

Proportional Integral Derivative Controllers



FY400

48x48x80mm
DIN 1/16

FY600

96x48x80mm
DIN 1/8

FY700

72x72x80mm
DIN 3/16

FY800

48x96x80mm
DIN 1/8

FY900

96x96x80mm
DIN 1/4

The FY Series

The FY Series Bright LED Microprocessor Proportional Integral Derivative Controllers are heavy duty, low cost, highly reliable, and accurate digital controllers. The FY Series PID Controllers have been well designed and manufactured for critical HVAC control requirements such as clean rooms, isolation rooms, laboratory, central plants, and utilities. The industry grade control performance provides versatile input selections and PID plus fuzzy functions.

FEATURES

- Multi range input (TC, RTD, mV, mA). Each 14 bit resolution.
- Fuzzy / PID control , with two individual outputs
- Three sets of alarm. Each one has 17 modes.
- Implement Zero / Phase control by trig SCR module directly
- E2PROM Non-volatile memory.
- RS232 and RS485 communication.
- Self-diagnosis function.
- Auto-zero and Auto-span circuits are highly accurate.
- Free range voltage AC85 ~ 265V / DC15 ~ 50V.
- Data lock function.
- Auto / Manual output mode.
- Output percent showing with 10 LEDs.
- 2 patterns each 8 segments programming procedure available to be ordered.
- Input 2 can be used in Remote SV.

SPECIFICATIONS

- Power supply: AC85 to 265V 50/60HZ , DC24V
- Power consumption: About 4VA
- Memory element: E2 PROM
- Display accuracy: Within 0.2% of displayed value + 1 digit
- Sampling time: 250 ms
- Input signal: Thermocouple, RTD, DC, Voltage/current
- Isolation:
Output part (control, alarm, transfer) and input part (measuring, CPU) are isolated separately.
- Dielectricity:
Measuring terminal-grounded terminal AC 1000V, 1 min. Power supply terminal-grounded terminal AC 1500V, 1min.
- Isolated resistance:
Measuring terminal-grounded terminal DC 500V more than 10M Ω . Power supply terminal-grounded terminal DC 500V > 10 M Ω
- Operating temperature: 0 ~ 50 $^{\circ}$ C
- Storage temperature: 25 ~ 65 $^{\circ}$ C
- Humidity range: 50 ~ 85% RH (not dew)
- Net weight:
FY400 approx 150g , FY600/FY700/FY800 approx 225g , FY900 approx 300g
- IP65 - Dust Proof and Water Proof Are Standard
On Queue FY400-900 Proportional Integral Derivative Controllers. (Board Type Excluded)

FY Series - Quick Selection Guide

Queue Engineering FY Series Proportional Integral Derivative Controllers Models and Suffix Codes

Model	Output 1	Output 2	Alarm	Transmitter	Second Input Remote Set Point	Communication	Input Type	Power	IP65* Dust Proof Water Proof
FY400	1	1	1	1	1	0		A	W

Standard Brightness

Model	Output 1	Output 2	Alarm	Transmitter	Second Input Remote Set Point	Communication	Input Type	Power	IP65*
FY400 48x48mm (DIN 1/16)	0 None	0 None	0 None	0 None	0 None	0 None	Field Selectable Input Codes Table A RS232_MODBUS B RS485_MODBUS	A AC 85-265V	0 None (Board Type)
FY600 96x48mm (DIN 1/8)	1 Relay	1 Relay	1 1 Set	1 4-20mA	1 4-20mA	A 0-5VDC		D DC 24V	
FY700 72x72mm (DIN 3/16)	2 Voltage Pulse (SSR Drive)	2 Voltage Pulse (SSR Drive)	2 2 Sets	2 0-20mA	2 0-20mA	B 0-10V		B Board Type AC 85-265V Pluggable Terminal Block	
FY800 48x96mm (DIN 1/8)	3 4-20mA	3 4-20mA	3 3 Sets	A 0-5VDC	A 0-5VDC	C 1-5V		W IP65	
FY900 96x96mm (DIN 1/4)	4 0-20mA	4 0-20mA		B 0-10V	B 0-10V	D 2-10V			
	5 1 φ zero crossing control	A 0-5VDC	A HBA**	C 1-5V	C 1-5V				
	6 3 φ zero crossing control	B 0-10VDC	B HBA+AL2	D 2-10V	D 2-10V				
	7 Motor valve control	C 1-5VDC	C HBA+AL2+AL3						
	8 1 φ phase angle control	D 2-10VDC							
	9 3 φ phase angle control								
Board Type									
FY100 175x110mm	A 0-5VDC								
FY101 90x90mm	B 0-10VDC								
	C 1-5VDC								
	D 2-10VDC								

