

DOGATEC

Mit Sicherheit montiert

Gesteuerte Schraubsysteme - messend
Serie MDT

TRANSDUCERIZED TOOLS
MDT series



www.dogatec.de

SUMMARY

TRANSDUCERIZED TOOLS

MDT series

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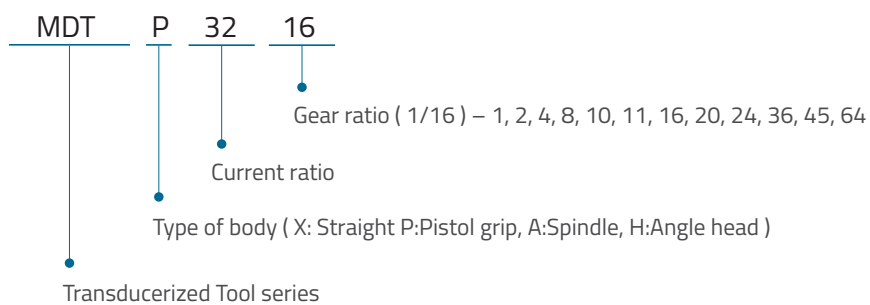
MAIN FEATURE

- ▶ Built-in torque transducer digital torque & angle control DC tool
- ▶ Digital torque and angle setting in 15 presets and 2 multi step sequence programs
- ▶ Models managing variable presets with counting no, and I/O in sequential 20 steps
- ▶ Color LCD touche screen with the user friendly easy settings
- ▶ Auto safe speed by torque setting as a standard factory setting
- ▶ Self customizing on actual tightening application for optimized setting
- ▶ Monitoring fastening quality and count of screw numbers
- ▶ Error information by code display
- ▶ Easy parameter setting and monitoring by Paramon (PC software)
- ▶ Real time torque data and curve display with 2ms resolution
- ▶ Real time fastening data output
- ▶ Modbus protocol open protocol
- ▶ RS232C, Ethernet communication port
- ▶ Fastening data storage in SD card
- ▶ Fastening torque data analysis (Stdev, Mean, Average, CP, CPK) on Paramon
- ▶ 15 input and 8 output flexible digital I/O
- ▶ ESD Free by body grounding and long life time over 5 million cycle
- ▶ Built-in torque transducer

Specification

Electric power	DC38V, 5A max
Motor	Swiss DC servo motor
Speed	Auto speed by torque setting or manual setting

MODEL SPECIFICATIONS



TECHNICAL DETAILS

Straight hand held screwdrivers from 0,2 to 57 Nm



Lever start

Model	Torque (min Nm)	Torque (max Nm)	Speed (rpm)	Weight (gr)	Bit Socket	Controller	Code
MDT2604-A	0,2	1,4	150 - 1500	535	Hex 1/4"	MDTC-38	4-1055213
MDT2611-A	0,4	3,4	100 - 900	555	Hex 1/4"		4-1055214
MDT2616-A	0,5	5	100 - 620	555	Hex 1/4"		4-1055215
MDT3204-A	0,4	4,5	100 - 1800	830	Hex 1/4"		4-1055216
MDT3206-A/L	0,6	6,5	100 - 1250	915	Hex 1/4"		4-1055217
MDT3211-A/L	1,5	11,5	50 - 690	915	Hex 1/4"		4-1055218
MDT3216-A/L	2	16	50 - 470	1000	Hex 1/4"		4-1055219
MDT3220-Q/L 3/8	3	20	50 - 375	995	SQ 3/8"		4-1055220
MDT3224-Q/L 3/8	4	24	50 - 310	1000	SQ 3/8"		4-1055221
MDT3236-Q/L 3/8	5	33	50 - 200	1005	SQ 3/8"		4-1055222
MDT3245-Q/L 3/8	6	40	50 - 160	1080	SQ 3/8"		4-1055223
MDT3264 Q/L 3/8	8	57	50 - 115	1085	SQ 3/8"		4-1055224

Pistol screwdrivers from 0,4 to 57 Nm



Model	Torque (Min Nm)	Torque (Max Nm)	Speed (rpm)	Weight (gr)	Bit Socket	Controller	Code
MDTP3204-A/D	0,4	4,5	100 - 1800	990	Hex 1/4"	MDTC-38	4-1055225
MDTP3206-A/D	0,6	6,5	100 - 1250	985	Hex 1/4"		4-1055226
MDTP3211-A/D	1,5	11,5	50 - 690	1060	Hex 1/4"		4-1055227
MDTP3216-A/D	2	16	50 - 470	1070	Hex 1/4"		4-1055228
MDTP3224-Q/D 3/8	4	24	50- 310	1070	SQ 3/8"		4-1055229
MDTP3236-Q/D 3/8	5	33	50 - 200	1075	SQ 3/8"		4-1055230
MDTP3245-Q/D 3/8	6	40	50 - 160	1150	SQ 3/8"		4-1055231
MDTP3264-Q/D 3/8	8	57	50 - 115	1155	SQ 3/8"		4-1055232
MDTP3204-A/U	0,4	4,5	100 - 1800	990	Hex 1/4"		4-1055233
MDTP3206-A/U	0,6	6,5	100 - 1250	985	Hex 1/4"		4-1055234
MDTP3211-A/U	1,5	11,5	50 - 690	1060	Hex 1/4"		4-1055235
MDTP3216-A/U	2	16	50 - 470	1070	Hex 1/4"		4-1055236
MDTP3224-Q/U 3/8	4	24	50 - 310	1070	SQ 3/8"		4-1055237
MDTP3226-Q/U 3/8	5	33	50 - 200	1075	SQ 3/8"		4-1055238
MDTP3245-Q/U 3/8	6	40	50 - 160	1150	SQ 3/8"		4-1055239
MDTP3264-Q/U 3/8	8	57	50 - 115	1155	SQ 3/8"		4-1055240

