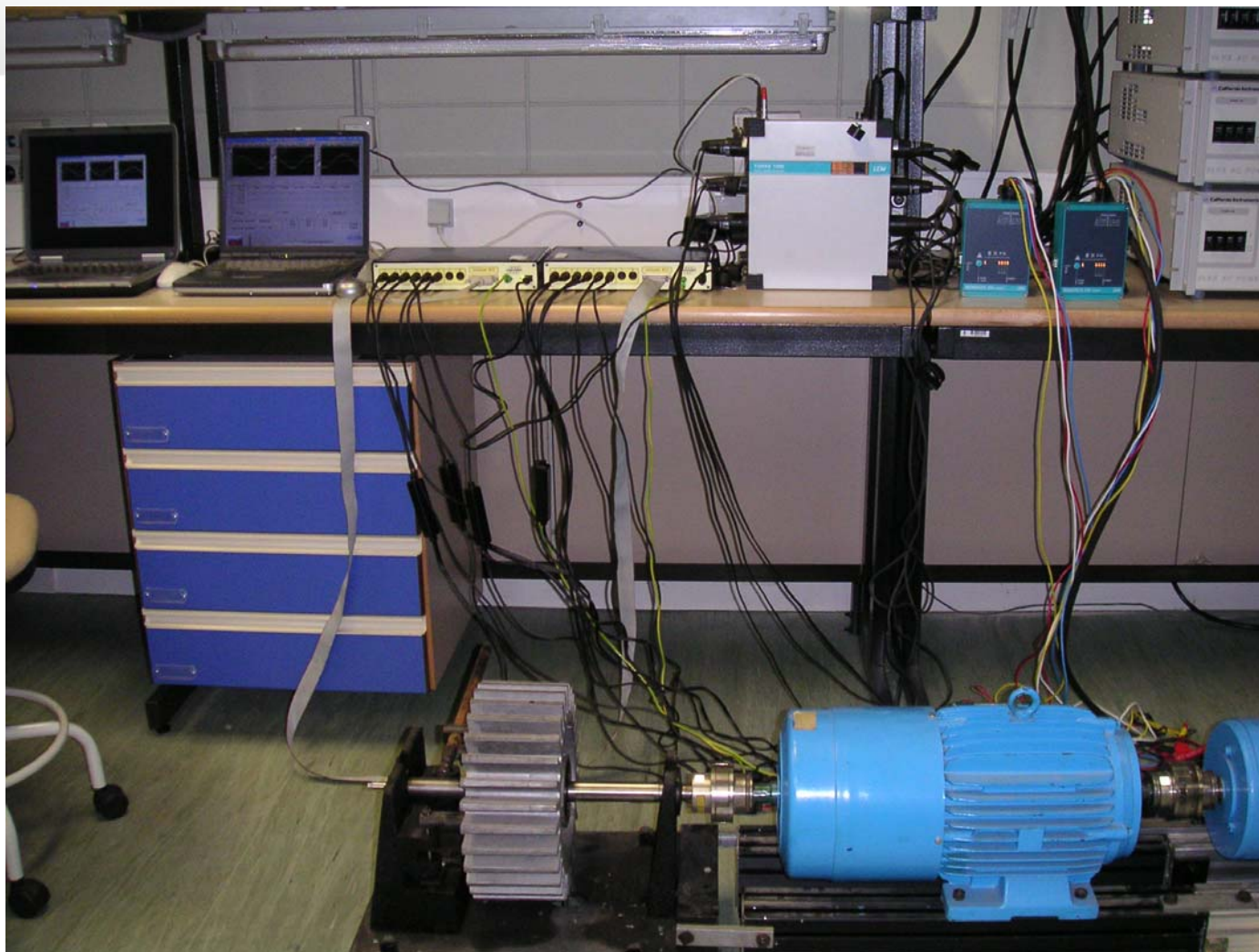


Power Quality. Equipment of Measure



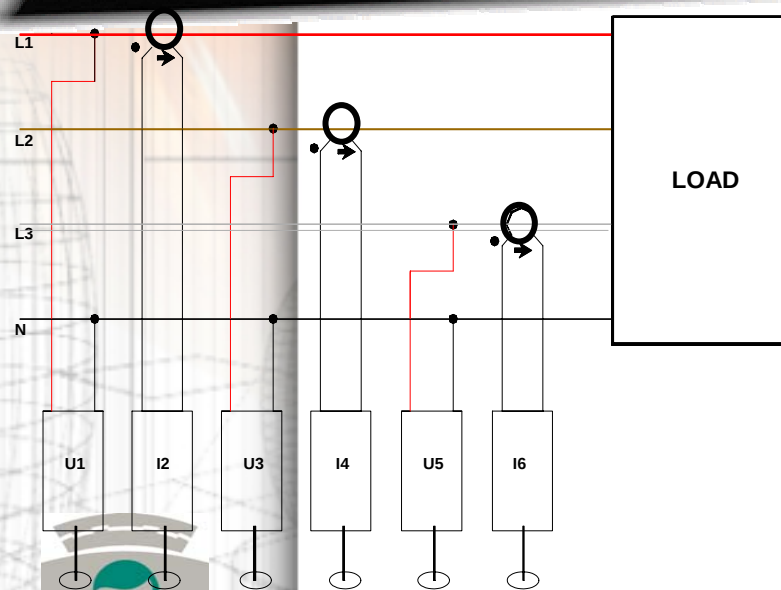
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Power Quality. Equipment of Measure

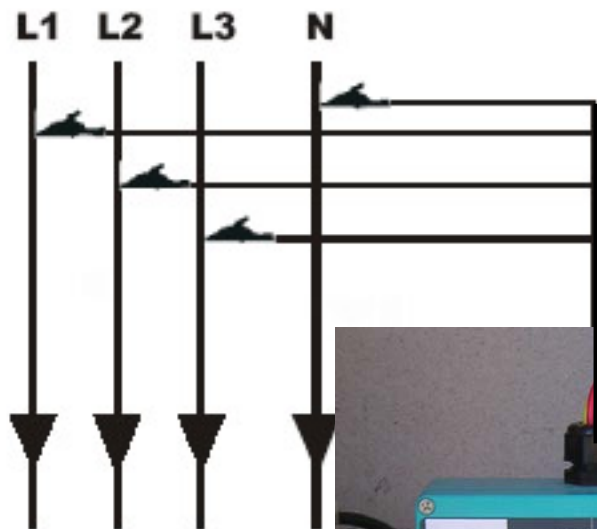


2 DYNAMICAL ANALYZERS U812 UNIPOWER



- **Channels:** 8 analogical channels, 283 mV, 10 M Ω , 0,1%.
- **Sampling frequency per channel:** from 6400 Hz till to 30 kHz.
- **Dynamic frequency:** 72 dB (12 bits conversion A/C).
- **Weight:** 2,5 Kg
- **Size:** 321 mm x 255 mm x 110 mm
- **Harmonics:** till to 50 for 50, 60 and 16 2/3 Hz of the fundamental
- **Flicker, sags, transients, etc.**

