



CONGAUGE LB 6755

**Radiometric Detector for Steel and Powder Level
Measurement for Continuous Casting**

Technical Information

65055TI
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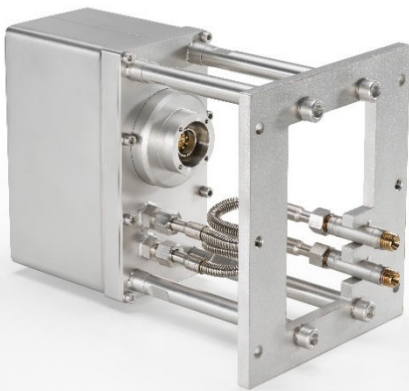
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Technical information are subject to change without prior notice.

Functional Description

CONGAUGE LB 6755 is a modern, high-tech radiometric detector, utilizing first-class sensing technology to continuously and simultaneously measure both the liquid steel level and the thickness of the casting powder.

CONGAUGE LB 6755 has been designed in cooperation with SMS Concast and enables for controlling of automatic feeders for casting powder.



Highlights

- Measures the steel level and the powder thickness simultaneously.
- Ten individually digitally controlled scintillators in an array configuration.
- Highly sensitive scintillation technology.
- State-of-the-art SiPM technology.
- Automatic calibration rig for steel and powder level calibration offered.
- Mechanically fully backward compatible with the GAMMAcast LB 6752 detector (using mechanical adapter kit).
- Backward compatible with the castXpert LB 452 control unit.

IMPORTANT

SiPM Technology



The superior SiPM technology replacing the conventional Vacuum Photomultiplier Tube (PMT), is characterized by a very small and compact design. With improved ruggedness, low power consumption, not affected by electromagnetic stirrers or breaks, no degradation, and built-in redundancy, the SiPM technology is ideal for demanding mould level applications.

Technical Data

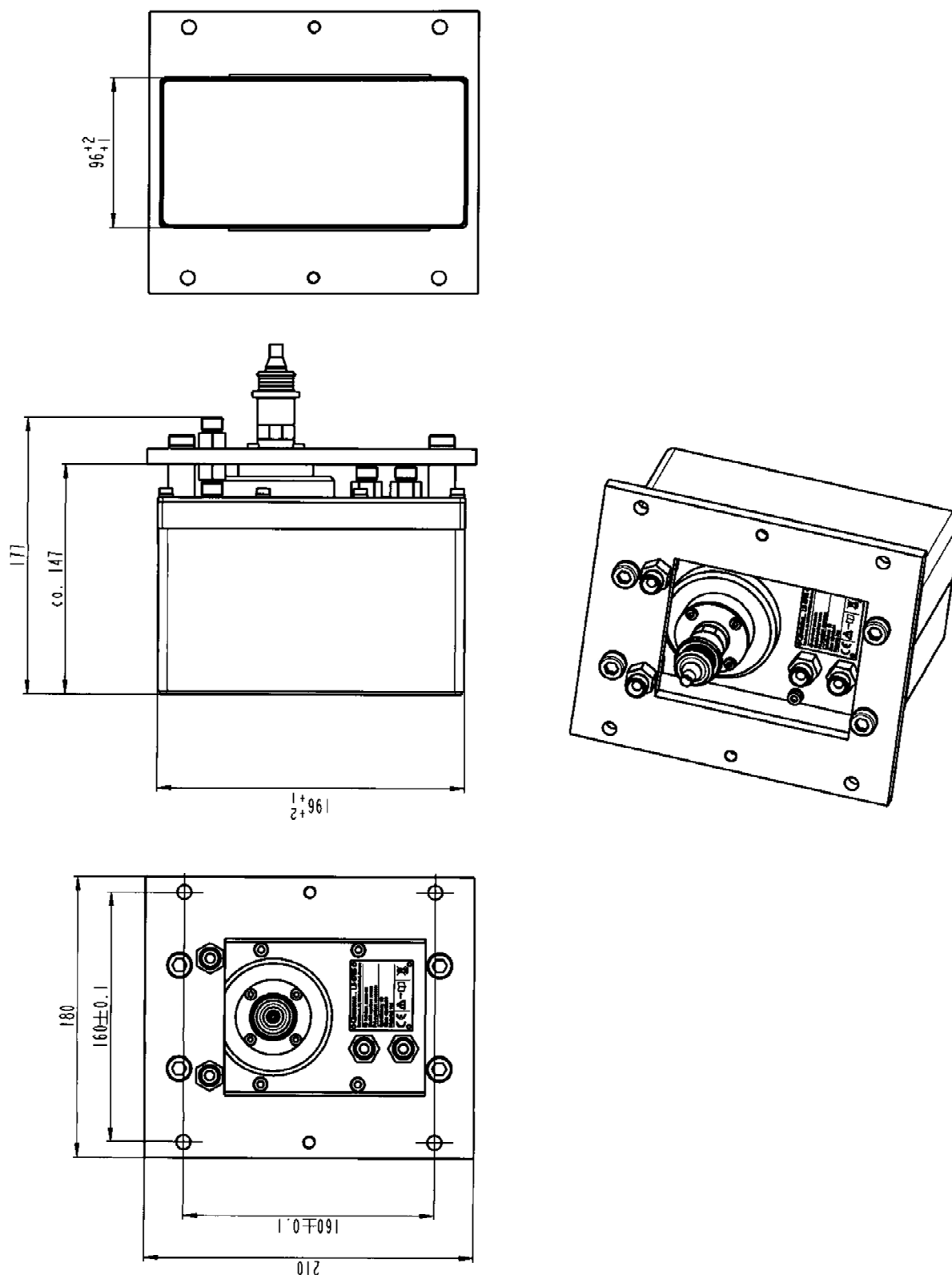
Mechanics	
Housing Material	Stainless steel 1.4301 (ANSI 304)
Scintillator	10 x NaI(Tl)-crystals; 40 mm x 45mm x 14mm
Admissible operating temperature	-20...+55°C (-4...131°F) ambient temperature
Storage temperature	-20...+70°C (-4...158°F)
Water cooling system	Connection: G1/4" female adapter with 60° sealing cone. Max. pressure: 6 bar Cooling water quality requirement: Drinking water quality (or filtered operating water without suspended matter) Water inlet temperature of max. 50°C and minimum flow of 20 l/h.
Protection class:	IP 66 / IP 67
Connection	Detector – terminal box and/or detector – evaluation unit: Special connection cable with PlugProtect connector (straight or angled by 90°) with open ends or HeavyCon plug Terminal box – evaluation unit: 6-wire, shielded (6 x 1.5 mm ²), max. length 500 m
Weight	Approx. 11 kg (Including adapter flange and hoses)

