

DATALOGIC AUTOMATION

DATAVS1 SERIES

The DATAVS1 series is the easiest solution for machine vision applications. The setup is very quick and intuitive thanks to the VSC unit, the external configurator with 3.5" colour display. The sensor setting is carried-out through three simple steps: region of interest definition, control type selection, parameter adjusting. The DATAVS1 is a fully embedded vision sensor able to acquire images, control them and activate the digital outputs according to the result. The VSC unit can provide a real time monitoring of the images, but it is not required during the functioning of the sensor and so it can be disconnected and used to setup multiple sensors. DATAVS1 is able to carry-out 8 different controls: Brightness, Contrast, Position, Width, Edge counting, Pattern match, Pattern match counting, OCV. Its flexibility together with the VSC configurator make the sensor ideal for plants with frequent format changes (packaging, food, cosmetic, bottling, labelling, ...)..

DataVS1



HIGHLIGHTS

- Quick setup without PC
- Fully embedded vision sensor
- 3.5" colour display, 8 push-buttons, 8 LEDs
- 8 different controls
- Memorisation of 20 differrent inspections

APPLICATIONS

DATAVS1 is ideal for the control of text presence in overprinting and logo position on food packages, product completeness before packaging, logo position on cosmetic bottles, correct stamp on post envelopes, liquid level inside a plastic bottle, correct product orientation on a conveyor belt, expiry date or lot number integrity.



The extremely compact size of the DATAVS1 sensors is not an obstacle for the full integration of all the elements for a reliable image-based control.

- Compact housing
- 640 x 480 image sensor
- VSC configurator with 3.5" colour display, 8 push-buttons, 8 LEDs Red light LED illuminator
- Selectable lenses
- Standard M12 connectors
- Configurator preset for DIN rail or panel mounting
- 3 PNP outputs
- 4 signalling LEDs: output1, output2, power supply, communication

DIMENSIONS



INDICATORS AND SETTINGS



- A Power supply, green
- **B** Digital output 2, yellow
- C Digital output 1, yellow
- VSC connection green



- A Setting mode, green
- B Adjust mode, green
- С Monitor mode, green
- D Main menu, green
- E Power supply, green
- F Digital output 1, yellow
- G Digital output 2, yellow
- H Sensor connection, green

CONNECTIONS





M12 8-pole (VSC connection)

PIN 1 = Ethernet TX+ PIN 2 = Ethernet RX+ PIN 3 = Ethernet RX-PIN 4 = Not used PIN 5 = 24 Vdc PIN 6 = Not used PIN 7 = Ethernet TX-PIN 8 = GND

M12 8-pole (power supply and I/O)

PIN 1 = white = digital input 1 PIN 2 = brown = 24 Vdc PIN 3 = green = STROBE for external illuminator PIN 4 = vellow = output 1PIN 5 = grey = output 2 PIN 6 = pink = output 3 PIN 7 = blue = GND PIN 8 = red = external trigger

TECHNICAL DATA

Power supply:	24 Vcc ±10 %		
Ripple:	1 Vpp max with illuminator 2 Vpp without illuminator		
Consumption (SVS1+VSC):	300 mA @ 24 Vdc (illuminator excluded)		
Output type:	3 PNP		
Output current:	100 mA max		
Saturation voltage:	< 2 V		
VSC connection:	M12 8-pole A-code		
External illuminator interface:	Strobe signal (24 V PNP N.O.)		
Frame rate:	60 fps		
Optics:	integrated (6 mm / 8 mm / 12 mm / 16 mm)		
Setting:	VSC configurator		
Sensor indicators:	4 LEDs		
VSC indicators:	8 LEDs		
Connections:	2 x M12 8-poli A-code		
Mechanical protection:	IP50 (DATAVS1) IP40 (VSC)		
Protection devices:	A, B ²		
Housing material:	aluminium alloy / ABS		
Sensor weight:	125 g		
VSC weight:	170 g		
Operating temperature:	-10 +50°C		
Storage temperature:	-25 +70°C		

TECHNICAL NOTES

- ¹Limit values
- ²A reverse polarity protection B overload and short-circuit protection





OPERATING	FIELD OF VIEW (Width x Height) in mm				
DISTANCE (mm)	DATAVS1-16-DE-xxx	DATAVS1-12-DC-S	DATAVS1-08-DC-x	DATAVS1-06-DC-S	
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	



DATAVS1 CONFIGURATOR



The configuration of DATAVS1 sensors is obtained exclusively via VSC unit. No PC is necessary and thus sensor setting is easy and quick. Once the configuration has been completed, the VSC display can be used to visualise inspection results in real time or to configure a new sensor.

