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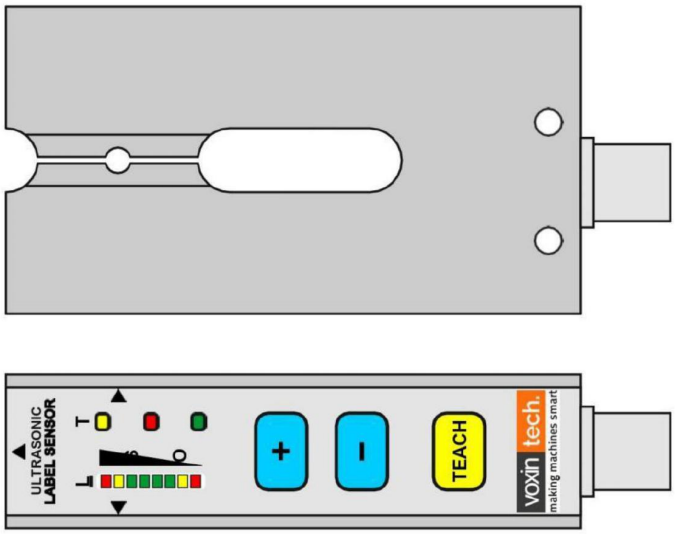
ULTRASONIC CLEAR LABEL SENSOR

ULS-24B-0162



Technical manual

CE

V.1.02

Technical information

Power supply: 10 - 30Vdc;
Current consumption: < 0,1A;
Time delay before available: < 0,1 second;
Output: transistor/PNP/NPN - from connection circuit, optically isolatted, with protection against overload and reverse polarity protection;
/the option **NO/NC** is determined by connection circuit/
Maximum output voltage: +35Vdc;
Maximum residual voltage: < 1,5V;
Maximum output current: 0,1A
Maximum switching frequency: 500Hz;
Minimum label width: 10mm;
Minimum distance between labels: 2,5mm;
Maximum speed of the tape: 200m/min.*;
Fork depth: 62mm;
Fork width: 1mm;
Sensitive area center: of 17,5mm from the top of the housing;
Indication:

- '**T**' /'teach'/ - yellow LED - mode 'teaching', functional;
- '**S**' /'status'/ - red LED - overload output, functional;
- '**O**' /'output'/ - green LED - active output, functional;
- '**L**' /'level'/ - bargraph - signal level;

Buttons: 2 - for setting thr sensor;
Connection: connector M12 - 4 pins;
Mechanical connection: 2through holes F4,2**;
Dimensions: 48x90x24 mm;
Material: Aluminium, polyester;
Ambient temperature range: 0 ... +60°C;
Ambient humidity range: 0 ... 80% RH;
Degree of protection: Ip65;
Storage conditions:

- temperature -20 ... +85°C;
- humidity 0 ... 85% RH;

* - depends of the material.
** - during installation the object must cover the maximum of the active sensor part

Description and setup

Description

The sensor is purposed for monitoring the position of a transparent or opaque marker or label on a transparent or half transparent base. Also allows detection of low-contrast, metallic, hot stamp and others.

The connection circuits allows to choose the type **/PNP** or **NPN/** and function of the output / **NO/NC** /. The active state of the output is indicated by LED **'O'** and possibly overload by LED **'S'**.

The setting is facilitated by the presence of bargrag for the signal level.

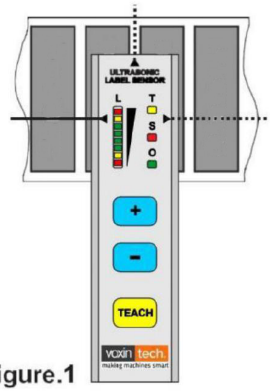


Figure.1

Automatic setup. /recommended!/

During setup the sensor and tape with labels should be kept still.

1. The tape label is positioned in gap between labels - Figure 1, in line with the markers on the front panel.
2. Press and hold the button TEACH for more than 3 seconds - LED **'T** '/yellow/ lights up - the sensor is in setup mode. When the button be released LED start to blink and begins automatic teaching of the sensor. The signal level indicated on the bargraph **'L'** is growing. Wait until LED **'T'** lights off.
3. The tape need to be positioned on a label - Figure 2.
4. Press the button TEACH . LED **'T'** lights up. When the button be released LED start to blink. Automatic setup is completed when the LED **'T'** lights off.

