

2RCi

Rated Capacity Indicator



The 2RCi is designed to increase safety during lifting operations, using the latest technology in software to give the highest performance.

The 2RCi can be used as a visual and audible operator alert, or for full lifting control with overload moment and motion cutting of the appropriate machine equipment. An external alarm and visual beacon can be fitted to warn external operatives of the system condition.

The screen shows the operator the current Rated Capacity condition, including the following:

- ◆ A graphic load bar
- ◆ Current Load On Hook (weight being lifted)
- ◆ Available lift capacity
- ◆ Approach to max Safe Working Load
- ◆ Current tool Height and Radius
- ◆ Current machine slew position in degrees**
- ◆ Height and/or Slew Limits that have been set
- ◆ Motion cuts that have been applied **
- ◆ Lifting and digging operation
- ◆ Visual error reporting with fault IDs
- ◆ Event data logging with GMT time and date

**with additional hardware required

The standard 2RCi systems consists of a Display, 2 or 3 Angle Sensors, 2 Pressure Sensors and a single lifting duty (additional lifting duties, up to a max of 16, can be configured).

The Display contains a TFT colour touch screen for use as the operator interface.

The system provides real time equipment monitoring throughout lifting operations and shows Load on hook with true available Lifting Capacity as well as showing the current height and radius of the Tool/ Lifting Point. The standard system can provide height limiting, external overload alarm and external warning beacon. Internal visual and audio approach to overload is given by the in-cab mounted display. Multiple boom configurations are supported, as well as multiple input configurations.



System Expansion Options

Full Machine motion control on overload can be provide with an additional module.

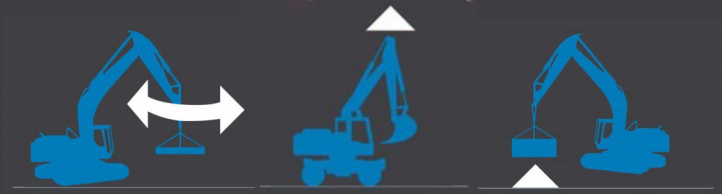
Up to 5 Slew duties can be provide with the addition of a slew module.

Foreman limit key switch can be connected to the slew module to provide the option of preventing set limits from being altered/switched off.

Machine travel inhibit while slew limit set can be performed with the additional slew module.

System Information

- ◆ The system operates with a full, bespoke CAN BUS protocol.
- ◆ The sensors and display use standard M12 connectors.
- ◆ Power requirement is 10-28 volts DC, 12v 1.5A or 24V 1A. (This is with no motion control valves. Valves typical use 2A at 12V and 1A at 24V. The system uses 1 valve per motion cut.)
- ◆ Complies to UK LOLER legislation and H&S requirements for **EN2006/42/EC**.
- ◆ Also complies to the following:
 - ◇ **EMC Directive 2014/30/EU**
 - ◇ **ROSH Directive 2002/95/EC**
 - ◇ **WEEE Directive 2002/96/EC**
- ◆ Designed to meet the following standards:
 - ◇ **BS EN 474-5:2006+A3:2013 - Earth Moving Machinery**
 - ◇ **BS ISO 10567:2007 - Hydraulic Excavators - Lift Capacity**
 - ◇ **BS 7262:1990 - Automatic Safe Load Indicators**
 - ◇ **BS EN 13000/2010+A1:2014 - Cranes - Mobile Cranes**
 - ◇ **BS EN 12077-2:1998+A12008 - Cranes Safety - Limiting and Indicating Devices**
 - ◇ **BS EN 62061-2005+A2:2015 - Functional Safety of Safety-Related Electronic Control Systems**
 - ◇ **BS EN 60204/2006+A:2009 - Electrical Equipment of Machines**
- ◆ EMC tested to **EN 13309/2010 - Construction Machinery & EN ISO 14982:2009 - Agricultural and Forestry Machinery**.
- ◆ Screen tested to **IP54**.
- ◆ Modules and Sensors tested to **IP67**.
- ◆ Vibration, temperature, impact protection tested.
- ◆ Display viewable 650cd/m2 max dimmable.
- ◆ The system is configurable by specification.



Specific equipment requirements for excavators that the 2RCi complies with:

From the first January 2016, Interserve Construction introduced enhanced requirements for all excavators with the capacity to lift loads greater than 1 Tonne (or an overturning moment greater than 40,000Nm). These enhanced requirements were detailed in the Interserve Construction Briefing Note issued in September 2016, and included within the Health and Safety Code for Subcontractors in the November 2015 revision. These requirements for all excavators are:

Excavators with the Capacity to Lift up to 1 Tonne (or an overturning moment up to 40,000Nm)

- ◆ A rated object handling capacity table available inside the cab (Load Tables).
- ◆ Lowering control devices (Check Valves) on all sections.
- ◆ A rated capacity indicator (RCI) that is configured to the safe working load of the excavator and in addition to an audible or visual warning on approach to the safe working load of the excavator include a motion cut out to stop the excavators operation beyond it's safe working load.
- ◆ The rated capacity indicator is also to include a data logging facility to enable post operation monitoring of lifting operations data and an external beacon indicating the rated capacity indicators operation in lifting mode.

In addition to the above, the 2RCi also complies with Highways England, Plant and equipment – Issued November 2013, Revised September 2014:

- ◆ Audible or visual overload warning system fitted and operational.
- ◆ A machine specific lifting duty sheet, lift plan and risk assessment.
- ◆ If used adjacent to live lanes, control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic. E.g. slew restrictors with indication on the machine.
- ◆ If used under overhead cables or obstructions. E.g. Height restrictors with indication on the machine.