

DIGITAL CONTROLLER TCOM

FT3415 UNIVERSAL MULTIFUNCTION TEMPERATURE/ PROCESS CONTROLLER



Super LCD display, excellent display effect.
 Universal multifunction type.
 Rich input and output, wide range of applications,
 Suitable for temperature, humidity, pressure, flowrate
 measuring and control.

Product Description

- White PV display and new higher contrast LCD with greatly improved visibility.
- A compact body with large display characters for easy reading even from a distance. This helps to reduce human error.
- The External waterproof sealing ring and the Internal waterproof sealing ring make the instrument reach the good waterproof performance.
- Get practical patent Plastic waterproof type keys, Firm and never wear and Operation feel clear and smooth and Good waterproof performance.
- Universal input: support all kinds of thermocouples, RTDs, linear current/voltage, resistance and radiation (infrared) thermometer signals are by parameter settings.
- Use digital calibration technology for input measurement with input measurement accuracy F.S.0.25%, and achieving accurate and stable measurement, maximum resolution is 0.01°C.
- Have a °C or °F Temperature unit symbol display and can choose the definition.
- providing plentiful output options, able to satisfy the requirements of various applications.
- Advanced "FUZZY+PID" ai intelligent control mode, no overshoot and with the function of auto tuning (AT) and self-adaptation, can also use the function of one-stop(ON-OFF) control mode.
- Can provide up to three alarm output, Can realize High limit, low limit, deviation high limit and deviation low limit and LBA control circuit disconnection alarm function.
- Support RS485 or RS232C communication interface, the use of advanced MODBUS RTU and FTBUS communication protocol.
- The measured value (PV) or a set value (SV) can be changed into a standard current signal output, which can be used as a temperature transmitter.
- Can achieve double output of heating-cooling, and two groups of independent PID regulation.
- Adopt the global universal high-performance switching power supply 100-240VAC/DC or 12-24VDC.

Model Code

FT3415 — —

① ② ③ ④ ⑤ ⑥

①

Code	MIO(Multiple function Input)
N	None
I3	4-20mA/0-20mA input
I4	4~20mA/0~20mA input, with 24VDC/25mA power output for two wire type transmitter
I2	Event input(Switch / frequency signal input)

②

Code	OUT(Master output)
N	None
R	Relay output
Q	SSR voltage output
W1	TRIAC no contact normally open output
W2	TRIAC no contact normally closed output
K1	Single-phase thyristor zero crossing trigger output
X	Analog 0-20mA/4-20mA output
X5	Analog 0-5V/1-5V output
X8	Analog 0-10V/2-10V output
K5	Single-phase thyristor phase-shift trigger output, suitable for 200~240VAC power

③

Code	ALM(Alarm)
N	None
R1	1 way relay output
R2	2 way relay output
Q1	1 way SSR voltage output
Q2	2 way SSR voltage output

⑤

Code	COMM(Communication Interface)
N	None
S	RS485 communication interface
S2	RS232C communication interface

④

Code	AUX (Auxiliary output)
N	None
R1	1 way relay output
Q1	1 way SSR voltage output
V24	24VDC sensor power output
V12	12VDC sensor power output
U5	5VDC sensor power output

⑥

Code	Power supply
N	AC/DC100~240V
D	AC/DC12-24V

*AUX can also be defined as alarm or cooling output.

FT3403 UNIVERSAL ECONOMICAL TEMPERATURE CONTROLLER



DIN48×48mm. Large White PV Display That's Easier to Read.
Function streamlining.

Product Description

- White PV display and new higher contrast LCD with greatly improved visibility.
- The External waterproof sealing ring and the Internal waterproof sealing ring make the instrument reach the good waterproof performance.
- Get practical patent Plastic waterproof type keys, Firm and never wear and Operation feel clear and smooth and Good waterproof performance.
- Input type thermocouples(K,E,J,N) and platinum resistance(Pt100) are by parameter settings.
- Output type: Relay, SSR voltage output.
- Use digital calibration technology for input Measurement accuracy:0.3%FS,maximum resolution is 0.1°C.
- Advanced "FUZZY+PID" ai intelligent control mode, no overshoot and with the function of auto tuning (AT) and self-adaptation , can also use the function of one-stop(ON-OFF) control mode .
- Up to 2 alarm output, alarm mode programmable.
- °C/°F temperature unit indication.
- Adopt the global universal high-performance switching power supply 100-240VAC/DC or 12-24VDC.

Model Code

FT3403 — —

① ② ③

①	
Code	OUT(Master output)
N	None
R	Relay output
Q	SSR voltage output
W1	TRIAC no contact normally open output
W2	TRIAC no contact normally closed output

②	
Code	ALM(Alarm)
N	None
1	1 way relay
2	2 way relay

③	
Code	Power supply
N	AC/DC100~240V
D	AC/DC12-24V

Technical Specifacat

Model	FT3403	
Size	Panel size:48X48mm (Panel back depth:86mm), Installation opening size:45X45mm	
Power supply voltage	1:AC100 ~ 240V 50/60HZ, 2:AC/DC12 ~ 24V(Allowable voltage range:85 ~ 110%)	
Power consumption	Approx. 5.5 VA (AC240V), Approx. 3.8 VA (DC24V)	
Measurement accuracy	0.3% FS ± 1 measurement unit	
Input type and Measuring range	K(-50~+1300°C)/E(0~800°C)/J(0~1000°C)/N(0~1300°C)/Pt100(-200~+600°C)	
Decimal point	0/0.0	
Response time	≤0.5Sec(when digital filter parameter InF=0)	
Control mode	On-off(one-stop) control mode, "FUZZY+PID" artificial intelligent control	
Control output	Relay output	3A/250VAC 5A/30VDC
	SSR output	12VDC/50mA(Used to drive SSR)
	TRIAC no contact discrete output	100 ~ 240VAC/0.2A (continuous), 2A (20mS instantaneous, repeat period≥5s)
EMC	±4KV/5KHz according to IEC61000-4-4; 4KV according to IEC61000-4-5	
Operating Ambient	Temperature:0~60°C ; Humidity≤90%RH	

Technical Specificat

Model	FT3415
Size	Panel size:48x48mm(Panel back depth:86mm), Installation opening size:45x45mm
Power supply voltage	1:AC100~240V 50/60HZ, 2:AC/DC12~24V(Allowable voltage range:85~110%)
Power consumption	Approx. 5.5 VA at 100 to 240 VAC, Approx. 3.8 VA at 12 to 24 VDC
Indication method	11-segment digital LCD display and individual indicators
Input type	Thermocouple:K, S, R, E, J, B, N, T, B,WRe3-WRe25, WRe5-WRe26. Resistance temperature detector:Cu50, Pt100. Linear voltage :0~5V, 1~5V, 0~1V, 0~10V, 2~10V, 0~20V, 0~20mV, 0~60mV, 0~75mV, 0~100mV, 0~500mV, 100~500mV etc. Linear current(External connection a shunt resistance) :0~10mA, 0~20mA, 4~20mA etc. Auxiliary input (install I3 or I4 module in MIO) : 0~20mA, 4~20mA.
Instrument Input range	K(-50~1300°C), S(-50~1700°C), R(-50~1700°C), E(0~800°C), J(0~1000°C), N(0~1300°C), T(-200~+350°C), B(200~1800°C). Cu50(-50~+150°C), Pt100(-200~+600°C). Linear Input: -9990~30000 defined by user
Measurement accuracy	0.25% FS ± 1 measurement unit
Decimal point	0/0.0/0.00/0.000
Response time	≤0.5Sec(when digital filter parameter InF=0)
Control mode	On-off(one-stop) control mode, "FUZZY+PID" artificial intelligent control
Control output	Relay output / SSR output/ TRIAC no contact discrete output/ Thyristor zero crossing trigger output/Linear current output

FT3419/3419P HIGH PERFORMANCE TEMPERATURE/ PROCESS CONTROLLER



Embodies the high precision and powerful features, display stable and fast response.

