

### Features

- Plug-in port or thread-in fittings
- Compact size
- Easy to use
- Low cost



### SPECIFICATION

TYPE	AP101	AP102
Operating pressure range	- 0.1 ~ 1.0 MPa (-14.5~145 PSI)	
Setting pressure range	- 0.1 ~ 0.4 MPa (-14.5~58 PSI)	
Fluid	Air, Non-corrosive / Non-flammable gas	
Load voltage	12 to 24VDC ± 10%, Ripple (P-P) 10% or less	
Load current	5~40mA	
Leak current	≤1mA	
Internal voltage drop	≤5V	
Switch output	Present Pressure ≥ Setting Pressure: ON	Present Pressure ≤ Setting Pressure: ON
Repeatability	± 1% F.S.	
Response time	Approx. 1ms	
Hysteresis	≤ 4% F.S.	
Indicator	Red LED turns ON	
Temperature characteristic	± 3% F.S. of detected pressure (25°C) at temp. Range of 0~50°C (32~122°F)	
Ambient temp. range	Operation: 0 ~ 60°C (32~140°F), No condensation or freezing	
Piping method	Push-in tube or thread-in	
Lead wire	Oil-resistance cable, 2 wires (0.18mm <sup>2</sup> ), Ø2.6mm, 3M	
Weight	Approx. 39g (with 3-meter lead wire)	

### ORDERING INFORMATION

**AP101 - 1 / 4 -** [ ]

#### Switch Type

101: For positive pressure

102: For vacuum and residual pressure

#### Wiring Type

Blank: With 3-meter cable

C : With M8, 3-Pin male connector

#### Pressure Port

1/4: ø1/4" Tube  
06: ø6mm Tube  
F1: 1/8" BSPT  
F2: 1/8" NPT  
F3: G1/8"(BSPP)  
M5: M5

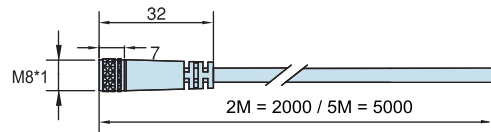
#### Option part

M83R-PVC-2M / M83R-PVC-5M : M8, 3-Pin female connector

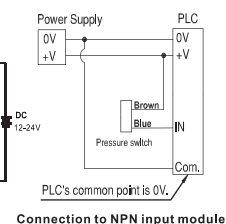
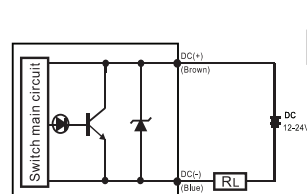
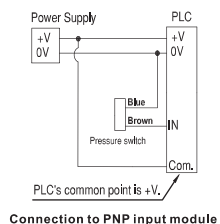
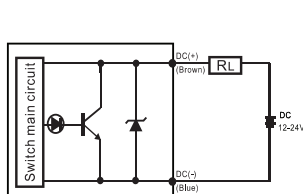
### OPTIONAL PART DIMENSIONS

#### M8 Female Connector

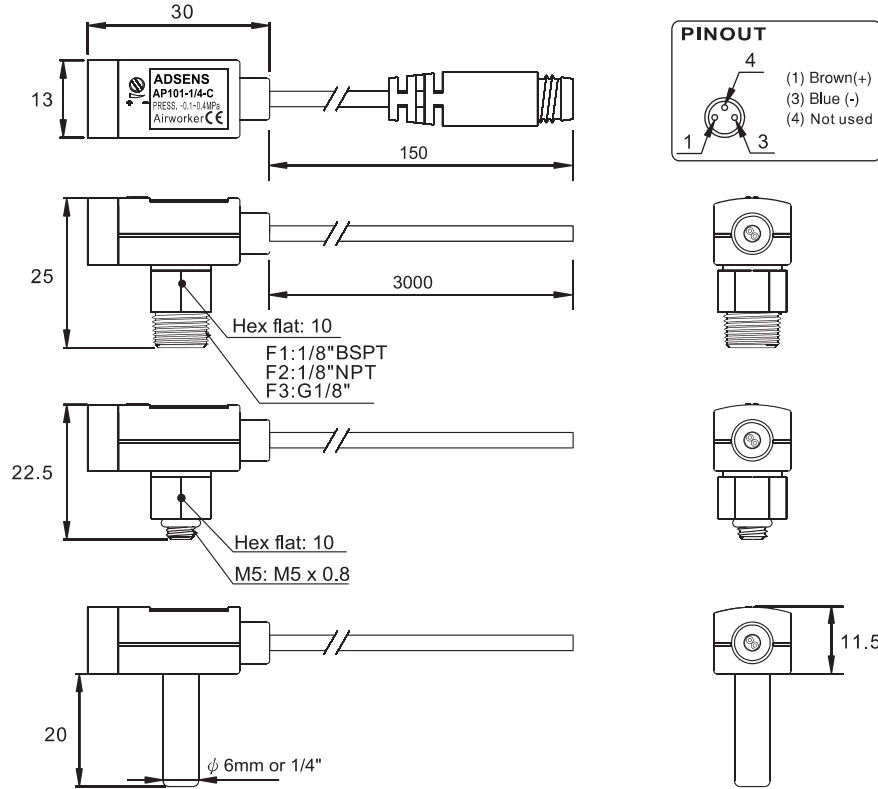
M83R-PVC-2M / M83R-PVC-5M



### CIRCUIT WIRING DIAGRAM



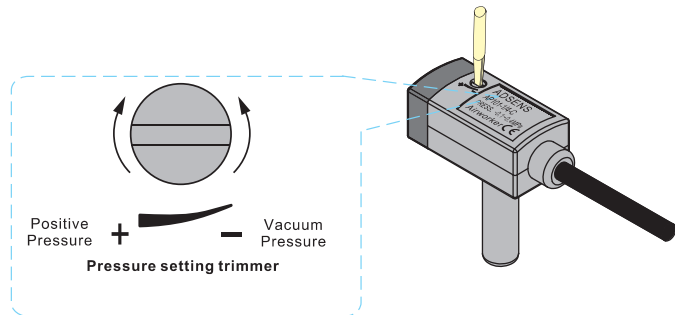
### ■ DIMENSIONS



Unit:mm

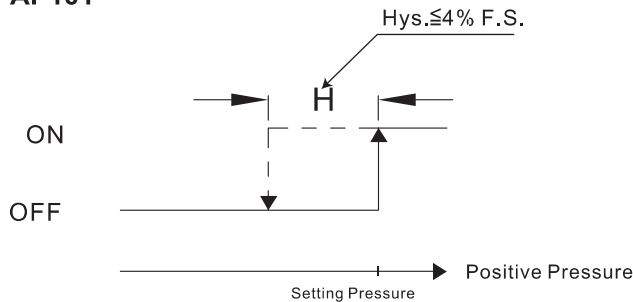
### ■ HOW TO SET PRESSURE

- ▶ Use the Pressure setting trimmer to set "ON" pressure. Rotate clockwise to increase pressure setpoint (or to decrease vacuum setpoint). Rotate counter-clockwise to decrease pressure setpoint (or to increase vacuum setpoint).
- ▶ Use appropriate size screwdriver for the setting trimmers. Gently turn the screwdriver to make adjustments. To prevent damage to the Pressure setting trimmer, DO NOT force the trimmer when it comes to a stop.

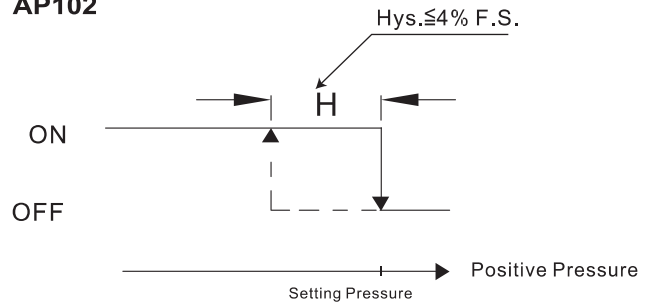


### ■ OUTPUT TYPE

AP101



AP102



Pressure Switch

Magnetic Switch

Circular Connector

## Features

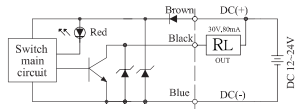
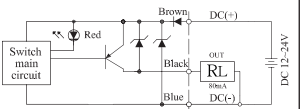
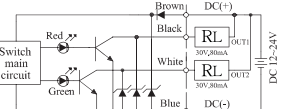
- High Repeatability :  $\leq \pm 1\%$  F.S.
- Quick response : 5ms
- Hysteresis adjustable .
- Low cost.



