

**NU-LEC**



**Loop Automation**

**NU•LEC**  
**INDUSTRIES**  
A SCHNEIDER ELECTRIC COMPANY

**Reclosers & Sectionalizers**

# NU-LEC LLC

**NU-LEC LLC** is a wholly unit of **NU-LEC Industries, Pty, Ltd.**

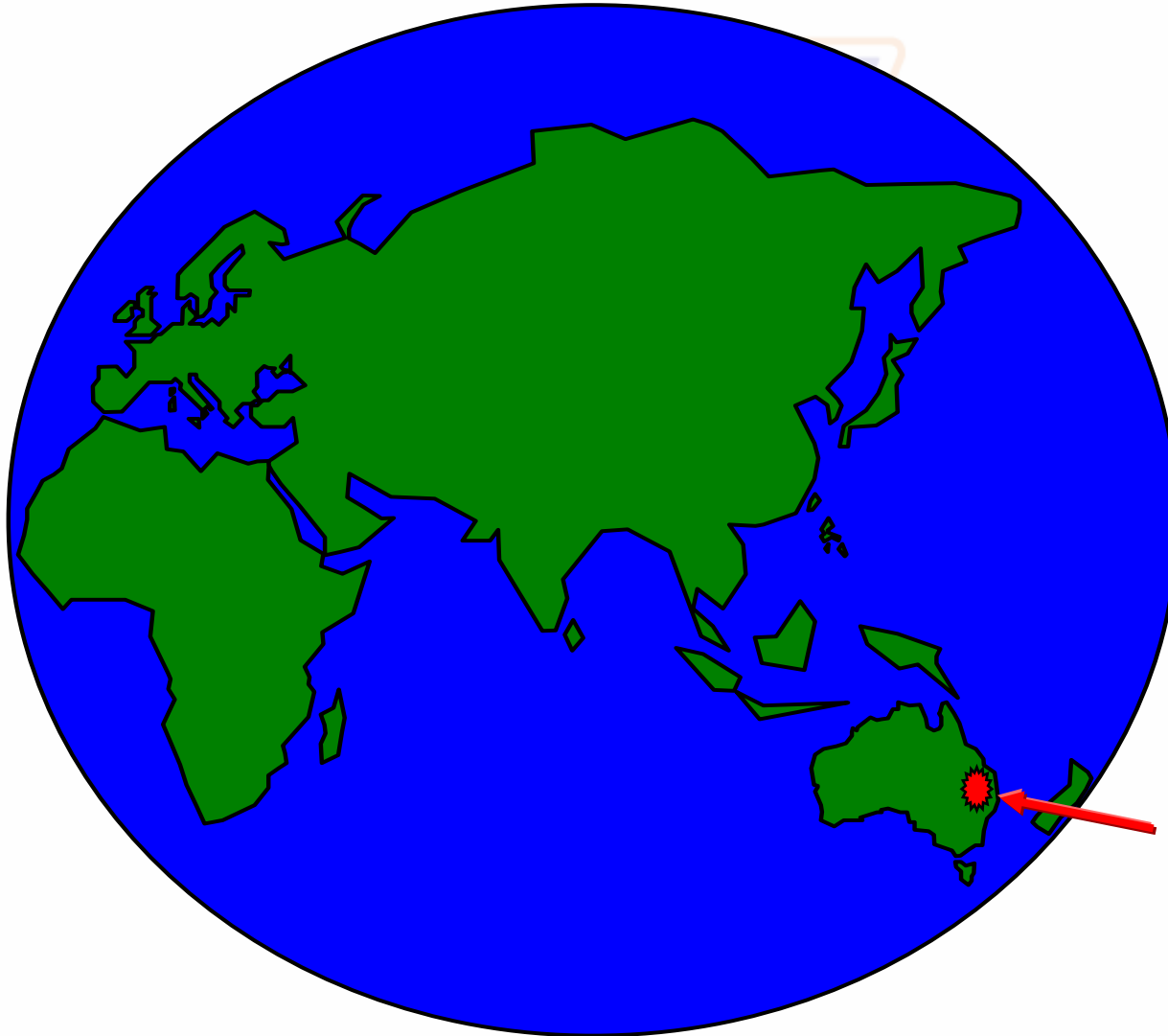
**Sales and service center for United States, Canada, and  
the Caribbean.**

**Warehouse and Main Office**

**1252 Old Alpharetta Rd.**

**Alpharetta, GA**

# NU-LEC Industries Pty, Ltd



**Nu-Lec Industries  
Corporate Office and  
Factory. Brisbane**

# Schneider Electric Overview

Major Brands:

