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Suzhou Inovance Technology Co., Ltd.
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INOVANCE
汇川技术

Inovance Collaborative Robot

U4/U8/U13/U18



Promoting industrial civilization, creating a better life together
Advancing industrial technology, for a better world

Specifications

Cobot



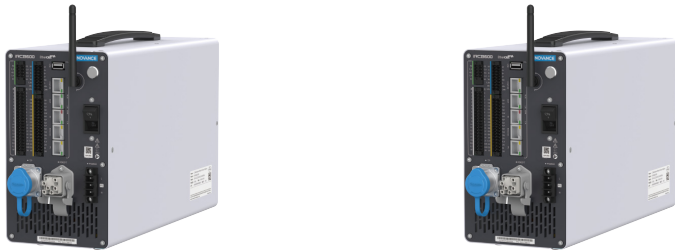
Model Name		IR-U4-60S5	IR-U8-78S5	IR-U13-130S5	IR-U18-100S5
Structural Form		Vertical Multi-Joint Series Structure			
Number of Axes		6 Axes			
Maximum Motion Radius		625mm	780.5mm	1301mm	1046mm
Repeatability		±0.02mm	±0.02mm	±0.03mm	±0.03mm
Maximum payload at wrist		4kg	8kg	13kg	18kg
Protection rating		IP54			
Maximum speed	J1 axis	210° /s	180° /s	150° /s	150° /s
	J2 axis	210° /s	180° /s	150° /s	150° /s
	J3 axis	223° /s	180° /s	180° /s	180° /s
	J4 axis	210° /s	210° /s	210° /s	210° /s
	J5 axis	210° /s	210° /s	265° /s	265° /s
	J6 axis	210° /s	210° /s	265° /s	265° /s
Maximum range of motion	J1 axis	±360°	±360°	±360°	±360°
	J2 axis	±175°	±175°	±175°	±175°
	J3 axis	±155°	±160°	±160°	±160°
	J4 Axis	±360°	±360°	±360°	±360°
	J5 Axis	±180°	±180°	±180°	±180°
	J6 axis	±360°	±360°	±360°	±360°
Wrist allowable load torque	J4 axis	11.9N·m	16.9N·m	29N·m	46N·m
	J5 axis	11.9N·m	16.9N·m	29N·m	46N·m
	J6 axis	11.9N·m	16.9N·m	29N·m	46N·m
Wrist allowable load inertia	J4 axis	0.49kg·m2	1.2kg·m2	2.2kg·m2	3.5kg·m2
	J5 axis	0.49kg·m2	1.2kg·m2	2.2kg·m2	3.5kg·m2
	J6 Axis	0.49kg·m2	1.2kg·m2	2.2kg·m2	3.5kg·m2
User interface	Wiring	End 8PIN IO aviation plug. End 6PIN ECAT network cable aviation plug			
	Pneumatic circuit	None			
Environmental Conditions	Ambient Temperature ^[1]	0°C ~50°C			
	Ambient Humidity	5% RH~95% RH (Non-condensing)			
Payload weight		16kg (excluding drag cable)	22.5kg (excluding drag cable)	39.5kg (excluding drag cable)	37.5kg (excluding drag cable)
Input power supply power (average power consumption)		200W	400W	550W	
Suitable control cabinet		IRCB600-6BD	IRCB600-6BD	IRCB600-6CD	IRCB600-6CD
Installation method		Installable at any angle			
Noise level ^[2]		LAeq ≤ 70dB(A)			
Base mounting dimensions		φ126 Evenly spaced center distances 4×φ6.6 Through hole	φ140 Evenly distributed center distance 4×φ9 Through hole	φ170 Evenly distributed center distance 4×φ9 Through hole	φ170 Evenly distributed center distance 4×φ9 Through hole

Description:

[1] Ambient temperature: If this product is used in a low-temperature environment close to the minimum temperature specified in the product specifications, or if it is left unused for a long time during holidays or at night, it is recommended to preheat for 10 minutes before operation. [2] Noise level: The operating conditions are six-axis linkage, 100% speed and acceleration, and a duty cycle of 50%; the measurement position is in front of the robot, 1000mm away from the motion area and more than 50mm above the base mounting surface.

