Barton®

FCX
Series AII & AIIe

Electronic Transmitters

- Compact
- Cost Effective
- Reduced Cost of Ownership
- Ideal for:
  - Oil/Gas
  - Power
  - Chemical
  - Water/Waste Water
  - General Industrial
  - Food/Beverage

A single silicon crystal etched to exacting standards is at the core of Barton's latest generation of electronic transmitters. This micro capacitance sensor negates the effects of hysteresis and long term fatigue. Approved by various international regulatory agencies, the FCX AII and AIIe Series transmitters are intrinsically safe and explosion proof. From sealed sensing systems to high powered RTUs - for every application from natural gas to cryogenic liquids - the FCX measures, displays, alarms and outputs level, pressure and/or flow. Whether the requirement demands standard or high performance accuracy, the FCX provides years of trouble free service resulting in the ultimate control of both the process and long term maintenance costs.

- **FCX AII Series**
  - Premium performance
  - Gauge, absolute, differential pressure, flanged level, remote seal
  - Turndown to 100:1
  - HART compatible with optional Foundation Fieldbus, Profibus
  - Accuracy to ±0.07% of span
  - Stability to ±0.1% URL for 3 years
  - Response time to 40 mS
- **FCX AIIe Series**
  - Cost effective precision
  - Gauge pressure, differential pressure
  - Turndown of 30:1
  - HART compatible
  - Accuracy of ±0.1% of span
  - Stability of ±0.2% URL for 3 years

A closer look at the FCX AII and AIIe Series

Low Cost Ownership

Direct savings through:

- Interchangeable components
- Multiple stocking locations in the US, Canada and Europe
- Access to engineering specialists that can provide advice ranging from product applications to the specification of complete integrated measurement solutions

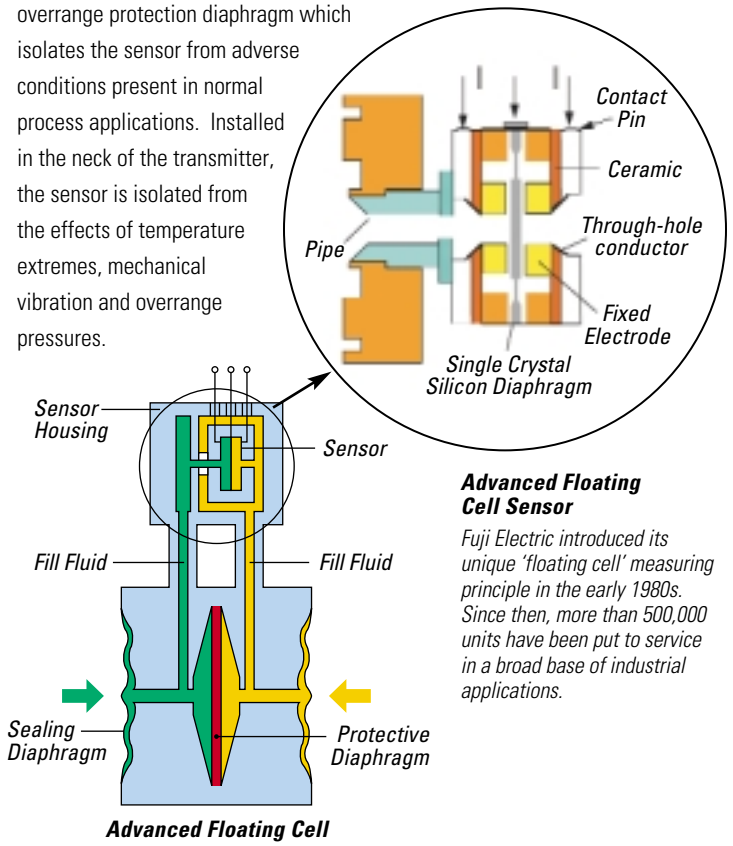
Fieldbus Compatible

The FCX AII series transmitter is well prepared to meet the requirements of the digital age. As option to the standard HART and Fuji compliant electronics, the AII can be supplied with digital electronics to support both IEC Foundation Fieldbus and Profibus specifications.

