

# Smart Lift Monitoring System

## Description:

eSol Smart lift monitoring system are using multiples Current Transformer (CT) sensors for the current consumption measurement and pattern monitoring.

To ensure a safety operation of the lift system, monitoring the current consumption pattern can provide an advance view for lift health status. So ensure a healthy current consumption pattern is also the key for a healthy lift operation system. eSol Smart lift monitoring system support 4 CTs measurement (e.g. Main lift motor, Door, Safety, Brake), a speed rotation sensor and a laser distance measurement device. Data collected is transmit instantly via LTE. With the user-friendly dashboard, user can easily remote monitoring the lift operation status.

## Features:

### Smart Energy Monitoring Gateway

- Support 4CH CT input (3P AC + Neutral)
  - Flexible to configure 4 independent channels
  - Support AC (up to 800A): Depends on CT selections (Need modification to match CT current rating)
- Support DC Current Monitoring
- Sampling: 1 sample/second, accumulate 3600 samples and send to Cloud via LTE

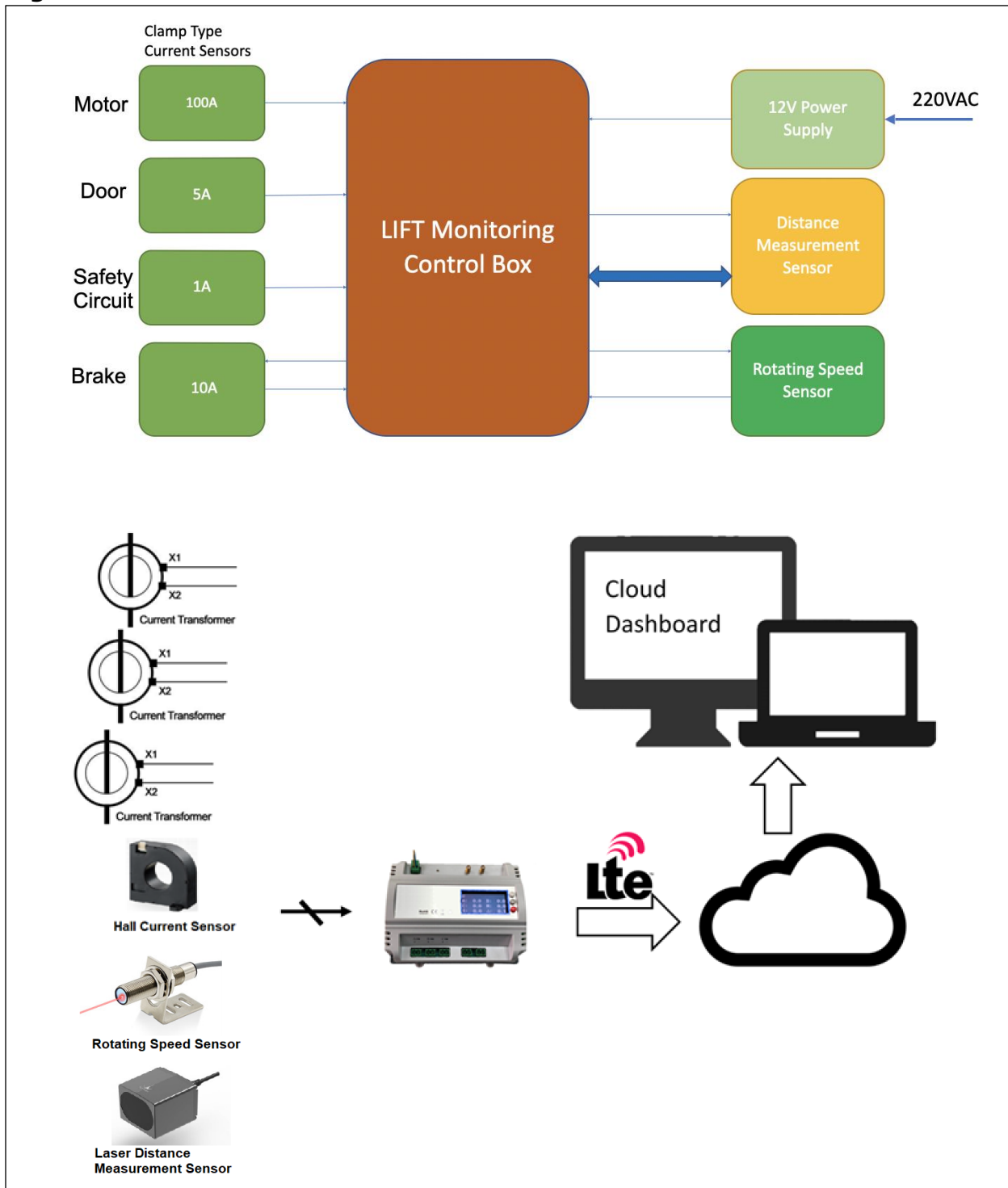
- Battery Operated (4 x D size battery – around 1-year operation)
- Real Time power monitoring by IoT sensors with non-intrusive installation
- Acquired data consolidated by edge gateway and send to Cloud for further viewing and big data analytics purpose
- Support other connectivity technologies (LoRa, Sigfox, Wifi, NB-IoT) in optional
- Support GPS Location Sensing in Outdoor environment. Temperature & Relative Humidity
- Support additional sensing technology such as Vibration sensor, Acoustic sensor, etc.



