

## KIT BASE WITH DSP LASER STANDARD A001 - 24V AC

### DSP LASER TX + RX A001



DSP emits a **visible laser barrier** which, made and placed as described in the EN12622 standard, **protects the press brake operator** against the risk of being crushed between the upper and lower part during the closing of the fold in high speed.

Module AL2 is an electronic module whose logic has been planned to **monitor and manage the systems and components present on a press brake** to ensure the safety of the bending process itself according to the EN12622 standard.



### MODULO AL2 24V AC

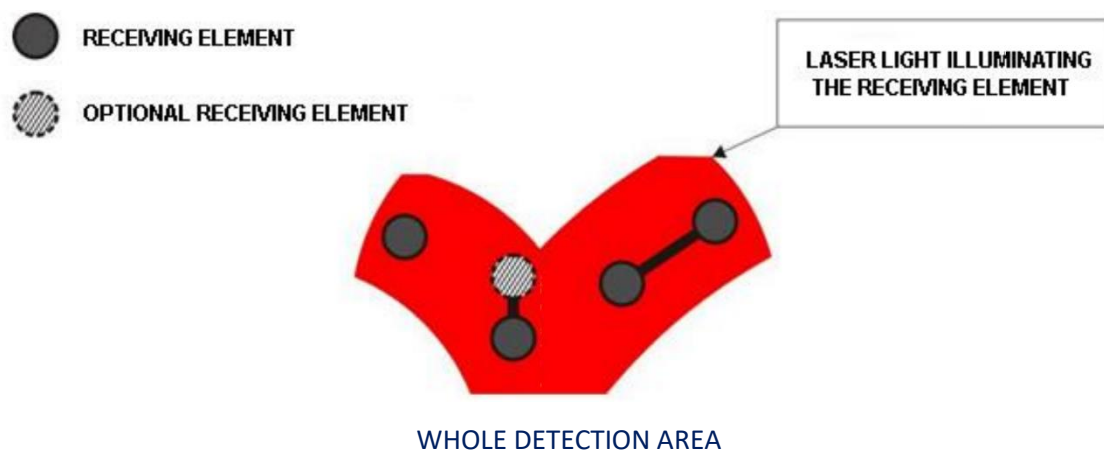
The safety device DSP LASER is a visible laser emission guard which, inserted in a more general control system, contributes to protect the operator in the use of press brakes for the cold working of the metals and is constituted by:

- one transmitter DSP LASER TX powered at 24Vac or 24Vdc,
- one receiver DSP LASER RX powered at 24Vac or 24Vdc which moreover includes: the logic for the control of the operation modes, the function of automatic monitoring of the overtravel and the two solid-state outputs OSSD,
- one DSP LASER AL module (optional) with a series of variations.

Each of them is enclosed within its own case.

The activation of the receiver is made possible only by the emission generated by the transmitter, which is electrically connected to by the synchronism. An emission generated by an identical transmitter, but not electrically connected with the receiver, cannot activate it.

Main task of “DSP LASER” is detecting, within the limits defined by the detection capacity of the instrument, the intrusion of any opaque physical element into the “detection area”. The detection area can be defined as a “laser light solid” which starts from the transmitter and arrives to the receiver and whose section is represented in Fig. 9.1. The interruption of the laser beams illuminating the receiving elements, causes the detection of the occurred interruption. The detection of the interruption of one or more of the receiving elements is then managed by the system to issue or not the passage to state OFF of the OSSD outputs. The device has been then designed to activate, in dangerous conditions, the functions for the stop of the movement of the dangerous parts.



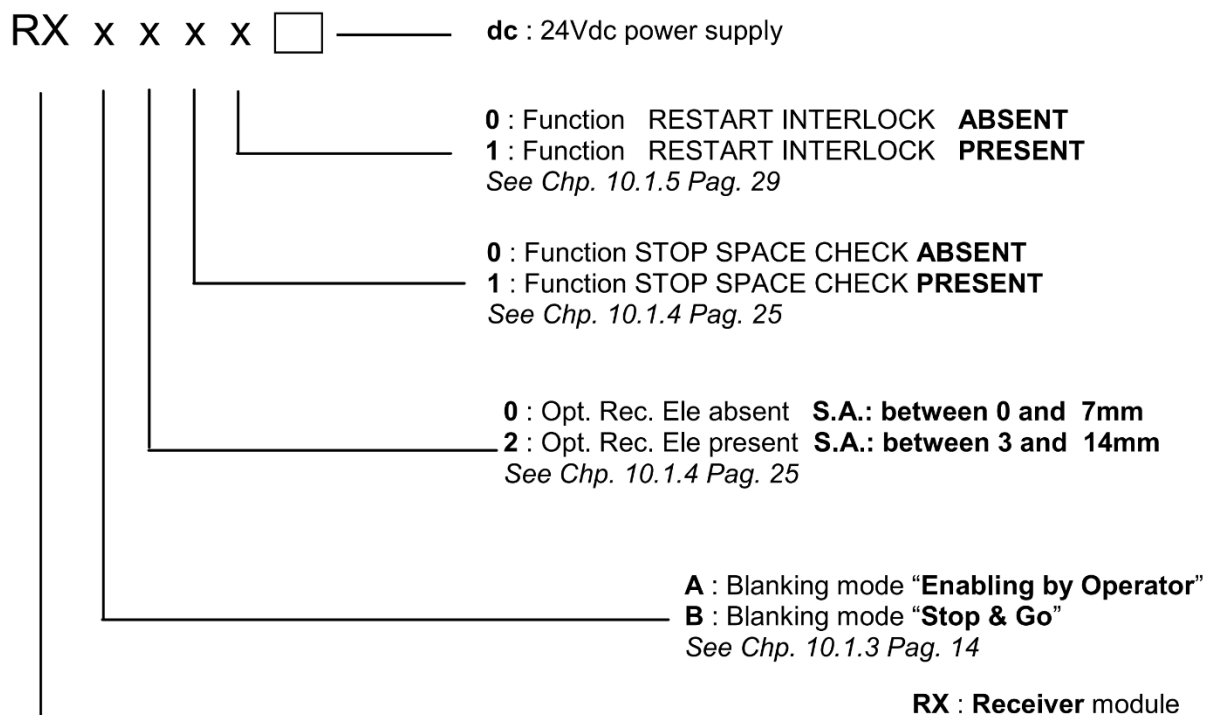
These functions have been realized providing, in output from the two OSSD, two different ON/OFF electrical signals. The state ON corresponds to the condition for which the DSP LASER system does not detect the conditions for which the downwards movement of the machine must be inhibited or stopped, while the state OFF detects them. Various can be the causes for which the outputs are set to the state OFF. The main ones are: the lack of collimation between the two TX and RX components (caused, for example, by the intrusion of an element into the detection area), the lack of power supply to DSP LASER, 30 hours of continue operation, failed check of the stop space, failure of the DSP LASER equipment itself.

