

3 FY / FU Series

- Standard spec.

Model	FY400 / FU48	FY600	FY700 / FU72	FY800 / FU86	FY900 / FU96	FY100	FY101
Dimension	48X48mm	96X48mm	72X72mm	48X96mm	96X96mm	175X110mm	90X90mm
Supply voltage	AC 85~265V , DC 15~50V (Option)					AC 85~265V	
Frequency	50 / 60 HZ						
Power consumption	approx 3VA	approx 4VA	approx 3VA	approx 4VA	approx 4VA	approx 4VA	approx 3VA
Input	Accuracy	0.2 % FS \pm 1digit					
	Sample time	250ms					
	TC	K , J , R , S , B , E , N , T , W5Re/W26Re , PLII , U , L					
	RTD	PT100,JPT100,JPT50					
	mA dc	4~20mA ,0~20mA					
	mV / V dc	0~1V,0~5V,0~10V,1~5V,2~10V -10~10mV,0~10mV,0~20mV,0~50mV,10~50mV					
	Decimal point position	0000 , 000.0 , 00.00 , 0.000 Available for linear input (mA / mV / V)					
Output 1	Relay	SPST type	SPDT type	SPST type	SPDT type	SPDT type	SPDT type
		3A , 220V , electrical life:100,000 times or more (under rated load)					
	Voltage pulse	For SSR drive. ON : 24V , OFF : 0V , max load current : 20mA					
	mA dc	4~20mA , 0~20mA. Maximum load resistance:560 Ω					
	Voltage dc	0~5V , 0~10V , 1~5V , 2~10V . Max load current:20mA					
Alarm 1	3A , 220V , electrical life:100,000 times or more (under rated load)						
Control algorithm	PID , PI , PD , P , ON / OFF(P=0) , FUZZY .						
PID range	P: 0.0 ~ 200.0 % , I: 0~3600s , D: 0~900s						
Isolation	Output terminals(control output , alarm , transmission) and input terminals are isolated separately						
Isolated resistance	10M Ω or more between input and case (ground) at DC 500 V 10M Ω or more between output and case (ground) at DC 500 V						
Dielectric strength	1000V AC for 1 minute between input terminal and case (ground) 1500V AC for 1 minute between output terminal and case (ground)						
Operating temperature	0~50 $^{\circ}$ C						
Humidity range	20~90%RH						
Weight	150g	225g	225g	225g	300g	130g	80g
Display Height	PV:7mm SV:7mm	PV:7mm SV:7mm	PV:14mm SV:10mm	PV:7mm SV:7mm	PV:14mm SV:10mm	—	—

- **Optional Spec.**

Model	FY400 / FU48	FY600	FY700 / FU72	FY800 / FU86	FY900 / FU96	FY100	FY101
Output 2	For heating and cooling control use. Relay , SSR , 4~20mA , 0~20mA , 0~5V , 0~10V , 1~5V , 2~10V						
Alarm 2	Available	Available	Available	Available	Available	Available	Not available
	SPST type	SPDT type	SPST type	SPDT type	SPDT type	SPDT type	available
3A , 220V , electrical life:100,000 times or more (under rated load)							
Alarm 3	Not available	Available	Available	Available	Available	Available	Not available
		SPST type	SPST type	SPST type	SPST type	SPST type	available
3A , 220V , electrical life:100,000 times or more (under rated load)							
Heater Break Alarm (HBA)	Display range of heater current : 0.0~99.9A , Accuracy : 1%FS						
	Included CT : SC-80-T (5.8mm dia , 0.0~80.0A) or SC-100-T (12mm dia , 0.0~99.9A)						
	Alarm relay : AL1						
Transmission	Available for PV or SV transmission						
	4~20mA , 0~20mA , 0~1V , 0~5V , 0~10V , 1~5V , 2~10V						
Remote SV	4~20mA , 0~20mA , 0~1V , 0~5V , 0~10V , 1~5V , 2~10V						
Communication	Protocol : MODBUS RTU , MODBUS ASCII , TAIE						
	RS232 , RS485 , TTL						
	Baud rate: 2400 , 4800 , 9600 , 19200 , 38400 bps.						
	Data bits : 8 , Stop bit : 1 or 2bit , Odd or Even parity.						
Water/Dust proof	IP65						

