



# BAULDS

YOUR PRODUCT **SMARTER**



## BAULDS CONNECTIVITY MASTER

BCM - 3M  
BCM - 3L

UNIVERSAL CONTROLLER AND LTE-GATEWAY  
CANOPEN/J1939 SUPPORT

**"Any IoT chain can be controlled by our universal building block, the Baulds Connectivity Master (BCM)"**

## ABOUT

The BCM is a solution for enabling secure IoT communication with the cloud. The BCM sends the sensor data via a cellular network connection to the data storage in the cloud. The BCM bridges the local sensor and actuator network with the possibilities in the cloud such as predictive maintenance.

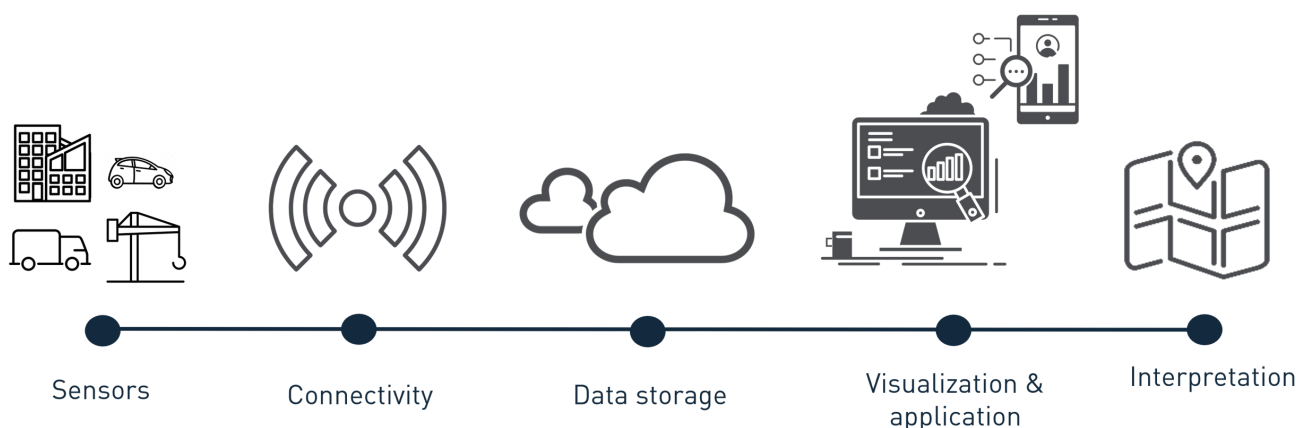
Besides connecting local devices to the cloud, the BCM has the capability of running interpretation algorithms. The BCM runs a real-time application with control mechanisms to drive actuators based on user input and feedback from the system. All this information can be monitored and controlled via dashboards and portals in the cloud.

An important functionality is to analyse the real-time application. This can be done with the logging module. All actions can be logged locally with a high sampling rate. This makes it possible to prove the performance of the system.

Firmware updates are a logical next step after analysing this data. A great feature of the BCM is the possibility to update over-the-air, as well as wired through a multiplatform tool. The BCM enables updates of other Baulds modules in the system.

## CUSTOMIZATION THROUGH MODULARITY

Baulds always provides custom solutions and the BCM is therefore suitable for many applications, for example compact cranes or climate-controlled transport. We can offer this versatility because of the modular design of our hardware and software.



## FACTS BCM - 3M

### Applications

- Industrial applications
- Construction equipment
- Smart farming machinery
- Track and trace systems
- Mobility as a Service (MaaS)
- Predictive Maintenance
- Transportation

### Power Supply

- Automotive Power rating
- Backup battery supported
- Operating voltage  
9VDC - 36VDC

### On-board Monitoring

- Temperature inside housing
- 9 axis IMU (accelerometer, gyro, compass)
- Ambient light detection (detect when housing is open)
- On-board voltage level measurements
- On-board power consumption measurements

