

Dec 23rd, 2020

EPT- Cordless Series DC Torque Control System Operation Manual Using Driver Display

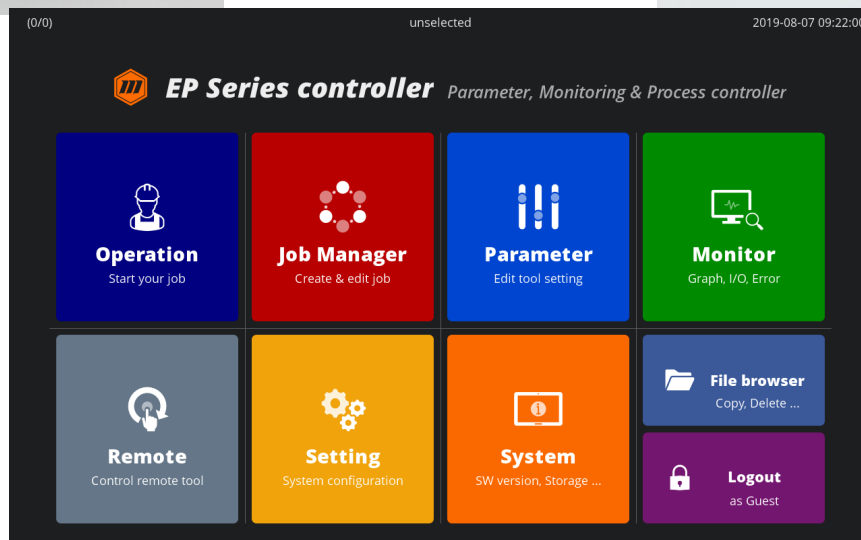


Table of Contents

GENERAL SAFETY RULES	3
Product	5
System Layout	5
Standard Packaging.....	5
Main Features.....	6
Screwdriver Specs	6
General.....	6
Model List.....	7
Screwdriver Dimensions.....	7
Dimension of BM3201, BM3202, BM3204, BM3211, BM3216	7
Battery & battery charger	8
Battery.....	8
Battery Charger.....	8
Operation	9
Screen Display Structure	9
Operation Mode	10
Info and Settings Mode	10
Power Battery Information	10
Torque and Speed Setting	11
Count cancel (last count).....	11
Network information display	12
Fastening parameters for preset #	14
Web server	15
Firmware Upgrade	16
Error Code	18

GENERAL SAFETY RULES

WARNING! Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire, and/or serious personal injury.

SAVE THESE INSTRUCTIONS

Work Area

Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.

Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.

Keep bystanders, children, and visitors away while operating a power tool.

Distractions can cause you to lose control.

Electrical Safety

Grounded tools must be plugged into an outlet properly installed and grounded by all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use ungrounded plugs? . Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.

Avoid body contact with grounded surface and pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.

Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock

Take care when using and handling the power/data cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep the cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

When operating a power tool outside, use an outdoor extension cord marked W-A or W. These cords are rated for outdoor use and reduce the risk of electric shock.

Personal Safety

Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.

Dress according to local safety guidelines . Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.

Avoid accidental starting of tool(s). Be sure the switch is off before plugging in. Carrying tools with your finger on the switch or plugging in tools may result in personal injury.

Remove adjusting keys or switches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.

. Keep proper footing and balance at all times. Proper footing and balance enable better control of the tool in unexpected situations.

Use safety equipment. Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

Tool use and Care

Use clamps or another practical way to secure and support the workplace to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

Do not operate a tool beyond its defined limits. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.

Do not use the tool if the switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.

Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges, are less likely to bind and are easier to control.

Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the operation of the tool. If damaged, have the tool serviced before using it. Many accidents are caused by poorly maintained tools.

Use only accessories that are recommended by the manufacturer for your model.
Accessories that may be suitable for one tool, may become hazardous when used on another tool.

SERVICE

Tool service must be performed only by qualified personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.

