



INDOOR INSTALLATION



OUTDOOR INSTALLATION

Energopro Canada's, patent pending, Medium Voltage Regulating and Optimizing Terminal (“MVROT_R“) is dry casted, single phase, power (energy) unit, with internally built-in, current and voltage windings in a novel (patent pending) manner. Secondary windings are built as dual connection, and as such can provide power to the group of single phase consumers within low voltage distribution. This way, MVROT provides equalization of electrical current, per phase, and can easily achieve high level of symmetricity loads within three phase distribution systems. The advantage here is that current in neutral conductor is eliminated or very small and with **smaller current²**, we are drastically reducing technical losses in distribution.

SOME OF THE ADVANTAGES AND BENEFITS OF MVROT_R IN COMPARISONS WITH CLASSIC SOLUTIONS:

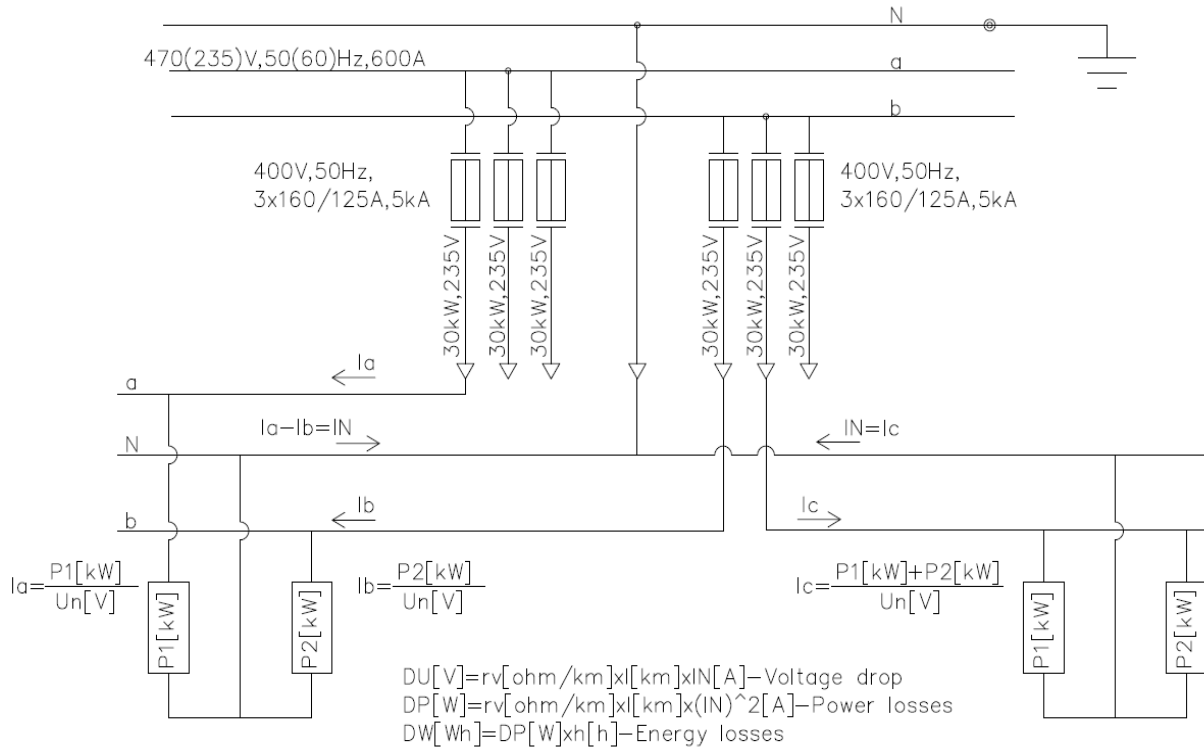
- Optimum relationship between nominal power and characteristics of the user groups.
 - *(i.e. if all consumers are single phase but using three phase distribution, that will generate un-symmetricity within low voltage conduits. MVROT will optimize that)*
- Eliminates unnecessary Capital/investment for large reconstructions
- Low cost installation
- Fast installation with minimal disruption
- Dry unit – minimum maintenance
- Small unit footprint, requiring small installation area
- Possible to be installed on the pole
- Integral measurements at high voltage side
- Resistant to ferroresonance state, and stops harmonics
- This unit can supply group of single phase users who generate frequent similar loads within the same time as:
 - *Weekend homes, development areas*
 - *Business / office buildings*
 - *Street and public lights*
 - *Traffic lights and tunnel lights*
 - *Industrial centers with many single phase users*
 - *Telecommunication centers and towers for the signal transmissions*