Square D

Merlin Gerin

Modicon

Telemecanique

Nu-Lec



85,000+ employees in 130 countries

2001 sales revenue: \$9 billion

620 commercial sites and 9000 sales outlets

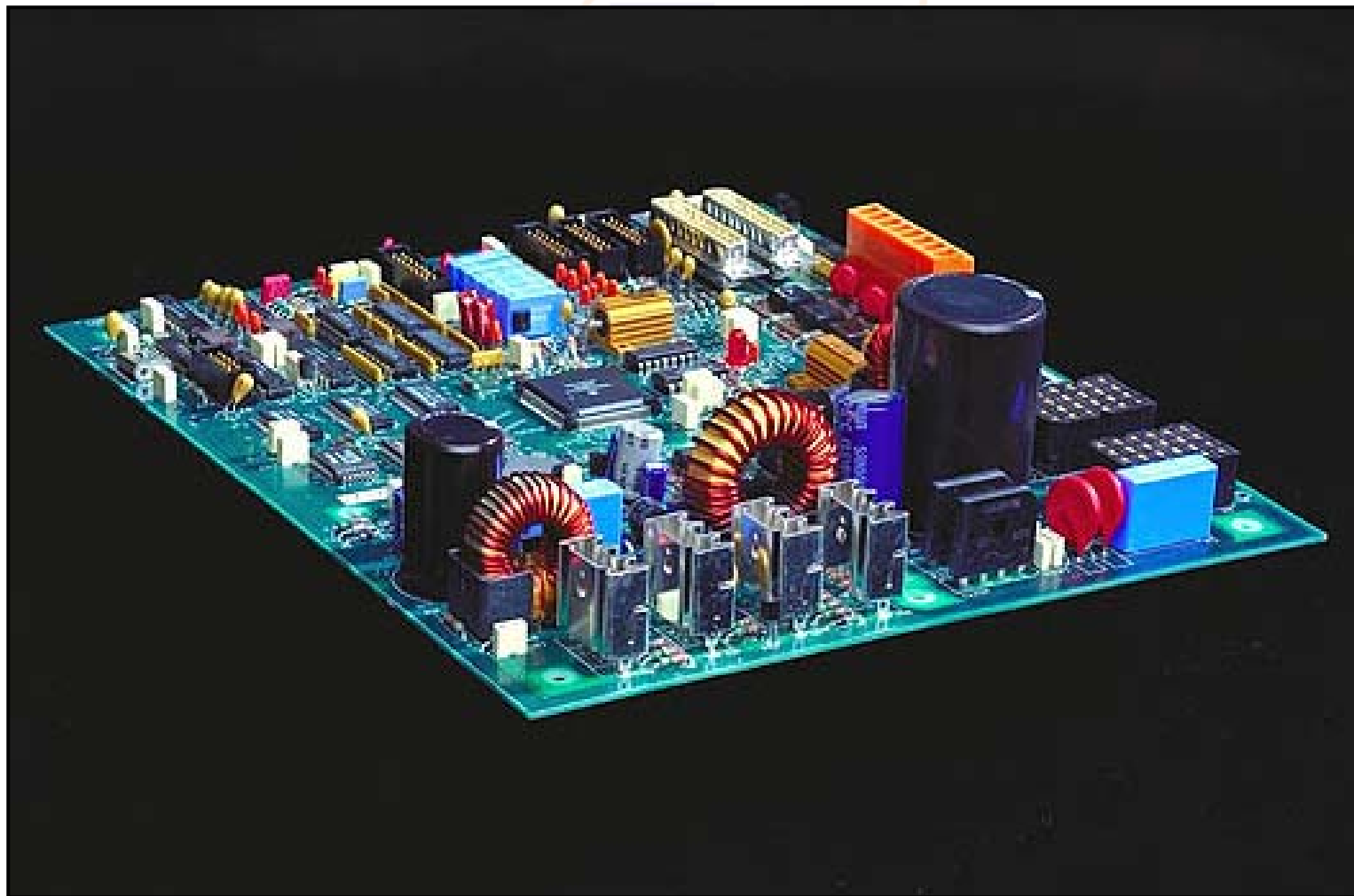
3,000+ Engineers and Technicians and development centers in 20 countries.

1,500+ software engineers engaged in numerous R&D programs.

