



D-MAXE with OI-TS

Operating Instructions



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1 INTRODUCTION

About these operating instructions

These operating instructions describe the installation, commissioning, operation and maintenance of the D-MAXE system with an operator interface OI-TS and provide important instructions for proper use.

These operating instructions are intended for both the system construction master as well as the operator who uses the D-MAXE system in production. The Operating Instructions must be read and applied by everyone who is responsible for commissioning, operating or maintaining the D-MAXE systems.

The Operating Instructions must be carefully kept and must

always be available throughout the service life of the D-MAXE system.



Note:

These Operating Instructions describe basic operation of the D-MAXE systems. Additions and customer-specific adaptations are found in Supplementary Operating Instructions in the system documentation.

If the customer's system consists of multiple D-MAXE Controllers and/or operator interfaces, the instructions in these Operating Instructions must be performed separately for each module.

Translation of the original Operating Instructions:

These Operating Instructions are a translation. The original Operating Instructions were composed in German.

Proper use

The D-MAXE System is used to control systems such as:

- Control roller systems
- Unwind and rewind systems
- Slitting systems
- Tool positioning systems

The D-MAXE system works in different functions:

- Edge guiding
- Center guiding
- Line guiding (edge or center guiding on printed lines).

The D-MAXE system must only be used in accordance with its intended purpose and must be in flawless technical condition. Unauthorized conversions or changes to the D-MAXE system are not permitted.

Any other use of the D-MAXE system requires the prior approval of Fife-Tidland GmbH.



Note:

The modules of the D-MAXE system must not be opened. If a module is opened, no claims under the warranty will be honored.

Options

Customer-specific programming and different sensors and actuators make it possible to adjust the D-MAXE system to a wide variety of applications.

Improper use

- Operation outside of the technical specifications is not permitted.
- Operation in areas where there is a danger of explosions is prohibited.
- Any use other than the designated use is not permitted.

Operating principle

The D-MAXE system consists of various modules that can be combined depending on the specific application.

Modules



Figure 1.1: Controller, D-MAXE 1 and D-MAXE 2

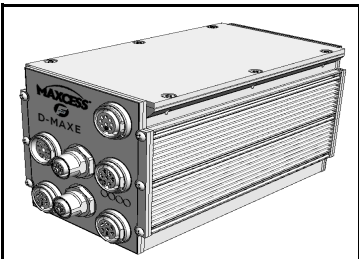


Figure 1.2: Controller, D-MAXE 3



Figure 1.3: Operator interface

D-MAXE Controllers

- integrated into a guiding system or for wall mounting
- D-MAXE 1 Controller:
for the drive of a control loop
- D-MAXE 2 Controller:
For the drive of two independent control loops
or
one control loop with automatic sensor positioning
- D-MAXE 3 Controller:
For the drive of three independent control loops or
combinations of control loops with automatic sensor
positioners

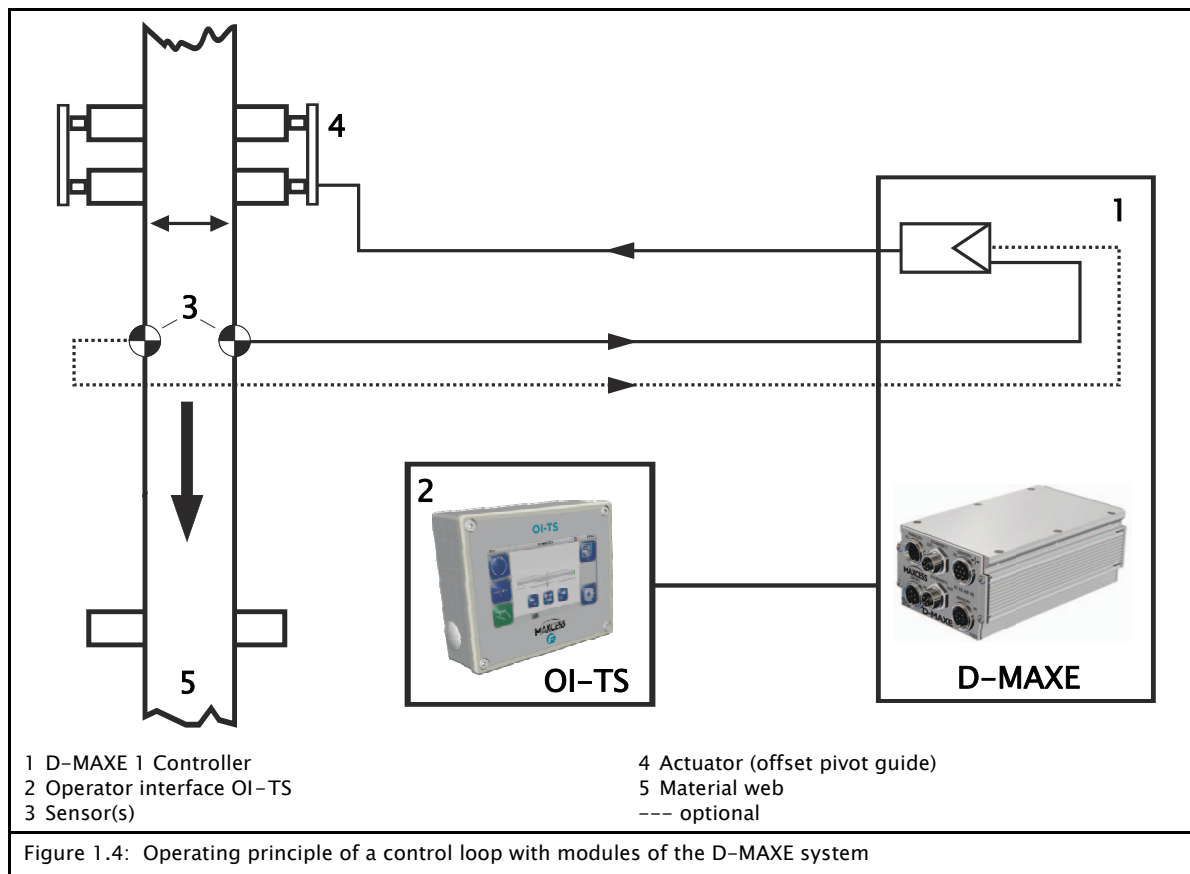
D-MAX Operator interfaces

- Operator interface OI-TS for desk installation or wall mounting:
for operating of D-MAXE controllers or sensors
- PC-based virtual operator interface

Operating principle

Figure 1.4 shows an example of edge guiding (optionally center guiding) with a D-MAXE system. The D-MAXE system consists of a D-MAXE 1 Controller (1) and an operator interface OI-TS (2).

