



Model number

VCS210

Colour sensor
Fibre optic amplifier for glass fibre optics

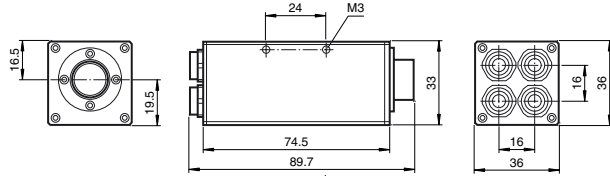
Features

- Colour sensor for connecting glass fibre optics
- Reliable, automated colour recognition
- Option to teach in max. 255 colours
- Extremely rapid response times
- Not affected by fluctuations in luminosity and gloss influences
- Wide range of functions, but simple operation via software
- Transparency recognition

Description

Color detection in the highest dimension marks the color sensor VCS210. The sensor detects colors according the human sense independent of brightness fluctuations. The fast response time of 90 µs assure fastest and accurate processes. The detection of lowest color differences, Primerdetection or self-illuminated objects are typical applications. Due to the adaptation of fibre optics the sensor can be used in an hazardous environment.

Dimensions



Electrical connection

Pinning according 8-pin M9-connector, female (Power supply)



Pin	Signal	Color
1	N.C	white
2	N.C.	brown
3	TRG 1 (Trigger 1)	green
4	TRG 0 (Trigger 0)	yellow
5	CLK_OUT (control output)	grey
6	N.C.	pink
7	GND (ground)	blue
8	+UB (power supply)	red

Pinning according 8-pin M9-connector, female (Output)



Pin	Signal	Color
1	OUT1 Output 1	white
2	OUT2 Output 2	brown
3	OUT3 Output 3	green
4	OUT4 Output 4	yellow
5	OUT5 Output 5	grey
6	OUT6 Output 6	pink
7	OUT7 Output 7	blue
8	OUT0 Output 0	red

Pinning according 4-pin M9-connector, female (USB)



Pin	Signal
1	GND
2	VBUS
3	D-
4	D+

Pinning according 4-pin M9-connector, female (serial)



Pin	Signal
1	GND
2	TxD
3	RxD
4	N.C.

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Technical data**General specifications**

Sensor range	depends on the fibre optics being used	
adapter form	18	
Light source	White light LED, deactivateable	
Light type	LED White light	
A/D converter	3 x 12 Bit	
Approvals	CE	
Light receiver	Three range photo diode	
Colour space modes	Non-self illuminating objects Self-illuminating objects	
Colour memory cells	up to 255	
Colour processing modes	Colour recognition Colour classification	
Colour resolution	$DE_{Lab} \leq 1$	
Operating mode	External triggering External synchronization Self-shining objects Non-self-shining objects Colour grouping Colour sequence recognition	
Ambient light compensation	dynamic , deactivateable	
Hysteresis	H	0 ... 255 %

Parameterization/software

Parameter assignment	Parameterization via PC user interface
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Indicators/operating means

Operating display	Software
Function display	Software
Operating elements	Software

Electrical specifications

Operating voltage	U_B	18 ... 28 V DC
No-load supply current	I_0	max. 500 mA

Input

Control input	2x Trigger Input
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Output

Switching type	according to $+U_B$ switching, if colour detected , Switching to 0 V if colour not detected
Interfaces	RS 232, USB
Signal output	1 control output , 8 Push-pull output, short-circuit proof, protected against reverse polarity
Switching voltage	$+U_B - 1 V$
Switching current	max. 100 mA per output
Response time	$\geq 100 \mu s$
Pulse extension	0 ... 65535 ms

Performance characteristics

Long-term drift	0.05 DE/day
Temperature drift	0.1 DE/°C

Standard conformity

Standards	EN 61000-6-2 EN 61326 EN 55011
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Ambient conditions

Ambient temperature	-10 ... 55 °C (263 ... 328 K)
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Mechanical specifications

