



# ifm PMD Profiler Webinar

Round Table Discussion

Wednesday 28 October



Field Sales Engineer

Christopher Kidson

Presenter



Field Sales Engineer

Sam Magwaza Nkutha

Presenter



## PMD Profiler for object profile checking

Round Table Discussion



New Business Development Manager

Johan van Niekerk

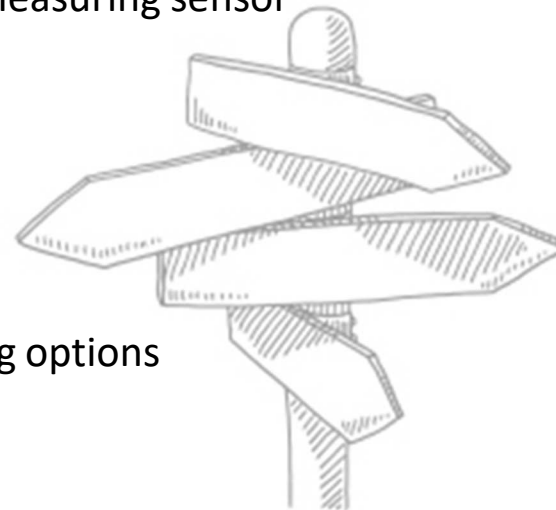
Host





# Agenda

1. Introduction
2. Classification within the optical measuring sensor
3. Product Technical specification
4. Product features
5. Product advantages and benefits
6. Applications
7. Product demonstration/Operating options
8. Q & A





# Introduction

- Ifm is happy to launch the new OPD100 Profiler which is an accurate contour detection for quality checks during the process.
- In assembly and handling applications, the PMD profiler does not only verify the presence of an object, but it checks whether the correct component has been used and properly installed.
- The photoelectric line scanner reliably detects even tiny differences, since the distance is not relevant, the PMD profiler does not require complicated object positioning as in the case with 1D point sensor.



# Classification within the optical measuring sensors

- 1D distance measurement between the sensor and a single point
  - Resolution distance: up to **1 mm**
  - 1 measuring point
- 2D profile measures the contour of a projected line
  - Resolution: up to 0.2mm
  - Approx. 300 measuring points
- 3D distance measurement of array of points
  - Resolution: up to 4mm
  - Approx. 100 000 measuring points



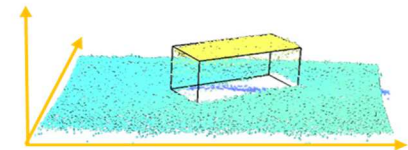
Point distance



contour line



point cloud





## Product technical specification

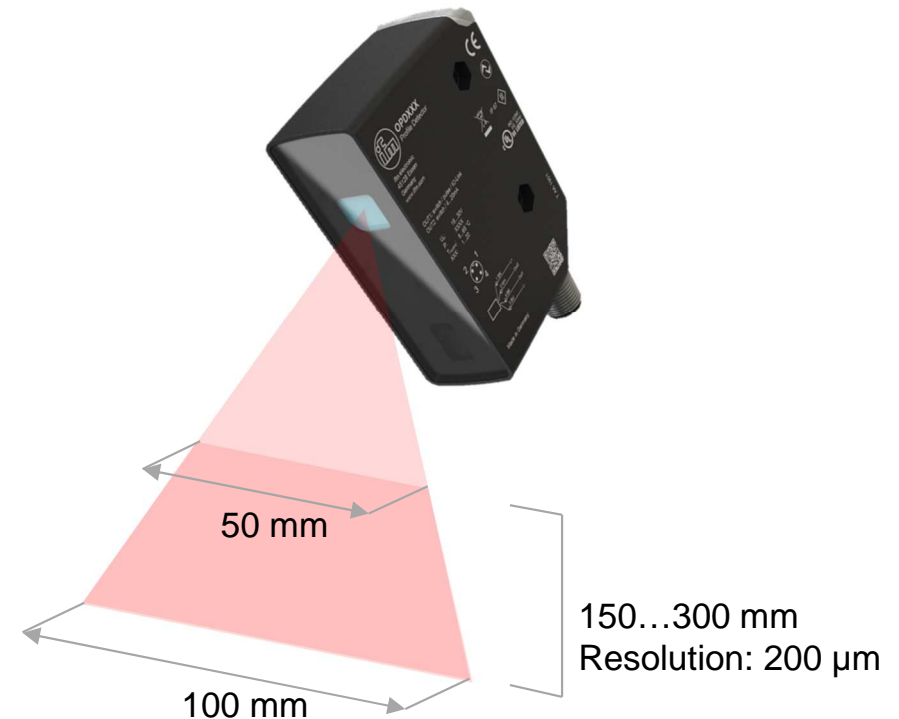
- Red laser light sensor
- Housing : Diecast zinc metal housing
- Dimensions : 88 x 65 x 28.5mm
- Operating voltage : 10....30 VDC
- 5-wire sensor with M12 connector
- 2 Outputs : OUT1 (Switch/IO-Link) ; OUT2 (Switch)
- 1 Input : IN1 (Trigger input)
- IP Rating : IP65
- Operating temperature : -10.....55 °C





