

科目： 193001

知能類：K1.01 [2.5/2.7]

序號： P73

An atmospheric pressure of 15 psia approximately equals...

A. 30.0 psig.

B. 29.4 psig.

C. 14.7 psig.

D. 0.0 psig.

ANSWER: D.

15 psia 的大氣壓力約等於.....

A. 30.0 psig

B. 29.4 psig

C. 14.7 psig

D. 0.0 psig

答案：D.

科目： 193001

知能類： K1.01 [2.5/2.7]

序號： P273

A pressure gauge on a condenser reads 27 inches of mercury (Hg) vacuum. What is the absolute pressure corresponding to this vacuum? (Assume an atmospheric pressure of 15 psia.)

- A. 14.0 psia
- B. 13.5 psia
- C. 1.5 psia
- D. 1.0 psia

ANSWER: C.

冷凝器壓力計顯示 27 吋汞柱(Hg)真空。請問對應此真空的絕對壓力為多少？(假設大氣壓力為 15 psia)

- A. 14.0 psia
- B. 13.5 psia
- C. 1.5 psia
- D. 1.0 psia

答案： C.

科目： 193001

知能類： K1.01 [2.5/2.7]

序號： P473

Assuming a standard atmospheric pressure of 15 psia, 5 inches of mercury (Hg) vacuum is equivalent to...

A. 2.5 psia.

B. 5.0 psia.

C. 10.0 psia.

D. 12.5 psia.

ANSWER: D.

假設標準大氣壓力為 15 psia，5 吋汞柱(Hg)真空等於.....

A. 2.5 psia

B. 5.0 psia

C. 10.0 psia

D. 12.5 psia

答案：D.

科目： 193001

知能類：K1.01 [2.5/2.7]

序號： P873

If a main steam line pressure gauge reads 900 psig, what is the absolute pressure?

- A. 870 psia
- B. 885 psia
- C. 915 psia
- D. 930 psia

ANSWER: C.

如果主蒸汽管的壓力計讀數為 900 psig，絕對壓力為多少？

- A. 870 psia
- B. 885 psia
- C. 915 psia
- D. 930 psia

答案：C.

科目： 193001

知能類： K1.01 [2.5/2.7]

序號： P1173

Which one of the following is equivalent to 5 psia?

- A. 20 psig
- B. 10 psig
- C. 10 inches of mercury (Hg) vacuum
- D. 20 inches of mercury (Hg) vacuum

ANSWER: D.

下列何者等於 5 psia ?

- A. 20 psig
- B. 10 psig
- C. 10 吋汞柱(Hg)真空
- D. 20 吋汞柱(Hg)真空

答案： D.

科目： 193001

知能類： K1.01 [2.5/2.7]

序號： P1273

Which one of the following is sequenced from lowest pressure to highest pressure?

- A. 8 psia, 20 inches Hg absolute, 2 psig
- B. 8 psia, 2 psig, 20 inches Hg absolute
- C. 20 inches Hg absolute, 2 psig, 8 psia
- D. 20 inches Hg absolute, 8 psia, 2 psig

ANSWER: A.

下列何者為從最低排列至最高壓力？

- A. 8 psia、20 吋汞柱絕對壓力、2 psig
- B. 8 psia、2 psig、20 吋汞柱絕對壓力
- C. 20 吋汞柱絕對壓力、2 psig、8 psia
- D. 20 吋汞柱絕對壓力、8 psia、2 psig

答案：A.

科目： 193001

知能類：K1.01 [2.5/2.7]

序號： P1573

Which one of the following is arranged from the highest pressure to the lowest pressure?

- A. 2 psig, 20 inches Hg absolute, 8 psia
- B. 2 psig, 8 psia, 20 inches Hg absolute
- C. 8 psia, 20 inches Hg absolute, 2 psig
- D. 8 psia, 2 psig, 20 inches Hg absolute

ANSWER: A.

下列何者為從最高排列至最低壓力？

- A. 2 psig、20 吋汞柱絕對壓力、8 psia
- B. 2 psig、8 psia、20 吋汞柱絕對壓力
- C. 8 psia、20 吋汞柱絕對壓力、2 psig
- D. 8 psia、2 psig、20 吋汞柱絕對壓力

答案：A.

科目： 193001

知能類：K1.01 [2.5/2.7]

序號： P1773

Which one of the following is approximately equivalent to 2 psig?

A. 11 psia

B. 13 psia

C. 15 psia

D. 17 psia

ANSWER: D.

下列何者約等於 2 psig ?

A. 11 psia

B. 13 psia

C. 15 psia

D. 17 psia

答案：D.



科目： 193001

知能類： K1.01 [2.5/2.7]

序號： P2073

Which one of the following is arranged from the lowest pressure to the highest pressure?

- A. 2 psig, 12 inches Hg absolute, 8 psia
- B. 2 psig, 18 inches Hg absolute, 8 psia
- C. 12 psia, 20 inches Hg absolute, 2 psig
- D. 12 psia, 30 inches Hg absolute, 2 psig

ANSWER: D.

