

# ODAC® 15XY-J/-JM

The ODAC® 15XY measuring head is ideal for applications requiring precise dual axis diameter measurement where a low investment per unit is crucial and where at the same time top accuracy is required. ZUMBACH's experience with laser technology, combined with high volume production resulted in a product, offering maximum performance at minimum cost.

The unique ZUMBACH design, high quality standards and many years of experience resulted in a measuring head with a very high MTBF<sup>1)</sup> rating, offering reliable performance and unmatched accuracy:

### Principal Characteristics

- Measures all extruded, drawn or ground products and materials (solid, opaque and transparent)
- Integrated splash guard/air curtain
- Extremely compact
- Fully IP 65 protected

### Specially suited for:

Fine and extra fine wires, enamelled wires, cables, steel cords, fibres, medical tubing, extruded plastic or rubber products.

Available for 2 measuring ranges:

- J version from  $\varnothing$  0.040 mm (.0016 in.)
- JM version from  $\varnothing$  0.015 mm (.0006 in.)

### Measurement Principle

The measuring head scans the object with two laser beams. These absolutely parallel laser beams cross the measuring field perpendicularly to each other. The cast shadows are detected electronically and converted into an electrical signal.

This signal is sent to a data acquisition system (USYS, AT 4, WIREMASTER or CI computer interface). Any of these systems is compatible with the ODAC® 15XY and fulfills numerous functions such as:

- Product parameter library
- Measurement and control
- Storage of min/max value of outer/inner diameter and wall thickness
- Closed loop control
- Statistical reel report
- C-D control (foam)
- Real-time SPC charts
- Ready for computer networking



### Special Features

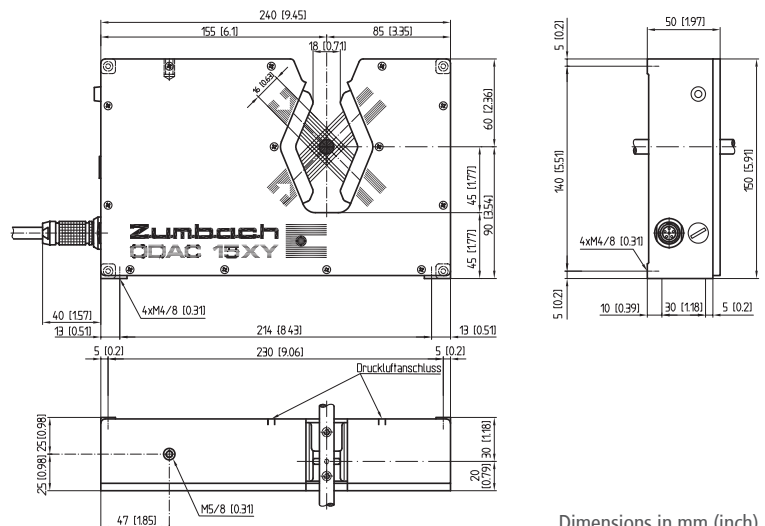
The new snap-in/snap-out air curtain elements are easily serviced and guarantee flawless operation, even in a hostile environment.

The measurement accuracy is independent of the line speed and of limited lateral oscillations of the measured object.

The measurement accuracy is not influenced by the light intensity of the environment.

High stability prevents a drift of the zero. Routine recalibration and zero check are unnecessary.

### Dimensions



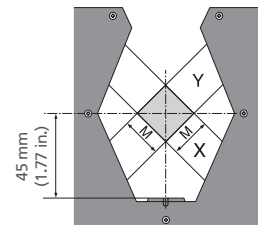
Dimensions in mm (inch)

