

LEVEL-EX



Figure: LEVEL-EX-S1A1A (left) and LEVEL-EX-AA1B1A

- ▶ Robust and safe level meter for general mining applications
- ▶ The level meter can be used for:
 - Measuring level in silos, tanks, bunkers or on conveyour belts
 - Calculating volume of medium in silos, tanks or bunkers
- ▶ Housing: Glassfibre-reinforced polyester, graphite added
- ▶ Measuring range: max. 10 m (solids) or 20 m (liquids)
- ▶ The remote transducer LEVEL-EX-S* is connected to the evaluation and display unit LEVEL-EX-A* with a special connection cable (max. 100 m). The connection cable is not part of the package and has to be ordered separately.
- ▶ Electrical connection (each connector with one cable gland):
 - Terminals and cable glands
 - Machaczek connector type ME2A10
 - PROMOS connector type BN 4160
 - Hirschmann connector type G4A5M
 - Hydrostar connector type SKK 24 or type SKK45M
 - Souriau connector series 845, size 1 or size 2
 - Circular connector M12
- ▶ Output signal (each with one potential-free optocoupler output):
 - Frequency 5 - 15 Hz
 - Current 4 - 20 mA
- ▶ Marking according to directive 94/9/EC:
I M2 Ex ia I (KDB 09ATEX146)



Ordering information evaluation and display unit **LEVEL-EX-A**

10	Electrical connection:		
	A	2x Cable gland	
	B	1x PROMOS connector type BN 4160	+ 1x Cable gland
	C	1x Machaczek connector type ME2A10	+ 1x Cable gland
	D	1x Souriau connector series 845, size 1	+ 1x Cable gland
	E	1x Souriau connector series 845, size 2	+ 1x Cable gland
	F	1x Hydrostar connector type SKK24	+ 1x Cable gland
	G	1x Hirschmann connector type G4A5M	+ 1x Cable gland
	H	1x Circular connector M12	+ 1x Cable gland
	J	1x Hydrostart connector typ SKK45M	+ 1x Cable gland
	Y	Special version, to be specified	
20	Output signal:		
	1	Frequency 5 - 15 Hz	+ Optocoupler output for limit and alarm
	3	Current 4 - 20 mA	+ Optocoupler output for limit and alarm
	9	Special version, to be specified	
30	Potential separation:		
	A	Output not potential-separated	
	B	Output potential-separated	
	Y	Special version, to be specified	
40	Mechanical version:		
	1	Standard	
	9	Special version, to be specified	
50	Special equipment:		
	A	Standard	
	Y	Special version, to be specified	

Complete order code:

LEVEL-EX-A

Note!

The connection cable (max. 100 m) is not part of the package and has to be ordered separately. The following pre-fabricated connection cables are available:

- **VLH-005** (5 m)
- **VLH-010** (10 m)
- **VLH-020** (20 m)
- **VLH-050** (50 m)
- **VLH-100** (100 m)

