LoopView
DIN 43650

Futuristic
Technologies

INTRODUCTION

LoopView is a 4-20 mA current loop indicator with 2 wires, low consumption, with excellent accuracy and that allows the device to indicate several variables such as pressure, flow, pH, temperature, acceleration, among others.

It is possible to perform the configuration, to display the indications, adjustment functions, filters and calibration, in a fast and practical way, directly on the indicator.

FEATURES

SIGNAL INPUT

The type of input to be used by the indicator is described in the table below:

TYPE	RANGE OF MEASUREMENT
4-20 mA	Linear Analog Signal Programmable indication of -1999 to 9999

FUNCTION AD-L and AD-H (A-L; Ad-H)

From the knowledge of the **process condition x indication (PV)** relationship of two process points, the total indication range must be defined.

The PV values for the two known process points are entered in the Ad-L and Ad-H parameters which are displayed in the configuration cycle. Note that for each entered input value, confirmation is required by pressing the ⊞ key.

By using these functions, the parameters of the indication limits are automatically set by the indicator.

FUNCTION LINE ($LINE$)

It allows the application of small corrections in the measurements (approximately 1 % of the measurement range), picking up a midpoint in the calibration interval. Example: the 4-20 mA range is defined, with a programmable interval between 0-1000, the value measured in 12 mA (midpoint of the calibration interval), must be 500, but when a LINE of 10 is applied, the display shows us 510.

Note: It is important to note that, depending on the value configured on the LINE and the range being used, the extreme values of the range may have increased their error.

FUNCTION DP (dP)

Function that allows you to apply a decimal point to measured and assigned values. Up to 3 decimal places are allowed.

FUNCTION FILTER ($FILE$)

Function that defines the value of the filter applied in signal processing, used to improve the stability of the measured signal, variable between 0 and 9.

INSTALLATION/ CONNECTIONS

ELECTRICAL CONNECTIONS

The indicator has standard EN 175301-803 (old DIN 43650) male and female connectors. The indicator has internal protection against polarity reversal of the power supply up to 60 mA.
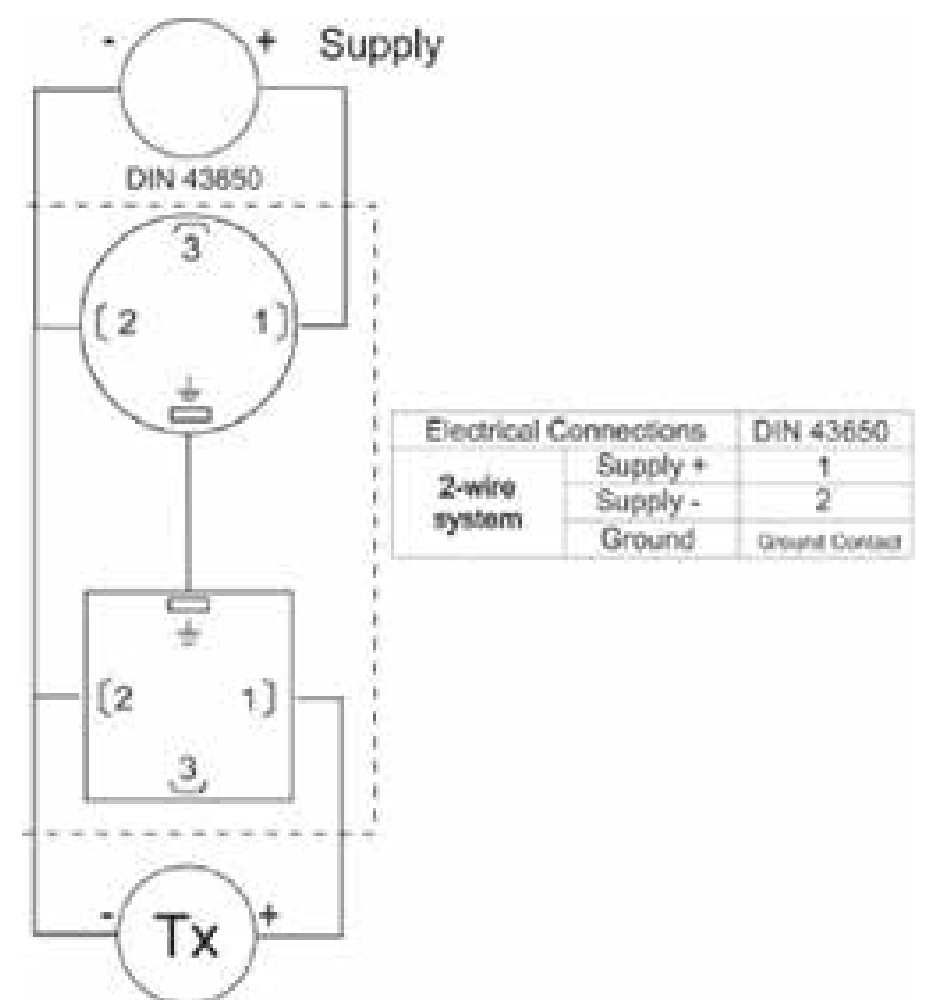

