

DuoXpert LB 476 Level+

Technical Information



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1. Evaluation Unit and Extension Modules

The modules can be installed either in wall housings or 19" subracks. It can be equipped differently, depending on requirements. The rear terminal blocks are used for the electrical connection.

WARNING

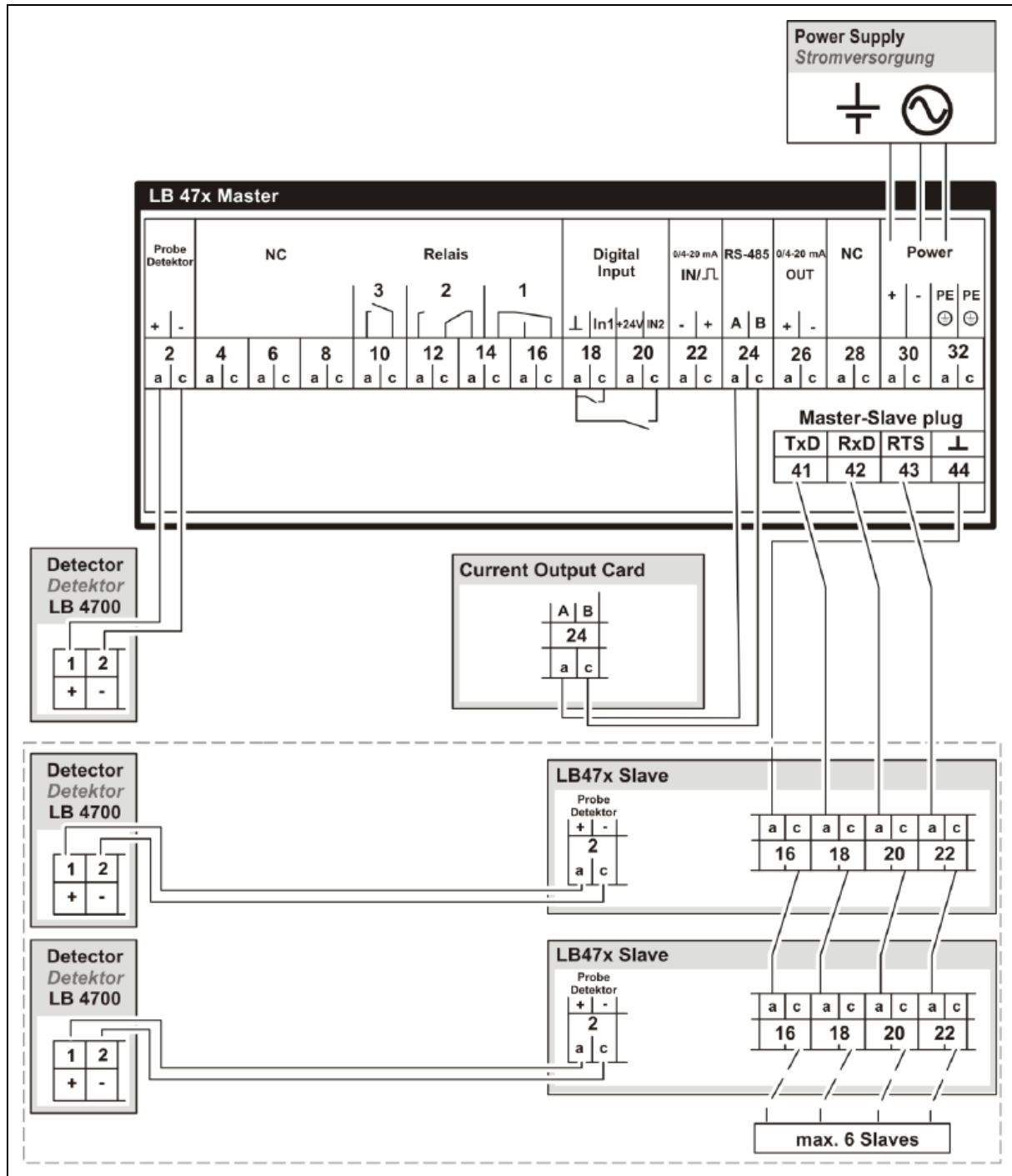


Danger to life due to explosion!

- ▶ This version of the evaluation unit is not explosion protected and is not designed for hazardous environments.

2. Connection Diagrams

2.1. Assignment Master EVU with LB 4700 Detectors



TI-Fig. 1 Assignment master EVU with LB 4700 detectors

Terminal Block Master EVU with LB 4700 Detectors

Signal	Pin			Pin	Signal
DETECTOR LB 4700 GND	C - 2			A - 2	DETECTOR LB 4700+
n.a. *	C - 4			A - 4	n.a. *
n.a. *	C - 6			A - 6	n.a. *
n.a. *	C - 8			A - 8	n.a. *
RELAIS 3 COM	C - 10			A - 10	RELAIS 3 NO
RELAIS 2 COM	C - 12			A - 12	RELAIS 2 NO
RELAIS 1 NC	C - 14			A - 14	RELAIS 2 NC
RELAIS 1 COM	C - 16			A - 16	RELAIS 1 NO
DIGITAL IN 1	C - 18			A - 18	DIGITAL IN GND
DIGITAL IN 2	C - 20			A - 20	+ 24 V (GND --> A-18)
CURRENT IN +	C - 22			A - 22	CURRENT IN -
RS485 B (Curr.Output/HART)	C - 24			A - 24	RS485 A (Curr.Output/HART)
CURRENT OUT -	C - 26			A - 26	CURRENT OUT +
n.a. *	C - 28			A - 28	n.a. *
Main N AC, DC 24 V (-)	C - 30			A - 30	Main L1 AC, DC 24 V (+)
PE**	C - 32			A - 32	PE**

* not assigned

** Protective conductor

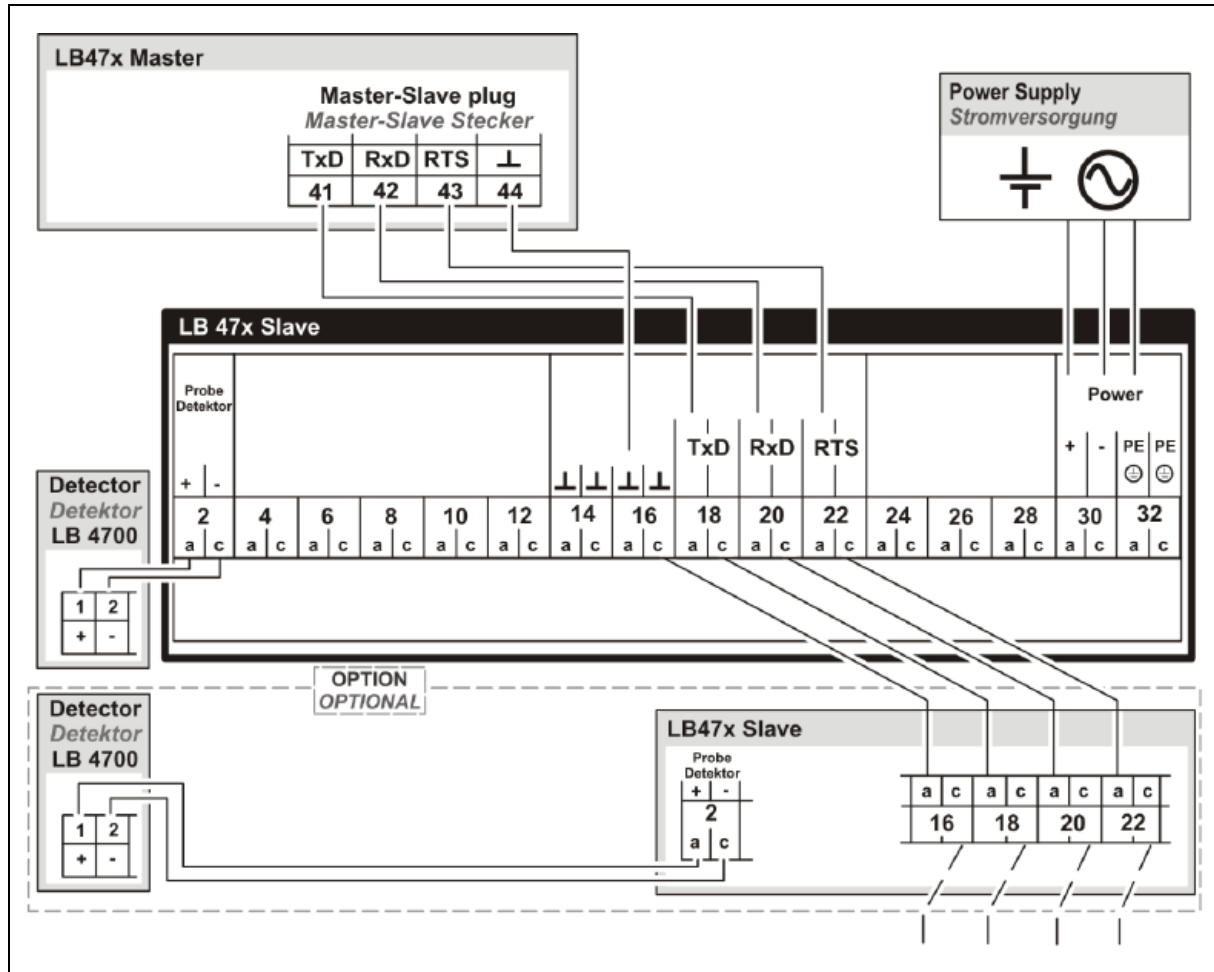
NOTICE

Since the master EVU and the extension modules (7-Wire/RS485-Repeater module, Current Output/HART module) create a RS485 network, ensure that the last bus participants (first and last) are terminated and thus require a 120 Ω terminating wire resistor between terminal A-24 and C-24.

2.2. Assignment Slave Module

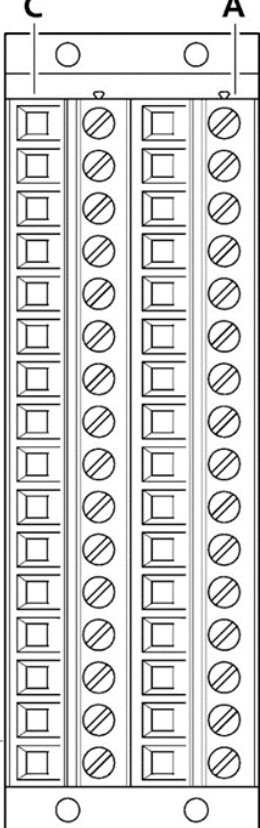
NOTICE

Slave modules are only used with LB 4700 detectors.



