

# HOIST SENSE+

Electronic Hoist Monitor&Control Unit



**CMAK**<sup>®</sup>  
Crane Systems



## A Game Changer in Crane Monitoring

Industry 4.0 application with HoistSense+ makes the whole crane transform from a regular one to an automatic crane supervisor.

HoistSense+ can integrate into a generic industrial wifi or mobile data router and connect to the internet to start flow of information securely to CMAK cloud servers to monitor and create reports/alarms for the users in real-time.



## Business Intelligence

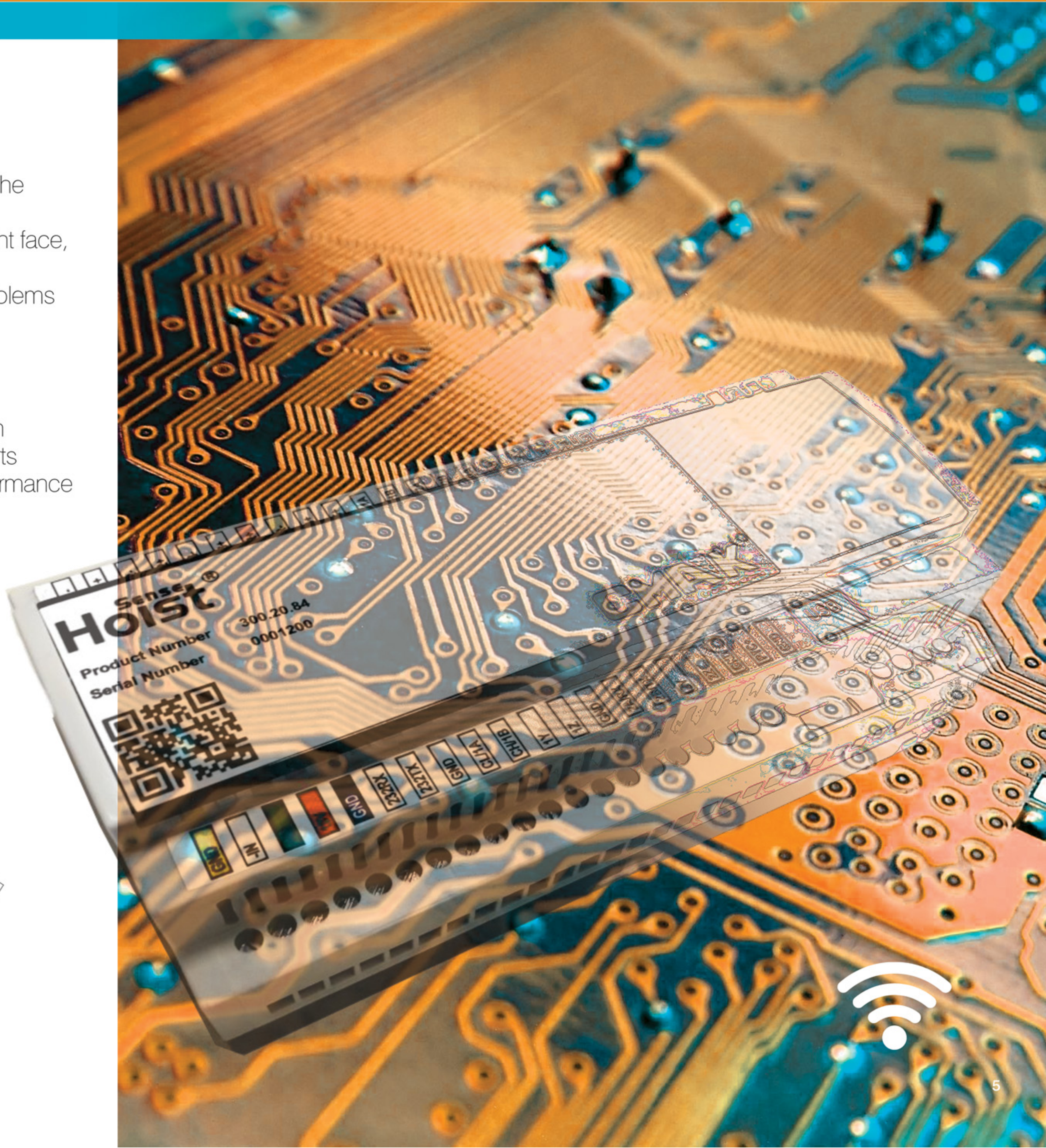
How much of an experience and knowledge a person requires for crane supervision and monitoring ?  
 For HoistSense+ , it is multiple decades of knowledge, which will give you the best insight about what is going on with your crane. With using multiple advanced sensors and historical data, it can predict the problems you might face, thus preemptively acting and advising you to take a proactive approach, letting you avoid or get rid of the electrical, mechanical and operational problems all together.

