

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Indicator

with type designation(s)

NS 25/15 AM, NS 25/25 AM,, NS 25 AM G1/2, , Electrical contacts:, MKS 1/K, MKS 1/W, MKS 2/K,, MKS 1/W-L24V

Issued to

Bühler Technologies GmbH
Ratingen, Germany

is found to comply with

DNV GL rules for classification – Ships

Application :

Location classes:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
NS 25/15 AM, NS 25/25 AM, NS 25 AM G1/2	C	B	A	N/A	B
Electrical contacts:					
MKS 1/K, MKS 1/W, MKS 2/K, MKS 1/W-L24V	C	B	A	N/A	B

This Certificate is valid until **2021-05-09**.

Issued at **Hamburg** on **2016-05-10**

DNV GL local station: **Essen**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

Duy Nam Le
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

The Type Approval covers the following products:

Level indicators: NS 25/15 AM, NS 25/25 AM, NS 25 AM G1/2
Electrical contacts: MKS 1/K, MKS 1/W, MKS 2/K, MKS 1/W-L-24V

All combinations of level indicators and electrical contacts.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Application/Limitation

When used on tanks containing flammable liquids in engine spaces it is required to have either self closing valves or remotely operated quick closing valves between the gauge and the tank flange. Level indicator's tube to be fastened to tank with brackets having a maximum distance of 1200 mm.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL CG-0339, November 2015

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Indicator

with type designation(s)

NS 25/15 AM, NS 25/25 AM,, NS 25 AM G1/2, , Electrical contacts:, MKS 1/K, MKS 1/W, MKS 2/K,, MKS 1/W-L24V

Issued to

Bühler Technologies GmbH
Ratingen, Germany

is found to comply with

DNV GL rules for classification – Ships

Application :

Location classes:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
NS 25/15 AM, NS 25/25 AM, NS 25 AM G1/2	C	B	A	N/A	B

Electrical contacts:

MKS 1/K, MKS 1/W, MKS 2/K, MKS 1/W-L24V	C	B	A	N/A	B
--	----------	----------	----------	------------	----------

This Certificate is valid until **2021-05-09**.

Issued at **Hamburg** on **2016-05-10**

DNV GL local station: **Essen**

Approval Engineer: **Marco Rinkel**



for **DNV GL**

Digitally Signed By: Schaarmann, Arne

Location: DNV GL Hamburg, Germany

Signing Date: 2016-05-27 , on behalf of

Duy Nam Le
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-001991-5**
Certificate No: **TAA00000FR**
Revision No: **2**

Product description

The Type Approval covers the following products:

Level indicators: NS 25/15 AM, NS 25/25 AM, NS 25 AM G1/2
Electrical contacts: MKS 1/K, MKS 1/W, MKS 2/K, MKS 1/W-L-24V

All combinations of level indicators and electrical contacts.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Application/Limitation

When used on tanks containing flammable liquids in engine spaces it is required to have either self closing valves or remotely operated quick closing valves between the gauge and the tank flange. Level indicator's tube to be fastened to tank with brackets having a maximum distance of 1200 mm.

Type Approval documentation

Mech. design drawings	20/001-03-3B, 20/003-04-3B, 20/L57-Z01-01-3H
MKS Wiring diagr.	20/L57-Z01-02-3
MKS housing	28/028-01-3
Data sheet	DE 20 0011, 04/2016
Installation and Operation Instruction	BX 200001, 03/2013
Test Reports	Phoenix Test Lab. No. S40375, dtd. July 2004 Aucoteam NO. 4577/04, dtd. April 2004 Bühler No. TB 20-0002-01, dtd. August 2004

DNV Essen periodical assessment report dated 2014-10-15.

DNV Essen periodical assessment report dated 2016-04-05.

Tests carried out

Applicable tests according to Class Guideline DNVGL CG-0339, November 2015

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00000FR
Revision No:
3

This is to certify:

That the Level Indicator

with type designation(s)

NS 25/15 AM, NS 25/25 AM, NS 25 AM G1/2 Electrical contacts: MKS 1/K, MKS 1/W, MKS 2/K, MKS 1/W-L24V

Issued to

Bühler Technologies GmbH
Ratingen, Nordrhein-Westfalen, Germany

is found to comply with

DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
NS 25/15 AM, NS 25/25 AM NS 25 AM G1/2	C	B	A	--	B
Electrical contacts: MKS 1/K, MKS 1/W, MKS 2/K MKS 1/W-L24V	C	B	A	--	B

Issued at **Hamburg** on **2021-05-03**

This Certificate is valid until **2026-05-09**.

DNV local station: **Essen**

Approval Engineer: **Holger Jansen**



for **DNV**

Digitally Signed By: Rinkel, Marco

Location: DNV GL SE Hamburg, Germany

Signing Date: 04.05.2021 , on behalf of

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

The Type Approval covers the following products:

Level indicators: NS 25/15 AM, NS 25/25 AM, NS 25 AM G1/2

Electrical contacts: MKS 1/K, MKS 1/W, MKS 2/K, MKS 1/W-L-24V

All combinations of level indicators and electrical contacts.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Application/Limitation

When used on tanks containing flammable liquids in engine spaces it is required to have either self closing valves or remotely operated quick closing valves between the gauge and the tank flange.

Level indicator's tube to be fastened to tank with brackets having a maximum distance of 1200 mm.

Type Approval documentation

Mech. design drawings	20/001-03-3B, 20/003-04-3B, 20/L57-Z01-01-3H
MKS Wiring diagr.	20/L57-Z01-02-3
MKS housing	28/028-01-3
Data sheet	DE 20 0011, 04/2016
Installation and Operation Instruction	BX 200001, 03/2013
Test Reports	Phoenix Test Lab. No. S40375, dtd. July 2004 Aucoteam NO. 4577/04, dtd. April 2004 Bühler No. TB 20-0002-01, dtd. August 2004

Type Approval Assessment Report 2021-03-25

Tests carried out

Applicable tests according to Class Guideline DNVGL CG-0339, December 2019

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE