

Thank you for purchasing Samwontech production. Please use after read instruction manual for safety. Free to contact to our sales Div. for Production Inquiry and After Service.
Tel : +82-32-326-9120 FAX : 032-326-9119
http://www.samwontech.com E-mail : webmaster@samwontech.com

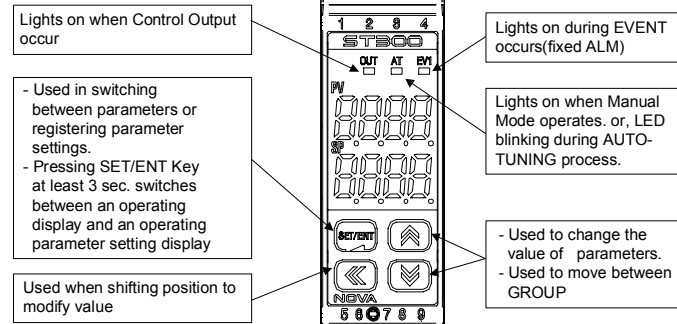
Safety Guide

The following safety symbols are used in this manual.



- If this symbol is marked on the product, the operator must investigate the explanation given in this manual to protect injury or death to personnel or damage to instrument.
1. Be sure to operate the controller installed on a panel to prevent electric shock.
 2. Keep the input circuit wiring as far as possible away from power and ground circuit.
 3. Do not mount front panel facing downward.
 4. To prevent electric shock, be sure to turn off and the source circuit breaker before wiring.
 5. The power consumptions are 100-240VAC, 50/60Hz, 10VAmax and operate without power switching in advance.
 6. No work in wet hands(it caused electric shock)
 7. Refer the way of grounding connection, however, keep away for grounding to Gas pipe, water pipe, lightning rod etc.
 8. No magnetic disturbances are caused.

Control Keys and Display



Type & Suffix Code

Model	Suffix Code	Description	Remark
ST300	- □□/□□	Digital Controller	
Control Output	S	SSR	
	A	SCR(4~20mA)	
	R	RELAY	
Power	0	100~240V AC	
	1	24V DC	
Options	/RS	RS422 / 485	

Specification

- PV/SP Data Disply : each 4 digits
- Sampling Time : 250ms
- Indication Accuracy : ±0.2% of FS
- Running Mode : AUTO / MAN
- Control Loops and Mode : Single-Loop Control
- Number of Setpoint(SP) : 1SP(1 Zone PID)
- Communication Protocols : PC-Link, MODBUS(ASCII, RTU), SYNC Master, Slave
- Power Supply and Consumption : 100 ~ 240V AC, 50 ~ 60Hz / Max 6W below

Sensor

- PV Input : Universal Input(1 Point)
- Type of Input
T/C : K, J, E, T, R, B, S, L, N, U, W, Platinel II
RTD : Pt100, JPt100
DCV : -10 ~ 20mV, 0 ~ 100mV, 0.4 ~ 2.0V DC, 1 ~ 5V DC, 0 ~ 10V DC
(4 ~ 20mA, 0 ~ 20mA, with external 250Ω, 500Ω)

Output

- Control Output : 1 Point
- Time-proportional PID : Relay, SSR(V-Pulse)
- Continuous PID : SCR(4 ~ 20mA DC)

Alarm

- Alarm Capacity : 1 Point
- Alarm Type : 21 types(High/Low Temp Limit, Deviation Limit etc)

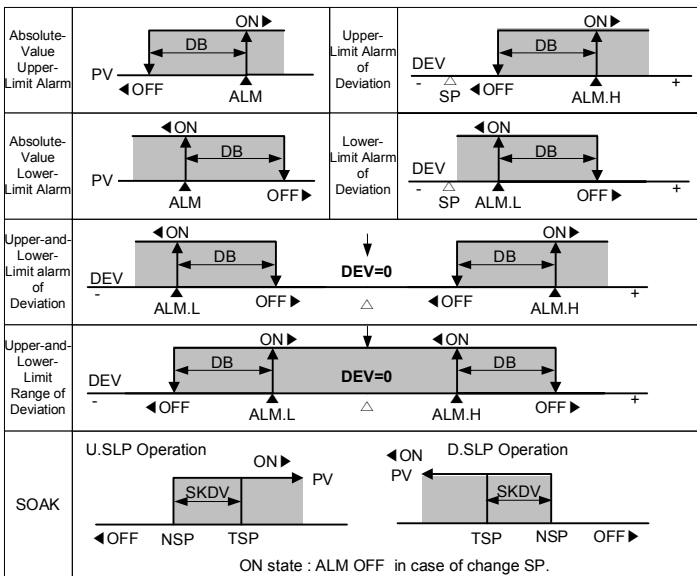
Safety & EMC

- Safety : EN61010-1, UL61010C-1, CAN/CSA C22.2 No.10101-92, Category II
- EMC : EMI(Emission) - EN61326, ClassA
EMS(Immunity) - EN61326

