Translation

18(1) # EU-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** **TÜV 18 ATEX 214370 X** **Issue:** 01

(4) for the product: Float switch type: UNS*; UNS1000*; UNS2000*; UNS2100-EX*; UNS-VA/SB-VA52; UNS-VA/SB1-VA52; UNS-VA/SB5 Bilge Guard Plus; UNS-VA/SB5 GE347 Bilge Guard Plus; UNS-VA/SB4 Bilge Guard; UNS-VA/SB4 GE347 Bilge Guard
Limit switch type:
GK03-EXI

(5) of the manufacturer: **Barksdale GmbH**

(6) Address: Dorn-Assenheimer Str. 27, 61203 Reichelsheim, Germany

Order number: 8003007818
Date of issue: 2021-09-21

(7) The design of this product and any acceptable variation thereto are specified in the schedule to this EU-Type Examination Certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH, Notified Body No. 0044, in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential ATEX Assessment Report No. 21 203 248658.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018 **EN 60079-11:2012** **EN 60079-26:2015**
except in respect of those requirements listed at item 18 of the schedule.

(10) If the sign ”X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions for Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design, and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the product shall include the following:

See Marking

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, notified by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The deputy of the head of the notified body

Digital unterschrieben von Meyer Andreas Datum: 2021.09.21 16:35:44 +02'00'

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(13) **S C H E D U L E**

(14) **EU-Type Examination Certificate No. TÜV 18 ATEX 214370 X Issue 01**

(15) **Description of product:**

The float switches of the type series UNS*; UNS1000*; UNS2000*; UNS2100-EX*; UNS-VA/SB-VA52; UNS-VA/SB1-VA52; UNS-VA/SB5 Bilge Guard Plus; UNS-VA/SB5 GE347 Bilge Guard Plus; UNS-VA/SB4 Bilge Guard and UNS-VA/SB4 GE347 Bilge Guard are used for intrinsically safe level measurement of liquid media in containers.
In a tubular construction, encapsulated reed switches are mounted for continuous level determination.
The limit switch type GK03-EXI is used to detect limit values on magnetically controlled level indicators.

Type code:

UNS1000*

Special Model

S = with ship building approval

Material

MS = brass
VA = stainless steel W. no. 1.4571, 1.4408

process connection (Fitting)

G1/8 = G1/8“-AG (male), mounting thread
G3/8 = G3/8“-AG (male), mounting thread
G1/2 = G1/2“-AG (male), mounting thread
1/8NPT = 1/8" NPT male, mounting thread
3/8NPT = 3/8" NPT male, mounting thread
1/2NPT = 1/2" NPT male, mounting thread
T1/2 = G1/2“-AG (male), tank screw
T3/4 = G3/4“-AG (male), tank screw
T1 = G1“-AG (male), tank screw
T1¼ = G1¼“-AG (male), tank screw
T1½ = G1½“-AG (male), tank screw
T2 = G2“-AG (male), Tankverschraubung
T1/2NPT = 1/2" NPT male, tank screw
T3/4NPT = 3/4" NPT male, tank screw
T1NPT = 1" NPT male, tank screw
T1¼NPT = 1¼" NPT male, tank screw
T1½NPT = 1½" NPT male, tank screw
T2NPT = 2" NPT male, tank screw
Tx = special tank screw thread
M20x1,5 = M20 x 1,5 mm AG (male), tank screw
FL2 = DN 25 / PN 16, Form A, DIN2527 blind flange
FL3 = DN 50 / PN 16, Form A, DIN2527 blind flange
FLA3 = 2” 150 lbs., RF, ASME B 16.5 blind flange
FLA5 = 3” 150 lbs., RF, ASME B 16.5 blind flange
FLx / FLS = special flange
(Other flanges and mounting threads available on request)

