

**New!**

**TDEM SYSTEM**

## PROTEM CM

By consolidating the PROTEM receiver and TEM47 transmitter components into a single console, the PROTEM CM system offers significant improvements in portability and convenience: As compared to the individual receiver and transmitter components, the consolidated module is both smaller in size, and less in weight by about half. A single, internal lithium-ion power source services both receiver and transmitter functions, providing up to eight hours of operating life, and up to 24 volts power.

Available with cable reference synchronization only, for either single component or sequential three-component data collection, the consolidated module otherwise offers the same functions and performance characteristics as the standard PROTEM receiver, and is compatible with all other Geonics transmitters.



**GEONICS LIMITED**

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## PROTEM CM

### TECHNICAL SPECIFICATIONS

#### Receiver Section

<b>Measured Quantity:</b>	Time rate of decay of magnetic flux along 3 axes
<b>Sensors</b>	
1. Low Frequency:	Air-cored coil of bandwidth 60 kHz; 100 cm diameter
2. High Frequency:	Air-cored coil of bandwidth 700 kHz; 61 cm diameter
3. 3D-1:	Three orthogonal component sensor; sequential operation
<b>Time Channels:</b>	20 or 30 geometrically spaced time gates for each base frequency gives range from 6 $\mu$ s to 800 ms
<b>Repetition Rate: (Base Frequency)</b>	0.3 Hz, 0.75 Hz, 3 Hz, 7.5 Hz, 30 Hz, 75 Hz or 285 Hz for countries using 60 Hz power line frequency 0.25 Hz, 0.625 Hz, 2.5 Hz, 6.25 Hz, 25 Hz, 62.5 Hz or 237.5 Hz for countries using 50 Hz power line frequency
<b>Synchronization:</b>	Reference cable
<b>Integration Time:</b>	0.25, 2, 4, 8, 15, 30, 60, 120, sec
<b>Calibration:</b>	Internal self calibration External QC coil calibration (optional)
<b>Keyboards:</b>	Two 3 x 4 matrix sealed key pads with positive tactile feedback
<b>Gain:</b>	Manual control
<b>Dynamic Range:</b>	29 bits (175 dB)
<b>Display Quantity:</b>	(1) Table of time rate of decay of magnetic flux (dB/dt) (2) Curve of rate of decay of magnetic flux (dB/dt) (3) Table of apparent resistivity ( $\rho_a$ ) (4) Curve of apparent resistivity ( $\rho_a$ ) (5) Profile of dB/dt (6) Real time noise monitor (7) Calibration curve (8) Data acquisition statistics (real time)
<b>Storage:</b>	Solid state memory with capacity for 25000 data records
<b>Display:</b>	8 lines x 40 characters (240 x 64 dot) graphic LCD
<b>Data Transfer:</b>	Standard RS-232 and USB communication ports
<b>Processor:</b>	CMOS 68HC000 8 MHz CPU

Note: The PROTEM CM receiver can be used with all seven independent Geonics transmitters: TEM47, TEM47 HP, TEM57, TEM57-MK2, TEM37, TEM67 and TEM67 Plus

#### Transmitter Section

<b>Current Waveform:</b>	Bipolar rectangular current with 50% duty cycle
<b>Repetition Rate:</b>	30 Hz, 75 Hz or 285 Hz in countries using 60 Hz power line frequency 25 Hz, 62.5 Hz or 237.5 Hz in countries using 50 Hz power line frequency
<b>Turn-Off Time:</b>	Very fast linear turn-off 2.5 $\mu$ s at 2 amps into 40 x 40 m loop. Faster in smaller loop
<b>Transmitter Loop:</b>	Any dimension from 5 x 5 m to 200 x 200 m. Multiple-turns loop possible
<b>Output Current:</b>	3.5 A maximum; (7 A pp)
<b>Output Voltage:</b>	0 to 9 volts continuously variable (at 1A load), or 24 volts

#### General

<b>Power Source:</b>	Internal 12/24 volts rechargeable lithium-ion battery
<b>Battery Life:</b>	8 hours continuous operation with 2 A transmitter current at 12V output voltage
<b>Weight:</b>	10.5 kg
<b>Receiver Size:</b>	40 x 35 x 24 cm
<b>Operating Temperature:</b>	-30°C to +50°C



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