Specifications

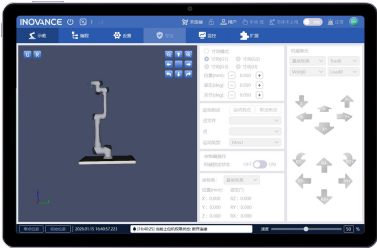
Collaborative control cabinet



Model	IRCB600-6BD	IRCB600-6CD
Robot motion mode	PTP CP	
Program storage space	● Maximum number of lines per program: 100,000 ● Maximum number of positions: 10,000 points ● Position files: Maximum 128 ● Tree-style programming nodes: 10,000 lines ● Number of multitasks: Supports 1 main task, 14 dynamic and static tasks, 1 xqt task	
Power failure data retention	● Power-off to power-on interval: 2s ● Data storage capacity (128kBytes): supports 256 B, R, D, PR, and other system data	
Standard IO	● DI×16 ● DO×16 ● AI×2 ● AO×2	
Safety IO	● Emergency stop input ×1(dual loop) ● Safety door input ×1(dual loop) ● Configurable safety DI×5 ● Configurable safety DO×4	
Encoder	ABZ Encoder ×1	
Bus Type	TCP/IP, ModbusTCP (slave), ModbusRTU (master, slave), EtherNetIP (slave), EtherCAT (slave)	
EtherNet	2 channels, speed of 100 Mbps, one of which is used as the TP/PC teaching interface 1 Both the PC and the EtherNet port support Modbus-TCP slave 2 Only the EtherNet port supports EtherNet/IP master/slave: when acting as a master, it supports 8 slaves; when acting as a slave, it only supports 1 master	
EtherCAT master	1 channel, ECAT(M), frame period jitter ≤ 30μs (not supported yet)	
EtherCAT slave	2 channels, IN, OUT, synchronous signal jitter <1μs	
USB2.0	1 channel	
RS-232	1 channel (reserved)	
RS485	1 channel, supports standard Modbus-RTU protocol, supports common baud rates between 4800bit/s~115200bit/s	
CAN bus	1 channel, maximum communication rate of 1M; (not supported yet)	
Maximum output power	2.6kW	3.6kW
Input voltage range	220V AC~240V AC (-15%~+10%)50/60Hz	
Input current range	12A	18A
Protection rating	IP20	
Ambient temperature	0°C ~50°C	
Ambient humidity	5% RH~95% RH(30°C)(Non-condensing)	
Altitude	1000m	
Certification	CE, Functional Safety (Functional safety meets standard ISO 13849-1 PLd Cat.3) (certificate not yet obtained)	
Noise	LAeq=60dB(A)	
Dimensions (WDH)	126mm×215mm×340mm	
Weight	8kg	
Compatible Base Model	IR-U4-60S5, IR-U8-78S5	IR-U13-130S5, IR-U18-100S5