下列何者為從最低排列至最高壓力？

- A. 2 psig、12 吋汞柱絕對壓力、8 psia
- B. 2 psig、18 吋汞柱絕對壓力、8 psia
- C. 12 psia、20 吋汞柱絕對壓力、2 psig
- D. 12 psia、30 吋汞柱絕對壓力、2 psig

答案：D.

科目： 193001

知能類：K1.01 [2.5/2.7]

序號： P2173

Which one of the following is the approximate condenser vacuum when condenser pressure is 16 inches Hg absolute?

- A. 4 inches Hg vacuum
- B. 8 inches Hg vacuum
- C. 12 inches Hg vacuum
- D. 14 inches Hg vacuum

ANSWER: D.

冷凝器的絕對壓力為 16 吋汞柱時，真空約為多少？

- A. 4 吋汞柱真空
- B. 8 吋汞柱真空
- C. 12 吋汞柱真空
- D. 14 吋汞柱真空

答案：D.

科目： 193001

知能類： K1.01 [2.5/2.7]

序號： P2273

Which one of the following is arranged from the highest pressure to the lowest pressure?

- A. 2 psig, 12 inches Hg absolute, 8 psia
- B. 2 psig, 18 inches Hg absolute, 8 psia
- C. 12 psia, 20 inches Hg absolute, 2 psig
- D. 12 psia, 30 inches Hg absolute, 2 psig

ANSWER: B.

下列何者為從最高排列至最低壓力？

- A. 2 psig、12 吋汞柱絕對壓力、8 psia
- B. 2 psig、18 吋汞柱絕對壓力、8 psia
- C. 12 psia、20 吋汞柱絕對壓力、2 psig
- D. 12 psia、30 吋汞柱絕對壓力、2 psig

答案： B.

科目： 193001

知能類：K1.01 [2.5/2.7]

序號： P2773

Which one of the following is arranged from the highest pressure to the lowest pressure?

- A. 2 psig, 12 inches Hg absolute, 8 psia
- B. 2 psig, 18 inches Hg absolute, 8 psia
- C. 12 psia, 20 inches Hg absolute, 2 psig
- D. 12 psia, 30 inches Hg absolute, 2 psig

ANSWER: B.

下列何者為從最高排列至最低壓力？

- A. 2 psig、12 吋汞柱絕對壓力、8 psia
- B. 2 psig、18 吋汞柱絕對壓力、8 psia
- C. 12 psia、20 吋汞柱絕對壓力、2 psig
- D. 12 psia、30 吋汞柱絕對壓力、2 psig

答案：B.

科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P374 (B373)

Refer to the drawing of four differential pressure (D/P) level detectors (see figure below).

The tanks are identical and are being maintained at 17 psia and 50% water level. They are surrounded by atmospheric pressure. Which one of the level detectors will sense the greatest D/P?

A. 1

B. 2

C. 3

D. 4

ANSWER: B.

請參照下圖的四個差壓(D/P)水位計。

水槽相同且維持在17 psia及50%水位，並處於大氣壓力之下。哪個水位計將感應到最大差壓？

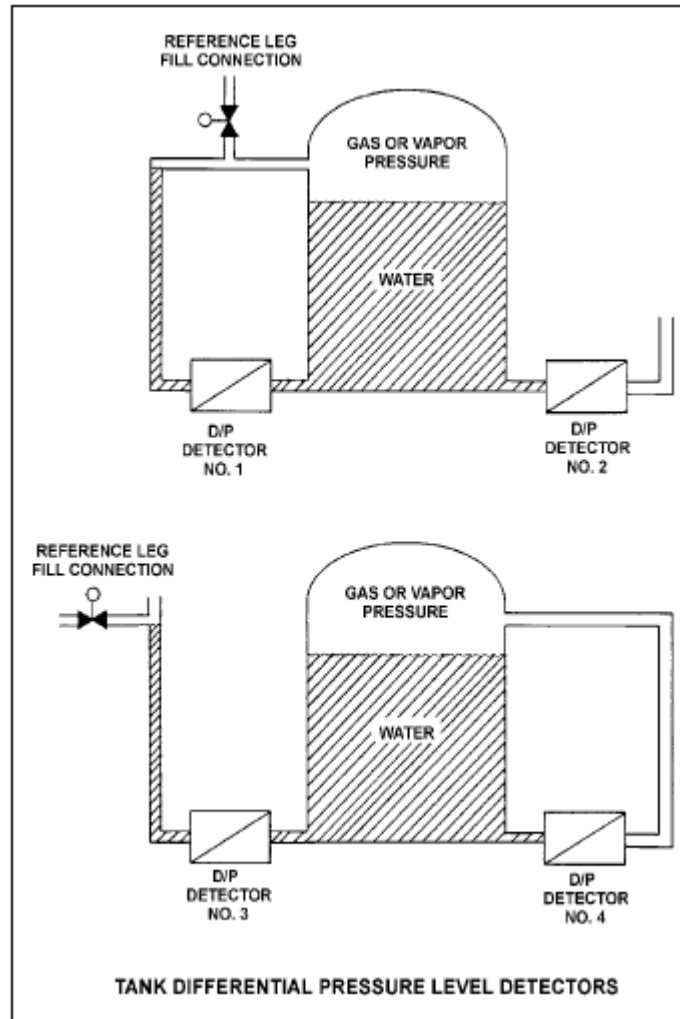
A. 1

B. 2

C. 3

D. 4

答案：B.



