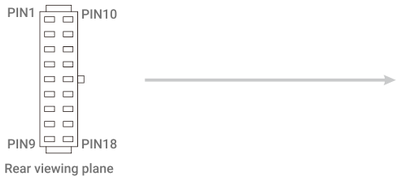
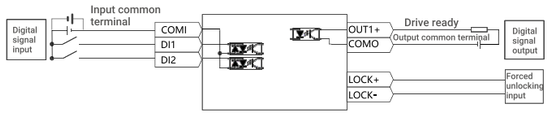
■ Terminal definition

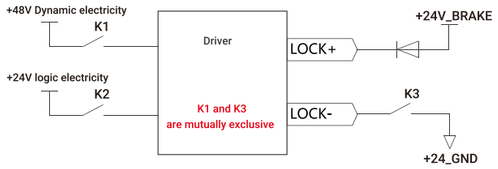


PIN	signal	PIN	signal
1	24V	10	GND
2	LOCK+	11	LOCK-
3	CANH	12	CANL
4	CANH	13	CANL
5	485A	14	485B
6	485A	15	485B
7	OUT1+	16	COMO
8	COMI	17	DI1
9	Empty	18	DI2

iWMC Integrated Servo Wheel Control Wiring Diagram



Wiring Diagram of Recommended Circuit for Forced Unlocking Brake



Note: The forced unlocking function needs to be used after the power supply of the servo wheel is cut off.

Power port

Pin number	Pin name	Pin function
3	DC-	The input end of the power supply of the driver must be connected
1	DC+	Input voltage: 24～60VDC

Brake resistance port

Pin number	Pin name	Pin function
1	RB+	External braking resistor input terminal
2	RB-	

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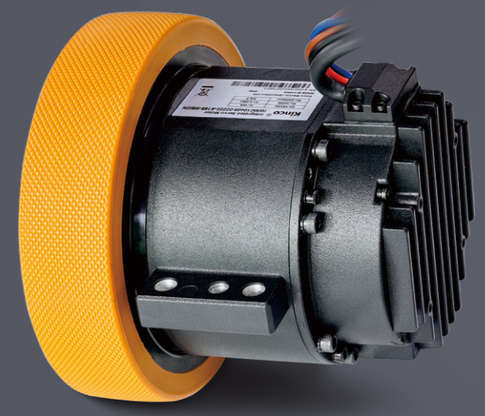
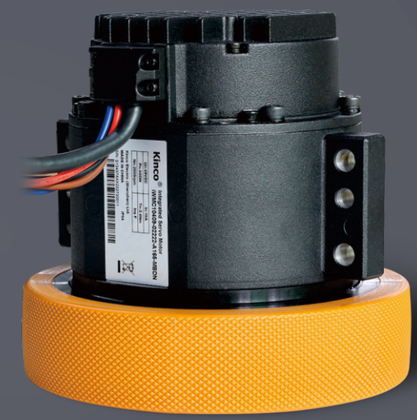
iWMC Integrated Servo Wheel





☑ Design of dual power supply for driver

☑ Support external forced unlocking

☑ Standard CANopen communication protocol

☑ The reducer has low back seam and high precision

■ Superiority

Highly integrated:The four main components of the driver, motor, gearhead, and wheel are highly integrated, resulting in a compact structure that facilitates downsizing;

High mounting accuracy:Supported mounting, simple and convenient mounting method, high mounting accuracy, and high control accuracy;

High reliability:The integrated module, with only external power supply and communication cables, is resistant to nickel-contacts and improves the stability and reliability of the entire system;

Compatible design & seamless switching: the communication and usage modes of the servo wheel products are no different from those of the standard Kinco products, allowing seamless switching;

Good maintainability: A single supplier for the integrated product facilitates the maintenance of the product at a later stage and reduces supply chain and after-sale costs.

■ Application Scenario

Power Servo Wheel Module for Mobile Machines with Loads up to 600 kg
Power Servo Wheel Module for Mobile Machines with Loads up to 1 T

■ Naming convention

iWMC - 104 09 - 022 22 - A 165 – M B D T - XXXX

	Series name
iWMC	iWM：4-in-1 servo wheel C: C series

	Outer diameter of motor stator
104	104mm

	Reducer speed ratio
09	9 speed ratio
11	11 speed ratio

	Torque
022	22Nm
040	40Nm

	Wheel speed (after reducer output)
22	22*10rpm
23	23*10rpm

	Wheel Covering Material/ Pattern Type
A	A:Polyurethane/Raised cross-section, diamond pattern
0	No rubber covered wheel

