



# Temperature Indicating Controller

# NOVA 500<sup>®</sup> SERIES



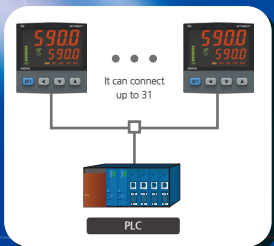
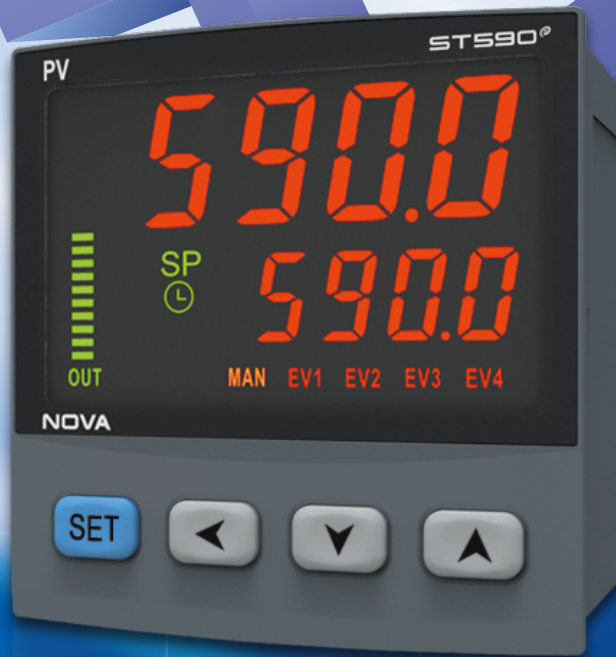
Digital Controller  
ST SERIES

