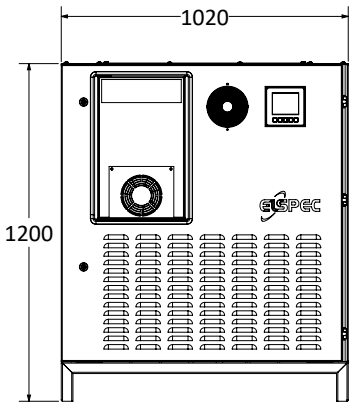
Compact Activar/Equalizer

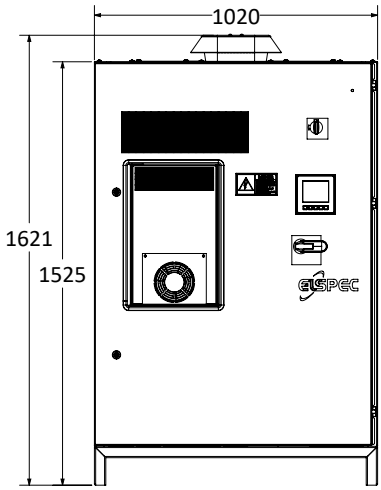
Compact reactive power compensation unit

The Compact Activar/Equalizer are static/dynamic VAR compensation systems for transient-free power factor correction and dynamic load compensation. Traditional systems are often larger, complex and expensive. Our compact systems emerge in response to these challenges for industrial and commercial sectors with limited space. With only 120(H) x102(W) x76(D) cm, our system's footprint is the most efficient design offered by Elspec.

By compensating voltage drops, harmonics, voltage flickering & fluctuations, our systems enhance machinery lifetime and improve production efficiency. our compact cost-effective design offers easy upgradability, and modularity. The unique modular design enables system extensions including hybrid layout for integrated active harmonic filtration.



Mechanical design



Mechanical design with hybrid harmonic filtration

Key Features

- Real-time power factor correction
- High resolution compensation
- Compact & efficient design
- Alternative to conventional, larger compensation systems
- Designed for industrial & commercial applications

Specifications

System Power	25kVAr(400V/50Hz) to 380kVAr(480V/60Hz)
Network Voltage	208V to 480V
Operational Frequency	45-55Hz for 50Hz Network 55-65Hz for 60Hz Network
Switching	**Transient free operation:** Electronic switching designed to switch capacitor groups into the network without switching transients. Connection to the network during current zero-crossings, providing smooth connection and disconnection of the groups.
Group Configurations	**Number of groups:** Up to 3 groups per system. Switching Sequence: • 1:1:1 • 1:2:2 • 1:2:4
Acquisition Time Equalizer	**Full compensation within one network cycle:** • 5-20ms for 50Hz network • 4-16ms for 60Hz network
Acquisition Time Activar Plus	**2 network cycles per step:** • 40ms per step for 50Hz network • 32ms per step for 60Hz network
Acquisition Time Activar	One second per step.
Control Mode	**Main CT Location options:** • Load only (open loop) • Load + capacitors (close loop) **Network configuration:** • Single phase • Three phases WYE/DELTA balanced • Three phases WYE/DELTA unbalanced **Capacitor configuration options:** • Single phase - line to line
Capacitors	**High power capacitors:** • 450V: 7.5um film thickness • 550V: 10um film thickness • 690V: 12um film thickness **Maximum ratings:** • Overcurrent: 4 In • Inrush current: 200 In
Inductors	**High performance cooper inductors:** • Rated inductance and tolerance: -1.5% / +2.5% • Insulation voltage: 6,000V
Losses	208V–480V: < 0.8%
Protection Class	NEMA 1
Operational Temperature	-10°C to +40°C
Communication	• Isolated RS485 • Up to 115k Baud Rate **Protocols options:** Ethernet protocol ELCOM (Elspec High-Speed Communication Protocol) ModBus/RTU (IEEE 754 Floating Point • Full remote control via PQ-SCADA
Operational Mode	• Manual • Automatic • Test

Built In Power Quality Measurement System	**Simultaneous measurement of the following sections:** • Mains (total of load and capacitor) • Load • Capacitors (system) • Combination of mains, load and capacitors
Display	**Structure:** • Graphic, high contrast FSTN LCD • 4.7", Black/White • Long life LED backlight • Antiglare coated polycarbonate window
Controller Specifications	**Power supply:** 230V, 50Hz **LCD Display:** • Size: 94x76mm • Resolution: Graphic 160x128px • Type: FSTN, LED backlight **Frequency:** 30 to 70Hz **Power consumption:** 10VA **Dimensions:** 144x144x138mm, Weight: 1.4kg **Standards:** **Electromagnetic compatibility:** EN50081-2, EN50082-2, EN55011, EN61000-4-2/3/4/5, ENV50204, ENV50141 **Safety standards:** EN61010-1, EN50439-1
Switching Module	**Electronic switches:** • Rated voltage: 2400V/peak • Rated current: 350Amp cooling: • Temperature controlled, forced air cooling system. Panel mounted • Easy maintenance • External air circulation • Long life ball bearings fan **Low losses:** • 400V: 0.35% (3.5W/kVAr) • 480V: 0.30% (2.0W/kVAr)
PC Software	• Pqscada Sapphire software: complete system remote control • Real time measurements • Time-of-use and cost allocation • Harmonic & waveform graphic and tabular display • Comprehensive data logging, including triggers and set points • Automatic comparing to international • Power quality standards, such as ieee 519 (harmonics standard) • Easy report generation • Exporting to word processor (such as Microsoft word) and spreadsheets (such as Microsoft excel) • User friendly on-line help, toolbars and hints • Internet and intranet operation • Stand-alone or network versions, allowing intra-net and internet connectivity

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