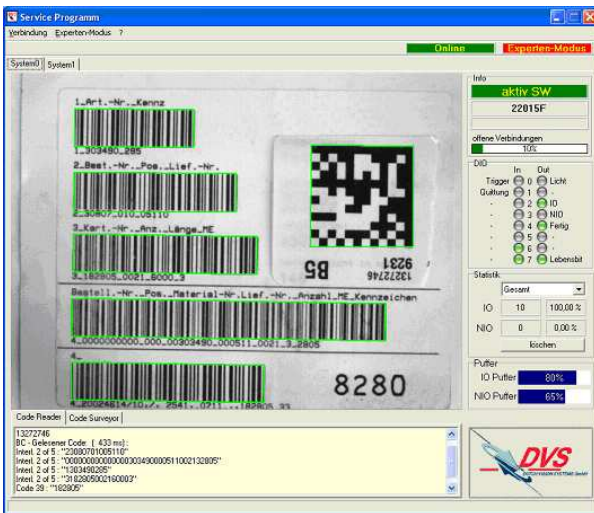


PICO Smart Vision

The PICO Smart Vision is a compact and network-capable vision sensor based on a smart camera. The PICO series ranges from code readers in various versions through OCR readers to inspection systems.

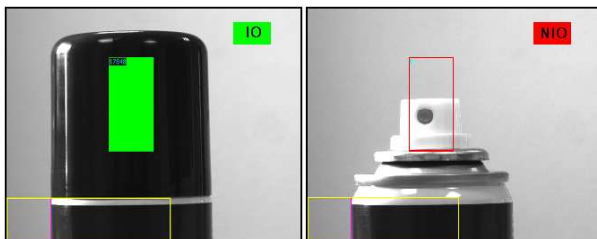
The vision sensor can be used for a multitude of purposes on account of its modular construction (various types of cameras, choice of software modules, objective/lighting integrated or optional) and configured for the most varied requirements.



Service program

Software

The included network software (service program) enables the control of the Vision Sensor from any network PC and also the monitoring of the recognition results. The service program can also be used for parameterisation, analysis, system optimisation and the transmission of saved pictures



Presence checking



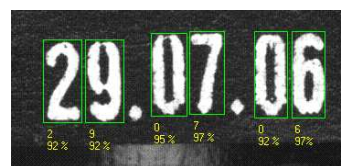
Properties and advantages

- Very compact vision system
- Reading distance can be chosen up to several metres
- Intuitive user interface
- Password-protected expert mode
- Very simple parametering
- High-speed reading
- Live picture recognition function
- Saving of IO/NIO pictures
- Comfortable installation of software updates
- Simple commissioning

Areas of application

- Reading of needed, lasered and printed codes and checking of codes
- Inspection of component labels
- Checking sell-by dates
- Checking presence of drillings, threads, covers and other components
- Control of printed labels
- Completeness checking... and much more!

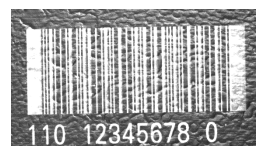
Recognition examples



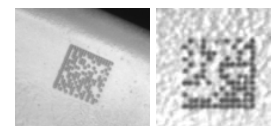
Sell-by date on a drink bottle



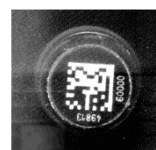
Lasered codes on glass



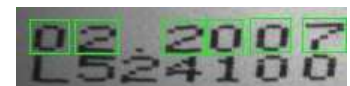
Lasered barcode on plastic



Needed codes on metal



Lasered code (original 2.4x2.4mm)



Sell-by date on can

Interesting features

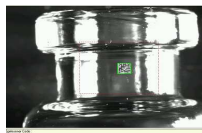
- All software modules can be combined and can work in parallel
- Configurable unbounce time for triggering
- Activation of the reading through digital input (external triggering) or through read commands (TCP/IP) or through software in the service program
- Continuous recognition for a configurable time

Software module

A number of software modules are available, which can be used alone or execute the tasks in combination.

Data matrix

- Supported codes: Data Matrix ECC200 (according to ISO 16022 standard)
- Automatic relearning function based on pictures taken for the optimisation of recognition
- Multi-reader function for the reading of many codes in one picture (optional)
- Omni-directional
- Automatic code type recognition
- Code type can be set
- Automatic correction of perspective distortion, damage of the code and change of lighting
- Code content checking through reference codes
- Checking of code twisting
- Code angle can be displayed



It can be configured whether the system reads the code and displays the contents of the code and/or IO/NIO (for read/not read) according to the configured interface (read mode) or checks the content using a reference code (compare mode).