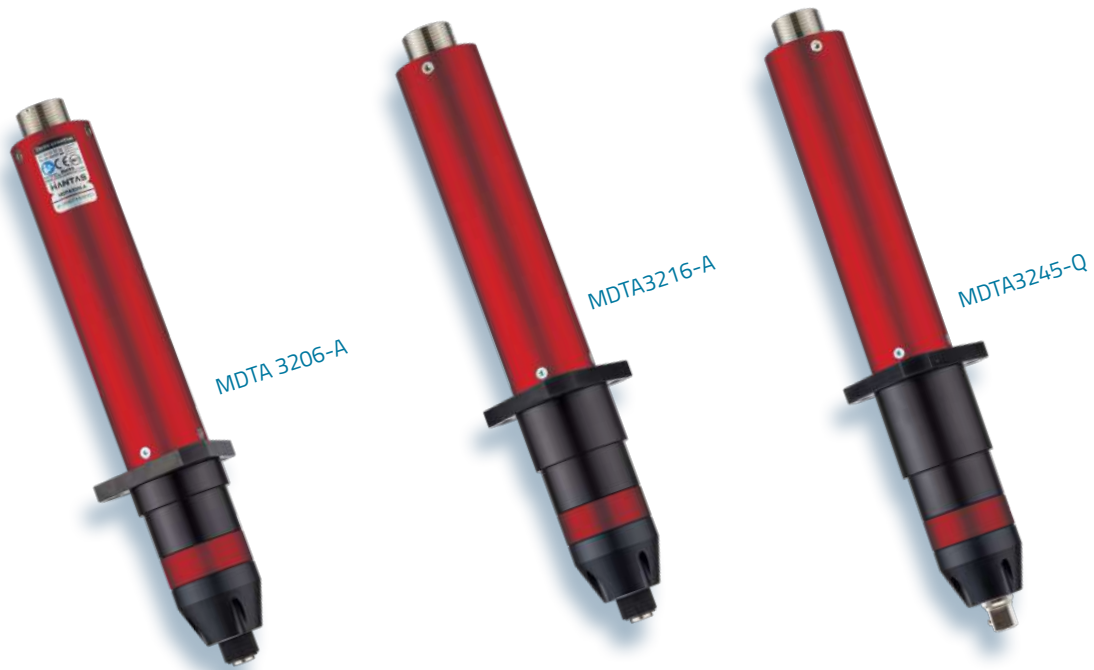
Angle head screwdrivers from 0,2 Nm to 57 Nm