Type of Alarm

No.	Type	Output Direct		Standby		Display Data	No.	Type	Output Direct		Standby		Display Data
		For	Rev	Off	On				For	Rev	Off	On	
1	Absolute-Value Upper-Limit Alarm	○				AH.F	11	Absolute-Value Upper-Limit Alarm	○				AH.FS
2	Absolute-Value Lower-Limit Alarm	○				AL.F	12	Absolute-Value Lower-Limit Alarm	○				AL.FS
3	Upper-Limit Alarm of Deviation	○				DH.F	13	Upper-Limit Alarm of Deviation	○				DH.FS
4	Lower-Limit Alarm of Deviation	○				DL.F	14	Lower-Limit Alarm of Deviation	○				DL.FS
5	Upper-Limit Alarm of Deviation		○			DH.R	15	Upper-Limit Alarm of Deviation		○			DH.RS
6	Lower-Limit Alarm of Deviation		○			DL.R	16	Lower-Limit Alarm of Deviation		○			DL.RS
7	Upper-and-Lower-Limit alarm of Deviation	○				DO.F	17	Upper-and-Lower-Limit alarm of Deviation	○				DO.FS
8	Upper-and-Lower-Limit Range of Deviation	○				DI.F	18	Upper-and-Lower-Limit Range of Deviation	○				DI.FS
9	Absolute-Value Upper-Limit Alarm			○		AH.R	19	Absolute-Value Upper-Limit Alarm			○		AH.RS
10	Absolute-Value Lower-Limit Alarm			○		AL.R	20	Absolute-Value Lower-Limit Alarm			○		AL.RS
							21	Soak	○				Soak