Code Surveyor Datamatrix

- Quality assessment for objective code valuation conform ISO/IEC 15415
- Digital output signal when an adjustable quality level is not met
- Individual and overall valuation of quality grade
- Valuation results and image of code can be sent to printer



Barcode

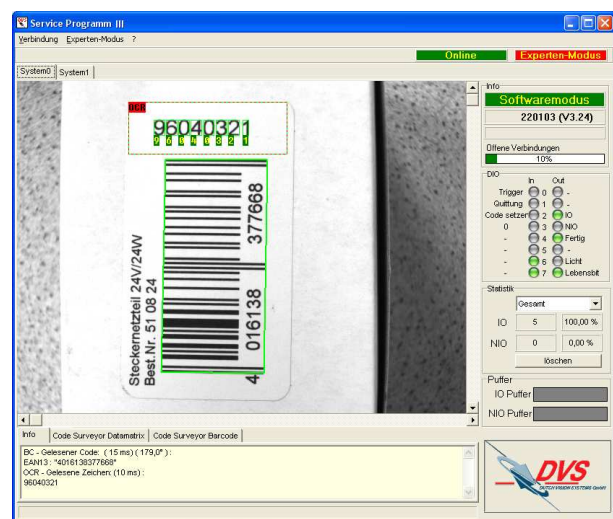
- Supported codes: Code39, Code 2 of 5 interleaved, Code 128, EAN 8, EAN 13 EAN 128, UPCE
- Multi-reader function for reading many codes in one picture (optional)
- Omni-directional
- Automatic code type recognition
- Code type can be set
- Automatic correction of perspective distortion, damage to codes and alteration of lighting
- Code content checking against reference code
- Checking of code twisting
- Code angle can be displayed

It can be configured whether the system reads the code and displays the contents of the code and/or IO/NIO (for read/not read) according to the configured interface (read mode) or checks the content using a reference code (compare mode).

OCR/OCV Lite

For numbers or OCR-A character set (continuous characters), not rotated on a homogeneous background.

- Not sensitive to variations in the character size
- Up to 20 AOI's (search area) can be set.
- Preconfigurable learnable character sets
- Configurable read quality
- Recognition modes: read (OCR), compare (OCV) and length checking
- OCV string configurable over TCP/IP.

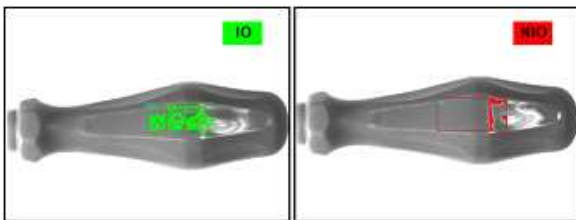


Parallel recognition of OCR and barcode

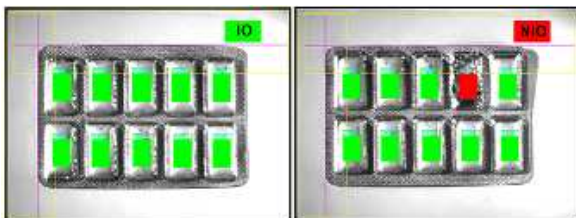
Check Pro

The software module Check Pro can be used for a multitude of testing tasks, which can be defined through pixel values:

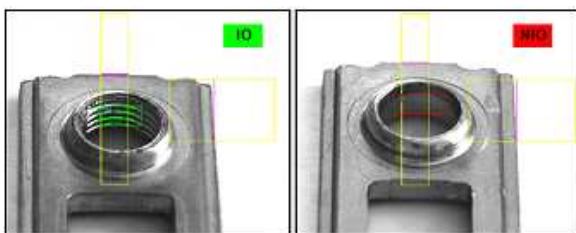
- Presence of printed labels
- Checking whether the colour intensity of printed labels is less than a certain lower limit
- Checking the presence of drillings and threads
- Checking the presence of mounted parts
- Checking the population of printed circuit boards
- Detection of surface defects
- Completeness checking of blister packs
- Checking the presence of lids and other components
- Type differences and much more



