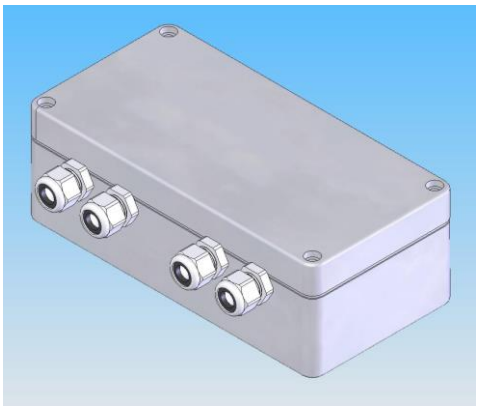
Hardware description – Date 2015-12-03

# Controller FAW



## Features

The controller unit FAW has the following characteristics:

- Potential-free output
  Signal with beam interruption (light switching)
- Fast cycle times starting with ~6 µs/beam
- Serial interface for service
- Connection of one light grid set (transmitter / receiver) in M12 fittings and Phoenix Contact CombiCon plugs
- Diagnostic LEDs
- Supply voltage: 24 Vdc
- Plastic enclosure



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# Function

FAW controllers are control devices for light grids type LF. They control the measuring process, convert signals and analyze measurement data. Additionally, they functions as input terminals for supply voltages as well as signal outputs. Configurable parameter sets support the device setup. The FAW is extremely fast and allows for a 6µs/beam cycle time.

# Intended use

FAW controllers are used in combination with LF light grids for the detection of objects in defined control areas as part of a higher-level overall system.

# Conformity

The product complies with the following standards:

| | |
|---|---|
| EC Directive | 2004/108/EC |
| EMC Emissions | EN 61000-6-1 |
| EMC Immunity | EN 61000-6-3 |
| IP Rating | EN 60529 |
| cCSAus | UL 61010-1 (Third Edition):2012-05;<br>CAN/CSA-C22.2 No. 61010-1-1 |

The manufacturer possesses a certified quality management system in accordance with DIN EN ISO 9001:2008.

For safety and legal notice please see the separate printout.

# Light grid profiles

Detailed information regarding the light grid profiles (Type LF) can be found in “Technical information Light grid profiles”.
The maximum cable length between profiles and control unit is 2m.