# NU-LEC's Worldwide Distribution Network



# Electronic Products





**NU-LEC's**

***Distribution Automation Optimized Family of  
Products***

**NU-LEC  
INDUSTRIES**  
A SCHNEIDER ELECTRIC COMPANY

# NU-LEC



## “N” SERIES RECLOSER

CIRCUIT BREAKER



ELECTRONIC CONTROL



AUTO-CIRCUIT RECLOSER

Arrestor Mounting Brackets  
and lifting points.

Epoxy Bushings w/ CVTs  
(Boots Removed)

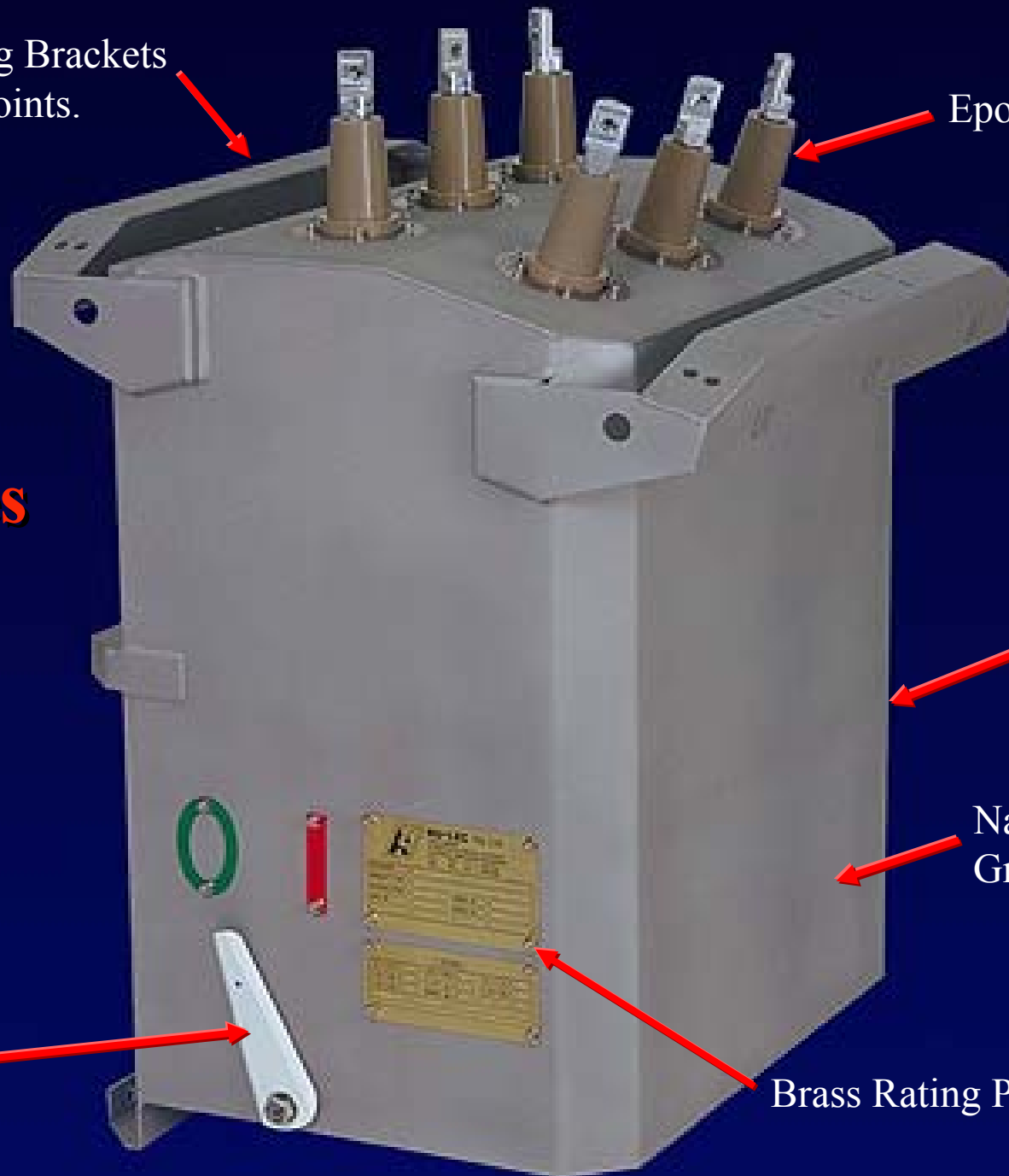
## “N” Series Recloser

Mechanical Trip Level  
On This Side

Natural “Matte” Finish  
Grade 316 Stainless Steel

Large Open/Close  
Indicator

Brass Rating Plates



# “N” Series Recloser Family

## Four models:

N12-15 rated 15.5kV 630A 110kV 12.5kA

N36-27 rated 27kV 630A 150kV 12.5kA

N36-12.5 rated 38kV 630A 170kV 12.5kA

N36-16 rated 38kV 800A 170kV 16kA

PTCC control and communications cubicle with integral RTU

Type Tested to comply with ANSI C37.60, IEC56 & IEC255

# “N” Series Recloser Features

Fully insulated bushing arrangement

Grade 316 stainless steel tank (sealed for life). Natural ‘matte’ finish.