Product Description

FT3419 High performance temperature/ process controller

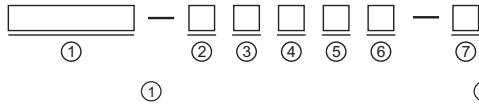
- White PV display and new higher contrast LCD with greatly improved visibility.
- A compact body with large display characters for easy reading even from a distance. This helps to reduce human error.
- The External waterproof sealing ring and the Internal waterproof sealing ring make the instrument reach the good waterproof performance.
- Get practical patent Plastic waterproof type keys, Firm and never wear and Operation feel clear and smooth and Good waterproof performance.
- Universal input: support all kinds of thermocouples, RTDs, linear current/voltage, resistance and radiation (infrared) thermometer signals are by parameter settings.
- Use digital calibration technology for input measurement with input measurement accuracy F.S.0.15%, and achieving accurate and stable measurement, maximum resolution is 0.01°C.
- Use advanced modular structure, conveniently providing plentiful output options, able to satisfy the requirements of various applications.
- Advanced "FUZZY+PID" ai intelligent control mode, no overshoot and with the function of auto tuning (AT) and self-adaptation, can also use the function of one-stop(ON-OFF) control mode.
- Can provide up to Three alarm output and LBA control circuit disconnection alarm function.
- Support RS485 or RS232C communication interface, the use of advanced MODBUS RTU and FTBUS communication protocol.
- The measured value (PV) or a set value (SV) can be changed into a standard current signal output, which can be used as a temperature transmitter.
- Can achieve double output of heating-cooling, and two groups of independent PID regulation.
- Can manual / automatic switch control and manual auto Tuning function.
- Application is very wide, suitable for temperature, humidity, pressure, flow, liquid level, pH value of the precise measurement / control.
- Adopt the global universal high-performance switching power supply 100-240VAC/DC or 12-24VDC.

Temperature/ Process Controllers

FT3419P 80 segment time program High precision digital temperature controller

- FT3419P is based on the FT3419 added 80 segment of the program control functions.
- FT3419P program type temperature controller is used in the application where the setpoint should be changed automatically with the time. It provides 50 segments program control which can be set in any slope and the function of jump, run, hold and stop can also be set in the program. Measurement startup function, preparation function and power-cut/power-resume event handling modes also provided.
- Three-level Display PV, SV, and MV displayed ,MV can display program remaining time and current program step.
- The 80 stage program can be programmed into a single set of curves or 4 sets of curves or 8 sets of curves,after grouping, you can quickly and conveniently call any group of curves.

Model Code



Code	Model category
FT3419	High performance standard control type
FT3419P	80 segment program control type

Code	MIO(Multiple function Input)
N	None
I3	4-20mA/0-20mA input
I4	4~20mA/0~20mA input , with 24VDC/25mA power output for two wire type transmitter
I2	Event input(Switch / frequency signal input)

Code	OUT(Master output)
N	None
R	Relay output
Q	SSR voltage output
W1	TRIAC no contact normally open output
W2	TRIAC no contact normally closed output
K1	Single-phase thyristor zero crossing trigger output
X	Analog 0-20mA/4-20mA output
X5	Analog 0-5V/1-5V output
X8	Analog 0-10V/2-10V output
K5	Single-phase thyristor phase-shift trigger output , suitable for 200~240VAC power
K6	Single-phase thyristor phase-shift trigger output , suitable for 340~415VAC power

Code	ALM(Alarm)
N	None
R1	1 way relay output
R2	2 way relay output
Q1	1 way SSR voltage output
Q2	2 way SSR voltage output

Code	COMM(Communication Interface)
N	None
S	RS485 communication interface
S2	RS232C communication interface

Code	AUX (Auxiliary output)
N	None
R1	1 way relay output
Q1	1 way SSR voltage output
V24	24VDC sensor power output
V12	12VDC sensor power output
U5	5VDC sensor power output

Code	Power supply
N	AC/DC100~240V
D	AC/DC12-24V

*AUX can also be defined as alarm or cooling output.