Electrical connection

K x/y = cable, direct potted
C = conduit connection with cable
PG x/y = cable gland PG or metric thread with cable
x= cable length in m
y= Cable material: 1=SI(-40°C--), 2=PVC(-20°C--), 3=CR(-20°C--), 4=PUR(-40°C--), 5=FEP(-40°C--),(permanent installation)
ST1 = EN 175301-803-A, cube plug, 3 pin + 1 ground
KX4(C) = Ex ia, junction box (Al), 4 terminals, cable gland
KX8(C) = Ex ia, junction box (Al), 8 terminals, cable gland
KXP(C) = junction box, pressure proof
M12x1 = M12x1mm plug (PA or brass) with 4 or 5 pin
KLS1(C) = Aluminum Terminal Box, 6 Terminals (only in S model)
KLS2(C) = Aluminium Terminal Box, 9 Terminals (only in S model)
KS(C) = Cable with Shipbuilding Approvals (only in S model)

Float type

BN18 = Ø18 mm NBR / Ø0.71“ NBR foamed (cylinder)
BN25 = Ø25 mm NBR / Ø0.98“ NBR foamed (cylinder)
VA27 = Ø27 mm 1.4571 / Ø1.06“ stainless steel 316 Ti (cyl.)
VX44 = Ø44 mm 1.4571 / Ø1.73“ stainless steel 316 Ti (ball)
PE23 = Ø23 mm PE / Ø0.91“ PE foamed (cylinder) (IIB)

Number of switchpoints

L1 = one switchpoint
Ln = n (max. 5) switchpoints

Contact mode

1 = NO normally open (SPST)
2 = NC normally closed (SPST)
3 = WE change over (SPDT)

Option

Exi = intrinsically safe
DR = damping tube
DUAL = 1 float + 2 switch points
HT = high temp. application
PT100 = Pt100-Element / Pt100-sensor
U = mounting through bottom
90° = angled for side mount.
VV = vertical adjustment (max. 5 bar)
TSxx/2 = temperature switch
xx = +60°C, +70°C, +80°C, 90°C, /2 = NC

Schedule to EU-Type Examination Certificate No. TÜV 18 ATEX 214370 X Issue 01

UNS2000*

Special Model

S = with ship building approval

Material

MS = brass
VA = stainless steel, W. Nr. 1.4571., 1.4408

Process connection (Fitting)

G3/8 = G3/8“-AG (male), mounting thread
G1/2 = G1/2“-AG (male), mounting thread
1/2NPT = 1/2" NPT (male), mounting thread
T1/2 = G1/2“ –AG (male), tank screw
T1 = G1“-AG (male), tank screw
T1¼ = G1¼“-AG (male), tank screw
T1½ = G1½“-AG (male), tank screw
T2 = G2“-AG (male), tank screw (not with VA80/VX80 float)
T1NPT = 1" NPT (male), tank screw
T1¼NPT = 1¼" NPT (male), tank screw
T1½NPT = 1½" NPT (male), tank screw
T2NPT = 2" NPT (male), tank screw
Tx = special tank screw thread
FL3 = DN 50 / PN 16, Form A, DIN2527 blind flange
FL4 = DN 65 / PN 16, Form A, DIN2527 blind flange
FL5 = DN 80 / PN 16, Form A, DIN2527 blind flange
FLA3 = 2” 150 lbs., RF, ASME B 16.5 blind flange
FLA5 = 3” 150 lbs., RF, ASME B 16.5 blind flange
FLA6 = 4” 150 lbs., RF, ASME B 16.5 blind flange
FLx / FLS = special flange
(Other flanges and mounting threads available on request)

Electrical connection

K x/y = cable, direct potted
C = conduit connection with cable
PG x/y = cable gland PG or metric thread with cable
x= cable length in m
y= Cable material: 1=SI(-40°C--), 2=PVC(-20°C--), 3=CR(-20°C--), 4=PUR(-40°C--), 5=FEP(-40°C--),(permanent installation)
ST1 = EN 175301-803-A, cube plug, 3 pin + 1 ground (IIB)
KX4(C) = Ex ia, junction box (Al), 4 terminals, cable gland
KX8(C) = Ex ia, junction box (Al), 8 terminals, cable gland
KXP(C) junction box, pressure proof
KLS1(C) = Aluminum Terminal Box, 6 Terminals (only in S model)
KLS2(C) = Aluminum Terminal Box, 9 Terminals (only in S model)
KS = Cable with Shipbuilding Approvals (1m) (only in S model)
M12x1 = M12x1mm plug (PA or brass) with 4 or 5 pin

float type

BN30 = Ø30 mm NBR Ø1.18“ NBR foamed (cylinder) Ø1.18“ (IIB)
VX44/VA44 = Ø44 mm 1.4571 / Ø1.73“ stainl. st. (cylinder)
VX52 = Ø52 mm 1.4571 / Ø2.05“ stainless steel 316 Ti (ball)
VX80 = Ø80 mm 1.4571 / Ø3.15“ stainless steel 316 Ti (ball)

