

1. DESCRIPTION

MCF-LW06CNT 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.

MCF-LW06CNT is available with DIN rail option as follow:



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	GND	Negative power supply
J3.10	VDD	Positive power supply range [10-36Vdc]

Power can also be supplied by USB.

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

2.2.2 Power supply:

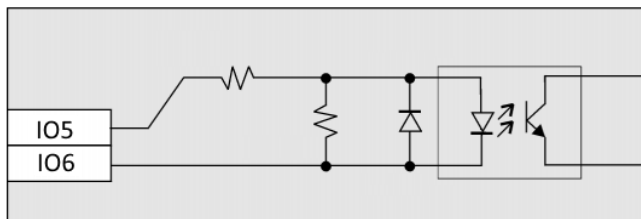
Pin	Name	Description
J2.1	VDD	Positive power supply range [10-36Vdc]
J2.2	GND	Negative power supply

Power can also be supplied by USB.

2.3 Input characteristics:

Maximum frequency (Dip 1 OFF)	2200Hz*
Maximum frequency (Dip 1 On)	150Hz*
Optoisulation	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%



2.2.3 Dip switches:



- dip1 ON/OFF = hardware filter 100Hz/1KHz
- dip2 ON/OFF = Internal polarization to 5V
- dip3 ON/OFF = Internal polarization to 3V

* Avoid dip2 and dip3 ON at the same time.

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-LW06CNT 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®

Network Key	App Key
<input type="text"/>	<input type="text"/>
Device Address	
<input type="text"/>	
AppEUI	DevEUI
<input type="text"/>	<input type="text" value="70B3D5E7C03304"/>
LoRa Band	
Europe EU [868 MHz] ▾	
LoRaWAN® Activation	
<input checked="" type="radio"/> NONE <input type="radio"/> OTAA MCF88 <input type="radio"/> OTAA <input type="radio"/> ABP	
Carrier	
<input checked="" type="radio"/> Any <input type="radio"/> Objenious	
Network	
<input checked="" type="radio"/> Public Network <input type="radio"/> Private Network	

Read
Save File

Cancel
Save LoRaWAN® parameters

The screenshot shows the configuration page for an MCF-LW06CNT device. The browser address bar is `iot.mcf88.cloud/LoRaWeb/#/configuration`. The page has a navigation menu with 'Setup', 'Download', 'Resources', 'Info', and 'Request offer'. The main content area is divided into 'Options' and 'Counters' sections.

Annotations:

- End node info:** A pink arrow points to the 'Status: DISABLED NONE' and the device image in the sidebar.
- I/O settings:** A blue arrow points to the 'Counters' section.
- Data retrieval interval (minutes):** A red arrow points to the 'Period [min]' field, which is set to 10.
- Input type (counter or frequency meter):** A green arrow points to the 'Frequency meter' radio button, which is currently selected as 'No'.

Device Information (Sidebar):

- Status: **DISABLED NONE**
- Device: MCF-LW06CNT
- DevEUI: 70B3D58717132324
- Class: C
- Firmware version: 0.02.07
- Checksum: 02889B2A
- LoRa Version: 2.00.159
- Last Reading:
 - Device: 2020/04/30 12:47:50
 - Local: 2020/04/30 14:47:52

Options Section:

- Led working: Yes No
- Time Sync uplink: Yes No
- Confirmed Uplinks: Yes No
- Single Join/Day: Yes No

Counters Section:

- I/O reading period [min]: 0
- Number of counter inputs (0 none): 0
- Counters reading period [min]: 10

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-LW06CNT	Counter/Frequency to LoRaWAN interface EU863-870
MCF-LW06CNT-AS	Counter/Frequency to LoRaWAN interface AS923