



ESTAPQS DOWNLOADED FROM ESTAPQS
UK & IRISH AGENT FOR ELSPEC
Case Study

Elspec Activar Improves Power Quality at Albert Einstein Hospital



Israelita Albert Einstein Hospital

Overview

In 2001 the Albert Einstein Hospital in Sao Paulo, Brazil required energy quality improvements to protect sensitive hospital equipment from voltage flickering, voltage drops, and to provide harmonic filtration. Because of the energy issues surrounding reactive power, the hospital incurred high energy bills. The hospital chose to install Elspec's transient-free Activar systems as their solution.

Reactive power can occupy large "spaces" in the electrical system, reducing the presence of active energy. When active energy is reduced, the amount of work that the load is capable of producing is reduced. Furthermore, the excess reactive energy present in the system is charged to the hospital by the utility company at the end of the month in the electricity bill.

The Solution

Reactive power can be corrected with the installation of a bank of capacitors next to the electrical equipment. Thus, the movement of energy is limited to the equipment in use and, as a result, the cost of energy power decreases to consumer.

The Elspec Activar system is specifically designed to compensate for dynamic loads with high reactive power consumption such as seen at this facility. The Activar uses SCR-SCR (silicon-controlled rectifier) electronic switches and sophisticated control algorithms that consider true power factor (PF) and all harmonics up to and including the 63rd harmonic order.

In the first stage of the project, four 300 kVAr systems were installed. Once operable, the systems immediately stabilized the energy supplied and reduced the hospital's energy costs. In the second stage of the project, the system was expanded with three more Activar systems installed in the central hospital in the district

of Morumbi, and five systems installed in the remote clinics of the Hospital.

A detailed study based on measurements in transformers and panel entry was headed by the Director of Engineering, Works and Maintenance, Antônio Carlos Cascão.

"Our monthly energy costs were reduced by R \$ 30 mil with the placement of equipment for the compensation of reactive power," said the Project Supervisor of the hospital, Alexandre Arantes. "We invested about R \$ 350 thousand, an investment that with our energy savings was paid for in a year."

In addition to cost reduction, the installation of the Activar compensation systems provided numerous other benefits. "There was a major improvement in the quality of energy supplied to eletromedical equipment which allowed for the simultaneous function of elevators while generators were in operation, thus eliminating a significant inconvenience to users. Elspec's equipment provided an instantaneous reactive power free of transients and harmonics. Moreover, the operational

In This Document

Read how the Elspec Activar:

- Improved power quality by preventing votage drops, flickering and transients
- Provided on-line harmoncis filtration
- Provided energy savings

Elspec Case Study

reliability of the Activar system is high, providing long life capacitors” says Alexandre Arantes.” Figure 1 below demonstrates the Activar’s compensation during facility’s system startup, with a significant improvement in the power factor, voltage stability and a considerable reduction in the reactive power.

HIAE - Unidade F Morato Ação Engenharia e Instalação Ltda

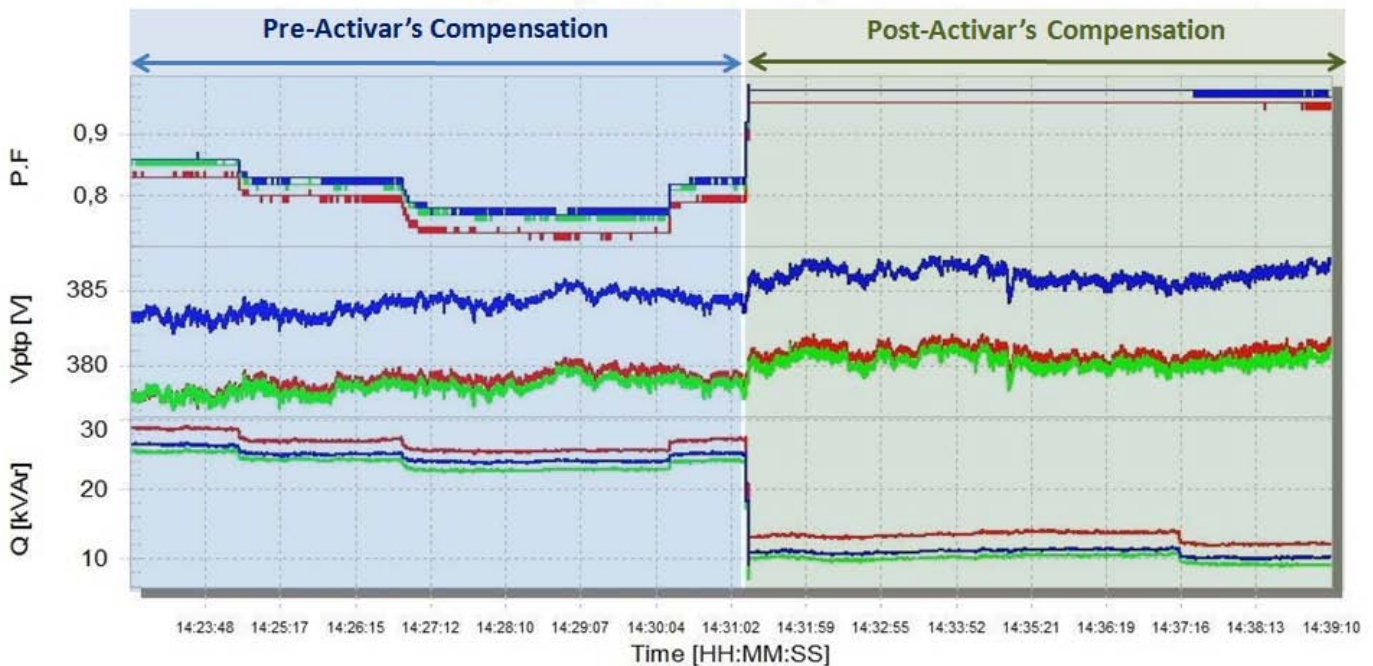


Figure 1: Power Factor, Voltage & Reactive Power

This document contains Elspec proprietary material. The information contained in this document is believed to be reliable and accurate.



©2009 Elspec Ltd.
All rights reserved.
SMC-

International

Elspec Ltd.
P.O. Box 3019
4 HaShoham St., Zone 23
Caesarea Industrial Park
38900, Israel
Tel: +972-4-6272-470
Fax: +972-4-6272-465
email: info@elspec-ltd.com

North America

Elspec North America, Inc.
500 West South Street
Freeport, IL 61032
USA
Tel: +1-815-266-4210
Fax: +1-815-266-8910
email: info@elspecna.com

Europe

Elspec Portugal Lda.
Zona Industrial 1a Fase
4900-231 Chafe
Viana do Castelo
Portugal
Tel: +315-258-351-920
Fax: +315-258-351-607
email: info@elspecportugal.com