

MINIMAT-ED Digital Electric Screwdriver, stationary

Straight handle design: torque ranges between 0.24 - 4.8 N·m

- process reliable
- flexible
- functional variety
- documentation capable
- economical
- simple integration

The new MINIMAT-ED is available in four versions for torques between 0.24 to 4.8 N·m at speeds of 1500 rpm. The speeds can be individually adjusted up to the maximum speed for each screwdriver type. The screwdriver spindles also benefit from a particularly slim design and are comfortably lightweight.

Use the interface 330E to connect to and communicate with a system controller when operating the stationary MINIMAT-ED screwdriver. All hardware components required should be integrated into a control cabinet.



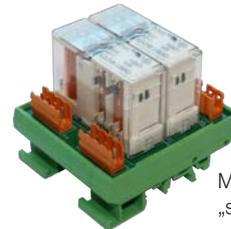
ADVANTAGES



Interface 330E

The DEPRAG controllers DPU050, DPU100 and DPU200 can now be used to control the MINIMAT-ED screwdriver alongside the **interface 330E for signal and data exchange** between the system controller (PLC) and the **screwdriver control electronic**. In combination with the software modules to be installed on the DPU, single and multi-channel EC screwdriving solutions can be integrated at low cost into the control concept of complete systems.

As well as using the existing control solution to adjust and control the screwdriver, there is also another advantage to the option of integrating screwdriving results into the specific system visualisation, e.g. for the display of result values relating to the screw position.



Module
„safe stop“

Description of functions

Screwdriving functions

In order to implement individual screwdriving procedures there are five screwdriving programmes (PG1 to PG5) available on the screwdriver, each with a three step programme structure. The procedure consists of search run, torque and angle screw assembly. There are also five loosening programmes available (PG6 to PG10).

Control and adjustment

The control and adjustment of the screwdriver is carried out via an Ethernet connection between DPU and the interface 330E:

- the integrated web server is used for adjustment and configuration (e.g. for adaptations to screwdriving programmes);
 - to display the web interface when using the DPU50 and DPU100 a separate PC/laptop is required
- control of the screwdriver is carried out via TCP/IP (e.g. programme selection and start) when using DPU specific driver software

Documentation

- status messages on the DPU: OK, NOT OK, READY
- screwdriving results, options: result values via TCP/IP interface, actual.csv
- no transfer of screwdriving curves