## Reporting

HoistSense+ is a unique crane supervisor that works every day for you with minimum cost. It reports back to you instantly and with neat graphical reports every month, will let you know about how your crane is operating with performance values.

## Monitoring

HoistSense+ is monitoring the current conditions of the crane including design working period calculations, load sharing, overloads, slackrope, faster speeds depending on the weight of the load, brake wear-tear, electrical and mechanical stability and much more, with the help of advanced sensors.



## Features

### Monthly Reporting

- Advise when to service and which points to check, make the user be proactive
- Send monthly reports directly to whom is in charge, but each individual alarm and status report can be also sent to an email address. ( if required )

### Load Weighing

- Real-time display of the loads via strain gauge sensor

### Real-time Monitoring

- Safe Working Period (SWP, DWP) according to FEM 9.755
- Monitor Hoisting and Cross-Travel motions
- Service time interval calculation

### Ultraspeed function

- Increase nominal speeds on motions when the load is below certain set amount ( can be adjusted to anything below 50% of nominal load )

### Slack Rope Supervision

- Monitor if there is a slack rope

### Overload Limiter

- 2 adjustable overload limits;
- \*1 is for ultimate limit
- \*2 can be utilized for illuminating a warning sign or sounding a siren ( in default it is not used )

### Using Inverters as advanced sensors

- Connect and listen to the inverters for arising errors of the Hoisting & CT Inverters.

### Brake lining supervision

- Electro-magnetic brake sensors are mounted on the standard disc brakes and they let HoistSense+ listen to those sensors for whether the brake-linings are worn out or not

### Temperature sensors in control panels and motors

- Connect to PTC inside of the hoisting motor and check whether the motor is running properly
- HoistSense+ itself is also a temperature sensor, monitoring the temperature inside of the control panel.

