

เรื่องเล่า จากบริการหลังการขาย

ความร่วมมือกับ Syntec จะมีไปถึงเทคโนโลยี ที่ใครๆก็ตื่นเต้นกับมัน ว่าเป็นเลข 4.0 อะไรทำนองนี้ 0.1~3.9 แข็งแรง อีกก็ x.0 ก็ไปได้

วานนี้ไปพบลูกค้ารายหนึ่ง เจ้าของเป็นวิศวกรที่ทำงานกับชาวญี่ปุ่นมาตลอด จนมีลักษณะ และความคิด ลำดับของความคิด คล้ายคนญี่ปุ่น บ่นเรื่องเครื่องได้หัววัน ตอนหลังพบว่า เขามีเครื่อง แบรินต์ นิยมจากได้หัววันสองยี่ห้อ ยี่ห้อหนึ่งขายทิ้งไปแล้วเป็น Double Column มี อีกยี่ห้อ เป็น Double Column 1 กับ VMC 1 ใช้ Control FANUC OiMD กับ 18i...

มีปัญหาหนึ่งที่เป็นทั้งสองตัวมาตั้งแต่วันส่งเครื่อง (เข้าใจว่า นานกว่า 2 ปี ดูจากสภาพเครื่อง) ปัญหาคืออะไร ทำไมไม่ถูกแก้ไข ตัวแทนจำหน่ายละ บอกอะไรได้มากมาย ผมเลยหมั่นเขี้ยวที่จะทดสอบว่า หลายปีที่ปล่อยลูกน้องทำนั้นให้ไปหมดจนในหัวไม่มีอะไรแล้วหรือเปล่า ลงมือหาจุดที่ทำให้เกิดปัญหา และพบมัน แล้วก็แก้ตัวเลข ใน Parameter 3 ค่า ...เป็น “0” ชะ หากอาการ และคู่มือ “PARAMETER” ที่ FANUC ให้มาด้วย

ผ่านไปสัก 20 นาที ลูกค้าที่เป็นเจ้าของบอกว่า วันหลังก็ได้พี่ และบอกว่า ตัวแทนจำหน่าย เรียกเก็บเงินทั้งที่ยังไม่มาดูแลว่า ปัญหาคืออะไร และปัญหานี้ค้างคามาตั้งแต่วันส่งเครื่อง

อูดมศักดิ์ เคยแพ้ใครชะที่ไหน ทั้งที่หัวข้าวแทบแยะ

อีกยี่สิบนาทีผ่านไป มีเสียงเฮ จาก อูดมศักดิ์ กับ Operator หลังจากทดสอบ ว่า ปัญหาหายไปแล้วหรือยัง จบการมั่วของอูดมศักดิ์ อีกครั้งหนึ่ง

ใน Company Profile บริษัท สยาม เอลมาเทค จำกัด มีประโยค ที่บอกว่า เราจะขายเฉพาะ สิ่งที่เรา รับผิดชอบ ทั้งขอบ ไม่ใช่ว่า ขายๆไป เอากำไร เพียงอย่างเดียว

เรื่องเล่า จากบริการหลังการขาย

บริษัท สยาม เอลมาเทค จำกัด

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TRUSTED TECHNICAL SERVICE



SYNTEC ROBOT CONTROLLER




SYNTEC

TRUSTED TECHNICAL SERVICE



SYNTEC

Robots Controller

Robots Controller

Features

- Support and usage of communication ways / Yaskawa tandem
- Support truss/Scara/Delta/R-axis/Deform robot arm
- Integrate HMI - PLC - MACRO in one controller
- Support Handheld simulation/Single block, easy to test during development
- Arms are equipped with machine-joint/linear/circular motion
- World coordinates/ Tool coordinates/ User coordinates
- Open tools for customizing your products easily, handheld box buttons can be customized functions and arrangements according to demand
- Package functions for pick-and-place, no need to develop from the beginning
- Provide economical choices for motor wrap programs

Complete Product Program






Handheld teaching box FC-A Controller FC-B Mechatrolink II SCD Controller with Servo Driver Integrated

01



Syntec robots controller: 11R and 21R adopt the structure of an embedded processor with 32 bit WinCE, provide high-speed processing and high-precision control. With high cost-performance ration and low power consumption, it's the best choice in robots application.