TI-Fig. 2 Assignment slave module

Terminal Block Slave Module

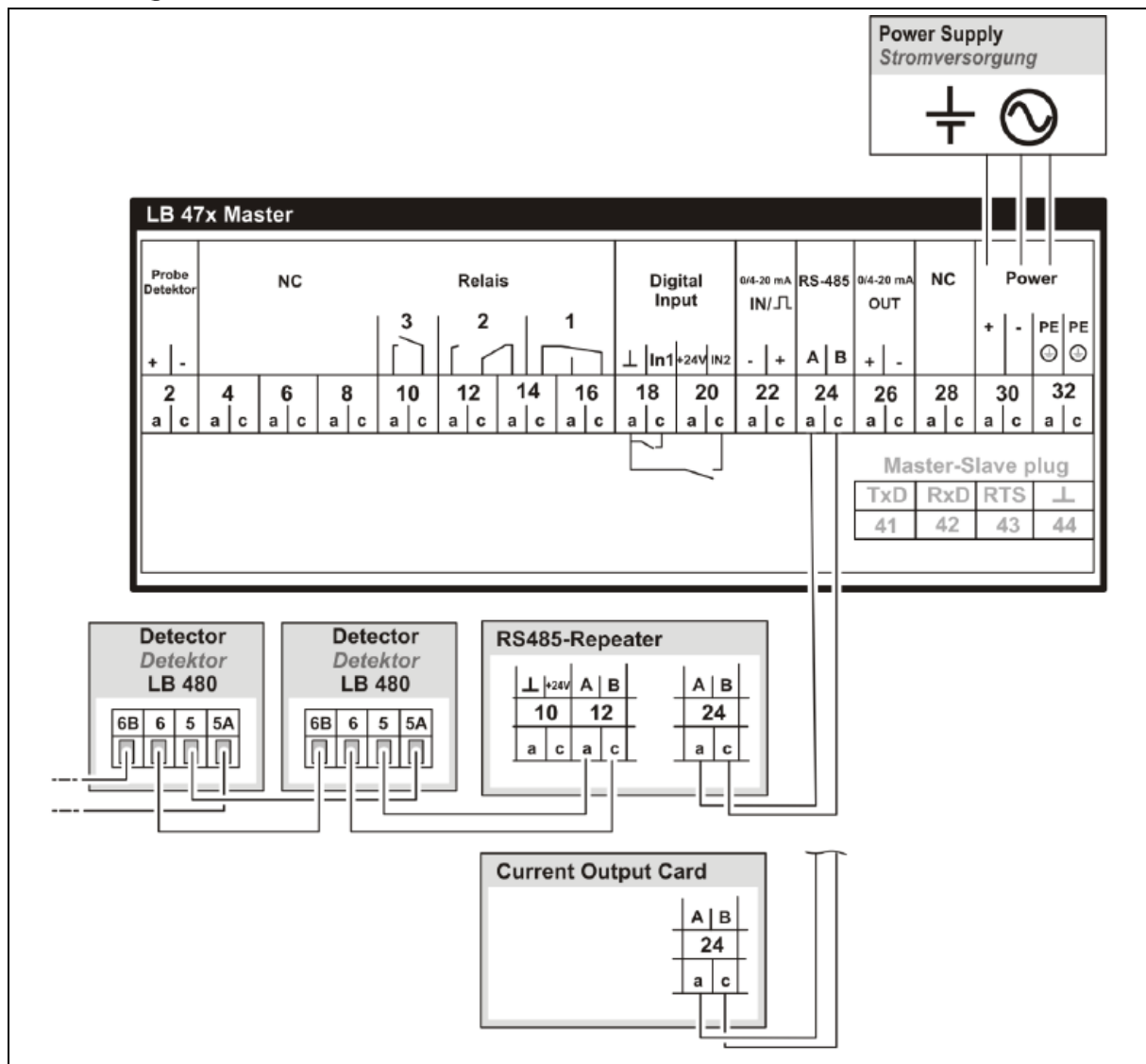
Signal	Pin	C	A	Pin	Signal
DETECTOR SLAVE GND	C - 2			A - 2	DETECTOR SLAVE +15 V
n.a**	C - 4			A - 4	n.a**
n.a**	C - 6			A - 6	n.a**
n.a**	C - 8			A - 8	n.a**
n.a**	C - 10			A - 10	n.a**
n.a**	C - 12			A - 12	n.a**
GND	C - 14			A - 14	GND
GND	C - 16			A - 16	GND
TxD to SLAVE *	C - 18			A - 18	TxD from MASTER/SLAVE
RxD to SLAVE *	C - 20			A - 20	RxD from MASTER/SLAVE
RTS to SLAVE *	C - 22			A - 22	RTS from MASTER/SLAVE
n.a**	C - 24			A - 24	n.a**
n.a**	C - 26			A - 26	n.a**
n.a**	C - 28			A - 28	n.a**
Main N AC, DC 24 V (-)	C - 30			A - 30	Main L1 AC, DC 24 V (+)
PE ***	C - 32			A - 32	PE ***

* option

** not assigned

*** Protective conductor

2.3. Assignment Master EVU with LB 480 Detectors



TI-Fig. 3 Assignment EVU with LB 480 Detectors

Terminal Block Master EVU wi C

A

Signal	Pin		Pin	Signal
n.u. ***	C - 2		A - 2	n.u. ***
n.a. *	C - 4		A - 4	n.a. *
n.a. *	C - 6		A - 6	n.a. *
n.a. *	C - 8		A - 8	n.a. *
RELAIS 3 COM	C - 10		A - 10	RELAIS 3 NO
RELAIS 2 COM	C - 12		A - 12	RELAIS 2 NO
RELAIS 1 NC	C - 14		A - 14	RELAIS 2 NC
RELAIS 1 COM	C - 16		A - 16	RELAIS 1 NO
DIGITAL IN 1	C - 18		A - 18	DIGITAL IN GND
DIGITAL IN 2	C - 20		A - 20	+ 24 V (GND --> A-18)
CURRENT IN +	C - 22		A - 22	CURRENT IN -
RS485 B ****	C - 24		A - 24	RS485 A ****
CURRENT OUT -	C - 26		A - 26	CURRENT OUT +
n.a. *	C - 28		A - 28	n.a. *
Main N AC, DC 24 V (-)	C - 30		A - 30	Main L1 AC, DC 24 V (+)
PE**	C - 32		A - 32	PE**

* not assigned

** Protective conductor

*** not used for this case

**** RS485-Repeater module/Current Output/HART module

NOTICE

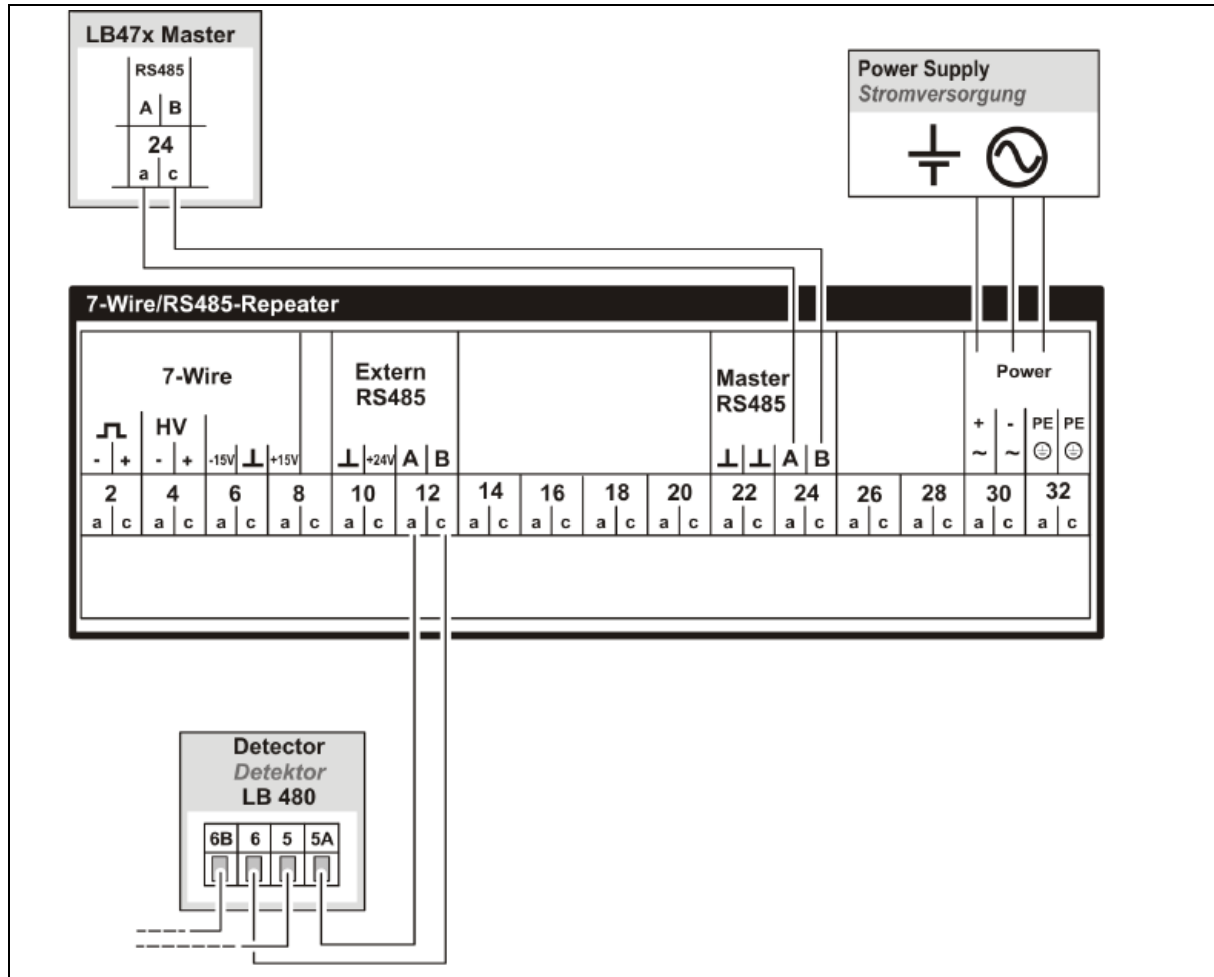
Since the master EVU and the extension modules (7-Wire/RS485-Repeater module, Current Output/HART module) create a RS485 network, ensure that the last bus participants (first and last) are terminated and thus require a 120 Ω terminating wire resistor between terminal A-24 and C-24.