Alarm Operation



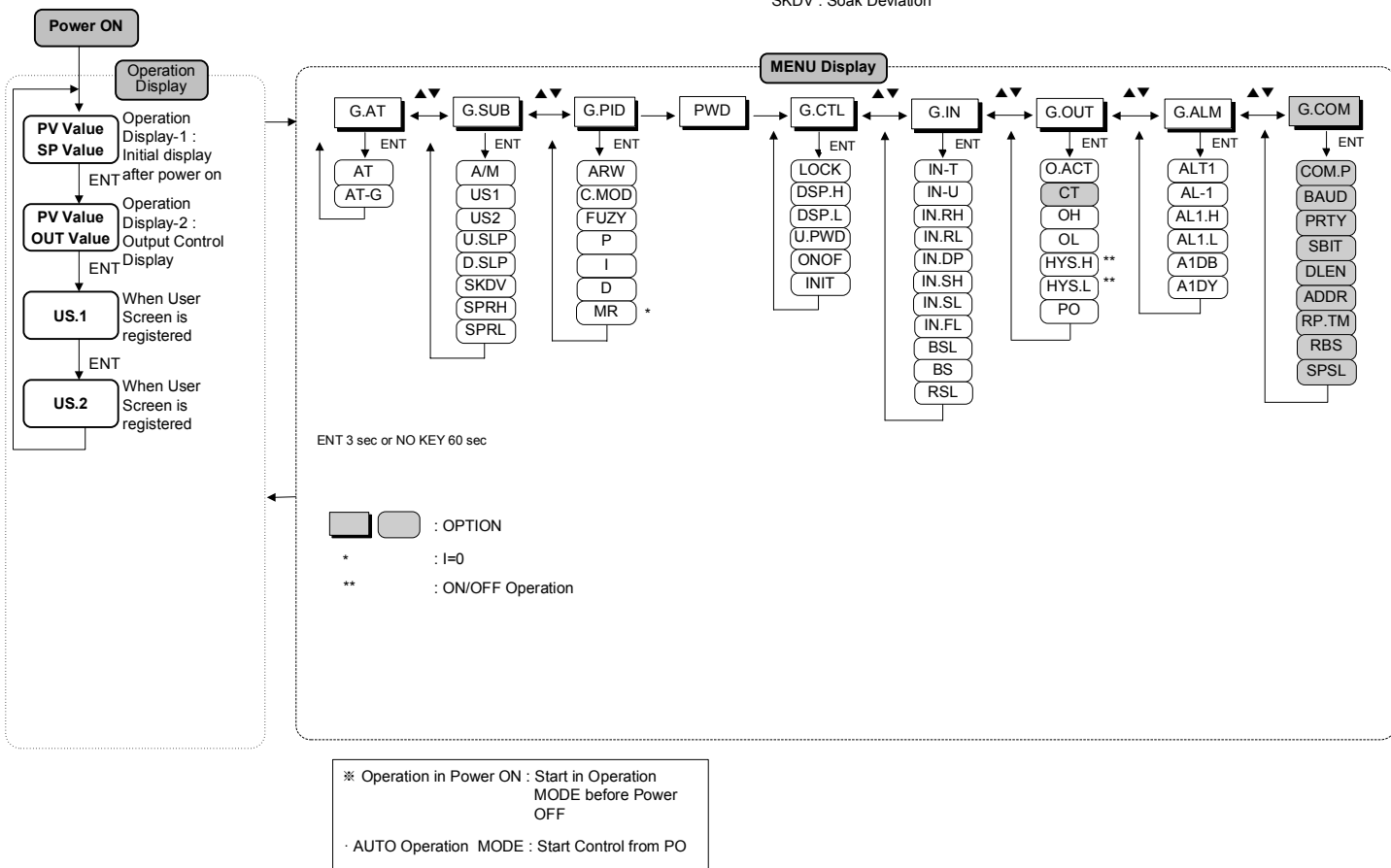
ALM.H : Upper-Limit Set value of Alarm
DEV : Deviation
TSP : Change SP
SKDV : Soak Deviation
ALM.L : Low-Limit Set value of Alarm
DB : Dead Band(HYSTERISYS)
NSP : Now SP

Type of Input Sensor

*display range : -5% ~ +105%

No.	TYPE	Temp.Range(℃)	Temp.Range(℉)	Group	DISP
1	K1	-200 ~ 1370	-300 ~ 2500	T/C	TC.K1
2	K2	-199.9 ~ 999.9	0 ~ 2300		TC.K2
3	J	-199.9 ~ 999.9	-300 ~ 2300		TC.J
4	E	-199.9 ~ 999.9	-300 ~ 1800		TC.E
5	T	-199.9 ~ 400.0	-300 ~ 750		TC.T
6	R	0 ~ 1700	32 ~ 3100		TC.R
7	B	0 ~ 1800	32 ~ 3300		TC.B
8	S	0 ~ 1700	32 ~ 3100		TC.S
9	L	-199.9 ~ 900.0	-300 ~ 1600		TC.L
10	N	-200 ~ 1300	-300 ~ 2400		TC.N
11	U	-199.9 ~ 400.0	-300 ~ 750		TC.U
12	W	0 ~ 2300	32 ~ 4200		TC.W
13	Platinel II	0 ~ 1390	32 ~ 2500		TC.PL
14	PTA	-199.9 ~ 850.0	-300 ~ 1560	RTD	PTA
15	PtB	-199.9 ~ 500.0	-199.9 ~ 999.9		PTB
16	PtC	-150.0 ~ 150.0	-199.9 ~ 300.0		PTC
17	JPTA	-199.9 ~ 500.0	-199.9 ~ 999.9		JPTA
18	JPTB	-150.0 ~ 150.0	-199.9 ~ 300.0		JPTB
19	0.4 ~ 2.0V	0.400 ~ 2.000V		DCV	2V
20	1 ~ 5V	1 ~ 5V			5V
21	0 ~ 10V	0 ~ 10V			10V
22	-10 ~ 20mV	-10 ~ 20mV		mV	20M
23	0 ~ 100mV	0 ~ 100mV			100M

Parameter Map



※ Operation in Power ON : Start in Operation MODE before Power OFF
· AUTO Operation MODE : Start Control from PO

PARAMETER Table

AT GROUP

Symbol	Parameter	Setting Range	Unit	Initial	Remark
AT	Auto Tuning	OFF, ON	ABS	OFF	AUTO Operation
AT-G	AT Gain	0.1 ~ 10.0	ABS	1.0	AUTO Operation

◎ AT GROUP is skipped in ON/OFF MODE operation.

