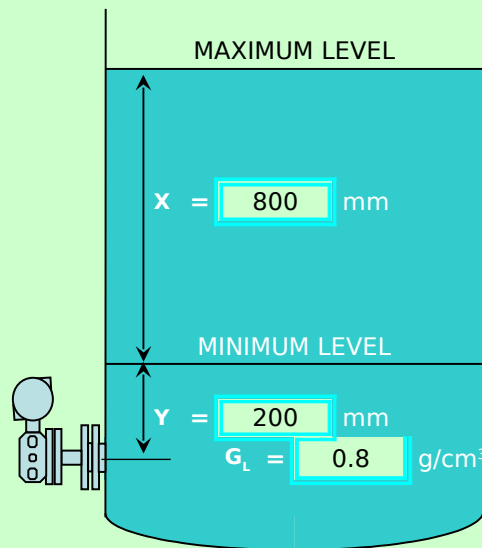


TYPICAL LIQUID LEVEL INSTALLATIONS

Transmitter Connected to Open Tank

Calibrated Range = 160 to 800 mmH₂O

Input Data Entry



Calculation Result

$$\text{Span} = (X) \times (G_L)$$

640 = 800 × 0.8

$$H_{W, \text{MIN}} = (Y) \times (G_L)$$

160 = 200 × 0.8

$$H_{W, \text{MAX}} = (X) + (Y) \times (G_L)$$

800 = 800 + 200 × 0.8

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|---------------------|---------------|
| | mm H ₂ O | mA |
| 0 | 160.00 | 4.00 |
| 25 | 320.00 | 8.00 |
| 50 | 480.00 | 12.00 |
| 75 | 640.00 | 16.00 |
| 100 | 800.00 | 20.00 |

Notes

H_w = Equivalent Head of Water

G_L = Specific gravity of tank liquid

$H_{w, \text{MIN}}$ = H_w at minimum liquid level

$H_{w, \text{MAX}}$ = H_w at maximum liquid level

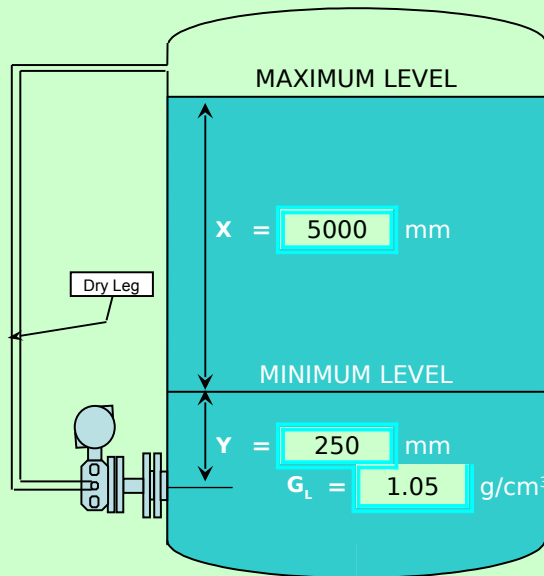


TYPICAL LIQUID LEVEL INSTALLATIONS

Transmitter Connected to Closed Tank with Dry Leg

Calibrated Range = 262.5 to 5512.5 mmH₂O

Input Data Entry



Calculation Result

$$\text{Span} = (X) \times (G_L)$$

5250 = 5000 × 1.05

$$H_{W, \text{MIN}} = (Y) \times (G_L)$$

262.5 = 250 × 1.05

$$H_{W, \text{MAX}} = (X) + (Y) \times (G_L)$$

5512.5 = 5000 + 250 × 1.05

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|---------------------|---------------|
| | mm H ₂ O | mA |
| 0 | 262.50 | 4.00 |
| 25 | 1575.00 | 8.00 |
| 50 | 2887.50 | 12.00 |
| 75 | 4200.00 | 16.00 |
| 100 | 5512.50 | 20.00 |

