



November 2006

## Transmitters: 2, 3 or 4 Wires?

### Historical November



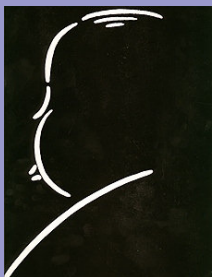
#### 1st November 1952

United States tests first Hydrogen Bomb on Eniwetok atoll in the Pacific.



#### 22nd November 1963

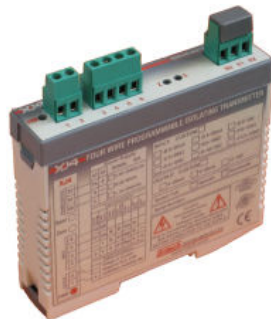
John Fitzgerald Kennedy, 35th President of the United States is assassinated in Dallas, Texas. He was 46 years old.



#### 30th November 1959

Production begins on Alfred Hitchcock's classic thriller *Psycho*

Electrical transmitters of old used to be available in only one guise: '4-wire' or powered. Two wires would be used to deliver power and two wires would be used to deliver the output signal. Both pairs would have a +ve and -ve for wiring purposes.



**XJ4: 4-Wire Input Powered Tx**

With a desire to reduce cabling, '3-wire' transmitters became popular for a short while. Using a common wire for both power to the transmitter and output signal, the 4th wire was eliminated.

Modern technology gave us the '2-wire' transmitter, where the transmitter output & power supply are combined on one pair of wires. Power is thus provided by the loop. Such transmitters are also known as 'loop powered'.

The majority of transmitters today are two wire units. These require no additional wiring to power supplies.

The disadvantage of '2-wire' units is that they are only able to provide a 4-20mA signal. If you need voltage outputs then you must use a '4-wire' unit.



**XJ2: 2-wire Loop Powered Tx**

Signal Transmitters are used for a variety of reasons. Most units have the dual function of offering signal conversion and also signal isolation.



**Bespoke: LPI-R-F RTD Tx**

If you have specific signal transmission requirements, (for example RTD to 4-20mA) then it may be advisable to get hold of bespoke transmitters. Although universal units can provide a very useful facility, the accuracy and precision of customized transmitters provides better control and signal characteristics.

## Find Your Level - With Nivelco

Knowing just how much is in a tank, hopper or vat may be critical. There are a host of systems on the market using all sorts of technology to measure levels. It's important to use the right technology for the right application.

**Vibrating fork / rod** switches operate by measuring changes in frequency. Solids or liquids in contact with such probes have a density different to that of ambient air. The affect alters the measured frequency providing an output.

**Use: Granules & powders**

**Float switches** offer an easy way to control levels between set points. Usually teamed up with at least one micro switch, they can provide simple contact outputs for control.

**Use: Fluids**



**Nivelco EchoTREK Ultrasonic**

**Capacitance probes** are able to provide a 4-20mA output due to the relative height of a medium along the probe.

**Use: Liquids, powders & granules**

**Ultrasonic level transmitters** offer a non-intrusive way to measure the level of a medium. This is a key advantage for many installations where there may be aggressive or sanitary products to measure.

**Use: Liquids**

Other methods of level control are available. Call us if you have an application you need help with.

Intech Instruments Ltd  
 59 Mandeville Street  
 Riccarton  
 Christchurch  
 New Zealand

Phone: +64 (3) 343 0646  
 Fax: +64 (3) 343 0649  
 E-mail: [sales@intech.co.nz](mailto:sales@intech.co.nz)  
[www.intech.co.nz](http://www.intech.co.nz)



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**For almost 25 years Intech Instruments have been operating throughout New Zealand, servicing a variety of industries. Our product range is made up of both our own high quality manufactured products plus a range of first class imported items.**

**Our core business is concerned with supervisory, monitoring and control – utilising hardware and software facilities to provide a host of solutions.**

**Based in Christchurch, where we have both a sales and service operation, Intech Instruments also have offices in Auckland and Hawkes Bay.**

**With a combination of industrial experiences and technical skills, Intech provide customers with the best solutions possible.**

**Intech Specials**

**Each month we try to highlight some products that may be useful to you at significantly reduced prices. Don't forget that our newsletters are archived on the internet. Be sure to check previous editions for other products we have promoted in the past at special prices.**

With so many hand held IR units on the market this is a great deal. The ***Eurotron Miniray*** is as good as you can buy. At just \$100 per unit, it isn't worth buying a cheap & cheerful alternative.



Eurotron Quality

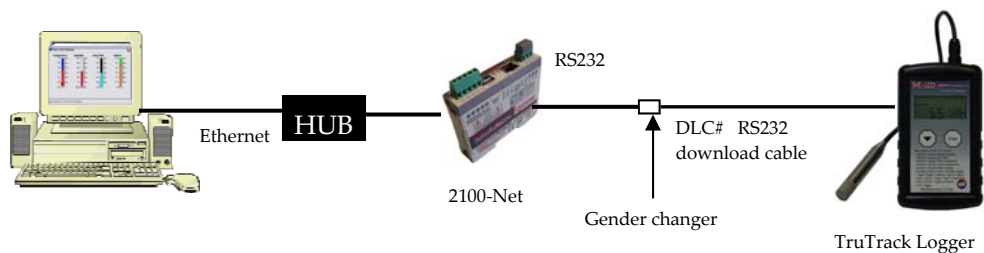
Temperature probes are an Intech specialty. We have in stock a number of 1st class units that may just suit your application ideally. A host of types are available. All sorts of sizes. Various prices.



Hot Stuff: Intech Probes

**USB, Ethernet, RS232 & Modem Connection For TruTrack loggers**

TruTrack loggers have operated for many years and are used for a variety of applications. Due to popular demand, the loggers can now connect through to a PC via a USB port using the new USB download cable. You are also able to connect across LAN or WAN Ethernet networks using the Intech 2100-Net converter. Distances are only limited by the extent of the network.



TruTrack loggers can also be accessed by GSM or Radio Modems. This has proven to be a very popular facility where remote monitoring is vital.