### Connectivity

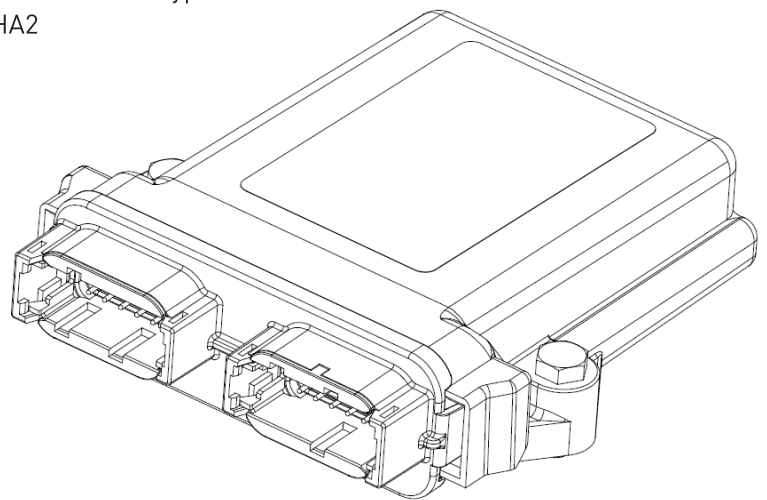
- 2 CAN interfaces (CANopen & J1939 stack)
- Full RS485 or RS422 interface
- Bluetooth V5
- Cellular network: 2G/3G/4G/LTE-M/NB-IoT and prepared for 5G
- RF-module
- Micro SIM or eSIM
- GNSS
- Full OBD-II
- J1708
- LIN bus
- Protected contact switch input  
One potential free output (dual contact) 1.5A fused Protected switchable voltage supply output
- Two GPIO pins: Analog voltage input, Analog current input, Digital voltage input (up to 36 VDC) (freq. counter supported), Digital voltage output (PWM supported) 1..1 A fused

### MCU & Memory

- 8 GB on-board eMMC
- Expandable with microSD 8GB
- 64Mbit on-board SDRAM
- 4Kbit on-board EEPROM for non-volatile information storage
- 16Kbit on-board FRAM
- On-board Secure Memory Unit for data encryption/license management
- LPC MCU of NXP family (ARM Cortex-M4)
- Security: AES-256 encryption SHA1/SHA2

### Certificates

- CE
- IP67



## FACTS BCM - 3L

### Applications

- Industrial applications
- Construction equipment
- Smart farming machinery
- Track and trace systems
- Mobility as a Service (MaaS)
- Predictive Maintenance
- Transportation

### Power Supply

- Operating voltage  
9VDC - 36VDC
- Max power consumption of 3A
- Low power energy saving modes
- Internal backup battery  
with charger

### On-board Monitoring

- Broken wire detection
- Backup battery status

### Connectivity

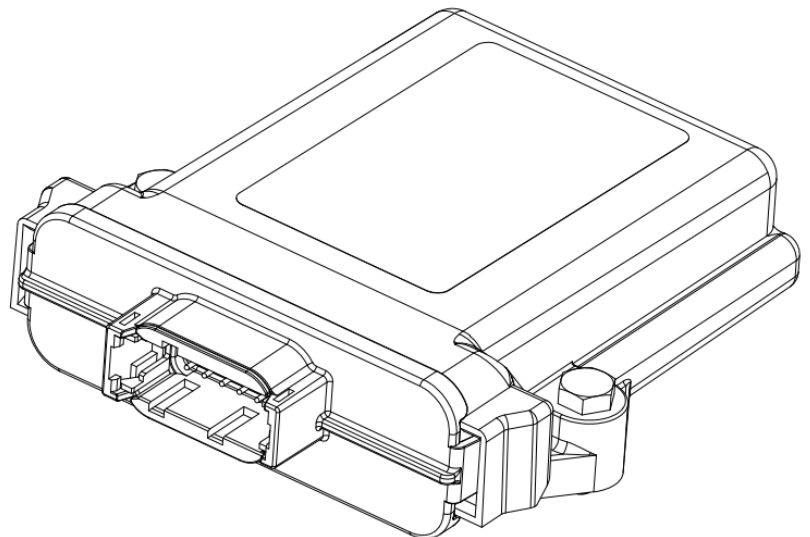
- 2 CAN interfaces  
(CANopen & J1939 stack)
- Bluetooth 5.1/Mesh
- NFC-A-tag prepared
- IEEE 802.15.4 with Thread  
and Zigbee prepared
- Wi-Fi IEEE 802.11 prepared
- Cellular network: LTE (4G) Cat.  
M1/NB1 with 2G fallback and  
simWISE ready
- GNSS (GPS, GLONASS, Beidou,  
Galileo)
- Two isolated digital inputs
- Digital output (default limited  
to 0.5A)

