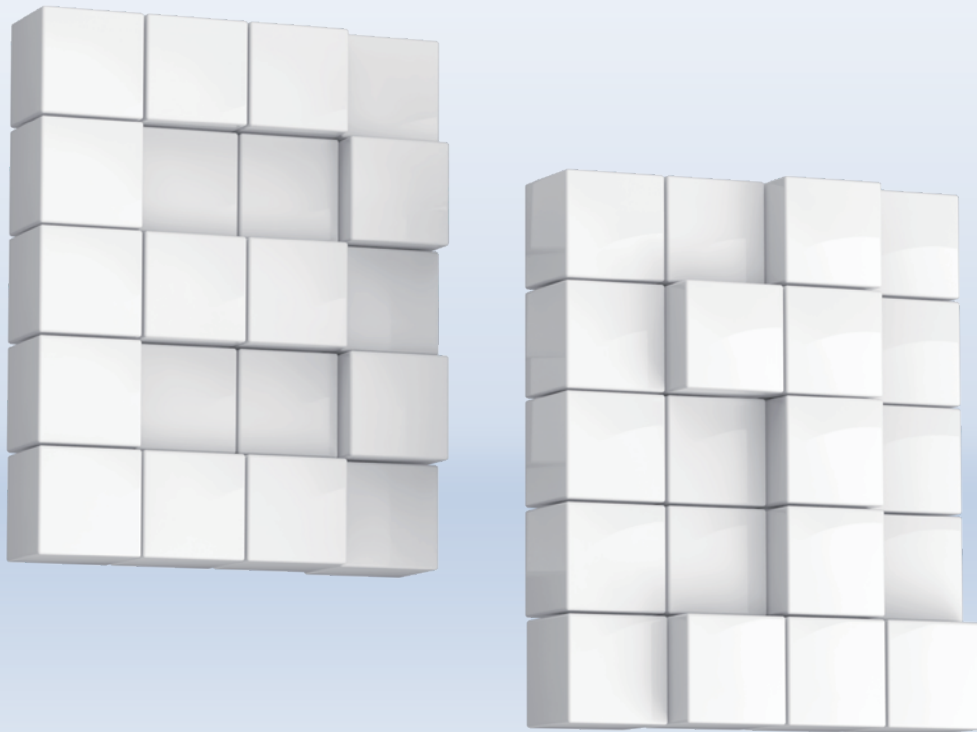




Matrix wall solutions



Medical automation



Semiconductor



Mobile robot



Modern logistics



New energy



Intelligent manufacturing

INTELLIGENT CONTROL DRIVES THE FUTURE

Matrix wall solutions

Product introduction

- The stepper motor is composed of subsystems such as stepper motor, feedback system, drive system and motion control. Through highly integrated technology, these technical elements are integrated into a whole. The whole machine only needs power supply and CAN communication to complete the motion control, the benefit is to avoid complex installation and wiring and control cabinet and other facilities, enhance the maintainability of the system, single node failure only need to replace the single node motor, do not need professional knowledge, in large-scale applications can be more able to reflect the product advantages.

The matrix system is built with Limaison integrated motor, which requires HMI, motion controller, network switch, EthernetCAN gateway, integrated motor, power supply and simple wiring. HMI is the user's demand input, which is used to collect the user's ideas. The motion controller CAN decompose the user's demand and convert it into the motor's recognizable motion instructions. The motion instructions enter the motor controller through the network switch and CAN gateway, and the motor controller and the motor form a closed loop to complete the execution of the motion. According to different networking scales, gateways can be added through switches to achieve a total of 102 pixel networking loop display of 17×6 .



Advantages and characteristics

- The motor matrix is composed of one integrated motor, based on the high-speed and stable CANopen technology, to achieve excellent dynamic synchronization performance. Its advantages are as follows:

01

Highly integrated modular distributed servo technology, No control cabinet is installed

The distributed system based installation method saves a lot of wiring and control cabinets, provides better EMC protection and distributed heat dissipation, and reduces the need and cost of a centralized cabinet environmental control system.

02

Excellent dynamic synchronization performance

In the case of large-scale networking, excellent synchronization performance can still be ensured, and the intuitive effect is that the motion of the motor matrix is uniform, and excellent execution is shown in the execution of various scenarios.

