SVS2

Vision sensor

Quick guide

MINIMUM SYSTEM REQUIREMENTS

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

- Pentium 1 GHz processor
- 512 MB of RAM
- Monitor SVGA (1024x768 pixel)
- Network Connection board 10/100 Mbps
- 25 - 30 MB Hard Disk drive free space
- CD-ROM drive

For best performances the following requirements are recommended:

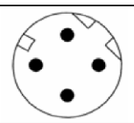
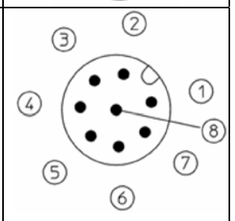
- Pentium 2 GHz processor
- 1 GB of RAM
- Monitor resolution 1280x768 at least
- Network Connection board 100 Mbps
- 25 - 30 MB Hard Disk drive free space
- CD-ROM drive

DESCRIPTION

The SVS2 series of vision sensors offers the easiest way to solve the most common machine vision applications.

- Compact IP40 housing
- Red light LED illuminator
- Selectable lens
- Focus ring with blocking screw
- Standard M12 connectors
- LED pointer
- Teach button
- Image sensor 640x480 pixel

ELECTRIC CONNECTIONS

M12 4 poles Ethernet: (connectivity)	
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

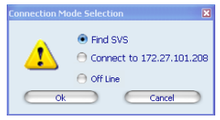
1. Power, green; 2. Digital output 2, orange; 3. Digital output 1, orange; 4. Network connection, green.	

CONFIGURATION

Easy Graphic User Interface – Starting Configuration

SVS2 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:

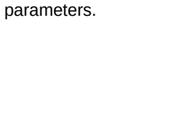


Find SVS: reseach of the sensors connected to the network
Connect to: connection to the last sensor you have worked with
Offline: open a working session without sensor

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



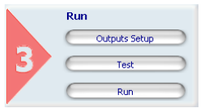
- Online/Offline selection
- Select a task: create a new inspection or open an existing inspection from the PC or from the sensor
- Set reference image: save the image as reference for the following steps

Step 2: Teach

Select Trigger
This parameter allows to specify the kind of trigger to be set for defining the inspection instants.
"Continuous" trigger is given by default: the system performs a continuous analysis of the acquired images.

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.
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: The last step, allows to define:



- **Output Setup**: configuration of the 3 digital outputs
- **Test:** verification on the PC (Online o Offline) of the selected controls;
- **Run** : store and launch the inspection on the sensor;

Once a control has been selected, Control Panel will display its configuration parameters.

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

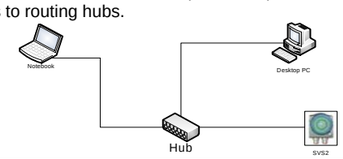
COMMUNICATIONS

Communication with the sensor occurs via the Ethernet network.

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

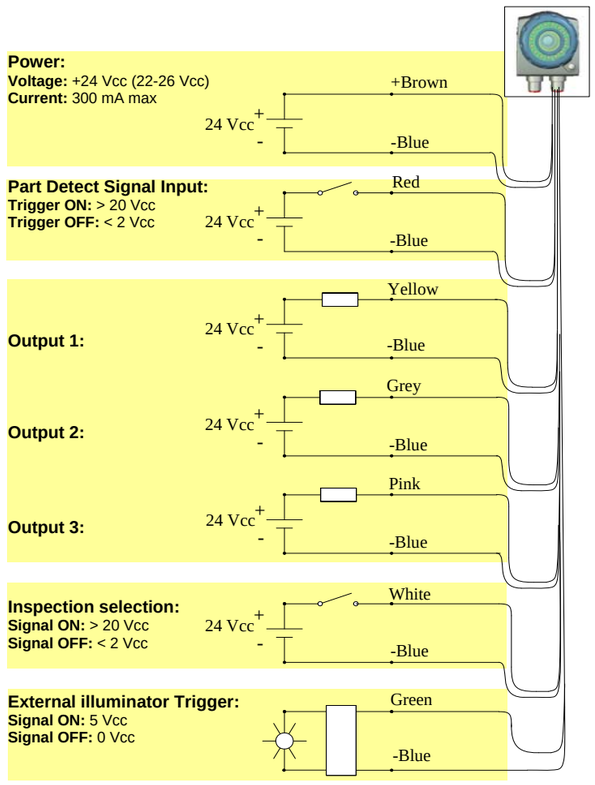
Warning: in case of direct connection the PC requires a fixed IP address

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 Adreess: 172.27.101.208
Subnet mask: 255.255.0.0

HARDWARE CONNECTIONS



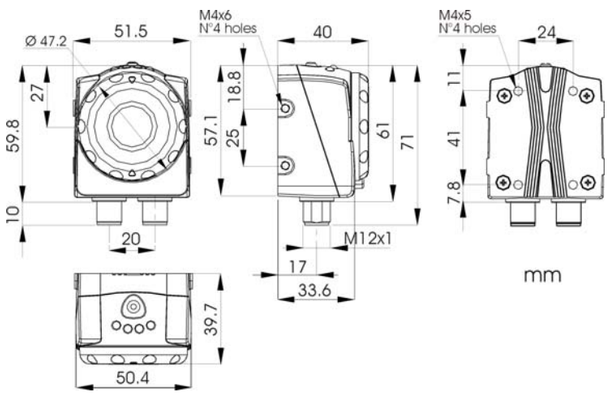
TECHNICAL DATA

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 (TTL)
Output current:	100 mA max
Output saturation voltage:	< 2 V
Optics:	Integrated
Resolution:	640 × 480 (VGA)
Dimensions:	69.8 × 51.5 × 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):	SVS2-12-DE-OBJ	SVS2-08-DE-OBJ	SVS2-06-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	45 x 35	70 x 50	98 x 69
170	53 x 38	85 x 60	118 x 83
200	60 x 50	100 x 70	138 x 92
300	90 x 65	145 x 103	201 x 140
400	121 x 82	186 x 132	265 x 189
500	150 x 110	236 x 167	330 x 232
600	185 x 130	282 x 232	385 x 270

MECHANICAL DIMENSIONS



DECLARATION OF CONFORMITY
We DATASENSOR S.p.A. declare under our sole responsibility that these products are conform to the 2004/108/CE, 2006/95/CE Directives and successive amendments.

WARRANTY
DATASENSOR S.p.A. warrants its products to be free from defects.
DATASENSOR S.p.A. 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 DATASENSOR products.

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830000030 Rev.A