## Product features

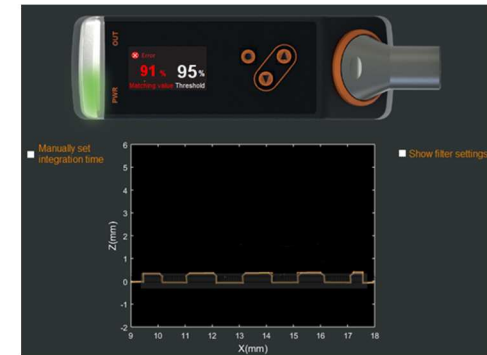
- IO-Link communication interface
- Class 1 laser protection
- Measuring distance (z- direction) : 150.....300mm
- Sampling rate : 5 Hz
- Measuring value resolution : 0.2mm
- Immunity to extraneous light : 20klx
- User friendly Colour display
- Intuitive setting with only 3 pushbuttons





# Product Advantages and Benefits

- Inline quality control checks to ensure correct assembly of parts
- Quick set-up without software in just a few steps
- Distance-independent measurement for high tolerance on object positioning
- Immunity to external illumination-No screening or external illumination required.
- Optical contour visualisation possible using software





# Application

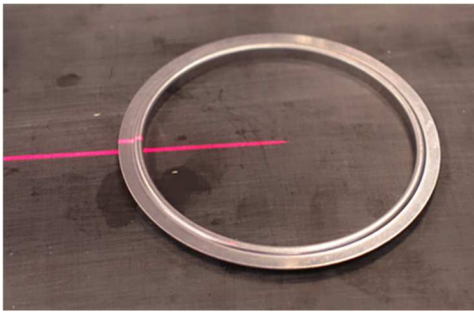
- Sorting Application
- Process and handling control
- Gap control
- Correct assembly/Depth measurement
- Completeness check
- Mounting technology/Assembly
- Control of the orientation