A sensor (3) senses the web edge of a material web and determines the current position of the web. The D-MAXE 1 Controller receives this information and guides the material web (5) by means of an actuator (4) so that it is always in the desired target position.



2 SAFETY INSTRUCTIONS

Important information

Problem-free and reliable operation of the D-MAXE system requires that the D-MAXE system is

- properly shipped and stored,
- properly mounted and placed in operation,
- properly used and carefully maintained.

Proper operation and careful maintenance will ensure a long service life for the D-MAXE system.

Only persons who are acquainted with the installation, commissioning, operation and maintenance of the system and who possess the necessary qualifications for their activities may work on the D-MAXE system.



Please note the following:

- The content of these operating instructions
- The safety instructions printed on the unit
- The requirements of the machine manufacturer
- National, state and local requirements for accident prevention and environmental protection

Information about safety instructions

The safety instructions and symbols described in this section are used in these Operating instructions. They are used to avoid possible dangers for users and to prevent material damage.



SIGNAL WORD

Source of danger and its results.

⇒ Avoiding dangers

The signal word **WARNING** refers to the danger of moderate to severe bodily injuries.

The signal word **CAUTION** refers to the danger of slight to moderate bodily injuries or material damage.

Symbols

**Warning/caution – dangerous area**

Reference to general hazards that may result in bodily injuries or damage to the device

**Warning/caution – danger due to crushing**

Refers to danger of injury caused by crushing

**Warning/caution – danger due to cutting**

Refers to danger of injury caused by cutting

Additional symbols

- This en dash is followed by an enumeration.
- This dot is followed by a prompt to do something.

**Note:**

Reference to important information.

Preventing hazards

Installation and commissioning

- Damaged modules of the D-MAXE system must not be installed or placed in operation.
- Assembly work must be performed while the machine is stopped and protected against being turned on again.
- All assembly tasks must only be performed when there is no electrical power in the system.
- The D-MAXE system must only be placed in operation if all components are securely assembled.
- Electrical connections on the modules of the D-MAXE system must only be made or disconnected when the electrical power is turned off. Failure to follow these instructions may result in damage to the D-MAXE system.
- The parameters specified in Section *Technical Data* must be observed.

- Only replacement parts that have been approved by Fife-Tidland may be used.
- No changes may be made to the D-MAXE system.
- Electrical lines must not be subjected to any mechanical loads.

Operation



- Danger of injury by crushing
⇒ Do not place your hands on or near moving parts (rollers, material web, etc.) during operation.



- Danger of injury due to cutting on the edge of the material web
⇒ Do not place your hands on the edge of the (moving) material web during operation.
- D-MAXE system modules damaged during operation must be decommissioned.

Maintenance



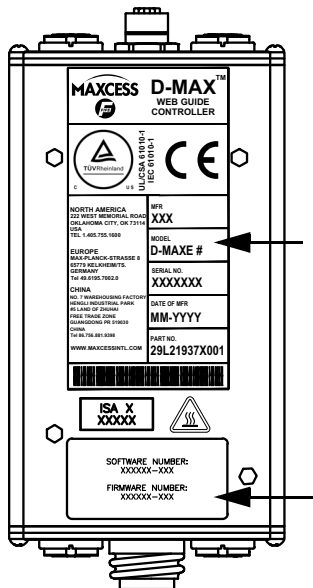
- Danger of injury by crushing
⇒ Maintenance work must only be performed on the D-MAXE system when the power is turned off, the machine is stopped, and it is protected against being turned back on.

3 INSTALLATION

Transport and storage

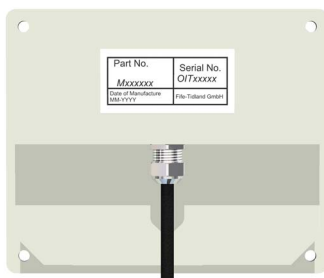
- Modules of the D-MAXE system must be secured to prevent them from slipping during transport.
- The modules must be kept cool, clean and dry.
- Operator interfaces OI-TS must not be stored close to powerful magnetic fields. The electronic components of the device could be damaged.

Scope of delivery



- D-MAXE Controller
The model designation, serial number, and the firmware and software numbers are on the rating plates on the housing.
- Operating Instructions

Option



- Operator interface OI-TS
The model designation and the serial number are on the rating plates on the housing. The firmware and software numbers are affixed to the side of the housing (see [figure 3.4, page 3–5](#)).
- Fastening materials for wall mounting
- Fastening material for installation in panel

Mounting



WARNING

⇒ All assembly tasks on the D-MAXE system must be performed when there is no electrical power in the system.

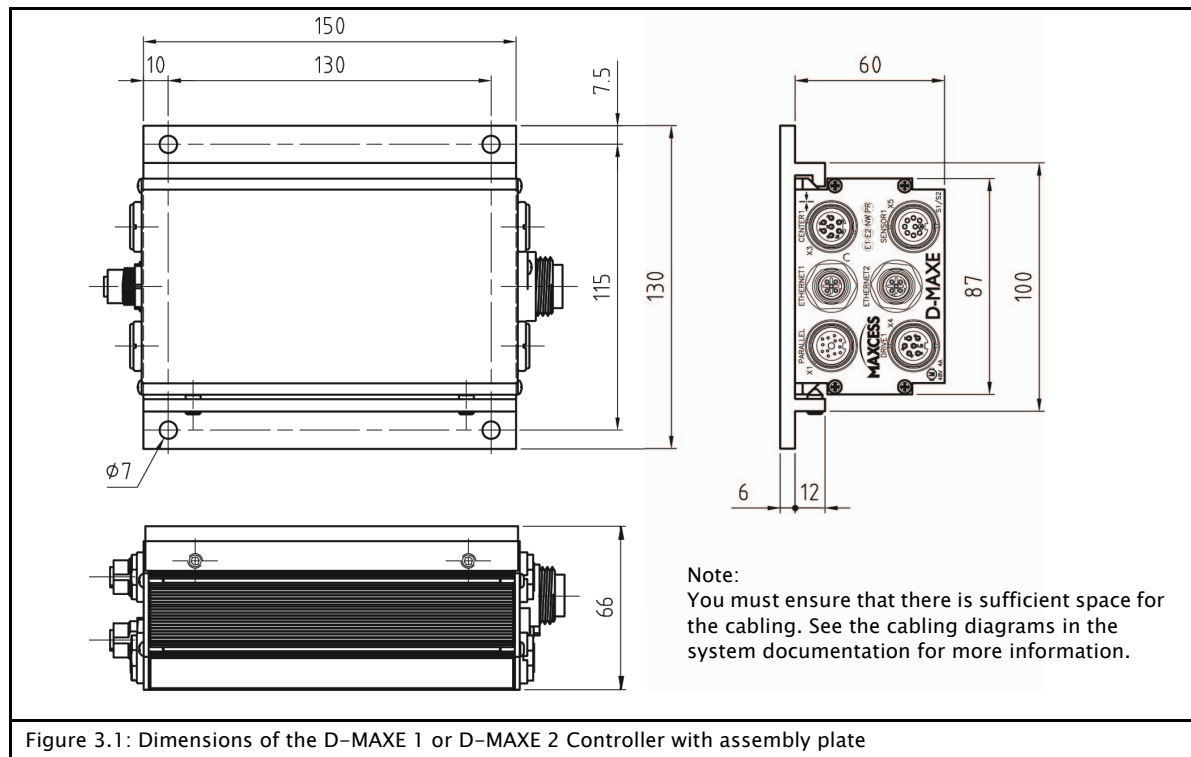
⇒ Assembly tasks and mechanical settings must only be performed when the machine has been stopped and secured from being turned on again.