The interface available on the configurator, composed of 8 signalling LEDs and 8 push-buttons, allows the operator to quickly and intuitively set the sensor functioning parameters.

PUSH-BUTTONS			
Push-button label	Main functions		
Status	Go to next configuration step		
Teach	Setting memorisation Acquisition of a new reference image		
Set	Confirmation of option selected Confirmation of parameter value		
Esc	Exit without saving Return to previous panel Return to previous configuration step		
Arrows	Change of option selected Movement/resizing of ROI Parameter change		



Step 1: Image adjustment and control definition



Step 2: Parameter setting



parameters in order to obtain a good image quality in terms of focus, brightness and contrast. The control type and the part to inspect have to be then defined.

In the first configuration step, the user has to set the sensor

The second configuration step consists in setting the functioning parameters of the control previously selected and the acceptance thresholds.

Step 3: Inspection check and memorisation



The third step consists in the control of the correct inspection functioning and the saving on the sensor memory. Once completed, the configuration has ended and the sensor can operate in a stand-alone mode.

EXCELLENT FLEXIBILITY

Password

A Password that prevents the access to the configuration parameters to unauthorised personnel can be defined.



Fail inspector

The latest 8 inspected parts that have caused a control failure can be recalled by the Fail Inspector. This tool provides an immediate control of the production non-conformities.





Inspection selection



Each inspection is composed of a template and parameters. A specific inspection can be thus referred to different products in progress on the same production line.

The different inspections can be recalled using digital pulses. Different inspection selection protocols with or without acknowledge are available.



The inspection change can be carried-out also directly by the operator using the bankset manager panel.

MONITORING USE OF THE VSC



Object Recognition

Eight different controls able to cover the most varied applications.				
Control	Functioning	Applications	Image	
Pattern Match	Searches a sample inside a specific area	 Packaging: logo check Assembling: product orientation Post automation: stamp check 	BEAUTY Cream	
Contour Match	Shape control	Metal working: integrity control Food: coffee waffle shape control		
Position	Check of object border position	 Bottling: liquid level control: Food: label position control 		
Width	Measures object width	 Assembling: plastic part control Wood industry: branch thickness measurement 		
Counting	Counts the objects along a line	 Electronics: component counting Pharmaceutical: blister stack counting 		
Contrast	Contrast calculation	 Food: date and lot presence control Metal working: laser marking control 	CHL CHL CHL CHL CHL CHL CHL CHL CHL CHL	
Brightness	Brightness calculation	 Bottling: cap presence control Packaging: object counting 		
Pattern match count	Count the number of templates inside a specific area	Bottling: bottle count Packaging: object counting		



ACCESSORIES



MODEL SELECTION TABLE

MODEL	OPTIC	VSC INCLUDED	POWER SUPPLY	DIGITAL INPUT	DIGITAL OUTPUT	ORDER N°
DATAVS1-08-DC-K	8 mm	•	•	2	4	959941000
DATAVS1-06-DC-S	6 mm			2	4	959941010
DATAVS1-08-DC-S	8 mm			2	4	959941020
DATAVS1-12-DC-S	12 mm			2	4	959941030
DATAVS1-16-DC-S	16 mm			2	4	959941050

ACCESSORY SELECTION AND ORDER INFORMATION				
MODEL	DESCRIPTION	ORDER N°		
CS-A1-06-B-03	M12 8-pole connector with 3 m unshielded cable	95ACC2230		
CS-A1-06-B-05	M12 8-pole connector with 5 m unshielded cable	95ACC2240		
CS-A1-06-B-10	M12 8-pole connector with 10 m unshielded cable	95ACC2250		
DATAVS-CV-VSC-02	DATAVS-VSC connection cable 2 m	95A901360		
DATAVS-CV-VSC-04	DATAVS-VSC connection cable 4 m	95A901370		
DATAVS1-VSC	VSC configurator	959941040		
DATAVS1 UPDATING KIT	Updating kit	95A901540		
DATAVS-ST-5068	L-shaped fixing bracket for 90° mounting	95A901320		
DATAVS-ST-5068	U-shaped fixing bracket for angle adjustement	95A901330		
DATAVS-MK-01	Mounting kit	95A901380		



The company endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct installation and use, the company can guarantee only the data indicated in the instruction manual supplied with the products.