科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P573 (B1973)

A water storage tank is enclosed to prevent vapors from escaping to the environment. The tank is also pressurized to prevent boiling. A differential pressure detector with a dry reference leg is used to measure the tank level.

To achieve the greatest accuracy of measurement, the low pressure side of the detector should sense which one of the following?

- A. The pressure at the bottom of the tank
- B. The pressure of the atmosphere surrounding the tank
- C. The pressure of a column of water external to the tank
- D. The pressure of the vapor space at the top of the tank

ANSWER: D.

一個儲水槽密封以防水汽散逸到環境中，並加壓以免沸騰蒸發。使用具乾式參考柱(dry reference leg)的差壓計來測量該水槽的水位。

為求獲得最精確的測量值，差壓計的低壓側應感應到下列何者？

- A. 水槽底部壓力。
- B. 水槽四周的大氣壓力。
- C. 水槽外的水柱壓力。
- D. 水槽頂部水汽空間的壓力

答案：D.

科目：193001

知能類：K1.03 [2.6/2.6]

序號：P709 (B710)

Refer to the drawing of four differential pressure (D/P) level detectors (see figure below).

The tanks are identical and are being maintained at 17 psia and 70% water level (calibration conditions). They are contained in a building that is open to atmospheric pressure.

Which of the level detectors will provide the lowest level indication if atmospheric pressure decreases?

A. 1 and 3

B. 1 and 4

C. 2 and 3

D. 2 and 4

ANSWER: B.

請參照下圖的四個差壓(D/P)水位計。

水槽相同且維持在 17 psia 及 70% 水位(校正後狀態)，並置於通向大氣壓力的建築物內。

如果大氣壓力降低，哪些水位計顯示的水位最低？

A. 1 與 3

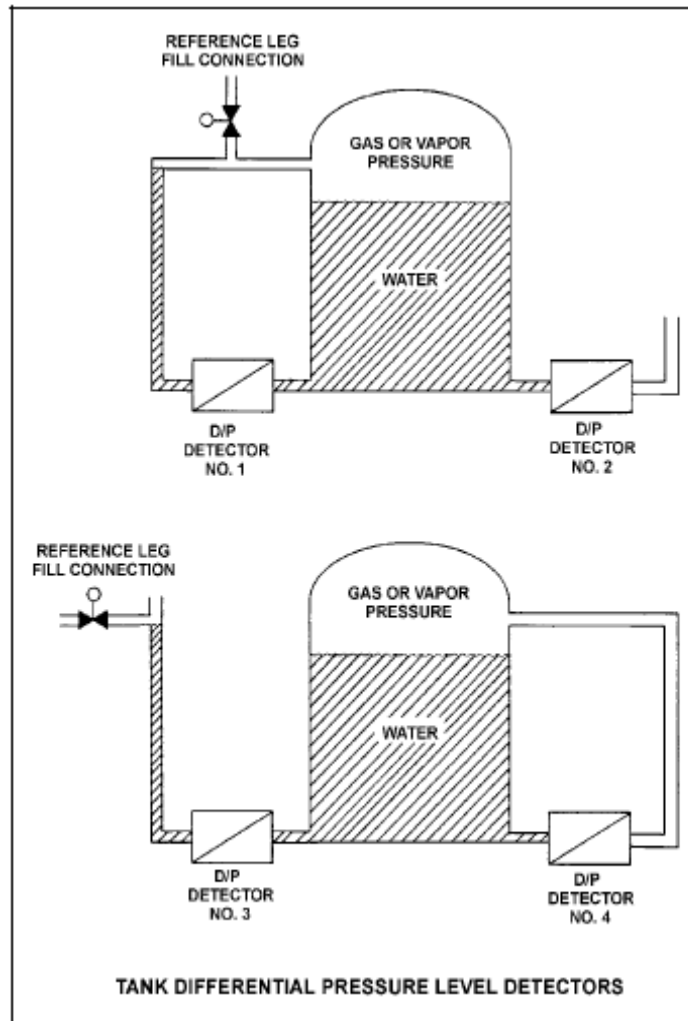
B. 1 與 4

C. 2 與 3

D. 2 與 4

答案：B.





科目： 193001

知能類：K1.03 [2.6/2.6]

序號： P1673 (B1174)

Refer to the drawing of four identical tank differential pressure (D/P) level detectors (see figure below).

The tanks are identical and are presently at 2 psig overpressure, the same constant water level, and a temperature of 60°F. They are surrounded by atmospheric pressure. All level detectors have been calibrated and are producing the same level indication. A leak in the top of each tank causes a complete loss of overpressure in both tanks.

