Modern single axis measuring head from the ODAC® laser measuring unit series. Highest accuracy, robustness, reliability and functionality distinguish all the laser heads from ZUMBACH. The ODAC® 100 is manufactured with a modular design. It is available with a support rail or as individual emitter and receiver parts when a maximum of flexibility is required to install the head in any position. The measuring head can also be installed in constricted confines or several emitter/receiver pairs can be mounted in the same plane. ODAC® 100 models can be used in virtually every manufacturing process in the wire and cable industry, the plastics and rubber industry as well as the steel and metal industry.

Known for precision, quality and ease of use the laser measuring heads from ZUMBACH are among the best of their class.

The technological basis considered for these measuring heads is always of the latest cutting edge technology, with laser diodes as light sources combined with intelligent and powerful measured-value processors which facilitate a simple and flexible integration. Our long-standing experience as a pioneer of in-line measuring technology, combined with high production figures result in a product with an excellent price-performance ratio.

Among the outstanding features are features such as single scan calibration (CSS), single scan monitoring and high data rate output of up to 333* data packages per second. The measuring heads can be used with all line speeds. Vibrations during production have no noticeable influence on measurements.

* Depending on the measuring head model, the number of transmitted measured values as well as the baud rate of the interface.

Adaptive signal processing in the measuring units increase accuracy

All the measuring heads of the ODAC® series have adaptive signal processing (patent DE3111356), which makes subsequent regular re-calibrations superfluous. Only in instances of component exchange or compliance to calibration regulations ISO 9001 etc. would re-calibration be required.

All the relevant parameters for accuracy are continuously monitored by the measuring system and automatically compensated. This is valid in particular also for possible long-term changes of the behaviour of the scanner motor or the measuring electronics.

Flexible communication integration

- RS (-232/-422/-485)
- DP (Profinet DP)
- EN (Ethernet TCP/IP)
- PN (Profinet IO V2.3)
- EI (EtherNet/IP)
- J (digital, for connection to USYS processors)

Main advantages

- Very high scan rate (measuring frequency)
  Standard: 1000/s, Version F: 2000/s
  - High precision measurement
  - High insensitivity to dirt and dust

Flexible mounting

With or without rail, different measuring distances

Types of measurement

1 Diameter
2 Slit width
3 Penetration depth
4 Height
5 Multiple products
6 Dual scanning with large measuring field (synchronized)
7 Dual scanning XY (synchronized)

Other types of measurement on request

Special applications

Measurement of hot steel

CV measurement

► Ask for special data sheets on CV or STEELMASTER hot steel systems
The built-in processor allows the acquisition and filtering of the measured values, as well as statistic functions, parameter selection and many other functions. The RS version communicates via the integrated RS interface with a higher level system, like USYS from ZUMBACH, host computer (or PLC). The ZUMBACH protocols ODAC, ASCII or the network capable ANSI software protocols are selectable according to choice.

The built-in processor allows the acquisition and filtering of the measured values, as well as statistic functions, parameter selection and many other functions. These versions communicate via the integrated Profibus DP or Profinet IO interface with a higher level system. These interfaces are designed for high speed data transfer at the sensor actuator level. At this level, controllers such as programmable logic controllers (or PLC’s) exchange data via a fast serial (Profibus DP) or Ethernet (Profinet IO) connection with their distributed peripherals such as drivers, valves or intelligent slaves like ODAC measuring heads from ZUMBACH.

The built-in processor allows the acquisition and filtering of the measured values, as well as statistic functions, parameter selection and many other functions. The EN version communicates via the integrated EN interface with a higher level system. The selectable ZUMBACH protocols (ODAC or ASCII) are integrated and transmitted in the well known TCP/IP protocol. TCP/IP allows the data transfer through existing networks such as LANs and others.

**ODAC® 100Jxx with the corresponding external ZUMBACH processors**

- **WIREMASTER**
- **USYS 20**
- **USYS 200**
- **USYS IPC 1e**
- **USYS IPC 2e**
### Accessories

**Description**

Floor stand ST2-ODAC 100.DT100  
Vertically adjustable.  
Line height (H): 900...1200 mm (35.4...47.25 in.)

Floor stand ST2-ODAC 100.DT100 90°  
Vertically adjustable.  
Line height (H): 900...1200 mm (35.4...47.25 in.)

Mountable support for ST2  
Lateral support, including rotary holder (USY.0002.910) for table top version of the USYS 20 processor.

