

C Series High Accuracy LCD Display Fuzzy + PID Temperature/Process Controllers

The new generation, low cost, PID microprocessor-based with Fuzzy logic controller series incorporate two bright, easy to read LCD displays which indicate Process value (PV) and Set Point value (SV).

The Fuzzy Logic technology incorporated on this series of controllers enables a process to reach the predetermined set point in the shortest time with minimum of overshoot during Start up (Power ON) or external load disturbances.

A wide range of inputs including Thermocouple (13 types), RTD, Milliamps (mA) and Voltage (V) are supported.

A selection of the range have a profile option with 16 segments, configurable as 1 x 16, 2 x 8, 4 x 4, ramp & soak.

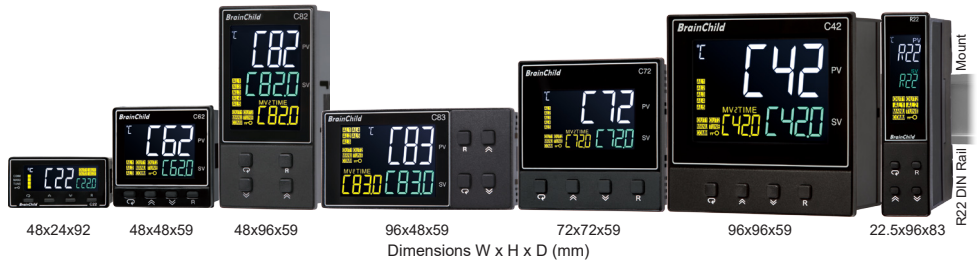
- High quality LCD display
- High accuracy 18 bit A-D input, 15 bit D-A output
- Fast 200msec sampling rate
- Universal inputs: Thermocouple, RTD, mA, V
- Fuzzy + PID Control
- Auto-tuning
- RS-485 and analog retransmission
- 16 configurable segments
- Up to 6 event inputs
- CT inputs for heater break detection
- Remote set point option
- Bumpless transfer
- Lockout protection
- Bi-directional menu navigation