SUB GROUP

Symbol	Parameter	Setting Range	Unit	Initial	Remark
A/M	AUTO, MAN	AUTO, MAN	ABS	AUTO	Always
US1	User Screen	OFF, D-Register Number(1~1299)	ABS	OFF	Always
US2	User Screen	OFF, D-Register Number(1~1299)	ABS	OFF	Always
U.SLP	Up Slope	OFF(0), EUS(0.0%+1digit~100.0%)/min	EUS	OFF(0)	Always
D.SLP	Down Slope	OFF(0), EUS(0.0%+1digit~100.0%)/min	EUS	OFF(0)	Always
SKDV	Soak Deviation	EUS(0.0 ~ 10.0%)	EUS	EUS(0.0%)	Always
SPRH	Set Point Range High	EU(0.0 ~ 100.0%)	EU	EU(100.0%)	Always
SPRL	Set Point Range Low	EU(0.0 ~ 100.0%)	EU	EU(0.0%)	Always

P.I.D GROUP

Symbol	Parameter	Setting Range	Unit	Initial	Remark
ARW	Anti-Reset Wind-Up Select	Auto(0.0) ~ 200.0%	%	100.0%	Always
C.MOD	Control Mode	D.DV, D.PV	ABS	D.DV	Always
FUZY	Fuzzy	OFF, ON	ABS	OFF	Always
P	Proportional Band	0.1 ~ 999.9%	%	10.0%	Always
I	Integral Time	OFF, 1 ~ 6000 sec	sec	120 sec	Always
D	Derivative Time	OFF, 1 ~ 6000 sec	sec	30 sec	Always
MR	Manual Reset	-5.0 ~ 105.0%	%	50.0%	I=0

◎ P.I.D GROUP is skipped in ON/OFF MODE operation.

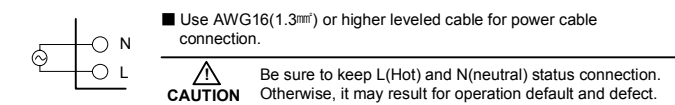
CTL GROUP

Symbol	Parameter	Setting Range	Unit	Initial	Remark
LOCK	Key Lock	OFF, ON(No Editing)	ABS	OFF	Always
DSP.H	Display High Limit	EU(-5.0 ~ 105.0%) : However, DSP.L<DSP.H	EU	EU(105.0%)	Always
DSP.L	Display Low Limit	EU(-5.0 ~ 105.0%) : However, DSP.L<DSP.H	EU	EU(-5.0%)	Always
U.PWD	User Password	0 ~ 9999	ABS	0	Always
ONOF	ON/OFF MODE	OFF, ON	ABS	OFF	Always
INIT	Parameter Initialization	OFF, ON	ABS	OFF	Always

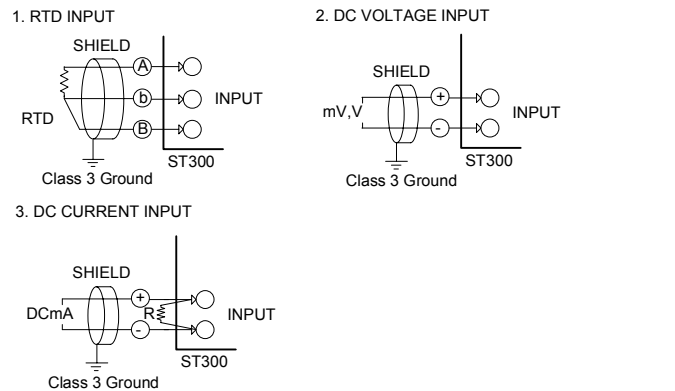
IN GROUP

Symbol	Parameter	Setting Range	Unit	Initial	Remark
IN-T	Input Type	refer to "Type of Input Sensor"	ABS	TC.K1	Always

