



## CODED LED MARKER 12V

### Datasheet

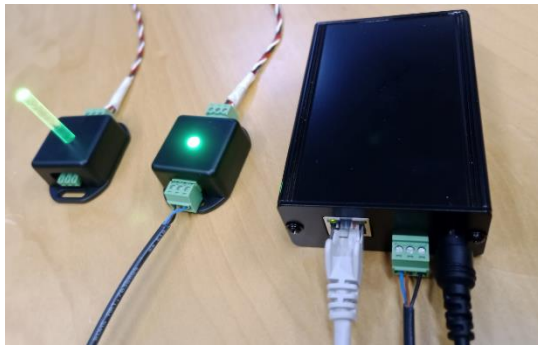
## 1 Overview

The Coded LED Markers are used as reference markers. Due to the direct control of each marker individually the position of the markers in the camera image can be determined automatically.

### Specification of Coded LED Markers 12V

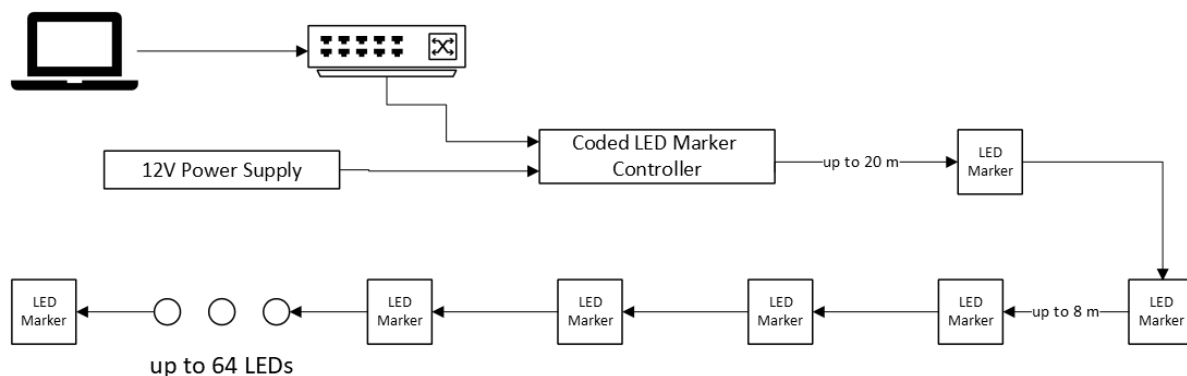
- Up to 64 LED markers
- Up to 8 m between LED markers
- Maximum cable length 150 m
- Marker Color Green
- Marker Controller with 12/24V power supply
- Up to 20 m from Controller to first LED marker
- Phoenix Contact 3 Pin MC/IMC 3.81 for connections

## 2 System Setup



The Coded LED Marker Controller connects the Coded LED Markers to the Control PC. The Coded LED Marker Controller is connected to Ethernet and powered by a 12V /24V power supply. The LEDs are connected in a daisy chain one after each other. The LEDs are connected using Phoenix Contact IMC-1.5/3-ST-3.81 and MC-1.5/3-ST-3.81 plugs. These cables can be easily adjusted in length on site.

The LEDs will be initially switched off when powered up. They can be switched on via a push button on the front. The network configuration can be changed via the coded LED Manager.



### Required System Components:

- Coded LED Marker
- Coded LED Marker Controller
- Ethernet-Connection
- 12V Power Supply with barrel connector
- Cables with Phoenix Contact IMC 1,5 /3-ST-3.81 and MC 1,5 /3-ST-3.81 plugs.

### 3 Controller

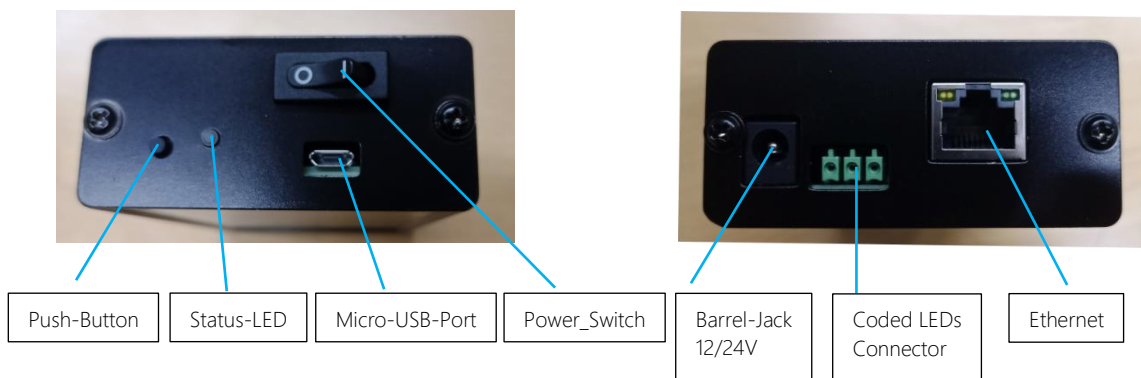
The Marker Controller is 12/24V powered by an external 12V power supply. The Marker Controller can be configured via Micro-USB-cable using the CodedLEDsManager.

