Autonics

Standard Pressure Transmitter
PTF30 SERIES

M A N U A L

Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

▣ Caution for your safety

※ Please keep these instructions and review them before using this unit.

※ Please observe the cautions that follow;
⚠ **Warning** Serious injury may result if instructions are not followed.
⚠ **Caution** Product may be damaged, or injury may result if instructions are not followed.

※ The following is an explanation of the symbols used in the operation manual.
⚠ Caution: Injury or danger may occur under special conditions.

⚠ Warning

1. **In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.**
   It may cause a fire, human injury or damage to property.
2. **Check explosion-proof standard(Ex d IIC T6) of this unit and do not use it in place where there are flammable or explosive gas, humidity, direct ray the light, radiant heat, vibration and impact etc.**
   It may cause a fire or explosion.
3. **Do not disassemble the case. Please contact us if it is required.**
   It may cause electric shock or a fire.

⚠ Caution

1. **Do not apply beyond rated pressure.**
   It may cause a damage to the product.
2. **Please observe the rated specifications.**
   It may shorten the life cycle of the product and cause a fire.
3. **Do not inflow dust or wire dregs into the unit.**
   It may cause a fire or a malfunction.
4. **Wire it properly after checking polarity of terminal.**
   It may cause a damage to the product.
5. **Please contact our service center if using for the corrosive detergent.**
   It may shorten the life cycle of the product and cause a damage to the product.
6. **In cleaning unit, do not use water or organic solvent. And use dry cloth.**
   It may cause electric shock or a fire.

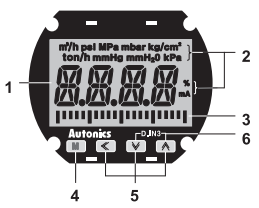
▣ Ordering information

PTF30 – G 6 N N – F8 (0 to 5kgf/cm²)
① ② ③ ④ ⑤ ⑥ ⑦

	Description			
①Item	PTF30	Pressure Transmitter		
②Measurement presssure	G	Gauge pressure		
	A	Absolute pressure		
③Pressure range		Absolute pressure		Gauge pressure
	1	0 to 0.35kgf/cm²	7	0 to 70kgf/cm²
	2	0 to 1kgf/cm²	8	0 to 200kgf/cm²
	3	0 to 2kgf/cm²	9	0 to 350kgf/cm²
	4	0 to 7kgf/cm²	A	-257mmHg to 0kgf/cm²
	5	0 to 20kgf/cm²	C	-760mmHg to 0kgf/cm²
	6	0 to 35kgf/cm²	F	-760mmHg to 2kgf/cm²
		—	H	-760mmHg to 7kgf/cm²
		—	M	-760mmHg to 20kgf/cm²
		—	O	-760mmHg to 35kgf/cm²
	Z	Others		
④HART communication output	N	None		
⑤Communication output	N	Without bracket		
	B	With bracket		
⑥Pressure port	F8	PF 3/8		
⑦User pressure range		User pressure range ※1		

※ **1**: Write the desired pressure range and it is the default of user pressure range. (Select "Z" at ③Pressure range)

