

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.**

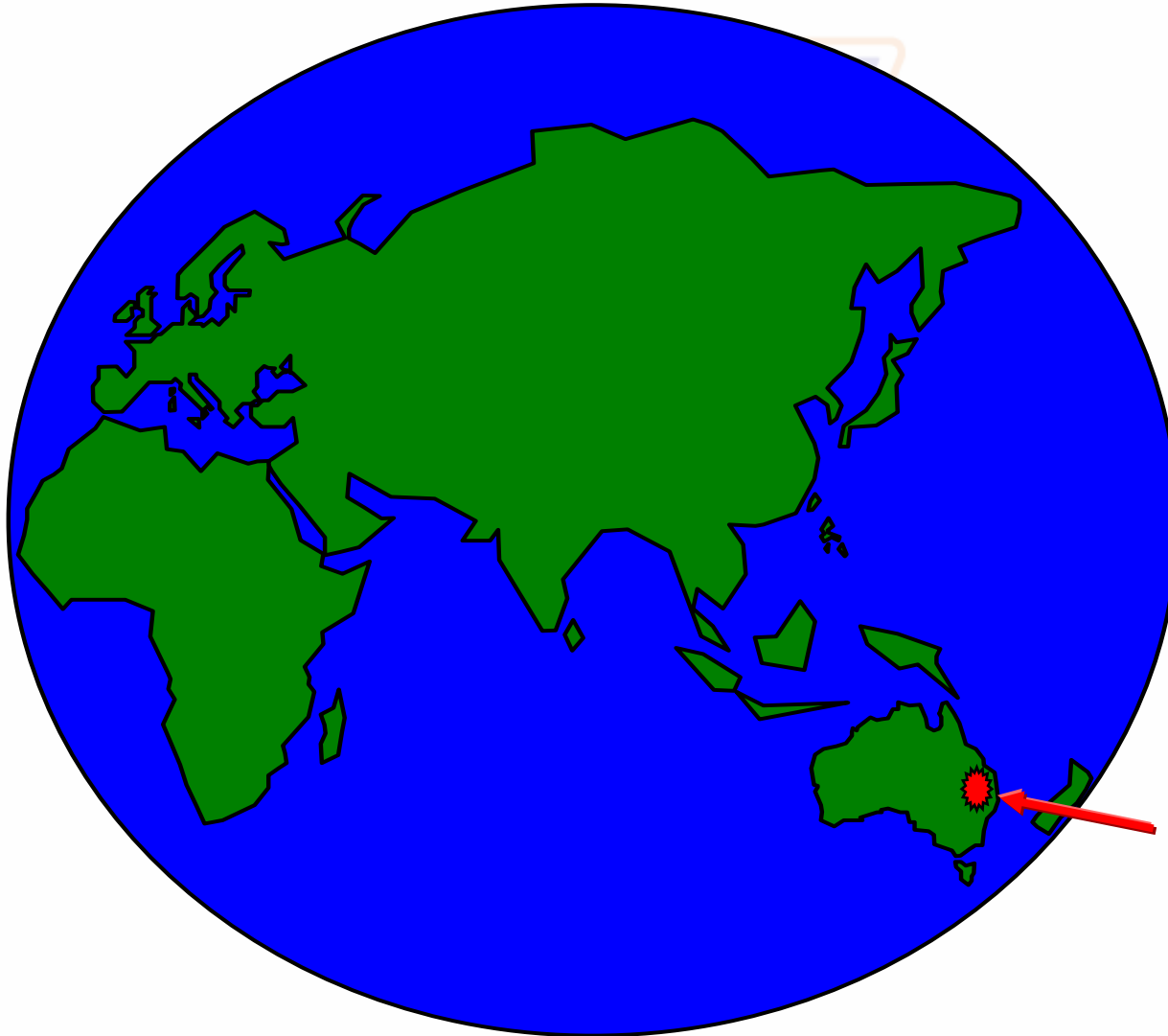
**Sales and service center for United States, Canada, and
the Caribbean.**

