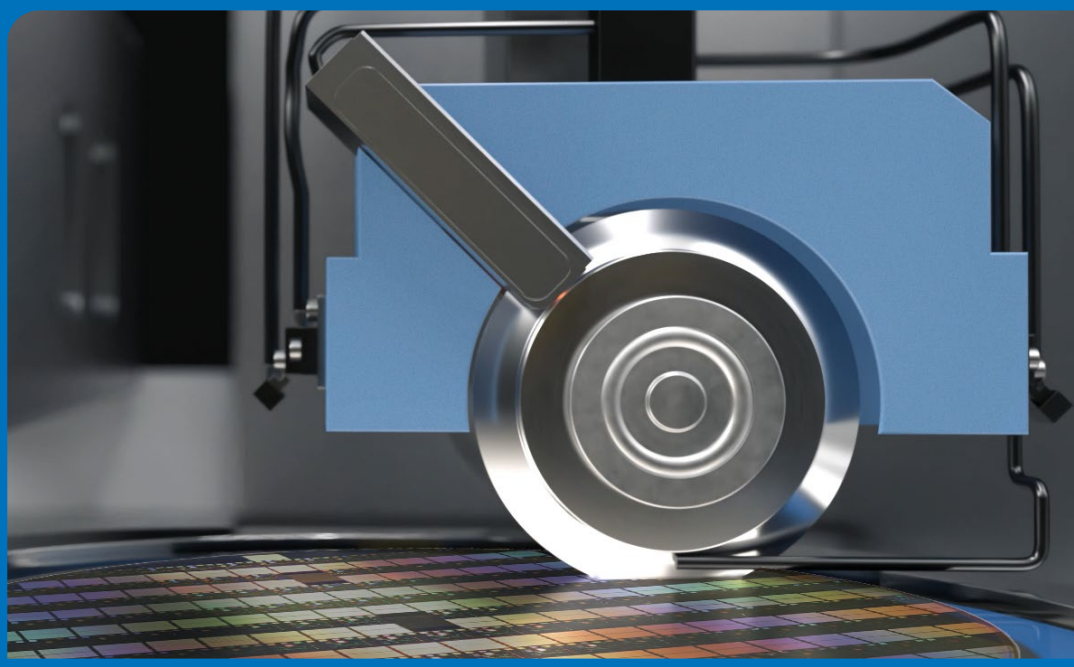
MARPOSS

VBI

VISUAL
BLADE
INSPECTOR



VBI

SYSTEM DESCRIPTION

Precision and reliability are essential in any industrial process where tool performance directly affects product quality. The VBI (Visual Blade Inspector) sensor has been designed to meet this need, providing advanced real-time monitoring of blade wear and shape through cutting-edge optical technology.

The VBI is the first ultra-high-frequency, fully digital system equipped with an innovative linear sensor that delivers accurate and consistent measurements. Its intuitive interface and integrated WebServer enable quick, user-friendly setup without the need for complex adjustments.

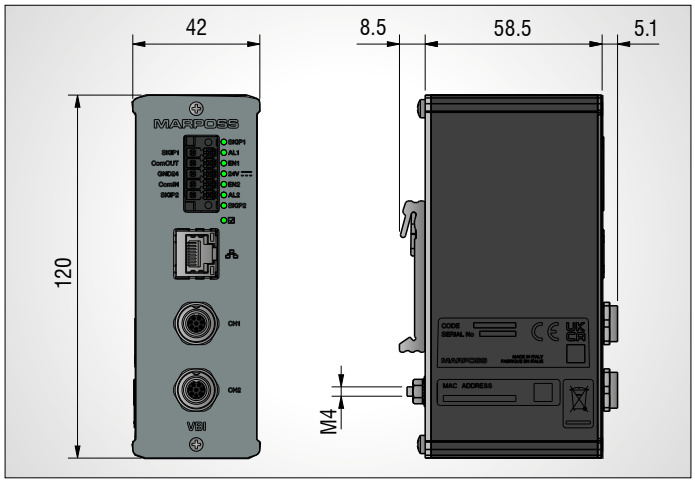
The system connects to an electronic interface unit capable of managing two sensors simultaneously, which can operate in parallel or perform different tasks, ensuring maximum flexibility in a wide range of applications.

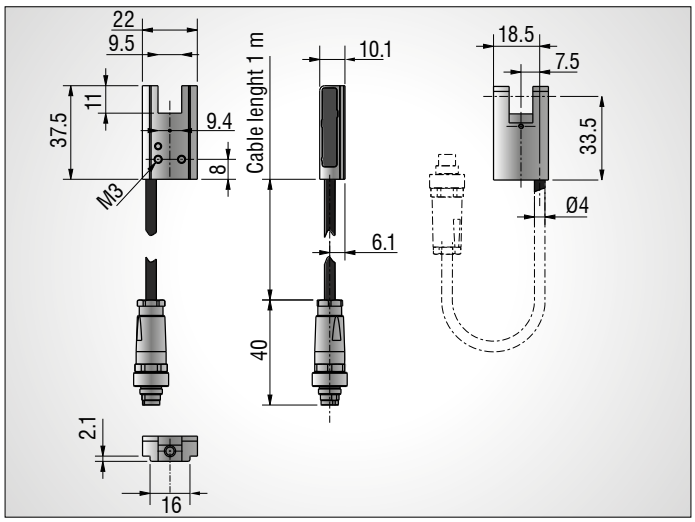
A smart air-connected cleaning system keeps the optical lenses clean by using the machine's air supply, guaranteeing stable performance and minimizing maintenance requirements.

