The result of years of research & development and a relentless commitment to improved safety, the MVC-4 technology is simply the world's most advanced precipitator control technology – exclusively from Neundorfer

Sectionalized with Neundorfer MVC-4 voltage controls, standard T/R sets deliver comparable performance to more expensive, higher frequency T/R sets. Neundorfer voltage controls:

- *Reduce opacity and outlet emissions*
- *Essentially eliminate high-voltage flash exposure – no open-cabinet calibration required*
- *Reduce maintenance costs and component failures*
- *Provide easy-to-implement, cost-effective shared communication across precipitator systems*
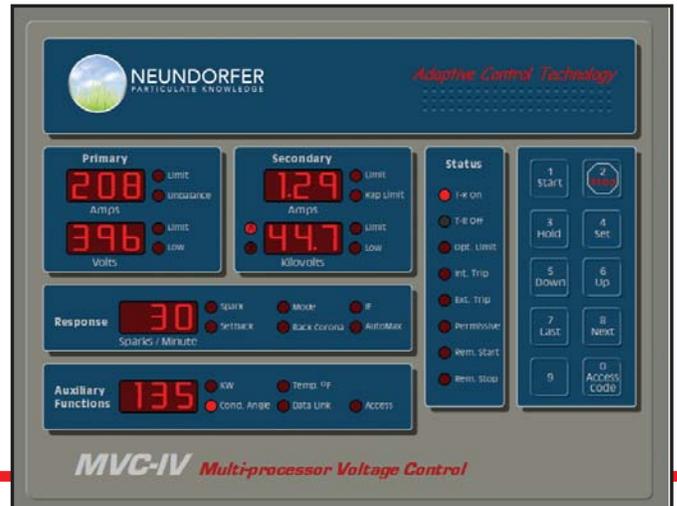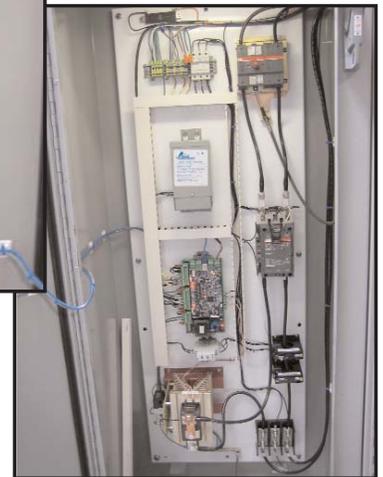

MVC-4 Display Panel

MVC-4 is the latest in automatic, adaptive voltage control from Neundorfer, providing significantly more processing power, convenience and safety for interfacing with the Neundorfer *POS* to remotely monitor and optimize precipitator performance. The *MVC-4* improves performance using state-of-the-art processing control and functionality while providing an advanced hardware platform to support technology development for years to come.

Enhanced Safety

With the *MVC-4*, Neundorfer eliminates the need for calibration – no special transducers, no potentiometers, no configuration jumpers – no calibration whatsoever. Set-up is conveniently done through the keypad. With no need for calibration, the *MVC-4* ensures that an energized control cabinet never requires entry, greatly improving safety when setting up or servicing voltage controls. A security access code for the keypad is also available for added safety.

Cabinet interior with more compact logic and interface boards and streamlined connections

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Easier Installation & Servicing

A new *MVC-4* display panel, with multifunction, dedicated readouts and increased keypad functionality, can be mounted on the outside cabinet door, requiring only a 1''-2''diameter cutout for a standard Ethernet cable (which replaces the ribbon cables used in earlier voltage controls). The logic board, featuring multi-layer surface mount technology, plugs directly into the interface board and the whole unit is easily secured to the back panel using a DIN rail mounting mechanism. The logic board and interface boards are more compact in size, making installation, board swap-outs and retrofits easier.

Advanced Hardware

Neundorfer loaded the *MVC-4* with programmable digital inputs and a fast microprocessor with 10x the processing power and 8x the integrated memory of existing voltage controls. The *MVC-4* is designed with abundant processor speed and memory capacity for future enhancements.

Improved Technology

MVC-4 was developed to match the proven, reliable functionality of MVC-3 and also provide advancements in technology and communications. The *MVC-4* enhancements include:

- New spark-sensing algorithms
- New spark-response modes
- Revised setback algorithms
- Enhanced back corona detection
- *POS*-independent optimization
- Self-diagnostic data link ports
- Networks with multiple display panels

