

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** FM22CA0025
3. **Equipment:** Measuring System Portavo Type 90aXc
(Type Reference and Name)
4. **Name of Listing Company:** Knick Elektronische Messgeräte GmbH & Co. KG
5. **Address of Listing Company:** Beuckestrasse 22
Berlin D-14163
Germany
6. The examination and test results are recorded in confidential report number:

3054586 dated 10th June 2015
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CAN/CSA-C22.2 No. 60079-0:2019, CAN/CSA-C22.2 No. 60079-11:2014,
CAN/CSA C22.2 No. 61010-1:2015
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

17 May 2022

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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SCHEDULE



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9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. Equipment Ratings:

Intrinsically Safe for Class I, Division 1, Groups A, B, C and D; Class I, Zone 0, Ex ia IIC in accordance with installation drawing 209.009-110 with an ambient temperature rating per the table below

11. The marking of the equipment shall include:

Intrinsically Safe for Class I, Division 1, Groups ABCD; T*(see table below) – 209.009-110

Zone 0 Ex ia IIC T*(see table below) Ga – 209.009-110;

Battery Quantity	Batteries	*Temperature Class	Ambient Temperature Range
4	Duracell MN1500	T4	Ta = -10°C to +40°C
4	Energizer E91	T3	Ta = -10°C to +50°C
4	Power One 4106	T3	Ta = -10°C to +50°C
4	Panasonic Pro Power LR6	T3	Ta = -10°C to +50°C

12. Description of Equipment:

General - The Measuring System Portavo Type 90*X* is an intrinsically safe handheld Battery Powered pH, conductivity and temperature measuring meter, for analog or digital sensors for use in potentially explosive environments. The analog sensors may be simple apparatus. The USB – Interface is only for use outside of explosion hazardous areas.

Ratings - The Measuring System Portavo Type 90*X* are rated for use in an ambient temperature range per the table below:

Battery Quantity	Batteries	*Temperature Class	Ambient Temperature Range
4	Duracell MN1500	T4	Ta = -10°C to +40°C
4	Energizer E91	T3	Ta = -10°C to +50°C
4	Power One 4106	T3	Ta = -10°C to +50°C
4	Panasonic Pro Power LR6	T3	Ta = -10°C to +50°C

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The Measuring System Portavo Type 90*X* has the following electrical ratings:

Supply	Only the following batteries may be used: Duracell MN1500 Energizer E91 Power One 4106 Panasonic Pro Power LR6					
	in type of protection intrinsic safety Ex ia IIC, with the following maximum values:					
	U _o (V)	I _o (mA)	P _o (mW)	C _o (μF)	L _o (mH)	
pH-Measuring circuit(MEAS)	4.1	0.1	0.1	100	1000	Linear characteristic
Temperature measurement circuit(TEMP1, TEMP2)	4.1	4.4	4.6	99	1000	Linear characteristic
pH / Temperature measurement circuit (MEAS, TEMP1, TEMP2)	7.2	4.4	4.6	13.3	1000	Linear characteristic
Conductivity measurement circuit(MEAS)	7.2	36	36.9	13.4	27	Linear characteristic
Conductivity / Temperature measurement circuit (MEAS, TEMP1, TEMP2)	7.2	40.6	41.7	13.3	22	Linear characteristic
Memosens interface circuit(MS and/or MEAS)	4.6	113	130	96	2.8	Linear characteristic
USB Interface(micro USB-B)	Um = 250 V					

Measuring System Portavo Type 90aXc

- a = 2 without USB interface
- = 4 USB interface version
- c = PH pH / ORP/ °C measurement analog
- COND Conductivity / °C measurement, analog
- MULTI Memosens PH, COND, OXY

13. Specific Conditions of Use:

None

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

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16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
10 th June 2015	Original Issue.
17 th May 2022	Supplement 1: Report Reference: – PR462822 dated 17 th may 2022. Description of the Change: <ol style="list-style-type: none">1) CAN/CSA C22.2 No. 60079-0:2011 updated to CSA C22.2 No 60079-0:20192) CAN/CSA C22.2 No. 61010-1:2015 added to Standards list3) Certificate updated to new format

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