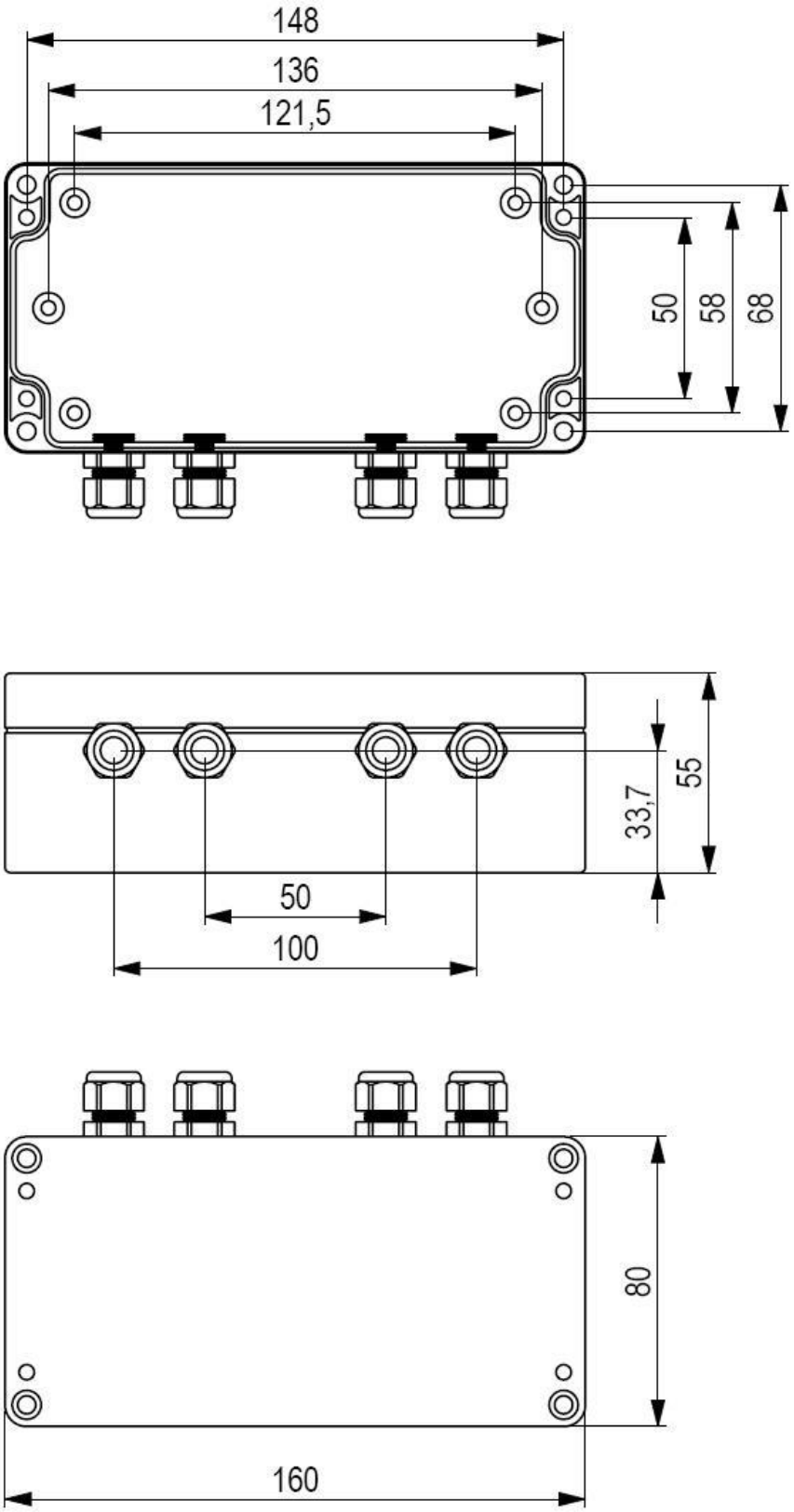
## Transmitter Profile

The transmitter profile is double shielded with a red mark on the connection cable. The profile can be directly connected to the control unit.

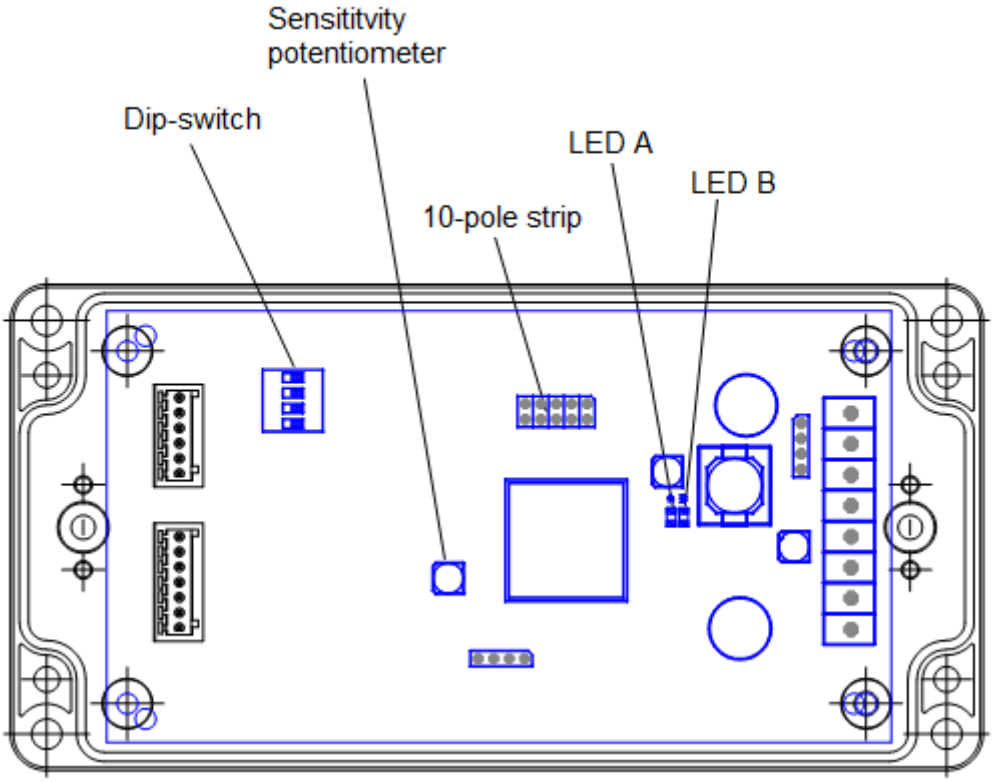
## Receiver Profile

The receiver profile is double shielded with a black mark on the connection cable. The profile can be directly connected to the control unit.

# Enclosure view



# Circuit board view




# Start-up

## Warning:

Do not mix connections!
The system can be damaged as a result of erroneous connections!

1. Connect transmitter profile.
2. Connect receiver profile.
3. Set DIP 3 to “on“ (Autocalibration at power-on).
4. Turn on supply voltage.
5. LEDs during calibration:
   LED A: signal “too weak”
   LED B: signal “too strong”
   For best performance both LEDs should be off. Adjust profiles as well as the sensibility potentiometer for corresponding settings.
6. Set DIP 3 to “off“ (save calibration values)
7. Test for proper functionality within the entire monitoring range.