Technical Details		C22	C62	C82	C83	C72	C42	R22
Power Supply		90 to 250 VAC, 47-63Hz; 11 to 40 VDC / 20 to 28 VAC, 47-63 Hz						
Signal Inputs		Thermocouple: K, J, T, N, E, R, S, B, L, U, P, C, D RTD: Pt100 (DIN), Pt100 (JIS) Current: mA (-3mA...27mA), Voltage: V (-1.3V...11.5V) Type: Linear Current (-3mA...27mA), Linear Voltage (-1.3V...11.5V) Accuracy: $\pm 0.05\%$						
Remote Set Point Input (not C22, C62, R22)								
Event Inputs		1	2	6	6	2	6	2
Output 1 & Output 2	Type	Relay, Pulsed Voltage, Linear Voltage & Linear Current						
	Relay Rating	2 A, 240 V AC, 200,000 Life Cycles for Resistive Load						
	Pulsed Voltage	Source Voltage 5 V, Current Limiting Resistance 66 Ω						
Alarm	Isolation Breakdown Voltage	1,000 V AC						
	Load Capacity of Linear Output	Linear Current: 500 Ω max, Linear Voltage: 10 K Ω min						
	Relay Type	Form A, max rating 2 A, 240 V AC, 200,000 Life Cycles for Resistive Load						
Data Communication	Alarm Functions	Dwell Timer (0.1...4.553.6 minutes), High & Low (Deviation, Deviation Band, Process)						
	Alarm Mode	Latching, Hold, Normal, Latching / Hold						
Analogue Retransmission		Interface / Protocol: RS-485 / Modbus RTU (Slave Mode)						
User Interface	Output Signal	4-20mA, 0-20mA, 0-10V (accuracy $\pm 0.05\%$ of span $\pm 0.0025\%/^{\circ}\text{C}$)						
	Isolation Breakdown	1,000 VAC minimum						
Programming Port	Upper Display Digit Size (mm)	10.0	15.0	17.7	17.7	15.0	25.0	8.0
	Lower Display Digit Size (mm)	4.8	7.8	11.2	11.2	8.3	14.0	6.5
Control Mode	Interface/PC Communication	Micro USB / Automatic Setup, Calibration and Firmware upgrade Configuration software available (see accessories)						
	Output 1	Reverse (Heating) or Direct (Cooling) action						
	Output 2	PID cooling control, Cooling P band, Dead band						
Profiler	Control Options	On / Off or PID (Fuzzy logic modified proportional band), Manual (Heat MV1 and Cool MV2)						
	Auto-Tuning	Cold Start and Warm Start						
	Availability	No	No	Option	Option	Option	Option	No
Environmental & Physical	No. of Segments	N/A	N/A	4 / 8 / 16	4 / 8 / 16	4 / 8 / 16	4 / 8 / 16	N/A
	Operating / Storage Temp.	Operating: $-10^{\circ}\text{C}...+50^{\circ}\text{C}$; Storage: $-40^{\circ}\text{C}...+60^{\circ}\text{C}$						
	Humidity	0...90 % RH (Non-Condensing)						
Dimensions & Weight	Altitude / Pollution	2,000 Metres Maximum, Pollution level Degree II						
	Insulation Resistance	20 M Ω Minimum (@ 500 V DC)						
	Dielectric Strength	2,000 V AC, 50/60Hz for 1 Minute						
Approval Standards	Vibration / Shock Resistance	10...55Hz, 10 m/s ² for 2 hours / 200 m/s ² (20g)						
	Moulding	Flame Retardant Polycarbonate						
	Mounting	Panel	Panel	Panel	Panel	Panel	Panel	DIN Rail
Approval Standards	Physical (W x H x D) (mm)	48 x 24 x 92	48 x 48 x 59	48 x 96 x 59	96 x 48 x 59	72 x 72 x 59	96 x 96 x 59	22.5 x 96 x 83
	Depth Behind Panel (mm)	84	50	50	50	50	50	-
	Cut Out Dimensions (mm)	45 x 22.2	45 x 45	45 x 92	92 x 45	68 x 68	92 x 92	-
Approval Standards	Weight (grams)	120	160	220	220	190	290	160
	Safety	UL61010C-1, CSA C22.2 No. 24-93, EN61010-1 (IEC1010-1)						
	Protective Class	IP66 for Panel, IP20 for terminals and housing. All indoor use.						
Approval Standards	EMC (CE)	EN 61326-1: 2013 CISPR 11: 2009 +A1: 2010 [Group 1, Class A] EN 61000-3-2: 2014 Class A EN 61000-3-3: 2013						

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C62

1	model	code	4	output 2 / alarm 1	code	6	option 1	code	8	option 3	code
	C62	C62	None	0		None	0		None	0	
2	power input	code	Form A Relay	1		RS-485	1		Retransmit 4-20mA / 0-20mA	1	
	90...250 VAC, 47-63Hz	4	SSRD, 5V / 30mA	2					Retransmit 0-10V	2	
	11...40 VDC / 20...28 VAC, 47-63Hz	5	Isolated 4-20mA / 0-20mA	3	7	option 2	code		Alarm 3	3	
			Isolated 0-10V	5		None	0				
3	output 1	code	SSRD, 14V / 40mA	C		2 Event Inputs	1		9	option 4	code
	Form A Relay	1			5	alarm 2	code			None	0
	SSRD, 5V / 30mA	2				None	0			Terminal Cover	1
	Isolated 4-20mA / 0-20mA	3	Form A Relay	1		1 Event Input, 1 CT Input	2				
	Isolated 0-10V	5				2 CT Inputs	3				
	SSRD, 14V / 40mA	C									