Fig. 01 - Electrical connection
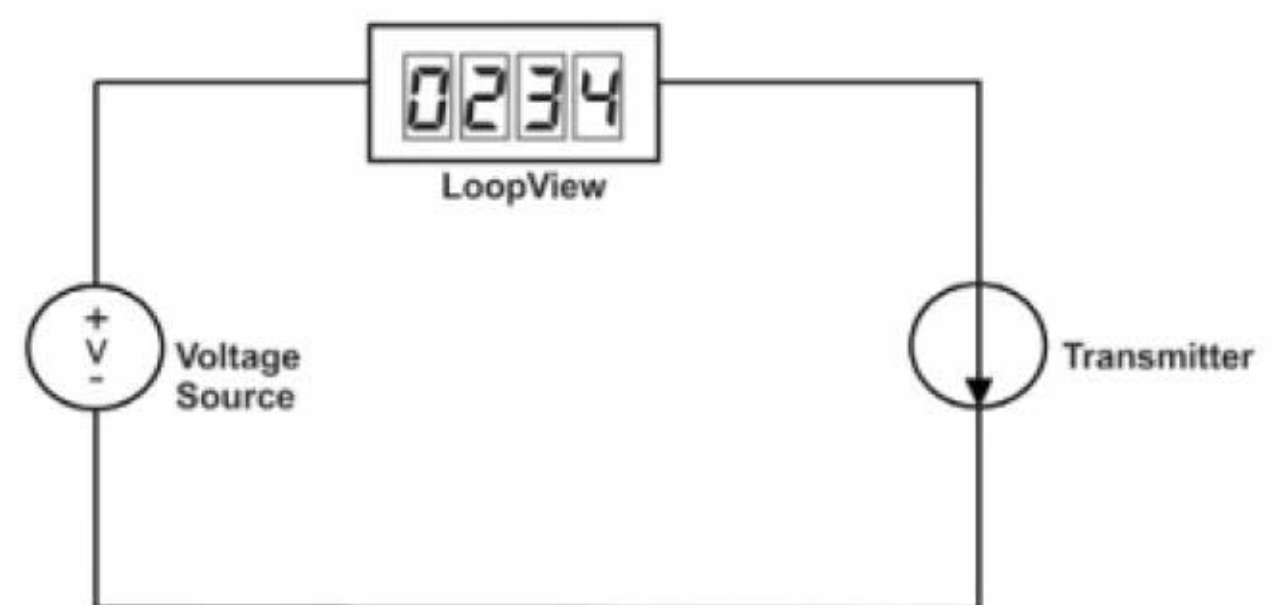
CONNECTION DIAGRAM

Fig. 02 - Connection diagram

RECOMMENDATIONS FOR THE INSTALLATION

Installation, operation, and maintenance must only be carried out by qualified personnel and in accordance with the information provided in this manual. Any deviation from these instructions will be the sole responsibility of the client.

