

Universal Process Controller

Fx-438 / Fx-638 / Fx-738 / Fx-838 / Fx-938



Features

- Selectable sensor Input
- Control Action : PID Control / ON-OFF
- Input Signal Conditioning (Filter & Offset)
- Overshoot Control Protection
- Single Step Ramp Soak
- Soft Start Time for 4~20 mA and 0~10 VDC
- Alarm Acknowledge & Inhibit function
- Battery Backup for Soak Timer
- Programmable soak timer with four start modes
- Universal supply voltage (90 ~ 270VAC)
- 24 VDC Available on Request

Technical Specifications

Display Specification

Digits	4 Digits Dual Row 7 Segment LED Display				
LED Indication	1 - Control Output Status 2 - Output 2 Status 3 - Output 3 Status T - Tune Status S - Soak Time Status R - Retransmission Status				
Model	Fx-438	Fx-738	Fx-938	Fx-638	Fx-838
Height					
PV (White)	0.60"	0.70"	0.80"	0.60"	0.60"
SV (Green)	0.36"	0.60"	0.56"	0.36"	0.36"

Output Specification

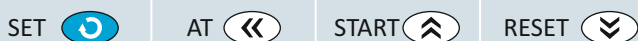
Control Output	Relay / SSR Drive / 4-20 mA / 0-10 VDC (Factory Set)
Output 2	Relay / SSR Drive (Factory Set)
Output 3	Relay / SSR Drive (Factory Set)
Relay	5A @ 250VAC / 30 VDC
SSR Drive	12 VDC @ 30 mA
mA (4~20/0~20)	500Ω Max.

Auxiliary Supply Specification

Supply Voltage	90 - 270 VAC (24 VDC Available on Request)
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Keys

4 Controlling keys for configuration and operation



Make In India



Accurate



Reliable



Affordable



User Friendly

Input Specification

Sensor Input	Thermocouple - J, K, R, S, N, T, B RTD - Pt-100
Analog Input	0-1 VDC , 0-3.3 VDC, 0-5 VDC 0-10 VDC , 0-20 mA, 4-20 mA
Resolution	T/C - 1°C Pt-100 - 1°C / 0.1°C
Accuracy	0.3% FSD
Temperature Unit	°C / °F
Sampling Rate	250 m Sec
CJC Error	± 2°C
Sensor Open	All Input
Sensor Burnout Current	1.10uA
RTD Excitation Current	0.2mA
Input Impedance	>1M
Max Voltage	20 VDC

Functional Specification

Control Action	PID Control / ON-OFF
Control Logic	Heat / Cool
Proportional Band	0.5 to 99.9°C
Integral Time	0 to 3600 sec
Derivative Time	0 to 300 sec
Cycle Time	1.0 to 100.0 sec
Overshoot Control Point	0 to 100%
Output Power Limit	0 to 100%
Hysteresis	J, K, RTD - 1 to 100°C
Delay	0 to 500 sec
Soft Start Time	5 to 1000 Sec
Output2 Function	None / Auxillary / Alarm
Output3 Function	None / Auxillary / Alarm / Alarm Soak / Soak Timer
Alarm Modes	Low / High / Deviation / Band
Soak Timer	Heater off / Alarm / Both

Environmental Specification

Temperature	Operating - 0 to 50°C
Storage	-20° to 75°C
Humidity	95% RH (Non-condensing)
Protection	IP 65 (Front Side)

Certification

None

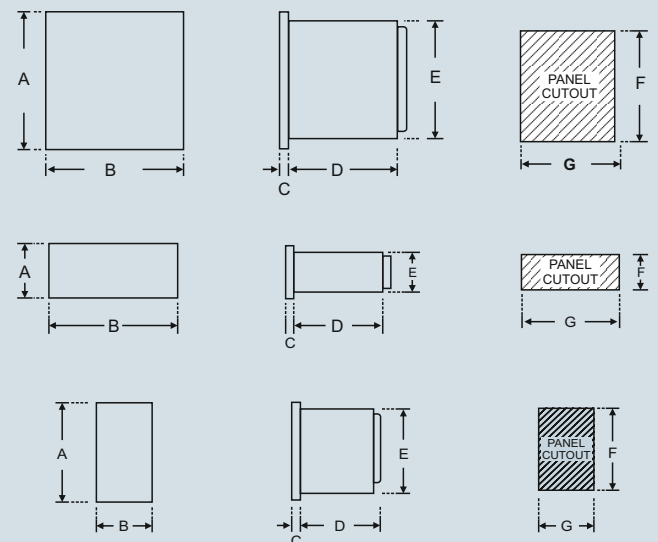
General Description

Model	Fx-438	Fx-738	Fx-938	Fx-638	Fx-838
Weight (Gms)	150	230	200	200	200
Enclosure	Molded ABS				
Color	Transparent				
Accessories	1 Pair of Mounting clamp				
Terminal Cable Size	Barrier Type terminal cable Size (2.5 mm ²)				

