



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
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BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

FEDERAL MARITIME AND HYDROGRAPHIC AGENCY

Bescheinigung Nr. 879

Certificate No.

über die Messung der Schutzabstände vom Magnet-Regel- und Magnet-Steuerkompass gemäß ISO 25862, Anhang E und F und DIN EN 60945, Absatz 11.2
about the measurement of the safe distances to the Standard-Magnetic- and Steering-Magnetic-compass in accordance with ISO 25862, Annex E and F and IEC 60945 Section 11.2

Bernecker + Rainer X20-Module

2839

Gerät bzw. Anlageteil <i>Equipment or part of equipment</i>	X20-Module
Hersteller <i>Manufacturer</i>	Bernecker + Rainer Industrie-Elektronik Ges.m.b.H. 5142 Eggelsberg, Austria
Typbezeichnungen der vermessenen Modulkombinationen <i>Type designation of the module combinations measured</i>	X20CP3586 + X20TB12, X20CM0985-1 + 2x X20TB12, X20BM32 + X20AP3161 + X20TB32, X20BB80 + X20PS9400 + X20TB12 + X20BC8084, X20BB80 + X20PS9400 + X20TB12 + X20HB8884, X20BB80 + X20PS9400 + X20TB12 + X20IF1063-1, X20BM11 + X20PS9500 + X20TB12, X20BM11 + X20AI8321 + X20TB1F, X20BM11 + X20AO4632-1 + X20TB12, X20BM11 + X20DOF322 + X20TB1F, X20BM11 + X20DS4389 + X20TB12, X20BM11 + X20AT6402 + X20TB12, X20BM11 + X20PD0016 + X20TB12, X20BM11 + X20DIF371 + X20TB1F, X20BM11 + X20CM8281 + X20TB12, X20BM31 + X20SM1436 + X20TB12, X20BM11 + X20CS1070 + X20TB12;
<u>Schutzabstand vom</u> <i>Safe distance to the</i> Magnet-Regelkompass <i>Standard-Magnetic-compass</i> Magnet-Steuerkompass <i>Steering-Magnetic-compass</i>	0,45 m 0,35 m
<u>Reduzierter Schutzabstand vom</u> <i>Reduced safe distance to the</i> Magnet-Regelkompass <i>Standard-Magnetic-compass</i> Magnet-Steuerkompass <i>Steering-Magnetic-compass</i>	0,30 m 0,30 m
Bemerkungen <i>Remarks</i>	Werte ermittelt <u>ohne</u> Hutschiene. <i>Values measured <u>without</u> top hat rail mounted.</i>

Die gemessenen Schutzabstände gelten ausschließlich für die vorgestellte Ausführung. Bei Änderung der Konstruktion und / oder der Betriebsdaten verliert die Bescheinigung ihre Gültigkeit.

The measured safe distances apply only to the represented design. If the construction and / or operating data are changed this certificate will lost its validity.

Da vom Hersteller nach seiner Aussage je Bausteinart aus magnetischer Sicht jeweils der worst case übersandt und so von uns vermessen wurde, gelten die oben genannten Kompassschutzabstände auch für beliebige Kombinationen aus den 488 folgenden Bausteinen (Auflistung in alphabetischer Reihenfolge):

As the manufacturer as per his statement for every type of module has provided us from the magnetic point of view with the worst case, the measured and above mentioned compass safe distances are also valid for any combinations of modules chosen from the following list of 488 modules (Modules listed in alphabetical order):

X20 system:

X20AI1744, X20AI1744-3, X20AI2222, X20AI2237, X20AI2322, X20AI2437, X20AI2438, X20AI2632, X20AI2632-1, X20AI2636, X20AI4222, X20AI4322, X20AI4622, X20AI4632, X20AI4632-1, X20AI4636, X20AI8221, X20AI8321, X20AIA744, X20AIB744, X20AO2237, X20AO2437, X20AO2438, X20AO2622, X20AO2632, X20AO2632-1, X20AO4622, X20AO4632, X20AO4632-1, X20AO4635, X20AP3111, X20AP3121, X20AP3131, X20AP3161, X20AT2222, X20AT2311, X20AT2402, X20AT402, X20AT4222, X20AT6402, X20ATA312, X20ATA492, X20ATB312, X20BB22, X20BB27, X20BB32, X20BB37, X20BB42, X20BB47, X20BB80, X20BB81, X20BB82, X20BC0043, X20BC0043-10, X20BC0053, X20BC0063, X20BC0073, X20BC0083, X20BC0087, X20BC0088, X20BC00E3, X20BC00G3, X20BC00H3, X20BC0143-10, X20BC1083, X20BC8083, X20BC8084, X20BC80G3, X20BM01, X20BM05, X20BM11, X20BM12, X20BM15, X20BM21, X20BM23, X20BM26, X20BM31, X20BM32, X20BM33, X20BM36, X20BR9300, X20BT9100, X20BT9400, X20CM0289, X20CM0985, X20CM0985-1, X20CM1201, X20CM1941, X20CM2821, X20CM2900, X20CM4810, X20CM6209, X20CM8281, X20CM8323, X20CP1583, X20CP1584, X20CP1585, X20CP1586, X20CP3583, X20CP3584, X20CP3585, X20CP3586, X20CS1011, X20CS1012, X20CS1013, X20CS1020, X20CS1030, X20CS1070, X20CS2770, X20DC1073, X20DC1176, X20DC1178, X20DC1196, X20DC1198, X20DC11A6, X20DC1376, X20DC137A, X20DC1396, X20DC1398, X20DC1976, X20DC2190, X20DC2395, X20DC2396, X20DC2398, X20DC4395, X20DI2371, X20DI2372, X20DI2377, X20DI2653, X20DI4371, X20DI4372, X20DI4375, X20DI4653, X20DI4760, X20DI6371, X20DI6372, X20DI6373, X20DI6553, X20DI8371, X20DI9371, X20DI9372, X20DID371, X20DIF371, X20DO2321, X20DO2322, X20DO2623, X20DO2633, X20DO2649, X20DO4321, X20DO4322, X20DO4331, X20DO4332, X20DO4529, X20DO4613, X20DO4623, X20DO4633, X20DO4649, X20DO6321, X20DO6322, X20DO6325, X20DO6529, X20DO6639, X20DO8232, X20DO8322, X20DO8323, X20DO8331, X20DO9321, X20DO9322, X20DOD322, X20DOF322, X20DS1119, X20DS1319, X20DS1828, X20DS1928, X20DS4387, X20DS4389, X20DS438A, X20ET8819, X20HB1881, X20HB2880, X20HB2881, X20HB2885, X20HB2886, X20HB28G0, X20HB8815, X20HB8880, X20HB8884, X20HB88G0, X20IF0000, X20IF1020, X20IF1030, X20IF1041-1, X20IF1043-1, X20IF1051-1, X20IF1051-3, X20IF1061, X20IF1061-1, X20IF1063-1, X20IF1063-1, X20IF1065, X20IF1072, X20IF1074, X20IF1082, X20IF1082-2, X20IF1086-2, X20IF1091, X20IF1091-1, X20IF10A1-1, X20IF10D1-1, X20IF10D3-1, X20IF10E1-1, X20IF10E3-1, X20IF10G3-1, X20IF10H3-1, X20IF10X0, X20MM2436, X20MM3332, X20MM4331, X20MM4456, X20PD0011, X20PD0012, X20PD0016, X20PS2100, X20PS2110, X20PS3300, X20PS3310, X20PS4951, X20PS8002, X20PS9400, X20PS9402, X20PS9500, X20PS9502, X20SM1426, X20SM1436, X20TB06, X20TB12, X20TB1E, X20TB1F, X20TB32, X20TB52, X20TB5E, X20TB5F, X20TB72, X20ZF0000

Coated X20 system:

X20cAI1744, X20cAI1744-3, X20cAI2222, X20cAI2237, X20cAI2322, X20cAI2437, X20cAI2438, X20cAI2632, X20cAI2632-1, X20cAI2636, X20cAI4222, X20cAI4322, X20cAI4622, X20cAI4632, X20cAI4632-1, X20cAI4636, X20cAI8221, X20cAI8321, X20cAIA744, X20cAIB744, X20cAO2237, X20cAO2437, X20cAO2438, X20cAO2622, X20cAO2632, X20cAO2632-1, X20cAO4622, X20cAO4632, X20cAO4632-1, X20cAO4635, X20cAP3111, X20cAP3121, X20cAP3131, X20cAP3161, X20cAT2222, X20cAT2311, X20cAT2402, X20cAT4222, X20cAT6402, X20cATA312, X20cATA492, X20cATB312, X20cATC402, X20cBB22, X20cBB27, X20cBB32, X20cBB37, X20cBB42, X20cBB47, X20cBB80, X20cBB81, X20cBB82, X20cBC0043, X20cBC0043-10, X20cBC0053, X20cBC0063, X20cBC0073, X20cBC0083, X20cBC0087, X20cBC0088, X20cBC00E3, X20cBC00G3, X20cBC00H3, X20cBC0143-10, X20cBC1083,