When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

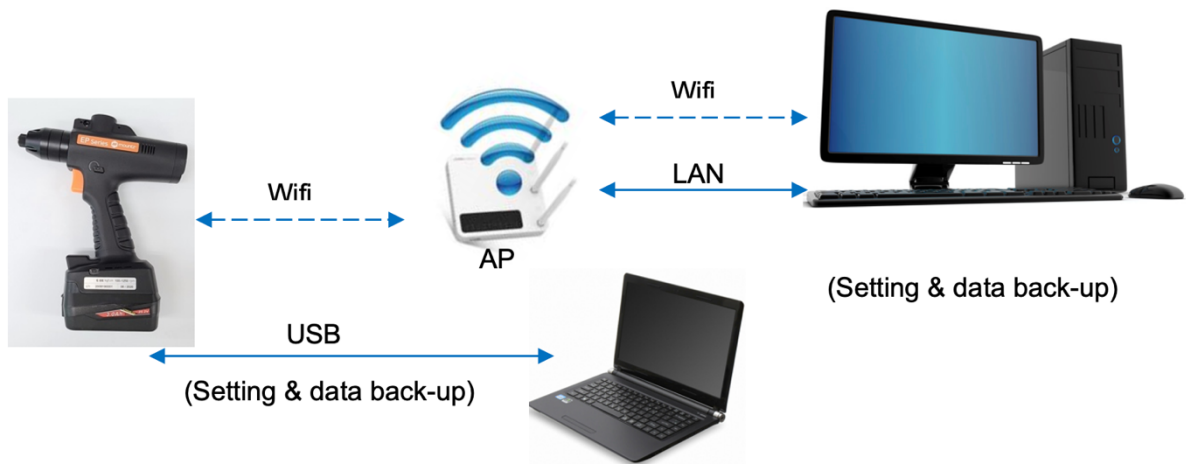
SPECIFIC SAFETY RULES

Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its cord. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.

Never lubricate aerosol oil on to the electrical part.

Product System Layout

[Connection to PC]



[Connection to Software ParaMon Pro X]



Standard Packaging



Driver with (2) Batteries
and Mini USB to USB
Type A Cord



Charger Sold Separately



EPC-10 Monitor Sold
Separately

Main Features

- Digital torque and angle program in 15 preset numbers and 2 multi step sequence programs
- 15 Models managing variable presets with counting no. and I/O in sequential 20 steps
- AMOLED color display
- Auto speed setting by torque
- Monitoring fastening quality and count of screw numbers
- Error information by code display
- Easy parameter setting and monitoring by ParaMon AIR (PC software) & Web server
- Real time torque data and curve display
- Real time fastening data output
- Modbus protocol
- USB, WIFI (2.4GHz & 5GHz)

Screwdriver Specs

General

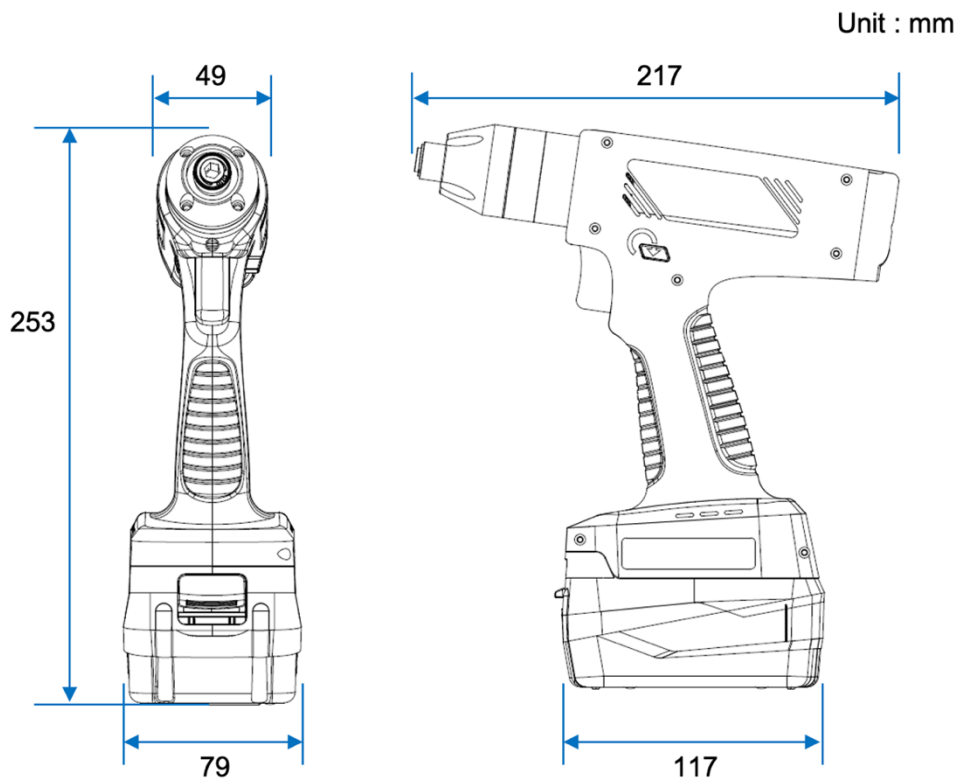
no	Item	Specification
1	Electric power	DC25.2V, 3A max
2	Motor	Swiss DC servo motor
6	Torque accuracy	10% in full scale
7	Torque repeatability	+/- 3%
8	WIFI	IEEE 802.11a/b/g/n 2.4GHz & 5GHz dual band
9	Weight	0.88 - 1.1 Kg (without battery)
10	Speed	Auto speed by torque setting
11	Data memory	Total 65.000 data MB?????
12	USB	Mini USB port
13	Display	1.29" AMOLED color display
14	No of preset	15 preset programing by USB or Wi-Fi