Notes

H_w = Equivalent Head of Water

G_L = Specific gravity of tank liquid

$H_{w, \text{MIN}}$ = H_w at minimum liquid level

$H_{w, \text{MAX}}$ = H_w at maximum liquid level

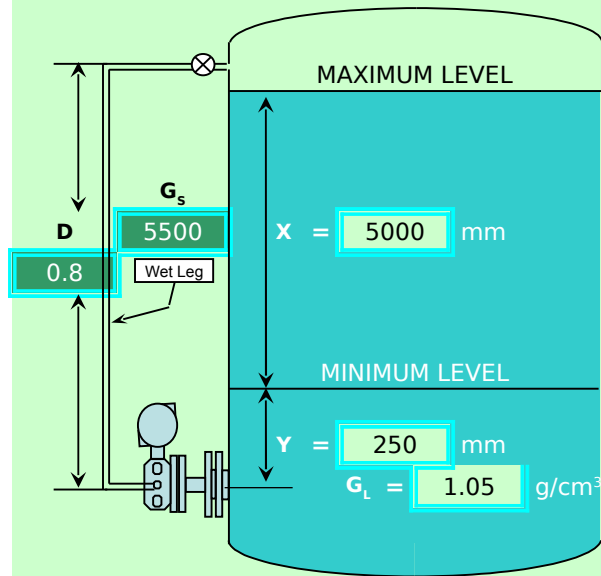


TYPICAL LIQUID LEVEL INSTALLATIONS

Transmitter Connected to Closed Tank with Wet Leg

Calibrated Range = **-4137.5** to **1112.5** mmH₂O

Input Data Entry



Calculation Result

$$\text{Span} = (X) \times (G_L)$$

5250 5000 1.05

$$H_{W, \text{MIN}} = Y \times (G_L) - D \times (G_S)$$

-4137.5 250 1.05 0.8 5500

$$H_{W, \text{MAX}} = (X + Y) \times (G_L) - D \times (G_S)$$

1112.5 5000 250 1.05 0.8 5500

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|---------------------|---------------|
| | mm H ₂ O | mA |
| 0 | -4137.50 | 4.00 |
| 25 | -2825.00 | 8.00 |
| 50 | -1512.50 | 12.00 |
| 75 | -200.00 | 16.00 |
| 100 | 1112.50 | 20.00 |

Notes

H_W = Equivalent Head of Water

$H_{W, \text{MIN}}$ = H_W at minimum liquid level

$H_{W, \text{MAX}}$ = H_W at maximum liquid level

D = Height of wet leg

G_L = Specific gravity of tank liquid

G_S = Specific gravity of wet leg liquid

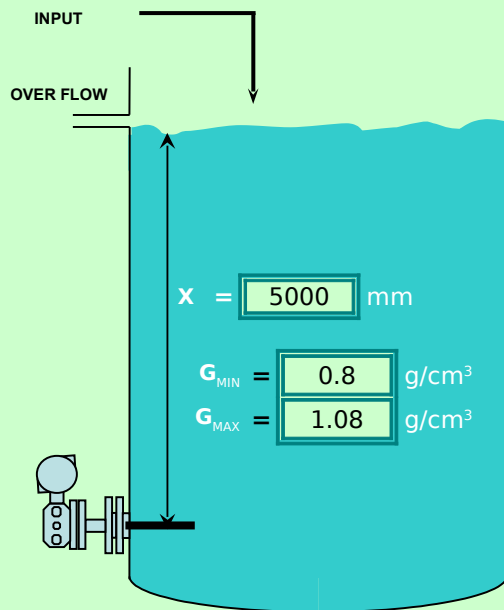


TYPICAL LIQUID DENSITY INSTALLATIONS

Transmitter Connected to Open Tank With Constant Level

Calibrated Range = 4000.0 to 5400.0 mmH₂O

Input Data Entry



Calculation Result

$$\text{Span} = (X) \times (G_{MAX} - G_{MIN})$$

1400 = 5000 × (1.08 - 0.8)

$$H_{W, MIN} = X \times G_{MIN}$$

4000 = 5000 × 0.8

$$H_{W, MAX} = X \times G_{MAX}$$

5400 = 5000 × 1.08

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|---------------------|---------------|
| | mm H ₂ O | mA |
| 0 | 4000.00 | 4.00 |
| 25 | 4350.00 | 8.00 |
| 50 | 4700.00 | 12.00 |
| 75 | 5050.00 | 16.00 |
| 100 | 5400.00 | 20.00 |

