CSS/CSX High Speed

Detects 24 stored colors quickly and offers precise adjustments

SICK

Sensor Intelligence.

Advantages

Quick detection of color gradients as well as precise sensitivity adjustment

With a switching frequency of 13.8 kHz, CSS/CSX High Speed color sensors are very well suited to fast processes. Thanks to the innovative teach-in procedure, even color gradients and structured materials are no problem for the sensors. Their sensitivity can also be precisely adjusted.
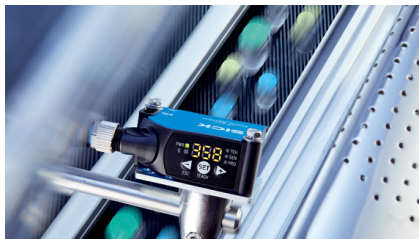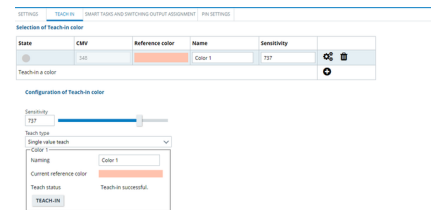

Quick color detection
Very well suited to sorting tasks at high speeds and fast detection of color markings.

(Natural) color mixtures
The CSS/CSX High Speed devices reliably distinguish even between textiles and natural materials such as wood, stone and leather.

999 sensitivity levels
The switching tolerances of the color sensor can be adjusted with process accuracy. This is ensured by its 999 sensitivity levels.

✚ Quick detection of structured materials and switching tolerances that can be adjusted with process accuracy

Outputs up to 15 colors, or even up to 24 with IO-Link interface

The four switching outputs of the 8-pin variants are binary coded in "Coded" mode and therefore enable output of up to 15 colors – directly at the sensor. IO-Link opens up even more options: Up to 24 colors can be stored in one job.

Output of 15 colors without interface
In "Coded" mode, up to 15 colors can be output through binary coding of the switching outputs.

Display of 24 colors with IO-Link interface
Up to 24 colors can be transmitted simultaneously via the IO-Link interface and saved externally.
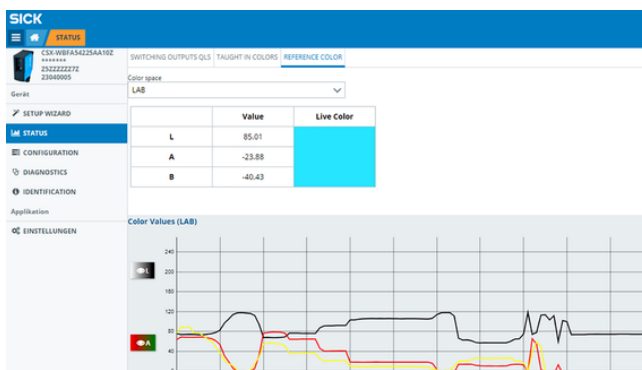
Detect and sort up to 24 colors in one process – with just one sensor

Display of color similarity and output of color values

The CSS/CSX High Speed shows the difference between the taught-in color and the detected color on its display. Color values (RGB or L*a*b) can also be transmitted and stored via IO-Link.

RGB and L*a*b output
In addition to storing and transmitting RGB color values, the CSS/CSX High Speed features another color space with L*a*b.
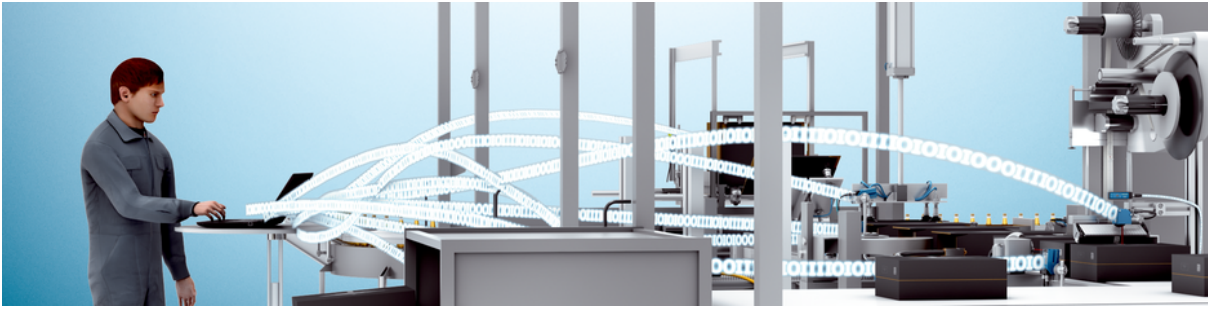

Captures color similarity
The sensor determines the similarity between the taught-in and detected color, from a complete match (999) to a complete contrast of color values (000).