Vacuum Interrupters (Cutler-Hammer)

SF6 Gas insulation medium (low psi, low vol.) – approx. 5.1 lbs/in<sup>2</sup>

Single pole mounting 500 lbs

LV solenoid close and trip from stored energy charged capacitors.

No Scheduled Maintenance for 30 years.

Voltage measurement to a 2.5% accuracy on all six bushings

# “N” Series Recloser Duty

10,000 Mechanical Operations

Breaking Duty Vacuum Interrupter:

Rated Load: 10,000 Operations

6kA: 1,000 Operations

12.5kA:

N12: 15kV, 100 Operations

N36: 27kV, 520 Operations

N36: 38kV, 520 Operations

# ***PTCC Control Cubicle***

*Insulated  
throughout*

*Operator Hatch*

*Comms. Tray with RS232 cable  
and DC power supply*

*Mini-breakers for Aux. power  
and Batteries*

*Natural Finish Grade 316  
Stainless Steel*

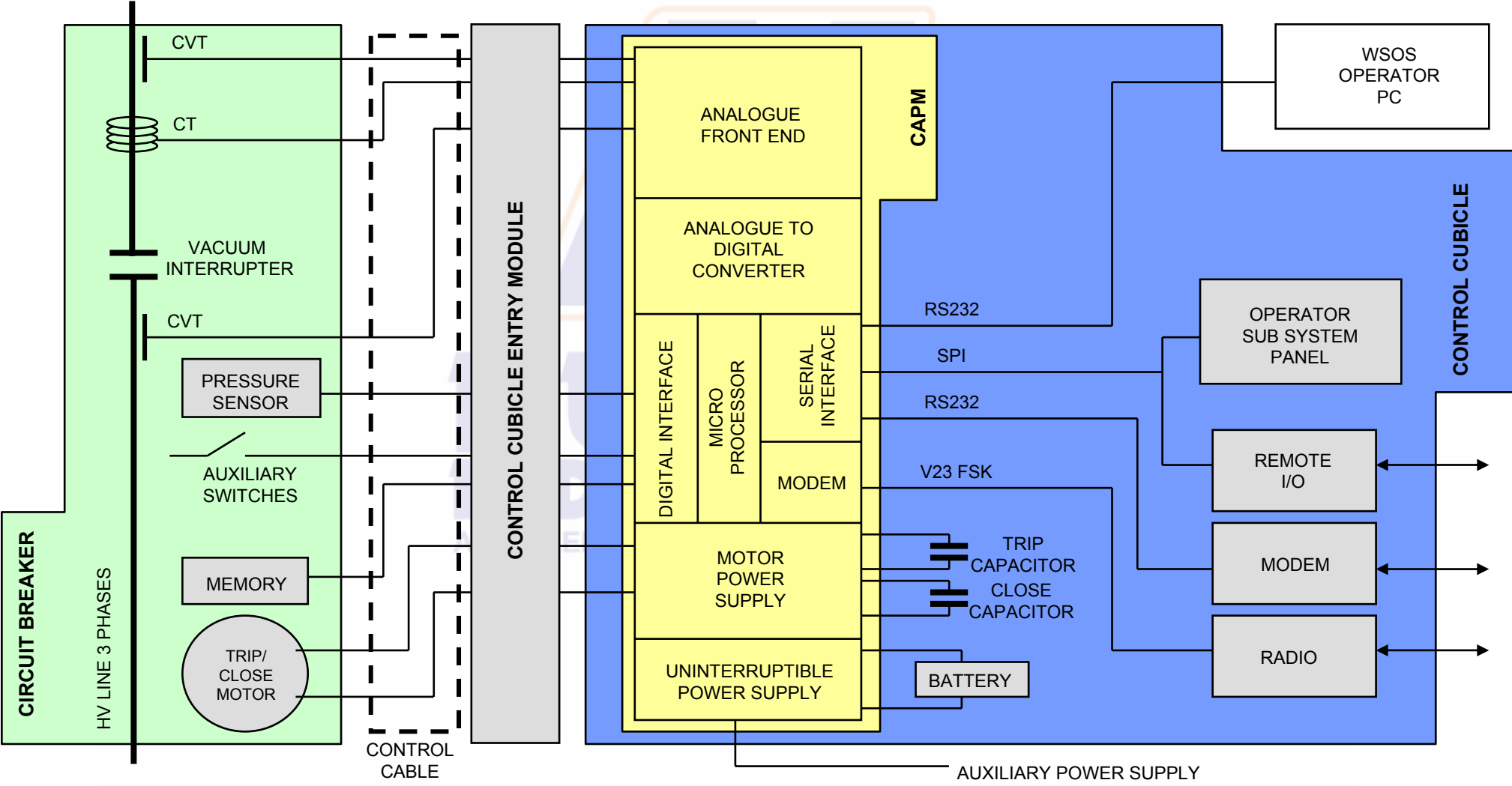
*Operator Panel with 4 line LCD  
display, computer port and push  
button controls. Plain English  
text, no codes.*