Electronics	
Power	24 (18...36) VDC, ≤ 6 W
Output Signals	Digital (RS485) and analogue pulse output.
Cable	6 wires, max. 1.5 mm ² , shielded, length max. 150 m
Logging	All relevant detector data logged in the detector and readable the control unit (LB 452).

Performance	
Internal Cycle Time	5 ms standard steel level 500 ms for powder level
Gain	Each scintillator is individually gain stabilized, meaning no temperature or aging effect.
Damping	0.1 ... 99 s
Stability	At constant count rate ≤ 1%
Approvals	Temperature, vibration, and shock. CE certification.
Max Count Rate	250.000 CPS without dead time correction.
Redundancy	<ul style="list-style-type: none"> Fourfold calculation of the level value and result verification for maximal performance. A scintillation module failure is automatically detected and compensated for.

Dimensional Drawings

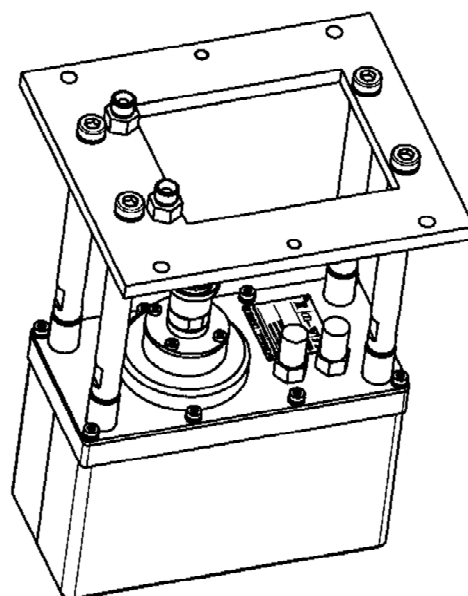
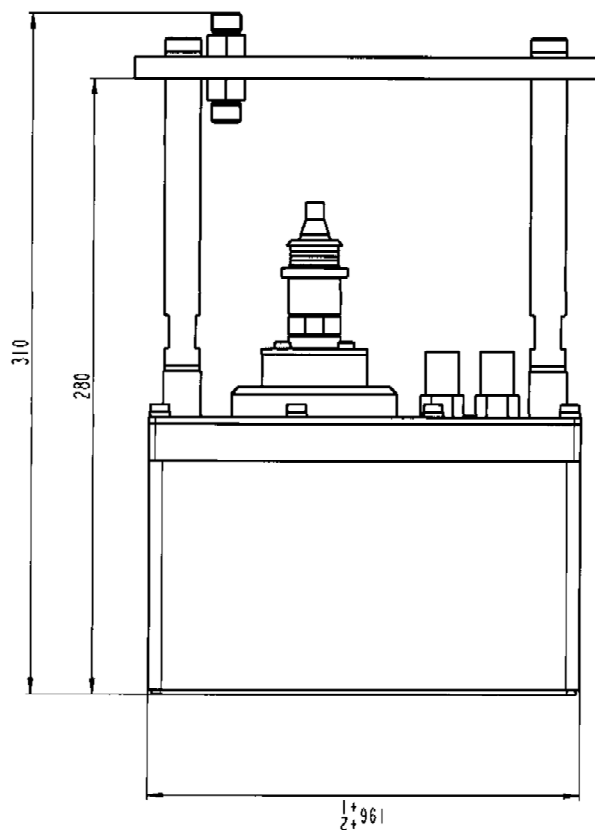
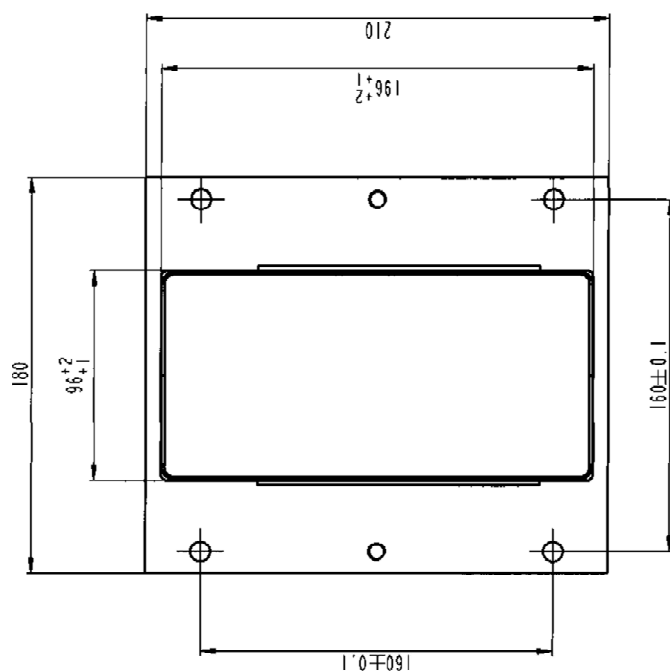
CONGAUGE LB 6755 Detector



