

## Model 1151/3051LT Flange Level Transmitter



STONG M&C's 3051(&1151) LT flange Level transmitter provides a kind of reliable measuring way. It is used for measuring level, density of liquid and converts the value into current signal output or digital protocol output. The pressures are directly applied to the isolating diaphragm that provide isolation and resistance against process fluid corrosion. The relationship between the level and pressure is:

$$P=0.0098\rho L$$

P=Pressure;  $\rho$ (g/cm<sup>3</sup>)=Density; L=Level

Being microprocessor based, the electronic circuit is extremely versatile and accurate.

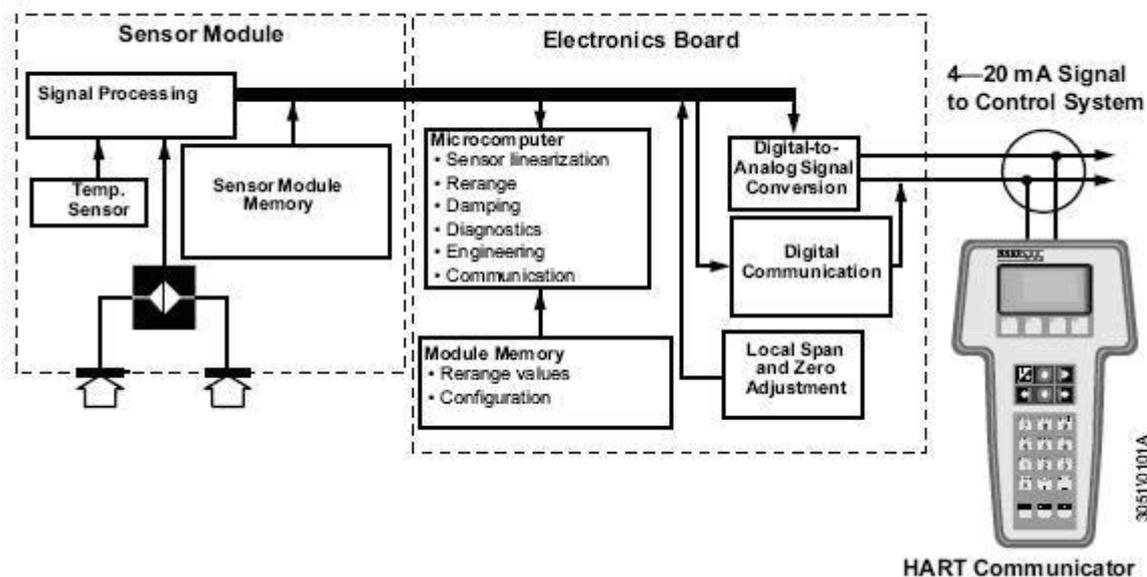
Combined with the sensor precision, it provides the high accuracy and range ability.

Transmitter performance is improved by continuous monitoring of the sensor temperature and corresponding corrections. A local display permits easy reading and writing of data.

The Model 3051 utilizes capacitance sensor technology for pressure measuring. The major components of the Model 3051 are the sensor module and the electronics housing. The sensor module contains the oil filled sensor system (isolating diaphragms, oil fill system, sensor and mounting flange) and the sensor electronics. The sensor electronics are installed within the sensor module and include a temperature sensor (RTD), a memory module, and the capacitance to digital signal converter (C/D converter). The electrical signals from the sensor module are transmitted to the output electronics in the electronics housing. The electronics housing contains the output electronics board (microprocessor, memory module, digital to analog signal converter or D/A converter), the local zero and span buttons, and the terminal block.

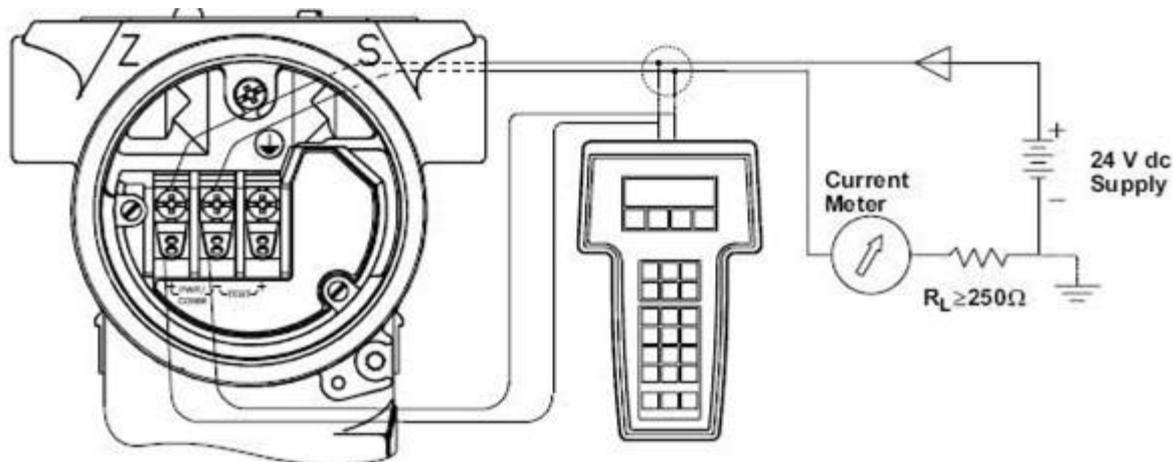
For the Model 3051LT design pressure is applied to the isolating diaphragm which is welded on the flange. Flat flange and insert flange are available. The sizes of the flange can be customized according to use's requirements. The material of diaphragm can be optional for different kinds of corrosive liquid as well.

