

# DATA SHEET

## Contact & Counting Sensor

# Feldfühler Lena



**feldfühler**

Professional sensors for agriculture!

## Overview:

Lena is a LoRaWAN contact and counting sensor for professional agriculture. It detects potential-free contacts (open or closed) and sends the information over the wireless LoRaWAN protocol to the Feldfühler app.

Lena is available in two orderable variants: In the instant-alert variant, Lena immediately sends a message on every contact change (opening or closing) – and that for up to three connections simultaneously. In the counting-function variant, Lena counts the pulses (e.g. contact closures) over a fixed time interval of 20 minutes and reports the count per interval.

Lena is built for permanent outdoor use: An integrated solar panel charges the rechargeable 3,000 mAh Li-Ion battery, so Lena works autonomously and low-maintenance for years. Thanks to the alarm function, you are notified immediately on a status change.

## Features:

- Instant alert on contact change
- Counting of contacts per time interval
- Up to three connections simultaneously
- For pumps, water meters & switches
- Solar panel & rechargeable battery
- Waterproof enclosure (IP67)
- Two variants: alarm & counter

## Sensor specification:

### Functions:

- Inputs: up to 3 contacts
- Detection: open / closed
- Instant alert: in real time on contact
- Counting function: pulses per interval
- Interval: 20 min.
- **Max. count: 16,777,215 / channel**

### Technology:

- Power: solar + 3,000 mAh Li-Ion
- Radio: LoRaWAN Class A, EU868
- Transmit power: up to +22 dBm
- Enclosure: IP67, -40...+85 °C



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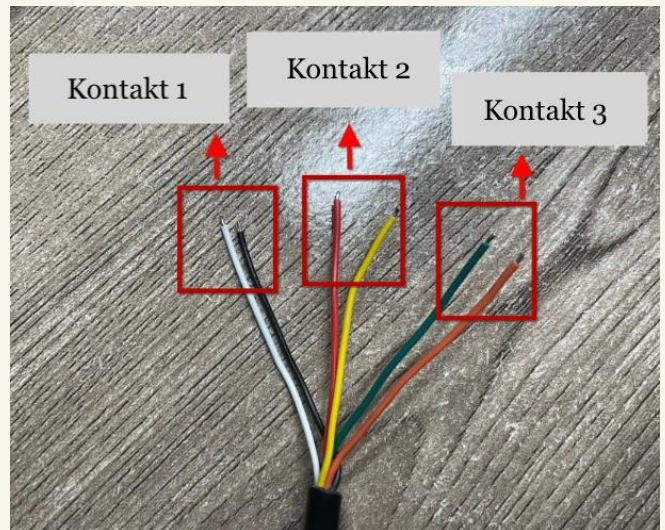
## Application:

Lena makes the difference wherever a simple switching state or a count matters: at gates and doors, shafts, pumps, flaps, lids or control cabinets.

In instant-alert mode, Lena notifies you immediately on every contact change (opening and closing) – ideal for access and theft monitoring of gates, shafts or control cabinets, or to detect equipment left open. In counting-function mode, Lena counts how many pulses (contact closures) arrive per time interval, such as the switching cycles of a pump or a water meter.

All values land automatically in the Feldfühler app. There you see the current status, histories and counter readings – and have an alarm sent to you immediately on every status change or when set limits are exceeded.

Thanks to the solar panel and rechargeable battery, Lena works low-maintenance for years. Questions about the setup? Let us know, we'll take care of it!



|                          |                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------|
| <b>Instant alert</b>     | Sends a message immediately on every contact change (open/closed) – for up to three connections |
| <b>Counting function</b> | Counts the pulses (contact closures) per 20-minute interval and reports the count               |
| <b>Three inputs</b>      | Monitors up to three potential-free contacts simultaneously                                     |
| <b>Alarm</b>             | Immediate notification in the Feldfühler app on contact                                         |

## Installation:

### Connection & Mounting

1. Connect the potential-free contact (e.g. reed switch, limit switch or pulse output) to Lena's connection cable.
2. **Note: Lena has up to three inputs. Depending on the application, connect one or more potential-free contacts (reed/S0 output). The variant – Lena Alarm or Lena Counter – is configured accordingly at the factory.**
3. Mount Lena with the side tabs on a wall, post, gate or control cabinet within range of the contact.
4. Align the solar panel facing south as much as possible so that the battery is charged reliably.
5. Activate Lena with a long button press (over 3 seconds); the green LED indicates the connection.
6. Check in the Feldfühler app that the contact or counting events arrive correctly.
7. Route the connection cable so that it is protected from damage.



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## Lena – two variants

You order exactly the function you need.

| Lena Alarm                                                                                                                                                                                       | Lena Counter                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Instant alert on every contact change (opening and closing) – ideal for access & theft protection (gates, shafts, control cabinets), dry-running protection and end positions. Up to 3 contacts. | Counts pulses (contact closures) per 20-minute interval – water meter pulses (potential-free, reed/S0), pump starts & switching cycles, rain gauge tipping bucket. Up to 3 channels, max. 16,777,215 per channel. |

## Technical limit values:

### Contact alarm – variant „Lena Alarm“

| Contact alarm     | Value                                          |
|-------------------|------------------------------------------------|
| Inputs            | up to 3 potential-free contacts simultaneously |
| Detection         | open / closed – every state change             |
| Min. operation    | arbitrarily slow (no lower limit)              |
| Reporting latency | a few seconds                                  |
| Alarm             | immediately on contact or limit value          |

*The alarm reports every pending state change (opening and closing). Very short contact pulses may, due to radio constraints, only be captured as a single message – to count fast pulses, use the Lena Counter variant.*

### Counting contacts – variant „Lena Counter“

| Counting contacts      | Value                                                                                 |
|------------------------|---------------------------------------------------------------------------------------|
| Debounce time (filter) | set at the factory, adjustable on request                                             |
| Input type             | potential-free (reed/S0)                                                              |
| Counting rate          | up to approx. 2 pulses/s (factory setting) – higher on request                        |
| Counting               | one count value per pulse (e.g. contact closure); counting edge changeable on request |
| Max. count value       | 16,777,215 per channel                                                                |
| Counting interval      | 20 minutes                                                                            |



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