### MCU & Memory

- 8 GB on-board eMMC
- 64Mbit on-board SDRAM
- 65Kbit on-board FRAM
- ST MCU of STM32F family  
(ARM Cortex-M4)

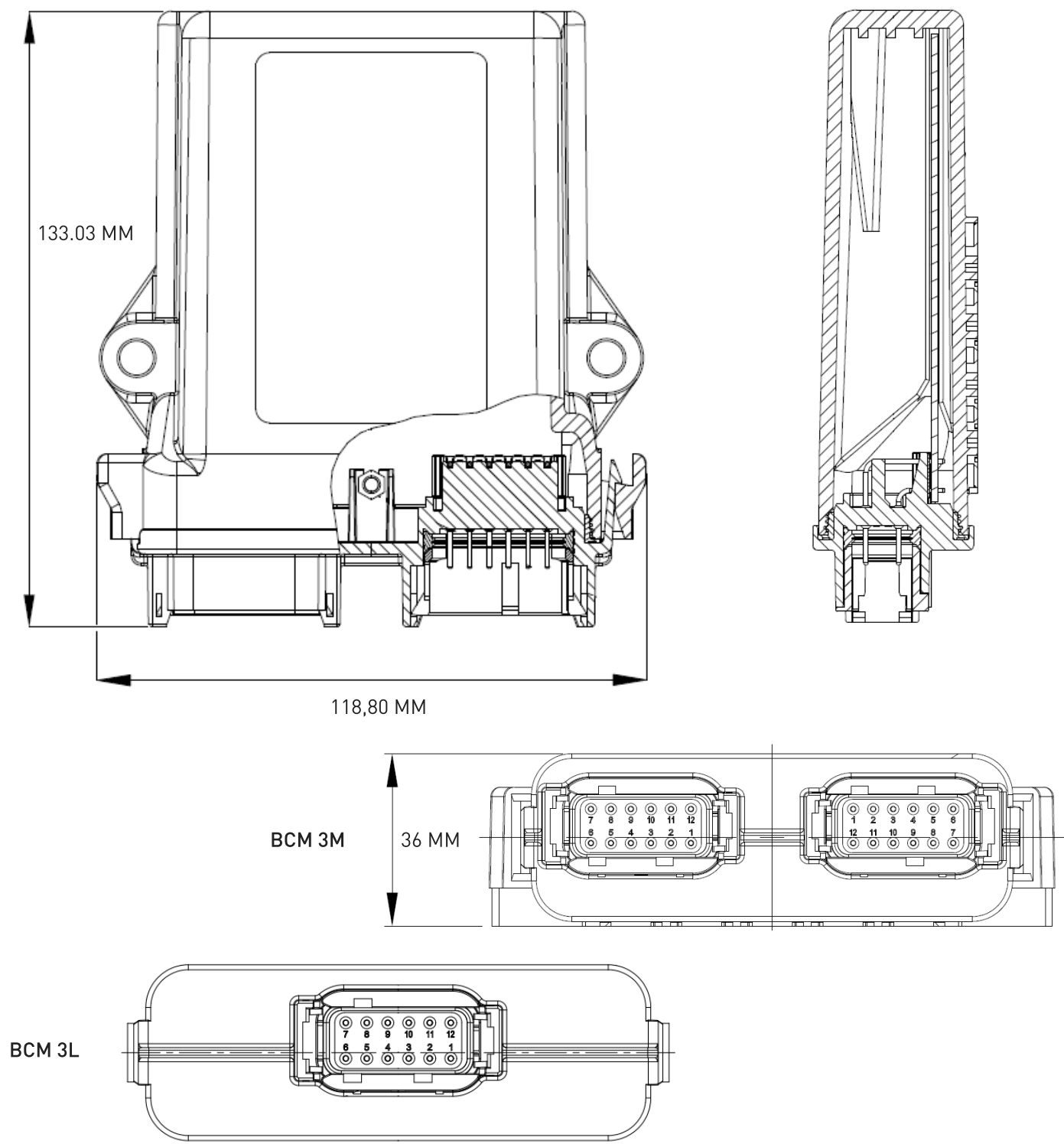