Figure 1-1. Block diagram of operation



## WIRING DIAGRAMS

Connect the bench equipment as shown in Figure, and turn on the HART-based communicator by pressing the ON/OFF key. The communicator will search for a HART-compatible device and will indicate when the connection is made. If the communicator fails to connect, it will indicate that no device was found.



## TECHNICAL SPECIFICATIONS

Measuring object: liquid, gas and steam

Measuring range: 0~0.1kPa to 0~40MPa

Output signal: 4~20mA DC+HART protocol

Power supply: 12~45V DC, generally 24V DC

Range and null point: adjustable

Humidity: relative humidity 5~95%

Precision: 0.25%FS

Converter housing: Low copper cast aluminum alloy with Polyurethane paint

Fill Fluid: Silicon / Fluorine Oil

Process Connections: 1/2NPT, 1/4NPT

Protection Class: IP65

Maximum positive shift is 500% of minimum adjusting span; maximum negative shift is 600% of minimum adjusting span.

Mounting : Flange

Material:

Flange : Stainless Steel

Drains/Vents: Stainless Steel 316/Monel / Hastelloy

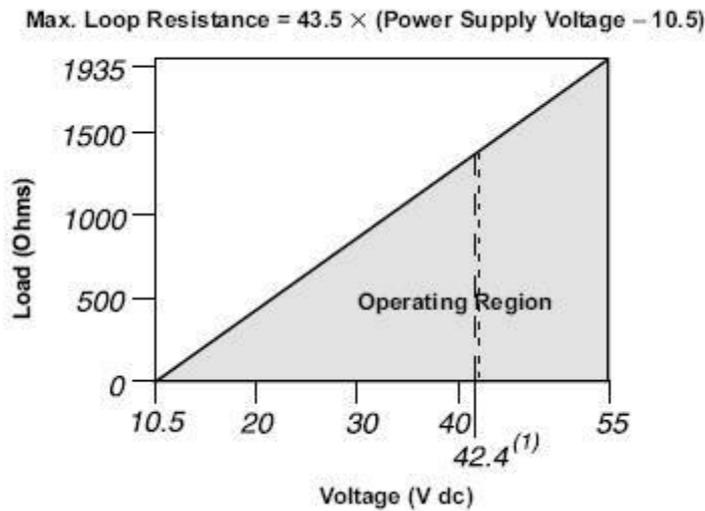
Diagrams: Stainless Steel 316/Monel /Hastelloy C/ Tantalum

Wetted O-Ring: Viton/ Buna-N

Seal O-Ring: Viton/ Buna-N

Bolts & Nuts: Carbon Steel/Stainless Steel316

**POWER SUPPLY LOAD LIMITATIONS, 4–20 MA TRANSMITTERS**



**ORDERING CODES**

1151/3051LT	Flange Level Transmitter			
	Measuring Range			
	3	0-1.3~7.5KPa		
	4	0-4-40KPa		
	5	0-40~200KPa		
	6	0-0.16KPa~1MPa		
	Signal Output			
	E	4-20mA		
	S	Smart 4-20mA+HART Protocol		
	Size of Flange(Flat and Insert), Material of Diaphragm on Flange			
		Nominal Diameter(mm)	Length of Insert Tube (mm)	Material of Diaphragm on Flange
	A0	3" 80	Flat Flange	316LSST
	A2	3" 80	50	316LSST
	A4	3" 80	100	316LSST
A6	3" 80	150	316LSST	
B0	4" 100	Flat Flange	316LSST	
B2	4" 100	50	316LSST	

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B4	4" 100	100	316LSST	
B6	4" 100	150	316LSST	
C0	3" 80	Flat Flange	Haste alloy C-276	
C2	3" 80	50	Haste alloy C-276	
C4	3" 80	100	Haste alloy C-276	
C6	3" 80	150	Haste alloy C-276	
D0	4" 100	Flat Flange	Haste alloy C-276	
D2	4" 100	50	Haste alloy C-276	
D4	4" 100	100	Haste alloy C-276	
D6	4" 100	150	Haste alloy C-276	
E0	3" 80	Flat Flange	Tantalum	
F0	4" 100	Flat Flange	Tantalum	
Specification of Flange				
A	3" 150lb			
B	4" 150lb			
C	3" 300lb			
D	4" 300lb			
Material				
	Flange /Adaptor	Drains/Vents	Diagrams	Fill Fluid
22	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Silicon Oil
23	Stainless Steel 316	Stainless Steel 316	Haste alloy	
24	Stainless Steel 316	Stainless Steel 316	Monel	
25	Stainless Steel 316	Stainless Steel 316	Tantalum	
33	Haste alloy	Haste alloy	Haste alloy	
35	Haste alloy	Haste alloy	Tantalum	
Optional				
	M1	0-100% Indicator Meter		
	M3	3 1/2 LCD Meter		
	M4	Smart Meter		