

GEOTEK[®]

TEKNOLOJİ SANAYİ ve TİC. LTD. ŞTİ.

“adds value with its own technology”



ABOUT US

The knowledge we've gathered in the geotechnical investigation sector since 1998, the challenges we've faced in the field, industry demands and needs, and today's technological breakthroughs formed the idea of developing and producing geological and geotechnical in-situ investigation testing instruments and made us bring "GEOTEK TECHNOLOGY" out.

OUR PURPOSE

Our aim is to design, develop, manufacture user-friendly in-situ investigation devices and be among the global brands creating innovative solutions.

PRESSUREMETER TEST

In pressuremeter test, one of the in-situ investigation techniques; with the probe placed in the borehole at regular intervals, pressure is gradually applied to the wall of borehole and the deformations on the inner surface are measured at intervals of 15-30-60 seconds.

Accordingly, pressure-deformation graphs are drawn in such a way that the x-axis shows the pressure levels (kg/cm^2) and the y-axis shows the volume changes (cm^3) at these levels.

The pressuremeter is composed of, by giving circular pressure, a cylindrical probe that creates circular deformation on the ground and the control panel connected to it. As a result of the test, 2 main parameters are the conclusion: "**Bearing capacity** and **Settlement**".

AUTOMATIC PRESSUREMETER: GPM-100

100 Bar (10 mPa) Pressure

It has the ability to produce pressure up to 100 bar. Pressure increases can be made automatically by the device, whether desired with step increases determined by the user.

Automatic Test from Tablet without Opening the Cover of the Device

It is a state-of-the-art device that is free from many control heads, valves and mechanical manometers, which are found in manual pressuremeters and that require qualified personnel due to their difficulty in use, and that offers ease of use from a single touch screen without opening the cover of the device.

High Precision Pressure and Volume Measurement

Pressure values measured by high-precision pressure sensors and 3 separate volume reading sensors transfer the determined volume changes to the user with a minimum margin of error.





Automatic Differential Adjustment by Depth

GPM-100 completely eliminates the problem of faulty differential setting, which causes erroneous test results in manual pressuremeters and is the cause of probe explosions to a large extent. The device can adjust the differences between water and gas pressure automatically, and most importantly, precisely and accurately, according to the depth information entered.

Automatic Calibration Modes

It automatically performs all the calibrations that need to be done in the pressuremeter test by managing it from a single screen. In this context, “**Pressure** and **Volume**” calibrations are carried out sensitively and accurately with automatic processes.



Easy Supervision with Industrial Touch Tablet

The pressuremeter is the only device that has the ability to manage all functions such as 4 different test modes, unloading- reloading test, automatic calibration processes and all these functions from a single screen without opening the cover of the device that you may need during the test process.

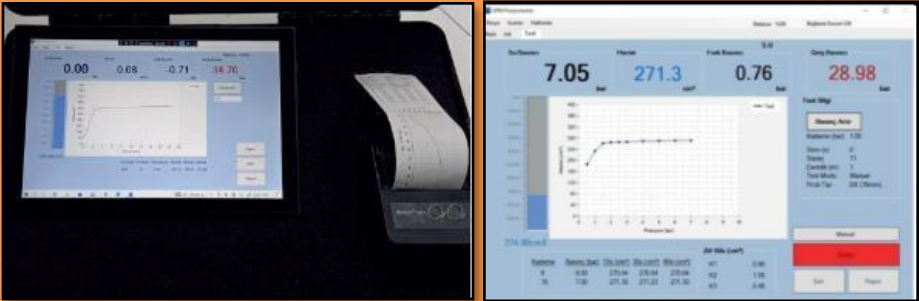


Deep Tests Without Changing Any Parts

GPM-100 can perform tests up to 500 meters without causing workload, cost and time loss, without the need for differential springs that need to be purchased and replaced according to depth, or any other part replacement in manual pressuremeters.

Simultaneous Test Data Monitoring on the Screen

It has the ability to display information such as "Pressure, Volume or Test graph" simultaneously on the screen during the pressuremeter test. Thus, the behavior of the soil or rock can be interpreted instantaneously from the data displayed on the screen and, if necessary, a printout can be taken from the wireless printer.



Automatic Test Termination in Large Boreholes

During the pressuremeter test, in cases where the borehole is wider than the width allowed in the standards, GPM-100 automatically ends the test by calculating the descent rate and volume change of the water precisely and prevents possible probe explosions.



Emergency Stop Button

It has the feature of ending the experiment with a single button and stopping the device at the desired pressure or volume level or in cases where an emergency stop is required in the experiment area.

