

DataVS2 Vision sensor

Quick guide

MINIMUM SYSTEM REQUIREMENTS

Check that your Personal Computer meets the following minimum requirements for system interfacing:

- Pentium 1,7 GHz processor
- 1 GB of RAM
- Monitor SVGA (1024x768 pixel)
- Network Connection board 10/100 Mbps
- 50 MB Hard Disk drive free space
- CD-ROM drive

For best performances the following requirements are recommended:

- Pentium 2 GHz processor
- 2 GB of RAM
- Monitor resolution 1280x768 at least
- Network Connection board 100 Mbps
- 60 MB Hard Disk drive free space
- CD-ROM drive

DESCRIPTION

The DataVS2 series of vision sensors offers the easiest way to solve the most common machine vision applications.



- Compact IP50 housing
- Red light LED illuminator
- Selectable lens
- Focus ring
- Standard M12 connectors
- Teach button
- Image sensor 640x480 pixel

ELECTRIC CONNECTIONS

M12 4 poles Ethernet: (connectivity) pin 1: White/Orange: Rx+ pin 2: White/Green: Tx+ pin 3: Orange: Rx- pin 4: Green: Tx-	
M12 8 poles: (power and I/O) pin 1: white : digital input 1 pin 2: brown : 24 Vdc pin 3: green : STROBE for external illuminator pin 4: yellow : output 1 pin 5: grey : output 2 pin 6: pink : output 3 pin 7: blue : GROUND pin 8: red : external trigger	

INDICATORS

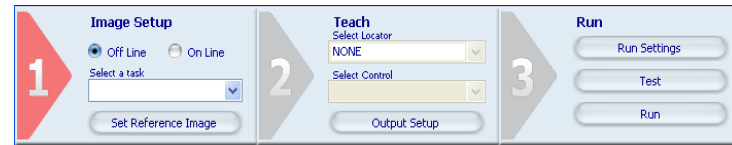
1. Power, green;
2. Digital output 2, orange;
3. Digital output 1, orange;
4. Network connection, green.



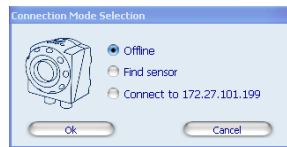
CONFIGURATION

Easy Graphic User Interface – Starting Configuration

DataVS2 sensor requires a preliminary setting: this is made in 3 steps by using the Easy GUI interface.



After the start-up of the program, the user is asked to establish a connection to the sensor:



Find sensor: research of the sensors connected to the network
Connect to: connection to the last sensor you have worked with
Offline: open a working session without sensor

If the sensor found is displayed in red, select Configure and follow the instructions

Step 1: Image Setup

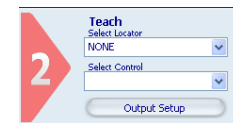
The first step allows to handle the connection to the sensor and set the parameters related to the image quality. Once achieved the desired result, the image can be saved and set as reference for the sensor operations



- **Online/Offline selection**
- **Select a Task:** create a new inspection or open an existing inspection from the PC or from the sensor
- **Set Reference Image:** save the image as reference for the following steps

Step 2: Teach

In this step you may configure the desired control.



- **Select Locator:** a locator is a special Tool allowing the sensor to find the object inside the image. Once the control is chosen it is added to current inspection. It is possible to add at most one locator to current inspection
- **Select Control:** It allows selecting the controls that will be added to the inspection process. Once the control is chosen it is added to current inspection. It is possible to add more than one control to current inspection.
- **Output Setup :** configuration of the 3 digital outputs.

After selecting the control, it's necessary to position it on the reference image, by clicking in the working area and by moving and resizing the ROI. The Control Panel displays the control's parameters, initialized to standard values: it is possible to modify them by using the sliders or by directly writing new numeric values. The STATUS indicator, as well as the ROI contour reveals the result of control application by assuming red (bad result) or green (good result) colouring.

Step 3: Run



- **Run Settings:** configure running options for the current Inspection.
- **Test:** verification on the PC (Online o Offline) of the selected controls.
- **Run :** store and launch the inspection on the sensor.