Dimensions in mm

Fig. 1 Mechanical dimensions for the CONGAUGE LB 6755 detector.

CONGAUGE LB 6755 Detector with mechanical adapter kit (66784)



Dimensions in mm

Fig. 2 Mechanical dimensions for the CONGAUGE LB 6755 detector with adapter kit (66784) to be used for retrofitting a GAMMAcast LB 6752-II detector.

Connections

Connections to castXpert LB 452 main board

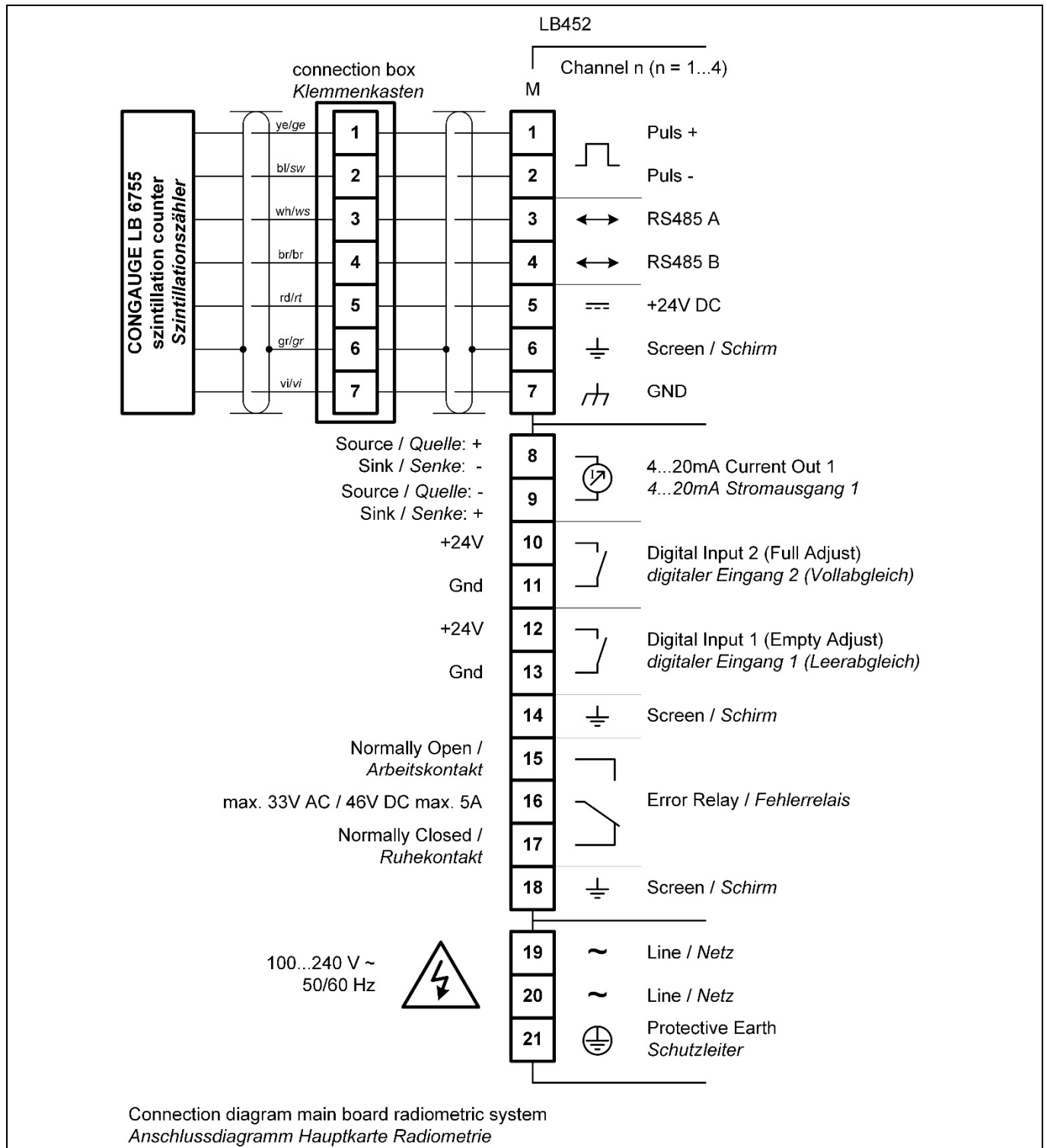


Fig. 3 Electrical connections to the channel board for the castXpert LB 452.