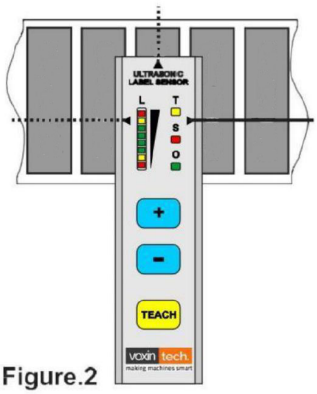


Figure.2

If there is not enough signal level of the gap/after step 2/ or there is not enough difference between the gap and label signal/after step 4/ the bargraph starts to blink which is indication for error.

The outcome of this situation is possible with new(correct) teaching of the sensor or by turn off the power.

Manual Setup
/performed by specialist!/

This mode of the sensor allows to manually modify the automatically saved limits of turn on and off of the output which determined the hysteresis.

This is necessary only in case when the automatic setup is not accurate enough for particular type of label.

The manual setup can be access by pressing and hold for 3 seconds the buttons [+] [-] /simultaneously!/ until lights up of LEDs **'S'** and **'O'**. Release the buttons - LED **'S'** remains on **- a change up limit.**

The change is made on steps/16 for whole range/ by pressing buttons [+] and [-]. Each pressing of the button indicates with lights off LED **'S'** and lead to change of the limit with 1 step. The changes are indicating on the bargraph. By reaching the end of the limit/ up maximum or down - already set/ is indicated with blinking of LED **'S'**. In this case the change can be performed in the other direction.

To change the down limit can be access by pressing and hold the button [TEACH] until lights up LED **'O'**. Release the button - LED **'T'** remains on **- a change down limit.**

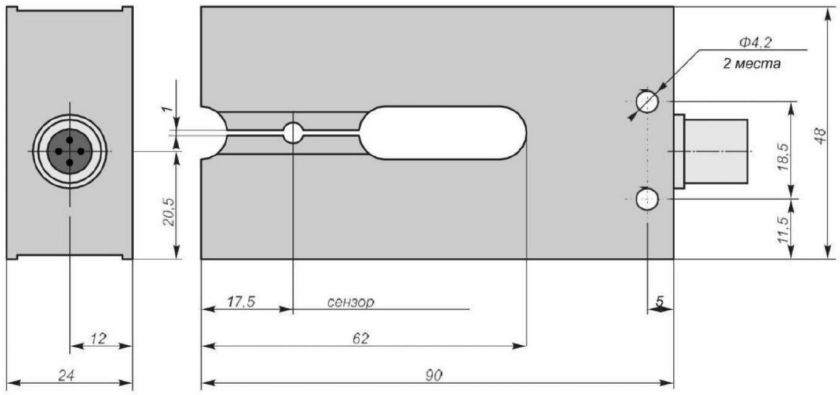
The change is made on steps by pressing the buttons [+] and [-]. Each pressing of the button indicates with lights off LED **'T'** and lead to change of limit with 1 step. The changes are indicating on the bargraph. By reaching the end of the limit /up maximum or down already set/ is indicated with blinking of LED **'T'**. In this case the change can be performed in the other direction.

The extreme positions are indicated with 10 blinks of **'T'.**

Moving to setup of the next parameter is possible by pressing button [TEACH] and LED **'T'** goes OFF. By releasing the button LED **'T'** and **'S'** go ON and begin a change of hysteresis. The bargraph indicates the depth of hysteresis. The change is made on steps /16 for whole range/ by pressing [+] and [-] buttons. When pressing a button LED **'T'** and **'S'** goes OFF. After releasing of a button starts a change to reach the next level. It is indicated from LED **'T'** and **'S'** go ON. The extreme positions are indicated with 10 blinks of **'T'** and **'S'**.

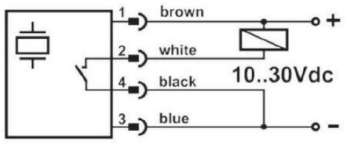
To exit setup mode need to press [TEACH] button until the LED **'T'** and **'S'** lights off.

OVERALL DIMENSIONS

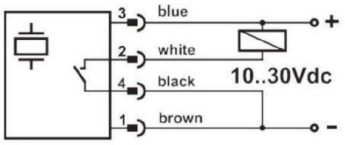


CONNECTION CIRCUITS

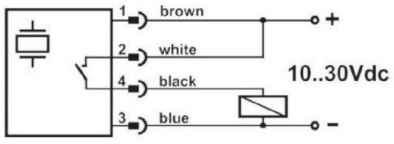
NPN/NO



NPN/NC



PNP/NO



PNP/NC