CONTROL PANEL

Control	Functioning	Applications
Pattern Match	Searches for a pattern inside the target area	Verifies logo on food packages
Contour Match	Shape control	Verifies the integrity of mechanical parts contours
Position	Identifies the object position edge (edge detection)	Controls the level of liquids in bottles
Width	Measures the distance between two points	Assembling control
Edge Count	Identifies all edges along an axis	Counts the blisters in stack for pharmaceutical
Contrast	Calculates the contrast in an image	Verifies overprint of labels
Brightness	Calculates the brightness of an image	Verifies the presence of cap and nozzle on phials
Geometric Pattern Match	Searches for a pattern inside the target area. It able to detect the position and the orientation of a target	Verifies product orientation on assembly lines

COMMUNICATIONS

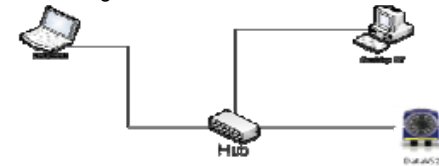
Communication with the sensor occurs via the Ethernet network.

Direct connection: personal computer is connected directly to device using a "cross cable".



Warning: in case of direct connection the PC requires a fixed IP address

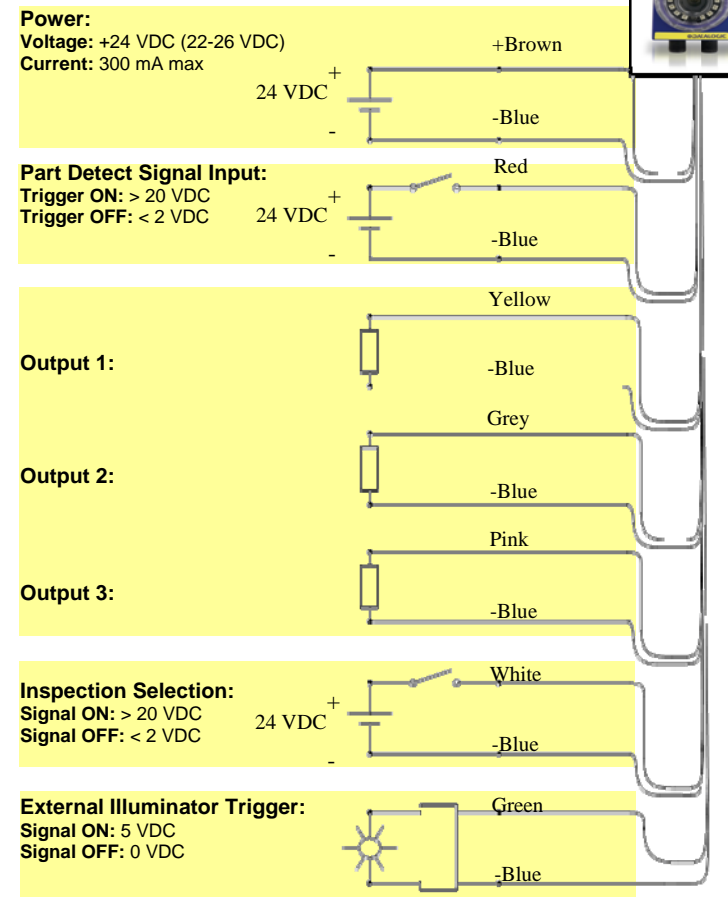
Through LAN: use common network (non-cross) cables normally used to connect devices to routing hubs.



