

Testing laboratory for climatic, mechanical,
and corrosive environmental test

QUALITY TEST CERTIFICATE

Test report No. 20-15685 Rev.01

Client **Knick Elektronische Messgeräte GmbH & Co. KG**
Beuckestraße 22
14163 Berlin

Equipment under test **Protos II** **4400C**
quantity 1 sample
labelled No. 22675000

Purpose **Test for the certification of the corrosive resistance according to specifications of the standards and to the demands of the client. The test was carried out in the test laboratory TZO Technologie-Zentrum für Oberflächentechnik und Umweltschutz Leipzig GmbH.**

Test program **Harmful gas test - Test Ke, method 4 according to IEC 60068-2-60**


Test period 3 July to 13 July 2020

Execution /results see page 2 to 3


Total number of pages 9 (incl. 2 appendices)

Test results **The test was carried out according to the specifications of the standards and to the demands of the client. During and after the test no damage or malfunctions were determined at the specimen.**

Passed - according to the client, the measured values determined during the test were within the prescribed limits.


Dipl.-Ing. (FH) Ch. Kretschmer
Head of the testing laboratory
Berlin, 08 October 2020




Dipl.-Ing. M. Geburtig
Test engineer

1 Purpose

Test for the certification of the corrosive resistance according to the specifications of the standards and to the demands of the client.

2 Equipment under test

Protos II	4400C
with following modules:	- digital module MS4400-160 (inside the device housing) - storage card F-ZU1080-P-N-D (inside the device housing) - conductivity sensor F-SE604-MS (outside the test chamber)
Power supply	24 V _{DC}
dimensions / weight	appr. 165 x 160 x 22 mm, appr. 4 kg
quantity	1 sample
labelled No.	22675000

3 Basics

3.1 Demands of the client

3.2 Used standards

IEC 60068-1:2013	DIN EN 60068-1; VDE 0468-1:2015-09
„Environmental testing - Part 1: General and guidance“	
IEC 60068-2-60:1995	DIN EN 60068-2-60:1996-09
„Environmental testing - Part 2-60: Tests - Test Ke: Flowing mixed gas corrosion test“	
Remark	This standard is not part of the Aucoteam GmbH accreditation!

4 Test program

Harmful gas test - Test Ke, method 4

according to the IEC 60068-2-60 and to the demands of the client

specimen	operating, supplied with 24 V _{DC} with self monitoring (by the client)	
temperature	(23±5) °C	
humidity	(75±3) %	
gas concentration	SO ₂	0,2 ppm
	H ₂ S	0,01 ppm
	NO ₂	0,2 ppm
	Cl ₂	0,01 ppm
test duration	10 d	(240 h)

Visual inspection / functional check

Before and after the test, the specimen shall be examined for external damage and any other alterations.

During the test the displayed values will be checked visually every day.

5 **Realization**

Test for the certification of the corrosive resistance of the **Protos II** was carried out according to the test program, in compliance with the specifications of the current standards and according to the demands of the client in the test laboratory „TZO Technologie-Zentrum für Oberflächentechnik und Umweltschutz Leipzig GmbH“, see appendix 2 – Test report 187/20 (13 July 2020).

Measuring and test equipment

corrosion test chamber	K 350 (CTS GmbH)
Flex Gas Detector	SPM (Honywell Analytics, Inc. USA)
Power supply (24.0 V _{DC})	TSX3510P (test laboratory TZO)

Visual inspection / functional check

After the test the specimen was examined for external damage and any other alterations. During the test the displayed values was checked visually every day.

6 **Results**

After the test of the **Protos II 4400C** with

- Harmful gas test - Test Ke, method 4 (10 d, operating)

- Test Ke

no damage or defects are visible, see appendix 2 – Test report 187/20 (13 July 2020), Before, during and after the test, the values displayed were within the plausible range; no significant deviations could be detected.

The further evaluation will be done by the client.

The test was carried out according to the specifications of the standards and to the demands of the client. During and after the test no damage or malfunctions were determined at the specimen.

Passed - according to the client, the measured values determined during the test were within the prescribed limits.

The results of the test refer exclusively to the above mentioned equipment under test. This report, or individual pages of this test report, may only be copied following the written consent of the testing laboratory. This test report No. 20-15685 Rev.01 includes 3 pages and 2 appendices.

Appendix 1 – Pictures (1 page)

Appendix 2 – Test report 187/20 (5 pages)

(TZO Technologie-Zentrum für Oberflächentechnik und Umweltschutz Leipzig GmbH 13 July 2020)

Changes in the Revision 01 compared to the Test report Pb 20-15685 of 15 July 2020:

- The evaluation of the measurement results by the customer was included as a test result.