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® 550 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® 550 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.

Amongst 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 (Profinbus 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
Profile measurement with rotating device

Ask for special data sheets
System Overviews

**ODAC® 550EN-RS (serial interface)**

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.

**ODAC® 550EN-DP (Profibus DP), -EN-PN (Profinet IO) or -EN-EI (EtherNet/IP)**

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.

**ODAC® 550EN-EN (Ethernet)**

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® 550Jxx with the corresponding external ZUMBACH processors**
## Accessories

### Set of calibration standards

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivered in a protection box, comprising:</td>
<td></td>
</tr>
<tr>
<td>- Calibration standard holder</td>
<td></td>
</tr>
<tr>
<td>- Calibration standard ø 6 and 400 mm</td>
<td></td>
</tr>
<tr>
<td>- Certificate</td>
<td></td>
</tr>
<tr>
<td>Other calibration standards on request.</td>
<td></td>
</tr>
</tbody>
</table>

### Local display LOC 01

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires connection cable no. ODAC.9167.0xxxx* between LOC 01 and the measuring head.</td>
<td>LOC.011.01000</td>
</tr>
<tr>
<td>Not for ODAC J versions.</td>
<td></td>
</tr>
<tr>
<td>* Cable length from 0.4 to 100 m; indicate length with ordering.</td>
<td></td>
</tr>
</tbody>
</table>

### Analogue interface AI 4-ODAC

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface with 4 analogue and 5 digital outputs. Direct connection of the digital input (proximity switch). Not for ODAC J versions.</td>
<td>ODAC.000.100</td>
</tr>
</tbody>
</table>

### Proximity switch

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>The proximity switch is used for the length detection.</td>
<td>A16 100 0110</td>
</tr>
<tr>
<td>Main data:</td>
<td></td>
</tr>
<tr>
<td>- Standard: EN 60947-5-6 (NAMUR, NC)</td>
<td></td>
</tr>
<tr>
<td>- Switching distance max. 2 mm (.08 in.), flush mounting</td>
<td></td>
</tr>
<tr>
<td>- Ambient temperature: -25...100° C (-13...212° F)</td>
<td></td>
</tr>
<tr>
<td>- Protection: IP67</td>
<td></td>
</tr>
<tr>
<td>- Connection: PVC cable 2 m (6.5 ft.)</td>
<td></td>
</tr>
</tbody>
</table>

### Signal cable L2 Bus 1DR22 x 02R

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the connection between the Profibus DP interface and the customer’s data acquisition system. Only for ODAC DP version.</td>
<td>A13 252 0150</td>
</tr>
</tbody>
</table>

## Dimensions

### Models with rail

<table>
<thead>
<tr>
<th>Description</th>
<th>Modell</th>
<th>A in mm</th>
<th>B in mm</th>
<th>C in mm</th>
<th>D in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODAC.550.DT.400</td>
<td>1750 (68.9)</td>
<td>800 (31.5)</td>
<td>1270 (50.0)</td>
<td>400 (15.7)</td>
<td></td>
</tr>
<tr>
<td>ODAC.550.DT.700</td>
<td>2250 (88.9)</td>
<td>1400 (55.1)</td>
<td>1870 (73.6)</td>
<td>700 (27.6)</td>
<td></td>
</tr>
<tr>
<td>ODAC.550.DT.1000</td>
<td>2960 (116.5)</td>
<td>2000 (78.7)</td>
<td>2470 (97.2)</td>
<td>1000 (39.4)</td>
<td></td>
</tr>
</tbody>
</table>
### Technical Data

**Model(s):**
- ODAC 550JP / ODAC 550EN-xxP
- ODAC 550JP

**Version:**
- Standard including profile measurement
- Same with synchronization input

**Measuring field M:** 550 mm (21.65 in.)

**Min. object ø:** 2 mm (0.08 in.)

**Scanning frequency scans/s:**
- Standard 1000
- Option F version: 2000
- –

**Scanning speed:**
- 1056 m/s (3464 ft/s); F version: 2112 m/s (6929 ft/s)

**Width of laser beams:**
- 400 mm (15.75 in.)
- 700 mm (27.56 in.)
- 1000 mm (39.37 in.)

**Repeatability (3σ) at measuring distance D and averaging time (s):**
- 600 mm (23.62 x 20.86 in.)
- 8 µm (0.1 s) (0.00024 in.)
- 3 µm (1 s) (0.00012 in.)
- 8 µm (0.1 s) (0.00032 in.)
- 5 µm (1 s) (0.0002 in.)
- 10 µm (0.1 s) (0.0004 in.)
- 6 µm (1 s) (0.00024 in.)
- 12 µm (0.1 s) (0.00048 in.)