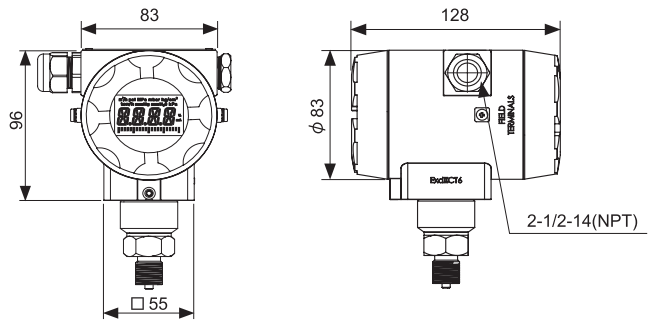
▣ Part descriptions



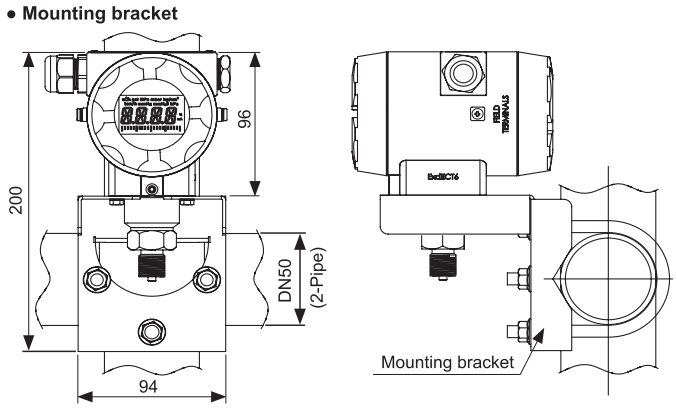
1. **Display part:** Displays detected pressure value, several setting value and errors.
2. **Unit display part:** Displays the currently set input unit.
3. **Output scale bar graph:** Displays output 4-20 mA as scale bar graph by 5% unit.
4. **M key:** Used to enter parameter mode, move parameters and save SV.
5. **≪, ≫, ∧ key:** Used to enter parameter set mode, move digits.
6. **D.IN3:** Press the ≫ and ∧ keys at the same time for 3 sec., the set function(display HOLD, zero-point adjustment) at dI -K in parameter.

▣ Dimensions

(unit: mm)



• **Mounting bracket**



※ **The above specifications are subject to change without notice.**

▣ Specifications

Series		PTF30
Measured materials		Vapor, Liquid, Fluid (except corrosive environment of SUS316)
Power supply		15-35 VDC
Display method		4 digit 12 Segment LCD Display
Character size		W 6.24×H10.73 mm (12 Segment) / W1.45×H2.5 mm (unit)
Output		DC4-20mA 2-wire Low-limit : 3.6 mA(-2.5%), High-limit : 21.6 mA (+10%)
Accuracy ※1		• 10% of Span < URL: ±(0.05 + 0.015 URL/Span)% of Span • 10% of Span ≥ URL: ±0.2% of Span
Temperature characteristics		At 20 ℃, ±(0.075% × URL + 0.15% × Span)
Setting method		Setting by front push keys
Sampling cycle		300 ms
Dielectric resistance		1000 VAC for 1 min. (between external terminal and case)
Vibration		0.75 mm amplitude at frequency of 5 to 55 Hz (for 1 min.) in each of X, Y, Z directions for 2 hours
Insulation resistance		Min. 100 MΩ (at 500VDC megger)
Noise resistance		Square shaped noise by noise simulator (pulse width 1 μs)±240 V
Memory protection		Approx. 10 years (non-volatile semiconductor memory type)
Enviro-nment	Ambient temperature	-20 to 70 ℃, storage: -20 to 80 ℃
	Ambient humidity	0 to 85%RH
Material		Body: Aluminum(AlDc.8S), Cover O-Ring: Buna N, Diaphragm: SUS316, Connections: SUS316
Explosion class※2		Ex d IIC T6 IP67
Approval		CE
Unit weight		1.2 kg

※ **1**: Span: User pressure range [L-RG to H-RG], URL: Pressure range by mode
※ **2**: This Explosion class is acquired and managed by Konics Co., Ltd.
※ Environment resistance is rated at no freezing or condensation.

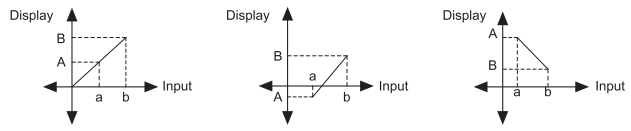
▣ Functions

◎ **Input unit [UNIt]**
You can select input unit.
(bar, mbar, Pa, kPa, MPa, gf/cm², kgf/cm², mmH₂O, psi, mmHg, %, OFF)

◎ **User input range [L-RG, H-RG]**
Even though each unit has the range, you can set user input range within the pressure range when input range is limited for actual usage.

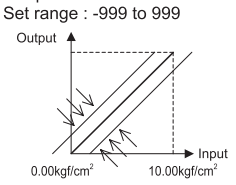
◎ **Decimal point setting [dP]**
This function is to change decimal point digit for input display value.
When input unit is set as % [o/o] or OFF [oFF], only the display position of decimal point is moved.
• Set range : 0 / 0.0 / 0.00 / 0.000
※ Set range is different by the pressure range.