Syntec provide a easy-to-use robots controller with simple HMI, intuitive operation, user-friendly instructions and packaged functions for pick-and-place. It also allows you to create custom pages, HMI and functions by development tools.


Users can move and teach robots with a well-functioned handheld teaching box. Thus, it's much easier and faster to teach a robot.

Hardware Specification



MPG or handheld teaching box External PLC IO module Robot Arms

02




Software Features

Enhance user friendliness significantly, improve user's ability and user experience

Packaged functions for pick-and-place make it easier to operate and develop, thus increase the production capacity. No need to learn programming, users can establish a whole procedure for pick-and-place by setting parameters, teaching reference points, setting trays and editing program via conversational inputs

Program Editing for pick-and-place

Conversational inputs



Conversational motion teaching, follow the instruction to input parameters

- No need to learn programming, speed up the learning curve for developers
- Multiple pick-and-place programs can be stored for increasing the flexibility for applications
- Multiple reference points can be stored for different needs.

>Commands :

Move	Teach point with machine-joint/linear/circular motion	CallMCode	Subfunction modular, repeat call can reduce development time
GetOO	Provide simplified instructions of complicated tray operations	Compute	Assigning value for variables, elementary arithmetic and other operation functions
Control	Integrate IO control module in controllers	Loop	Conduct WHILE FORM or EXIT loop
Wait Time	Dwell time instructions, stop the robot arm for a while	Condition	Logical judgement instructions, fulfill complicated application

03

Parameters setting for robot arms

Parameter ID	Parameter Name	Value
0001	Machine Type P1201	100
0101	L1: The Height of 1st Axis	5000
0102	L2: The Distance of 1st and 2nd Axis	0
0103	L3: The Distance of 2nd and 3rd Axis	10000
0104	L4: The Distance of 3rd and 4th Axis	10000
0105	L5: The Distance of 4th and 5th Axis	0
0106	L6: The Distance of 5th and 6th Axis	10000
0107	L7: The Distance of 6th Axis	0

With parameters illustration, users can define size, type and coordinate for different robot arms easily.

- Graphic mechanism and parameters
- Setting limits for each axis
- Protection for self-interference
- Coordinates setting: Integrating with coordinates under other systems

>Supported types of arms and illustrations

- SCARA
- DELTA
- Manufacturing robot arms

Software Features

Reference points setting

Position	Description	X	Y	Z	A	B	C
1		0.000	20.000	0.000	30.000	0.000	0.000
2		488.718	0.000	0.000	573.271	-36.052	35.531
3		20.000	20.000	0.000	0.000	0.000	0.000
4		300.484	14.239	573.271	40.000	20.000	20.000
5		0.000	25.000	0.000	0.000	0.000	0.000
6		440.982	0.000	573.271	40.000	20.000	20.000
7		0.000	0.000	0.000	0.000	0.000	0.000
8		320.539	0.000	344.761	40.000	30.000	30.000
9		0.000	0.000	0.000	0.000	0.000	0.000
10		200.442	12.294	568.000	20.000	0.000	0.000
11		0.000	0.000	0.000	0.000	0.000	0.000
12		300.000	0.000	30.000	0.000	0.000	0.000

Save the positions that could be used so that users can move the arm to reference point at any time and call use these positions when programming easily

- Move the arm, press "teach", save the position.
- Edit the description for this position and delete, insert or edit the position.
- Go to reference point: Assigning the speed and motion types to reference point

>Move to reference point

In the auto mode, select the reference point you would like to go and press "Go to reference point". The coordinate information will be displayed.

