

# TYPE APPROVAL CERTIFICATE

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No.	<b>11 927 - 10 HH</b>
Company	<b>Beckhoff Automation GmbH &amp; Co. KG</b> <b>Hülshorstweg 20</b> <b>33415 Verl, GERMANY</b>
Product Description	<b>Beckhoff Bus Terminals System</b> <b>Modular I/O System</b>
Type	<b>Bus Terminals Digital Input, Digital Output, Analog Input, Analog Output</b>
Environmental Category	<b>D, H, EMC1 / EMC2*</b>
Technical Data / Range of Application	<b>Bus Terminals Digital Input</b> <b>KL/KS1002: 2-Channel 24 V DC Digital Input, Input filter 3ms</b> <b>KL/KS1012: 2-Channel 24 V DC Digital Input, Input filter 0.2ms</b> <b>KL/KS1032: 2-Channel 48 V DC Digital Input, Input filter 3ms</b> <b>KL/KS1104: 4-Channel 24 V DC Digital Input, Input filter 3ms</b> <b>KL/KS1114: 4-Channel 24 V DC Digital Input, Input filter 0.2ms</b> <b>KL/KS1212: 2-Channel 24 V DC Digital Input, Input filter 3ms, diagnostics</b> <b>KL/KS1352: 2-Channel 24 V DC Digital Input for NAMUR Sensors,</b> <b>Input filter 3ms</b> <b>KL/KS1362: 2-Channel 24 V DC Digital Input for break-in alarm</b> <b>KL/KS1382: 2-Channel 24 V DC Digital Input for Thermistor</b> <b>KL/KS1402: 2-Channel 24 V DC Digital Input, Input filter 3ms</b> <b>KL/KS1404: 4-Channel 24 V DC Digital Input, Input filter 3ms</b> <b>KL/KS1412: 2-Channel 24 V DC Digital Input, Input filter 0.2ms</b> <b>KL/KS1414: 4-Channel 24 V DC Digital Input, Input filter 0.2ms</b> <b>KL/KS1408: 8-Channel 24 V DC Digital Input, Input filter 3ms</b> <b>KL/KS1418: 8-Channel 24 V DC Digital Input, Input filter 0.2ms</b>  <b>Environmental Category "H": Cold test -25°C / 4h</b>
Test Standard	<b>Guidelines for the Performance of Type Approvals, Chapter 2- Test Requirements for Electrical / Electronic Equipment and Systems (VI-7-2), Edition 2003</b>
Documents	<b>Test reports no.: Beckhoff 1007FB106 (12.07.10) and 1006FB103 (05.07.10), AKUVIB 2010-0037-VU (12.07.10), RS Schwarze Elektrotechnik 2010155 and 2010156 (08.07.10), TÜV EMV 10 07 2868 and 10 07 2869 (28.07.10), PB0406FFB043 (21.06.04), EMV Services 03/2277-1(30.12.03), paconsult 352-04 (15.04.04)</b>
Remarks	<b>This certificate is issued on the basis of GL Guidelines for the Performance of Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007. Notes about operation in Marine Applications (GL) must be observed. Further types in Certificate no. 21154-04HH and 11939-10HH.</b>
Valid until	<b>2020-02-28</b>
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File No.	<b>I.B.08</b>
	<b>Hamburg, 2015-10-28</b>

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## Further Technical Data Range of Application

### Bus Terminals Digital Input

KL/KS1702: 2-Channel 120 V AC to 230 V AC, 4-wire system

KL/KS1722: 2-Channel 120 V AC to 230 V AC, without power contacts, 4-wire system

KL/KS3201: 1-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 3-wire system [EMC2\*]

KL/KS3202: 2-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 3-wire system [EMC2\*]

KL/KS3204: 4-channel input terminal PT100 (RTD) for resistance sensors, 16 bit, 2-wire system [EMC2\*]

KL3314: 4-channel thermocouple input terminal, preset to type K, with wire breakage detection, 16 bit [EMC2\*]

KL/KS6031: Serial interface RS232, 115.2 kbaud [EMC2\*]

KL/KS6041: Serial interface RS422/RS485, 115.2 kbaud [EMC2\*]

### Bus Terminals Digital Output

KL/KS2022: 2-Channel 24 V DC Digital Output, max. output 2.0 A

KL/KS2032: 2-Channel 24 V DC Digital Output, max. output 0.5 A (Reverse voltage protection)