X20cBC8083, X20cBC8084, X20cBC80G3, X20cBM01, X20cBM05, X20cBM11, X20cBM12, X20cBM15, X20cBM21, X20cBM23, X20cBM26, X20cBM31, X20cBM32, X20cBM33, X20cBM36, X20cBR9300, X20cBT9100, X20cBT9400, X20cCM0289, X20cCM0985, X20cCM0985-1, X20cCM1201, X20cCM1941, X20cCM2821, X20cCM2900, X20cCM4810, X20cCM6209, X20cCM8281, X20cCM8323, X20cCP1583, X20cCP1584, X20cCP1585, X20cCP1586, X20cCP3583, X20cCP3584, X20cCP3585, X20cCP3586, X20cCS1011, X20cCS1012, X20cCS1013, X20cCS1020, X20cCS1030, X20cCS1070, X20cCS2770, X20cDC1073, X20cDC1176, X20cDC1178, X20cDC1196, X20cDC1198, X20cDC11A6, X20cDC1376, X20cDC137A, X20cDC1396, X20cDC1398, X20cDC1976, X20cDC2190, X20cDC2395, X20cDC2396, X20cDC2398, X20cDC4395, X20cDI2371, X20cDI2372, X20cDI2377, X20cDI2653, X20cDI4371, X20cDI4372, X20cDI4375, X20cDI4653, X20cDI4760, X20cDI6371, X20cDI6372, X20cDI6373, X20cDI6553, X20cDI8371, X20cDI9371, X20cDI9372, X20cDID371, X20cDIF371, X20cDO2321, X20cDO2322, X20cDO2623, X20cDO2633, X20cDO2649, X20cDO4321, X20cDO4322, X20cDO4331, X20cDO4332, X20cDO4529, X20cDO4613, X20cDO4623, X20cDO4633, X20cDO4649, X20cDO6321, X20cDO6322, X20cDO6325, X20cDO6529, X20cDO6639, X20cDO8232, X20cDO8322, X20cDO8323, X20cDO8331, X20cDO9321, X20cDO9322, X20cDOD322, X20cDOF322, X20cDS1119, X20cDS1319, X20cDS1828, X20cDS1928, X20cDS4387, X20cDS4389, X20cDS438A, X20cET8819, X20cHB1881, X20cHB2880, X20cHB2881, X20cHB2885, X20cHB2886, X20cHB28G0, X20cHB8815, X20cHB8880, X20cHB8884, X20cHB88G0, X20cIF0000, X20cIF1020, X20cIF1030, X20cIF1041-1, X20cIF1043-1, X20cIF1051-1, X20cIF1051-3, X20cIF1061, X20cIF1061-1, X20cIF1063-1, X20cIF1063-1, X20cIF1065, X20cIF1072, X20cIF1074, X20cIF1082, X20cIF1082-2, X20cIF1086-2, X20cIF1091, X20cIF1091-1, X20cIF10A1-1, X20cIF10D1-1, X20cIF10D3-1, X20cIF10E1-1, X20cIF10E3-1, X20cIF10G3-1, X20cIF10H3-1, X20cIF10X0, X20cMM2436, X20cMM3332, X20cMM4331, X20cMM4456, X20cPD0011, X20cPD0012, X20cPD0016, X20cPS2100, X20cPS2110, X20cPS3300, X20cPS3310, X20cPS4951, X20cPS8002, X20cPS9400, X20cPS9402, X20cPS9500, X20cPS9502, X20cSM1426, X20cSM1436, X20cTB06, X20cTB12, X20cTB1E, X20cTB1F, X20cTB32, X20cTB52, X20cTB5E, X20cTB5F, X20cTB72, X20cZF0000

Hamburg, 2014-10-01

Im Auftrag

For the Federal Maritime and Hydrographic Agency



Jörn Kallauch



BUNDESAMT FÜR
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BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

FEDERAL MARITIME AND HYDROGRAPHIC AGENCY

Bescheinigung Nr. 1017

Certificate No.