Technical Specificat

Model	FT3419/FT3419P	
Size	Panel size:48x48mm(Panel back depth:86mm), Installation opening size:45x45mm	
Power supply voltage	1:AC100~240V 50/60HZ, 2:AC/DC12~24V(Allowable voltage range:85~110%)	
Power consumption	Approx. 5.5 VA (AC240V), Approx. 3.8 VA (DC24V)	
Indication method	11-segment digital LCD display and individual indicators	
Input type	Thermocouple:K, S, R, E, J, B, N, T, B,WRe3-WRe25, WRe5-WRe26. Resistance temperature detector:Cu50, Pt100. Linear voltage :0~5V, 1~5V, 0~1V, 0.2~1V, 0~20mV, 0~60mV, 0~75mV, 0~100mV, -5~+5V, -1V~+1V, -20mV~+20mV, -100~+100mV etc. Linear current(External connection a shunt resistance) :0~10mA, 0~20mA, 4~20mA etc. Auxiliary input (install I3 or I4 module in MIO) : 0~20mA, 4~20mA.	
Instrument Input range	K (-50~+1300°C) , S (-50~+1700°C) , R (-50~+1700°C) , T (-200~+350°C) , E (0~800°C) , J (0~1000°C) , B (200~1800°C) , N (0~1300°C) , WRe3-WRe25 (0~2300°C) , WRe5-WRe26 (0~2300°C) . Cu50 (-50~+150°C) , Pt100(-200~+600°C) . Linear Input: -9990~30000 defined by user.	
Measurement accuracy	0.15% FS ± 1 measurement unit	
Decimal point	0/0.0/0.00/0.000	
Response time	80mS(when digital filter parameter InF=0),Display response times≤0.5Sec	
Control mode	On-off(one-stop) control mode, "FUZZY+PID" artificial intelligent control	
Control output	Relay output	3A/250VAC 5A/30VDC
	SSR output	12VDC/50mA(Used to drive SSR)
	TRIAC no contact discrete output	100~240VAC/0.2A (continuous), 2A (20mS instantaneous, repeat period≥5s)
	Thyristor zero crossing trigger output	Can trigger TRIAC of 5~500A, a pair of inverse paralleled SCRs or SCR power module.
	Linear current output	Analog 0~20mA, 4~20mA . (Output voltage≥10.5V maximum load resistor 500ohm, output precision 0.2%FS)
EMC	±4KV/5KHz according to IEC61000-4-4; 4KV according to IEC61000-4-5	
Isolation withstanding voltage	Between power, relay contact or signal terminals ≥2300VDC; between isolated electroweak terminals ≥600V	
Operating Ambient	Temperature:0~60°C ; Humidity≤90%RH	

FT803 UNIVERSAL ECONOMICAL TEMPERATURE CONTROLLER



Product Description

Easy to operate, price economy, very popular

- designed for plastics, food, packaging, oven, scientific experiments and other heating equipment design.
- Use digital calibration technology for input Measurement accuracy:0.3%FS,maximum resolution is 0.1°C.
- Input type thermocouples(K,E,J,N) and platinum resistance(Pt100) are by parameter settings.
- Advanced "FUZZY+PID" ai intelligent control mode, no overshoot and with the function of auto tuning (AT) and self-adaptation , can also use the function of one-stop(ON-OFF) control mode .
- Programmable multiple alarm mode:High alarm, Lower alarm, High-lower alarm and deviation alarm.
- Adopt the global universal high-performance switching power supply of AC/DC100-240V or AC/DC12-24V and various installation dimensions for users to choose.

Model Code

FT803 — —

① ② ③ ④ ⑤

①		②		③		④		⑤	
Code	Panel size(W*H)	Code	OUT(Master output)	Code	ALM(Alarm)	Code	Shell color	Code	Power supply
G	48X48mm	N	None	N	None	None	Light gray	N	AC/DC100~240V
D	72X72mm	R	Relay output	1	1 way relay	B	Black	D	AC/DC12-24V
A	96X96mm	Q	SSR voltage output	2	2 way relay				
E	48X96mm								
F	96X48mm								

Technical Specifacat

Model	FT803				
Size code	-G	-D	-A	-E	-F
Panel size(W*H)	48X48mm	72X72mm	96X96mm	48X96mm	96X48mm
Panel back depth	86mm	89mm	72mm	99mm	99mm
Installation opening size	45X45mm	68X68mm	92X92mm	45x92mm	92x45mm
Power supply voltage	1:AC100~240V 50/60HZ, 2:AC/DC12~24V(Allowable voltage range:85~110%)				
Power consumption	Approx. 5 VA (AC240V), Approx. 3.5 VA (DC24V)				
Indication method	7-segment, LED digital display				
Measurement accuracy	0.3% FS ± 1 measurement unit				
Input type and Measuring range	K(-50~+1300°C),E(0~800°C),J(0~1000°C),N(0~1300°C),Pt100(-200~+600°C)				
Decimal point	0/0.0				
Temperature unit	°C/°F				
Response time	≤0.5Sec(when digital filter parameter InF=0)				
Control mode	on-off(one-stop) control mode, "FUZZY+PID" artificial intelligent control				
Control output	Relay output	3A/250VAC 5A/30VDC			
	SSR output	12VDC/50mA(Used to drive SSR)			
EMC	±4KV/5KHz according to IEC61000-4-4; 4KV according to IEC61000-4-5				
Isolation withstanding voltage	Between power, relay contact or signal terminals ≥2300VDC; between isolated electroweak terminals ≥600V				
Operating Ambient	Temperature:0~65°C ; Humidity≤90%RH				