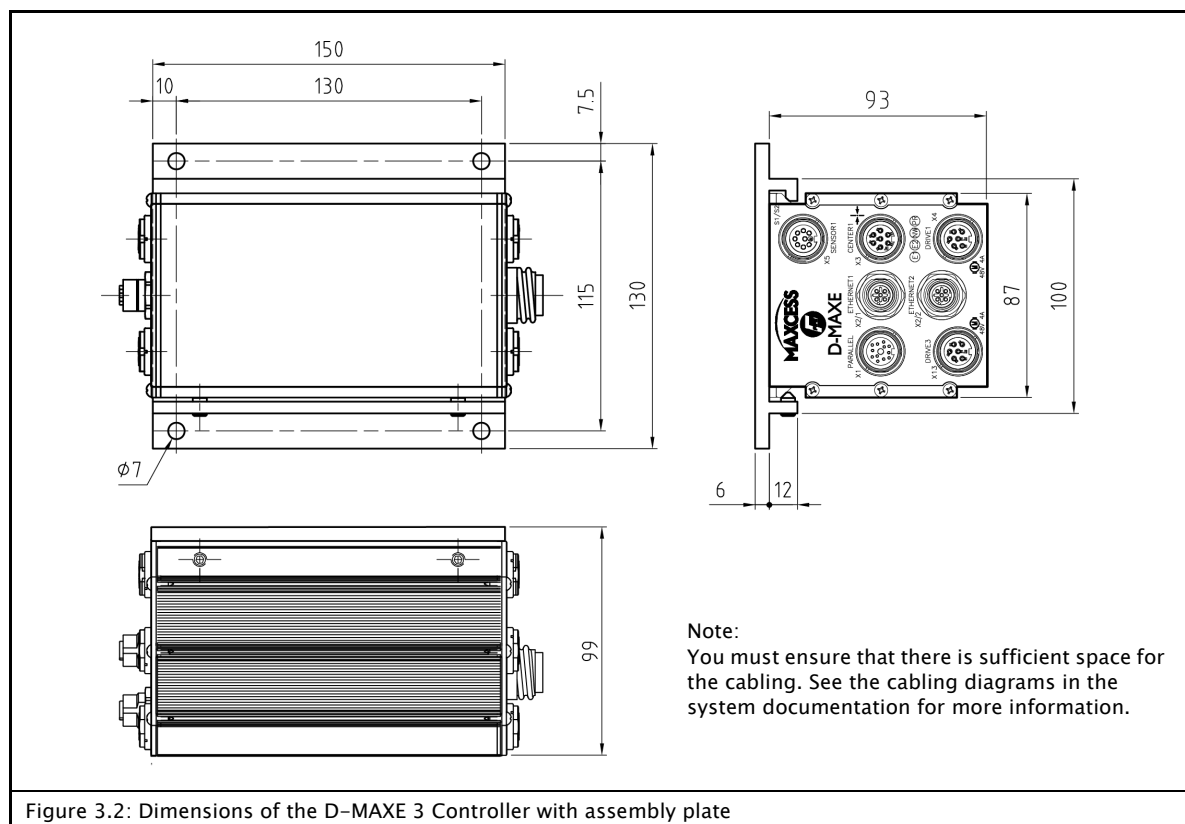
Installation location of D-MAXE Controller

- Protection class: IP54
- Operating temperature: 0°C ... 60°C
(see *Technical Data, page 11-1*).
- Relative humidity: 10% to 90% non condensing
- Operating altitude above sea level: maximum 3000m
- On a fixed machine part or on a wall
- Not in places where there is a risk of explosions.

Mechanical fastening of D-MAXE Controller

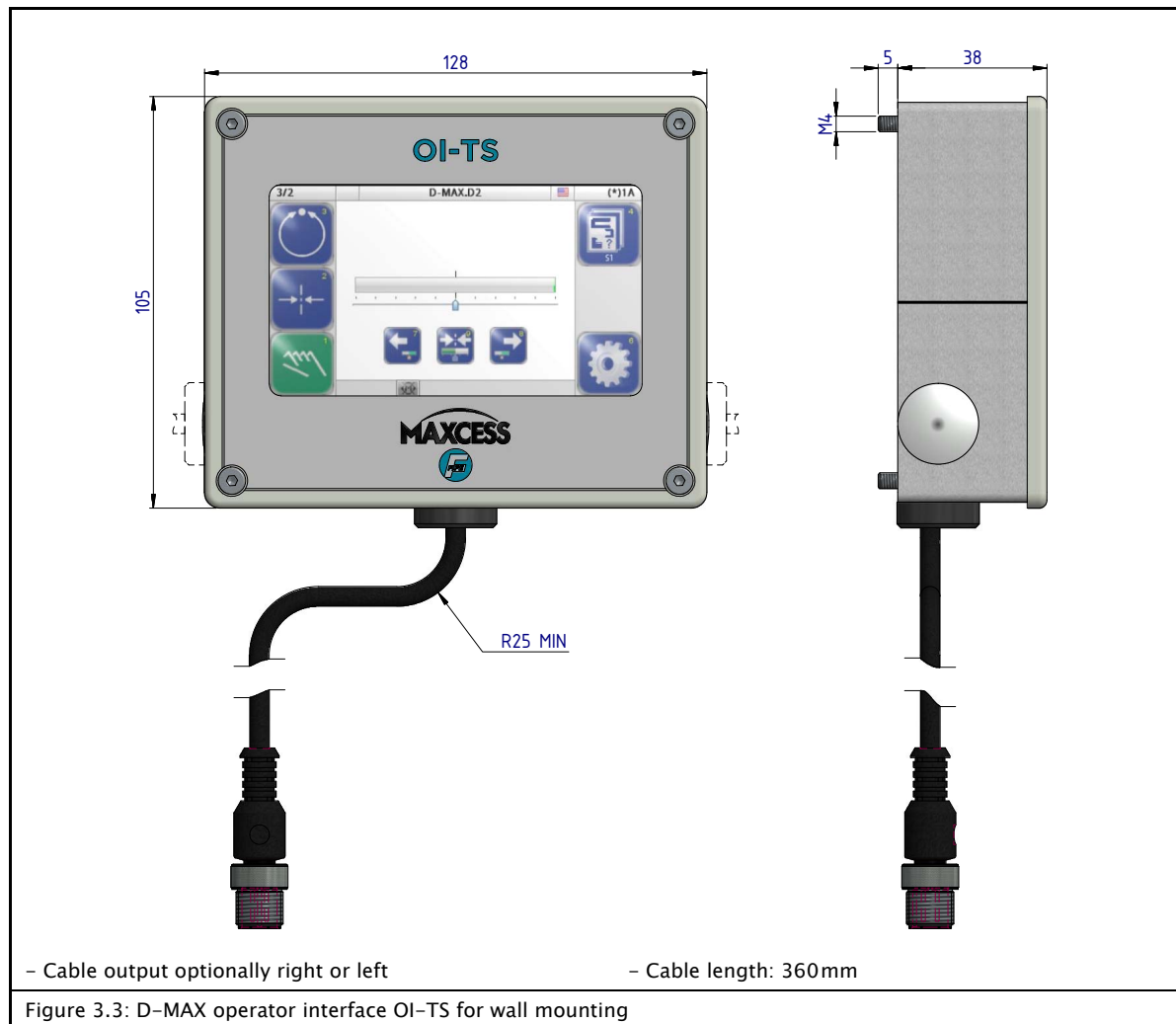
- Built into a guiding system or
- With an assembly bracket (optional) for wall mounting (see [figure 3.1](#)) or