KL/KS2134: 4-Channel 24 V DC Digital Output, max. output 0.5 A (Reverse voltage protection)

KL/KS2408: 8-Channel 24 V DC Digital Output, max. output 0.5 A (Reverse voltage protection)

KL/KS2602: 2-Channel Relay 230 V AC / 30 V DC Digital Output, max. output 2 A AC / DC

KL/KS2612: 2-Channel Relay 125 V AC / 30 V DC Digital Output, 0.5 A AC / 2 A DC, no power contacts

KL/KS2622: 2-Channel Relay 230 V AC / 30 V DC Digital Output, max. output 2 A AC / DC, no power contacts

KL/KS2631: 1-Channel Relay 400 V AC / 300 V DC Digital Output, max. output 1500 VA AC / 0.15 A DC

KL/KS2702: 2-Channel Solid State Load Relay 0...230 V AC / DC Digital Output, max. output 0.3 A (on each channel)

KL/KS2712: 2-Channel Triac 12...230 V AC Digital Output, max. output 0.5 A

KL/KS2722: 2-Channel Triac 12...230 V AC Digital Output, max. output 1 A, mutually locked outputs

KL/KS2732: 2-Channel Triac 12...230 V AC Digital Output, max. output 1 A, mutually locked outputs, no power contacts

### Bus Terminals Analog Input

KL/KS3011: 1-Channel 0...20 mA Analog Input, differential input, 12 bit

KL/KS3012: 2-Channel 0...20 mA Analog Input, differential input, 12 bit

KL/KS3021: 1-Channel 4...20 mA Analog Input, differential input, 12 bit

KL/KS3022: 2-Channel 4...20 mA Analog Input, differential input, 12 bit

KL/KS3041: 1-Channel loop-powered 0...20 mA Analog Input, 12 bit

KL/KS3042: 2-Channel loop-powered 0...20 mA Analog Input, 12 bit

KL/KS3044: 4-Channel 0...20 mA Analog Input, 12 bit

KL/KS3051: 1-Channel loop-powered 4...20 mA Analog Input, 12 bit

KL/KS3052: 2-Channel loop-powered 4...20 mA Analog Input, 12 bit

KL/KS3054: 4-Channel 4...20 mA Analog Input, 12 bit

KL/KS3064: 4-Channel 0...10 V Analog Input, single-ended, 12 bit

KL/KS3404: 4-Channel -10...+10 V Analog Input, 4 x 2-wire system, 12 bit

KL/KS3408: 8-Channel -10...+10 V Analog Input, 1-wire system, 12 bit

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Certificate No. **11 927 - 10 HH**

## Bus Terminals Analog Input

KL/KS3444: 4-Channel 0...20 mA Analog Input, 4 x 2-wire system, 12 bit  
 KL/KS3448: 8-Channel 0...20 mA Analog Input, 1-wire system, 12 bit  
 KL/KS3454: 4-Channel 4...20 mA Analog Input, 4 x 2-wire system, 12 bit  
 KL/KS3458: 8-Channel 4...20 mA Analog Input, 1-wire system, 12 bit  
 KL/KS3464: 4-Channel 0...10 V Analog Input, 4 x 2-wire system, 12 bit  
 KL/KS3468: 8-Channel 0...10 V Analog Input, 1-wire system, 12 bit

## Bus Terminals Analog Output

KL/KS4011: 1-Channel 0...20 mA Analog Output, 12 bit  
 KL/KS4012: 2-Channel 0...20 mA Analog Output, 12 bit  
 KL/KS4021: 1-Channel 4...20 mA Analog Output, 12 bit  
 KL/KS4022: 2-Channel 4...20 mA Analog Output, 12 bit  
 KL/KS4031: 1-Channel -10 V...+10 V Analog Output, 12 bit  
 KL/KS4032: 2-Channel -10 V...+10 V Analog Output, 12 bit  
 KL/KS4034: 4-Channel -10 V...+10 V Analog Output, 12 bit  
 KL/KS4404: 4-Channel 0 V...10 V Analog Output, 4 x 2-wire system, 12 bit  
 KL/KS4408: 8-Channel 0 V...10 V Analog Output, 1-wire system, 12 bit  
 KL/KS4414: 4-Channel 0...20 mA Analog Output, 4 x 2-wire system, 12 bit  
 KL/KS4418: 8-Channel 0...20 mA Analog Output, 1-wire system, 12 bit  
 KL/KS4424: 4-Channel 4...20 mA Analog Output, 4 x 2-wire system, 12 bit  
 KL/KS4428: 8-Channel 4...20 mA Analog Output, 1-wire system, 12 bit  
 KL/KS4434: 4-Channel -10 V...+10 V Analog Output, 4 x 2-wire system, 12 bit  
 KL/KS4438: 8-Channel -10 V...+10 V Analog Output, 1-wire system, 12 bit

