Goliah (G40) Portable Data Logger

The G4O unit is a device for control in gas, oil and water distribution and transport networks. Designed for the measurement, monitoring and control of cathodic protection parameters in pipelines. The G4O device is a monolithic module whose interior contains all the elements that correspond to the functionalities of the device (electronics, auxiliary memory, batteries, cyclical switch, connectors for measurement cables, buttons and status LEDs). The device offers high performance combined with ease of use. The container, compact and ergonomic, made of ABS, with degree of protection IP65, is designed for use in one hand and easy installation for field applications. The G4O communicates in Bluetooth or MiWi mode with the terminal management application that allows the configuration, programming and recovery of the measurements made.

Technical Characteristics of the Device

- Ultra-low-power micro-controller, 32-Bit RISC technology (80 MHz), with built-in Flash memory and boot-loader, allowing the download of the firmware updates
- Internal perpetual clock calendar
- Communication ports:
- Wireless Bluetooth Low Energy 4.0 for local host connectivity (optionally MiWi)
- 256 Mb Serial SPI Flash memory for storage of measurement data
- 2 GB microSD memory for extended storage of measurement data (optional)
- Battery level monitoring
- 2 physical measure channels, galvanically insulated and with separate references, with 2 KHz sampling rate and the following characteristics:

Input impedance: > 10 MOhm (standard)

Accuracy: 0,02% RMS on DC range

Direct current (DC) and alternating current (AC) measurements, simultaneously active on each channel

Voltage range: ± 250 mV, ± 20 V, ± 50 V, ± 100 V

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Operational Characteristics of the Device

- Current intensity measurement on external shunt, with selectable current scale
- Built-in solid state cyclic interrupter (maximum current 2.6A), for coupon electrical disconnection from the pipe and on-off cycles execution; also equipped with an external precision resistor for the current measurement on the coupon (optional)
- Standard terminal connection with 5 silicon coated cables with 4mm banana plug termination; optionally, 5 standard   insulated 4mm banana socket for standard banana plug cable connection
- Low power, low voltage power supply:
- By means of 3xAA lithium batteries with intrinsic autonomy of minimum 300 x 24-hour measurement, storage and data transfer
- Shock resistant ABS container with TPE decor bumper, assuring IP 65/DIN EN 60529 protection rating; included compartment for 3xAA batteries
- External case dimensions: 159,4 x 77,9 x 33,5 mm
- Weight: approximately 200 g (excluding batteries and cables)
- Operative temperature range: - 20°C ÷ + 60 °C
- Lighting and surge protection (impulsive transient protection 8/350uS > 5KV)

G4O is supplied ready for typical measurement settings:

- Temporary short-term monitoring: voltage, current, with instant value logging and sampling rate programmable from 20 samples per second to a sample every second
- Temporary long-term monitoring: voltage, current, with logging of a group of meaningful values such as:
- Min value with date and time of occurrence
- Average value during the sampling period
- Max value with date and time of occurrence
- Mean square deviation
- Mode
- Time of over- and under-range values
- Variability of the electrical field
- OFF potential: depolarization curve recording with storage of 20 samples per cycle, with programmable ON/OFF durations
- Continuous OFF measurement on coupon: cyclic sampling of the OFF potential (with programmable ON/OFF cycle and logging of the OFF potential every second after a pre-set period after disconnection)
- Parametric setting of the measured electrical quantities
- Control of the analytical functions and their settings by means of a PC or mobile device in local wireless connection

G4O can be integrated with:

- FIDO3-O and FIDO MOBILE software, for device configuration management and for measurements data transfer; the communication takes place by means of Bluetooth Low-Energy 4.0 interface (or optionally of suitable USB-to-MiWi adapter miUSB)
- WebProCat web application, for measures management, analysis and graphical representation; the device generates output files that can be natively imported
- Third-party applications, through a customer provided protocol