2408(f) and 2404(f) High Stability Temperature and Process Controller / Programmer

TECHNICAL SPECIFICATION (2408(f), 2404(f))

Process value inputs

Low level range	-100 to + 100mV
High level range	0-20mA or 0-10Vdc
Sample rate	9Hz
Resolution	<2µV for low level inputs <0.2mV for high level inputs
Linearity	Better than 0.2°C ±1LSD
Calibration accuracy	±1°C or ±0.2% of reading, whichever is greater
User calibration	Low and high offsets can be applied
Input filtering	OFF to 999.9 seconds
Thermocouple types	Refer to the ordering code sensor input table
Cold Junction compensation	In automatic mode, >30 to 1 rejection of ambient tem perature change OR external 0°C, 45°C, 50°C references
3-wire Pt100 input	Bulb current: 0.3mA. Up to 22ohm in each lead without error
Potentiometer input	330 to 15Kohm
Analogue input functions	Process value, remote setpoint, setpoint trim, external power limit, feedforward input, Valve position feedback
Second process value input functions	Select min, select max, derived value, transfer to 2nd PV

Digital inputs (Isolated except for fixed digital inputs 1 & 2)

Contact closure inputs	Open circuit voltage:	24 to 30Vdc
	Short circuit current:	24 to 29mA
	Off state:	<100ohms input resistance
	On state:	>28Kohm input resistance
Logic inputs (Current sinking)	Off state:	-3 to 5Vdc @ <-0.4mA
	On state:	10.8 to 30Vdc @ 2.5mA

Digital outputs

Relay rating		2A, 264Vac resistive
Single logic output*		18Vdc, 20mA (non-isolated)
Triple logic output		12Vac, 8mA per channel (isolated)
Triac		1A, 264Vac resistive (isolated)
High current output	Rating:	10amp, 264Vac resistive (2404 f only) (isolated)

Analogue outputs

Range	0-20mA, 0-10VDC (isolated)
Resolution	1 part in 10,000 for analogue retrans. 1 part in 7,000 for DC control outputs
Transmitter supply	20mA, 24Vdc

Control functions

Control modes	On/Off, PID or motorised valve control, with or without a feedback potentiometer
Cooling algorithms	Linear, water, fan, oil
Tuning	One-shot and continuous adaptive tuning
Number of PID sets	Two
Auto manual control	Bumpless transfer or forced manual output available
Setpoint rate limit	Display units per sec, per min or per hour

Alarms

Number of alarms	Four
Alarm types	High, low, deviation high, deviation l ow, deviation band, rate of change.
Alarm modes	Latching or non-latching. Blocking. Energised or de-energised in alarm

Setpoint programming

Number of programs		Up to four
Segments per prog		16
Event outputs		Up to eight

Communications (All modules are isolated)

Profibus		High speed, RS485. Up to 1.5Mb/s
Modbus ®		RS232, 2-wire RS485 and 4-wire RS485 modules

PDSIO

Slave input (isolated)		Remote setpoint with holdback to master
Master output*		Retransmission of setpoint, process value or output

General

Display range		Four digits with up to two decimal places
Supply		100 to 240Vac -15%, +10% 48 to 62Hz, OR 24Vdc or ac -15%, +20%. 10W max.
Operating ambient		0 to 55°C and 5 to 95% RH non-condensing
Storage temperature		-10 to +70°C
Panel sealing		IP54
Dimensions (mm)	2408f:	48W x 96H x 150D
	2404f:	96W x 96H x 150D
EMC standards		EN50081-2 & EN50082-2 generic standards for industrial environments
Safety standards		Meets EN61010, installation category II, pollution degree 2
Atmospheres		Not suitable for use above 2000m or in explosive or corrosive atmospheres.

* These inputs or outputs are not isolated from the main process value input.

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