- **Special control output (OUT1)**

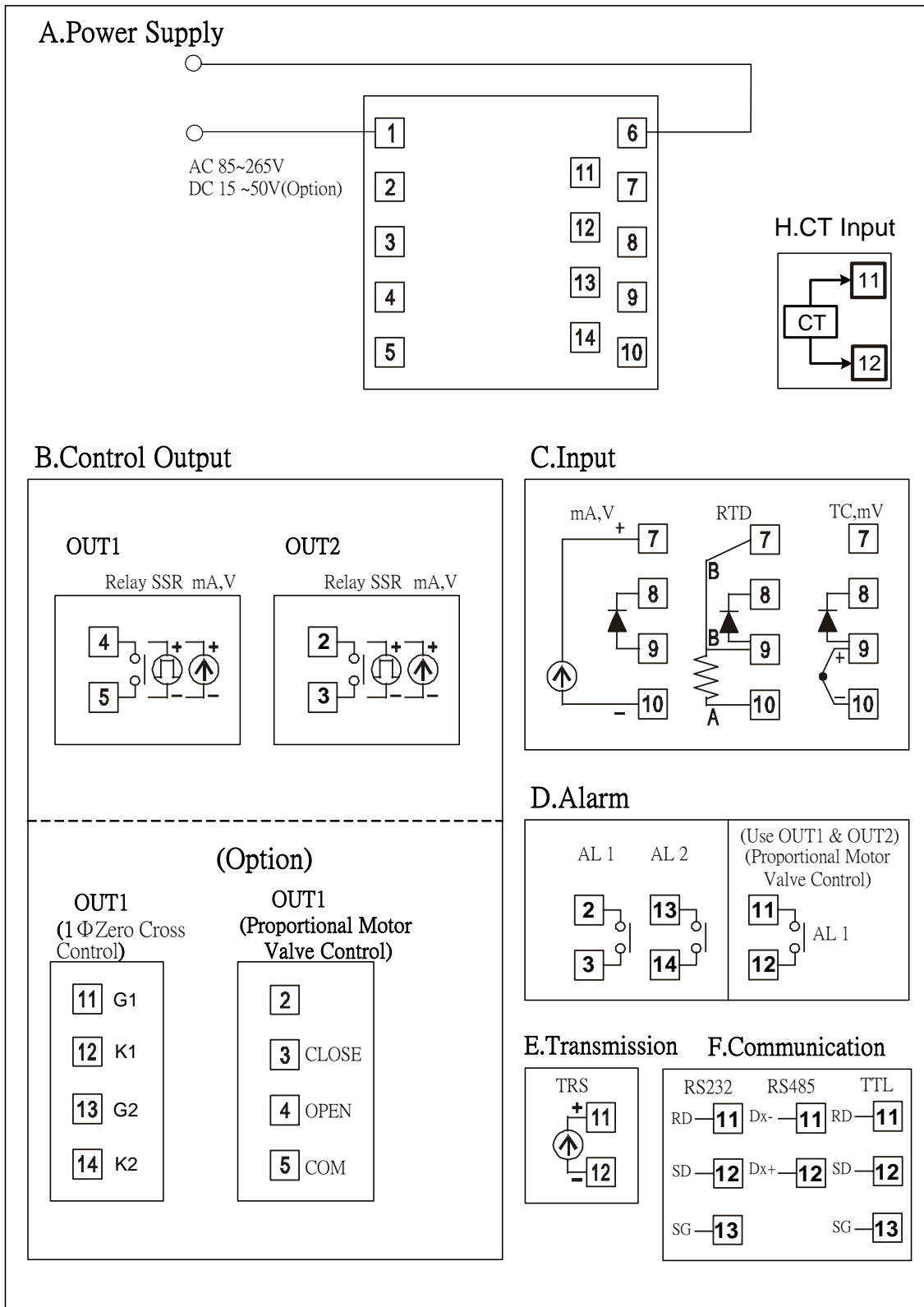
Model	FY400 / FU48	FY600	FY700 / FU72	FY800 / FU86	FY900 / FU96	FY100	FY101
1φ zero crossing control(1φSSR)	Available	Not available	Available	Not available	Available	Not available	Not available
3φ zero crossing control(3φSSR)	Not available				Available	Not available	Not available
Motor valve control	Available						
1φ phase angle control(1φSCR)	Not available	Available				Available	Not available
3φ phase angle control(3φSCR)	Not available				Available	Not available	Not available

- **Programmable RAMP/SOAK**

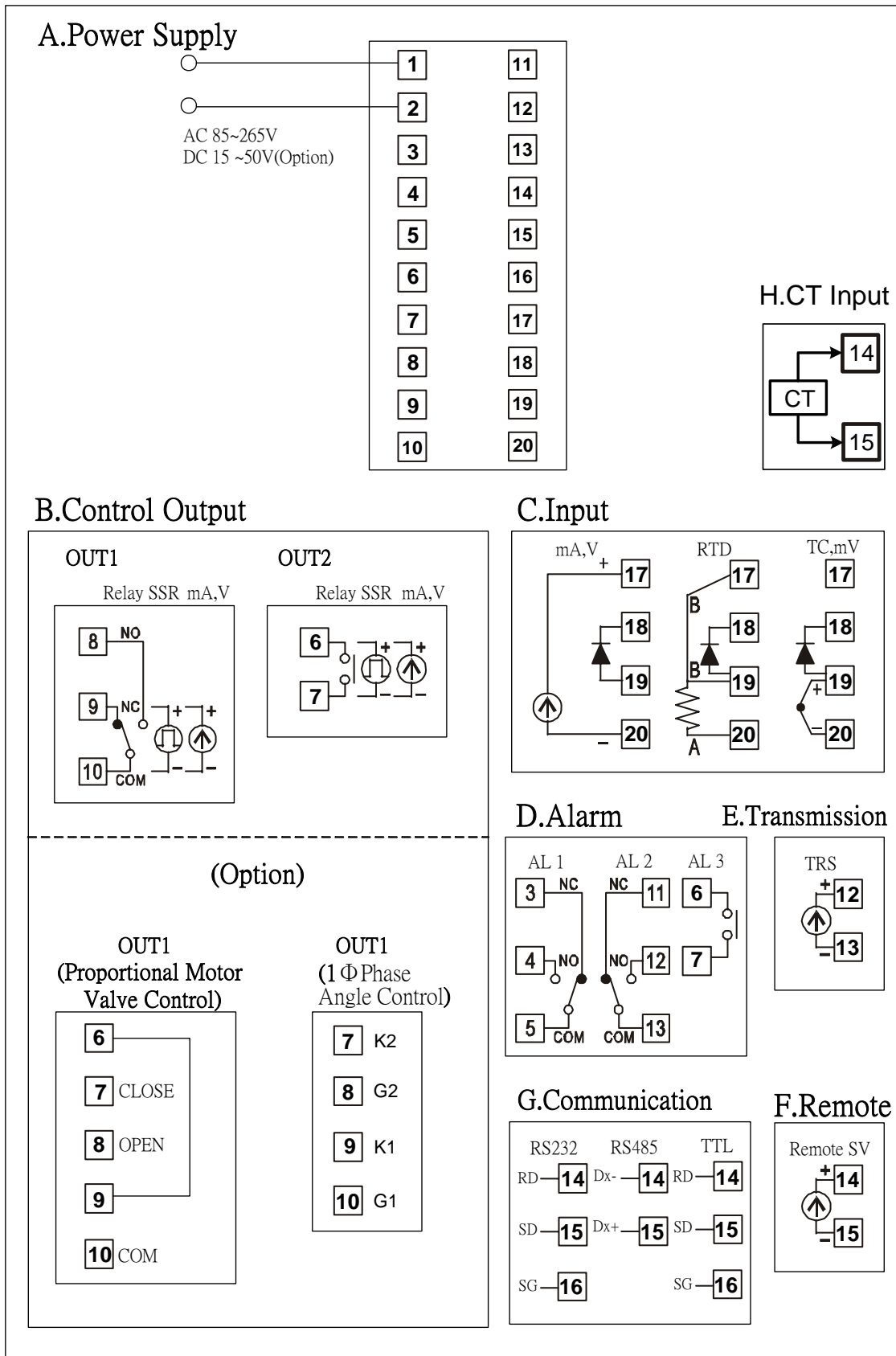
Model	PFY400	PFY600	PFY700	PFY800	PFY900	PFY100	PFY101
Programmable RAMP/SOAK	2 patterns with 8 segment each. The 2 patterns can be linked together as 16 segments use.						