### Certificates

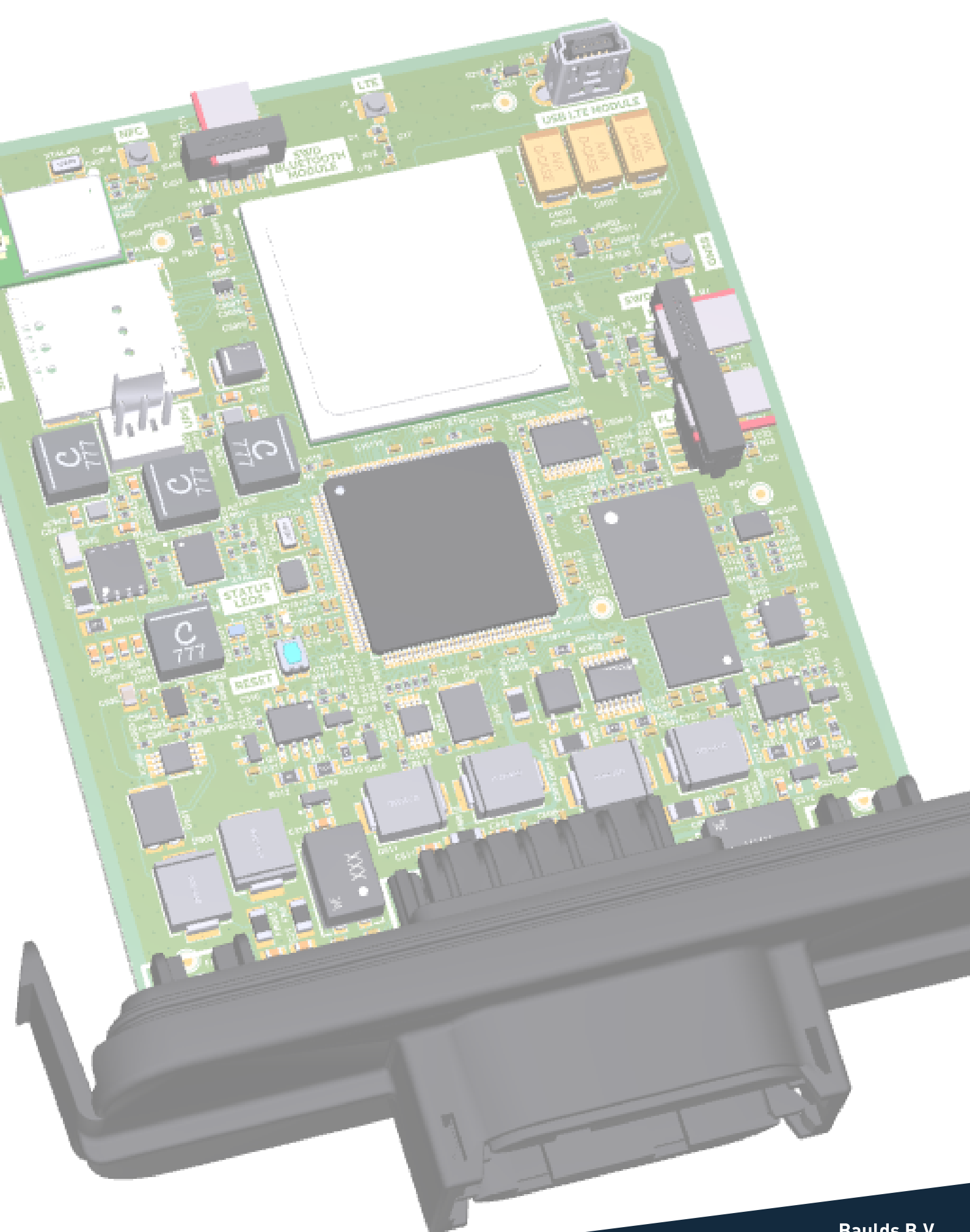
- CE
- IP67





DIMENSIONS 3M AND 3L





Baulds B.V.  
Energieweg 48-50  
3771 NA Barneveld - Nederland  
+31 (0) 342 42 13 33  
[www.baulds.nl](http://www.baulds.nl)