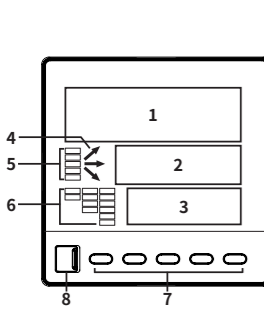


Unit Descriptions

- Below is based on TNL Series.
- The shape and function of each part may be different depending on the series, and it is possible to check the additional information in the user manual.



- PV display part (White)**
 - RUN mode: Displays PV (Present value) and unit.
 - Setting mode: Displays parameter name
- SV display part (Green)**
 - RUN mode: Displays SV (Setting value) and unit.
 - Setting mode: Displays parameter setting value.
- Operating value display part (Yellow)**
 - RUN mode: Displays selected value among MV (Manipulated output value), CT, TIME with unit.
- Temperature control indicator**
 - Fixed control: Relative PV value status display based on SV
 - PV > SV (↗), PV = SV (→), PV < SV (↘)
 - Program control: Displays temperature control status of up (↗), hold (→), down (↘).

5. Operation status indicator

Display	Name	Description
LOCK	Lock	Turns ON during key lock status.
PROG	Program	Turns ON during program control.
WAIT	Wait	Turns ON during waiting status.
HBA1/2	Heater break alarm	Turns ON when the heater break alarm output is ON.

7. Input key

Display	Name	Description
[U]	User key	
[M]	Mode key	
[◀], [▶], [▲], [▼]	Setting value control key	

8. PC loader port

For connecting communication converter (SCM-USP).

6. Output status indicator

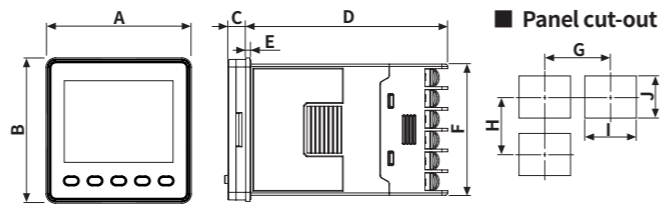
Display	Name	Description
OUT1/2	Control output	Turns ON when the control output is ON
AT	Auto tuning	Flashes during auto tuning every 1 sec
MAN	Manual control	Turns ON during manual control mode
STOP	Control output stop	Turns ON during control output stop mode
HOLD	Program control hold	Turns ON when program control is hold status
AL1 to 6	Alarm output	Turns ON when the alarm output is ON

Errors

Display	Input	Description	Output	Troubleshooting
oPEN	Temperature sensor	Flashes at 0.5 sec interval when input sensor is disconnected or sensor is not connected.	'Sensor error, MV' parameter setting value	Check input sensor status.
	Analog	Flashes at 0.5 sec interval when input is over F.S. ±10%.	'Sensor error, MV' parameter setting value	Check analog input status.
HHHH	Temperature sensor	Flashes at 0.5 sec interval if the input value is above the input range.	Heating: 0%, Cooling: 100%	When input is within the rated input range, this display disappears.
	Analog	Flashes at 0.5 sec interval if the input value is over 5 to 10% of high limit or low limit value.	Normal output	
LLLL	Temperature sensor	Flashes at 0.5 sec. interval if the input value is below the input range.	Heating: 100%, Cooling: 0%	When input is within the rated input range, this display disappears.
	Analog	Flashes at 0.5 sec interval if the input value is over 5 to 10% of low limit or high limit value.	Normal output	
ERR	-	Flashes at 0.5 sec interval if there is error for setting and it returns to the error-before screen.	-	Check setting method.

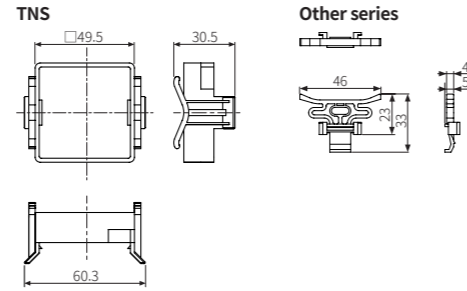
Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.
- Below is based on TNS Series.



