





# Pressure Gauge Guide

## Pressure Gauge for General Purpose

Outside diameter	Model	Type	Indication precision ±% FS	Pressure range MPa	Connection thread	Material			Indication <sup>(1)</sup> unit	Attachment <sup>(2)</sup>
						Case	Clear cover	Stud		
	ø15 G15	Back side thread	5	0 to 1.0	R 1/8 M5 (Female thread)	Zinc die-casted (Black graphite coated)	Poly-carbonate	Zinc die-casted (Black graphite coated)	MPa	—
	ø26 G27	Back side thread		0 to 1.0					R 1/16	
	ø37.5 G36	Back side thread	3	0 to 0.2 0 to 0.4	R 1/8	Aluminum die-casted (Black disulfide molybdenum coated)	Poly-carbonate	Aluminum die-casted (Black disulfide molybdenum coated)	MPa	—
	GA36	Vertical side thread		0 to 0.7 0 to 1.0 0 to 1.5						
	ø42.5 G46	Back side thread	3	0 to 0.2 0 to 0.4	R 1/8 R 1/4	Aluminum die-casted (Black disulfide molybdenum coated)	Poly-carbonate	Aluminum die-casted (Black disulfide molybdenum coated)	MPa	Cover ring assembly
	GA46	Vertical side thread		0 to 0.7 0 to 1.0 0 to 1.5						R 1/8 R 1/4
	ø30 G33	Back side thread	3	0 to 0.2 0 to 0.3	R 1/8	Stainless steel	Glass	Brass	MPa	—
	GA33	Vertical side thread		0 to 0.4 0 to 0.6						
	ø43 G43	Back side thread		0 to 0.7 0 to 1.0						




Note 1) Please consult with SMC for other scale indication units and connecting thread "NPT".

Note 2) Possible for use in panel mounting.

Note 3) Please contact SMC for the pressure range 0 to 0.6 MPa of GA33.

## Oil-free/External Parts Copper-free Pressure Gauge


Outside diameter	Model	Type	Indication precision ±% FS	Pressure range MPa	Connection thread	Material			Indication <sup>(1)</sup> unit	Attachment <sup>(2)</sup>
						Case	Clear cover	Stud		
	ø42.5 G46E	Back side thread	3	0 to 0.2 0 to 0.4 0 to 0.7 0 to 1.0 0 to 1.5	R 1/8 R 1/4	Rolled steel (Black melamine painted)	Poly-carbonate (Hard coated)	Brass (Electroless nickel plated)	MPa	Cover ring assembly



Note 1) Please consult with SMC for other scale indication units and connecting thread "NPT".

Note 2) Possible for use in panel mounting.


## Pressure Gauge for Clean Series (10-Series)

Outside diameter	Model	Type	Indication precision ±% FS	Pressure range MPa	Connection thread	Material			Indication <sup>(1)</sup> unit	Attachment
						Case	Clear cover	Stud		
	ø44 G49	Back side thread	3	0 to 0.4 0 to 0.7 0 to 1.0	R 1/4	Zinc die-casted (Chrome plated)	Glass	Brass (Nickel plated)	MPa	—



Note 1) Please consult with SMC for other scale indication units and connecting thread "NPT".

## Pressure Gauge for Clean Regulator


Outside diameter	Model	Type	Indication precision ±% FS	Pressure range MPa	Connection thread	Material			Indication <sup>(1)</sup> unit	Attachment
						Case	Clear cover	Stud		
	ø42.5 G46-SRA, B	Back side thread	3	0 to 0.2 0 to 0.4 0 to 0.7 0 to 1.0 0 to 1.5	R 1/8 R 1/4	Stainless steel (Black melamine painted)	Poly-carbonate (Hard coated)	Stainless steel	MPa	Cover ring assembly



Note 1) Please consult with SMC for other scale indication units and connecting thread "NPT".

Note 2) Possible for use in panel mounting.