Existing AII transmitters in the field can be upgraded at an affordable cost through a simple electronics replacement. With appropriate electronics installed, Fieldbus or Profibus protocols are switch selectable.

Advanced Floating Cell Design

Barton's unique cell design incorporates an overrange protection diaphragm which isolates the sensor from adverse conditions present in normal process applications. Installed in the neck of the transmitter, the sensor is isolated from the effects of temperature extremes, mechanical vibration and overrange pressures.



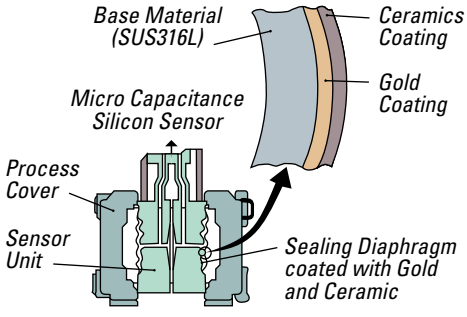
Advanced Floating Cell

Advanced Floating Cell Sensor

Fuji Electric introduced its unique 'floating cell' measuring principle in the early 1980s. Since then, more than 500,000 units have been put to service in a broad base of industrial applications.

Hydroseal Diaphragm

A unique 316L SS diaphragm coated with a layer of gold and a layer of ceramic eliminates Hydrogen penetration. The Hydroseal option for the AII series transmitter reduces penetration to 1/160th of 316 SS and 1/1600th of Hastelloy C-276.



Hydroseal Diaphragm

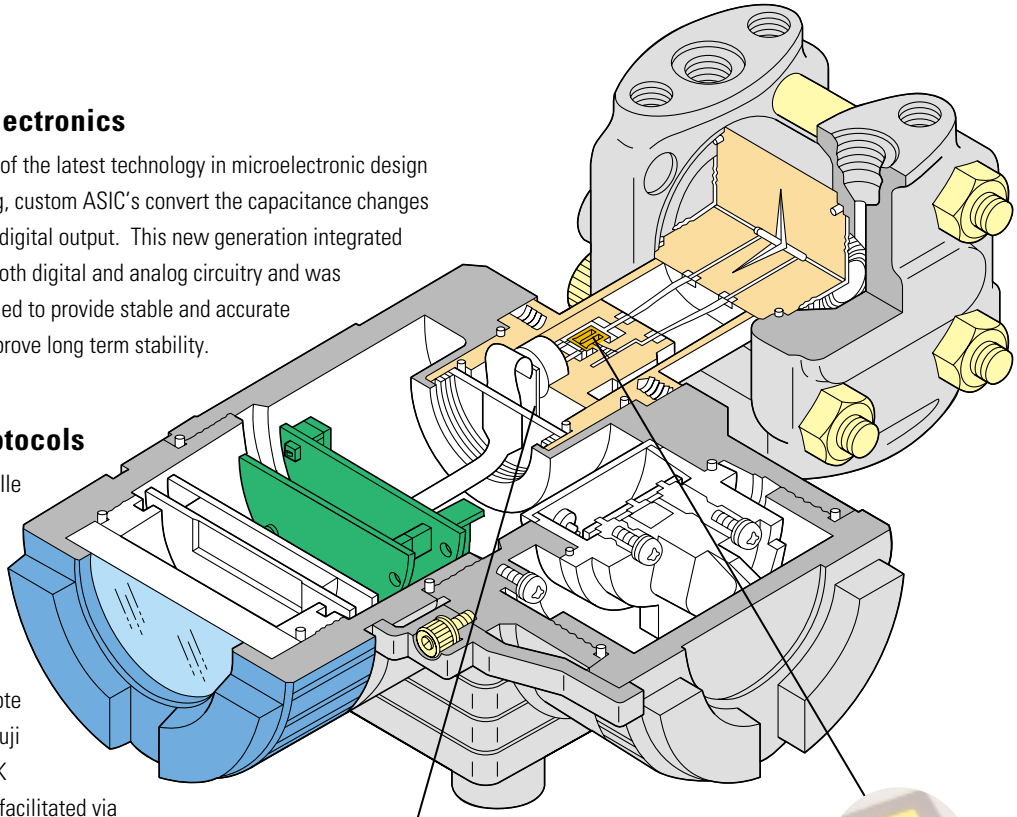
Programmable Linearization

In addition to supporting both linear and square root outputs, the AII and AIIe can output a current signal proportional to the volume of cylindrical tanks. Up to 14 level versus volume points can be entered to the memory of the transmitter's electronics.

