

TEM57MK2A Data Sheet

The TEM57MK2A and PROTEM receiver are the principal components of PROTEM 57 systems. The design and performance of the PROTEM 57 make it a highly portable, powerful and versatile time domain system.



TEM57MK2A. Image Courtesy of Geonics Limited.

The TEM57MK2A is powered by either a 600 W generator or by rechargeable batteries in a backpack. PROTEM 57MK2A systems are synchronized by either a reference cable or quartz crystal, usually determined by the size of the loop and whether they are being used for large loop soundings or profiling.

The PROTEM 57MK2A is used for a wide variety of applications. The system can sound the depth, thickness and conductivity of layers down to 300 m below surface, for applications such as mapping the thickness of aquifers, clay layers and assessing water quality. In coastal areas, the PROTEM 57MK2A has defined the depth to saline intrusion as accurately as chemical samples from wells. The PROTEM 57MK2A, with a short reference cable, portable transmitter and 3-D receiver coil can delineate complex ore bodies within 200 m of surface. Deeper conductors can be characterised by profiling with a crystal synchronised receiver and a large, fixed transmitter loop. Modelling provides conductivity thickness, dip and extent of the ore body.

Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	43cm x 25cm x 25cm	15kg

Technical Specifications

Current Waveform:	Bipolar rectangular current with 50% duty cycle.
Base Frequency:	3, 7.5 or 30 Hz where powerline frequency is 60 Hz. 2.5, 6.25 or 25 Hz where powerline frequency is 50 Hz. Rates below 1 Hz available from Protem Receiver through reference cable.

Turn-Off Time:	20 to 115 us depending on size, current and number of turns in transmitter loop.
Transmitter Loop:	Single turn: any dimension; minimum resistance is 0.7 ohms, up to 300 x 600 m. 8-turn; 5 x 5 or 10 x 10 m.
Output Current:	25 A maximum.
Output Voltage:	21 V to 60 V continuous control with motor generator, up to 160 V (3,800 W).
Synchronization:	Reference cable or, optionally, quartz crystal.
Power Supply:	1,800 W, 110/220 V, 50/60 Hz single-phase motor generator or, optionally multiple 12 V batteries.
Transmitter Protection:	Electronic and electromechanical protection short circuit.