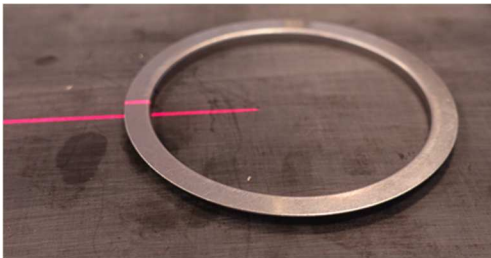


# Sorting Application

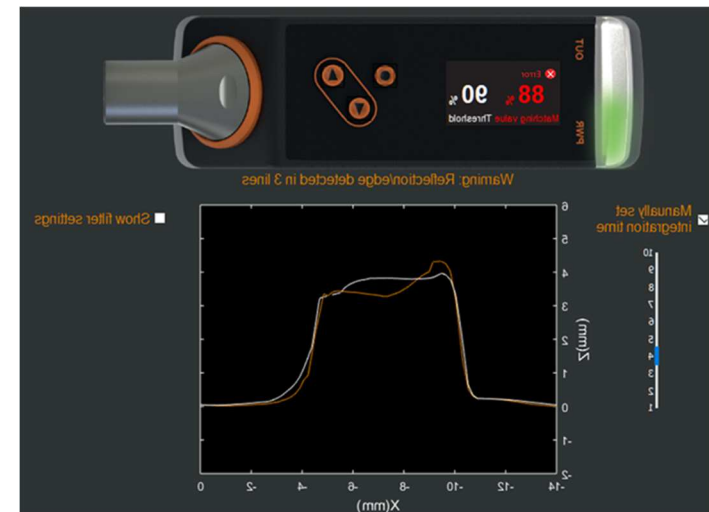
## Ring with groove



## Ring without groove



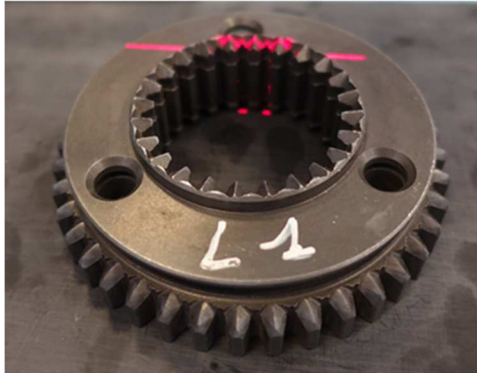
- Use case:  
**Sorting application**
- Reliable distinction even of features which are hard to discover with the naked eye.



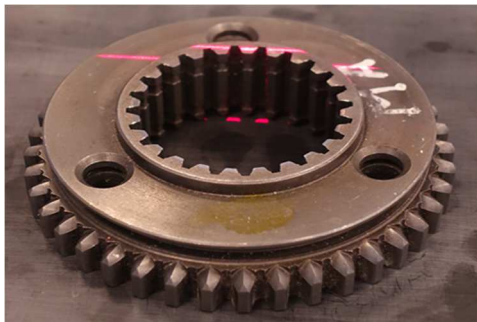


# Process and handling

Ground



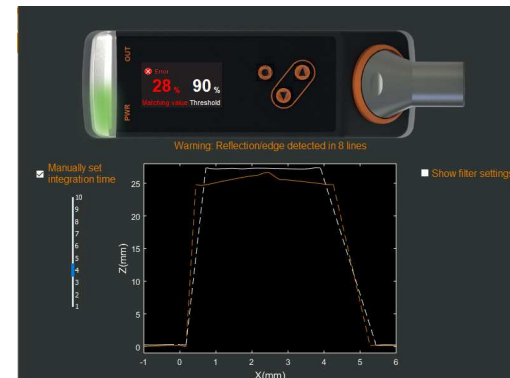
Flat



Use case:

## Process and handling control

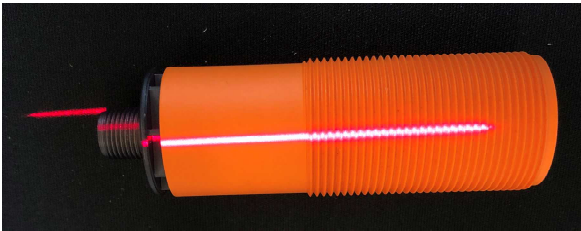
Fast and reliable control of handling steps to increase the process reliability



