

魔法原子关节模组

为人形机器人而生的精工心脏

魔法原子自研的关节模组覆盖了 $10\text{N}\cdot\text{m}$ ~ $525\text{N}\cdot\text{m}$ 全范围区间，其中关节峰值扭矩爆发力强劲，为行业第一水平；涵盖谐波模组、行星模组、直线模组等品类；具有高运动控制精度、高扭矩密度等特性，满足多种复杂应用场景需求；具备更加科学的功耗控制，长时间运行不发热。

核心优势

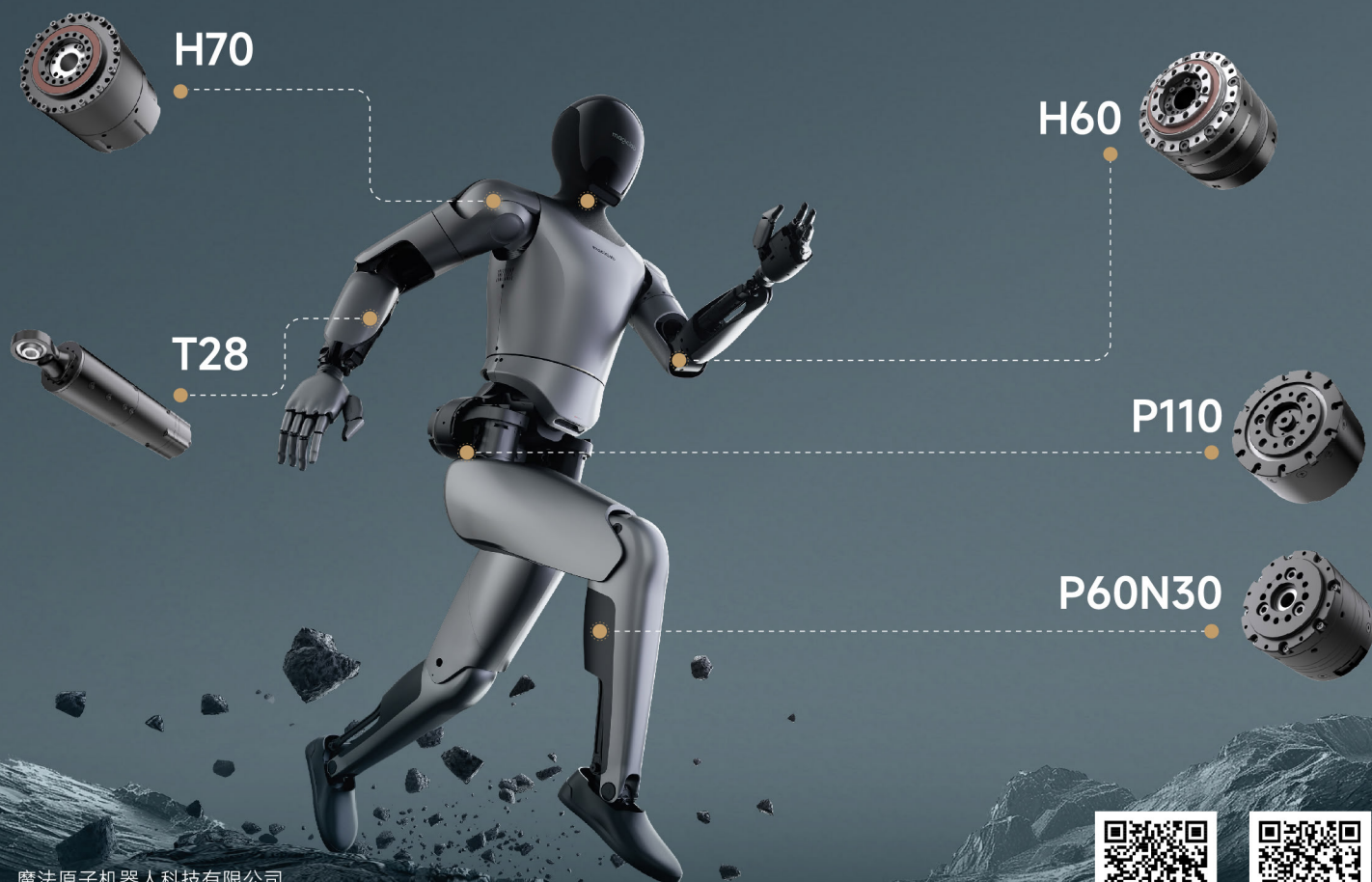
高爆发力

轻量灵巧

高响应控制

稳定可靠

多种选择，灵活配置，快速产品落地



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了解详情

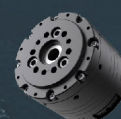


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行星系列关节模组

· 适用于：全尺寸，半尺寸人形机器人腿部，腰部或手臂关节，消费级或工业级机器狗腿部关节。

结构外观



型号	P110	P90N20	D90	P60N30
减速机类型	行星减速器	行星减速器	行星减速器	行星减速器
外形尺寸	φ112*71.5	φ92*63.4	φ98*48.5	φ64*57.1
关节重量	1900g	1100g	590g	532g
最大扭矩	360N·m	130N·m	25N·m	60N·m
额定扭矩	90N·m	35N·m	9N·m	20N·m
最大转速	120rpm	300rpm	180rpm	175rpm
工作电压	48V-54V	48V-54V	24V-36V	48V-54V
编码器	双编，15Bit	双编，18Bit	双编，12Bit	双编，15Bit
通讯协议	CAN/EtherCAT	CAN/EtherCAT	CAN	CAN/EtherCAT
中空走线	可选	是	否	否

谐波系列关节模组

· 适用于：机器人腿部，腰部或手臂关节，协作机械臂等关节。

结构外观



型号	H70	H60
减速机类型	谐波减速器	谐波减速器
外形尺寸	φ70*96	φ64*60
关节重量	900g	590g
最大扭矩	90N·m	90N·m
额定扭矩	30N·m	33N·m
最大转速	30rpm	39rpm
工作电压	48V-54V	48V-54V
编码器	双编，19Bit	双编，19Bit
通讯协议	CAN/EtherCAT	CAN/EtherCAT
中空走线	是	是

直线关节模组

· 适用于：小臂，脚踝或其他需要直线推力的场合。

结构外观



型号	T28
减速机类型	滚珠丝杠
外形尺寸	φ32*155
关节重量	340g
最大推力	750N
额定推力	300N
最大速度	116mm/s
最大行程	40mm
工作电压	48V
编码器	双编，18Bit
通讯协议	RS485



MagicLab's Joint Modules:

An Exquisite Engineered Heart Born for Humanoid Robots

MagicLab's in-house developed joint modules cover a full torque range from 10N·m to 525N·m, delivering industry-leading peak torque performance. The product line includes harmonic, planetary and linear modules, featuring high motion control precision and exceptional torque density to meet the demands of complex application scenarios. With optimized power consumption management, the modules ensure long-term operation without overheating.

Core Strengths

High Explosive Power

Light Weight and Agility

High-Responsiveness Control