## Recommendation:

- During the calibration sequence the monitoring area must be uninterrupted.
- Change the sensitivity potentiometer only during the calibration sequence.

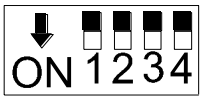
# Parameterisation

The parameterisation is adjusted according to customer requests for each order.

The command mode can be reached with command '@'.

# DIP-Switch

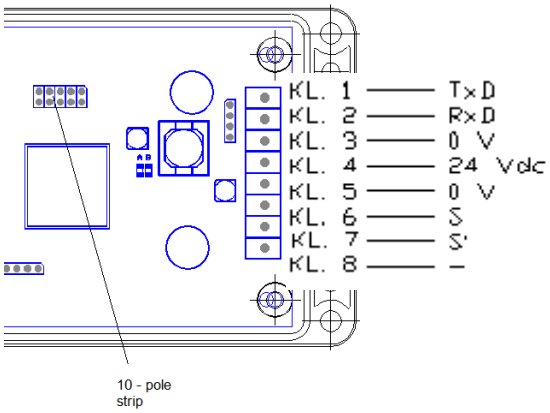
| | |
|---|---|
| DIP 1 | Firmware update |
| DIP 2 | |
| DIP 3 | Calibration on power-up |
| DIP 4 | |




# Profile- und PIN-Assignment

## Terminal block pin assignment

| Block | Descr. | Comment / Function |
|---|---|---|
| 1 | TxD | EIA232 Transmission data |
| 2 | RxD | EIA232 Receiving data |
| 3 | Minus | |
| 4 | +24 VDC | |
| 5 | Minus | |
| 6 | S | Switching output (100mA) |
| 7 | S' | |
| 8 | - | Not connected |




Assignment of ten-pole strip:

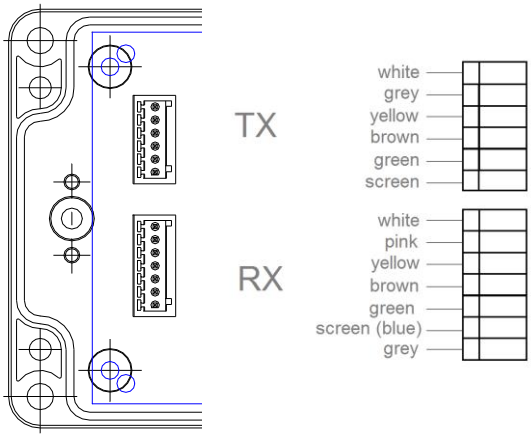
| PIN | Descr. | Comment / Function |
|---|---|---|
| 3 | TxD | EIA232 Transmission data |
| 5 | RxD | EIA232 Receiving data |
| 9 | 0 V | |

(order number BE-40-00452: flat ribbon cable with 9-pole DSUB-socket)

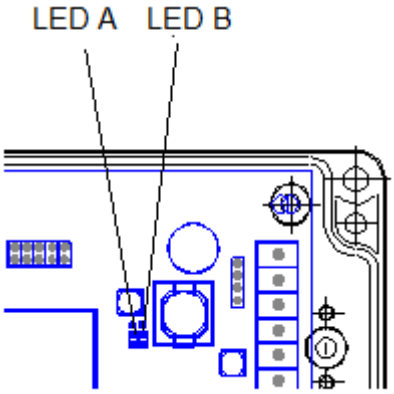
## Connection of light grids

| | Desc. | Comment / Function |
|---|---|---|
| 6-pole | Tx | Transmitter profile |
| 7-pole | Rx | Receiver profile |

Differing wire colors are possible with special cabling (e.g. (M12).



# LEDs




## LED A

During calibration: „signal too weak “.

During normal operation: active with interrupted beam

## LED B

During calibration: „signal too strong “.

# Technical Data

| | |
|---|---|
| Max. beam number | 256 beams |
| Number of light grid sets | 1 set (AC8 = ’B’) |
| Cycle time | Depends on range and parameterisation, ~ 6µs/beam |
| Supply voltage | 24 (19 – 30) VDC (grounded supply)<br>*For CSA:* The device has to be used together with an external fuse. Specification: 32 Vdc, 3 A, Fast-Acting, 50 A (interrupting rating), ANSI/UL 248-1 and ANSI/UL 248-14 |
| Outputs | floating, 100 mA |
| Range | with standard grids: 200…1000 mm |
| Serial I/O | Baudrate 115200, 8n1 |
| Temperature | 0…+40 °C |
| Humidity | Up to 90%, non-condensing |
| Altitude | <2000 m |
| Pollution index | 2 |

## Enclosure

| | | | |
|---|---|---|---|
| Type | plastic (ABS) | | |
| Protection class | IP20, interior usage | | |
| Connections | M12 fitting | | |
| Weight | ~ 130 g | | |
| Dimensions | Length | Width | Height |
| | 160 mm | 80 mm | 55 mm |