FT815 UNIVERSAL MULTIFUNCTION TEMPERATURE/ PROCESS CONTROLLER



Product Description

Universal Multi-function models

- Universal input: support all kinds of thermocouples, RTDs, linear current/voltage, resistance and radiation (infrared) thermometer signals are by parameter settings.
- Use digital calibration technology for input measurement with input measurement accuracy F.S.0.25%, and achieving accurate and stable measurement, maximum resolution is 0.01°C.
- providing plentiful output options, able to satisfy the requirements of various applications.
- Advanced "FUZZY+PID" intelligent control mode, no overshoot and with the function of auto tuning (AT) and self-adaptation, can also use the function of one-stop(ON-OFF) control mode.
- Can provide up to three alarm output, Can realize High limit, low limit, deviation high limit and deviation low limit and LBA control circuit disconnection alarm function.
- Support RS485 or RS232C communication interface, the use of advanced MODBUS RTU and FTBUS communication protocol.
- The measured value (PV) or a set value (SV) can be changed into a standard 4-20mA current signal output, which can be used as a temperature transmitter.
- Besides unidirectional PID regulation, but also can realize heating and refrigerating bidirectional regulation, double output and two group independent PID.
- Application is very wide, suitable for temperature, humidity, pressure, flow, liquid level, pH value of the precise measurement and control.

Model Code

FT815 — —

①

Code	Panel size(W*H)
G	48X48mm
D	72X72mm
A	96X96mm
E	48X96mm
F	96X48mm

②

Code	MIO(Multiple function Input)
N	None
I3	4-20mA/0-20mA input
I4	4~20mA/0~20mA input, with 24VDC/25mA power output for two wire type transmitter
I2	Event input(Switch / frequency signal input)

③

Code	OUT(Master output)
N	None
R	Relay output
Q	SSR voltage output
W1	TRIAC no contact normally open output
W2	TRIAC no contact normally closed output
K1	Single-phase thyristor zero crossing trigger output
K3	Three-phase thyristor zero crossing trigger output
X	Analog 0-20mA/4-20mA output
X5	Analog 0-5V/1-5V output
X8	Analog 0-10V/2-10V output
K5	Single-phase thyristor phase-shift trigger output, suitable for 200~240VAC power
K6	Single-phase thyristor phase-shift trigger output, suitable for 340~415VAC power

④

Code	ALM(Alarm)
N	None
R1	1 way relay output
R2	2 way relay output
Q1	1 way SSR voltage output
Q2	2 way SSR voltage output

⑤

Code	AUX(Auxiliary output)
N	None
R1	1 way relay output
R2	2 way relay output
Q1	1 way SSR voltage output
Q2	2 way SSR voltage output
K1	Single-phase thyristor zero crossing trigger output
X	0-20mA/4-20mA output
X5	0-5V/1-5V output
V24	24VDC sensor power output
V12	12VDC sensor power output

⑥

Code	COMM(Communication Interface)
N	None
S	RS485 communication interface
S2	RS232C communication interface

⑦

Code	Shell color
None	Light gray
B	Black

⑧

Code	Power supply
N	AC/DC100~240V
D	AC/DC12-24V

*AUX can also be defined as alarm or cooling output.

