

Innovative Testing Technology for Water Supply

# PMS Testing Case



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for Water Supply

## PMS Testing Case



### Application

In August 2022, the revised DVGW Worksheet W 400-2 was published in its final (white print) version.

This worksheet continues to require pressure testing of water supply pipelines prior to commissioning. As a rule, one of the established pressure loss methods (contraction method, standard method, accelerated standard method, or influence-minimized standard method) is used for pressure testing, depending on the type of pipeline.

The PMS testing case, with its intuitive user guidance, enables even less experienced personnel to carry out pressure tests correctly. The evaluation of the test results is performed automatically by the system and is available directly on site.

### Fully Automated Pressure Testing of Water Supply Pipelines

The combination of the PMS testing case and an electric test pump including the pressure relief device "ADAMM" enables fully automated pressure testing of water supply pipelines.

The pressure reduction, including measurement of the discharged water volume, is carried out fully automatically.

Since the flowing water volume always remains within the permissible measuring range of the water meter, very high accuracy is ensured even with small discharge volumes.

#### User Benefits:

- **Error prevention during the testing process**  
Pressure build-up, pressure holding, and phase changes are performed automatically
- **Pressure reduction with water volume measurement**  
is carried out automatically
- **Cost reduction through automation**  
Pressure testing can be performed by a single person
- **Increased occupational safety**  
During the test, no personnel are required to remain in the pipe trench

### Wide Range of Applications

The option of a second internal pressure sensor enables a wide range of applications for the PMS testing case. By integrating a high-pressure sensor, it can also be used for pressure tests up to 500 bar.

Furthermore, the integrated 30 bar pressure sensor is DAkkS-calibrated, which also allows pressure testing in gas supply systems in accordance with DVGW Worksheet G 469.

### PMS System Features

**Standard-compliant testing procedures with intuitive user guidance**

- Graphical display of the testing process constantly available
- Standard-compliant leak testing possible even for less experienced personnel

**State-of-the-art electronics with 7" touch display**

**Test reports can be read out as PDF via USB or Bluetooth**

No special PC software required

- Free Android app + iOS app for viewing and sending test reports
- Test data can also be exported in CSV format

**30 bar pressure sensor with high measurement accuracy**

- Option for a second internal pressure sensor

**Option for an integrated protocol printer**

**Expandable with additional software packages/testing standards**

Various Electric Test Pumps for Different Pipeline Volumes

The electric test pumps of the “EPP” series, available in different pressure levels (25 and 50 bar) and flow rates (14, 30, and 68 l/min), are the perfect companions for practical pressure testing of water distribution systems. Thanks to the intelligent bypass control operated via a solenoid valve, a controlled build-up of test pressure is guaranteed at all times. The bypass also allows the electric test pumps to start even under high backpressure.

When combined with the PMS, the electric test pumps are automatically controlled (pressure build-up, pressure holding, and phase changes during the testing process occur automatically). Optional Pressure Relief Devices with Water Volume Measurement:

By adding one of the two optional pressure relief devices, the electric test pumps in combination with the PMS enable semi- or fully automated pressure testing of water supply pipelines:

Pressure Relief Device with Water Volume Measurement “DAMM”:

- Manual pressure reduction via integrated ball valve
- Automatic measurement of the discharged water volume

Pressure Relief Device with Water Volume Measurement “ADAMM” for fully automated pressure testing:

- Fully automated pressure tests
- Fully automated pressure reduction via solenoid valve control
- Automatic measurement of the discharged water volume

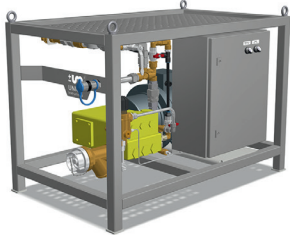
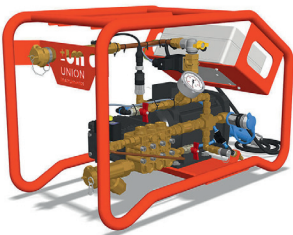
In both cases, the discharged water volume during pressure reduction is measured automatically and recorded in the test report.

