

LOAD MOMENT INDICATOR

RCI-LE

Light Edition · Dual Sensor

Pressure-based load safety system for truck-mounted knuckle boom cranes. Independent monitoring of main boom and knuckle boom cylinders, three-level alarm logic and a fail-safe cut-off output. No load cell required.

Dual-Sensor Worst-Case Arbitration

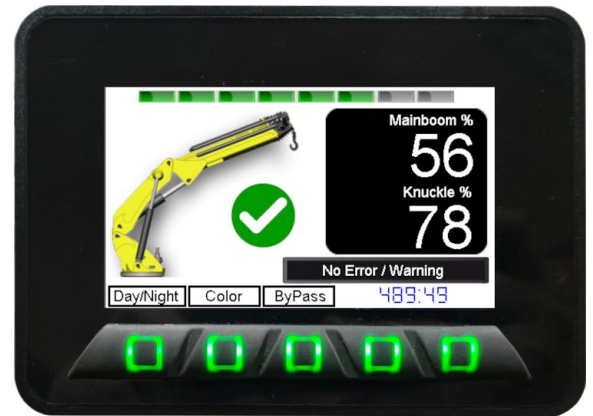
Main boom and knuckle boom monitored independently. Higher load drives the alarm.

800-nit Sunlight-Readable Display

AVD.043.02B 4.3 inch colour display. Readable in direct sunlight.

Encrypted Event Logger + RTC

Tamper-proof audit trail with real-time timestamps.



Real-time dual-boom load moment display



Night mode with illuminated buttons



GREEN · Normal

Load below 80%



AMBER · Warning

Load at or above 80%



RED · Overload

Cut-off signal removed

System Overview

The Potentium RCI-LE monitors hydraulic pressure on both the main lift cylinder and the knuckle boom cylinder, comparing each against a pre-configured limit. The higher of the two load percentages drives the alarm logic. Load percentage is shown in real time on the AVD.043.02B 4.3 inch 800-nit colour display. The ECU holds a permit signal on a digital output during normal operation. At 100 percent it removes the signal, stopping crane movement through a fitted valve. This fail-safe logic also stops the crane on power or wiring loss. No load cell required. Every unit ships with a real-time clock, working hour counter, encrypted event logger and configurable periodic maintenance alert.

Dual Pressure Monitoring

Two hydraulic transducers, one on each cylinder. Load percentage derived and displayed continuously for both boom sections.

Worst-Case Arbitration

Main boom and knuckle boom evaluated independently. The higher load percentage governs alarm state and cut-off signal, catching overloads a single sensor would miss.

Three-Level Alarm

Green below 80 percent. Amber warning at 80 percent. Red alarm and cut-off signal at 100 percent.

Dual-Sensor Arbitration

On a two-section crane, a single pressure sensor on the main cylinder cannot detect every overload condition originating at the knuckle boom. RCI-LE monitors both cylinders and drives the alarm from the worst case, closing that gap. This is the standard RCI-LE configuration.

Three-Level Alarm Logic

Load percentage is derived from cylinder pressure on both sections and compared against the configured limit continuously. The worst-case section drives the displayed state.

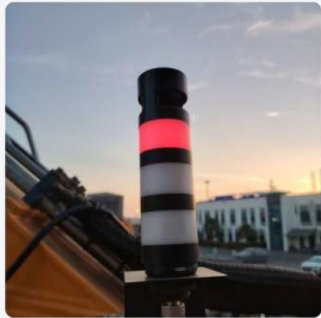
<80% NORMAL	Normal Operation Both sections below 80 percent. Full crane operation permitted. Working hour counter visible bottom-right.		● GREEN lamp ON ● AMBER lamp OFF ● RED lamp OFF ● Buzzer OFF ● Permit signal ON
80% WARNING	Pre-Alarm Warning Either section at or above 80 percent. Operator alerted to reduce load. Crane movement still permitted.		● GREEN lamp OFF ● AMBER lamp ON ● RED lamp OFF ● Buzzer OFF ● Permit signal ON
100% OVERLOAD	Overload · Cut-Off Either section at 100 percent. Permit signal removed on the digital output. Buzzer active. Event logged with RTC timestamp. A fitted valve stops crane movement.		● GREEN lamp OFF ● AMBER lamp OFF ● RED lamp ON ● Buzzer ON ● Permit signal OFF



GREEN · Normal



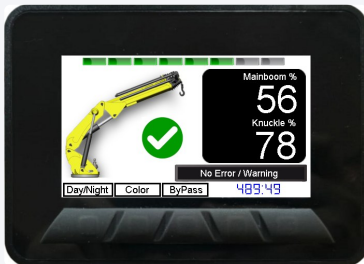
AMBER · Warning



RED · Overload

Real-Time Boom Geometry Display

The display shows main boom angle, knuckle boom angle and length, outreach, hook height and load percentage for both sections simultaneously. Crane silhouette colour is customisable per application during commissioning.



Normal. Both sections monitored, no warning



Pre-alarm. Knuckle boom at threshold



Overload. STOP shown, crane halted



ByPass mode active with countdown timer



Periodic maintenance warning overlay

Display Personalisation



Four crane silhouette colours, selectable on-screen via the Color button



Night mode dims the display and illuminates the buttons. Button LEDs available in four colours

Standard Data & Monitoring

Working Hour Counter

Counts total powered-on hours continuously. Displayed bottom-right of every screen. Persists through power cycles.

Real-Time Clock (RTC)

Battery-backed RTC maintains accurate date and time. Every event log entry carries a precise timestamp.

Encrypted Event Logger

Overload events, alarms, bypass actions and power cycles stored in a tamper-proof encrypted log with RTC timestamps.

Periodic Maintenance Alert

Configurable working-hour threshold. Warning overlay appears at power-on until acknowledged.

System Components

All kits are pre-wired, configured and bench-tested before dispatch. RCI-LE ships as a dual-sensor system by default.

Component	Model / Ref.	Function
Display / ECU	AVD.043.02B	4.3 inch 800-nit CAN Bus display. 2 analog inputs, 4 digital outputs. RTC and encrypted data logger.
Main boom pressure sensor	Hydraulic transducer, IP67	Cylinder pressure measurement. Load percentage derivation.
Knuckle boom pressure sensor	Hydraulic transducer, IP67	Second cylinder. Worst-case dual arbitration input.
Tower light	Banner TL50 Pro	RGB, 93 dB audible. GREEN / AMBER / RED plus buzzer. IP65.
Permit signal output	Digital output, ECU	Held during normal operation, removed at 100 percent. Fail-safe: also removed on power or wiring loss. Drives an external valve. Valve supplied and fitted by the installer.

Pre-wired. Pre-configured. Ready to install.

Every kit ships fully wired, labelled and bench-tested. Pressure limits, maintenance interval and crane silhouette colour are set per application during commissioning. Panel branding available on request. For real-time geometry, vehicle stability control and crane travel safety in a single ECU, see the Potentum RCI & Stability Control System (SCS).

RCI-LE kit as delivered →