MDTH 3236-Q/L

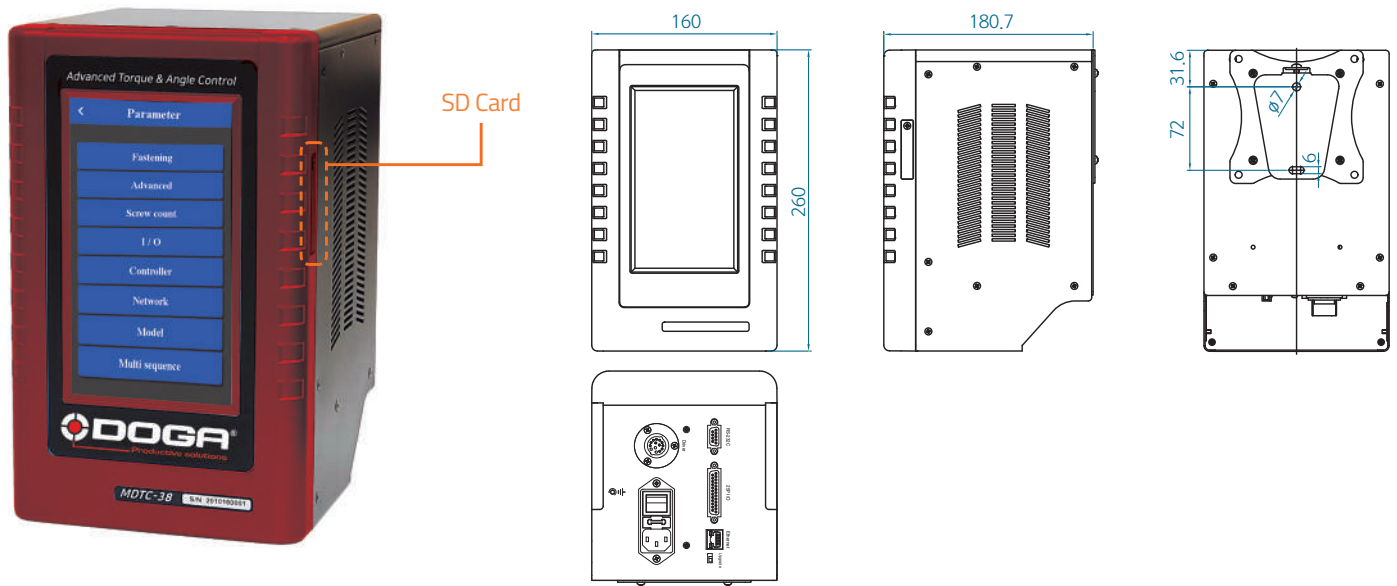
Model	Torque (Min Nm)	Torque (Max Nm)	Speed (rpm)	Weight (gr)	Bit Socket	Controller	Code
MDTH2604-A	0,2	1,4	150 - 1500	895	Hex 1/4"	MDTC-38	4-1055241
MDTH2611-A	0,4	3,4	100 - 900	915	Hex 1/4"		4-1055242
MDTH2616-A	0,5	5	100 - 620	915	Hex 1/4"		4-1055243
MDTH2628-A	1,8	8	50 - 300	920	Hex 1/4"		4-1055244
MDTH3204-A	0,4	4,5	100 - 1800	1270	Hex 1/4"		4-1055245
MDTH3206-A/L	0,6	6,5	100 - 1250	1335	Hex 1/4"		4-1055246
MDTH3206-Q/L 3/8	0,6	6,5	100 - 1250	1335	SQ 3/8"		4-1055247
MDTH3211-A/L	1,5	11,5	50 - 690	1440	Hex 1/4"		4-1055248
MDTH3211-Q/L 3/8	1,5	11,5	50 - 690	1440	SQ 3/8"		4-1055249
MDTH3216-A/L	2	16	50 - 470	1445	Hex 1/4"		4-1055250
MDTH3216-Q/L 3/8	2	16	50 - 470	1445	SQ 3/8"		4-1055251
MDTH3220-Q/L 3/8	3	20	50 - 375	1460	SQ 3/8"		4-1055252
MDTH3224-Q/L 3/8	4	24	50 - 310	1465	SQ 3/8"		4-1055253
MDTH3236-Q/L 3/8	5	33	50 - 200	1470	SQ 3/8"		4-1055254
MDTH3245-Q/L 3/8	6	40	50 - 160	1545	SQ 3/8"		4-1055255
MDTH3264-Q/L 3/8	8	57	50 - 115	1550	SQ 3/8"		4-1055256

Spindles for automation from 0,4 to 57 Nm



Model	Torque (Min Nm)	Torque (Max Nm)	Speed (rpm)	Weight (gr)	Bit Socket	Controller	Code
MDTA3204-A	0,4	4,5	100 - 1800	1070	Hex 1/4"	MDTC-38	4-1055257
MDTA3206-A	0,6	6,5	100 - 1250	1065	Hex 1/4"		4-1055258
MDTA3211-A	1,5	11,5	50 - 690	1170	Hex 1/4"		4-1055259
MDTA3216-A	2	16	50 - 470	1180	Hex 1/4"		4-1055260
MDTA3224-Q 3/8	4	24	50 - 310	1205	SQ 3/8"		4-1055261
MDTA3236-Q 3/8	5	33	50 - 200	1210	SQ 3/8"		4-1055262
MDTA3245-Q 3/8	6	40	50 - 160	1285	SQ 3/8"		4-1055263
MDTA3264-Q 3/8	8	57	50 - 115	1290	SQ 3/8"		4-1055264

