

Instrumentation Interview Question and Answers

Can we use a control valve without positioner?

Control valve can not be without positioner. The purpose of the positioner is to control the control valve stroke so as to keep the valve in desired position. The positioner receives signal from the controller, and send the boosted signal to the actuator to reach the desired position as and when the valve reaches the desired position the positioner cuts the boosted signal to the actuator and keeps the position.

Why 4-20 mA signal is preferred over a 0-10V signal?

Generally in a transistor some amount of voltage is required for turning it on. This voltage is the cut in voltage. Up to this voltage there exists a nonlinearity in its characteristics. Beyond this cut in voltage the char. of transistor is linear. This nonlinear region lies between 0-4mA, beyond 4mA it is linear. This is why 4-20 mA range is used.

What is remote mount with MTA option? (In case of Dual Sensor Vortex Flowmeter, Rosemount has written in its Catalog drawings)?

Remote mount with MTA means MTA connector for mounting remote connection.

MTA is the Connector used for connection. Generally we call it MTA Connector.

There are many types of MTA connector such as MTA 100 connectors, MTA 156 connectors etc...

How to write the program for single push button by using Ladder diagram?

1. Create a Push button
2. Connect a Counter series to PB
3. Create a compare button
4. Initialize 1 at one end
5. Counter output in another
6. Connect the Coil which has to be energized
7. Initialize 2 at one end
8. Counter output in another
9. Connect the Coil which has to be reenergized.

Difference between DCS and PLC including data processing and architecture.

If we have more I/O's in digital signals than analogue signals normally we choose DCS....and vice versa

Re: Why we use 4 to 20 mA, (This is International Standard) instead of this can we use 4-16, or 4-24 or 3- 15 or any other range

Answer the 4mA zero is termed a "live zero".
 # 5 If 0mA was the zero point there would be no way of telling if the transducer was reading zero or in a fault condition eg. an open loop. with a 4mA zero an open loop would drive the indicator eg. a recorder into a minus figure (-25%). The 4 - 20mA scale is to give a calibration points for 0-25-50-75-100%. Because the start point is 4 the steps are 4mA.

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Richard Marks

Is This Answer Correct ?

9
 Yes ☒ ☐
☐ 0 No

Re: Why we use 4 to 20 mA, (This is International Standard) instead of this can we use 4-16, or 4-24 or 3- 15 or any other range

Answer First the question is why can't we use
 # 6 3~15mA or other range, here also we can check live zero and also we can go step current like 3,6,9,12,15(i.e 0%,25%,50%,75%,100%).ok The reason is the transmitter voltage

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Nagarajan.p

is 24Vdc , here we
can load max of 600 ohms, for this
voltage & load better
range is 4~20.
Why 4 ~ 20 is better since we can
convert easily 1~5Vdc by
put 250 ohms.All the controllers and
DCS , PLCs are operated
by the input of 1~5Vdc (external or
Internal conversion)

Is This Answer
Correct ?

24
Yes ☒ ☐
☐ 0 No

**Re: Why we use 4 to 20 mA, (This is International Standard) instaed
of this can we use 4-16, or 4-24 or 3- 15 or any other range**

Answer Answers 5 & 6 are totally correct..
[7](#) just adding another point.
20 mA as upper value is used to keep
electrical components
intrinsically safe at hazardous area.

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Samrat Kar

Is This Answer
Correct ?

3
Yes ☒ ☐
☐ 0 No

**Re: Why we use 4 to 20 mA, (This is International Standard) instaed
of this can we use 4-16, or 4-24 or 3- 15 or any other range**

Answer Answers 5, 6 & 7 are correct. just
[8](#) want 2 add that why cant
we use 3 mA current as lower value.
The reason is that there
are many small noise signals that can
be picked up by our
signal wire which has the potential of
providing upto 3 mA
current. So to be on the safe side to
distinguish between
our proper field signal and the noise
pick-ups we use 4 mA
as our lower value

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**Anup
Ramteke**

Is This Answer
Correct ?

4
Yes ☒ ☐
☐ 1 No

Re: Why we use 4 to 20 mA, (This is International Standard) instaed

of this can we use 4-16, or 4-24 or 3- 15 or any other range

Answer
9 ans. 5,6,7 & 8 r correct.only two points add.
1.in ancient time,niddle type galvanometers are used,only if we pass 4mA current it shows deflection.therefore 4mA.
2.if 21mA current will pass through our body,man can goes dead.therefore 20mA. & 4-20 mA can divided into 5 equal %.

Is This Answer Correct ?

1
Yes ☒
0 No ☐

Question what is the role of proportional in process control?

Question Submitted By :: Waris

I also faced this Question!!

Rank **Answer Posted By**

Re: what is the role of proportional in process control?

Answer
1 Normally In PID Controller Proportional gain and integral time is important parameters in Process control we are using several parameters so we maintain a pertucular level of the system proportional is used.

Is This Answer Correct ?

0
Yes ☐
2 No ☒

0 **Rajesh**

Re: what is the role of proportional in process control?

Answer
2 proportional control is used to linear increase(relationship) with the controlled variable and to the final control element

Is This Answer Correct ?

1
Yes ☐
1 No ☒

0 **Dinesh**

Re: what is the role of proportional in process control?

Answer
[3](#) To maintain one-to-one correspondence between error signal and manipulated signal.

Re: what is difference between 3 wire and 4 wire RTD sensor?

Answer
[3](#) Lead-wire resistance in two-wire measurements causes potentially large temperature measurement errors.

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Ravikant

Other types of resistance measurements include three-wire and four-wire resistance measurements. Four-wire measurements are preferred in temperature applications because they eliminate lead wire resistance from the measurement.

Is This Answer Correct ?

2
Yes ☒
0 No ☐

Re: what is difference between 3 wire and 4 wire RTD sensor?

Answer
[4](#) 3rd wire is used as compensation and if we use 4 wire RTD it eliminated more resistance as compared to 3 wire. 4 wire is more perfect

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Imran Aslam

Is This Answer Correct ?

2
Yes ☒
0 No ☐

Re: what is difference between 3 wire and 4 wire RTD sensor?

Answer
[5](#) 3 wire rtd sensor have a 1 positive (red) and 2 negative (white). whenever 3 wire rtd used for long distance that means 10 meter wire..that time wire resistance also increased. ($r = \rho l/a$). in 4 wire rtd sensor have a 2 positive (red) and 2 negative (white). 4 wire rtd used for long distance that time the red and red wire have short. so the resistance variation is equal.