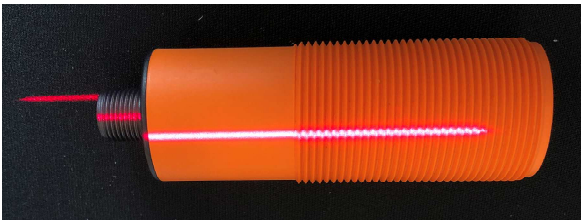


# Gap control

Not engaged



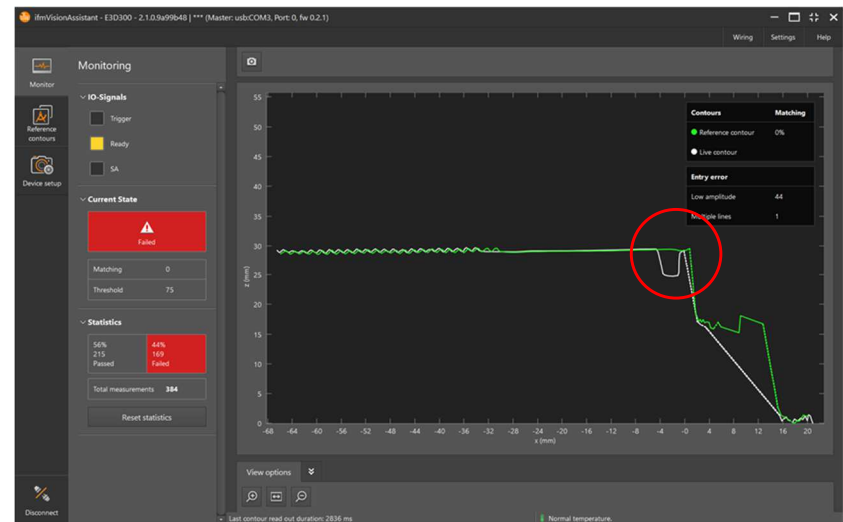
engaged



Use case:

## Gap control

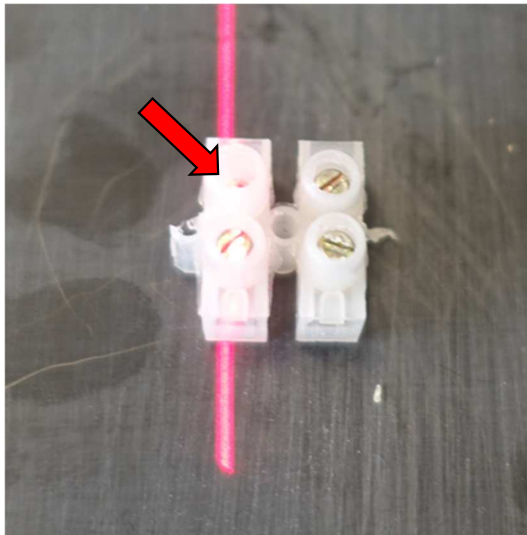
The accuracy of the Profiler allows a reliable check whether the housing is correctly engaged.





# Correct assembly/Depth measurement

## Screw missing



Use case:

## Depth measurement

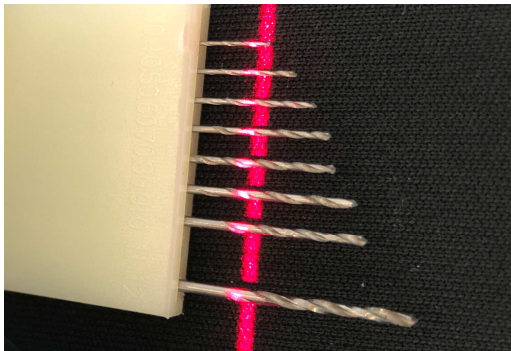
Check whether the screw exists or not.



