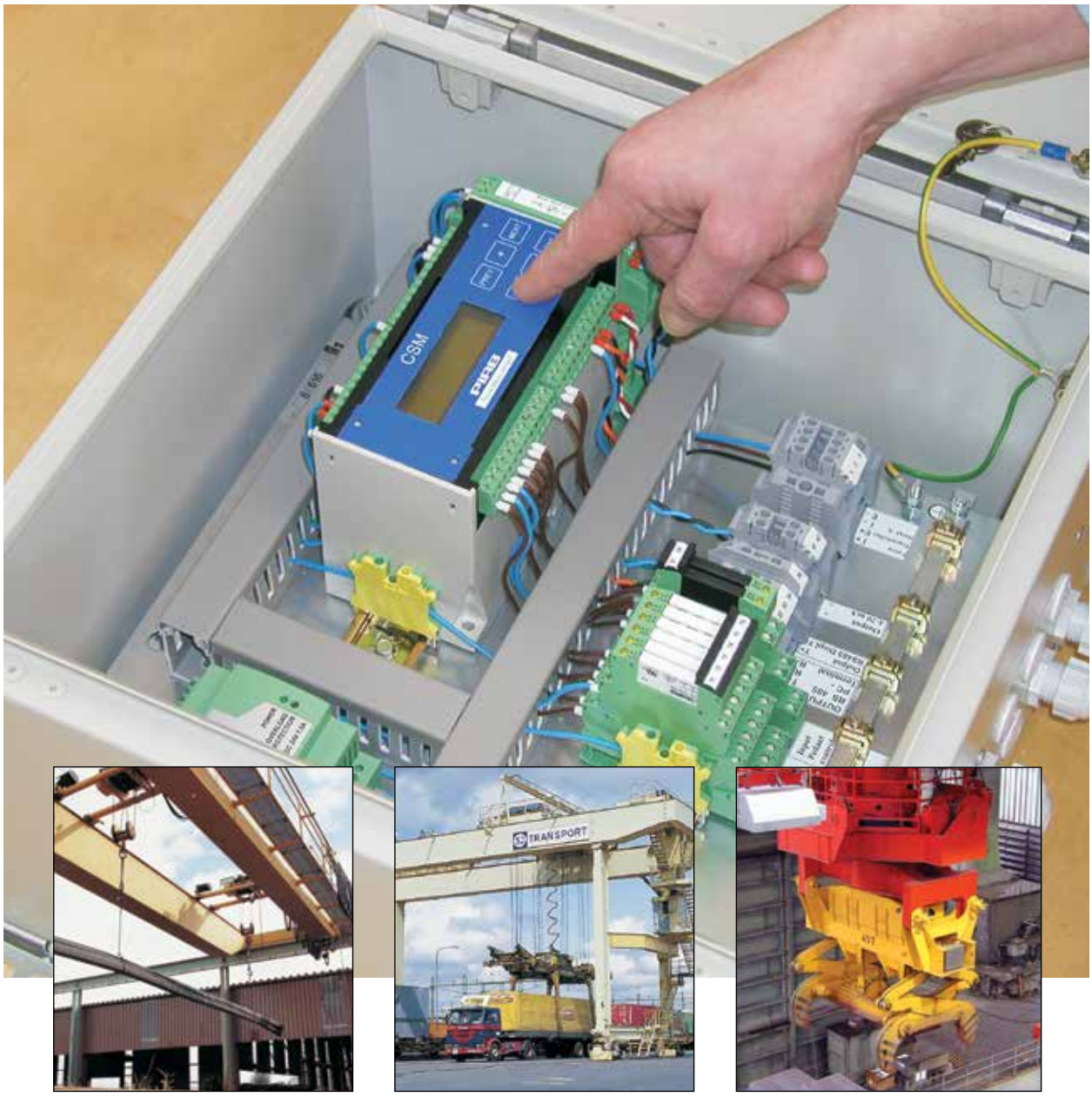
PIAB CSM Electronic Unit

for Overload Protection and Operation Recording of Lifting Devices



PIAB Crane Safety Monitor (CSM) is an electronic control unit to be used in overload protection systems. The CSM evaluates and computes signals from force transmitters and can be set for alarm at preset alarm limits. By installing the CSM, hazards for personnel and material can be avoided. The CSM will also record the operation of the hoist. The CSM is designed for indoor and outdoor operation in aggressive and demanding industrial environments.

Range of Application

The CSM unit evaluates and computes signals from one or more force trans-mitters. The PIAB CSM is designed to be easily incorporated into new lifting equipment or to be retrofitted into existing systems.
The calibration and operation of the CSM has been simplified in comparison with existing overload protection systems. All adjustments and controls are made with six pushbuttons at the display panel. No potentiometers to adjust!

Function

The PIAB CSM controls and monitors the following functions and operations:

- Limits for slack rope control, load difference and overload, individual and overall.
- Display of individual and overall loads.
- Display of load peak values.
- Display of total service time.
- Display of overload service time.
- Display of full load hours, Safe Working Period (SWP) and Condition Monitoring according to ISO 12482-1.

Options:

- Load boom angle.
- Allowed load difference between two parallel working lifting gears.
- RS485 output to remote display, computer or to fieldbus converter to Profibus DP, etc.

Safety

- PIAB CSM Units are self-checking.

Malfunction of the force transmitter or cable will indicate overload.