* IP65 - Dust Proof and Water Proof Are Standard On Queue Engineering, LLC. FY400-900 Bright LED Series PID Controllers. (Board Type Excluded)
 ** HBA: Heater Break Alarm (HBA must use AL1 as alarm relay)

Proportional Integral Derivative Controllers Combination Of Options And Models

Model	Options RAMP/SOAK PROGRAM	Output 1					Output2	Alarm2	Alarm3	HBA	Transmission	Remote SV*	Communication	DC24V
		1 φ SCR_Z	3 φ SCR_Z	Motor Valve Control	1 φ SCR_P	1 φ SCR_P								
FY400	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY600	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY700	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY800	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY900	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY100	●	●	●	●	●	●	●	●	●	●	●	●	●	
FY101	●	●	●	●	●	●	●	●	●	●	●	●	●	

● = Available ● = Not Available * Remote SV Option Not Available if HBA Function has been specified

Field Selectable Input Codes Table - Proportional Integral Derivative Controllers

	Type	Code	Range		Type	Code	Range		Type	Code	Range				
			Type	Code			Type	Code			Type	Code			
TC	K	K1	01	0-200°C (392°F)	K2	02	0-400°C (752°F)	K3	03	0-600°C (1112°F)	LINEAR	AN1	61	-10-10mV	
		K4	04	0-800°C (1472°F)	K5	05	0-1000°C (1832°F)	K6	06	0-1200°C (2192°F)		62	-2-2V		
	J	J1	07	0-200°C (392°F)	J2	08	0-400°C (752°F)	J3	09	0-600°C (1112°F)		63	-5mV		
		J4	10	0-800°C (1472°F)	J5	11	0-1000°C (1832°F)	J6	12	0-1200°C (2192°F)		64	-10-10V		
	R	R1	13	0-1600°C (2912°F)	R2	14	0-1769°C (3216°F)					AN2	71	0-10mV	-199.9-999.9 or 19.99-99.99 or -1.999-9.999
	S	S1	15	0-1600°C (2912°F)	R2	14	0-1769°C (3216°F)					AN3	76	0-20mV	
	B	B1	17	0-1820°C (2912°F)						AN4		81	0-50mV		
	E	E1	18	0-800°C (1472°F)	E2	19	0-900°C (1652°F)					82	0-20mV		
	N	N1	20	0-1200°C (2192°F)	N2	21	0-1300°C (2320°F)					83	0-1V		
	T	T1	22	-199.9-400°C (752°F)	T2	23	-199.9-200°C (392°F)	T3	24	-199.9-300°C (662°F)		84	0-5V		
	W	W1	25	0-2000°C (3632°F)	W2	26	0-2320°C (4206°F)					85	0-10V		
	PLII	PL1	27	0-1300°C (2320°F)	PL2	28	0-1390°C (2534°F)					86	0-5K ohm		
	U	U1	29	-199.9-600°C (999.9°F)	U2	30	-199.9-200°C (392°F)	U3	31	0-400°C (752°F)		87	0-2V		
	L	L1	32	0-400°C (752°F)	L2	33	0-800°C (1472°F)					AN5	91	10-50mV	
RTD	JPT	JP1	41	-199.9-600°C (1112°F)	JP2	42	-199.9-400°C (752°F)	JP3	43	-199.9-200°C (392°F)	92	4-20mA			
	100	JP4	44	0-200°C (392°F)	JP5	45	0-400°C (752°F)	JP6	46	0-600°C (1112°F)	93	1-5V			
	PT	DP1	47	-199.9-600°C (1112°F)	DP2	48	0-400°C (752°F)	DP3	49	-199.9-200°C (392°F)	94	2-10V			
	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°C (1112°F)	JP.2	54	0-400°C (752°F)	JP.3	55	-199.9-200°C (392°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)					

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