2.4. Assignment 7-Wire/RS485-Repeater Module

NOTICE



7-Wire/RS485-Repeater modules are only used with LB 480 detectors.



TI-Fig. 4 Assignment 7-Wire/RS485-Repeater module

Terminal Block 7-Wire/RS485-Repeater

Signal	Pin					Pin	Signal
n.a. *	C - 2					A - 2	n.a. *
n.a. *	C - 4					A - 4	n.a. *
n.a. *	C - 6					A - 6	n.a. *
n.a. *	C - 8					A - 8	n.a. *
+24 V	C - 10					A - 10	GND
RS485 B to Detector LB 480	C - 12					A - 12	RS485 A to Detector LB 480
n.a. *	C - 14					A - 14	n.a. *
n.a. *	C - 16					A - 16	n.a. *
n.a. *	C - 18					A - 18	n.a. *
n.a. *	C - 20					A - 20	n.a. *
GND	C - 22					A - 22	GND
RS485 B to Master	C - 24					A - 24	RS485 A to Master
n.a. *	C - 26					A - 26	n.a. *
n.a. *	C - 28					A - 28	n.a. *
Main <i>Netz</i> N AC, DC 24 V (-)	C - 30					A - 30	Main <i>Netz</i> L1 AC, DC 24 V (+)
PE **	C - 32					A - 32	PE **

* not assigned

** Protective conductor

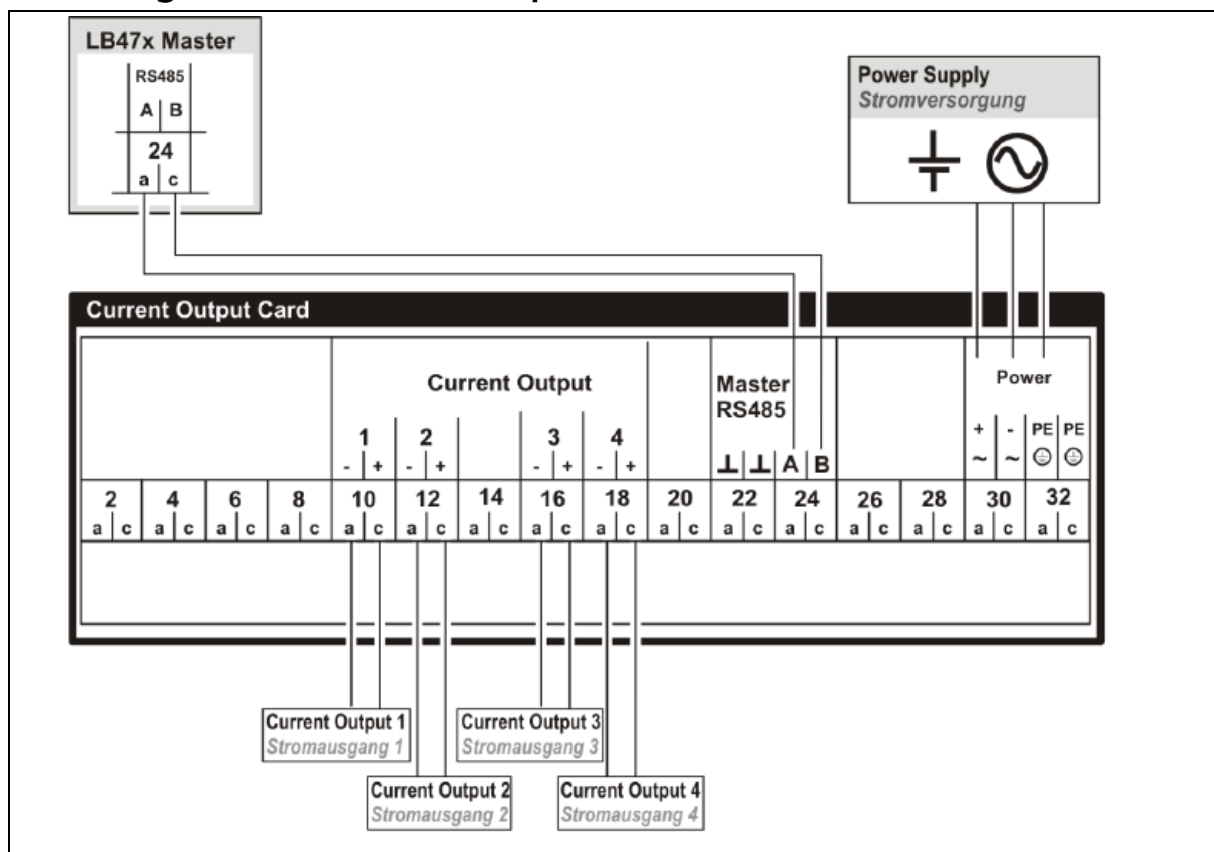
NOTICE

Since the master EVU and the extension modules (7-Wire/RS485-Repeater module, Current Output/HART module) create a RS485 network, ensure that the last bus participants (first and last) are terminated and thus require a 120 Ω terminating wire resistor between terminal A-24 and C-24.

NOTICE

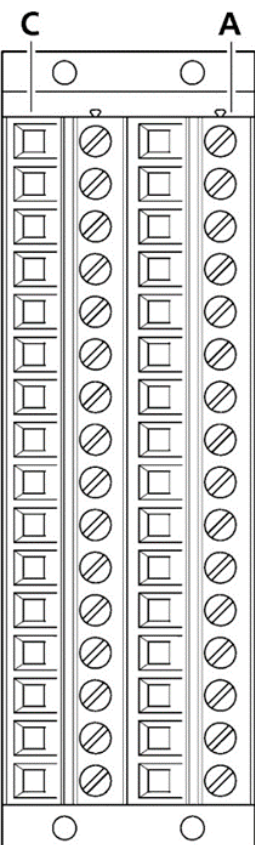
For the RS485 network between 7-Wire/RS485-Repeater module and LB 480 detector, no termination is necessary as this is already activated internally. It must also be noted that in this case the 7-Wire/RS485-Repeater module is physically placed at the end/beginning of the bus and the LB 480 detector placed at the other end of the bus must have a termination.

2.5. Assignment Current Output/HART module



TI-Abb. 5 Assignment Current Output/HART module

Terminal Block Current Output/HART

Signal	Pin			Pin	Signal
n.a. *	C - 2			A - 2	n.a. *
n.a. *	C - 4			A - 4	n.a. *
n.a. *	C - 6			A - 6	n.a. *
n.a. *	C - 8			A - 8	n.a. *
Current Out 1 +	C - 10			A - 10	Current Out 1 -
Current Out 2 +	C - 12			A - 12	Current Out 2 -
n.a. *	C - 14			A - 14	n.a. *
Current Out 3 +	C - 16			A - 16	Current Out 3 -
Current Out 4 +	C - 18			A - 18	Current Out 4 -
n.a. *	C - 20			A - 20	n.a. *
GND	C - 22			A - 22	GND
RS485 B to Master	C - 24			A - 24	RS485 A to Master
n.a. *	C - 26			A - 26	n.a. *
n.a. *	C - 28			A - 28	n.a. *
Main <i>Netz</i> N AC, DC 24 V (-)	C - 30			A - 30	Main <i>Netz</i> L1 AC, DC 24 V (+)
PE **	C - 32			A - 32	PE **