Key-Features:

- Pressure build-up, pressure holding, and phase changes occur automatically
- Option for fully automated pressure reduction with water volume measurement
- Cost reduction through automation: pressure testing can be performed by a single person
- Increased safety: no operating personnel are required in the pipe trench during testing

Maximum Test Lengths Using the Contraction Method (for PE100, SDR11, STP 21 bar) with optimally vented pipelines)

| Test Pumps 14 l/min          | Test Pumps 30 l/min         | Test Pumps 68 l/min         |
|------------------------------|-----------------------------|-----------------------------|
| DA110 – approx.. 1100 meters | DA110 – approx. 2500 meters | DA110 – approx. 5820 meters |
| DA160 – approx.. 520 meters  | DA160 – approx. 1200 meters | DA160 – approx. 2900 meters |
| DA225 – approx. 260 meters   | DA225 – approx. 600 meters  | DA225 – approx. 1400 meters |
| DA315 – approx. 130 meters   | DA315 – approx. 300 meters  | DA315 – approx. 720 meters  |



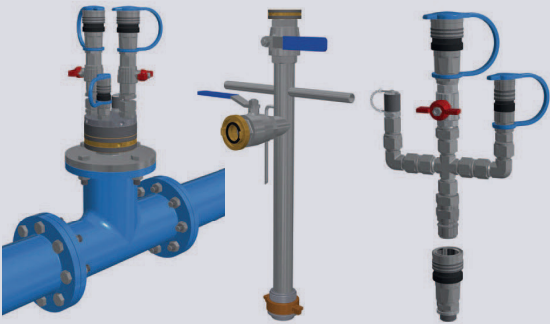
Connection Accessories for Pressure Testing

The right connection accessories play an important role in any type of pressure testing. These are essential components that establish the connection between the measurement equipment and the pipeline being tested, and are therefore required for every pressure test.

For smooth execution of a pressure test, having a complete set of these accessories is highly important.

Test Body L and Accessories:

- Test Body L enables the correct and quick connection of the testing system to the pipeline being tested. Connection can be made either directly via the stainless steel test pipe or using an adapter for a smaller G-thread.
- Test Body L and adapters are sealed with an O-ring, providing a highly tight transition to many threads and fittings.
- Test Body L provides connection points for the measurement line of the PMS testing case and the pressure hose of the test pump.



Simple Connection Equipment

The connection adapter offers a more cost-effective alternative for connecting the testing system.

It features a connection for the measurement line of the PMS testing case, a connection for the pressure hose of the test pump, and a manometer connection.

The connection adapter itself is connected to the pipeline being tested via an adapter (quick-coupling connection) with a G1/2” external thread and sealing ring.

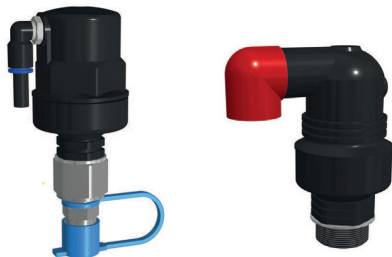
Accessories for Venting Pipelines

For a successful pressure test, complete venting of the pipeline is essential. Simple flushing is often not sufficient, as air can accumulate at high points. In such cases, swabbing may also be necessary.

To fully remove air and prevent additional air from entering during pressure build-up, the use of venting valves is recommended. These should be installed at the filling fitting, at high points, and at the end of the pipeline, and each must be able to be shut off with a ball valve.

The venting valves are available in 1” and 2” (PN16) and are suitable for pressure testing.

During filling, they allow air to escape without losing water. Since air pockets can also move during pressure build-up, using them in these phases is advisable. At the end of the pressure-holding phase, all venting valves must be closed to prevent pressure loss.