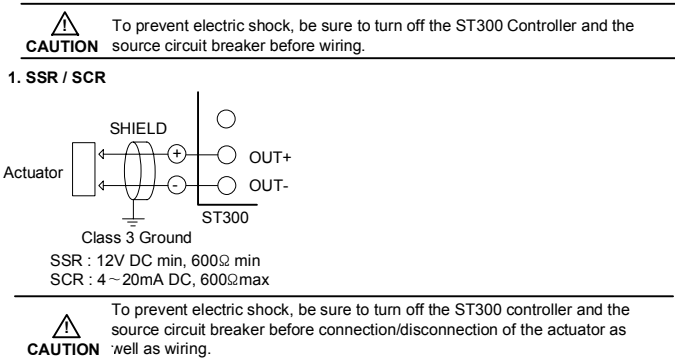
Power Cable Connection



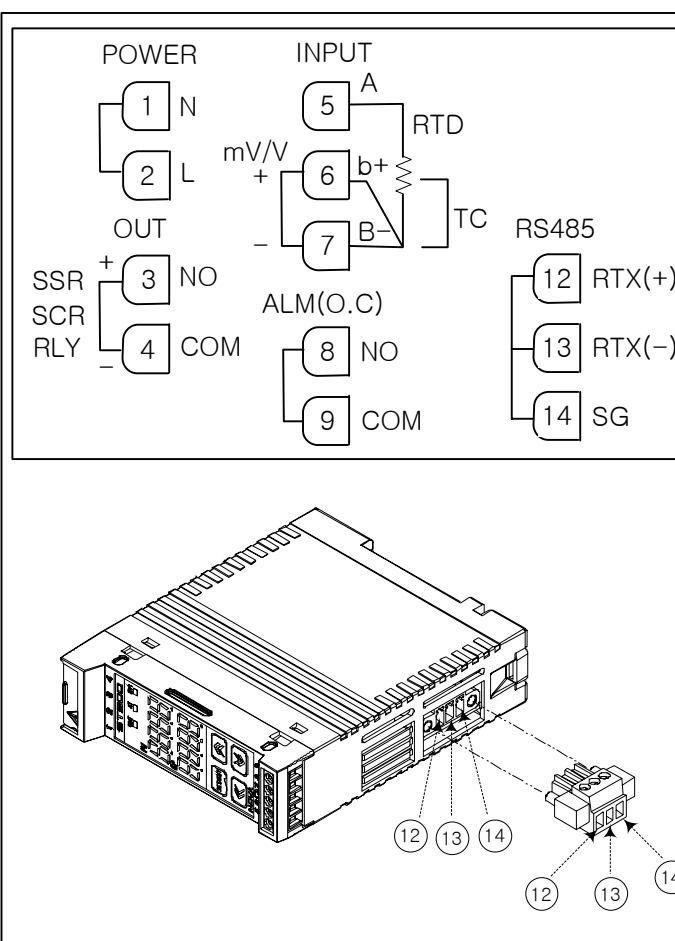
ANALOG INPUT Connection



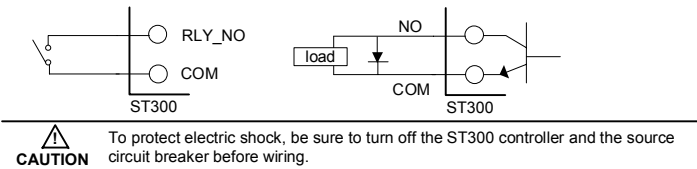
ANALOG OUTPUT Connection



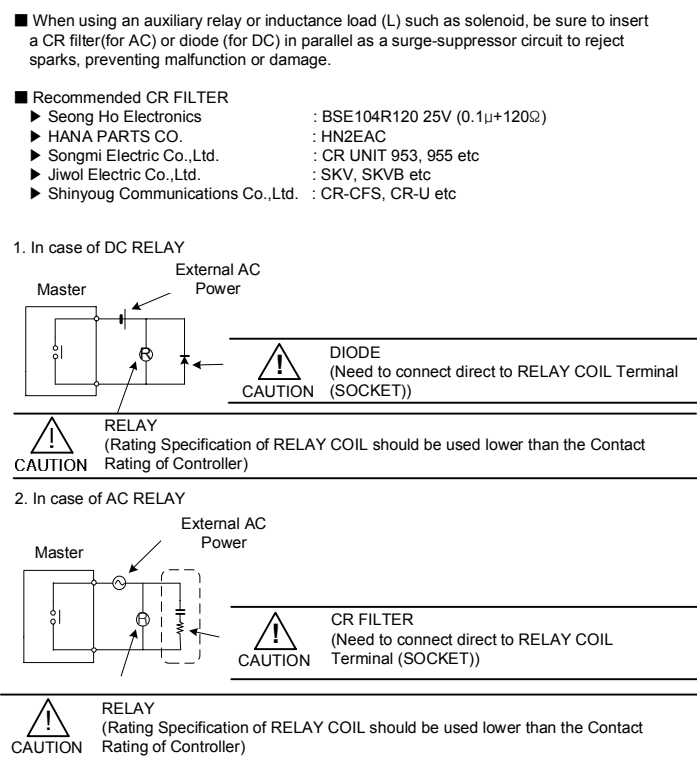
Terminal Arrangement and External wiring