4. Terminal arrangement

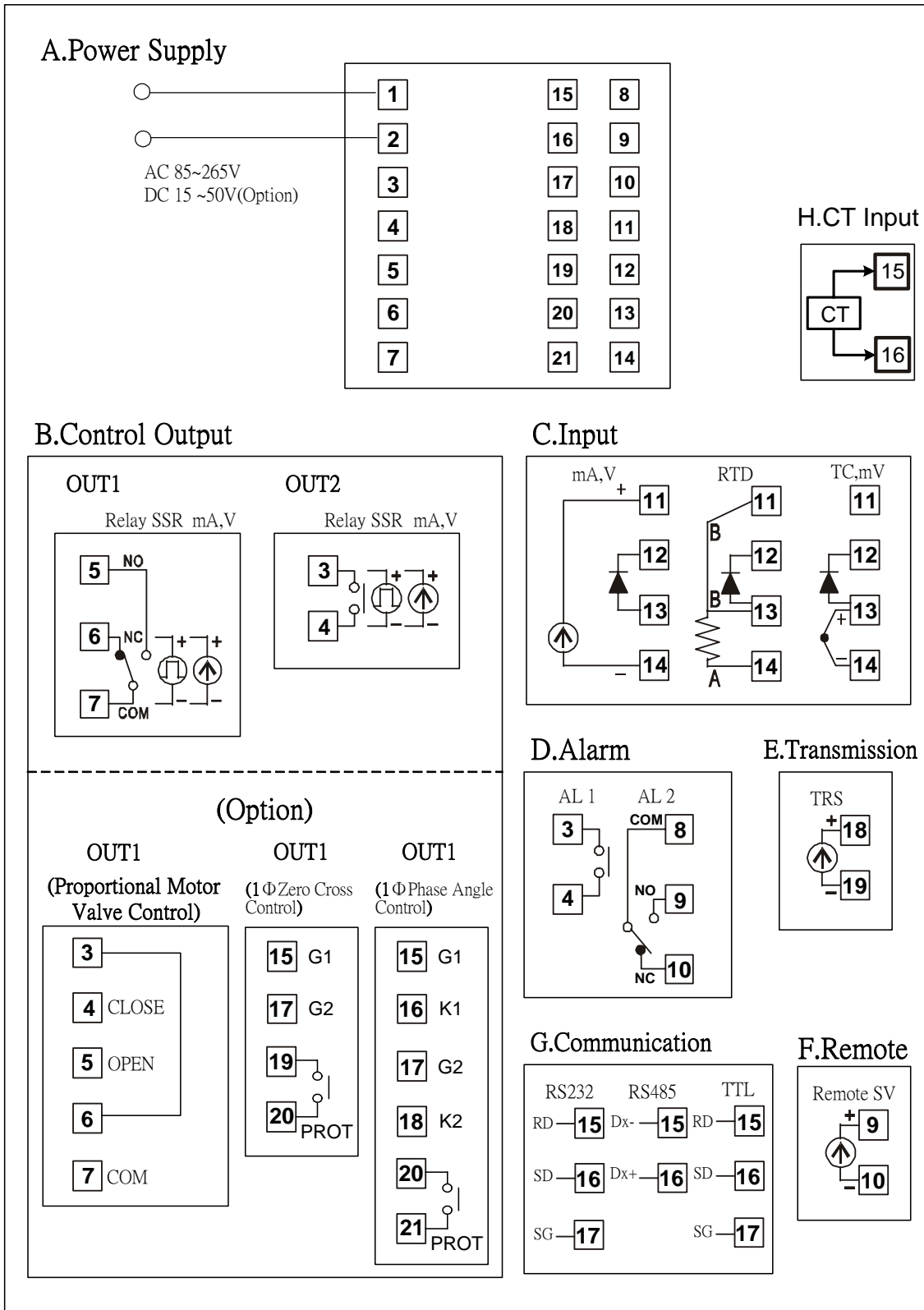
4.1 FY400 / FU48 Terminals (48mm x 48mm , DIN 1/16)