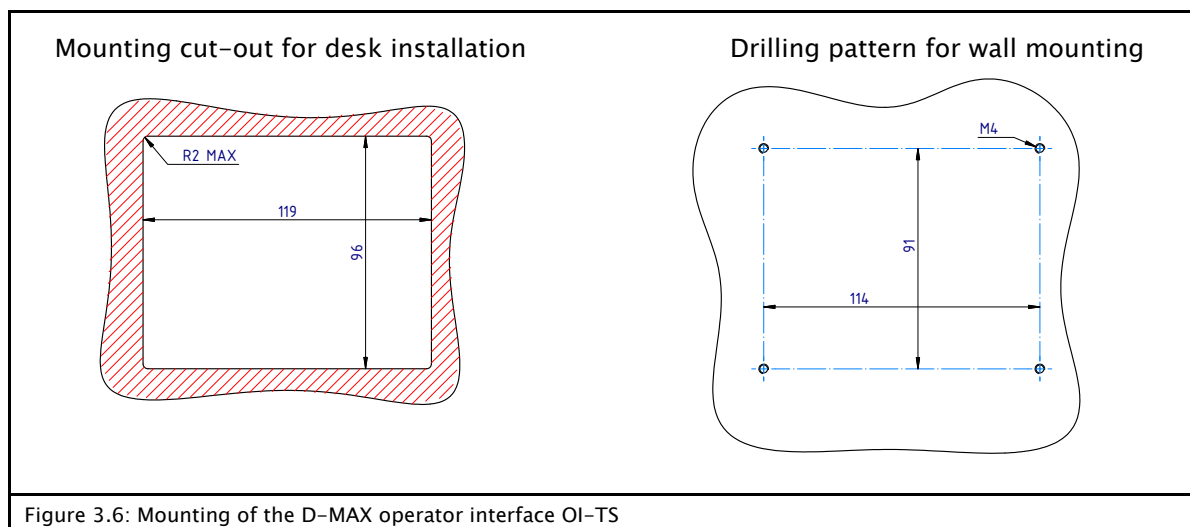
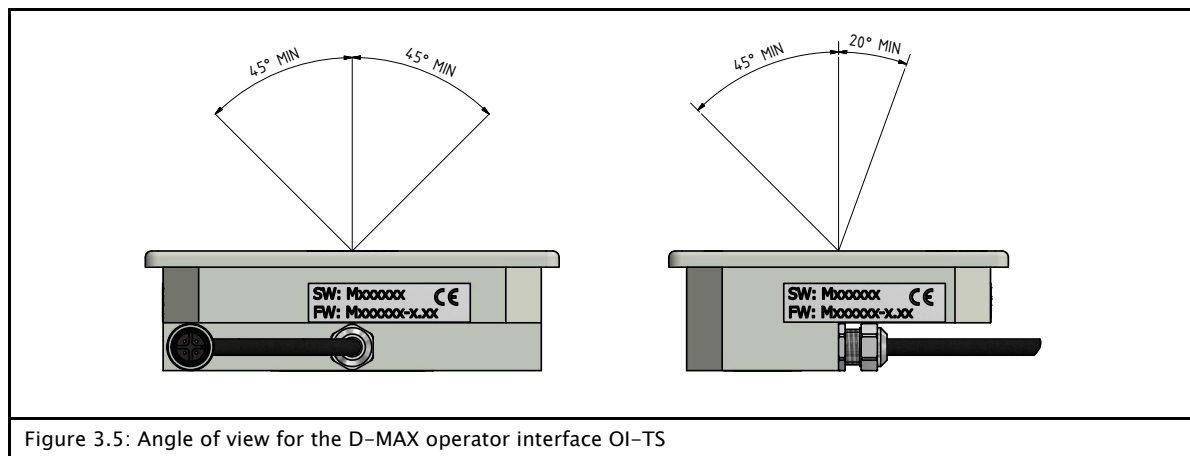
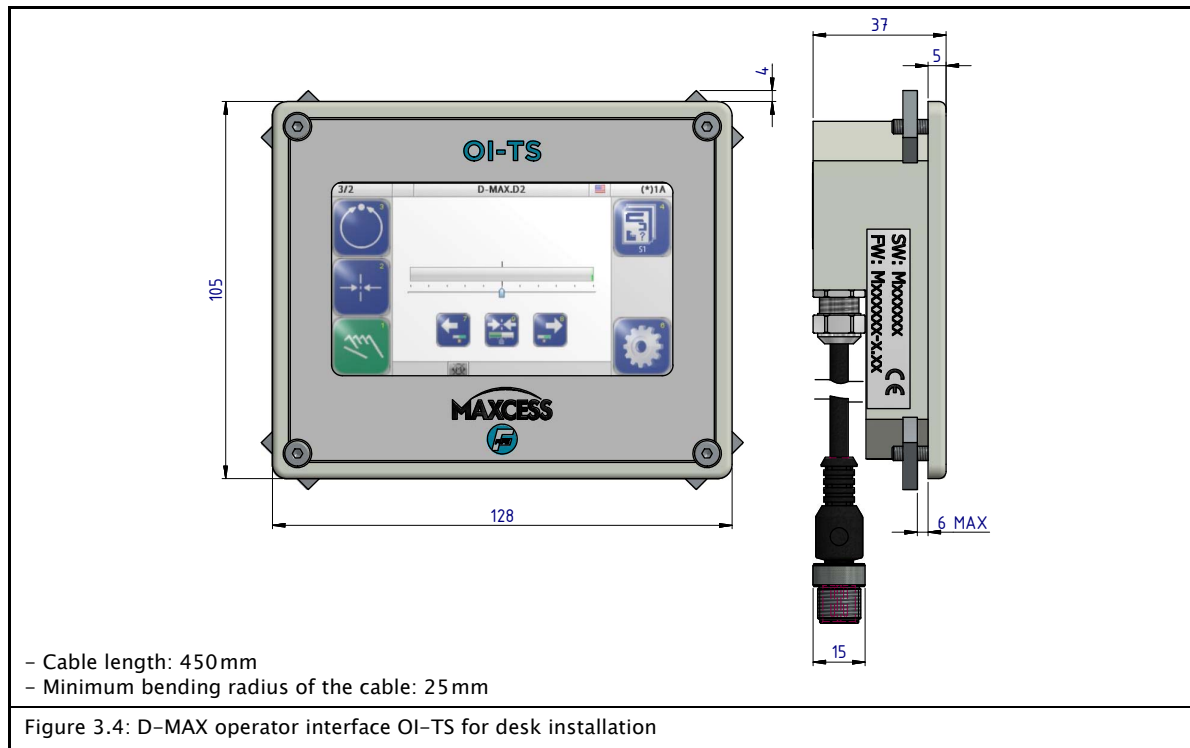