Which level detector(s) will produce the lowest level indication?

- A. No. 1 only
- B. No. 2 only
- C. No. 1 and 4
- D. No. 2 and 3

ANSWER: D.

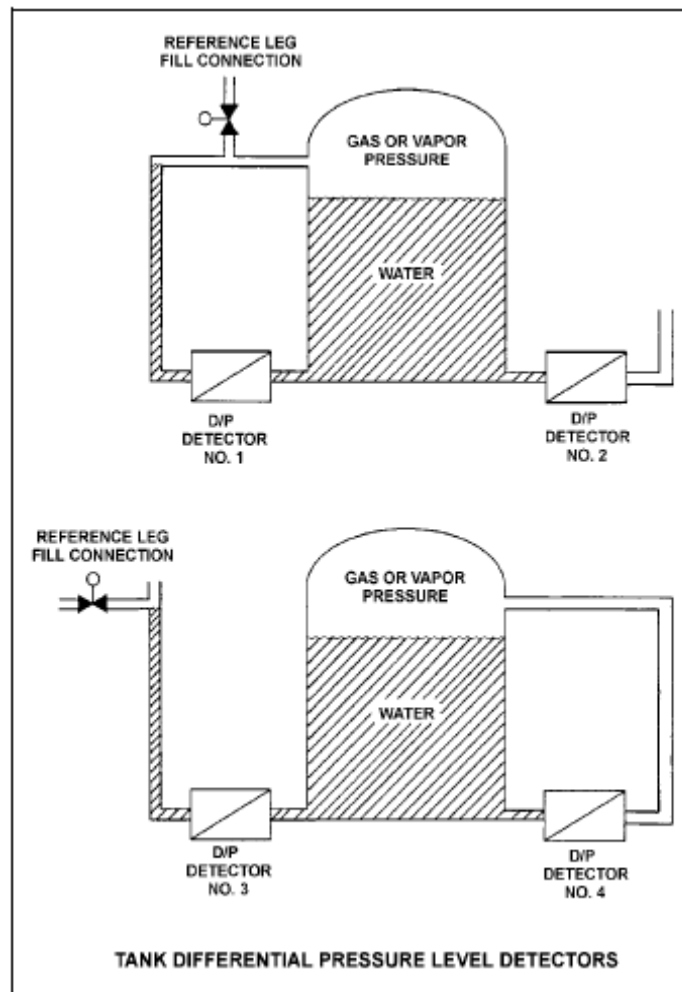
請參照下圖中四個相同的水槽差壓(D/P)水位計。

水槽相同且目前維持在2 psig過壓，水位相同且維持不變，溫度均為60°F，並處於大氣壓力之下。所有水位計都校正過，而且指示相同水位。槽頂漏縫導致兩個水槽完全失去過壓。

請問哪一(幾)個水位計指示的水位最低？

- A. 只有No. 1
- B. 只有No. 2
- C. No. 1與4
- D. No. 2與3

答案：D.



科目： 193001

知能類：K1.03 [2.6/2.6]

序號： P2373 (B2373)

Refer to the drawing of four identical tank differential pressure level detectors (see figure on next page).

The tanks are identical and they are presently at 2 psig overpressure, 60°F, and the same constant water level. They are located within a sealed containment structure that is being maintained at atmospheric pressure. All level detectors have been calibrated and are producing the same level indication. A ventilation malfunction causes containment structure pressure to decrease to 12 psia.

Which level detectors will produce the lowest level indication?

