



**Concentration / Moisture Measuring Systems**  
**MicroPolar 2 (++)**  
**LB 567**

*Konzentrations- / Feuchte-Messsysteme*  
*MicroPolar 2 (++)*  
*LB 567*

**Technical Information**  
*Technische Information*

41988TI  
Rev. No.: 00, 06/2018

## Technical Data

### Technische Daten

| General specifications<br>Allgemeine Spezifikationen |                                                                                                                                                                          |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method<br>Verfahren                                  | Microwave transmission measurement<br>Mikrowellen-Transmissionsmessung                                                                                                   |
| Transmission power<br><br>Sendeleistung              | < 1 mW (< 0 dBm)<br>All coaxial line power<br><br>< 1 mW (< 0 dBm)<br>Alles koaxiale Leitungsleistung                                                                    |
| Applications<br>Applikationen                        | Concentration / moisture measurement in pipelines, on conveyor belts and in chutes.<br>Konzentrations-, Feuchtemessung in Rohrleitungen, an Förderbändern und Schächten. |

## Evaluation Unit

### Auswerteinheit

| Technical Data Evaluation Unit<br>Technische Daten Auswerteinheit          |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Housing<br><br>Gehäuse                                                     | Wall housing made of stainless steel, see dimensional drawing<br>MicroPolar Brix: HxWxD: 300 x 323 x 140 mm<br>MicroPolar Brix++: HxWxD: 400 x 338 x 170 mm<br><br>Wandgehäuse aus Edelstahl, siehe Maßbild.<br>MicroPolar Brix:HxBxT: 300 x 323 x 140 mm<br>MicroPolar Brix++: HxBxT: 400 x 338 x 170 mm                                                                                                       |
| Protection type<br>Schutzart                                               | IP 65<br>IP 65                                                                                                                                                                                                                                                                                                                                                                                                  |
| Weight<br>Gewicht                                                          | about 8.0 kg<br>ca. 8,0 kg                                                                                                                                                                                                                                                                                                                                                                                      |
| Ambient conditions during operation<br><br>Umgebungsbedingungen im Betrieb | Relative humidity: max. 85 %, short-term up to 100 %, no condensation<br>Altitude: max. 2000 m<br>MicroPolar 2:<br>-20 ... +50 °C (253...323 K)<br>MicroPolar 2 ++:<br>-20 ... +45 °C (253...318 K)<br>Relative Luftfeuchte: max. 85 %, kurzzeitig bis 100 %, keine Kondensation<br>Höhenlage: max. 2000 m<br>MicroPolar 2:<br>-20 ... +50 °C (253...323 K)<br>MicroPolar 2 ++:<br>-20 ... +45 °C (253...318 K) |
| Ambient conditions during storage<br><br>Umgebungsbedingung bei Lagerung   | -20 ... +70 °C ( 253 K ...343 K ), no condensation<br>Relative humidity: max. 85 %<br>-20 ... +70 °C (253...343 K), keine Betauung,<br>Relative Luftfeuchte: max. 85 %                                                                                                                                                                                                                                          |

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Achievable accuracy<br>Erreichbare Genauigkeit | <p>≤ 0.1 weight % (standard deviation) depending on product and sensor<br/>                 ≤ 0,1 Gewichts % (Standardabweichung) je nach Produkt und Sensor</p>                                                                                                                                                                                                                                                                        |
| Display<br>Anzeige                             | <p>Dot matrix LC display, 114 mm x 64 mm, 240 x 128 pixels, with back-lighting, automatic contrast setting<br/>                 Dot-Matrix LC Display, 114 mm x 64 mm, 240 x 128 Pixel, mit Hintergrundbeleuchtung, automatische Kontrasteinstellung</p>                                                                                                                                                                                |
| Keyboard<br>Tastatur                           | <p>Freely accessible foil keypad, light-stable and weatherproof: alphanumeric keyboard and 4 softkeys (software-assigned buttons)<br/>                 Freizugängliche Folientastatur, lichtstabil und witterungsfest: alphanumerische Tastatur und 4 Softkeys (software zugeordneten Tasten)</p>                                                                                                                                       |
| Power supply<br>Hilfsenergie                   | <p>Depending on device type:<br/>                 1.) 100 ... 240 V AC, 50/60 Hz<br/>                 2.) 24 V DC: 18 ... 36 V, reverse polarity protection<br/>                 Je nach Geräteausführung:<br/>                 1.) 100 ... 240 V AC, 50/60 Hz<br/>                 2.) 24 V DC: 18 ... 36 V, kein Verpolungsschutz</p>                                                                                                 |
| Power consumption<br>Leistungsaufnahme         | <p>max. (48/60) VA, je nach Konfiguration<br/>                 max. (48/60) VA, je nach Konfiguration</p>                                                                                                                                                                                                                                                                                                                               |
| Fuses<br>Sicherungen                           | <p>2 x 2.0 A / 250 V / T at 100 ... 240 V AC;<br/>                 ID no. 4403<br/>                 or<br/>                 2 x 6.3 A / 250 V / M at 18 ... 36 V DC;<br/>                 ID no. 4408<br/>                 2 x 2,0 A / 250 V / T bei 100 ... 240 V AC;<br/>                 Id.-Nr. 4403<br/>                 oder<br/>                 2 x 6,3 A / 250 V / M bei 18 ... 36 V DC;<br/>                 Id.-Nr. 4408</p> |
| Battery type<br>Batterietyp                    | <p>3 V Lithium button cell, type CR2032, ID no. 17391<br/>                 3 V Lithium Knopfzelle, Typ CR2032, Id.-Nr 17391</p>                                                                                                                                                                                                                                                                                                         |
| Measured value<br>Messwert                     | <p>e.g. concentration, moisture content<br/>                 z.B. Konzentration, Feuchtegehalt</p>                                                                                                                                                                                                                                                                                                                                      |

## Inputs and outputs Evaluation Unit *Eingänge und Ausgänge Auswertereinheit*

[illegible]

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <p>DI3: Keine, Probeaufnahme, Produktauswahl</p> <p>Funktionsbeschreibung:</p> <ol style="list-style-type: none"> <li>1. Messung (Start/Stopp), <u>offen</u>: Messung gestoppt, <u>geschlossen</u>: Messung gestartet bzw. Messung läuft</li> <li>2. Messung anhalten, <u>offen</u>: Messung läuft, <u>geschlossen</u>: Messung angehalten, d.h. Mittelwerte und Stromausgang sind eingefroren</li> <li>3. Produktauswahl über ein DI:<br/> <u>offen</u>: Produkt 1 (P1), <u>geschlossen</u>: P2<br/>                     Produktauswahl über zwei DI's:<br/>                     DI2 &amp; DI3 <u>offen</u>: P1<br/>                     DI2 <u>geschlossen</u> &amp; DI3 <u>offen</u>: P2<br/>                     DI2 <u>offen</u> &amp; DI3 <u>geschlossen</u>: P3<br/>                     DI2 &amp; DI3 <u>geschlossen</u>: P4</li> <li>4. Probeaufnahme: <u>offen</u>: keine Aktionen, <u>geschlossen</u>: einmalige Aufnahme startet</li> </ol> |
| Relay outputs           | <p>2 x relays (SPDT), insulated</p> <p><u>Configuration options:</u></p> <ul style="list-style-type: none"> <li>- Collective failure message</li> <li>- Stop measurement</li> <li>- Limit value (min. and max.)</li> <li>- No product</li> </ul> <p><u>Load capacity:</u></p> <p>AC: max. 400VA<br/>                 DC: max. 90W<br/>                 AC/DC: max. 250V, max. 2A, non-inductive<br/>                 ≥ 150V: voltage must be grounded</p> <p>The cable used at the relay output must correspond to a mains cable.</p> <p><u>Restrictions at 24 V AC/DC (DC: 18 ...36 V; AC: 24 V +5 %, -20 %) mains supply, if the ground conductor is not connected to terminal 1 (PE):</u></p> <p>AC: max. 50 V<br/>                 DC: max. 70 V</p>                                                                                                                                                                                                |
| Relaisausgänge          | <p>2 x Relais (SPDT), isoliert</p> <p><u>Konfigurationsmöglichkeiten:</u></p> <ul style="list-style-type: none"> <li>- Sammelstörmeldung</li> <li>- Messung anhalten</li> <li>- Grenzwert (min. und max.)</li> <li>- kein Produkt</li> </ul> <p><u>Belastbarkeit:</u></p> <p>AC: max. 400VA<br/>                 DC: max. 90W<br/>                 AC / DC: max. 250V, max. 2A, induktionsfrei<br/>                 ≥ 150V: Spannung muss erdbezogen sein</p> <p>Das an den Relaisausgang verwendete Kabel muss einer Netzanschlussleitung entsprechen.</p> <p><u>Einschränkungen bei 24 V AC/DC (DC: 18 ...36 V; AC: 24 V +5 %, -20 %) Netzversorgung, wenn der Schutzleiter nicht an die Klemme 1 (PE) angeschlossen ist:</u></p> <p>AC: max. 50 V<br/>                 DC: max. 70 V</p>                                                                                                                                                             |
| Serial interfaces       | <p>RS232 on the bottom side<br/>                 RS485 via terminal strip</p> <p>Data format: 38400 Bd, no handshake, 8 data bits, 1 stop bit, no parity</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Serielle Schnittstellen | <p>RS232 auf der Geräteunterseite,<br/>                 RS485 über Klemmenleiste</p> <p>Datenformat: 38400 Bd, kein Handshake, 8 Datenbits, 1 Stoppbit, keine Parität</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Sensors