**Installation location of
D-MAX operator interface
OI-TS**

- Protection class: IP64
- Operating temperature: 0°C ... 60°C
- Relative humidity: 10% to 95% non-condensing
- Operating altitude above sea level: maximum 3000m
- On a fixed machine part or on a wall
- Protect from vibrations
- Do not place close to powerful magnetic fields:
The electronic components may be damaged.
- Protect from falling objects:
The operator interface can be damaged or an unintended
switching process may be triggered.





Electrical connection



CAUTION:

Electrical connections on the D-MAXE system should always be made or disconnected while there is no electrical power in the system.

⇒ Failure to follow these instructions may result in damage to the D-MAXE system.

Emergency Stop

Observe the “D-MAX Supplementary Operating Instructions – Safe shutoff of electromechanical actuators driven by a D-MAX or D-MAXE Controller” in the system documentation.

Power supply of D-MAXE Controller

The D-MAXE Controller has no power switch. Because of this, the power supply of the D-MAXE Controller must be switched on and off via the machine's power distribution.

The D-MAXE Controller must be connected to the power supply according to the information supplied at connector X6 of the controller (see [figure 3.8](#) and [figure 3.10](#)).

Power supply of operator interface OI-TS

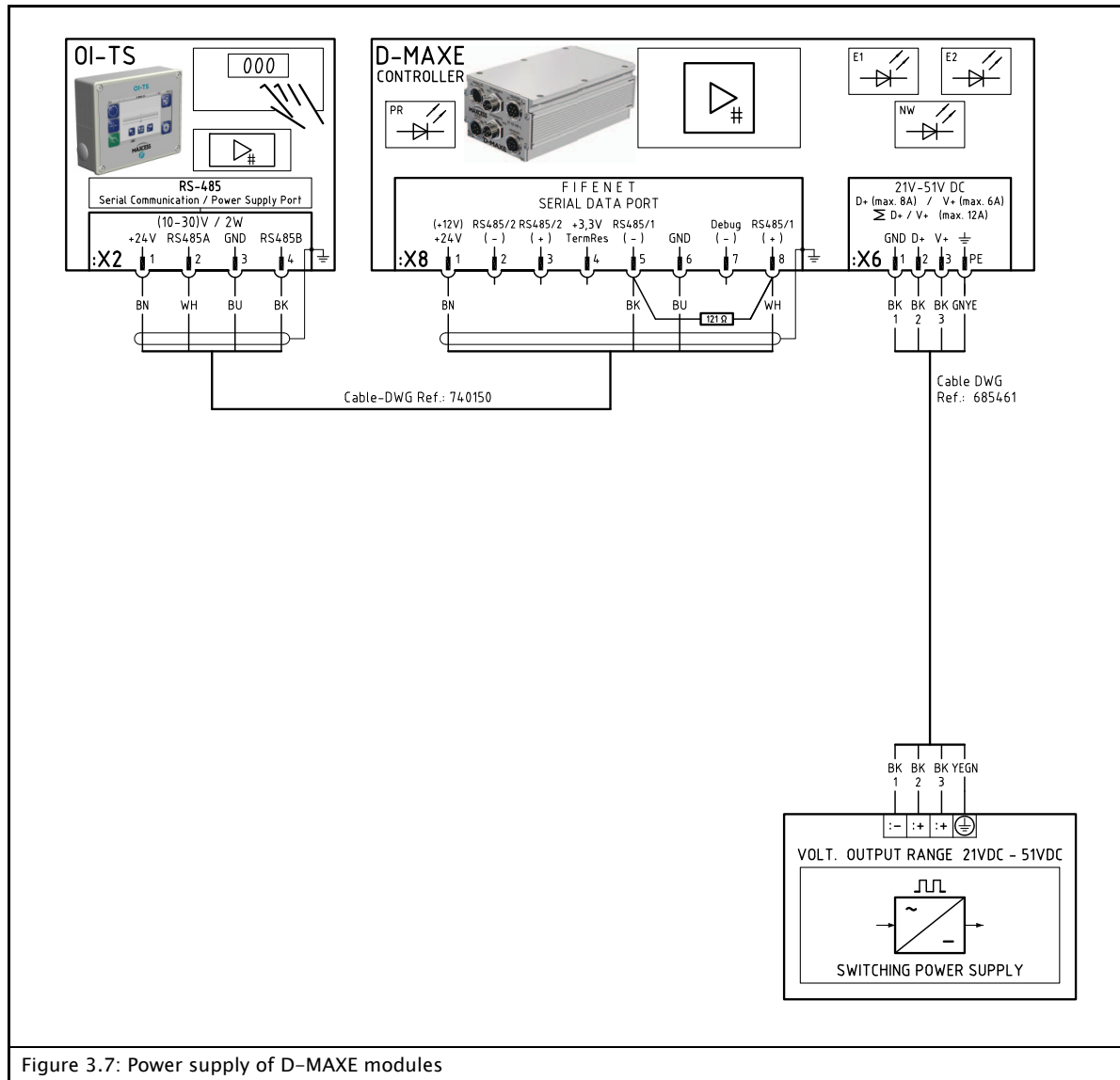
The power supply for the operator interface OI-TS is via the signal cable, which is connected to the web guide controller at connector X8.