Model List

BATTERY (CORDLESS) TRANSDUCERIZED										
MOUNTZ MODEL	Item No	Configuration	DRIVE	SPEED	Nm		Lbf.in.		Controller Model	
					Min Torque	Max Torque	Min Torque	Max Torque		
EPT50100-P	313131	Battery Pistol	F 1/4" HEX	100-1800	0.90	4.50	7.97	39.83	EPC-10 Controller / 313005	
EPT50104-P	313132	Battery Pistol	3/8" SQ.DR.	100-1800	0.90	4.50	7.97	39.83		
EPT50120-P	313133	Battery Pistol	F 1/4" HEX	100-1250	1.30	6.50	11.51	57.53		
EPT50124-P		Battery Pistol	3/8" SQ.DR.	100-1250	1.30	6.50	11.51	57.53		
EPT50200-P	313135	Battery Pistol	F 1/4" HEX	50-690	2.30	11.50	20.36	101.78		
EPT50204-P		Battery Pistol	3/8" SQ.DR.	50-690	2.30	11.50	20.36	101.78		
EPT50300-P	313137	Battery Pistol	F 1/4" HEX	50-470	3.20	16.00	28.32	141.60		
EPT50304-P	313138	Battery Pistol	3/8" SQ.DR.	50-470	3.20	16.00	28.32	141.60		
EPT50500-P	313139	Battery Pistol	F 1/4" HEX	50-310	4.80	24.00	42.48	212.40		
EPT50504-P	313140	Battery Pistol	3/8" SQ.DR.	50-310	4.80	24.00	42.48	212.40		
EPT50100-RA	313141	Battery Right Angle	F 1/4" HEX	100-1800	0.90	4.50	7.97	39.83		EPC-10 Controller / 313005
EPT50104-RA	313142	Battery Right Angle	3/8" SQ.DR.	100-1800	0.90	4.50	7.97	39.83		
EPT50120-RA	313143	Battery Right Angle	F 1/4" HEX	100-1250	1.30	6.50	11.51	57.53		
EPT50124-RA	313144	Battery Right Angle	3/8" SQ.DR.	100-1250	1.30	6.50	11.51	57.53		
EPT50200-RA	313145	Battery Right Angle	F 1/4" HEX	50-690	2.30	11.50	20.36	101.78		
EPT50204-RA	313146	Battery Right Angle	3/8" SQ.DR.	50-690	2.30	11.50	20.36	101.78		
EPT50300-RA	313147	Battery Right Angle	F 1/4" HEX	50-470	3.20	16.00	28.32	141.60		
EPT50304-RA	313148	Battery Right Angle	3/8" SQ.DR.	50-470	3.20	16.00	28.32	141.60		
EPT50500-RA	313149	Battery Right Angle	F 1/4" HEX	50-310	4.80	24.00	42.48	212.40		
EPT50504-RA	313150	Battery Right Angle	3/8" SQ.DR.	50-310	4.80	24.00	42.48	212.40		
EPT50604-RA	313151	Battery Right Angle	3/8" SQ.DR.	50-200	6.40	32.00	56.64	283.20		
EPT50804-RA	313153	Battery Right Angle	3/8" SQ.DR.	50-160	7.60	38.00	67.26	336.30		
EPT50805-RA	313152	Battery Right Angle	1/2" SQ.DR.	50-160	7.60	38.00	67.26	336.30		
EPT50904-RA	313155	Battery Right Angle	3/8" SQ.DR.	50-115	10.00	50.00	88.50	442.50		
EPT50905-RA	313154	Battery Right Angle	1/2" SQ.DR.	50-115	10.00	50.00	88.50	442.50		

Screwdriver Dimensions

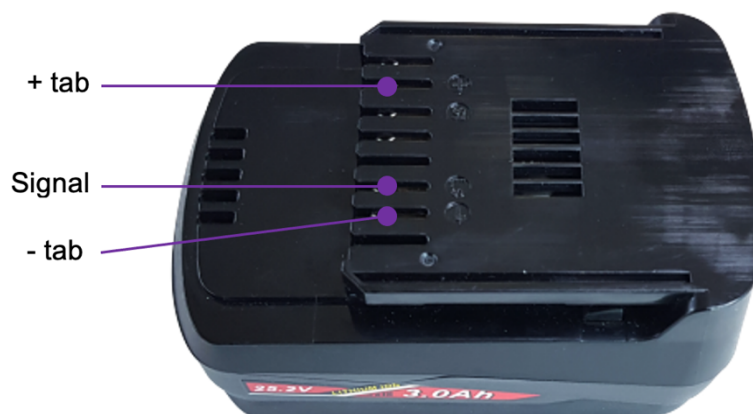
Dimension of BM3201, BM3202, BM3204, BM3211, BM3216