Power Quality. Equipment of Measure



2 DYNAMICAL ANALYZERS MEMOBOX 300 smart



- **Channels:** 4 analogical for voltage.
- **Flicker** (Pst and Plt)
- **Harmonics of voltage:** till to 40
- **Interharmonics:** 5 from 5 Hz to 5 Hz
- **Sags, transients, etc.**
- **Need the computer only for programming**

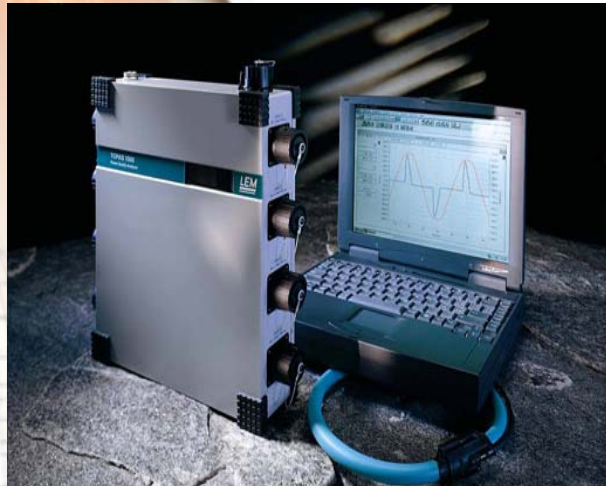


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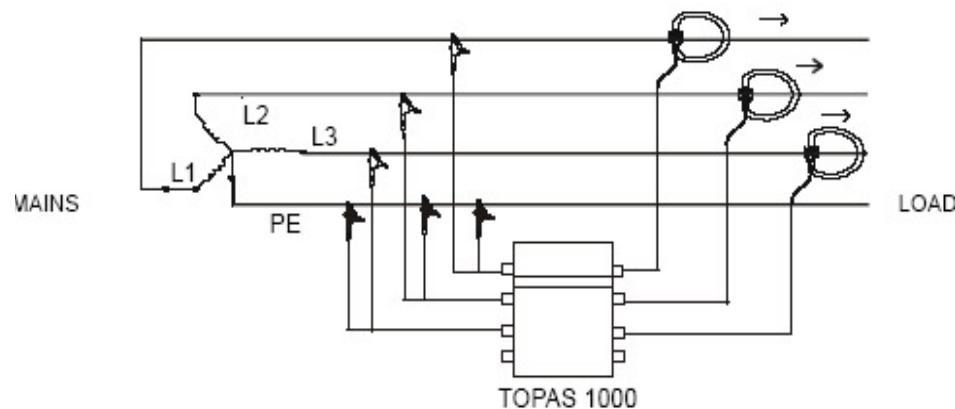


Power Quality. Equipment of Measure



TOPAS 1000 DYNAMICAL ANALYZER

- **Channels:** 8 channels for 16 bits, 4 for current, 4 for voltage or 8 for voltage.
- **RS232, ethernet, IP65.**
- **Modem GSM .**
- **Memory:** hard disc 1 GB
- **Need the computer only for programming.**
- **Trigger function**
- **Sampling frequency:** 100 kHz-10 MHz
- **Voltage range:** 6 kV.
- **Register time for one event:** 20 ms-2s
- **Flicker, sags, transients, etc.**



Power Quality. Equipment of Measure

DRANETZ POWERXPLOER PX5 ANALYZER.



- **Equipment of A Class:** in accordance with IEC 61000-4-30.
- **Power quality analyzer:** following EN 50160.
- **4 channels for voltage:** 1-600Vrms, AC/DC, 256 samples/cycle.
- **4 channels for current:** 1-6000Arms, AC/DC, 256 samples/cycle.
- **Sampling of high speed:** 1MHz for transient measurements
- **Frequency Range:** 15-20 Hz, 45-65 Hz.
- **DRA-32MFLASH:** Memory CompactFlash of 32 MB.
- **DRA-DVPX5HASP:** Software DRAN-VIEW
- **LCD Screen, tactile, ¼ VGA.**
- **Dont need a computer.**

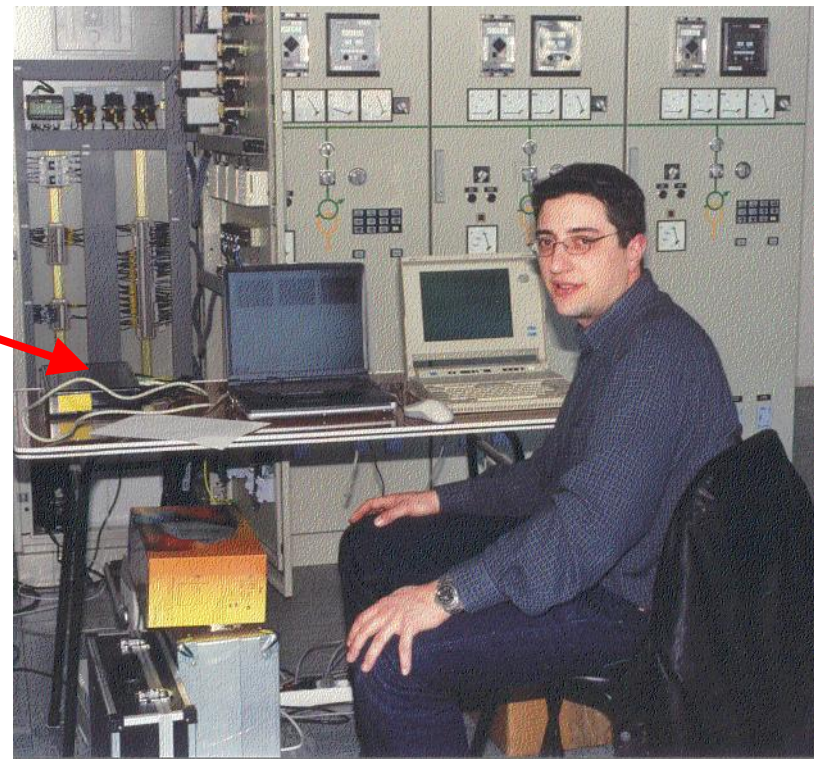


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Measurement at line 8

- ✚ For take the measurements at the line 8 we have used an **Unilyzer 812** installed in the control panel of the current and voltage transformers corresponding to the power transformer 7E.