Technical Data  
Test Pumps:

|                                                                                                     | EPP15-14-025                          | EPP15-14-050 | EPP22-30-025       | EPP30-30-050       | EPP40-68-025                         | EPP75-68-050 |
|-----------------------------------------------------------------------------------------------------|---------------------------------------|--------------|--------------------|--------------------|--------------------------------------|--------------|
| Test Pressure                                                                                       | 0 – 25 bar                            | 0 – 50 bar   | 0 – 25 bar         | 0 – 50 bar         | 0 – 25 bar                           | 0 – 50 bar   |
| Flow Rate                                                                                           | 14 l/min                              |              | 30 l/min           |                    | 68 l/min                             |              |
| Power Supply                                                                                        | 230 V / 50 Hz or 400 V / 50 Hz        |              | 230 V / 50 Hz      | 400 V / 50 Hz      | 400 V / 50 Hz                        |              |
| Power Consumption                                                                                   | 1500 VA                               |              | 2200 VA            | 3000 VA            | 4000 VA                              | 7500 VA      |
| Required Generator Power at Start-up                                                                | 4000 VA - 230 V / 50 Hz               |              | 4000 VA            | 4500 VA            | 7000 VA                              | 12000 VA     |
| Protection Class                                                                                    | IP 54                                 |              |                    |                    |                                      |              |
| Pressure Control                                                                                    | PMS / manual                          |              |                    |                    |                                      |              |
| Pressure Relief                                                                                     | manual                                |              |                    |                    |                                      |              |
| Optional Pressure Relief Device with Water Measurement:<br>• manual “DAMM” /<br>• automatic “ADAMM” | „DAMM“<br>„ADAMM“                     | „ADAMM“      | „DAMM“<br>„ADAMM“  | „ADAMM“            | „DAMM“<br>„ADAMM“                    | „ADAMM“      |
| Water Volume Measurement (optional)                                                                 | 0,5 – 30 l/min<br>resolution: 0,001 l |              |                    |                    | 4 – 200 l/min<br>resolution: 0,001 l |              |
| Safety Feature                                                                                      | Pressure switch in control circuit    |              |                    |                    |                                      |              |
| Water Connection                                                                                    | Geka quick coupling                   |              |                    |                    | Storz coupling                       |              |
| Pressure Connection                                                                                 | Quick coupling 5010                   |              |                    |                    | Quick coupling 7510                  |              |
| Dimensions (L × W × H)                                                                              | 637 x 347 x 465 mm                    |              | 952 x 624 x 730 mm | 750 x 430 x 557 mm | 1150 x 590 x 860 mm                  |              |
| Weight                                                                                              | approx. 45 kg                         |              | approx 80 kg       | approx. 60 kg      | approx 120 kg                        |              |

Technical Data  
PMS Testing Case:

|                                     |                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display                             | 7" color graphic touchscreen                                                                                                                                                                                                                                                                                                                   |
| Operating Time                      | approx. 100 h (with display off)                                                                                                                                                                                                                                                                                                               |
| Simultaneous Operation and Charging | Yes                                                                                                                                                                                                                                                                                                                                            |
| Pressure Sensors                    | Two internal pressure sensors possible – measuring ranges –1 to +500 bar                                                                                                                                                                                                                                                                       |
| Protection Class                    | IP 66 (with closed lid)                                                                                                                                                                                                                                                                                                                        |
| Operating Temperature               | –20 °C to +45 °C                                                                                                                                                                                                                                                                                                                               |
| Dimensions (L x B x H)              | 365 x 295 x 150 mm                                                                                                                                                                                                                                                                                                                             |
| Weight                              | approx. 5 kg                                                                                                                                                                                                                                                                                                                                   |
| Available Test Procedures           | Water Distribution Systems:<br>DVGW W 400-2, SVGW W4, ÖVGW W 101, DIN EN 805<br><br>Gas Supply::<br>DVGW G 469, SVGW G2<br><br>Sewer Networks::<br>DIN EN 1610, DWA-A 139<br>Custom Test Procedures, Freely definable*<br><br>*New test procedures can be implemented at any time according to customer requirements and stored in the system. |



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