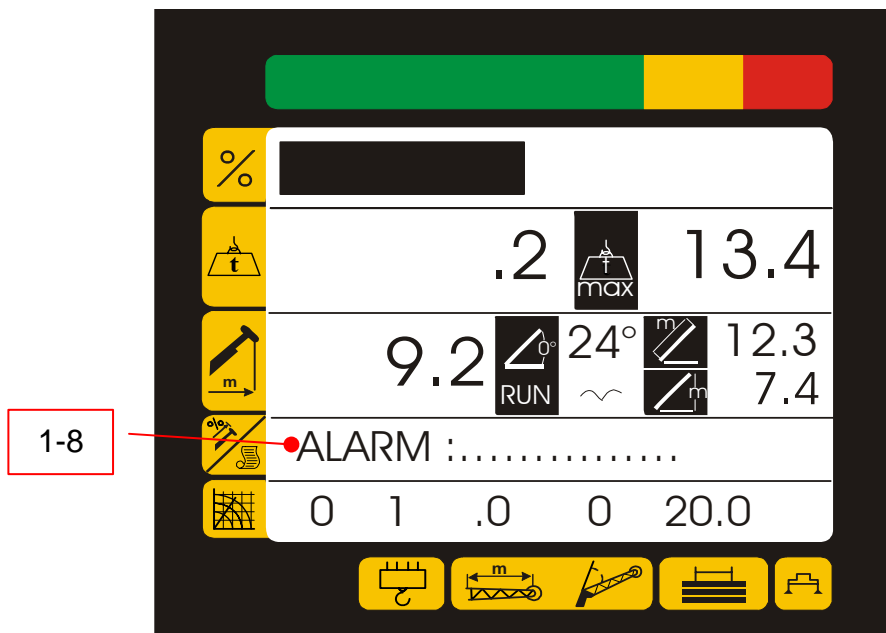


Auto-Diagnostics

The LMI is equipped with an auto diagnostic system, which will detect faulty pressure transducers, boom angle/length sensor, broken cables or internal electronic faults. When an alarm occurs, the LMI will shutdown and display an alarm message (zone 1-8). Troubleshooting is accomplished by the alarm codes indicated on the display to detect the problem.



The codes are reported in the following list, that also includes some hints to solve the problem and get back to normal working conditions.

AUTO DIAGNOSTIC

System internal monitoring

Geometric data and load data

These readings indicate the internal status.

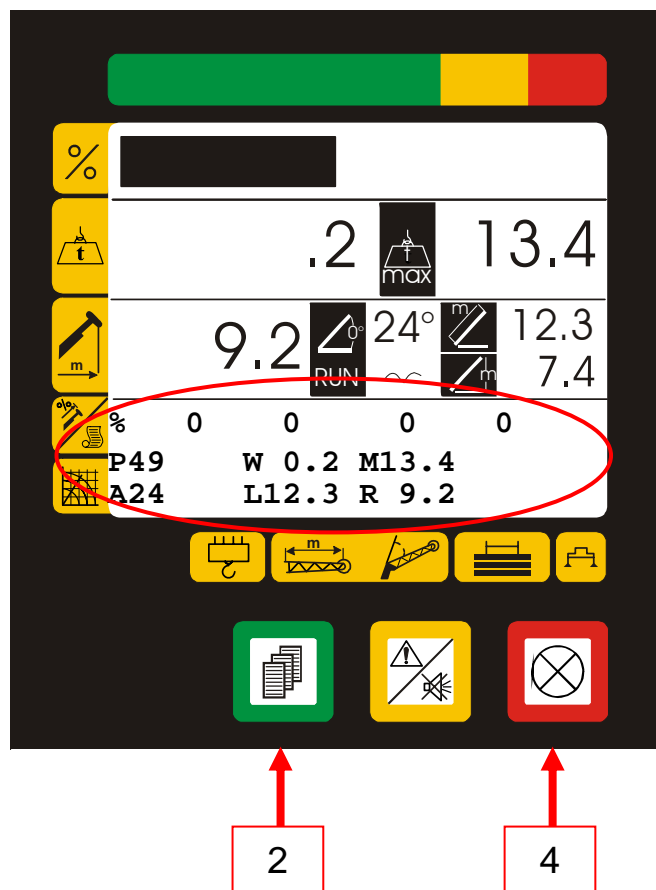
Starting from the main working data page press and release the Green pushbutton (2) **two** to enter the diagnostics pages.

