Rosemount™ 3051 Pressure Transmitter with 4–20 mA HART®

Use this sheet for all 3051C, 3051L, and 3051CFx products with Enhanced Software (Option RK).

BOLD = Required value
★= Default

○ Select only one of the items provided
☐ One or more of the listed items can be selected

Customer information

Customer: _____   Contact name: _____

Phone no:_____   Fax no./email: _____

P.O./reference no.:_____   P.O. line item: _____

Quote no.:_____   Model no.: _____

Customer sign-off:_____

Tagging

Hardware tag: _____ (56 characters)

Software tag: _____ (8 characters)

Long software tag: _____ (32 characters)

Output information

Pressure units:[1]					
inH_2O at 68 °F★	ftH_2O at 68 °F	inHg at 0 °C	Atm	MPa	g/cm^2
inH_2O at 4 °C	mmH_2O at 4 °C	mmHg at 0 °C	Torr	Bar	kg/cm^2
inH_2O at 60 °F	mmH_2O at 68 °C	cmHg at 0 °C	Pa	mBar	kg/m^2
ftH_2O at 4 °C	cmH_2O at 4 °C	mHg at 0 °C	hPa		lb/ft^2
ftH_2O at 60 °F	mH_2O at 4 °C	Psi	kPa		

Transfer function: Linear★   Square Root

Range points: 4 mA =_____ (0★)   20 mA = _____ (URL★)

1. Default values may be different outside the U.S.A. Consult an Emerson Representative.

Note
Custom configuration information below this note requires C1 option code.

EMERSON

Transmitter information

Descriptor: _____ (16 characters)

Message: _____ (32 characters)

Date: _____ (date of calibration★)

Output information

Sensor Temperature units: °C★   °F   Damping[1] (0-60 sec): _____ (0.4 sec.)

1. For Range 0 default damping value is 3.2 seconds.

Display Parameters

Pressure★	Percent of Range	Level	Volume
Flow rate	Totalized Flow	Alarm Switch State[2]	Security Status[2]
Review parameters at startup[1]	Hart Long Tag[2]	Sensor Temperature	

1. LCD Display with Local Operator Interface (M4 option) or LCD Display (M5 Option) Only.

2. Graphical LCD Display (M6 Option).

Graphical LCD Display Settings[1]

Language Selection		Backlight	GP/AP Unit Label	Decimal Separator	Bluetooth[2]
English★	Italian	On★	Disable★	Period★	Enable★
French	Portuguese	Off	Enable	Comma	Disable
German	Chinese				
Spanish	Russian				

1. Graphical LCD Display (M6 Option) Only.

2. Bluetooth Configuration and Maintenance (BLE Option) Only.

Process variable output assignments

Primary Variable:	Pressure★	Flow Rate	Totalized Flow	Level	Volume	
Secondary Variable:	Pressure	Flow Rate	Totalized Flow	Level	Volume	Sensor Module Temperature★
Tertiary Variable:	Pressure	Flow Rate	Totalized Flow	Level	Volume	Sensor Module Temperature★

Security information

Hardware Security Switch:	Enable	Disabled★	Configuration Buttons[1]:	Enable★	Disabled
Local Operator Interface Password[2]:	Enable	Disabled★	Software Security:	Enable	Disabled★
Password (4 digits)[2]: _____					

1. Requires Quick Service Buttons (option D1), Analog Zero and Span (option D4), Digital Zero Trim (option DZ), or LCD with Local Operator Interface (Option M4).

2. Requires LCD with Local Operator Interface (M4 Option).

Custom Alarm and Saturation Signal Levels

Alarm: Values (mA) the transmitter outputs if it detects a gross malfunction condition.
Saturation: Values (mA) the transmitter outputs if applied pressure goes outside the 4-20 mA range values.

Alarm and Saturation levels are defined by option codes:	Alarm Value:	Saturation value:
No option = Standard, High	21.75 mA	= 20.80 mA
CT = Standard, Low	3.725 mA	= 3.90 mA
C4 = NAMUR, High	22.50 mA	= 20.50 mA
CN = NAMUR, Low	3.575 mA	= 3.80 mA
CR = Custom, High	Enter Value (20.20 to 23.00) _____ (mA)[1]	(20.10 to 22.90) _____ (mA)
CS = Custom, Low	Enter Value (3.57 to 3.80) _____ (mA)	(3.67 to 3.90) _____ (mA)[1]

1. High alarm must be 0.1 mA greater than high saturation value, and low saturation must be 0.1 mA greater than low alarm value.

Process Alert 1

Units of measure will automatically be set to match the previous settings for the Monitored Device Variable. Pressure along with any of the inferred process variable alerts will be limited to the range of the transmitter. Temperature alerts are limited to -40 to 185 °F (-40 to 85 °C) with a minimum 9 °F (5 °C) difference required between low and high alert.

Monitored Device Variable:

Pressure★   Flow   Rate   Totalized Flow   Level   Volume   Sensor Module Temperature

Alert Name _____ (14 Characters)

Activation Trigger: Above High Side   Below Low Side   Inside Window   Outside Window

Process alert set points define the boundaries for a designated alert window. Alerts can be set to trigger with respect to the alert window. Above the high side alert only requires a High Alert set point and below the low side only requires a Low Alert set point. Both set points are required for inside or outside window triggers.