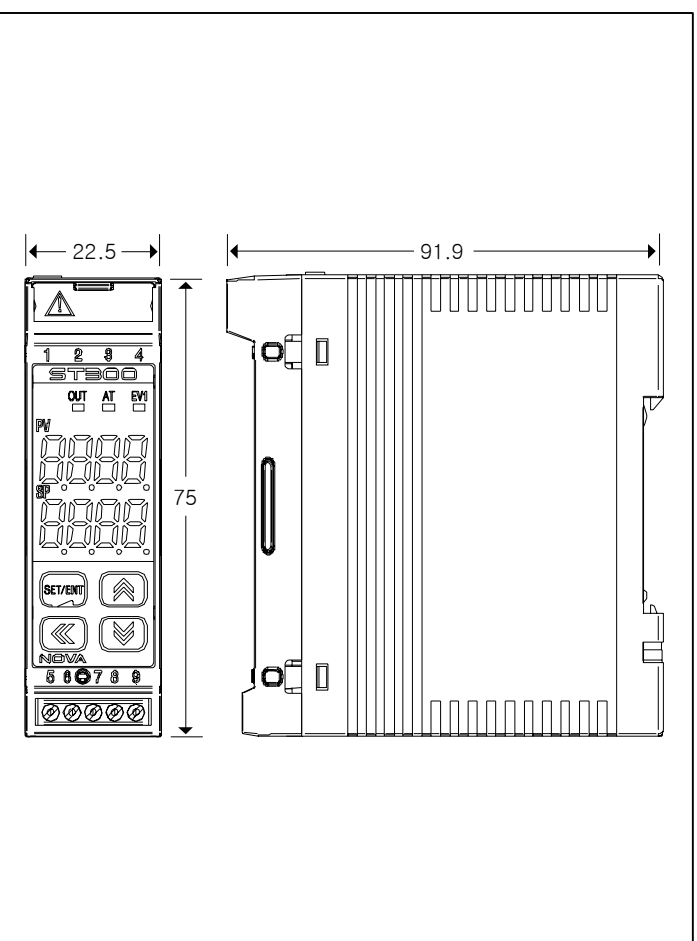
RELAY Connection



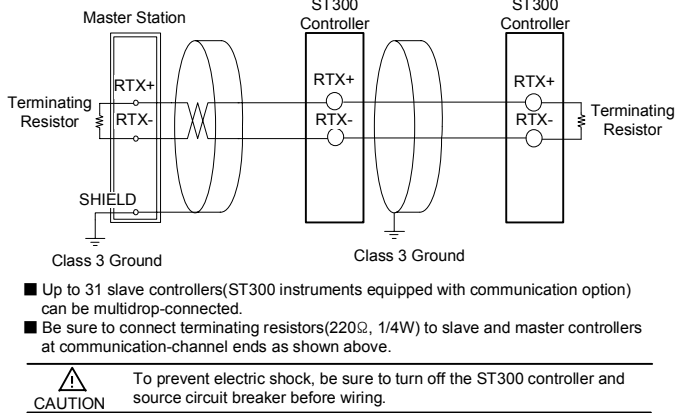
Use an Auxiliary RELAY



Dimension



Communication Wiring (RS485)

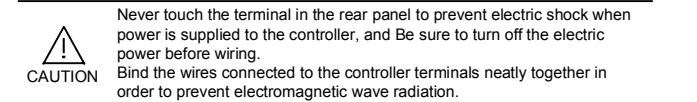


Power Cable Specification

Power Cable Specification(1,2 Terminal) : AWG16(1.3mm²)

