DCP32

DigitroniK
Digital Control Programmer

The DCP32 is a 2-loop advanced-function programmable controller supporting up to 19 program patterns to which thermocouple signals, resistance temperature detector (RTD) signals, DC voltage and DC current can be input. A temperature and relative humidity calculation model which controls temperature and relative humidity is also available.

The DCP32 supports extensive digital I/O functions including 3 event outputs, 5 time events (optional) and 12 external switch inputs (8 optional). RS-485 communications and two auxiliary outputs can also be added on as options.

Specifications

General	**Memory backup**	RAM backed up by lithium battery
	Power	100 to 240Vac, 50/60Hz
	Power consumption	30VA max.
	Ambient temperature	0 to 50°C
	Ambient humidity	10 to 90% RH (no condensation allowed)
	Mass	Approx. 900g
Program pattern	**No. of programs**	19
	No. of segments	30/program
	Segment time	0 to 99h 59 min, or 0 to 99min 59s (selectable)
PV input 1	**Type**	Thermocouple, RTD, DC voltage, DC current multi-range
	Sampling cycle	0.1s
	Bias	-1000 to +1000U (U: industrial unit)
PV input 2	**Type**	Thermocouple, RTD, DC current multi-range
	Sampling cycle	0.1s
	Bias	-1000 to +1000U (U: Industrial unit)
Indication & setting	**Indicator**	2 or 4-digit, 7-segment LED (green or orange)
	Profile display	6 orange LEDs
Control output	**Control mode**	Program or constant value control
	PID auto-tuning	Automatic setting of PID value by limit cycle system + Neural/Fuzzy (2 degrees of freedom PID) & Smart system (executable by 0D, 2G, 5G, and 6D outputs)
	No. of PID sets	8 (for program operation) + 1 (for constant value operation) (heat/cool: 4 + 1 respectively)
	MV limit (%)	Lower: -10.0 to upper limit Upper: Lower limit to 110.0
	MV change limit	0.0 to 10.0% / 0.1s
Event (EV) output	**No. of outputs**	Event: 3, Time event: 5
	Type	Event: PV, dev., |dev.|, SP, MV MFB and control status events, Time event: Time and segment No. events
Remote switch (RSW) input	**No. of inputs**	12
	Type	Dry relay contact, or open collector
	Function	Fixed: RUN, HOLD, RESET, ADV, program No. Variable: FAST, PV start, AT, AUTO/MANUAL, G. Soak cancel, direct/reverse action
Auxiliary (AUX) output	**No. of outputs**	1 (does not apply to 2G and heat/cool models)
	Type	PV, SP, dev., MV, MFB
	Output	4 to 20mAdc, load resistance 600Ω max.
Communications		RS-485

Selection Guide

I II III IV V VI VII Example: **P32A5G1AS001D0**

Segment	Model No. selection				Description		
I	Basic No.	P32A	↓	↓	Digital control programmer (2 loops)		
II	Control output	0D	○	–	Time proportional PID or ON/OFF (relay contact) + current output		
		2G	–	○	Position proportional PID (M/M drive relay contact) + current output		
		5G	○	–	Two continuous proportional PID (4 to 20mAdc) outputs		
		3D	–	○	Heat-cool, (two relay outputs) + current output		
		5K	–	○	Heat-cool, (two current outputs) + current output		
III	Function	1	○	○	Two input channels		
		2	○	○	Temperature and humidity computation		
IV	Power	AS	○	○	100 to 240Vac, 50/60Hz		
V	Auxiliary output	00	○	○	None		
		01	○	–	1 output		
VI	Option 1				External switch input	Time event	Communications
		0	○	○	4 inputs	–	–
		1	○	○	12 inputs	5 events	–
		2	○	○	12 inputs	5 events	RS-485
VII	Option 2	00	○	○	None		
		T0	○	○	Tropicalization		
		K0	○	○	Antisulfidization		
		D0	○	○	With test data		
		B0	○	○	Tropicalization + test data		
		L0	○	○	Antisulfidization + test data		
		Y0	○	○	With traceability certification		

• A circle (○) denotes availability.