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

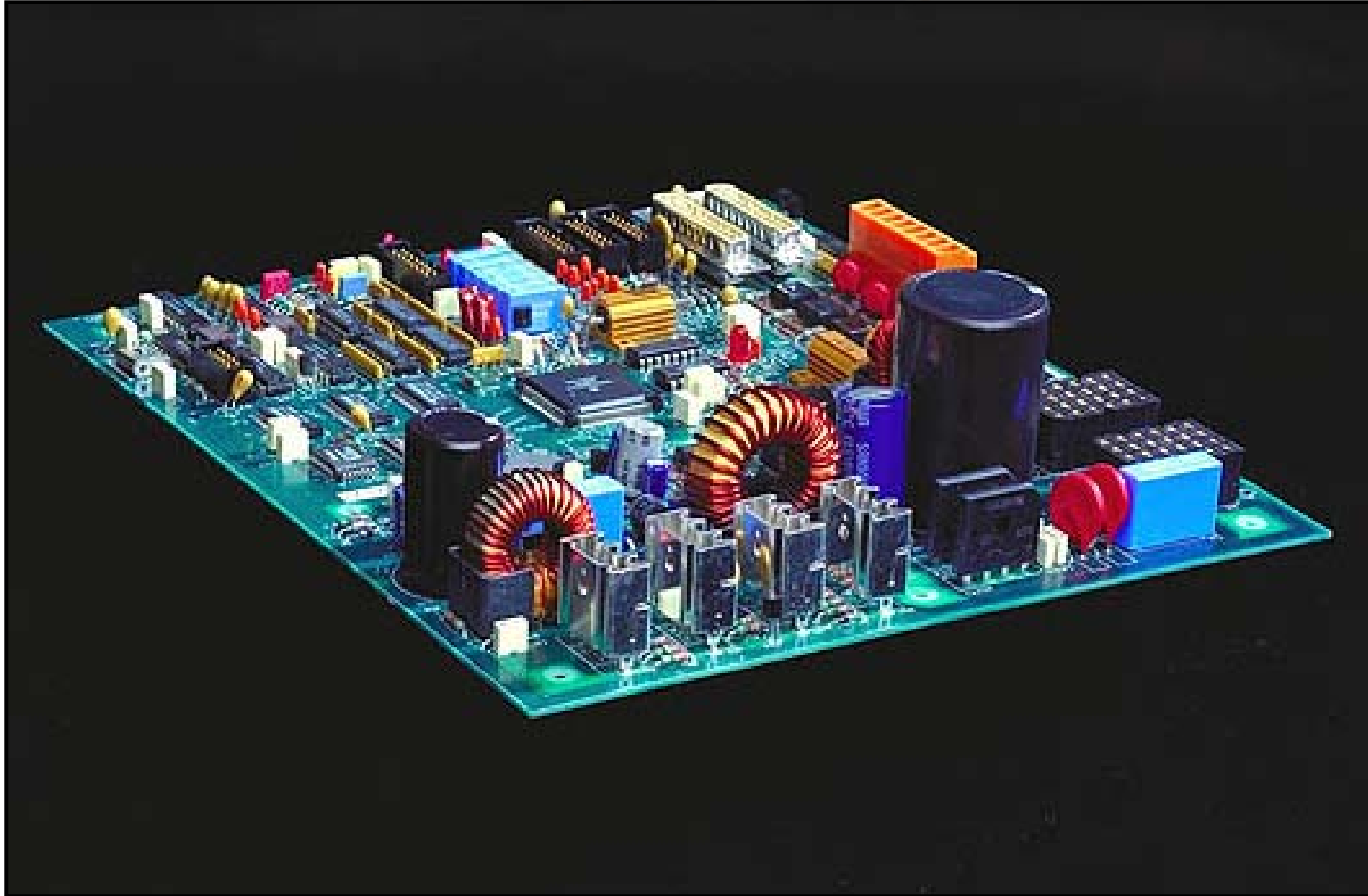
3,000+ Engineers and Technicians and development centers in 20 countries.

