DATALOGIC

DataVS2-xx-RE-ID
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

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

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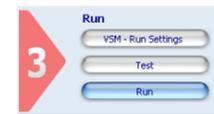
- **VSM \ Run Settings:** configure VSM options and running options for the current Inspection.
- **Test:** verification on the PC (Online or Offline) of the selected controls.
- **Run** : store and launch the inspection on the sensor.

CONTROL PANEL

| Control	Functioning	Applications
Pattern Match	Searches for a pattern inside the target area	Verifies logo on food packages
Position	Identifies the object position edge (edge detection)	Controls the level of liquids in bottles
OCV	Checks presence of characters on parts	Verifies overprint of labels
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
QRCode	Searches and decodes the contents of one or more QR symbols	Identification

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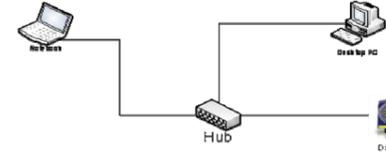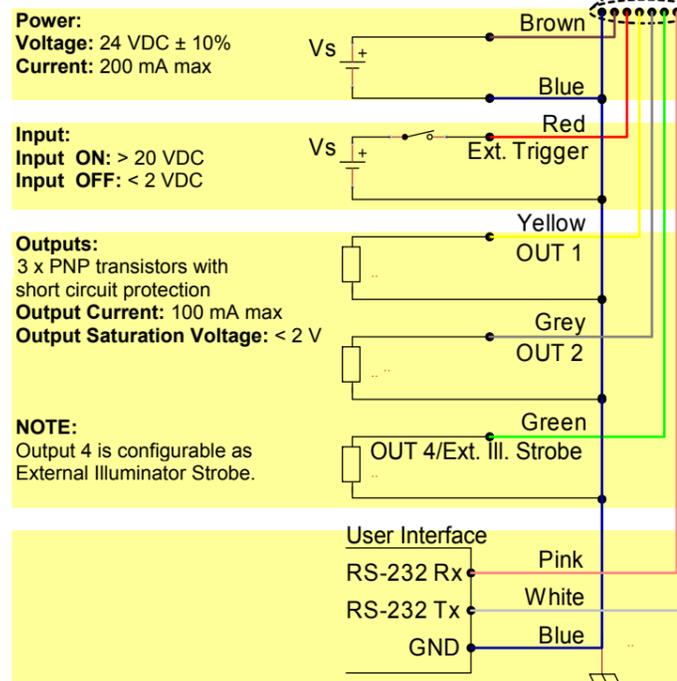
> The sensor has the following default IP address:
> **IP Address: 172.27.101.208**
> **Subnet mask: 255.255.0.0**

HARDWARE CONNECTIONS

M12 8 Poles (Power and I/O)

Note: It is not permitted to disconnect the cable at the connector Power and I/O while it is under power.
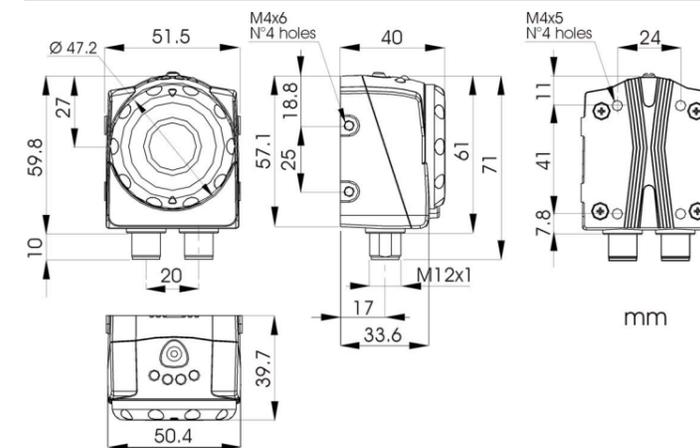
Power:
Voltage: 24 VDC ± 10%
Current: 200 mA max
Vs — Brown
Blue

Input:
Input ON: > 20 VDC
Input OFF: < 2 VDC
Vs — Red Ext. Trigger

Outputs:
3 x PNP transistors with short circuit protection
Output Current: 100 mA max
Output Saturation Voltage: < 2 V
Yellow OUT 1
Grey OUT 2

NOTE:
Output 4 is configurable as External Illuminator Strobe.
Green OUT 4/Ext. Ill. Strobe

User Interface
RS-232 Rx — Pink
RS-232 Tx — White
GND — Blue

OPERATING DISTANCE

Operating distance(mm):	DataVS2-06-DE-ID	DataVS2-08-DE-ID	DataVS2-12-DE-ID	DataVS2-16-DE-ID
50	39 x 29	24 x 18	16 x 12	-
80	58 x 44	38 x 29	26 x 19	-
110	78 x 58	53 x 40	35 x 26	-
140	99 x 73	67 x 50	45 x 34	-
170	119 x 88	82 x 61	54 x 41	-
200	138 x 104	196 x 72	64 x 48	48 x 36
300	207 x 155	144 x 108	96 x 72	72 x 54
400	274 x 206	192 x 144	128 x 96	96 x 72
500	338 x 254	240 x 180	160 x 120	120 x 90
600	405 x 304	288 x 216	192 x 144	144 x 108

TECHNICAL DATA

Supply voltage (Vs):	24 Vdc ± 10%
Ripple voltage:	1 Vpp max with illuminator / 2 Vpp max without illuminator
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 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) 2 hours on each axis	14 mm @ 2 to 10 Hz; 1.5 mm @ 13 to 55 Hz; 2 g @ 70 to 200 Hz
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

830001404 (Rev. D)