## Pressure Gauge with Switch

Outside diameter	Model	Type	Indication precision ±% FS	Pressure range MPa	Connection thread	Material			Indication <sup>(1)</sup> unit	Attachment <sup>(2)</sup>
						Case	Clear cover	Stud		
	ø42.5 GP46	Back side thread	3	0 to 1.0	R 1/8 R 1/4	Rolled steel (Black melamine painted)	Poly-carbonate	Brass	MPa	Cover ring assembly



Note 1) Please consult with SMC for other scale indication units and connecting thread "NPT".

Note 2) Possible for use in panel mounting.

Pressure Gauge with Switch

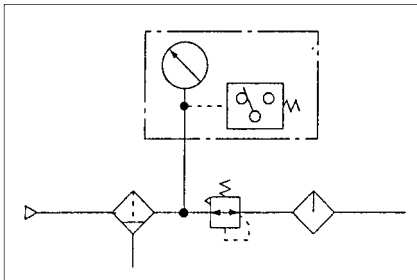
GP46

O.D.: ø42



- A pressure switch function has been added to the gauge.
- The pressure switch is equipped with a light for verifying operation.
- The pressure gauge is equipped with a limit indicator.
- To be used for verifying the supply pressure.

Circuit Example



- Be sure to read the precautions in page 14-11-15 for selection and installation.

Standard Specifications

Model		GP46
Gauge	Type	Back side thread
	Ambient and fluid temperature	-5 to 60°C (No freezing)
	Indicated pressure range	0 to 1.0 MPa
	Port size <sup>(1)</sup>	R 1/8, 1/4 (Option M: with M5 female thread)
	Fluid <sup>(2)</sup>	Air
Pressure switch	Indication precision	±0.03 MPa
	Setting range <sup>(3)(4)</sup>	1 to 0.8 MPa
	Hysteresis	0.07 MPa
	Pointer error <sup>(5)</sup>	±0.05 MPa (5 to 40°C) ±0.08 MPa (-5 to 60°C) No freezing
	Contact	With light: 1a (Normally open) Without light: 1ab (Normally open/ Normally closed)
	Wiring	Lead wire (Length: 300 mm)
	Indicator light	AC DC Neon light Light emitting diode (LED)
Attachment: With cover ring assembly		C Part no.: 1305104-4A
Weight (kg)		0.12

- Note 1) Indicates the condition at the lower pressure limit. Use a pipe tape for sealing. Recommended tightening torque: R 1/8: Set between 7 and 9 N·m, R 1/4: 12 and 14 N·m respectively.
- Note 2) Water is not an acceptable fluid. When using the other fluids, please consult with SMC for compatibility information concerning corrosion.
- Note 3) Set value of pressure switch is indicated by pointer (green). It is the point where the circuit between N.O. (white) and COM (black) is turned off during pressure decrease. To set the value, turn needle in clockwise position to the correct value. When setting; if desired set position has been passed, turn needle in a counterclockwise direction back again beyond the desired value and then once again return needle in a clockwise direction stopping at the desired value. Value must be set while needle is traveling in a clockwise direction.
- Note 4) Make sure to provide a minimum difference of 0.1 MPa between the set pressure and the operating pressure (including the pressure drop). If the difference is smaller, it could lead to improper operation. Refer to page 14-11-15 for details on how to set the setting needle. Use caution: Operating pressure should be the sum of the pressure of the setting needle error (±0.05 MPa), the hysteresis (0.07 MPa), and the display accuracy (±0.05 MPa) on the set pressure value, or the circuit between N.O. (white) and COM (black) may not turn ON while pressure is increasing.
- Note 5) Maximum error value: Add the pressure gauge indicator error of 0.03 MPa to the setting needle error.

Model (Standard)

Model	Pressure range <sup>(1)</sup> MPa	Indication unit	Connection thread	Note
GP46-10-01 to 02	0 to 1.0	MPa	R 1/8 R 1/4	—
GP46-10-01 to 02L2				
GP46-10-01 to 02L5				

- Note 1) Do not apply pressure more than the maximum display pressure. This will cause a malfunction.

