

SETTING OF THE PARAMETERS

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	9	4	5	○	●	○

Press the SET pushbutton for at least 8s to enter into the parameter setting menu.
The "MEnu" message appears.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	M	E	n	u	○	○	○

Pressing the + and - pushbuttons the user and run up and down the menu, reading the following messages.

Maximum distance visualization

- At each pressure of the SET pushbutton, the user can run through the options of the selected level.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D	-	H	I	○	○	○

DISTANZA 7 0 0 0 ○ ● ○

Minimum distance visualization

- At each pressure of the SET pushbutton, the user can run through the options of the selected level.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d	-	L	o	○	○	○

DISTANZA 0 3 0 0 ○ ● ○

Delay setting

- At each pressure of the SET pushbutton, the user can run through the options of the selected level.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	d	-	0	0	○	○	○

d	-	0	5	○	○	○	○
d	-	1	0	○	○	○	○
d	-	2	0	○	○	○	○
d	-	3	0	○	○	○	○
d	-	4	0	○	○	○	○

- The delay value setting is in common to both outputs.
- When a delay value, different from zero, is set, the outputs will be maintained active for a minimum time equal to the number of milliseconds visualised on the display.

Visualisation of the channel 1 data

- At each pressure of the SET pushbutton, the user can run through the options of the selected level.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C	H	-	1	○	○	○

THRESHOLD 1 9 4 5 ○ ● ○

MODE L/d - 0 n ○ ● ○

Visualisation of the channel 2 data

At each pressure of the SET pushbutton, the user can run through the options of the selected level.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C	H	-	2	○	○	○

THRESHOLD 1 9 4 5 ○ ● ○

MODE L/d - 0 n ○ ● ○

Serial output deactivation

At each pressure of the SET pushbutton, the user can run through the options of the selected level.

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S	-	o	n	○	○	○

S - o f ○ ● ○

Memorisation of the parameters set

OR	1	2	3	Dig1	Dig2	Dig3	Dig4	+	SET	-
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S	A	V	E	○	○	○

S A V E ○ ● ○

- Pressing the SET pushbutton (the SAVE message blinks for 2s, 4Hz) all the changed values are saved and the user exits from the menu, and returns to the normal mode.
- One of the +/- pushbuttons has to be pressed to return to the setting menu.

Exit from the parameter setting menu

After a 10 s inactivity of the pushbuttons, the sensor returns to the normal mode visualising the distance.

REMOTE FUNCTION

KEYLOCK function (SET pushbutton block)

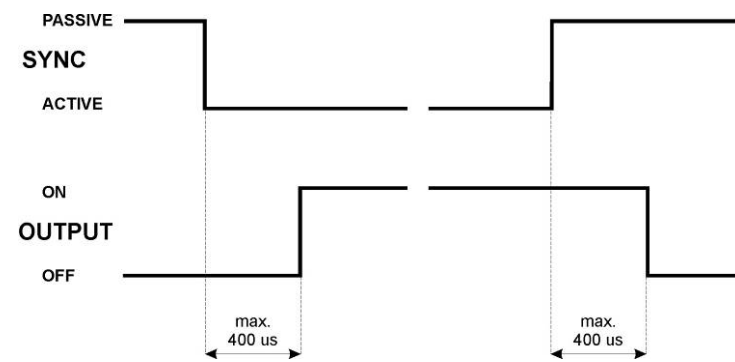
The keyboard block function is activated at powering on, connecting the SYNC terminal to the positive power supply (+Vdc) for at least 1 s.
After the first second, the SYNC input is ready for the normal synchronisation operations (refer to next paragraph).
To deactivate the keyboard block, the sensor has to be turned off and re-powered maintaining the SYNC wire not connected or ground connected (GND).

SYNC input (synchronisation)

The connection of the SYNC wire to +Vdc corresponds to the passive logic status while SYNC not connected or connected to 0 V corresponds to the active logic status.

SYNC passive = +Vdc ; SYNC active = 0V

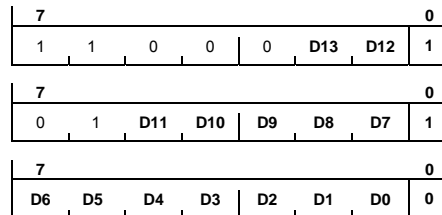
The synchronisation signal allows to calculate the beginning and ending instants of the measurement. The reading cycle begins after the transition of the SYNC signal from passive to active and the sensor outputs are updated after max. 400µs.
All the outputs are deactivated after max. 400µs from the active - passive transition.



The SYNC wire is used also to determine the transmission direction when the RS485 serial connection is used.

RS485 serial connection

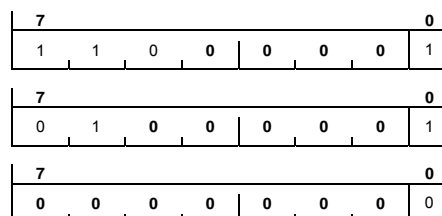
The serial communication parameters are: 9600 baud, non-parity, 8 data bits, 1 stop bit.
The refresh time of the serial port is 35 ms.
The SYNC input is used to determine the communication direction, and in particular if low (active) direction S80->User, if high (passive) User->S80.
With SYNC active, the sensor continuously transmits the detected distance value (with a precision of 14bit) by means of a binary data format. 3 byte are used; one with bit 0 at logic level 1 identifies the most important byte, second with bit 6 at logic level 1 and bit 7 at logic level 0 identifies intermediate byte, third with bit 6 at logic level 1 and bit 7 at logic level 1 identifies more important byte.