Ordering information transducer **LEVEL-EX-S**

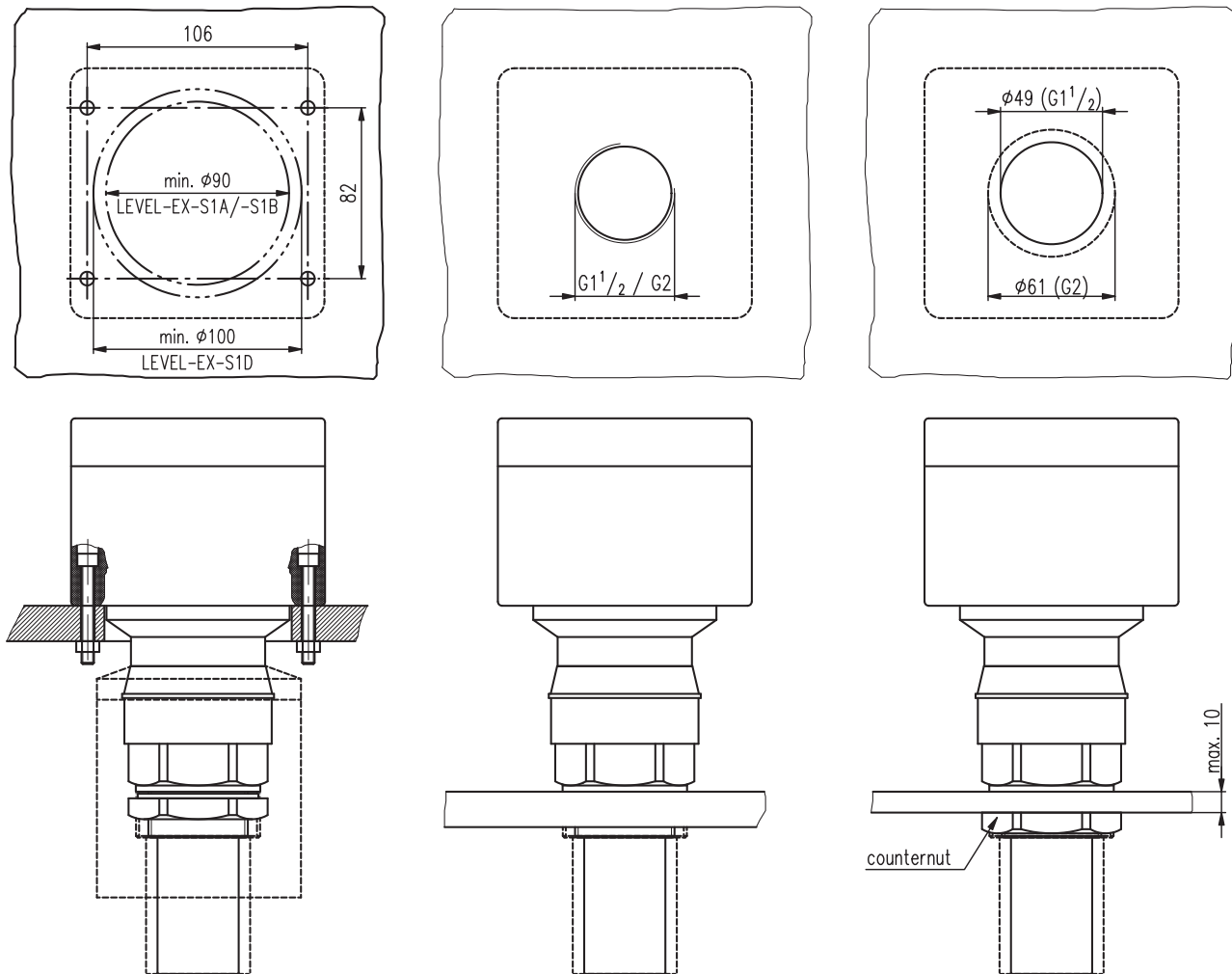
10	Device version:		
	1	Ultrasonic	
	9	Special version, to be specified	
20		Measuring range:	
	A	Max. 2.0 m (Solids) or 5.0 m (Liquids)	
	B	Max. 3.5 m (Solids) or 8.0 m (Liquids)	
	D	Max. 10 m (Solids) or 20 m (Liquids)	
	Y	Special version, to be specified	
30		Mechanical version:	
	1	Standard	
	9	Special version, to be specified	
40		Special equipment:	
	A	Standard	
	Y	Special version, to be specified	

Complete order code:

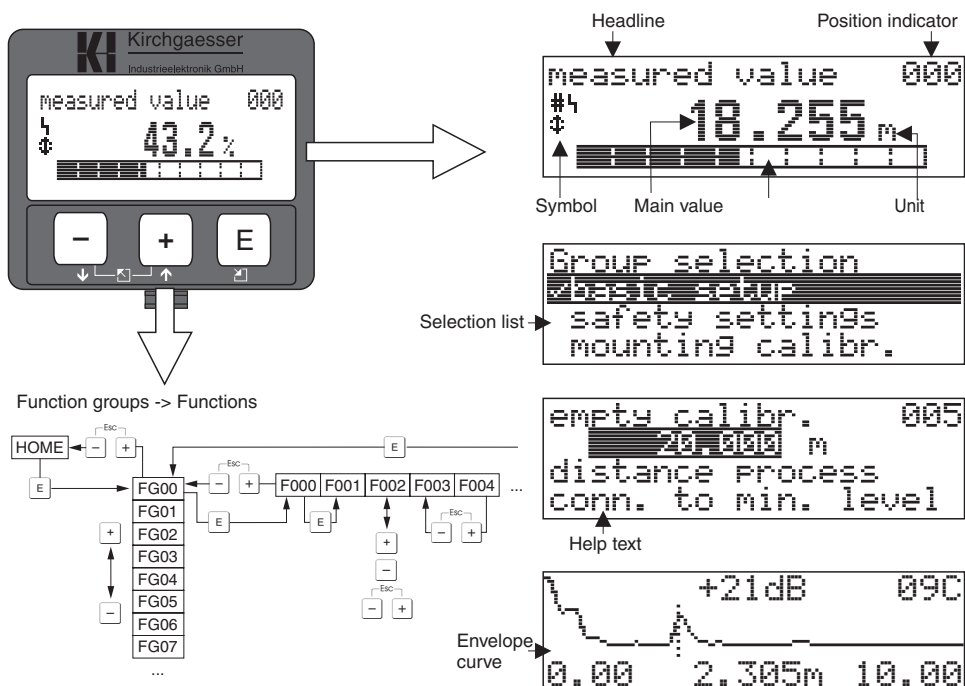
LEVEL-EX-S

Device features:

- Easy mounting of the device at the metering point by different mounting options