Connections to castXpert LB 452 extension board

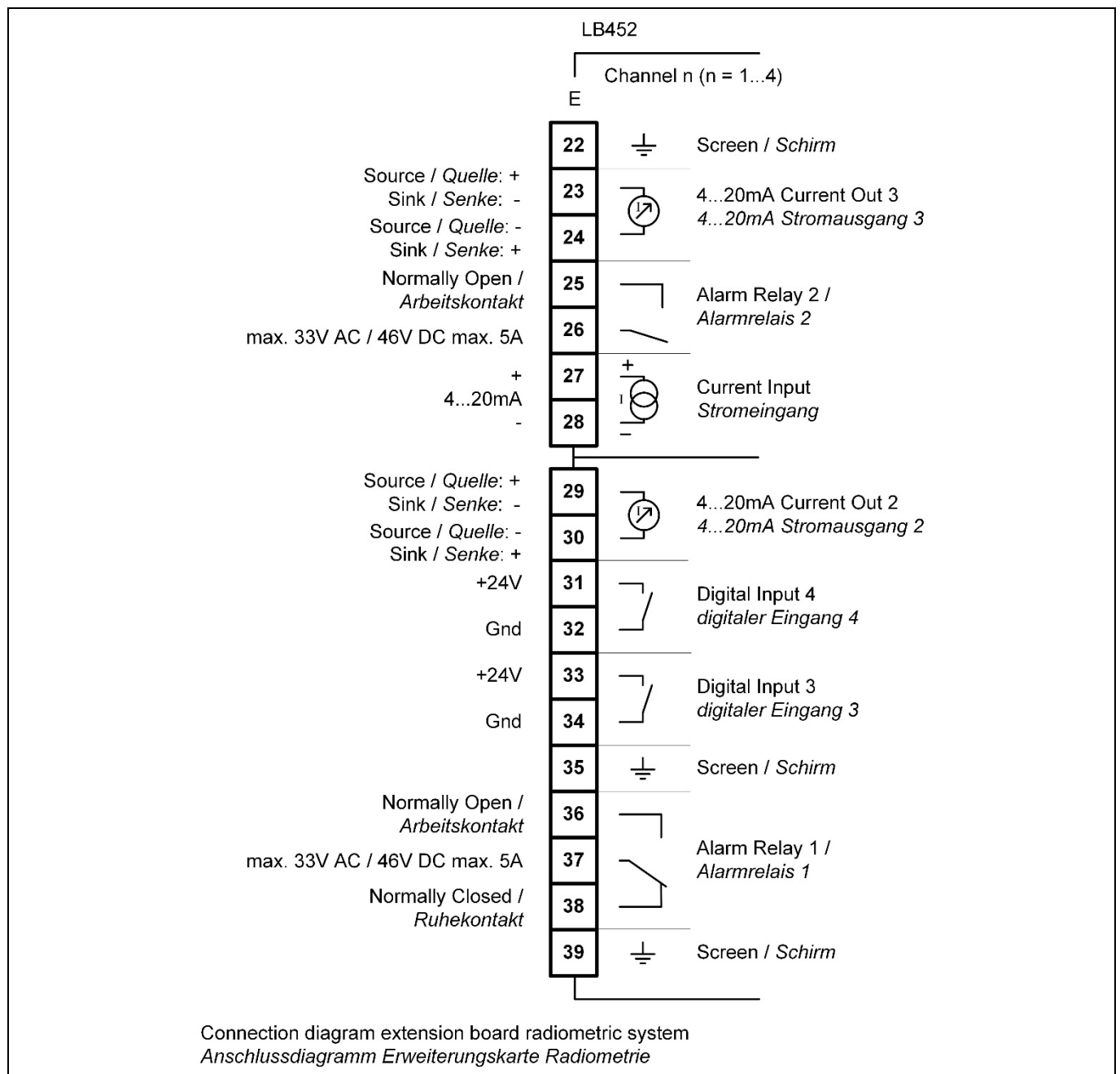
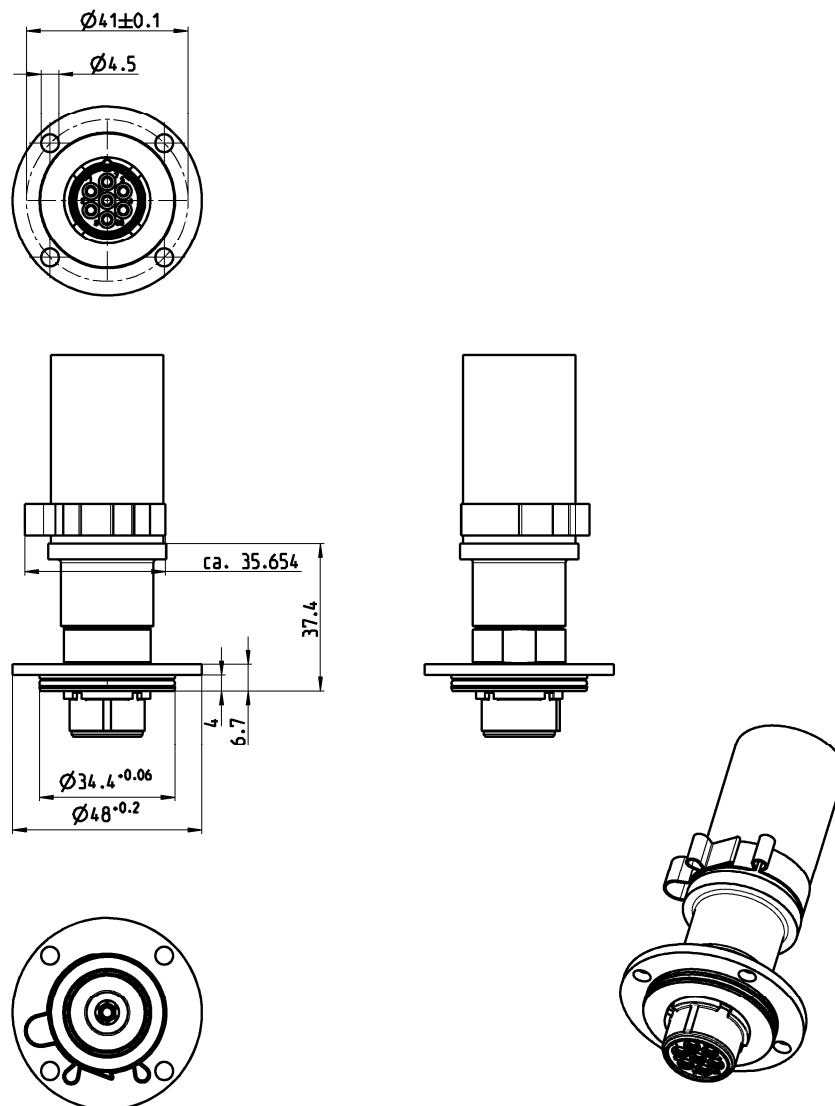