## Further documents

00ME23056 / UL dated 2003-01-22  
 User manual "Beckhoff Bus Terminals System in Marine Applications (GL)", version 1.0 (11.01.2011)  
 Software Questionnaire acc. class 3 dated 2005-01-24  
 Data sheets, part lists and drawings according to submitted files.  
 Comparison Hardware/Software Version 2010 to 2015  
 Test report Beckhoff no.: 1409ANFL001 (29.09.2014), 1408ANFL001 (25.09.2014),  
 Test report AKUVIB no.: 2014-0315-VU (22.07.2014),  
 Test report RS Schwarze Elektrotechnik no.: 2014104 (07.07.2014),  
 Test report WAGO no.: EMVP10-0131 (13.08.2010)

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Certificate No.	<b>11 939 - 10 HH</b>
Company	<b>Beckhoff Automation GmbH &amp; Co. KG</b> <b>Hülshorstweg 20</b> <b>33415 Verl, GERMANY</b>
Product Description	<b>Beckhoff Bus Terminals System</b> <b>Modular I/O System</b>
Type	<b>System Terminals</b>
Environmental Category	<b>D, H, EMC1</b>
Technical Data / Range of Application	<b>System Terminals</b> <b>KL9010: Bus end terminal</b> <b>KL9020: Bus end terminal 24 V DC, connection with an Ethernet cable and RJ45 plug</b> <b>KL9050: Bus coupler terminal 24 V DC and is the counterpart to KL9020</b> <b>KL9080: Bus potential groups (e.g. 230 V AC / 24 V DC)</b> <b>KL/KS9100: Power feed terminal 24 V DC</b> <b>KL/KS9110: Power feed terminal 24 V DC, diagnostics</b> <b>KL/KS9150: Power supply terminal, 230 V AC</b> <b>KL/KS9160: Power supply terminal with diagnostics, 230 V AC</b> <b>KL/KS9180: Power feed terminal up to 230 V AC, PE contact, Additional power contact 2</b> <b>KL/KS9185: Power feed terminal up to 230 V AC, Additional power contact 4</b> <b>KL/KS9186: Potential distribution terminal, 8 x 24 V contact</b> <b>KL/KS9187: Potential distribution terminal, 8 x 0 V contact</b>
Test Standard	<b>Environmental Category "H": Cold test with -25°C / 2h</b> <b>Guidelines for the Performance of Type Approvals, Chapter 2- Test Requirements for Electrical / Electronic Equipment and Systems (VI-7-2), Edition 2003</b>
Documents	<b>Test reports no.: Beckhoff 1007FB106 (12.07.10) and 1006FB103 (05.07.10), AKUVIB 2010-0037-VU (12.07.10), RS Schwarze Elektrotechnik 2010155 and 2010156 (08.07.10), TÜV EMV 10 07 2868 and 10 07 2869 (28.07.10), PB0406FFB043 (21.06.04), EMV Services 03/2277-1 (30.12.03), paconsult 352-04 (15.04.04)</b>
Remarks	<b>This certificate is issued on the basis of GL Guidelines for the Performance of Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007.</b> <b>Notes about operation in Marine Applications (GL) must be observed.</b> <b>Further types in Certificate no. 11927-10HH and 21154-04HH.</b>

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Certificate No. **11 939 - 10 HH**