**Order Number**

ST02.143.28575

ST02.143.28585

ST02.060.190

**Dimensions**

- **Model**:  
  - ODAC.000xx.DT100  
  - ODAC.000xx.DT200  
  - ODAC.000xx.DT300  
  - ODAC.000xx.DT400

- **Dimensions in mm (inch)**
  - ODAC 100xx.DT100  560 (22.05) 200 (7.87) 455 (17.91) 100 (3.94)
  - ODAC 100xx.DT200  760 (29.92) 400 (15.75) 655 (25.79) 200 (7.87)
  - ODAC 100xx.DT300  960 (37.80) 600 (23.62) 855 (33.66) 300 (11.81)
  - ODAC 100xx.DT400 1160 (45.67) 800 (31.50) 1055 (41.54) 400 (15.75)

- **Accessories**

  - **Floor stand ST2-ODAC 100.DT100**
    - ST02.143.28575
  - **Floor stand ST2-ODAC 100.DT100 90°**
    - ST02.143.28585
  - **Mountable support for ST2**
    - ST02.060.190

- **Set of calibration standards**
  - ODAC.9501.07000
  - Delivered in a protection box, comprising:
    - Calibration standard holder
    - Calibration standard ø 2 and 75 mm
    - Certificate
  - Other calibration standards on request.

- **Connectors**

  - **Counter connector for digital input “I/F”**
    - Connector A10 125 0070
  - **Proximity switch**
    - A16 100 0110
  - **Set of calibration standards ODAC 100**
    - ODAC.1001.900

- **Local display LOC 01**
  - Is mounted directly on the measuring head.
  - Requires connection cable no. ODAC.9167.00005 between LOC 01 and the measuring head.
  - Not for ODAC J versions.

- **Signal cable L2 Bus 1D822 x 02R**
  - For the connection between the Profibus DP interface and the customer's data acquisition system. Only for ODAC DP version.
  - Not for ODAC J versions.

- **Analogue interface A4-ODAC**
  - Interface with 4 analogue and 5 digital outputs.
  - Direct connection of the digital input (proximity switch).
  - Not for ODAC J versions.

- **VISU-Touch**
  - The VISU-Touch is a rugged and compact 7" touch screen. This universal PoE (Power over Ethernet) powered touch screen enables display of the integrated web interface of the connected ODAC measuring head. It is supplied with a holder for fixing on the ODAC measuring head.
  - Not for ODAC J versions.

- **Ethernet cable**
  - Ethernet network cable cat. 6 S/FTP with RJ45 connectors. (XX in the order number stands for: x 0.1 m, e.g. A15 608 8025 stands for 25 x 0.1 m and thus a cable that is 2.5 m long). Not for ODAC J versions.

- **PoE Injector 48V, 24W**
  - Power over Ethernet supply for devices that do not support PoE or a long Ethernet cable.
  - Not for ODAC J versions.

- **Analogue interface A4-I-R**
  - Interface with 4 analogue, 5 digital and 2 relay outputs.
  - Direct connection of the digital input (proximity switch).
  - Not for ODAC J versions.

- **Connector**
  - Counter connector for digital input “I/F”. Connection of a proximity switch. It is not required, if the analogue interface is already used.
  - Not for ODAC J versions.

- **Proximity switch**
  - The proximity switch is used for the length detection.
  - Main data:
    - Standard: EN 60947-5-6 (NAMUR, NC)
    - Switching distance max. 2 mm (0.08 in.), flush mounting
    - Ambient temperature: -25...100 °C (-13...212 °F)
    - Protection: IP 67
    - Connection: PVC cable 2 m (6.5 ft.)

- **VISU-Touch VISU.001.01000**
  - The VISU-Touch is a rugged and compact 7" touch screen. This universal PoE (Power over Ethernet) powered touch screen enables display of the integrated web interface of the connected ODAC measuring head. It is supplied with a holder for fixing on the ODAC measuring head.
  - Not for ODAC J versions.

- **Ethernet cable A15 608 80XX**
  - Ethernet network cable cat. 6 S/FTP with RJ45 connectors. (XX in the order number stands for: x 0.1 m, e.g. A15 608 8025 stands for 25 x 0.1 m and thus a cable that is 2.5 m long). Not for ODAC J versions.

- **PoE Injector 48 V, 24 W**
  - Power over Ethernet supply for devices that do not support PoE or a long Ethernet cable.
  - Not for ODAC J versions.

- **Analogue interface A4-I-R**
  - Interface with 4 analogue, 5 digital and 2 relay outputs.
  - Direct connection of the digital input (proximity switch).
  - Not for ODAC J versions.

