

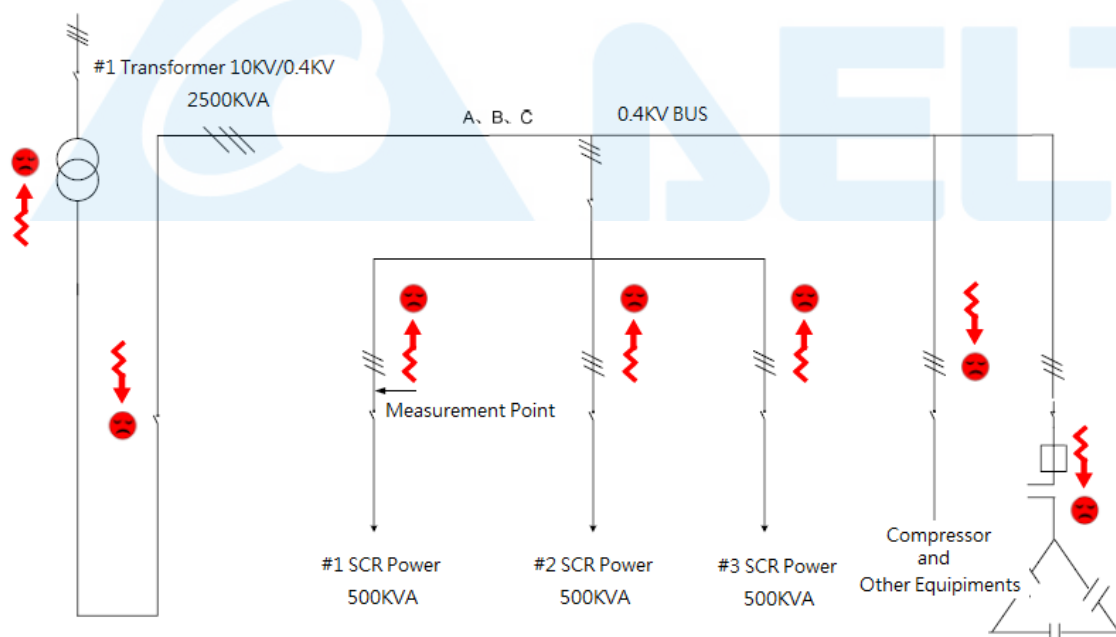
Case	Application: Delta Industrial Automation Products for the Kitchenware Industry				
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Applicable to	Active Power Filter APF2000 Series				
Key words	Active Power Filter, Harmonic Suppression, Power Factor Improvement				

## 【Introduction】

In modern kitchenware manufacturing, electroplating plays a central role. Electroplating is a process that uses electrical current to reduce dissolved metal cations to form a coherent metal coating on an electrode. The production line implements many rectifiers to facilitate the production process, but this generates a massive amount of harmonics, overheating the transformer cable and causing noise that can seriously damage the compensation capacitor. Harmonics problems can damage equipment power cables, lower production efficiency, and cause higher safety risks.