## Further Technical Data / Range of Application

### System Terminals

**KL/KS9190: Power feed terminal rated load voltage arbitrary**

**KL/KS9195: Power feed terminal up to 230 V AC, Additional power contact 1, Shielding connection 2**

**KL9200: Power feed terminal 24 V DC, Integrated fine-wire fuse 6.3 A**

**KL9210: Power feed terminal 24 V DC, Integrated fine-wire fuse 6.3 A, diagnostics**

**KL9250: Power supply terminal with fuse, 125 V AC...230 V AC**

**KL9260: Power supply terminal with fuse and diagnostics, 230 V AC**

**KL9290: Power feed terminal rated load voltage arbitrary, Integrated fine-wire fuse 6.3 A**

**KL/KS9400: Power supply unit terminal for the K-bus, 24 V DC, 2 A**

**KL/KS9540: Surge filter terminal 24 V DC, Surge filter for field supply**

**KL9540-0010: Surge filter terminal 24 V DC, Surge filter for field supply, analog terminals**

**KL/KS9550: Surge filter terminal 24 V DC, Surge filter for field supply and system supply**

**KL/KS9560: Power supply unit terminal 24V DC / 24 V DC, Insulation voltage in-/output 500 V AC permanent load**

**KL9184: Potential distribution terminal, 8 x 24 V contact, 8 x 0 V contact**

**KL9188: Potential distribution terminal, 16 x 24 V contact**

**KL9189: Potential distribution terminal, 16 x 0 V contact**

### Further documents

**Test reports: Beckhoff no. 1204FB105 (12.04.12) + 1207FB107 (31.07.12) + 1208FB101 (10.08.12),  
RS Schwarze no. 2012035 (09.03.12), AKUVIB no. 2012-0035-VU (16.02.12),  
WAGO no. EMVP10\_0131 (13.08.10)**

**00ME23056 / UL dated 2003-01-22**

**User manual "Beckhoff Bus Terminals System in Marine Applications (GL)", version 1.0**

**Software Questionnaire acc. class 3 dated 2005-01-24**

**Data sheets, part lists and drawings according to submitted files**

**Comparison Hardware/Software Version 2010 to 2015**

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This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No.	<b>21 154 - 04 HH</b>
Company	<b>Beckhoff Automation GmbH &amp; Co. KG</b> <b>Hülshorstweg 20</b> <b>33415 Verl, GERMANY</b>
Product Description	<b>Beckhoff Bus Terminals System</b> <b>Modular I/O System</b>
Type	<b>Bus Terminal Controller</b> <b>Bus Coupler</b>
Environmental Category	<b>D, H, EMC1</b>
Technical Data / Range of Application	<b>Bus Terminal Controller</b> <b>BC3100: PROFIBUS Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>BC7300: Modbus Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>BC8000: RS485 Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>BC8100: RS232 Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>BC9000: Ethernet TCP/IP Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>BC9100: Ethernet TCP/IP Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>(with integrated 2-channel switch)</b> <b>BC9020: Ethernet TCP/IP Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>(255 with K-bus extension)</b> <b>BC9120: Ethernet TCP/IP Bus Terminal Controller 24 V DC, 64 Bus Terminals</b> <b>(255 with K-bus extension, with integrated 2-channel switch)</b>
Test Standard	<b>Environmental Category "H": Cold test with -25°C / 4h</b> <b>Guidelines for the Performance of Type Approvals, Chapter 2- Test</b> <b>Requirements for Electrical / Electronic Equipment and Systems (VI-7-2),</b> <b>Edition 2003</b>
Documents	<b>Test reports no.: Beckhoff 1007FB106 (12.07.10) and 1006FB103 (05.07.10),</b> <b>AKUVIB 2010-0037-VU (12.07.10), RS Schwarze Elektrotechnik 2010155 and</b> <b>2010156 (08.07.10), TÜV EMV 10 07 2868 and 10 07 2869 (28.07.10),</b> <b>PB0406FFB043 (21.06.04), EMV Services 03/2277-1 (30.12.03),</b> <b>paconsult 352-04 (15.04.04)</b>
Remarks	<b>This certificate is issued on the basis of GL Guidelines for the Performance of</b> <b>Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007.</b> <b>Notes about operation in Marine Applications (GL) must be observed.</b> <b>Further types in Certificate no. 11927-10HH and no. 11939-10HH.</b>

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Certificate No. **21 154 - 04 HH**