- **Connector**
  - Counter connector for digital input “I/F”. Connection of a proximity switch. It is not required, if the analogue interface is already used.
  - Not for ODAC J versions.

- **Proximity switch**
  - The proximity switch is used for the length detection.
  - Main data:
    - Standard: EN 60947-5-6 (NAMUR, NC)
    - Switching distance max. 2 mm (0.08 in.), flush mounting
    - Ambient temperature: -25...100 °C (-13...212 °F)
    - Protection: IP 67
    - Connection: PVC cable 2 m (6.5 ft.)
Technical Data

Measurement

<table>
<thead>
<tr>
<th>Model(s)</th>
<th>ODAC 100</th>
<th>ODAC 100EN-xx</th>
<th>ODAC 100IP</th>
<th>ODAC 100EN-xPx</th>
<th>ODAC 100JN</th>
<th>ODAC 100EN-xxN</th>
<th>ODAC 100JC</th>
<th>ODAC 100EN-xxC</th>
<th>ODAC 100Jx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>Standard</td>
<td>Narrow Beam</td>
<td>Measurement</td>
<td>CV tube</td>
<td>Same with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. object ø</td>
<td>0.25 mm</td>
<td>1 mm</td>
<td>0.25 mm</td>
<td>0.25 mm</td>
<td>0.25 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanning frequency</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>500</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width of laser beam</td>
<td>219 mm</td>
<td>219 mm (1.7 ft.)</td>
<td>437 ft. s</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Repeatability (3σ)</td>
<td>at measuring distance D, and averaging time (s)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Measurement error centric</td>
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<tr>
<td>Measuring zone (width x height)</td>
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<tr>
<td>Interface LOC</td>
<td>Only for Zumbach local display LOC 01</td>
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<tr>
<td>Interface I/F</td>
<td>Can be used for the connection of a remote interface (e.g. AI 4-ODAC) or as digital input for length detector (e.g. proximity switch according to EN 60947-5-6, NAMUR)</td>
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<tr>
<td>LED Service interface</td>
<td>Indicates traffic and error</td>
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</tr>
<tr>
<td>LED Host Interface</td>
<td>Indicates link and traffic</td>
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<tr>
<td>Energy supply</td>
<td>100 VA</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Operating range</td>
<td>85-265 VAC, typically</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mains voltage</td>
<td>50-60 Hz</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Power</td>
<td>20VA</td>
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</tr>
</tbody>
</table>

Ordering Information

When ordering, please specify the following:

1. Models: ODAC 100x, -ISx or ODAC 100EN-Rsx, -Dpx, -ENx, -PNx, -EIx

2. Connection cable

3. Processor model (Data acquisition system), only for ODAC 100x: WIREMASTER, USYs 20, USYs 200, USYs 1iec, USYs IPC 2e, CI 1J/EN-RS/-DP/-EN/-PN/-EI.

† Measuring field M ± 95% from “measuring field M”. The centre of the object is at “measuring distance D” as well as in the middle of the “measuring field M”.

‡ The measured object must be within this measuring zone. The centre of this measuring zone is at the “measuring distance D” as well as in the middle of the “measuring field M”.

§ System resolution is the smallest practical value on the last digit of the display (adjustable).

‖ Maximum power of the laser can be read on the warning label.

{| alternate style="" |
| --- |

**Available lengths:** 1, 2, 3, 5, 10, 15, 20, 25, 30, 40, 45, 50 m, each 10 m

**For the ODAC 100EN-DP, the connection to a higher level system is made with the signal cable # A13 252 0100.**

| USYS 20, USYS 200, USYS 1iec, USYs IPC 2e, CI 1J/EN-RS/-DP/-EN/-PN/-EI. | CI 1J/EN-RS/-DP/-EN/-PN/-EI. |

| CI 1J/EN-RS/-DP/-EN/-PN/-EI. | CI 1J/EN-RS/-DP/-EN/-PN/-EI. |

**Order no. B.ODAC.821.32xx.**

**Connectivity:**

1. For "K" versions (Narrow beam) is recommended in case of products with very uneven surfaces, for the contour measurement and detection of surface defects, such as laps and neckdowns.

2. Conformity not verified by UL.

All devices equipped with lasers have been built in accordance with the requirements of IEC/EN 60825-1:2014 and CDRH (USA) and carry the prescribed warning labels according to IEC/EN 60825-1:2014.

| Technical specifications are subject to change without notice |

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