MDTC CONTROLLER



Hardware

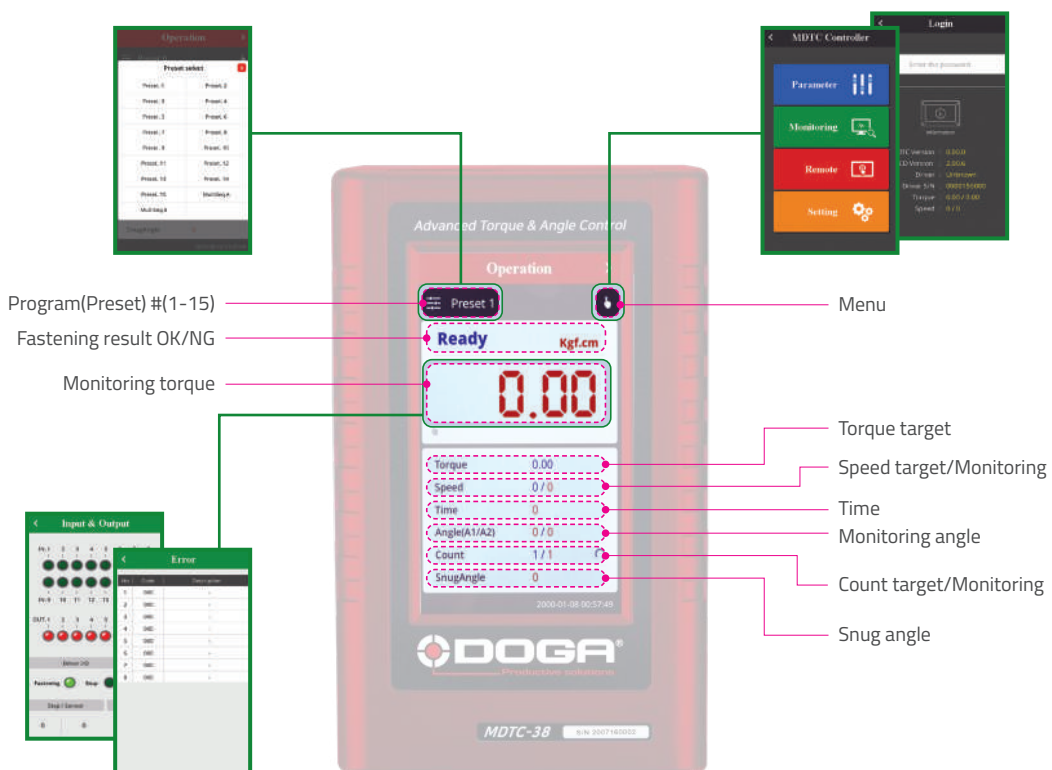
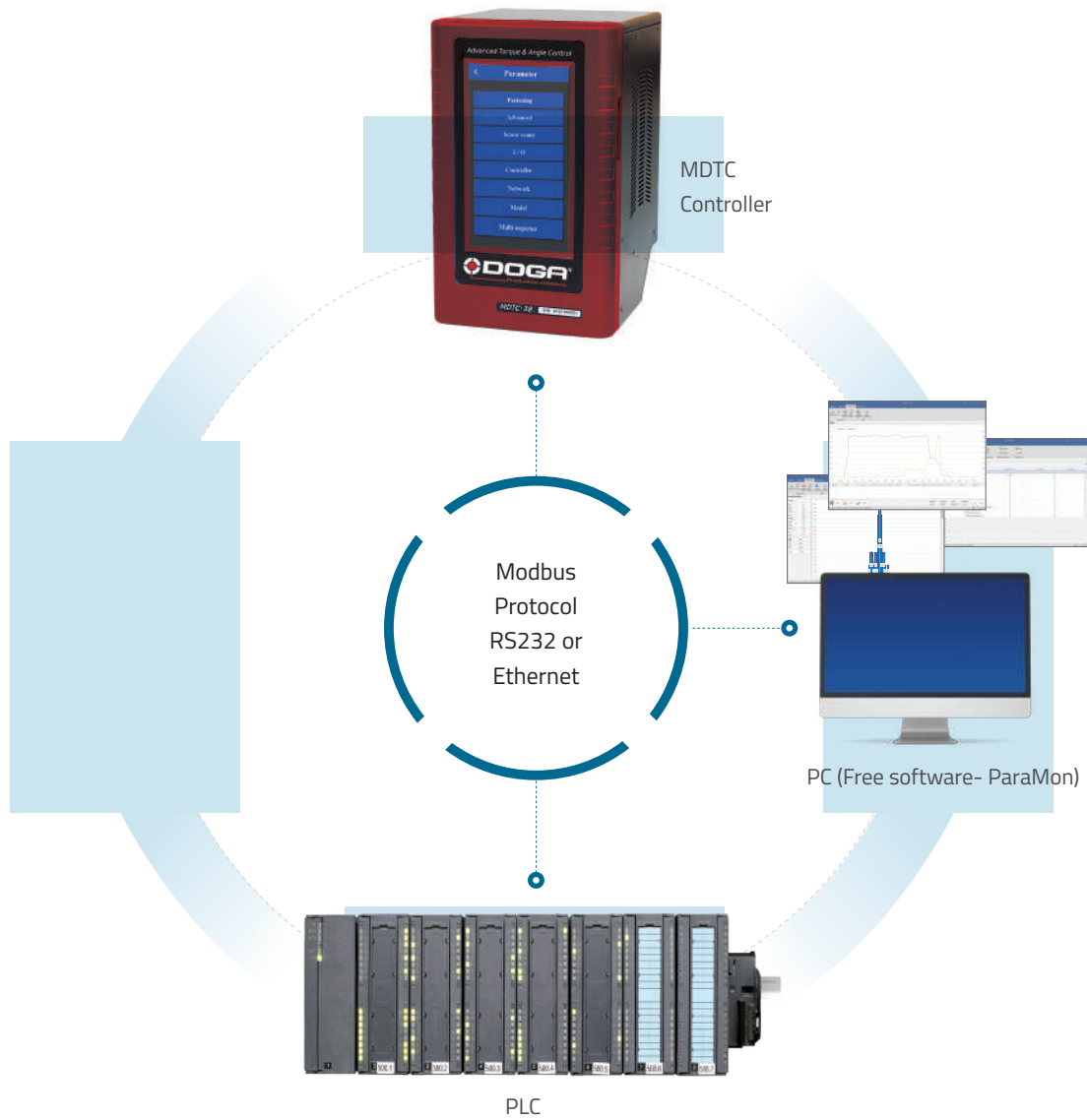
Dimension	160(w) x 260(h) x 180(d)
AC Input	AC 230V 50/60 Hz
LCD	7 inch
Storage	Standard Built-in 8GB SD Card
I/O	15 Input & 8 Output