### Sensoren

| Technical Data Flow Cell<br><i>Technische Daten Flow Cell</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application<br><i>Anwendung</i>                               | Microwave FlowCell with various nominal diameters and flanges for concentration measurement on pipelines<br><i>Mikrowellen-FlowCell verschiedener Nennweiten und Flansche zur Konzentrationsmessung an Rohrleitungen</i>                                                                                                                                                                                                                                                                                       |
| Material<br><i>Material</i>                                   | Inline housing made of stainless steel 1.4404 polished (AISI 316L)<br>Microwave windows made of PEEK<br>Product touching sealing made of EPDM<br><i>Inline-Gehäuse aus Edelstahl 1.4404 poliert (AISI 316L)</i><br><i>Mikrowellenfenster aus PEEK</i><br><i>Produktberührende Dichtung aus EPDM</i>                                                                                                                                                                                                            |
| Process coupling<br><i>Prozessankopplung</i>                  | Two versions:<br>1. Hygiene milk pipe screw connection DIN 11853-1<br>EHEDG certified<br>2. Flange according to EN 1092-1/11 (V flange)<br>FDA-approved materials<br>Optional adapter for the V flange version with ASA flange<br><br><i>Zwei Varianten:</i><br><i>1. Hygiene Milchrohrverschraubung DIN 11853-1</i><br><i>EHEDG-Zulassung</i><br><i>2. Flansch nach EN 1092-1/11 (V-Flansch)</i><br><i>FDA-zugelassene Materialien</i><br><i>Optionale Adapter für die V-Flansch Variante mit ASA-Flansch</i> |
| Process pressure<br><i>Prozessdruck</i>                       | up to 16 bar (relative)<br><i>Bis 16 bar (relativ), je nach Nennweite und Flanschtyp, siehe Tabelle unten</i>                                                                                                                                                                                                                                                                                                                                                                                                  |
| Temperature range<br><i>Temperaturbereich</i>                 | Product temperature: 10...130 °C (283...403 K), temporarily up to 140<br>Ambient temperature: -20...60 °C (253...333 K)<br>Storage temperature: 10...80 °C (283...353 K)<br><br><i>Produkttemperatur: 10...130 °C (283...403 K), kurzzeitig bis 140°C (413 K)</i><br><i>Umgebungstemperatur: -20...60 °C (253...333 K)</i><br><i>Lagertemperatur: 10...80 °C (283...353 K)</i>                                                                                                                                 |
| Connections<br><i>Anschlüsse</i>                              | 2 x HF connections: N female, 50 Ω<br>for HF cable with max. 10 m length<br><i>2 x HF-Anschlüsse: N-Buchse, 50 Ω</i><br><i>Für HF-Kabel mit max. 10 m Länge</i>                                                                                                                                                                                                                                                                                                                                                |
| Versions<br><i>Varainten</i>                                  | Nominal pipe widths from 50 ... 150 mm<br><i>Rohrnennweiten von 50 ... 150 mm</i>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Dimensions<br><i>Maße</i>                                     | See dimensional drawings.<br><i>Siehe Maßzeichnungen.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Overview FlowCells with V flange Übersicht FlowCell mit V-Flansch

| Designation<br>Bezeichnung | ID no.<br>Id.-Nr. | Nominal width [mm]<br>Nennweite [mm] | Flange<br>Flansch | Pressure [bar]<br>Druck [bar] |
|----------------------------|-------------------|--------------------------------------|-------------------|-------------------------------|
| LB 5660-102-00x            | 66744-001         | 50                                   | DN 50 / PN 16     | 16                            |
| LB 5660-202-00x            | 66744-002         | 65                                   | DN 65 / PN 16     |                               |
| LB 5660-302-00x            | 66744-003         | 80                                   | DN 80 / PN 16     |                               |
| LB 5660-402-00x            | 66744-004         | 100                                  | DN 100 / PN 16    |                               |
| LB 5660-502-00x            | 66744-005         | 125                                  | DN 125 / PN 16    |                               |
| LB 5660-602-00x            | 66744-006         | 150                                  | DN 150 / PN 16    |                               |

## Overview FlowCells with Hygiene milk pipe screw connection Übersicht FlowCell mit Milchrohrverschraubung

| Designation<br>Bezeichnung | ID no.<br>Id.-Nr. | Nominal width [mm]<br>Nennweite [mm] | Flange<br>Flansch | Pressure [bar]<br>Druck [bar] |
|----------------------------|-------------------|--------------------------------------|-------------------|-------------------------------|
| LB 5660-112-00x            | 66744-013         | 50                                   | LB 5660-112-00x   | 16                            |
| LB 5660-212-00x            | 66744-014         | 65                                   | LB 5660-212-00x   |                               |
| LB 5660-312-00x            | 66744-015         | 80                                   | LB 5660-312-00x   |                               |
| LB 5660-412-00x            | 66744-016         | 100                                  | LB 5660-412-00x   |                               |
| LB 5660-512-00x            | 66744-017         | 125                                  | LB 5660-512-00x   |                               |
| LB 5660-612-00x            | 66744-018         | 150                                  | LB 5660-612-00x   |                               |

## Overview Microwave windows set Übersicht Mikrowellenfenster-Set

The microwave windows of the FlowCell are available in a reinforced glass fibres design for applications with a high grade of abrasion. This design is not approved for the food sector.

*Die Mikrowellenfenster der FlowCell sind für Anwendungen mit ho-hem Abrieb auch in einer glasfaserverstärkten Ausführung erhältlich. Diese ist nicht für den Lebensmittelbereich zugelassen.*

| ID no.<br>Id.-Nr. | Designation<br>Bezeichnung                                                                                                                                                |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 66624-S           | 2 pieces of PEEK Microwave windows with 6 seal-ing O-rings<br>2 Stück PEEK Mikrowellenfenster mit 6 Dichtungs-O-Ringen                                                    |
| 66625-S           | 2 pieces of PEEK Microwave windows GF30 glass fibre reinforced with 6 sealing O-rings<br>2 Stück PEEK Mikrowellenfenster GF30 glasfaserverstärkt mit 6 Dichtungs-O-Ringen |

## Overview ASA flange adapter *Übersicht ASA-Flansch-Adapter*

| Designation<br>Bezeichnung                                                                                                          | ID no.<br>Id.-Nr. |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| ASA flange adapter set for Flow Cell 50<br><i>ASA-Flansch-Adapter-Set für Flowcell 50</i>                                           | 62324             |
| ASA flange adapter set for Flow Cell 65<br><i>ASA-Flansch-Adapter-Set für Flowcell 65</i>                                           | 62319             |
| ASA flange adapter set for Flow Cell 80<br><i>ASA-Flansch-Adapter-Set für Flowcell 80</i>                                           | 62319             |
| ASA flange adapter set for Flow Cell 100<br><i>ASA-Flansch-Adapter-Set für Flowcell 100</i>                                         | 62331             |
| ASA flange adapter set for Flow Cell 150<br><i>ASA-Flansch-Adapter-Set für Flowcell 150</i>                                         | 62335             |
| The kit consists of two adapters, screws and two seals.<br><i>Das Set besteht aus zwei Adaptern, Schrauben und zwei Dichtungen.</i> |                   |

## Overview Inline housing, FDA *Übersicht Inline-Gehäuse, FDA*

for temperature or conductivity sensors or sampling valve  
*für Temperatur-, Leitfähigkeitssensor oder Probenahmeventil*

| Designation<br>Bezeichnung                                                | VFL     | G-BS/M  |
|---------------------------------------------------------------------------|---------|---------|
|                                                                           | Id.-Nr. | Id.-Nr. |
| Inline housing for Flowcell 50<br><i>Inline-Gehäuse für Flowcell 50</i>   | 67078   | 67084   |
| Inline housing for Flowcell 65<br><i>Inline-Gehäuse für Flowcell 65</i>   | 67079   | 67085   |
| Inline housing for Flowcell 80<br><i>Inline-Gehäuse für Flowcell 80</i>   | 67080   | 67086   |
| Inline housing for Flowcell 100<br><i>Inline-Gehäuse für Flowcell 100</i> | 67081   | 67087   |
| Inline housing for Flowcell 125<br><i>Inline-Gehäuse für Flowcell 125</i> | 67082   | 67088   |
| Inline housing for Flowcell 150<br><i>Inline-Gehäuse für Flowcell 150</i> | 67083   | 67089   |





|                                                                                                                                                                                                                                                                                                    |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <p><i>Temperatursensor EHEDG, Clamp-Flansch</i></p> <p><i>PT100 Temperatursensor für hygienische Anwendungen</i><br/> <i>Messbereich: -50 - +250 °C</i><br/> <i>Länge 20 mm, Durchmesser 4 mm</i><br/> <i>Prozessanschluss: Clamp-Flansch</i><br/> <i>Mit Anschlusskabel 10 m (lose Enden)</i></p> | 66694 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|

## Overview Sampling valve and accessories

### Übersicht Probenahmeventil und Zubehör

| Designation<br>Bezeichnung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ID no.<br>Id.-Nr.         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <p>Sampling valve aseptic, Clamp-flange</p> <p>Aseptic Inline Sampling valve<br/>                     Stainless steel 1.4404 (AISI 316L), bellows PTFE<br/>                     Discharge port S-DN 10<br/>                     without flushing connection<br/>                     Process connection: Clamp-flange</p> <p><i>Probenahmeventil aseptisch, Clamp-Flansch</i></p> <p><i>Aseptisches Inline Probenahmeventil</i><br/> <i>Edelstahl 1.4404 (AISI 316L), Faltenbalg PTFE</i><br/> <i>Auslaufstutzen S-DN 10</i><br/> <i>ohne Spülanschluss</i><br/> <i>Prozessanschluss: Clamp-Flansch</i></p> | <p>66738</p> <p>66738</p> |
| <p>Clamp-blind flange</p> <p>Clamp-blind flange for Inline housing DN 50-150<br/>                     Stainless steel 1.4306 (AISI 304L)</p> <p><i>Clamp-Blindflansch</i></p> <p><i>Clamp-Blindflansch für Inline-Gehäuse DN 50-150</i><br/> <i>Edelstahl 1.4306 (AISI 304L)</i></p>                                                                                                                                                                                                                                                                                                                        | <p>66737</p> <p>66737</p> |
| <p>Clamp coupling</p> <p>1 piece Clamp coupling for Inline housing DN 50-150<br/>                     Stainless steel 1.4306 (AISI 304L)</p> <p>Clamp-Klammer</p> <p>1 Stück Clamp-Klammer für Inline-Gehäuse DN 50-150<br/>                     Edelstahl 1.4306 (AISI 304L)</p>                                                                                                                                                                                                                                                                                                                           | <p>66736</p> <p>66736</p> |

