

DSM Tightening Control System MultiPro TA

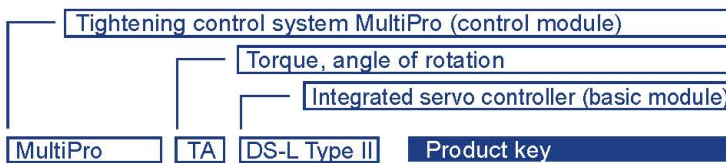


Programmable control unit with integrated servo controller for all DSM tightening tools of the DS series with direct (TQA) or indirect (CC) torque measurement.

MultiPro

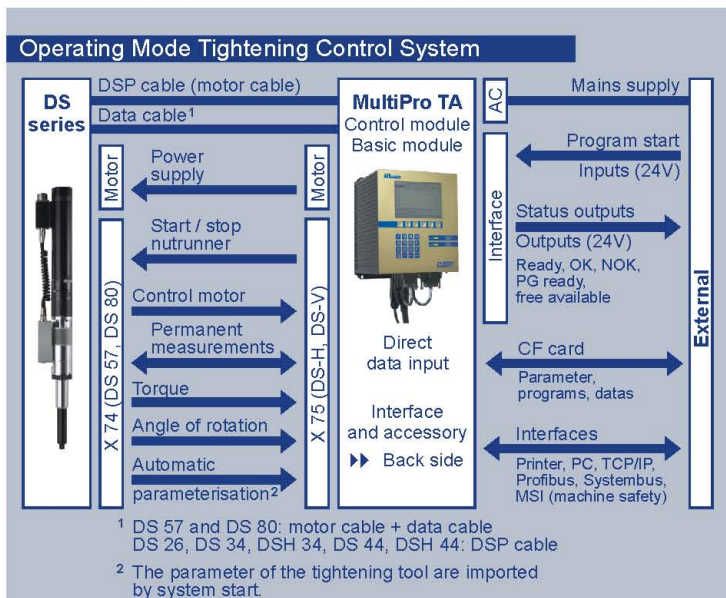
The high-end tightening control system for complex and high-precision tightening operations.

Universal and flexible usable for manual work stations, automatic stations as well as multi-channel system solution.



Integrated servo controller (basic module)			
Type of nutrunner	Basic module	Mains supply	
DS 26	DS-S	230 V / 50 Hz	115 V / 60 Hz
DS 34 / DS 44	DS-L	230 V / 50 Hz	115 V / 60 Hz
DSH 34 / DSH 44	DS-LH	230 V / 50 Hz	115 V / 60 Hz
DS 57	DS-H	230 V / 50 Hz	115 V / 60 Hz
DS 80	DS-V	3 x 400 VAC / 50 Hz	

- Power supply of the control module and of the DS tightening tool
- Servo motor control and monitoring
- Electrical activation of the servo motor with monitoring of max. current, max. temperature and cable break



- 5,7" LCD display with illumination
- Display of the graphic recording
- LED status reports for torque and angle of rotation
- Keyboard and function keys
- Programming and parameterisation directly at the unit or via included PC software
- Freely programmable tightening operations
- 128 programs and 127 subroutines available
- 200 instructions per program possible
- Extensive programming environment
- Test routine for testing of the program sequence (single-step mode, control of cycle time)
- Digital measuring signal processing
- Traceable calibration
- Automatic self test of the tightening control system and of the DS nutrunner
- Mobile long-time memory 128 MB (compact flash card) as backup and production memory
- Ring buffer for 500 data sets
- Parameter / program backup in EEPROM

Technical Datas Back side

Tightening Control System MultiPro TA	
Size of case	201 x 280 x 231 (128*) mm (BxHxT)
Weight of the unit	about 6,5 kg - 12 kg
Protection class	IP 40 (optional IP 54)
Mains voltage	depending on the servo controller

* Servo controller DS-S

Our Impulse Your Quality.