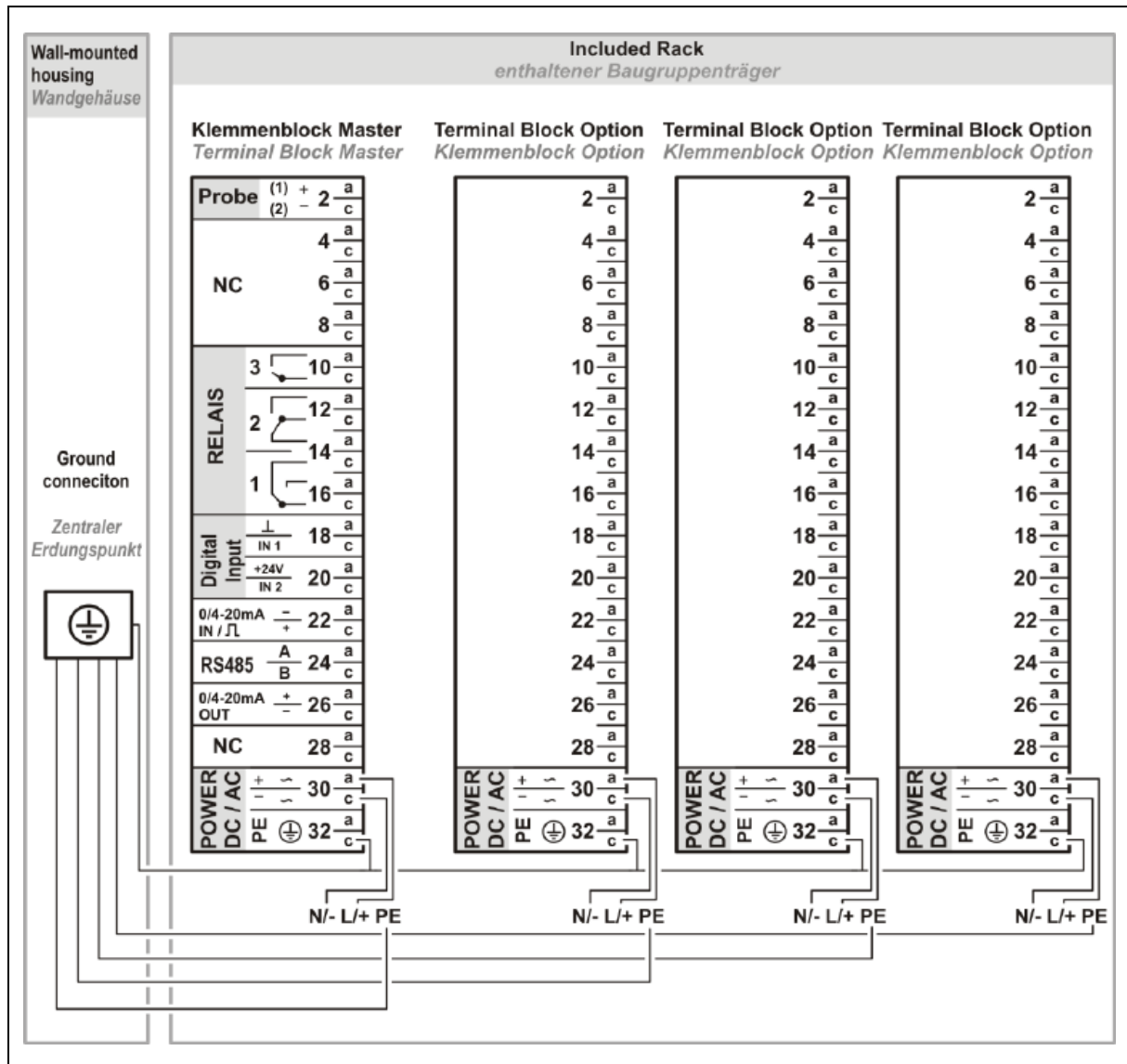
* not assigned

** Protective conductor

NOTICE

Since the master EVU and the extension modules (7-Wire/RS485-Repeater module, Current Output/HART module) create a RS485 network, ensure that the last bus participants (first and last) are terminated and thus require a 120 Ω terminating wire resistor between terminal A-24 and C-24.

2.6. Assignment of the Wall-mounted Housing for arbitrary Extension Modules



TI-Fig. 6 Assignment drawing of the wall-mounted housing

NOTICE



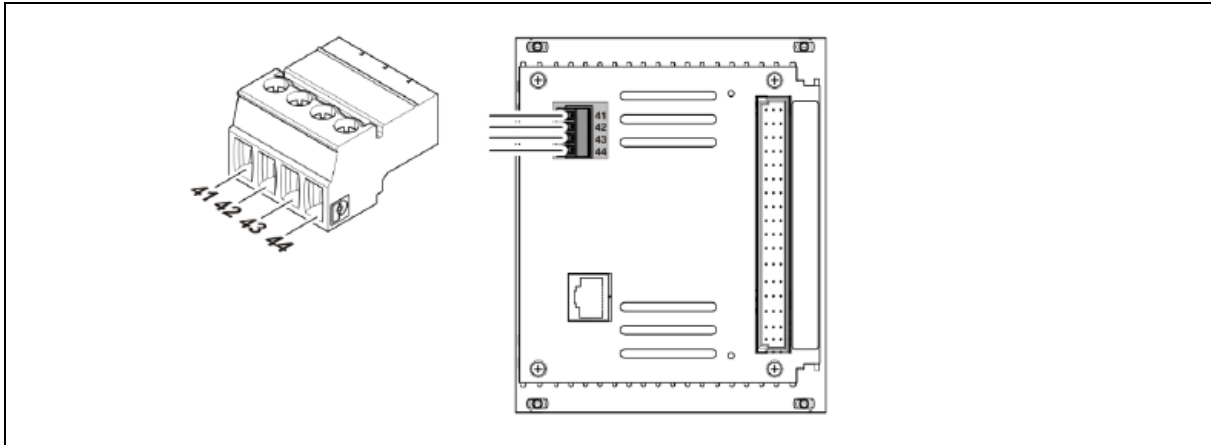
The wall housing includes a sticker as shown in TI-Fig. 6. The terminal assignments of the three possible extension modules are also shown on the sticker.

2.7. Assignment Terminals Master/Slave Plug

NOTICE



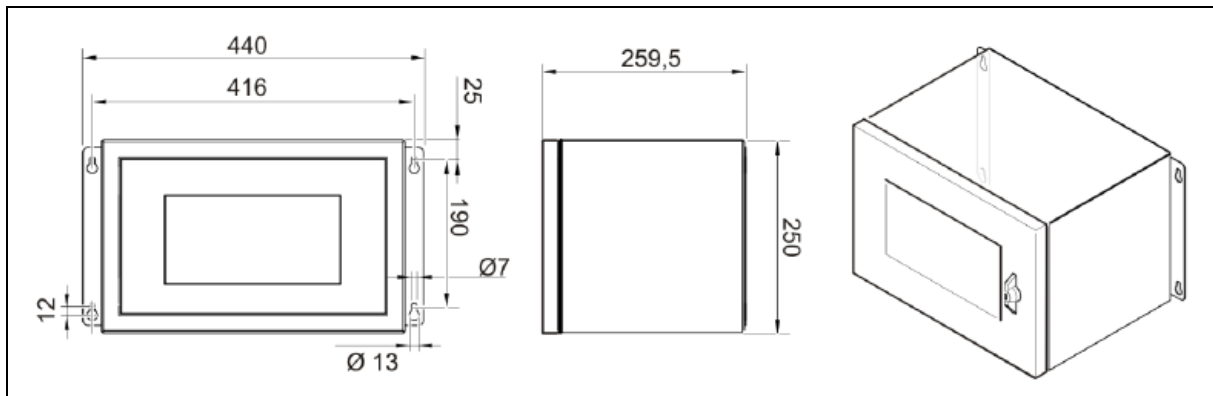
The Master/Slave plug is only used in Master/Slave configurations with LB 4700 detectors.



TI-Fig. 7 Assignment Terminal Master/Slave Plug

Signal	Pin
TxD	41
RxD	42
RTS	43
GND	44

3. Wall Housing

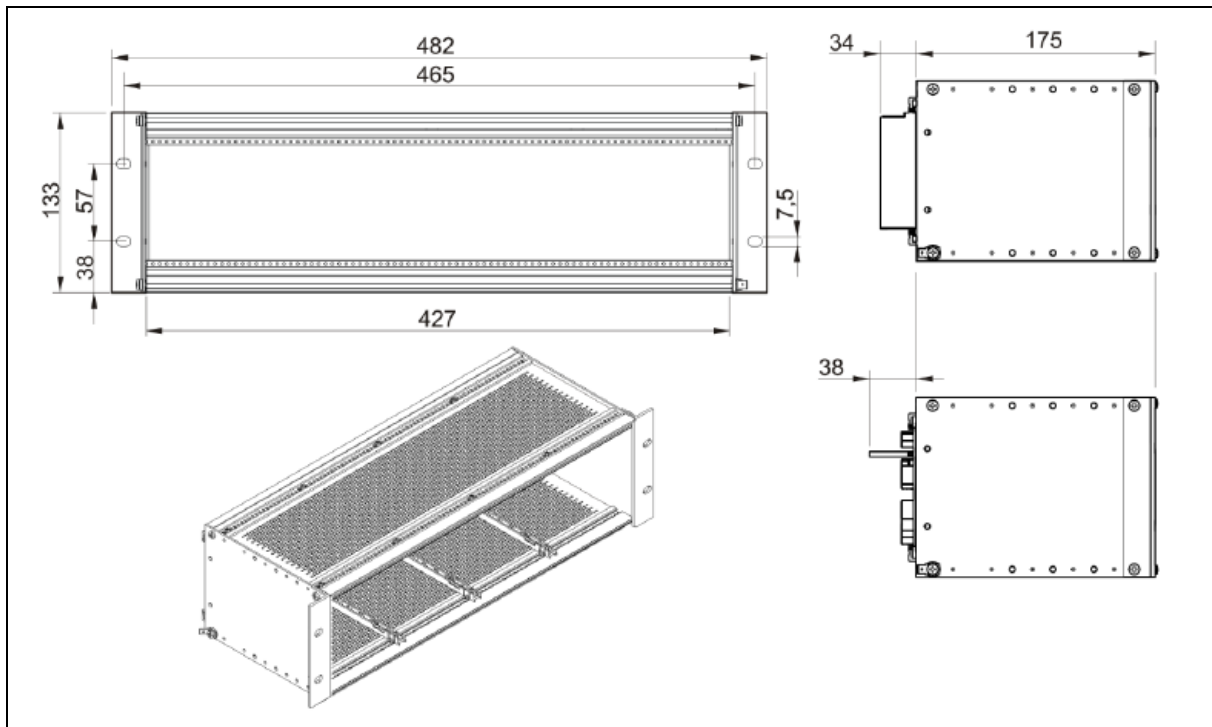


TI-Fig. 8 Drawing wall housing

Technical Data	
Max. assembly	- 1 Master, 3 arbitrary extension modules with terminal blocks ¹
Weight (with circuit board, without modules)	8.8 kg
Degree of protection	IP65
Operational temperature	-20 °C ... +40 °C
Storage temperature	-25 °C ... +80 °C
General ambient conditions	Overvoltage category: II Pollution Degree: 2 Altitude: up to 2000 m Rel. humidity: 93% or less
User interface, colours	Powder coated, grey
Cable entry	8 x M16, 2 x M32