Specifications

Collaborative tablet teaching device

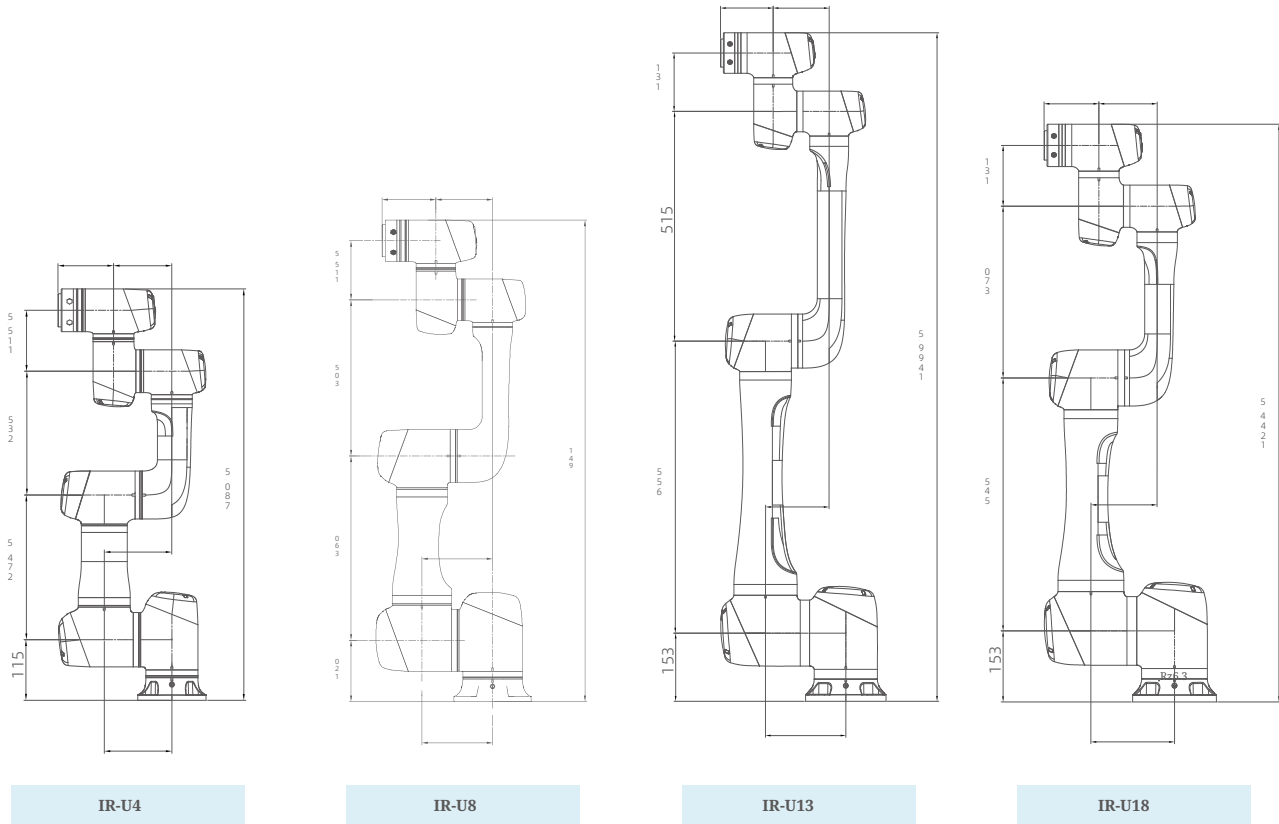


Name		IR-TP1000-H1	Collaborative robot teaching pendant
Dimensions		255.53mm×167.08mm×7.36mm	
Weight		478g	
Display	Screen Type	LCD	
	Screen Size	11 inches	
	Screen ratio	16:10	
	Resolution	1920×1200	
Configuration	Processor speed	2.4GHz	
	Processor	Snapdragon 6 Series	
	RAM	6GB+2GB (Expandable Memory)	
	Total Storage	128GB	
	Battery Capacity	8000mAh	
Communication	Network Communication	Wi-Fi	
Certification	Certified Model	23073RPBFC	