03

Low system integration cost

The cost advantage brought by the integrated motor matrix is reflected in the comprehensive cost of the system, which can shorten the structural design cycle, save the installation of heat dissipation air conditioning, save the cost of cabinet, cable and installation and commissioning.

04

Simple structure, low maintenance threshold

The external connection of the integrated motor only needs communication and power supply, and the bus-type topology makes the installation, addition of nodes, and reduction of nodes do not require professional manufacturer technicians, and the fault generation and maintenance only involve the current node, and do not affect the operation of the entire system.

05 Online upgrade technology

When you need to add functions after installation, there is no need to disassemble the motor, and the motor program can be upgraded online through the communication network. It only takes ten seconds to upgrade a motor, which is convenient and fast.

06 Power failure data saving function

In case of sudden power failure, the operating parameters of the motor can be saved locally in real time. You do not need to reset parameters when you power on the device again. You know the absolute position when you power on the device. You do not need to worry about power outages.

07 Encoder

Integrated 14-bit high-resolution single-turn absolute encoder.

08 Idle current Settings

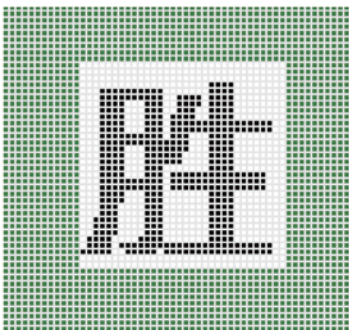
The idle current can be set in the range of 0-1.6A, which can greatly reduce the energy consumption generated when the system is stationary, environmental protection and energy saving.

Demonstration effect display

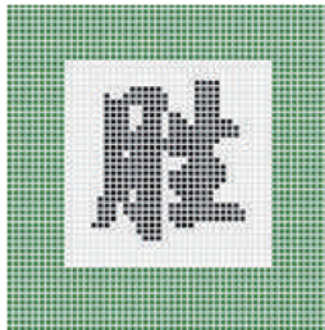
Using the integrated motor matrix solution of Limaison, it can complete static text display, static picture display, text dynamic switching, Flash animation display and so on. Derivative scenarios can be designed according to customer requirements. Switching between scenes can set the time interval and switching mode (sliding switch, pen switch, etc.), support cyclic playback mode.

1. Static text display

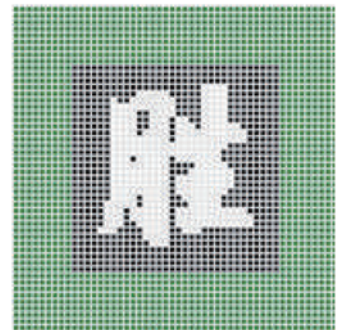
Static text display is to enter the text to be displayed in the scene editing software, support single words and statements, set the text size, font, font, black and white reflection, you can generate the scene code, download to the motion controller, you can see the static text display in the motor matrix. Here are some examples of text displays:



Black body small one, regular font, 1024 array



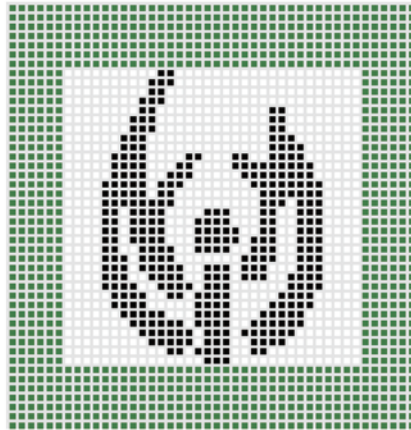
Line letters small one, regular font, 1024 array