The main causes of fault or wrong operation are signalled by a precise configuration of the LEDs present in RX. For information see par.12.1. The OSSD outputs, properly inserted in the electric circuit of command of the dangerous part of the equipment, enable, in ON state, the possibility to command the movement (start function) and, vice versa, to inhibit or stop it in OFF state (stop function).

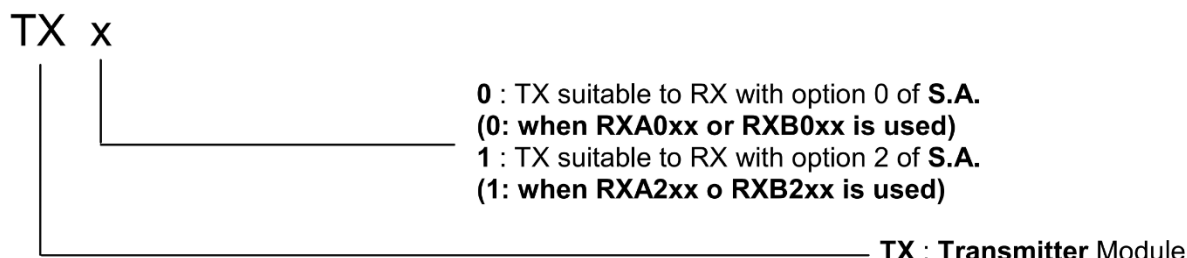
At last, the management of the procedures of stop, suspension and reactivation of the machine are entrusted to the main control board of the machine itself. DSP LASER is available in more versions which differ for the following main characteristics:

- Blanking type: "Stop&Go" or with "Enabling by operator"
- Central receiver: optional or in different positions, allowing the use with machines whose stop space is included within ranges of different values
- Function of check, at switch-on, of the presence/absence of the stop space
- 24Vdc power supply for TX and RX modules
- 24Vdc power module and OSSD relay outputs (ALdc)
- Power supply module with filter and power supply transformer by 220Vac or 24Vac (AL1B)
- Power supply module with filter and power supply transformer by 220Vac or 24Vac and OSSD outputs with relay (AL2B)

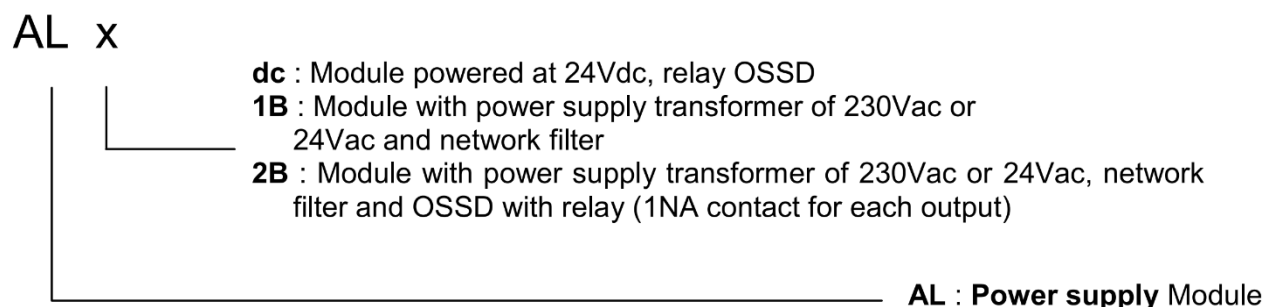
The codes identifying RX module of DSP LASER with the corresponding configuration are:



The codes identifying TX module of DSP LASER with the corresponding configuration are:



The codes identifying AL module of DSP LASER with the corresponding configuration are:



The examples here below help to order the proper DSP model.

If you wish to order one DSP LASER module for a machine with stopping distance of 10mm, out-of-stroke test, anti-repetition pedal, Blanking of type A and 24Vdc power supply, the proper code to order is: RX A211 DC.

As consequence, you have to associate the transmitter TX 1.

If you wish the solid state outputs, the auxiliary AL module is not necessary. Otherwise, if you wish the relay outputs, even the ALdc module has to be ordered.

If you wish to order one DSP LASER module for a machine with stopping distance of 3mm, WITHOUT out-of-stroke test, WITHOUT anti-repetition pedal, with Blanking of type B and 230Vac power supply, the proper code to order is: RX B000. As consequence, you have to associate the transmitter TX 0.

If you wish the solid state outputs, the auxiliary module AL1B 230Vac will be necessary. Otherwise, if you wish the relay outputs, the AL2B 230Vac module shall be ordered.