Outline dimensions

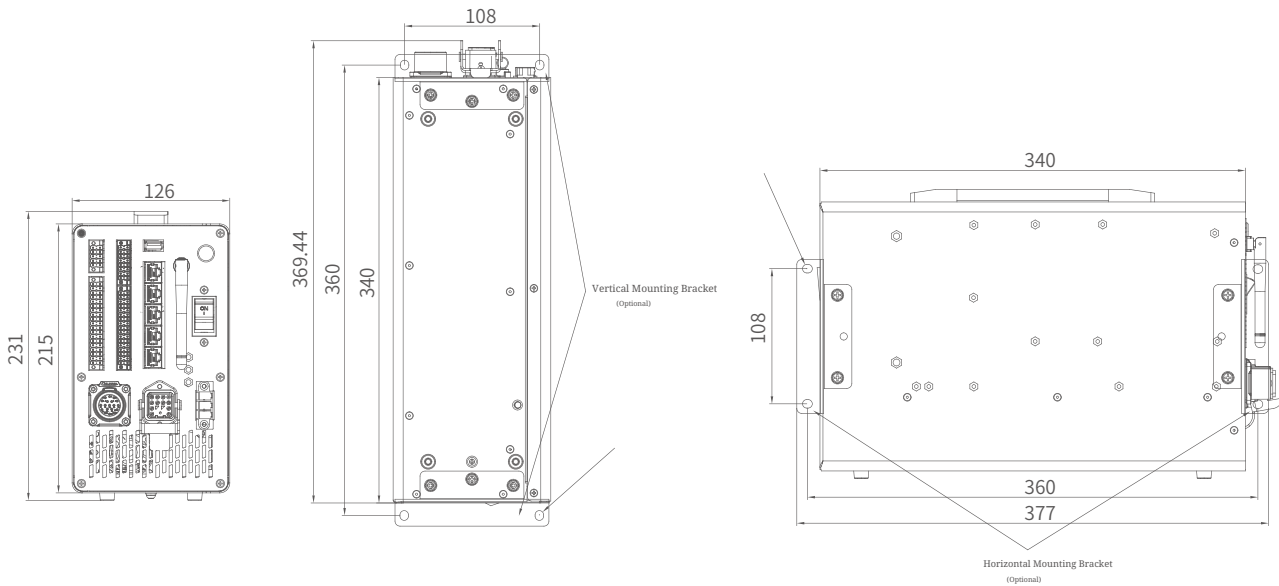
Main body outline

Unit: mm



Control cabinet

Unit: mm

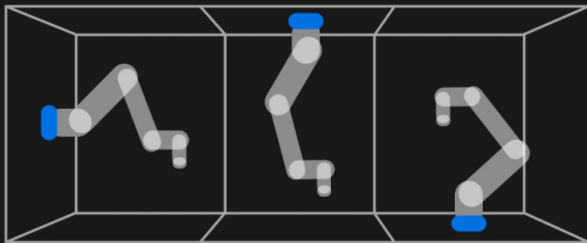


INOVANCE
Collaboration
**Your friendly
companion**

Easy to install

Multi-angle installation

Installation with no 'blind spots'



Compared to industrial

Reduced base area

26%

**Good
connection**



First-in-class dual-end
IO
Supports end-of-arm alarm transmission, abnormal
signal
transmission

6PIN

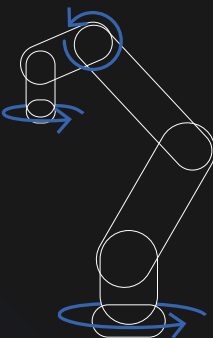
8PIN

Few blind spots

Reach of 3
joints

360°

J1, J4, J6

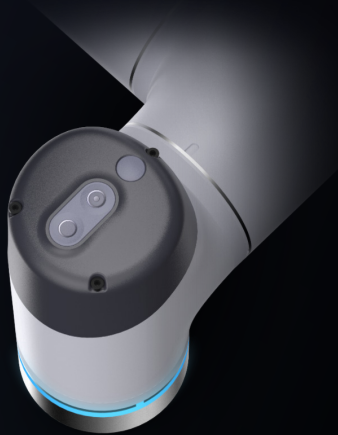


**Easy to
debug**

Multi-button drag teaching on the body

Comfortable grip, precise debugging

- Top physical buttons, support single-handed and double-handed point adjustment, teaching, and point recording
- Customizable buttons, support directional, speed-defined, and step-by-step, precise debugging