## SPECIFICATION

TYPE		AP1-1 (Vacuum)	AP1-2 (Low pressure)	AP1-3 (Positive)
Set pressure range		-101 ~ 0 kPa (-14.6 ~ 0 PSI)	0 ~ 100 kPa (0 ~ 14.5 PSI)	0 ~ 1 MPa (0 ~ 145 PSI)
Withstand pressure		300 kPa (43.5 PSI)		1.5 MPa (217.5 PSI)
Fluid		Air, Non-corrosive / Non-flammable gas		
Power supply voltage		12 to 24VDC $\pm 10\%$ , Ripple (P-P) 10% or less		
Response time		5ms or less		
Repeatability		$\leq \pm 1\%$ F.S.		
Current consumption		1-output : NPN & PNP : 21mA max., 2-output : 25mA max.		
Environment	Enclosure	IP40		
	Ambient temp. range	Operation: 0 ~ 50°C (32 ~ 122°F), Storage: -20 ~ 60°C (-4 ~ 140°F), No condensation or freezing		
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)		
	Withstand voltage	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500VDC, between case and lead wire)		
Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z			
	Shock	980m/s <sup>2</sup> (100G), 3 times each in direction of X, Y and Z		
Temperature characteristic		$\pm 3\%$ F.S. of detected pressure (25°C) at temp. range of 0~50°C		
Port size		1/8"BSPT, M5; 1/8"NPT, M5; G1/8" (BSPP), M5.		
Weight		Approx. 50g (with 1M lead wire)		

## OUTPUT SPECIFICATION

TYPE	AP1-□-01	AP1-□-02	AP1-□-03
CONNECT DIAGRAM			
CHARACTERISTICS			
Output method	NPN open collector 30V 80mA	PNP open collector 24V 80mA	NPN open collector 30V 80mA
Hysteresis	1~10% of setting pressure (Adjustable)		3% F.S. or less (Fixed)
Setting points	1 Point		2 Point
Operation indicating Lamp	Red LED turns ON		Out1 = Red, Out2 = Green

## ORDERING INFORMATION

AP1-1-01-01-NPT

### Pressure Range

- 1 : Vacuum (-101 ~ 0 KPa)
- 2 : Low Pressure (0 ~ 100 KPa)
- 3 : Positive (0 ~ 1 MPa)

### Output Specifications

- 01 : NPN output
- 02 : PNP output
- 03 : 2 NPN output

### Option part

M84R-PVC-2M / M84R-PVC-5M : M8, 4-Pin female connector

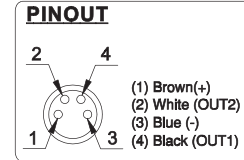
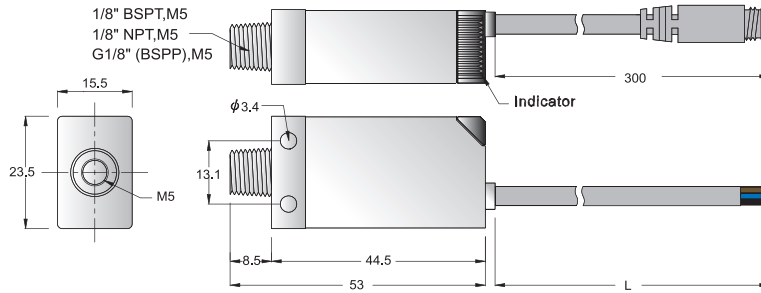
### Pressure Port

- PT: 1/8"BSPT, M5
- NPT: 1/8"NPT, M5
- G: G1/8" (BSPP), M5

### Wiring Type

- 01: With 1-meter cable
- 03: With 3-meter cable
- C: With M8, 4-Pin male connector

## DIMENSIONS

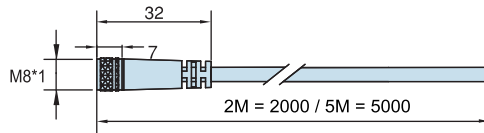


Unit:mm

## OPTIONAL PART DIMENSIONS

### M8 Female Connector

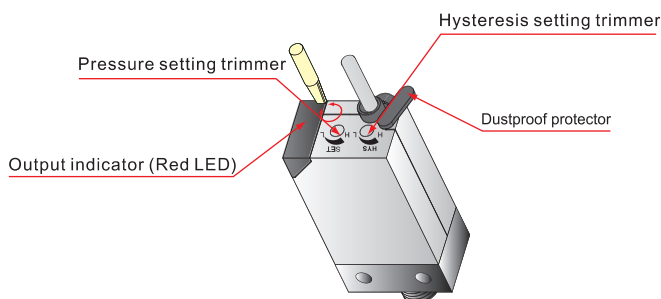
M84R-PVC-2M / M84R-PVC-5M



## HOW TO SET PRESSURE

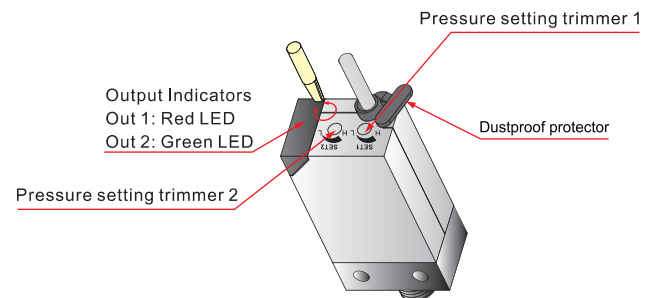
### AP1-□ - 01,02

- ▶ Remove dustproof protector to make any adjustments. Replace dustproof protector when finished to prevent foreign object from entering.
- ▶ Pressure setting trimmer (SET) is for setting the output (ON) pressure. Rotate SET trimmer counter-clockwise to increase (Pressure or vacuum) the ON point. Rotate clockwise will decrease the setting pressure.
- ▶ Hysteresis setting trimmer (HYS) is for changing the hysteresis. Rotate trimmer counter-clockwise to increase the range 1~10%.
- ▶ Use appropriate size screwdriver for the setting trimmers. Gently turn the screwdriver to make adjustments. Do not force the trimmer when it comes to a stop to prevent damage to the setting trimmer.



### AP1-□ - 03

- ▶ Remove dustproof protector to make any adjustments. Replace dustproof protector when finished to prevent foreign object from entering.
- ▶ Pressure setting trimmer (SET 1, SET 2) is for setting the output (ON) pressure. Rotate SET trimmer counter-clockwise to increase (Pressure or vacuum) the ON point. Rotate clockwise will decrease the setting pressure.
- ▶ Hysteresis for models with two outputs is 3% fixed.



## Features

- Pressure range : Compound -100~100kPa  
Positive 0~1MPa
- High accuracy and Resolution.
- Low cost .
- Selectable pressure unit: kPa, kgf/cm<sup>2</sup>, bar, psi, mmHg



## SPECIFICATION

TYPE		AP23C (Compound)	AP23P (Positive)
Set pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	-0.100 ~ 1.000 MPa (-14.5 ~ 145 PSI)
Withstand pressure		300 kPa (43.5 PSI)	1.5 MPa (217.5 PSI)
Fluid		Air, Non-corrosive / Non-flammable gas	
Power supply voltage		12 to 24VDC ±10%, Ripple (P-P) 10% or less	
Current consumption		≤ 55mA	
7 segment LED display		3 1/2 digit LED display (Sampling rate: 5 times/1sec.)	
Indicator accuracy		≤ ±2% F.S. ±1 digit (ambient temperature: 25 ±3°C)	
Environment	Enclosure	IP40	
	Ambient temp. range	Operation: 0 ~ 50°C (0 ~ 122°F), storage: -20 ~ 60°C (-4 ~ 140°F), No condensation or freezing	
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)	
	Withstand voltage	1000VAC in 1-min (between case and lead wire)	
	Insulation resistance	50Mohm min. (at 500VDC, between case and lead wire)	
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z	
Shock		980m/s <sup>2</sup> (100G), 3 times each in direction of X, Y and Z	
Temperature characteristic		≤ ±2% F.S. of detected pressure (25°C) at temp. range of 0~50°C	
Port size		F1: 1/8"BSPT, F2: 1/8"NPT, F3: G1/8" (BSPP)	
Lead wire		2-Conductor Oil-resistance cable (0,15mm <sup>2</sup> )	
Weight		Approx. 102g (with 2M lead wire), Approx. 68g (with M8 male connector)	

## ORDERING INFORMATION

**A P 2 3 C - F 1 - □**

### Pressure Range

C : Compound (-100.0~100.0KPa)  
P : Positive (-0.100~1.000 MPa)

### Pressure Port

F1 : 1/8" BSPT  
F2 : 1/8" NPT  
F3 : G1/8" (BSPP)