Normal safety precautions should be taken to avoid the possibility of an accident occurring when operating under high pressure and/or high temperature conditions.

Do not connect the power supply until the entire installation is complete.
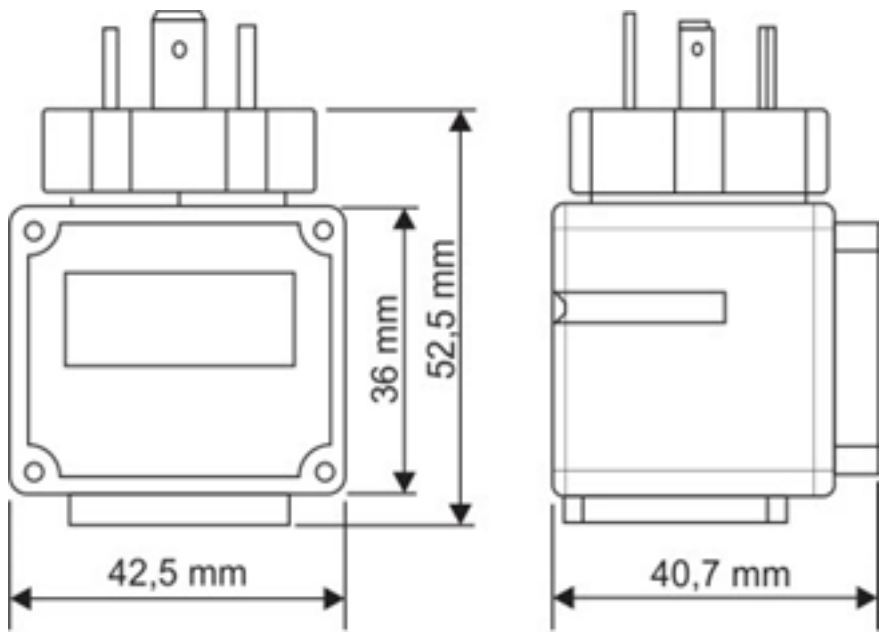
MECHANICAL INSTALLATION

Fig. 03 — Dimensions

OPERATION

The controller's front panel, with its parts, can be seen in the **Fig. 04.**
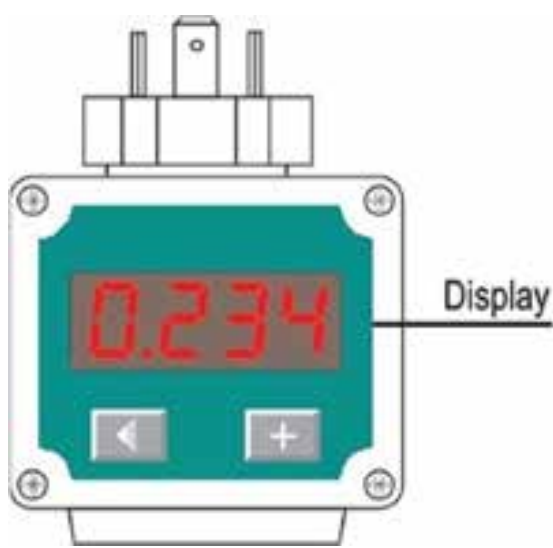

Fig. 04 - Indicator overview

Display : Shows the measured variable, the configuration parameters and their values / conditions

◁ **Decrement Key and** ⊞ **Increment Key** : Allow altering the values of the parameters and accessing the indicator operation and configuration cycles.

STARTUP

When the power is on, the indicator shows the value of the measured process variable **(PV)**.

This is the **Indication Screen.**

In order for the indicator to operate properly, its parameters need to be configured first The configuration consists of the calibration and definition of the programmable interval. The user must be aware of the importance of each parameter and for each one determine a valid condition.

The 2 cycles of parameters are

• Operation

• Configuration

When pressing both keys (◁ and ⊞) at the same time, the indicator shows a screen where the device password must be entered. After entering the password, the indicator will show the configuration cycle. To advance the parameters of this cycle, use the ⊞ key with short touches. To rewind parameters, use the ◁ key. To select the parameter, press both keys (⊞ and ◁) at the same time.

