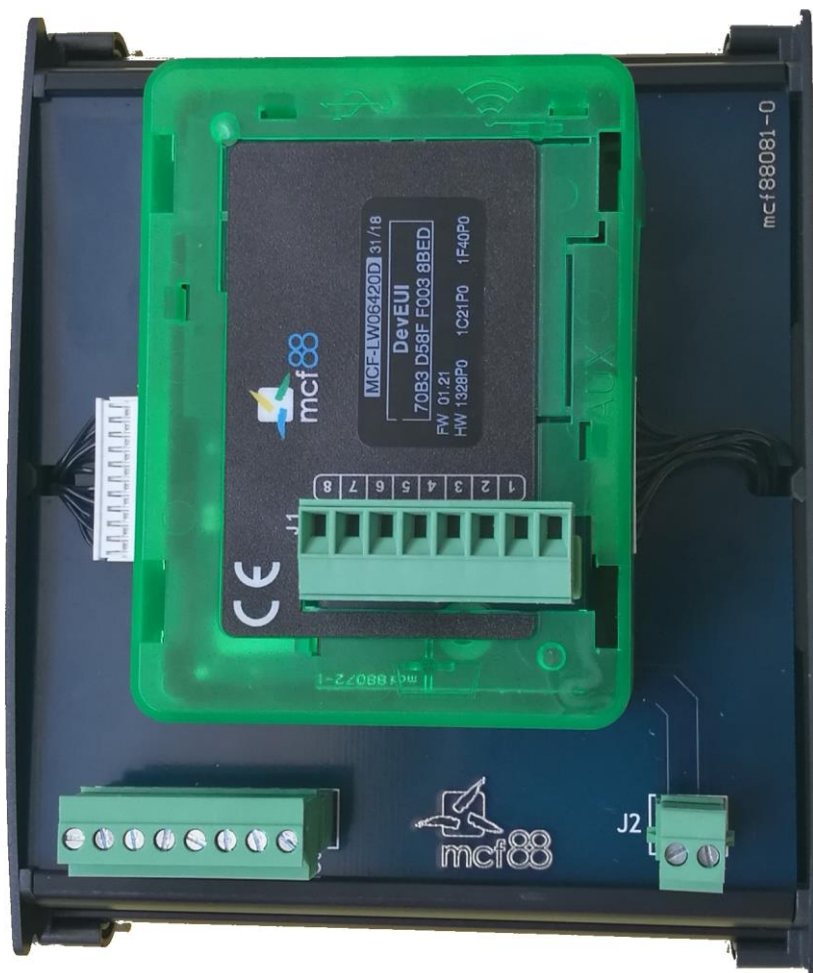


## 1. DESCRIPTION

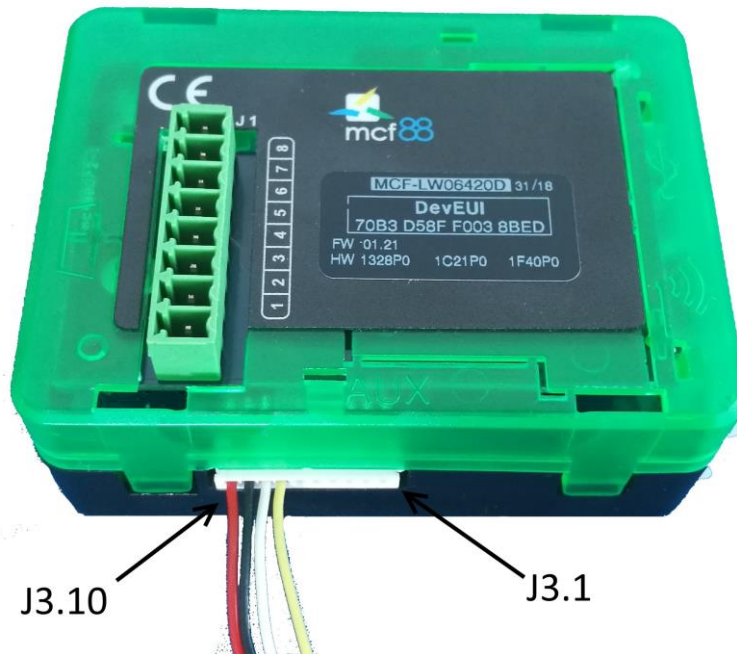
MCF-LW06424B is a class A LoRaWAN interface, ables to read 4 analog inputs 4-20mA with a resolution of 12 bit. Inputs have an insulation of 1000Vdc with respect to the power supply, and are protected against polarity inversion. It has a protected digital output to drive a load 24Vac/dc up to 500mA, useful for power the connected sensors only when making the measurement, and save energy.

MCF-LW06424B is available with an optional DIN rail mount board (MCF-DIN105) as follow:



## 2. CONNECTION OF THE DEVICE

### 2.1 Connection as stand-alone device:



Pin	Name	Description
J3.7	IO5	Digital output positive (yellow)
J3.8	IO6	Digital output negative (white)
J3.9		Do not use (black): must be insulated
J3.10		Do not use (red): must be insulated

USB port only for configuration, doesn't provide power supply.

## 2.2 Connection with MCF-DIN105:



### 2.2.1 Digital output:

Pin	Name	Description
J1.1		
J1.2		
J1.3		
J1.4		
J1.5		
J1.6		
J1.7	IO5	Digital output positive
J1.8	IO6	Digital output negative

Maximum load voltage: 26Vac/34Vdc

Maximum load current: 500mA.