Cable Specification

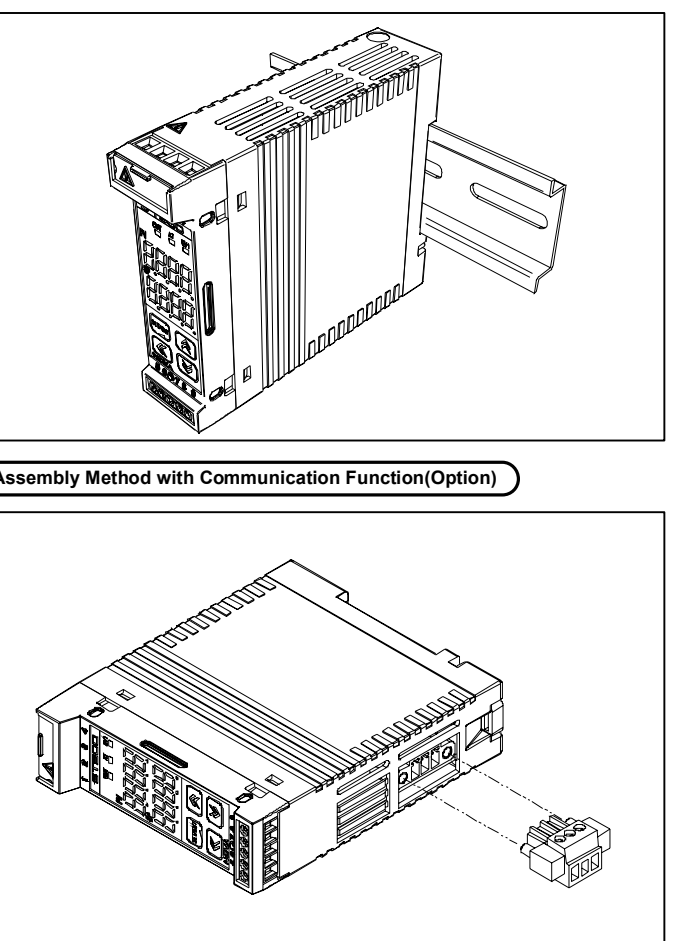
Cable Specification(3~9 Terminal) : AWG26-16(0.13mm² ~ 1.3mm²)



Display Error and Correction

Display ERROR	ERROR Contents	Correction
E.SYS	EEPROM, DATA Loss	Ask repair
E.RJC	RJC SENSOR Failure	Ask repair
Flash Decimal point of SP	Communication Failure	Comm Cable CHECK
S.OPN	SENSOR Open	SENSOR CHECK
E.AT	AT Time Out (27h over)	PROCESS CHECK

RAIL Installation



相關通信問題請電洽:(02)2222-7373 或 傳真:(02)2225-0655 宇佑科技股份有限公司 陳俞辰先生 0918073077

D-Register

NO	PROCESS	FUNCTION	CONTROL	HBA	ALARM	PID	IN/OUT
0	0	100	200	300	400	500	600
0							
1	NPV		SP		ALT1	ARW	IN-T
2	NSP					FUZZY	IN-U
3			LOCK			P	IN.RH
4			DSP.H			I	IN.RL
5		A/M	DSP.L			D	IN.DP
6	MVOUT				AL-1	MR	BS
7			ONOF			CMD	IN.SH
8			INIT				IN.SL
9							IN.FL
10							BSL
11			SPRH		AL1.H		O.ACT
12			SPRL				CT
13							OH
14	ALSTS						OL
15							HYS.H
16			U.SLP		AL1.L		HYS.L
17			D.SLP				PO
18			SKDV				RSL
19							
20							
21		AT			A1DB		
22		AT-G					
23							
24							
25							
26					A1DY		
27							
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31							
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33							

NO	PROCESS	FUNCTION	CONTROL	HBA	ALARM	PID	IN/OUT
0	0	100	200	300	400	500	600
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35		US1					
36		US2					
37							
38							
39							
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61							COM.P
62							BAUD
63							PRTY
64							SBIT
65							DLEN
66							ADDR
67							RP.TM

NO	PROCESS	FUNCTION	CONTROL	HBA	ALARM	PID	IN/OUT
0	0	100	200	300	400	500	600
68							RBS
69							SPSL
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