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

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“N” SERIES RECLOSER

CIRCUIT BREAKER



ELECTRONIC CONTROL



AUTO-CIRCUIT RECLOSER

Arrestor Mounting Brackets
and lifting points.

Epoxy Bushings w/ CVTs
(Boots Removed)

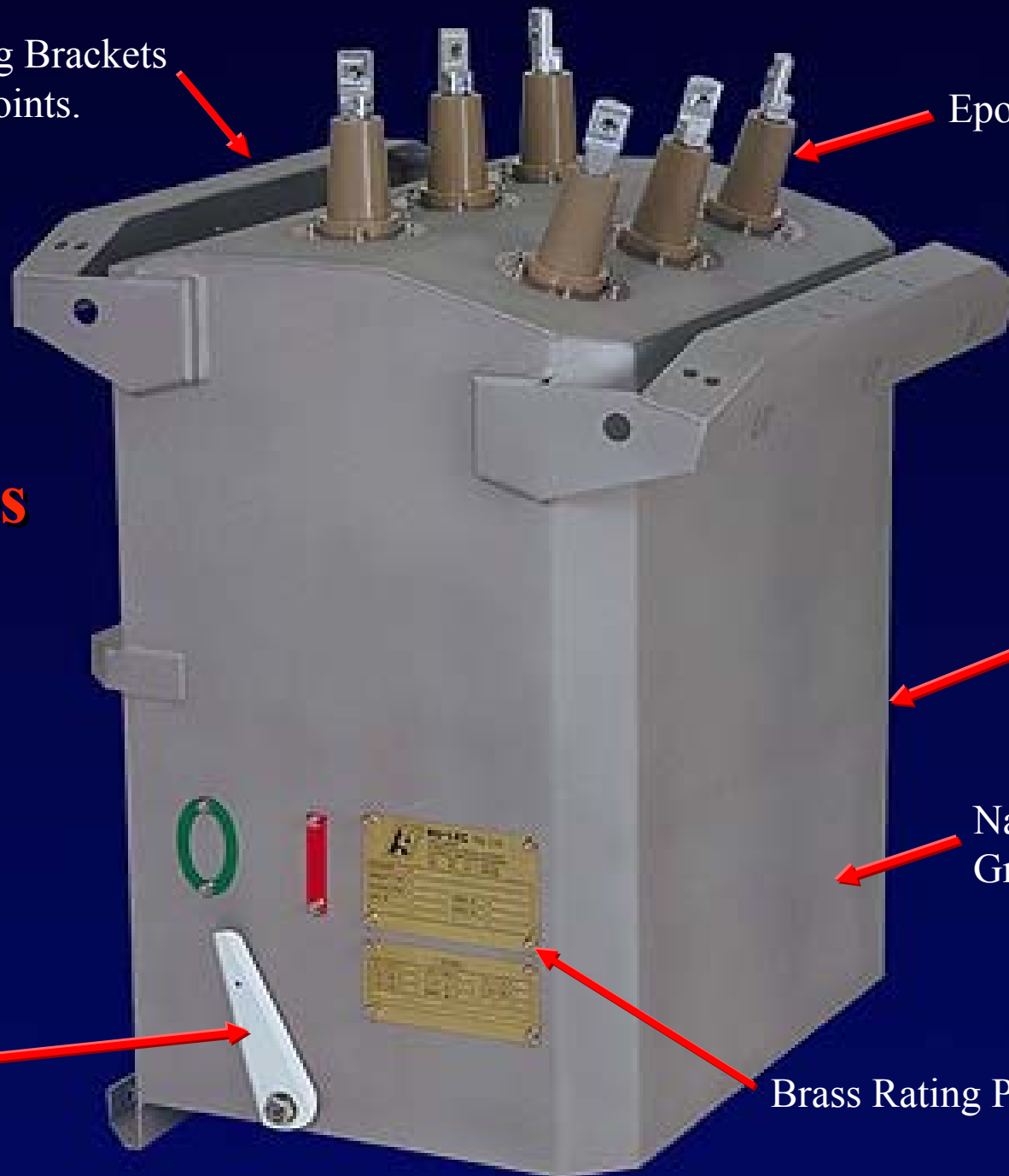