Notes

H_w = Equivalent Head of Water

$H_{w, MIN}$ = H_w at minimum density

$H_{w, MAX}$ = H_w at maximum density

G_{MIN} = Minimum Specific gravity of tank liquid

G_{MAX} = Maximum Specific gravity of tank liquid

G_s = Specific gravity of wet leg liquid

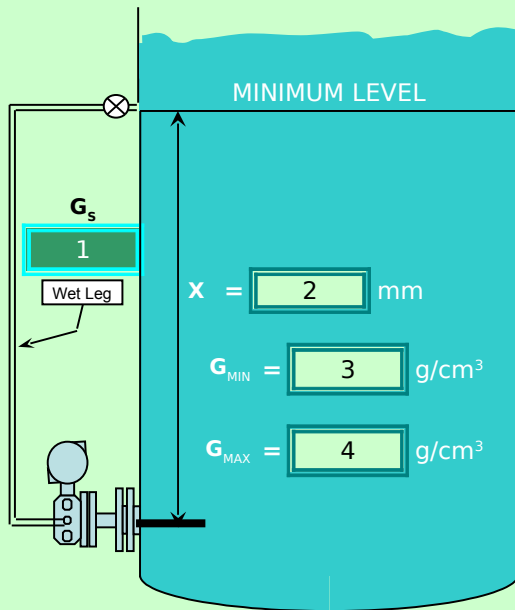


TYPICAL LIQUID DENSITY INSTALLATIONS

Transmitter Connected to Open Tank With Varying Level

Calibrated Range = 4.0 to 6.0 mmH₂O

Input Data



Calculation Result

$$\text{Span} = (X) \times (G_{\text{MAX}} - G_{\text{MIN}})$$

2 = 2 × (4 - 3)

$$H_{W, \text{MIN}} = X \times (G_{\text{MIN}} - G_s)$$

4 = 2 × (3 - 1)

$$H_{W, \text{MAX}} = X \times (G_{\text{MAX}} - G_s)$$

6 = 2 × (4 - 1)

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|---------------------|---------------|
| | mm H ₂ O | mA |
| 0 | 4.00 | 4.00 |
| 25 | 4.50 | 8.00 |
| 50 | 5.00 | 12.00 |
| 75 | 5.50 | 16.00 |
| 100 | 6.00 | 20.00 |

Notes

H_w = Equivalent Head of Water

H_{w, MIN} = H_w at minimum density

H_{w, MAX} = H_w at maximum density

G_{MIN} = Minimum Specific gravity of tank liquid

G_{MAX} = Maximum Specific gravity of tank liquid

G_s = Specific gravity of wet leg liquid

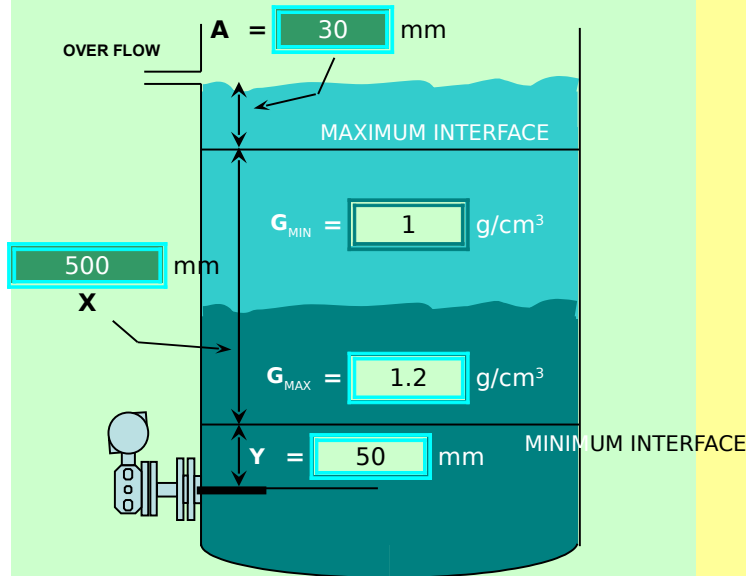
TYPICAL LIQUID INTERFACE LEVEL INSTALLATIONS

