



DCP31

DigitroniK

Digital Control Programmer

The DCP31 is an advanced-function programmable controller supporting up to 19 program patterns to which thermocouple, resistance temperature detector (RTD), DC voltage and DC currents can be applied as input signals.

The DCP31 supports extensive digital I/O functions, including 3 event outputs, 5 time event outputs (optional) and 12 external switch inputs.



Specifications

General	Memory backup	RAM backed up by lithium battery
	Power	100 to 240Vac, 50/60Hz
	Power consumption	25VA 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 59min, or 0 to 99min 59s (selectable)
PV input	No. of channels	1
	Type	Thermocouple, RTD, DC voltage, 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
	No. of outputs	Event: 3 Time event: 5
Event (EV) output	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	Max. 2 (1 for 2G and heat/cool models)
	Type	PV, SP, dev., MV, MFB
	Output	4 to 20mA dc, load resistance 680Ω max.
Communications		RS-485

Selection Guide I II III IV V VI VII Example: P31A0D0AS011D0

Segment	Model No. selection		Description			
I	Basic No.	P31A	↓	↓	Digital control programmer	
II	Control output	0D	○	–	Time proportional PID or ON/OFF (relay contact)	
		2G	–	○	Position proportional PID (M/M drive relay contact)	
		5G	○	–	Continuous proportional PID (4 to 20mA dc) (changeable to 6D)	
		6D	○	–	Time proportional PID or ON/OFF (voltage) (changeable to 5G)	
		3D	–	○	Heat-cool, Time proportional PID or ON/OFF (relay contact)	
		5K	–	○	Heat-cool, Continuous proportional PID (4 to 20mA dc)	
III	Function	0	○	○	1 input channel	
IV	Power	AS	○	○	100 to 240Vac 50/60Hz	
V	Auxiliary output	00	○	○	None	
		01	○	○	1 output	
		02	○	○	2 outputs	
VI	Option 1				External switch input	Time event
					4 inputs	–
					12 inputs	5 events
					12 inputs	5 events
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

• 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

Range code	Input type	Range (°C)
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

Range code	Input type	Range (°C)
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

Range code	Input type	Range (°C)
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

Range code	Input type	Range (°C)
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

Range code	Input type	Range (°C)
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

Range code	Input type	Range (°C)
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	
68	0 to 100mV	

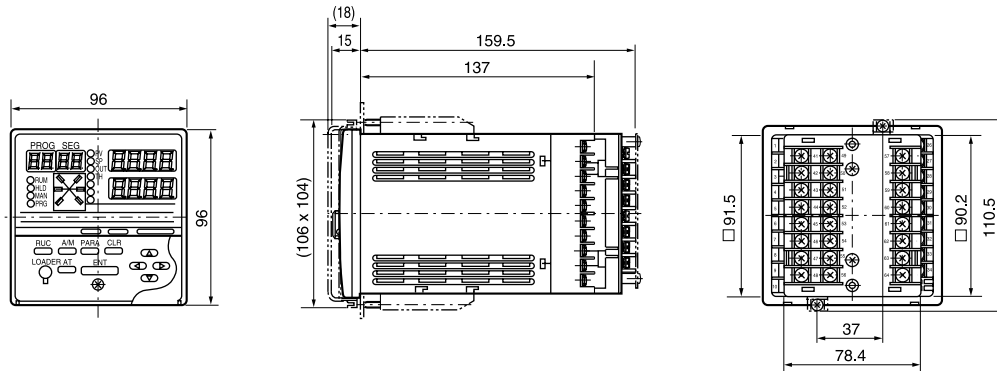
Range code	Input type	Range (programmable)
69	0 to 1V	-1999 to +9999
70	-1 to +1V	
71	1 to 5V	
72	0 to 5V	
73	0 to 10V	

• °F display is selectable.

Dimensions

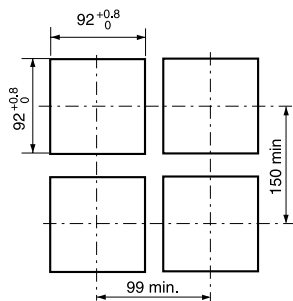
(Unit: mm)

• DCP31

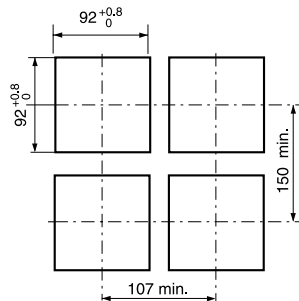


• Panel cutout

Individual standard mounting
or with soft dustproof cover



Individual mounting
with hard dustproof cover



Side-by-side mounting

