

Signal Characterization is a versatile function available on the EJX series of transmitters. This function is used to compensate the output for non-linear applications. Such applications include tank strapping or flow measurement (or any non-linear application where the relationship between pressure input in % and desired output in % are known). For a measured pressure, a maximum of nine coordinates can be specified between 0 – 100%. These characterized values are applied to the 4 to 20mA output.



(See **Figure 1**)

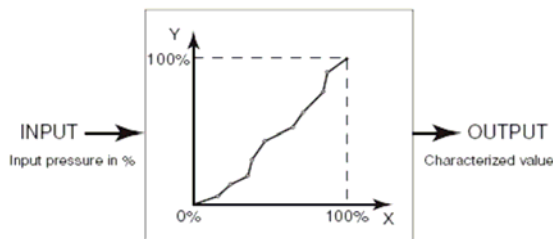


Figure 1

Section 1.0 Setting the Signal Characterizer

Using a Hart Communicator, setting the Signal Characterizer (S.C.) requires four basic steps:

1. S.C. set to *Disabled*
2. Set the number of coordinates
3. Set the coordinates
4. S.C. set to *Enabled*

Section 1.1 S.C. set to *Disabled*

The Signal Characterizer must be set to *Disabled* before the transmitter will accept the coordinates.

(See **Figure 4**)

Section 1.2 Set the number of coordinates

A minimum of 4 to maximum of 9 coordinates can be entered.

(See **Figure 2**)

Example: Set the number of coordinates on the line graph to 5.

1. Device setup
4. Detailed setup
2. Signal condition
S.C. menu
2. Num of points

1

EJX: Num of points 0	' 5'
5	[F4]
HELP DEL ESC ENTER	(ENTER)

Enter 5 and press ENTER (F4).

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2

EJX: S.C. menu 1 S.C. Disabled 2 Num of points 5 3 point setting 4 X Start 0.00 % 5 Y Start 0.00 %	[F2]
HELP SEND HOME	(SEND)

Press SEND (F2) to send the data to the transmitter, then check to confirm that [SEND] disappears.

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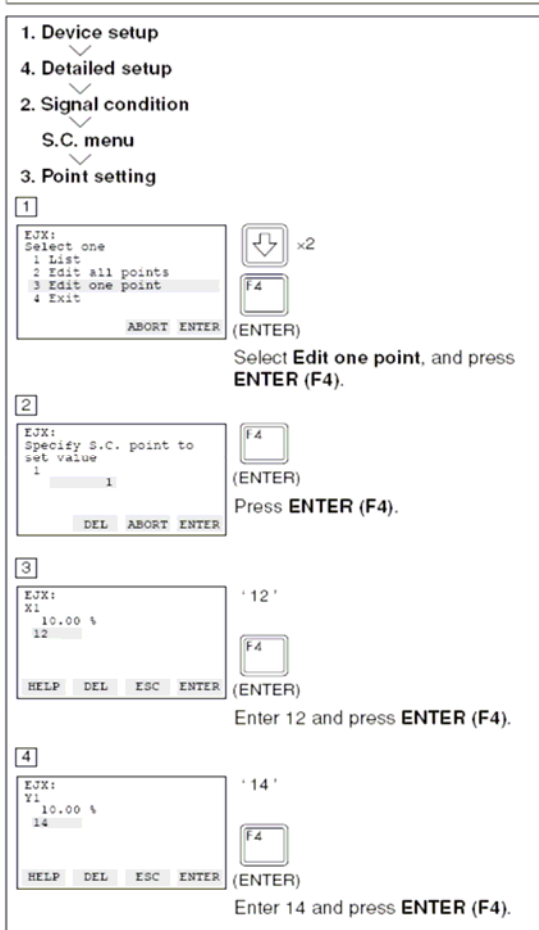
Figure 2

Section 1.3 Set the Coordinates

The coordinates are set as (X, Y) where X is the input % and Y is the output %. The specified coordinates of X and Y must be incremental as the input increases.

(See *Figure 3*)

Example: Set the first coordinates (X1, Y1) as (12, 14) in %.



1. Device setup
4. Detailed setup
2. Signal condition
S.C. menu
3. Point setting

1
EJX:
Select one
1 List
2 Edit all points
3 Edit one point
4 Exit
ABORT ENTER (ENTER)
Select **Edit one point**, and press **ENTER (F4)**.

2
EJX:
Specify S.C. point to set value
1 1
DEL ABORT ENTER (ENTER)
Press **ENTER (F4)**.

3
EJX:
X1
10.00 %
12
HELP DEL ESC ENTER (ENTER)
Enter 12 and press **ENTER (F4)**.

4
EJX:
Y1
10.00 %
14
HELP DEL ESC ENTER (ENTER)
Enter 14 and press **ENTER (F4)**.

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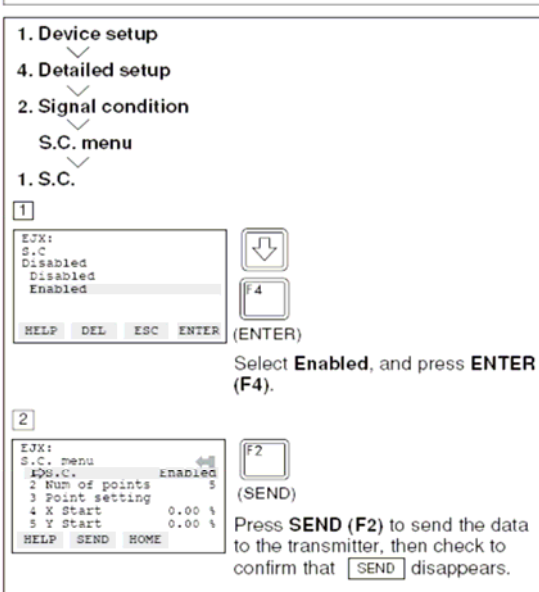
Figure 3

Section 1.4 S.C. set to Enabled

To apply the settings to the output, set the S.C. parameter to *Enabled*.

(See *Figure 4*)

Example: Set the signal characterizer to **Enabled**.



1. Device setup
4. Detailed setup
2. Signal condition
S.C. menu
1. S.C.

1
EJX:
S.C.
Disabled
Disabled
Enabled
HELP DEL ESC ENTER (ENTER)
Select **Enabled**, and press **ENTER (F4)**.

2
EJX:
S.C. menu
S.C. enabled
2 Num of points 5
3 Point setting
4 X Start 0.00 %
5 Y Start 0.00 %
HELP SEND HOME (SEND)
Press **SEND (F2)** to send the data to the transmitter, then check to confirm that **SEND** disappears.

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Figure 4



Important

When the S.C. is *Enabled*, if an “AL.60” code is displayed, the EJX transmitter has rejected the activation.

There are two reasons for the transmitter to reject the activation:

1. When the specified coordinates of X and Y are not incremental as the input increases.
2. When the output mode of the output signal is set as **Sq root** at the same time as the low cut mode is set to **Linear**.

Section 2.0 Settings when shipped

The S.C. parameter is set to *Disabled*.