Line letters smaller than one, regular font, 1024 array, reverse display

2. Static picture display

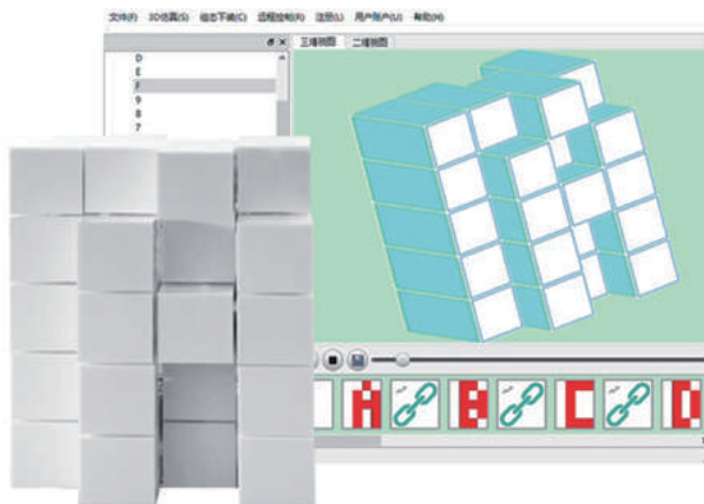
Static picture display is to enter the picture to be displayed in the scene editing software, BMP format, set pixels according to the size of the motor matrix, you can generate scene code, download to the motion controller, you can see the static picture display in the motor matrix. Here is a picture illustration:



Line letters small one, regular font, 1024 array

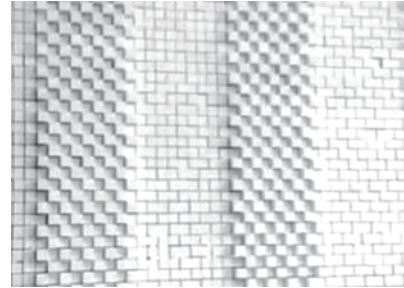
3. Dynamic text, Flash animation presentation

Dynamic text and animation are scene upgrade functions based on static display and provide Flash file input interface. Users need to edit Flash files in advance and load them into the scene editing software. The scene editing software of Limaisen performs scene slice planning and control code conversion, and outputs them to the motion controller for execution. Flash animation display example:



Matrix wall application case - Unigroup International Matrix project

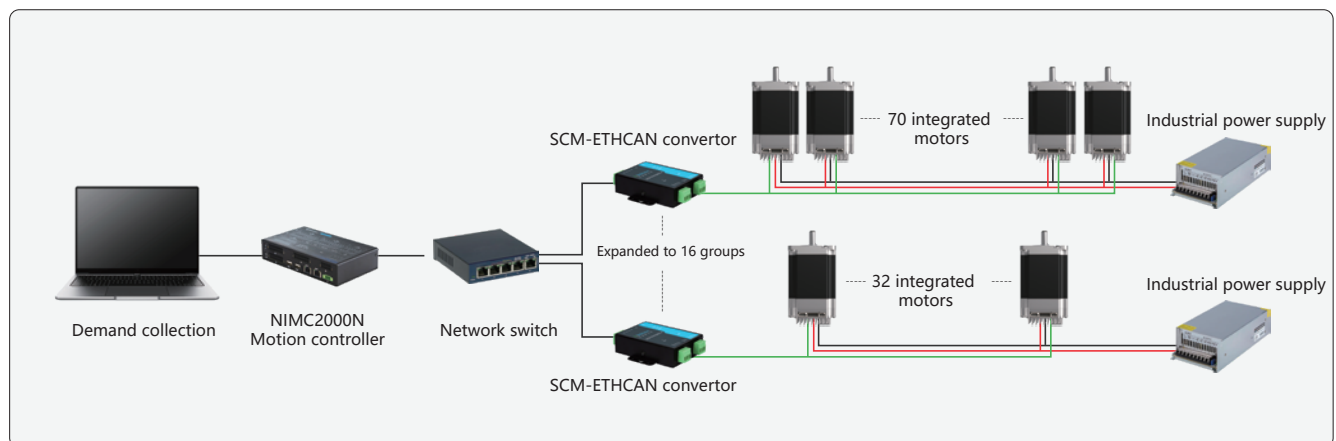
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102



The overall size is 2880mm x 1010mm, the pixel unit size is 160mm x 160mm, and the gap in the middle is 10mm.

102 pixels

System composition: one set of scene editing software + one motion controller + rated 2400W DC power supply + two EthernetCAN gateways + 100 all-in-one motors + 2-port network switches + cables + two standby motors



Unigroup International matrix wall system block diagram

Scheme summary

The motor matrix is an array motion control system containing hundreds or even thousands of motor units. Through the linear motion unit, the rotating motion of the motor is transformed into a telescopic 10cm in the three-dimensional space. Under the control of the computer, various shapes such as curves, surfaces, planes, text and three-dimensional patterns can be presented, and with the light and sound media, it can bring unprecedented audio-visual impact.



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