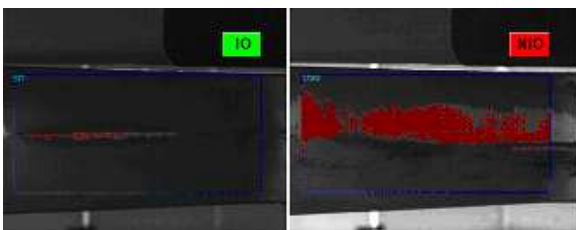
Checking the presence of printing



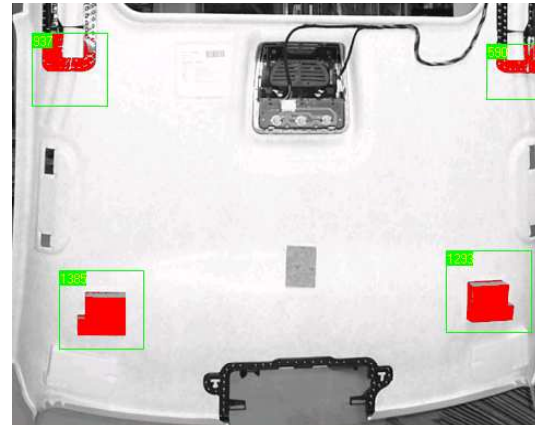
Checking completeness of blisters



Checking the presence of threads

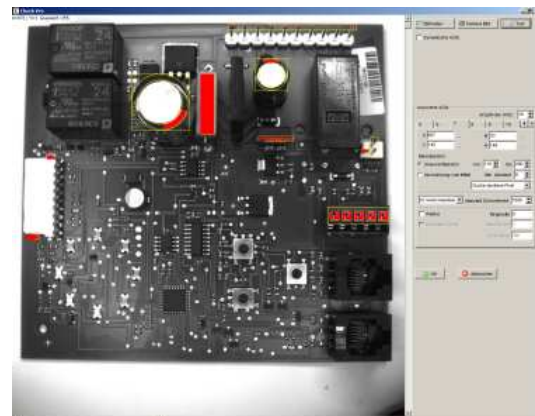


Checking surface for unwanted stamping of cast parts



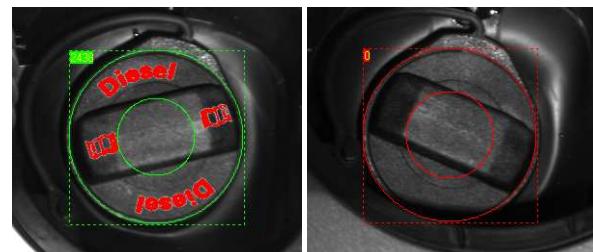
Checking the presence of components

The module enables the configuration of many evaluation areas, whose position can be static or dynamic.



Checking the population of printed circuit boards

The testing tasks are configured through limits or areas for pixel number and pixel values.



Type differentiation of filler cap



PICO-S / PICO-F / PICO-H



PICO-F-I

Technical data

	PICO-S	PICO-F	PICO-F-I	PICO-H
Resolution, pixels	752 x 480	640 x 480		1280 x 1024
Scan rate	50 fps	185 fps		27 fps
Chip size	1/3"	1/2"		2/3"
Electronic shutter	51 μ s to 32 ms	27 μ s to 1 s		8 μ s to 1 s
Objective mount	C/CS	C/CS	Integrated objective	C/CS
Objective	See accessories!	See accessories!	Integrated optics with f=12 mm for 22-1000 mm working distance	See accessories!
Lighting	See accessories!	See accessories!	integrated LED Ring, white, 8 LEDs, sufficient up to approx. 200 mm distance	See accessories!
Ethernet interface	100BaseT, TCP/IP			
Inputs/outputs	2 inputs / 3 outputs 24 V I/O, up to 1.5A total current			
Operating voltage	24VDC			
Current used	120 mA with unloaded outputs			
Power used	1.9 W with unloaded outputs			
Operating temperature	-10 to +50 $^{\circ}$ C			
Temperature monitoring	Integrated			
Vibration resistance	Tested to DIN / IEC 68 / EN 60068 part 2-6. 0.35 mm Travel at 10...60 Hz. 5 g acceleration at 60...150 Hz.			
Shock resistance	Tested to DIN / IEC 68 / EN 60068 part 2-27. +/- 30 g at 11 ms duration. 5 shocks per direction.			
Protection class	IP65 and IP67			
Dimensions WxHxD	45 mm x 45 mm x 85 mm (without tube)			
Weight of camera	184 g			