Program Controller  
SP SERIES

Digital Indicator  
SD SERIES

Limit Controller  
SL SERIES

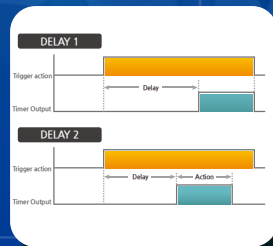
Digital Signal Converter  
SS SERIES



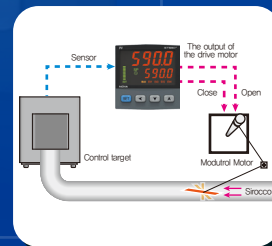
PLC Auto Connect



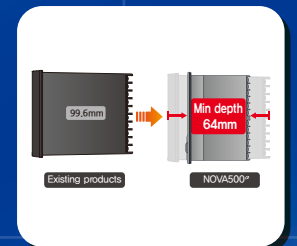
Parameter Management



Timer Output



Position Proportional Control



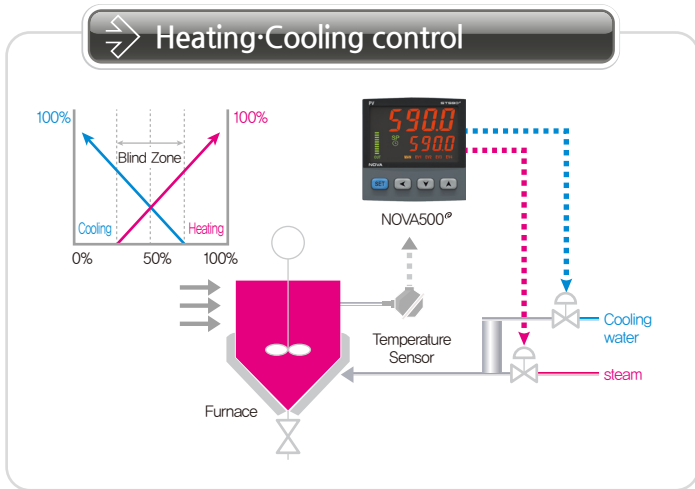
Compact Size



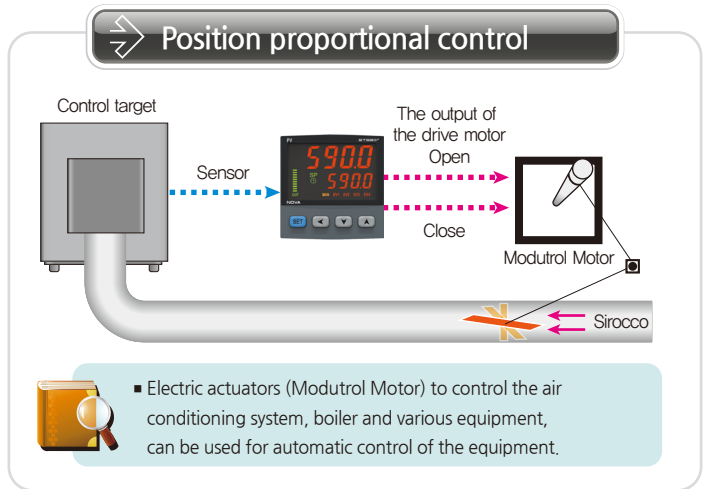
- Auto/Manual output support
- Reserve function of Run/End
- Run/Stop function
- Run/Stop by external input, SP selectable
- Power mode function(STOP, COLD, HOT)
- Transmission output of the basic 2points (PV, SP, MV)
- Alarm output basic 2points (Max.4points)
- Display of running status in auxiliary output
- Input piece bias function(Max. 4points)
- Various communication protocol support (Modbus and etc.)
- Heater Break Alarm support
- Various auxiliary output support (IS, ALM, TMR, RUN etc.)



### Heating-Cooling control



### Position proportional control



▪ Electric actuators (Modutrol Motor) to control the air conditioning system, boiler and various equipment, can be used for automatic control of the equipment.



Group	ST540 <sup>®</sup>	ST560 <sup>®</sup>	ST570 <sup>®</sup>	ST580 <sup>®</sup>	ST590 <sup>®</sup>
Size	48(W)×48(H)×79(L)	96(W)×48(H)×68(L)	72(W)×72(H)×68(L)	48(W)×96(H)×68(L)	96(W)×96(H)×68(L)
PV/SP display	Each 5 digits				
Sampling time	250ms				
Control mode	Normal control / Heating-Cooling control/Position proportional control				
PID control	4 PID groups(3 Zone PID groups + 1 Deviation PID group)				
Temperature setting(SP)	SP 1 ~ SP 4				
Analog input	Type/Accuracy	1point(Universal input) / ±0.1% of full scale ±1 digit (Inquire separately for PTC and JPTB)			
	TC	K, J, E, T, R, B, S, L, N, U, W, Platinel II, C			
	RTD	PT100(IEC), JPT100(JIS), 1/100 Displayable			
	DCV	-10 ~ 20mV, 0 ~ 100 mV, 0.4 ~ 2.0V DC, 1 ~ 5V DC, 0 ~ 10V DC(4 ~ 20mA, 0 ~ 20mA, External resistance 250Ω, 500Ω Attach)			
Analog output	Type	5points(Universal output)		6points(Universal output)	
	Output type	Control output, Retransmission output(PV, SP, MV) or loop power supply			
	SSR	12V DC(Resistance: Min. 600Ω)			
	SCR	4 ~ 20mA DC, 0 ~ 20mA DC(Option)(Resistance : Max. 500Ω) / Accuracy: ±0.1%			
Relay output	Relay	Max. 30V DC/1A, 250V AC/1A			
	Quantity	A : 2points + 1point		A : 2points + 2points	
	Specification	Max. 30V DC/1A, 250V AC/1A			
Digital input	Signal type	Is 2points, Alm 4points, Run 1point, Heat 1point, Cool 1point, Timer 2points, Hba 1point, Lba 1point			
	Function	2points(Voltage : Max. 12V DC, 10mA)			
Heater break alarm(HBA)	Run/Stop, SP select, Timer operation				
Communication	50A/800:1, 1000:1 CT				
Power	PC-Link, PC-Link(Checksum), Modbus(ASCII, RTU), Sync(Master, Slave), PLC COMM., Max. 115,200bps				
	100~240V AC, 50/60Hz, 10VA Max.				