Connecting the sensors/actuators

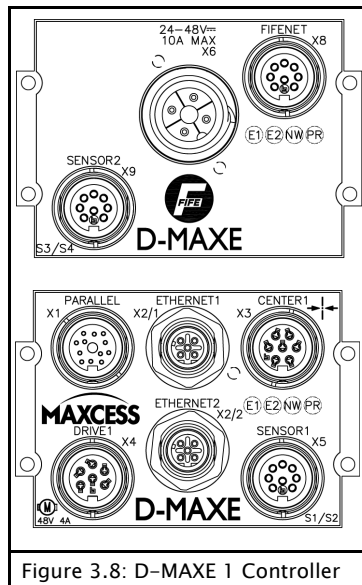
- Only sensors and actuators approved by Fife-Tidland GmbH may be used.
- The technical data for sensors and actuators must match the connection data for the D-MAXE system (see [Technical Data, page 11-1](#)).
- Relevant operating instructions must be observed for installation and operation of sensors and actuators.
- Sensors and actuators must be connected to the D-MAXE system according to the system diagram in the system documentation.

**Note:**

Ensure that two wires from the power supply line are connected to the D-MAXE controller with a power supply in the permitted range from 24V to 48V.



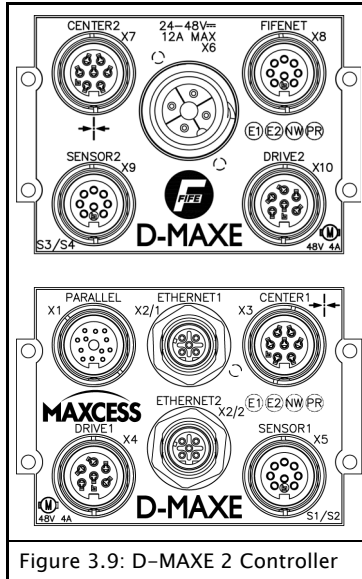
Connections on the D-MAXE 1 Controller



| Connection | Designation |
|------------|--------------------------------------|
| X1 | Parallel inputs/outputs |
| X2 / 1 | Ethernet |
| X2 / 2 | Ethernet |
| X3 | Servo-center transducer 1 /Encoder 1 |
| X4 | Drive 1 |
| X5 | Sensor 1 (S1 / S2) |
| X6 | Power supply voltage |
| X8 | FifeNet/ OI-TS |
| X9 | Sensor 2 (S3 / S4) |

For technical details and additional information, please consult Section [11 Technical Data](#).

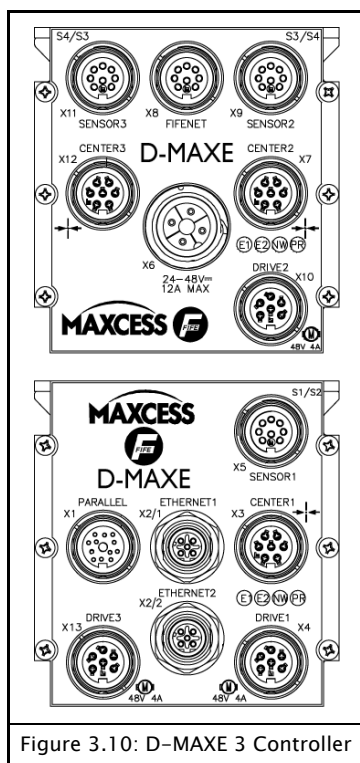
Connections on the D-MAXE 2 Controller



| Connection | Designation |
|------------|--------------------------------------|
| X1 | Parallel inputs/outputs |
| X2 / 1 | Ethernet |
| X2 / 2 | Ethernet |
| X3 | Servo-center transducer 1 /Encoder 1 |
| X4 | Drive 1 |
| X5 | Sensor 1 (S1 / S2) |
| X6 | Power supply voltage |
| X7 | Servo-center transducer 2 /Encoder 2 |
| X8 | FifeNet/ OI-TS |
| X9 | Sensor 2 (S3 / S4) |
| X10 | Drive 2 |

For technical details and additional information, please consult Section [11 Technical Data](#).

Connections on the D-MAXE 3 Controller



| Connection | Designation |
|------------|---------------------------------------|
| X1 | Parallel inputs/outputs |
| X2 / 1 | Ethernet |
| X2 / 2 | Ethernet |
| X3 | Servo-center transducer 1 /Encoder 1 |
| X4 | Drive 1 |
| X5 | Sensor 1 (S1 / S2) |
| X6 | Power supply voltage |
| X7 | Servo-center transducer 2 /Encoder 2 |
| X8 | FifeNet/ OI-TS |
| X9 | Sensor 2 (S3 / S4) |
| X10 | Drive 2 |
| X11 | Sensor 3 (S4/S3) |
| X12 | Servo-Center transducer 3 / Encoder 3 |
| X13 | Drive 3 |

For technical details and additional information, please consult Section [11 Technical Data](#).

LEDs on the D-MAXE Controller

| LED | Status | Indicates |
|--------------|-------------------------|---|
| E1 (X2/1) | Off | No Ethernet connection |
| | Green or Green flashing | Ethernet connection detected |
| | Yellow | Either a 10mbps connection or a half-duplex connection is recognized |
| E2 (X2/2) | Off | No Ethernet connection |
| | Green or Green flashing | Ethernet connection detected |
| | Yellow | Either a 10 mbps connection or a half-duplex connection is recognized |
| NW | Off | No external device is connected to connection X8 |
| | Green | External device recognized at connection X8 (e.g. an operator interface OI-TS) |
| PR | Off | No power supply |
| | Red | Power supply voltage too low, internal voltage outside tolerance or internal temperature too high |
| | Green | Power supply and temperature OK |
| | Yellow | No motor voltage |

Additional information about error messages that are displayed may be found in Section [Troubleshooting, page 10-1](#).

4 OPERATOR INTERFACE OI-TS

OI-TS description

The OI-TS operator interface has a touch screen.