## Horn and Spiral Antennas

### *Horn - und Spiralantennen*

| Horn antenna (ID no.: 10806)<br><i>Hornantenne (Id.-Nr.: 10806)</i>                              |                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application<br><i>Anwendung</i>                                                                  | Used in pairs, for example on conveyor belts and chutes for the moisture measurement in bulk goods.<br><i>Paarweise Anwendung z.B. an Förderbändern und Schächten zur Feuchtebestimmung in Schüttgütern.</i>  |
| Material<br><i>Material</i>                                                                      | Stainless steel, microwave window made of Makrolon<br><i>Edelstahl, Mikrowellenfenster aus Makrolon</i>                                                                                                       |
| Weight<br><i>Gewicht</i>                                                                         | 1.4 kg<br><i>1,4 kg</i>                                                                                                                                                                                       |
| Temperature range<br><i>Temperaturbereich</i>                                                    | Ambient temperature: -20...60°C (253...333 K)<br>Storage temperature: 10...80°C (283...353 K)<br><i>Umgebungstemperatur: -20...60°C (253...333 K)</i><br><i>Lagertemperatur: 10...80°C (283...353 K)</i>      |
| Connection<br><i>Anschluss</i>                                                                   | 1 x HF connections: N-connector, 50 Ω<br><i>1 x HF-Anschlüsse: N-Stecker, 50 Ω</i>                                                                                                                            |
| Accessories antenna fixture (ID no.: 10805)<br><i>Zubehör Antennenhalterung (Id.-Nr.: 10805)</i> |                                                                                                                                                                                                               |
| Material<br><i>Material</i>                                                                      | Galvanized steel<br><i>Verzinkter Stahl</i>                                                                                                                                                                   |
| Weight<br><i>Gewicht</i>                                                                         | 3.8 kg<br><i>3,8 kg</i>                                                                                                                                                                                       |
| Dimensions<br><i>Maße</i>                                                                        | See dimensional drawings<br><i>Siehe Maßzeichnungen</i>                                                                                                                                                       |
| Spiral antenna (ID no.: 15394)<br><i>Spiralantenne (Id.-Nr.: 15394)</i>                          |                                                                                                                                                                                                               |
| Application<br><i>Anwendung</i>                                                                  | Used in pairs, for example on conveyor belts and chutes for the moisture measurement in bulk goods.<br><i>Paarweise Anwendung z.B. an Förderbändern und Schächten zur Feuchtebestimmung in Schüttgü-tern.</i> |
| Material<br><i>Material</i>                                                                      | Stainless steel, plastic<br><i>Edelstahl, Kunststoff</i>                                                                                                                                                      |
| Weight<br><i>Gewicht</i>                                                                         | 0.4 kg<br><i>0,4 kg</i>                                                                                                                                                                                       |
| Temperature range<br><i>Temperaturbereich</i>                                                    | Ambient temperature: -20...60°C (253...333 K)<br>Storage temperature: 10...80°C (283...353 K)<br><i>Umgebungstemperatur: -20...60°C (253...333 K)</i><br><i>Lagertemperatur: 10...80°C (283...353 K)</i>      |
| Connection<br><i>Anschlüsse</i>                                                                  | 1 x HF connections: N-connector, 50 Ω<br><i>1 x HF-Anschlüsse: N-Stecker, 50 Ω</i>                                                                                                                            |
| Dimensions<br><i>Maße</i>                                                                        | See dimensional drawings<br><i>Siehe Maßzeichnungen</i>                                                                                                                                                       |

## Technical Data Measuring Chute

### Technische Daten Messschacht

| Measuring chute, complete<br>Messschacht, komplett           |                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application<br>Anwendung                                     | For moisture and concentration determination in bulk material.<br>Zur Feuchte- und Konzentrationsbestimmung in Schüttgütern.                                                                                                                                                                                                                                                   |
| Variants / chute material<br><br>Varianten / Schachtmaterial | 1. Polypropylen homo polymer (PP-H)<br>ID no. 57957<br>2. Polyvinylidene fluoride (PVDF),<br>ID no. on request<br><br>1. Polypropylen-Homopolymer (PP-H),<br>Id.-Nr. 57957<br>2. Polyvinylidenfluorid (PVDF),<br>Id.-Nr. auf Anfrage                                                                                                                                           |
| Components<br><br>Komponenten                                | - Chute<br>- Assembly plate<br>- two brackets<br>- two HF angle connectors<br>- Fastening material<br><br>- Schacht<br>- Montageplatte<br>- zwei Halterungen<br>- zwei HF-Winkelverbinder<br>- Befestigungsmaterial                                                                                                                                                            |
| Weight<br><br>Gewicht                                        | Only the chute:<br>Version 1: approx. 10 Kg<br>Version 2: on request<br>Measuring chute, complete:<br>Version 1: approx. 33 Kg<br>Version 2: on request<br><br>Nur der Schacht:<br>Variante 1: ca. 10 Kg<br>Variante 2: auf Anfrage<br>Messschacht komplett:<br>Variante 1: ca. 33 Kg<br>Variante 2: auf Anfrage                                                               |
| Temperature range<br><br>Temperaturbereich                   | Environment: 0...60 °C (253...333 K)<br>Storage: 10...80 °C (283...353 K)<br>Product temperature:<br>Version 1: 10...90 °C (283...363 K)<br>Version 2: 10 ... 140 °C (283 ... 413 K)<br><br>Umgebung: 0...60 °C (253...333 K)<br>Lagerung: 10...80 °C (283...353 K)<br>Produkttemperatur:<br>Variante 1: 10...90 °C (283...363 K)<br>Variante 2: 10 ... 140 °C (283 ... 413 K) |
| Assembly plate, brackets<br>Montageplatte, Halterungen       | Material: Stainless steel, galvanized steel<br>Material: Edelstahl, verzinkter Stahl                                                                                                                                                                                                                                                                                           |
| Dimensions<br>Maße                                           | See dimensional drawings<br>Siehe Maßzeichnungen                                                                                                                                                                                                                                                                                                                               |

## Technical Data HF Cable

### Technische Daten HF Kabel

| HF cable Quad<br>HF-Kabel Quad     |                                                                                                                                    |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Material                           | Corrugated tube: Polyamide (PA6)<br>Cable sheath: Polyethylene (PE)                                                                |
| Material                           | Wellrohr: Polyamid (PA6)<br>Kabelmantel: Polyethylen (PE)                                                                          |
| Protection type<br>Schutzart       | IP 66<br>IP 66                                                                                                                     |
| Temperature<br>Temperatur          | In operation: -30 ... +70 °C<br>When installing: -20 ... +70 °C<br>Bei Betrieb: -30 ... +70 °C<br>Bei Installation: -20 ... +70 °C |
| Cable length [m]<br>Kabellänge [m] | ID no.<br>Ident.-Nr.                                                                                                               |
| 2.0                                | 43431                                                                                                                              |
| 4.0                                | 43432                                                                                                                              |
| 6.0                                | 43433                                                                                                                              |
| 8.0                                | 43434                                                                                                                              |
| 10.0                               | 43435                                                                                                                              |

| HF-Kabel Quad, hygienic<br>HF-Kabel Quad, hygienisch |                                                                                                                                    |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Material                                             | Corrugated tube: Polyamide (PA6)<br>Cable sheath: Polyethylene (PE)                                                                |
| Material                                             | Wellrohr: Polyamid (PA6)<br>Kabelmantel: Polyethylen (PE)                                                                          |
| Protection type<br>Schutzart                         | IP 66<br>IP 66                                                                                                                     |
| Temperature<br>Temperatur                            | In operation: -30 ... +70 °C<br>When installing: -20 ... +70 °C<br>Bei Betrieb: -30 ... +70 °C<br>Bei Installation: -20 ... +70 °C |
| Cable length [m]<br>Kabellänge [m]                   | ID no.<br>Ident.-Nr.                                                                                                               |
| 2.0                                                  | 67048                                                                                                                              |
| 4.0                                                  | 67049                                                                                                                              |

| HF-Kabel Quad, solid cable<br>HF-Kabel, Festmantelkabel |                                                                  |
|---------------------------------------------------------|------------------------------------------------------------------|
| Material<br>Material                                    | Cable sheath: Polyethylene (PE)<br>Kabelmantel: Polyethylen (PE) |
| Protection type<br>Schutzart                            | IP 68 when unscrewed<br>IP 68 im aufgeschraubten Zustand         |
| Temperature<br>Temperatur                               | In operation: -40 ... +85 °C<br>When installing: -40 ... +85 °C  |

|                                           |                                                                               |
|-------------------------------------------|-------------------------------------------------------------------------------|
|                                           | <i>Bei Betrieb:</i> -40 ... +85 °C<br><i>Bei Installation:</i> -40 ... +85 °C |
| Cable length [m]<br><i>Kabellänge [m]</i> | ID no.<br><i>Ident.-Nr.</i>                                                   |
| 2.0                                       | 11476                                                                         |
| 2.5                                       | 11477                                                                         |
| 3.0                                       | 11478                                                                         |
| 3.5                                       | 11479                                                                         |
| 4.0                                       | 11480                                                                         |

## Format of Serial Data Output RS232 and RS485

### Headline

Date·Time→State→Status→Synchronizer→Product→Att→Phi→R2→Tint→IN1→IN2→PT100→  
 C→Cm→C2→C2m→MF1→MF2