Battery & battery charger

Battery

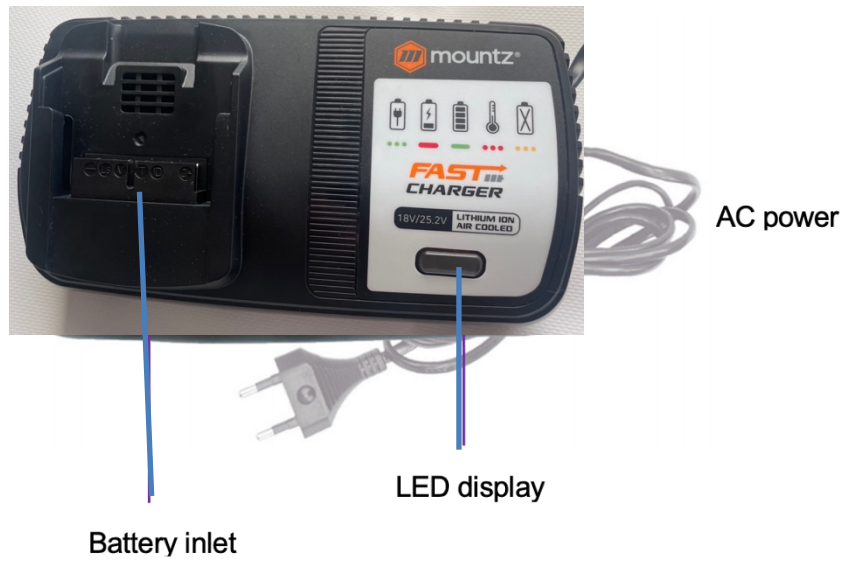
Item	Description
Model	BL25201
Voltage	25.2V
Number of cell	3.6V x 7 cells
Weight	0.4 kg



Battery pin configuration

Battery Charger

Item	Specification
Model	C25247
Input	AC220 - 240V, 50/60Hz, 1.05A
Output	DC25.2V, 4.0A
Fuse	250VAC T3.15A
Operating environment	0 ~ 40°C / 15 ~ 80% RH (without condensation?)
Full charging time	53 minutes
Safety class	Class II
Weight	0.6 kg



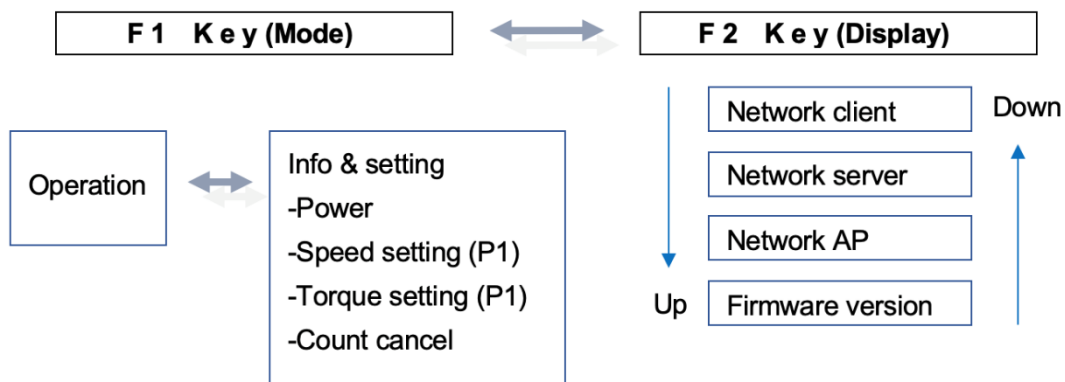
LED display information

Green(blink)	Ready
Red	Charging
Green	Complete
Red(blink)	Battery overheat
Yellow(blink)	Charging Not possible



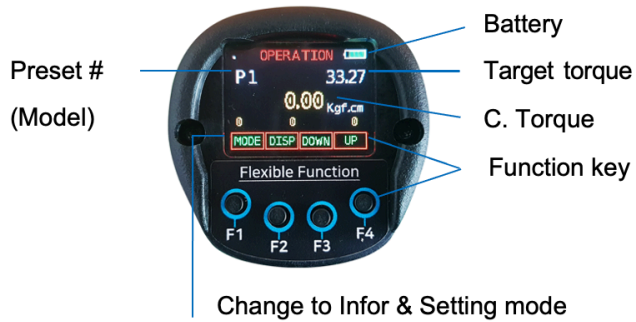
Operation

Screen Display Structure



Operation Mode

There are 3 different mode ; Operation, power information & Torque setting.



Operation mode screen is a default window when the screwdriver battery power connected.