## 【Supply Equipment and System】

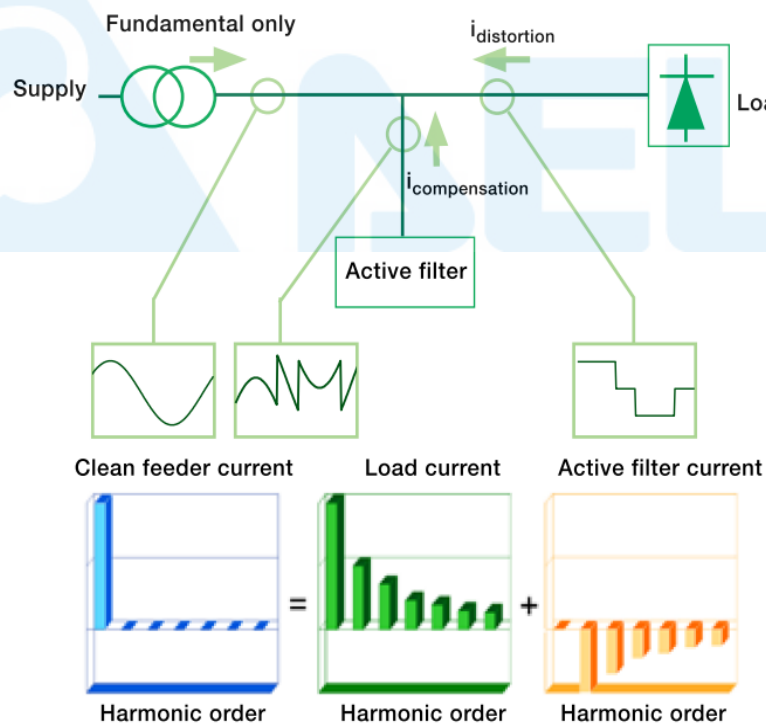
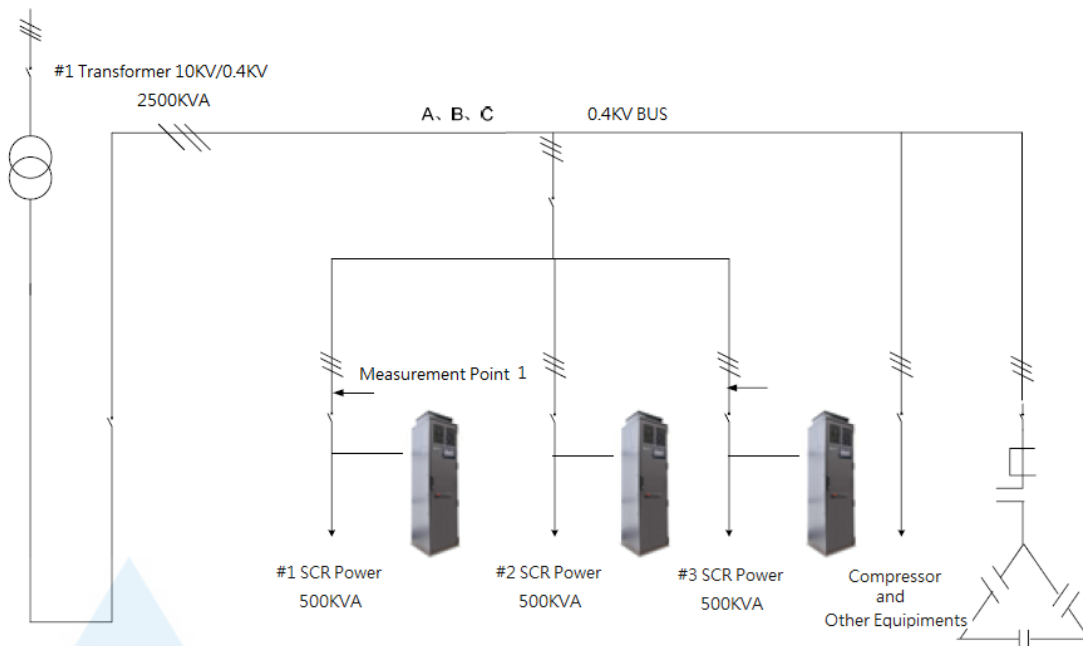
The production line implements three 500KVA Controlled Rectifiers (SCR), which account for 70% of the total production line load capacity.



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## 【System Structure with APF Implementation】

Delta's solution uses six 200A APF2000 series and parallel connects to three SCR rectifiers for harmonic filtering.



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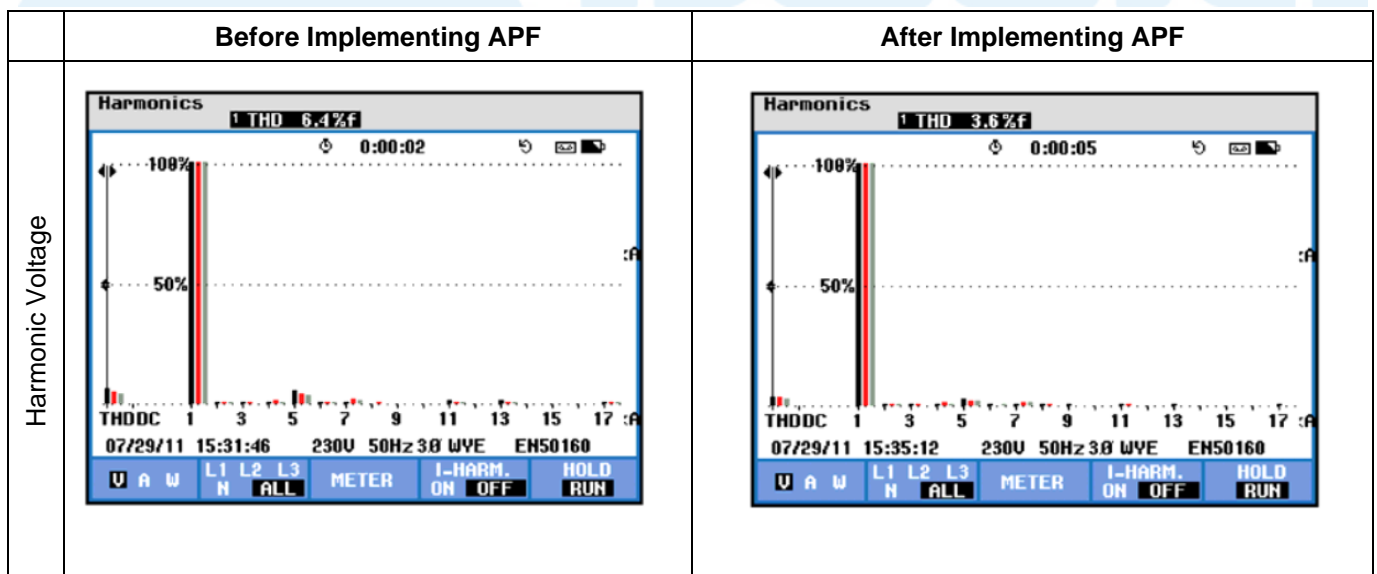