4 Test Modes: Manual, SPT, Rock and Auto

It has 4 different test modes that are unique in the world. Each mode carries out the test process autonomously in itself, automatically terminates the test where necessary, and a report can be printed from the printer according to the user's request.

1- Manual Mode

With this mode, the user can determine the step increase rate (1- 2-3 bar or 2-4-6 bar etc.) and have the device perform the test automatically according to the criteria the user has determined. The test can be terminated either automatically by the device or at the point requested by the user.

2- Standard Penetration Test and Rock Modes

With these modes, the user can perform the test by entering the "SPT-N" value or by selecting the "Rock Type" with the automatic step increase rates determined by the device. The test can be terminated either automatically by the device or at the point requested by the user.



3- Automatic Mode

With this mode, the AI (artificial intelligence) of the device decides the level increases according to the soil or rock strength. This mode is fully automatic and does not require any information from the user other than depth information. The test can be terminated either automatically by the device or at the point requested by the user.

Unload – Reload Mode

It has the ability to automatically perform the "Unloading- Reloading" tests requested in some projects in pressuremeter tests with the guidance of the user.

Controls Minimizing the Risk of Probe Damage

GPM-100 has advanced control mechanisms and alert prompts:

- Pressure and volume changes control system
- Wide borehole warning system
- Automatic differential adjustment
- Controlled test termination in high pressure tests

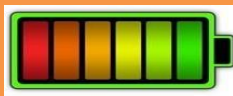


Automatic Test Termination

- It has the feature of automatically ending the test when the maximum volume or maximum pressure point is reached in the pressuremeter test and automatically switching to standbymode for longer battery life.

Li-ion Battery

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- Up to many tests, tests can be performed without using a spare battery or charging the existing battery. The device automatically switches to "Stand By" mode between tests. It can also be used with the optional spare battery.



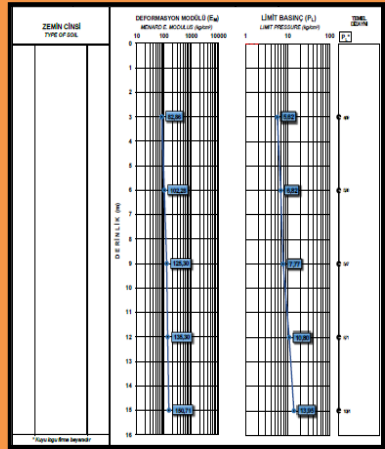
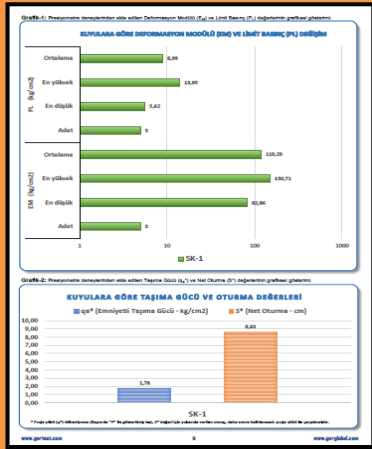
Instant Access to Many Parameters in the Test Area*

Without the need for data processing or calculations in the office, it has the ability to instantly calculate the following values and take printouts in the test area:

- The Bearing capacity and settlement
- The Cohesion (c) and friction angle (f)
- The Creep pressure (Pf) (creep curve)
- The Borehole logs (Em, PL, PL*)
- Test result with graphics

Thus, it provides great convenience in preparing reports that require experience, knowledge and time in the office after the experiment.

* *Optional*



Backing Up Data to the Cloud with GPS***

By uploading the results obtained in the pressuremeter test, data such as coordinates information and report parameters to the cloud, it provides the opportunity to access the data whenever and wherever you want with instant backup.

*** (It has not been activated yet. Cloud system software is still in progress.)

Waterproof Aluminum Case

It has been designed and manufactured to be able to work in all difficult terrain conditions with its wheeled, easily portable, waterproof lightweight aluminum case supported by protective material.

Compatibility with Manual Pressuremeter Equipment



It can work in harmony with the probe, casing, calibration pipe and other equipment used in manual pressuremeter devices.

Faster Tests with Artificial Intelligence

GPM-100, with its automatic artificial intelligence that manages the test process, the pressuremeter performs tests 50% faster* than standard pressuremeters.