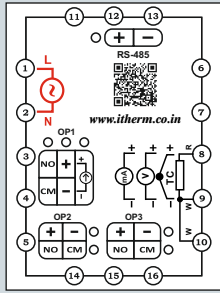
Mechanical Dimensions

Model	Dim A	B	C	D	E	F	G
Fx-438	50	50	3	85	45	45	45
Fx-738	72	72	3	60	68	68	68
Fx-938	96	96	10	45	89	92	44
Fx-638	96	50	3	60	90	92	45
Fx-838	50	96	3	60	90	92	45

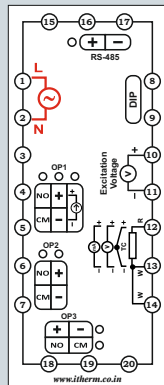
Mechanical Dimensions



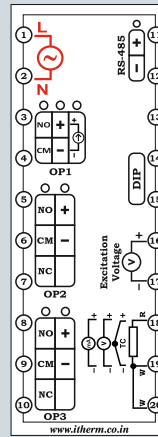
Terminal Diagram



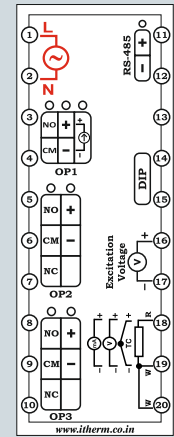
Fx-438



Fx-738



Fx-938



Fx-638 / 838

Order Code : Fx-Series

Size	No. Of Outputs	No. Of Digits	O/P1 Type	O/P2 Type	O/P3 Type	RS-485
4 (48X48X70)	Three	8 Digits	R (Relay)	R (Relay)	R (Relay)	N (None)
6 (96X48X53)			S (SSR Drive)	S (SSR Drive)	S (SSR Drive)	Available
7 (72X72X60)						
8 (48X96X53)						
9 (96X96X53)						

Example : Fx-438-R-R-R-00B

Size	No. Of Outputs	No. Of Digits	O/P1 Type	O/P2 Type	O/P3 Type	RS-485
4	3	8	R	R	R	000
4 (48X48X70)	Three	8 Digits	R (Relay)	R (Relay)	R (Relay)	None

Input Sensor Range

Sensor Input	Range	Resolution	Accuracy
Fe-k(J) T/C	0 ~ 760 °C	1 °C	± 1 °C
Cr-AL(K) T/C	-99 ~ 1300 °C	1 °C	± 1 °C
(R) T/C	0 ~ 1700 °C	1 °C	± 1 °C
(S) T/C	0 ~ 1700 °C	1 °C	± 1 °C
TC - N	-99 ~ 1300 °C	1 °C	± 1 °C
TC - T	-99 ~ 400 °C	1 °C	± 1 °C
TC - B	0 ~ 1800 °C	1 °C	± 1 °C
Pt-100(RTD)	-100 ~ 450 °C	1 °C	± 1 °C
Pt-100(RTD 0.1)	-100.0 ~ 450.0 °C	0.1 °C	± 0.3 °C
0 ~ 20 mA	-1999 to 9999 °C	1 / 0.1 / 0.01 / 0.001 °C	± 0.1 % of Full Scale
4 ~ 20 mA	-1999 to 9999 °C	1 / 0.1 / 0.01 / 0.001 °C	
0 ~ 1 VDC	-1999 to 9999 °C	1 / 0.1 / 0.01 / 0.001 °C	
0 ~ 3.3 VDC	-1999 to 9999 °C	1 / 0.1 / 0.01 / 0.001 °C	
0 ~ 5 VDC	-1999 to 9999 °C	1 / 0.1 / 0.01 / 0.001 °C	
0 ~ 10 VDC	-1999 to 9999 °C	1 / 0.1 / 0.01 / 0.001 °C	