



SENSICK
CVS 1
CVS 2
Color Vision Sensor




Detect, differentiate and sort colors




If color plays an important role in your process and a simple color sensor does not have the required working distance or field of view for more complex checks, the compact color vision sensor CVS is the economic solution. It counts pixels of all colors or specifically pre-selected colors in its monitor field of view and compares the result with a taught in number. Inaccurate positioned objects will be easily detected, even at further distances.



A built in color display helps to optimally align the sensor for start-up and teaching. The continually updated measurement values are shown so that all parameters, which are needed for reliable operation, are displayed. If the CVS is mounted in a way where the internal display and keypad can't be used, such as when embedded into a packaging machine, a separate console with keypad and color display can be connected.



Seven initial parameter settings allow a quick set up of different identification tasks. Each parameter can of course be easily edited subsequently if adjustments are required. The CVS has memory space for 12 complete parameter sets, which can be selected via external signals. Consequently, it can be optimally set up for fast product changes.



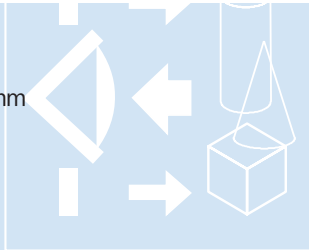
The CVS has no problem in environments where broken glass must be avoided thanks to its sturdy plastic housing and front window. With an enclosure rating of IP 67 it allows installation especially in harsh industrial environments.

Your benefits

- Fast and reliable color identification or sorting
- Easy and fast set-up operation
- Flexible and customisable to batch production
- Universal applicable

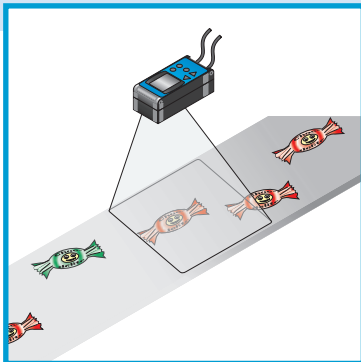
The CVS 1 and CVS 2 at a glance

- Pixel sum evaluation
- Working distance up to 270 mm
- Wide depth of field
- Short response time
- LCD color display
- Integrated keypad
- Integrated LED lighting
- 7 different initial parameter settings
- Digital output
- External trigger and teach input
- Digital switching inputs for external color selection
- Memory for a total of 12 colors (CVS 1 only)
- Robust and compact plastic housing
- Enclosure rating IP 67

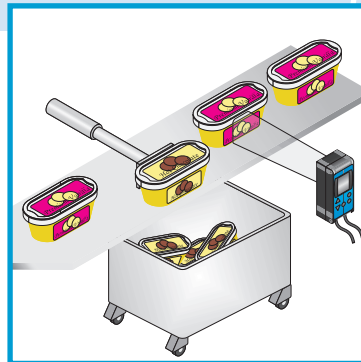


The CVS 2 does more

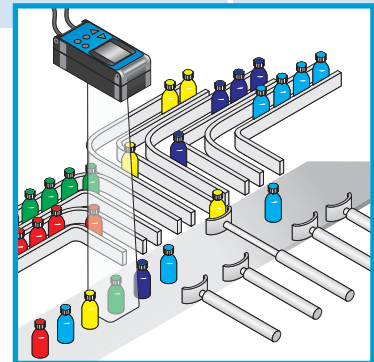
- Memory for a total of 15 colors
- Color sorting
- Identification and sorting of two colored objects
- 2 digital outputs to sort up to 3 colors
- Serial interface to sort up to 15 colors
- Parameter download and upload



Thanks to its large light spot, the CVS can even detect parts with greatly varying appearance and position using their color.

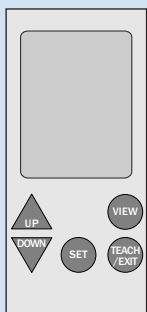







The label is on – but is it the right one? The CVS recognizes correct and incorrect labels by color.




The same shape, different contents: the CVS 2 assists in sorting if color remains the only distinguishing feature.