	Special Customization
XXXX	Custom suffix

	Connector type/wire length, etc
T	T:Standard connector and cable length

	Supply voltage
D	D: DC48V

	Brake
B	B:With brake
	A:Without brake

	Encoder type
M	M:Single turn communication type magnetoelectric encoder

	Wheel outer diameter
165	165mm
180	180mm
000	0mm

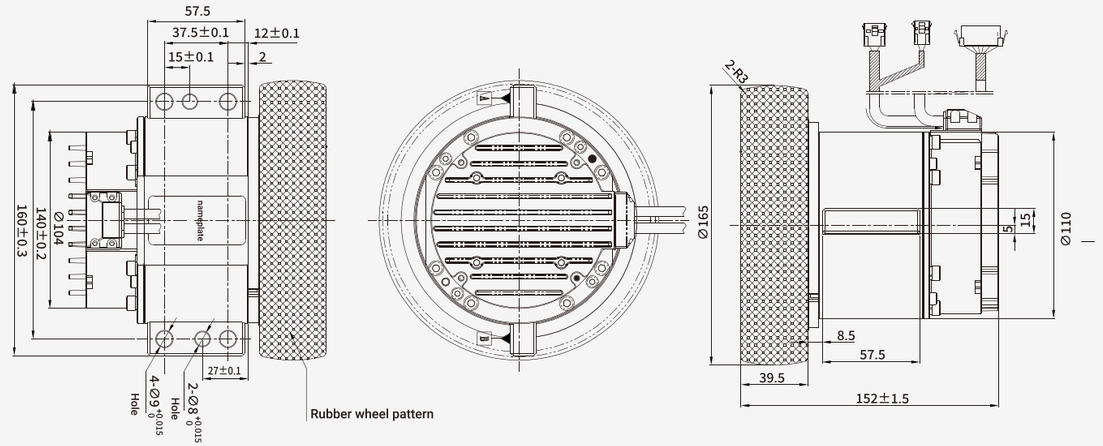
■ Product Parameters

iWMC Integrated Servo Wheel Model Number		iWMC10409-02222-A165-M■DT	iWMC10411-04023-A180-M■DT
Power	Power Supply	24VDC～60VDC	
	Logic Supply	24VDC	
Rated Linear Speed（m/s）		1.9	2.14
Rated Torque Tn(Nm)		21	40
Peak Torque Tn(Nm)		60	99
Tire Diameter（mm）		165	180
Tire Width(mm)		39.5	50
Tire Material		Polyurethane (optional)	
Tire Hardness Rating		85A	90A
Energy Consumption Braking		External braking resistor is required (depending on the operating conditions, mainly used for rapid starting and stopping)	
Energy Consumption Braking Voltage Absorption Point		DC63V ± 2V(Default, settable)	
Overvoltage alarm point		DC68V ± 2V	
Undervoltage alarm point		DC18V ± 2V	
Input Specifications		2 digital inputs / Common COMI terminal / High level: 12.5-30VDC / Low level: 0-5VDC / Maximum frequency: 1KHz / Input impedance: 5KΩ.	
Output Specifications		1 digital output common COMO terminal / Maximum output current: 100mA	
Brake		Built-in brake and control circuit	
Forced Unlock Interface		1-way forced unlock interface, only for use when there is no power input to the servo wheel	
RS485 Debug Port		Maximum support for 115.2Kbps baud rate	
CAN BUS		Maximum support for 1Mbps baud rate, CANopen protocol can be used to communicate with the controller	
Drive Current	Max. continuous output current（rms）	16A	26A
	Peak Current (PEAK)	100Ap(<2s)	100Ap(<2s)
Motor	Rated RPM nN(rpm)	2000	2500
	Rated Torque Tn(Nm)	2.4	4
	Brake Holding Torque T(Nm)	4	
Noise		＜65dB	
Cooling Methods		Natural cooling & Body-assisted cooling	
Operating Environment	Operating Temperature	0～40°C	
	Storage Temperature	-20°C～60°C	
	Humidity (non-condensing)	90%RH below	
	Protection Level	IP54	
	Altitude	The rated working altitude is up to 1000m above sea level. For working altitudes above 1000m, a reduction of 1.5% is required for every 100 meters of rise in altitude, with a maximum working altitude of 2000 meters above sea level.	
	Atmospheric Pressure	86kpa～106kpa	

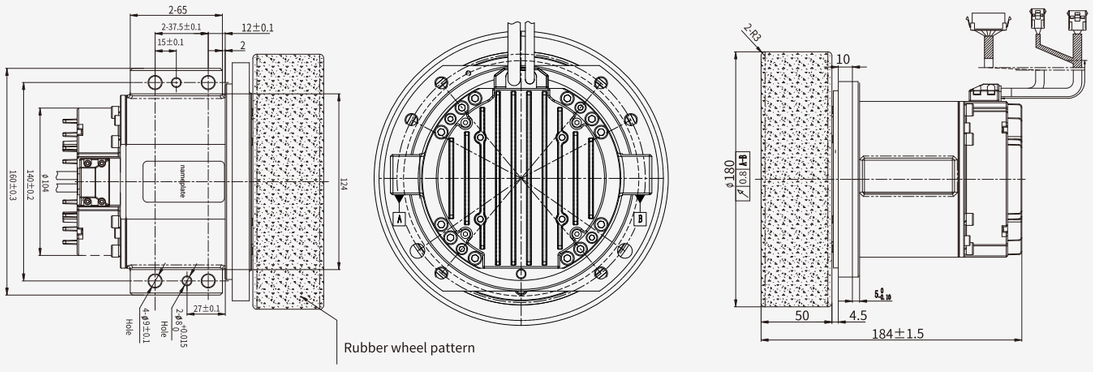
Note: ■ = A : Without brake　B : With brake

iWMC Integrated Servo Wheel

■ iWMC10409-02222-A165-M■DT



■ iWMC10411-04023-A180-M■DT



■ External Wiring Diagram