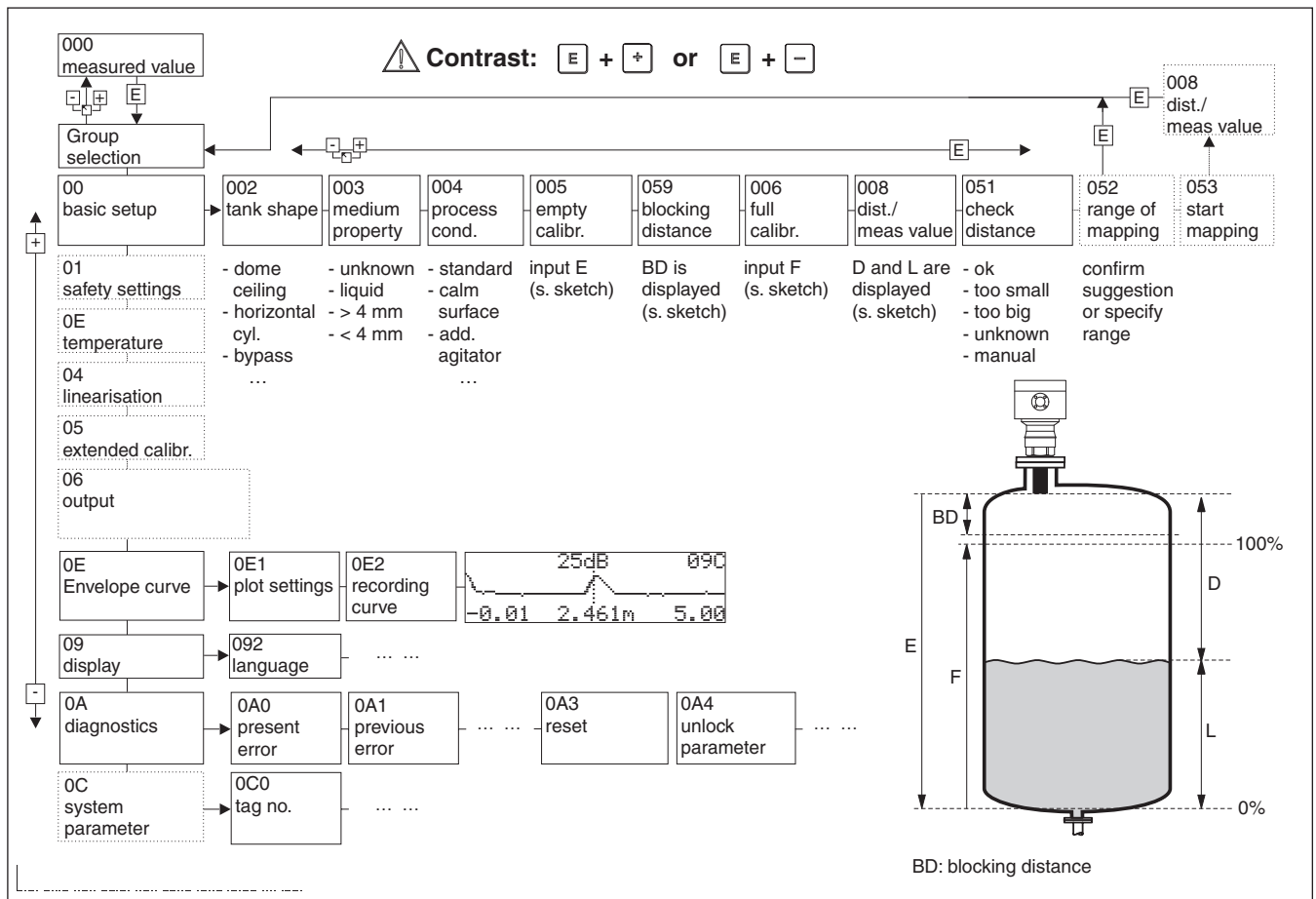


- Easy local parameterization with graphical LC display



Additional features:

- Additional programmable functions like safety settings, linearization, extended calibration and diagnostics



Please refer to the Operating Instructions ba056000en for further details.

- Two potential-free optocoupler outputs for direct evaluation of the limit and error functions with a corresponding LED

Note!

The level meter LEVEL-EX replaces the level meter UMINEX, it has additional features like e.g. an optional current output.