Fig. 4 Electrical connections to the extension board for the castXpert LB 452.

PlugProtect plug-in connection, straight



Dimensions in mm

Fig. 5 Mechanical dimensions for PlugProtect plug-in connection, straight.

PlugProtect plug-in connection angled by 90°

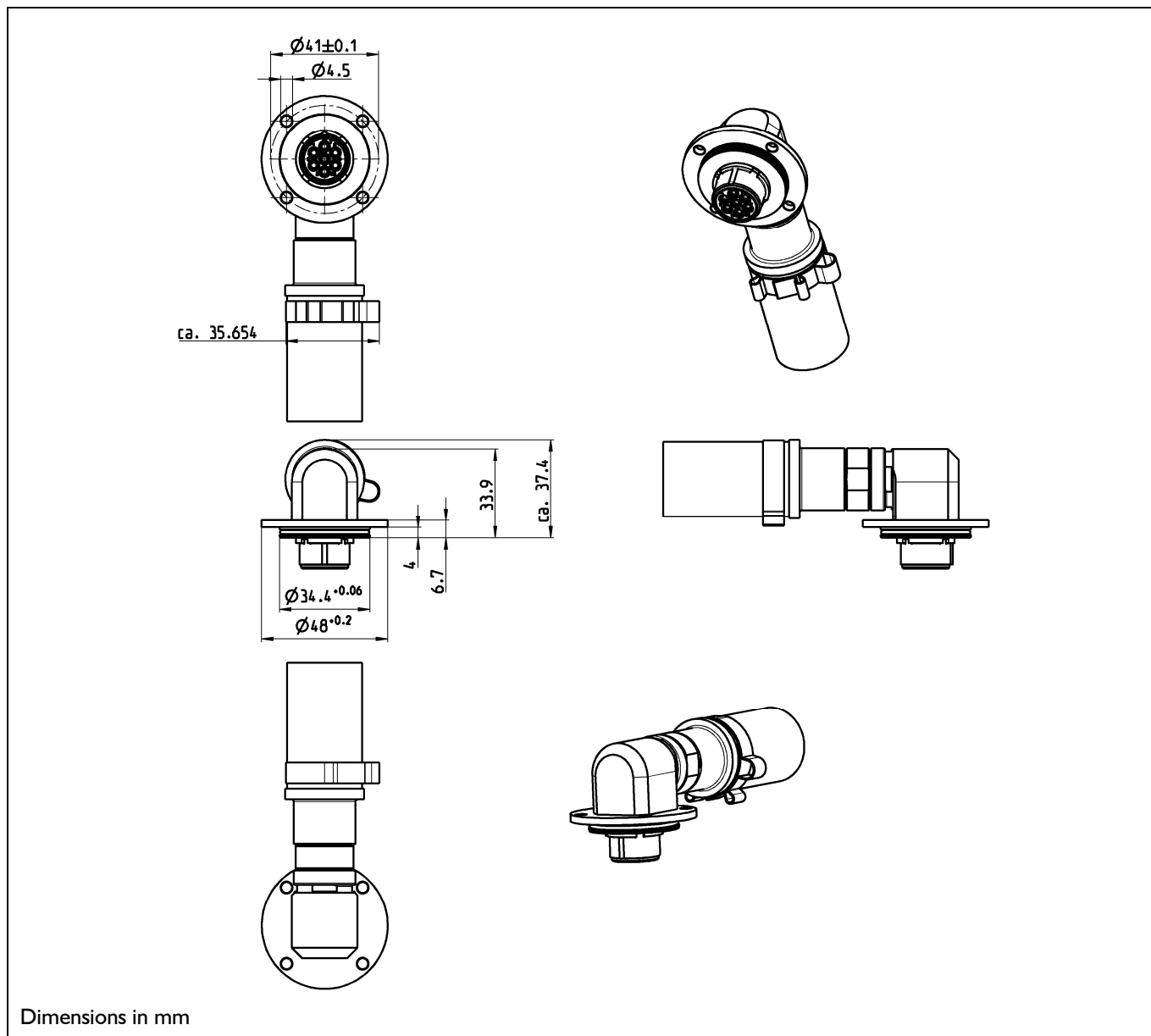


Fig. 6 Mechanical dimensions for PlugProtect plug-in connection, straight.

Cable connections

Technical data for cable connections	
Connections	<p>At the detector:</p> <ul style="list-style-type: none"> ▪ PlugProtect with straight plug or plug angled by 90° <p>At the terminal box:</p> <ul style="list-style-type: none"> ▪ open cable ends or HeavyCon plug
Cross section	6-wire, shielded (6 x 0.5 mm ²)
Material	<p>Internal cable:</p> <ul style="list-style-type: none"> ▪ Core insulation and cable jacket: FEP 6Y <p>Heat protection hose:</p> <ul style="list-style-type: none"> ▪ Special Hypalon® mixture
Temperature range	<p>Internal cable:</p> <ul style="list-style-type: none"> ▪ Ambient temperature: -100°C to +205°C ▪ Conductor: up to +180°C <p>Heat protection hose:</p> <ul style="list-style-type: none"> ▪ 140°C permanent ▪ up to 700°C for short periods ▪ Flame-resistant at 800°C for short periods (approx. 20 sec.), self-extinguishing, hardly inflammable
Resistance	<p>Internal cable:</p> <ul style="list-style-type: none"> ▪ absolute ozone-resistant and weather-proof ▪ very well resistant to acids, alkalies, solvents, oil and petrol <p>Heat protection hose:</p> <ul style="list-style-type: none"> ▪ resistant to ageing and chemicals ▪ UV-resistant, ozone-resistant and weather-proof