Software

Management of Firmware Update	SD Card
Firmware	Controller main board / LCD display
Language	English, French, Spanish, German, Czech
Parameter Setting	Controller front LCD / Web Server / Com port, Protocol
Protocol	Modbus, Open protocol
Tightening presets	15 programs consist of 15 key parameters each
Model	15 models consist of 20 steps each
Advanced Function	4 functions for each preset including free reverse rotation, engaging torque detection, thread tapping, angle after torque up

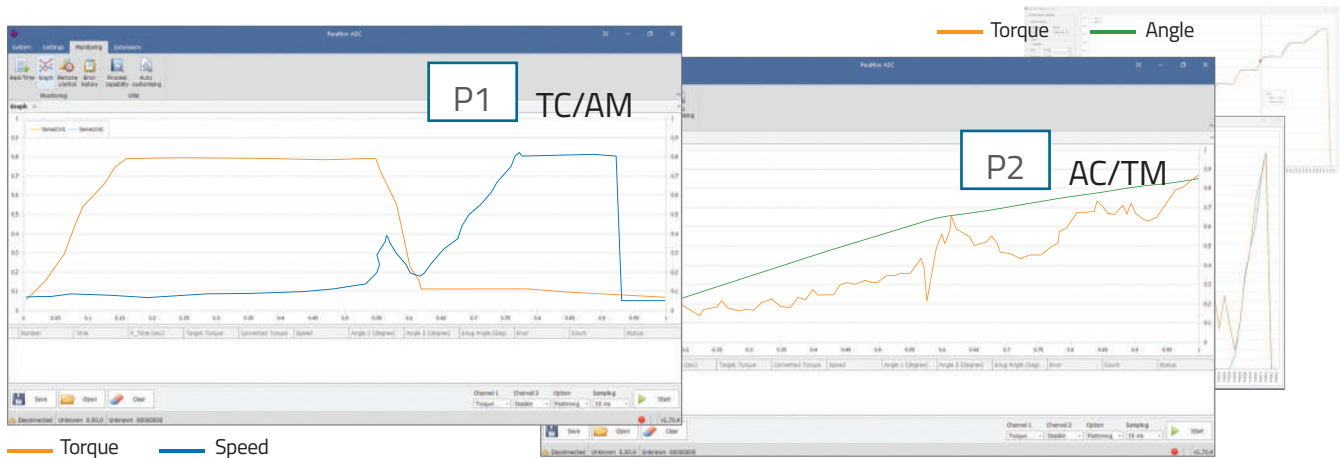
Model	Available tools	Code
MDTC-38	MDT32XX Series, MDTP32XX Series, MDTH32XX Series, MDTA32X Series, MDT26XX Series	4-1055182

CONTROLLER COMMUNICATION AND DISPLAY



TORQUE AND ANGLE TIGHTENING STRATEGIES

Total 15 tightening presets consist of each 15 keys parameters



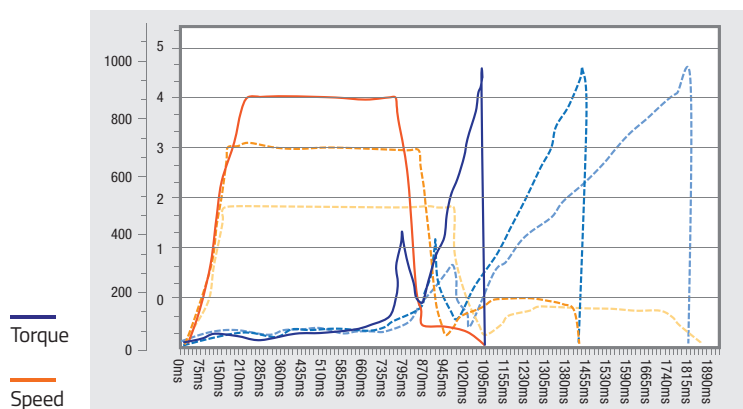
Each preset programs have the customized parameters as below:

- ▶ Tightening mode
 - Torque Control + Angle Monitoring (TC/AM)
 - Angle Control + Torque Monitoring (AC/TM)
- ▶ Torque
 - Target torque, min/max torque, snug torque, seating torque, torque compensation
- ▶ Angle
 - Target angle, min/max angle, free speed angle
- ▶ Speed
 - Target speed, free speed
- ▶ Time
 - Soft start time, torque rising time, torque holding time



Easy guidance to the optimized tightening condition by built-in self customizing simulation feature

Self customizing software will find the optimized parameter condition to provide torque accuracy for the target torque in most fast speed. Just apply tightening with factory setting parameters until the software stop changing parameter setting.



