

Specifications

FY Series

Digital PID Controller

Standard Spec.

Model	FY400	FY600	FY700	FY800	FY900
Dimension	48X48mm	96X48mm	72X72mm	48X96mm	96X96mm
Supply voltage	AC 85~265V , DC24V (Optional)				
Frequency	50 / 60 HZ				
Power Consumption	approx 3VA	approx 4VA	approx 3VA	approx 4VA	approx 4VA
Memory	Non-volatile memory E ² PROM				
Input	Accuracy :0.2%FS , Sample time : 250ms				
TC	K , J , R , S , B , E , N , T , W5Re/W26Re , PL2 , U , L				
RTD	PT100 , JPT100 , JPT50				
mA dc	4~20mA , 0~20mA				
Voltage dc	0~1V , 0~5V , 0~10V , 1~5V , 2~10V -10~10mV , 0~10mV , 0~20mV , 0~50mV , 10~50mV				
DP Position	0000 , 000.0 , 00.00 , 0.000 (available for mA or Voltage dc input)				
Output 1	Main control output				
Relay	SPST type	SPDT type	SPDT type	SPDT type	SPDT type
	3A , 220V , electrical life : 100,000 times or more(under the rated load).				
Voltage Pulse	For SSR drive. ON:24V , OFF:0V , maximum load current:20mA.				
mA dc	4~20mA , 0~20mA .Maximum load resistance:560 Ω				
Voltage dc	0~5V , 0~10V , 1~5V , 2~10V. Maximum load current:20mA.				
Alarm 1	SPST type	SPDT type	SPST type	SPDT type	SPDT type
	3A , 220V , electrical life : 100,000 times or more(under the rated load).				
Control algorithms	PID , P , PI , PD , ON/OFF(P=0) , FUZZY				
PID range	P:0~200% , I:0~3600 Secs , D:0~900 Secs				
Isolation	Output terminals (control output , alarm , transmission) and Input terminals are isolated separately.				
Isolated resistance	10M Ω or more between input terminals and case(ground) at DC 500V 10M Ω or more between output terminals and case(ground) at DC 500V				
Dielectric strength	1000V AC for 1 minute between input terminals and case(ground) 1500V AC for 1 minute between output terminals and case(ground)				
Operating temperature	0~50°C				
Humidity range	20~90% RH				
Weight	FY400 approx 150g ,FY600/700/800 approx 225g , FY900 approx 300g.				
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	FY600	FY700	FY800	FY900
RAMP/SOAK Program	2 Patterns with 8 segments each . The 2 patterns can be linked together as 16 segments use.				
Output 2	For heating and cooling control use				
Relay	SPST type	SPST type	SPST type	SPST type	SPST type
Voltage Pulse	For SSR drive. ON:20V , OFF:0V , maximum load current:20mA.				
mA dc	4~20mA , 0~20mA .Maximum load resistance:560 Ω				
Voltage dc	0~5V , 0~10V , 1~5V , 2~10V. Maximum load current:20mA.				
Alarm 2	SPST type	SPDT type	SPDT type	SPDT type	SPDT type
Alarm 3	X	SPST type	SPST type	SPST type	SPST type
Heater Break Alarm (HBA)	Display Range of Heater Current : 0.0~99.9 A , 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				
mA dc	4~20mA , 0~20mA .Maximum load resistance:560 Ω				
Voltage dc	0~5V,0~10V,1~5V,2~10V. Maximum load current:20mA.				
Remote SV Input	4~20mA , 0~20mA , 0~5V , 0~10V , 1~5V , 2~10V are available				
Communication	Protocol : MODBUS RTU , MODBUS ASCII , TAIE Interface : RS232 , RS485 , TTL Baudrate : 38400 , 19200 , 9600 , 4800 , 2400 bps. Data bits : 8 , Start bit : 1 , Stop bit : 1 or 2 , Odd or Even parity				
WaterProof/DustProof	IP65				

Order Information

FY Series

Digital PID Controller

Model & Suffix codes

Model	Output1	Output2	Alarm	TRS	Remote SV	Communication	Input Type	Power	Water/Dust Proof
FY400	1	0	1	0	0	0	02	A	N
FY400 48x48mm	0 None	0 None	0 None	0 None	0 None	0 None	See Input Codes	A AC 85~265V	N None
FY600 96x48mm	1 Relay	1 Relay	1 1 Set	1 4~20mA	1 4~20mA	1 RS232		D DC24V	W IP65
FY700 72x72mm	2 Voltage Pulse (SSR Drive)	2 Voltage Pulse (SSR Drive)	2 2 Sets	2 0~20mA	2 0~20mA	2 RS485			
FY800 48x96mm	3 4~20mA	3 4~20mA	3 3 Sets	A 0~5V	A 0~5V	3 TTL			
FY900 96x96mm	4 0~20mA	4 0~20mA		B 0~10V	B 0~10V	A RS232_MODBUS	NEW		
(STANDARD)	5 1φSCR zero cross control	5 1φSCR zero cross control		C 1~5V	C 1~5V	B RS485_MODBUS			
PFY400 48x48mm	6 3φSCR zero cross control	6 3φSCR zero cross control		D 2~10V	D 2~10V				
PFY600 96x48mm	A 0~5V	A 0~5V	NEW						
PFY700 72x72mm	B 0~10V	B 0~10V	A HBA *						
PFY800 48x96mm	C 1~5V	C 1~5V	B HBA+AL2						
PFY900 96x96mm	D 2~10V	D 2~10V	C HBA+AL2+AL3						
(RAMP/SOAK Programmable)	7 Motor valve control	7 Motor valve control							
	8 1φSCR phase angle control	8 1φSCR phase angle control							
	9 3φSCR phase angle control	9 3φSCR phase angle control							