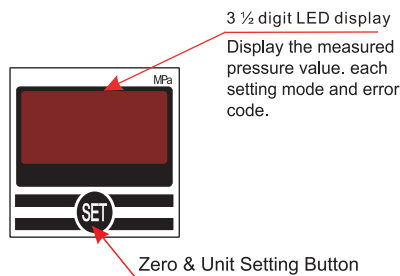
### Wiring Type

Blank: With 2-meter cable  
QD : With M8, 4-Pin male connector

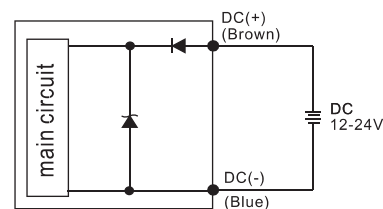
### Optional parts

M84R-PVC-2M / M84R-PVC-5M : M8, 4-Pin female connector  
AP20-A : Mounting bracket (BT-1+BT-2)  
AP20-B : Panel adapter (PA-1+PA-2)  
AP20-C : Panel adapter + Front protective lid (PA-1+PA-2+FPC-1)

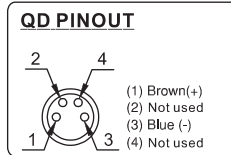
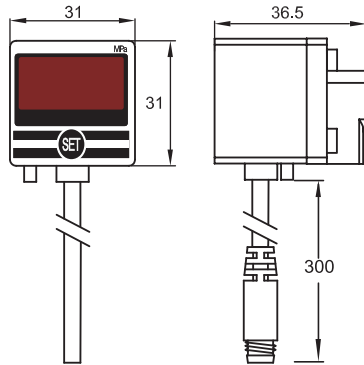
## PANEL DESCRIPTION



## CIRCUIT WIRING DIAGRAM

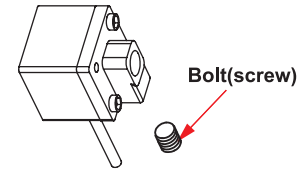


## DIMENSIONS



## INSTALLATION

1. This product has two inlet pressure ports, select the one most convenient for installation.
2. Please plug the unused inlet port with supplied port plug. Use seal tape to prevent pressure leak.

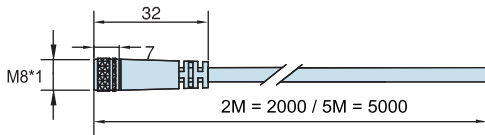


Unit:mm

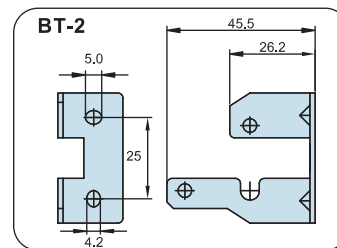
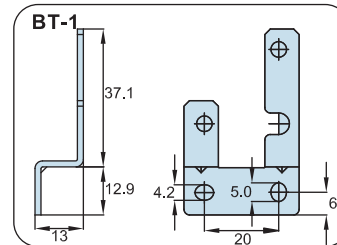
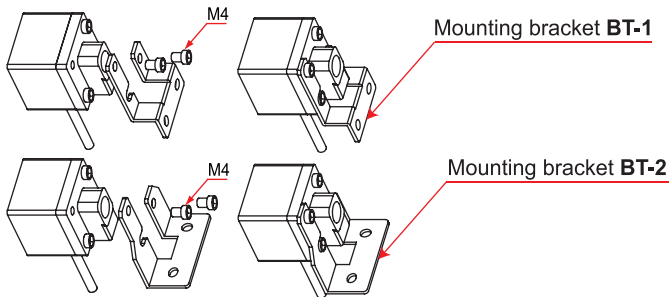
## OPTIONAL PARTS DIMENSIONS

### 1 M8 Female Connector

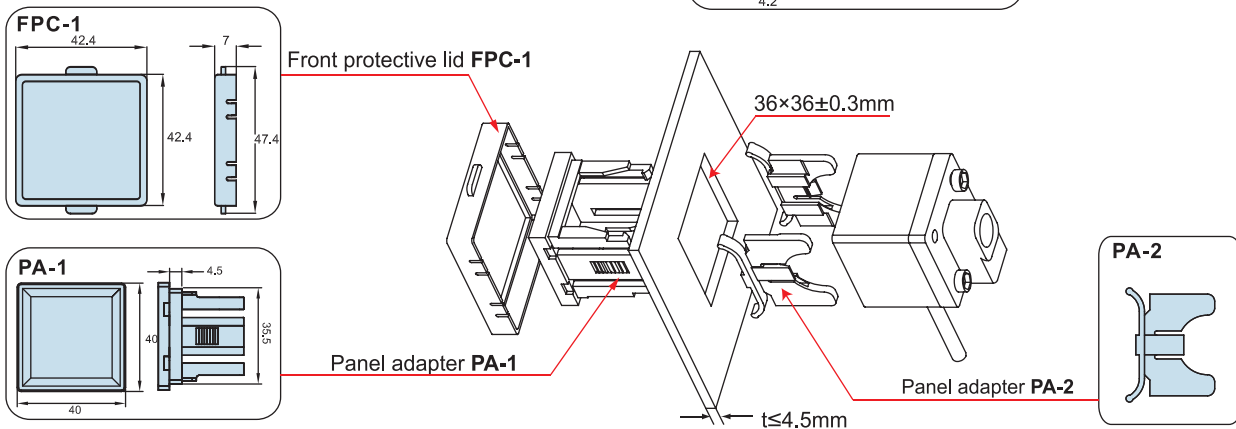
M84R-PVC-2M / M84R-PVC-5M



### 2 Mounting Bracket



### 3 Panel Mount Adapter + Front Protective Lid



Unit:mm

Pressure Switch

Magnetic Switch

Circular Connector

## Features

- Pressure range : Compound -100~100kPa  
Vacuum 0~-101.3kPa  
Positive 0~1MPa
- Two switch output & one analog output.
- Hysteresis adjustable.
- High accuracy and Resolution.
- Selectable pressure unit: kPa, kgf/cm<sup>2</sup>, bar, psi, mmHg
- Enclosure:IP 65



## SPECIFICATION

TYPE		AP25C (Compound)	AP25V (Vacuum)	AP25P (Positive)
Rated pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	0.0 ~ -101.3 kPa (0 ~ -29.9"Hg)	0.000 ~ 1.000 MPa (0 ~ 145 PSI)
Setting pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	10.0 ~ -101.3 kPa(1.45 PSI ~ -29.9"Hg)	-0.100 ~ 1.000 MPa (-14.5 ~ 145 PSI)
Withstand pressure		300 kPa (43.5 PSI)		1.5 MPa (217.5 PSI)
Fluid Air, Non-corrosive gases / Non-flammable gas				
Set pressure resolution	kPa	0.1		-
	MPa	-		0.001
	kgf/cm <sup>2</sup>	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	InHg	0.1		-
	mmHg	1		-
	mmH <sub>2</sub> O	0.1		-
Power supply voltage		12 to 24VDC ±10%, Ripple (P-P) 10% or less		
Current consumption		≤55mA		
Switch output		NPN:open collector 2 outputs Max. load current : 80mA Max. supply voltage: 30VDC Residual voltage: ≤ 1V (load current 80mA)		PNP:open collector 2 outputs Max. load current : 80mA Max. supply voltage: 24VDC Residual voltage: ≤ 1V (load current 80mA)
Repeatability(Switch output)		≤ ± 0.2% F.S. ±1digit		
Hysteresis	Hysteresis mode	Adjustable		
	Window comparator mode	Fixed (3 digits)		
Response time		≤2.5ms (chattering-proof function: 24ms, 192ms and 768ms selectable)		
Output short circuit protection		Yes		
7 segment LED display		3-1/2 digit LED display (Sampling rate: 5 times/sec.)		
Indicator accuracy		≤ ±2% F.S. ± 1 digit (ambient temperature: 25 ± 3°C)		
Indicator		OUT1 = Green, OUT2 = Red		
Analog output (Only type AP25□-01-□, AP25□-03-□)		Output voltage: 1 to 5V ≤ ± 5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S.		Output voltage: 1 to 5V ≤ ± 2.5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S.
Environment	Enclosure	IP 65		
	Ambient temp. range	Operation: 0 ~ 50 °C, storage:-20 ~ 60 °C (No condensation or freezing)		
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)		
	Withstand voltage	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500VDC, between case and lead wire)		
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z		
Shock		980m/s <sup>2</sup> (100G), 3 times each in direction of X, Y and Z		
Temperature characteristic		≤±2% F.S. of detected pressure (25 °C) at temp. Range of 0~50 °C		
Port size		F1:1/8"PT, F2:1/8"NPT, F3: G1/8"		
Lead wire		Oil-resistance cable (0.15mm <sup>2</sup> )		
Weight		Approx. 105g (with 2M lead wire), Approx. 71g (with M8 male connector)		



