

# Vision Sensor

## B50S103

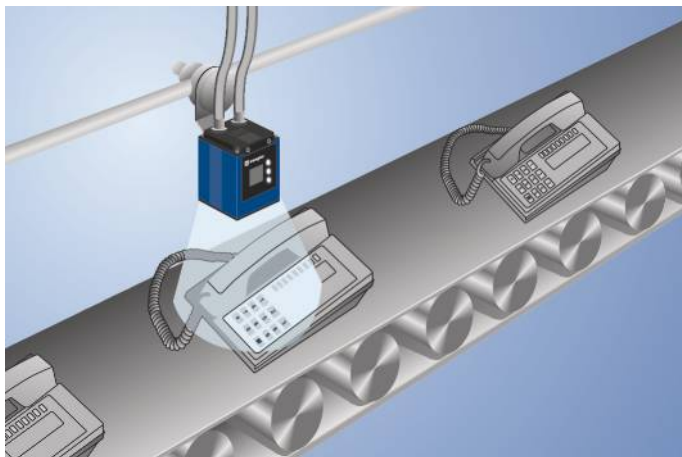
Part Number

weQubeVision



- Image processing functions
- MultiCore technology
- Pattern matching

The vision sensor weQubeVision is based on the wenglor MultiCore technology. The functions autofocus, region of interest and tracking ensure optimal object detection. The following image processing modules are available: Dimensional accuracy check, sorting procedures, presence control, object counting, position output, pixel counting, pattern matching, filter options, and statistics evaluation. Thanks to the integrated color image chip, all image processing functions are also available for remote applications.



### Technical Data

Optical Data	
Working Range	≥ 20 mm
Resolution	736 × 480 Pixel
Image Chip	color
Light Source	White Light
Service Life (T = +25 °C)	100000 h
Visual Field	see Table 1
Frame Rate	15 Hz

Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 200 mA
Response Time	66 ms
Temperature Range	-25...55 °C*
Inputs/Outputs	6
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Interface	RS-232/Ethernet
Protection Class	III

Mechanical Data	
Setting Method	Ethernet
Housing Material	Aluminum
Degree of Protection	IP67
Connection	M12 × 1; 12-pin
Type of Connection Ethernet	M12 × 1; 8-pin, X-cod.

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	227,7 a

Function	
Presence Check	yes
Pixel Comparison	yes
Reference Image Comparison	yes
Tracking	yes
Object detection	yes
Dimensional accuracy check	yes
Pattern matching	yes
Web server	yes

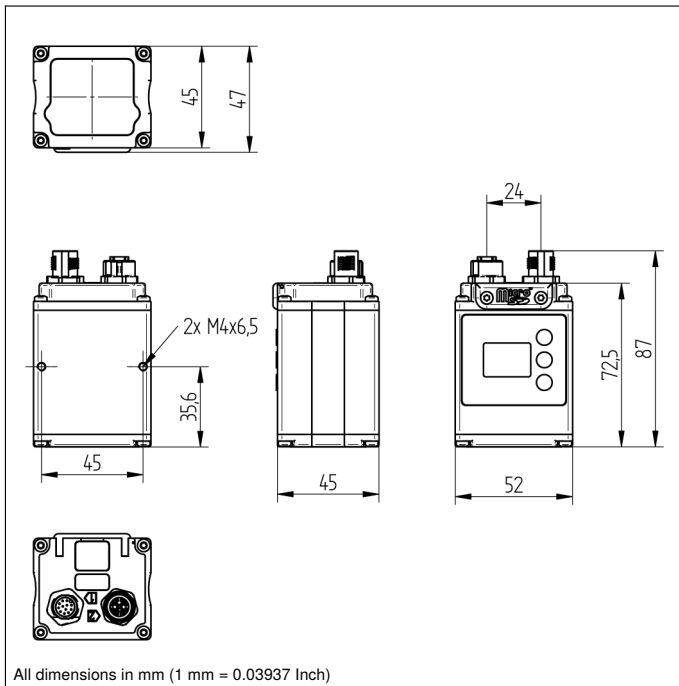
Configurable as PNP/NPN/Push-Pull	●
Switchable to NC/NO	●
Illumination Output	●
RS-232 Interface	●
Ethernet	●
PROFINET	●
EtherNet/IP™	●

Connection Diagram No.	002   1008
Control Panel No.	X2
Suitable Connection Technology No.	50   87
Suitable Mounting Technology No.	560

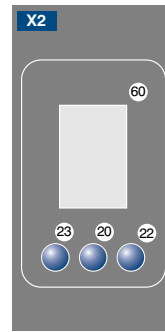
Display brightness may decrease with age. This does not result in any impairment of the sensor function.  
 \* -25 °C: Ambient conditions should not result in condensation; avoid the formation of ice on the front panel!  
 55 °C: Continuous illumination at max. 1% or flash mode at 100% brightness with an exposure time of ≤ 5 ms; may affect the service life of the product.