➕ **The CSS/CSX High Speed devices show the difference between taught-in color and detected color – color values can also be transmitted and stored via IO-Link**

More options thanks to IO-Link

Thanks to the smart setup assistant in the SOPAS software, the color sensor is especially quick to install. The simple diagnostics, monitoring and adjustment of the CSS/CSX High Speed during operation also improves efficiency.
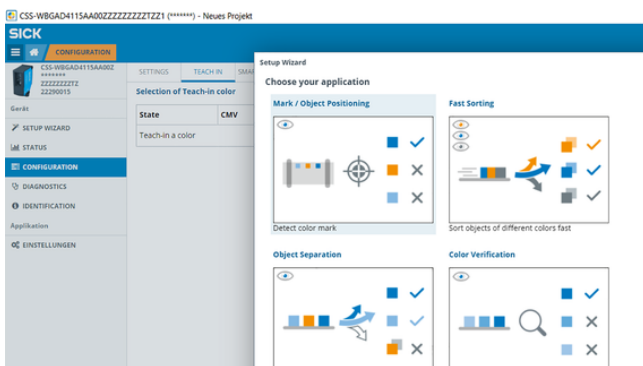
Fast commissioning
Using the setup assistant in the SOPAS interface, the CSS/CSX can be quickly and precisely configured for the specific application.
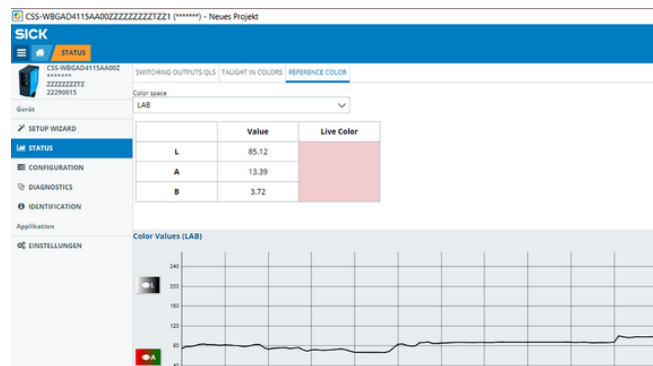
Intelligent real-time monitoring
Continuous monitoring in real time, fast diagnostics, and lots of process data thanks to IO-Link.

Thanks to its many intelligent tools, the CSS/CSX High Speed color sensor saves valuable resources and increases system productivity through predictive maintenance.

CSS/CSX High Speed

Technical data overview

Sensing distance	13 mm (13 mm) 60 mm (60 mm)
Light spot size	2 mm x 4 mm Ø 12 mm
Adjustment	Single value teach-in, Multi value teach-in
Connection type	Male connector

Product description

The CSS/CSX High Speed color sensor is characterized by its high switching frequency and its precise, infinitely variable sensitivity adjustment. Furthermore, the sensor outputs color values (L*a*b or RGB) as well as the similarity of a detected color to a taught-in color. Thanks to its innovative teach-in procedure, the CSS/CSX High Speed also detects color gradients and structured materials. The switching outputs of the device can be binary coded in "Coded" mode without interfaces, which enables it to output up to 15 colors. Up to 24 colors per identification task (job) can even be transferred via the IO-Link interface and saved externally. The sensor can be quickly and precisely configured for the specific application using the setup assistant in the SOPAS software.

At a glance

- Switching frequency: 13.8 kHz
- Output of color values (L*a*b or RGB) and color similarity
- Output of up to 15 colors using the "Coded" mode
- Up to 24 colors per identification task (job) can be saved
- IO-Link interfaces; SOPAS software with application-specific setup assistant
- CSX: installation-compatible to CS8

Your benefits

- Thanks to the fast object color detection, high process speeds can be achieved thereby increasing productivity
- The output of up to 15 colors per binary coding of the switching outputs ensures easy data transmission - without interfaces such as IO-Link or Modbus®
- Extends the process monitoring and diagnostics options through the output of color values and color similarity
- Using IO-Link, up to 24 colors can be saved per identification task (job). This saves resources and increases the process flexibility
- The sensor can be quickly configured correctly using the setup assistant in the SOPAS software. This makes commissioning easier and increases the process stability.