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Measurements results

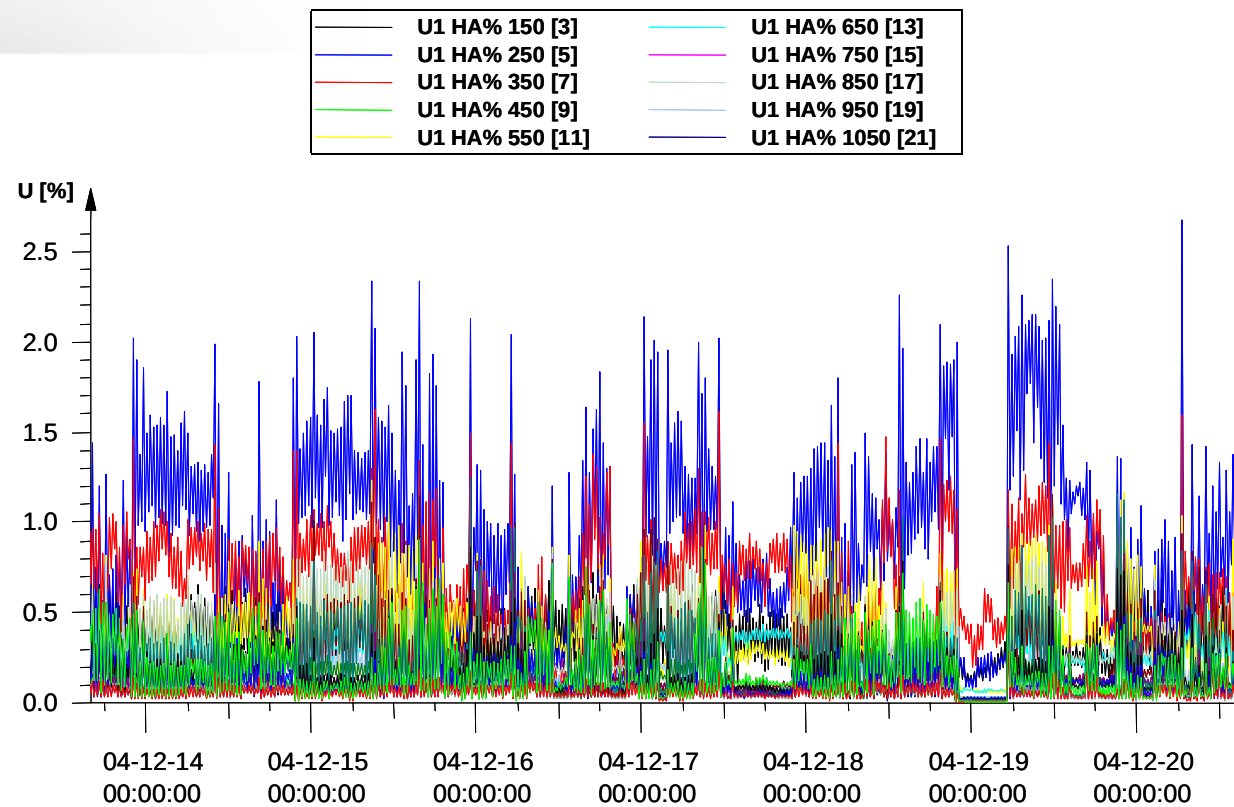


Fig.1. Voltage odd harmonics ratio chart of the 8 cut line corresponding at “R” phase (in 7E).

Measurements results

Línea de corte 8

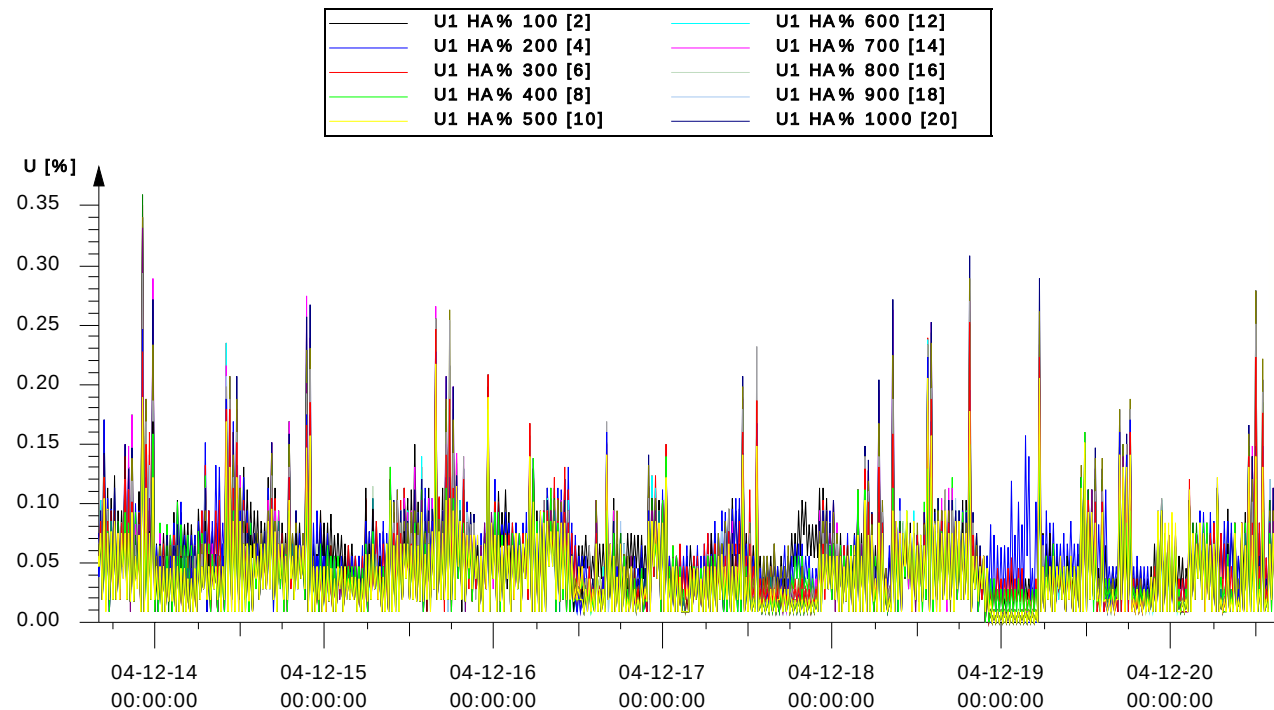


Fig.2. Voltage even harmonics ratio chart of the 8 cut line corresponding at “R” phase (in 7E).