- When "Synchronized joint motion" or "tip linear motion" is pressed, mpp dry run will be activated.
- When moving to the reference point, the status of robot arm will be "Running".
- You can move robot arms back to stored reference point easily and exam the accuracy or do the calibration.

Trays settings

Eliminate the inconvenience for user by modularized functions, make it easy to programming.

- Support matrix trays
- Trays information teaching: Picking up items along x, y, z direction one by one.
- Angle calibration is available.
- Parameters like the number of trays, speed, safe level and etc.
- Trays action editing: Editing robot actions on working position

>Instance of picking up from trays

Advantages of software

Special Commands

PE	Functions	PE	Functions
SCAL	Tip linear motion	WAITSYNC	Wait for synchronization
MOVJ	Joint motion	ENDSYNC	End of synchronization
MOV	Circular motion	INTERPROTECT	Enable interference protection
USERCOORD	User coordinate	DISABLE	Disable interference protection

Specialized Commands for robot arms
Provide a user-friendly parameters setting and motion plan

MPG Dry Run

For program development

When running a program, the execution speed is determined by how fast you operate MPG, therefore you can run the program safely.

Button Customization

Buttons can be customized to demand by setting correspond functions after pressing, tailor-made according to using habits of customers

Extension and Integration

Built-in extensible I/O module is easy for installation and use.

Interference Prevention

3 interference zone are available, which prevent robot damage due to misoperation

Belt Conveyor Systems Tracking

Can be applied to packaging, food manufacturing, etc.

Belt conveyor systems tracking is available with visual function or photo interrupter switches. Production efficiency will be higher and unmanned factory will be realized with this feature.

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Varied Coordinates

User Coordinate

When avoiding obstacles or pick-and-place, it's convenient to use user coordinate

Joint Coordinate

Individual moving for each axis/moving angle/displacement in joint coordinate

World Coordinate

The tip position in world coordinate

Instance of Coordinates Transformation

Prevent from self-interference or rotation limit

Linear displacement can be done easily in world coordinate

Route setting can be done easily when polishing or work on inclined trays.

Develop for different users

- Managers
 - Authority management
 - Decision making for product model
- Engineers
 - PLC - eHMI - MACRO
 - Program teaching
 - Position defining
- Operators
 - Position teaching
 - Machine operation
 - Troubleshooting

Enhance user friendliness significantly, improve user's ability and user experience

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Advantages of Software

Customization for manufacturing

With modularized functions and open development tools: MACRO, PLC, eHMI, we provide a high-efficiency, user-friendly solution.

Replacing programming manually by conversational input

Integrating MACRO, PLC, user interface as a module, replacing programming manually by conversational input, assigning variables on the user interface instead of MACRO or PLC, there's no need to learn programming to perform a delicate machining.

軸	移動距離	移動速度	停止時間	停止速度	停止距離	停止時間	停止速度	停止距離	停止時間
X1	0.000mm								
Y1	0.000mm								
Z1	0.000mm								
C1	0.000mm								

MACRO+PLC variables input has been replaced

```

// Lock HORN
// LOCK FOCUS - USER CAN'T MOVE THE FOCUS
// COLAR OF SPOTLIGHT
// DISCONNECT THE COLAR TO STOP
// Drivling the TRACKING STOP ON ROBOT STOP
// order type
// one step
    
```

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Application Case

Combination of robot arm pick-and-place and vision inspection



Supply choices of vision systems, efficient resource usage can be achieved by integrating inspection and pick-and-place and test.

Punch pick-and-place



Substitute repeat and dangerous movements, achieve unmanned production, SYNTEC also provide end-of-linear function, highly boost production efficiency.

Pick-and-place for Lathe



Support multiple axis group
With trays setting and critical position teaching, robot arm can be adopted to automatic pick-and-place quickly.