- A. 1 and 2
- B. 3 and 4
- C. 1 and 4
- D. 2 and 3

ANSWER: C

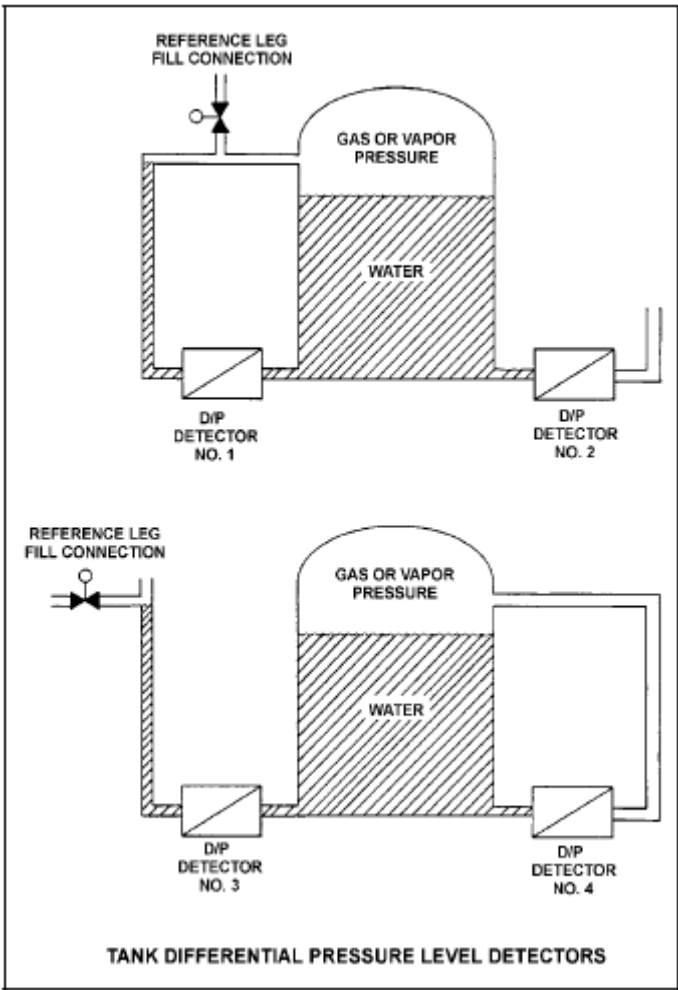
請參照下圖中四個相同的水槽差壓水位計。

水槽相同且目前處於2 psig過壓，溫度為60°F，水位相同且維持不變，並置於保持在大氣壓力的密閉建築物內。所有水位計都校正過，並指示相同水位。通風設備異常使得密閉建築物的壓力降到12 psia。

請問哪幾個水位計指示的水位最低？

- A. 1與2
- B. 3與4
- C. 1與4
- D. 2與3

答案：C.



科目： 193001

知能類：K1.03 [2.6/2.6]

序號： P2574 (B2573)

Refer to the drawing of four identical tank differential pressure level detectors (see figure on next page).

The tanks are identical and they are presently at 2 psig overpressure, 60°F, and the same constant water level. They are located within a sealed containment structure that is being maintained at atmospheric pressure. All level detectors have been calibrated and are producing the same level indication. A ventilation malfunction causes containment structure pressure to decrease to 13 psia.

Which level detectors will produce the highest indication?

- A. 1 and 2
- B. 3 and 4
- C. 1 and 4
- D. 2 and 3

ANSWER: D.

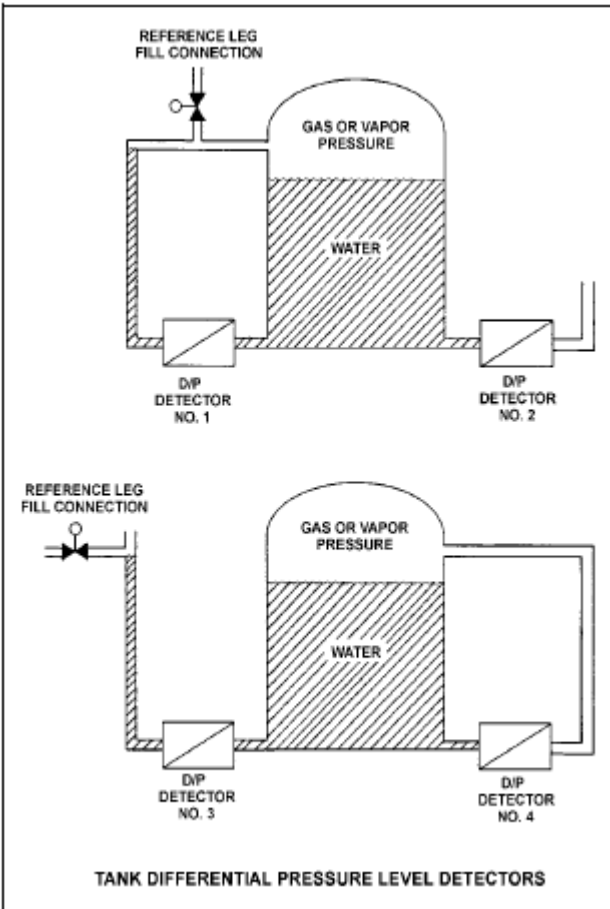
請參照下圖中四個相同的水槽差壓水位計。

水槽相同且目前處於2 psig過壓，溫度為60°F，水位相同且維持不變，並置於保持在大氣壓力的密閉建築物內。所有水位計都校正過，並指示相同水位。通風設備異常使得密閉建築物的壓力降到13 psia。

請問哪幾個水位計指示的水位最高？

- A. 1與2
- B. 3與4
- C. 1與4
- D. 2與3

答案：D.



科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P2673 (B73)

Refer to the drawing of a differential pressure manometer (see figure below).

A differential pressure manometer is installed across an orifice in a ventilation duct. With the ventilation conditions as shown, the pressure at P1 is \_\_\_\_\_ than P2, and airflow is from \_\_\_\_\_.