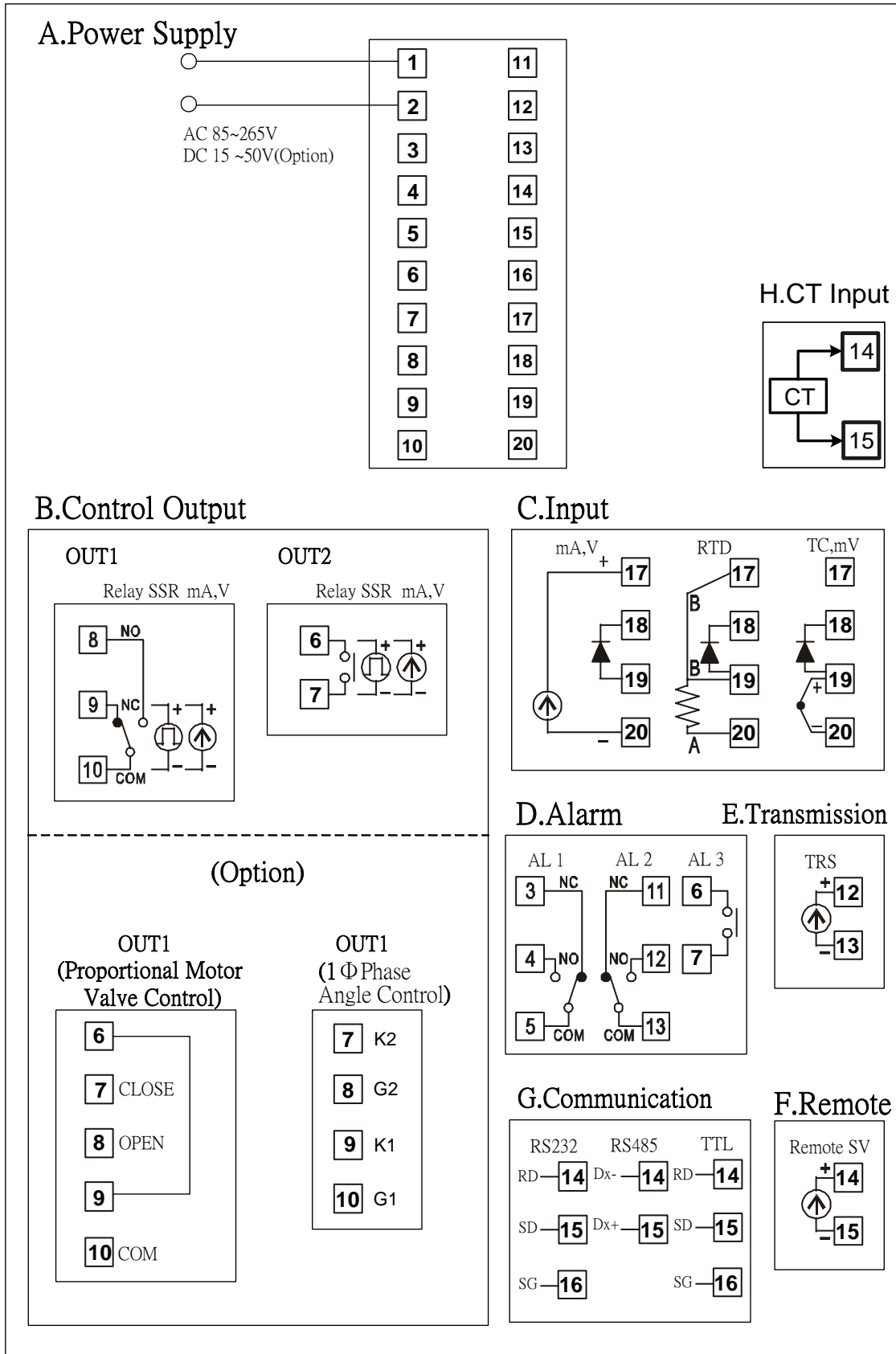
4.2 FY600 Terminals (96mm x 48mm , DIN 1/8)