The display will indicate the control page, giving

geometric data and main cylinder differential pressure summary.

The displayed parameters are as follows:

- *P* : Main cylinder differential pressure in Bars of pressure;
- *W* : Applied load in kilos x1000;
- *M* : Rated load in current program in kilos x 1000
- *A* : Actual angle in Degrees;
- *L* : Actual boom length in meters;
- *R* : Radius from center of rotation in meters



To return to the main page, press and release the Green pushbutton (2).

AUTO DIAGNOSTIC

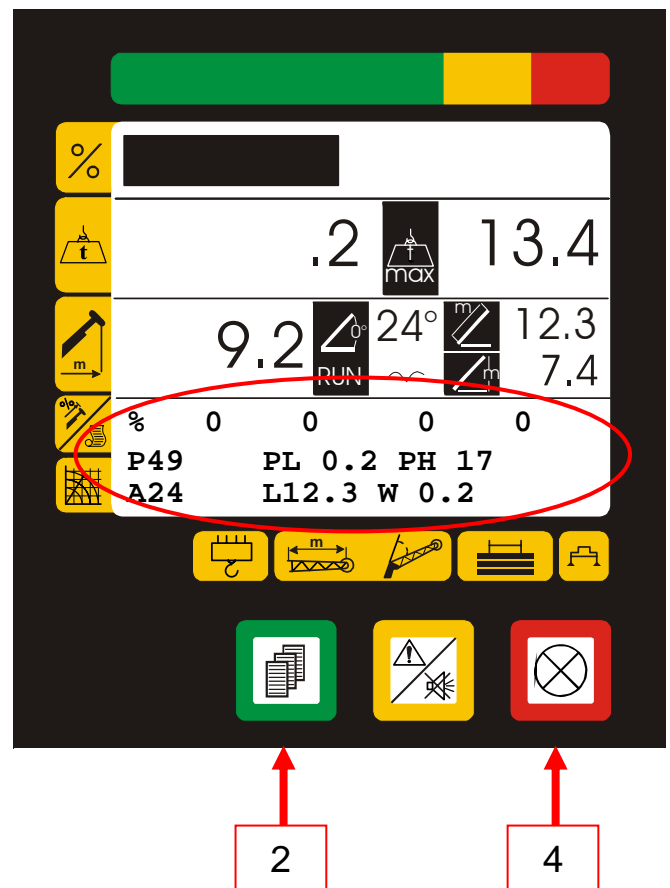
System internal working conditions monitoring

Hydraulic pressure data

Press and release the Red pushbutton (4) the display indicates the individual hydraulic pressures summary :

The displayed parameters are as follows:

- *P* : Main cylinder differential pressure in Bars of pressure;
- *PL* : Main cylinder piston side pressure in Bars of pressure;
- *PH* : Main cylinder rod side pressure in Bars of pressure;
- *A* : Actual angle in Degrees;
- *L* : Actual boom length in Meters;
- *W* : Lifted load weight in kilos x 1000;



To return to the main page, press and release the Green pushbutton (2).

AUTO DIAGNOSTIC

System internal monitoring

Sensor Digital Signals

Press and release the RED pushbutton (4) the display will indicate the **first** page indicating the **pressure transducers and length/angle sensors digital signals and tension corresponding to the actual measurements.**

The displayed parameters are as follows:

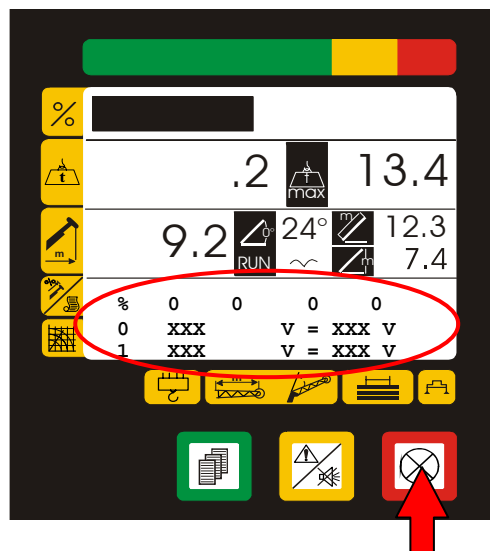
0 xxx : Main cylinder piston side pressure value in Bits; between 0 and 4092 (*)

V = xxx v : Tension value.