“N” Series Recloser

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/in²

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*

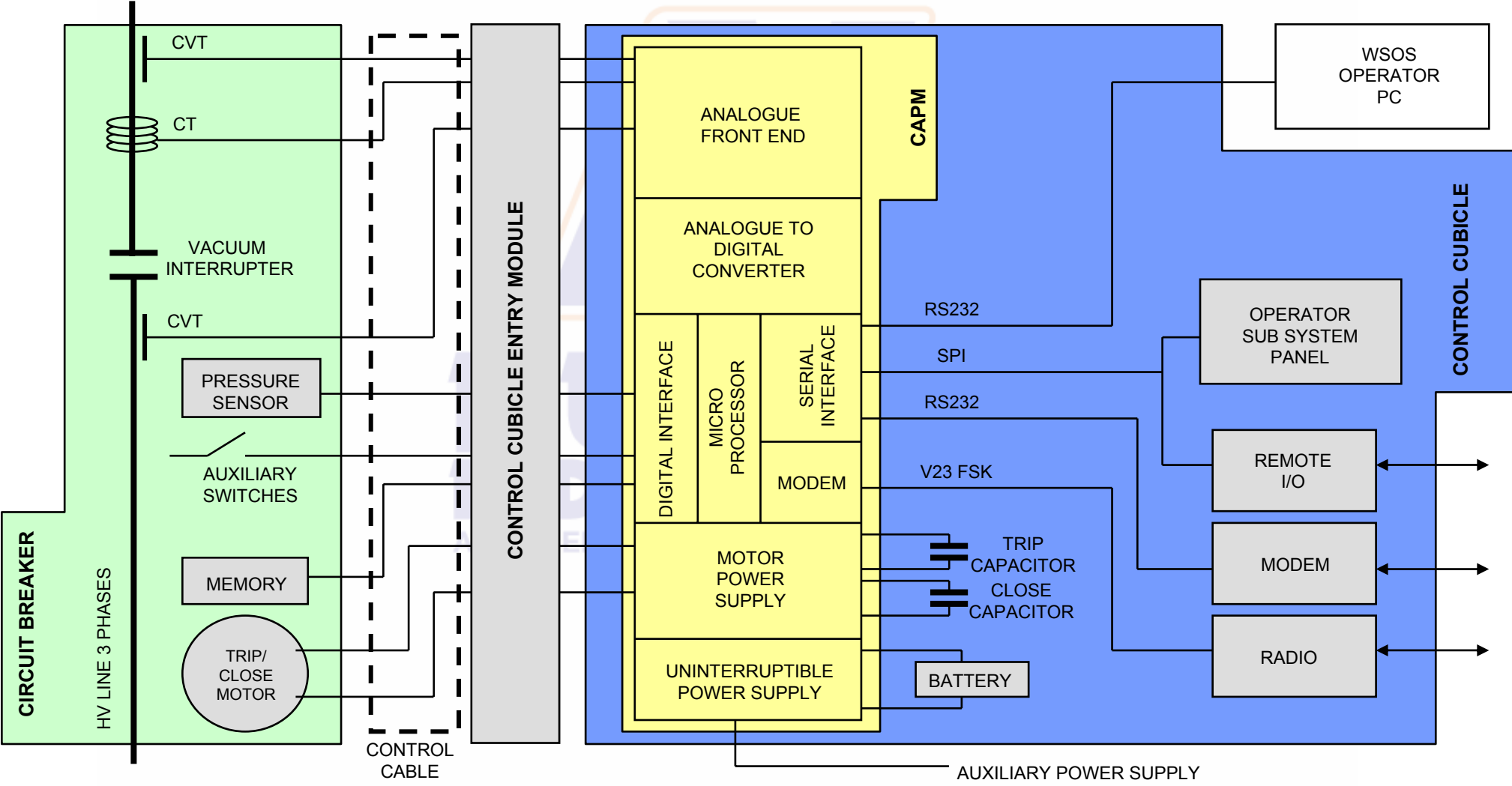
*Operator Panel with 4 line LCD
display, computer port and push
button controls. Plain English
text, no codes.*

