DATALOGIC™

DataVS2-xx-DE-AOR/OBJ
Vision Sensor

QUICK REFERENCE 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
- DVD-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
- DVD-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 : Inspection Selection Input
pin 2: brown : 24 VDC
pin 3: green : Output 4 / Ext. Illuminator Strobe
pin 4: yellow : Output 1
pin 5: grey : Output 2
pin 6: pink : Output 3
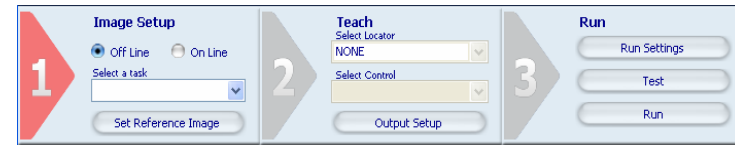pin 7: blue : Ground
pin 8: red : External Trigger

INDICATORS

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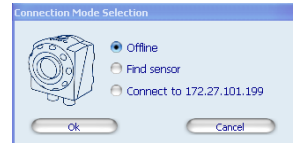3. Output 2, orange;
4. Network connection, green.

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 4 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

- **VSM \ Run Settings:** configure VSM options and 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
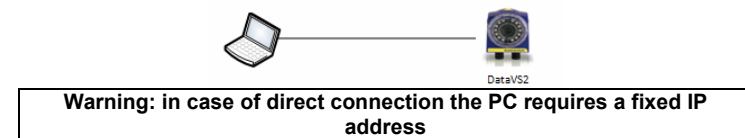
Through LAN: use common network (non-cross) cables normally used to connect devices to routing hubs.
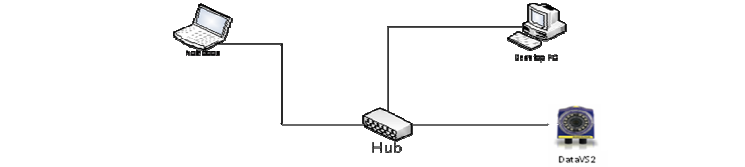
The sensor has the following default IP address:
IP Adress: 172.27.101.208
Subnet mask: 255.255.0.0

HARDWARE CONNECTIONS

M12 8 Poles (Power and I/O)

Power:
Voltage: 24 VDC ± 10%
Current: 200 mA max

Inputs:
Input ON: > 20 VDC
Input OFF: < 2 VDC

Outputs:
4 x PNP transistors with short circuit protection
Output Current: 100 mA max
Output Saturation Voltage: < 2 V

NOTE:
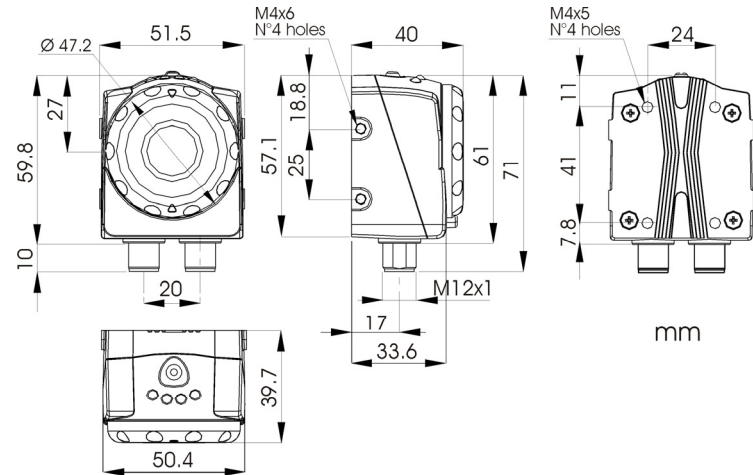Output 4 is configurable as External Illuminator Strobe.

OPERATING DISTANCE

Operating distance(mm):	DataVS2-16-DE-XXX	DataVS2-12-DE-XXX	DataVS2-08-DE-XXX	DataVS2-06-DE-XXX
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

TECHNICAL DATA

Supply voltage (Vs):	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)*	max 200 mA at 24 VDC
Outputs:	4 PNP outputs (short circuit protection) (Output 4 is configurable as External Illuminator Strobe)
Output current:	100 mA max
Output saturation voltage:	< 2 V
Network interface:	M12 4 poles – 10/100 Mbps ethernet
Optics:	Integrated
Resolution:	640 × 480 (VGA)
Dimensions:	69.8 × 51.5 × 40 mm
Indicators:	4 LED
Setup:	1 Teach-In button
Data retention:	Non-volatile FLASH memory
Operating temperature:	-10 °C … +55 °C
Storage temperature:	-25 °C … +75 °C
Vibrations: (EN60068-2-6)	14 mm @ 2 to 10 Hz; 1.5 mm @ 13 to 55 Hz; 2 g @ 70 to 200 Hz; 2 hours on each axis
Shock resistance: (EN60068-2-27)	11 ms (30 G) 6 shock for every axis
Housing material:	Aluminium alloy / ABS
Mechanical protection:	IP50
Connections:	M12 8 pole A-code, M12 4 pole D-code
Weight:	125 g

MECHANICAL DIMENSIONS

mm

CE

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.