Anzahl der Schaltpunkte

L1 = one switchpoint
Ln = n (max. 5) switchpoints

Schaltfunktion

1 = NO normally open (SPST)
2 = NC normally closed (SPST)
3 = WE change over (SPDT)

Option
Exi = intrinsically safe
DR = damping tube
DUAL = 1 float + 2 switch points
HT = high temp. application
PT100 = Pt100-sensor
U = mounting through bottom
90° = angled for side mount.
VV = vertical adjustment
TPxx/x = temperature switch
TSxx/x = temperature switch

UNS*

Special Model
S = with ship building approval

Material
MS = brass
VA = stainless steel

Process connection (Fitting)
1/8 = G1/8“-AG (male), mounting thread
1/4 = G1/4“-AG (male), mounting thread
3/8 = G3/8“-AG (male), mounting thread
1/2 = G1/2“-AG (male), mounting thread
1/8NPT = 1/8" NPT male, mounting thread
1/4NPT = 1/4" NPT male, mounting thread
3/8NPT = 3/8" NPT male, mounting thread
1/2NPT = 1/2" NPT male, mounting thread
x/xX = special external mounting thread

Electrical connection
K x/y = cable, direct potted
PG x/y = cable gland PG or metric thread with cable
x= cable length in m
y= Cable material: 1=SI(-40°C--), 2=PVC(-20°C--), 3=CR(-20°C--), 4=PUR(-40°C--), 5=FEP(-40°C--),(permanent installation)

Float type
BN18 = Ø18 mm NBR foamed (cylinder) / Ø0.71“ (IIB)
BN25 = Ø25 mm NBR foamed (cylinder) / Ø0.98“ (IIB)
BN30 = Ø30 mm NBR foamed (cylinder) / Ø1.18“(IIB)
VA27 = Ø27 mm 1.4571 stainless steel (cylinder) / Ø1.06“
VX44/VA44 = Ø44 mm stainless steel 1.4571 (cylinder) / Ø1.73“316 Ti
VX52 = Ø52 mm stainless steel 1.4571 / Ø2.05“ 316 Ti (ball)
VX80 (VA80)= Ø80 mm stainless steel 1.4571) / Ø 3.15“316 Ti (ball)
PP19 = Ø19 mm PP / Ø1.75“ PP foamed (cylinder) (IIB)

Contact mode
1 = NO = normally open (SPST)
2 = NC = normally closed (SPST)
3 = WE = change over (SPDT)

Option
Exi = / type of protection intrinsically safe
HT = high temp. application (-40°C…+75°C)
U = mounting through bottom
90° = angled for side mounting
TSxx/x = temp. switch (+60, +70, +80 / or +90°C)
TPxx/x = temp. switch (+50, +60, +70, +80 / or +90°C)
PT100 = Pt100-sensor

UNS2100-Ex*

Material

VA = Stainless steel, W. Nr. 1.4571., 1.4408

Process connection (Fitting)

T2 = G2“-AG (male), tank screw (not with VA80/VX80 float)
FL3 = DN 50 / PN 16, Form A, DIN2527 blind flange
FL4 = DN 65 / PN 16, Form A, DIN2527 blind flange
FLA3 = 2” 150 lbs., RF, ASME B 16.5 blind flange
FLx / FLS = special flange
(Other flanges and mounting threads available on request)

Electrical connection

KX4(C) = Ex ia,. junction box (Al), 4 terminals, cable gland
KX8(C) = Ex ia, junction box (Al), 8 terminals, cable gland

Float type

VX44 = Ø44 mm 1.4571 / Ø1.73“ stainl. st. (cylinder)
VX52 = Ø52 mm 1.4571 / Ø2.05“ stainless steel 316 Ti (ball)
VX80 = Ø80 mm 1.4571 / Ø3.15“ stainless steel 316 Ti (ball)

number of switchpoints

L1 = one switchpoint
Ln = n (max. 4) switchpoints

Contact mode

1 = NO normally open (SPST)
2 = NC / normally closed (SPST)
3 = WE change over (SPDT)

