Datalogic Smart-VS Vision Sensor

959971320

The Smart-VS is a smart vision sensor. It can be set up as easily as a basic photoelectric sensor but provides enhanced functionality. This self-contained vision sensor provides an elegant solution for applications requiring presence and/or orientation object detection. The Smart-VS is built around a powerful multiprocessor platform featuring embedded artificial intelligence technology. The user can step through the simple teach procedure to obtain a GOOD or NO-GOOD (pass or fail) result.

Features

- Machine learning assisted setting
- No vision tools programming experience required
- No inspection threshold adjustment
- Fast and easy set-up
- Deterministic response time 50ms
- Reduced cost of ownership and maintenance
- TEACH button and comprehensive UI with 5 status LEDs
- Electronic focus control
- 50-150 mm operating distance
- Bright and highly visible red LED pointer
- Built-in white polarized light illuminator
- Green/red LED spot for GOOD/NO GOOD part
- Ethernet point-to-point communication available for configuration
- Easy and intuitive WEB server GUI for maintenance and job setting
- Easy photosensor-style output interface
- Cable exit connections can be rotated to accommodate a variety of installation configurations.

Applications

- Processing and packaging machinery
- Transport and handling lines
- Assembly lines
- Food and beverage
- Bottling lines
- Machines for the cosmetic and pharmaceutical sectors

Agency Approvals

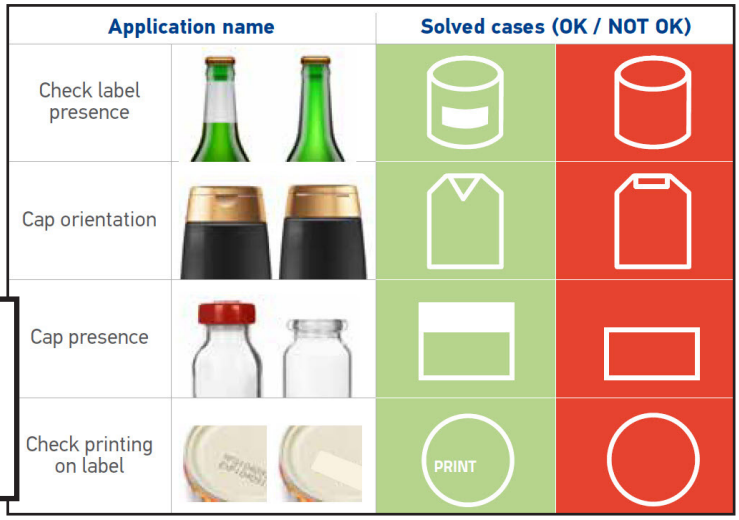
- CE and CSA

Datalogic Smart-VS Smart Vision Sensor Selection Guide						
Part Number	***Price***	***Operating Distance***	***Resolution***	***Illuminator***	***I/O***	***Drawing***
959971320	$879.00	50 to 150 mm [1.97 to 5.91 in]	320 x 240	Polarized white LED	2 inputs and 3 outputs	PDF

The Smart-VS System

The Smart-VS system teaches the sensor GOOD and NO GOOD object conditions. This allows the Smart-VS system to be used in an effective and reliable way for detecting the presence/absence of object features for side orientation of objects, referring to proper object attributes.

This makes the sensor setting independent of the type, material, or color of the object that needs to be detected.



Datalogic Smart-VS Vision Sensor

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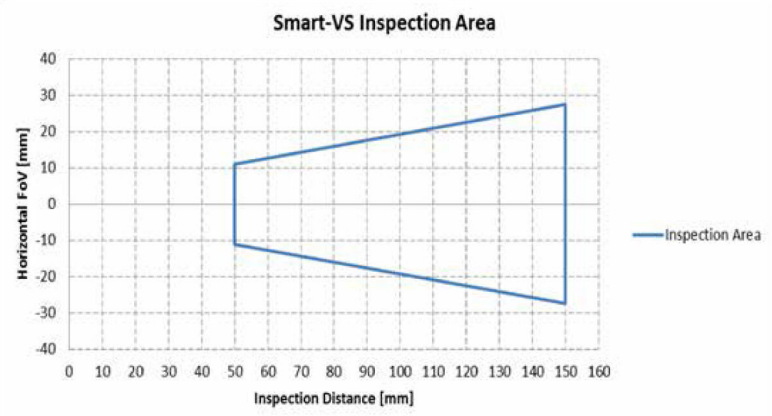
Datalogic Smart-VS Smart Vision Sensor Specifications	
Supply Voltage	10 to 30 VDC
Communication Interface (Ethernet)[1]	10/100 Mbit/s
Inputs	Opto-coupled and polarity insensitive
Maximum Voltage	30VDC
Maximum Input Current Consumption	0.4 to 0.14 A (4.2 W)
Output Type	Push-pull, NPN or PNP. Short circuit protected. Default is push-pull.
Outputs	3 outputs (DATA VALID, GOOD, NO GOOD)
V_{out} (I_{load} = 0mA) Maximum	30VDC
V_{out} (I_{load} = 100mA) Maximum	3VDC
I_{load} Maximum	100mA
Operating Distance	50 to 150 mm [1.97 to 5.91 in]
View Angle	19°
Field Of View Area @ 50 mm	22mm (H) x 16mm (V) [0.87 in (H) x 0.63 in (V)] (Refer to field of view diagram below)
Field Of View Area @ 150 mm	55mm (H) x 41mm (V) [2.17 in (H) x 1.61 in (V)] (Refer to field of view diagram below)
Response Time	50ms from input trigger
Maximum Reference Images (GOOD+NO GOOD)	6 images
Maximum Inspection Rate	20 per second
Active Area Resolution	320x240 pixels
Illuminator	White LED polarized
Weight	173g [6.1 oz]
Material	Aluminum with plastic PMMA protective window
Operating Temperature[2]	-10° to 50°C [14° to 122°F]
Storage Temperature	-20° to 70°C [-4° to 158°F]
Maximum Humidity	90% non-condensing
Vibration Resistance	14mm [0.55 in] @ 2 to 10 Hz; 1.5 mm [0.06 in] @ 13 to 55 Hz; 2 g @ 70 to 500 Hz (2 hours on each axis)
Shock Resistance	30g; 11ms; 3 shocks on each axis
Protection Class[3]	IP65 and IP67
Agency Approvals	CE, CSA