1 xxx : Main cylinder rod side pressure value in Bits; between 0 and 4092 (*)

V = xxx v : Tension value.

(*) = Due to 12 bits A/D Converter



Press and release the RED pushbutton (4) the display will indicate the **first** page indicating the **pressure transducers and length/angle sensors digital signals and tension corresponding to the actual measurements.**

The displayed parameters are as follows:

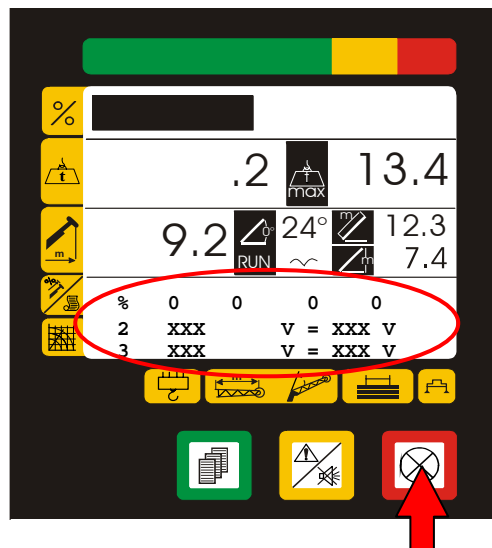
2 xxx : Angle value in Bits; between 0 and 4092 (*)

V = xxx v : Tension value.

3 xxx : Boom Length value in Bits; between 0 and 4092 (*)

V = xxx v : Tension value.

(*) = Due to 12 bits A/D Converter



To return to the main page, press and release the Green pushbutton (2).

AUTO DIAGNOSTIC

System internal monitoring

Sensors Digital Signals

Press and release the RED pushbutton (4) the display will indicate the **next** page indicating **digital signals corresponding to the measurements of the other analog inputs:**

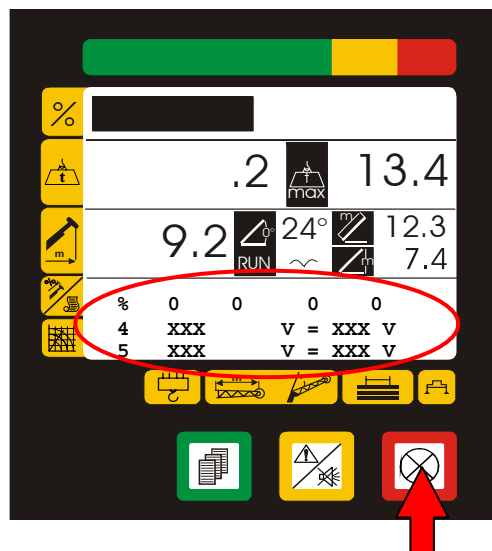
The displayed parameters are as follows:

4 xxx : not used;

V = xxx v : Tension value.

5 xxx : not used;

V = xxx v : Tension value.



Press and release the RED pushbutton (4) the display will indicate the **next** page indicating **digital signals corresponding to the measurements of the other analog inputs:**

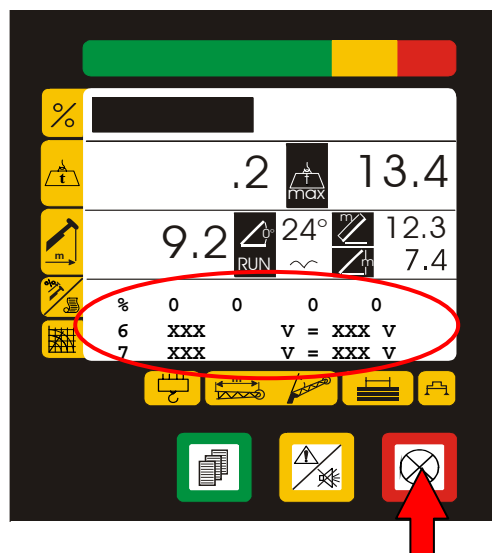
The displayed parameters are as follows:

6 xxx : not used;

V = xxx v : Tension value.