<sup>1)</sup> Mean Time Between Failure

## Technical Data

Designation	ODAC 15XY-J	ODAC 15XY-JM "Super micro"
Processors	AT 4, WIREMASTER, USYS 20, USYS 200, USYS IPC 1e, USYS IPC 2e	
Computer interfaces	CI 1J/RS-RS, CI 1J/RS-DP, CI 1J/RS-EN	
Measuring field M <sup>1)</sup>	16 x 16 mm (.64 x .64 in.)	3 x 3 mm (.12 x .12 in.)
Min. object diameter	0.040 mm (.0016 in.)	0.015 mm (.0006 in.)
Repeatability <sup>2)</sup>	± 0.25 µm (.00001 in.) (Averaging time 0.2 s) ± 0.1 µm (.000004 in.) (Averaging time 1 s)	
Linearity	± 0.5 µm (.00002 in.) ± 0.1 ‰ (from 8 mm /.31 in. ± 0.5 ‰) <sup>3)</sup>	± 0.3 µm (.000012 in.) range up to 0.5 mm (.02 in.) ± 0.8 µm (.00003 in.) range up to 3 mm (.12 in.)
Resolution <sup>4)</sup>	0.1 µm (.000005 in.)	
Scanning frequency	2 x 200 scans/s 2 x 400 scans/s	2 x 200 scans/s
Scanning speed	26.7 m/s (87.6 ft./s) with 200 scans/s 53.4 m/s (175.8 ft./s) with 400 scans/s	26.7 m/s (87.6 ft./s) with 200 scans/s
Width of laser beam <sup>5)</sup>	0.5 mm (.02 in.)	
Light source <sup>6)</sup>	VLD (Visible Laser Diode) class II	
Ambient temperature	Operating: 0...45° C (32...113° F) Transport/Storage: - 20...50° C (- 4...122° F)	
Max. atmospheric humidity	95% (non condensing)	
Altitude	0...2500 m (0...8200 ft.) over sea level	
Type of protection	IP 65	
Power supply	supplied by the processor unit (24 V)	
Power consumption	approx. 6 W	
Weight	2.05 kg (4.52 lbs)	
Dimensions	see page 1	

- <sup>1)</sup> M stands for measuring field height. In practice, the largest object diameter corresponds to measuring field height minus instability of position.
- <sup>2)</sup> Values within ± 3 Sigma (99.7 %) / U<sub>95</sub>
- <sup>3)</sup> For object diameter up to 15 mm (.59 in.)
- <sup>4)</sup> System resolution is the smallest practical value on the last digit of the display.
- <sup>5)</sup> Measured within the measuring plane, including lateral jitter of the scan.
- <sup>6)</sup> Maximum power of the laser can be read on the warning label.

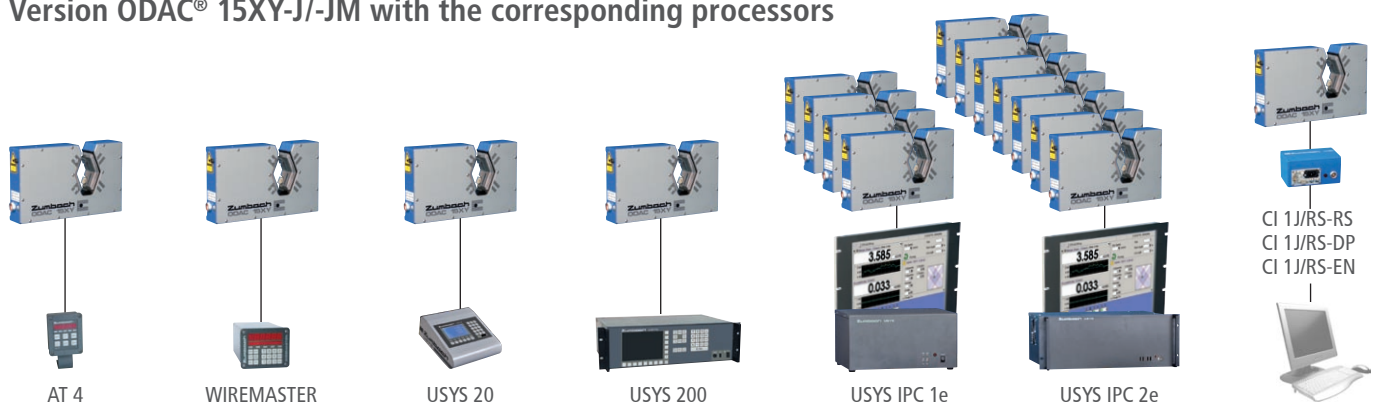


All units, which are equipped with lasers, were designed to meet the regulations CDRH (USA), BS 4803, EN 60825-1:2007, DIN/FDE 0837 and SEV TP 76/1A-D. They hold the warning and explanatory labels prescribed by EN 60825-1:2007.