C62: Panel Mount, 48mm (W) x 48mm (H) x 59mm (D)

order code (example)	1	2	3	4	5	6	7	8	9
	C62	4	1	0	0	0	0	0	0

C22, R22

1	model	code	3	output 1	code	4	output 2 / alarm 1	code	5	option 1	code
	C22	C22	Form A Relay	1		None	0		None	0	
	R22	R22	SSRD, 5V / 30mA	2		Form A Relay	1		RS-485	1	
2	power input	code	Isolated 4-20mA / 0-20mA	3		SSRD, 5V / 30mA	2		1 Event Input	2	
	90...250 VAC, 47-63Hz	4	Isolated 0-10V	5		Isolated 4-20mA / 0-20mA	3		1 CT Input	3	
	11...40 VDC / 20...28 VAC, 47-63Hz	5	SSRD, 14V / 40mA	C		Isolated 0-10V	5		6	option 2	code
						SSRD, 14V / 40mA	C			None	0
										Retransmit 4-20mA / 0-20mA	1
										Retransmit 0-10V	2
										Alarm 2 (Form A relay)	3

C22: Panel Mount, 48mm (W) x 24mm (H) x 92mm (D)

R22: DIN Rail Mount, 22.5mm (W) x 96mm (H) x 83mm (D)

order code (example)	1	2	3	4	5	6
	C22	5	2	1	0	1

C82, C83, C72, C42

1	model	code	4	output 2 / alarm 1	code	7	option 1	code	9	option 3	code
	C82	C82	None	0		None	0		None	0	
	C83	C83	Form A Relay	1		RS-485 & Remote Set Point	1		Retransmit 4-20mA / 0-20mA & Remote Set Point	1	
	C72	C72	SSRD, 5V / 30mA	2					Retransmit 0-10V and Remote Set Point	2	
	C42	C42	Isolated 4-20mA / 0-20mA	3					Alarm 4, Retransmit 4-20mA / 0-20mA and Remote Set Point (retransmit not for C72)	3	
2	power input	code	Isolated 0-10V	5		8	option 2	code			
	90...250 VAC, 47-63Hz	4	SSRD, 14V / 40mA	C			None	0			
	11...40 VDC / 20...28 VAC, 47-63Hz	5					1 CT Input & Remote Set Point	1			
							2 CT Inputs & Remote Set Point	2			
3	output 1	code	Form A Relay on Alarm 2	1							
	Form A Relay	1	Form A Relay on Alarm 2 to 3	2							
	SSRD, 5V / 30mA	2									
	Isolated 4-20mA / 0-20mA	3	6	event inputs	code				10	option 4	code
	Isolated 0-10V	5		None	0					None	0
	SSRD, 14V / 40mA	C	6 Event Inputs (2 for C72)	1						Terminal Cover	1
										Ramp & Soak Profiler	2
										Terminal Cover and Ramp & Soak Profiler	3

C82: Panel Mount, 48mm (W) x 96mm (H) x 59mm (D)

C83: Panel Mount, 96mm (W) x 48mm (H) x 59mm (D)

C72: Panel Mount, 72mm (W) x 72mm (H) x 59mm (D)

C42: Panel Mount, 96mm (W) x 96mm (H) x 59mm (D)

order code (example)	1	2	3	4	5	6	7	8	9	10
	C42	4	1	1	1	1	1	1	2	1

accessory (all models)	code	accessory (all models)	code
14V / 40mA SSR Drive Module	OM94-7	Current Transformer 0-50A	CT98-1
Isolated 4-20mA / 0-20mA Analog Output Module	OM98-3	USB Programming Adaptor	PA98-1
Isolated 0-10V Analog Output Module	OM98-5	Programming Port Cable (1.5M)	CC98-1
Isolated 4-20mA / 0-20mA Retransmission Module (not C22/R22)	CM98-3	Configuration Software	BC-SET
Isolated 0-10V Retransmission Module (not C22/R22)	CM98-5		

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