CAUTION:

Danger of damaging the touch screen with pointed and/or hard objects (such as pens or screwdrivers).

⇒ The touch screen must only be operated with a finger or suitable touch screen stylus.



CAUTION:

Danger of the touch screen being operated accidentally by falling objects.

⇒ The operator interface must be protected against falling objects.

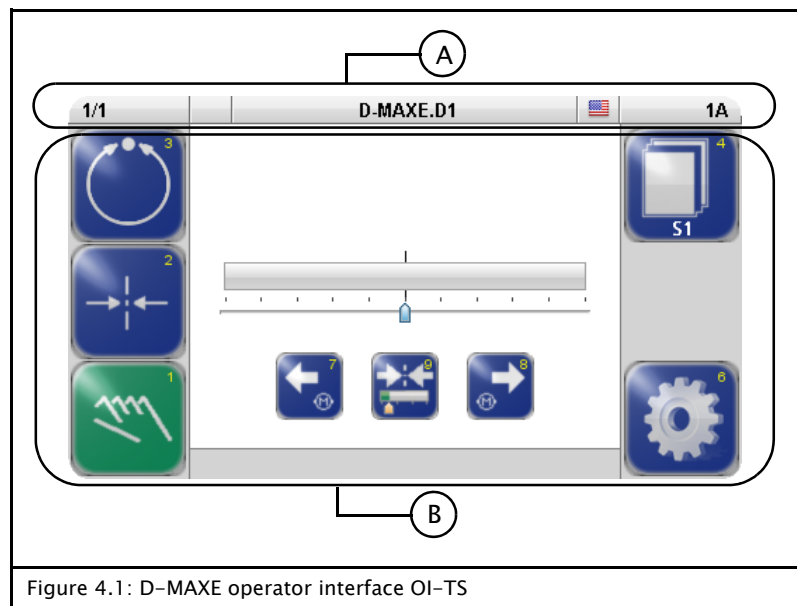


Figure 4.1: D-MAXE operator interface OI-TS

A Header

- See [Header, page 4-3](#)

B Control area

- Contains all the buttons and displays needed to operate the D-MAXE system
- Changes depending on the menu selected (user level, menu level -> see [Operating the Controller, page 5-1](#))

Buttons and Displays



The entry in a menu is accepted



The entry in a menu is rejected



Return to the previous menu level



or



Switch between the pages of a menu



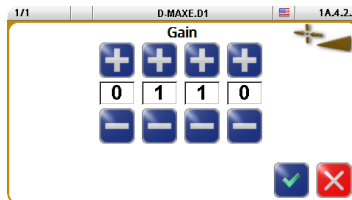
or



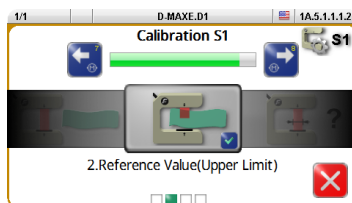
Buttons represented in colors can be operated in the current operation state.
Buttons represented completely in gray cannot be operated in the current operation state.



Fields filled in with white show information and cannot be operated.



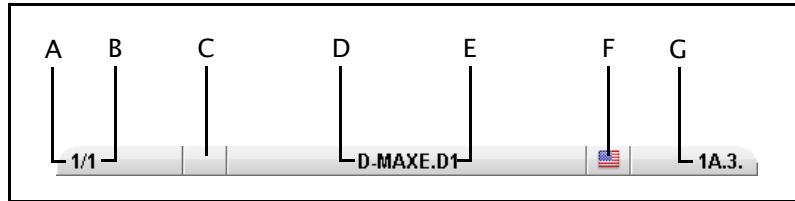
To enter numbers, set the desired value with the + and – buttons.




Sequences are a defined succession of menus to be processed by the user step by step.
The next step can be reached by pressing the button in the middle of the display.

Header

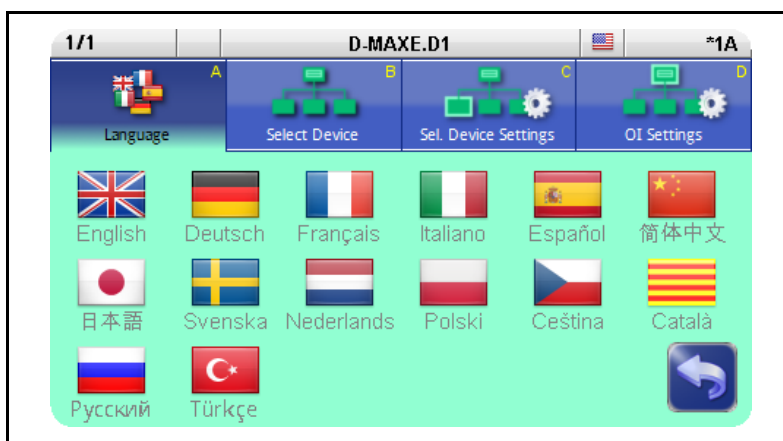
The header contains complete information about the D-MAXE system. It is always available in this form.



- A Shows the currently selected hardware e.g. a D-MAXE Controller
- B Shows the currently selected device of the D-MAXE system if it is present in the D-MAXE system:
 - 1 – Drive 1,
 - 2 – Drive 2,
 - 30 – Drive 3
 - 3 – Customer-specific system menu CM
 - 5 – Gateway
 - 7 – SE-46 Line Sensor
 - 8 – SE-45 Ultrasonic Sensor
 - 9 – DAC-005 Diode Line Camera
-  C no connection
- D Shows the name of the currently selected hardware e.g. D-MAXE Controller (can be edited, see [Device Names, page 7-22](#))
- E Shows the name of the selected device (can be edited, see [Device Names, page 7-22](#))
- F Language selection
- G Menu identification
Each menu has its own identification. This makes it possible to retrace every step in the control tree of the D-MAXE system precisely.

Select operator interface

- Touch the header



A Language



Select the language for menu labels

B Select Device



In the list of devices select the one you want to operate with the OI-TS

C Select Device Settings

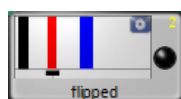


Set up the parameters of the selected device for the display

Flip horizontally



Display not mirrored



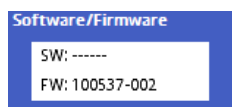
Parts of the display are mirrored, for example the bar graph or the Right and Left buttons

D OI Settings

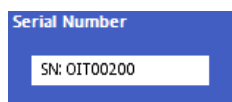


Set up the parameters of the OI-TS

Labels This screen contains the details on the nameplate which is affixed to the OI-TS operator interface.