Following lines

01.01.2005·00:00:00→0000→0→0→1→0.43→5.30→0.07→0.00→0.0→0.0→0.0→0.0→

1 2 3 4 5 6 7 8 9 10 11 12 13

75.36→75.00→0.00→0.00→0.000→0.000¶

14 15 16 17 18 19

| Column no.<br><i>Spalte Nr.</i>                    | Description<br><i>Beschreibung</i>                            | Format<br><i>Format</i>           |
|----------------------------------------------------|---------------------------------------------------------------|-----------------------------------|
| 1                                                  | Date and time                                                 | DD.MM.YY·HH:MM:SS                 |
| 2                                                  | State                                                         | 4 digits, HEX                     |
| 3                                                  | Status: Information about the quality of the last measurement | 0 : Measurement OK<br>< 0 : Error |
| 4                                                  | Product number                                                | X (1 to 4)                        |
| 5                                                  | Attenuation [dB]                                              | X.XX                              |
| 6                                                  | Phase [°/GHz]                                                 | X.XX                              |
| 7                                                  | Dispersion of the phase regression                            | X.XX                              |
| 8                                                  | Device temperature [temperature unit]                         | X.X                               |
| 9                                                  | Current input 1 [unit of current input]                       | X.X                               |
| 10                                                 | Current input 2 [unit of current input]                       | X.X                               |
| 11                                                 | PT100 temperature [temperature unit]                          | X.X                               |
| [...] with selection of the unit g/cm <sup>3</sup> |                                                               |                                   |
| 12                                                 | Concentration 1 live                                          | X.XX [X.XXXX]                     |
| 13                                                 | Concentration 1 averaged                                      | X.XX [X.XXXX]                     |
| 14                                                 | Concentration 2 live                                          | X.XX [X.XXXX]                     |
| 15                                                 | Concentration 2 averaged                                      | X.XX [X.XXXX]                     |

Special characters

“→” Tabulation

“¶” Carriage return + Line feed

“.” Spaces

## Format der seriellen Datenausgabe RS232 und RS485

### Titelzeile

Date·Time→State→Status→Synchronizer→Product→Att→Phi→R2→Tint→IN1→IN2→PT100→

C→Cm→C2→C2m→MF1→MF2

¶

### Folgezeilen

01.01.2005·00:00:00→0000→0→0→1→0.43→5.30→0.07→0.00→0.0→0.0→0.0→0.0→

1 2 3 4 5 6 7 8 9 10 11 12 13

75.36→75.00→0.00→0.00→0.000→0.000¶

14 15 16 17 18 19

| Spalte Nr.                                      | Beschreibung                                               | Format                         |
|-------------------------------------------------|------------------------------------------------------------|--------------------------------|
| 1                                               | Datum und Uhrzeit                                          | DD.MM.YY·HH:MM:SS              |
| 2                                               | Status                                                     | 4 –Stellig, HEX                |
| 3                                               | Status: Information über die Qualität der letz-ten Messung | 0 : Messung OK<br>< 0 : Fehler |
| 4                                               | Produktnummer                                              | X (1 bis 4)                    |
| 5                                               | Dämpfung [dB]                                              | X.XX                           |
| 6                                               | Phase [°/GHz]                                              | X.XX                           |
| 7                                               | Streuung der Phasenregression                              | X.XX                           |
| 8                                               | Gerätetemperatur [Temperatureinheit]                       | X.X                            |
| 9                                               | Stromeingang 1 [Einheit des Stromeingangs]                 | X.X                            |
| 10                                              | Stromeingang 2 [Einheit des Stromeingangs]                 | X.X                            |
| 11                                              | PT100 Temperatur [Temperatureinheit]                       | X.X                            |
| [...] mit Auswahl der Einheit g/cm <sup>3</sup> |                                                            |                                |
| 12                                              | Konzentration 1 live                                       | X.XX [X.XXXX]                  |
| 13                                              | Konzentration 1 gemittelt                                  | X.XX [X.XXXX]                  |
| 14                                              | Konzentration 2 live                                       | X.XX [X.XXXX]                  |
| 15                                              | Konzentration 2 gemittelt                                  | X.XX [X.XXXX]                  |

### Sonderzeichen

"→" Tabulation

"¶" Carriage return + Line feed

"·" Leerzeichen



## EC Declaration of Conformity



BERTHOLD TECHNOLOGIES GmbH & Co.KG

Calmbacher Str. 22  
75323 Bad Wildbad, Germany

Phone: +49 7081 177-0  
Fax: +49 7081 177-100  
info@Berthold.com  
www.Berthold.com

### EC-Declaration

We herewith confirm that the construction of the following indicated products / systems / units is brought into circulation to comply with the relevant EC regulations listed.

Description: **Concentration- and Moisture-Measuring Systems  
Micro-Polar 2, Micro-Polar 2 ++,  
Micro-Polar Moist, and Micro-Polar Moist ++**

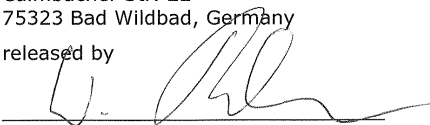
Type: **LB 567-XX and LB 568-XX**

|     | Richtlinie und Änderungen | angewendete Normen                                                                                                                                                                                                                                                                 |
|-----|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMC | 2004/108/EC               | EN 55011 1998<br>+A1:1999<br>+A2:2002<br>EN 61326-1 2006-05<br>EN 61000-4-2 1995<br>+A1:1998<br>+A2:2001<br>EN 61000-4-3 2006-12<br>EN 61000-4-4 2004<br>EN 61000-4-5 1995<br>+A1:2001<br>EN 61000-4-6 1996<br>+A1:2001<br>EN 61000-4-11 1994-08<br>+A1:2001-02<br>Namur NE21 2004 |
| LVD | 2006/95/EC                | EN 61010 part 1 2002-08                                                                                                                                                                                                                                                            |

This declaration is issued by the manufacturer

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

released by

  
Dr. Wilfried Reuter – Technical Director  
Bad Wildbad, 28<sup>th</sup> of April 2010

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.  
WEE-Reg. No.

Stuttgart HRA 330991  
BERTHOLD TECHNOLOGIES Verwaltungs-GmbH  
Stuttgart HRB 331520  
Hans J. Oberhofer, Dr. Wilfried Reuter  
DE813050511  
49038/08038  
DE99468690

|                 |                   |                                              |                      |                                   |
|-----------------|-------------------|----------------------------------------------|----------------------|-----------------------------------|
| Sparkasse PF-CW | 75323 Bad Wildbad | Konto/Account No. 8 045 003 (BLZ 666 500 85) | SWIFT-BIC PZHSDE66   | IBAN: DE37 6665 0085 0008 0450 03 |
| Volksbank       | 75119 Pforzheim   | Konto/Account No. 957 004 (BLZ 666 900 00)   | SWIFT-BIC VBPFDE66   | IBAN: DE85 6669 0000 0000 9570 04 |
| Commerzbank     | 75105 Pforzheim   | Konto/Account No. 6 511 120 (BLZ 666 800 13) | SWIFT-BIC DRESDEFF66 | IBAN: DE05 6668 0013 0651 1120 00 |

## EG-Konformitätserklärung



BERTHOLD TECHNOLOGIES GmbH & Co. KG

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75323 Bad Wildbad, Germany

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info@berthold.com  
www.berthold.com

## EG-Konformitätserklärung

Hiermit erklären wir, dass die Bauart der nachfolgend bezeichneten Geräte / Systeme / Anlagen in der von uns in den Verkehr gebrachten Ausführung den unten genannten einschlägigen EG-Richtlinien entspricht.

Produktbezeichnung: **Konzentrations- und Feuchte-Messsysteme  
Micro-Polar 2, Micro-Polar 2 ++,  
Micro-Polar Moist und Micro-Polar Moist ++**

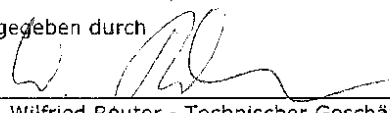
Typenbezeichnung: **LB 567-XX und LB 568-XX**

| Richtlinie | und Änderungen | angewendete Normen                                                                                                                                                                                                                                                                 |
|------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMV        | 2004/108/EG    | EN 55011 1998<br>+A1:1999<br>+A2:2002<br>EN 61326-1 2006-05<br>EN 61000-4-2 1995<br>+A1:1998<br>+A2:2001<br>EN 61000-4-3 2006-12<br>EN 61000-4-4 2004<br>EN 61000-4-5 1995<br>+A1:2001<br>EN 61000-4-6 1996<br>+A1:2001<br>EN 61000-4-11 1994-08<br>+A1:2001-02<br>Namur NE21 2004 |
| Niederspg. | 2006/95/EG     | EN 61010 Teil 1 2002-08                                                                                                                                                                                                                                                            |

Diese Erklärung wird verantwortlich für den Hersteller

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

abgegeben durch

  
Dr. Wilfried Reuter - Technischer Geschäftsführer  
Bad Wildbad, den 28. April 2010

Registered office / Firm of the Manufacturer  
Personlich haftende Gesellschafterin / Fully liable shareholder  
"Berthold Technologies GmbH & Co. KG" (Registered Office)  
Berthold Technologies GmbH & Co. KG  
Calmbacher Str. 22 / 75323 Bad Wildbad  
Deutsche Firmennummer / German Tax No.  
VAT Reg. No.

