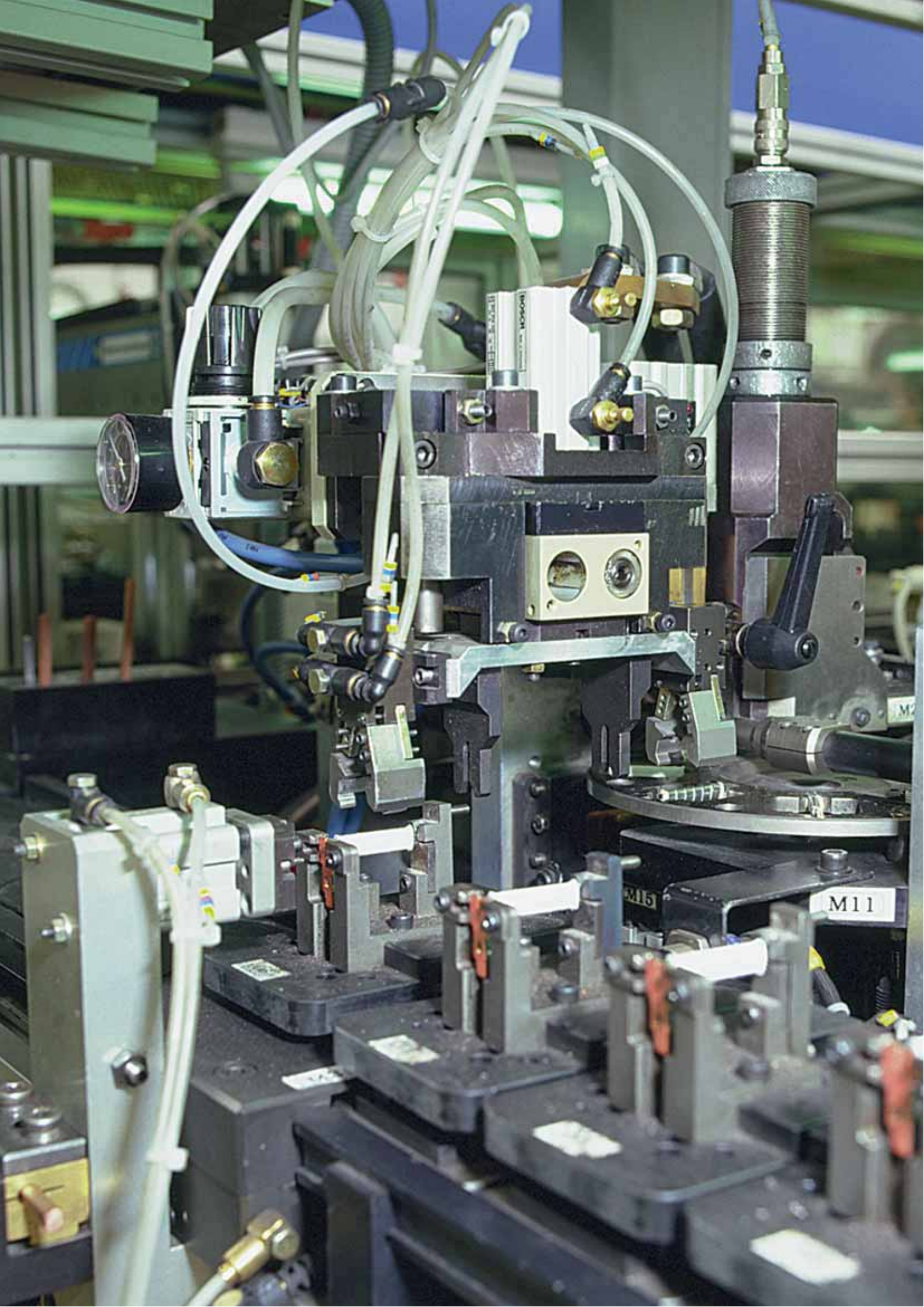


Vision sensors

OsiSense XUW

Catalogue





A high performance vision sensor that is simple to install and configure

The new **OsiSense XUW** vision sensor assists quality control of your manufactured parts.

