"PERIPHERAL SENSORS"

The handling of the electronic, safety and crane functions control systems, by means of the software and suitable handling programmes for the different crane models and installations, requires the presence of peripheral sensors which transmit signals (inputs) and information to the electronic logic. On the base of the received signals, the electronic logic elaborates some "output" to manage the operative situation.

The peripheral sensors installed in the system are as follows:

- **Pressure transducers** installed on the cylinder side of the lifting rams.
- **Angular sensors** installed on the crane outer boom and on the jib boom.
- **Proximity sensors** installed on the crane base to check the crane rotation arc.

Pressure transducers (*)

Pressure transducers are sensors which read the pressure induced by the load inside the lifting rams cylinder (inner, outer and articulation of the jib) to activate, in case of overload, the lifting moment limiting device. They transmit an analogical signal (bit) to the electronic card that will then transform it in digital, in order to show on the display of the control handle of the radio control or of the user panels the value of pressure or percentage of function utilisation. **As is standard Fassi practice, the monitoring of the pressures induced by the load to activate the lifting moment limiting device is made on all the lifting rams, this is the only guarantee of complete crane load covering.**

The correct functioning of these sensors can be verified by means of the functional check menus present in the programme readable directly from the display of the control handle of the radio control or of the user panel. The presence of malfunction is shown on the display by means of alarm codes (each transducer has an alarm code related to the ram on which it's installed to facilitate the problem identification).

The pressure reading is extremely precise (to tenths of a Bar) and, having no hysteresis (characteristic of the hydraulic valves), it allows the crane reactivation following to the activation of the lifting moment with a minimum decrease of the induced pressure (this means that, if you decide to reactivate the crane, for example by re-entering the extension booms, you need only few re-enter centimetres to come out from the block).
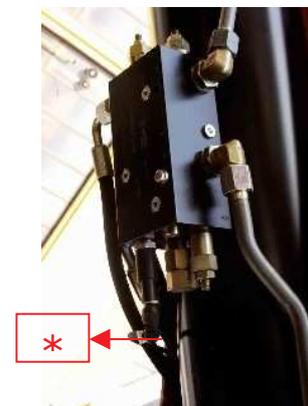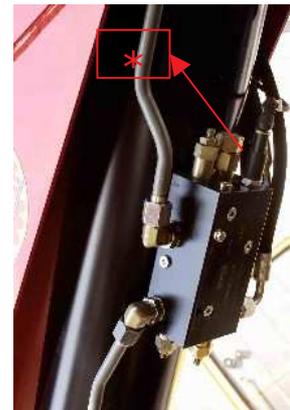
Angular sensor

The angular sensor installed on cranes or on jibs equipped with "Prolink" system reads the angular position of the booms on which it is installed to make the lifting moment "intelligent". As it recognises the position of the booms and, therefore, of the load, in case of overload, the lifting moment limiting device authorises the manoeuvres reducing the overload and stops those that, if activated, would further increase it. By means of the information that the angular sensor transfers to the electronic logic, it's possible to handle the safety stroke ends in vertical with the "Prolink" function active. In case of malfunction, alarm codes are shown on the display.

Proximity sensors

The proximity sensors check the position of the crane booms in respect to the rotation arc. It's possible to handle a limitation of the rotation arc or a lifting moment limiting device for two working zones for the unstable area if these sensors are combined to a metallic band that activates them. The band length sets the authorised working degrees in regard to the verification of the equipment stability.
Three proximity sensors handle the above device; the two lateral ones record the direction of the rotation movement and the central one activates the block of the movement in the non-authorised direction.
In case of malfunction, alarm codes are shown on the display.

Advantages for the operator:

- **Precise, reliable and safe sensors, the best that the market can offer, grant the crane safeties.**

- **Any eventual malfunctions are shown by means of alarm codes that exactly identify the problem to facilitate its solution.**