Stichtag / Date of issue  
BERTHOLD TECHNOLOGIES  
Calmbacher Str. 22  
75323 Bad Wildbad  
Phone: +49 7081 177-0  
Fax: +49 7081 177-100  
E-Mail: info@berthold.com  
DEAL 5055011  
49070/05108  
DE 5055011

Spezialvers. PC / Software  
Vollversion  
Calmbacher Str. 22  
75323 Bad Wildbad  
75323 Bad Wildbad

Kontaktfunktion Nr. 41988TI Rev. 00 (01.06.2018)  
Kontaktfunktion Nr. 957000 (01.06.2018)  
Kontaktfunktion Nr. 957000 (01.06.2018)

SWP-PC-PC-PC-PC-PC-PC  
SWP-PC-PC-PC-PC-PC-PC  
SWP-PC-PC-PC-PC-PC-PC

Barcode: 6666 0000 0000 0000 0000 0000  
Barcode: 6666 0000 0000 0000 0000 0000

## EHEDG Certificate *EHEDG Zertifikat*

CERTIFICATE OF COMPLIANCE



Valid until end: December, 2018

TUM Certification  
hereby declares that the product

microwave flow cell with PEEK windows and EPDM O-ring seals in size DN50 –  
DN150

from

Berthold Technologies GmbH & Co. KG, 75323 Bad Wildbad, Germany

has been evaluated for compliance with the  
Hygienic Equipment Design Criteria of the EHEDG, by:

TUM (Forschungszentrum für Brau- u. Lebensmittelqualität) at Weihenstephan, Germany  
and meets the criteria as demonstrated by:

Evaluation Report No. 596TUM2017

Signed Jürgen Hofmann  
Dr. Jürgen Hofmann

Evaluation Officer

Signed Fritz Jacob  
Prof. Dr. Fritz Jacob

Head of Department

Date of issue: 13 November 2017

Certificate No. 17/2017

**TUM** FORSCHUNGSZENTRUM  
WEIHENSTEPHAN  
TECHNISCHE UNIVERSITÄT MÜNCHEN für Brau- und  
Lebensmittelqualität

85354 Freising-Weihenstephan, Germany  
©EHEDG

## Frequency License *Frequenzzulassung*

TCB

GRANT OF EQUIPMENT  
AUTHORIZATION

TCB

Certification  
Issued Under the Authority of the  
Federal Communications Commission  
By:

CETECOM ICT Services GmbH  
Untertuerkheimer Strasse 6-10  
66117 Saarbruecken,  
Germany

Date of Grant: 02/10/2016

Application Dated: 10/07/2015

**Berthold Technologies**  
**Calmbacher Str. 22 75323 Bad Wildbad Germany**  
**Bad Wildbad, 75323**  
**Germany**

**Attention: Dirk Moermann , Dr.**

**NOT TRANSFERABLE**

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is  
VALID ONLY for the equipment identified hereon for use under the Commission's  
Rules and Regulations listed below.

FCC IDENTIFIER: R9ZFCC02X03  
Name of Grantee: Berthold Technologies  
Equipment Class: Ultra Wideband Transmitter  
Notes: Concentration / Moisture / Dry Mass /  
Density Measuring System