TECHNICAL CHARACTERISTICS:

- | | |
|---|--|
| • Nominal voltage grid level: 12000V | • Current transformer: 20A/5(1)A, cl. 0.5%,10VA |
| • Nominal primary voltage: 10500V | • Voltage transformer: 10500V/100V, cl 0.5%, 50VA |
| • Nominal secondary voltage: 235V | • Control windings and its consumption: 120V, cl. 3%, 200VA
<i>(dedicated mainly for transmitting signals)</i> |
| • Nominal power: 185kVA | • Insulation windings: 12/28/75kV |
| • Losses, normal load: 480W | • Weight [kg]: 870 |
| • Losses, short circuit: 1030W | |

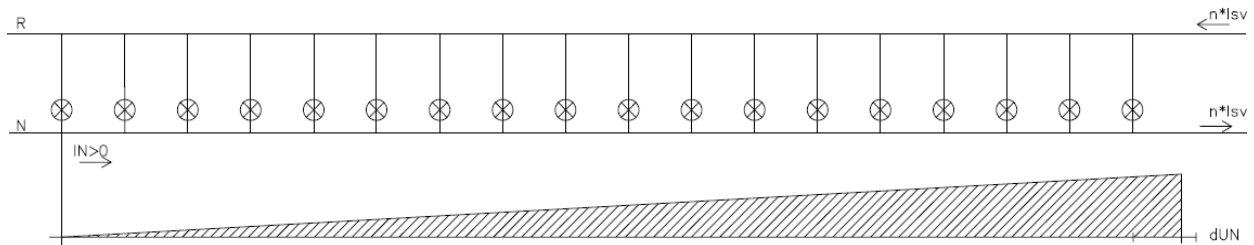


DISTRIBUTION SYSTEM WITH SINGLE PHASE CONSUMERS AND WORKING PRINCIPLE:

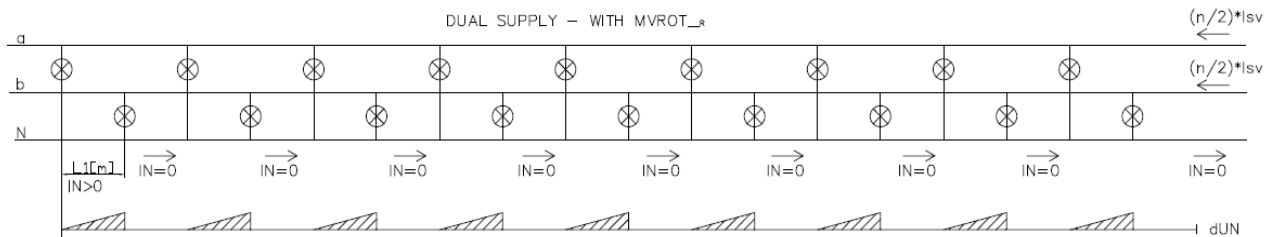


SUPPLY PUBLIC AREA LIGHTS:

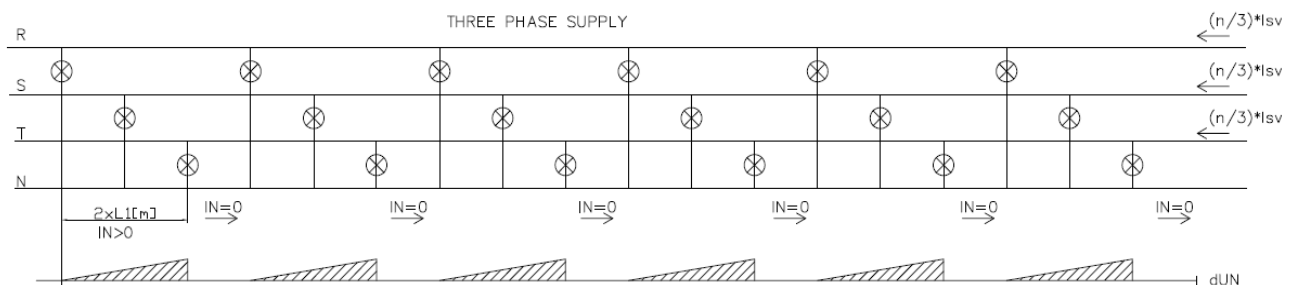
SINGLE PHASE SUPPLY



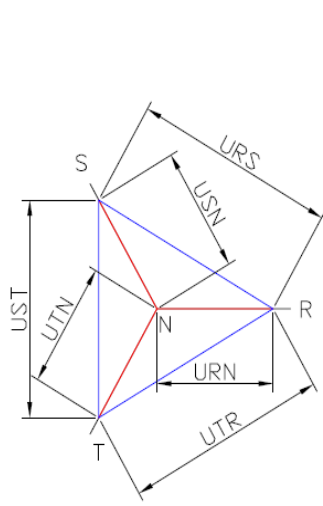
DUAL SUPPLY - WITH MVROT_R



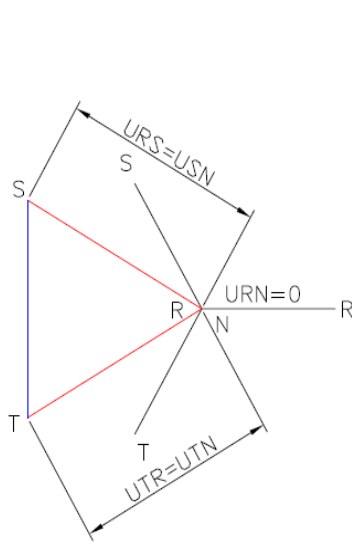
THREE PHASE SUPPLY



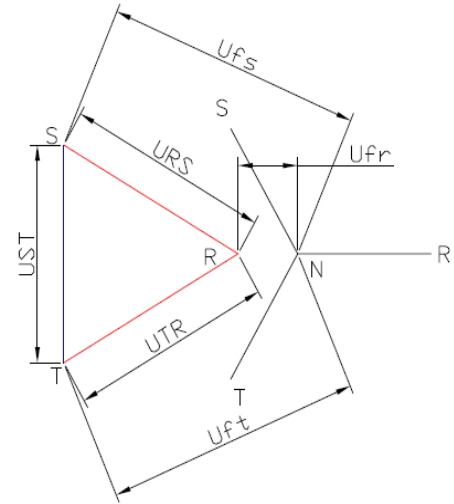
SHORT CIRCUIT AND FERRORESONANCE STAGE IN GRIDS:



Voltage levels, within normal and nominal loads in grids



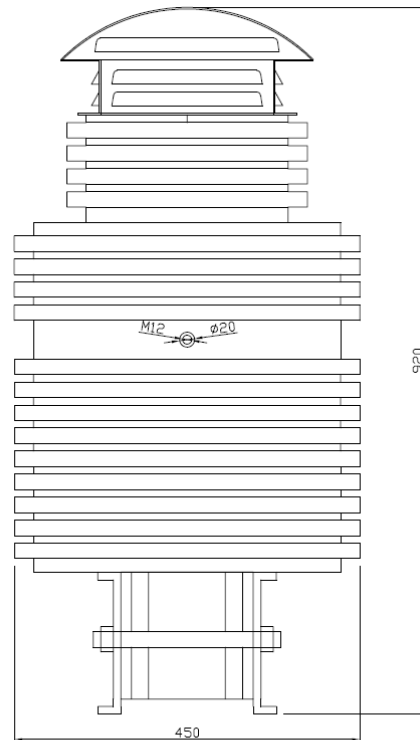
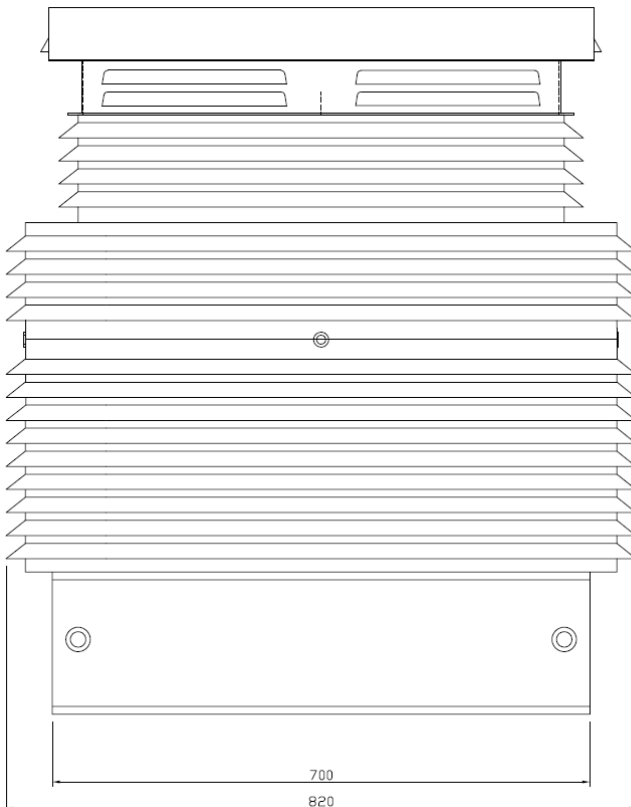
Voltage levels, when phase R is in fault with ground. Phase voltages in phase S and T increased to line voltages