Accessories (sold separately)

Part No.	Description
SLP-P30J20	Smart Loader Package
81446083-001	Hard dustproof cover
80446087-001	Soft dustproof cover
81446084-001	Terminal cover
81446431-001	Lithium battery

Input Types and Ranges

■ Input 1:

• Thermocouple

Range code	Input type	Range (°C)
0	K (CA)	0 to 1200
1		0.0 to 800.0
2		0.0 to 400.0
3		-200 to +1200
4		-200.0 to +300.0
5		-200.0 to +200.0
6	E (CRC)	0.0 to 800.0
7	J (IC)	0.0 to 800.0
8	T (CC)	-200.0 to +300.0
9	B (PR30-6)	0 to 1800
10	R (PR13)	0 to 1600
11	S (PR10)	0 to 1600
12	W (WRe5-26)	0 to 2300
13		0 to 1400
14	PR40-20	0 to 1900
15	Ni-Ni·Mo	0 to 1300
16	N	0 to 1300
17	PL II	0 to 1300
18	DIN U	-200.0 to +400.0
19	DIN L	-200.0 to +800.0
20	Golden iron chromel	0.0 to 300.0K (K: Kelvin)

• Resistance temperature detector (RTD)

Range code	Input type	Range (°C)
32	JIS '89 Pt100 (IEC Pt100Ω)	-200.0 to +500.0
33		-200.0 to +200.0
34		-100.0 to +150.0
35		-50.0 to +200.0
36		-60.0 to +40.0
37	JIS '89 Pt100 (IEC Pt100Ω)	-40.0 to +60.0
38		0.0 to 500.0
39		0.0 to 300.0
40		0.00 to 100.00
48	JIS '89 JPt100	-200.0 to +500.0
49		-200.0 to +200.0
50		-100.0 to +150.0
51		-50.0 to +200.0
52		-60.0 to +40.0
53	JIS '89 JPt100	-40.0 to +60.0
54		0.0 to 500.0
55		0.0 to 300.0
56		0.00 to 100.00

• DC current/voltage

Range code	Input type	Range (programmable)
64	4 to 20mA	-1999 to +9999
65	0 to 20mA	
66	0 to 10mA	
67	-10 to +10mV	-1999 to +9999
68	0 to 100mV	
69	0 to 1V	
70	-1 to +1V	-1999 to +9999
71	1 to 5V	
72	0 to 5V	
73	0 to 10V	-1999 to +9999

■ Input 2:

• Thermocouple

Range code	Input type	Range (°C)
128	K (CA)	-200.0 to +300.0
129	K (CA)	-200 to +1200

• Resistance temperature detector (RTD)

Range code	Input type	Range (°C)
160	JIS '89 Pt100 (IEC Pt100Ω)	-50.0 to +200.0
161		0.00 to 100.00
176	JIS '89 JPt100	-50.0 to +200.0
177		0.00 to 100.00

• DC current/voltage

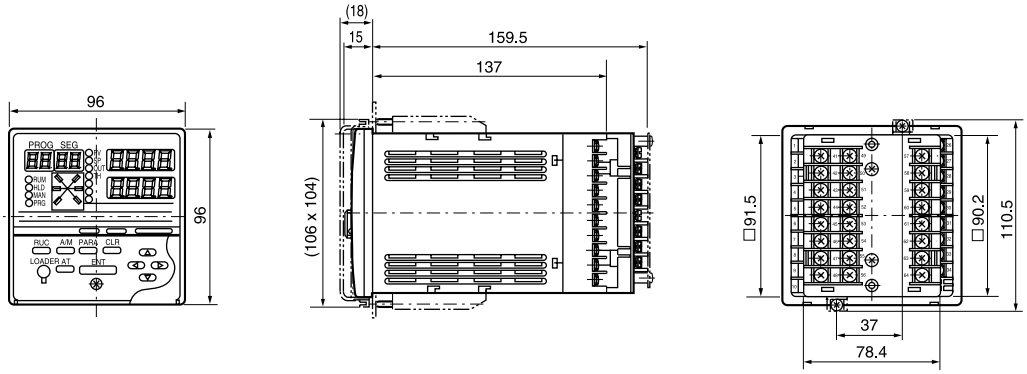
Range code	Input type	Range (programmable)
192	0 to 10V	-1999 to +9999
193	1 to 5V	-1999 to +9999

• °F display is selectable.

Dimensions

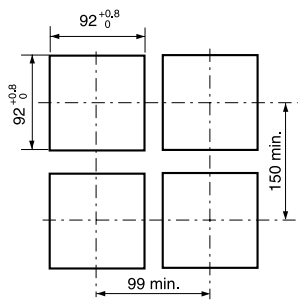
(Unit: mm)

• DCP32

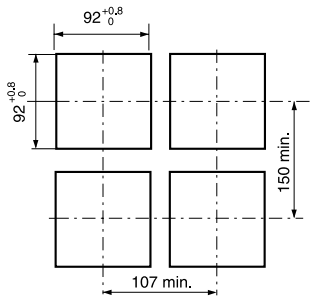


• Panel cutout

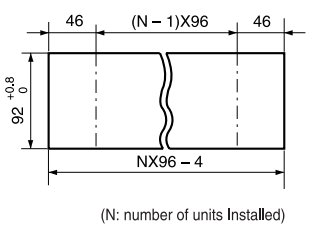
Individual standard mounting or with soft dustproof cover



Individual mounting with hard dustproof cover



Side-by-side mounting



(N: number of units Installed)