Grant Notes

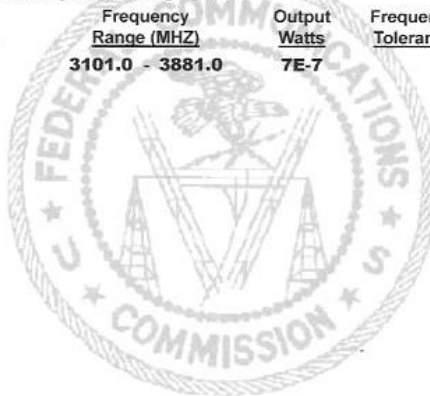
FCC Rule Parts  
**15F**

Frequency  
Range (MHZ)  
**3101.0 - 3881.0**

Output  
Watts  
**7E-7**

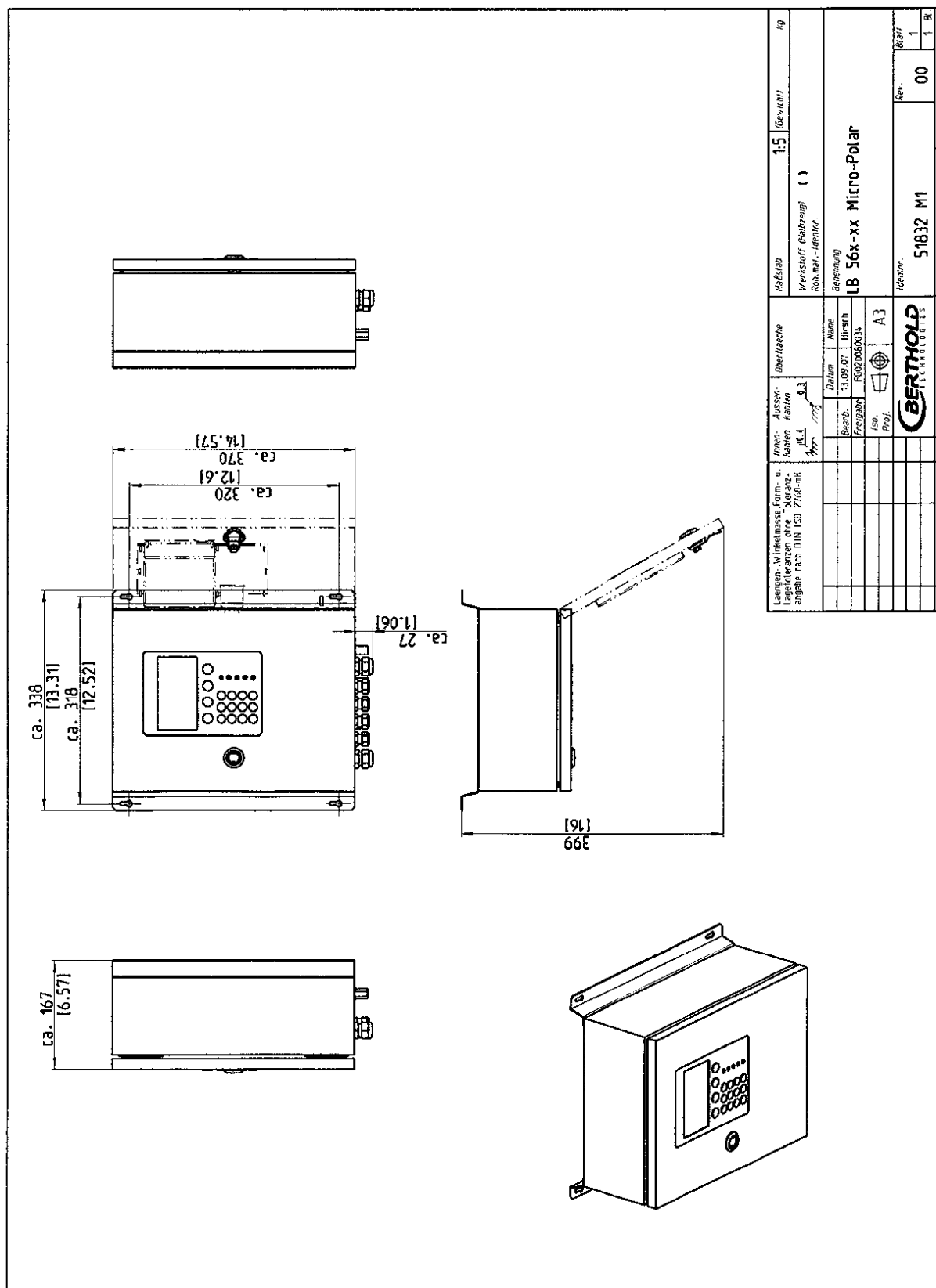
Frequency  
Tolerance

Emission  
Designator

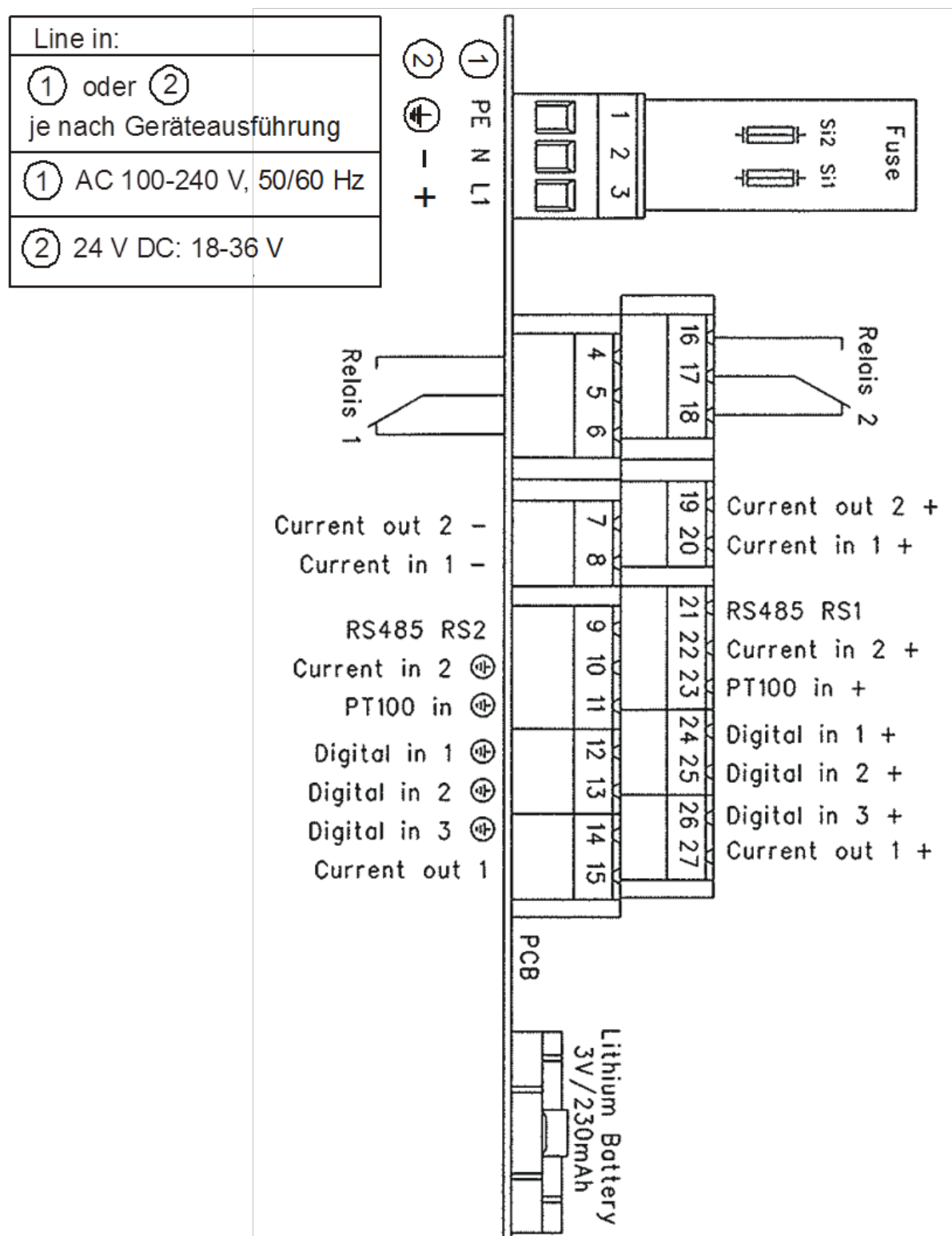


# Dimensional Drawings Maßzeichnungen

## Evaluation Unit Auswertereinheit



## Electrical Wiring Diagram Elektrischer Anschlussplan

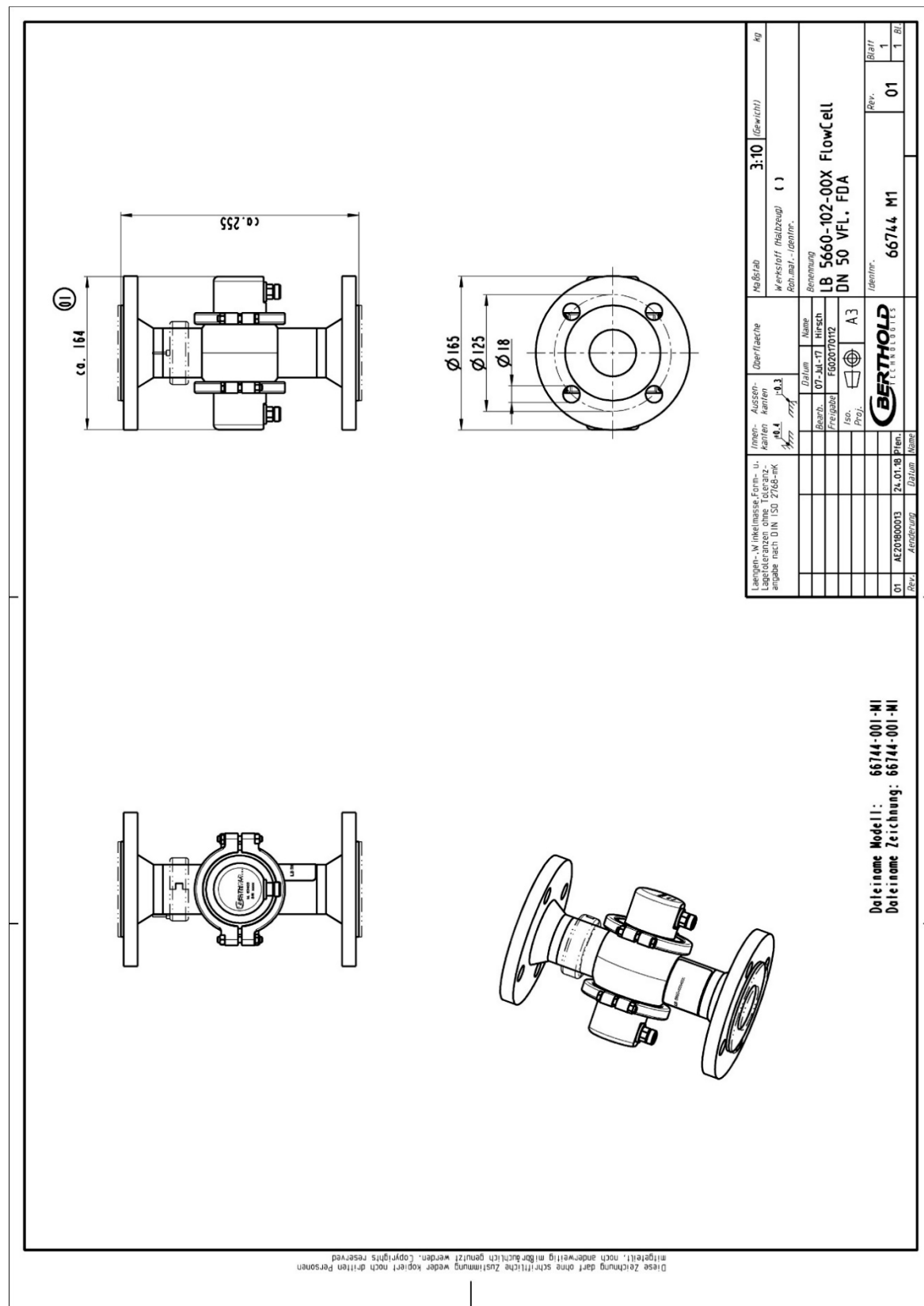




# Dimensional Drawings Flow Cells

## Maßbilder FlowCell

Type LB 5660-102-00X FlowCell DN 50 Flange, FDA  
Typ LB 5660-102-00x, Nennweite 50 mm





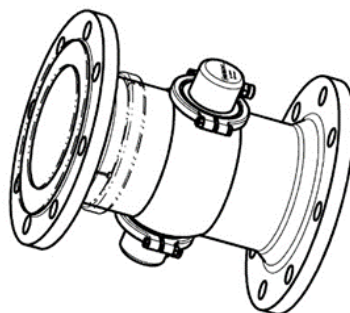
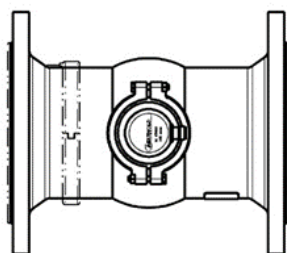
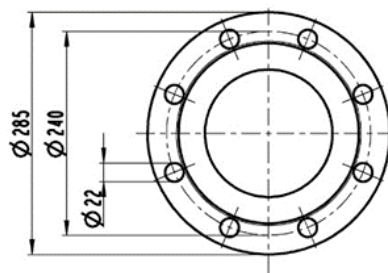
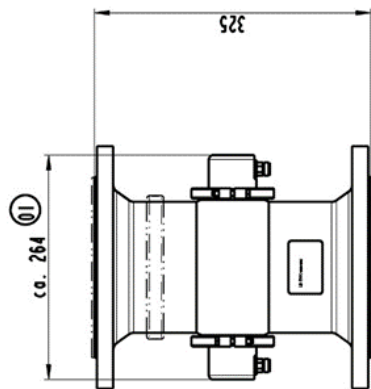