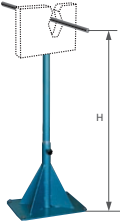

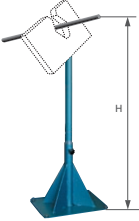


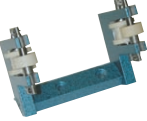


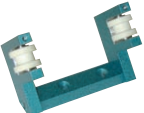








- Technical specifications are subject to change without notice










## Version ODAC® 15XY-J/-JM with the corresponding processors



## Accessories

Description	Order Number	Description	Order Number
<b>Stand ST2-ODAC 15</b> Vertically adjustable stand.  Line Height (H): 890 ... 1230 mm (35 ... 48.5 in.)	ST02.060.65000	<b>Flat guide FF1-ODAC15</b> Flat guide for measured object diameter up to 0.2 mm (.01 in.)	ODAC.151.440
			
<b>Stand ST2-ODAC 8-...45°</b> Vertically adjustable stand with 45° tilt.  Line Height (H): 880...1220 mm (34.6...48 in.)	ST02.060.65020	<b>VR guide VR1M-ODAC15</b> V-roller guide for measured object diameter up to 1 mm (.04 in.)	ODAC.151.450
			
<b>Mountable support w. rot. holder ST2-USYS20</b> Lateral support with rotating holder (USY.0002.910) for the table top model of the USYS 20 processor.	ST02.060.190	<b>Flat roller guide FRG6B-ODAC15</b> Roller guide for flat objects up to a width of up to 6 mm (.24 in.)	ODAC.151.460
			
<b>Rotary holder USYS 20</b> <b>Fixation set for wall mounting</b> (with pivot arm) <b>Fixation set for table top</b>	USY.0002.910 USY.0002.920 USY.0002.930	<b>VR guide VR10-ODAC15</b> V-roller guide for measured object diameter up to 10 mm (.4 in.)	ODAC.151.470
			
<b>Stand ST6-ODAC 15</b> Vertically adjustable swivel stand.  Line Height (H): 860...1150 mm (33.8...45.3 in.)	ST06.140.15000	<b>Flat roller guide FR6B-ODAC15</b> Flat-roller guide for measured object diameter up to 6 mm (.24 in.)	ODAC.151.480
			
<b>Leveling feet mounting set</b> To be mounted on the existing base plate of the stand.	ST02.001.1030	<b>Guide FRG15/6B-ODAC15</b> Flat-roller guide for round products up to a diameter of 15 mm (.6 in.) and for profiles with a max. border width of 6 mm (.24 in.)	ODAC.151.490
			
<b>Limiting socket VF15-ODAC15</b> Used as a device to delimit the measuring field (up to 15 mm [.059 in.]). It has no guiding function.	ODAC.151.420	<b>Guide DF4-ODAC15</b> Guide for measured object diameter up to 4 mm (.16 in.)	ODAC.151.500
			
<b>V guide VF6-ODAC15</b> V-guide for measured object diameter up to 6 mm (.24 in.)	ODAC.151.430	<b>Manual rotating sample holder FHM-ODAC 15</b> This rotating holder is used for the offline measurement (QC stations) of products within a diameter range of 0.5 up to 6.5 mm (.02 up to .26 in.).	ODAC.151.600
			

## Accessories

Description	Order Number	Description	Order Number																
<b>Set of calibration standard ODAC 15XY-J</b> Set of calibration standards supplied in a case, composed of: <ul style="list-style-type: none"> <li>– Calibration standard holder</li> <li>– Calibration standard <math>\varnothing</math> 0.5 mm (.02 in.)</li> <li>– Calibration standard <math>\varnothing</math> 6 mm (.24 in.)</li> <li>– Certificate</li> </ul>	<b>ODAC.9500.34000</b>	<b>Hose assembly for air curtain</b> Compressed air hose assembly with connection nipples for the air supply of the standard mounted air curtains/splash guards.	<b>ODAC.151.120</b>																
																			