ACCESS PASSWORD

On the login screen, "0000" will show on the display, to enter a value, press the ◁ key, to change decimal places, press the ⊞ key, and to confirm the password, press both keys (◁ and ⊞)at the same time, the password is requested "66".

PARAMETERS

OPERATION CYCLE

PV	**PV Indication Screen**. Value of measured variable.

CONFIGURATION CYCLE

Ad-L AD-L	Statement of the minimum calibration Signal at the beginning of the range applied to the input (Low).
Ad-H AD-H	Statement of the maximum calibration signal at the end of the range applied at the input (High)
dS-L dS-L	Sets the lower value of the indication range (Low).
dS-H dS-H	Sets the upper value of the indication range (High).
-dP- -dp-	Sets the number of decimal places that will be shown on the display.
LINE Line	Parameter that allows the user to make corrections to the indicated PV value.
FILE Filter	Digital Input Filter - Used to improve measured signal (PV) stability. Adjustable between 0 and 9 At 0, it means minimum filter and at 9, maximum filter. The larger the filter, the slower the measured value response.
END END	Final parameter that, when pressing both keys (◁ and ⊞) at the same time, save the settings have been set by the user.

CALIBRATION

Following is the **LoopView** calibration procedure, which can be divided into two steps, the **unlocking** and the **calibration** steps:

Unlock :

1. Connect **LoopView** into a 4-20 mA signal simulator. Vary it and check if the indicator is powered up accordingly between 4 and 20 mA

2. Press ◁ and ⊞ keys simultaneously (from now on referred to as ◁ / ⊞ for 3 seconds and release them. Then parameter Lccy will be displayed. It means we've accessed Configuration Cycle

3. At Lccy parameter click ◁ / ⊞ in order to enter this parameter's adjustment. The current displayed value will be 0000. The ⊞ key increments values from 0 to 9 in a single digit. The ◁ key shifts to the next digit to be adjusted. Define value 0066 at it and press ◁ / ⊞ to confirm.

Calibration :

4. Parameter Ad-L will be displayed Click ◁ / ⊞ to enter this parameter. A random number is displayed.

5. Simulate 4 mA in its input

6. Single click ⊞ key. At this moment **LoopView** reads inputs current and determines it as its lower point (4 mA). Press ◁ / ⊞ to confirm and go back to Ad-L.

7. Press ⊞ key to shift to the next parameter, Ad-H.

8. Press ◁ / ⊞ to enter Ad-H. A random number will be displayed.

9. Simulate 20 mA in its input.

10. Click ⊞ key. At this moment **LoopView** reads inputs current and determines it as its superior point (20 mA). Press ◁ / ⊞ to confirm and go back to Ad-H. Calibration is finished here.