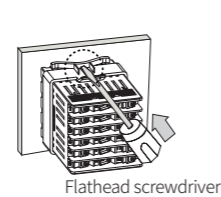
	Body						Panel cut-out			
	A	B	C	D	E	F	G	H	I	J
TNS	49	49	6	69	1.5	44.8	≥ 65	≥ 65	45 ^{+0.6} ₀	45 ^{+0.6} ₀
TNH	49	97	6	69	1.5	91.5	≥ 65	≥ 115	45 ^{+0.6} ₀	92 ^{+0.8} ₀
TNL	97	97	6	69	1.5	91.5	≥ 115	≥ 115	92 ^{+0.8} ₀	92 ^{+0.8} ₀

■ Bracket

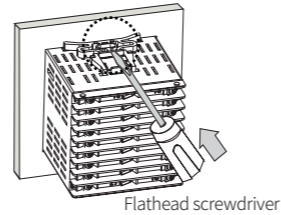


Installation Method

■ TNS



■ Other series

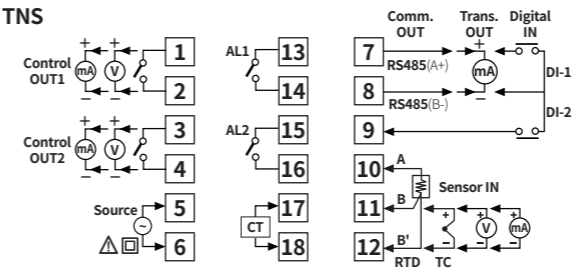


Insert the unit into a panel, fasten the bracket by pushing with tools with a flathead screwdriver.

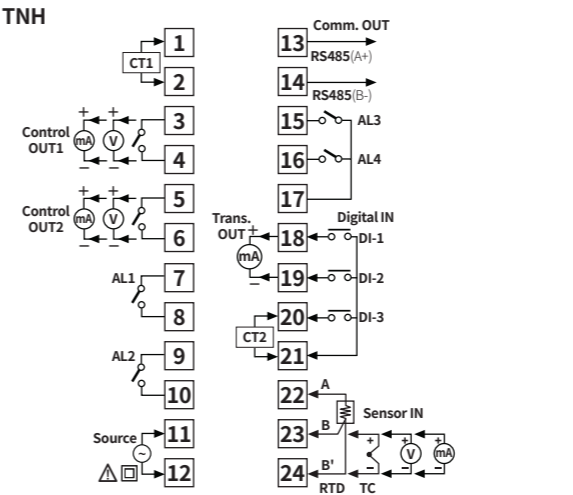
Connections

- Digital input is not electrically insulated from internal circuits, so it should be insulated when connecting other circuits.

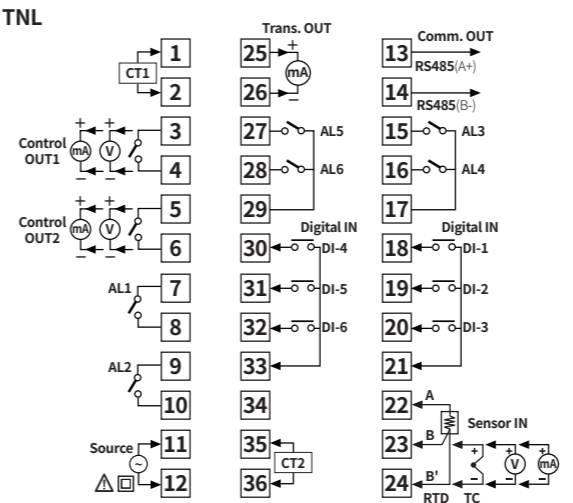
■ TNS



■ TNH

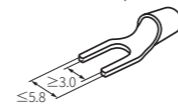


■ TNL

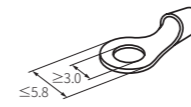


Crimp Terminal Specifications

- Unit: mm, Use the crimp terminal of follow shape.



Fork crimp terminal



Round crimp terminal

Initial Display When Power is ON

When power is supplied, after all display will flash for 1 sec, model name is displayed sequentially. After input sensor type will flash twice, enter into RUN mode.

Display part	1. Model	2. Model	3. Input specification	4. RUN mode
PV	EN5P	R5	TYPE	oPEN
SV	42RR	006	CRH	0

Mode Setting

Operation	Mode	Parameter	Value	
Auto before entering to mode (when using password)	Password input	Password	Key input	
		Pass	Auto	Entering mode
		Fail	[MODE]	Selected mode
			[MODE]	Password input
[◀], [▲], [▼] (in manual control)	MV setting	Move digits:	[◀]	
[◀], [▲], [▼] (in auto control)	SV setting	Change value:	[▲], [▼]	
[▼] + [▲] 3 sec	Control output run/stop	Save:	[MODE] or no key input over 3 sec	
[M] + [▲]	Operating value display part (MV/CT/TIME) setting	Auto		
[U] + [◀] / [▼] / [▲] 2 sec	Shortcut key 1/2/3	Auto		
[◀] + [▼] 3 sec	Key lock	[◀] + [▼] 3 sec		
[M] 2 sec	Parameter group	[◀] 2 sec		
[U] 2 sec	User customized parameter group	[U]		
[◀] + [▲] + [▼] 5 sec	Parameter reset	Auto		

* TNS series does not support 'MV setting', 'Operation value display part setting' mode. For the details, refer to the user manual.