<b>Set of calibration standard for VR1M guide</b> <b>Set of calibration standard for FF1 guide</b> Set of calibration standards supplied in a case, composed of: <ul style="list-style-type: none"> <li>– Calibration standard <math>\varnothing</math> 0.05 mm (.002 in.)</li> <li>– Calibration standard <math>\varnothing</math> 0.5 mm (.02 in.)</li> <li>– Certificate</li> </ul> Other calibration standards on request.	<b>ODAC.9500.10000</b> <b>ODAC.9500.34010</b>	<b>Air curtain LV.D-ODAC 15-18</b> Pressurized dust guard. Recommended for wire drawing applications. Metal bushing with ceramic inserts. For the safety device (air curtain, pair) no. ODAC.151.140. It is essential to select the corresponding bushing pair: <table border="1"> <thead> <tr> <th>Wire diameter range</th> <th>Part number</th> </tr> </thead> <tbody> <tr> <td>- 1.000 mm ( - .04 in.)</td> <td>B.ODAC.151.1440</td> </tr> <tr> <td>1.001 - 2.000 mm (.04 - .08 in.)</td> <td>B.ODAC.151.1450</td> </tr> <tr> <td>2.001 - 3.000 mm (.08 - .12 in.)</td> <td>B.ODAC.151.1460</td> </tr> <tr> <td>3.001 - 4.000 mm (.12 - .16 in.)</td> <td>B.ODAC.151.1470</td> </tr> <tr> <td>4.001 - 5.000 mm (.16 - .20 in.)</td> <td>B.ODAC.151.1480</td> </tr> <tr> <td>5.001 - 6.000 mm</td> <td>B.ODAC.151.1500</td> </tr> <tr> <td>6.001 - 8.500 mm</td> <td>B.ODAC.151.1490</td> </tr> </tbody> </table>	Wire diameter range	Part number	- 1.000 mm ( - .04 in.)	B.ODAC.151.1440	1.001 - 2.000 mm (.04 - .08 in.)	B.ODAC.151.1450	2.001 - 3.000 mm (.08 - .12 in.)	B.ODAC.151.1460	3.001 - 4.000 mm (.12 - .16 in.)	B.ODAC.151.1470	4.001 - 5.000 mm (.16 - .20 in.)	B.ODAC.151.1480	5.001 - 6.000 mm	B.ODAC.151.1500	6.001 - 8.500 mm	B.ODAC.151.1490	<b>ODAC.151.140</b>
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		  Bushing																	
<b>Protective shield ODAC 15XY</b> To protect additionally the measuring head against severe pollution and damage.	<b>ODAC.151.920</b>	<b>Air curtain LV.G-ODAC 15</b> With connection for blower unit GE 6.	<b>ODAC.151.940</b>																
																			
<b>Maintenance kit</b> Cleans and keeps the compressed air free of dirt. Features: Filter regulators, submicrofilter, manometer, pressure difference display, automatic condensate emptying and wall fixture.	<b>A34 200 0050</b>	<b>Blower unit GE 6, 230 V</b> <b>Blower unit GE 6, 115 V</b>	<b>GE.601.06000</b> <b>GE.601.06010</b>																
																			
		<b>Heat proof protection</b>	<b>ODAC.151.930</b>																

## Ordering Information

When ordering, specify the following:

### 1. Measuring head models:

Measuring head ODAC® 15XY-J / ODAC® 15XY-JM

### 2. Length of the connection cable between ODAC® 15XY-J (-JM) and the processor:

Available lengths: 1, 2, 5, 10, 15, 20, 25 and 30 m. Longer cables on request.

### 3. Processor models:

AT 4, WIREMASTER, USYS 20, USYS 200, USYS IPC 1e, USYS IPC 2e, CI 1J/RS-RS, CI 1J/RS-DP, CI 1J/RS-EN.

► Corresponding data sheets available on request.