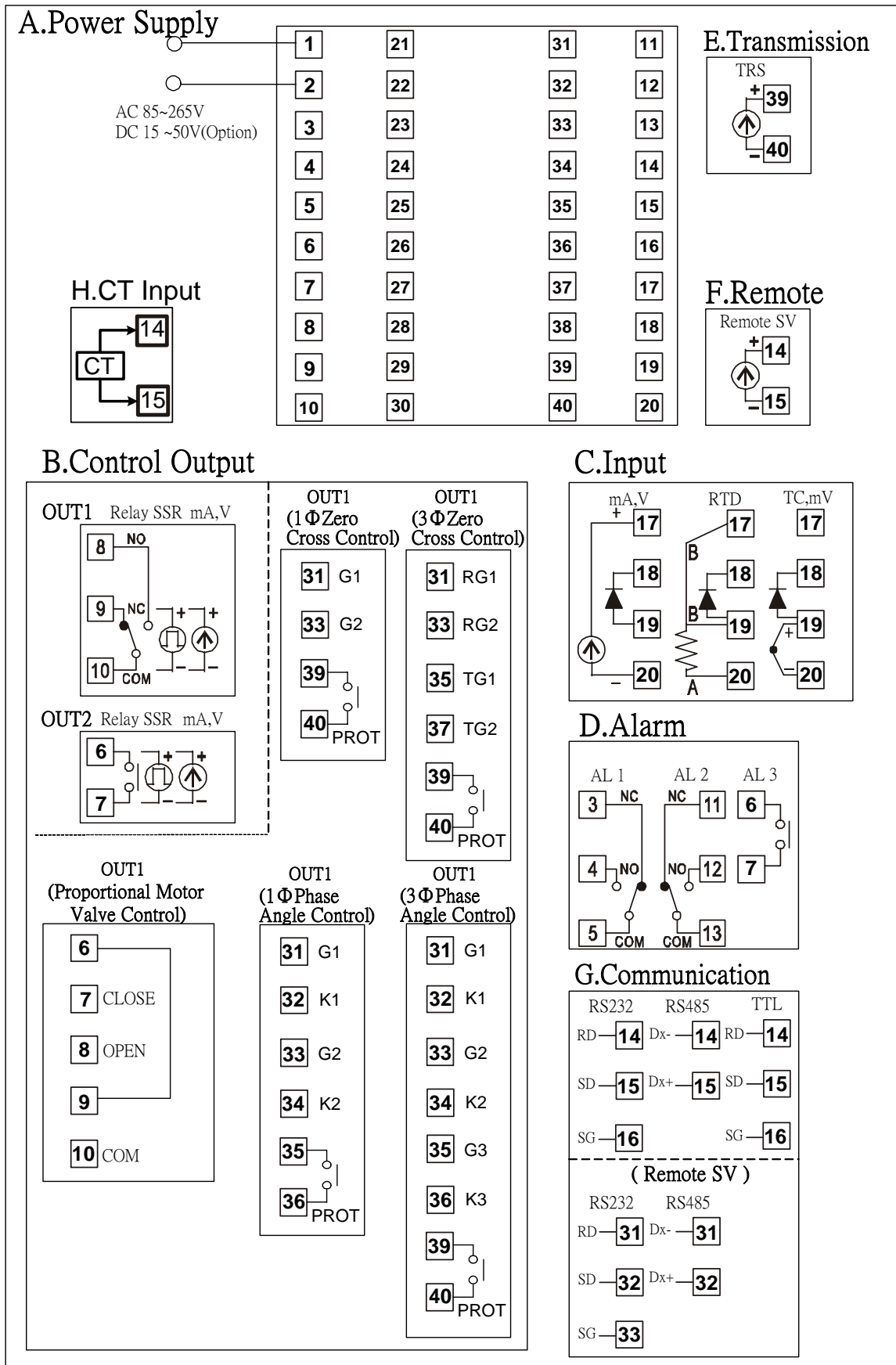
4.3 FY700 / FU72 Terminals (72mm x 72mm)



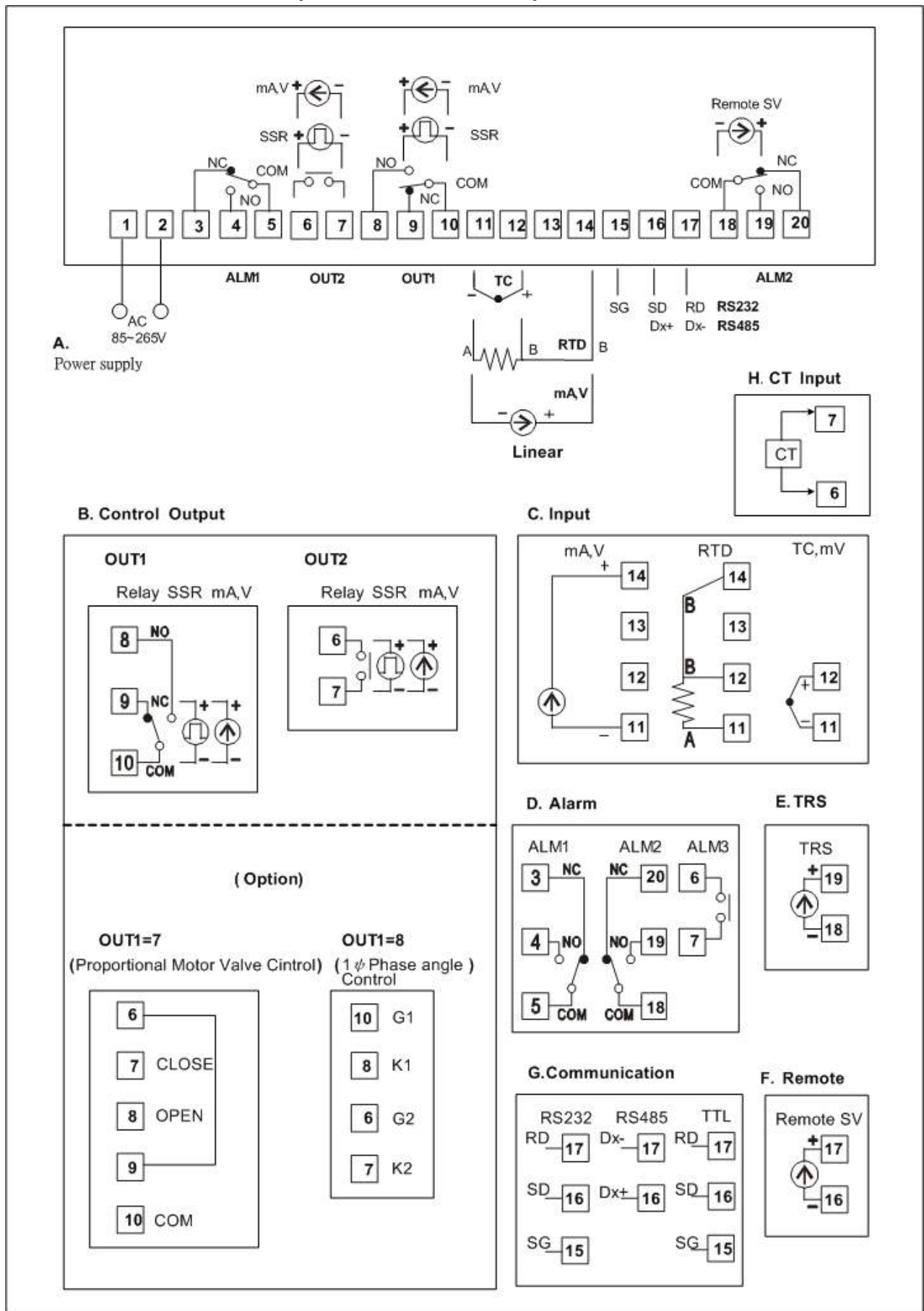
4.4 FY800 / FU86 Terminals (48mm x 96mm , DIN 1/8)