¹ No NRTL certification

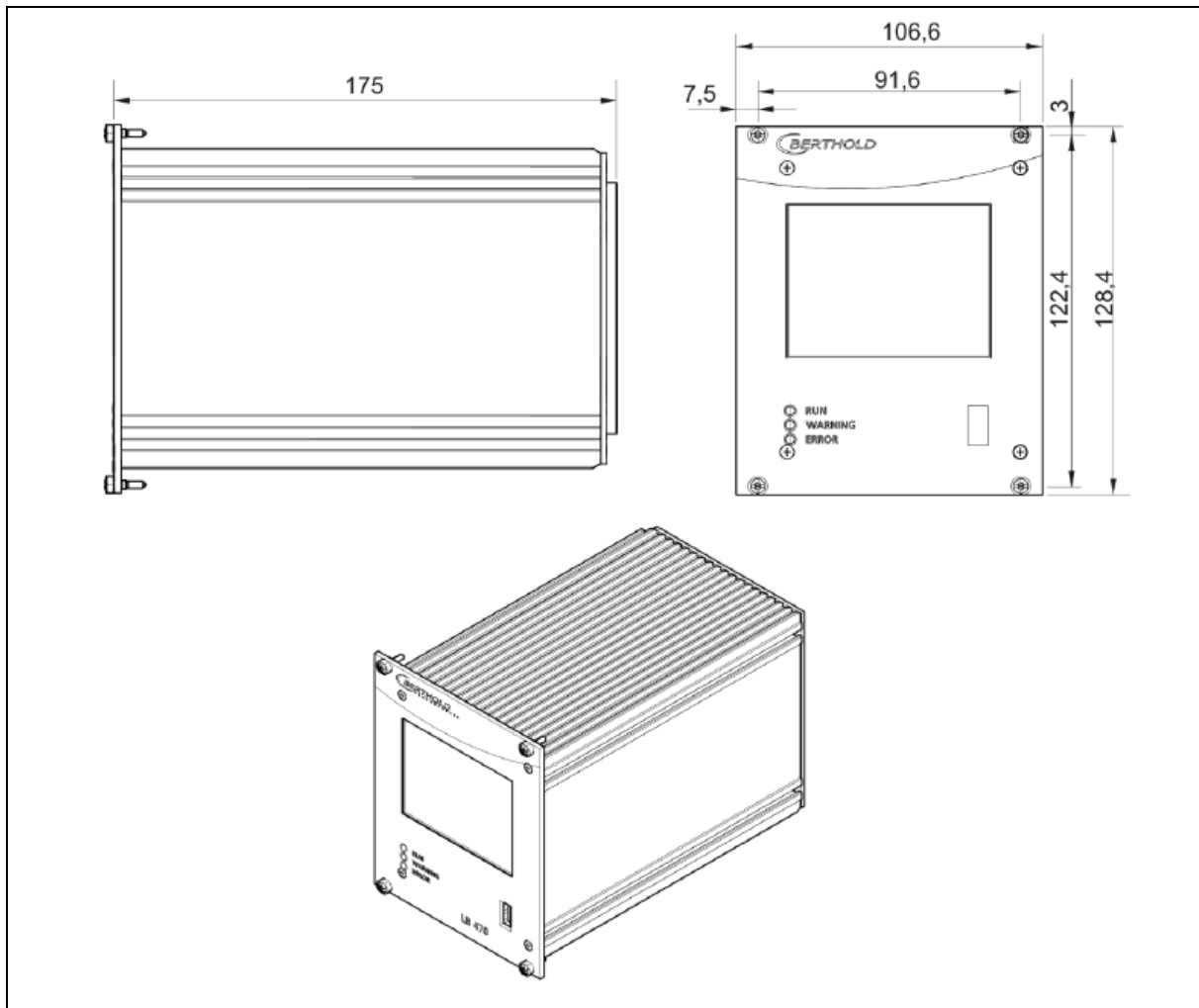
4. 19" Subrack



TI-Fig. 9 Drawing 19" subrack

Technical Data	
Standard units	3HE/84TE
Max. Assembly	3 Master + 3 Slave / 2 Master + 6 Slave / 4 Master / 1 Master+ 9 Slave / 12 Slave
Weight (with circuit board, without modules)	1.4 kg
Weight terminal block	220 g
Operational temperature	-20 °C ... +50 °C, not condensing
Storage temperature	-25°C ... +80°C
Degree of protection	IP20

5. Master EVU



TI-Fig. 10 Drawing master EVU

Technical Data	
Weight	1200 g
Operational temperature	-20 °C ... +50 °C not condensing. Avoid direct sunlight. Unobstructed air circulation must be provided to the subrack.
Storage temperature	-30 °C ... +80 °C
General ambient conditions	Overvoltage category: II Pollution Degree: 2 Altitude: up to 2000 m Rel. humidity: 93% or less
Degree of protection	IP20 ¹
Connections	- USB port for the connection to the USB storage medium - Master/slave connection (4-pin) and plug - RJ45 connection for Ethernet (on back wall) - 32-pin plug connector according to DIN 19465 Series C

Display	- graphical LCD display - 320 x 240 points, 262,000 colours - Dimmable LED background lighting - Touchscreen
Computer core	- Processor: Dual Core DSP/ARM Controller - clock frequency: 300 MHz internal (20 MHz external quartz) - ROM: 512 KByte - RAM: 64 MByte ext. SDRAM, 128 KByte int. shared RAM - FLASH: 8 MByte external serial

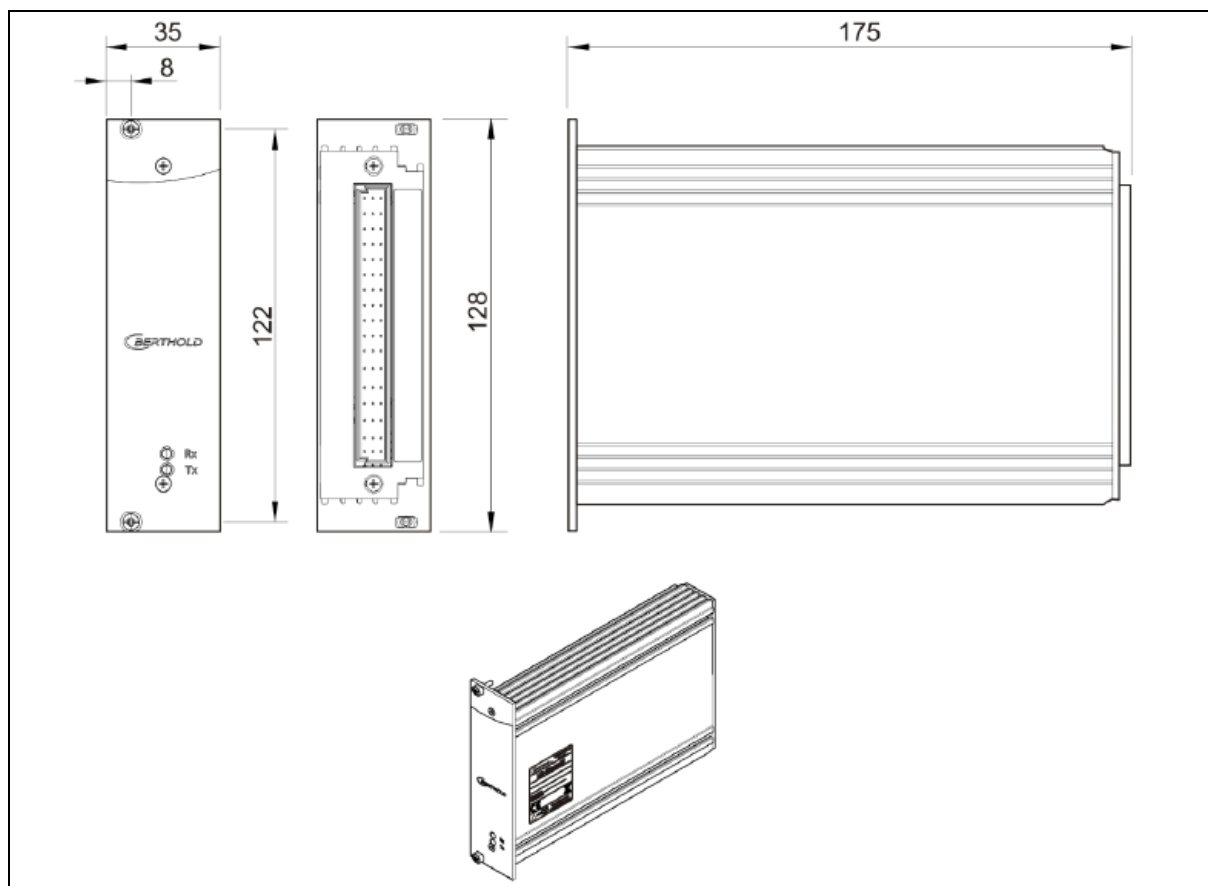
Power Supply

Voltage	100...240 VAC 50/60 Hz (wide range input) +/- 10% 21...32 VDC (24 VDC power input)
Power consumption	22 VA, 15 W
Fuses	Internal, 2 x 250 V, 1A delayed, 5x20 mm, 1500 A breaking capacity IEC 60127-2, 1x 250 V TR5 T80 mA (Ø 8,5 mm)

¹ Designed for indoor use. Outdoor use only possible if installed in wall housing.

Interfaces	
Current output	4...20 mA internally switched from power source to sink current (according to NAMUR recommendation NE 006 and NE 043). Dip switch source/sink on the electronic board of the LB 47x. Standard setting is source current. Continuous short circuit proof and galvanically isolated (500 V). Internal resistance about 105 ohm max. Burden when operating as a power source: 850 ohm. Internal monitoring of the loop current and additional error signalling by hardware on detection of a fault condition.
Digital outputs	3 relays, $U_{\max} = 33 \text{ V AC}_{\text{eff}}, 46 \text{ V DC}; I_{\max} = 1 \text{ A}$ functions: Relay 1: SPDT for error signalling Relay 2: SPDT assignable by software Relay 3: SPST assignable by software
Digital inputs	2 x together electrically isolated (500 V) Switch between DigIn and GND, U_{outmax} approx. 24 V Function configurable via software
External supply	Output voltage: 24 V DC Output current: max. 150 mA
RS485	For communication between Master EVU, 7-Wire/RS485-Repeater module, Current Output/HART module and testing and evaluation purposes. Not isolated from main electronics and USB port, electrically isolated from remaining I/Os (500 V).
USB port	1 x USB 2.0 Type A (Host) via front plate to the connection of an ext. mouse, keyboard or storage medium $U_{\text{out}} = 5 \text{ V}, I_{\text{outmax}} = 0.5 \text{ A}$
Ethernet	RJ45 connection via back wall, 10 Mbit, DHCP supported, max. 3 m Designed for maintenance purposes. Not designed for long-term operation.