Configuration of the sensor is simplified due to an intuitive configuration interface and interactive online help.

> Integrate it easily in your machines

The compactness of the OsiSense XUW vision sensor enables easy installation at the point where the parts must be checked.

> Reduce configuration time

Configure the sensor in only 3 simple steps.

> Evolve with your production

The use of 5 mixable interface tools means that you can add up to 32 simultaneous checks on a part.

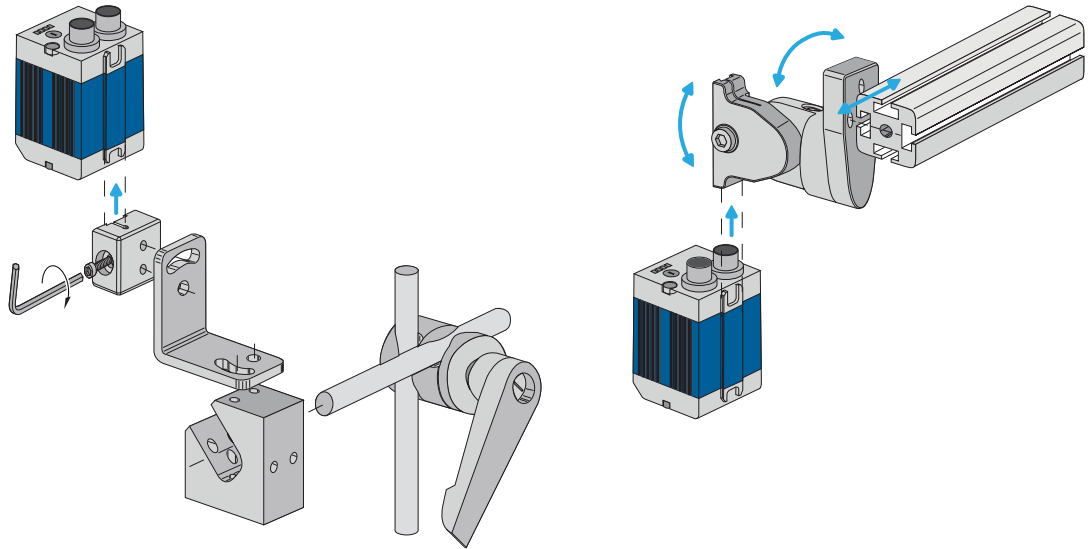
Simply easy!™



> Integrate it easily in your machines

The OsiSense XUW vision sensor is one of the most compact on the market. This compactness enables easy installation in your machines at the point where the part must be checked. Numerous mounting accessories enable easy positioning, orientation and fixing of the sensor. Its flexible and adjustable lighting eliminates unwanted reflections in order to obtain the best possible image and optimise your checking.

The **most compact** on the market



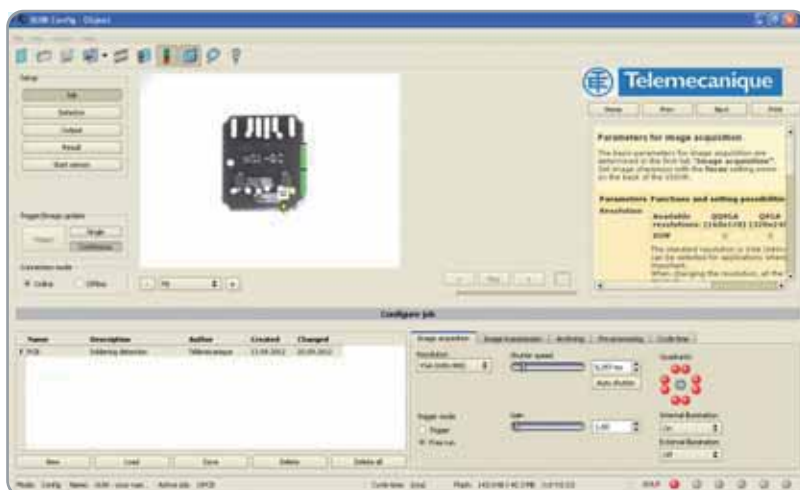
> Reduce configuration time

Nothing could be faster or simpler than configuring the OsiSense XUW vision sensor. The configuration interface, installed on your PC, guides you by offering predefined parameters.