**The sensor has the following default IP address:
 IP Address: 172.27.101.208
 Subnet mask: 255.255.0.0**

HARDWARE CONNECTIONS

M12 8 Poles (Power and I/O)



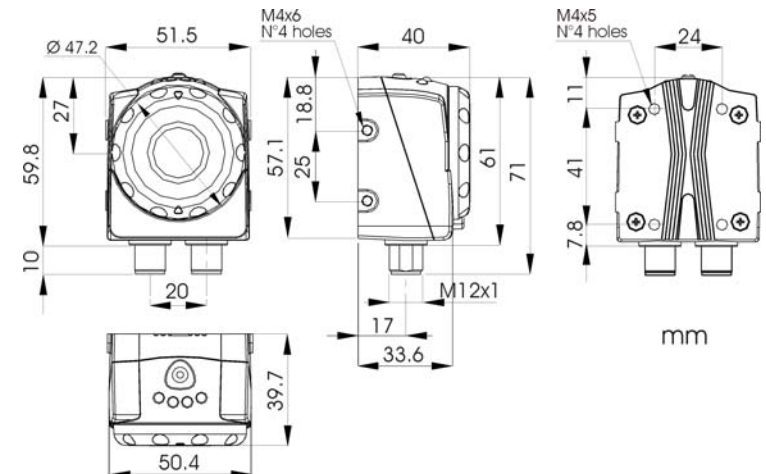
TECHNICAL DATA

Supply voltage:	24 Vdc ± 10%
Ripple voltage:	1 Vpp max with illuminator 2 Vpp max without illuminator
Current draw: (excluding output current and illuminator)	100 mA at 24 VDC
Current draw with illuminator: (depends on how long illuminator stays on)	200 mA at 24 VDC
Outputs:	3 PNP outputs (short circuit protection)
Network interface:	M12 4 poli – 10/100 Mbps ethernet
Interface for external illuminator:	Strobe signal (24 V PNP N.O.)
Output current:	100 mA max
Output saturation voltage:	< 2 V
Optics:	Integrated
Resolution:	640 x 480 (VGA)
Dimensions:	69.8 x 51.5 x 40 mm
Indicators:	4 LED
Setup:	1 Teach-In key
Data retention:	Non-volatile FLASH memory
Operating temperature:	-10 °C ... +55 °C
Storage temperature:	-25 °C ... +75 °C
Vibration:	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)
Shock resistance:	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Housing material:	Aluminium alloy / ABS
Mechanical protection:	IP50
Connections:	M12 8 pole A-code, M12 4 pole D-code
Weight:	125 g

OPERATING DISTANCE PANEL

Operating distance(mm):	DataVS2-16-DE- OBJ	DataVS2-12-DE- OBJ	DataVS2-08-DE- OBJ	DataVS2-06-DE- OBJ
50	-	17 x 12	25 x 20	42 x 30
80	-	25 x 20	40 x 30	60 x 41
110	-	33 x 25	55 x 40	80 x 55
140	31 x 24	45 x 35	70 x 50	98 x 69
170	39 x 29	53 x 38	85 x 60	118 x 83
200	46 x 34	60 x 50	100 x 70	138 x 92
300	70 x 53	90 x 65	145 x 103	201 x 140
400	94 x 71	121 x 82	186 x 132	265 x 189
500	118 x 89	150 x 110	236 x 167	330 x 232
600	143 x 107	185 x 130	282 x 232	385 x 270

MECHANICAL DIMENSIONS



DECLARATION OF CONFORMITY
 We DATALOGIC AUTOMATION declare under our sole responsibility that these products are conform to the 2004/108/CE and successive amendments.

WARRANTY
 DATALOGIC AUTOMATION warrants its products to be free from defects. DATALOGIC AUTOMATION will repair or replace, free of charge, any product found to be defective during the warranty period of 36 months from the manufacturing date. This warranty does not cover damage or liability deriving from the improper application of DATALOGIC AUTOMATION products.

DATALOGIC AUTOMATION
 Via Lavino 265 - 40050 Monte S. Pietro - Bologna - Italy
 Tel: +39 051 6785611 - Fax: +39 051 6759324
 www.automation.datalogic.com e-mail: info.automation.it@datalogic.com

DATALOGIC AUTOMATION cares for the environment: 100% recycled paper. DATALOGIC AUTOMATION reserves the right to make modifications and improvements without prior notification.

Datalogic and the Datalogic logo are registered trademarks of Datalogic S.p.A. in many countries, including the U.S.A. and the E.U.