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

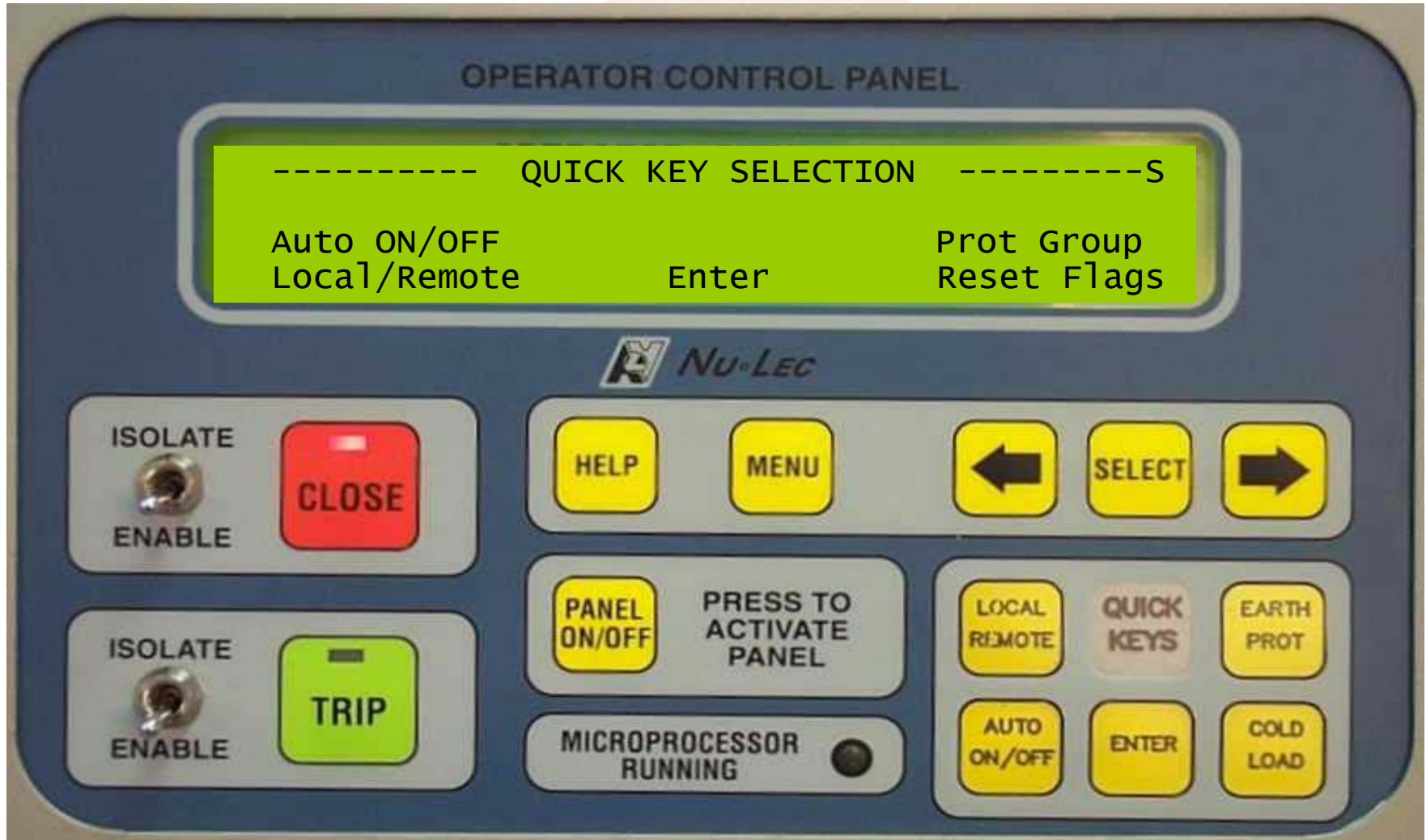
*Battery heater (not shown)
Temperate model only.*