*12 volt sealed lead acid cell  
batteries. 5 day hold up w/o  
comms. 5 year replacement.*

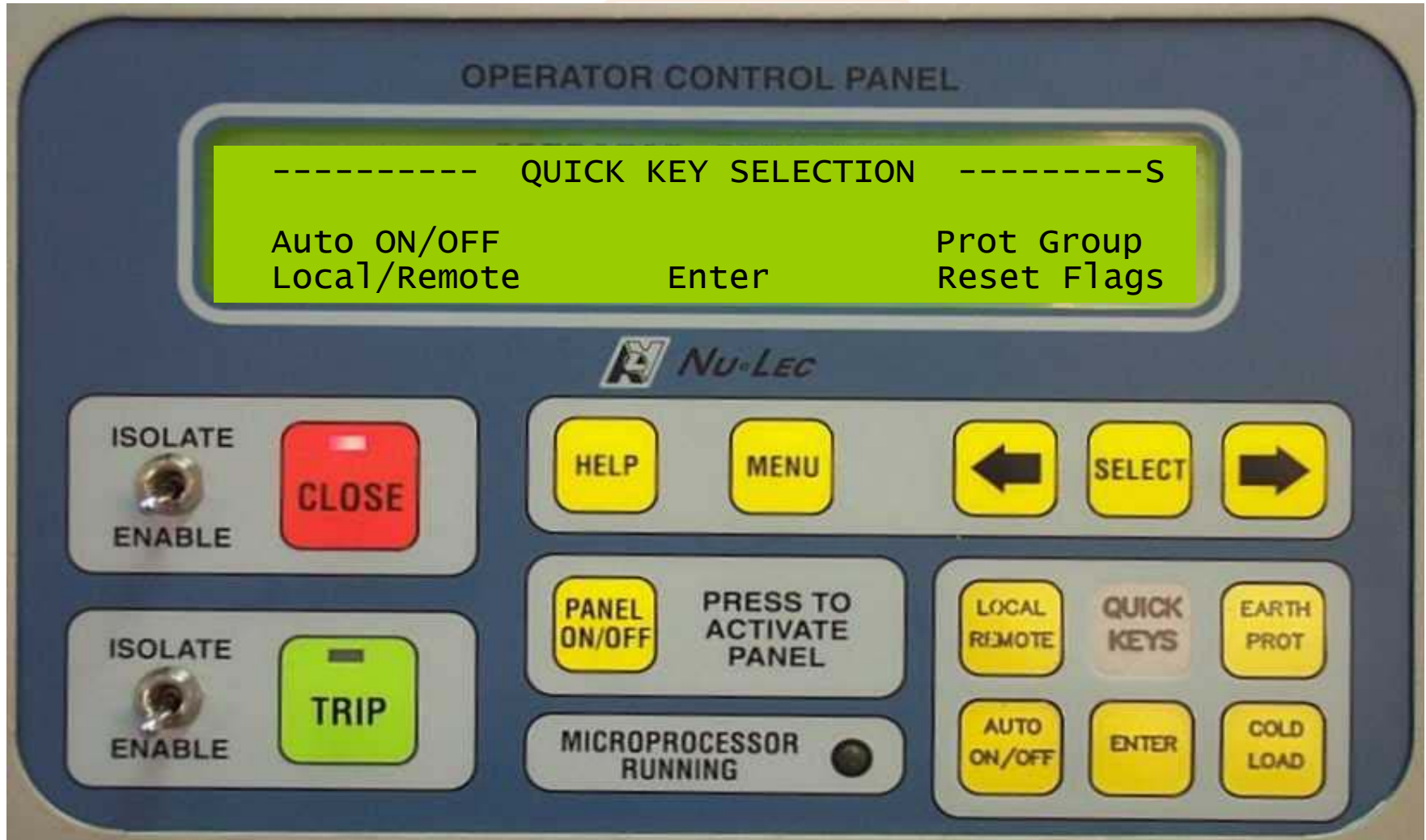
*Battery heater (not shown)  
Temperate model only.*