Key	Function	Description
F1	MODE	Mode change from Operation to Info & Setting
F2	DISP	Display change to show the network information
F3	DOWN	Select Preset # down
F4	UP	Select Preset # up

Info and Settings Mode

Power Battery Information

The battery voltage is automatically monitored and displayed. High power means the 25.2V battery pack connected

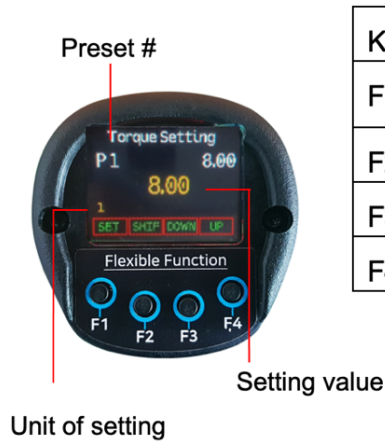


25.2V

Voltage	Display	Description
25.2V	High power	Full power. it provides full specification

Torque and Speed Setting

- 1) Select the Preset # to change torque or speed.
 - 2) Press F1 to move to “Power Information” mode display.
 - 3) Press F3 for torque setting, F2 for speed setting.
- (Auto speed should be deselected for speed setting



Key	Function	Description
F1	Set	Set the torque and change mode to operation
F2	Shift	Shift the digits from right to left.
F3	Down	Decrease number
F4	Up	Increase number

Count cancel (last count)

The last Fastening OK count can be canceled by pressing “ -1 “ count cancel key.



Key	Function	Description
F1	Yes	Confirm count cancel (-1)
F2	-	No use
F3	-	No use
F4	No	Return back to operation

Network information display



All networking setting is available on the PC software, ParaMon Air that is connected by USB port.

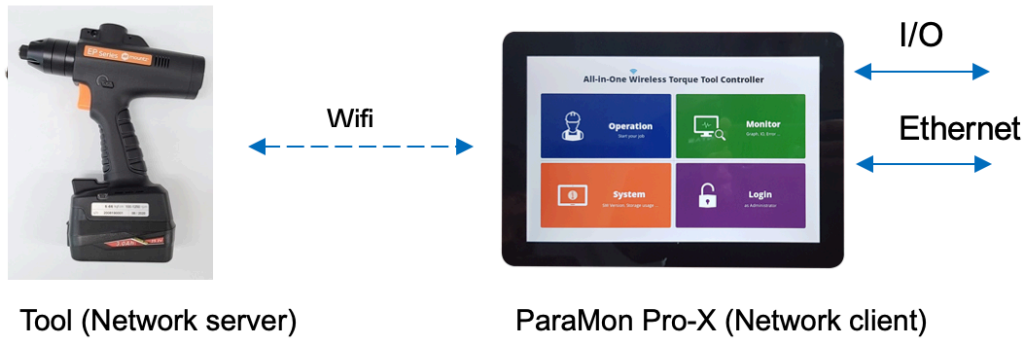
No	Network	Description
1	Client	Information about networking of the BM screwdriver Mode : DHCP (Dynamic Host Configuration Protocol) IP address: 192.168.0.4 Gate way : 192.168.0.1 Net Mask : 255.255.255.0
2	Server	Information about networking of the PC software, ParaMon Air IP address: 192.168.0.53 Port : 5000
3	AP	Information about networking of the AP SSID : Hantas_5G
4	Firmware ver.	Screwdriver firmware version Ver : 0.70.2 S/N : 1812100012 - 18(year)12(Month)10(BM code)0012(serial) Model : Screwdriver model

■ USB connection



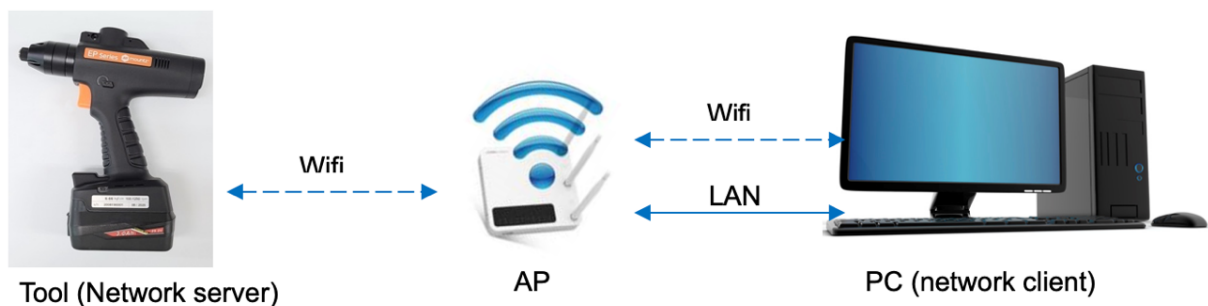
- Initial network and parameter setting, data monitoring
- Data download from the internal memory
- Tool firmware update

■ WIFI connection to ParaMon Pro-X



- Parameter setting, data monitoring and process guide job managing
- Tool fastening data saving in file system
- Tool remote control