## ORDERING INFORMATION

**A P 2 5 C - 0 1 - F 1 - □**

**Pressure Range**  
**C** : Compound (-100.0~100.0KPa)  
**V** : Vacuum (0.0~101.3KPa)  
**P** : Positive (-0.100~1.000 MPa)

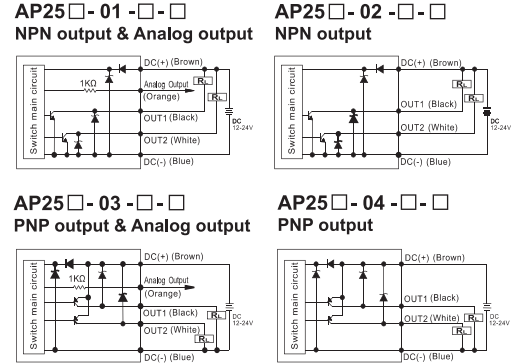
**Wiring Type**  
**Blank** : With 2-meter cable  
**QD** : With M8, 4-Pin male connector  
 \*(Only type AP25 □ - 02 - □ , AP25 □ - 04 - □)

**Pressure Port**  
**F1** : 1/8" BSPT  
**F2** : 1/8" NPT  
**F3** : G1/8" (BSPP)

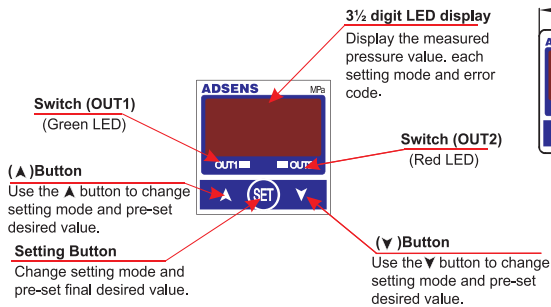
**Output Specifications**  
**01** : 2 NPN output & 1 Analog output  
**02** : 2 NPN output  
**03** : 2 PNP output & 1 Analog output  
**04** : 2 PNP output

**Optional parts**  
**M84R-PVC-2M / M84R-PVC-5M** : M8, 4-Pin female connector  
**AP20-A** : Mounting bracket (BT-1+BT-2)  
**AP20-B** : Panel adapter (PA-1+PA-2)  
**AP20-C** : Panel adapter + Front protective lid (PA-1+PA-2+FPC-1)

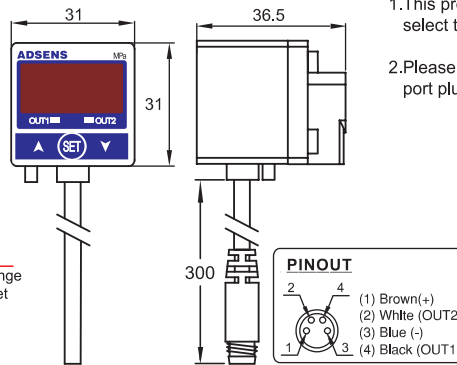
## OUTPUT CIRCUIT WIRING DIAGRAMS



## PANEL DESCRIPTIONS

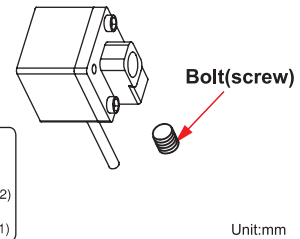


## DIMENSIONS



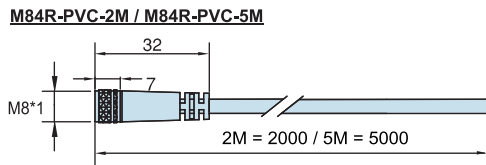
## INSTALLATION

1. This product has two inlet pressure ports, select the one most convenient for installation.
2. Please plug the unused inlet port with supplied port plug. Use seal tape to prevent pressure leak.

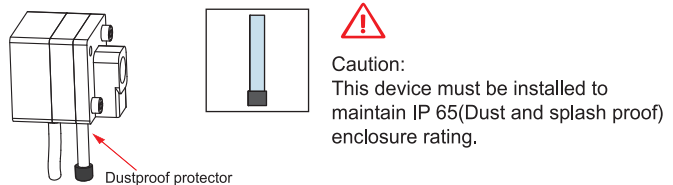


## OPTIONAL PARTS DIMENSIONS

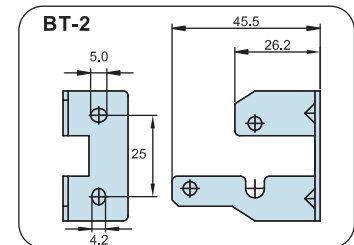
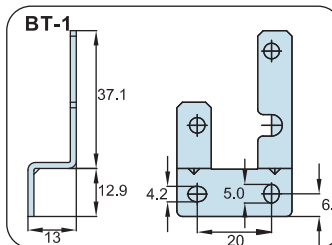
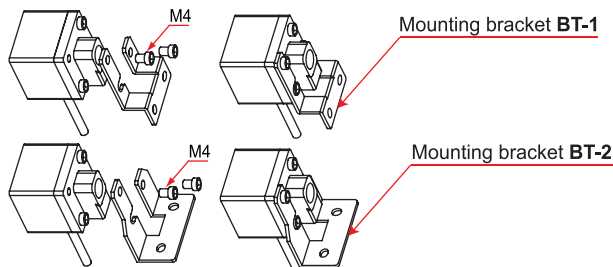
### 1 M8 Female Connector



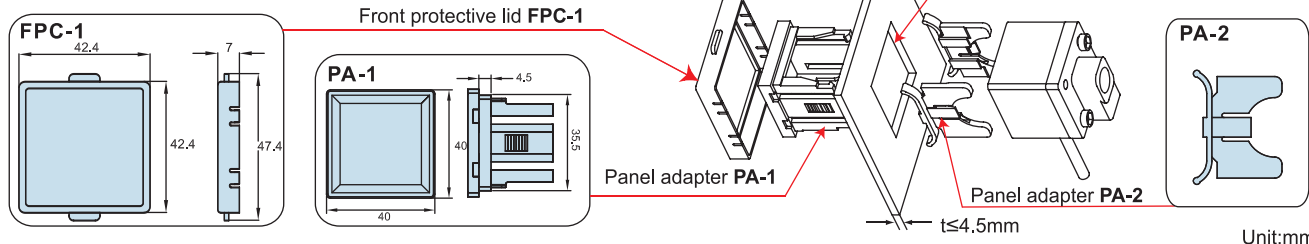
### 2 IP65 Protector



### 3 Mounting Bracket



### 4 Panel Mount Adapter + Front Protective Lid





### Features

- Pressure range : Compound -100~100kPa  
Vacuum 0~-101.3kPa  
Positive 0~1MPa
- Two switch output & one analog output.
- Hysteresis adjustable.
- High accuracy and Resolution.
- Low cost.



### SPECIFICATION

TYPE		AP30C (Compound)	AP30V (Vacuum)	AP30P (Positive)
Rated pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	0.0 ~ -101.3 kPa (0 ~ -29.9"Hg)	0.000 ~ 1.000 MPa (0 ~ 145 PSI)
Setting pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	10.0 ~ -101.3 kPa (1.45 PSI ~ -29.9"Hg)	-0.100 ~ 1.000 MPa (-14.5 ~ 145 PSI)
Withstand pressure		300 kPa (43.5 PSI)		1.5 MPa (217.5 PSI)
Fluid		Air, Non-corrosive gases ,incombustible gases		
Set pressure resolution	kPa	0.1		-
	MPa	-		0.001
	kgf/cm <sup>2</sup>	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	InHg	0.1		-
	mmHg	1		-
mmH <sub>2</sub> O		0.1		-
Power supply voltage		12 to 24VDC ±10%, Ripple (P-P) 10% or less		
Current consumption		≤55mA		
Switch output		NPN:open collector 2 outputs Max. load current : 80mA Max. supply voltage: 30VDC Residual voltage: ≤ 1V (load current 80mA)	PNP:open collector 2 outputs Max. load current : 80mA Max. supply voltage: 24VDC Residual voltage: ≤ 1V (load current 80mA)	
Repeatability(Switch output)		≤ ± 0.2% F.S. ± 1 digit		
Hysteresis	Hysteresis mode	Adjustable		
	Window comparator mode	Fixed (3 digits)		
Response time		≤ 2.5ms (chattering-proof function: 24ms, 192ms and 768ms selectable)		
Output short circuit protection		Yes		
7 segment LED display		3-1/2 digit LED display (Sampling rate: 5 times/sec.)		
Indicator accuracy		≤ ± 2% F.S. ± 1 digit (ambient temperature: 25 ± 3°C)		
Indicator		OUT1 = Green LED, OUT2 = Red LED		
Analog output (Only type AP30□-01-□, AP30□-03-□)		Output voltage: 1 to 5V ≤ ± 5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S.	Output voltage: 1 to 5V ≤ ± 2.5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S.	
Environment	Enclosure	IP 40		
	Ambient temp. range	Operation: 0 ~ 50 °C, storage: -20 ~ 60 °C (No condensation or freezing)		
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)		
	Withstand voltage	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500VDC, between case and lead wire)		
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z		
Shock		980m/s <sup>2</sup> (100G), 3 times each in direction of X, Y and Z		
Temperature characteristic		≤ ± 2% F.S. of detected pressure (25°C) at temp. range of 0~50°C		
Port size		F1: 1/8"BSPT, M5; F2: 1/8"NPT, M5; F3: G1/8"(BSPP), M5		
Lead wire		Oil-resistance cable (0.15mm <sup>2</sup> )		
Weight		Approx. 67g (with 2M lead wire), Approx. 35g (with M8 male connector)		