Multi Input TC, RTD, DCV

Accuracy 0.1%

18bits A/D

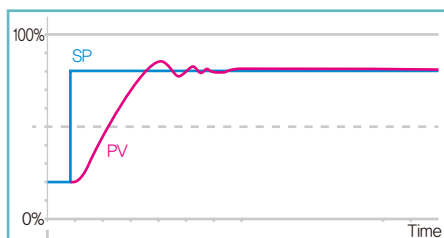
Easy Parameter



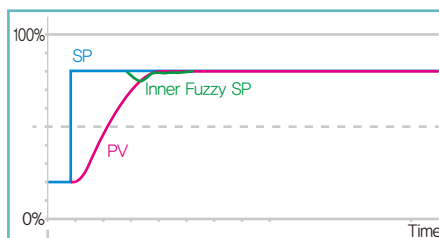
- 2 Patterns / 30 Segments
- By external contact input, RUN / STOP, HOLD, STEP, program selection.
- Power mode function(STOP, COLD, HOT)
- Transmission output of the basic 2points (PV, SP, MV)
- Alarm output basic 2points (Max.4points)
- Display of running status in auxiliary output
- Input piece bias function(Max. 4points)
- Various communication protocol support(Modbus and etc)
- Heater Break Alarm support
- Various auxiliary output support (IS, TS, PTEND, UP, SOAK, DOWN and etc.)



⇒ Powfull Fuzzy function(Overshoot control)



Normal control (Fuzzy off)



Fuzzy control (Fuzzy on)



In case when SP changes often, Fuzzy manages over-shoot with best results



Group		SP540 <sup>®</sup>	SP560 <sup>®</sup>	SP570 <sup>®</sup>	SP580 <sup>®</sup>	SP590 <sup>®</sup>
Size		48(W)×48(H)×79(L)	96(W)×48(H)×68(L)	72(W)×72(H)×68(L)	48(W)×96(H)×68(L)	96(W)×96(H)×68(L)
PV/SP display		Each 5 digits				
Sampling time		250ms				
Control mode		Normal control/Position proportional control				
Operation mode		Program				
Pattern/Segments		2 Patterns/30 Segments				
PID control		4 PID groups(3 Zone PID groups + 1 Deviation PID group)				
Analog input	Type/Accuracy	1point(Universal input) / ±0.1% of full scale ±1 digit (Inquire separately for PTC and JPTB)				
	TC	K, J, E, T, R, B, S, L, N, U, W, Platinel II, C				
	RTD	PT100(IEC), JPT100(JIS), 1/100 Displayable				
	DCV	-10 ~ 20mV, 0 ~ 100 mV, 0.4 ~ 2.0V DC, 1 ~ 5V DC, 0 ~ 10V DC(4 ~ 20mA, 0 ~ 20mA, External resistance 250Ω, 500Ω Attach)				
Analog output	Type	5points(Universal output)		6points(Universal output)		
	Output type	Control output, Retransmission output(PV, SP, MV) or loop power supply				
	SSR	12V DC(Resistance: Min. 600Ω)				
	SCR	4 ~ 20mA DC, 0 ~ 20mA DC(Option)(Resistance : Max. 500Ω) / Accuracy: ±0.1%				
Relay output	Relay	Max. 30V DC/1A, 250V AC/1A				
	Quantity	A : 2points + 1point		A : 2points + 2points		
	Specification	Max. 30V DC/1A, 250V AC/1A				
Digital input	Signal type	Is 2points, Alm 4points, Ts/Run/Pt end/Up/Soak/Down/Heat/Hba/Lba each 1point, Timer 2points				
	Specification	2points(Voltage : Max. 12V DC, 10mA)				
Heater break alarm(HBA)	Function	Run/Stop, Hold, Step, Ptn Select, Timer Operation				
	Heater break alarm(HBA)	50A/800:1, 1000:1 CT				
Communication		PC-Link, PC-Link(Checksum), Modbus(ASCII, RTU), Sync Master, PLC COMM., Max. 115,200bps				
Power		100~240V AC, 50/60Hz, 10VA Max.				