Lengths	<p>Total cable length:</p> <ul style="list-style-type: none"> ▪ 5 m, 10 m, 15 m or 20 m <p>Length of heat protection hose:</p> <ul style="list-style-type: none"> ▪ 3 m or in cable length (not 20 m)

Lengths and variants

Straight connection, open ends

3 m heat protection hose	5 m anaconda protection hose.	Heat protection hose in cable length
52592-050 (5 m)	65416-050 (5 m)	55249-050 (5 m)
52592-100 (10 m)	65416-100 (10 m)	55249-100 (10 m)
52592-150 (15 m)		55249-150 (15 m)
52592-200 (20 m)		

90° connection, open ends

3 m heat protection hose	5 m anaconda protection hose.	Heat protection hose in cable length
52593-050 (5 m)		55250-050 (5 m)
52593-100 (10 m)		55250-100 (10 m)
52593-150 (15 m)		55250-150 (15 m)
52593-200 (20 m)		

Straight connection, HeavyCon plug

3 m heat protection hose	5 m anaconda protection hose.	Heat protection hose in cable length
52594-050 (5 m)	65417-050 (5 m)	55067-050 (5 m)
52594-100 (10 m)	65417-100 (10 m)	55067-100 (10 m)
52594-150 (15 m)		55067-150 (15 m)
52594-200 (20 m)		

90° connection, HeavyCon plug

3 m heat protection hose	5 m anaconda protection hose.	Heat protection hose in cable length
52595-050 (5 m)		55252-050 (5 m)
52595-100 (10 m)		55252-100 (10 m)
52595-150 (15 m)		55252-150 (15 m)
52595-200 (20 m)		

Connection terminal box for CONGAUGE detectors

Terminal box with plug-in connection (34787)