Improved Networking Capability

The *MVC-4* display unit is a microprocessor-based terminal with a remote function capability, communicating via standard serial interface and utilizing RS-485 links. A remote display terminal option offers more networking options, accessing up to 254 *MVC-4* controls with a single display unit. New, self-diagnostic data communication links function independently and disconnect in the event of a malfunction, preventing a whole communications network shutdown.
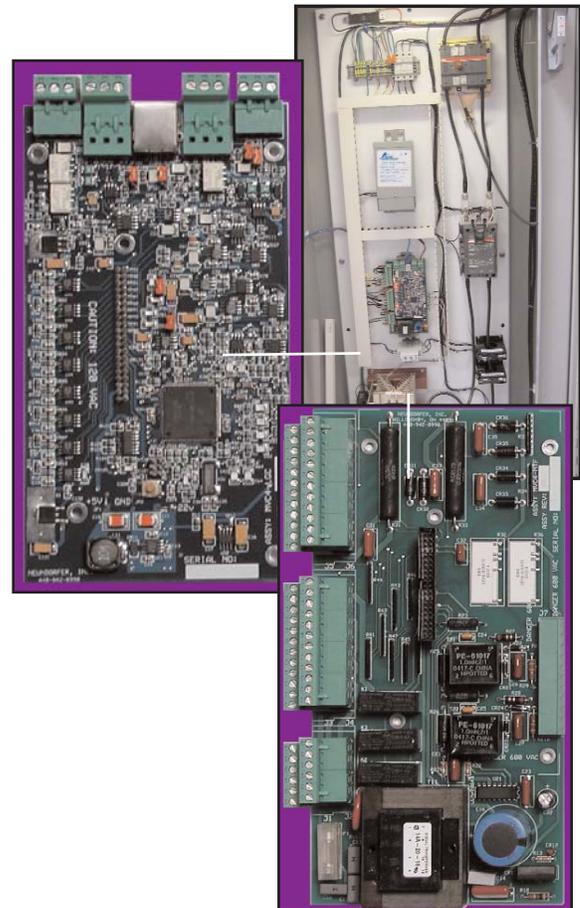
Smaller, more powerful logic board (top) and interface board (right) — with 10x processing power and 8x integrated memory
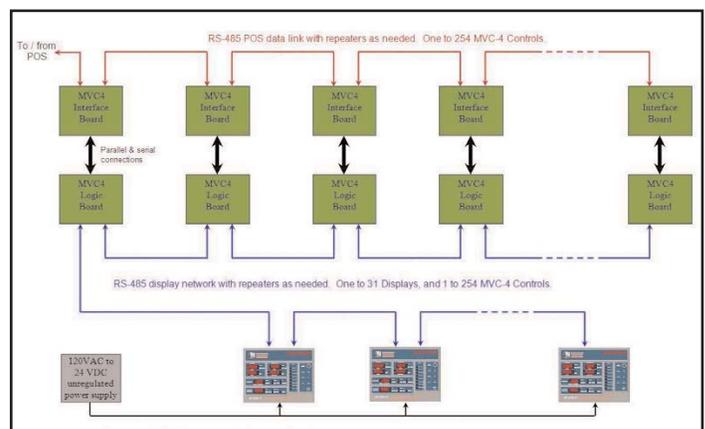
RS-485 display network (one to 31 displays and one to 254 MVC-4 controls)

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MVC-4 Features and Benefits

Advanced Hardware – Enhanced Safety & Quicker Installation

- No calibration adjustments
- Easy board replacement
- More networking options
- Programmable digital inputs
- Increased keypad functionality

- Mulit-processor technology with integrated memory
- 10 x processing power
- -40°C to +85°C operation
- Integrated temperature sensor

Standard Display Panel – Improved Access & Communication

- Dedicated readouts
- Start & Stop keys
- Security Access
- Microcontroller based terminal
- RS-485 communications

- May be remotely located (2000 ft.)
- Hot pluggable for use with blind controls

Network Display Panel – Enhanced Networking Capability

- All features of standard display, plus:
  - One display can access up to 254 *MVC-4* controls
  - Additional readout and Unit Select mode for selecting target control
  - Functions with a group of blind controls

Logic Board (SMT) – 10x Processing Power

- Multi-layer Surface Mount Technology PCB plugs directly into Interface board – no ribbon cables
- Abundant processor speed and memory capacity for future enhancements
- Easy retrofit for cubical type controls – only requires data link cable to cubicle rather than all the feedback signals
- Only jumpers are for data link terminator and kV filters
- Data Link cables are opposite gender allowing easy bypass – just unplug IN and OUT cables and plug them together

Specifications

- Multi-processor configuration
- No calibration adjustments needed or provided
  - Provides accuracy of feedback at ± 5% of full scale
- Easy Joy cubicle retrofit
- Compatible with all TR sets up to:
  - 640 Amps
  - 600 VAC
  - 3200 mA.
  - 120KV with 40 to 400 meg dividers
- SCR Gate Drive:
  - Dual 2 Amp pulsed DC, transformer isolated.
- Relay Outputs and Ratings:
  - Contactor Coil Power: 120 VAC, 3 Amp
  - Trip Alarm: 8 Amp @125 VAC / 24 VDC
  - Configurable - General Alarm or Trip Breaker: 8 Amp @125 VAC / 24 VDC

- Communications:
  - RS-485 multi-drop network to *POS*
  - RS-485 link to display
- Operating Temperature Range: -40°C to 85°C
- Supplied with a NEMA 12'' cabinet or can be retrofitted to an exsisting cabinet
- Display/Control Panel Dimensions: 8.0'' x 10.25'' x 1.0''
- Multifunction keypad with Start/Stop/Reset keys and security code
- Digital Operating Value Displays:
  - Primary Current
  - Primary Voltage
  - Secondary Current
  - Dual bushing KV
  - Spark Rate
  - SCR Conduction Angle
  - Kilowatt
  - Control Board Temperature

- Digital Setpoints for:
  - TR Nameplate Operating Limits
  - Undervoltage Limits
  - Reduced Power Rapping
  - Target spark rate
  - Set Back
  - Response Mode
  - Back Corona
  - Intermittent Energization
  - Data link Unit Number, Ena/Disable
  - Security Access code
- LED Indicators for:
  - Operating Limits Reached
  - TR On/Off
  - Optimization Active
  - Internal Trip
  - External Trip
  - Opto Coupler Inputs