Measurements results

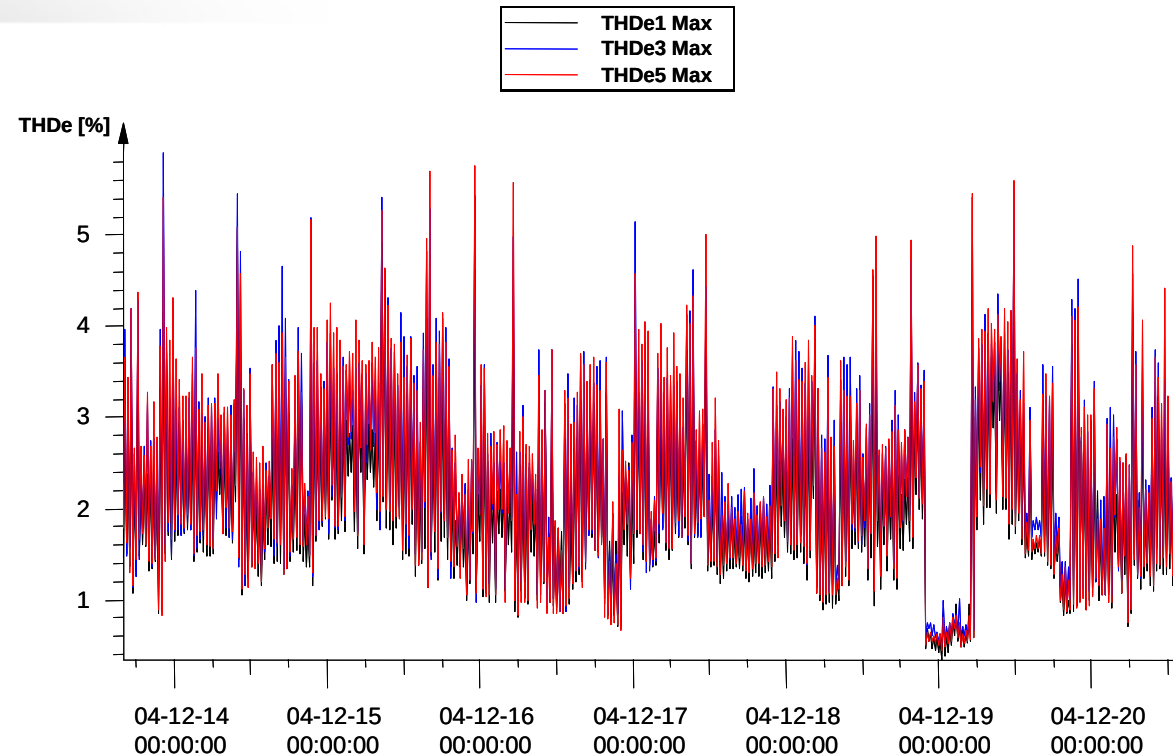


Fig.3. Maximum total harmonic distortion of the three phases chart of the 8 cut line (in 7E).

Measurements results

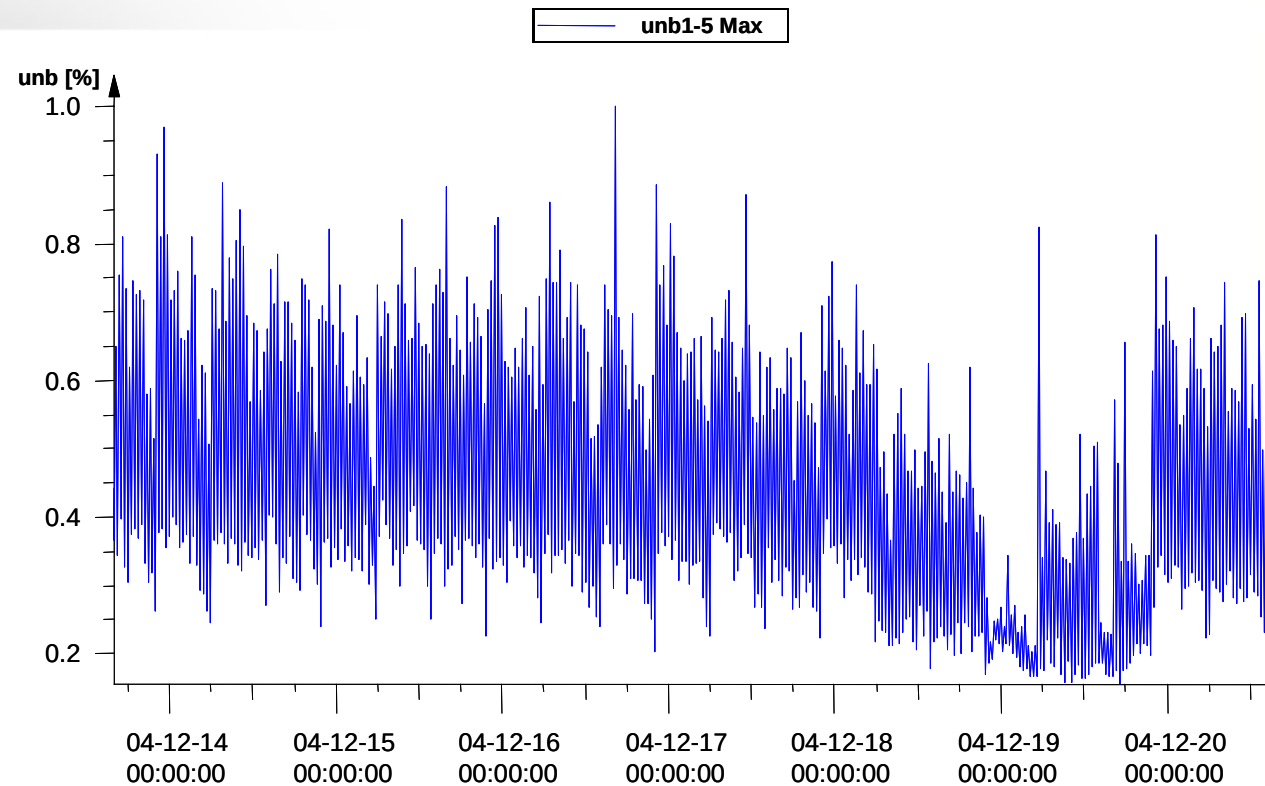


Fig.4. Maximum unbalance chart of the 8 cut line (in 7E).