- A. greater; left to right
- B. greater; right to left
- C. less; left to right
- D. less; right to left

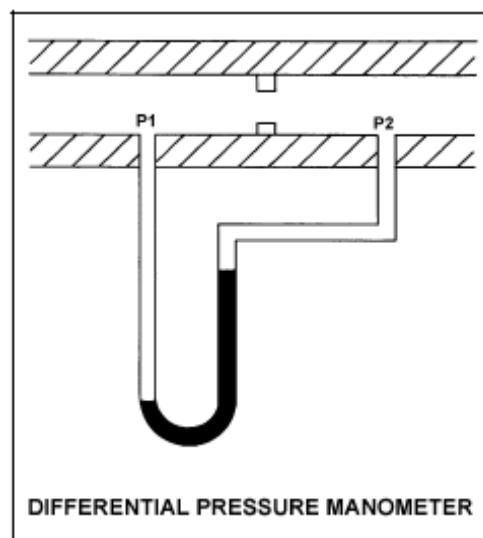
ANSWER: A.

請參照下圖的差壓壓力計。

差壓計裝於跨接通風管的孔口兩端。通風狀況如圖所示，則P1的壓力\_\_\_\_\_P2，氣流流向為\_\_\_\_\_。

- A. 大於；左到右
- B. 大於；右到左
- C. 小於；左到右
- D. 小於；右到左

答案：A.





科目： 193001

知能類：K1.03 [2.6/2.6]

序號： P2873 (B1073)

Refer to the drawing of four differential pressure level detectors (see figure below).

The tanks are identical and are being maintained at 30 psia with a water level of 20 feet. They are surrounded by standard atmospheric pressure. The water temperatures in the tanks and reference legs are the same.

If each detector experiences a ruptured diaphragm, which detector(s) will cause indicated tank level to decrease? (Assume actual tank water level remains constant.)

- A. No. 1 only
- B. No. 2 only
- C. No. 1, 2, and 3
- D. No. 2, 3, and 4

ANSWER: D.

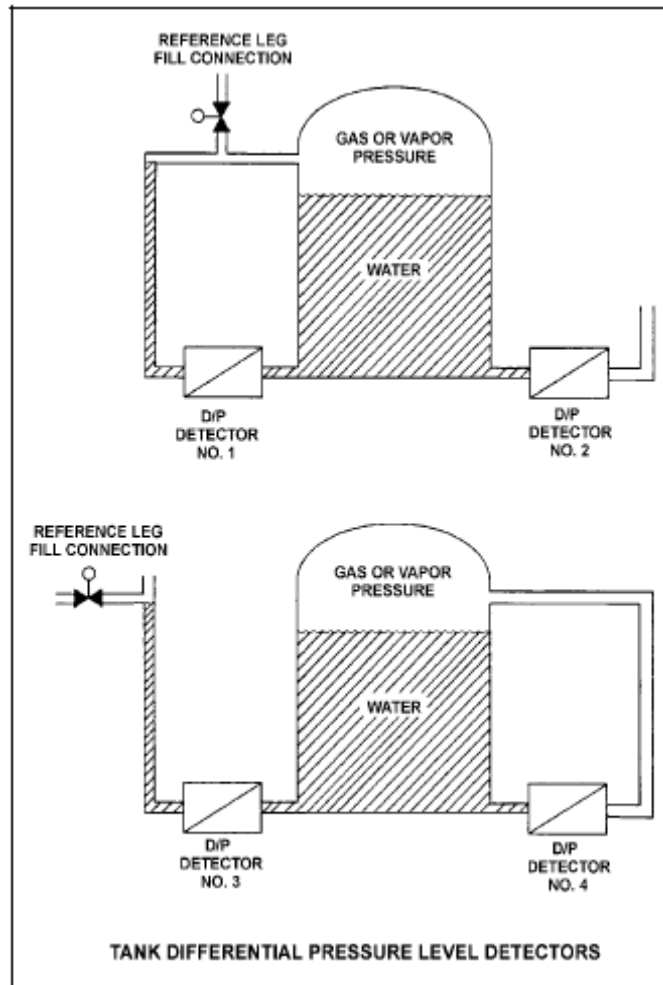
請參照下圖的四個差壓水位計。

水槽相同且維持在30 psia，水位為20呎，並處於標準大氣壓力之下。水槽與參考柱水溫相同。

如果每個水位計的膜片破裂，哪一(幾)個將導致水槽指示水位下降？(假設水槽的真正水位維持不變)

- A. 只有No. 1
- B. 只有No. 2
- C. No. 1、2與3
- D. No. 2、3與4

答案：D.



科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P2973 (B673)

Refer to the drawing of a differential pressure manometer (see figure below).

A differential pressure manometer containing water is installed across an orifice in a ventilation duct to determine the direction of airflow. P1 and P2 are pressures sensed in the ventilation duct.

With the conditions shown in the drawing, P1 pressure is \_\_\_\_\_ than P2 pressure, and airflow is to the \_\_\_\_\_.

- A. less; left
- B. less; right
- C. greater; left
- D. greater; right

ANSWER: A.