* Block means optional functions with additional charge
* HBA : Heater Break Alarm (HBA must use AL1 as alarm relay)

Combination of options and models

○ Available ✗ Not available

Options	RAMP/SOAK PROGRAM	Output 1			Output2	Alarm2	Alarm3	HBA	TRS	Remote SV	Communication	Power DC 24V
Model		1φSCR_Z	3φSCR_Z	Motor valve control	1φSCR_P	3φSCR_P						
FY400	○	○	✗	○	✗	✗	○	○	○	○	○	○
FY600	○	✗	✗	○	○	✗	○	○	○	○	○	○
FY700	○	○	✗	○	○	✗	○	○	○	○	○	○
FY800	○	✗	✗	○	○	✗	○	○	○	○	○	○
FY900	○	○	○	○	○	○	○	○	○	○	○	○

*Remote SV function is not available ,if HBA Function has been specified.

Input type table

	TYPE			RANGE							
	TYPE	CODE	RANGE	TYPE	CODE	RANGE					
T.C	K	K1	01	0.0~200.0°C (392.0°F)	K2	02	0.0~400.0°C (752.0°F)	K3	03	0~600°C (1112°F)	
		K4	04	0~800°C (1472°F)	K5	05	0~1000°C (1832°F)	K6	06	0~1200°C (2192°F)	
		J	J1	07	0.0~200.0°C (392.0°F)	J2	08	0.0~400.0°C (752.0°F)	J3	09	0~600°C (1112°F)
			J4	10	0~800°C (1472°F)	J5	11	0~1000°C (1832°F)	J6	12	0~1200°C (2192°F)
		R	R1	13	0~1600°C (2912°F)	R2	14	0~1769°C (3216°F)			
		S	S1	15	0~1600°C (2912°F)	S2	16	0~1769°C (3216°F)			
	E	B	B1	17	0~1820°C (3308°F)						
		E	E1	18	0~800°C (1472°F)	E2	19	0~900°C (1652°F)			
		N	N1	20	0~1200°C (2192°F)	N2	21	0~1300°C (2372°F)			
		T	T1	22	-199.9~400.0°C (752.0°F)	T2	23	-199.9~200.0°C (392.0°F)	T3	24	0.0~350.0°C (662.0°F)
		W	W1	25	0~2000°C (3632°F)	W2	26	0~2320°C (4208°F)			
		PLII	PL1	27	0~1300°C (2372°F)	PL2	28	0~1390°C (2534°F)			
R.T.D	U	U1	29	-199.9~600.0°C (999.9°F)	U2	30	-199.9~200.0°C (392.0°F)	U3	31	0.0~400.0°C (752.0°F)	
	L	L1	32	0~400°C (752°F)	L2	33	0~800°C (1472°F)				
	JPT	JP1	41	-199.9~600.0°C (999.9°F)	JP2	42	-199.9~400.0°C (752.0°F)	JP3	43	-199.9~200.0°C (392.0°F)	
	100	JP4	44	0~200°C (392°F)	JP5	45	0~400°C (752°F)	JP6	46	0~600°C (1112°F)	
	PT	DP1	47	-199.9~600.0°C (999.9°F)	DP2	48	-199.9~400.0°C (752.0°F)	DP3	49	-199.9~200.0°C (392.0°F)	
	100	DP4	50	0~200°C (392°F)	DP5	51	0~400°C (752°F)	DP6	52	0~600°C (1112°F)	
	JPT	JP.1	53	-199.9~600.0°C (999.9°F)	JP.2	54	-199.9~400.0°C (752.0°F)	JP.3	55	-199.9~200.0°C (392.0°F)	
	50	JP.4	56	0~200°C (392°F)	JP.5	57	0~400°C (752°F)	JP.6	58	0~600°C (1112°F)	
	LINEAR	AN1	61	-10 ~ 10mV							
		62	-2 ~ 2V								
63		-5 ~ 5V									
64		-10 ~ 10V									
AN2		71	0 ~ 10mV								
AN3		76	0 ~ 20mV								
AN4		81	0 ~ 50mV	-1999 ~ 9999							
82		0 ~ 20mA	or								
83	0 ~ 1V	-199.9 ~ 999.9									
84	0 ~ 5V	or									
85	0 ~ 10V	-19.99 ~ 99.99									
86	0 ~ 5K ohm	or									
87	0 ~ 2V	-1.999 ~ 9.999									
AN5	91	10 ~ 50mV									
92	4 ~ 20mA										
93	1 ~ 5V										
94	2 ~ 10V										