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Measurements results

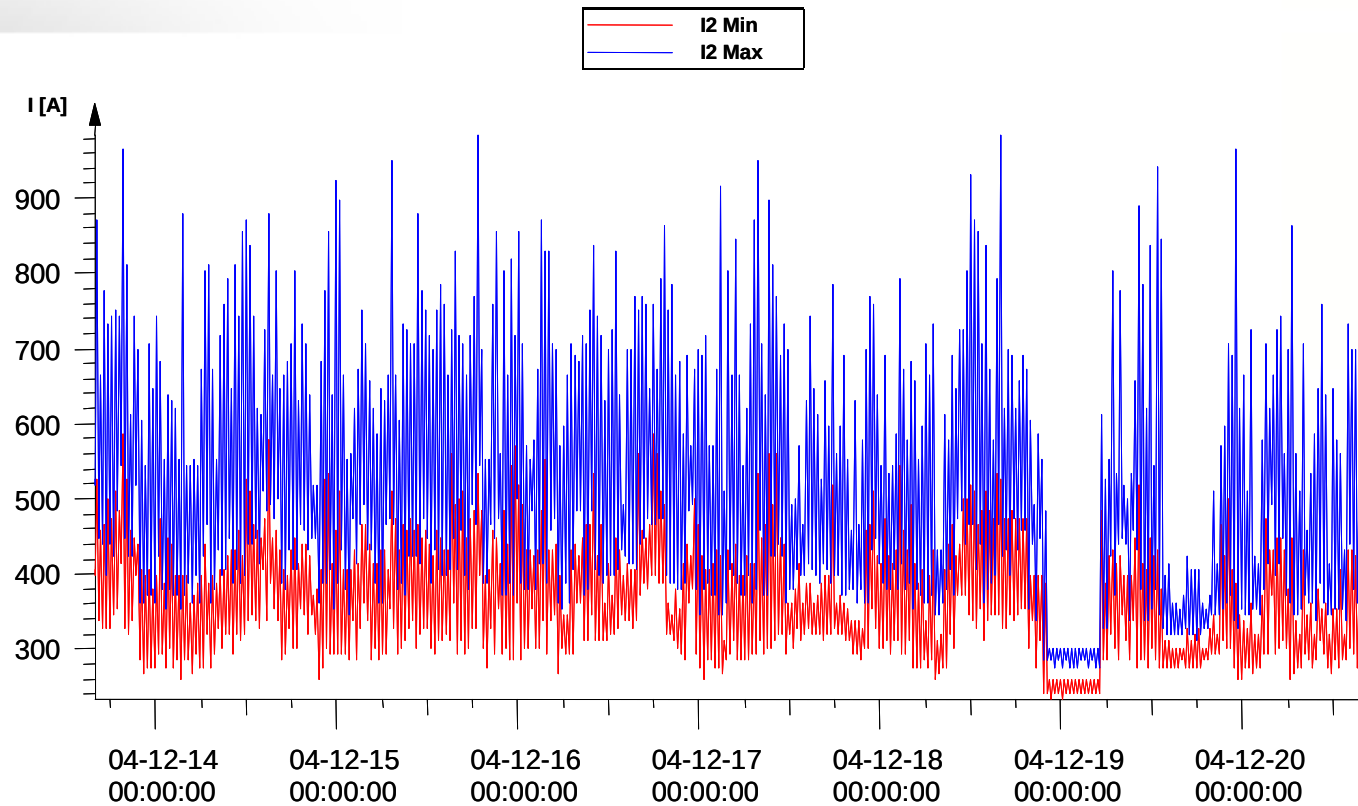


Fig.5. "R" phase maximum/minimum current chart of the 8 cut line (in 7E).

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Measurements results

Línea de corte 8

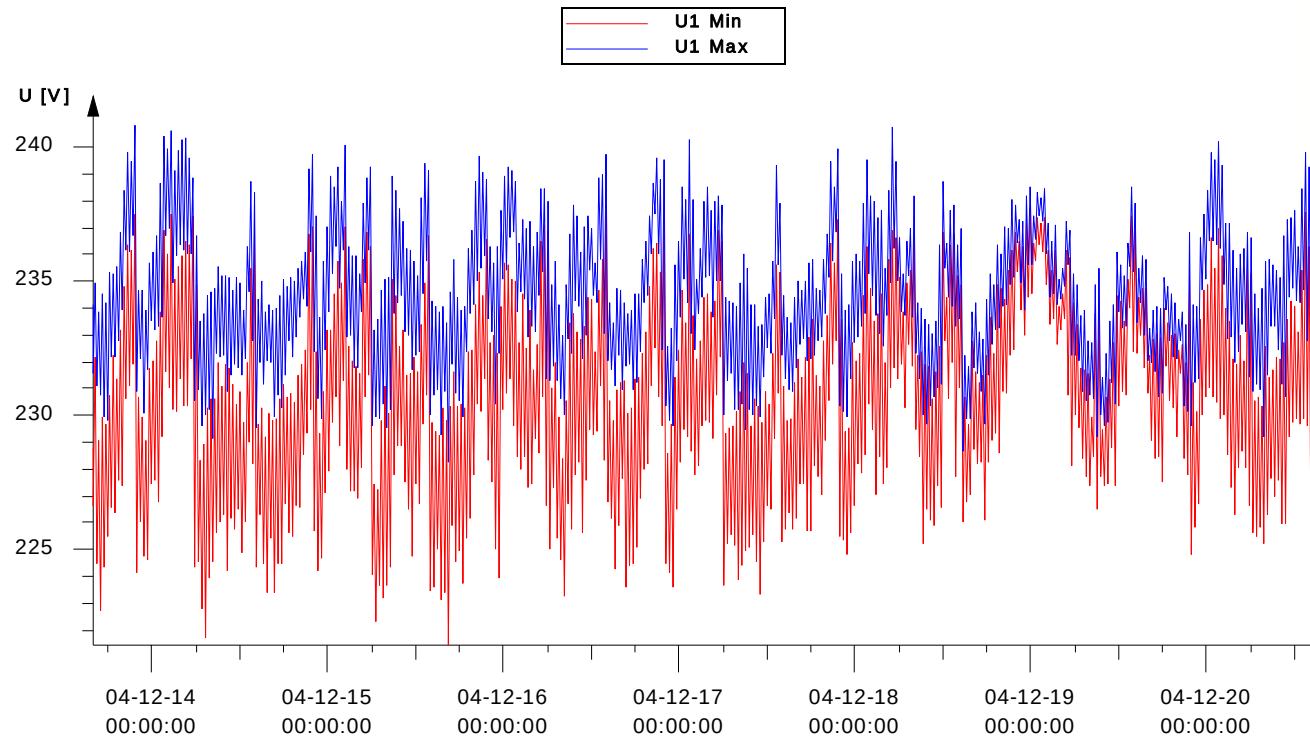


Fig.6. “R” phase maximum/minimum voltage chart of the 8 cut line (in 7E).