## Further Technical Data / Range of Application

### Bus Coupler

**BK3010: PROFIBUS Bus Coupler 24 V DC, 64 Bus Terminals, 1.5 Mbaud**  
**BK3100: PROFIBUS DP/FMS Bus Coupler 24 V DC, 64 Bus Terminals, 12 Mbaud**  
**BK3110: PROFIBUS Bus Coupler 24 V DC, 64 Bus Terminals, 12 Mbaud**  
**BK3120: PROFIBUS Bus Coupler 24 V DC, 64 Bus Terminals (255 with K-bus extension), 12 Mbaud**  
**BK5110: CANopen Bus Coupler 24 V DC, 64 Bus Terminals**  
**BK5120: CANopen Bus Coupler 24 V DC, 64 Bus Terminals (255 with K-bus extension)**  
**BK5210: DeviceNET Bus Coupler 24 V DC, 64 Bus Terminals**  
**BK5220: DeviceNET Bus Coupler 24 V DC, 64 Bus Terminals (255 with K-bus extension)**  
**BK7300: Modbus Bus Coupler 24 V DC, 64 Bus Terminals**  
**BK8000: RS485 Bus Coupler 24 V DC, 64 Bus Terminals**  
**BK8100: RS232 Bus Coupler 24 V DC, 64 Bus Terminals**  
**BK9000: Ethernet TCP/IP Bus Coupler 24 V DC, 64 Bus Terminals**  
**BK9050: Ethernet TCP/IP Bus Coupler 24 V DC, 64 Bus Terminals (255 with K-Bus extension)**  
**BK9100: Ethernet TCP/IP Bus Coupler 24 V DC, 64 Bus Terminals (with integrated 2-channel switch)**  
**BK9103: PROFINET Bus Coupler 24 V DC, 64 Bus Terminals (with integrated 2-channel switch)**  
**BK9105: EtherNet/IP Bus Coupler 24 V DC, 64 Bus Terminals (with integrated 2-channel switch)**

### Further documents

**00ME23056 / UL dated 2003-01-22**  
**User manual "Beckhoff Bus Terminals System in Marine Applications (GL)"**  
**Software Questionnaire acc. class 3 dated 2005-01-24**  
**Data sheets, part lists and drawings according to submitted files**  
**Comparison Hardware/Software Version 2010 to 2015**

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Certificate No. **46 945 - 12 HH**

Company **Beckhoff Automation GmbH & Co. KG**

**Hülshorstweg 20  
33415 Verl, GERMANY**

Product Description **Beckhoff Embedded PC**

Type **CX5010-x1xx, CX5020-x1xx**

Environmental Category **D, H, EMC2**

Technical Data /  
Range of Application **CPU: Intel Atom Z510, 1.1 GHz (serie CX5010-x1xx)  
Intel Atom Z530, 1.6 GHz (serie CX5020-x1xx)  
Memory: 512 MB, optionally 1 GB  
Interfaces: 2 x RJ 45, 10/100/1000Mbit/s, DVI-D, 4 x USB 2.0  
Power Supply: 24 V DC**

**Optional Interface:**

**CX50x0-N030 = RS232, D-sub socket  
CX50x0-N031 = RS422/RS485, D-sub socket  
CX50x0-M310 = Profibus master, D-sub socket  
CX50x0-B310 = Profibus slave, D-sub socket  
CX50x0-M930 = Profinet RT, controller, Ethernet (2 x RJ45 switch)  
CX50x0-B930 = Profinet RT, device, Ethernet (2 x RJ45 switch)  
CX50x0-B950 = Ethernet/IP-Slave, Ethernet (2 x RJ45 switch)  
CX50x0-B110 = EtherCAT-Slave, EtherCAT In and OUT (2 x RJ45 switch)**

**Environmental Category "H": Cold test with -25°C / 2h**

Test Standard **Guidelines for the Performance of Type Approvals, Chapter 2- Test Requirements for Electrical / Electronic Equipment and Systems (VI-7-2), Edition 2003**

Documents **Test reports: Beckhoff no.1204FB10512.04.12) + 1207FB107(31.07.12) + 1208FB101 (10.08.12), RS Schwarze no. 2012035 (09.03.12), AKUVIB no. 2012-0035-VU (16.02.12), WAGO no. EMVP10\_0131 (13.08.10)**

Remarks **This certificate is issued on the basis of GL Guidelines for the Performance of Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007.**

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Certificate No. **46 945 - 12 HH**

