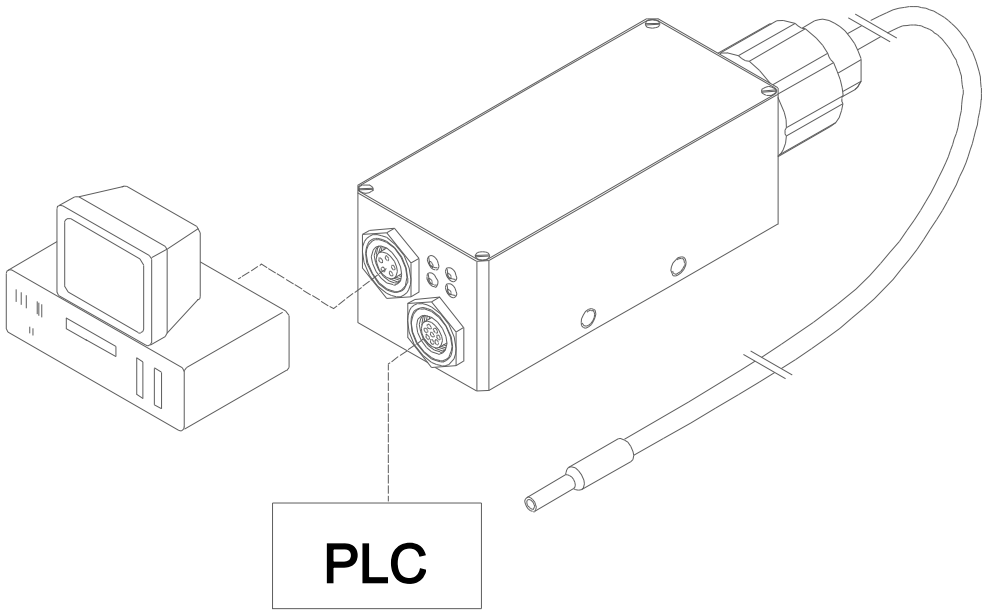
# color sensors SI-COLO2 and SI-COLO2-LWL




The SI-COLO2 color sensor detects the radiation that is diffusely reflected by the target. The SI-COLO2 color sensor uses a white-light LED with adjustable power as a light source. A triple receiver for the RED, GREEN, and BLUE content of the light reflected from the target is used as a receiver.

The SI-COLO2 color sensor can be "taught" up to 15 colors; 5 different color-detection modes and 3 contrast-detection modes for the respective primary color are available for selection. Color-detection either operates continuously or is started by means of an external SPC trigger signal. The respective detected color either is output as binary code at the 4 digital outputs, or it can be sent directly to the outputs, if only up to 4 colors are to be detected. Simultaneously the detected color code is visualised at the SI-COLO2 housing by means of 4 LEDs.

Through the RS232 interface parameters and measured values can be exchanged between the PC and the SI-COLO2 color sensor. All the parameters for color detection can be stored in the non-volatile EEPROM of the SI-COLO2 color sensor. When parameterization is finished the color sensor continues to operate with the current parameters in "stand alone" mode without a PC.

catalogue
in revision

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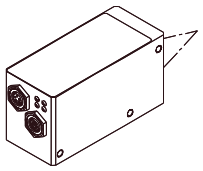
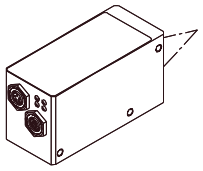
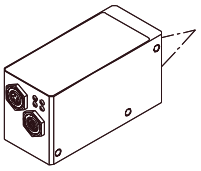
## Technical Data of SI-COLO2 color sensors

| **SI-COLO2-20-d0** |  |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 18 mm … 24 mm |
| Light spot dimensions | Type d0: ∅ 0.8 mm (typ.) at 20mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminium, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT0 – OUT3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

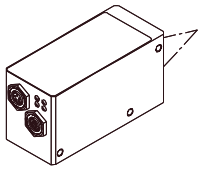
## SI-COLO2-20-d0-ANA



| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 18 mm … 24 mm |
| Light spot dimensions | Type d0: ∅ 0.8 mm (typ.) at 20mm distance |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminium, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | 3x Analog (0V … +10V) |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | --- |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

| SI-COLO2-30-... (-d0, -d1, -d2, -d3) |  |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 25 mm … 55 mm |
| Light spot dimensions | Different types available:<br>Type d0: ∅ 1.5 mm (typ.) at 30mm distance<br>Type d1: ∅ 2.0 mm (typ.) at 30mm distance<br>Type d2: ∅ 3.0 mm (typ.) at 30 mm distance<br>Type d3: ∅ 4.5 mm (typ.) at 30 mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT0 – OUT3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

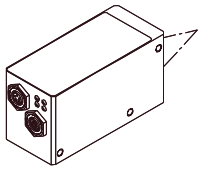
## SI-COLO2-30-d2-ANA



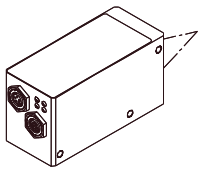
| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 25 mm … 55 mm |
| Light spot dimensions | Type d2: ∅ 3.0 mm (typ.) at 30 mm distance |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | 3x Analog (0V … +10V) |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | --- |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