Protection degree	IP65
Connection	M9 plug, 8-pin and M9 plug, 4-pin
Material	
Housing	anodised aluminium
Optical face	Fibre optic
Mass	150 g

Accessories**USBA-2M-PUR-V34-G**

Connection cable

SUBD9-2M-PUR-V34-G

Connection cable

V38S-G-2M-PUR-ABG

Non pre-wired cable socket

LCRF 18-3,2-2,0-K4

Glass fibre optic

LCRF 18-1,1-2,0-K15

Glass fibre optic

LCRF 18-2,3-2,0-K16

Glass fibre optic

LCEF 18-3,2-2,0-K4

Glass fibre optic

LCEF 18-1,1-2,0-K16

Glass fibre optic

LCEF 18-3,2-2,0-Z1

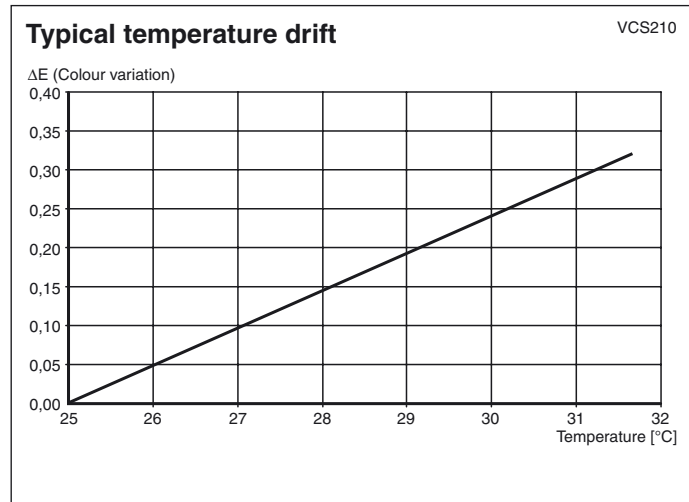
Glass fibre optic

OMH-VCS210

Mounting aid

Additional accessories can be found in the Internet.

Curves / diagrams



Optional information

Sensor connector female SB1 pin description (Power supply):

Pin	Name	Description	Specification
1	N.C.		
2	N.C.		
3	TRG 1	trigger signal input for external synchronization purposes	LOW: 0 V ... 3 V; HIGH: 18 V ... 28 V
4	TRG 0	1. input for updating the sensor outputs (rising edge) in "EXTERN" mode 2. input for trigger controlled color sequence in "TRIGG. SEQU." mode (rising edge) 3. input for starting timed color sequence in "TIMED SEQU." mode (rising edge) 4. input for external triggered Teach-In in "EXT. TEACH" mode (rising edge)	LOW: 0 V ... 3 V; HIGH: 18 V ... 28 V
5	CLK_OUT	output signal for synchronization of an additional external light source or an additional sensor	LOW: 0 V; HIGH: +U _B - 1 V, max. 4 mA
6	N.C.		
7	GND	Ground	0 V
8	+UB	power supply	18 V DC ... 28 V DC max. 500 mA

Specification sensor connector female SB2 (Output):

Pin	Name	Specification
1	OUT 1	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
2	OUT 2	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
3	OUT 3	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
4	OUT 4	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
5	OUT 5	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
6	OUT 6	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
7	OUT 7	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA
8	OUT 0	Push-Pull, LOW: 0 V; HIGH: +U _B - 1 V, max. 100 mA

Sensor connector female RS 232 pin description:

Pin	Name	Specification
1	GND	0 V
2	TXD	- 5 V ... + 5 V
3	RXD	- 5 V ... + 5 V
4	N.C.	-

Parameters	Value
Baud rate	9.600 ... 115.200
Data bits	8
Parity	no
Stop bits	1
Flow control	no

Hint:

The baud rate of the RS232 interface is pre-set to 28800.

Sensor connector female USB pin description:

Pin	Name	Specification
1	GND	0 V
2	VBUS	+ 5 V
3	D-	- 400 mV
4	D+	+ 400 mV

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