

## 1. DESCRIPTION

MCF-LW06CNTB is a LoRaWAN™ interface with one optoisolated digital input that can be used to count pulses or to measure a frequency, up to 2KHz, from 5V to 36V. This allows to read any devices with pulse output interface or measure frequency or speed, like a tachometer. Power with a 3.6V 7.2Ah or 14.4Ah lithium battery.

MCF-LW06CNTB is available with DIN rail option:



## 2. CONNECTION OF THE DEVICE

### 2.1 Connection as stand-alone device:



Pin	Name	Description
J3.1		
J3.2		
J3.3		
J3.4		
J3.5		
J3.6		
J3.7	IO5	Input positive - yellow wire (5V to 36V)
J3.8	IO6	Input negative - white wire
J3.9		Do not use (black): must be insulated
J3.10		Do not use (black): must be insulated

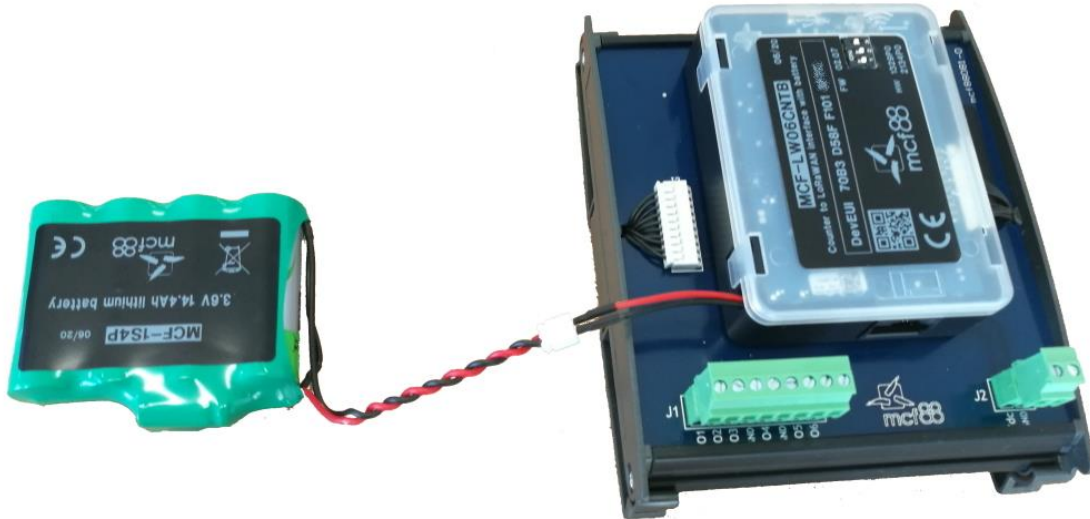
## 2.2 Connection with DIN rail option:



### 2.2.1 Input:

Pin	Name	Description
J1.1		
J1.2		
J1.3		
J1.4		
J1.5		
J1.6		
J1.7	IO5	Input positive (5V to 36V)
J1.8	IO6	Input negative

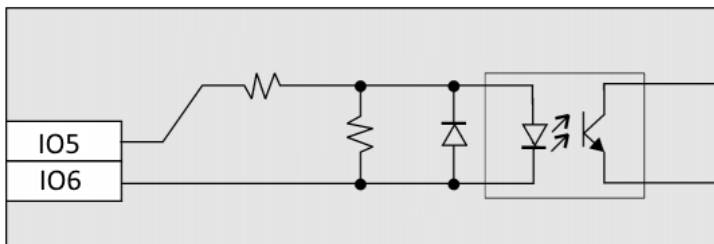
## 2.3 Power Supply:



2.4 Input characteristics:

Maximum frequency (Dip 1 OFF)	2200Hz*
Maximum frequency (Dip 1 On)	150Hz*
Optoinsulation	300V
Off voltage	0÷2V
On Voltage	> 4V
Maximum input voltage	40V
Maximum reverse voltage	40V
Input resistance	6600Ω
Internal voltage drop	2V

\* duty cycle = 50%



2.4.1 Dip switches:



- dip1 ON/OFF = hardware filter 100Hz/1KHz
- dip2 ON/OFF = Internal polarization of IO5 to 5V (not available)
- dip3 ON/OFF = Internal polarization of IO5 to 3V

\* Avoid dip2 and dip3 ON at the same time. If dip2 or dip3 on, do not connect IO5.