Easy to use

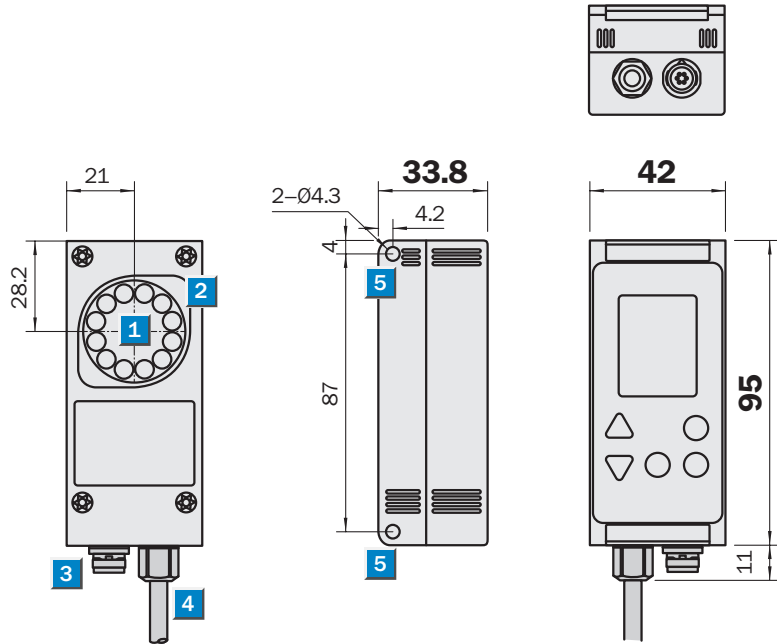


-  Increasing parameter values or scrolling up in menu
-  Decreasing parameter values or scrolling down in menu
-  Showing parameter list, enters parameter values, teaching objects (CVS 1 only), entering submenus (CVS 2 only)
-  Starting teach, scrolling in teach menu, leaving teach menu (CVS 1 only), leaving submenu or parameter setting, starting teach, scrolling in teach menu (CVS 2 only)
-  Toggling between different types of image (live, color enhanced, detected colors only)

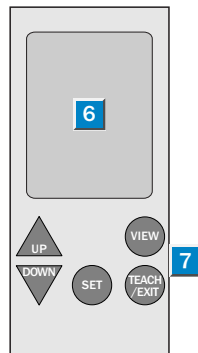

Nominal scanning dist.
 210 ... 270/90 ... 150/
 50 ... 100 mm
Color Vision Sensor

- Teach-in and detect colors
- Simple alignment using the color display and large depth of focus
- Flexible set-up and adjustment
- Large range of scanning distances
- High clock cycle rate for applications with high throughput

Dimensional drawing



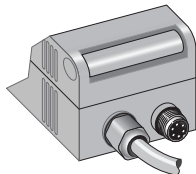
Adjustments possible



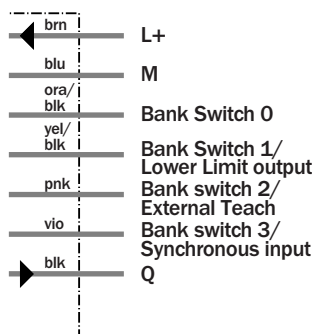
- 1 Front screen
- 2 Lighting
- 3 Connection: external lighting/monitor
- 4 Cable
- 5 Fixing hole
- 6 Color display
- 7 Keyboard

Connection type

All types



Cable, 7-wire




Technical data		CVS1-	P112	P122	P142	N112	N122	N142				
Nominal scanning distance/	210 ... 270 mm/40 x 50 ... 55 x 65 mm ²											
Field of view	90 ... 150 mm/40 x 50 ... 65 x 75 mm ²											
	50 ... 100 mm/50 x 65 ... 100 x 115 mm ²											
Light source ¹⁾	12 x LED, white											
Resolution	Max. 200 x 240 x 3 (RGB)											
Teach procedure	1-point											
	2-point											
	Upper/lower limit											
V _S supply voltage ²⁾	12 ... 24 V DC											
Residual ripple ³⁾	< 5 V _{PP}											
Current consumption ⁴⁾	< 220 mA (at 24 V), < 120 mA (at 12 V)											
Switched outputs	PNP											
	NPN											
Output current I _A max.	< 100 mA											
Response time ⁵⁾	0.6 ... 22 ms											
Trigger input	HIGH corresp. 8 V											
I/O + V _S connection	Cable 7-pin, L = 2 m											
Connection of additional device	HRS, 6-pin											
Ambient temperature T _A ⁶⁾	Operation: 0 °C ... +40 °C Storage: -20 °C ... +70 °C											
Shock load	5 g, 6 directions											
Enclosure rating	IP 67											
Weight	180 g											

¹⁾ Average service life 50,000 h at T_A = +25 °C; 50 % intensity fall
²⁾ Limit values ± 10 %
³⁾ May not exceed or fall short of V_S tolerances

⁴⁾ Without load
⁵⁾ Dependent on settings; see display on device
⁶⁾ Rel. humidity: 35 ... 85 %

