

UCI

Universal Control Interface

The Universal Control Interface (UCI) module is designed specifically for the control and monitoring of industrial cathodic protection systems. The UCI provides a common, versatile, and networkable control interface for a wide variety of Cathodic Protection power supply types (e.g. SCR, Switch Mode, Solar, etc.) and for any DC output range



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Intuitive HMI

- Easy-to-navigate graphical display enabling Operators to view & adjust all operating levels, set control mode, schedule data polling, view & update diagnostics and initiate special functions.

User Selectable VIP Control Mode

- UCI operates in either Constant Current, Constant Voltage, or Potential Control mode at user-selected operating limits.

Stand-alone or Networked Configuration

- UCI can be configured for stand-alone operation or in a multi-UCI network.

Fully Autonomous (Local) and/or Networked (Remote) Operation

- UCI automatically transitions between Local & Remote operating modes to provide all functions and features via its local HMI and/or via a networked terminal.

True Simultaneous Data Acquisition & On

- board Storage, UCI acquires multiple parameter data simultaneously on every poll (i.e. not multiplexed) with non-volatile memory capable of storing 10+ years of daily acquired operating data.

64 Simultaneous Reference/Parameter Measurement Capacity

- UCI can manage up to 16 connected AIM modules, each measuring 4 parameters, to provide simultaneous (not multiplexed) data acquisition of 64 reference potentials or other parameters.

Parameter	Description / Rating
Microcontroller	Flash-based high performance 32-bit ARM Cortex-M7 processor with Floating Point Unit (FPU)
Memory	High performance serial based 32Mbit/4Mbyte Flash memory
Real Time Clock	Battery-backed crystal-based Real Time Clock
Ethernet Port	10/100 Base-T/TX Ethernet Transceiver providing networking and direct access to on-board UCI browser HMI
RS485 Port 1 Site Network	Half-duplex RS485 'Slave' port for Site Networking. Configurable Baud Rate - 9600, 19200, 57600, or 115200. User assigned addressing 1 to 255 (0 reserved for Global Commands)
RS485 Port 2 Peripherals	Half-duplex RS485 'Master' port to control and/or communicate with peripherals such as AIM analog data-acquisition modules
SD Card Port	Multi-function SD Card port
A/D Conversion	Dedicated fully differential 16-Bit Sigma-Delta Converter for each analog input (i.e. not multiplexed) providing true-simultaneous data acquisition on all analog inputs. 50/60Hz & 100/120Hz noise filtering
Analog Input Range	Output Voltage: 0 to 100 VDC Output Current: unlimited, based on 50mV Shunt Reference Potential: -4V to +2V – 20 MΩ input

Standard & Fast Data Polling

- Standard polling at user-selectable intervals from 1 minute to 24 hour – and a Fast-Polling function that polls data at 0.1s intervals.

Scheduled Depol Test Sequence

- Scheduled Depol test sequence including 5s of 0.1s Fast-polling and up to 4 user-configurable subsequently scheduled polling sets.

Multiple Electronic Interruption & Run/Stop Facilities

Interrupt DC power output via toggle on HMI, built-in interrupter function, conventional / GPS interruption, and/or via the RS4985 / Ethernet network.

Intelligent Diagnostics

Clear Diagnostics for all Alert / Alarm conditions.

Tiered Password Access

- Password assignment limits / expands functions available to select Operators.

Wide Operating Temperature Range

- 10°C to +65°C.

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Internal Reference	Built-in ultra-stable 2500mV internal calibration reference provides continuous correction to analog processes

Operator HMI

- The UCI's OLED Display and LED indicators provide an intuitive user interface for a wide variety of functions. Consult the Operating Manual for a full explanation of the functions summarized below.
- High-contrast sunlight readable 3.12" 256 x 64-pixel OLED Graphical Display
- 3x 'Control Mode' indicating LEDs – Voltage, Current, Potential
- 3x 'Status' indicating LEDs – 'Good' (Green) / 'Alert' (Yellow) / 'Alarm' (Red)
- 5-Way Navigation Switch with integrated Encoder
- Output Go/Pause Toggle
- East-to-navigate 6-level main menu leading to comprehensive settings sub-menus for the following
 - Output & Control Settings
 - Viewing all parameters from attached peripherals (e.g. AIM modules)
 - Diagnostic Details
 - Detail UCI Information and Configuration Settings
 - Special Functions (e.g. Standard/Fast Polling, Instant Off, Depol Test, Interrupter, etc.)
 - HMI Password Activation

Parameter	Description / Rating
Control Output	Conditioned Output Control Signal based on a firmware-based variable-index PID control algorithm with user-selectable at 0-2V, 0-6V, and 0-12V output range having 12-bit D/A control resolution.
Thermal Sensing / Fold-back	Independent on-board thermal sensing IC and user-configurable automatic thermal foldback protection
DIO - Internal	Optically-isolated dry-contact output to 'enable' power converter Dry contact sensing input to for power converter faults
DIO - External	Configurable optically-isolated dry-contact output for external alarms Dry contact sensing input for power converter shutdown
Power Supply	12VDC / 200mA – Isolated on board
SD Card Port	Multi-function SD Card port
Wiring	All wiring to UCI is via industrial quick-mate modular connectors

Complete RMCS Network

- Remote Monitoring & Control System Configuration