# Control Block Diagram



# Operator Control panel



# Measurement

**Measurement of voltage on all three phases**, including sensing of voltage on all six terminals. This is achieved to a 2.5% accuracy by digitizing each bushing's ground screen current in real time in the microprocessor.

**Measurement of current on all three phases.** (CT ratio 2000:1)



# Protection

Over current protection

Directional Blocking.

Live Load blocking.

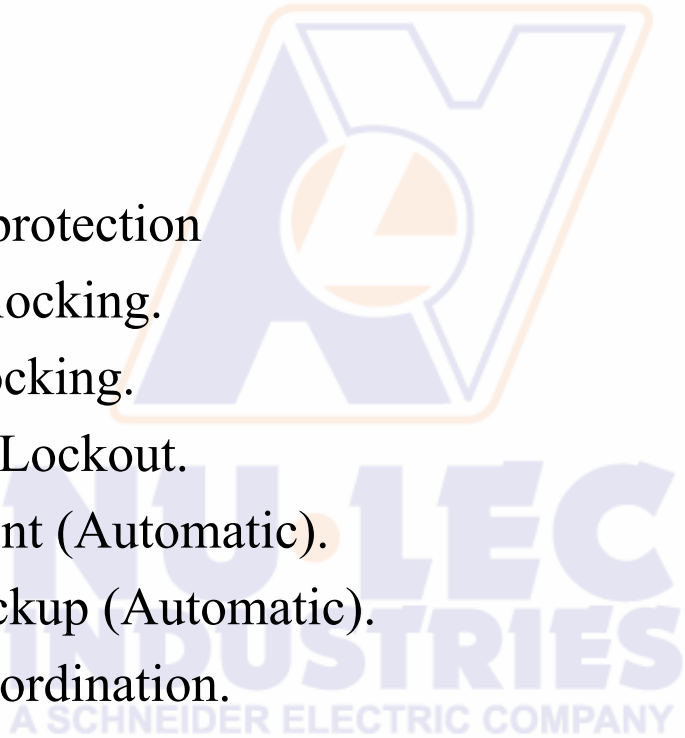
High Current Lockout.

Inrush Restraint (Automatic).

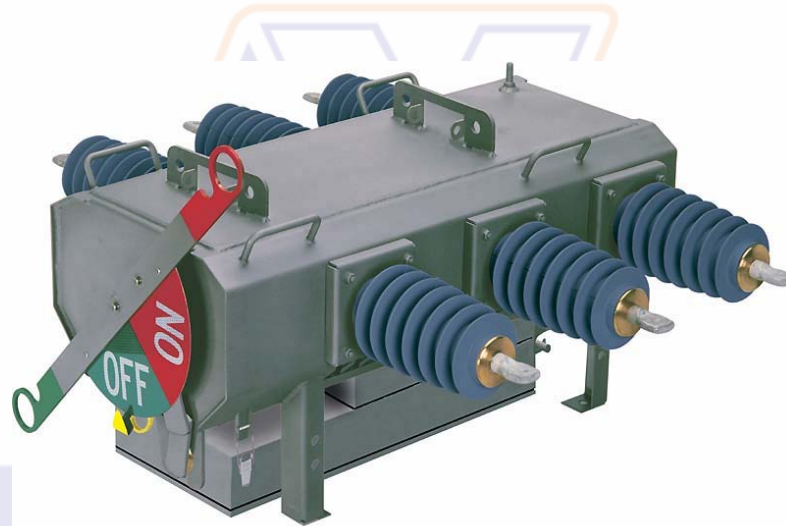
Cold Load Pickup (Automatic).

Sequence Co-ordination.

Over/Under Frequency Protection and Restoration.