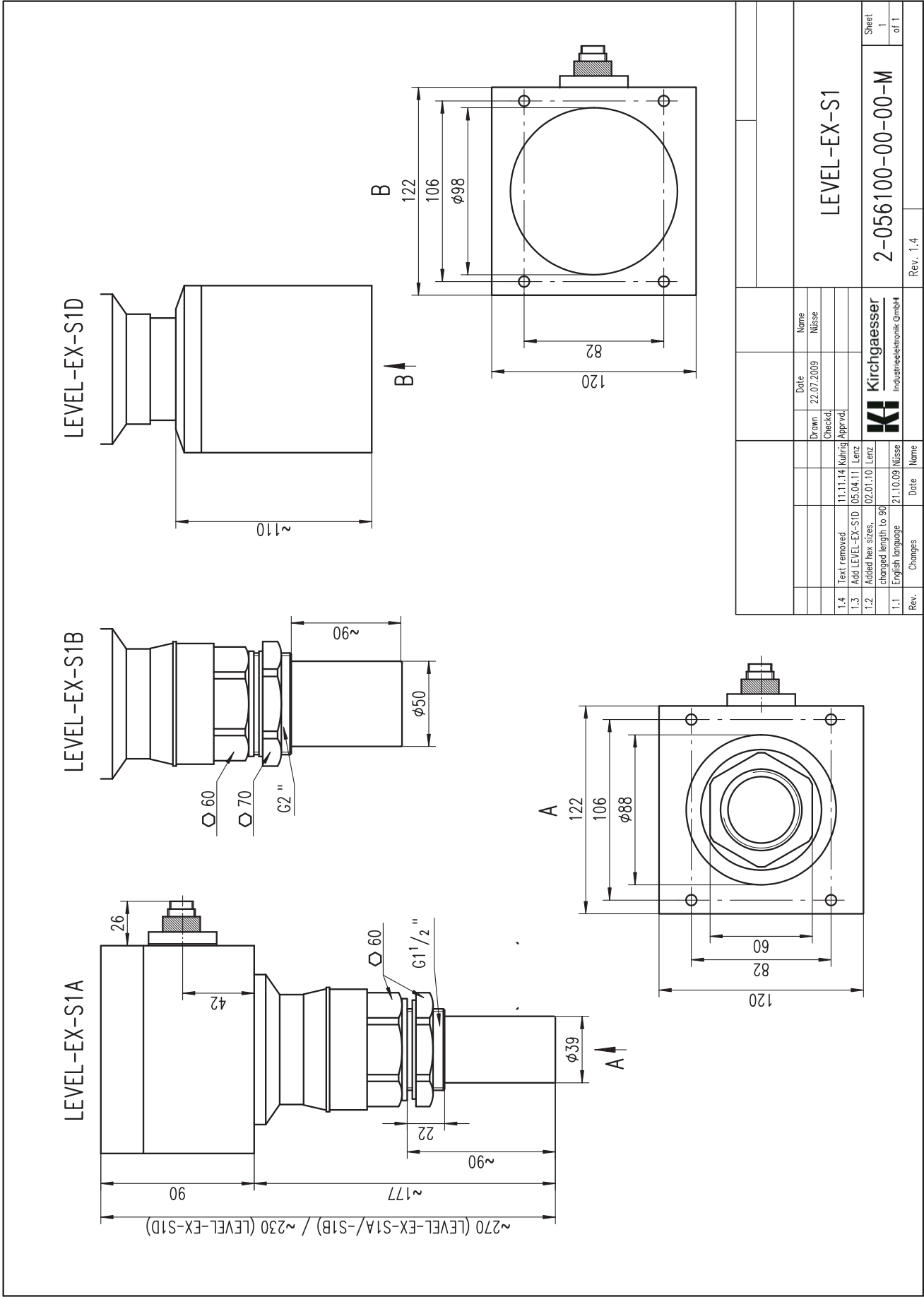
Technical data (general):