Technical Specificat

Model	FT815				
Size code	-G	-D	-A	-E	-F
Panel size(W*H)	48X48mm	72X72mm	96X96mm	48X96mm	96X48mm
Installation opening size	45X45mm	68X68mm	92X92mm	45x92mm	92x45mm
Power supply voltage	1:AC100 ~ 240V 50/60HZ, 2:AC/DC12 ~ 24V(Allowable voltage range:85 ~ 110%)				
Power consumption	Approx. 5 VA (AC240V), Approx. 3.5 VA (DC24V)				
Indication method	7-segment, LED digital display				
Measurement accuracy	0.25% FS \pm 1 measurement unit				
Input type	Thermocouple:K, S, R, E, J, B, N, T, B,WRe3-WRe25, WRe5-WRe26. Resistance temperature detector:Cu50, Pt100. Linear voltage :0~5V, 1~5V, 0~1V, 0~10V, 2~10V, 0~20V, 0~20mV, 0~60mV, 0~75mV, 0~100mV, 0~500mV, 100~500mV etc. Linear current(External connection a shunt resistance) :0~10mA, 0~20mA, 4~20mA etc. Auxiliary input (install I3 or I4 module in MIO) : 0~20mA, 4~20mA.				
Measuring range	K(-50~1300°C), S(-50~1700°C), R(-50~1700°C), E(0~800°C), J(0~1000°C), N(0~1300°C), T(-200~+350°C), B(200~1800°C). Cu50(-50~+150°C), Pt100(-200~+600°C). Linear Input: -9990 ~ 30000 defined by user				
Decimal point	0/0.0/0.00/0.000				
Response time	\leq 0.5Sec(when digital filter parameter InF=0)				
Control mode	on-off(one-stop) control mode, "FUZZY+PID" artificial intelligent control				
Control output	Relay output :3A/250VAC 5A/30VDC SSR output :12VDC/50mA(Used to drive SSR) TRIAC no contact discrete output:100~240VAC/0.2A (continuous), 2A (20mS instantaneous, repeat period \geq 5s) Thyristor zero crossing trigger output:Can trigger TRIAC of 5~500A, a pair of inverse paralleled SCRs or SCR power module. Linear current output:Analog 0 ~ 20mA, 4 ~ 20mA . (output precision 0.2%FS)				

THW18 FAR INFARED TEMPERATURE SENSOR



Product Description

- The infrared temperature sensor can calculate the surface temperature of the object by measuring the infrared radiation intensity of the target without touching the target.
- Non contact temperature measurement is the greatest advantage of infrared thermometer, which enables users to conveniently measure targets that are difficult to access or move.
- The THW18 series temperature sensor is an integrated infrared temperature sensor, The sensor, optical system and electronic circuit are integrated into the stainless steel shell.
- The THW18 series is easy to install. The standard thread on the metal shell can be quickly connected with the installation part.
- At the same time, the THW18 series also has all kinds of options (such as sweeper, mounting bracket, adjustable mounting bracket, purge protective sleeve, etc.) to meet the requirements of various working conditions.
- It can be matched with FT815/FT819/T904-FSVA□ instrument, achieve far-infrared temperature measurement display, control, computer communication and other functions.

Model Code

THW18 — □ □
 ① ②

①

Code	Temperature range
3	0-300°C
5	0-500°C
8	0-800°C
10	0-1000°C

②

Code	Output signal
X2	Analog 4-20mA output
X5	Analog 0-5V output
X8	Analog 0-10V output

Technical Specificat

Model	THW18-□□
Shell size	113mm×φ18mm(length * diameter)
Thread	M18×1
Shell material	Stainless steel
Protection grade	IP65 (NEMA-4)
Length of wire	1.5 m (standard), other special specifications (custom)
Working power supply	24VDC
Maximum current of power supply	50mA
Spectral range	8~14 μm
Temperature range	0-300°C/0-500°C/0-800°C/0-1000°C
Optical resolution	20:1
Response time	150 ms (95%)
Temperature measurement accuracy	The measured value ±1% or ±1.5°C, and the large value is taken
Repetition precision	The measured value ±0.5% or ±1°C, and the large value is taken
Emissivity	0.95 fixed
Output signal	Analog 4-20mA linear output (2 line system) Analog 0-5V linear output (4 line system)
Working environment temperature	0 ~ 60°C
Storage temperature	-20 ~ 80°C
Relative humidity	10 - 95% (non - condensation)
Recommended display control instrument	T904-FSVA□/FT815/FT819/FT801/FT3415/FT3419