# NU-LEC



## **“RL” SERIES LOAD-BREAK SWITCH AND SECTIONALIZER**

# “RL” Series

Natural “matte” finish,  
grade 316 stainless steel

Lifting Handles

Add SCADA and fully Automate  
with PTCC Control Cubicle



Mounting Support Brackets

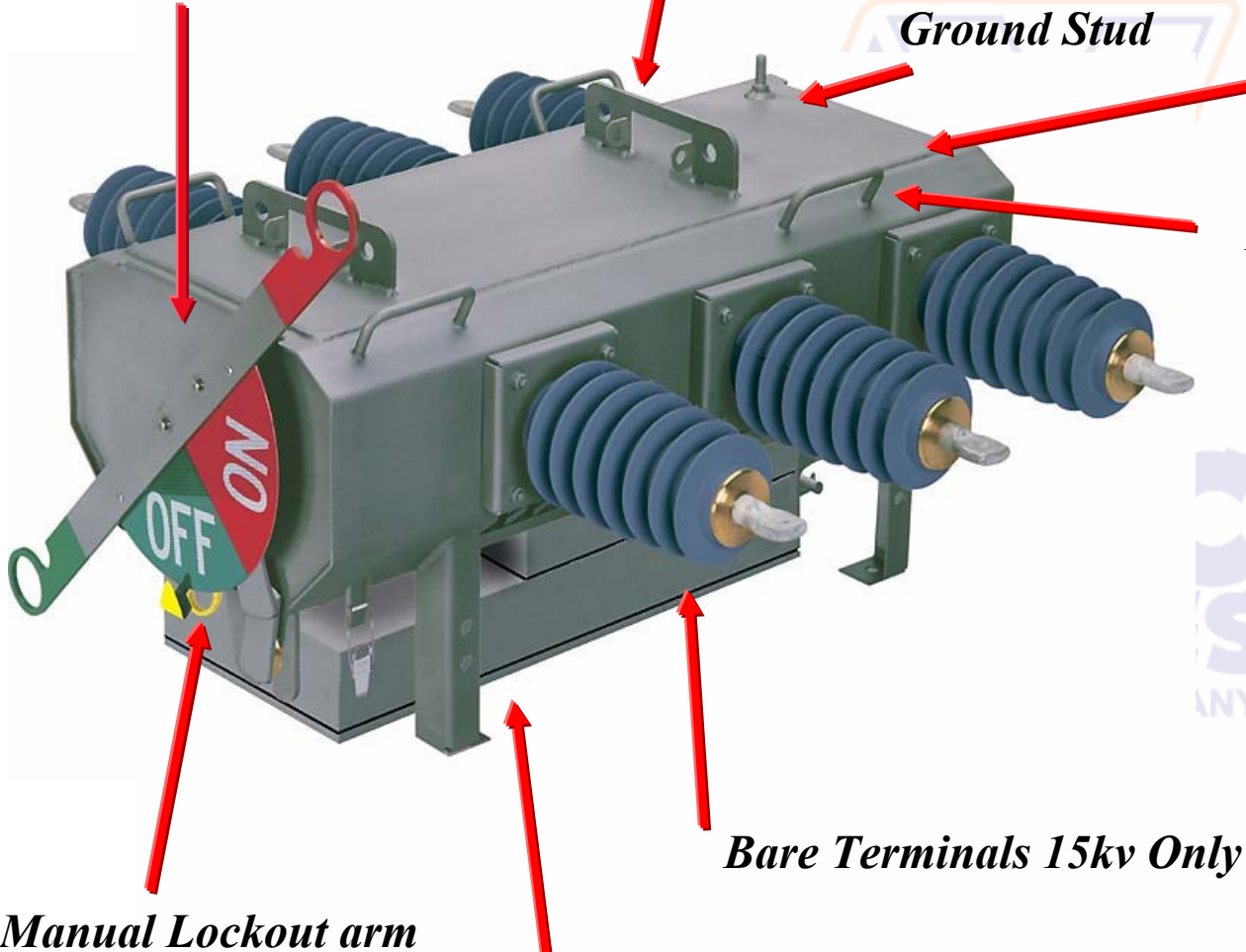
Ground Stud

Bare Terminals 15kv Only

Add on Motor Pack

Hot Stick Operator with  
Large Status Indicator

Manual Lockout arm



# “RL” Series

**15-27 kV**



**Maximum System Voltage**

**15-27 kV**

**Continuous current**

**630 A**

**Fault Make (RMS)**

**12.5 kA/16kA**

**Fault Make (Peak)**

**31.5 kA/40kA**

**Mechanical Operations**

**3000**

**Rated Full Load Operations**

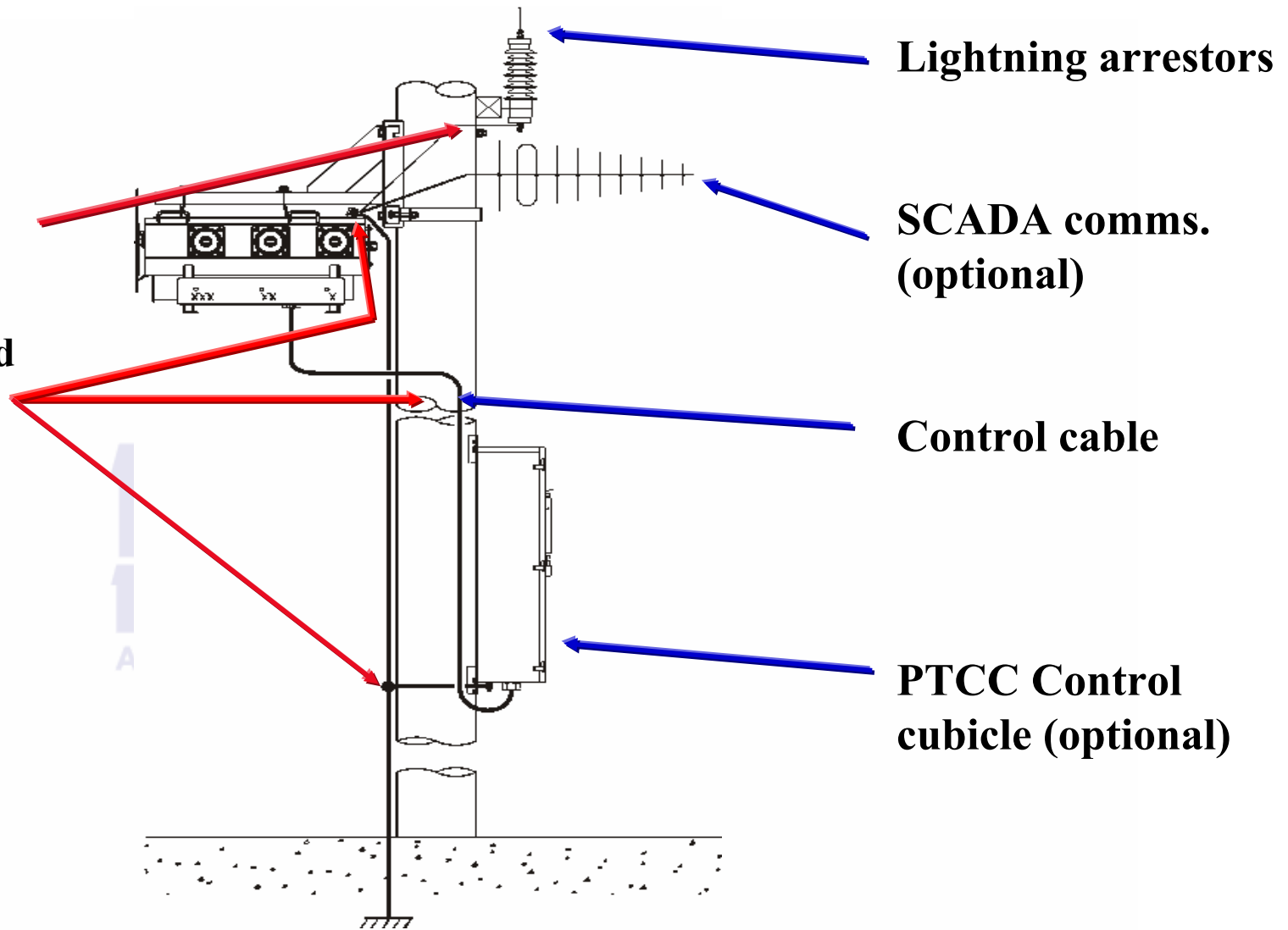
**600**

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# Installation

## Grounding points

All grounding should be of correct size, using crimped connections and be kept as short as practicable to prevent high impedances during impulse.



# Protection

Auto Change to protection group A and B depending on direction of power flow.  
User configurable.

Protection settings easily loaded from the control panel or WSOS software.

## Special Features

**Loop Automation:** Has the ability to isolate a faulted section of feeder within one minute with out the need for peer-to-peer communications.

**Auto-Changeover:** Has the ability to quickly change over from a main feed to an alternate feed at a critical load; requires peer-to-peer communications.





**Adjustable height  
galvanized steel Substation  
Mounting Frame**



**UtiliNet  
Radio**

**Auto-Changeover  
&  
Feeder Automation**

**Reclosers & Sectionalizers**