ADVANTAGES

- **Advanced Monitoring** enhances process reliability
- **NCS Cycle** High speed for positioning with excellent repeatability
- **High Sampling Speed** Images captured in rapid succession for up-to-date monitoring
- **Advanced BBD Algorithm :** Quick detection of blade breaks with water filtration, reduced false alarms
- **Better Signal Transmission** no fiber optics reducing issues related to fragility and movement
- **Reduced Downtime** With a range of 1.8mm minimises repositioning operations and optimises productivity
- **Simple Integration** easily integrates with your machines without complex modifications
- **Intuitive Configuration** Can be easly programmed through the integrated Web Server
- **Advanced features** automatic operations for sensor setup according to ambient light conditions

VBI COMPONENTS





VBI - ELECTRONIC UNIT INTERFACE	
Visual indicators	Power and I/O state, activity state and link state
Interfaces	1 x Ethernet for external communication
Maximum number of sensors	2
Image sampling speed max	125 KHz
Programmable cycles	NCS (non contact setup) BBD (blade breakage detection) BSC (Blade Shape Control)
I/O	Isolated Sink Source connection type (see example below) Input circuits Type 1 - 24 Vdc Output circuits 24 Vdc / 100 mA max
Power supply / CONSUMPTION	24V direct current SELV - PELV type.
Protection degree *Standard IEC 60529*	IP30

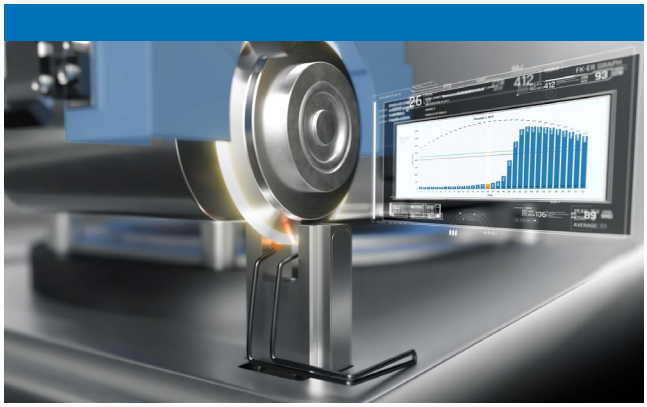
VBI - SENSOR	
Emitter Type	LED
Receiver Type	Linear image sensor
Protection Level	sensor side IP68 sensor connector IP50
Maximum Extension Lenght	1m

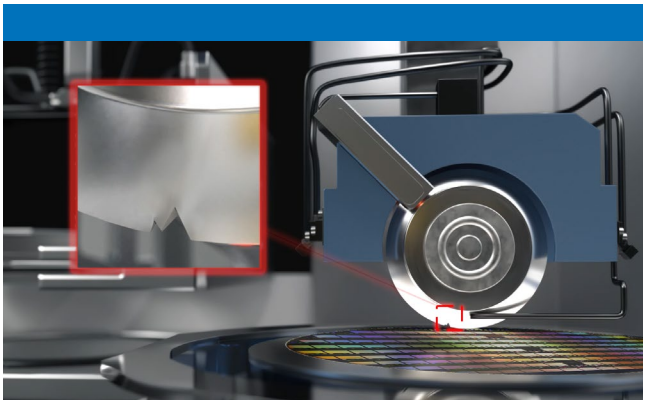
FUNCTIONALITY

The dicing process involves several fundamental aspects from the point of view of the sensor monitoring the blade.

NCS
(NON CONTACT SETUP)

The sensor checks the position of the blade (NCS) to ensure correct alignment with the workpiece, since improper positioning can lead to process inaccuracies or defects.
By activating a filter according to the rotation speed, it is possible to significantly improve repeatability for blades with large TIR.



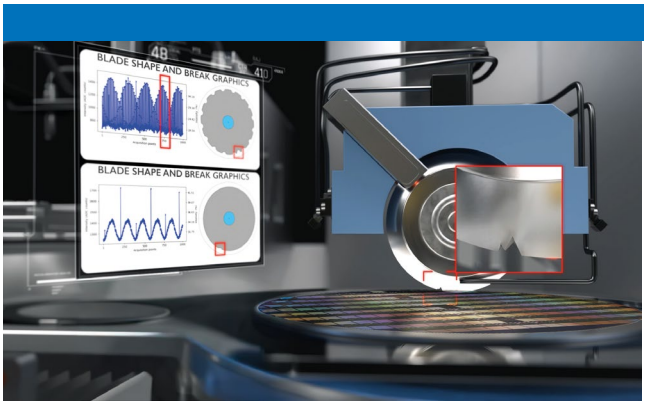


BBD
(BLADE BREACKAGE DETECTION)

During the process, the data collected by the sensor is analysed in real time to detect blade breakage (BBD), enhancing cut quality and overall process efficiency.
And thanks to the I/O of VBI Electronic Unit Interface, the machine is immediately stopped.

BSC
(BLADE SHAPE CONTROL)

The sensor also monitors the level of blade wear and can alert the operator or activate an automatic replacement system when the blade begins to wear.
It measures blade eccentricity and shape, ensuring optimal performance and consistent cutting accuracy.



WEBSERVER

Taking advantage of the connection with the Ethernet port, a WebServer is available to show different informations: connection parameters, firmware update, sensor programming and data display.
With this system, it is not necessary to open the machine cabinet to change the sensor programming.

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D6C11300G0- Edition 11/2025 - Specifications are subject to modifications.