### 3. LORAWAN™ ACTIVATION

The device supports the following activations on a LoRaWAN™ network:

**NONE:** sensor not activated

**OTAA:** needs settings of appkey and appEUI

**OTAA MCF88:** Over the air activation according to mcf88 specifications

**ABP:** needs settings of NwkSkey, AppSkey, DevAddr

The device exits factory activated with **NONE** mode. The devEUI of the device is shown on the product label. MCF-LW06CNTB is a Class A LoRaWAN™ device.

### 4. DEVICE CONFIGURATION

The activation parameters and the device settings can be read and modified via USB using the appropriate "LoRaWEB" desktop application (<https://iot.mcf88.cloud/LoRaWeb/#/configuration>):

LoRaWAN® Parameters ✕

**LoRaWAN®**

<b>Network Key</b>	<b>App Key</b>
<input type="text"/>	<input type="text"/>
<b>Device Address</b>	
<input type="text"/>	
<b>AppEUI</b>	<b>DevEUI</b>
<input type="text"/>	<input type="text" value="70B3D87F70B3D87F70B3D87F70B3D87F"/>
<b>LoRa Band</b>	
<div style="background-color: #007bff; color: white; padding: 5px; border-radius: 4px;">Europe EU [868 MHz] <span style="float: right;">▾</span></div>	
<b>LoRaWAN® Activation</b>	
<input checked="" type="radio"/> NONE <input type="radio"/> OTAA MCF88 <input type="radio"/> OTAA <input type="radio"/> ABP	
<b>Carrier</b>	
<input checked="" type="radio"/> Any <input type="radio"/> Objenious	
<b>Network</b>	
<input checked="" type="radio"/> Public Network <input type="radio"/> Private Network	

The screenshot shows the configuration page for the MCF-LW06CNTB device. The browser address bar shows `iot.mcf88.cloud/LoRaWeb/#/configuration`. The navigation menu includes Setup, Download, Resources, Info, and Request offer. The main content area is divided into several sections:

- End node info:** A pink box highlights the left sidebar containing device details: Status: DISABLED NONE, Device: MCF-LW06CNT, DevEUI: 70B3D..., Class: C, Firmware version: 0.02.07, CheckSum: 02889B2A, LoRa Version: 2.00.159, and Last Reading information.
- I/O settings:** A blue box highlights the 'Counters' section, which includes:
  - I/O reading period [min]: 0
  - Number of counter inputs (0 none): 0
  - Counters reading period [min]: 10
- Options:** A red box highlights the 'Period [min]' input field, which is set to 10. A red arrow points to it with the label 'Data retrieval interval (minutes)'. A green box highlights the 'Frequency meter' section, which has radio buttons for 'Yes' and 'No' (with 'No' selected). A green arrow points to it with the label 'Input type (counter or frequency meter)'.

## 5. INSTALLATION

The magnetic antenna must be positioned on a metal body. It should preferably be vertical and at least 30 cm away from other metal bodies.

The installation must take place in a place where the LoRaWAN™ signal coverage is good (SF=7 optimal, SF=12 weak).

Use the provided clip to hold the antenna connector in place, as in the pictures:



## 6. ORDERING CODE

Ordering Code	Description
MCF-LW06CNTB	Counter/Frequency to LoRaWAN interface EU863-870
MCF-LW06CNTB-AS	Counter/Frequency to LoRaWAN interface AS923
MCF-1S2P	7200mAh battery pack
MCF-1S4P	14400mAh battery pack
MCF-DIN105	DIN Rail option 105mm