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Technical Datas Tightening Control System

The control module MultiPro is available as tightening control system (TA) and as press-in control system (FL).

- = Standard
- = Options
- = Not available

DSM tightening tools

DS nutrunner execution **TQA**

DS nutrunner execution **CC**

MultiPro TA

Number of programs / number of subroutines (macros) ¹	128 / 127
Number of instructions per program	200
Instruction set (programming commands)	37 instructions
Maximum number of tightening stages per program	199
Flow trace (with instruction execution times as well as program elapsed times)	●
Long-term memory for production datas (display of the measurands)	●
Internal ring buffer for measurands ²	500 data sets
Mobile long-term storage with backup function, compact flash card 128 MB	●
Statistics memory (OK evaluation, average value, machine capability and process capability)	2 per program
Available tightening processes (turn-in and turn-out, releasing)	6
- Switch-off via torque	●
- Hold torque	●
- Switch-off via angle of rotation	●
- Hold angle of rotation / position	●
- Switch-off via initiator	●
- Untightening processes	●
- Yield point processes	○
- Switch-off via external sensor (0 ... 10 V)	○
- Friction torque check	○
- Rolling torque measurement	○
- Addition of the rolling torque to the switch-off torque	○
- Parallel collection of a force during the tightening process	○
- Redundant measuring circuit torque TQ, additional monitoring by all tightening processes	○
Angle of rotation measurement via digital absolute angle of rotation encoder	●
Angle of rotation resolution by digital absolute angle of rotation encoder	0,1 °
Angle of rotation measurement via motor sensoric	●
Angle of rotation resolution via motor sensoric	Depending on the nutrunner
Torque measurement via digital torque transducer	●
Torque measurement via motor current	○
Classification of the torque measurement acc. to VDI / VDE 2862	1
Sampling rate	1 kHz
Input / output of angle of rotation values in degrees [°]	●
Input / output of torque values in Nm	●
Input / output of speeds in rpm	●
Access control / access journal integrated in the unit	●
User administration integrated in the unit	●
Single-step mode integrated in the unit (for test of the tightening program)	●
Firmware update via PC	●
Firmware bilingual, reversible	●
Graphics recording and presentation of the measurands	●
Traceable calibration of the transducers	●
Parameterisation and programming via PC or upload via CF card	●
Parameterisation and programming at the unit	●
Control electronics (SM) and servo controller (BM) in one case	●
Protection class standard	IP40
Protection class optional	IP54
Dimensions (Width / Height / Depth) depending on the unit	201 / 280 / 128 201 / 280 / 231
Mains voltage, depending on the unit (servo controller)	230 V / 50 Hz 115 V / 60 Hz
Weight, depending on the unit (servo controller)	3 x 400 VAC / 50 Hz
LCD display	6,5 - 12 kg
Keyboard	320 x 240 pixel
V24 interface for PC	22 keys
V24 interface for printer	●
Profibus interface	●
Ethernet interface (TCP/IP)	○
MSI interface (machine safety interface, emergency power-off)	○
Interface, 4 inputs, 4 outputs (24 V / 100 mA, DC, potential free)	●
DSM systembus interface (for connection of DSM accessory)	●
Accessory IO-Extension (extension of the inputs and outputs to up to 128 I/O)	○
Accessory Printer PR-II	○
Accessory DSM radio controlled clock for the tightening control system	○
Accessory ToolControl; tool administration, monitoring of the tool removal, allocates press-in sequences (programs) to the respective tools	○
Accessory DCM-Extension; for activation of an external DC motor, e.g. workpiece adjustment	○
Accessory P CONTROL; position control electronic, monitoring XYZ coordinates	○
Accessory Status Indication; external status report in different executions, like e.g.: with program selection 1-9 or program selection 1-99, with start switch, with NOK key switch	○

1: Often recurring processes can be programmed in subroutines. The user can include these into arbitrary tightening programs.

2: Ring buffer which stores production datas (torque, angle of rotation, date, time, tightening process, program no., evaluation) nonvolatile.