Measurements results

Línea de corte 8

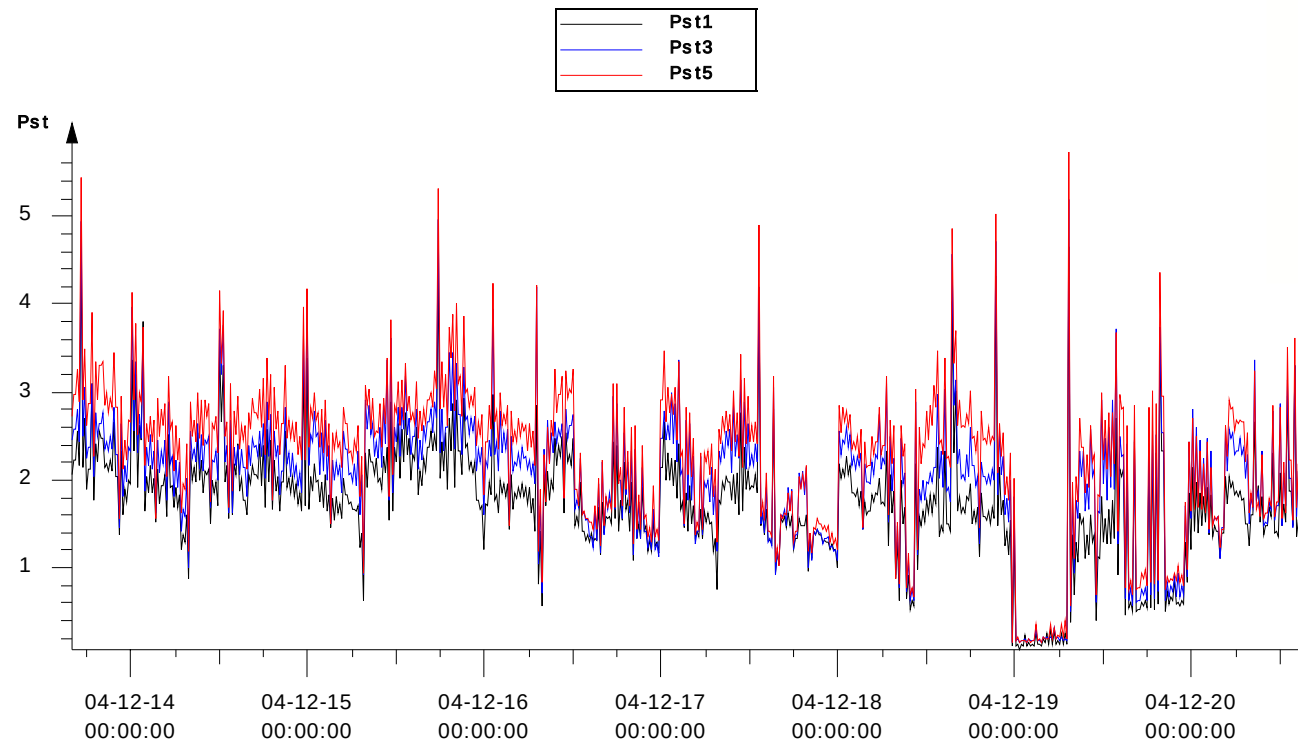


Fig.7. Pst flicker at the three phases (in 7E).

Measurements results

Línea de corte 8

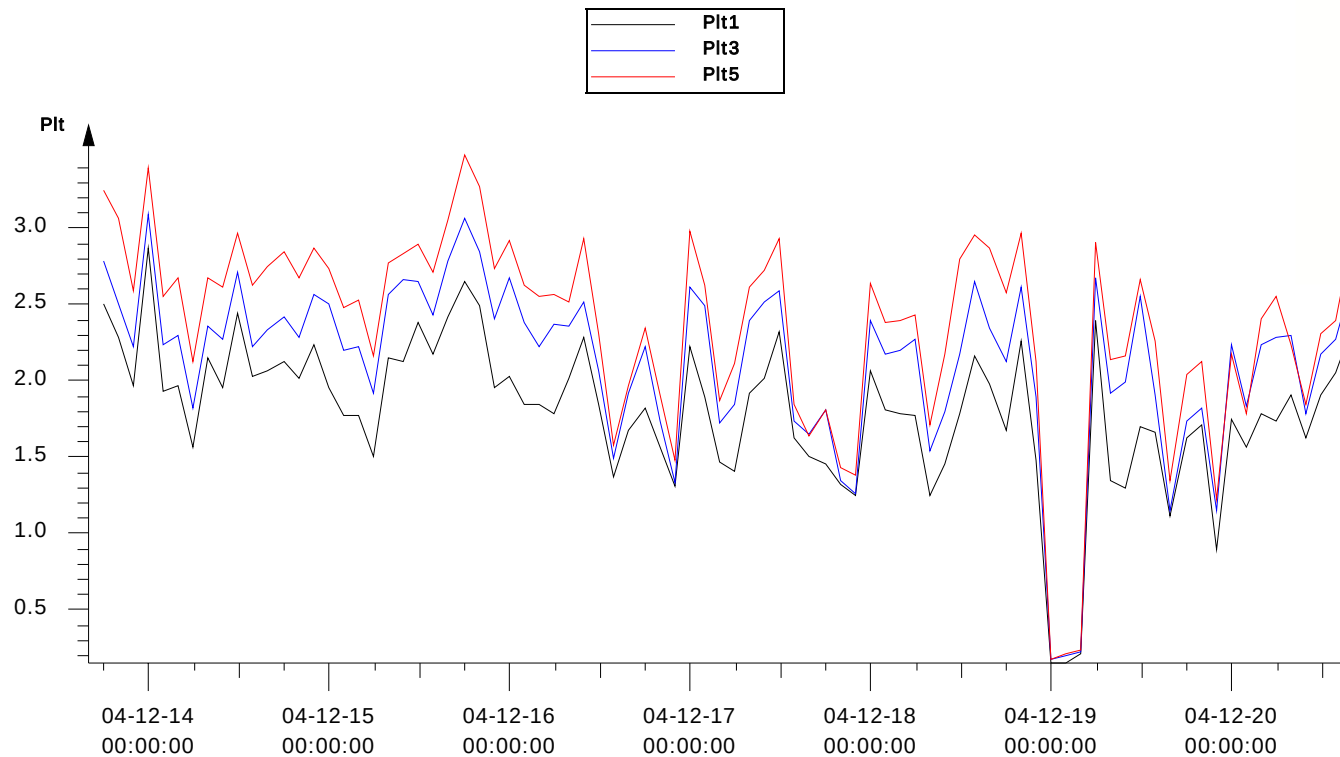


Fig.8. Plt flicker at the three phases (in 7E).

Measurements results

Linea de corte 8

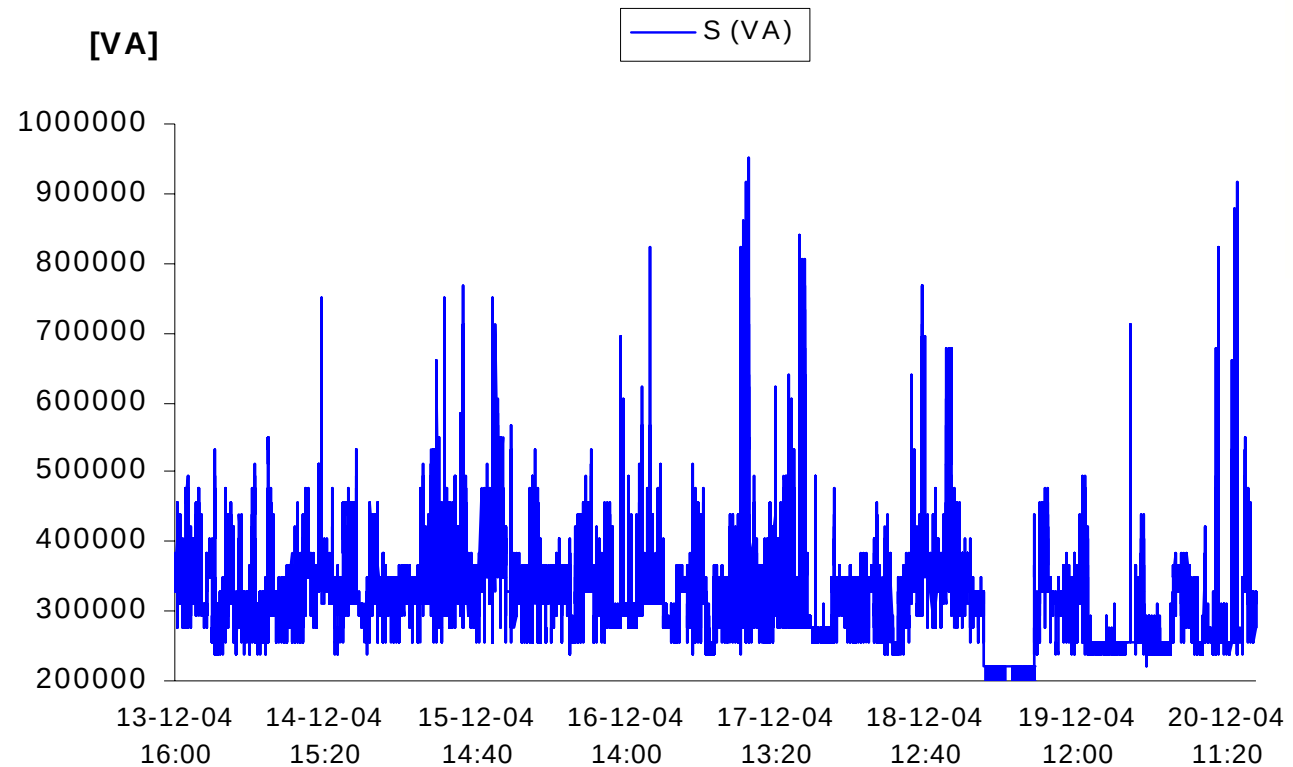


Fig. 9. Apparent Power at 7E.