Multi Outputs SSR, SCR

USER SCREEN

KC, CE, IP65

FREE PC S/W

## SD560<sup>®</sup> Digital Indicator

- Reset function by the external input contact point
- Memory and display function of high and low temperature value
- 1point transmission output, 2points alarm output support (Max. 4points)
- Input piece bias function (Max. 4points)
- Various communication protocol support (Modbus and etc.)



## SL540<sup>®</sup> Limit Controller

- Memory and display function of high and low temperature value
- In case that over temperature occurs, relay recovery function by check key
- Memory and display function of time period from the power off the reset
- 1point transmission output, 1point over output, 1point alarm output support (Max. 2points)
- Input piece bias function(Max. 4points)
- Various communication protocol support (Modbus and etc.)

## ST510<sup>®</sup> Digital Controller

### ST510<sup>®</sup> Digital Controller

- Auto/Manual output support
- Reserve function of Run/End
- Run/Stop function
- Transmission output of the basic 2points (Max. 2points)
- Heater Break Alarm support
- Various auxiliary output support (IS, ALM, TMR, RUN etc.)

### SS510<sup>®</sup> Digital Signal Converter

- 1point input signal convert output support as standard(Max. 2Points)
- Memory and display function of high and low temperature value
- Suitable for a variety of Digital Signal Converter output to multiple inputs
- Various Digital Signal Converter support

## Rail Type Controller

- Slim rail type
- Power and communication can be multiple connections to simplify wiring
- Various communication protocol support (Modbus and etc.)
- Each section input correction function (Max. 4Points)



Group	SD560 <sup>®</sup>	SL540 <sup>®</sup>	ST510 <sup>®</sup>	SS510 <sup>®</sup>
Size	96(W)×48(H)×68(L)	48(W)×48(H)×79(L)	28(W)×100(H)×100(L)	
PV/SP display	Each 5 digits		Each 4 digits	
Sampling time	250ms			
Control mode	PV display		Normal control / Heating: Cooling control / Position proportional control	PV display
PID control	-		4 PID groups(3 Zone PID groups + 1 Deviation PID group)	-
Temperature setting(SP)	-		SP 1 ~ SP 4	-
Analog input	Type/Accuracy	1point(Universal input) / ±0.1% of full scale ±1 digit (Inquire separately for PTC and JPTB)		
	TC	K, J, E, T, R, B, S, L, N, U, W, Platinel II, C		
	RTD	PT100(IEC), JPT100(JIS), 1/100 Displayable		
Analog output	DCV	-10 ~ 20mV, 0 ~ 100 mV, 0.4 ~ 2.0V DC, 1 ~ 5V DC, 0 ~ 10V DC(4 ~ 20mA, External resistance 250Ω, 500Ω Attach)		
	Type	Fixing 1point	3points(Universal output)	Fixing 1point + 1point
	Output type	Retransmission output(PV) or loop power supply	Retransmission output(PV, SP) or loop power supply	Control output, Retransmission output (PV, SP, MV) or loop power supply
	SSR	-	24V DC(Resistance: Min. 600Ω)	Retransmission output(PV)
Relay output	SCR, RET	4 ~ 20mA DC, 0 ~ 20mA DC(Option)(Resistance : Max. 500Ω) / Accuracy: ±0.1%		
	Relay	-	250V AC 1A, 30V DC 1A	-
	Quantity	A : 2points + 2points	A: 1point + 1point	-
Digital input	Specification	2points(Voltage : Max. 12V DC, 10mA)	-	-
	Function	Start PV Min./Max., Reset PV Min./Max.	-	-
Heater break alarm(HBA)	-		50A/800:1, 1000:1 CT	-
Communication	PC-Link, PC-Link(Checksum), Modbus(ASCII, RTU), Sync(Master, Slave), PLC COMM., Max. 115,200bps			
Power	100~240V AC, 50/60Hz, 10VA Max.		24V DC, 2.7VA Max.	24V DC, 3.2VA Max.

