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C1000M introduction

Product introduction

C1000M can control 5 feed axes(including C axis), 2 analog spindles, 1ms high-speed interpolation, 0.1μm control precision, which can obviously improve the machining efficiency, precision and surface quality.

C1000M

X, Z, Y, 4th, 5th ; axis name and axis type of Y, 4th, 5th can be defined
1ms interpolation period, control precision 1μm, 0.1μm
Max. speed 60m/min (up to 24m/min in 0.1μm)
Adapting to the servo spindle to realize the spindle continuously positioning, rigid tapping, and the rigid thread machining
Built-in multi PLC programs, and the PLC program currently running can be selected
Statement macro command programming, macro program call with parameter
Metric/inch programming, automatic toolsetting, automatic chamfer, tool life management function
Chinese, English display can be selected by parameters.
USB interface, U disc file operation, system configuration and software
2-channel 0V ~ 10V analog voltage output, two-spindle control
1-channel MPG input, MPG function
36 input signals and 36 output signals
Appearance installation dimension, and command system are compatible with C1000M

Technical specification

Controllable axes

Controllable axes: 5 (X, Z, Y , 4^{th},5^{th})

Link axes：4

Feed axis function

Least input unit: 0.001mm (0.0001inch) and 0.0001mm (0.00001inch)

Least command unit：0.001mm (0.0001inch) and 0.0001mm (0.00001inch)

Position command range: ±99999999× least command unit

Rapid traverse speed：max. speed 60m/min in 0.001mm command unit

Rapid override: F0, 25%, 50%, 100%

Feedrate override: 0～150% 16 grades to tune

Interpolation mode: linear interpolation, arc interpolation(three-point arc interpolation), thread interpolation and rigid tapping

Automatic chamfer function

Thread function

General thread(following spindle)/rigid thread

Single/multi metric, inch straight thread, taper thread, end face thread, constant pitch thread and variable pitch thread

Thread run-out length, angle, speed characteristics can be set

Thread pitch: 0.01mm～500mm or 0.06 tooth/inch～2540 tooth/inch

Acceleration/deceleration function

Cutting feed: front acceleration/deceleration linear, front acceleration/deceleration S back acceleration/deceleration linear,back acceleration/deceleration exponent

Rapid traverse: linear,S type

Thread cutting: linear, exponential

Initial speed, termination speed, time of acceleration/deceleration can be set by parameters.

Spindle function

2-channel 0V～10V analog voltage output, two-spindle control

1-channel spindle encoder feedback, spindle encoder line can be set (100p/r～5000p/r)

Transmission ratio between encoder and spindle: (1～255) : (1～255)

Spindle speed: it is set by S or PLC, and speed range: 0r/min～9999r/min

Spindle override: 50%～120% 8 grades tune

Spindle constant surface speed control

Rigid tapping

Tool function

Tool length compensation

Tool nose radius compensation (C)

Tool wear compensation

Tool life management

Tool setting mode: fixed-point tool setting, trial-cut tool setting, reference point return tool setting, automatic tool setting

Tool offset execution mode: modifying coordinate mode, tool traverse mode

Precision compensation

Backlash compensation

Memory pitch error compensation

PLC function

Two-level PLC program，up to 5000 steps，the 1st program refresh period 8ms

PLC program communication download

PLC warning and PLC alarm

Many PLC programs（up to 20PCS），the PLC program currently running can be selected

Basic I/O：18 input signals /18 output signals

Man-machine interface

8.0″ wide screen LCD，resolution: 800X600

Chinese, English display

Planar tool path display

Real-time clock

Operation management

Operation mode: edit, auto, MDI, machine zero return, MPG/single, manual, program zero return

Multi-level operation privilege management

Alarm record

Program edit

Program capacity: 56MB，400 programs（including subprograms and macro programs）

Edit function: program/block word search, modification, deletion,copying,pasting

Program format: ISO command, statement macro command programming, relative coordinate, absolute coordinate and compound coordinate programming

Program call: macro program call with parameter, 4-level program built-in ,,

Communication function

RS232：two-way transmitting part programs and parameters, PLC program, system software serial upgrade

USB：U file operation, U file directly machining, PLC program, system software U upgrade