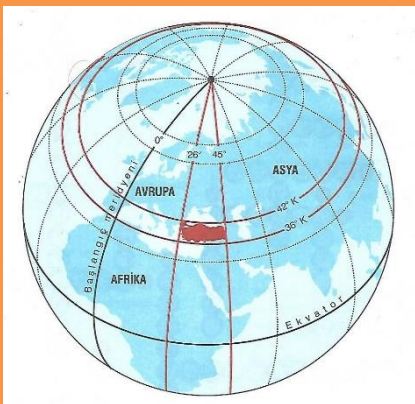
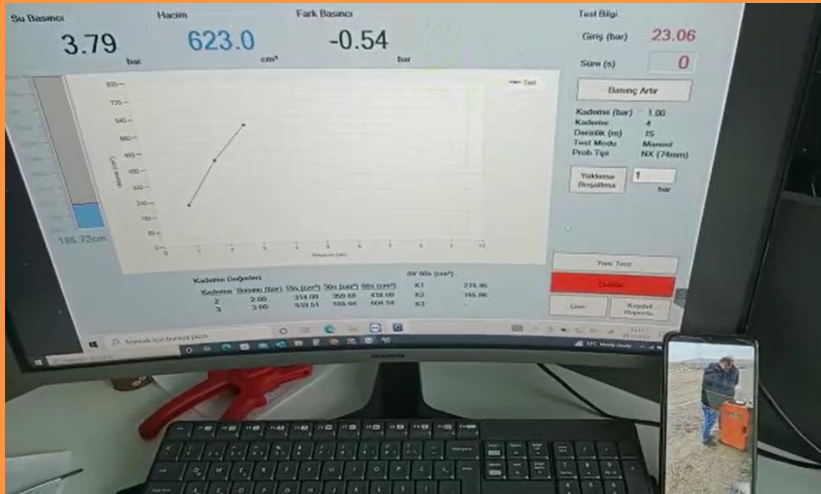
Thus, the duration of the employee and the device in the test area and the work process are shortened significantly.

- Faster test preparation process
- Faster differential pressure tuning
- Faster test termination



Instant communication with the test area with Remote Testing and Monitoring

GPM-100; It is possible to connect the pressuremeter experiment to the system online with an internet connection, to monitor it remotely, to perform tests, to reach the results instantly, to be informed of the test results immediately by sending it to the defined e-mail address.



Test field location information

At the beginning of the test in the test area, the internet connection is opened for a short time, latitude and longitude coordinate information is obtained and entered in the test result report.

DIFFERENCES OF GPM-100 AUTOMATIC PRESSUREMETER

GEOTEK GPM-100 AUTOMATIC PRESSUREMETER	STANDARD PRESSUREMETER	GPM-100
To control all functions from a single screen without opening the cover of the device with a touch tablet	UNAVAILABLE	AVAILABLE
High precision and automatic pressure and volumeter measurement	UNAVAILABLE	AVAILABLE
Backing up the data with GPS to the cloud without interfering with the results and saving the experimental coordinate information	UNAVAILABLE	AVAILABLE
Independent operation from many buttons and manometers in mechanical devices that make it difficult to use	UNAVAILABLE	AVAILABLE
Compatible with standard pressuremeter equipment	UNAVAILABLE	AVAILABLE
4 different experiment modes; Manual, SPT, Rock and Automatic	UNAVAILABLE	AVAILABLE
Ability to automatically adjust the differential according to the depth	UNAVAILABLE	AVAILABLE
Ability to try up to 150* meters without changing the spring according to the depth	UNAVAILABLE	AVAILABLE
Automatic calibration modes; Pressure, volume and device	UNAVAILABLE	AVAILABLE
Experiment termination at maximum probe volume	UNAVAILABLE	AVAILABLE
Ability to experiment horizontally and upwards (tunnel etc.)	UNAVAILABLE	AVAILABLE
Being able to experiment horizontally and upwards (tunnel, etc.) different from existing devices.	UNAVAILABLE	AVAILABLE
Loading-Unloading mode	UNAVAILABLE	AVAILABLE
Ending the experiment with a single button at the desired pressure or volume level	UNAVAILABLE	AVAILABLE
Monitoring simultaneous ongoing experiment information (pressure, volume, graphic, etc.) from the screen	UNAVAILABLE	AVAILABLE
Determination of test suitability according to well diameter and automatic termination in large wells	UNAVAILABLE	AVAILABLE
Autonomous control mechanisms that minimize the risk of bursting the probe tire	UNAVAILABLE	AVAILABLE
Ability to print out the test/calibration results with graphics in the field	UNAVAILABLE	AVAILABLE

Approved by The Scientific and Technological Research Council of Turkey (TÜBİTAK)

GPM-100 is a project that has proven its innovative features and made a difference by taking part in the few projects approved by TÜBİTAK.



Compliant with ISO 22476 and ASTM D4719 Standards

GPM-100 meets the requirements of ISO 22476-4 and ASTM D'4719-07 standards.



**Kalibrasyon
TS EN ISO/IEC T7025**

AB-0119-K



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