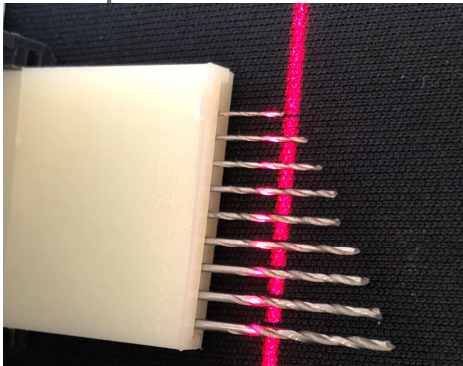


# Completeness check

Incomplete



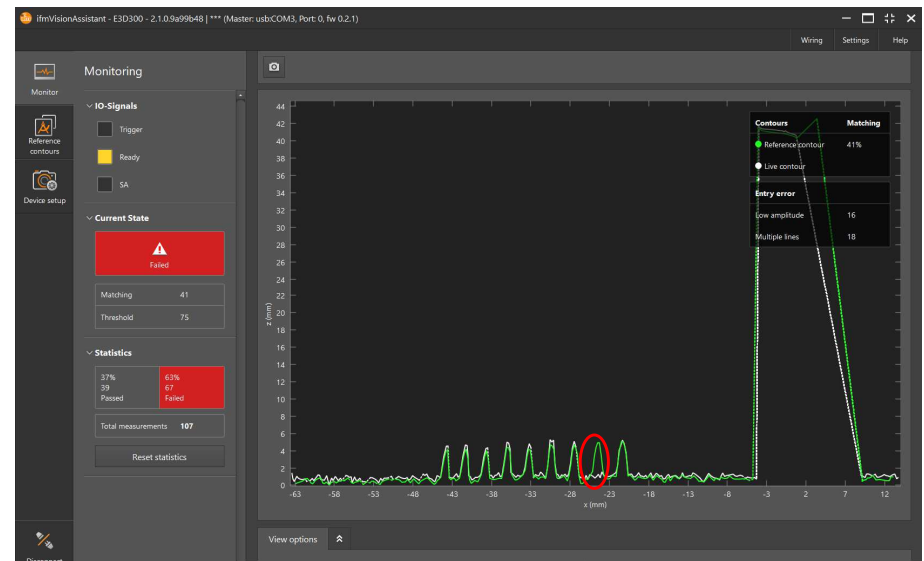
complete



Use case:

## Completeness check

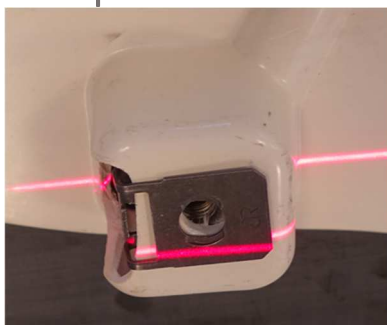
Even small parts can be checked for completeness.



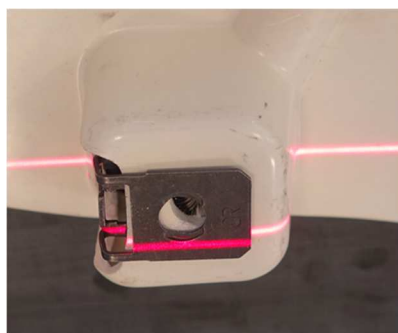


# Mounting technology/Assembly

Clip close



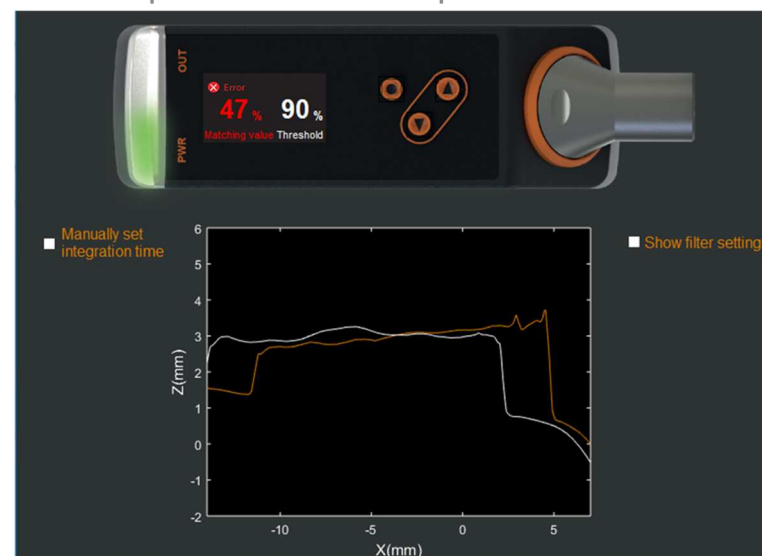
Clip open



Use case:

## Mounting technology / Assembly

Easy and fast detection of presence and correct position of the clip.