Specifications:

- IP-Address can be set via USB and CodedLEDManager
- barrel connector socket to connect a 12V / 24V power supply
- Size: 100 mm x 70 mm x 32 mm

Operation modes:

- All LEDs on
- All LEDs off
- Individual LED on
- Gray code pattern



Status-LED-Colors

- Red - Starting up
- Yellow - Ready not connected to Ethernet
- Green - Connected to Ethernet
- Blue - Connected via USB and ready for configuration

Usage:

- Direct:
  - ON/OFF via Push-Button (no ethernet required)
- Ethernet
  - Communication via OSC-Command (e.g. directly via ProjectionTools)
- Configuration
  - Connection via Micro-USB to a Computer with CodedLEDManager (see Section 6)

### 4 Coded LED Marker

The LED Markers are available as housed markers with hinges or as PCB.

- LED Markers be individually controlled by Marker Controller
- 12V Power
- Up to 8 m between LED Markers
- Different colors possible.
- 35x35mm case with mounting holes

- Explicit connection scheme due to male and female connectors on PCB



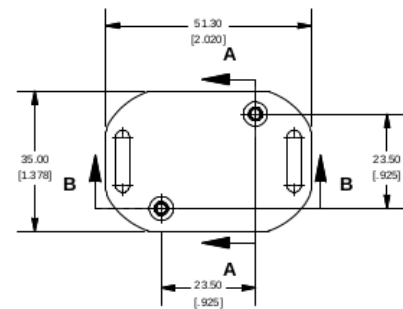
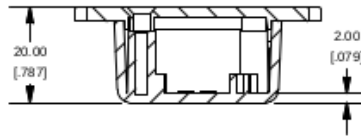
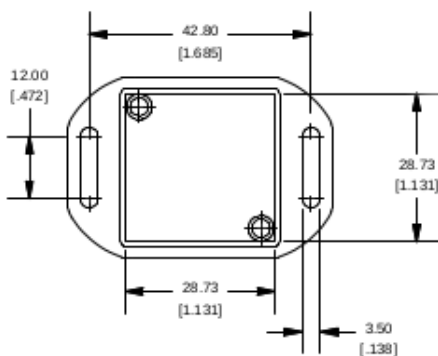
Figure 1 Input



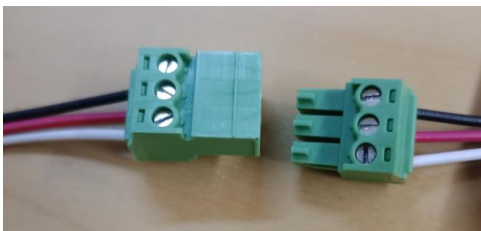
Figure 2 Output



Figure 4 Coded LED  
Marker PCB



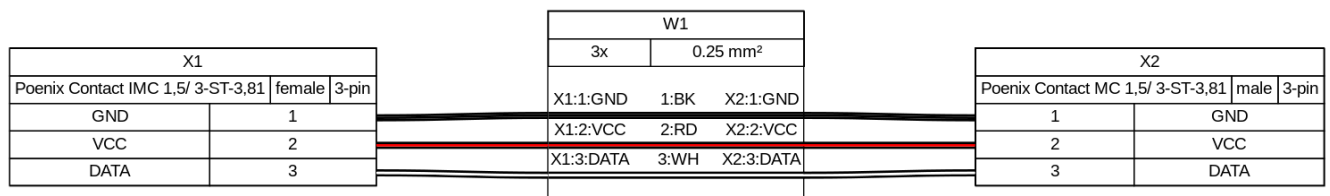
## 5 Cables



The cables can be made from any 3 wire cable with 0.25mm<sup>2</sup> gauge. On one end it must have a Phoenix Contact IMC 1,5 /3-ST-3.81 and on the other end the MC 1,5 /3-ST-3.81.

If both ends are connected and the colors of the connected wire are the same, then the wiring is correct. This will connect correctly to the controller and then to each of the Coded LED markers. See below a purposed color scheme. Cables can be easily adjusted in

length on site. It is possible to make extension cords in the same way.



## 6 Cascaded Controller Setup

Each CodedLED Controller can hold the IP and the port of an other controller. If the CascadeMode is enable the Controller is working as a relay and sending the OSC-Commands to the next Controller.  
With an offset, the number of LEDs before this Controller is configured.

This Mode is used for configurations where the distance between the CodedLEDs is larger than the 10m.

## 7 CodedLED Controller Configuration

The CodedLED Controller is configured using the CodedLEDsController, which can be downloaded from our website.  
Therefore the CodedLED Controller needs to be connected via MicroUSB-Cabel.  
Power and Ethernet Connection is not required for configuration.

## 8 Document History

Date	Author	Description
2024-04-22	Michael Tornow	Initial Documentation and Datasheet
2024-04-23	Michael Tornow	Wording and Spelling
2024-12-09	Michael Tornow	Update of the description for the new Controller
2025-14-03	Michael Tornow	File is focused on the Hardware, the CodedLED Manager has its own documentation; Cascaded Controller Setup is added