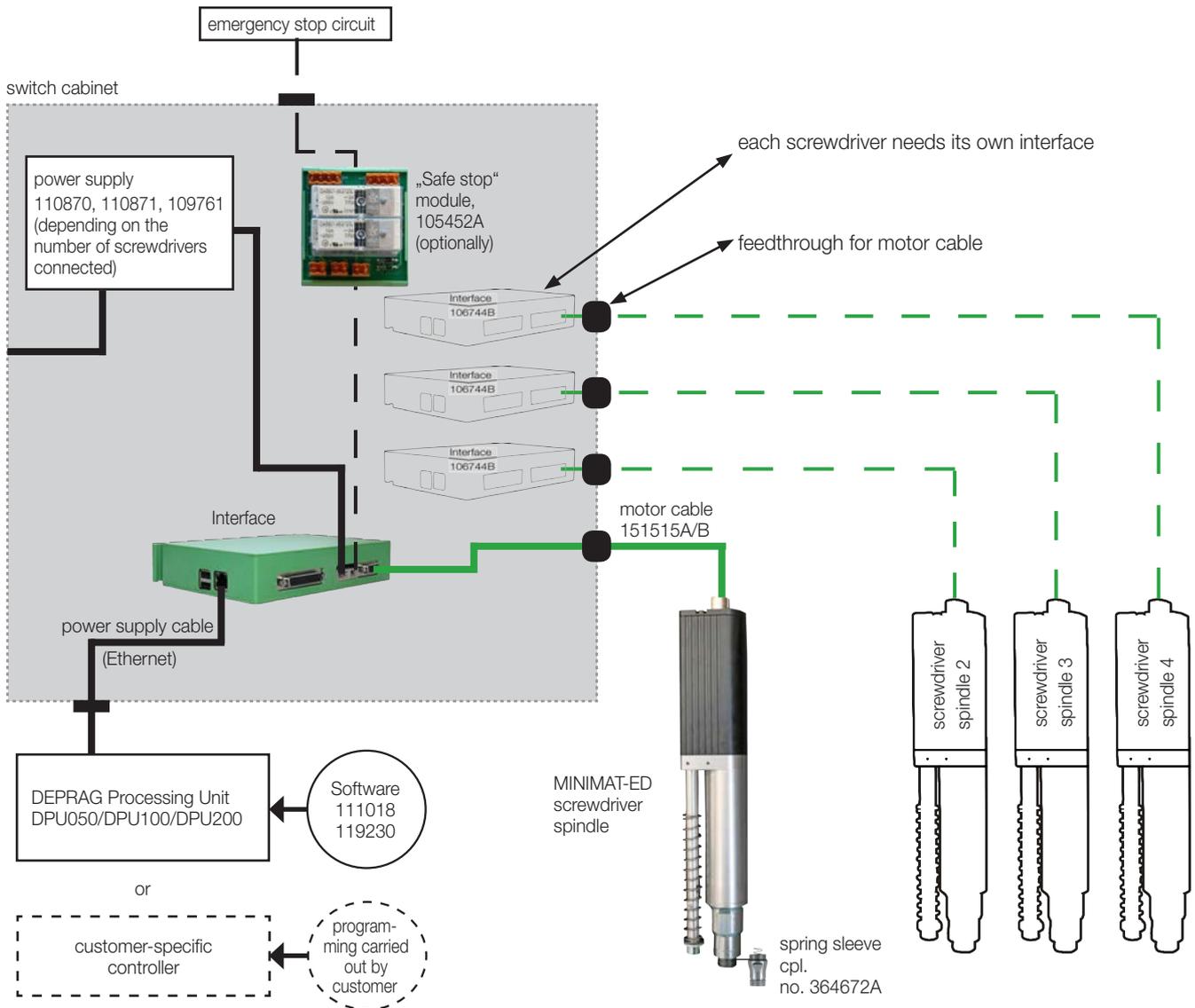
Visualisation

- a standard visualisation for the DEPRAG controllers DPU050, DPU100 and DPU200 is an integral part of each driver software
- customer specific visualisation can be created by the user

Integration into additional system control systems (PLC)

- using features on the TCP/IP interface application specific implementation of the control and visualisation can be carried out, e.g. for display of screw positions, with OK/NOT OK
- for customer specific controller the communication protocol is described in the operating manual
- request to the PLC: integrated PC functionality (TCP/IP interface)

SYSTEM SET UP AND COMPONENTS



The hardware components required for the adjustment, control and power supply of the screwdriver are intended for integration into a control cabinet.

The screwdriver is connected to the interface 330E using a motor cable. The additional connection to the DPU uses a network cable (Ethernet). A power supply is also required, possibly the „safe stop“ module (optional components) and an Ethernet switch in multi-spindle systems.

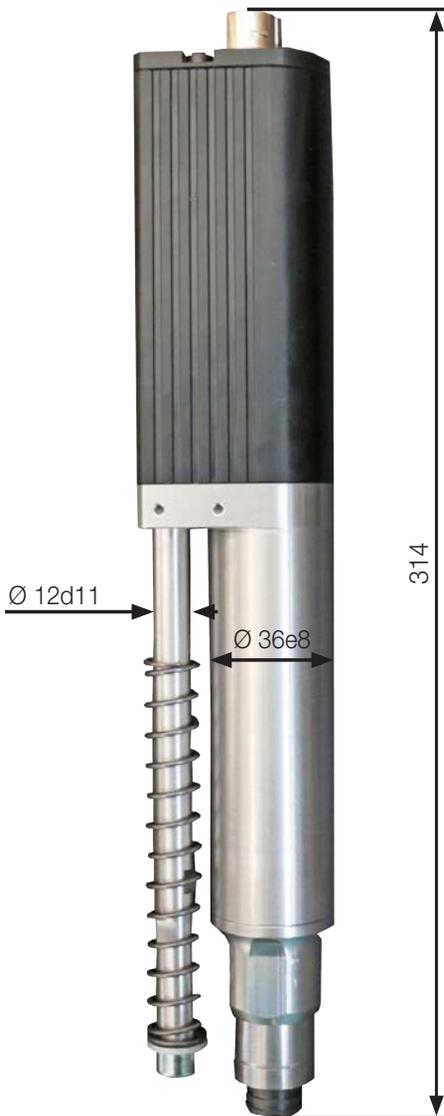
The necessary circuit diagrams for the electrical engineers are of course available from DEPRAG to enable integration of the components. The motor cable is connected directly to the plug on the interface 330E. There must be provision for cable feedthrough on the control cabinet.