...a cost effective, reliable, and high performance transmitter.

Enhanced Electronics

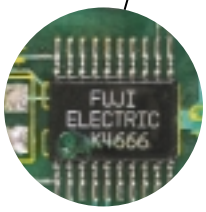
Taking advantage of the latest technology in microelectronic design and manufacturing, custom ASIC's convert the capacitance changes of the sensor to a digital output. This new generation integrated circuit combines both digital and analog circuitry and was specifically designed to provide stable and accurate conversions to improve long term stability.

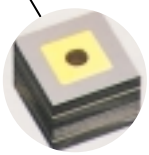


Multiple Protocols

Both the AII and AIIe are intelligent transmitters communicating in both HART (Highway Addressable Remote Transceiver) and Fuji protocols. Full FSK communication is facilitated via either a universal 275 or Fuji HHT handheld.

A simple electronics upgrade in the field converts the standard AII output to be compatible with both IEC Foundation Fieldbus and Profibus specifications.



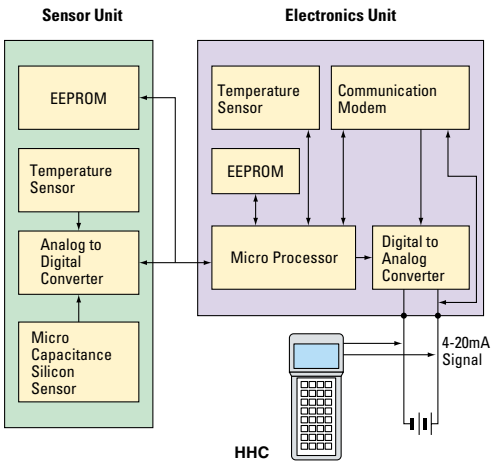


Micro Capacitance Silicon Sensor

A sensor etched from a single Silicon crystal is at the heart of every FCX transmitter. The highly elastic property of Silicon virtually eliminates hysteresis in a transducer that exhibits one quarter the fatigue of equivalent metal sensors. The single wafer construction technique results in repeatability of the manufacturing process and that translates directly to consistent, accurate and stable measurement performance. Hundreds of sensors are manufactured from each silicon wafer to ensure high yields, low manufacturing costs and practically no long term drift.

Fully Interchangeable

The transmitter electronics unit is fully interchangeable with any AII or AIIe series cell, irrespective of cell function or range. Configuration data is stored on separate EEPROMS, one in the sensor and the other in the transmitter electronics.



FCX AII Specifications

The FCX AII is a premium performance transmitter with a broad base of ranges and wetted materials including 316 SS, Hastelloy C276, Monel 400, and Tantalum. Intrinsically safe and explosion proof, the FCX AII can also be offered with a Hydroseal Diaphragm featuring excellent resistance to highly corrosive processes.

	Differential Pressure & Flow FKC			**Gauge Pressure** FKG			**Absolute Pressure** FKA			**Liquid Level** FKE		
Upper Range Limit	in. w.c. (psid)	mm w.c. (kPa)	mbar (bar)	psi	kPa (MPa)	bar	psi abs	kPa abs	bar abs	in. w.c. (psid)	kPa d	mbar d
Range: 1	4*	100	10	18	130	1.3	2.32*	16	0.16	125	32	320
2	24**	610	60	72	500	5	19***	130	1.3	520	130	1300
3	125	3175	320	435	3000	30	72	500	5	(72)	500	5000
4	520	(130)	(1.3)	1500	(10)	100	435	3000	30			
5	(72)	(500)	(5)	7000	(50)	500						
6	(435)	(3000)	(30)									

Safe Working Pressure	psi	kPa	bar	psi	mPa	bar	psi	kPa	bar	
	450	3200	32	145	1	10	72	500	5	
	1500	10000	100	215	1.5	15	72	500	5	Up to
	2300	16000	160	1300	9	90	215	1500	15	flange rating
	6000	42000	420	2175	15	150	1300	9000	90	
				10000	75	750				