6. Slave Module



TI-Fig. 11 Drawing slave module

Technical Data

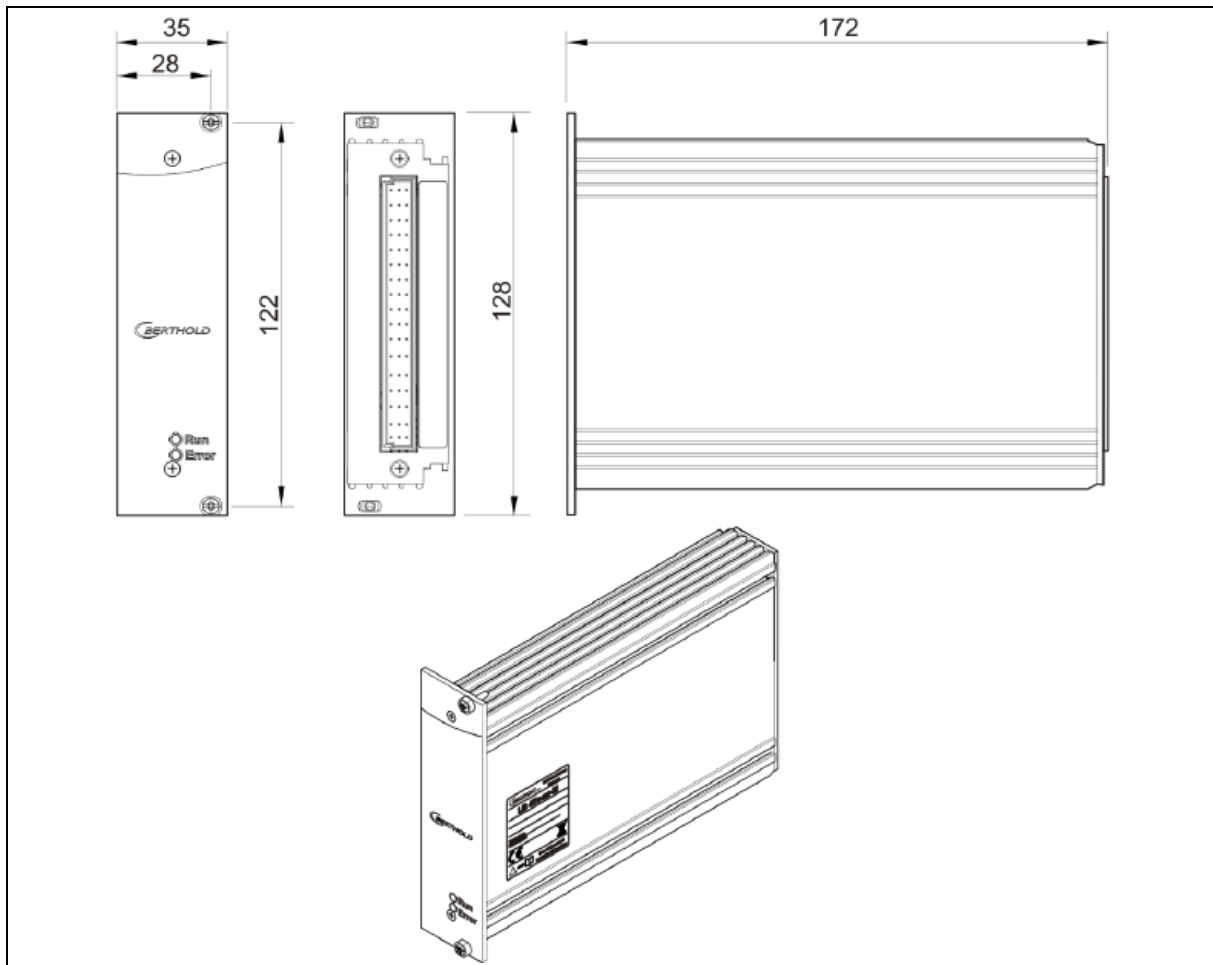
Weight	600 g
Operational temperature	-20 °C ... +50 °C, not condensing. Avoid direct sunlight. Unobstructed air circulation must be provided to the sub-rack.
Storage temperature	-30 °C ... +80 °C
General ambient conditions	Overvoltage category: II Pollution Degree: 2 Altitude: up to 2000 m Rel. humidity: 93% or less
Degree of protection	IP20 ¹

Power Supply

Voltage	100...240 V AC 50/60 Hz (wide range input) +/- 10% 21...32 VDC (24 VDC power input)
Power consumption	6 VA, 5 W
Fuses	Internal, 2 x 250 V, 1 A delayed, 5x20 mm, 1500 A breaking capacity IEC 60127-2
Connections	32-pin plug connector

¹ Designed for indoor use. Outdoor use only possible if installed in wall housing.

7. 7-Wire/RS485-Repeater Module¹



TI-Abb. 12 7-Wire/RS485-Repeater module

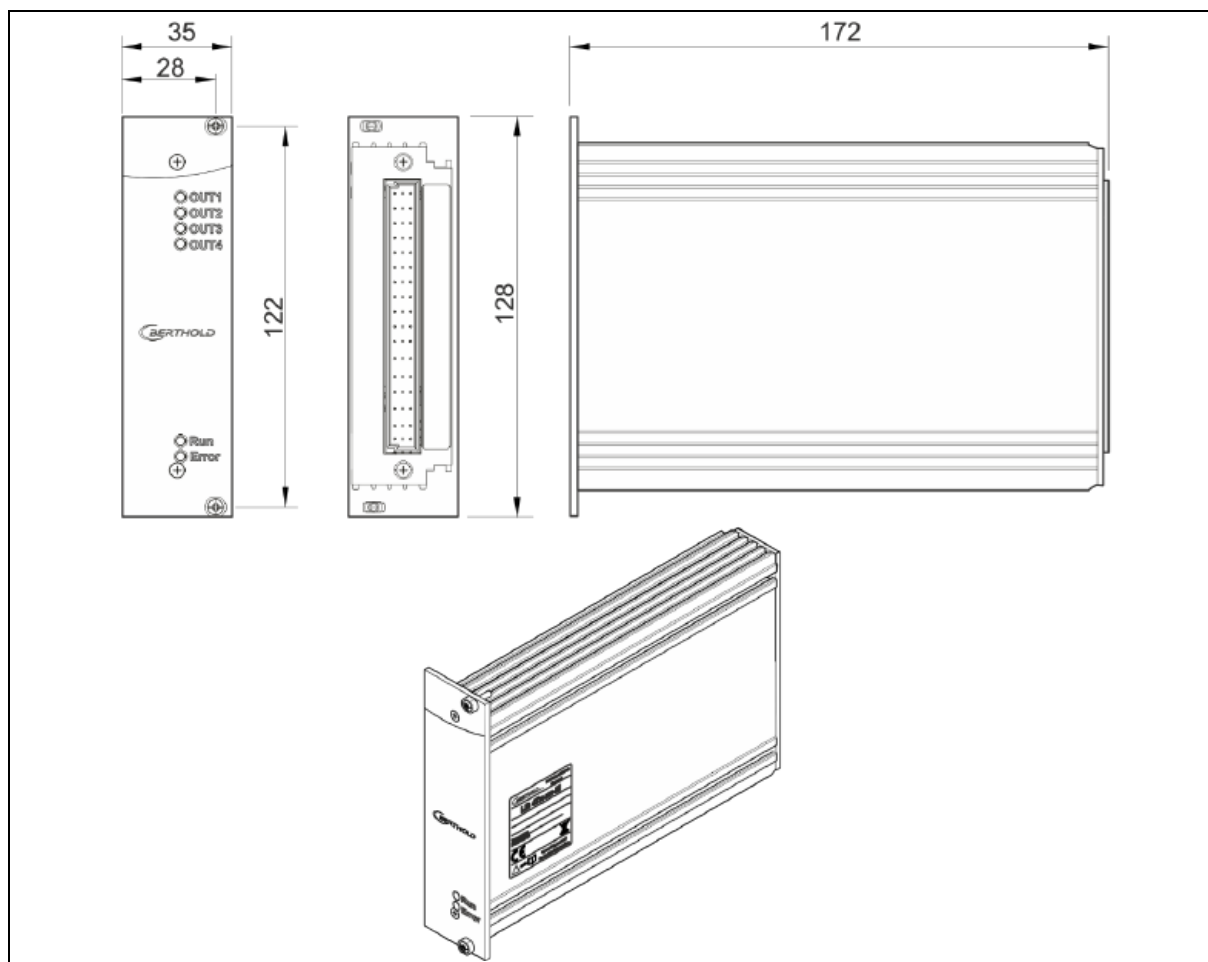
Technical Data	
Weight	500 g
Operational temperature	-20 °C ... +50 °C not condensing. Avoid direct sunlight. Unobstructed air circulation must be provided to the subrack.
Storage temperature	-30 °C ... +80 °C

¹ No NRTL certification US/CAN

General ambient conditions	Overvoltage category: II Pollution Degree: 2 Altitude: up to 2000 m Rel. humidity: 93% or less
Degree of protection	IP20 ²
Power Supply Voltage	100...240 VAC 50/60 Hz (wide range input) +/- 10% 21...32 VDC (24 VDC power input)
Power Consumption	8 VA, 4 W
Fuses	Internal, 2 x 250 V, 1 A delayed, 5x20 mm, 1500 A breaking capacity IEC 60127-2

² Designed for indoor use. Outdoor use only possible if installed in wall housing.

