Gigasense CSM Crane Safety Monitor

Gigasense CSM Crane Safety Monitor is designed for overload protection. For your safety and best life cycle economy and to avoid unplanned production stop.

For industries where safety and clarity is crucial in the daily work.

The CSM is designed to give optimal safety in heavy lifting operations and for continuous work in the toughest of industries.

With different options of load cell inputs, summations, slack rope control, unbalance control etc.

The CSM is designed for a safety level up to Performance Level d, Category 3 according to SS-EN-ISO 13849-1.

Gigasense Crane Safety Monitor is maintenance free and all settings are made from factory.

GIGASENSE

Gigasense products within Force Measurement and Crane Safety are well known high quality products, built from many years' experience and used by leading heavy duty industry around the world.

Gigasense products meet the highest demands of performance level requirements.

We are represented by many selected local partners in more than 30 countries on six continents.

Technical Data

Mains Supply Voltage
100-240 VAC, 50-60Hz, other voltages on request.

ENCLOSURE
Dimensions 380x380x210 mm, PLd systems 600x600x210 mm

PROTECTION CLASS IP65.

TEMPERATURE RANGE
-20°C to +70°C.

INPUT FORCE TRANSMITTERS
Current signal, 4-20 mA.

ALARM LIMITS
16 limits with delay functions and catastrophe limits.

LOAD TIME REGISTRATION
(SWP time)
Up to four hoists can be monitored via digital optical voltage relay inputs.

USB
Type A.

OUTPUTS
RS 485 serial for Gigasense large format display

ANALOGUE OUTPUTS
4 - 20 mA
0 – 10 VDC

DISPLAY (BUILT IN)
Back lit LCD, 2 rows each with 16 alphanumeric characters.

SETTING OF LIMITS/PARAMETERS
Simply with 6 push buttons.

producer of **PIAB**

CSM Crane Safety Monitor

The CSM, combined with force transmitters:

- is an advanced overload protection system to be used as an overload protection system in a lifting equipment.

- one unit can handle up to 4 pcs of force transmitter inputs, either single channel or redundant channels (as optional, more inputs can be added).

- the force transmitter inputs can be summarized in different combinations. E.g. the main hoist + auxiliary hoist, unbalance control and more.

- the alarm limits can be assigned to individual overload, summations, unbalance control, slack rope detection, load detection, warning etc.

- can be configured in various versions, up to performance level d, category 3 according to SS-EN-ISO 13849-1.

- automatically register load time (Safe Working Period, SWP) for up to 4 individual hoists. The system indicates when service of the crane is required. The data is stored in the CSM EEPROM (permanent memory), no manual records are needed.

The CSM will also register total time, overload time, amount of lifting operations and the peak loads.

–can be designed in many different combinations, both hardware and software, according to customer requirements.

–is plug & play. All settings, parameters and calibrations are made at factory. Full records of the delivered CSM are stored at Gigasense, for easy support handling.

–is code protected for safety reasons. The operator can only read parameters without entering the required safety code. To change the calibration and the parameter settings, the safety code must be entered.

–provides an user friendly operation. If re-programming, change of alarm limits or readout of values are required, no tools nor PC is needed.

Interfaces included

- USB, the interface can be used to transmit and read and write parameter data to a standard USB memory stick. Download of parameters, load time registered values and other types of customer specific logs can be stored on the USB memory.

- RS 485 for Gigasense large format display in digit size 77 mm, 165 mm or 230 mm. The large format display can toggle between the different hoists (e.g. main hoist, Auxiliary hoist and summation). Several displays can be connected on the same RS485 bus.

Interfaces (options):

4-20 mA, 0-10VDC, Profibus and Profinet are used by customers who collect data from the crane in a control room, crane cabin or equal to display e.g. the actual load, limit thresholds, load time indication etc. It is an easy way to transfer data to another system.

- Profibus DP, is a traditional and classic digital protocol based on the serial communication.

- Profinet, is a newer protocol based on the Industrial Ethernet.

- Analogue output 4-20mA

- Analogue output 0-10 VDC

Jib control

Used to control the force along the jib. A 4-20 mA signal from a sensor, which measures the position on the trolley. The closer the trolley moves to the "crane side" on the jib, the more load is allowed to lift.
As the trolley moves out on the jib, the less load is accepted by the CSM to lift.

Angle control

Works in principle as the jib control, but the angle of the jib is measured instead.
Requires an external angle sensor with 4-20 mA output.

Oblique pull control (side pull control)

Used to control the angle and the force in conjunction, to avoid wear of the wire ropes. An Angle Measurement Unit (AMU) is required, supplied by Gigasense.

Load summation

This function allows an operator to add load momentarily, each load can be summerized in the CSM and the total weight of the load can be displayed. E.g. when a truck is loaded several times and the total weight of the truck needs to be supervised.

All option settings are preprogrammed from Gigasense.

The CSM has been in operation in heavy duty industry since 1998; the first installed systems are still in operation.

The CSM functions, software and hardware are specifically designed for cranes, therefore it is not necessary to scroll through irrelevant settings or functions.

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SP
Certified
ISO 9001