Graphical programming

**Programming, easy to
get started**

- Graphical programming, easy to learn, use, and understand, goodbye to complex code
- Wireless connection of the tablet teaching pendant, flexible and efficient

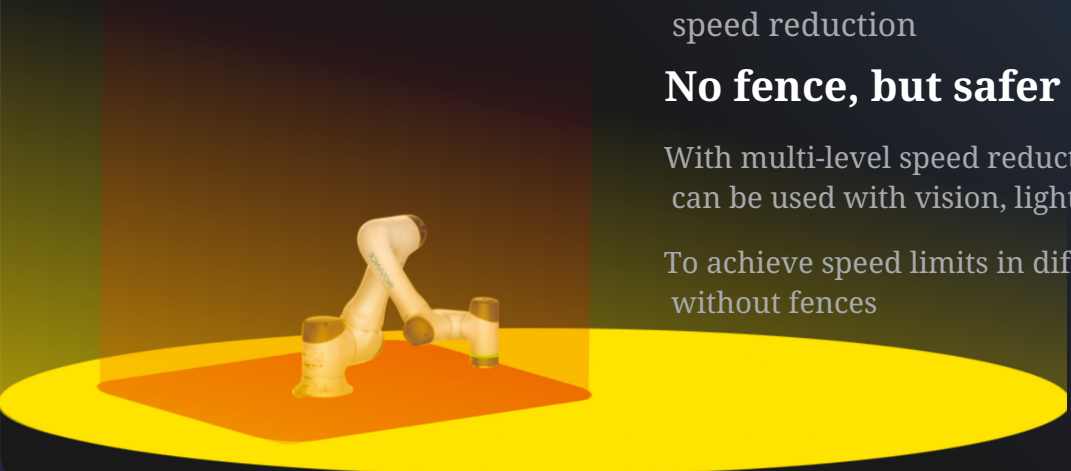
INOVANCE
Collaboration
**Your safe
companion**

Multi-level reduction, multi-level
speed reduction

No fence, but safer

With multi-level speed reduction mode,
can be used with vision, light grids

To achieve speed limits in different levels
without fences



Diverse lighting feedback, status clearly
visible at a glance

**Get as close as
you like**

**And still
feel safe**



**Flexible, diverse safety
envelope**



Real-time
Tool
position



Irregular tool
Tool
envelope



Elbow
Detection



Dynamic
Take
effect



Certification passed

ISO13849-1 PL d, Category 3

INOVANCE Collaboration - Your Strong and Reliable Partner

INOVANCE Technology Self-developed Integrated Joint

Leading Takt Time, Industrial-Grade Precision

U8 Repeatability
Accuracy $\pm 0.02\text{mm}$

U8 trajectory accuracy
U8 absolute positioning
accuracy $\pm 0.5\text{mm}$ $\pm 0.2\text{mm}$

Support for all major bus protocols

Online under any
working conditions

EtherCAT

Modbus

EtherNet/IP

TCP/IP, ModbusTCP (slave),
ModbusRTU (slave), EtherNetIP (slave),
EtherCAT (slave)

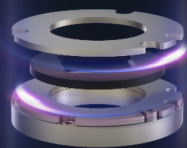


Highly Reliable Collaboration Inheriting INOVANCE's Industrial
Expertise

Ultimate Stability

Industrial grade

Friction brake
design



Unfazed by "collision", no production stoppage

After an unexpected collision at an
end-effector speed of 250mm/s, it can still
meet the requirements of most industrial
control scenarios.