Stability and Reliability

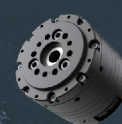
Multiple Options, Flexible Configuration and Rapid Product Deployment



Planetary Series Joint Modules

- Designed for use in full-size and mid-size humanoid robot joints (legs, waist or arms), as well as leg joints of consumer- and industrial-grade quadruped robots.

Structure and Appearance

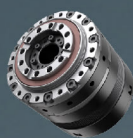


Model	P110	P90N20	D90	P60N30
Gearbox Type	Planetary Gearbox	Planetary Gearbox	Planetary Gearbox	Planetary Gearbox
Dimensions	φ112*71.5	φ92*63.4	φ98*48.5	φ64*57.1
Joint Weight	1900g	1100g	590g	532g
Maximum Torque	360N·m	130N·m	25N·m	60N·m
Rated Torque	90N·m	35N·m	9N·m	20N·m
Maximum Speed	120rpm	300rpm	180rpm	175rpm
Operating Voltage	48V-54V	48V-54V	24V-36V	48V-54V
Encoder	Dual Encoders, 15Bit	Dual Encoders, 18Bit	Dual Encoders, 12Bit	Dual Encoders, 15Bit
Communication Protocol	CAN/EtherCAT	CAN/EtherCAT	CAN	CAN/EtherCAT
Supports internal routing	Optional	Yes	No	No

Harmonic Series Joint Modules

- Designed for high-precision joints in robotic legs, waists, arms and collaborative robotic arms.

Structure and Appearance



Model	H70	H60
Gearbox Type	Harmonic Gearbox	Harmonic Gearbox
Dimensions	φ70*96	φ64*60
Joint Weight	900g	590g
Maximum Torque	90N·m	90N·m
Rated Torque	30N·m	33N·m
Maximum Speed	30rpm	39rpm
Operating Voltage	48V-54V	48V-54V
Encoder	Dual Encoders, 19Bit	Dual Encoders, 19Bit
Communication Protocol	CAN/EtherCAT	CAN/EtherCAT
Supports internal routing	Yes	Yes

Linear Joint Modules

- Designed for use in forearms, ankles, and other applications that demand precise linear force output.

Structure and Appearance



Model	T28
Gearbox Type	Ball Screw
Dimensions	φ32*155
Joint Weight	340g
Maximum Thrust	750N
Rated Thrust	300N
Maximum Speed	116mm/s
Maximum Range	40mm
Operating Voltage	48V
Encoder	Dual Encoders, 18Bit
Communication Protocol	RS485