## ORDERING INFORMATION

**A P 3 0 C - 0 1 - F 1 - □**

### Pressure Range

- C : Compound (-100.0~100.0KPa)
- V : Vacuum (0.0~101.3KPa)
- P : Positive (-0.100~1.000 MPa)

### Output Specifications

- 01 : 2 NPN output & 1 Analog output
- 02 : 2 NPN output
- 03 : 2 PNP output & 1 Analog output
- 04 : 2 PNP output

### Cable Length / Connector

- Blank: With 2 meter cable
- QD : With M8, 4 Pin male connector
- \*(Only type AP30 □ - 02 - □, AP30 □ - 04 - □)

### Pressure Port

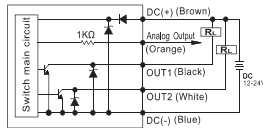
- F1 : 1/8" BSPT
- F2 : 1/8" NPT
- F3 : G1/8" (BSPP)

### Optional part

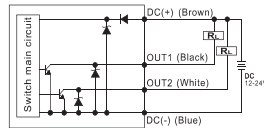
M84R-PVC-2M / M84R-PVC-5M : M8, 4-Pin female connector

## OUTPUT CIRCUIT WIRING DIAGRAMS

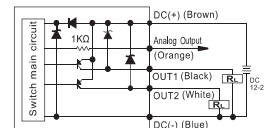
**AP30□-01-□-□**  
NPN output & Analog output



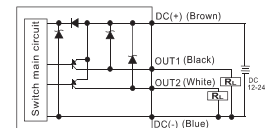
**AP30□-02-□-□**  
NPN output



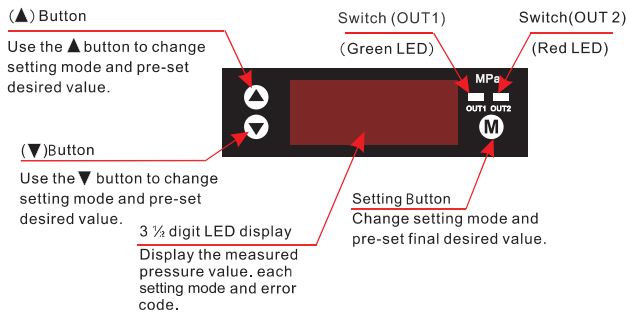
**AP30□-03-□-□**  
PNP output & Analog output



**AP30□-04-□-□**  
PNP output



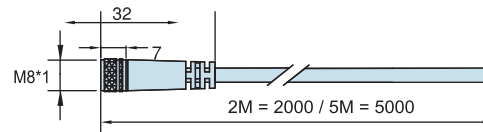
## PANEL DESCRIPTIONS



## OPTIONAL PART DIMENSIONS

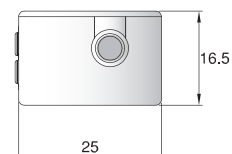
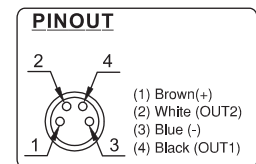
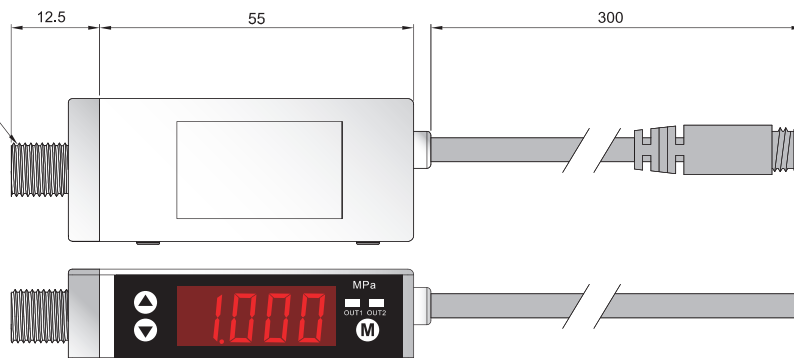
### M8 Female Connector

M84R-PVC-2M / M84R-PVC-5M



## DIMENSIONS

- F1 : 1/8" BSPT
- F2 : 1/8" NPT
- F3 : G1/8" (BSPP)



Unit:mm

Pressure Switch

Magnetic Switch

Circular Connector

## Features

- 2-Color display
- Selectable pressure unit
- Pressure unit indicate on sub-display
- Setting status indicate on sub-display
- Space saving design



## SPECIFICATION

TYPE		AP40C (Compound)	AP40V (Vacuum)	AP40P (Positive)
Rated pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	0.0 ~ -101.3 kPa (0 ~ -29.9"Hg)	0 ~ 1000 kPa (0 ~ 145 PSI)
Setting pressure range		-101.0 ~ 101.0 kPa (-14.6 ~ 14.6 PSI)	10.0 ~ -101.3 kPa (1.45 PSI ~ -29.9"Hg)	-100 ~ 1000 kPa (-14.5 ~ 145 PSI)
Withstand pressure		300 kPa (43.5 PSI)		1.5 MPa (217.5 PSI)
Fluid		Air, Non-corrosive / Non-flammable gas		
Set pressure resolution	kPa	0.1		1
	kgf/cm <sup>2</sup>	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	InHg	0.1		-
	mmHg	1		-
Power supply voltage		12 to 24VDC ±10%, Ripple (P-P) 10% or less		
Current consumption		≤ 45mA (With no load)		
Switch output		NPN open collector Max. load current : 125mA Max. supply voltage: 30VDC Residual voltage : ≤1.5V (load current 125mA)	PNP open collector Max. load current : 125mA Max. supply voltage: 24VDC Residual voltage : ≤1.5V (load current 125mA)	
Repeatability(Switch output)		≤ ±0.2% F.S. ±1digit		
Hysteresis	Hysteresis mode	Adjustable		
	Window comparator mode			
Response time		≤ 2.5ms (chattering-proof function: 24ms, 250ms, 500ms, 1000ms and 1500ms selectable)		
Output short circuit protection		Yes		
7 segment LCD display		Two-color (Red/Green) display (Sampling rate: 5 times/sec.)		
Indicator accuracy		≤ ±2% F.S. ±1 digit (ambient temperature: 25 ±3 °C)		
Switch ON Indicator		Green OUT Indicator		
Analog output (Voltage Output) (*1)		Output Voltage: 1 to 5V ≤ ±2.5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S. Output impedance: about 1kΩ		
Analog output (Current Output) (*2)		Output Current: 4 to 20mA ≤ ±2.5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S. Max.Load Impedance: 300Ω at power supply of 12V, 600Ω at power supply of 24V Min. Load impedance: 50Ω		
Environment	Enclosure	IP 40		
	Ambient temp. range	Operation: 0 ~ 50 °C, storage: -10 ~ 60 °C ( No condensation or freezing)		
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH ( No condensation)		
	Withstand voltage	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500VDC, between case and lead wire)		
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z		
Shock		100m/s <sup>2</sup> (10G), 3 times each in direction of X, Y and Z		
Temperature characteristic		≤ ± 2% F.S. of detected pressure (25°C) at temp. range of 0~50°C		
Port size		F1: 1/8"BSPT, M5; F2: 1/8"NPT, 10-32UNF; F3: G1/8"(BSPP), M5		
Lead wire		Oil-resistance cable (0.15mm <sup>2</sup> )		
Weight		Approx.*75 g (with 2-meter lead wire), Approx.*45g (with male connector)		

\*1:If analog voltage output is selected, the analog current output cannot be selected at the same time.

\*2:If analog current output is selected, the analog voltage output cannot be selected at the same time.