Micro-switch Rated Voltage

Load	Load resistant		
	30 VDC	125 VAC	250 VAC
Rated voltage	30 VDC	125 VAC	250 VAC
Operating current range	0.01 to 0.5 A	0.01 to 0.3 A	0.01 to 0.2 A

How to Order

GP46 — 10 — 01 M L2 C X201

Pressure gauge with switch

Size

Symbol	Outside diameter
46	ø42.5

Max. display pressure

Symbol	Unit: MPa
10	1.0

Option

Symbol	Specifications
Nil	—
M	With M5 (Female thread)

Indicator light

Symbol	Specifications
Nil	Without indicator light
L2	Neon light (100 VAC/220 VAC)
L5	LED/24 VDC

Attachment (Cover ring assembly)

Symbol	Specifications
Nil	Without cover ring assembly
C	Clear cover has no protrusion. (Clear cover is irremovable.)

Option

Symbol	Specifications
Nil	—
X201	Lead wire length 3 m

Note 1) X3 (Wetted parts stainless steel) specification is not available.

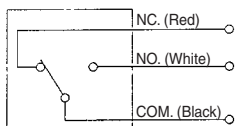
Note 2) Part number for pressure gauge with MPa·psi units is G46-P\*\*\*-X30. This will no longer be sold for use in Japan after the new Weight and Measure Act has been implemented (October, 1999).

Note) Option C1 (Clear cover has protrusion. / Clear cover is removable.) is not compliant.

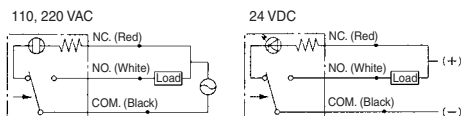
- F.R.L.
- AV
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- AF
- AR
- IR
- VEX
- AMR
- ITV
- IC
- VBA
- VE□
- VY1
- G
- PPA
- AL

## Circuit Diagram

### Without indicator light



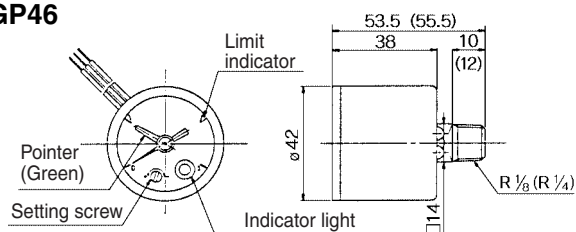
### With indicator light



The arrow in the diagram indicates the direction of the pressure increase. The light turns OFF when the pressure becomes higher than the set pressure and turns ON when the pressure becomes lower than the set pressure.

## Dimensions

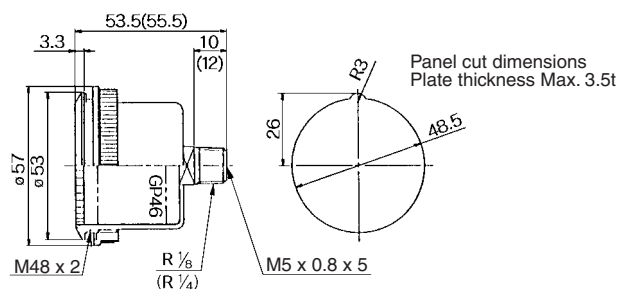
### GP46



( ): R 1/4

### GP46: With cover ring assembly (For panel mounting)

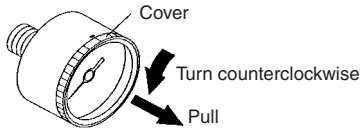
Clear cover is not removable.



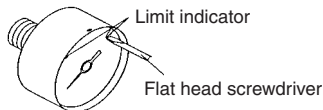
Refer to page 14-11-15 for mounting method.