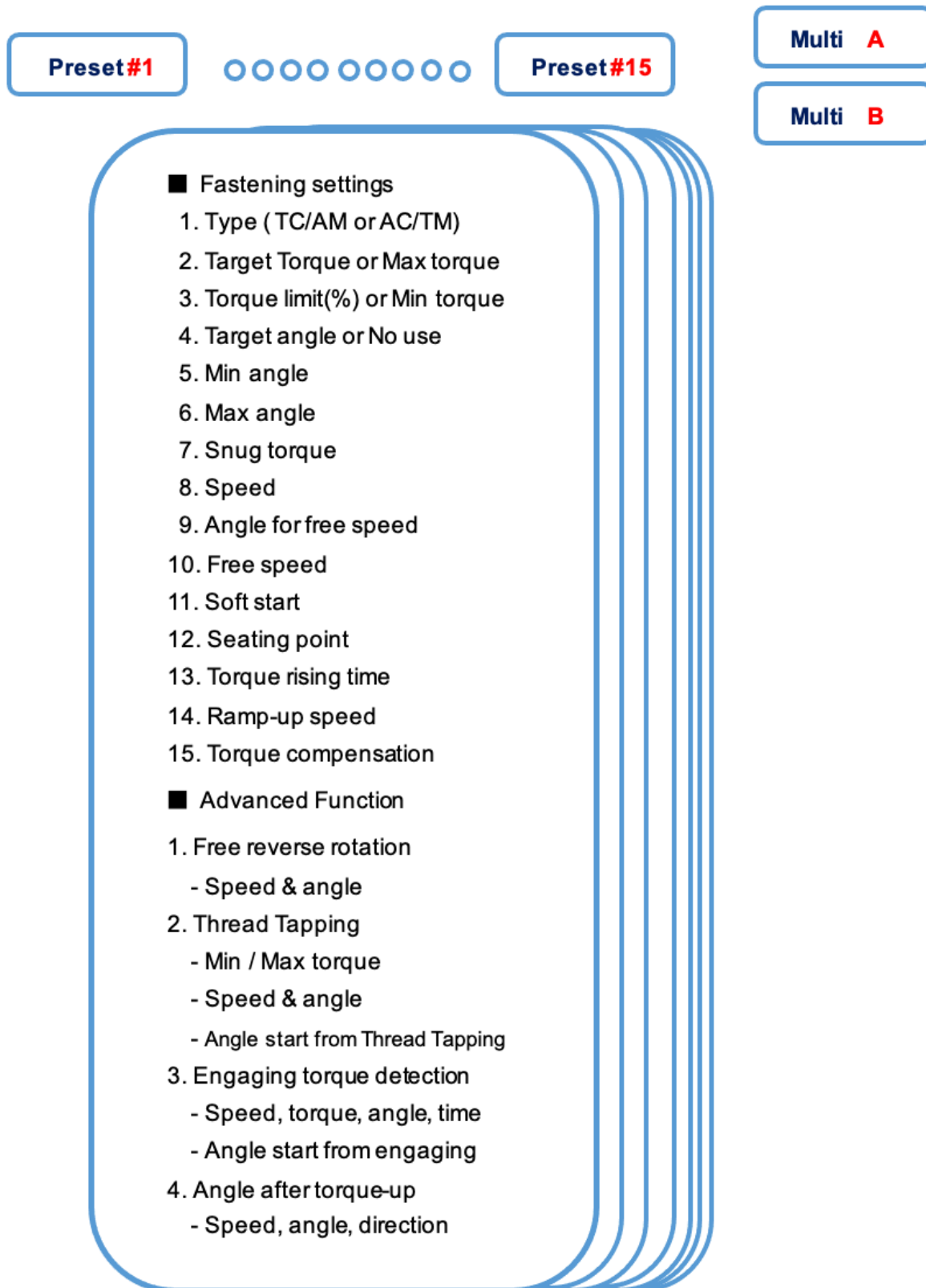
■ WIFI connection to PC via AP



- Parameter setting, data monitoring on PC with ParaMon Air or custom software
- Protocols are open for programming the custom software