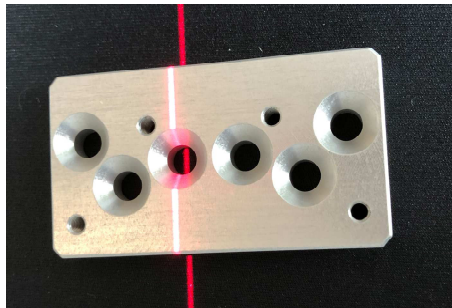


29.10.2020

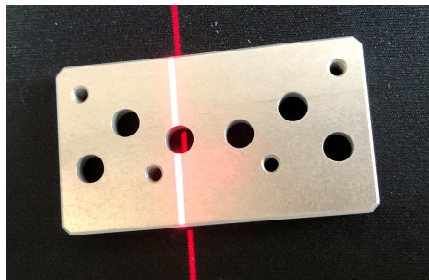


# Control of the orientation

Object right side up



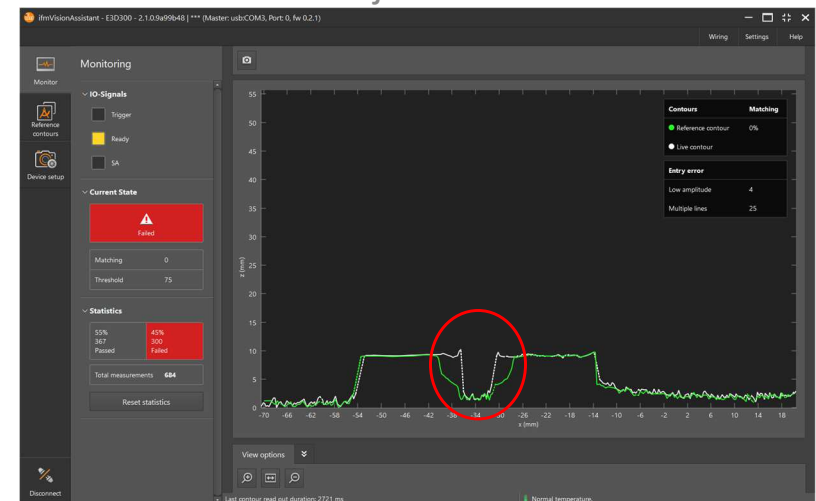
Object upside down



Use case:

## Control of the orientation

Distance-independent control of the orientation of the object.



29.10.2020

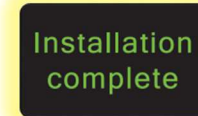
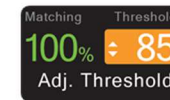
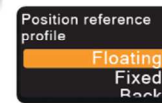
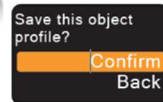




# Operating options

As a stand alone unit

1. Choose the language
2. Teach the reference profile
3. Set the Region Of Interest (ROI)
4. Select the position behavior of the reference profile
5. Set the threshold in %.