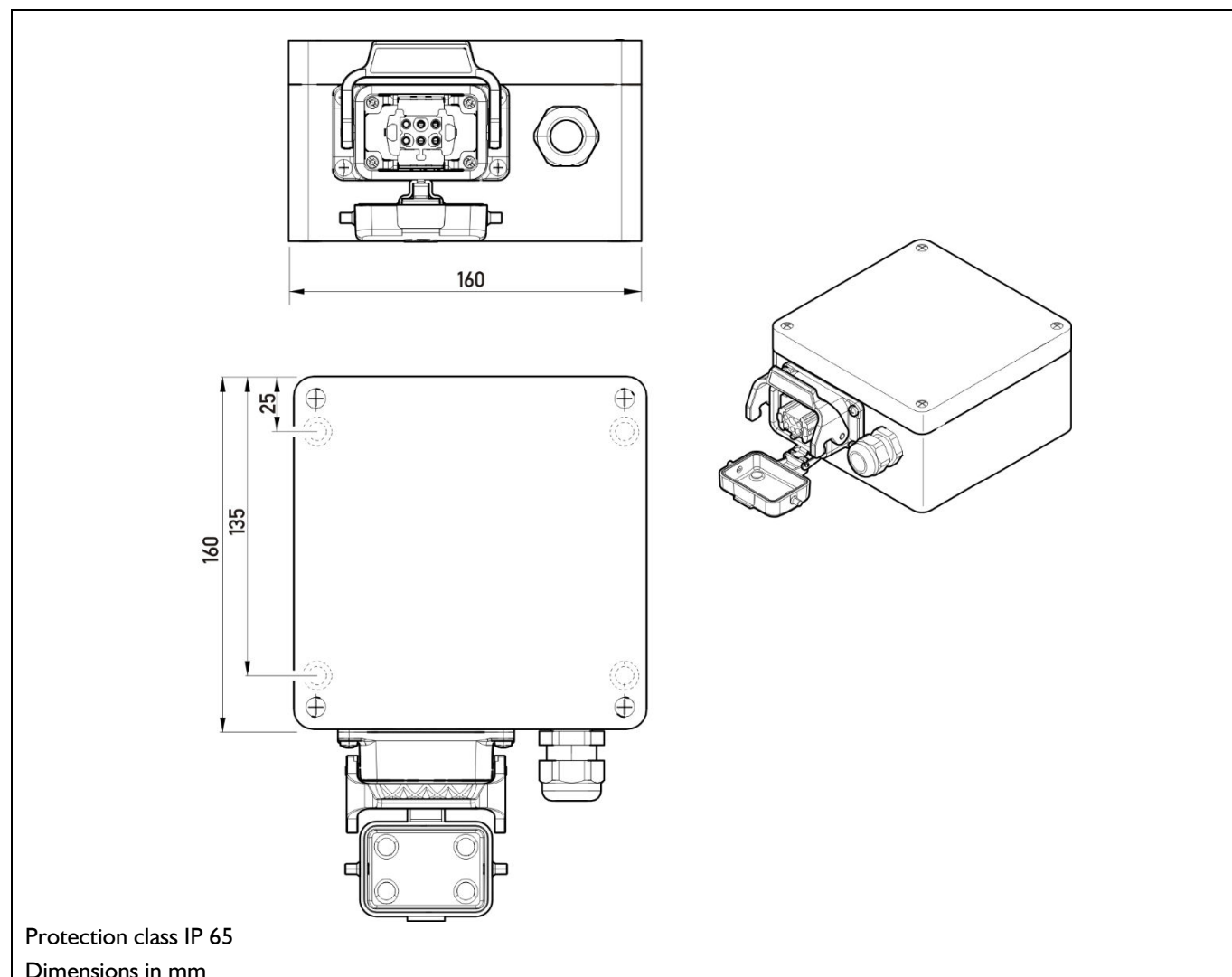
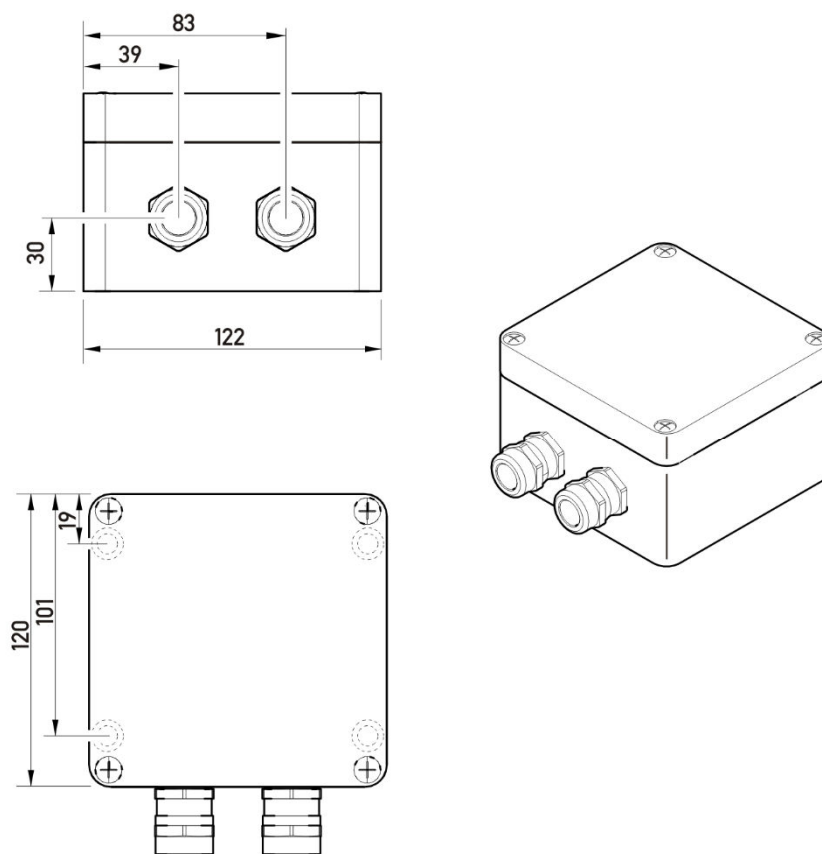


Fig. 7 Drawing for terminal box.

