**Noncontact online color measurement**

- Ethernet / EtherCAT
- Pin 7 and 8 open: LLL (Low logic level).
- Pushbutton, LED White reference
- No data transmission
- Brown
- GND (0V)
- Danger of injury, damage to or destruction of the system
- Pin 7 and 8 open: LLL (Low logic level).
- Pushbutton, LED Dark reference
- Action was successfully
- Failure of the measurement device
- Pin 7 and 8 connected: HLL (High logic level)
- LED Status
- Error
- Measurement frequency up to 2000 Hz
- Green
- Storage temperature: -20 ... 70 °C (-4 ... +158 °F)
- Action is currently running
- n.c.
- No error, system ready
- Operating temperature: 0 ... +45 °C (+32 ... +113 °F)
- Wire color
- CAB-M9-7P-St-ge
- Green, flashing
- CAB-M9-4P-St-ge
- Pink, flashing
- CAB-M9-3P-St-ge
- Grey, flashing
- CAB-M9-2P-St-ge
- Yellow, flashing
- CAB-M9-1P-St-ge
- Red
- Wire color
- CAB-M9-7P-Sig-ge
- Function
- ACS
- Pin 7 and 8 open: LLL (Low logic level).
- Pushbutton, LED Dark reference
- 4-pol. male connector, view: solder-pin side
- Digital I/O
- Functions
- Noncontact online color measurement
  - Color recognition from a taught reference list
  - Triggering, Synchronization
  - Ethics/EtherCAT, RS422, Digital I/O
  - + 24 VDC, ± 15 %, I
- Warnings
  - Connect the sensor cable (frick, strong, longer) to the controller.
  - Guard the coding keys upward along the fiber connectors, until they fit into the controller’s grooves.
  - Carefully tighten the union nut by hand.
  - Scale the signal connection of the system.
- Dimensional Drawing Controller

**Connecting Sensor Cable to the Controller**

- When connecting the optical fiber cable, you need to ensure that the end points do not touch any edges or surfaces to avoid damage.
- Connect the sensor cable (frick, strong, longer) to the controller.
- Guard the coding keys upward along the fiber connectors, until they fit into the controller’s grooves.
- Carefully tighten the union nut by hand.
- Scale the signal connection of the system.

**Proper Environment**

- Protection class: IP 40 (Controller)
- IP 64 (Sensor)
- Operating temperature: -40 °C to +120 °C (-40 °F to +248 °F)
- Storage temperature: -30 °C to +70 °C (-22 °F to +158 °F)

**Assembly Instructions**

- Place the controller on a level surface, or install it for example in a switch cabinet using a DIN EN 60715 mounting rail (DIN rail T505).
- When attaching the controller, ensure that no connections, operating or display elements are covered. Free space adjacent to the heat sink on the right side of the controller: min. 100 mm (4 in).
**Controller**

Laptop / PC + USB -> Ethernet-Adapter + Ethernet cable

**Reduce the brightness of the light source**

**Sensor and clamp**

Use the spectra and / or signal averaging,

If possible, select a higher light source

Operate the controller with exposure mode

**Power supply**

Set the required measuring rate. Exposure rate

**Structure of the Components**

Quick Guide

- BECKHOFF

Run

X2

Patch cable

colorCONTROL

Measurement connected to a PC / network with the SensorFinder.exe

You can check the IP address of the controllers that are

169.254.168.150.

The controller is delivered ex factory with the IP address

Controller warm-up time is approx. 40 minutes.

Dark Referencing

Dark referencing is used to compensate dark signal drift for the receiving array in the controller.

Controller warm-up time is approx. 40 minutes.

Cover the sensor with a piece of dark paper, and press the dark reference pushbutton on the controller or click the dark correction button on the website.

Menu > Preferences > Corrections, referencing

No external light must reach the sensor during dark referencing. Any light source LEDs are auto-

matically switched off for the duration of the correction process.

**Fine Positioning the Sensor, Placing the Target**

Switch to the measurement program, and select XYZ as your color space. Place a bright measurement object as close as possible to the center of the working range.

**Select the designated controller from the list.**

**Select Measuring Rate**

The optimum measuring rate depends on the brightness of the light source and the used sensor.

Place a white target inside the working range.

**Select the program Spectrum and select Video signal.**

As an alternative to color teaching you can record a color manually by their color values (L*a*b or XYZ color space) into the color table.

Measure and

Enter a description of the new color.

**Select the signal, enter the limits.**

**Save setup**

Not saved settings will be lost, if you switch off the controller.