◎ **Display scale [L-SC, H-SC]**
This function is to set (-1999 to 9999) for particular high/low limit value in order to display high/low limit value of measurement input. If measurement inputs are "a" and "b" and particular values are "A" and "B", it will display a=A, b=B as below graphs.

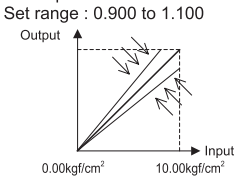


※ This function is available only when input unit is % [o/o] or OFF [oFF].

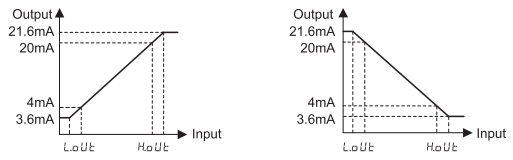
◎ **Zero-point correction [ZERo]**
It corrects the error of display value for 0% input.
• Set range : -999 to 999



◎ **Slope correction [SPAN]**
It corrects the error of display value for 100% input.
• Set range : 0.900 to 1.100



◎ **Output scale [LoUt, HoUt]**
For 4-20 mA current output, this function is set to display value for current output.
Set the display value for 4 mA[LoUt]and the display value for 20 mA[HoUt].



◎ **Digital filter [MAV.F]**
Digital filter is able to display stably and output the noise from input line and irregular signals. This unit applies moving average digital filter and display cycle is same.
• Set range : 01 to 16
※ when setting as 01, digital filter function does not run.

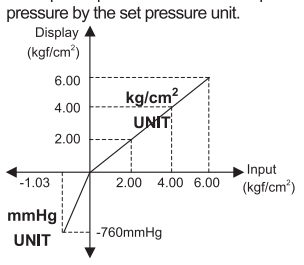
◎ **Digital input [dI -K]**
By front keys operation(D.IN3: ≫ + ∧ 3sec.), one of two functions executes as the below table.

Function		Operation
Hold	Display Hold	Temporarily indicated value is stopped in order to confirm indicated value in unstable input.
Z-tM	Zero-point adjustment	It is same function as [ZERo]. When executing this function, you can check and change correction value at ZERo.

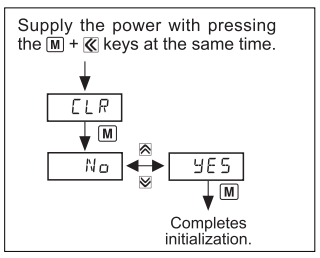
◎ **Multi-display selection [dSP1, dSP2]**
Select one for display 1 and display 2 among PV, oUt, LPEK, HPEK.
Set dSP1 and dSP2 differently and it displays two different values in turn for 2 sec.
When selecting LPEK (HPEK), the left (or the right) of output scale bar graph flashes for 0.5 sec.

◎ **High/Low peak monitoring [LPEK, HPEK]**
This function is to save high/low peak to check the invisible abnormal condition of system. Select this function display selection[dSP1, dSP2]parameter.
When the high/low peak is out of the temperature range, it displays HHHH or LLLL.
To initialize high/low peak, press the ≫, ∧ keys at the same time for 3 sec. at [HPEK] or [LPEK]. In this case, peak value is the present input value.

◎ **Two Unit Function [tUF]**
For compound pressure model, this function displays the input pressure which is below atmospheric pressure by mmHg unit. It displays the input pressure atmospheric pressure or over atmospheric pressure by the set pressure unit.



◎ **Parameter initialization [INIt]**
To initialize all parameter as factory default, supply the power to the product with pressing the M key and ≪ key at the same time and it enters initialization parameter.