7 xxx : not used;

V = xxx v : Tension value.



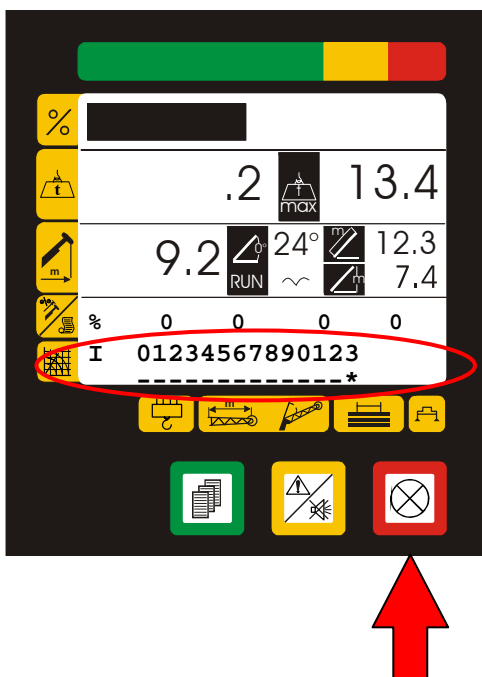
To return to the main page, press and release the Green pushbutton (2).

AUTO DIAGNOSTIC

System internal monitoring

Status of Digital Inputs from external components

Press and release the RED pushbutton (4), the display indicates the **summary of the ON/OFF selections given by external micro-switches**:



Digital Inputs (I)

The upper row indicates the Input number, while the lower row indicates its status. The symbol “*” means **active Input**, the symbol “-” means **non active Input**.

- 0 : Anti two block switch
- 1 : Rope end winch 1
- 2 : Rope end winch 2
- 3 : Max cylinder position
- 4 : Basket
- 5 : Axle blocked
- 6 : Front position
- 7 : Outrigger
- 8 : Exclusion key
- 9-N : Not used

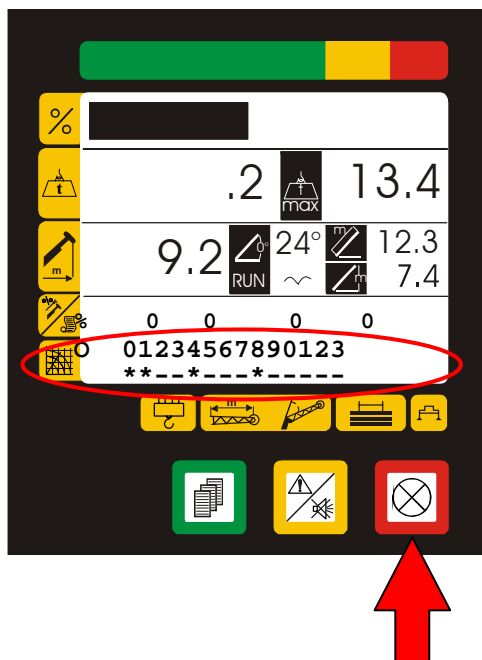
To return to the main page, press and release the Green pushbutton (2).

AUTO DIAGNOSTIC

System internal working conditions monitoring

Status of Digital Outputs to external components

Press and release the RED pushbutton (4), the display indicates the **Outputs of the system status summary (automatic signals)**:



Digital Outputs (O)

The upper row indicates the Output number, while the lower row indicates its status. The symbol “*” means **active Output**, the symbol “-” means **non active Output**.

- 0 : Winch up
- 1 : Winch down
- 2 : Telescope out
- 3 : Telescope in
- 4 : Lift cylinder up
- 5 : Lift cylinder down
- 6 : Overload

To return to the main page, press and release the Green pushbutton (2).