Spray painting



High quality, convenient, multi-functional application. Meet the different needs such as polishing, burnishing, welding, etc. in one robot.

Pick-and-place for mill machine



With automatic pick-and-place system and easy-to-use position teaching, robot arm can be adopted to automatic manufacturing quickly.

Pick-and-place for belt conveyor systems



High-speed pick-and-place by belt conveyor systems tracking

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Supported arm types

Specialize algorithm for each type of robot arm can meet different needs

Rectangular coordinate type/Gantry type/Truss type



Adding value by Syntec's specialized functions for Cartesian coordinate robot

- Adding value for cnc machine
- Multiple axis group cooperation
- Trend of machine industry
- Support 2-4 axis robot arm
- Modularized pick-and-place functions for Cartesian coordinate robot

Delta



With agility and quickness it's suitable for arrangement and stacking

- Support 3-axis and 4 axis standard Delta robot
- Applications combine with Delta robot and vision system is common
- Modularized function for Delta robot



6-axis robot

Complicated application which need to avoid obstacles

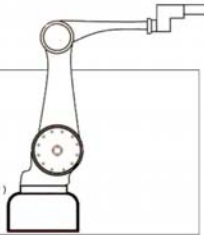
- 6 rotational joints
- More expensive
- Can be adopted to almost every applications such as Pick-and-place, polishing, spray painting, etc.
- Modularized pick-and-place functions for 6-axis robot



4-axis robot

Also known as palletizing robot
Suitable for heavy items moving

- 4 rotational joints, the rotation direction of the tip is selective(X, Y or Z)
- Support heavy-duty 4-axis robot(parallel crank four bar linkage)
- For simple application 4-axis robot is enough
- Modularized pick-and-place functions for 4-axis robot



SCARA

Wide range, simple mechanism, suitable for high-speed pick-and-place and assembly.

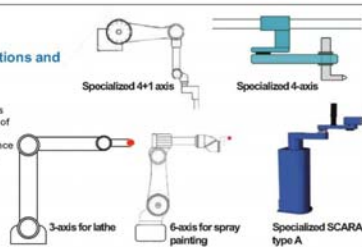
- 3 rotational joints and 1 linear axis
- It's usually adopted to production line, assembly line and pick-and-place
- Can cooperate with vision inspection systems
- Modularized pick-and-place functions for SCARA



Specialize robot

Developed for varied applications and automation industry

- Specialized/Composited robot arms
- Short development period for both of mechanism and user interface
- With specialization, with convenience
- Customers own product's value
- The earlier you invest the less competitors



Specification

Item model	FC Series		SCD Control Modules	
	FOA 80RG	F0B 80RG	SCD80RG	
Graphic				
Support	1-4 axes robotic arm	Every type	1-4 axes robotic arm	
USB	USB*2	USB*2	USB*4	
Internet	10/100 Mbps*2	10/100 Mbps*2	10/100 Mbps*2	
COMPort	RS485*1 SRI*2	RS485*1	RS485*1 SRI*2	
Server	pulse	Yaskawa serial	Yaskawa serial	
Maximum control axis	4	16	4(expandable 16)	
I/O (expandable)	0I/0O (4096I/4096O)	0I/0O (4096I/4096O)	16I/8O (4096I/4096O)	32I/32O (4096I/4096O)
Extended facility	VGA*1		VGA*1 Double feedback encoder interface*2 Controller with Servo Driver Integrated&Motor Maximum uniaxial 4 KW Flexible drive control I/O	
External MPG (optional)	x	Independent handwheel Handheld box	x	Independent handwheel Handheld box
Optional	Remote monitoring, visual, DA/AD, PWM			

Hand-held teach pendant	
System architecture	WinCE connect with controller via internet
Supported types	Right angle
Monitor	7 inch touch screen
USB	1
Internet	10/100 Mbps
I/O point	Independent emergency I point Physical button I/O(customized)
Cable length	8M/15M
Hand input	Optional



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