über die Messung der Schutzabstände vom Magnet-Regel- und Magnet-Steuerkompass gemäß ISO 25862* Anhang E und F und IEC 60945* , Absatz 11.2
about the Measurement of the Safe Distances to the Standard-Magnetic- and Steering-Magnetic-Compass in Accordance with ISO 25862 Annex E and F and IEC 60945* Section 11.2*

3252

Gerät bzw. Anlageteil <i>Equipment or Part of Equipment</i>	X20-Module
Hersteller <i>Manufacturer</i>	B&R Industrial Automation GmbH, 5142 Eggelsberg, Austria
Typbezeichnungen <i>Type designations</i>	X20CP0484, X20CP1382-RT, X20SL8011, X20SLX910, X20SC2432, X20DM9324, X20SP1130, X20RT8401, X20AP3171, X20ST4492, X20IF1063, X20CM2966, X20BR7300, X20ATC402, X20BB77, X20MM4456, 0TGF016.01, X20MK0203
<u>Schutzabstand vom</u> <i>Safe Distance to the</i> Magnet-Regelkompass <i>Standard-Magnetic-Compass</i> Magnet-Steuerkompass <i>Steering-Magnetic-Compass</i>	0,45 m 0,35 m
<u>Reduzierter Schutzabstand vom</u> <i>Reduced Safe Distance to the</i> Magnet-Regelkompass <i>Standard-Magnetic-Compass</i> Magnet-Steuerkompass <i>Steering-Magnetic-Compass</i>	0,30 m 0,30 m
Bemerkungen <i>Remarks</i>	Werte ermittelt <u>ohne</u> Hutschiene. <i>Values measured without top hat rail mounted.</i>

Die gemessenen Schutzabstände gelten ausschließlich für die vorgestellte Ausführung. Bei Änderung der Konstruktion und / oder der Betriebsdaten verliert die Bescheinigung ihre Gültigkeit.

The measured Safe Distances are valid for the represented Design only. This Certificate will lose its Validity due to Change of Design and / or Technical Data.

*= ISO25862:2009, IEC 60945:2008

Da vom Hersteller nach seiner Aussage je Bausteinart aus magnetischer Sicht jeweils der worst case übersandt und so von uns vermessen wurde, gelten die oben genannten Kompassschuttabstände auch für beliebige Kombinationen aus den folgenden Bausteinen:

As the manufacturer as per his statement for every type of module has provided us from the magnetic point of view with the worst case, the measured and above mentioned compass safe distances are also valid for any combinations of modules chosen from the following list of modules:

X20:
X20CP0410, X20CP0411, X20CP0482, X20CP0483, X20BB72, X20BB52, X20BB57, X20BB62, X20BB67, X20CP1301, X20CP1381, X20CP1381-RT, X20CP1382, X20SL8000, X20SL8001, X20SL8010, X20SL8100, X20SL8101, X20SL8110, X20MK0201, X20MK0211, X20MK0213, X20SC0402, X20SC0806, X20SLX402, X20SRT402, X20SRT806, X20SLX811, X20SI8110, X20SLX806, X20SLX410, X20SLX210, X20SD1207, X20SI2100, X20SI4100, X20SI9100, X20SO6300, X20SO4120, X20SO2110, X20SO2120, X20SO4110, X20SC2212, X20SLX842, X20SC0842, X20SRT842, X20SO2530, X20ZF000F, X20DI0471, X20RT8001, X20RT8201, X20RT8202, X20RT8381, X20AP3122, X20SA4130, X20SA4430, X20MM4455, 0TG1000.01, 0TG1000.02, X20CM4323, X20AP3132, X20BC0087-10, X20BC008U, X20IF1083-1, X20IF2181-2, X20IF2772, X20IF2792, X20PS9602, X20PS9600, X20AI1744-10, X20AI2622, X20DO8332, X20AT4232, X20PD2113, X20HB1882, X20BM13;

X20-coated:
X20cCP1381, X20cCP1382-RT, X20cSL8101, X20cSL8100, X20cMK0213, X20cSC0806, X20cSLX402, X20cSI8110, X20cSLX806, X20cSLX410, X20cSLX210, X20cSD1207, X20cSI4100, X20cSI9100, X20cSO6300, X20cSO4120, X20cSO4110, X20cSC2212, X20cSLX842, X20cSC0842, X20cSLX910, X20cSC2432, X20cSO2530, X20cDM9324, X20cSP1130, X20cST4492, X20cSA4430, X20cIF2181-2, X20cIF2772, X20cDO8332, X20cPD2113;

Hamburg, 2018-08-31

Im Auftrag
For the Federal Maritime and Hydrographic Agency


Jörn Kallauch

Ver2018-05-15



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Bundesrepublik Deutschland

Federal Republic of Germany

Bundesamt für Seeschifffahrt und Hydrographie

Federal Maritime and Hydrographic Agency



Bescheinigung Nr. 1078

Certificate No.