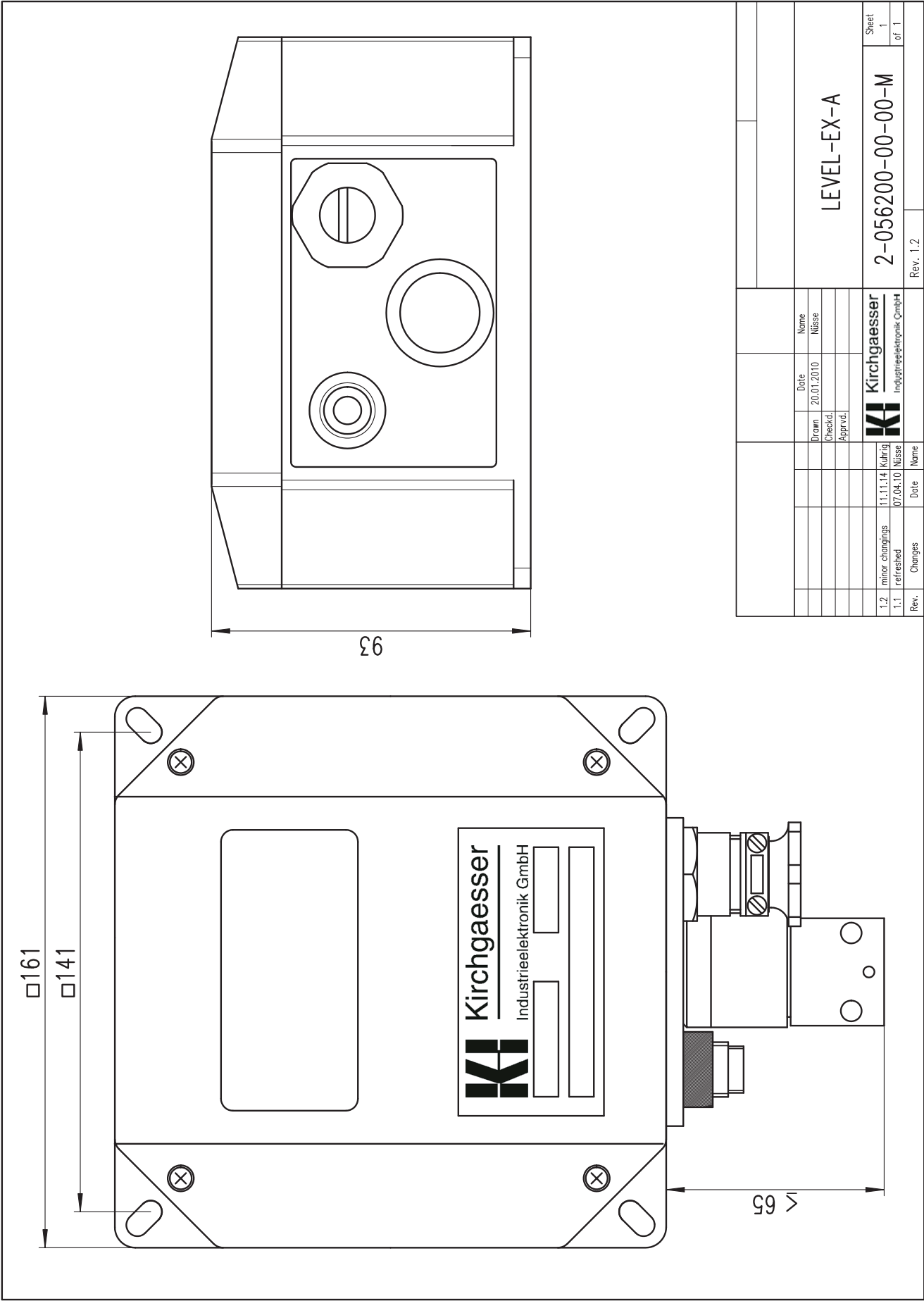
- Measuring principle:
Ultrasonic
- Measuring uncertainty (the longest value is imperative):
 $\pm 1\%$ of the measuring distance (empty calibration)
- Material of the housing:
Glassfibre-reinforced polyester, graphite added
- Weight:
Approx. 2 kg (every unit)
- Protection according to EN 60529:
IP65
- Cable gland:
 - M25x1.5
 - Clamping range 8.5 - 15.0 mm
 - Tightening torque 2 Nm
- Type of protection according to EN 60079-0:
Ex ia I
- Ambient temperature:
 - Transducer: $-20^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$
 - Evaluation and display unit: $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$

Technical data (electrical):

- Power supply:
 - LEVEL-EX-A*1A* and -A**B* with LEVEL-EX-S1A*: $9.0 \text{ VDC} \leq U_i \leq 13.5 \text{ VDC}$
 - LEVEL-EX-A**B* with LEVEL-EX-S1B*: $10.0 \text{ VDC} \leq U_i \leq 13.5 \text{ VDC}$
 - LEVEL-EX-A**B* with LEVEL-EX-S1D*: $11.0 \text{ VDC} \leq U_i \leq 13.5 \text{ VDC}$
 - LEVEL-EX-A*3A*: $11.0 \text{ VDC} \leq U_i \leq 13.5 \text{ VDC}$
- Current consumption:
30 mA (without voltage and current output)
- Optocoupler output:
 - Output signal: Frequency 5 - 15 Hz (only LEVEL-EX-A*1*), limit and alarm
 - Power supply: $9.0 \text{ VDC} \leq U_{io} \leq 13.5 \text{ VDC}$
- Current output:
 - Output signal: 4 - 20 mA
 - Load resistance: max. 200 Ω
 - Additional external power supply (LEVEL-EX-A*3B*): $11.0 \text{ VDC} \leq U_{io} \leq 13.5 \text{ VDC}$
- Internal capacitances: negligible
- Internal inductances: negligible

Dimension sheets:





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