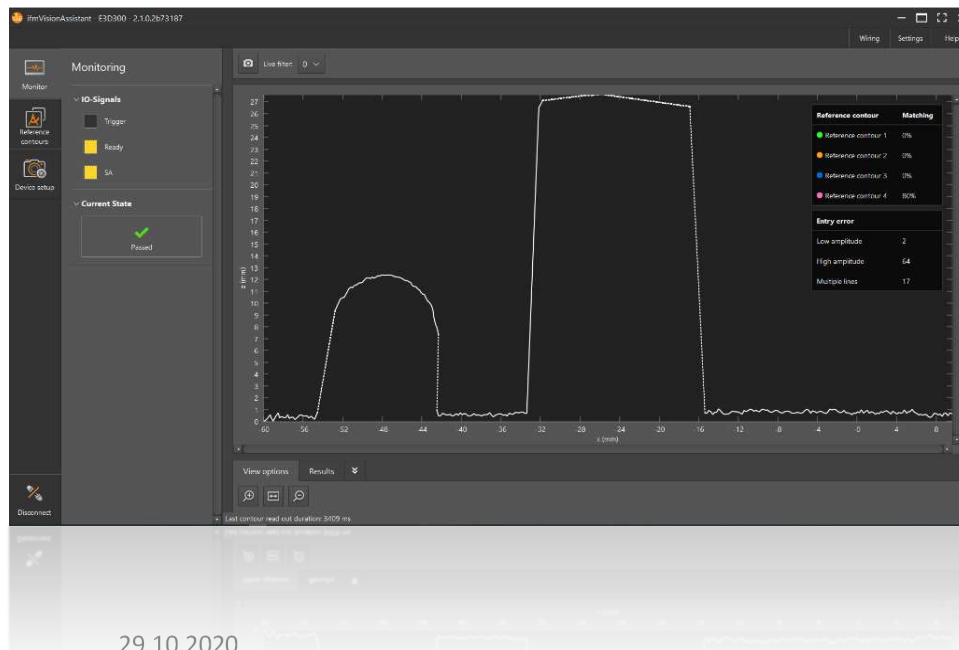




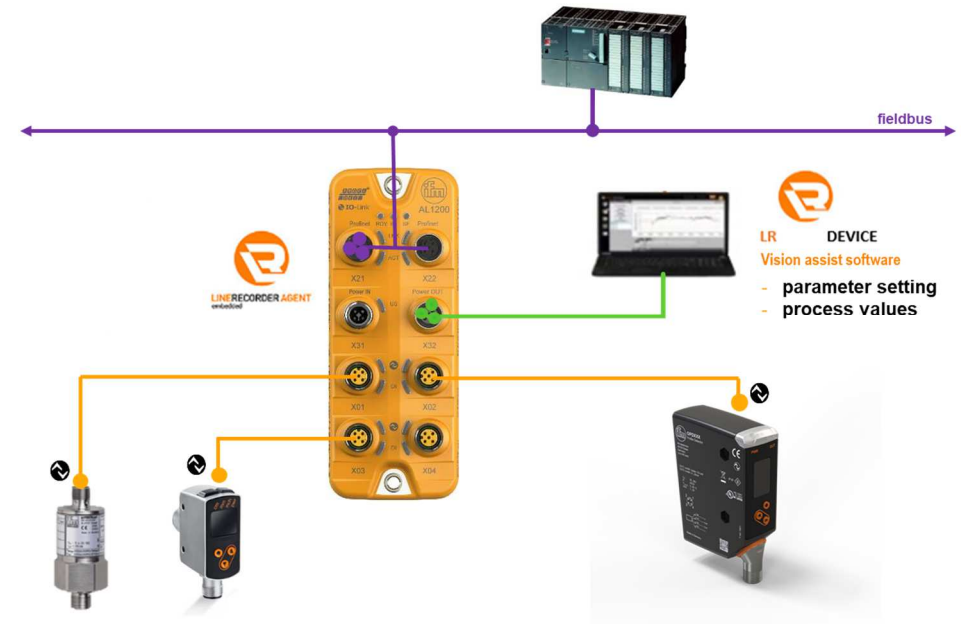


# Operating options

## IO-Link



29.10.2020



# Q & A

**Do you have questions about the products featured?**

**Please download the Q&A Document or alternatively contact your sales engineer.**





ifm South Africa

## Follow us on Social Media





Thank you for participating

Please contact us:

ifm electronic ZA  
112 Sovereign Drive  
R21 Corporate Park  
Irene Centurion



Phone: 012 450 0400  
E-Mail: [info.za@ifm.com](mailto:info.za@ifm.com)  
Website: <https://www.ifm.com/za/>