



日本太科TN221 控制器 & MBL 系列工具

日本太科多功能控制器搭配使用直流无刷马达和高精度编码器的手动操作型号驱动工具。

Multi-functional controller of next generation architecture & Manual operation type driver tool carrying brushless DC servo motor & high resolution encoder



TN221控制器和MBL手动操作型号工具提供稳定高精度扭矩输出，可靠耐用的质量，保证最佳质量的螺丝拧紧方案。

数字显示扭力值，控制面板按键直接设定扭力值。

日本太科多功能控制器搭配使用直流无刷马达和高精度编码器的手动操作型号驱动工具，针对不同的螺丝和组装工件，不同的摩擦力，材料特性，多功能的控制器会自动调节输出扭力去克服，保证最佳质量的螺丝拧紧方案。

Set tightening torque value digitally, and all the rest are taken care automatically, and the torque is applied correctly and reliably, regardless of difference of screw and components, friction or joint characteristics. With MBL series manual operation type tool carrying brushless DC servo motor and high resolution encoder, TN221 will take you to the next generation screw tightening control.



**TN221 Controller & MBL Series Manual Operation Type Tool
For Reliability, Durability & Flexibility Towards Next Generation Screw Tightening**

型号 TN221控制器

功能特点

- * 数字扭矩设定和高精度扭力输出
- * 超快转速的螺丝拧紧
- * 可以预设8组扭力参数（拧紧和拧松）
- * A/B 模式的不同控制参数设定
- * 可通过37针端口连接PLC 外部控制
- * 可通过RS-232C 端口定制参数和监控参数



数据监控功能

通过RS-232C 端口可以在电脑上监测每一次操作的数据和显示马达电流输出曲线图或扭力变化曲线图，监测操作时间、马达转速、输出扭力等数据，可以分析操作细节，并保存数据。

For Audit & Traceability

Real-time monitoring data can be output at RS-232C Port, for every single operation. The graph view monitoring and recording of motor current curve is also available in option.

TN221技术规格

型号名称	TN221
适用工具	MBL 系列工具
电源电压	AC100 ~ 240V 50/60Hz
功率	500W
配件	1 x AC 电源线
尺寸	W111 x H207 x D302 mm
重量	约 3.5 kg
使用环境	环境温度：0 ~ 50° C 环境湿度：30 ~ 80%
保修期	一年

Model TN221 Controller

Main Features

- * Digital torque setting & genuine torque repeatability
- * Ultra-fast screw tightening of any screw into any component
- * 8 x preset memory for each FWD & REV
- * A/B Mode for different control parameter settings
- * 37-pin photo-coupler interface port for remote control operation
- * RS-232C port for customizing & monitoring



可以定制参数

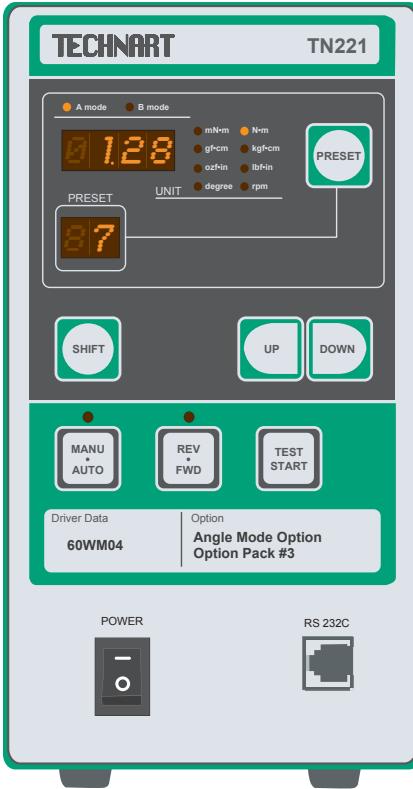
在Windows 操作系统下，通过RS-232C 端口，使用客户端软件连接控制器，您可以编辑和设定控制参数和功能，也可以設定一个多步骤控制程序。

Customize It As You Want

Connect with Customizer Program running on PC with Windows 2000/XP®, and you can edit and customize control parameters and functions.
You can also compose a Multi-sequence Program.