# AP40 SERIES



# Pressure switch

## ORDERING INFORMATION

**A P 4 0 C - 0 2 - F 1 - [ ] - J**

### Pressure Range

C : Compound (-101 ~ 101 kPa)  
 V : Vacuum (0 ~ -101.3 kPa)  
 P : Positive (-100 ~ 1000 kPa)

### Pressure Port

F1 : 1/8" BSPT, M5  
 F2 : 1/8" NPT, 10-32UNF  
 F3 : G1/8" (BSPP), M5

### Pressure Unit

Blank: Unit changeable  
 J: Unit unchangeable (Fixed unit is kPa)

### Output Specifications

010 : 1 NPN output & 1 Analog output (1-5V)  
 011 : 1 NPN output & 1 Analog output (4-20mA)  
 02 : 1 NPN output  
 030 : 1 PNP output & 1 Analog output (1-5V)  
 031 : 1 PNP output & 1 Analog output (4-20mA)  
 04 : 1 PNP output

### Cable Length / Connector

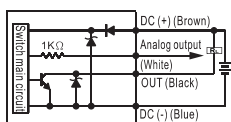
Blank: With 2-meter cable  
 QD: With M8, 4-Pin male connector

### Option part

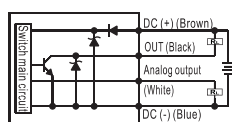
M84R-PVC-2M / M84R-PVC-5M : M8, 4-Pin female connector  
 AP20-A : Mounting bracket (BT-1+BT-2)  
 AP40-B : Panel adapter (PA-3+PA-4)  
 AP40-C : Panel adapter + Front protective lid (PA-3+PA-4+FPC-2)

## OUTPUT CIRCUIT WIRING DIAGRAMS

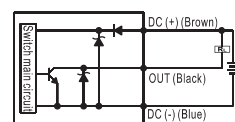
AP40 [ ] - 010 - [ ] - [ ]  
 NPN + Analog (Voltage) output



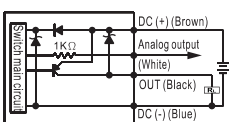
AP40 [ ] - 011 - [ ] - [ ]  
 NPN + Analog (Current) output



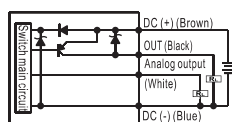
AP40 [ ] - 02 - [ ] - [ ]  
 NPN output



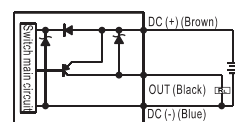
AP40 [ ] - 030 - [ ] - [ ]  
 PNP + Analog (Voltage) output



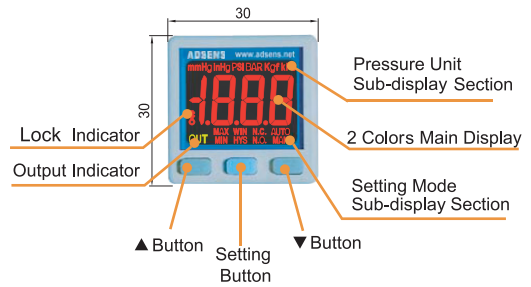
AP40 [ ] - 031 - [ ] - [ ]  
 PNP + Analog (Current) output



AP40 [ ] - 04 - [ ] - [ ]  
 PNP output



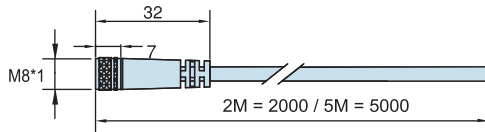
## PANEL DESCRIPTIONS



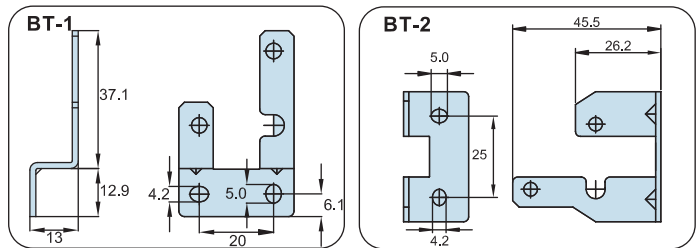
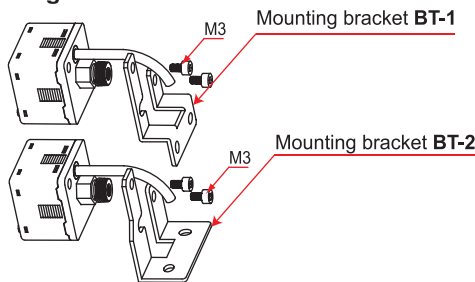
## OPTIONAL SPARE PARTS DIMENSIONS

### 1 M8 Female Connector

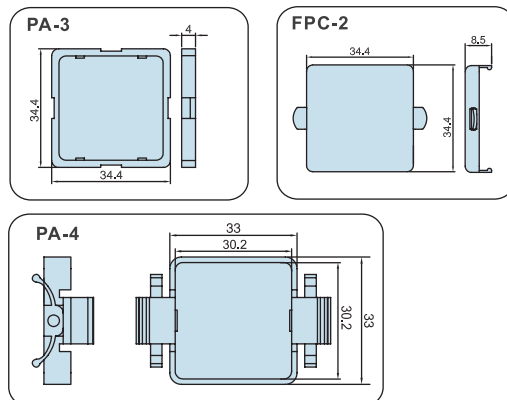
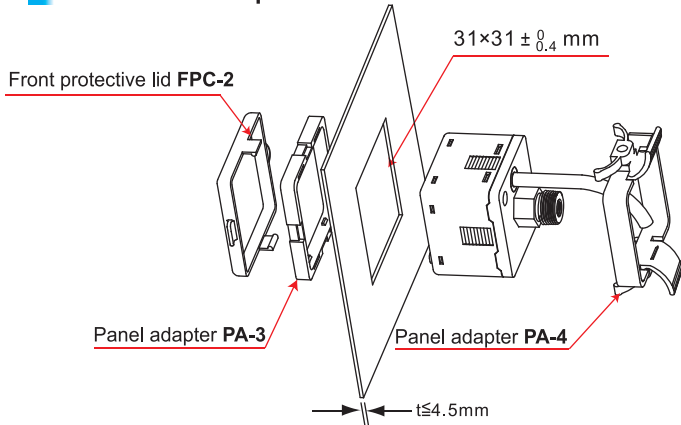
M84R-PVC-2M / M84R-PVC-5M



### 2 Mounting Bracket



### 3 Panel Mount Adapter + Front Protective Lid



Unit:mm

Pressure Switch

Magnetic Switch

Circular Connector

## Features

- 3 Colors Display, 3 Display Section .
- Unit Setting Available.
- When setting the pressure unit, it will display on the units-display section.
- The parameter of setting pressure can display. on the sub-display section.
- Key Lock Indicator.
- RoHs Directive Compliant.



## ■ SPECIFICATION

TYPE		AP42C (Compound)	AP42V (Vacuum)	AP42P (Positive)
Rated pressure range		-100.0 ~ 100.0 kPa (-14.5 ~ 14.5 PSI)	0.0 ~ -101.3 kPa (0 ~ -29.9" Hg)	0.000 ~ 1.000 MPa (0 ~ 145 PSI)
Setting pressure range		-101.0 ~ 101.0 kPa (-14.6 ~ 14.6 PSI)	10.0 ~ -101.3 kPa (1.45 PSI ~ -29.9" Hg)	-0.100 ~ 1.000 MPa (-14.5 ~ 145 PSI)
Withstand pressure		300 kPa (43.5 PSI)		1.5 MPa (217.5 PSI)
Fluid		Air, Non-corrosive gases, incombustible gases		
Set pressure resolution	kPa	0.1		-
	MPa	-		0.001
	kgf/cm <sup>2</sup>	0.001		0.01
	bar	0.001		0.01
	psi	0.01		0.1
	InHg	0.1		-
	mmHg	1		-
Power supply voltage		12 to 24VDC ±10%, Ripple (P-P) 10% or less		
Current consumption		≤ 40mA (With no load)		
Switch output		2 NPN open collector Max. load current : 125mA Max. supply voltage: 30VDC Residual voltage : ≤1.5V (load current 125mA)	2 PNP open collector Max. load current : 125mA Max. supply voltage: 24VDC Residual voltage : ≤1.5V (load current 125mA)	
Repeatability(Switch output)		≤ ±0.2% F.S. ±1digit		
Hysteresis	Hysteresis mode	Adjustable		
	Window comparator mode			
Response time		≤ 2.5ms (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selectable)		
Output short circuit protection		Yes		
7 segment LCD display		Two color (Red/Green) main & unit display, Orange sub-display (Sampling rate: 5 times/1sec.)		
Indicator accuracy		≤ ±2% F.S. ±1 digit (ambient temperature: 25 ± 3°C)		
Switch ON Indicator		Orange 1 & 2 Indicator		
Analog output (Voltage Output) (*1)		Output Voltage: 1 to 5V ≤ ±2.5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S. Output impedance: about 1kΩ		
Analog output (Current Output) (*2)		Output Current: 4 to 20mA ≤ ±2.5%F.S. (within rated pressure range) Linearity: ≤ ±1% F.S. Max.Load Impedance: 300Ω at power supply of 12V, 600Ω at power supply of 24V Min. Load impedance: 50Ω		
Environment	Enclosure	IP 40		
	Ambient temp. range	Operation: 0 ~ 50 °C, storage: -10 ~ 60 °C (No condensation or freezing)		
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)		
	Withstand voltage	1000VAC in 1-min (between case and lead wire)		
	Insulation resistance	50Mohm min. (at 500VDC, between case and lead wire)		
	Vibration	Total amplitude 1.5mm or 10G, 10Hz-150Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z		
Shock		100m/s <sup>2</sup> (10G), 3 times each in direction of X, Y and Z		
Temperature characteristic		≤ ±2% F.S. of detected pressure (25 °C) at temp. Range of 0-50 °C		
Port size		F1:1/8"BSPT, M5; F2:1/8"NPT, 10-32UNF; F3: G1/8", M5		
Lead wire		Oil-resistance cable (0.15mm <sup>2</sup> )		
Weight		Approx.*80g (with 2-meter lead wire), Approx.*45g (with male connector)		