## SI-COLO2-30-RING

| | |
|---|---|
| Light source | 4 white-light LED, modulated 100 kHz |
| Target distance | typ. 25 mm … 55 mm |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT0 – OUT3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

| SI-COLO2-50-... (-d1, -d2, -d3) |  |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 30 mm ... 90 mm |
| Light spot size | Type d1: Ø 3.5 mm (typ.) at 50 mm distance<br>Type d2: Ø 5.5 mm (typ.) at 50 mm distance<br>Type d3: Ø 8.0 mm (typ.) at 50 mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 ... OUT 3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

## SI-COLO2-50-d2-ANA

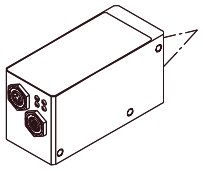


| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 30 mm ... 90 mm |
| Light spot size | Type d2: Ø 5.5 mm (typ.) at 50 mm distance |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | 3x Analog (0V … +10V) |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | --- |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

## SI-COLO2-50-RING

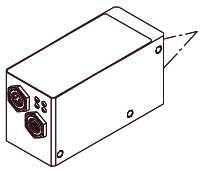
| | |
|---|---|
| Light source | 4 white-light LED, modulated 100 kHz |
| Target distance | typ. 30 mm ... 90 mm |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 ... OUT 3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

## SI-COLO2-80-... (-d1, -d2, -d3)



| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 50 mm ... 150 mm |
| Light spot size | Type d1: Ø 6.5 mm (typ.) at 80 mm distance<br>Type d2: Ø 9.0 mm (typ.) at 80 mm distance<br>Type d3: Ø 13.0 mm (typ.) at 80 mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 ... OUT 3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

## SI-COLO2-80-d2-ANA

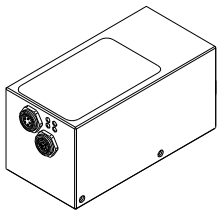


| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | typ. 50 mm ... 150 mm |
| Light spot size | Type d2: Ø 9.0 mm (typ.) at 80 mm distance |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | 3x Analog (0V … +10V) |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | --- |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

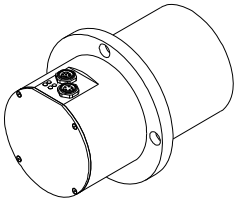
## SI-COLO2-80-RING

| | |
|---|---|
| Light source | 4 white-light LED, modulated 100 kHz |
| Target distance | typ. 50 mm ... 150 mm |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 ... OUT 3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

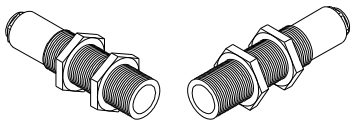
## SI-COLO2-200-... (-d1, -d2)



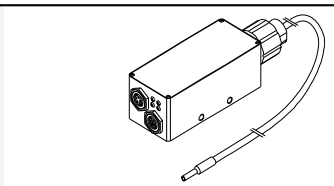
| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | Type d1: typ. 100 mm … 350 mm<br>Type d2: typ. 100 mm … 400 mm |
| Light spot size | Type d1: Ø 12 mm (typ.) at 200 mm distance<br>Type d2: Ø 25 mm (typ.) at 200 mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 160 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminum, anodized in blue respectively black |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 … OUT 3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

| SI-COLO2-500-... (-d2, -d3) |  |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | Type d2: typ. 100 mm … 600 mm<br>Type d3: typ. 50 mm … 800 mm |
| Light spot size | Type d2: Ø 25 mm (typ.) at 500 mm distance<br>Type d3: Ø 50 mm (typ.) at 500 mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 160 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC – 801 … CE |
| Housing | Aluminum, anodized in blue respectively black |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 … OUT 3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |

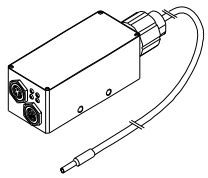
**SI-COLO2-M18 color sensor**
**SI-COLO2-CON1 electronic control unit**