## Further Technical Data / Range of Application

Order code **CX50x0 - x 1 x x**  
[A] [B] [C]

[A]: **0 = E-bus interface for EthernetCAT Terminals**

**1 = K-bus interface for Bus terminals**

[B]: **0 = without operating system**

**1 = operating system Windows CE**

**2 = operating system Windows Embedded**

**3 = operating system Windows Embedded 7**

[C]: **0 = without TwinCAT**

**1 = TwinCAT PLC run-time**

**2 = TwinCAT PLC/NC run-time**

Hardware revision: **3.2+1**

Software revision: **boot2-0\_013**

## Further Documents

**CX50x0 Hardware Documentation, version 1.4**

**User manual "Beckhoff Bus Terminals system in Marine Applications (GL)", version 1.0**

**Software Documentation: SW OS, Operating systems for CX1000/CX10x0/CX90x0/Ethernet Panels/IPC..., version 1.2**

**Software Questionnaire acc. to class 3 dated 24.01.05**

**Data sheets part lists and drawings according to submitted files.**

Valid until **2017-10-14**

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This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the DNV GL Type Approval System.

Certificate No.	<b>46 946 - 12 HH</b>
Company	<b>Beckhoff Automation GmbH &amp; Co. KG</b> <b>Hülshorstweg 20</b> <b>33415 Verl, GERMANY</b>
Product Description	<b>Beckhoff Bus Terminals System</b> <b>Modular I/O System</b>
Type	<b>Bus Terminals Digital Input, Digital Output</b>
Environmental Category	<b>D, H, EMC1</b>
Technical Data / Range of Application	<b>Bus Terminals Digital Input</b> <b>KL1804: 4-channel digital input 24 V DC, 3-wire connection,</b> <b>Input filter 3ms</b> <b>KL1814: 4-channel digital input 24 V DC, 3-wire connection,</b> <b>Input filter 0.2ms</b> <b>KL1808: 8-channel digital input 24 V DC, 2-wire connection,</b> <b>Input filter 3ms</b> <b>KL1809: 16-channel digital input 24 V DC, 1-wire connection,</b> <b>Input filter 3ms</b> <b>KL1819: 16-channel digital input 24 V DC, 1-wire connection,</b> <b>Input filter 0.2ms</b> <b>KL1859: KL1809: 8-channel digital input + 8-channel digital output 24 V DC,</b> <b>1-wire connection, Input filter 3ms</b> <b>KL1889: 6-channel digital input 24 V DC, 0 V (ground), 1-wire connection,</b> <b>Input filter 3ms</b>
Test Standard	<b>Environmental Category "H": Cold test with -25°C / 2h</b> <b>Guidelines for the Performance of Type Approvals, Chapter 2- Test</b> <b>Requirements for Electrical / Electronic Equipment and Systems (VI-7-2),</b> <b>Edition 2003</b>
Documents	<b>Test reports: Beckhoff no.1204FB10512.04.12) + 1207FB107(31.07.12) +</b> <b>1208FB101 (10.08.12), RS Schwarze no. 2012035 (09.03.12),</b> <b>AKUVIB no. 2012-0035-VU (16.02.12),</b> <b>WAGO no. EMVP10_0131 (13.08.10)</b>
Remarks	<b>This certificate is issued on the basis of GL Guidelines for the Performance of</b> <b>Type Approvals, Chapter 1 - Procedure (VI-7-1), Edition 2007.</b> <b>Notes about operation in Marine Applications (GL) must be observed.</b>

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Certificate No. **46 946 - 12 HH**

## Further Technical Data / Range of Application

### Bus Terminals Digital Output

**KL2424: 4-channel digital output 24 V DC, max. 2 A per channel, 2-wire connection**

**KL2808: 8-channel digital output 24 V DC, max 0.5 A per channel, 2-wire connection**

**KL2809: 16-channel digital output 24 V DC, max. 0.5 A per channel, 1-wire connection**

**KL 2889. 16-channel digital output 24 V DC, oV (ground) switching, max. 0.5 A per channel, 1-wire connection**

### Further Documents

**User manual "Beckhoff Bus Terminals system in Marine Applications (GL)", version 1.0**

**Software Questionnaire acc. to class 3 dated 24.01.05**

**Data sheets part lists and drawings according to submitted files.**

Valid until **2017-10-14**

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