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.

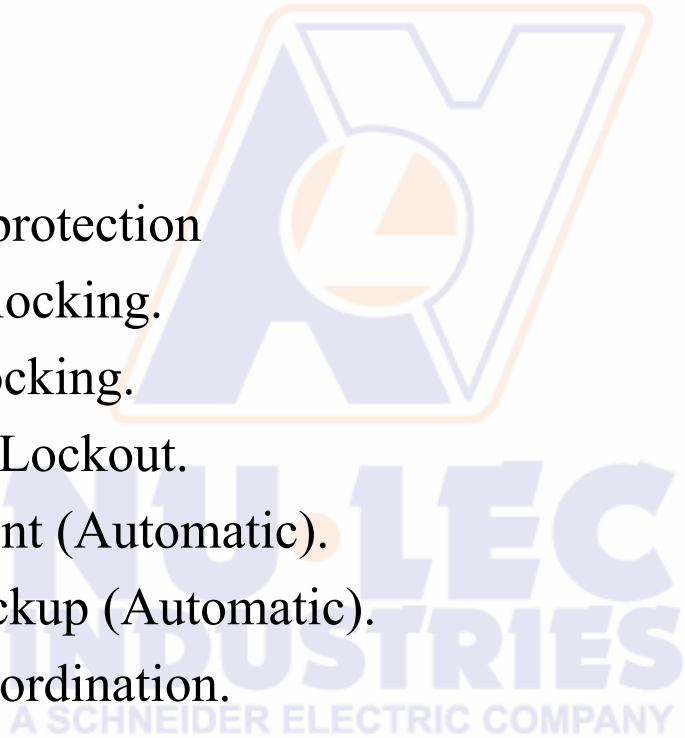
High Current Lockout.

Inrush Restraint (Automatic).

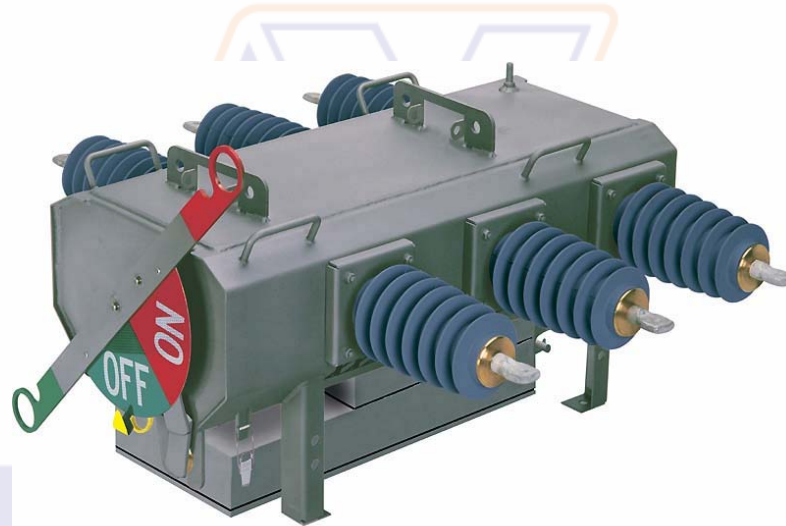
Cold Load Pickup (Automatic).