Safety function

Emergency stop

Hardware travel limit

Software travel check

Data backup and recovery

G command table

G code	Group	F	Whether high-speed and high-precision mode is valid	Function
*G0	01	G00 X_Y_Z_	T	Positioning (rapid traverse)
G01		G X_Y_Z_F_	T	Linear interpolation (cutting feed)
G02		G02 G03 X_Y_ R_ I F_;	T	Circular interpolation CW (clockwise)
G03				Circular interpolation CCW (counter clockwise)
G04	00	G04 P_ or G04 X_	F	Dwell, exact stop
G10		G10 L_N_P_R_	F	Programmable data input
*G11		G11	F	Programmable data input cancel
*G1	16	G12 X_Y_Z_ I_J_K_	F	Stored stroke detection ON
G13		G13	F	Stored stroke detection OFF
*G1	11	G15	F	Polar coordinate Command cancel
G16		G16	F	Polar coordinate Command
*G1 G18 G19	02	Written in blocks, used for circular interpolation and tool radius compensation	F	XY plane selection ZX plane selection YZ plane selection
G20	06	Must be specified in a single block	F	Input in inch
*G21				Input in metric
G22	09	G22 X_Y_Z_R_I_L_W_Q_V_D_F_ K	F	CCW inner circular groove rough milling
G23		G23 X_Y_Z_R_I_L_W_Q_V_D_F_K	F	CW inner circular groove rough milling
G24		G24 X_Y_Z_R_I_J_D_F_K_	F	CCW fine milling cycle within a circle
G25		G X_Y_Z_R_I_J_D_F_K_	F	CW fine milling cycle within a circle
G26		G26 X_Y_Z_R_I_J_D_F_K_	F	CCW outer circle finishing cycle

G27	00	G27	X_Y_Z_	T	Reference point return detection
G28		G28		T	Reference point return
G29				T	Return from reference point
G30		G30Pn		T	2nd, 3rd and 4th reference point return
G31		G31		F	Skip function
G32	09	G32 X_Y_Z_R_I_J_D_F_K_		F	CW outer circle finishing cycle
G33		G33X_Y_Z_R_I_J_L_W_Q_V_U_D_F_K		F	CCW rectangular groove rough milling
G34		G34X Y_Z_R_I_J_L_W_Q_V_U_D_F_K		F	CW rectangular groove rough milling
G35		G35 X_Y_Z_R_I_J_L_ U_D_F_K_		F	CCW rectangular groove rough milling cycle
G36		G36 X_Y_Z_R_I_J_L_ U_D_F_K_		F	CW rectangular groove rough milling cycle
G37		G37 X_Y_Z_R_I_J_L_ U_D_F_K_		F	CCW rectangular outside groove finishing cycle
G38		G38 X_Y_Z_R_I_J_L_ U_D_F_K_		F	CW rectangular outside groove finishing cycle
G39		G39		F	Corner offset circular interpolation
*G4	07	G17	G40 G41 G42	D_X_Y_		Tool radius compensation cancel
G41				D_X_Z_	T	Left-hand tool radius compensation
G42				D_Y_Z_	T	Right-hand tool radius compensation
G43	08	G43		H_Z_	T	Tool length compensation in positive direction
G44					T	Tool length compensation in negative direction
*G49					T	Tool length compensation cancel
*G5	12	G50			T	Scaling cancel
G51		G51 X_ Y_ Z_ P_			T	Scaling
G53	00	Written in a program			T	Machine coordinate system selection
*G5	05	Written in a block, usually placed at the program beginning			T	Workpiece coordinate system 1
G55						Workpiece coordinate system 2
G56						Workpiece coordinate system 3
G57						Workpiece coordinate system 4
G58						Workpiece coordinate system 5
G59						Workpiece coordinate system 6

G60	00/01	G60 X_ Y_ Z_	T	Unidirection l positioning
G61	14	G61	T	Exact stop mode
G62			T	Automatic corner override
G63		G63	T	Tapping mode
*G64		G64	T	Cutting mode
G65	00	G65 H_P# i Q# j R# k	T	Macro program Command
G68	13	G68 X_ Y_ R_	T	Coordinate rotation
*G6			T	Coordinate rotation cancel
G73	09	G73 X_Y_Z_R_Q_F_;	F	Peck drilling cycle
G74		G74 X_Y_Z_R_P_F_;	F	Left-hand tapping cycle
G76		G76 X_Y_Z_Q_R_P_F_K_;	F	Fine boring cycle
*G80		Written in a block with other programs	F	Canned cycle cancel
G81		G81 X_Y_Z_R_F_;	F	Drilling cycle (spot drilling cycle)
G82		G82 X_Y_Z_R_P_F_;	F	Drilling cycle (counter boring cycle)
G83		G83 X_Y_Z_R_Q_F_;	F	Peck drilling cycle
G84		G84 X_Y_Z_R_P_F_;	F	Right-hand tapping cycle
G85		G85 X_Y_Z_R_F_;	F	Boring cycle
G86		G86 X_Y_Z_R_F_;	F	Boring cycle
G87		G87 X_Y_Z_R_Q_P_F_;	F	Back boring cycle
G88		G88 X_Y_Z_R_P_F_;	F	Boring cycle
G89		G89 X_Y_Z_R_P_F_;	F	Boring cycle
*G9	03	ritten into blocks	T	Absolute programming
G91				Incrementa programming
G92	00	G92 X_Y_Z_	T	Floating coordinate system setting
*G9	04	G94	T	Feed per minute
G95		G95	T	Feed per revolution
G96	15	G96S_	T	Constant surface speed control （cutting speed）
*G97		G97S_	T	Constant surface speed control cancel（cutting speed）
*G9	10	ritten into blocks	T	Return to initial plane in canned cycle
G99				Return to point R plane in canned cycle