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Measurements results

Linea de corte 8

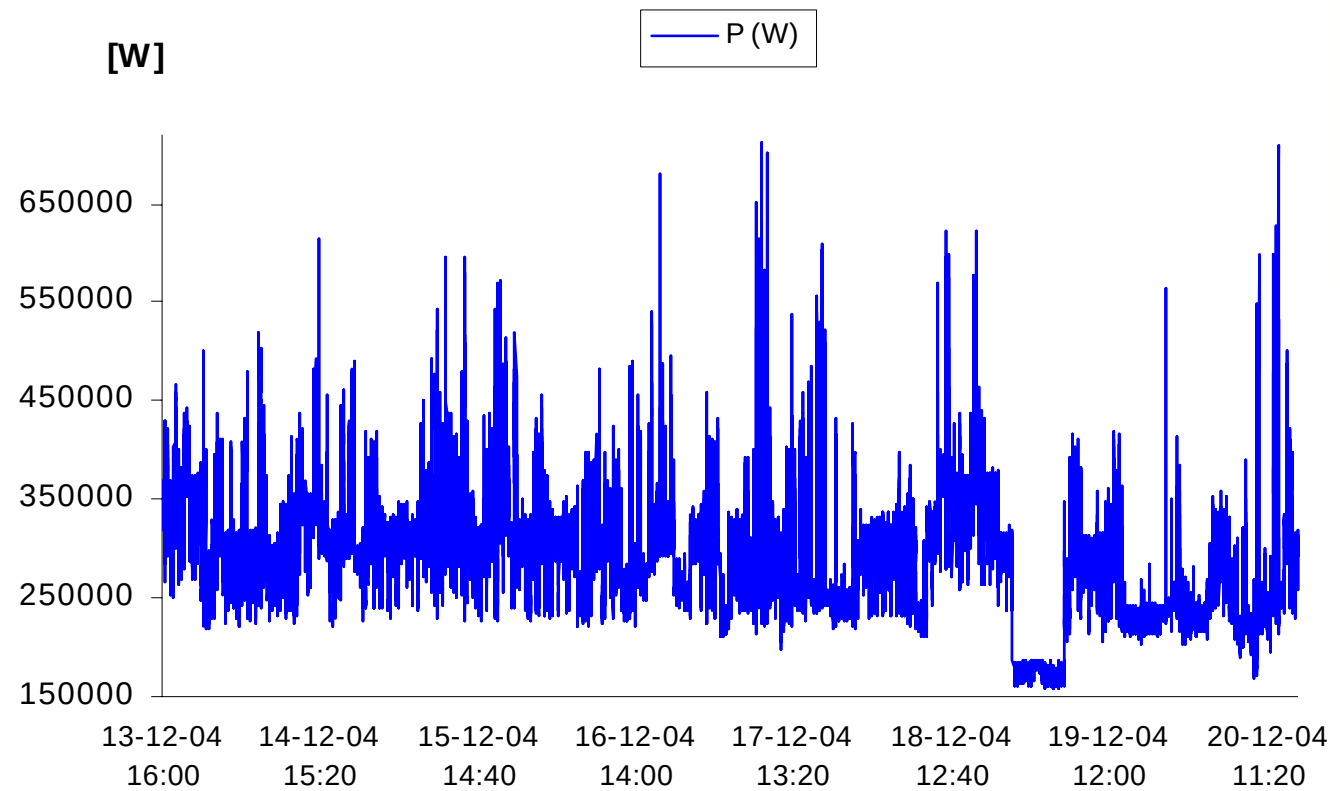


Fig. 10. Active Power at γE .

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Measurements results

Linea de corte 8

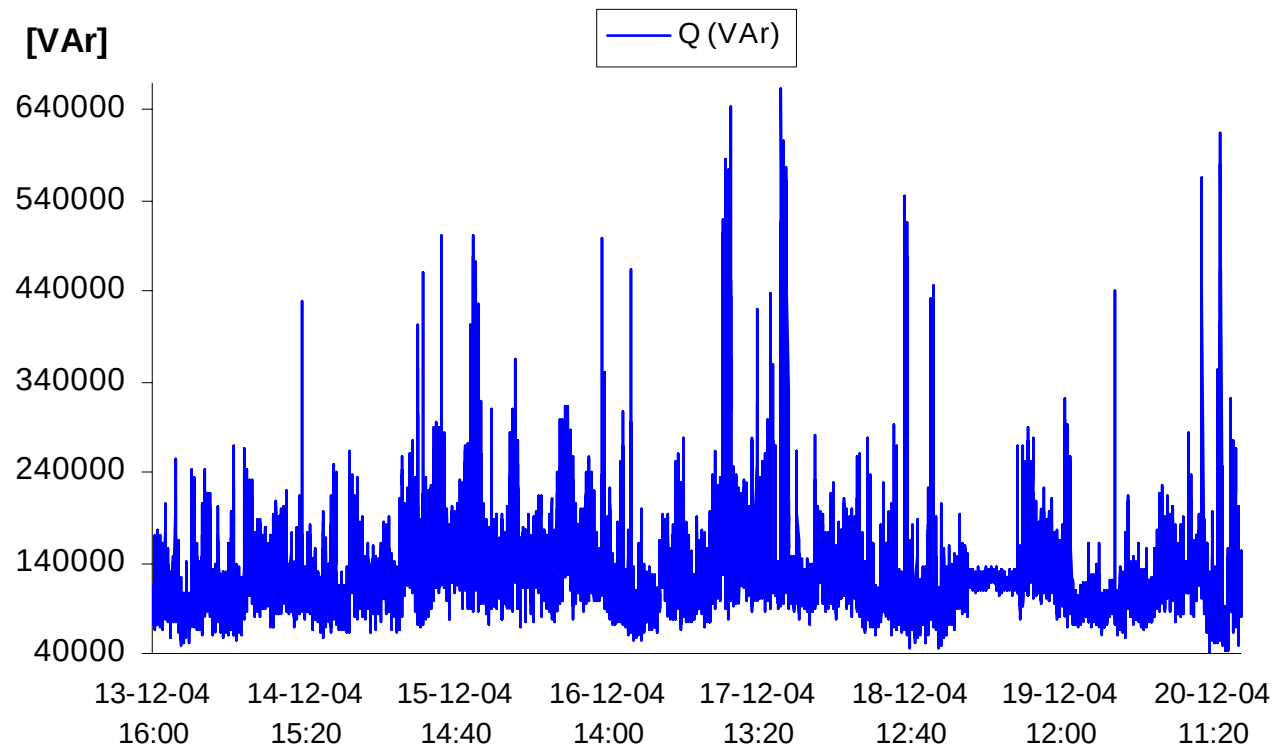


Fig. 11. Reactive Power at 7E.