über die Messung der Schutzabstände vom Magnet-Regel- und Magnet-Steuerkompass gemäß ISO 25862* Anhang F und IEC 60945* Absatz 11.2
about the Measurement of the Safe Distances to the Standard-Magnetic- and Steering-Magnetic-Compass in Accordance with ISO 25862 Annex F and IEC 60945* Section 11.2*

3375

Gerät bzw. Anlageteil <i>Equipment or Part of Equipment</i>	X20-Module
Hersteller <i>Manufacturer</i>	B&R Industrial Automation GmbH, 5142 Eggelsberg, Austria
Typbezeichnung <i>Type</i>	X20DO4F49
<u>Schutzabstand vom</u> <i>Safe Distance to the</i> Magnet-Regelkompass <i>Standard-Magnetic-Compass</i> Magnet-Steuerkompass <i>Steering-Magnetic-Compass</i>	0,40 m 0,30 m
<u>Reduzierter Schutzabstand vom</u> <i>Reduced Safe Distance to the</i> Magnet-Regelkompass <i>Standard-Magnetic-Compass</i> Magnet-Steuerkompass <i>Steering-Magnetic-Compass</i>	0,30 m 0,30 m
Bemerkungen <i>Remarks</i>	Die oben aufgeführten Kompassschutzabstände gelten auch für die Varianten: <i>The above mentioned compass safe distances are also valid for the variants:</i> X20CP0484X, X20cCP0410, X20CP0484-1, X20cCP1301, X20CP1686X, X20CP1685, X20CP1684, X20CP3687X, X20CP3684, X20CP3685, X20CP3686X, X20CMR111, X20CMR010, X20CMR100, X20DO4332-1, X20DO8332-1, X20cBB52, X20BM01X, X20BM11X, X20SO6530, X20SM1446-1, X20SM1436-1, X20SM1444-1, X20ZF0002, X20CP0420, X20CM0985-02, X20CM4800X, X20BM16, X20BB80X, X20BC008T, X20MK0223, X20cMK0223;

Die gemessenen Schutzabstände gelten ausschließlich für die vorgestellte Ausführung und die aufgelisteten Varianten. Bei Änderung der Konstruktion und / oder der Betriebsdaten verliert die Bescheinigung ihre Gültigkeit.

The measured Safe Distances are valid for the Design presented and the variants listed only. This Certificate will lose its Validity due to Change of Design and / or Technical Data.

Hamburg, 2020-10-09

Im Auftrag
For the Federal Maritime and Hydrographic Agency

Jörn Kallauch

*= ISO25862:2019, IEC 60945:2008



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BSH · P.O. Box 30 12 20 · 20305 Hamburg · Germany

B&R Industrial Automation GmbH

B&R Straße 1
5142 Eggelsberg
Austria

Hamburg Office

**Safe Distance to the Standard- and Steering-Magnetic-Compass
for the B&R X20 modules X20 AT 2321, X20c BB 57, X20 CMR 011
and X20 PD 0053**

Date
2021-08-06
Extension
+ 49 (0) 40 3190 - 7322
Reference
(please quote in your answer)
4531/10973426/21/S3202

1. **B&R Statement "Compass safe distance for new X20 modules", dated 2021-08-06, file reference B&R_RnD_CON_Maritim_BSH_20210806**
2. **Our Compass Safe Distance Certificates No. 879, No. 1017 and No. 1078 dealing with the Compass Safe Distances (CSD) for several X20 modules**

To whom it may concern

The Statement mentioned above (see position 1) deals with that the **X20 modules X20 AT 2321, X20c BB 57, X20 CMR 011** and **X20 PD 0053** differ from already measured X20 modules (see position 2) by non-magnetic materials only.

Under this condition the Compass Safe Distances for the X20 modules dealt with in our Compass Safe Distance Certificate No. 879 dated 2014-10-01 also apply to the modules **X20 AT 2321, X20c BB 57, X20 CMR 011** and **X20 PD 0053**.

With kind regards
For the Federal Maritime and Hydrographic Agency

Jörn Kallauch

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