Fastening parameters for preset

There are 15 presets of program. Each preset contains the following parameters

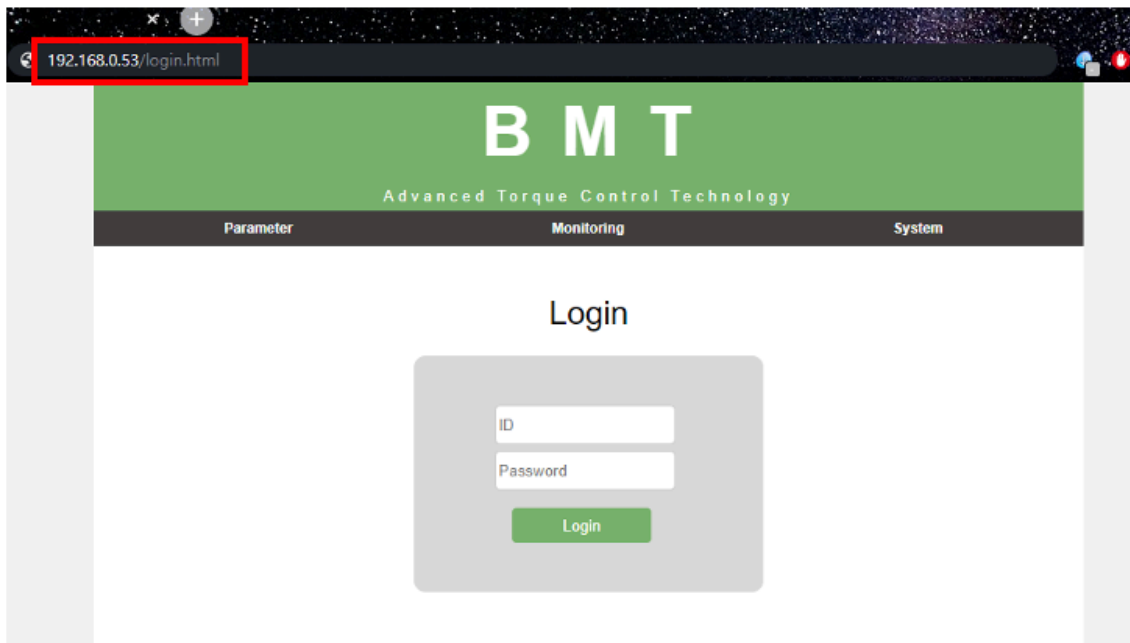


Web server

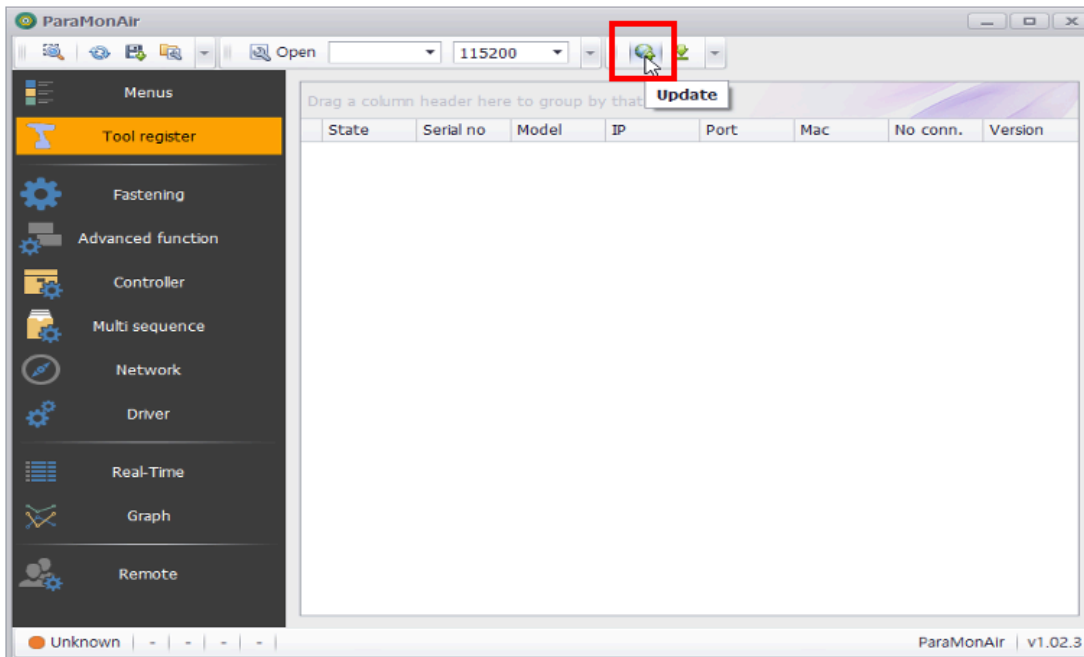
- EPT screwdriver has the built-in web server program. By web browser on PC or Smart phone, it is possible to access to BMT screwdriver for parameter setting or monitoring, if they are connected through the same network AP.
 - The recommended web browsers are Chrome or Firefox.
- How to access



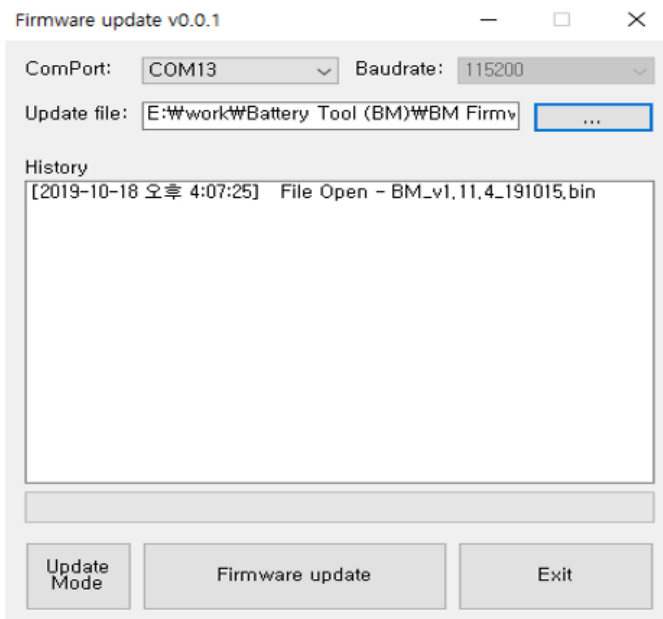
1. Key in the IP address of the BMT screwdriver on the web browser. (ex. 192.168.0.53)
2. Once it is accessed, log-in with ID: bmtool Password: 0 (factory default).
(Multiple user access is not available at same time)