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Measurements results

Linea de corte 8

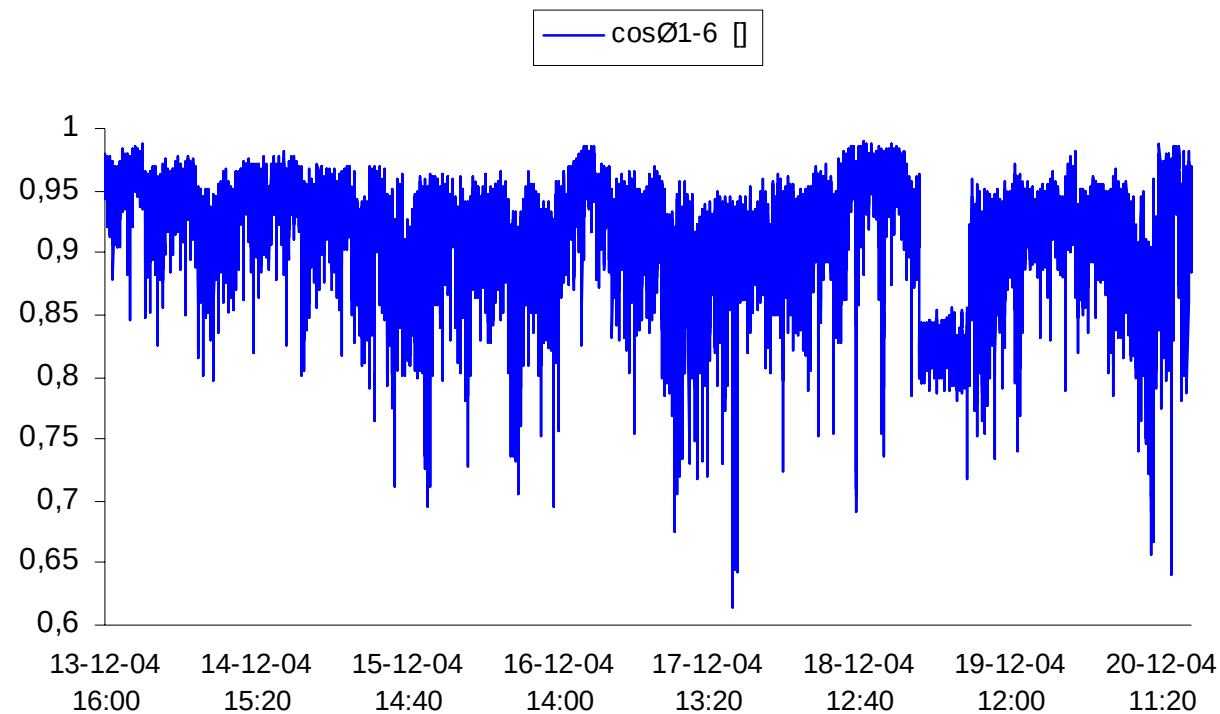


Fig. 12. Power Factor at 7E.

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Measurements results

Línea de corte 8

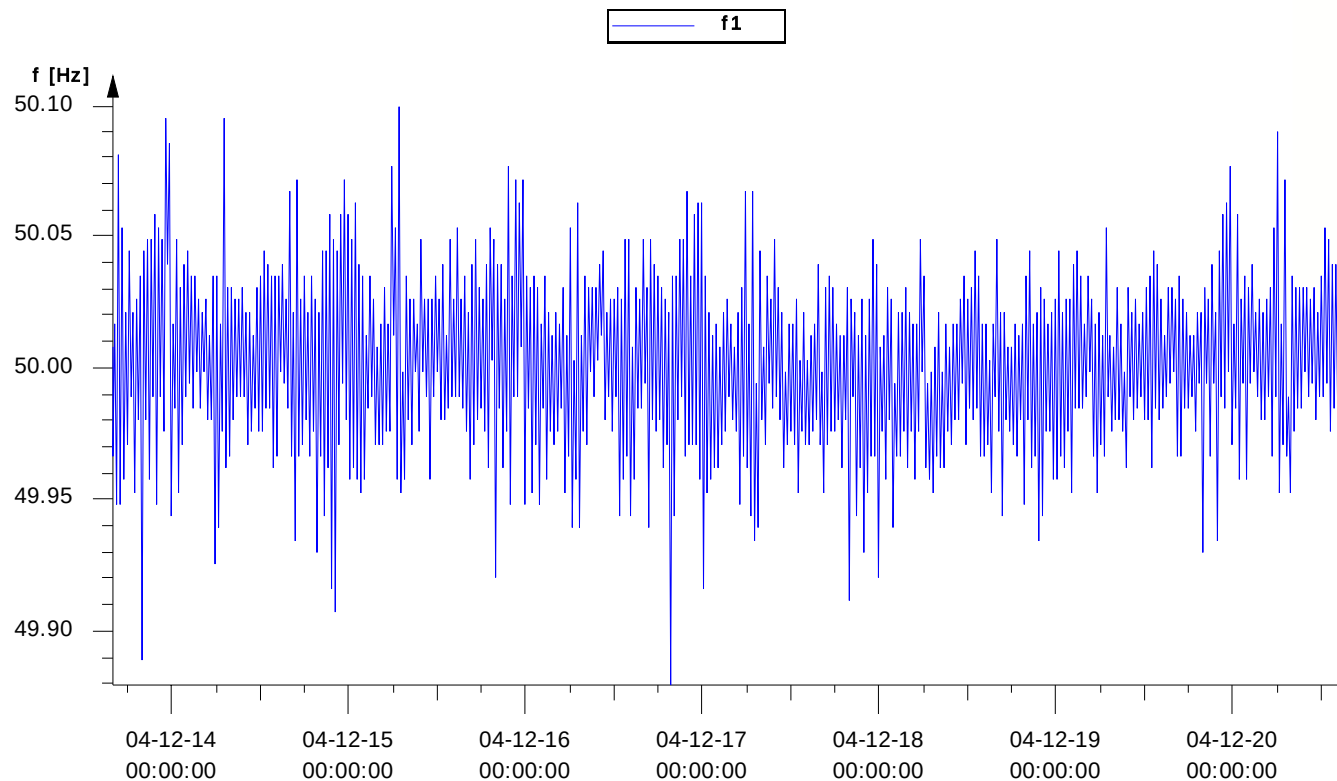


Fig. 13. Frequency variations at 7E.



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