Fields of application

- Mark and object positioning: detecting colored marks, labels, adhesive areas (splicing)
- Fast sorting of objects by color: e.g., components in the automotive industry and machine construction; containers and pallets in intralogistics; vial and beverage bottle lids

Ordering information

Other models and accessories → www.sick.com/CSS_CSX_High_Speed

- **Housing design:** small
- **Communication interface:** Modbus
- **Sensing distance:** ≤ 13 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
Push-pull: PNP/NPN	2 mm x 4 mm	Vertical	Long side of housing	Male connector M12, 8-pin	CSS-WBF114118RZZZZ	1115223

- **Housing design:** small
- **Communication interface:** Modbus
- **Sensing distance:** ≤ 60 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
Push-pull: PNP/NPN	Ø 12 mm	Round, large	Long side of housing	Male connector M12, 8-pin	CSS-WBFA54118RZZZZ	1113518

- **Housing design:** small
- **Communication interface:** IO-Link
- **Sensing distance:** ≤ 13 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
Push-pull: PNP/NPN	2 mm x 4 mm	Vertical	Long side of housing	Plug, M12, 5-pin	CSS-WBF114115AA10Z	1120168
				Male connector M12, 8-pin	CSS-WBF114118AA10Z	1120167

- **Housing design:** small
- **Communication interface:** IO-Link
- **Sensing distance:** ≤ 60 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
Push-pull: PNP/NPN	Ø 12 mm	Round, large	Long side of housing	Plug, M12, 5-pin	CSS-WBFA54115AA10Z	1120170
				Male connector M12, 8-pin	CSS-WBFA54118AA10Z	1120169

- **Housing design:** large
- **Communication interface:** -
- **Sensing distance:** ≤ 13 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
NPN	2 mm x 4 mm	Vertical	Long side of housing	Plug, M12, 5-pin	CSX-WNF1141252ZZZZ	1120178
				Male connector M12, 8-pin	CSX-WNF1141282ZZZZ	1120184
			Short device side	Plug, M12, 5-pin	CSX-WNF1142252ZZZZ	1120166
				Male connector M12, 8-pin	CSX-WNF1142282ZZZZ	1120182

CSS/CSX High Speed

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
PNP	2 mm x 4 mm	Vertical	Long side of housing	Plug, M12, 5-pin	CSX-WPF1141252ZZZZ	1147710
			Short device side	Plug, M12, 5-pin	CSX-WPF1142252ZZZZ	1147711

- **Housing design:** large
- **Communication interface:** -
- **Sensing distance:** ≤ 60 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
NPN	Ø 12 mm	Round, large	Long side of housing	Plug, M12, 5-pin	CSX-WNFA541252ZZZZ	1120188
				Male connector M12, 8-pin	CSX-WNFA541282ZZZZ	1120190
			Short device side	Plug, M12, 5-pin	CSX-WNFA542252ZZZZ	1120186
				Male connector M12, 8-pin	CSX-WNFA542282ZZZZ	1120189
PNP	Ø 12 mm	Round, large	Short device side	Plug, M12, 5-pin	CSX-WPFA542252ZZZZ	1147712

- **Housing design:** large
- **Communication interface:** IO-Link
- **Sensing distance:** ≤ 13 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
Push-pull: PNP/NPN	2 mm x 4 mm	Vertical	Long side of housing	Plug, M12, 5-pin	CSX-WBF114125AA10Z	1120177
				Male connector M12, 8-pin	CSX-WBF114128AA10Z	1120183
			Short device side	Plug, M12, 5-pin	CSX-WBF114225AA10Z	1115229
				Male connector M12, 8-pin	CSX-WBF114228AA10Z	1120181

- **Housing design:** large
- **Communication interface:** IO-Link
- **Sensing distance:** ≤ 60 mm

Switching output	Light spot size	Light spot direction	Light emission	Connection type Detail	Type	Part no.
Push-pull: PNP/NPN	Ø 12 mm	Round, large	Long side of housing	Plug, M12, 5-pin	CSX-WBFA54125AA10Z	1120187
				Male connector M12, 8-pin	CSX-WBFA54128AA10Z	1113515
			Short device side	Plug, M12, 5-pin	CSX-WBFA54225AA10Z	1120185
				Male connector M12, 8-pin	CSX-WBFA54228AA10Z	1120193

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

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