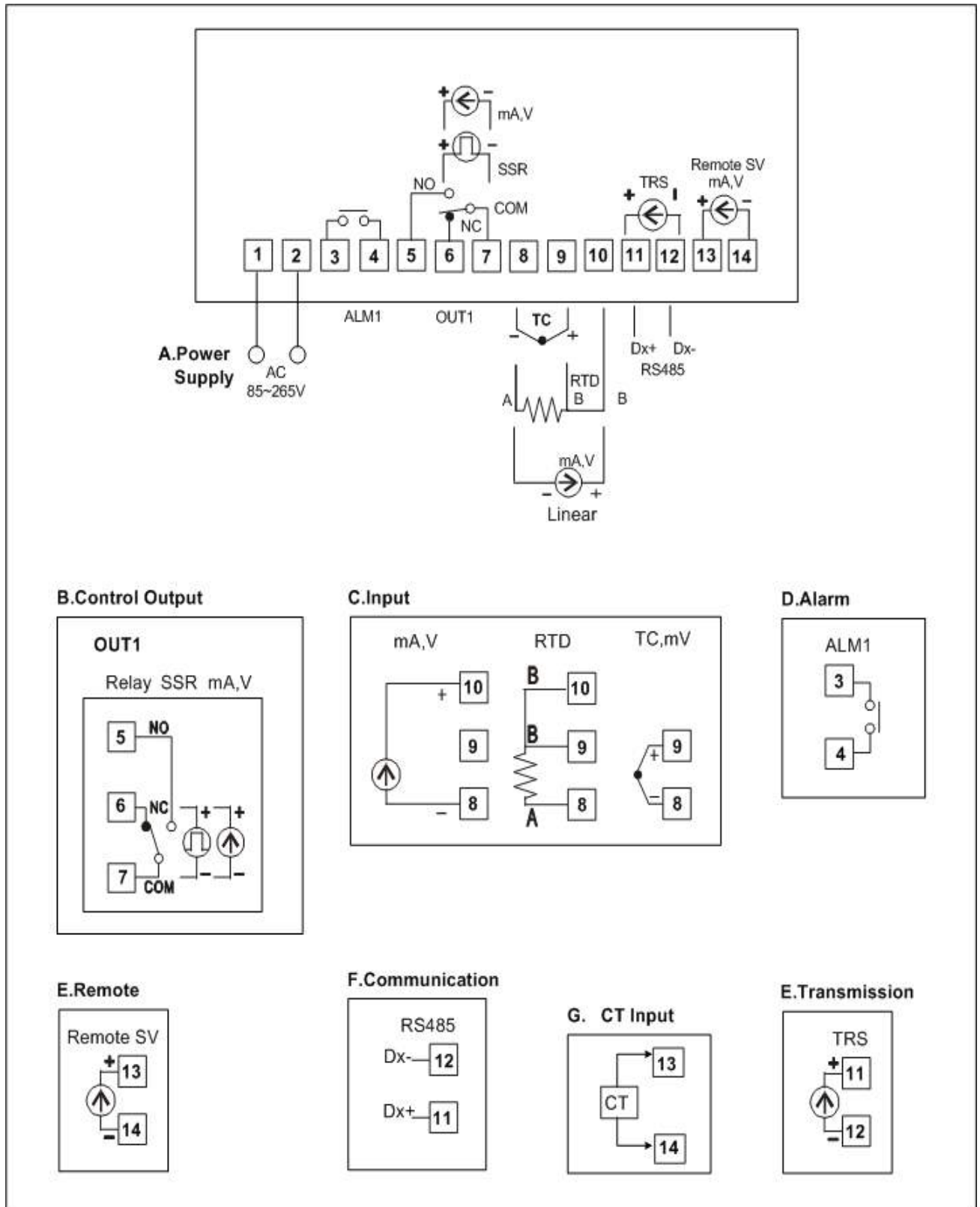
4.5 FY900 / FU96 Terminals (96mm x 96mm , DIN 1/4)



4.6 FY100 Terminals (175mm x 110mm)



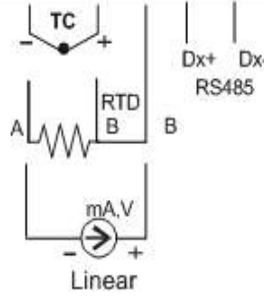
4.7 FY101 Terminals (90mm x 90mm)