Transmitter Connected to Open Tank With Constan Overflow

Calibrated Range = 590.0 to 690.0 mmH₂O

Input Data Entry

Calculation Result



$$\text{Span} = X \times (G_{\text{MAX}} - G_{\text{MIN}})$$

100 = 500 × (1.2 - 1)

$$H_{W, \text{MIN}} = (Y \times G_{\text{MAX}}) + (A + X) \times G_{\text{MIN}}$$

590 = (50 × 1.2) + (30 + 500) × 1

$$H_{W, \text{MAX}} = (Y + X) \times G_{\text{MAX}} + (A \times G_{\text{MIN}})$$

690 = (50 + 500) × 1.2 + (30 × 1)

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|---------------------|---------------|
| | mm H ₂ O | mA |
| 0 | 590.00 | 4.00 |
| 25 | 615.00 | 8.00 |
| 50 | 640.00 | 12.00 |
| 75 | 665.00 | 16.00 |
| 100 | 690.00 | 20.00 |

Notes

H_w = Equivalent Head of Water

$H_{w, \text{MIN}}$ = H_w at minimum interface

$H_{w, \text{MAX}}$ = H_w at maximum interface

G_{MIN} = Minimum Specific gravity of upper (lighter) liquid

G_{MAX} = Maximum Specific gravity of lower (heavier) liquid

G_s = Specific gravity of wet leg liquid

A = Distance constant overflow and desired maximum interface



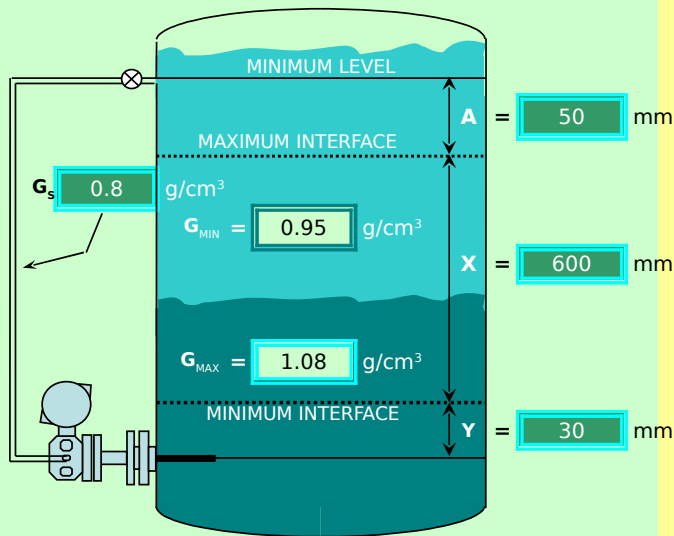


TYPICAL LIQUID INTERFACE LEVEL INSTALLATIONS

Transmitter Connected to Closed Tank With Wet Leg

Calibrated Range = 105.9 to 183.9 mmH₂O

Input Data Entry



Calculation Result

$$\text{Span} = X \times (G_{\text{MAX}} - G_{\text{MIN}})$$

78 = 600 × (1.08 - 0.95)

$$H_{W, \text{MIN}} = (Y \times G_{\text{MAX}}) + (A + X) \times G_{\text{MIN}} - (A + X + Y) \times G_s$$

105.9 = (30 × 1.08) + (50 + 600) × 0.95 - (50 + 600 + 30) × 0.8

$$H_{W, \text{MAX}} = (Y + X) \times G_{\text{MAX}} + (A \times G_{\text{MIN}}) - (A + X + Y) \times G_s$$

183.9 = (30 + 600) × 1.08 + (50 × 0.95) - (50 + 600 + 30) × 0.8

CALIBRATION DATA

| % | Input Simulation | Output Result |
|-----|------------------|---------------|
| | mm H2O | mA |
| 0 | 105.90 | 4.00 |
| 25 | 125.40 | 8.00 |
| 50 | 144.90 | 12.00 |
| 75 | 164.40 | 16.00 |
| 100 | 183.90 | 20.00 |

Notes

H_w = Equivalent Head of Water

$H_{w, \text{MIN}}$ = H_w at minimum interface

$H_{w, \text{MAX}}$ = H_w at maximum interface

A = Distance minimum level and desired maximum interface

G_{MIN} = Minimum Specific gravity of upper (lighter) liquid

G_{MAX} = Maximum Specific gravity of lower (heavier) liquid

G_s = Specific gravity of wet leg liquid