Alternatively, we can deliver a complete system including an already integrated and wired-up control cabinet. Please contact us, we will be happy to provide you with a quotation.

SYSTEM COMPONENTS

MINIMAT-ED SCREWDRIVER SPINDLE, Straight handle design, size 36

| Screwdriver spindle | Type | 330E36-0012 | 330E36-0018 | 330E36-0032 | 330E36-0048 |
|---|------------|-------------|-------------|-------------|-------------|
| | Part no. | 450000A | 450000B | 450000E | 450000C |
| Torque min. | N·m/in.lbs | 0.24 / 2.1 | 0.36/3.2 | 0.64/5.66 | 1.0/8.85 |
| Torque max. | N·m/in.lbs | 1.2/10.6 | 1.8/15.9 | 3.2/28.3 | 4.8/42.5 |
| Speed min. | rpm | 150 | 150 | 120 | 90 |
| Speed max. | rpm | 1500 | 1500 | 1200 | 900 |
| Diameter | mm/in. | 36/1.4 | 36/1.4 | 36/1.4 | 36/1.4 |
| Length | mm/in. | 314/12.25 | 314/12.25 | 314/12.25 | 314/12.25 |
| Weight | kg /lbs. | 1.2/2.6 | 1.2/2.6 | 1.2/2.6 | 1.2/2.6 |
| Line voltage (DC) | V | 48 | 48 | 48 | 48 |
| Internal hex drive DIN ISO 1173 | | F6.3 (1/4") | F6.3 (1/4") | F6.3 (1/4") | F6.3 (1/4") |
| Suitable inserting tools and connection parts with inserting end DIN ISO 1173 | | E6.3 (1/4") | E6.3 (1/4") | E6.3 (1/4") | E6.3 (1/4") |



| Status P1:OK | |
|--------------|-----------|
| Torque [N·m] | Angle [°] |
| 1.49 | 2541 |

Standard visualisation for DPU (torque assembly)

SYSTEM COMPONENTS

Required components for the installation into a switch cabinet

| | | | |
|---|-------------------------|------------------------------|--|
| Motor cable length 2 m alternative Motor cable length 5 m | Type Part no. | KS4-2M 151515A | To connect the screwdriver with the interface 330E. |
| Motor cable length 5 m | Type Part no. | KS4-5M 151515B | |
| Power supply single 240W-48V 2-fold 480W-48V 4-fold 960W-48V | Part no. | 110870 110871 109761 | Selection depends on the number of screwdrivers used. The different power supply options can be combined with one another. |
| Interface 330E  | Type Part no. | 330E 106744B | The interface 330E allows simple adjustment of screwdriving programmes, recording of result values via the integrated WEB server as well as control of the MINIMAT-ED spindle screwdriver. It has an Ethernet connection and two USB ports. All settings can be carried out comfortably on the web interface (e.g. DPU, PC, laptop ..). Several language options are available. Each screwdriver requires its own interface 330E and is reached via its own individual IP address. |
| Software (driver software for DPU050/100) | Type Part no. | 330E-DPU-CE 119230 | The software module is activated on the DPU and is required for communication and data exchange between the DPU050/DPU100 and the screwdriving system 330E. A description of the range of functions of the software is included. |
| Software (driver software for DPU200) | Type Part no. | 330E-DPU200 111018 | The software module is activated on the DPU and is required for communication and data exchange between the DPU200 and the screwdriving system 330E. A description of the range of functions of the software is included. |

Optional accessories for the screwdriver spindles

| | | | |
|--|----------|---------|--|
| Spring sleeve cpl. | Part no. | 364672A |  Spring sleeve |
| Spring sleeve cpl., with vacuum connection (in connection with finder, see brochure: Inserting tools D3320E) | Part no. | 364672C | |

Optional component for the installation into a switch cabinet

| | | | |
|---|----------|---------|--|
| „Safe stop“ module  | Part no. | 105452A | The “safe stop” module disconnects the power supply to the screwdriver. The power supply to the interface 330E remains connected. Disconnection is carried out on two channels with monitoring contacts, so that Performance Level e in accordance with EN ISO 13849-1 is fulfilled (functional safety). Each “safe stop” module can be used to protect up to three screwdrivers. After triggering the safety-cut off around 10s is needed for the screwdriver to return to operational readiness. |
|---|----------|---------|--|



At DEPRAG, we are committed to constantly improving our software solutions. To harness these benefits, we recommend regularly updating to the latest edition. For more information, please contact our service department at service@deprag.de.

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