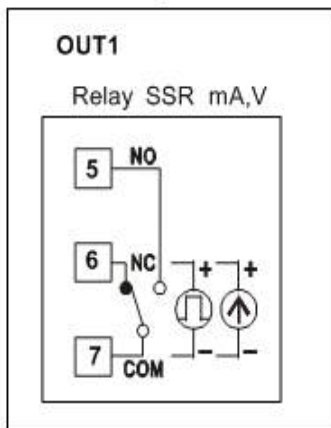
A. Power Supply
AC
85~265V

ALM1

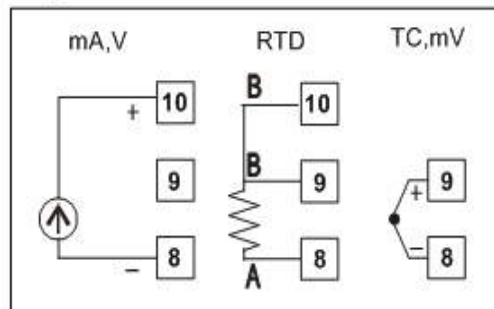
OUT1



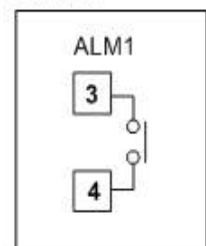
B. Control Output



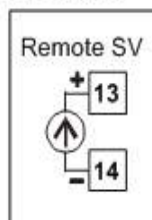
C. Input



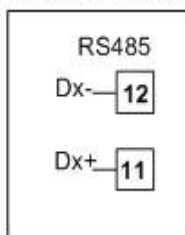
D. Alarm



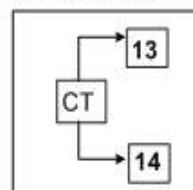
E. Remote



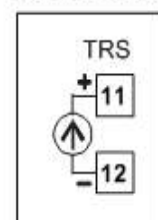
F. Communication



G. CT Input

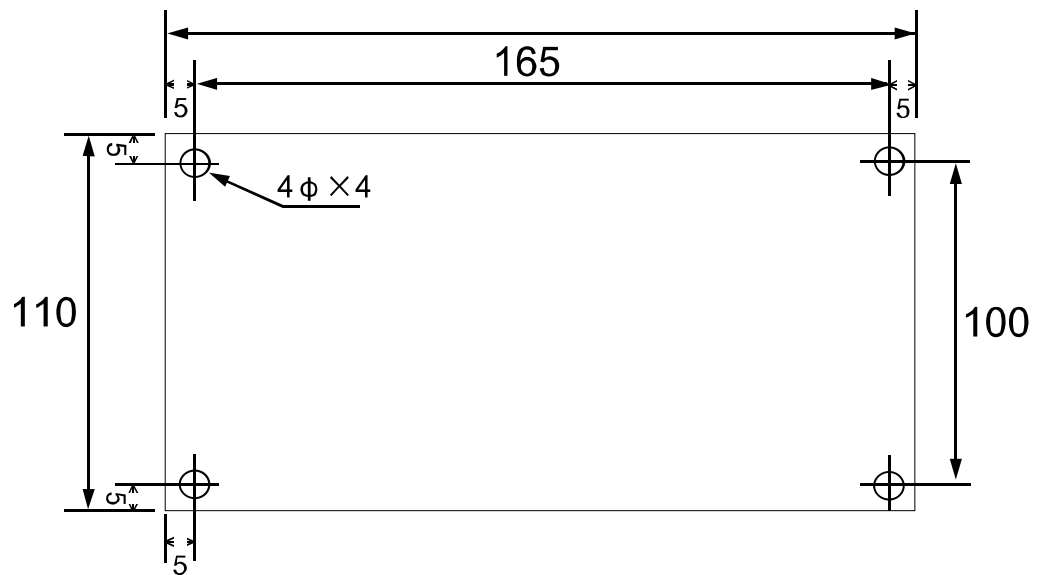


E. Transmission

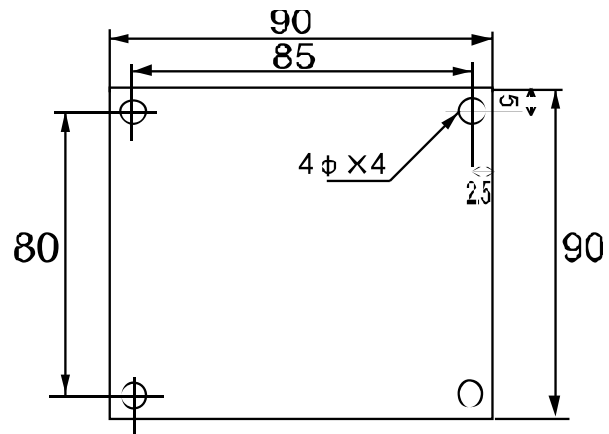


5. External dimension and panel cutout < Unit : mm >

5.1 FY100

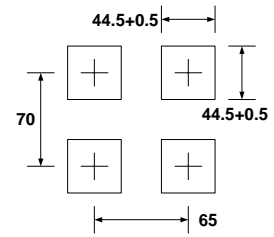
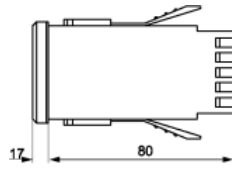
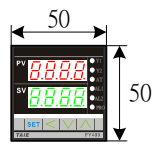


5.2 FY101

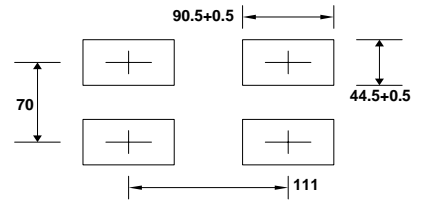
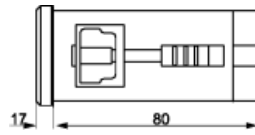
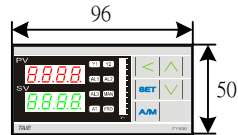