# Type LB 5660-602-00X FlowCell DN 150 Flange, FDA Typ LB 5660-602-00x, Nennweite 150 mm

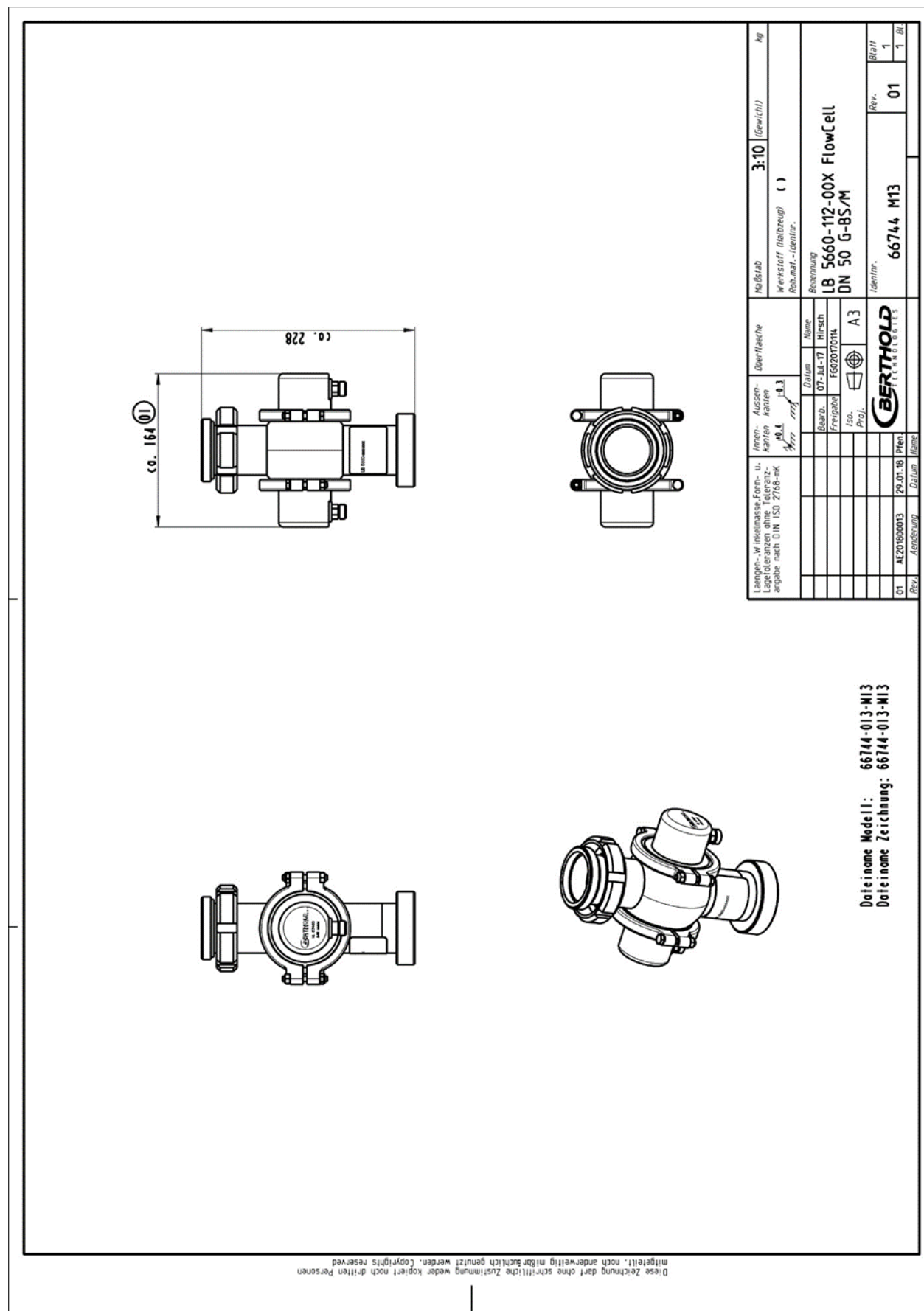


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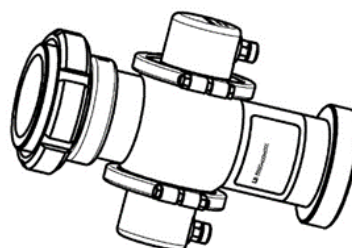
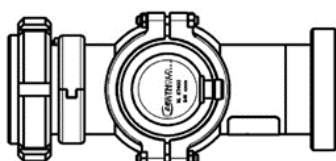
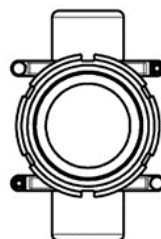
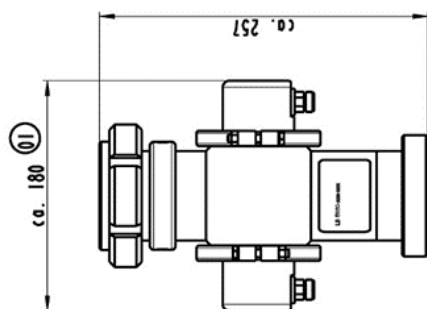
|                                                                                          |  |                          |  |                           |  |            |  |                 |  |                          |  |         |  |
|------------------------------------------------------------------------------------------|--|--------------------------|--|---------------------------|--|------------|--|-----------------|--|--------------------------|--|---------|--|
| Längen-, W.-Inhalts-, Form- u. Lagerdimensionen ohne Toleranzangabe nach DIN ISO 2768-mS |  | Innen-<br>Kanten<br>R0,1 |  | Aussen-<br>Kanten<br>R0,3 |  | Überfläche |  | Maßstab         |  | 1:5 (Gewicht)            |  | kg      |  |
| Bearb.                                                                                   |  | 28-Sep-17                |  | Hirsch                    |  | F62010112  |  | LB 5660-602-00X |  | FlowCell DN 150 VFL. FDA |  | Identr. |  |
| Proj.                                                                                    |  | A3                       |  | 66744 M6                  |  | 01         |  | 1               |  | Blatt                    |  | 1       |  |
| Rev.                                                                                     |  | Änderung                 |  | Datum                     |  | Name       |  | Pten.           |  | Rev.                     |  | Blatt   |  |
| 01                                                                                       |  | AE201800013              |  | 29.01.18                  |  | Pten.      |  | 01              |  | 1                        |  | Bl.     |  |

Dateiname Modell: 66744-006-M6  
 Dateiname Zeichnung: 66744-006-M6

# Type LB 5660-112-00X FlowCell DN 50 G-BS/M Typ LB 5660-112-00x, Nennweite 50 mm



# Type LB 5660-212-00X FlowCell DN 65 G-BS/M Typ LB 5660-212-00x, Nennweite 65 mm

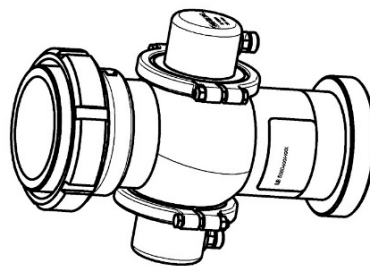
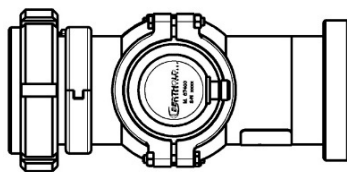
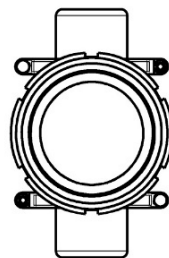
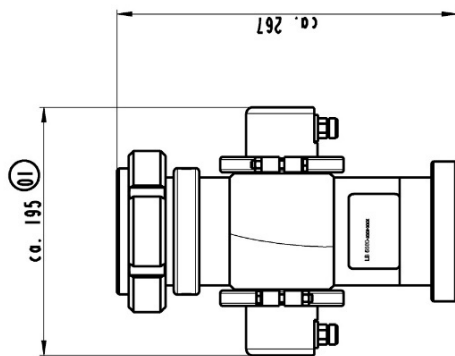


|                                                                                            |  |                          |                           |             |  |                                                       |                |    |
|--------------------------------------------------------------------------------------------|--|--------------------------|---------------------------|-------------|--|-------------------------------------------------------|----------------|----|
| Laenge/-, W inkelmasse, Form- u. Lagerdimensionen ohne Toleranzangabe nach DIN ISO 2768-mS |  | Innen-<br>Kanten<br>R0,4 | Aussen-<br>Kanten<br>R0,3 | Oberflaeche |  | Maßstab                                               | 3:10 (Gewicht) | Kg |
|                                                                                            |  |                          |                           |             |  | Werkstoff (Halbzeug)<br>Rob.mtl. - Identif.           |                |    |
|                                                                                            |  |                          |                           |             |  | Benennung<br>LB 5660-212-00X FlowCell<br>DN 65 G-BS/M |                |    |
|                                                                                            |  |                          |                           |             |  | Identif.                                              |                |    |
|                                                                                            |  |                          |                           |             |  | 66744 M14                                             |                |    |
|                                                                                            |  |                          |                           |             |  | Rev.                                                  |                |    |
|                                                                                            |  |                          |                           |             |  | 01                                                    |                |    |
|                                                                                            |  |                          |                           |             |  | Blatt                                                 |                |    |
|                                                                                            |  |                          |                           |             |  | 1                                                     |                |    |
|                                                                                            |  |                          |                           |             |  | 1 Bl.                                                 |                |    |

Dateiname Modell: 66744-014-M14  
 Dateiname Zeichnung: 66744-014-M14

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# Type LB 5660-312-00X FlowCell DN 80 G-BS/M Typ LB 5660-312-00x, Nennweite 80 mm

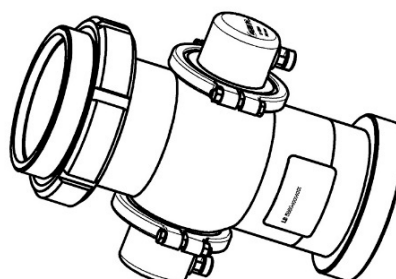
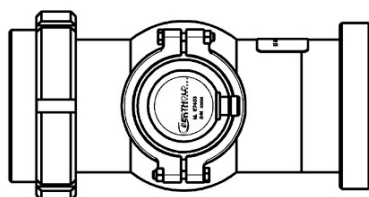
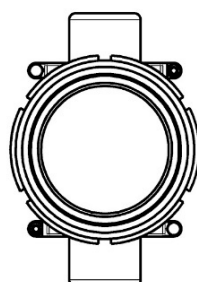
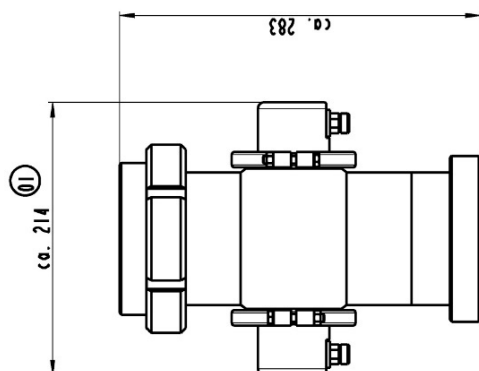


Dateiname Modell: 66744-015-M15  
 Dateiname Zeichnung: 66744-015-M15

|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|------------------------------------------------------------------------------------------|--|-----------------------------|--|------------------------------|--|------------|--|--------------------------|--|-------------------|--|-------|--|
| Längen-, Winkelmasse, Form-, u. Lage toleranzen ohne Toleranzangabe nach DIN ISO 2768-mS |  | Innen-<br>kannten<br>Anm. 1 |  | Ausßen-<br>kannten<br>Anm. 2 |  | Oberfläche |  | Maßstab                  |  | 3:10 (Gezeichnet) |  | kg    |  |
|                                                                                          |  |                             |  |                              |  |            |  | Werkstoff (Teilzeug) ( ) |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  | Rob.mst.-Leistung        |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  | Benennung                |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  | LB 5660-312-00X FlowCell |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  | DN 80 G-BS/M             |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  | Identif.                 |  | Rev.              |  | Blatt |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  | 66744 M15         |  | 1     |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  | 1 Bl. |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
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|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
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|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
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|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
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|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
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|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
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|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |
|                                                                                          |  |                             |  |                              |  |            |  |                          |  |                   |  |       |  |



