



### Power Cable Wiring

100-240V AC 50/60Hz

24V DC

NOVA100<sup>®</sup>

- Use Vinyl insulation wire 0.9~2.0mm<sup>2</sup> (Allowed Rating Voltage 300V max) or higher leveled cable for Power Cable Wiring.
- Use the main power disconnect device in case of abnormal situations occur.

**CAUTION**

- For power connection, make sure that N-phase and L-phase (+ and - phases for DC Power) are connected.
- Turn off the power of NOVA100<sup>®</sup> when wiring the terminal to prevent electrical shock.
- DC Power will operate at 24V DC, 4.1VA Max.

### Analog Input Wiring

① RTD INPUT

Class 3 Ground

② DC VOLTAGE INPUT

Class 3 Ground

③ DC CURRENT INPUT

Class 3 Ground

### External Contact Output Wiring

- When using an auxiliary relay or inductance load (L) such as solenoid, be sure to insert a CR filter(for AC) or diode (for DC) in parallel as a surge-suppressor circuit to reject sparks, preventing malfunction or damage.
- Recommended CR FILTER
  - Seong Hoo Electronics : BSE104R1 20 25V (0.1μ+120Ω)
  - HANA PARTS CO. : HN2EAC
  - Songmi Electric Co.,Ltd. : CR UNIT 953, 955 etc
  - Jiwol Electric Co.,Ltd. : SKV, SKVB etc
  - Shinyoung Communications Co.,Ltd. : CR-CFS, CR-U etc

### Display Error and Correction

Display ERROR	ERROR Contents	Correction
ESYS	EEPROM, Data Loss	Ask Repair
ERJC	R/C Sensor Failure	Ask Repair
Flash Decimal point of SP	Communication Failure	Check Comm Cable
SOPN	Sensor Open	Check Sensor
EAT	AT Time Out (27h over)	Check Process

### Terminal Specification

- Use M3 screw-compatible crimp-on terminals with insulating sleeve as shown below.

**CAUTION**

Never touch the terminal in the rear panel to prevent electric shock when power is supplied to the controller, and Be sure to turn off the electric power before wiring. Bind the wires connected to the controller terminals neatly together in order to prevent electromagnetic wave radiation.

### Analog Output Wiring

① SSR/SCR

Class 3 Ground

② RET

Class 3 Ground

4~20mA DC, 500Ω max  
Receiver (Recorder etc)

SCR : 4~20mA DC, 500Ω max  
SSR : 12V DC min, 600Ω min  
24V DC, 600Ω min(DC Power)

**CAUTION**

To prevent electric shock, be sure to turn off the Controller and the source circuit breaker before connection/disconnection of the actuator, receiver as well as wiring.

① In case of DC Power

② In case of AC Power

**CAUTION**

- To protect electric shock, be sure to turn off the Controller and the source circuit breaker before wiring.
- DIODE, CR FILTER connection  
Need to connect direct to INDUCTANCE(L) Terminal (SOCKET)
- Auxiliary RELAY connection  
Auxiliary Rating Specification of RELAY COIL should be used lower than the Contact Rating of Controller (RELAY Contact Rating : 250V AC 1A/30V DC 1A)

### Communication Wiring (RS485)

Master Station

NOVA100<sup>®</sup>

NOVA100<sup>®</sup>

Terminating Resistor

RTX+

RTX-

SHIELD

Class 3 Ground

Class 3 Ground

- Up to 31 slave controllers(NOVA100<sup>®</sup>) series instruments equipped with communication option) can be multidrop-connected.
- Be sure to connect terminating resistors(220Ω, 1/4W) to slave and master controllers at communication-channel ends as shown above.

**CAUTION**

To prevent electric shock, be sure to turn off the Controller and source circuit breaker before wiring.

### Terminal Arrangement and External wiring

#### ST190<sup>®</sup>

EV1 ALM1, EV2 ALM2, COOL

OUT1 SSR, SCR, RELAY

RELAY Contact Rating : 250V AC 1A/30V DC 1A

Voltage Pulse 4~20mA DC

RELAY Contact Rating : 250V AC 1A/30V DC 1A

RET 4~20mA DC

RS485 Max:115,200bps

POWER 24V DC 4.1VA Max, 100-240V AC 50/60Hz 10VA Max

TC INPUT, m/V/V INPUT, RTD INPUT

#### ST180<sup>®</sup>

EV1 ALM1, EV2 ALM2, COOL

OUT1 SSR, SCR, RELAY

RELAY Contact Rating : 250V AC 1A/30V DC 1A

Voltage Pulse 4~20mA DC

RELAY Contact Rating : 250V AC 1A/30V DC 1A

RET 4~20mA DC

RS485 Max:115,200bps

POWER 24V DC 4.1VA Max, 100-240V AC 50/60Hz 10VA Max

TC INPUT, m/V/V INPUT, RTD INPUT

#### ST140<sup>®</sup>

EV1 ALM1, EV2 ALM2, COOL

OUT1 SSR, SCR, RELAY

RELAY Contact Rating : 250V AC 1A/30V DC 1A

Voltage Pulse 4~20mA DC

RELAY Contact Rating : 250V AC 1A/30V DC 1A

RET 4~20mA DC

RS485 Max:115,200bps

POWER 24V DC 3.9VA Max, 100-240V AC 50/60Hz 10VA Max

TC INPUT, m/V/V INPUT, RTD INPUT

### Dimension and Panel Cutout

#### ST190<sup>®</sup>

96

98.8

105.6

91.6

Panel 1~7mm

64

120

120

92<sup>+0.6</sup>

92<sup>+0.6</sup>

91.6

#### ST180<sup>®</sup>

48

97.4

105.6

91.6

Panel 1~7mm

64

70

120

45<sup>+0.6</sup>

92<sup>+0.6</sup>

44.6

#### ST140<sup>®</sup>

48

49.4

58.8

44.8

58.8

Panel 1~7mm

75

70

70

45<sup>+0.6</sup>

45<sup>+0.6</sup>

44.8