



Leak testing

- Gas supply according to G469 (A) A2, B2, B3, C3 and D2
- Drinking water supply according to W400-2, Part 16 and DIN EN 805
- Process engineering / industry / process technology
- Long-distance heat lines
- Cable protection tubes
- Geothermal probes
- Sewers

Measured quantities

- Absolute pressure
- Temperature
- Water discharge volume (DAK2000)



PMS3000



Leak testing system with integrated
log printer

PMS3000 overview

Pressure test kits of the **PMS3000** series are used for leak testing in pipeline construction. The operating terminal, the measurement technology, and a log printer are housed in a rugged and waterproof plastic case suitable for use at construction sites. Via a color graphic touch display, all parameters of a leak test can very easily be entered and the test procedure controlled.

All test methods of the DVGW directives G469 (A): 2010 and W400-2, Part 16 : 2004 are stored in the device. Intuitive operation is thereby possible even for inexperienced users without prior knowledge. Each test procedure ends with an automatic evaluation of the results of the leak test.

During the test, a graphic depiction of the test procedure is available on the display.

Other test methods in accordance with pressure vessel regulations, drains and sewers (EN 1610), cable protection tubes (e.g., ZTV TKNNetz40) can also easily be integrated.

Via an integrated, 122-mm-wide printer, the test report can be printed out directly at the construction site. Thus, no valuable time is lost pending approval of pipe integration. In addition, all test reports can be called up as PDF files in the memory of the PMS. The cumbersome and training- and cost-intensive use of an additional PC evaluation program is no longer necessary. The PDF files can easily be copied to the connected PC via a USB interface, where they can be processed further (e.g., sent to a client via e-mail).

By means of the integrated printer logger function, the simplest test procedures can be recorded with the measurement of start pressure, measurement cycle, final pressure, and temperature.

When performing the W400-2 Part 16 Pressure drop methods (contraction procedure, accelerated standard procedure, and standard procedure), the water discharge quantities can be recorded with the optional **DAK2000** pressure relief kit. These are automatically transferred to the **PMS3000**. Manual entry and, thus, possible transfer errors / tampering are thereby avoided.

Tests of gas lines are supported by test procedures according to G469 (A) B2, B3 building connection, B3 supply line, and C3 from the device. Temperature compensation can also be activated. Much more accurate test results are thereby achieved.

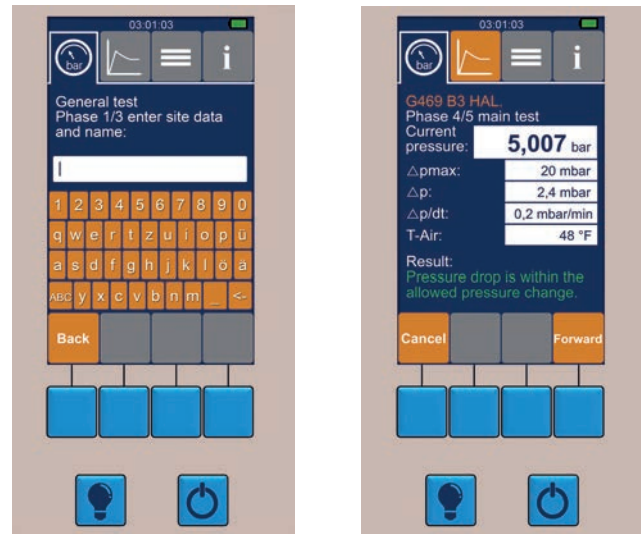


Figure 1: Input of the test data via a complete keyboard. Test procedure W400-2, Part 16

Test methods

| | Test method | Test medium |
|-----------------|-------------------------------------|-------------------------|
| W400-2, Part 16 | Contraction procedure | Water |
| | Accelerated standard | Water |
| | Standard procedure | Water |
| G469 (A) | A2 visual process | Water |
| | B2 pressure test | Water |
| | B3 building connection | Air / inert gas |
| | B3 supply line | Air / inert gas |
| | C3 high-pressure line (MOP > 5 bar) | Air / inert gas |
| | D2 pressure volume measurement | Water |
| General | Freely definable test cycles | Water / air / inert gas |

Table 1: Available test methods

Freely definable test procedures can be entered in the device and stored as a template. The number of test phases in the test procedures can be freely selected and can be named appropriately (e.g., pressure build-up, settling phase, main test, pressure relief).

For each phase, the start pressure, measurement duration, final pressure, and temperature are stored. Customer-specific leak tests (e.g., with different TÜV requirements) can thereby easily be created and managed.

Connection accessories

An extensive selection of connection accessories for all common gas and water pipe systems facilitates straightforward use of the testing system. This saves a great deal of time on-site, thereby reducing costs.

| | |
|---------------------------------|-------------|
| Measuring line 1620 4m | 17301199988 |
| Battery charger 230V - 12V - 2A | 17302199997 |
| Car charger | 17302199998 |
| Temperature sensor 5m cable | 17301199995 |
| DAK2000 pressure | 17301199989 |
| DAK2000 connection cable | 17302199994 |
| Pressure line 2m | 17301199987 |
| Pressure line 5m | 17301199986 |
| Pressure line 10m | 17301199985 |
| Drain line 2m | 17301199984 |

Table 2: Accessories

Scope of delivery

The PMS3000 is delivered with a universally usable standard test procedure.