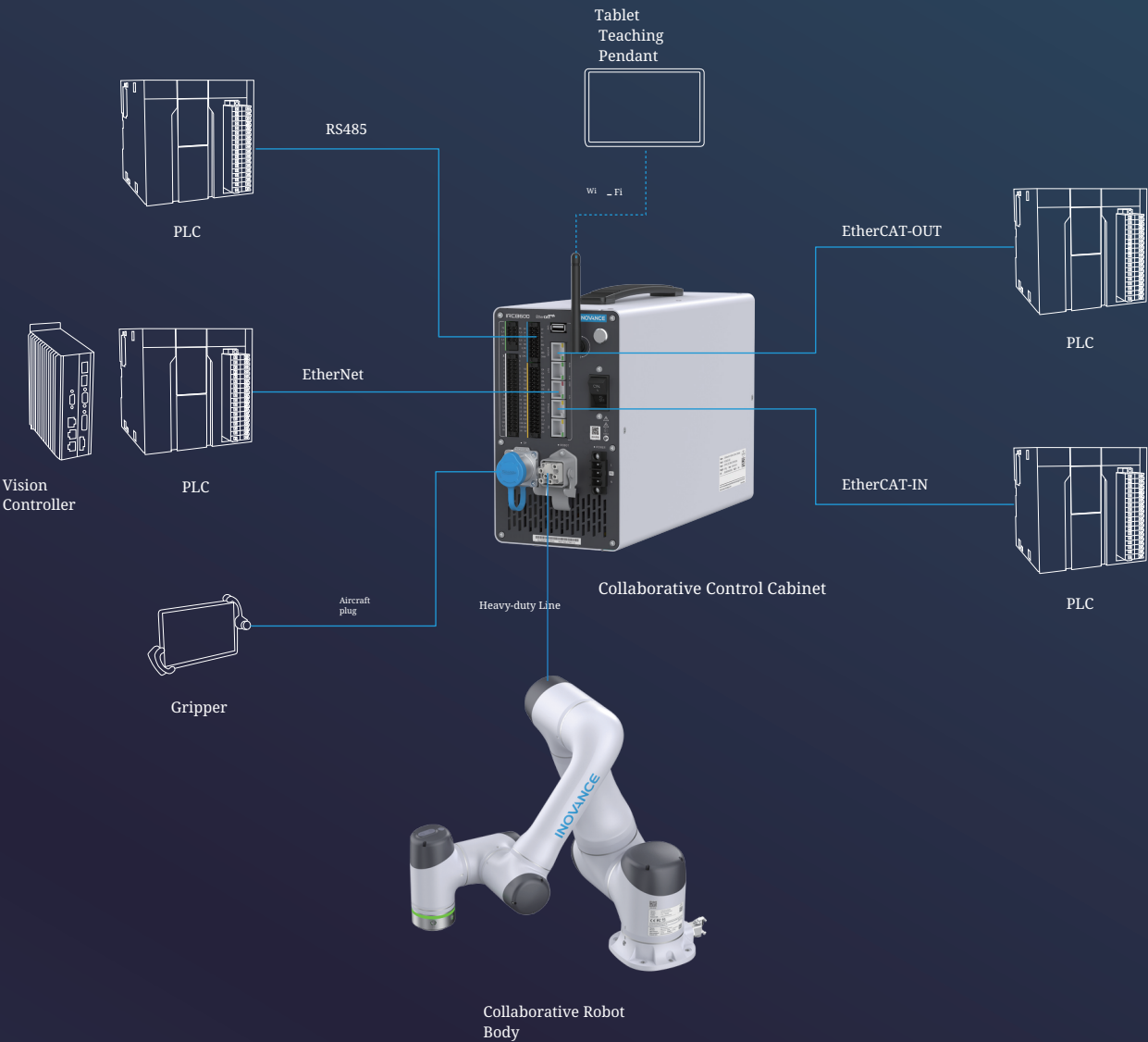
Reliability laboratory, key parts

aging
performance
testing



Full inspection, full
calibration, and running-in
aging of incoming
materials

Topology Diagram



Application Industry



3C Electronics



Automotive



Medical



Metal
processing



Education



New
Retail

...

Others

Application Field



Loading and
unloading



CNC



Palletizing



Screw
tightening



Others

Notes

[illegible]