8. Current Output/HART Module¹



TI-Fig. 13 Current Output/HART module

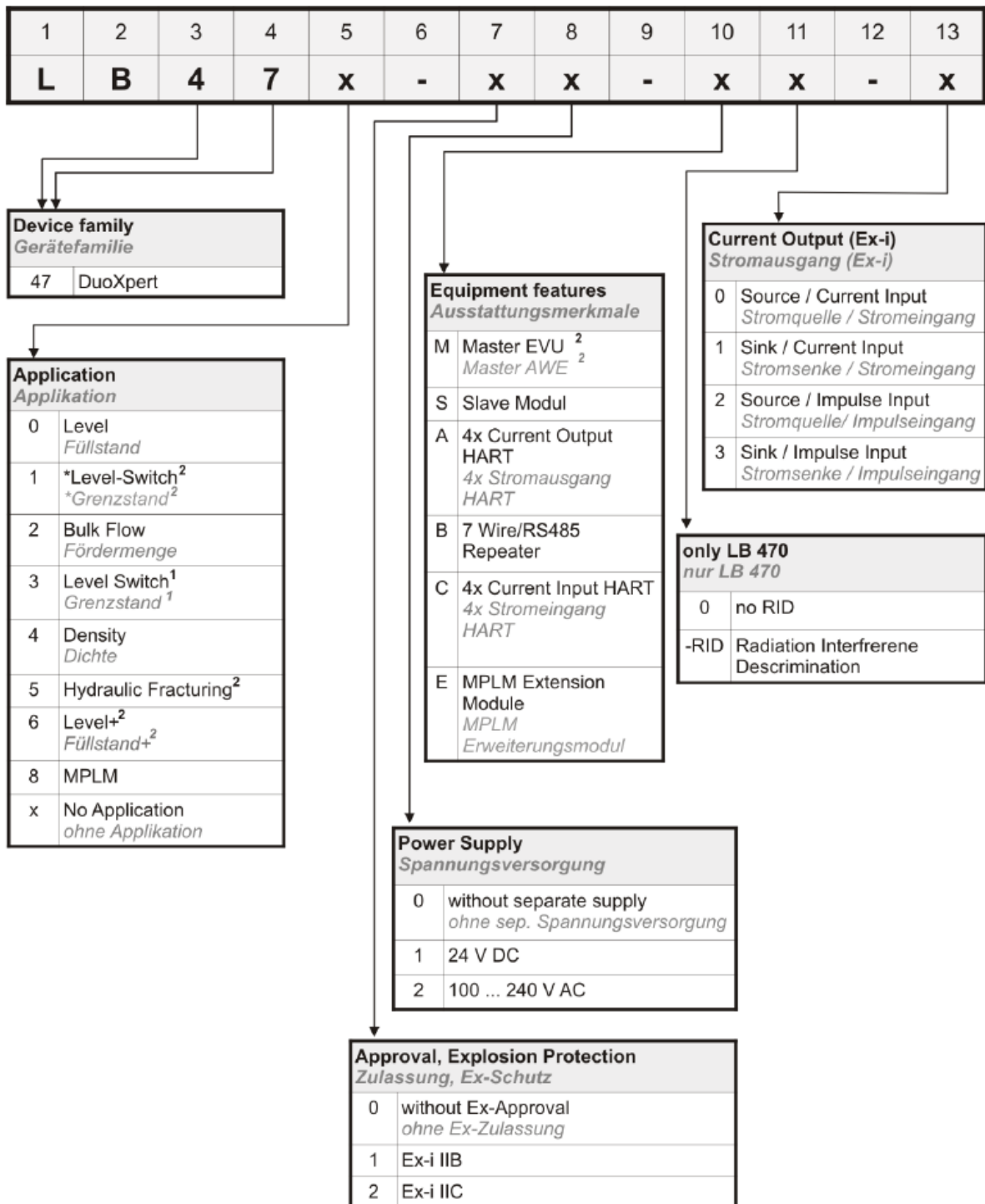
Technical Data	
Weight	500 g
Operational temperature	-20 °C ... +50 °C not condensing. Avoid direct sunlight. Unobstructed air circulation must be provided to the subrack.
Storage temperature	-30 °C ... +80 °C
General ambient conditions	Overvoltage category: II Pollution Degree: 2 Altitude: up to 2000 m Rel. humidity: 93% or less
Degree of protection	IP20 ²
Power Supply Voltage	100...240 VAC 50/60 Hz (wide range input) +/- 10% 21...32 V DC (24 VDC power input)
Power Consumption	16 VA, 5 W
Fuses	Internal, 2 x 250 V, 1 A delayed, 5x20 mm, 1500 A breaking capacity IEC 60127-2

Current Outputs	4x 4...20 mA as power source. Operation as power sink not possible. Continuous short circuit proof and galvanically isolated (500 V). Burden when operating as a power source: 600 ohm.
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¹ No NRTL certification US/CAN

² Designed for indoor use. Outdoor use only possible if installed in wall housing.

9. Number Key LB 47x



TI-Fig. 14 Number Key

¹ Only available as Ex-i version² Only available as a standard version

*Other Hardware

10. EG-Declaration of Conformity LB 47x



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EG-Declaration of Conformity (ORIGINAL)

File.No.: CE20028-2

We, hereby declare under our sole responsibility that the design of the following products / systems / units / machines brought into circulation by us comply with the relevant harmonized rules of the EU.

This declaration loses its validity should modifications or unsuitable and improper use take place without our authorisation.

Product name: **radiometric evaluation system
DuoXpert**

Type / model: **LB 47x**

	directive	applied standards
LVD	2014/35/EU	EN 61010-1 2010
RoHS	2011/65/EG	
EMC	2014/30/EU	EN 61326-1 2013 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-11 EN 61000-3-2 Namur NE21 2012

This declaration is issued by the manufacturer

BERTHOLD TECHNOLOGIES GmbH & Co. KG
Calmbacher Str. 22, D-75323 Bad Wildbad, Germany

released by


Dr. Jürgen Briggmann

Head of R&D

Bad Wildbad, 1st of September, 2015

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BERTHOLD TECHNOLOGIES Verwaltungs-GmbH
Stuttgart HRB 331520
Horst Krauß, Dr. Dirk Mörmann
DE813050511
45038/08038
DE95468690

Sparkasse -CW
Vollkbank
Commerzbank

75323 Bad Wildbad
75119 Pforzheim
75105 Pforzheim

Konto/Account No. 8 045 003 (BLZ 566 500 05)
Konto/Account No. 557 004 (BLZ 666 800 00)
Konto/Account No. 8 511 120 (BLZ 566 800 12)

SWIFT-BIC: PZHSDE33
SWIFT-BIC: VPM0DE33
SWIFT-BIC: COBSDE33

IBAN: DE37 6665 9085 0008 0450 03
IBAN: DE85 6665 9085 0008 9570 04
IBAN: DE35 6668 3013 0651 1120 00

11. EU-Declaration of Conformity 7-wire/RS-485 repeater



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EU-Konformitätserklärung

EU-Declaration of Conformity

Nr./No.: CE20041-01

Hiermit erklären wir in alleiniger Verantwortung, dass die Bauart des nachfolgend bezeichneten Geräts, in der von uns in den Verkehr gebrachten Ausführung den unten genannten einschlägigen Harmonisierungsvorschriften der EU entspricht.

Durch nicht mit uns abgestimmte Änderungen oder nicht bestimmungsgemäßen Gebrauch verliert diese Erklärung ihre Gültigkeit

We hereby declare, under our sole responsibility, that the design of the following device placed on the market by us complies with the relevant harmonized rules of the EU.

Unauthorized modifications or unintended use of the product makes this declaration invalid

Hersteller
 Manufacturer

BERTHOLD TECHNOLOGIES GmbH & Co. KG
 Calmbacher Str. 22, D-75323 Bad Wildbad, Germany

Produktbezeichnung
 Product name

7-Leiter/RS-485 Repeater
7-wire/RS-485 repeater

Typenbezeichnung / Modell
 Type / model

LB47x-01-B0
LB47x-02-B0

Richtlinie/Verordnung directive/regulation	angewendete Normen applied standards
*Niederspannungsrichtlinie 2014/35/EU low voltage directive	EN 61010-1:2010 + A1:2019
EMV / EMC 2014/30/EU	EN IEC 61326-1:2021 Namur NE 021:2017
RoHS 2011/65/EU	

* nur die Variante LB47x-02-B0 (100-240 V AC) fällt in den Geltungsbereich den LVD – die Variante LB47x-01-B0 (24 V) nicht.
 Only the variant LB47x-02-B0 (100-240 V AC) is within the scope of the LVD – but not the variant LB47x-01-B0 (24 V).

Diese Erklärung wird in Verantwortung für den Hersteller ausgestellt durch
 This declaration is issued by the manufacturer released by


 Dr. Jürgen Briggmann

Head of R&D
 Bad Wildbad, 13.01.2023

Registergericht / Court of Registration
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Bankverbindungen / Bank Details
 Sparkasse Pforzheim-Calw
 Volksbank Pforzheim
 Commerzbank Pforzheim

IBAN BLZ Konto / Account
 DE37 6665 0085 0008 0450 03
 DE85 6669 0000 0000 9570 04
 DE05 6668 0013 0651 1120 00

Stuttgart HRA 330991
 Berthold Technologies Verwaltungs-GmbH
 Stuttgart HRB 331520
 Thomas Bogner
 DE813050511
 49038/08038
 DE99468690

Swift BIC
 PZHSDE66
 VBPFDE66
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12. EU-Declaration of Conformity 4x Current Output/HART



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EU-Konformitätserklärung

EU-Declaration of Conformity

Nr./No.: CE20040-01

Hiermit erklären wir in alleiniger Verantwortung, dass die Bauart des nachfolgend bezeichneten Geräts, in der von uns in den Verkehr gebrachten Ausführung den unten genannten einschlägigen Harmonisierungsvorschriften der EU entspricht.

Durch nicht mit uns abgestimmte Änderungen oder nicht bestimmungsgemäßen Gebrauch verliert diese Erklärung ihre Gültigkeit

We hereby declare, under our sole responsibility, that the design of the following device placed on the market by us complies with the relevant harmonized rules of the EU.

Unauthorized modifications or unintended use of the product makes this declaration invalid

Hersteller <i>Manufacturer</i>	BERTHOLD TECHNOLOGIES GmbH & Co. KG Calmbacher Str. 22, D-75323 Bad Wildbad, Germany
Produktbezeichnung <i>Product name</i>	4x Spannungsausgang/HART 4x current output/HART
Typenbezeichnung / Modell <i>Type / model</i>	LB47x-01-A0 LB47x-02-A0

Richtlinie/Verordnung <i>directive/regulation</i>	angewendete Normen <i>applied standards</i>
*Niederspannungsrichtlinie 2014/35/EU <i>low voltage directive</i>	EN 61010-1:2010 + A1:2019
EMV / EMC 2014/30/EU	EN IEC 61326-1:2021 Namur NE 021:2017
RoHS 2011/65/EU	

* nur die Variante LB47x-02-A0 (100-240 V AC) fällt in den Geltungsbereich der LVD – die Variante LB47x-01-A0 (24 V) nicht.
 Only the variant LB47x-02-A0 (100-240 V AC) is within the scope of the LVD – but not the variant LB47x-01-A0 (24 V).

Diese Erklärung wird in Verantwortung für den Hersteller ausgestellt durch
This declaration is issued by the manufacturer released by


 Dr. Jürgen Briggmann

Head of R&D
 Bad Wildbad, 13.01.2023

Registergericht / Court of Registration
 Persönlich haftende Gesellschafterin / Fully liable Associates
 Registergericht / Court of Registration
 Geschäftsführung / Management
 USt.-Id.-Nr. / VAT Reg. No.
 Deutsche Steuernummer / German Tax No.
 WEEE-Reg. No.

