DATALOGIC

DataVS2-xx-RE-PRO
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
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-pin Ethernet: (connectivity)

pin 1: white/orange: Rx+
pin 2: white/green: Tx+
pin 3: orange: Rx-
pin 4: green: Tx-

M12 8-pin (Power and I/O)

pin 1: white: RS-232 Rx
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: RS-232 Tx
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.

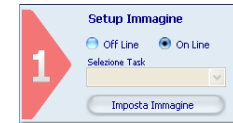After the start-up of the program, the user is asked to establish a connection to the sensor:

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 handling the connection to the sensor and sets the parameters related to the image quality. Once the desired result is achieved, the image can be saved and set as the reference for the sensor operations.

- **Online/Offline** selection
- **Task Selection**: 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. 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. 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 is 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 default values; it is possible to modify them by using the corresponding controls on control panel.
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 or Offline) of the selected controls.
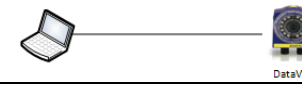- **Run**: store and launch the inspection on the sensor.

CONTROL PANEL

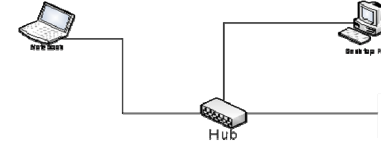| Control	Functioning	Applications
Brightness	Brightness calculation	Presence of cap and spout on bottles.
Contrast	Contrast calculation	Verification of label overprinting.
Width	Measures the object width	Correct assembling
Counting	Counting of objects along a line	Counting of stacked blisters for pharmaceutical industry
Position	Position verification of object edges	Controls the level of liquids in bottles
OCV	Checks presence of characters within ROI	Verification of correct label printing
Barcode	Searches and decodes the contents of one or more Barcode symbols	Identification
Datamatrix	Searches and decodes the contents of one or more Datamatrix symbols	Identification
Pattern Match	Searches for a pattern inside the target area	Verification of logo on food packages
Pattern Match 360°	Searches a sample position and orientation	Verification of product orientation and position during assembling.
Contour Match	Shape control	Verification of contour integrity of mechanical parts
Contour Match 360°	Searches a sample position and orientation	Verification of product orientation and position during assembling.
Contour Counter 360°	Counting of objects inside an area	Counting of objects during assembling
Defect Finder 360°	Verification of the presence of defects	Quality verification during assembling

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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

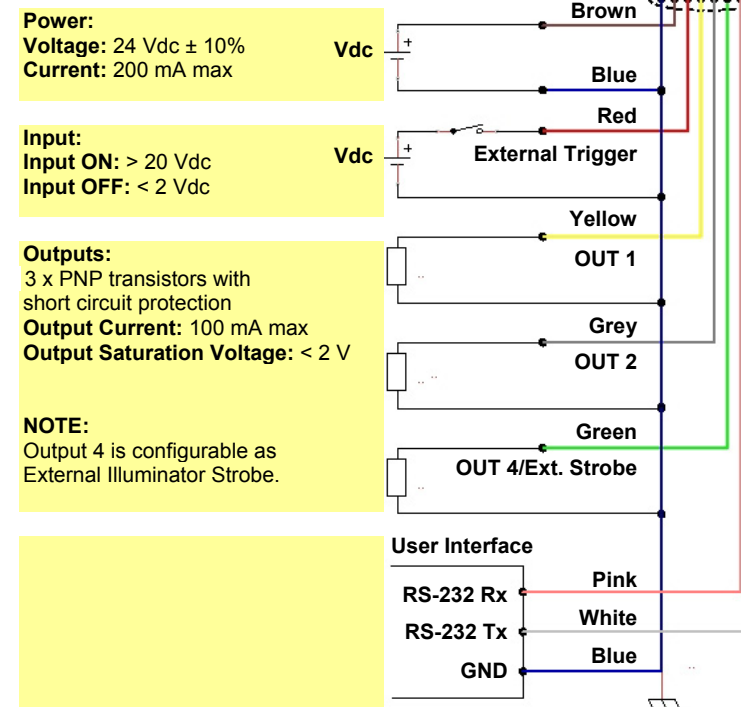**Through LAN**: use common network (non-cross) cables normally used to connect devices to routing hubs.

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

HARDWARE CONNECTIONS

M12 8-Pin (Power and I/O)

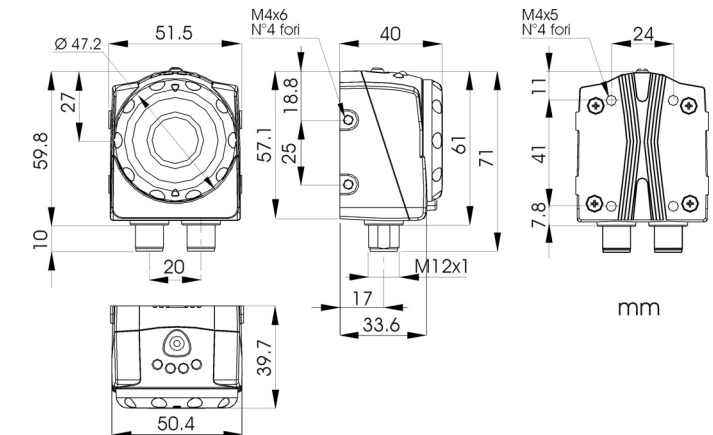**Note**: It is not permitted to disconnect the cable at the connector Power and I/O while it is under power.

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

Input:
Input ON: > 20 Vdc
Input OFF: < 2 Vdc

Outputs:
3 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.

Brown
Blue
Red
External Trigger
Yellow
OUT 1
Grey
OUT 2
Green
OUT 4/Ext. Strobe
User Interface
RS-232 Rx — Pink
RS-232 Tx — White
GND — Blue

OPERATING DISTANCE

Operating distance(mm)	DataVS2-16-RE-PRO	DataVS2-12-RE-PRO	DataVS2-08-RE-PRO	DataVS2-06-RE-PRO
50	-	16 x 12	24 x 18	34 x 25
80	-	26 x 19	38 x 29	54 x 41
110	-	35 x 26	53 x 40	73 x 55
140	-	45 x 34	67 x 50	95 x 71
170	-	54 x 41	82 x 61	115 x 86
200	48 x 36	64 x 48	196 x 72	136 x 102
300	72 x 54	96 x 72	144 x 108	200 x 150
400	96 x 72	128 x 96	192 x 144	270 x 203
500	120 x 90	160 x 120	240 x 180	338 x 253
600	144 x 108	192 x 144	288 x 216	405 x 304

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:	3 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-pins – 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-pin A-code, M12 4-pin D-code
Weight:	125 g

MECHANICAL DIMENSIONS

mm