\*1:If analog voltage output is selected, the analog current output cannot be selected at the same time.

\*2:If analog current output is selected, the analog voltage output cannot be selected at the same time.



# AP42 SERIES

# Pressure switch

## ORDERING INFORMATION

**A P 4 2 C - 0 2 - F 1 - [ ] - J**

**Pressure Range**

- C** : Compound (-101 ~ 101 kPa)
- V** : Vacuum (0 ~ -101.3 kPa)
- P** : Positive (-0.100 ~ 1.000 MPa)

**Pressure Port**

- F1** : 1/8" BSPT, M5
- F2** : 1/8" NPT, 10-32UNF
- F3** : G1/8" (BSPP) , M5

**Pressure Unit**

- Blank**:Unit changeable
- J**:Unit unchangeable (Fixed unit is kPa,MPa)

**Output Specifications**

- 010** : 1 NPN output & 1 Analog output (1-5V)
- 011** : 1 NPN output & 1 Analog output (4-20mA)
- 02** : 2 NPN output
- 030** : 1 PNP output & 1 Analog output (1-5V)
- 031** : 1 PNP output & 1 Analog output (4-20mA)
- 04** : 2 PNP output

**Cable Length / Connector**

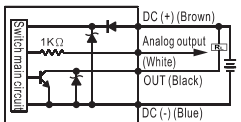
- Blank**:With 2 meter cable
- QD** : With M8, 4 Pin male connector

**Option part**

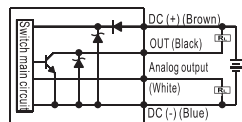
- M84R-PVC-2M / M84R-PVC-5M** M8, 4-Pin female connector
- AP42-A** Mounting bracket (BT-3+BT-4)
- AP40-B** Panel adapter (PA-3+PA-4)
- AP40-C** Panel adapter + Front protective lid (PA-3+PA-4+FPC-2)

## OUTPUT CIRCUIT WIRING DIAGRAMS

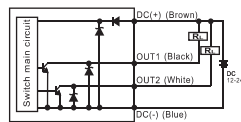
**AP42□- 010 -□-□**  
NPN + Analog (Voltage) output



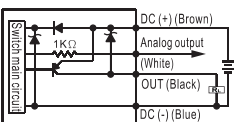
**AP42□- 011 -□-□**  
NPN + Analog (Current) output



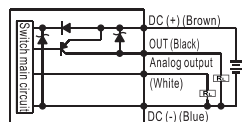
**AP42□- 02 -□-□**  
NPN output



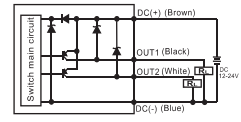
**AP42□- 030 -□-□**  
PNP + Analog (Voltage) output



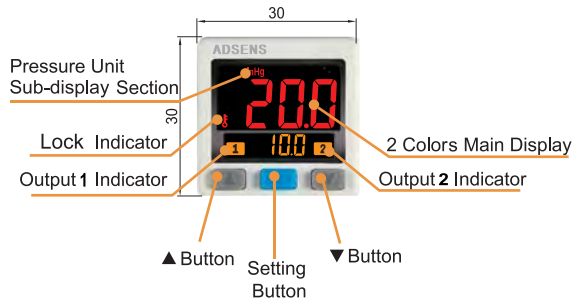
**AP42□- 031 -□-□**  
PNP + Analog (Current) output



**AP42□- 04 -□-□**  
PNP output



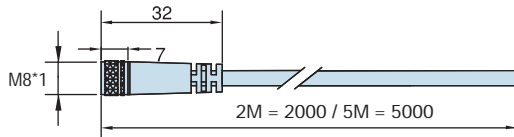
## PANEL DESCRIPTIONS



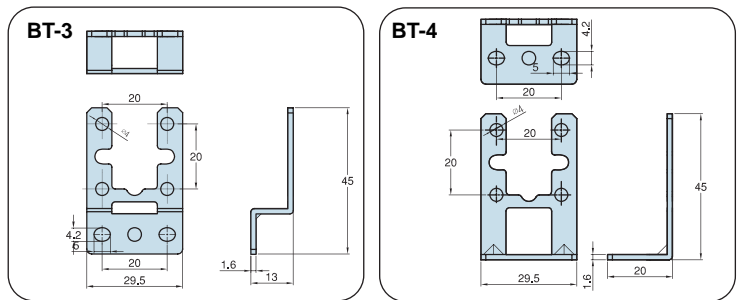
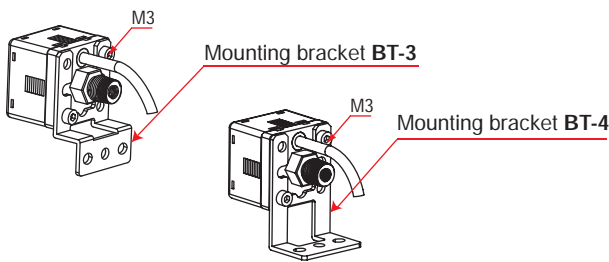
## OPTIONAL SPARE PARTS DIMENSIONS

### 1 M8 Female Connector

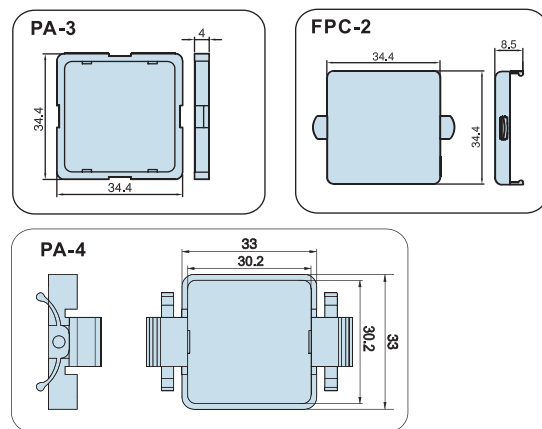
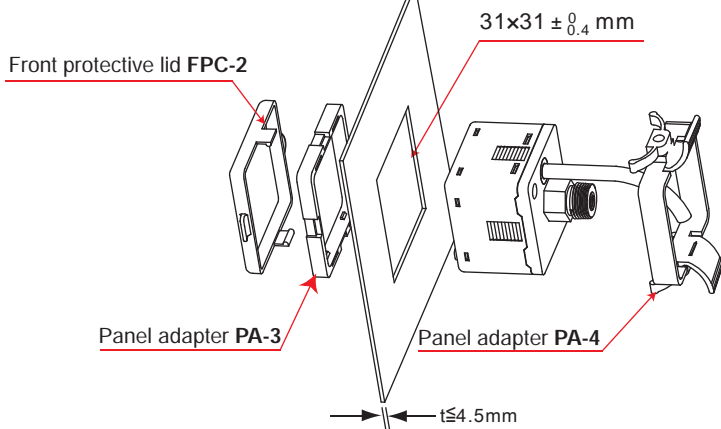
**M84R-PVC-2M / M84R-PVC-5M**