### 2.2.2 Power supply:



MCF-1S2P 3.6V, 7.2Ah Lithium battery.  
 Current consumption during standby: 18uA.

### 2.3 Analog inputs



Pin	Name	Description	Range	Resolution
J1.1	AI1	Analog input 1	4-20mA	12 bit
J1.2	GA	Common		
J1.3	AI2	Analog input 2	4-20mA	12 bit
J1.4	GA	Common		
J1.5	AI3	Analog input 3	4-20mA	12 bit
J1.6	GA	Common		
J1.7	AI4	Analog input 4	4-20mA	12 bit
J1.8	GA	Common		

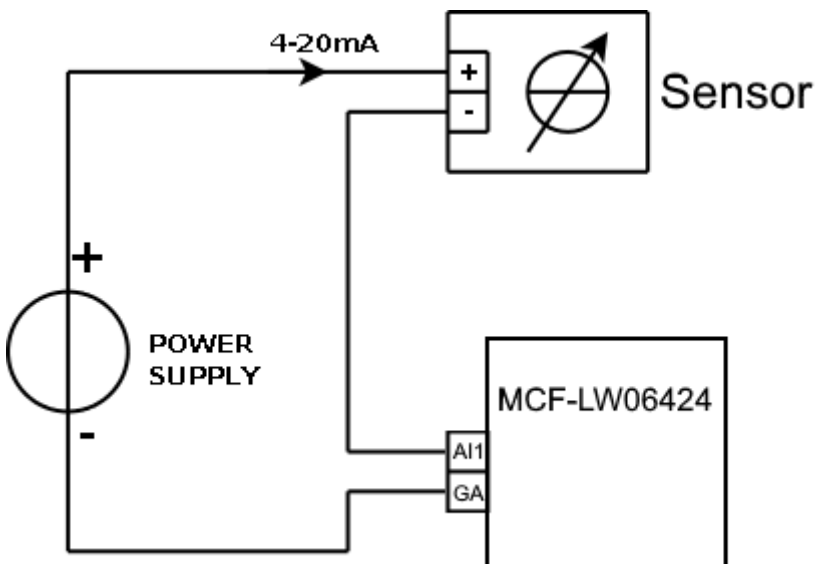
	<b>Current Loop (4-20mA)</b>
Input resistance	125Ω
Absolute maximum value	24mA
Max error	±0.1%
Insulation	1000Vdc

Current values less than 3mA generate a “disconnected sensor” condition.

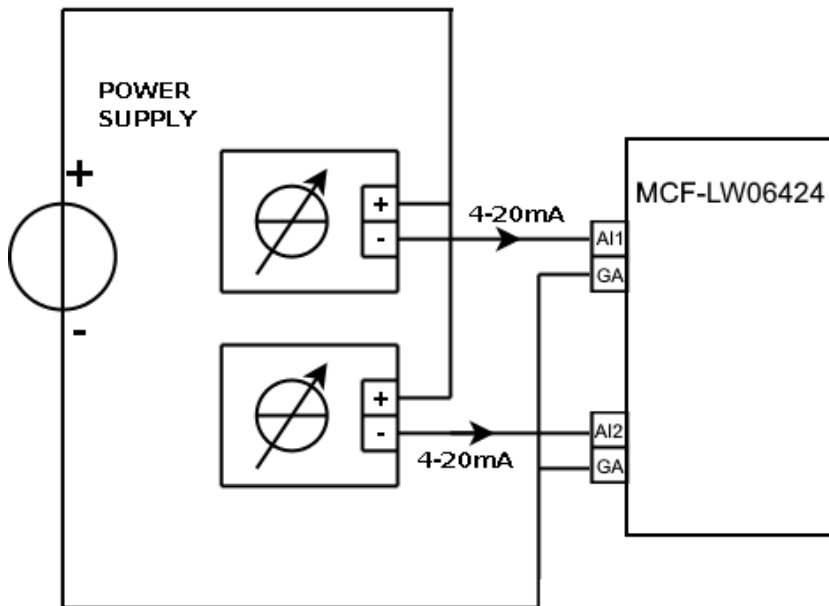
Caution: inputs are not galvanically isolated from each other.

**Connection examples for current inputs:**

- 1 sensor



- 2 sensors



2.4 Connect the antenna as shown below, using the provided clip to hold the antenna connector in place:



### 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 enginko 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-LW06424B 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="70B3D8E0F0750004"/>
<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	

iot.mcf88.cloud/LoRaWeb/#/configuration

Setup Download Resources Info Request offer

Status: **DISABLED NONE**

Device: MCF-LW06420

DevEUI: 70B3D...

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

LoRaBridge Port: 8100, COM Port: COM3 - mcf88 USB VCom

Options:

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

Others:

- USB:  Standard  Debug
- Timezone: None

Period [min]: 10

Delay for the analog input reading [sec]: 0

End node info

Data retrieval interval (minutes)

Set the time (in seconds) between the activation of the output and the reading of the inputs (settling time). If 0 the reading is immediate and the output remains OFF.

## 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).

## 6. ORDERING CODE

Ordering Code	Description
MCF-LW06424B	4-20mA to LoRaWAN interface with DO EU863-870
MCF-LW06424B-AS	4-20mA to LoRaWAN interface with DO AS923
MCF-DIN105	DIN Rail option 105mm