1) The embedded Ethernet interface is intended for configuration only through connection to the device IP. Point-to-point connection is recommended. The IP address is factory set to 192.168.3.100.
2) High ambient temperature applications should use metal mounting bracket for heat dissipation.
3) When correctly connected (fully tightened) to IP67 cables with seals.

Field of View Diagram



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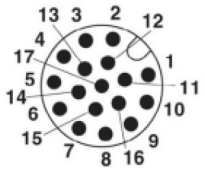
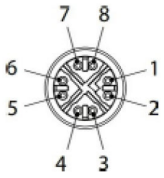
Connections



M12 17-Pin Power and I/O Connector Pinout			
Pin	***Name***	***Color****	***Function***
1	Vdc	Brown	Power supply input voltage +
2	GND	Blue	Power supply input voltage -
Connector Case	Chassis	–	Connector case provides electrical connection to chassis
6	I1A	Yellow	I1A Trigger Input A (polarity insensitive)
5	I1B	Pink	I1B Trigger Input B (polarity insensitive)
13	I2A	Green	I2A Remote Teach A (polarity insensitive)
3	I2B	White	I2B Remote Teach B (polarity insensitive)
9	O1	Red	Data Valid (default is push-pull)
8	O2	Gray	GOOD Output (default is push-pull)
16	O3	Black	NO GOOD Output (default is push-pull)

**** The wire colors refer to cables part numbers CAB-GD03 and CAB-GD05***



M12 8-Pin Standard Ethernet Network Connector Pinout		
Pin	***Name***	***Function***
1	TX+	Transmit data (positive pin)
2	TX-	Transmit data (negative pin)
3	RX+	Receive data (positive pin)
4	RX-	Receive data (negative pin)
5	NC	Not connected
6	NC	Not connected
7	NC	Not connected
8	NC	Not connected

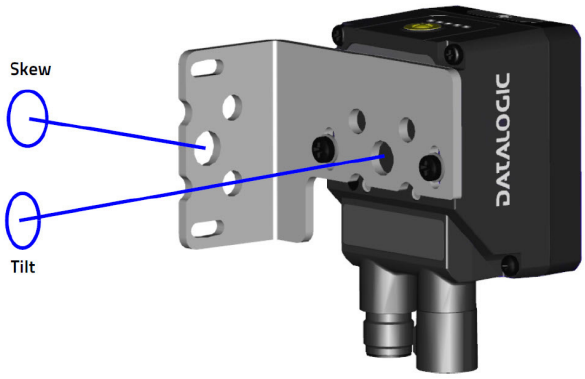
Datalogic Smart-VS Vision Sensor Mounting Bracket

Datalogic Smart-VS Smart Vision Sensor Mounting Bracket Selection Guide			
Part Number	***Price***	***Description***	***Drawing***
BK-22-000	$36.50	Replacement mounting bracket, stainless steel	PDF

BK-22-000

Mounting and Positioning the Smart-VS Vision Sensor

Smart-VS mounting brackets are fabricated with slots which allow for easy rotation. This permits precise setting of skew and tilt. When using Smart-VS mounting brackets, you have the ability to rotate the sensor on two axes, as shown in the accompanying diagrams.



Smart-VS Vision Sensor Mounting Options

The Smart-VS Vision Sensor can be attached to the mounting bracket in several ways. Cable exit connections can be rotated to accommodate a variety of installation configurations.

Side mounting with vertical cable exit

Top mounting with vertical cable exit (Horizontal cable exit is also possible)

Side mounting with horizontal cable exit

Datalogic 17-Pin M12 Cables

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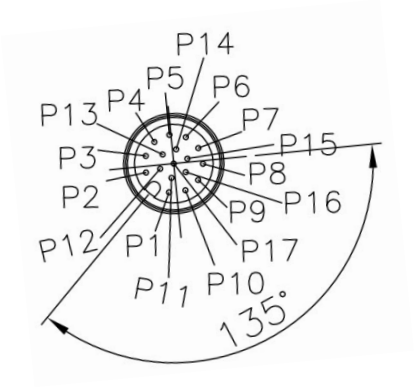
Datalogic 17-Pin M12 Cables Selection Guide		
Part Number	***Price***	
CAB-GD03	$50.00	Datalogic cable, M12 axial female to pigtail, 17-pin, PVC, 9.8 ft [3m] cable length.
CAB-GD05	$67.00	Datalogic cable, M12 axial female to pigtail, 17-pin, PVC, 16.4 ft [5m] cable length.

CAB-GD03

CAB-GD05

Diagrams



Wire Run List		
AWG	***CONN 1***	***Color***
26	1	Brown
	2	Blue
	3	White
	4	Not connected
	5	Pink
	6	Yellow
	7	Not connected
	8	Gray
	9	Red
	10	Not connected
	11	Not connected
	12	Not connected
	13	Green
	14	Not connected
	15	Not connected
	16	Black
	17	Not connected