Elevation/Suppression	–100% to +100% (zero plus span not to exceed URL)
Turn Down (Min. Span)	100 : 1 (1/100th of URL) * 10 : 1 (1/10th of URL) ** 60 : 1 (1/60th of URL) *** 80 : 1 (1/80th of URL)
Accuracy	± 0.07% of calibrated span for up to 10 : 1 turndown typical (see data sheets for further detail)
Sensor Temp Limit	–40° F to + 250° F (-40° C to + 120° C) for Silicone fill
Electronics Temp Limit	–40° F to + 185° F (-40° C to + 85° C)
Wetted Metallic Parts	316 (L) Stainless Steel, Hastelloy C276, Monel 400, Tantalum
Power Supply	11 – 45 VDC
Output Signal	4 – 20 mA
Comm./Protocol	FCX or HART Protocol IEC Foundation Fieldbus and Profibus (Optional)
Enclosure	IEC IP67 and NEMA 6/6P
Hazardous Locations	Intrinsically safe and/or flameproof (explosion proof) per CSA, FM, RIIS, ATEX
Options	Digital or analog indicator; lightning arrestor; stainless steel electronics housing; NACE specification; high temperature/high vacuum service; chlorine service; hydroseal diaphragm for corrosive service; tropicalization; material certification; process adapters

FCX AIIe Specifications

The AIIe series transmitter was designed to exceed the performance expectations of industrial process applications where economics is a key purchasing consideration. Offered in the most popular ranges and 316 stainless steel materials, the AIIe is an excellent choice for applications that require cost effective yet precision measurement.

	Differential Pressure & Flow FHC			**Gauge Pressure** FHG		
Upper Range Limit	in. w.c. (psid)	mm w.c. (kPad)	mbar (bar)	psi	kPa	bar
	125	3175	320	72	500	5
	520	13200	1300	435	3000	30
	(72)	(500)	(5)	1500	10000	100
Safe Working Pressure	psi	kPa	bar	psi	kPa	bar
	2300	16000	160	200	1500	15
				1300	9000	90
				2175	15000	150

Elevation/Suppression	–100% to +100% (zero plus span not to exceed URL)
Turn Down (Min. Span)	30 : 1 (1/30th of URL)
Accuracy	± 0.1% of calibrated span (up to 10:1 turndown) (see data sheets for further detail)
Sensor Temp Limit	–40° F to + 250° F (-40° C to + 120° C) for silicone fill
Electronics Temp Limit	–40° F to + 185° F (-40° C to + 85° C)
Wetted Metallic Parts	316 Stainless Steel, 316L Stainless Steel
Power Supply	11 – 45 VDC
Output Signal	4 – 20 mA
Comm./Protocol	FCX or HART Protocol
Enclosure	IEC IP67 and NEMA 6/6P
Hazardous Locations	Intrinsically safe and flameproof (explosion proof) per CSA, FM, RIIS, ATEX
Options	Digital or analog indicator; lightning arrestor; stainless steel electronics housing; NACE specification; degreasing; tropicalization; material certification; process adapters

NuFlo *Measurement Systems*

A NuFlo Technologies Company

North America:
1.800.654.3760
nuflotech@nuflotech.com

Singapore:
65.6737.0444
singapore@nuflotech.com

Bognor Regis, UK:
44.1243.826741
uk@nuflotech.com

USA: Houston, TX • Corpus Christi, TX • Longview, TX • Odessa, TX • Duncan, OK
Shreveport, LA • Houma, LA • Lafayette, LA • Laurel, MS • Bakersfield, CA
Saginaw, MI • Casper, WY • Broomfield, CO • Dallas, TX • Tulsa, OK

Canada: Calgary, AB • Edmonton, AB

International: Jakarta, Indonesia • Aberdeen, Scotland • Bognor Regis, UK
Dubai, UAE • Hassi Messaoud, Algeria • Singapore

www.nuflotech.com • HOUSTON HEAD OFFICE: 281.582.9500

For representation in your area:

Document NF 00032 02 0504