Bankverbindungen / Bank Details
 Sparkasse Pforzheim-Calw
 Volksbank Pforzheim
 Commerzbank Pforzheim

IBAN BLZ Konto / Account
 DE37 6665 0085 0008 0450 03
 DE85 6669 0000 0000 9570 04
 DE05 6668 0013 0651 1120 00

Stuttgart HRA 330991
 Berthold Technologies Verwaltungs-GmbH
 Stuttgart HRB 331520
 Thomas Bogner
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14. UK Declaration of Conformity 7-wire/RS-485 repeater



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UK Declaration of Conformity

File No.: UK20041-01

We hereby declare, under our sole responsibility, that the design of the following device placed on the market by us complies with the relevant U.K. legislation for UKCA-marking.

Unauthorized modifications or unintended use of the product make the declaration invalid.

Product name: **7-wire/RS-485 repeater**

Type / model: **LB47x-01-B0**
LB47x-02-B0

Regulation		applied standards
*Electrical Equipment (Safety) Regulations 2016	SI 2016/1101	EN 61010-1:2010+A1:2019
Electromagnetic Compatibility Regulations 2016	SI 2016/1091	EN IEC 61326-1:2021 Namur NE 021:2017
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	SI 2012/3032	

* Only the variant LB47x-02-B0 (100-240 V AC) is within the scope of the Electrical Equipment (Safety) Regulations – but not the variant LB47x-01-B0 (24 V).

This declaration is issued by the manufacturer.

BERTHOLD TECHNOLOGIES GmbH & Co. KG
 Calmbacher Str. 22, D-75323 Bad Wildbad, Germany

released by


 Dr. Jürgen Briggmann

Head of R&D
 Bad Wildbad, 13th of January 2023

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16. UK Declaration of Conformity 4x Current Output/HART



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UK Declaration of Conformity

File No.: UK20040-01

We hereby declare, under our sole responsibility, that the design of the following device placed on the market by us complies with the relevant U.K. legislation for UKCA-marking.

Unauthorized modifications or unintended use of the product make the declaration invalid.

Product name: **4x current output/HART**

Type / model: **LB47x-01-A0**
LB47x-02-A0

Regulation		applied standards
*Electrical Equipment (Safety) Regulations 2016	SI 2016/1101	EN 61010-1:2010+A1:2019
Electromagnetic Compatibility Regulations 2016	SI 2016/1091	EN IEC 61326-1:2021 Namur NE 021:2017
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	SI 2012/3032	

* Only the variant LB47x-02-A0 (100-240 V AC) is within the scope of the Electrical Equipment (Safety) Regulations – but not the variant LB47x-01-A0 (24 V).

This declaration is issued by the manufacturer.

BERTHOLD TECHNOLOGIES GmbH & Co. KG
 Calmbacher Str. 22, D-75323 Bad Wildbad, Germany

released by


 Dr. Jürgen Briggmann

Head of R&D
 Bad Wildbad, 13th of January 2023

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17.NTRL Certification US/CAN wall-mounted housing

		Certificate of Compliance	
Nemko-CCL, Inc.			
Certificate: NA201610530	Date Issued: January 20, 2016		
Project: 257087-7.1			
Issued to: Berthold Technologies GmbH & Co. KG Calmbacher Straße 22 75323 Bad Wildbad Germany			
<i>The products listed below have been certified as being compliant with all applicable requirements of the specifications listed and are eligible to bear the following certification mark</i>			
			
Issued by:		Robert Keller, Senior Engineer/Safety Supervisor	
Authorized by:		Thomas Jackson, Certification Manager	
PRODUCTS			
MEASUREMENT, CONTROL, OR LABORATORY EQUIPMENT – Certified to US and Canada Standards			
Product: Process measurement unit Model: Wall-mounted LB 47x, 1M/3S; Wall-mounted LB 47x, 2M (x can be 0 to 8 and describes different software versions for the master and slave modules not affecting safety). Ratings: Wall-mounted LB 47x, 1M/3S: 40VA 100-240V, 50/60Hz, Class I; Wall-mounted LB 47x, 2M: 44VA 100-240V, 50/60Hz, Class I			
The certification system, as described in ISO/IEC Guide 67 (Conformity Assessment – Fundamentals of Product Certification), most closely resembles System 3 Nemko-CCL, Inc. 1940 West Alexander Street Salt Lake City, Utah 84119-2039 Tel (801) 972-6146 Fax (801) 972-8432 NFCC-002 Issue 2 May 2014			
			
			Page 1 of 3

APPLICABLE REQUIREMENTS

UL Std. No. 61010-1 2nd Edition - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements

CAN/CSA-C22.2 No. 61010-1-04 Second Edition - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements

This certificate is issued on condition that the holder complies and will continue to comply with the requirements of the above mentioned specifications and pursuant to the terms and conditions specified in the Certification Agreement.

The certification system, as described in ISO/IEC Guide 67 (Conformity Assessment – Fundamentals of Product Certification), most closely resembles System 3

Nemko-CCL, Inc. 1940 West Alexander Street Salt Lake City, Utah 84119-3039 Tel (801) 972-6146 Fax (801) 972-8432

NFCC-002 Issue 2 May 2014



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Supplement to Certificate of Compliance

Certificate: NA201610530

Project: 257087-7.1

Nemko-CCL grants a license to the applicant to apply the Certification Mark to the certified products and that the mark shall only be affixed at the following factory locations

Factory Information

Factory Name	Location
Berthold Technologies GmbH & Co. KG	Calmbacher Straße 22 75323 Bad Wildbad Germany

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
257087-7.1	January 20, 2016	Original Certification: Model: Wall-mounted LB 47x, 1M/3S; Wall-mounted LB 47x, 2M (x can be 0 to 8 and describes different software versions for the master and slave modules not affecting safety). Ratings: Wall-mounted LB 47x, 1M/3S: 40VA 100-240V, 50/60Hz, Class I; Wall-mounted LB 47x, 2M: 44VA 100-240V, 50/60Hz, Class I

This Supplement forms an integral part of the Certificate of Compliance

The certification system, as described in ISO/IEC Guide 67 (Conformity Assessment – Fundamentals of Product Certification), most closely resembles System 3

Nemko-CCL, Inc. 1940 West Alexander Street Salt Lake City, Utah 84119-2039 Tel (801) 972-6146 Fax (801) 972-8432

NFCC-002 Issue 2 May 2014



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18.NTRL Certifikate US/CAN DuoXpert LB 47x



Nemko-CCL, Inc.

Certificate of Compliance

Certificate: NA201510498

Date Issued: September 17, 2015

Project: 235982-14.1

Issued to: Berthold Technologies GmbH & Co. KG
Calmbacher Straße 22
75323 Bad Wildbad
Germany

The products listed below have been certified as being compliant with all applicable requirements of the specifications listed and are eligible to bear the following certification mark



Issued by:

Robert Keller, Senior Engineer/Safety Supervisor

Authorized by:

Thomas Jackson, Certification Manager

PRODUCTS

MEASUREMENT, CONTROL, OR LABORATORY EQUIPMENT – Certified to US and Canada Standards

Product: Process measurement unit for building-in

Model: DuoXpert LB47x-02-M; DuoXpert LB47x-02-S (x can be 0 to 8 and describes different software versions for the master and slave modules not affecting safety)

Ratings: LB47x-02-M: 100-240V AC 22VA 50/60Hz; LB47x-02-S: 100-240V AC 6VA 50/60Hz

APPLICABLE REQUIREMENTS

UL Std. No. 61010-1 3rd Edition - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements

CAN/CSA-C22.2 No. 61010-1-12 Third Edition – Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements

This certificate is issued on condition that the holder complies and will continue to comply with the requirements of the above mentioned specifications and pursuant to the terms and conditions specified in the Certification Agreement.

The certification system, as described in ISO/IEC Guide 67 (Conformity Assessment – Fundamentals of Product Certification), most closely resembles System 3

Nemko-CCL, Inc. 1940 West Alexander Street Salt Lake City, Utah 84119-3039 Tel (801) 972-6146 Fax (801) 972-8432



NFCC-002 Issue 2 May 2014

Page 1 of 2

Supplement to Certificate of Compliance

Certificate: NA201510498

Project: 235982-14.1

Nemko-CCL grants a license to the applicant to apply the Certification Mark to the certified products and that the mark shall only be affixed at the following factory locations

Factory Information

Factory Name	Location
Berthold Technologies GmbH & Co. KG	Calmbacher Straße 22 75323 Bad Wildbad Germany

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
235982-14.1	September 17, 2015	Original Certification: Model: DuoXpert LB47x-02-M; DuoXpert LB47x-02-S (x can be 0 to 8 and describes different software versions for the master and slave modules not affecting safety) Ratings: LB47x-02-M: 100-240V AC 22VA 50/60Hz; LB47x-02-S: 100-240V AC 6VA 50/60Hz

This Supplement forms an integral part of the Certificate of Compliance

The certification system, as described in ISO/IEC Guide 67 (Conformity Assessment – Fundamentals of Product Certification), most closely resembles System 3

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19. Parts Overview

Mat. No.	Description
64656	LB 476-02-M0 Level+ Transmitter (100...240 VAC)
64657	LB 476-01-M0 Level+ Transmitter (24 VDC)
73033	LB 47x-02-A0 4x Current Output/HART (100...240 VAC)
73072	LB 47x-01-A0 4x Current Output/HART (24 VDC)
73148	LB47x-02-B0 7-Wire/RS485-Repeater (100...240 VAC) Only required when using LB 480 (1x in total)
73147	LB47x-01-B0 7-Wire/RS485-Repeater (24 VDC) Only required when using LB 480 (1x in total)
63285	LB 47x-02-S0 Slave (100...240 VAC) Only required when using LB 4700 (per detector)
63286	LB 47x-01-S0 Slave (24 VDC) Only required when using LB 4700 (per detector)
64607	19" subrack for use with terminal blocks
74818	Wall-mounted housing with preinstalled terminal blocks for 1x Master and 3x arbitrary extension module
59477	Terminal block for LB 47x Master and Master/Slave plug
59478	Terminal block für LB 47x Slave
73149	Terminal block for Current Output/HART
73150	Terminal block for 7-Wire/RS485-Repeater
37526	Front Cover Plate 21 HP / 3 RU (Master)
59501	Front Cover Plate 7 HP / 3 RU (Slave)
56925-6BA1	Operating Manual LB 476 Level+, German
56925-6BA2	Operating Manual LB 476 Level+, English