Data Acquisition

Signal Conditioning

29,184 views May 20, 2018 3:35

https://www.youtube.com/watch?v=HSHJXXFigz8

Sensor Fundamentals Data Acquisition Basics and Terminology

2,980 views Nov 5, 2020 35:17 From Mouser

https://www.youtube.com/watch?v=Xc8dP0PdC_4

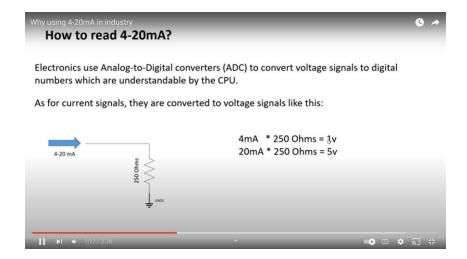
Learn from our partner and DAQ expert NI the fundamental data acquisition concepts and terminology, essential sensor operating principles, and considerations for building a data acquisition system.

REMEMBER: Resolution, Range, Rate

Why using 4-20mA in industry

107,334 views Apr 15, 2017 3:38

https://www.youtube.com/watch?v=ZWA3srlVwnw





Main reasons are:

- **1- Drop voltage:** very long cables have resistance and thus will make a voltage drop which will affect readings. However, currents do not have this.
- 2- Electromagnetic interference: currents are more robust against noise from EMI.
- 3- Can detect open circuit: if Ov (ground) is the minimum reading, you cannot determine if it is actually 0% reading or the wire is cut (open circuit). That is why 4mA is the minimum, thus 0mA will mean an open circuit.



Videos covering a wide range of practical embedded systems techniques.

ECE 376 Embedded Systems 32 videos1,015 viewsLast updated on Jul 29, 2022

https://www.youtube.com/playlist?list=PLAWu8xH2-DFsrrU5e5F7Z0P4Kw1736l04

Examples

ECE 376 00 Syllabus (Fa22) ECE 376.13 A2D Converters

PIC vs Arduino 17,415 viewsApr 23, 2020 30:14

https://www.youtube.com/watch?v=TdFsOoxbQq4

Shannon Nyquist Sampling Theorem 73,505 views Dec 11, 2020 17:18

https://www.youtube.com/watch?v=FcXZ28BX-xE