**Procedure for Setting the Limit Gauge Indicator**

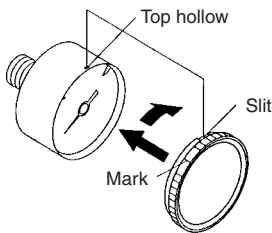
- (1) Before setting the (green) limit indicator, turn the cover counterclockwise (approximately 6 to 7 mm) until it stops. Then, remove by pulling it towards you.



- (2) Use a flat head screwdriver (with a 2.9 mm blade width) to set the (green) limit indicator. Be careful not to bend the other needle or damage the dial plate.



- (3) After completing the setting, replace the cover. Fit the cover by aligning the cutout in the cover to the groove on the top of the black case. Turn the cover clockwise (approximately 6 to 7 mm) until it stops. Make sure that the matching mark on the cover is aligned with the groove on the top of the case.



**⚠️ Precautions**

Be sure to read before handling. Refer to pages 14-21-3 to 14-21-4 for Safety Instructions and Common Precautions.

**Selection**

**⚠️ Caution**

1. Do not apply high load voltage (current) or surge current as this can cause the switch to malfunction.
2. Make sure that no direct impact or vibrations are applied to the body.
3. If operating under pressure pulsations or in high frequency operations, please contact SMC.

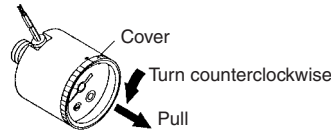
**Mounting**

**⚠️ Caution**

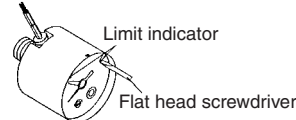
1. During transport and installation, do not apply shock to the product, such as by dropping doing so will affect its precision.
2. Regarding the installation posture, place it perpendicular to the ground, with the zero point on the reading of a pressure gauge facing down.
3. Do not install it in an area that is exposed to high temperature or humidity, because doing so will lead to improper operation.
4. To screw in the pressure gauge, make sure to turn the gauge by placing a wrench over the square wrench flats. If the pressure gauge is screwed in by holding it on some other area, air leakage or damage may result.

**Procedure for Setting the Limit Gauge Indicator and the Setting Needle**

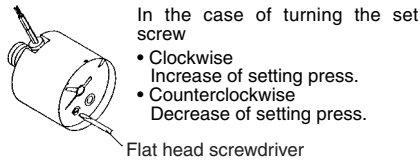
- (1) Before setting the limit indicator and the (green) setting needle, turn the cover counterclockwise (approximately 6 to 7 mm) until it stops. Then, remove by pulling it towards you.



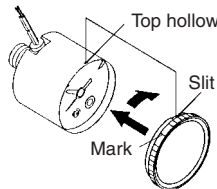
- (2) Use a flat head screwdriver (with a 2.9 mm blade width) to set the (green) limit indicator. Be careful not to bend the other needle or damage the dial plate.



- (3) Before setting the setting needle, use a flat head screwdriver (with a 2.9 mm blade width) to turn the setting screw and set the setting needle to the set pressure.

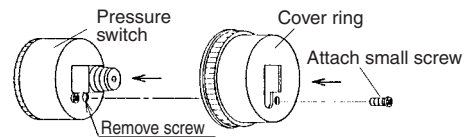


- (4) After completing the setting, replace the cover. Fit the cover by aligning the cutout in the cover to the groove on the top of the black case. Turn the cover clockwise (approximately 6 to 7 mm) until it stops. Make sure that the matching mark on the cover is aligned with the groove on the top of the case.

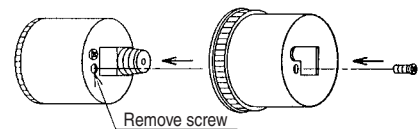


**Procedure for Assembling the Cover Ring Assembly**

● Pressure gauge for general purpose



● Pressure gauge with switch



1. Remove the small screw (1 position) from the pressure gauge.
2. Place the cover ring on the pressure gauge.
3. Using the small screw that is provided with the cover ring, install the cover ring. The installation torque is 0.3 to 0.5 N·m.

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