, amps	500	500
150% - 2 hours, amps	600	600

MECHANICAL LIFE

2500 Open-Close Operations

DUTY CYCLE

<u>PERCENT OF INTERRUPTING RATING</u>	<u>NUMBER OF UNIT OPERATIONS</u>	<u>MAXIMUM CIRCUIT X/R VALUE</u>
15-20	88	4
45-55	112	8
90-100	<u>32</u>	15
total:	232	

RECLOSER FEATURES

The recloser shall be mechanically and electrically trip free.

The recloser shall be operated by a solenoid-controlled spring mechanism using line potential. This mechanism may also operate at 120Vac, 240Vac, 125Vdc, or 250Vdc as an option.

Bushings shall be of wet process porcelain and will have a standard creepage distance of 11 5/8 inches at 15kV. A 17" creepage distance bushing will be available as an option at 15kV. At 27kV, standard creepage distance shall be 17". A 26 1/2" creepage distance will be available as an option at 27kV.

Bushing terminals shall be universal clamp type and shall accommodate conductor ranging in size from NO. 6 to 350 MCM inclusive.

Current interruption shall occur in an axial-magnetic vacuum interrupter.

It shall be possible to replace one or both bushings without re-alignment or adjustment of the vacuum interrupters or operating mechanism.

A sensing bushing current transformer, 1000:1 ratio, for use with the recloser control, shall be mounted internally in the recloser on the source-side bushing. Included shall be a protection circuit for the CT, also internally mounted in the recloser, that permits disconnection of the control cable without removing the recloser from service.

A 4-digit non-resettable counter shall be provided under the sleet shield.

A ground lug capable of accommodating #8 solid to 2/0 stranded shall be provided on the head of the recloser.

Two pole mounting support brackets shall be provided on the tank of the recloser for pole or substation mounting.

The manufacturer shall have no less than 25 years experience in the design and fabrication of reclosers.

A non-reclose lever shall be provided, externally, to be operated through the use of a hookstick.

A single lifting strap shall facilitate hoisting during installation and maintenance.

The recloser shall have the capability of operating between -30°C and $+40^{\circ}\text{C}$, ambient, without the need of external heaters.

The recloser shall have a red/green closed/open contact position indicator on the outboard side of the sleet hood.

The recloser shall utilize a captured head-bolt design to ease maintenance.

The recloser shall have the ability to trip on fault current when no ac or battery power is available.

The recloser shall be completely self contained and shall operate a full sequence without the presence of an external supply voltage. An accessory shall be available to provide low voltage closing as an alternative.

CONTROL FEATURES

The recloser operation shall be controlled by an electronic control that can be located remotely, up to 100 feet, from the recloser. The control shall be housed in a weatherproof cabinet with a door that can be padlocked. The operating temperature range for the control shall be -30°C to $+40^{\circ}\text{C}$, ambient.

Control power is to be supplied by line current flowing through the recloser via the sensing CT (current transformer).

Control parameters are to be programmed by setting dip switches on the circuit board. These parameters include minimum trip, operations to lockout, operations on TCC #1, minimum response time enable, minimum response time settings, TCC modifiers, reclose time, reset time, and cold load pick-up time delay.

Time current curves are to be determined by two field changeable plug-in circuit boards.

Remote monitoring and control may be provided through an Input/Output board, including remote lockout, remote close, remote non-reclose, remote contact position indicator, remote lockout indicator, remote non-reclose status, and remote analog current monitoring.

The control shall have a sequence coordination feature which allows a source-side recloser to step through its "fast" curve without tripping to provide complete trip coordination with a downline recloser.

A target that shows orange during control lockout shall be provided on the bottom of the control cabinet.