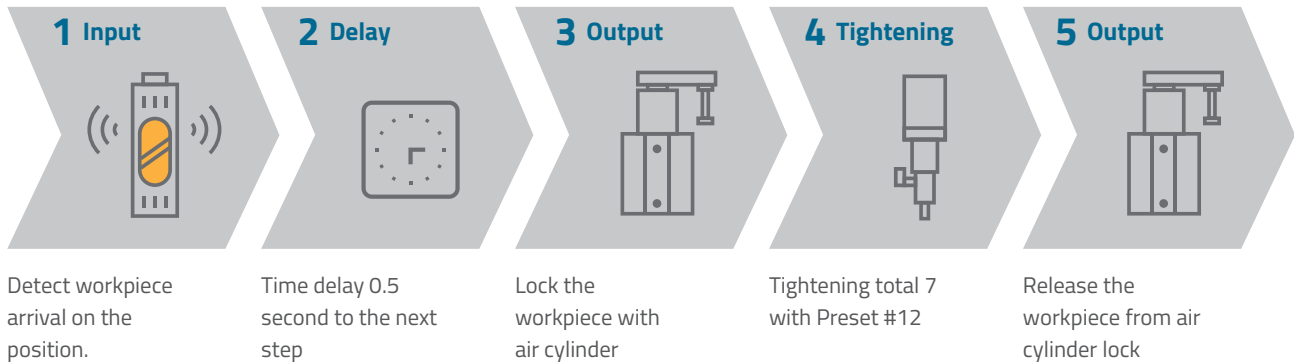
MODELS AND DATA COMMUNICATION

Sequence control by managing tightening preset# and screw counting, Time delay, input & output provides automation without PLC or sequence control device

Total 15 process sequence managing models consist of each 20 steps of sequence program capacity



Sample program of Sequence control



Modbus protocol communication

MDTC provides the Modbus TRU for RS232 and Modbus TCP/IP for the Ethernet port connection together. The following is available through the communication.

- ▶ Parameter read and write
- ▶ Data monitoring
- ▶ Remote control operation

Modbus RTU

Slave ID	F code	Data	CRC
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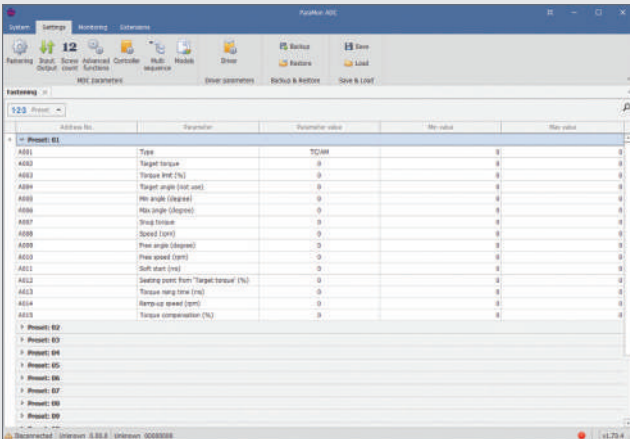
Modbus TCP

Transaction ID	Protocol ID	Length	Unit ID	F code	Data
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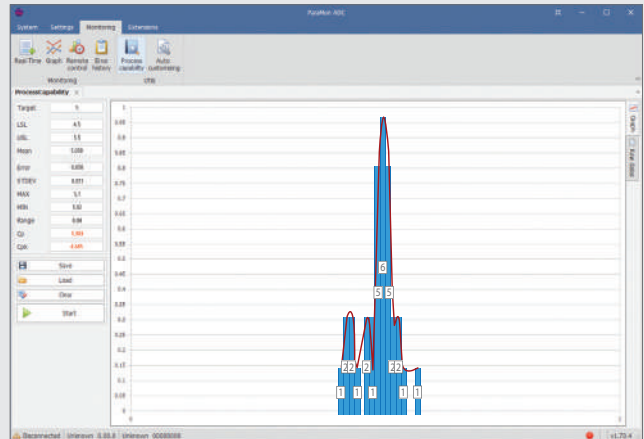
FREE PARAMON SOFTWARE

Free PC software Paramon provides easy parameter setting, data monitoring & analysis