Multi Input TC, RTD, DCV

Accuracy 0.1%

18bits A/D

Easy Parameter

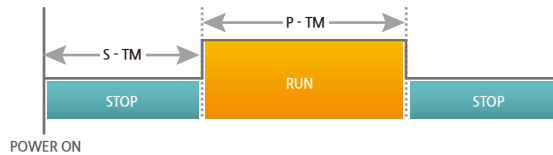
# NOVA500<sup>®</sup> SERIES Feature

## ⇒ Built-In Reserve function of RUN and STOP(ST Series)

- Reserve function of Run is to start control temperature after setting time(S-TM).
- Reserve function of End is to stop control output when after pass the setting time(P-TM).

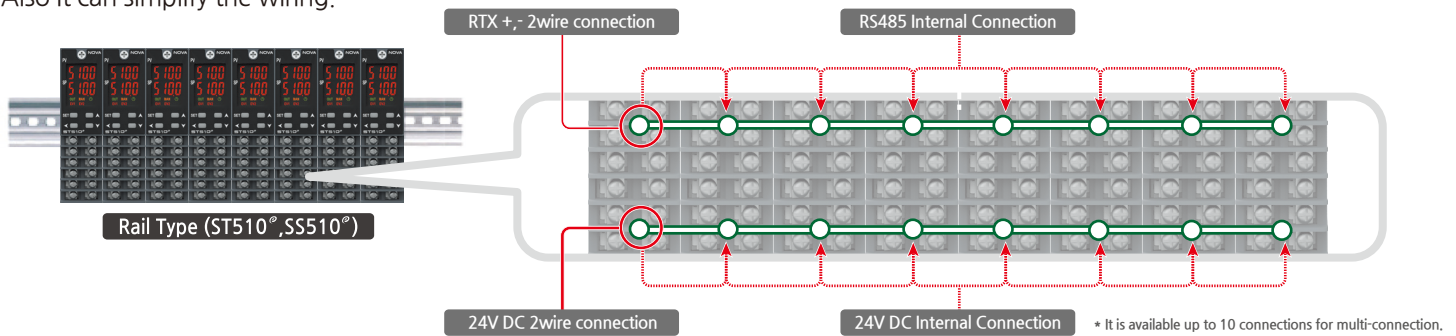


Display in Reserve Function Status

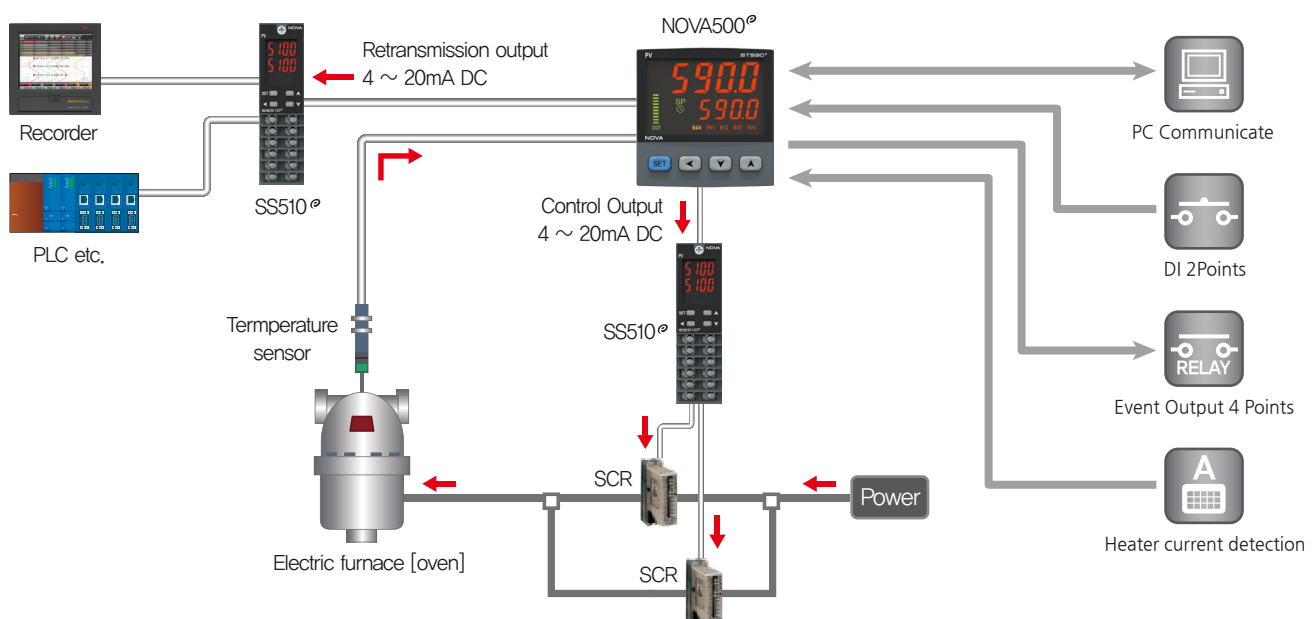