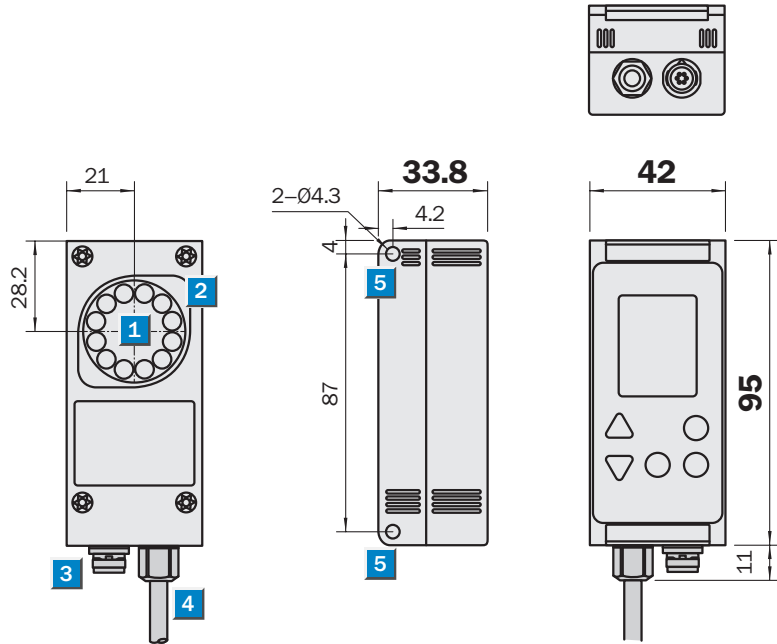
Teach procedure	Explanation
1-point	Color parts of the object are taught in.
2-point	Color parts of the object and the background are taught in. Switching limit = average between object and background.
Upper/lower limit	Upper and lower switching limit of the object color is taught in.

Order information			
Color Vision Sensor		Accessories	
Type	Order no.	Type	Order no.
CVS1-P112	1 026 352	CVSM-1, external operating unit incl. monitor and keyboard	1 026 355
CVS1-P122	1 026 353	CVSL-S5, external lighting, 12 x LED, white	1 026 356
CVS1-P142	1 026 354	Cable DSL-SH06-G03M, 3 m	6 028 659
CVS1-N112	1 026 349		
CVS1-N122	1 026 350		
CVS1-N142	1 026 351		

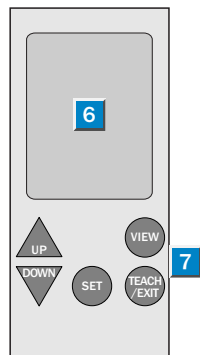

Nominal scanning dist.
 210 ... 270/90 ... 150/
 50 ... 100 mm
Color Vision Sensor

- Teach-in, detect, and sort color areas
- Simple alignment using the color display and large depth of focus
- Flexible set-up and adjustment
- Large range of scanning distances
- High clock cycle rate for applications with high throughput

Dimensional drawing



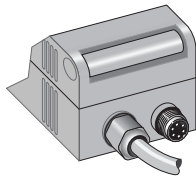
Adjustments possible



- 1 Front screen
- 2 Lighting
- 3 Connection: external lighting/monitor
- 4 Cable
- 5 Fixing hole
- 6 Color display
- 7 Keyboard

Connection type

All types



Cable, 8-wire

← brn	L+
blu	M
ora/ blk	Bank Switch 0
yel/ blk	Bank Switch 1
pnk	Bank switch 2/ External Teach
vio	Bank switch 3/ Synchronous input
→ blk	Q
→ red/ blk	Auxiliary Q



Technical data		CVS2-	P112	P122	P142	N112	N122	N142				
Nominal scanning distance/	210 ... 270 mm/40 x 50 ... 55 x 65 mm ²											
Field of view	90 ... 150 mm/40 x 50 ... 65 x 75 mm ²											
	50 ... 100 mm/50 x 65 ... 100 x 115 mm ²											
Light source ¹⁾	12 x LED, white											
Resolution	Max. 208 x 236 x 3 (RGB)											
Teach procedure	1-point											
	2-point											
	Upper/lower limit											
V _S supply voltage ²⁾	12 ... 24 V DC											
Residual ripple ³⁾	< 5 V _{PP}											
Current consumption ⁴⁾	< 240 mA (at 24 V), < 140 mA (at 12 V)											
Interface	RS 232 TTL											
Switched outputs	PNP											
	NPN											
Output current I _A max.	< 100 mA											
Response time ⁵⁾	5 ... 26.6 ms											
Trigger input	HIGH corresp. 8 V											
I/O + V _S connection	Cable 8-pin, L = 2 m											
Connection of additional device	HRS, 6-pin											
Ambient temperature T _A ⁶⁾	Operation: 0 °C ... +40 °C Storage: -20 °C ... +70 °C											
Shock load	5 g, 6 directions											
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Color Vision Sensor		Accessories	
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CVS2-P112	1 027 332	CVSM-1, external operating unit incl. monitor and keyboard	1 026 355
CVS2-P122	1 027 333	CVSL-S5, external lighting, 12 x LED, white	1 026 356
CVS2-P142	1 027 334	Cable DSL-SH06-G03M, 3 m	6 028 659
CVS2-N112	1 027 329	Connection cable DOL-DH06-G02M, 2 m for CVS data transfer	6 029 801
CVS2-N122	1 027 330		
CVS2-N142	1 027 331		

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