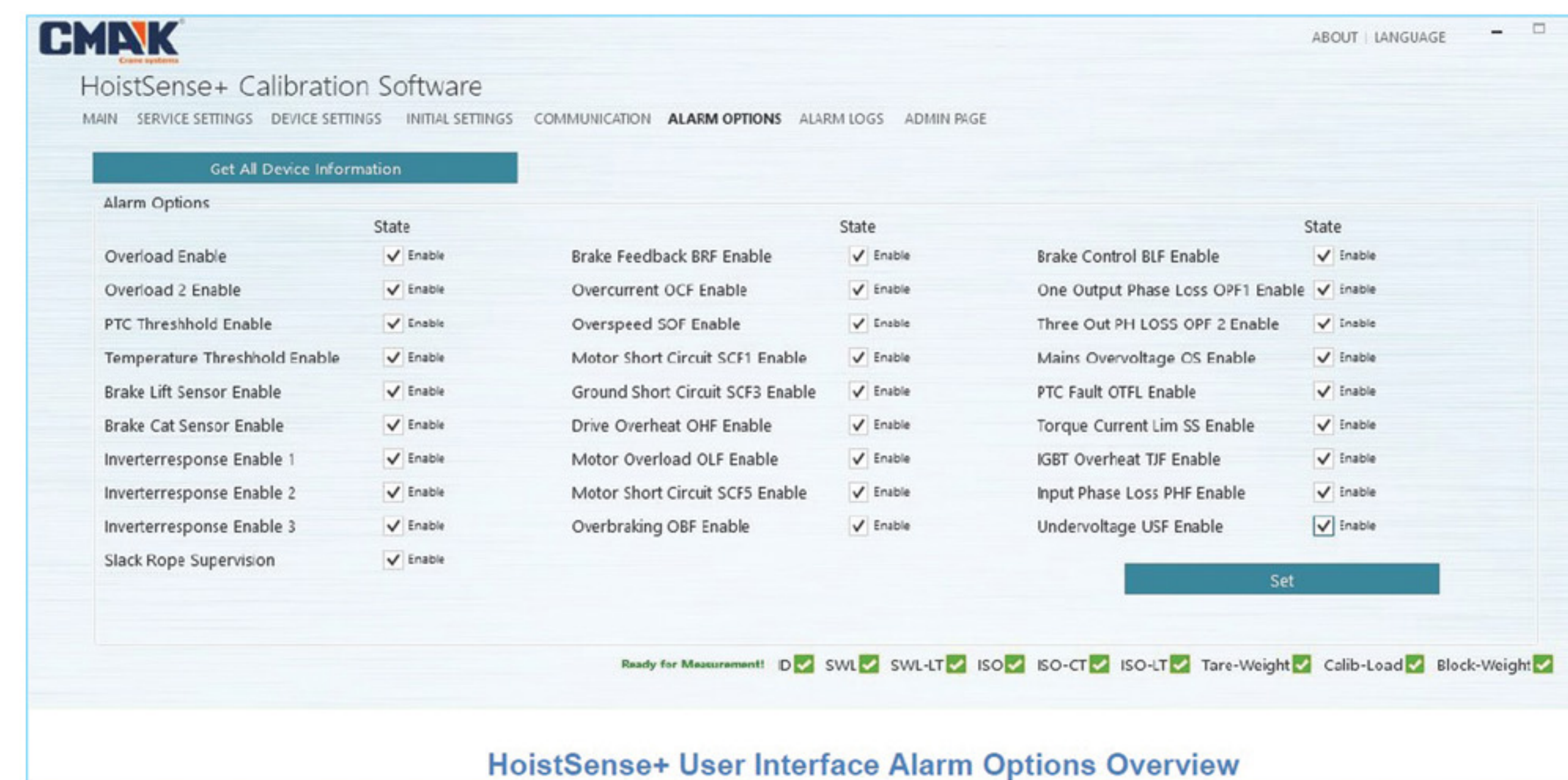
### Load Summation / Load sharing function

- Connect with other HoistSense+ to monitor total load of 2 or 3 hoists at a time
- Use load sharing for overloading and both overload limiters engaging on shared load to avoid overloading the crane

## Alarm options

HoistSense+ communicates with Inverters of the crane, and it lets it grab any error or alarm message immediately and send it to the end-users, depending on settings.

- \*Mechanical compressions
- \*Inverter faults
- \*Overloads
- \*Overheating and Over-temperature
- \*Brake wear-tear
- \*Short Circuits
- \*Current and Voltage values and more



## What are included in HS+ MK-I, MK-II and MK-III packages ?

|  | HoistSense+ MK-I (Base Product)    | HoistSense+ MK-II       | HoistSense+ MK-III         |
|--|------------------------------------|-------------------------|----------------------------|
| WiFi + GPRS (Industry 4,0)                       | Not Present                        | Not Present             | Present                    |
| Monthly Reporting                                | Not Present                        | Not Present             | Present                    |
| Load Weighing                                    | Present                            | Present                 | Present                    |
| Real-time Monitoring                             | Present                            | Present                 | Present                    |
| Ultraspeed function                              | Present (Hoisting & C-T)           | Present (All motions)   | Present (All motions)      |
| Slack Rope Supervision                           | Present                            | Present                 | Present                    |
| Overload Limiter                                 | Present                            | Present                 | Present                    |
| Using Inverters as advanced sensors              | Present (Hoisting & C-T inverters) | Present (All inverters) | Present (All inverters)    |
| Hoist Brake Lining Monitoring                    | Not Present                        | Present                 | Present (Upgrade to MK-II) |
| Temperature sensors in control panels and motors | Present                            | Present                 | Present                    |
| Load Summation / Load sharing function           | Optional                           | Optional                | Optional                   |