## ⇒ Multi-connect of power and communication

- If It use a rail-type controller, It can multi-connection of the power and communications to the contact instrumentation. Also It can simplify the wiring.



## ⇒ Electric furnace [oven] control



Multi Outputs SSR, SCR

USER SCREEN

KC, CE, IP65

FREE PC S/W

# NOVA500<sup>®</sup> SERIES Feature

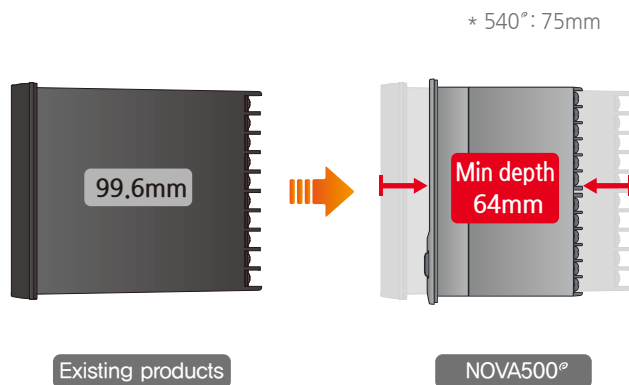
## ⇒ Parameter Management

- Simple Parameter setting and transition using PC S/W.



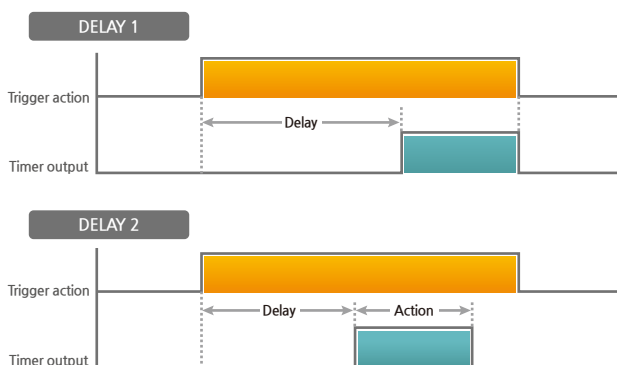
## ⇒ Compact Size

- Compact and space-saving design.