**Centric measurement error at measuring distance D:**
- ± 50 µm (0.002 in.)
- ± 100 µm (0.004 in.)
- ± 10 µm (0.1 s) (0.0004 in.)

**Measurement error within the measuring zone:**
- ± 50 µm (0.002 in.)

**Measuring zone (width x height):**
- 600 x 530 mm (23.62 x 20.86 in.)

**Resolution:**
- 1 µm (0.00005 in.)

**Light source:**
- Helix Laser, class 2

**Types of measurement (see page 1):**
- 1, 2, 3, 4, 5
- 1, 6, 7

### Interfaces / Connections

**Model(s):**
- ODAC 550EN-RSP
- ODAC 550EN-DPP
- ODAC 550EN-ENP
- ODAC 550EN-PNP
- ODAC 550EN-EIP
- ODAC 550Jx

**Interface Host:**
- RS-232/-422/-485, D-sub. connectors
- Profibus DP (RS-485), D-sub. connector 9p./f., galvanically isolated
- Ethernet TCP/IP, RJ45 10/100BaseT, galvanically isolated
- Profibus DP
- Ethernet IO, RJ45 10/100BaseT
- EtherNet/IP

**Interface Service:**
- Only for Zumbach local display LOC 01

**Data rate max. standard:**
- RS-232/-422/-485: 115.2 kbps
- Profibus DP: 12.5 kbps
- Ethernet TCP/IP: 100 Mbps
- Profibus DP: 12.5 kbps
- EtherNet/IP: 20 Mbps

**Data rate max. F version:**
- RS-232/-422/-485: 2.5 Mbps
- Profibus DP: 2 Mbps
- Ethernet TCP/IP: 50 Mbps
- Profibus DP: 2 Mbps
- EtherNet/IP: 100 Mbps

**LED Indicator of contamin. windows:**
- Flashing LED on the measuring head (relay output 30 VAC/VDC, 0.5 A)

**Interface LOC:**
- Only for Zumbach local display LOC 01

**Indicator of contamin. windows:**
- Flashing LED on the measuring head (relay output 30 VAC/VDC, 0.5 A)

**LED Service interface:**
- Indicates traffic
- Indicates traffic and error
- Indicates link and traffic
- Indicates link, traffic, system error and bus error
- Indicates link, traffic, module status and network status

**Energy supply emitter:**
- Power supply, tolerance: 110/230 VAC switchable, ± 15%
- Power: 40 VA

**Energy supply receiver:**
- Power supply: 100-240 VAC
- Operating range: Typically 85...265 VAC
- Mains frequency: 47...63 Hz
- Power: 20 VA

### Operation conditions / Miscellaneous

**Ambient temperature:**
- Operating: 0...45°C (32...113°F), Transport / Storage: -20...50°C (-4...122°F)

**Max. atmospher. humidity:**
- 95% (non condensing)

**Altitude:**
- 0...3000 m (0...9843 ft.)

**Weight:**
- Emitter: 35 kg (38 lbers)
- Receiver: 23.5 kg (51 lbs.)

### Ordering Information

**When ordering, please specify the following:**
1. **Models:**
   - ODAC 550JP, -JSP or ODAC 550EN-RSP, -DPP, -ENP, -PNP, -EIP
   - Versions: P (Profile measurement) standard, K (Components, without rail) specify the measuring distance D (see page 3), F (Fast, with higher scan frequency)

2. **Connection cable**
   - Available lengths: 1, 2, 3, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 m, each 10 m
   - For “K” versions (without rail)

3. **Processor model**
   - Available lengths: 1.5, 2, 3, 4, 5, 6, 8, 13 m (5, 6.5, 10, 13, 16.4, 20.24 ft.)
   - Minimum length = 2 x measuring distance D + 1 m (1.3 ft.)

All units, which are equipped with lasers, were designed to meet the regulations CDRH (USA), IEC/EN 60825-1:2014, DIN/VDE 0837.

They hold the warning and explanatory labels prescribed by CDRH or IEC/EN 60825-1:2014.

Switzerland (H.Q.): ZUMBACH Electronic AG, P.O. Box, CH-2552 Orpund, Phone +41(0)32 356 04 00, Fax +41(0)32 356 04 30, E-Mail: sales@zumbach.ch

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