Accessories	
Ethernet patch cable RJ45	Cable plug: M12x1 4-pole on RJ45 Length: 3m
Cable for power supply and I/O	Cable plug: M12x1 8-pole on open ends Length: 2 m
Compact tubular objective with fixed focus	Objective tube for protection class IP67 Length: 55 mm, diameter: 45 mm
Tubular zoom objective	Objective tube for protection class IP65 with changeable Filter disc (other filters can be screwed on) Length: 102 mm, diameter: 70 mm
Compact objective	Objective with fixed focus (4.8/8,5/12/16/25/35/50 mm) Choice of picture field required and object distance: we would be pleased to advise on the selection of the ideal objective!
Zoom objective	For 1/3" cameras: Objective 5-50mm, Objective 5.5-82.5mm For 2/3" cameras: Objective 12-36mm, Objective 17.5-75mm
Lighting	LDL-DT-series (available in various LED-colours/angles of radiation and diffuse) Choice according to reading conditions: we would be pleased to advise on the selection of the ideal lighting!
Assembly set	Tripod adapter with ball joint fixing Dovetail adapter with base plate

(Further accessories on request)



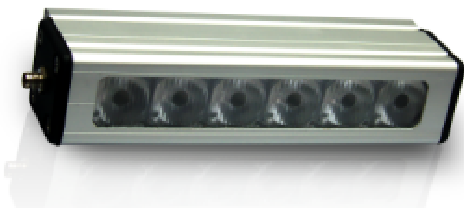
Ethernet patch cable



Power cable



Compact tubular objective



LDL-DT6/148



LDL-DT3/73-xD



LDL-DT1/23



Tripod adapter



Ball joint fixing



*Dovetail adapter with base
plate*



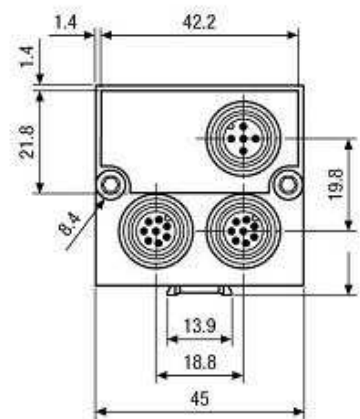
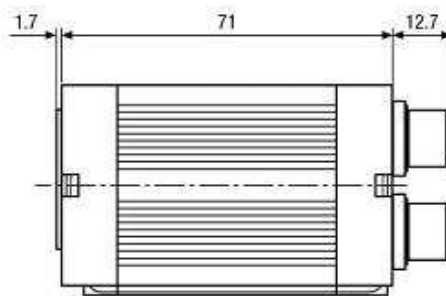
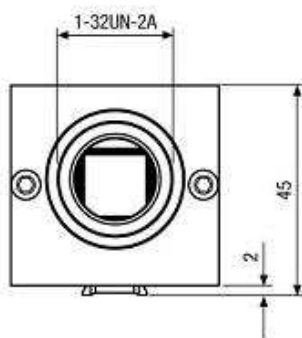
PICO-S / PICO-F / PICO-H



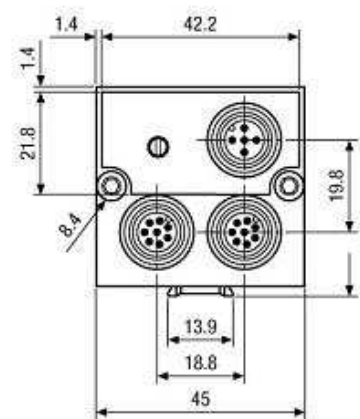
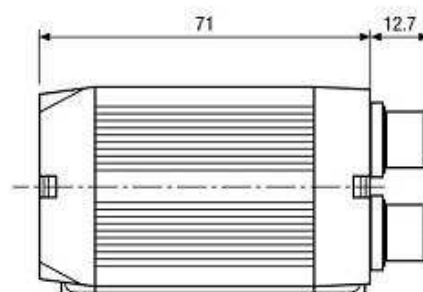
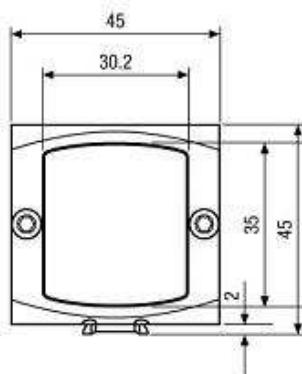
PICO-F-I

Dimensions

Dimensions: mm



PICO-S / PICO-F / PICO-H (without tube)



PICO-F-I