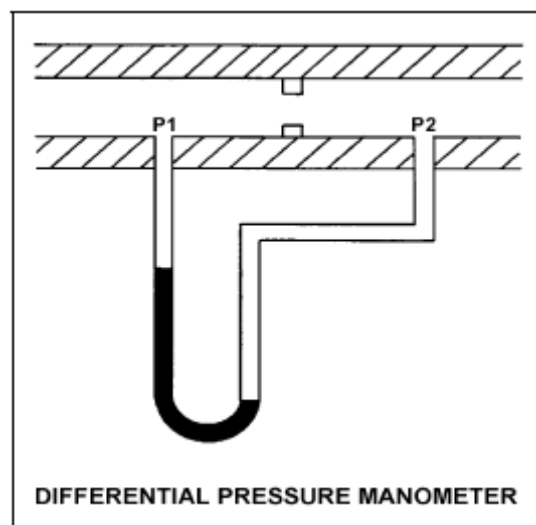
請參照下圖的差壓壓力計。

一個裝水的差壓壓力計裝於跨接通風管的孔口上，用來確定氣流流向。P1和P2表示在通風管感應到的壓力。

若狀況如圖所示，則P1的壓力\_\_\_\_\_P2，氣流流向為\_\_\_\_\_。

- A. 小於；向左
- B. 小於；向右
- C. 大於；向左
- D. 大於；向右

答案：A.



科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P3173 (B3173)

A water storage tank is vented to atmosphere. The tank is located at sea level and contains 100,000 gallons of 80°F water. A pressure gauge at the bottom of the tank reads 5.6 psig. What is the approximate water level in the tank?

- A. 13 feet
- B. 17 feet
- C. 21 feet
- D. 25 feet

ANSWER: A.

一儲水槽通氣至大氣。該水槽位於海平面高度，內含80°F的水100,000加侖。水槽底部的壓力計讀數為5.6 psig。請問水槽水位約為多少？

- A. 13呎
- B. 17呎
- C. 21呎
- D. 25呎

答案：A.

科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P3673 (B3673)

Refer to the drawing of a tank with a differential pressure (D/P) level detector (see figure below).

If the tank contains 30 feet of water at 60°F, what is the approximate D/P sensed by the detector?

- A. 2 psid
- B. 13 psid
- C. 20 psid
- D. 28 psid

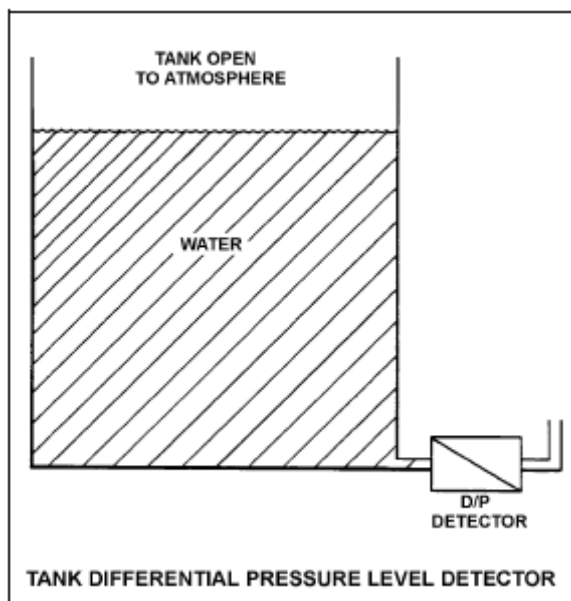
ANSWER: B.

請參照下圖中裝有差壓(D/P)水位計的水槽。

如果水槽內含30呎60°F的水，水位計感應到的差壓約為多少？

- A. 2 psid
- B. 13 psid
- C. 20 psid
- D. 28 psid

答案：B.



科目： 193001

知能類： K1.03 [2.6/2.6]

序號： P3873 (B3873)

A water storage tank is vented to atmosphere. The tank is located at sea level and contains 100,000 gallons of water at 80°F. A pressure gauge at the bottom of the tank reads 7.3 psig. What is the approximate water level in the tank?

- A. 13 feet
- B. 17 feet
- C. 21 feet
- D. 25 feet

ANSWER: B.

一儲水槽通氣到大氣中。該水槽位於海平面高度，內含80°F的水100,000加侖。水槽底部的壓力計讀數為7.3 psig。請問水槽水位約為多少？

- A. 13呎
- B. 17呎
- C. 21呎
- D. 25呎

答案：B.

科目/題號：193001/1 (2016新增)

知能類：K1.03 [2.6/2.6]

序號：P4537 (B4537)

A water storage tank is vented to atmosphere. The tank is located at sea level and contains 100,000 gallons of water at 80°F. A pressure gauge at the bottom of the tank reads 9.0 psig. What is the approximate water level in the tank?

A. 13 feet

B. 17 feet

C. 21 feet

D. 25 feet

ANSWER: C.

一通大氣的儲水槽。水槽位於海平面高度內儲有80°F的水100,000加侖。在槽底部的壓力表讀數為9.0 psig。水槽內水位約為多少？

A.13 feet

B.17 feet

C.21 feet

D.25 feet

答案： C

科目/題號：193001/2 (2016新增)

知能類：K1.03 [2.6/2.6]

序號：P4837 (B4837)

Refer to the drawing of two water storage tanks with four differential pressure (D/P) level detectors (see figure below).