Gesamtlänge L0 =… mm (max. 3000 mm)

Option

DR = Damping tube
U = Mounting through bottom
TPxx/x = Temperature switch

UNS-VA/SB-VA52

Bilge float switch with test function, VA, float VA52, Reed switch (NO or switcher), 2m, 5m or 10m cable

UNS-VA/SB1-VA52

Bilge float switch without test function, VA, float VA52, Reed switch (NO or Wechsler), 2m, 5m or 10m cable

UNS-VA/SB5 Bilge Guard Plus

Bilge float switch with test function, VA, float PE33 (IIB), Reed switch (NO), 2m, 5m, 10m or 15m cable

UNS-VA/SB5 GE347 Bilge Guard Plus

Bilge float switch with test function, VA, float PE33 (IIB), Reed switch (NO), 2m, 5m, 10m oder 15m cable, cable break detection according to Namur

UNS-VA/SB4 Bilge Guard

bilge float switch without test function, VA, float PE33 (IIB), Reed switch (NO), 2m, 5m, 10m or 15m cable

UNS-VA/SB4 GE347 Bilge Guard

Bilge float switch without test function, VA, float PE33 (IIB), Reed switch (NO), 2m, 5m, 10m or 15m cable, cable break detection according to Namur

GK03-EXI

Limit switch

Schedule to EU-Type Examination Certificate No. TÜV 18 ATEX 214370 X Issue 01

Marking:

	Float switch with floats from Buna-N or other plastic material (PP,PE,PVC, PTFE or PA), as well as with ST1- plug	Limit switch and other float switchs:
Ex	**II 1 G Ex ia IIB T6 Ga or II 1/2 G Ex ia IIB T6 Ga/Gb or II 2 G Ex ia IIB T6 Gb or II 1 D Ex ia IIIC T100°C Da**	**II 1 G Ex ia IIC T6 Ga or II 1/2 G Ex ia IIC T6 Ga/Gb or II 2 G Ex ia IIC T6 Gb or II 1 D Ex ia IIIC T100°C Da**

Electrical data:

Power supply (Terminal box or cable or plug)	In type of protection intrinsic safety Ex ia IIB/IIC/IIIC Only for the connection to certified intrinsically safe circuits. Maximum values: U_i = 28 V I_i = 125 mA P_i = 0.5 W
Effective internal capacitance	C_i = Capacitance of 10 m connection cable = 2 nF
Effective internal inductance	L_i = Inductance of 10 m connection cable = 10 µH

Thermal data:

Permissible ambient temperature range:

Float switch with PVC and CR-cable material:	-20 °C ≤ T_a ≤ +75 °C
Limit switch GK03-EXI and float switch with SI, PUR, FEP-cable material:	-40 °C ≤ T_a ≤ +75 °C

(16) Drawings and documents are listed in the ATEX Assessment Report No. 21 203 248658

(17) **Specific Conditions for Use:**

1. Metallic process connection parts have to be included in the local potential equalization. A good electrically conductive connection between float switch and system ground has to be ensured.

2. For the use in IIC-areas that require EPL Ga each float switch and limit switch, have to be installed and used in such a way that electrostatic charges through operation, maintenance and cleaning are excluded.

3. For the use in areas that require EPL Da all float switches and limit switch have to be protected from strong charge generation mechanisms.

4. By using an aluminium terminal box KX4(C), KX8(C), KXP(C), KLS1(C) or KLS2(C) in areas that require EPL Ga, the danger of ignition by impact or friction has to be excluded.

5. For EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the float switches resp. the limit switch have to be secured effectively against these dangers.

6. For EPL Ga/Gb applications the medium tangent materials of the float switches resp. the limit switch have to be resistant to the media.

7. For EPL Ga/Gb applications the whole devices shall be mounted in a way that allows an installation that results in a sufficient tight joint (IP66 or IP67) or a flameproof joint (IEC 60079-1) in the direction of the less endangered area.

(18) **Essential Health and Safety Requirements:**
No additional ones.

- End of EU-Type Examination Certificate -