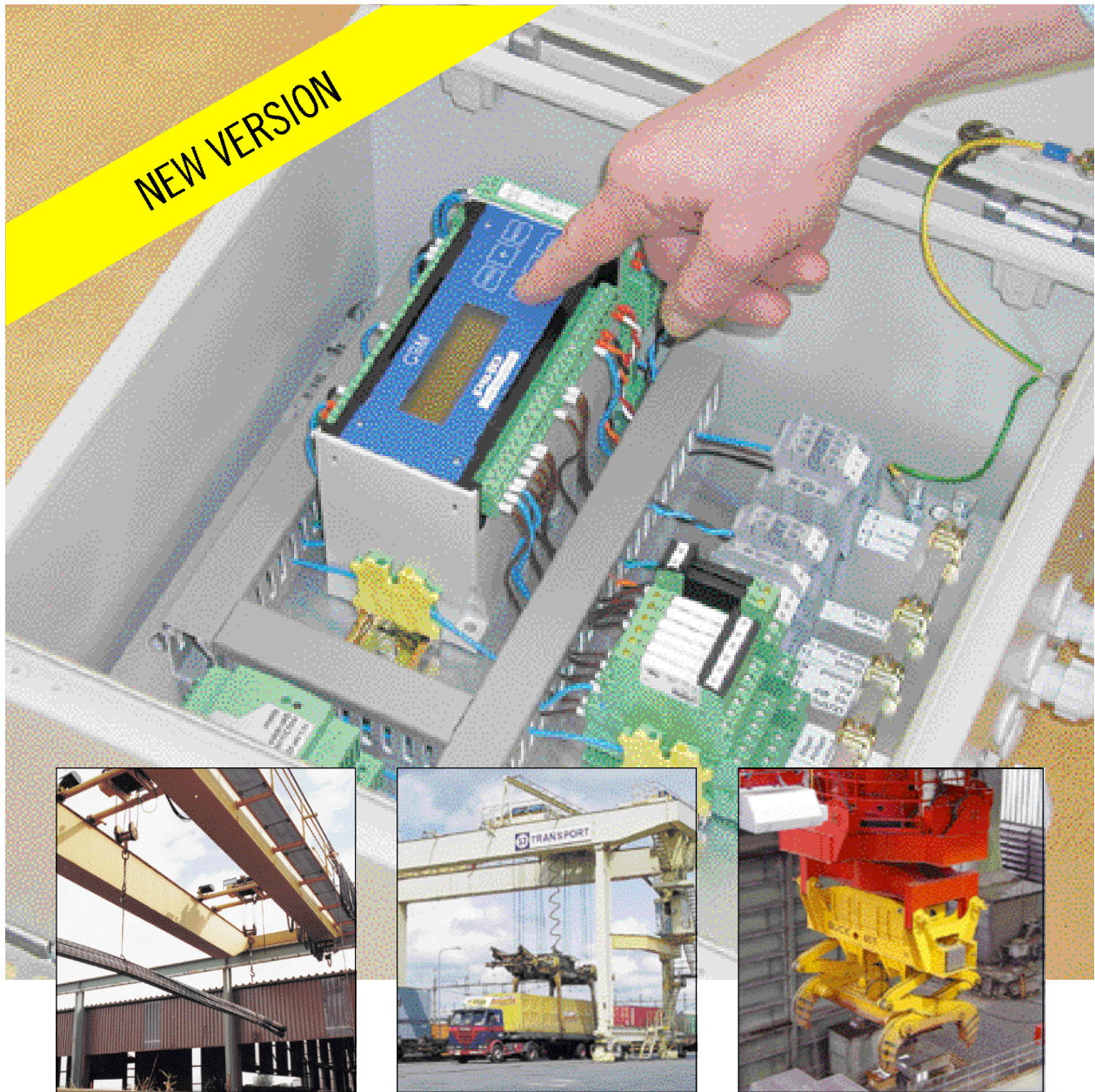# CSM ELECTRONIC UNIT

FOR OVERLOAD PROTECTION AND OPERATION RECORDING OF LIFTING DEVICES

NEW VERSION

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 transducers 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 or outdoor operation in aggressive and demanding industrial environments.

PIAB

RANGE OF APPLICATION

The CSM unit evaluates and computes signals from one or more force transducers. The PIAB CSM is designed to easily be 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 on the display panel (No potentiometers to adjust!).

FUNCTION

The PIAB CSM can control and monitor the following functions and operations:

- Limits for slack rope control 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.
- Service Time converted into Full-Load Service Time.

(For computing of Safe Working Period per ISO 12482-1, Cranes, Condition Monitoring).