## Applications:

- Air Conditioner Power Monitoring
- Lift/Escalator Motor Power Monitoring
- Water Pump Motor Power Monitoring

## System Overview:



# Specifications:

## Main Lift Motor CT Specification

Current Rating	100A AC
CT Hole diameter	Φ 16 mm
Operation Voltage	≤ 660V
Operation Temperature	-25°C ~ +60°C
Operation Frequency Range	50Hz ~ 60Hz



## Safety & Door CT Specification

Current Rating	5A AC
CT Hole diameter	Φ 13 mm
Operation Voltage	≤ 660V
Operation Temperature	-25°C ~ +60°C
Operation Frequency Range	50Hz ~ 1KHz



## Brake CT Specification

Current Rating	10A DC
CT Hole diameter	Φ 16 mm
Operation Temperature	-10°C ~ +70°C
Operation Frequency Range	DC ~ 25KHz



## Laser Distance Measurement

Type	Laser
Wavelength	905nm
Operation Voltage	6V ~ 24V
Operation Temperature	-25°C ~ +60°C
Detection Range	0 ~ 100m

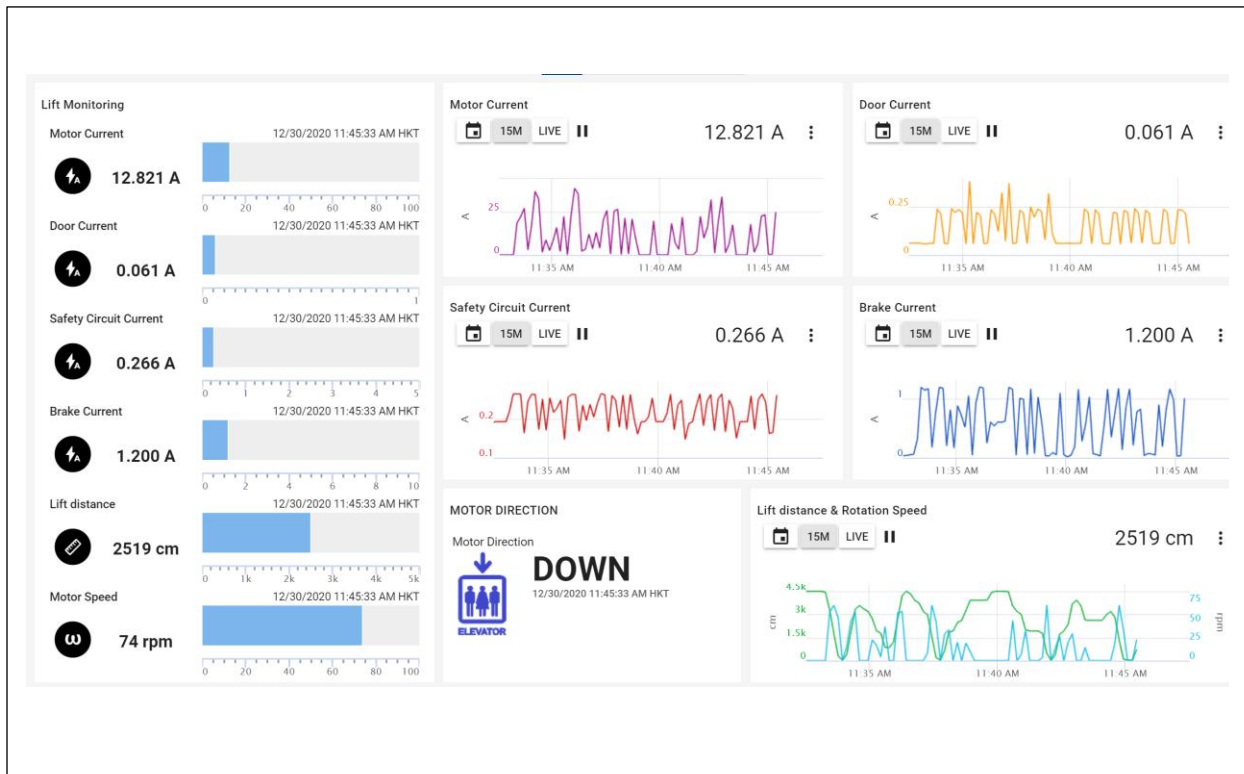


## Rotation Speed Sensor

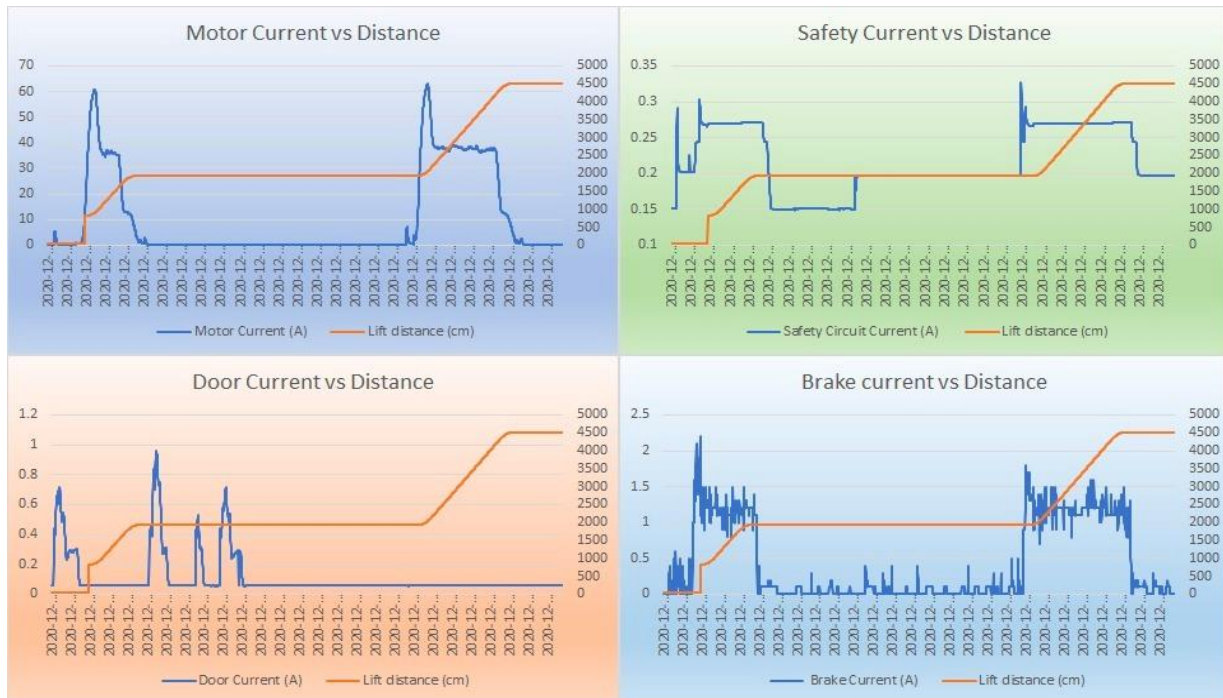
Type	Laser
Operation Voltage	10V ~ 30V
Operation Temperature	-25°C ~ +55°C
Detection Range	≤ 15cm



# Cloud Dashboard:



# Data Analysis:



[Data Analysis - Data Pattern versus Lift moving](#)