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

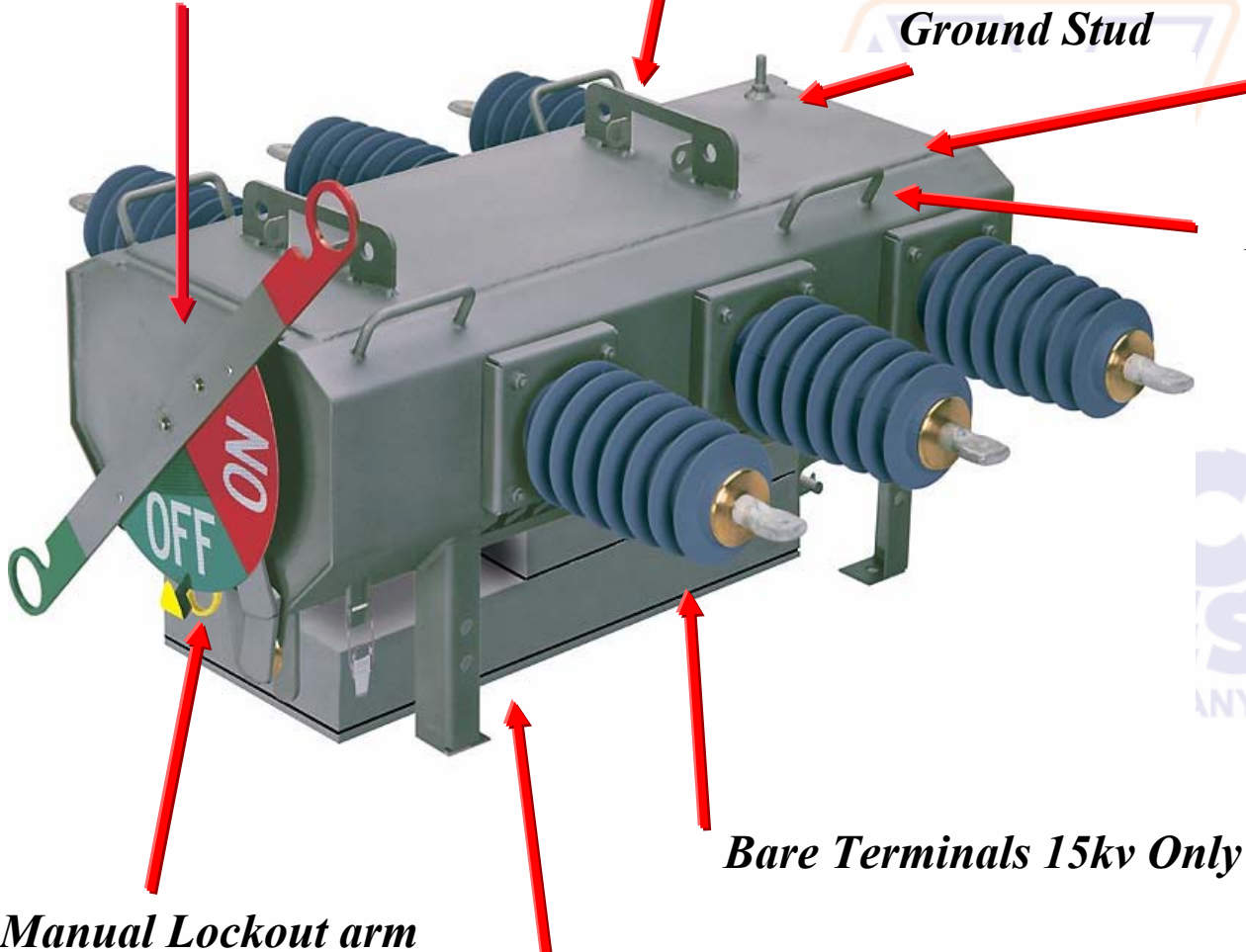
Ground Stud

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

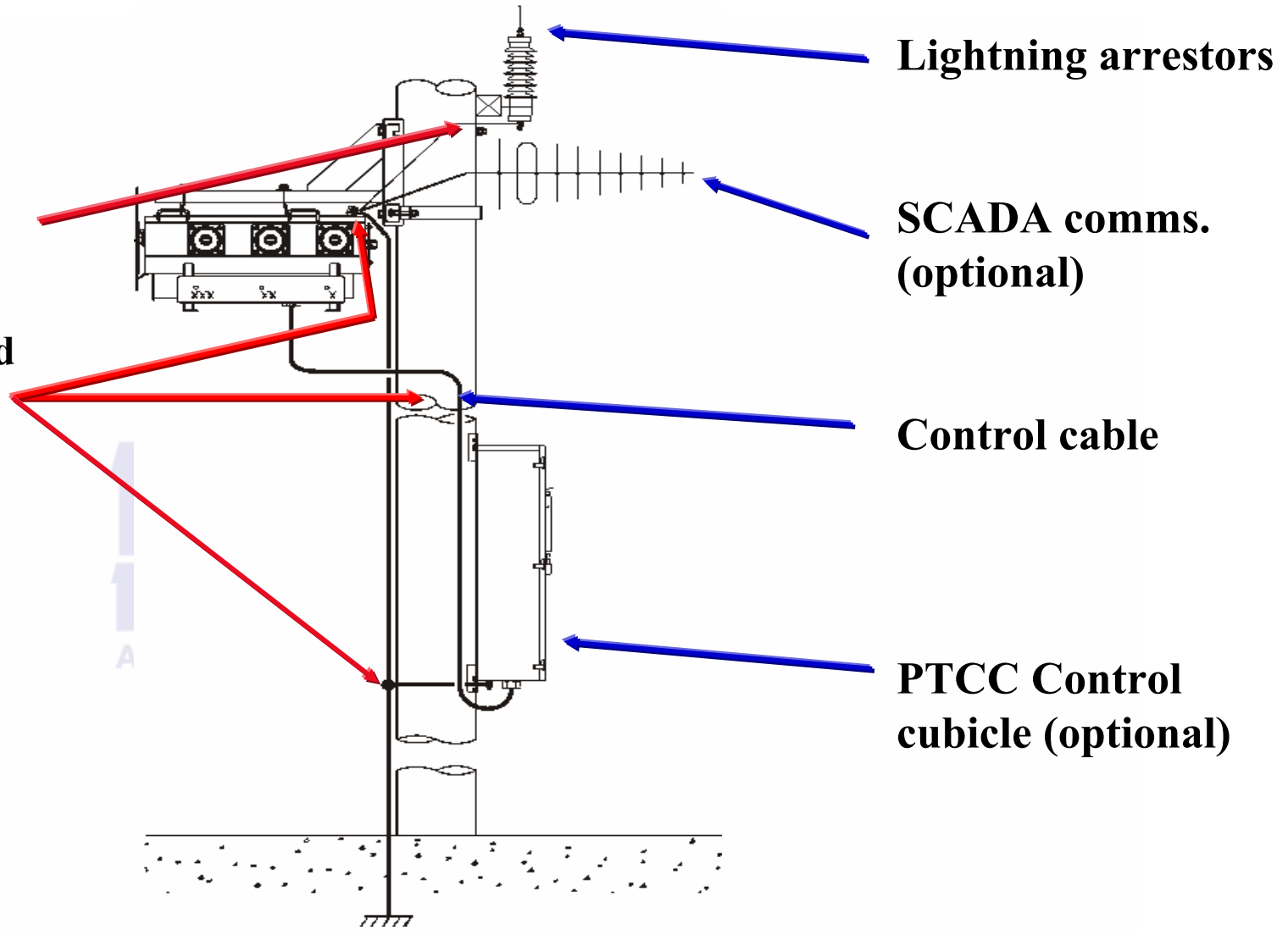
600

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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 without 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