Low signal received condition, corresponding to "FFFF" display indication, is represented on RS485 serial connection by the following sequence:



Out of range condition, corresponding to "HHHH" or "LLLL" display indication, is represented on RS485 serial connection by the following sequence:



The RS485 serial interface allows also the complete remote control of the sensor. All the commands have to be sent via terminal in an ASCII format according to the following:

Receipt of the channel status:

At any moment, at the receipt of the 'r <CR> <LF>' remote command (and SYNC passive), the sensor configuration is restored.

Remote configuration:

The commands available are:

@ <CR> <LF> beginning of the remote setting mode (and SYNC passive)
c1 <CR> <LF> channel 1 selection
vxxx <CR> <LF> distance selection, with xxx ∈ {0...4095}
bx <CR> <LF> dark/light mode selection, with x ∈ {1, 2}

b1 = Dark
b2 = Light

e <CR> <LF> memorisation of the configuration sequence.
q <CR> <LF> exit from remote setting without saving the configuration.

At the receipt of the q <CR> <LF> or e <CR> <LF> commands, the sensor visualises ok <CR> <LF>.

Delay configuration:

The commands available are:

@ <CR> <LF> beginning of the delay configuration (and SYNC passive)
dx <CR> <LF> delay selection, with x ∈ {0, 1, 2, 3, 4, 5}

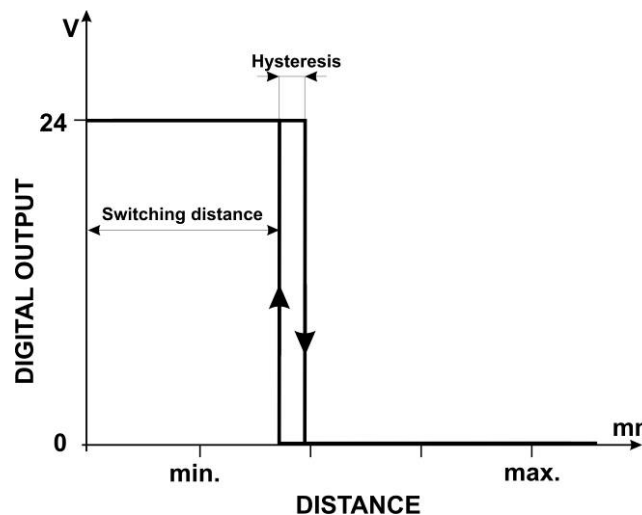
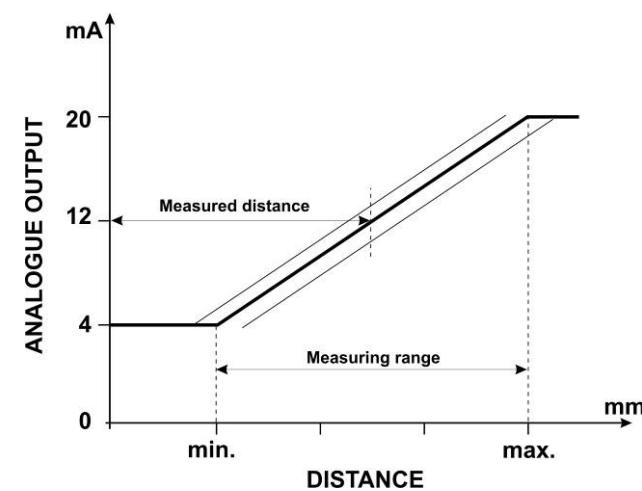
d0 = 0 ms d3 = 20 ms
d1 = 5 ms d4 = 30 ms
d2 = 10 ms d5 = 40 ms

e <CR> <LF> memorisation of the new delay value
q <CR> <LF> exit from the delay configuration without saving the configuration.

At the receipt of the q <CR> <LF> or e <CR> <LF> commands, the sensor visualises ok <CR> <LF>.

NOTE: the single digits have to be distanced amongst themselves at least 1 ms, during the command transmission.

DETECTION DIAGRAMS



SAFETY WARNINGS

All the safety electrical and mechanical regulations and laws have to be respected during sensor functioning. The sensor has to be protected against mechanical damages.
Place the given labels in a visible position close to the laser emission.



Do not look directly into the laser beam!
Do not point the laser beam towards people!
Eye irradiation for over 0.25 seconds is dangerous; refer to class 2 standard (EN60825-1).
These sensors are not conform to safety applications!
This product is intended for indoor use only.

The sensors are NOT safety devices, and so MUST NOT be used in the safety control of the machines where installed.

DECLARATION OF CONFORMITY

We Datalogic Automation declare under our sole responsibility that these products are conform to the 2004/108/CE and successive amendments.

WARRANTY

Datalogic Automation warrants its products to be free from defects.
Datalogic Automation will repair or replace, free of charge, any product found to be defective during the warranty period of 36 months from the manufacturing date.
This warranty does not cover damage or liability deriving from the improper application of Datalogic Automation products.

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