Depending on the application area, the PMS3000 can, at the request of the customer, also be equipped with the test procedures listed in the table 3.

| | | |
|--|------------------|-------------|
| Building gas connection B3 Gas | G469 (A) | 17204199998 |
| Gas supply line C3 | G469 (A) | 17204199997 |
| Contraction procedure Accelerated normal | W400-2, Part 16 | 17204199996 |
| Standard procedure | | |
| Free test procedures | Expert | 17204199995 |
| Testing of drains and sewers | DIN EN 1610 | 17204199994 |
| Cable protection tube | ZTV TKNetz40 | 17204199993 |
| Geothermal probes | SIA 384/6 | |
| | DVGW W120-2 | 17204199992 |
| Interior gas installation | TRGI 2008 / G600 | 17204199991 |

Table 3: Overview of program procedures

Measuring ranges

A number of different measuring ranges are available:

| | | | | |
|--------------------------|--|--------------------------------|---------------|-------------|
| 0 ... 300 mbar absolute | Sewers | EN 1610 | PMS3150-0003S | 17102199996 |
| 0 ... 1 bar absolute | Interior gas installation | G600/TRGI 2008 | PMS3150-0010S | 17102199995 |
| 0 ... 7 bar absolute | Gas supply + building gas connection | G469 (A) B3 | PMS3150-0070S | 17102199994 |
| 0 ... 30 bar absolute | Gas supply lines MOP ≤ 5 bar Drinking water supply lines | G469 (A) B3 W400-2, Part 16 | PMS3150-0300S | 17102199993 |
| 0 ... 30 bar absolute C3 | Gas supply line > MOP 5 bar | G469 (A) C3 | PMS3150-0300K | 17102199992 |
| 0 ... 150 bar absolute | Gas supply line > MOP 5 bar | G469 (A) A2 / B2 | PMS3150-1500S | 17102199991 |
| 0 ... 500 bar absolute | Industry | Expert | PMS3150-5000S | 17102199990 |

Table 4: PMS3000 measurement ranges

Technical data

| | |
|----------------------------|---------------------------|
| Weight | 4,5 kg |
| Dimensions: W x H x D [mm] | 350 x 148 x 295 |
| Protection class (closed) | IP 67 |
| Power supply: Battery | Power supply unit: 12 V |
| Battery capacity | 9 Ah |
| Pressure sensors | 1 (a second is optional) |
| Pressure connection | Measuring coupling 1620 |
| Temperature sensors | 1 x internal 1 x external |
| Temperature connection | Plug connector |
| Operating temperature | -10 ... +40°C |
| Storage temperature | -20 ... +60°C *) |

Table 5: PMS3000 technical data

*) with liquid test media > 0°C

| | |
|----------------------------|------------------|
| Weight | 6 kg |
| Dimensions: W x H x D [mm] | 350 x 148 x 295 |
| Pressure inlet | Plug nipple |
| Pressure output | Geka coupling |
| Operating temperature | 0 ... +40°C |
| Storage temperature | -20 ... +60°C *) |

Table 6: DAK2000 technical data

*) with liquid test media > 0°C



Figure 2: DAK2000 pressure relief kit

The **PMS3000** can be equipped with up to two individual pressure sensors. In addition, a temperature sensor is available for measuring the pipe or soil temperature. The ambient temperature is measured and documented separately.



About UNION Instruments

UNION Instruments, founded in 1919, is a specialized supplier of measuring instruments in the areas of calorimetry, gas composition and leak testing. Its user and customer base includes biogas producers, the chemical industry, and energy and water suppliers. The company has its headquarters in Karlsruhe and subsidiaries in Lübeck as well as in Berlin. With approximately 30 international distributors, UNION Instruments operates worldwide. The company's core businesses include development and production as well as maintenance, service, and support.

Our service performance



Support

The **UNION-hotline** helps to solve all inquiries and urgent issues fast and easy. Device specific concerns can be solved worldwide within minutes by direct communication via TEAMVIEWER.



Original spare parts

Original spare parts for the majority of UNION's products are on stock directly at site and ready for dispatch within a few hours.



Software

For read-out of measurement and calibration data a device-specific software is available for our clients. In addition to the graphic display of measurement data its export in several database formats is possible.



Training

UNION offers individual in-house training or on-site seminars for installation, use and maintenance of our devices even at the customer's premises. Training is individually adapted to the client's requirements.



Repair service

A global service for inspection, maintenance and repair of our devices and systems is provided directly by UNION and via its distributors.



Certification

Since 20 years we have implemented the ISO9001 system. UNION's products are certified to ATEX and UL/CSA directives accordingly. Industrial safety "**Safety with System**" is part of UNION's company policy.



Engineering

In the last decades UNION compiled a very high level to the state of the art that covers many market segments. So a wide range of possible solution approaches is on hand.



Calibration

As part of maintenance and service UNION provides the validation and re-calibration of measuring devices in conformity with certified custody transfer instruments and / or traceable perpendicular.

www.union-instruments.com

UNION Instruments GmbH ■ Zeppelinstrasse 42, 76185 Karlsruhe, Germany
 Phone: +49 (0) 721-68 03 81 0 ■ Fax: +49 (0) 721-68 03 81 33
 E-Mail: info@union-instruments.com