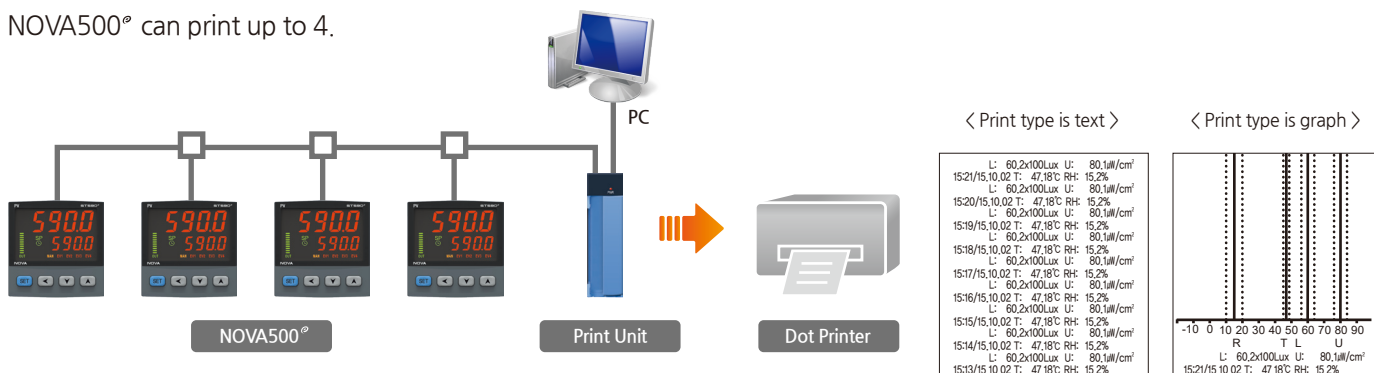
## ⇒ Support timer signal output

- When the trigger (DI1, DI2, RUN) action, the internal timer action can reduce the external device (timer) used to make wiring simple.



## ⇒ Support Dot Printer

- Print the PV, SP and various Information(time, unit, sensor type etc.).
- NOVA500<sup>®</sup> can print up to 4.



Multi Input TC, RTD, DCV

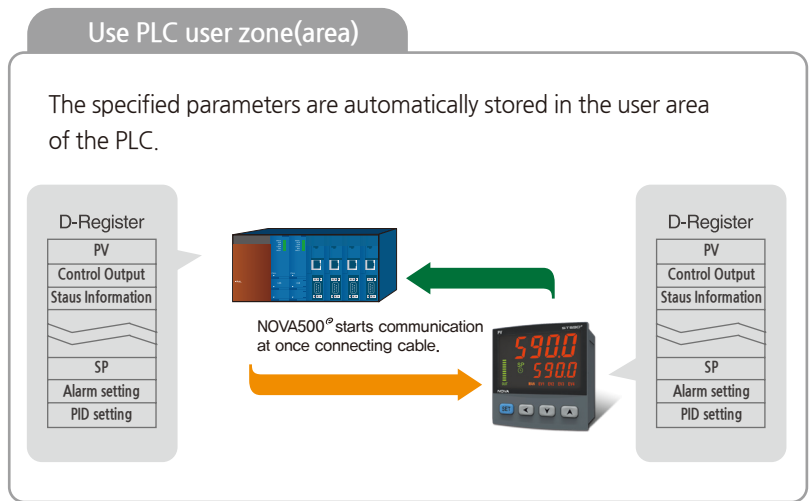
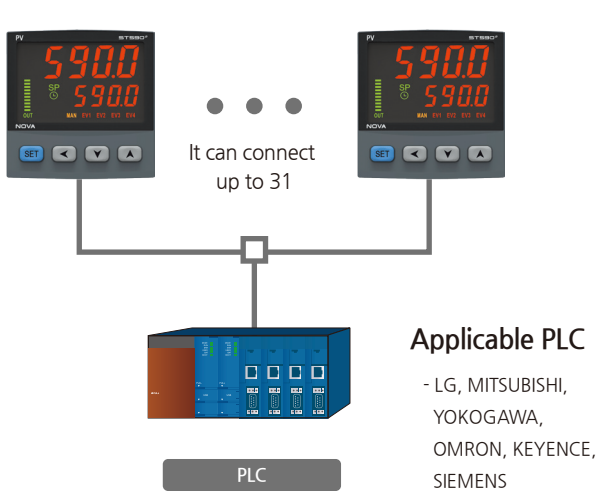
Accuracy 0.1%

18bits A/D

Easy Parameter

## Programless Communication

- Communicating with PLC without program, PLC is a communication port can be connected to up to 31 units.