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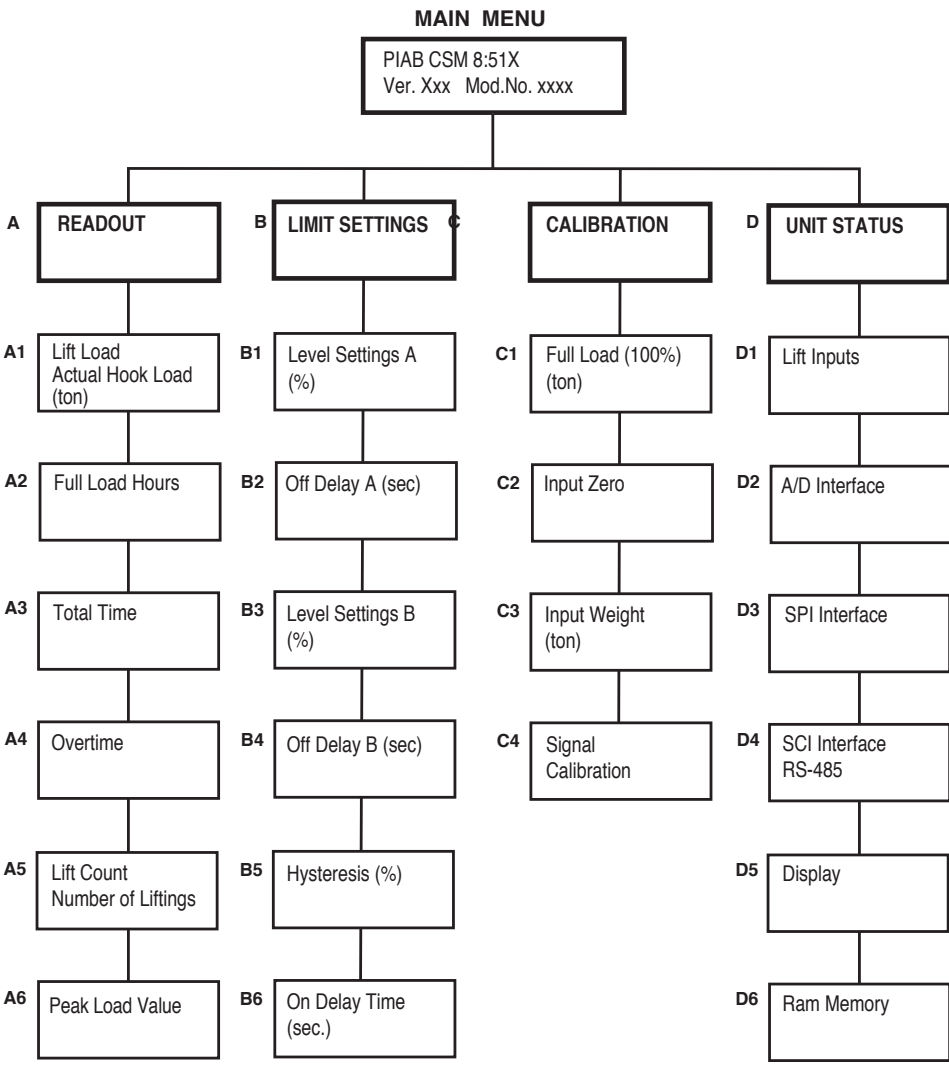- RS485 output to remote display, computer or to fieldbus converter to Profibus DP, etc

SAFETY

- PIAB CSM Units are self-checking. Malfunction of the transducer 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 and 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

MAIN MENU

PIAB CSM 8:51X
Ver. Xxx   Mod.No. xxxx

	A	READOUT		B	LIMIT SETTINGS	C		CALIBRATION		D	UNIT STATUS

A1	Lift Load Actual Hook Load (ton)	B1	Level Settings A (%)	C1	Full Load (100%) (ton)	D1	Lift Inputs
A2	Full Load Hours	B2	Off Delay A (sec)	C2	Input Zero	D2	A/D Interface
A3	Total Time	B3	Level Settings B (%)	C3	Input Weight (ton)	D3	SPI Interface
A4	Overtime	B4	Off Delay B (sec)	C4	Signal Calibration	D4	SCI Interface RS-485
A5	Lift Count Number of Liftings	B5	Hysteresis (%)			D5	Display
A6	Peak Load Value	B6	On Delay Time (sec.)			D6	Ram Memory

EXAMPLES OF APPLICATIONS FOR PIAB CSM

Electrical Overhead Traveling Crane (EOT Crane) with two hoists

Equipped with transducers for individual overload protection for each hoist and overall overload 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 container weight.

EOT Crane for Handling Slabs in a Steelworks

A PIAB LKVE8 Electronic Force Transducer is fit on each of the 8 wire rope dead-ends. The LKVE8 and the PIAB CSM Electronic Unit protect the crane against load imbalances and overloading. Current load or force from each force transducer and total load can be read off a display.

PIAB

Force Measurement