# Type LB 5660-412-00X FlowCell DN 100 G-BS/M Typ LB 5660-412-00x, Nennweite 100 mm



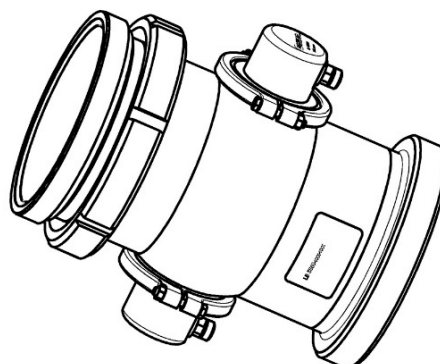
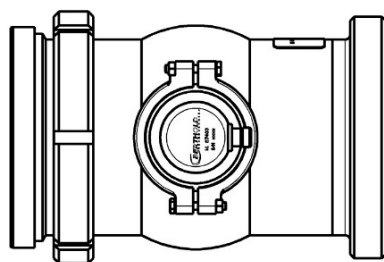
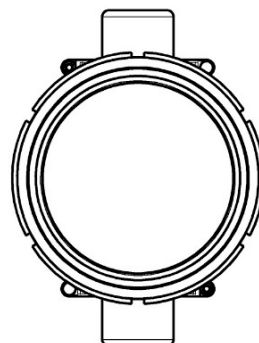
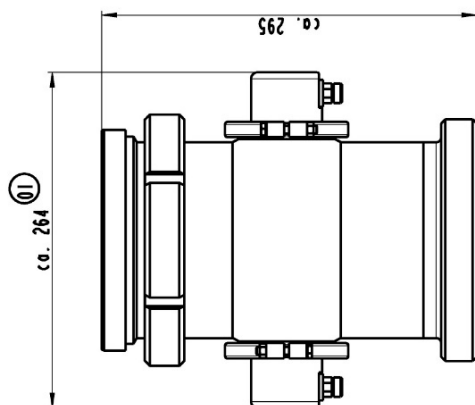
Dateiname Modell: 66744-016-M16  
 Dateiname Zeichnung: 66744-016-M16

|                                                                                             |  |                       |  |             |  |         |  |           |  |
|---------------------------------------------------------------------------------------------|--|-----------------------|--|-------------|--|---------|--|-----------|--|
| Laengen-, W. Einzelmasse, Form- u. Lagererhalten ohne Toleranz- angabe nach DIN ISO 2768-mK |  | Innen- Ausser- kanten |  | Oberflaeche |  | Maßstab |  | kg        |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 3:10    |  | (Gewicht) |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
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| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
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| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
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| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
| 1:1                                                                                         |  | 1:1                   |  | 1:1         |  | 1:1     |  |           |  |
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# Type LB 5660-612-00X FlowCell DN 150 G-BS/M Typ LB 5660-612-00x, Nennweite 150 mm



Teilname Modell: 66744-018-M18  
 Teilname Zeichnung: 66744-018-M18

|                                                                                   |                       |                        |            |                                           |       |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|------------|-------------------------------------------|-------|
| Längen-, Wichtmassen-, Form- u. Oberflächenangaben<br>Angabe nach DIN ISO 2768-MK | Innen-<br>Maß<br>10.1 | Ausßen-<br>Maß<br>10.3 | Überflache | Maßstab<br>3:10 (Gewicht)                 | kg    |
|                                                                                   |                       |                        |            |                                           |       |
| Bemerkung                                                                         | Bearb.                | Datum                  | Name       | Werkstoff (Halbzeug)                      | Rev.  |
|                                                                                   |                       |                        |            |                                           |       |
| A3                                                                                | 13-Oct-17             | EG02070114             | Hirsch     | LB 5660-612-00X<br>FlowCell DN 150 G-BS/M | 01    |
|                                                                                   |                       |                        |            |                                           |       |
| Rev.                                                                              | Änderung              | Datum                  | Name       | Identif.                                  | Blatt |
|                                                                                   |                       |                        |            |                                           |       |
| 01                                                                                | AE201800013           | 31.01.18               | Pfen.      | 66744 M18                                 | 1 Bl. |

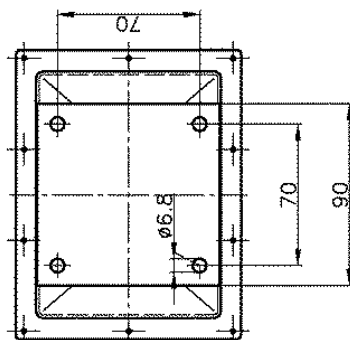
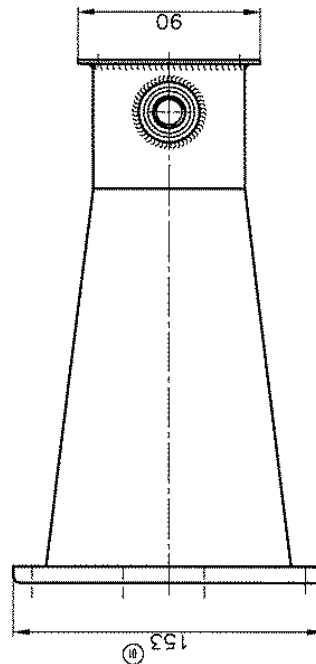
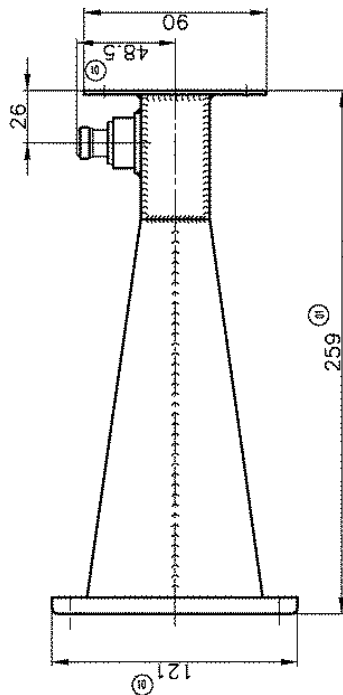
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# Dimensional Drawings Horn and Spiral Antennae

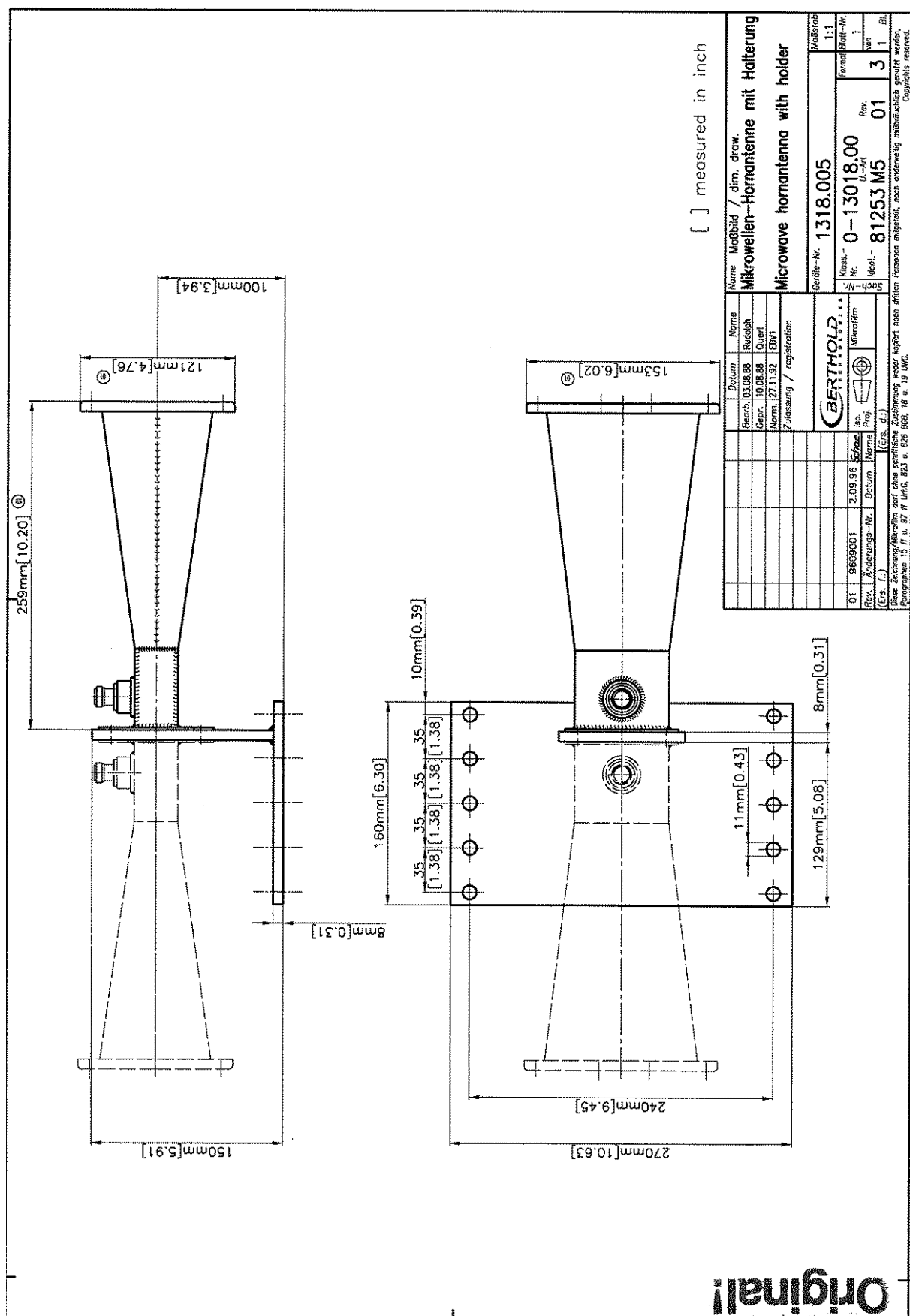
## Maßbilder Horn- und Spiralantennen

### Horn Antenna and Horn Antenna Holder

#### Hornantenne und Hornantennenhalter



| Name                                  |  | Maßbild / dim. draw. |  | Name                                  |  | Maßstab           |  |
|---------------------------------------|--|----------------------|--|---------------------------------------|--|-------------------|--|
| Mikrowellen Hornantenne (Micro Moist) |  |                      |  | Mikrowellen hornantenna (Micro Moist) |  | 1:1               |  |
| Geräte-Nr. 1318.004                   |  |                      |  | Klass.-Nr. 0-13018.00                 |  | Formelblatt-Nr. 1 |  |
|                                       |  |                      |  | U.-Art. 81253 M4                      |  | Rev. 01           |  |
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## Installation Proposal at the Measuring Chute Einbauvorschlag am Messschacht