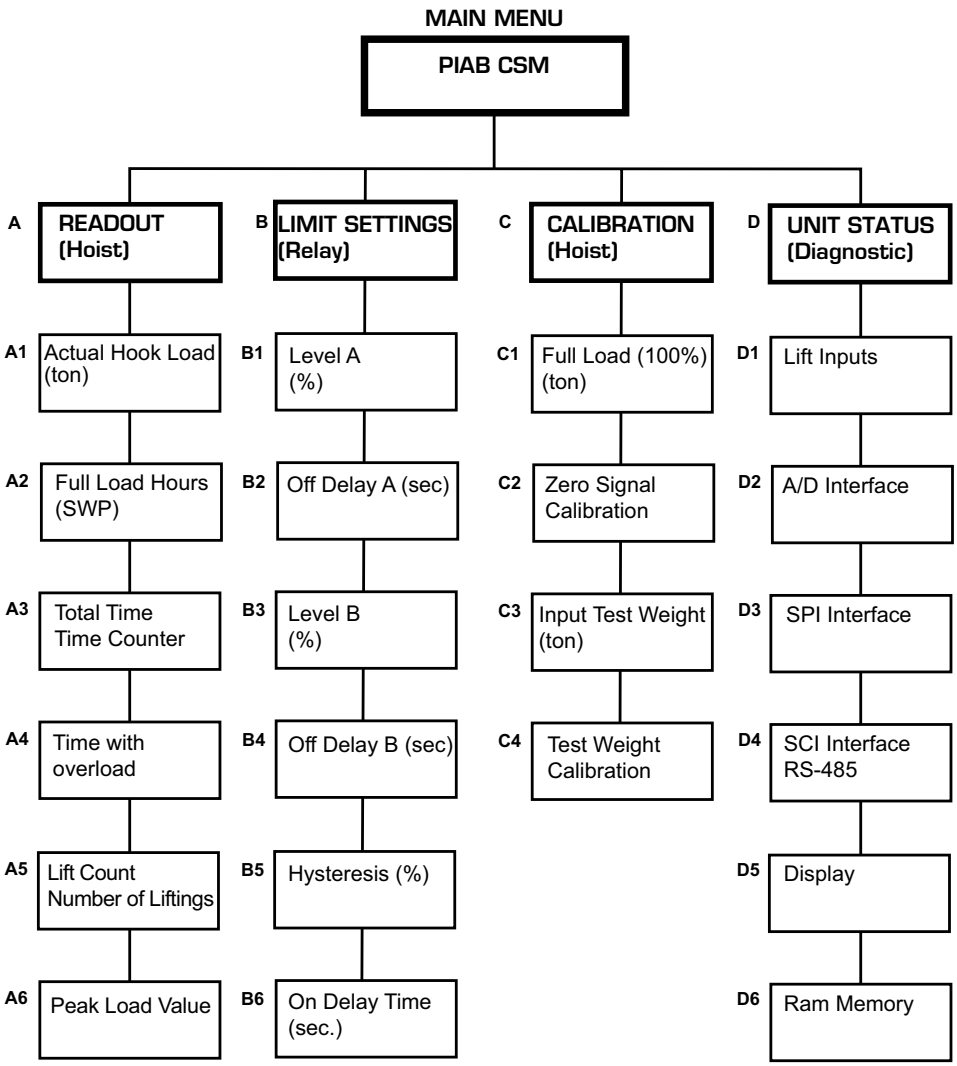
- Protects personnel and property against hazards due to overload.
- Records crane operations.
- An entry code protects all calibrations and settings against unauthorized interference.

Economy

- Reduces crane maintenance, downtime and costs.
- To be used when selecting classification code for new lifting gear investments.
- Monitors the operational conditions of the crane as well as the recommended service intervals.

This monitoring enables full utilisation during the crane's entire life period, SWP (Safe Working Period).

Description for PIAB CSM



Technical Data

OPERATING VOLTAGE
85-264 V AC, 47-440 Hz or 120-370 VDC.

ENCLOSURE
Dimensions 380x380x210 mm.

PROTECTION CLASS
IP65.

TEMPERATURE RANGE
-20°C to +70°C.

INPUT FORCE TRANSMITTERS
Current signal, 4-20 mA.

LIMIT SETTINGS
Two limit settings for each relay.

The switch limits can be set with "on-" or "off-" delay up to 5 seconds. Optionally, further limit settings can be made.

Switching capacity 5 A, 250 VAC. Higher switching capacity can be achieved by installing contactors as an option.

RECORDING OF HOISTING MOVEMENT
Two Inputs: low and high speed. Voltages: 12 VDC, 24 VDC, 115 VAC or 230 VAC.

OUTPUT
RS 485 serial, can be used for Remote Display or for other purposes.

ANALOGUE OUTPUT
4 - 20 mA

DISPLAY (BUILT IN)
LCD, 2 rows each with 16 alphanumeric characters. Height of characters is 5 mm, back light.

SETTING OF SWITCH LEVELS/ PROGRAMMING
Simply with 6 push buttons at panel.

Examples of applications for PIAB CSM

Electrical Overhead Traveling Crane (EOT Crane) with two hoists

Equipped with force transmitters for individual overload protection for each hoist and overall over-load protection and load indication (display).

Container Crane equipped with overload protection and load indication for each corner and side of the container, as well as overload protection and load indication for the total contai-ner weight.

EOT Crane for Handling Slabs in Steelworks. The PIAB LKVE-8 force trans-mitter is mounted at each of the eight wire rope dead-ends. The eight LKVE-8 together win th the PIAB CSM electronic unit protect the crane against load imbalances and overloading. Current load or force on each force trans-mitter and total load can be read at the PIAB CSM display.

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GIGASENSE

GIGASENSE AB • Stationsvägen 16
SE - 18450 Åkersberga • SWEDEN
Phone: +46 (0)8 540 839 00
e-mail: info@gigasense.se • webb: www.gigasense.se

ISO 9001 Certified