Firmware Upgrade



1. Run a "ParaMon Air" PC program.
2. Click [Update].



3. Set "Com Port",

Caution

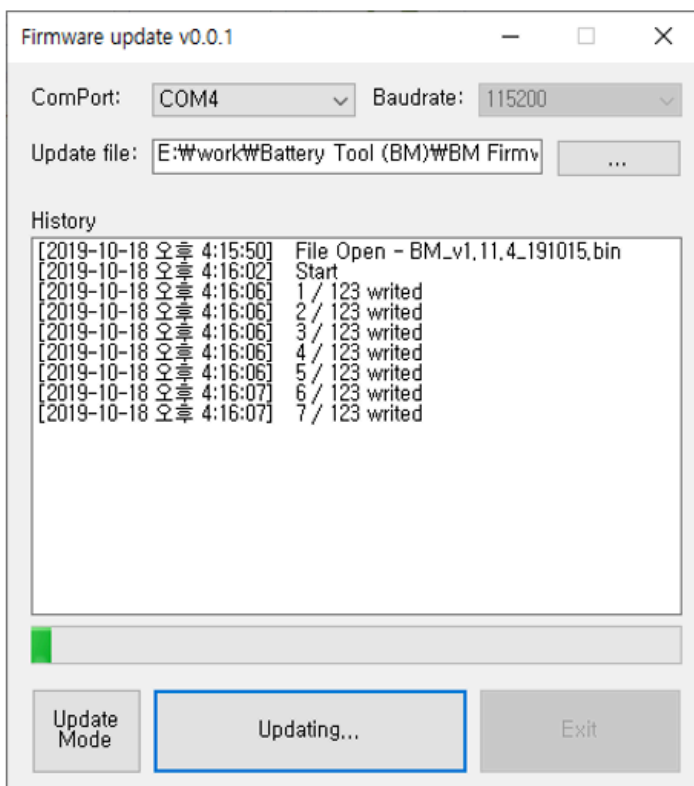
If cable disconnect during upgrade: End program, BM battery remove

Start firmware upgrade first step.



[Update Mode]

4. Click "Update Mode" (If already Update mode then don't click "update mode")
5. Check firmware update mode
6. Check "Com Port" change.
7. Select firmware file.
8. Click "Firmware update".



9. End the program after upgrade complete.

Error Codes

Code	Number	Description
UNDER VOLTAGE	104	Low Battery voltage
TRANSDUCER_SENSOR_ERR	105	Transducer sensor offset value error.
BACKUP DATA R/W	108	Back up (Fastening) data read / write Error
OVER_CURRENT	109	Driver use high current.
CURRENT OFFSET	110	Current calculation error
BAT_UNDER_VOLTAGE	111	Battery error signal
OVER SPEED	112	Over Motor max speed
DRIVER PARAMETER	113	Can't read driver parameter
UNKNOWN DRIVER	114	Controller driver model setting different with driver
NO SPEED	118	When motor rotation is not monitored
WIFI COMM FAIL	120	Disconnect with AP
USB COMM FAIL	122	USB communication Fail
WIFI INIT FAIL	123	Wi-Fi connect fail with AP
PARAMETER R/W	200	Parameter read / write Error
PARAMETER CHKSUM	201	The read parameter is wrong by the checksum routine
MULTI SEQUEN PGM	220	Multi-sequence program is wrong
FASTENING TIMOUT	300	Over time limit on A242(Forward run time limit)
LOOSENING TIMOUT	301	Over time limit on A243(Loosen run time limit)
OVER TIME LOOSEN	304	Motor stall by loosening failure within time limit on A244
OVER_TRQ_BEFORE_RAMP_UP	305	Over torque occur before ramp up section
MIN ANGLE	330	Target torque reached before the Min angle
TARGET ANGLE SET	331	Target angle setting is out of the range [AC/TM mode]
MAX ANGLE	332	Target torque reached over the Max angle
FASTENING STOP	333	Operation stops before complete cycle of torque up by releasing lever trigger
FIND ENGAGING TQ	334	The engaging torque is not detected in time or angle limit
C_TORQUE LIMIT	335	Converted torque is out of torque limit (%)
FASTEN OVER TQ	336	Torque reached to the high limit of torque capacity
TQ_UP DURING F_SPEE	337	Torque up when free speed zone
THREADTAP MAX TORQUE	338	Torque reached when Thread Tap max torque zone

Code	Number	Description
THREADTAP MIN MAX RANGE OVER	339	Over Thread Tap torque Min, Max range
OVER TEMP MOTOR	500	Motor temperature over 80°C
OVER TEMP BATTEY	501	Battery temperature over 80°C

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