1.1.3 Environment and conditions

C1000M storage delivery, working environment as follows:

Table 1-2

Item	Working conditions	Storage delivery conditions
Ambient temperature	0℃～45℃	-40℃～+70℃
Ambient humidity	≤90%(no freezing)	≤95%(40℃)
Atmosphere pressure	86 kPa～106 kPa	86 kPa～106 kPa
Altitude	≤1000m	≤1000m

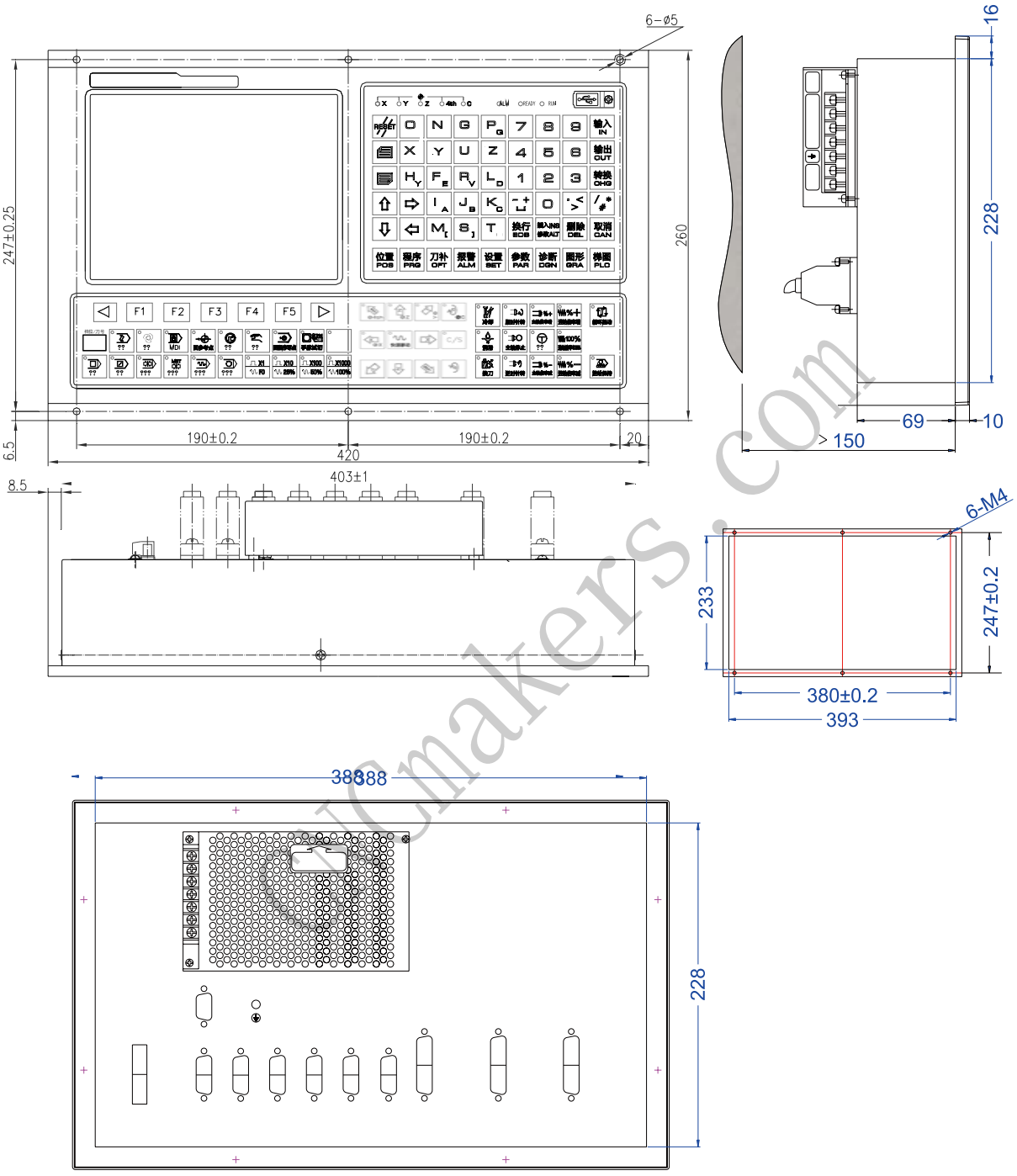
Power supply

C1000M can normally run in the following AC input power supply.
Voltage: within(0.85～1.1)×rated AC input voltage (AC 220V);
Frequency: 49Hz～51Hz continuously changing

Guard

C1000M guard level is not less than IP20.

III C1000M contour dimension



Additional panel dimensions