

# SYSCAL TERRA



**RESISTIVITY & IP**  
SURVEYING SYSTEM OF  
NEW GENERATION

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General specifications	
GPS	Internal GPS for a simplified management of the global (UTM) coordinates.
Memory	2 Gb + USB ports for external memory (1 Tb).
Temperature range	-20°C - +70°C on external batteries.
Sequence	Can be imported from a PC (Electre Pro) or created directly in the Syscal.
Screen	7 inches 480 x 800 color touch screen (touch screen can be disabled).
Fullwave mode recording	Possibility to record 100 Hz fullwave form timeseries of voltage in background while measuring. Possibility to record full waveform only up to 1 kHz of sampling rate.
Monitoring / time-lapse	Possibility to use the system in monitoring mode. System is controlled by scripts written by the user. The scripts can be changed remotely. Data can be sent to a FTP server automatically. An additional module integrated to the Syscal Terra box, dedicated to the management of battery charge in between measurement, can be added to the Syscal Terra.
Receiver Only	Possibility to use the system in receiver mode only (to be used with external transmitter).
Dynamic acquisition (terrestrial or water)	Possibility to measure continuously resistivity and IP from an adapted cable towed on the ground or in the water. This type of functioning does not require additional PC or tablet.
Mode Master-Slave	Connected to another Syscal Terra Switch, the Syscal Terra Switch behaves like a Switch Terra to make a system with 192 electrode from two 96 electrode systems for example.
Mode Multi-Syscal / Multi-Tx	Combines several Syscal Terra for complex surveys without connection between them. Two Syscal Terra can work synchronously on the same sequence, based on their GPS clock. In Multi-Tx mode, several Syscal can survey simultaneously on the same sequence, synchronized through GPS clock.
Mode diagnostic	The Syscal Terra is provided with different accessories and internal software that allow to test the receiver board, the transmitter board, the switching relays and the external battery capacity.
Rx Firmware update	Update the Syscal Terra Rx firmware by yourself when a new version is available.
Batteries	Removable internal Li-ion batteries (4 x 96 Wh). Possibility to connect external battery for the Tx and Rx. Automatic recognition of external battery.
Data downloading	From USB key, WiFi connection from a web browser or using USB cable.
Weight	Syscal Terra Switch 96: 15.5 Kg with internal batteries.
Dimensions	Syscal Terra Switch 96: 45 cm x 37 cm x 24 cm.
Quality control	Computation of the quality factor on resistivity and chargeability and storage of a stacked semi-period with 1 sample every 10ms (even when timeseries are not recorded).
Full waveform processing	Possibility to perform advanced processing of full waveform data on Fullwave Viewer II to improve the data quality.
Compatibility	Compatible with the Switch Pro (10 channels only, requires additional connectors).
Pseudo-section display	Real time display of pseudo-section on demand.

Transmitter specifications	
Maximum voltage	800 V in ERT mode / 1000 V <sup>(1)</sup> in VES mode.
Maximum power	250 W <sup>(2)</sup> / 1200 W with external AC/DC generator
Maximum Current	2.5 Amp <sup>(3)</sup> .
Regulation	Current regulation or voltage regulation
Type of injection	Constant Vab Constant Iab Iab adapted to reception voltage Vab adapted to reception voltage
Receiver specifications	
Number of measurement channels	20 channels galvanically isolated
AD Converter / Dynamic range	24 bits / $\approx$ 30 bits G.B.D. <sup>(4)</sup>
Input impedance	100 M $\Omega$ G.B.D.
Max voltage	15 V on Channel 1 & 15 V on the sum of channel 2 to 20
Input protection	1000 V
Filter	Selectable filters: -low pass - 10 Hz + Notch 50 Hz -low pass - 10 Hz + Notch 60 Hz -low pass 256 Hz -low pass 512 Hz
Gain	4 Automatic gains input voltage
Resolution on voltage	1.7nV G.B.D. <sup>(4)</sup>
Accuracy on resistivity	0.05% <sup>(5)</sup>
Induced polarization windows	20 windows with possibility to export the decay curve at 1 sample every 1 ms.
Induced polarization measurement	100% or 50% duty-cycle

(1)  $\pm$  0.2% (2)  $\pm$  1% (3)  $\pm$  0.5% (4) on resistivity measurement for 8s pulses, 3 stacks (5) measured on 1 V voltage and calculated as mean accuracy on 1.5, 2.0 and 2.5 A currents.





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Specifications subjects to change without notice SC\_SYS\_TERRA\_GB\_V1



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