Only **3 steps and it's done!**

Configuration in 3 steps
 1 Program
 2 Tools
 3 Inputs/Outputs

Connected mode or **simulation mode**



Interactive online help available at each step of the configuration

Lighting adjustment

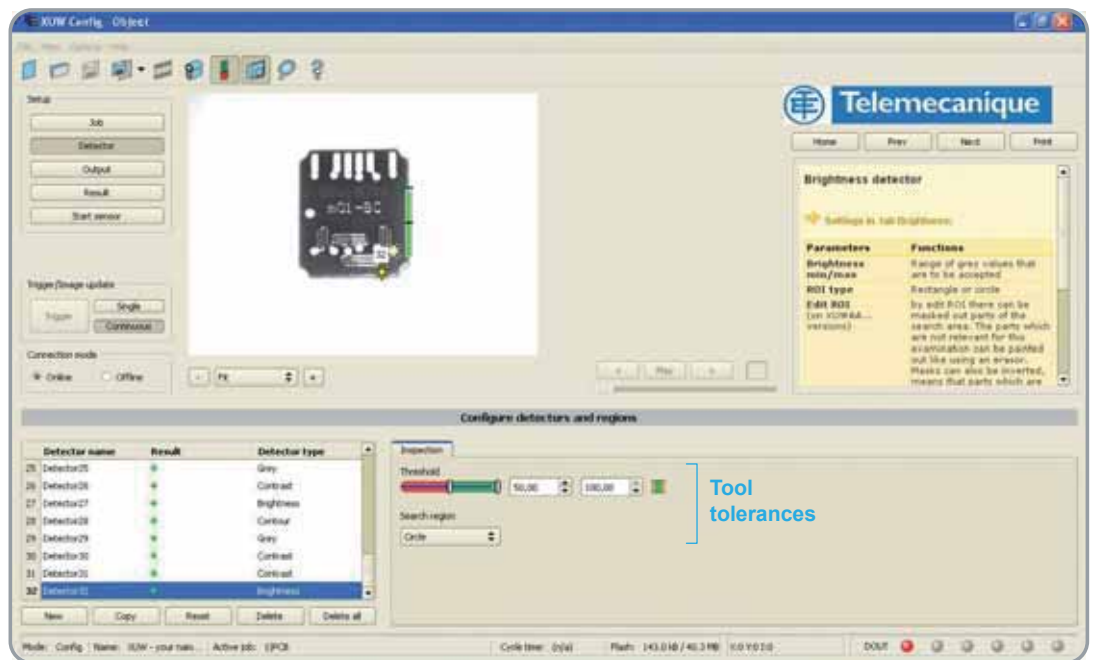
> Evolve with your production

The configuration interface offers you 5 tools with “unrestricted” usage

5 tools
32 checks

By using these 5 tools, up to 32 different checks can be performed on the same manufactured part. The tolerance of the tools is adjustable in order to set the acceptable limits.

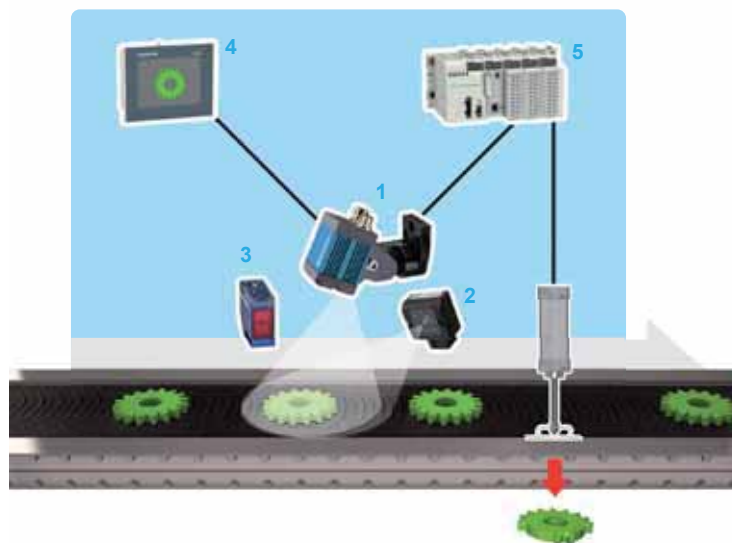
Select from these **5 tools** for optimum checking of your manufactured parts



Traceability of your configurations and checks saved

All images (good and bad), as well as configuration data, can be saved either in the sensor memory or on the network

General



- 1 : Vision sensor XUW.
- 2 : Additional lighting.
- 3 : Photo-electric sensor.
- 4 : Human/machine interface.
- 5 : Automation platform.