Terminal box for open ends (07005)



Protection class IP 65

Dimensions in mm

Fig. 8 Mechanical dimensions for terminal box for open ends.

Replacing GAMMAcast LB 6752-I I with CONGAUGE LB 6755

In order to prepare for an easy retrofit, a mechanical adapter (66784) kit is offered. With the use of this adapter kit the CONGAUGE LB 6755 detector gets the same mechanical dimensions as the GAMMAcast LB 6752-I I detector. The adapter kit contains:

- 4 x extension bars
- 2 x water hoses
- 4 x lock rings

Spare parts

CONGAUGE LB 6755

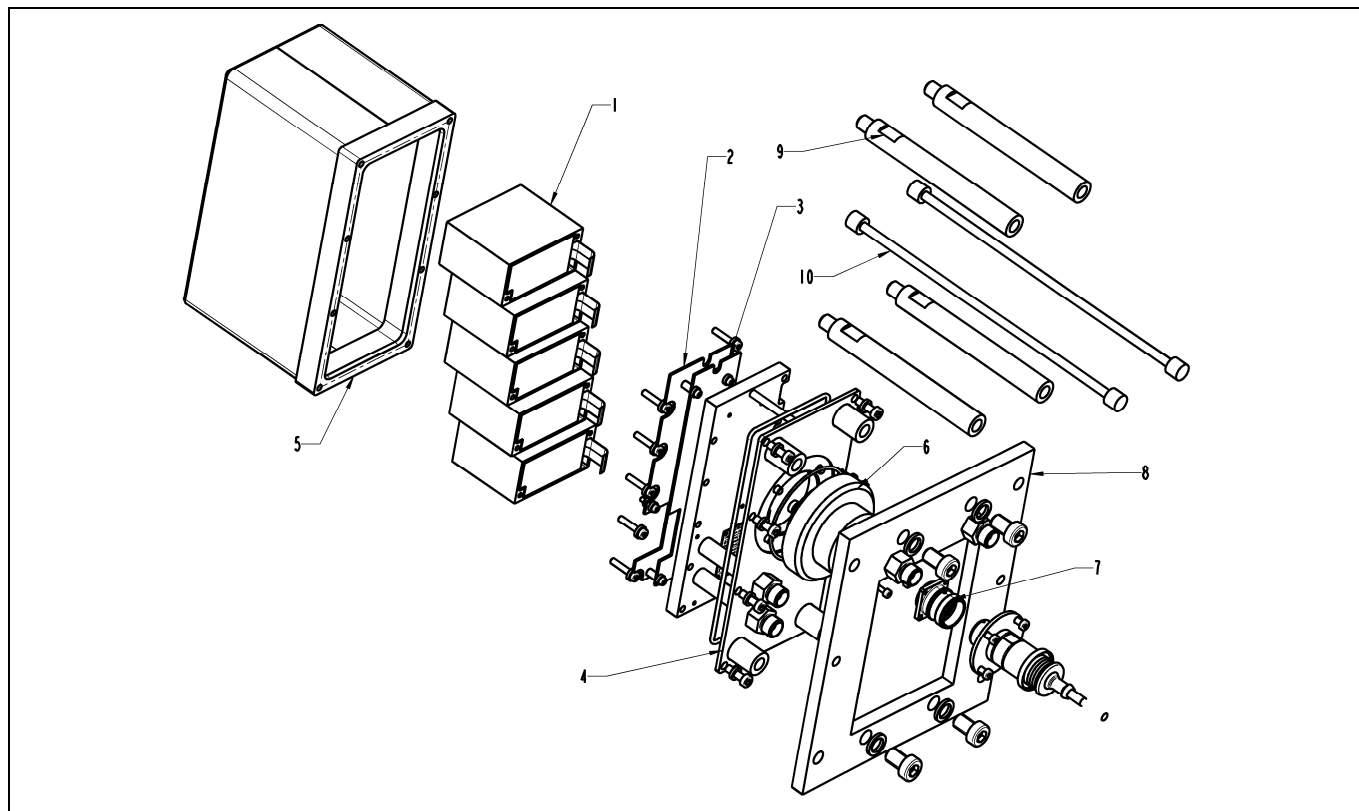


Fig. 9 Exploded view with spare parts numbered.

Spare parts for CONGAUGE LB 6755

item	ID	Description
1	66821-S	SiPM-Frontend module
2	65057-S	CPU-FPGA Board
3	65059-S	I/O-Board
4	66813-S	Sensor back and interior mechanics
5	66805-S	Sensor housing
6	66966-S	Connector block
7	66213-S	Electrical connector
8	66780-S	Mounting plate
9+10	66784-S	Adapter kit for retrofitting a LB 6752-II installation

GAMMAcast cables

Spare parts for cables

all with PlugProtect connectors for GAMMAcast detectors; no heat protection, cable ends cut flat

ID	Description
58802-050-S	Straight connector, 5 m cable
58802-100-S	Straight connector, 10 m cable
58802-150-S	Straight connector, 15 m cable
58802-200-S	Straight connector, 20 m cable
58803-050-S	90° connector, 5 m cable
58803-100-S	90° connector, 10 m cable
58803-150-S	90° connector, 15 m cable
58803-200-S	90° connector, 20 m cable