### 2 Mounting Bracket



### 3 Panel Mount Adapter + Front Protective Lid



Unit:mm

Pressure Switch

Magnetic Switch

Circular Connector



### Features

- Plug-in port or thread-in fitting
- Compact size
- Easy to use
- Low cost



### SPECIFICATION

TYPE	AP10V (Switch)	AP10P (Switch)	AP10V (Analog)	AP10P (Analog)
Setting pressure range	0 ~ 101.3 kPa	0 ~ 0.6 MPa	0 ~ 101.3 kPa	0 ~ 1.0 MPa
Withstand pressure	0.6 MPa	1.5 MPa	0.2 MPa	1.5 MPa
Fluid	Air, Non-corrosive / Non-flammable gas			
Power supply voltage	10.8 to 30V DC (include ripple voltage)		12 to 24V DC (5% ripple voltage)	
Load current	80mA max.		--	
Internal voltage drop	NPN≤0.8V, PNP≤0.8V		--	
Current consumption	10 mA max.			
Analog output	--		1~5 V ± 1% F. S. / Linearity ≤ ± 0.5% F. S.	
Sensor type	NPN or PNP		--	
Output short circuit protection	Yes		--	
Setting method	Adjusting by VR		--	
Response time	Approx. 1ms		--	
Repeatability	≤ ±1% F.S.		--	
Hysteresis	3% F.S. max.		--	
Indicator	Red LED turns ON		--	
Enclosure	IP 40			
Temperature characteristic	± 3% F.S. of detected pressure (25°C) at temp. Range of 0~50°C (32 ~ 122°F)		± 2% F.S. of detected pressure (25°C) at temp. Range of 0~50°C (32 ~ 122°F)	
Ambient temp. range	Operation: 0 ~ 60°C (32 ~ 140°F), Storage: -20 ~ 70°C (-4 ~ 158°F) (No condensation or freezing)		Operation: 0 ~ 50°C (32 ~ 122°F), Storage: -20 ~ 70°C (-4 ~ 158°F) (No condensation or freezing)	
Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)			
Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X, Y and Z			
Shock	980m/s <sup>2</sup> (100G), 3 times each in direction of X, Y and Z			
Piping method	Push-in tube or thread-in			
Lead wire	Oil-resistance cable, 3 wires (0.18mm <sup>2</sup> ), φ 2.6mm, 3M			
Weight	Approx. 50g (with 3-meter lead wire)			

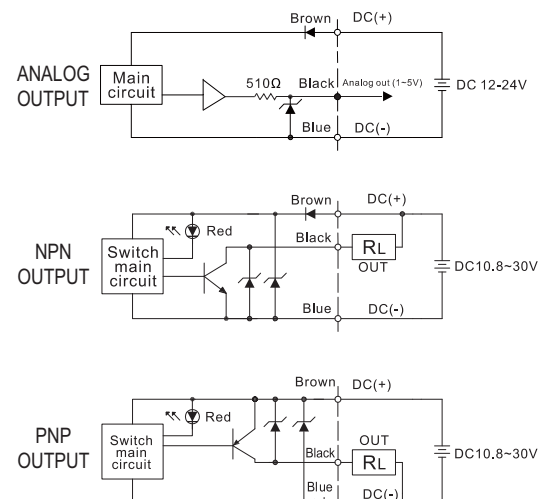
### ORDERING INFORMATION

Switch Specifications	Output Specifications	Pressure Port	Cable Length / Connector
V: Vacuum (0 ~ -101.3 kPa) P: Positive (0 ~ 1.0 MPa)	01 : Analog output(1~5V)	1/4 : Ø 1/4" Tube R4 : Ø 4mm Tube R6 : Ø 6mm Tube F1 : 1/8" PT, M5 F2 : 1/8" NPT, M5 F3 : G1/8"(BSPP), M5 M5 : M5*0.8	Blank: With 3 meter cable C : With M8, 3 Pin male connector

Switch Specifications	Output Specifications	Pressure Port	Cable Length / Connector
V: Vacuum (0 ~ -101.3 kPa) P: Positive (0 ~ 0.6 MPa)	02 : NPN output 04 : PNP output	1/4 : Ø 1/4" Tube R4 : Ø 4mm Tube R6 : Ø 6mm Tube F1 : 1/8" PT, M5 F2 : 1/8" NPT, M5 F3 : G1/8"(BSPP), M5 M5 : M5*0.8	Blank: With 3 meter cable C : With M8, 3 Pin male connector

Optional part  
M83R-PVC-2M / M83R-PVC-5M : With M8, 3 Pin female connector

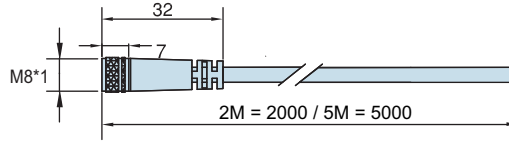
### CIRCUIT WIRING DIAGRAM





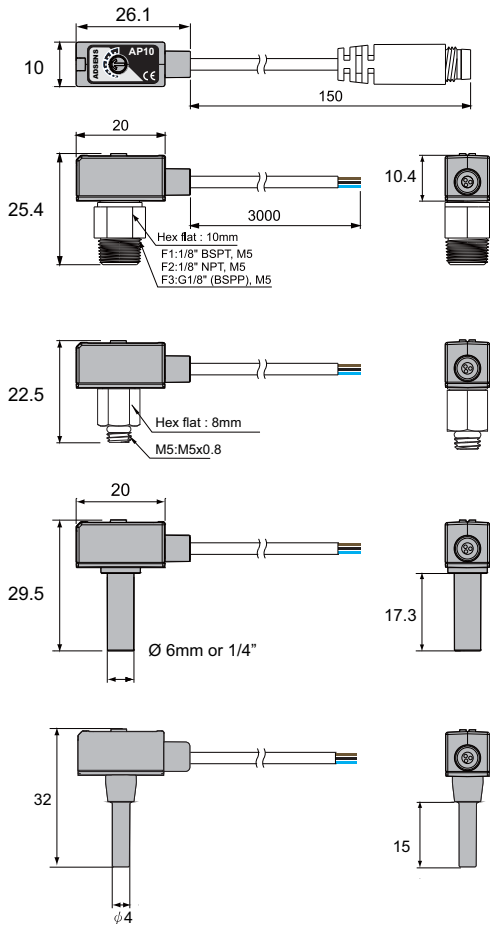
### TYPE OF SPARE PARTS / DIMENSION GRAPH

**M8 Female Connector**  
M83R-PVC-2M / M83R-PVC-5M

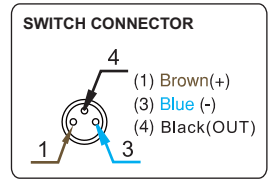
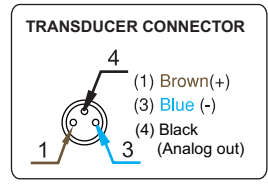
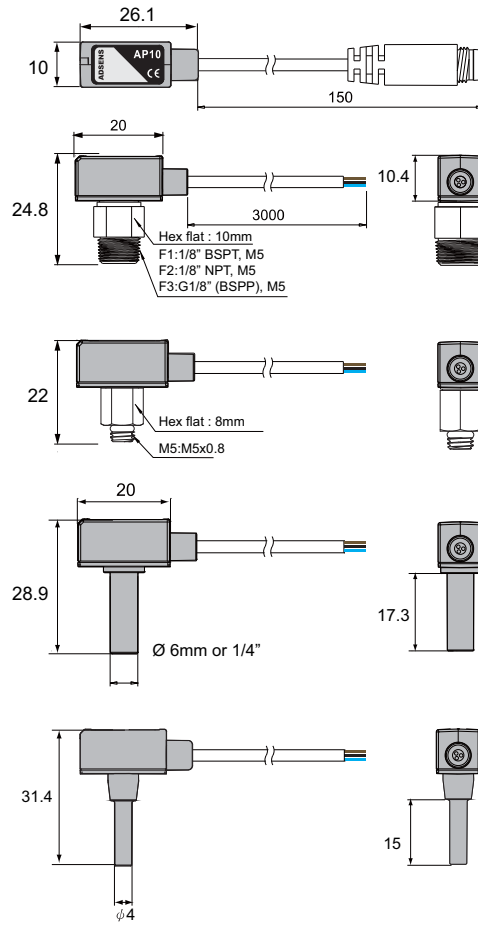


### DIMENSIONS

AP10□ - 02/04 - □



AP10□ - 01- □



Unit:mm

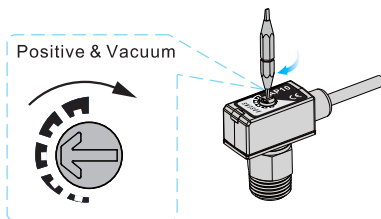
Pressure Switch

Magnetic Switch

Circular Connector

### HOW TO SET PRESSURE

- ▶ Use the Pressure setting trimmer to set "ON" pressure. Rotate clockwise to increase pressure setpoint .
- ▶ Rotate counter-clockwise to decrease pressure setpoint .
- ▶ Use appropriate size screwdriver for the setting trimmers. Gently turn the screwdriver to make adjustments. To prevent damage to the Pressure setting trimmer, DO NOT force the trimmer when it comes to a stop.



### OUTPUT TYPE