With high industrial production rates and a constant need to improve quality and boost profits, industrial companies are increasingly anxious to automate their production methods.

Vision sensors for the inspection of manufactured parts provide an answer to these concerns.

Vision sensors, such as OsiSense XUW, allow checking of high rate production operations and ensure good repeat accuracy of checking. These XUW sensors can also be used to manage object flows.

Types of application for manufactured parts:

- quality control
- presence
- position, orientation, sorting, integrity
- checking markings
- guiding and gripping

Operating principle

Once the application to be created is well defined, i.e. when "good" and "bad" parts have been identified, implementation of the XUW vision sensors is simple.

The sensor is configured via the software. This software is supplied on CD-ROM and must be installed on a PC. An image of the "good" part and its acceptance tolerances are saved in the XUW sensor memory. Once the sensor has been configured, it is independent. The PC is no longer required. Inspection results: the "good part" or "bad part" result is obtained via discrete outputs or Ethernet IP network outputs.

The inspection of parts is therefore simple to perform.

Presentation

The Telemecanique Sensors "vision" offer comprises:

- 4 vision sensors
- additional lighting (if necessary, depending on the application)
- configuration software
- fixing, mounting and cabling accessories

OsiSense XUW vision sensors

The main characteristics of these sensors are as follows:

- a grey-scale image
- compact size: 45 x 45 x 65 mm
- rugged construction: metal enclosure and connections
- connection by M12 connector
- a wide range of focal adjustment, for image sharpness
- white or red light, via LED (integrated and adjustable)
- integrated lens:
 - 12 mm focal length: high precision and long distance
 - 6 mm focal length: for close object and wide field of vision



Vision sensor



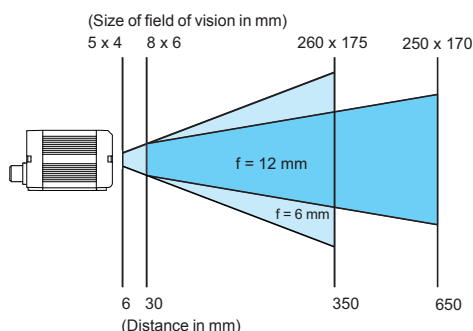
Direct linear lighting



"Good" part
(marking complete)



"Bad" part
(marking incomplete)



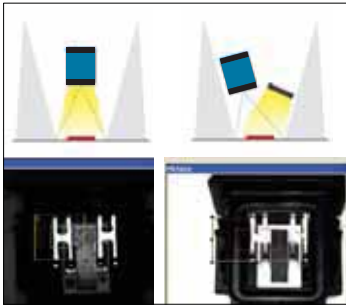


Figure 1: Direct linear lighting

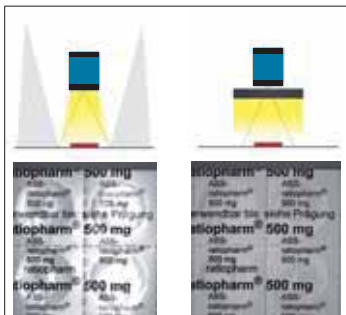


Figure 2: Ring lighting

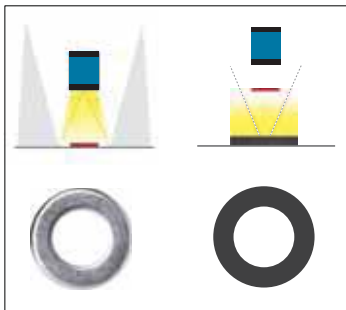


Figure 3: Back-lighting

Key for the 3 figures:



: Vision sensor



: Part to be detected



: Lighting

Presentation (continued)

Configuration software (see following pages)

In 5 simple steps, without any special training, the configuration software allows the user to:

- obtain the image quality needed to view the flaw being detected
- select the appropriate tool for the required inspection and set tolerances:
 - pattern matching
 - contour
 - contrast
 - brightness
 - grey-scale level
- assign inspection results to the discrete outputs or to the network outputs
- test the jobs created and view statistics
- save the jobs and set up the sensor

Inspections can be viewed using “viewer” mode.