5.3 FY400~900 & FU48~96

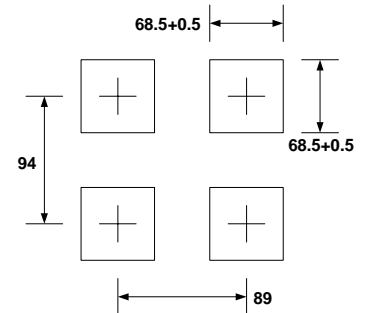
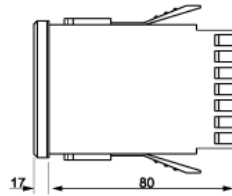
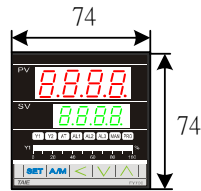
**FY400/
FU48**



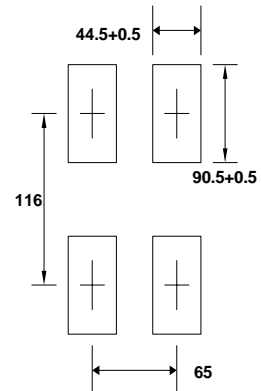
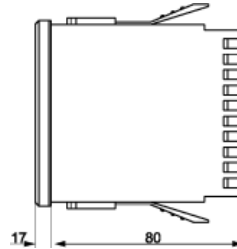
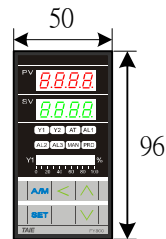
FY600



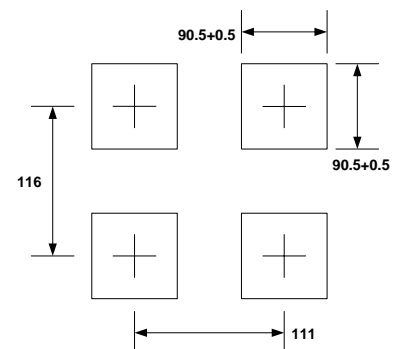
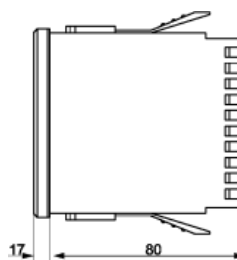
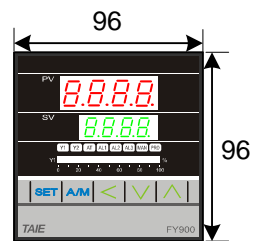
**FY700/
FU72**



**FY800/
FU86**

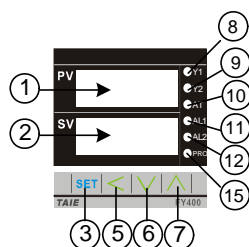


**FY900/
FU96**

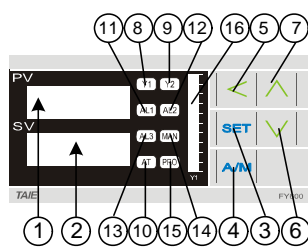


6. Parts description

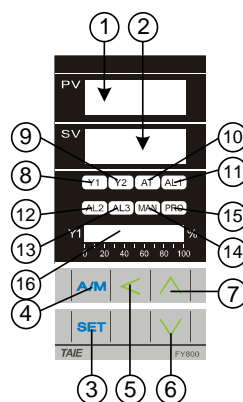
FY400/FU48



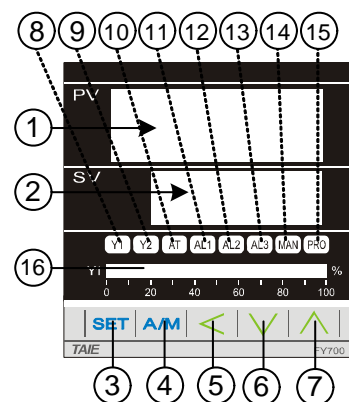
FY600



FY800/FU86



FY700/FY900/FU72/FU96
FY100/101 External
Interface Unit



SYMBOL	NAME		FUNCTION
PV	①	Measured value (PV) display	Displays PV or various parameter symbols (Red)
SV	②	Set value (SV) display	Displays SV or various parameter set values (Green)
SET	③	Set key	Used for parameter calling up and set value registration
A/M	④	Auto/Manual key	Switches between Auto(PID) output mode and Manual output mode.
<	⑤	Shift key	Shift digits when settings are changed
∨	⑥	Down key <i>*Program hold</i>	Decrease numbers (-1000,-100,-10,-1) <i>* Program hold <Programmable controller></i>
∧	⑦	Up key <i>*Program run</i>	Decrease numbers (+1000,+100,+10,+1) <i>* Program run <Programmable controller></i>
OUT1	⑧	OUT1 lamp	Lights when OUT1 is activated (Green)
OUT2	⑨	OUT2 lamp	Lights when OUT2 is activated (Green) ◦
AT	⑩	Auto tuning lamp	Lights when Auto tuning is activated (Orange)
AL1	⑪	Alarm 1 lamp	Lights when Alarm 1 is activated (Red)
AL2	⑫	Alarm 2 lamp	Lights when Alarm 2 is activated (Red)
AL3	⑬	Alarm 3 lamp	Lights when Alarm 3 is activated (Red)
MAN	⑭	Manual output lamp	Lights when manual output is activated (Orange)
PRO	⑮	<i>*Program running lamp</i>	<i>*Flashes when program is running <Programmable controller> ◦</i>
OUT1%	⑯	OUT% bar-graph display	Output% is displayed on 10-dot LED.