

New

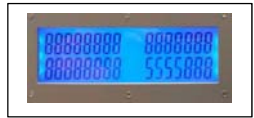


Biosirus

HawkEye

Theft Deterrent Power Metering Systems Revenue Protection; Tamper Resistant

- **Application:**
 - Residential, Apartments, Condos, Townhouse complexes
 - Neighbourhoods
 - Plazas and industrial parks
 - Other
- **Features:**
 - Clusters of 10/20/30/40/50 meters per cabinet
 - 100 Amp Remote Disconnect Switch (rated for 10,000 operations)
 - 0.2% accuracy; 120V or 240V; 50 or 60 Hz.; -40 to +85 deg C Ambient
 - Meter communicates via optical ports at the back of the meter
 - Meters can be programmed to act as circuit breakers
 - One Totalizing meter per 10 Customer meters; maximum 5 totalizers
 - Programmable current limit from 1 to 100Amps
 - Prepaid Metering System (STS); Others coming
 - 2 streetlight metered circuits
 - Forms 1S(M) or 2S(M); 2CTs per Form 2S(M) to detect load side tampering
- **How Does it Work:**
 - Aluminium IP65 enclosure; About 80 Kgs (200 Lbs);
 - All wiring permanently connected
 - Meters communicate optically to a central point (Radio Gate) within enclosure
 - All external communications is through Radio Gate
 - Isolating individual meters from tampering
 - Backhaul communications/control through an Ethernet port or USB
 - IP Radio systems can also be used as backhaul
 - Data on Demand – Every 15 seconds (programmable) for V, I, KWh, KVAh, KVARh, pf
- **Tamper Proof Features:**
 - Mounted high on a pole (likely next to pole top transformer)
 - All line-side wiring is connected to bus-bars;
 - Secondary wirings to terminal blocks at bottom
 - Instant Alert:
 - Meter removal signal sent via Radio Gate to head-end.
 - Door Opening alert to head-end
 - Enclosure designed with 15KV-34.5KV insulators for high-voltage wire wrap around box
 - Lockable front door; All hinges are inside to prevent tampering



Tech Talk: *Power Theft Mitigation.*

- Electric Utilities are losing millions of dollars in “non-technical” losses, often as a result of electricity theft. Common form of theft occurs through unauthorised connection to overhead secondary lines or tampering /bypassing /damaging electric meters on customer property. *Typical distribution technical losses should be around 4-8%.*
- Detection/alerts of such theft occur by (1) system calculations and past-data comparisons or (2) visible signs of tampering, or (3) having a reporting system of such incidents
- Once tampering has been detected, mitigation against such theft has to be implemented. Such implementation must have the following elements:
 - **Tamperproof:** Difficulty in accessing, hardy cabinets, tamper-proof meters, wireless/optical communications
 - **Instant Alerts:** Door opening, meter tampering, wiring alterations
 - **Summation checks:** Verification across a set of 5 or 10 meters, further checked against incoming
 - **Remote Disconnect:** Individual meters act as circuit breakers, Programmable current limits on each meter
 - **Customer Access to Meter Reads:** Customers must be able to read their own meters
 - **Prepayment Options:** Revenue loss minimization on select circuits as needed



And Savings Too:

Savings lie in:

- Lower cost per metering point due to consolidation in a box
- Efficient Servicing at few key locations
- No meter reading

Best Value Applications:

- High Revenue Loss Neighbourhoods
- High Density Neighbourhoods (Condos, TH, Apartments, Commercial, Plazas)

Parameters	Platinum Savings	Gold Savings	Silver Savings	Bronze Savings
High Tariff Rate	*****	****	***	**
High Power Theft	*****	****	***	**
High Density Locales	*****	****	***	**
Electricity Tariff (US\$/kWh)	0.20+	0.17	0.15	0.10
Annual Power Theft (KWh)	3000	1500	1250	1000
Number of Theft Points	25	25	25	25
Typical Pay back (simple ROI)	1-2 Years	2-3 Years	3-4 Years	5-6 Years

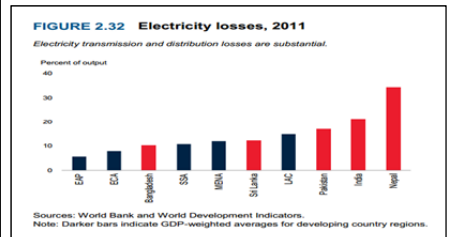
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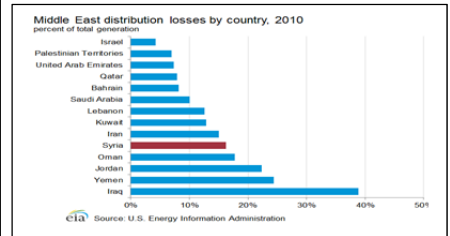
Typical Electricity Losses

(Source: WB/IEA/Other)

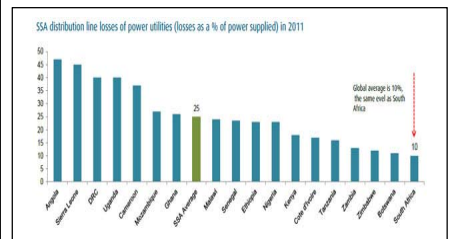
Asia:



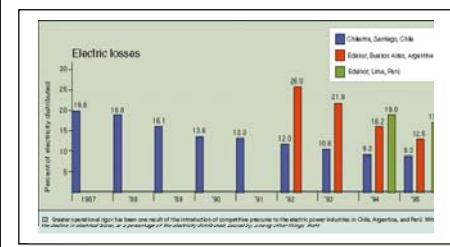
Middle East:



Africa:



Latin America:



**Call us for any details
or a trial project**

Biosirus Brochure P.Theft-1: June 2015