Additional lighting

XUW sensors have integrated lighting.

However, it may be necessary to add further lighting for correct viewing of the flaw being sought.

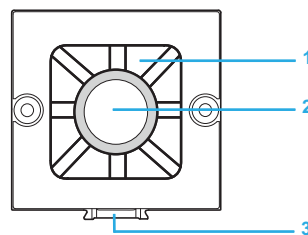
Three types of lighting, with white or red light, are offered:

- **direct linear lighting** to eliminate a reflection, on a part, generated by direct light from the sensor (Figure 1).
- **ring lighting** gives a consistent and uniform image of a highly reflective or irregularly-shaped part, for example a sheet of aluminium foil (Figure 2).
- **back-lighting** based on the shadow play principle, makes it possible to obtain more sharply contrasted contours. Object = black, light = white (Figure 3).

Accessories

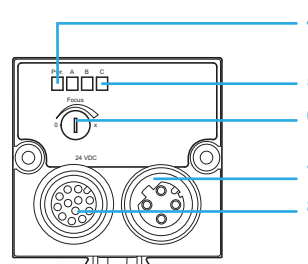
To simplify the installation of lighting, Telemecanique Sensors offers installation and adjustment accessories, jumper cables and pre-wired connectors in PUR.

Description of vision sensors



On the front panel:

- 1 LED lighting. White or red light, depending on model
- 2 Lens. Focal length 6 or 12 mm, depending on model
- 3 Dovetail fixing



Rear view:

- 4 Operating LED: green
- 5 A, B and C outputs LED: yellow
- 6 Focal adjustment potentiometer
- 7 Metal M12 connector, for connection to the Ethernet IP network
- 8 Metal M12 connector, for the power supply and the inputs/outputs

Photo-electric sensors

OsiSense XUW

Configuration software

In 5 steps, the software installed on a PC allows you to configure your application. The software is supplied on CD-ROM, in English, French and German.



Step 1: adjustment of image quality

This step is used to:

- adjust the focusing for image sharpness
- adjust the exposure time
- modify the number of lighting LEDs used or switch off the lighting
- use an external trigger (sensor) or an internal trigger (in continuous mode)



Step 2: tool selection and setting of tolerances

Tool selection

This step is used to select the tool or tools best suited to the required inspection.

The 5 inspection tools are:

- pattern matching (typical cycle time: 40 ms)
- contour (typical cycle time: 60 ms)
- contrast (typical cycle time: 4 ms)
- brightness (typical cycle time: 4 ms)
- grey-scale level (typical cycle time: 4 ms)

The 5 tools can be combined to obtain up to 32 check zones for a single part.



Setting of tolerances

This step is used to set the detection zone (in yellow), the teach zone (in green) and to set the tolerances of the tool or tools selected:

- acceptance threshold
- rotation angle
- mask modification
- position checking



Step 3: I/O module assignment

This step is used to:

- specify the assignment of discrete I/O
- configure the Ethernet IP network output
- assign logic functions for each output
- set a switching time



Good part: marking complies



Bad part: marking does not comply



Step 4: tests and results

This step is used for testing the jobs created on “good” and “bad” parts:

- good part: teach zone green and red and result bargraph green
- bad part: teach zone all red and result bargraph red
- score display (correspondence in relation to part saved, as %)
- display of X and Y positions
- display of rotation angle

Step 5: saving

This step is used to save the jobs in the vision sensor's memory and to start the application.

At this stage, the cycle time for each check can be seen. Once the program has been saved in the sensor, the computer is no longer necessary. The sensor operates independently.