| | SI-COLO2-M18-T (transmitter) SI-COLO2-M18-R (receiver) |
|---|---|
| Light source | White light LED, modulated 100 kHz |
| Target distance (working range) | With reflected light operation: typ. 20 mm ... 200 mm<br>With transmitted light operation: typ. 100 mm ... 2000 mm |
| Light spot size | typ. Ø 5 mm at 100 mm distance |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | Up to 5000 Lux |
| Type of protection | IP 67 |
| Current consumption | typ. 50 mA |
| Type of connector | SI-COLO2-M18-T: 5-pin flange socket (PC), type Binder Series 712<br>SI-COLO2-M18-R: 8-pin flange socket (PLC), type Binder Series 712 |
| Housing material | Brass, nickel-plated |
| Operating temperature range | -20°C … +55°C |
| Storage temperature range | -20°C … +85°C |
| EMC test acc. to | IEC - 801 ... CE |
| | **SI-COLO2-CON1 (electronic control unit)** |
| Voltage supply | +12VDC … +30VDC, protected against polarity reversal, overload-protected |
| Type of protection | IP 64 |
| Current consumption | typ. 180 mA |
| Max. switching current | 100 mA, short-circuit-proof |
| Interface | RS232, parameterizable under Windows® |
| Pulse lengthening | Adjustable under Windows® 0 ms … 100 ms |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT 0 ... OUT 3 (DIGITAL, $+U_B$/0V) |
| Averaging | Over 32768 values max. |
| Switching state display | Visualisation by means of 4 yellow LED |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |
| Type of connector | To the transmitter: 5-pin plug type Binder 712<br>to the receiver: 8-pin plug type Binder 712<br>to the PLC: 8-pin flange socket type Binder 712<br>to the PC: 5-pin flange socket type Binder 712 |
| Housing material | Aluminum, anodized in blue |
| Operating temperature range | -20°C ... +55°C |
| Storage temperature range | -20°C ... +85°C |
| EMC test acc. to | IEC – 801 CE |

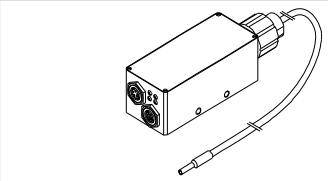
| **SI-COLO2-LWL** |  |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | With optical fiber: typ. 2 mm ... 10 mm<br>With additional reflex optics KL-20: typ. 15 mm ... 40 mm |
| Light spot dimensions | Depending on the optical fiber used, e.g.:<br>With optical fiber ∅ 2,5mm, 22°: ∅ 3mm - 6mm (at distance 2mm ... 10mm)<br>With optical fiber ∅ 2,5mm, 67°: ∅ 5mm - 15mm (at distance 2mm ... 10mm)<br>With additional reflex optics KL-20: Ø 5 mm (at distance 30 mm) |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT0 - OUT3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualisation by means of 4 yellow LEDs |
| Color memory capacity | Non-volatile EEPROM with parameter sets for max. 15 colors |
| Optical fiber | (please cf. catalog LWL series) |

## SI-COLO2-LWL-ANA



| | |
|---|---|
| Light source | White-light LED, modulated 100 kHz |
| Target distance | With optical fiber: typ. 2 mm ... 10 mm<br>With additional reflex optics KL-20: typ. 15 mm ... 40 mm |
| Light spot dimensions | Depending on the optical fiber used, e.g.:<br>With optical fiber ∅ 2,5mm, 22°: ∅ 3mm - 6mm (at distance 2mm ... 10mm)<br>With optical fiber ∅ 2,5mm, 67°: ∅ 5mm - 15mm (at distance 2mm ... 10mm)<br>With additional reflex optics KL-20: Ø 5 mm (at distance 30 mm) |
| Receiver | 3-color photodiode (red, green, blue) |
| Pulsating light operation | 100 kHz |
| Ambient light | up to 5000 Lux |
| Type of protection | IP 64 |
| Current consumption | typ. 120 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | 8-pin flanged socket-outlet (PLC), type Binder series 712<br>5-pin flanged socket-outlet (PC), type Binder series 712 |
| EMC testing | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | 3x analog (0V ... 10V) |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | --- |
| Color memory capacity | Non-volatile EEPROM with parameter sets for max. 15 colors |
| Optical fiber | (please cf. catalog LWL series) |

## SI-COLO2-LWL-ACL



| | |
|---|---|
| Light source | The measuring object itself serves as a light source |
| Target distance | With optical fiber: typ. 2 mm ... 10 mm<br>(depends on the measuring object = light source to be measured) |
| Reproducibility | In the x,y color range 1 digit each with 8 bit A/D conversion |
| Receiver | 3-color photo diode (red, green, blue) |
| Type of protection | IP 64 |
| Current consumption | typ. 180 mA |
| Interface | RS232, parameterizable under Windows® |
| Connector type | to PLC: 8-pin flanged socket-outlet, type Binder series 712<br>to PC: 5-pin flanged socket-outlet, type Binder series 712 |
| EMC test acc. to | IEC - 801 ... CE |
| Housing | Aluminum, anodized in blue |
| Operating temperature range | -20°C to +55°C |
| Storage temperature range | -20°C to +85°C |
| Pulse lengthening | Adjustable under Windows® 0 ms ... 100 ms |
| Max. switching current | 100 mA, short-circuit-proof |
| Switching frequency | Max. 2 kHz with 15 teach-in colors, max. 5 kHz with 1 teach-in color,<br>max. 28 kHz in case of contrast detection |
| Outputs | OUT0 - OUT3, short-circuit protected |
| Averaging | Over 32768 values max. |
| Voltage supply | +12VDC ... +30VDC, protected against polarity reversal, overload-protected |
| Switching state display | Visualization by means of 4 yellow LEDs |
| Color memory capacity | Non-volatile EEPROM with parameter sets for 15 colors max. |
| Optical fiber | (please cf. catalog LWL series) |