### Complementary Products

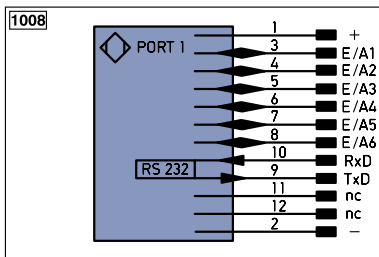
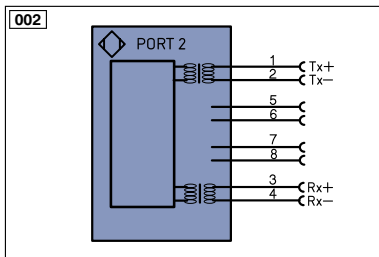
Disk with Polarization Filter ZNNG004
Illumination Technology
Protective Housing ZNNS001, ZNNS002
Software
weQubeDecode License Upgrade DNNL002
weQubeOCR License Upgrade DNNL003



### Ctrl. Panel



20 = Enter Button  
 22 = UP Button  
 23 = Down Button  
 60 = Display



### Legend

<b>+</b> Supply Voltage +	<b>PT</b> Platinum measuring resistor	<b>ENa</b> Encoder A
<b>-</b> Supply Voltage 0 V	<b>nc</b> not connected	<b>ENb</b> Encoder B
<b>~</b> Supply Voltage (AC Voltage)	<b>U</b> Test Input	<b>AMIN</b> Digital output MIN
<b>A</b> Switching Output (NO)	<b>U</b> Test Input inverted	<b>AMAX</b> Digital output MAX
<b>Ā</b> Switching Output (NC)	<b>W</b> Trigger Input	<b>AOck</b> Digital output OK
<b>V</b> Contamination/Error Output (NO)	<b>O</b> Analog Output	<b>SY In</b> Synchronization In
<b>∇</b> Contamination/Error Output (NC)	<b>O-</b> Ground for the Analog Output	<b>SY OUT</b> Synchronization OUT
<b>E</b> Input (analog or digital)	<b>BZ</b> Block Discharge	<b>OLt</b> Brightness output
<b>T</b> Teach Input	<b>AWv</b> Valve Output	<b>M</b> Maintenance
<b>Z</b> Time Delay (activation)	<b>a</b> Valve Control Output +	
<b>S</b> Shielding	<b>b</b> Valve Control Output 0 V	
<b>RxD</b> Interface Receive Path	<b>SY</b> Synchronization	
<b>TxD</b> Interface Send Path	<b>E+</b> Receiver-Line	
<b>RDY</b> Ready	<b>S+</b> Emitter-Line	
<b>GND</b> Ground	<b>≠</b> Grounding	
<b>CL</b> Clock	<b>SnR</b> Switching Distance Reduction	
<b>E/A</b> Output/Input programmable	<b>Rx+/-</b> Ethernet Receive Path	
<b>IO-Link</b>	<b>Tx+/-</b> Ethernet Send Path	
<b>PoE</b> Power over Ethernet	<b>Bus</b> Interfaces-Bus A(+)/B(-)	
<b>IN</b> Safety Input	<b>La</b> Emitted Light disengageable	
<b>OSSD</b> Safety Output	<b>Mag</b> Magnet activation	
<b>Signal</b> Signal Output	<b>RES</b> Input confirmation	
<b>Bl_D+/-</b> Ethernet Gigabit bidirect. data line (A-D)	<b>EDM</b> Contactor Monitoring	
<b>EN0 RS422</b> Encoder 0-pulse 0-0 (TTL)	<b>ENAR5422</b> Encoder A/Ā (TTL)	
	<b>ENBR5422</b> Encoder B/B̄ (TTL)	
		<b>Wire Colors according to DIN IEC 757</b>
		<b>BK</b> Black
		<b>BN</b> Brown
		<b>RD</b> Red
		<b>OG</b> Orange
		<b>YE</b> Yellow
		<b>GN</b> Green
		<b>BU</b> Blue
		<b>VT</b> Violet
		<b>GY</b> Grey
		<b>WH</b> White
		<b>PK</b> Pink
		<b>GNYE</b> Green/Yellow

**Table 1**

Working Distance	20 mm	200 mm	1000 mm
Visual Field	16 × 12 mm	120 × 90 mm	600 × 450 mm

