



DCP31

DigitroniK Digital Control Programmer

The DCP31 is a high-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 times event outputs (optional) and 12 external switch inputs.



CONTROLLERS

Specifications

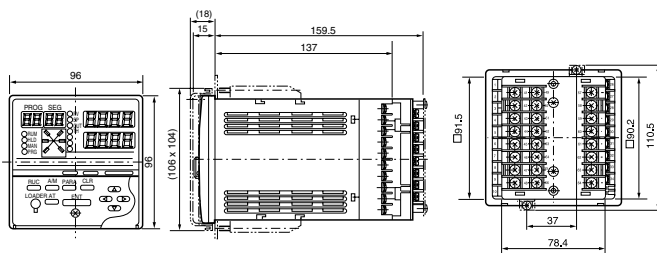
General	Memory backup	RAM backed up by lithium battery
	Power supply voltage	100 to 240Vac, 50/60Hz
	Power consumption	25VA max.
	Ambient temperature	0 to 50°C
	Ambient humidity	10 to 90%RH (no condensation allowed)
Weight		Approx. 900g
Program pattern	No. of programs	19
	No. of segments	30/program
	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 +1000 U (U: industrial unit)
Indication & setting	Indicator	2 or 4-digit, 7-segment LED (green or orange)
	Profile display	6 orange LED's
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
	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
Auxiliary (AUX) output	Function	Fixed: RUN, HOLD RESET, ADV, program No. Variable: FAST, PV start, AT, AUTO/MANUAL, G. Soak cancel, direct/reverse action
	No. of outputs	Max. 2 (1 for 2G and heat/cool models)
Communications	Type	PV, SP, DEV, MV MFB
	Output	4 to 20mA, load resistance: 680Ω max.
		RS-485

* User's manual No. : CP-UM-1757E (operation), CP-SP-1066E (CPL communications), CP-UM-1759 (SLP)

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

Table	Selection	Description		
I	Basic model No. P31A	↓ ↓	Digital indicating 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) (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)
		0	○ ○	1 input channel
III	Function	AS	○ ○	100 to 240Vac 50/60Hz
IV	Power	00	○ ○ ○	None
		01	○ ○	1 output
		02	○ ○	2 outputs
V	Auxiliary output	0	○ ○ ○	4 inputs
		1	○ ○ ○	12 inputs
		2	○ ○ ○	12 inputs
VI	Option (1)			External switch input
				Time event
				Communication
		0	○ ○ ○	4 inputs
		1	○ ○ ○	12 inputs
VII	Option (2)	00	○ ○	None
		T0	○ ○	Tropicalization
		K0	○ ○	Antisulfidization
		D0	○ ○	With test data
		B0	○ ○	Tropicalization + test data
		L0	○ ○	Antisulfidization + test data

Dimensions (unit:mm)



Input Types and Ranges

• Thermocouple

Range code	Input type	Range (°C)	Range code	Input type	Range (°C)
00	K (CA)	0 to 1200	11	S (PR10)	0 to 1600
01		0.0 to 800.0	12	W (WRe5-26)	0 to 2300
02		0.0 to 400.0	13		0 to 1400
03		-200 to +1200	14		PR40-20
04		-200.0 to +300.0	15	Ni-Ni-Mo	0 to 1300
05	-200.0 to +200.0	16	N	0 to 1300	
06	E (CRC)	0.0 to 800.0	17	PL II	0 to 1300
07	J (IC)	0.0 to 800.0	18	DIN U	-200.0 to +400.0
08	T (CC)	-200.0 to +300.0	19	DIN L	-200.0 to +800.0
09	B (PR30-6)	0 to 1800	20	Golden iron chromel	0.0 to 300.0K (K: Kelvin)
10	R (PR13)	0 to 1600			

• Resistance temperature detector (RTD)

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

• DC current/voltage

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

• °F ranges selectable.

Optional Parts

Part No.	Description
SLP-P30J20	PC loader
81446083-001	Hard dust-proof cover
80446087-001	Soft dust-proof cover
81446084-001	Terminal cover
81446431-001	Lithium battery