The tanks are identical and are being maintained at 2 psig overpressure, the same constant water level, and a temperature of 60°F. The tanks are surrounded by atmospheric pressure. All level detectors have been calibrated and are producing the same level indication.

If a leak in the top of each tank causes a complete loss of overpressure in both tanks, which detector(s) will produce the highest level indication(s)?

- A. No. 1 only
- B. No. 2 only
- C. No. 1 and 4
- D. No. 2 and 3

ANSWER: C.

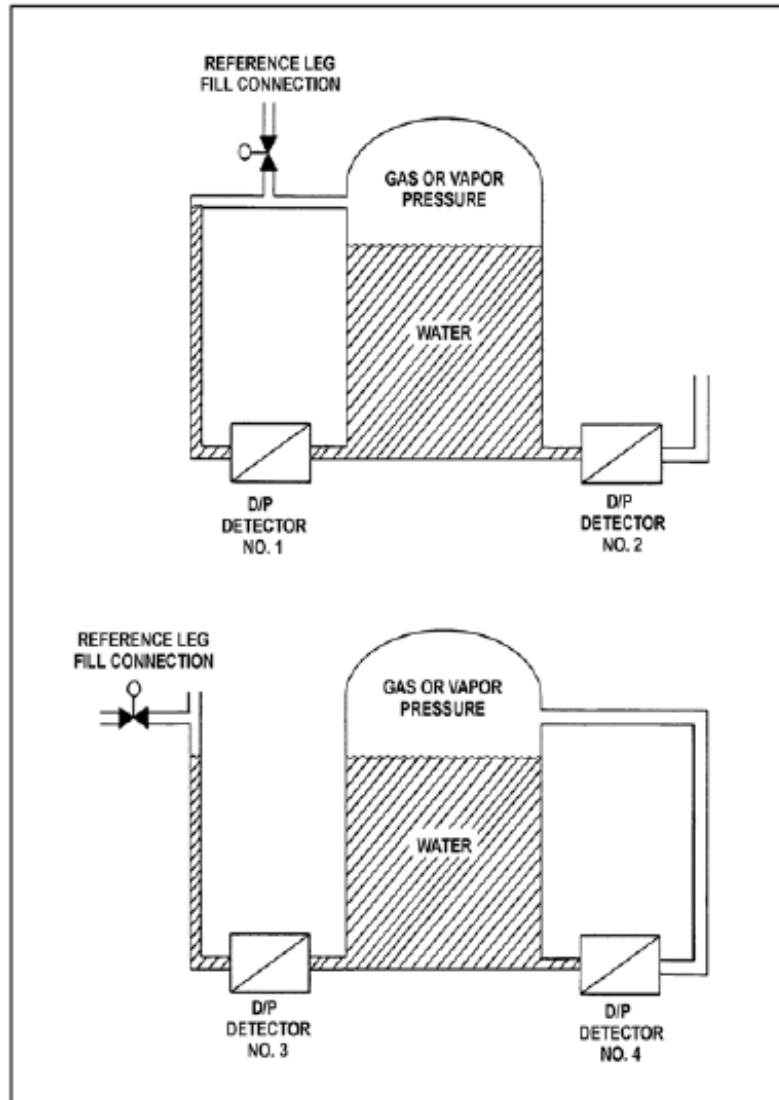
參考兩個配置有四個壓差（D/P）液位偵檢器的儲水槽圖(見下圖)。兩個水槽相同並都維持壓力2 psig過壓，及相同的固定液位，與60°F的溫度。兩水槽周圍壓力為1大氣壓力。每個液位偵檢器均已校準，並調整至相同液位指示。

如果兩個水槽的頂部均洩漏導致兩個水槽完全喪失過壓，何者偵檢器將顯示最高的液位？

- A. 只有編號1
- B. 只有編號2
- C. 編號1和編號4
- D. 編號2和編號3

答案： C





科目/題號：193001/3 (2016新增)

知能類：K1.03 [2.6/2.6]

序號：P5837 (B5837)

Refer to the drawing of an open water storage tank with a differential pressure (D/P) level indicator that is vented to atmosphere (see figure below). Both the tank and the level indicator are surrounded by standard atmospheric pressure. Tank water temperature is 70°F.

The D/P level indicator is sensing a differential pressure of 4.0 psi. What is the water level in the tank above the instrument penetration?

A. 9.2 feet

B. 16.7 feet

C. 24.7 feet

D. 43.2 feet

ANSWER: A.

參考一配備壓差(D/P)液位指示器的開放式儲水槽(見下圖)，該壓差液位指示器通大氣。水槽和液位指示器周圍為標準氣壓。水槽水溫為70°F。壓差液位指示器(D/P)測得的壓差為4.0 psi。在水槽之儀器穿越器上方的水位是多少？

A. 9.2 feet

B. 16.7 feet

C. 24.7 feet

D. 43.2 feet

答案： A