◎ **Lock [LoCK]**
It limits to check parameter set value and to change it.

	oFF	LoC.1	LoC.2
Parameter	●	◐	○

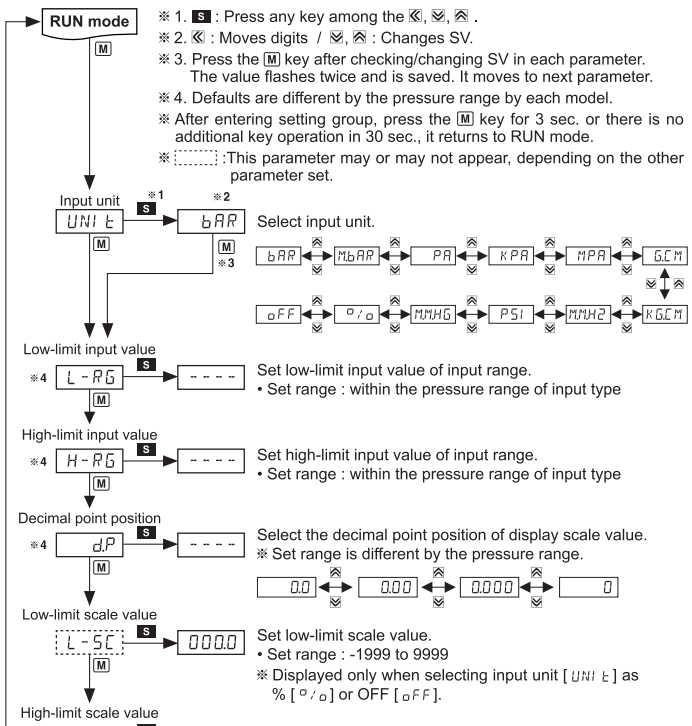
● : Enable to check/set
◐ : Enable to check, disable to set
○ : Disable to check

In LoC.2, only the LoCK parameter displays.

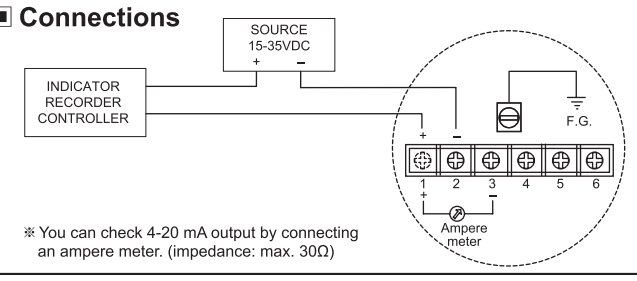
◎ **Error**

Display	Descriptions	Troubleshooting
HHHH	Flashes when measured pressure is higher than the 'pressure range'.	Adjust measured pressure within the 'pressure range'.
LLLL	Flashes when measured pressure is lower than the 'pressure range'.	
ERR	Flashes when there is error to SV	Re-set it after checking the setting conditions

▣ Parameters



▣ Connections



※ You can check 4-20 mA output by connecting an ampere meter. (impedance: max. 30Ω)

▣ Factory default

Parameter	Default	Parameter	Default	Parameter	Default	Parameter	Default
UNIt	bAR	L-SC	000.0	LoUt	0.000※1	dSP1	PV
L-RG	0.000※1	H-SC	100.0	HoUt	0.350※1	dSP2	PV
H-RG	0.350※1	ZERo	000	MAV.F	04	tUF	oFF
dP	0.350※1	SPAN	1.000	dI -K	Hold	LoCK	oFF

※ **1**: Defaults are different by the pressure range by each model.

▣ Caution for using

1. For connecting the power, use a crimp terminal(M3.5, min. 7.2 mm).
2. The connection of this unit should be separated from the power line and high voltage line in order to prevent inductive noise.
3. Install a power switch or a circuit breaker to supply or cut off the power.
4. Switch or circuit breaker should be installed nearby users for convenient control.
5. Do not use this unit near the high frequency instruments(high frequency welding machine & sewing machine, large capacity SCR controller).
6. When supplying input, if HHHH or LLLL is displayed, measured input may have problem. Turn off the power and check the line.
7. Installation environment.
   ① Indoor / Outdoor
   ② Altitude max. 2,000 m
   ③ Pollution degree 2
   ④ Installation category II

※ **It may cause malfunction if above instructions are not followed.**

▣ Major product

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connectors/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO_2, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers
- Recorders
- Indicators
- Converters
- Controllers
- Thyristor units
- Pressure transmitters
- Temperature transmitters

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TEL: 82-32-610-2730 / FAX: 82-32-329-0728
■ E-mail: sales@autonics.com

The proposal of a product improvement and development: product@autonics.com

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