High Alert Value _____   Low Alert Value _____

Alert values are limited to the range of the transmitter and will have units of measure that are defined by the selected Monitored Device Variable. High alert must be greater than alert.

Notification Mode: Analog Output Alarm   HART Status Alert   Disable★

Sporadic Alert Reduction: None★   Time Delay _____ seconds   Deadband _____

Sporadic Alert Reduction Methods can be used to introduce a buffer in either time (via Time Delay 30 s maximum) or measured process variable (via Deadband) to create a buffer between the process alert limit and alert deactivation. Deadband units of measure will automatically be set to match the previous settings for the Monitored Device Variable.

Process Alert 2

Units of measure will automatically be set to match the previous settings for the Monitored Device Variable. Pressure along with any of the inferred process variable alerts will be limited to the range of the transmitter. Temperature alerts are limited to -40 to 185 °F (-40 to 85 °C) with a minimum 9 °F (5 °C) difference required between low and high alert.

Monitored Device Variable:

Pressure   Flow   Rate   Totalized Flow   Level   Volume   Sensor Module Temperature★

Alert Name _____ (14 Characters)

Activation Trigger: Above High Side   Below Low Side   Inside Window   Outside Window

Process alert set points define the boundaries for a designated alert window. Alerts can be set to trigger with respect to the alert window. Above the high side alert only requires a High Alert set point and below the low side only requires a Low Alert set point. Both set points are required for inside or outside window triggers.

High Alert Value _____   Low Alert Value _____

Alert values are limited to the range of the transmitter and will have units of measure that are defined by the selected Monitored Device Variable. High alert must be greater than alert.

Notification Mode: Analog Output Alarm   HART Status Alert   Disable★

Sporadic Alert Reduction: None★   Time Delay _____ seconds   Deadband _____

Sporadic Alert Reduction Methods can be used to introduce a buffer in either time (via Time Delay 30 s maximum) or measured process variable (via Deadband) to create a buffer between the process alert limit and alert deactivation. Deadband units of measure will automatically be set to match the previous settings for the Monitored Device Variable.

Application Specific Configuration

Application Specific Configuration is used to translate the pressure measurement to either a flow rates output or to a level output. Provide configuration details for any variable that will be displayed or set as an output variable. Flow rate configuration is required to support flow totalizer operation and level configuration is required to support volume operation.

Flow Rate

      Flow rate units _____ (6 characters max)

      Pressure at Flow Rate: _____ (Pressure Units)

      Entered Flow Rate: _____ (Flow Rate Units)

      Pressure Cut-off: _____ (Pressure Units)

      Pressure Cut-in: _____ (Pressure Units)

          If the measured pressure is less than the cut-off value, the device will calculate zero flow.
          If the measured pressure is greater that the cut-in value, the device will begin measuring the flow rate.

    Range Values (required if flow rate is set to primary variable)

      Lower Range Value (4 mA) _____ (Flow Rate Units)   Upper Range Value (20 mA) _____ (Flow Rate Units)

Flow Totalizer (flow rate section must be completed)

      Totalizer Mode: Totalizing   Stopped★

      Direction: Forward Flow Only★   Reverse Flow Only   Gross (Forward + Reverse)   Net (Forward - Reverse)

      Totalizer Units: _____ (6 characters max, this value should match the user defined flow units)

      Flow Unit of Time   Seconds★   Minutes   Hours   Days (Unit of time associated with the flow rate)

      Unit Conversion Factor _____

          To totalize in the same units as flow, enter a value of 1. Example: if the flow unit is "lb/sec" and the totalizer unit is "lbs", enter 1. To totalize in a different unit than flow, take the flow unit dividend by the desired totalizer unit and enter the result in the Unit Conversion Factor box. Example: If flow unit is "gallons/sec" and the totalize unit is "thousands of gallons", enter 0.001 (0.001=1 gallon/100 gallons).

    Range Values (required if totalized flow is set to primary variable)

      Lower Range Value (4 mA) _____ (Totalizer Units)   Upper Range Value (20 mA) _____ (Totalizer Units)

Application Specific Configuration

Level

Level Units:	Feet	Inches★	Meters	Centimeters	Milimeters

Maximum Level: _____ (Level Units)

Pressure at Maximum Level: _____ (Pressure Units)

Minimum Level: _____ (Level Units)

Pressure at Minimum Level: _____ (Pressure Units)

Range Values (required if Level is set to primary variable)

Lower Range Value (4 mA) _____ (Level Units)   Upper Range Value (20 mA) _____ (Level Units)

Volume (Level section and strapping table must be completed)

Volume units:	Gallons	Imperial gallons	Barrels	Cubic yards	Cubic feet	Cubic inches★
	Liters	Cubic meters			

Strapping table

Level and volume units of measure for the values entered below are defined in the level and volume sections above.

Entries must be greater than 0; monotonic with increasing values for both level and volume.

A minimum of 2 rows of data is required in the strapping table.

Factory configuration is limited to 10 points, the device can be configured with up to 50 points in the field.

Strapping Point	Level	Volume
0	_____	_____
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____

Range values (required if volume is set to primary variable)

Lower Range Value (4 mA) _____ (Volume Units)   Upper Range Value (20 mA) _____ (Volume Units)

For more information: **Emerson.com**

ROSEMOUNT™

EMERSON™