11. Press ⊞ key until parameter END be displayed.

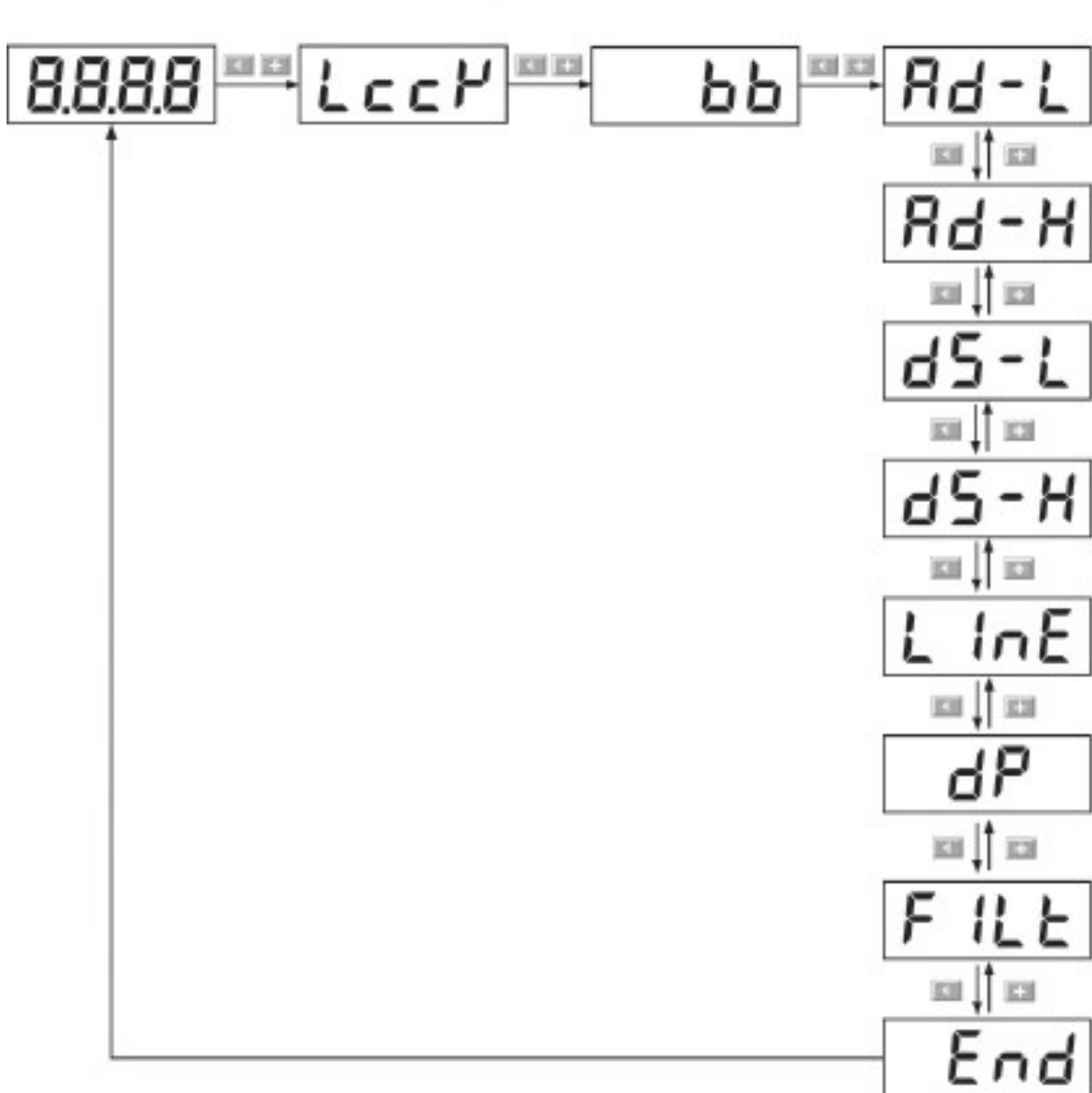12. Press ◁ / ⊞ to leave Configuration Cycle.

NAVIGATION LAYOUT

Fig. 05 - Navigation Layout

APPLICATIONS

Fig. 06 - Coupled to temperature sensor

Fig. 07 - Coupled to pressure sensor

SPECIFICATIONS

DIMENSIONS:..65×45×45mm

  Approximate Weight:..54g

POWER SUPPLY:...........................4-20 mA loop current

MAXIMUM LOOP CURRENT...............................60mA

ENVIROMENTAL CONDITIONS:

  Operating temperature:.............................40 to 85°C

  Temperature Drift:............................<0.003% per °C

INPUT:..4-20 mA

  Internal Resolution:...................65535 levels (16 bits)

  Display Resolution:............11998 levels (-1999 9999)

  Accuracy:...mA 0 5 % of span

VOLTAGE DROP...<2.5 V to 4mA

....< 3 V to 20 mA

ENCLOSURE:............................ABS (Polyurethane Gasket)

PROTECTION:..IP65, NEMA4X

CONNECTORS:....Connector to input form A (DINEN 175301403)

START UP OPERATION:....lmmediately after being energized.