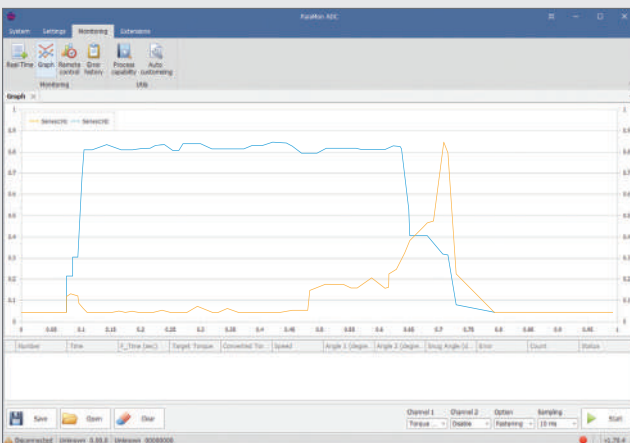
- ▶ 2 channel realtime curve display for torque, speed, angle
- ▶ Torque capability analysis for mean value, standard deviation, CP and CPK
- ▶ Auto data output on every event in Modbus protocol



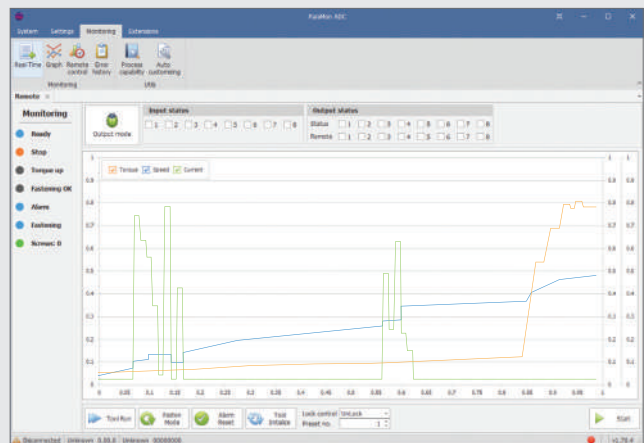
Fastener parameter setting



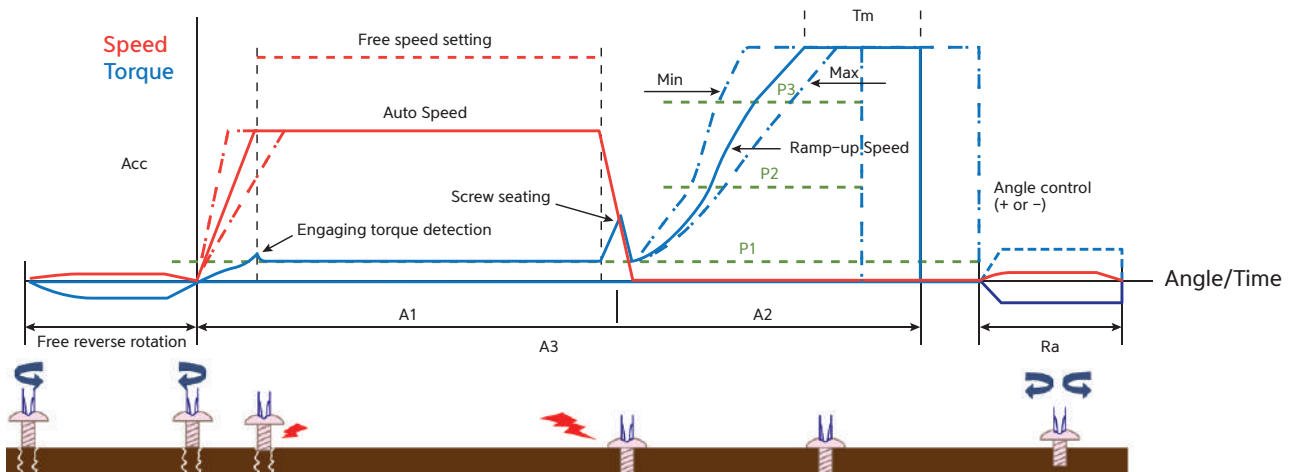
Process capability analysis



Real time graph monitoring (2 channel)



Remote control & monitoring



STAND AND BRACKET



Soon available

Detachable VESA Bracket

Controller can be easily hung on the wall mounted bracket. One part of bracket is assembled on the back of controller, the other one is installed on the wall.

Soon available

Tilting VESA Bracket

Controller can stand on the table with adjustable tilting angle. It can be also mounted on the wall as well.

Soon available

Wall mount Bracket

Controller can be firmly installed on the wall with 4 screws.

SPECIAL CONNECTOR



Designation	Code
90° connector lg 80 mm Position not adjustable	4-1000349

SCREWDRIVER CABLE

Standard cable



Model	Code
CB-MD01-3M Standard	4-1055183
CB-MD01-5M Standard	4-1055184
CB-MD01-8M Standard	4-1055185

VACCUM PICK-UP ASSY (VPA)



Model	Comply with screwdrivers	Code
M20-Hex 1/4"	MDT26xx-A	4-1050589
M23-Hex 1/4"	MDT32xx-A	4-1050590

BIT HOLDER ASSY



Model	Comply with screwdrivers	Code
M20-Dia 7 mm	MDT26xx-A	4-1050586
M23-Dia 7 mm	MDT32xx-A	4-1050587
M20-Hex 1/4"	MDT26xx-A	4-1050588
M23-Hex 1/4"	MDT32xx-A	4-1050589

TELESCOPIC BIT CUSHION (TBC)

Code 4-1050650
Bit socket Hex 1/4"



Code 4-1050651
Square 3/8"



Detachable external 20mm stroke of bit cushion for MDTA spindles.