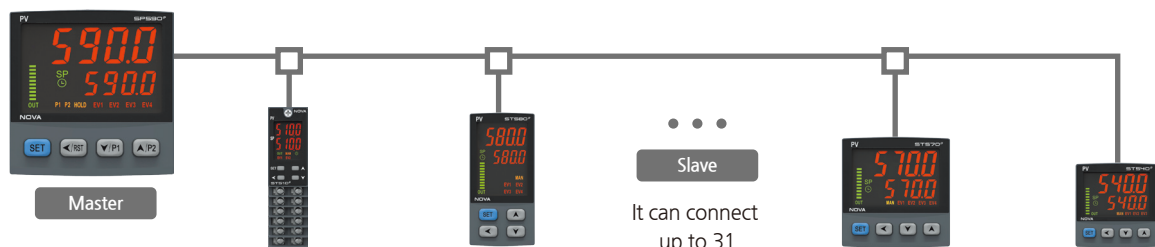
## FREE PC S/W

- Support free PC S/W which can control/monitor the NOVA500® series on user PC, and improves user convenience and economics.



## Powerful Sync communication

- As synchronizing Slave controllers with Master setting point, the controllers operate same program as NOVA500® series Master controller. Low price controllers can operate same as programmable controller-Saving prime cost.



Multi Outputs SSR, SCR

USER SCREEN

KC, CE, IP65

FREE PC S/W

## Model code

Model	Additional Code	ST590° ST570° ST540°	ST580° ST560°	ST510°	SP590° SP570° SP540°	SP580° ST560° SP540°	SD560°	SL540°	SS510°	Remark
S * 5 □ 0 °	- □ □ /□	ST SERIES			SP SERIES		SD	SL	SS	
Size	1			RAIL TYPE					RAIL TYPE	
	4			48*48	-	48*48	-	48*48	-	
	6			96*48	-	96*48	96*48	-	-	
	7			72*72	-	72*72	-	-	-	
	8			48*96	-	48*96	-	-	-	
Type	0			Normal control		Normal control	Normal control	Normal control	-	
	1			Heating · Cooling control		-	-	-	-	
	2			Position proportional control		Position proportional control	-	-	-	
Retransmission output(SS)	A			-		-	-	-	4~20mA	
	B			-		-	-	-	0~20mA	
	1			-		-	-	-	0~100mV	
	2			-		-	-	-	0~10V	
	3			-		-	-	-	0~5V	
Power	0			100 ~ 240V AC	-	100 ~ 240V AC	100 ~ 240V AC	100 ~ 240V AC	-	
	1			24V DC		24V DC	24V DC	24V DC	24V DC	
Option	/EV			RELAY 2points	RELAY 1point	RELAY 2points	RELAY 2points	RELAY 2points	-	Att.1
	/RS			RS485		RS485	RS485		RS485	
	/DI			DI 2points	-	DI 2points	DI 2points	-	-	Att.2
	/HBA			Heat Burnout 1point		Heat Burnout 1point	-	-	-	
	/MT			-	Multi-connection	-	-	-	Multi-connection	
	/A1			-	-	-	-	-	4~20mA	
	/A2			0~20mA	-	0~20mA	-	-	0~20mA	Att.3,4
	/V1			-	-	-	-	-	0~100mV	
	/V2			0~10V	-	0~10V	-	-	0~10V	Att.3,4
/V3			0~5V	-	0~5V	-	-	0~5V	Att.3,4	
/V4			1~5V	-	1~5V	-	-	1~5V	Att.3,4	

Att.1) 540° RELAY 1Point Att.2) DI/HBA is unavailable to mix (570° is available to mix) Att.3) ST, SP OUT1 Option Att.4) If 540° Option OUT2 is unavailable Att.5) 570° is unavailable

## External and Cutting size