Voltage levels, when grid is in ferroresonance frequency stage. Phase voltages Uft and Ufs are much bigger than line voltages

WITH MVROT_R-250 SYSTEM ALL CONNECTED POWER EQUIPMENT, CURRENT AND VOLTAGE SINGLE PHASE SENSORS, ARE IN VOLTAGE TRIANGLE, SO INFLUENCE OF ELEVATED PHASE VOLTAGES ON THAT EQUIPMENT IS ELIMINATED.

DIMENSIONS – FOR SINGLE PHASE USERS:



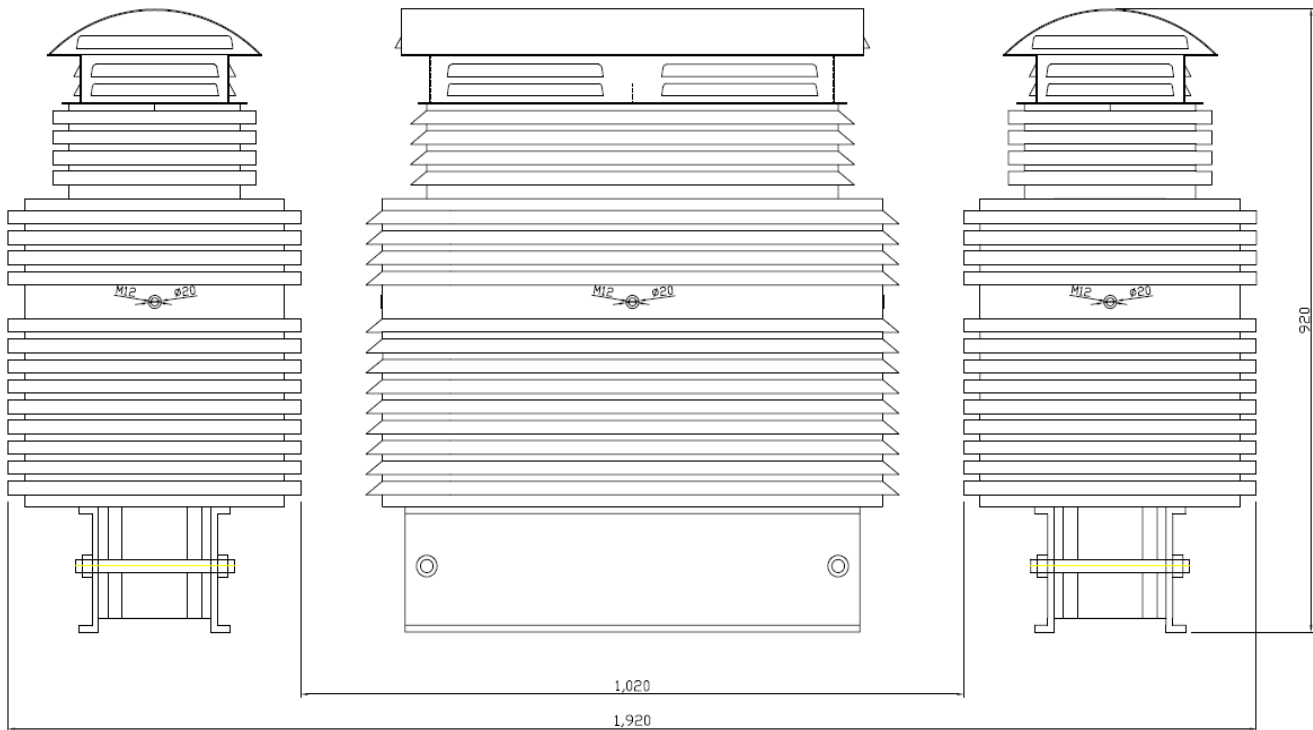
MVROT_R - 250

DRY POWER TERMINAL WITH BUILT IN MEASURING CAPABILITIES



CSA Certified

DIMENSIONS - FOR THREE PHASE USERS:



ADDITIONAL INFORMATION AND CONTACTS

Please visit our website www.egcanada.ca for further information about Energo Group Canada Inc. and its' products or contact sales at sales@egcanada.ca