Model	Available tools	Code
Bit socket Hex 1/4"	MDTA3204, MDTA3206, MDTA3211, MDTA3216, MDTA3220, MDTA3224, MDTA3236, MDTA3245, MDTA3264	4-1050650
Square 3/8"		4-1050651

OPTIONAL ACCESSORIES

RS232 barcode readers - 1D and 2D

To select preset or model.

Bar code is merged to tightening datas on SD memory card or read over Modbus protocol

Designation	Specification	Code	
1D / 2D wired scanner kit RS232 DS2208 Type	Scanner type DS2208 for 1D and 2D barcode reading 2 m USB straight cable, 2 m DB19 RS232 straight cable, 5,2 V power supply for RS232 cable, MDC null modem adapter, M / M MDC gender changer, holder, reading distance from 1 to 35 cm, optical sensor resolution 640 pixels, reading on paper or screen, IP 42, color black	4-5000004	
1D / 2D wireless scanner kit RS232 DS2278 Type	Scanner type DS2278 for 1D and 2D barcode reading Bluetooth wireless (max. range 100 m), charging station / holder, 2 m USB straight cable, 2 m DB19 RS232 straight cable, MDC null modem adapter, M / M MDC gender changer, reading distance from 1 to 35 cm, optical sensor resolution 640 pixels, reading on paper or screen, IP 52, color black	4-5000005	
1D / 2D wired scanner kit RS232 DS3608 Type	Scanner type DS3608 for 1D et 2D barcode reading Programmable and intelligent, 2 m DB19 RS232 straight cable, 12 V power supply for RS232 cable, MDC null modem adapter, M / M MDC gender changer, holder, reading distance from 1 to 150 cm, optical sensor resolution 1280 pixels, reading on paper or screen, IP 67, color black / green	4-5000008	
1D / 2D wireless scanner kit RS232 DS3678 Type	Scanner type DS3678 for 1D and 2D barcode reading. Programmable and intelligent, Bluetooth wireless (max. range 100 m), charging station / holder, 2 m USB straight cable, 2 m DB19 RS232 straight cable, MDC null modem adapter, M / M MDC gender changer, reading distance from 1 to 150 cm, optical sensor resolution 1280 pixels, reading on paper or screen, IP 67, color black / green	4-5000009	



Necessary to adapt scanner RS232 to MDC controller serial port.



All scanners can read barcodes as well as 2D codes



No : 12345678900000000000

I/O BOX : wiring box SUB-D44

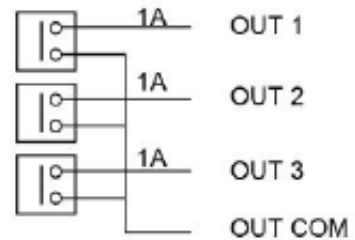
For easy and convenient wiring – 8 inputs and outputs of MDTC controller by sharing one single 24V power source.



Output port has the relay contact with the max 1A capacity for each port.

Be sure that the 24VDC power supply should have enough capacity for total output load.

Model	Code
44P I/O wiring box	4-1050593
I/O cable/MDC controller	4-1050595
DC Adaptater + Power cable	4-1050599 + 4-1050600



Information

Inputs 9 to 15 dedicated to models cannot be connected to IO box..

BIT SOCKET TRAY

The bit socket tray makes sure your operator selects the correct bit and the correct tightening program.

It can be used in two ways:

- ▶ Slave: it tells the operator which bit to use to perform the assembly operation.
- ▶ Master: It selects the tightening program associated with this bit when the operator takes a tightening bit.

BS-5C color ID bit tray



- ✓ **No default**
Bit coding by color recognition
- ✓ **Easy setting**
Self-learning of bit color on each slot position, choice of program assignment for each bit, several languages available
- ✓ **Bit's capacity**
Suitable for all types of bits and sockets: halfmoon, hex. 1/4", (max. Ø 19 mm, length 49 to 250 mm)
- ✓ **Ergonomics**
Horizontal or vertical mounting, angle adjustment, visible bit footprint, rings leds around slots for easy selection, bright OLED display

BST - LCD with magnet sensor



- ✓ **Wide capacity**
4 models from 4 slots to 16 slots to lay flat on a small foot print
- ✓ **Easy setting**
AMOLED color display with operation and settings menu
Number of active slots can be set up
- ✓ **Adaptive bit mapping**
Assignment of Socket no and screwdriver Preset # can be direct 1 to 1 matching of flexible
- ✓ **Bit's capacity**
Suitable for all types of steel bits and sockets up to 18 mm

DOGATEC

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