TN221 Spec Outline

Model Name	TN221
Applicable Tool	MBL series tool
Power Supply	AC100~240V 50/60Hz
Power Consumption	500W
Accessories	1 x AC Power Supply Cable
Dimensions	W111 x H207 x D302 mm
Weight	3.5 kg (approx.)
Installation & Operational Environments	Ambient Temp. 0 ~ 50°C Ambient Humidity: 30 ~ 80% (no condensation)
Warranty Period	12 months after delivery



MBL 系列手动操作工具

主要特长

- * 无刷直流伺服马达，长寿命、高精度扭力输出和超高速转速运行
- * 高精度的编码器
- * 存储ID信息和输出扭力特性
- * 完全校准扭力输出
- * 可启用手柄开关和下压启动类型
- * 滑动开关切换FWD/REV, 发生错误LED显示
- * 双轴承设计，实现最佳同心度
- * 快速安装批头装置
- * 定制套筒，通过真空吸取螺丝
- * 适用于净化间使用（相当于100 级）

MBL Series Manual Operation Tool

Main Features

- * Brushless DC servo motor, for long-life, outstanding output torque repeatability and ultra-fast operation
- * High resolution encoder
- * Memory for ID info & output torque characteristics
- * Completely calibrated for accurate output torque
- * Switch Lever type and Push-to-start type available
- * FWD/REV selection slide switch & LED (for error display)
- * Double-bearing for best bit centering
- * Quick-release ball chuck for bit installation
- * Sleeve for screw pick-up by vacuum attachable
- * ESD type (with continuous bit grounding mechanism) available
- * Suitable for cleanroom use (Class 100 or equivalent)

标准型号工具系列一览

型号 MODEL	扭矩范围 TORQUE RANGE		控制 rpm Control rpm	最大 rpm Max. rpm	批头缓冲 Bit Cushion	批头接地 (ESD) Bit Grounding (ESD)	重量 Weight
	Metric	S.I.					
MBL60MP04-SH2/PH2	4.00 ~ 16.0 kgf·cm	0.40 ~ 1.56 Nm	180 ~ 600 rpm	1,080 rpm	NO	NO	860 g (870 g)
MBL60MP04-FH2					YES (10 mm)		
MBL60MP04-SHG2/PHG2					NO	YES	870 g (875 g)
MBL60MP04-FHG2					YES (10 mm)		
MBL60MP06-SH2/PH2	6.00 ~ 25.0 kgf·cm	0.59 ~ 2.45 Nm	150 ~ 435 rpm	680 rpm	NO	NO	860 g (870 g)
MBL60MP06-FH2					YES (10 mm)		
MBL60MP06-SHG2/PHG2					NO	YES	870 g (875 g)
MBL60MP06-FHG2					YES (10 mm)		

-后缀 PH2 & PHG2 : 下压启动类型

-括弧内重量 : 下压启动类型

+ Suffix PH2 & PHG2 : Push-to-start type

+ Weight in parentheses : Push-to-start type

Standard Model Tool Line-up

防冲击和防静电解决方案

电批配备防冲击设计，在螺丝着座时，冲击力控制在目标扭力之内，不会造成工件损坏。防静电功能可选。



Shock-free & ESD Solution

There will be no damage on your precious components due to spike at the instance of screw seating, thanks to low inertia and shock-free process control. Continuous Bit Grounding Mechanism is available in option, for ESD sensitive application.



MBL 系列工具规格

适用控制器	型号 TN221
马达类型	直流60W无刷伺服马达
编码器	增量式1000脉冲分辨率
适用批头	6.35 mm 六角型
配件	1 x DEMC2 (4M) 工具连接电缆 1 x 套筒弹簧 1 x 吊钩
可选	批头 + 批头套筒 + 批头中心套 (不要套筒时)
保修期	一年

MBL Series Tool Spec Outline

Applicable Controller	TN221
Motor Type	Brushless DC60W servo motor
Encoder	Incremental & 1,000 pulses resolution
Applicable Bit	1/4 inch HEX shank mount bit
Including	1 x DEMC2 (4M) tool connecting cable 1 x Sleeve Spring 1 x Hanger
Optional	Bit, Sleeve, Bit Center (when no sleeve is required)
Warranty Period	12 months after delivery