**Photo: On-site Application**

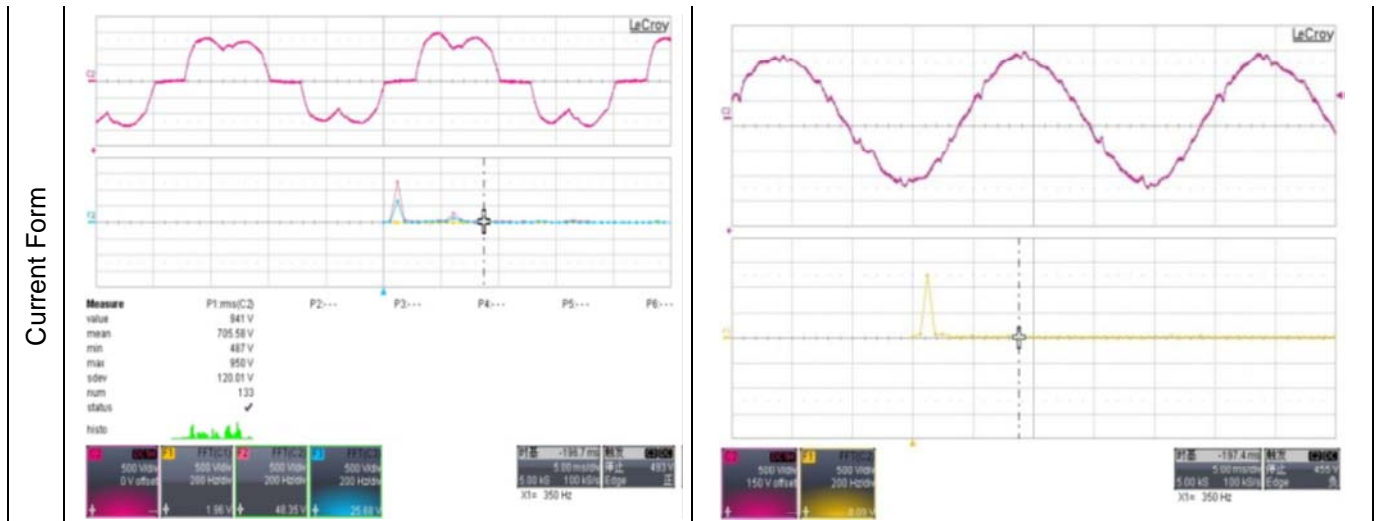
## 【Performance】

The voltage harmonics on the production line are decreased from 6% ~ 10% to 2% ~ 4%. The current harmonics are reduced by 5%. Using the Delta APF2000 series active power filter changes the current wave form to a sine wave and improves harmonic interference problems on the production line.

Harmonic Order	5 <sup>th</sup>	7 <sup>th</sup>	11 <sup>th</sup>	13 <sup>th</sup>	Total Current	Compensation
Current (A) Before	276.8	73.4	54.4	26.8	29.3	96%
Current (A) After	7.7	5.9	4.6	4.7	11.7	



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## 【 Performance 】

Delta's power quality solution can effectively improve high noise and copper plating overheating problems to improve the stability of production equipment, reduce maintenance costs and security risks, and ensure the security, stability, and high efficiency of the electroplating production line.

## 【 Conclusion 】

Delta's power quality solution provides effective harmonic filtering results and fast reactive power compensation for the kitchenware production line. It delivers stable operation to the electroplating process and reduces the defect rate, which ensures good product quality. In addition, it stabilizes the power quality of the production line and is benefited with high power factor. This solution solves the power quality problems of electroplating equipment and ensures the production line with stable power quality and safe operation in an energy-saving way.

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