- Software number
- Firmware number



- Serial number

Settings



- Change between the US and British flags for display

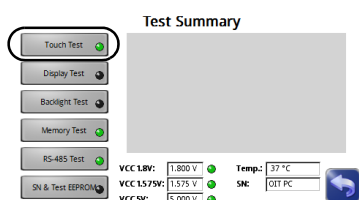


- Calibration of the touch screen
Calibration is required if the activity of the buttons is not synchronous with the location that is displayed. The user is prompted to touch the screen at two points. Use of a suitable touch screen stylus is recommended to improve the accuracy of the calibration.

Debugging



Other than the *Touch Test*, this collection of functions is intended for Service and is not relevant for the operator.



Touch Test

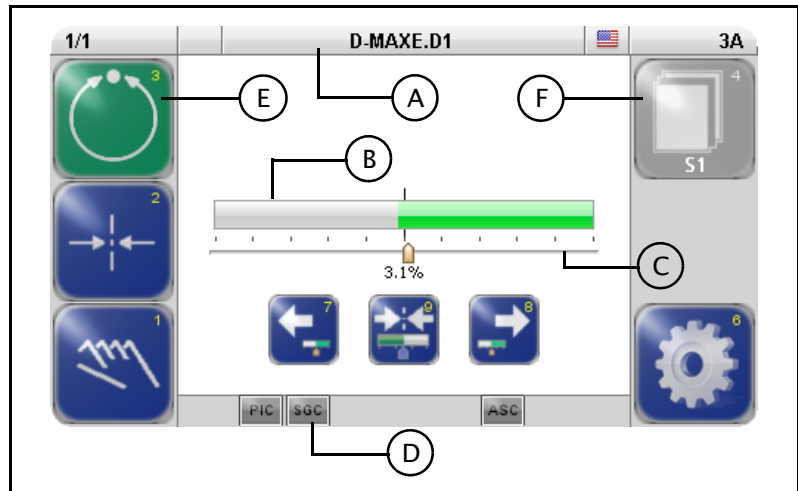
This test can be performed if no actions or incorrect actions are performed on the OI-TS operator interface.

→ see [D-MAXE operator interface OI-TS, page 10-3](#)

5 OPERATING THE CONTROLLER

User level

All the functions required for normal operation of the D-MAXE systems are available on the user level.



Buttons

- 1 select operating mode „Manual“
- 2 select operating mode „Servo-center“
- 3 select operating mode „Automatic“
- 4 Select available jobs (controller types)
- 5 Available for special applications only
- 6 Press and release: Open the *Job* menu for the current job
Press and hold: Open the *Setup* menu
- 7 and 8 „Automatic“ operating mode: Move the guide point in the sensor field of view
„Manual“ and „Servo-center“ operating mode: move actuator
- 9 „Automatic“ operating mode: resetting the guide point
„Manual“ operating mode: set the guide point
- A Header: select devices/actuators

Legend

- A Header: Information about the D-MAXE system
- B Bar graph
„Automatic“ and „Manual“ operating mode: signal level of the active sensor
„Servo-center“ operating mode: signal level of the servo-center transducer

- C Guide point display
Operating mode „Automatic“ and „Manual“: Guide point offset of the active sensor
- D Status line
Symbols see [Appendix B – Symbols, page 13-1](#)
- E Green marked button
Identifies the currently selected operation mode
- F Gray marked button:
This button has no function in the current system status.

Select devices/actuators

The OI-TS can be used to operate various devices present in the network (D-MAX controllers and their actuators, any system menus or gateways that are present).



- Touch the header and select menu [B Select Device](#)
- Select the device you want to operate with the OI-TS

Select operating modes



Automatic

The web course is guided by an actuator based on sensor information.

The bar graph represents the position of the material web in the sensor's field of view.



Servo-center

The actuator is moved to the mechanical center position depending on the servo-center transducer. Then the control rollers are aligned parallel to the rollers of the customer system. The bar graph indicates the current position of the actuator in relation to the servo-center transducer.



Manual

There is no guiding of the web course. The settings of the D-MAX system can be changed.

The bar graph represents the position of the material web in the sensor's field of view.

Select jobs



Jobs are types of controllers that, in principle, are available in a D-MAXE system.

From the large number of possible controller types, customer-specific programming selects the controller types that have the required functionality for the customer's application and makes them available (see [Jobs, page 11–5](#)).

Existing jobs can be [1y.6.2 Jobs, page 7–19](#) limited or extended in the menu.

It is only possible to select another job on the user level in "Manual" and "Servo-center" operation modes.

Shift guide point



Note:

This parameter can also be set with menu *Job* (see page [7–3](#)).

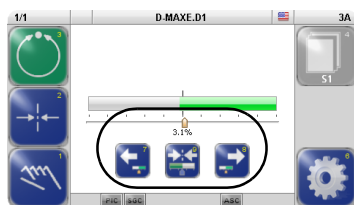
„Automatic“ operating mode

The guide point can be shifted within the sensor's field of view during ongoing operation.



Note:

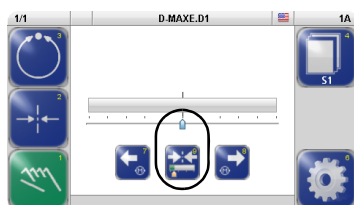
This is only possible if the parameter has been set up appropriately in menu [1y.6.3.1 Jog Enable, page 7–19](#).



- Move the guide point to the desired position using the arrow buttons 7 and 8

A cursor appears in the display at the location to which the guide point was moved, together with a numeric entry.

- Press button 9 to reset the guide point

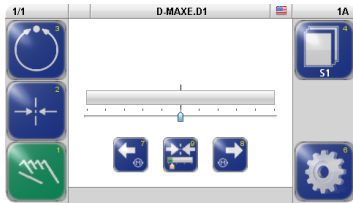


"Manual" operating mode

- Press on button 9 to set the guide point alternately
 - to 0 or
 - pre-set it, so that it takes the value of the selected sensor and enables a bounce-free transfer to 'Automatic' mode.

Moving the actuator

The actuator can be moved in "Manual" operation mode.



- Move the actuator to the desired position with arrow buttons 7 and 8

Menu level

The parameters of the D-MAXE system can be set for the relevant customer application in the menu level. They have been combined to form the following menu groups:

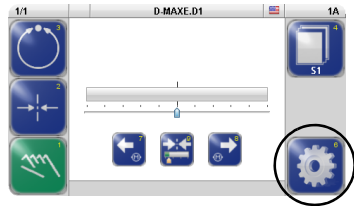
- *Job* menus (page [5-5](#))
- *Servo-center* menus (page [5-6](#))
- *Setup* menus (page [5-7](#))

For an explanation of the menus for the individual parameters see section [Menus, page 7-1](#).

Job menu

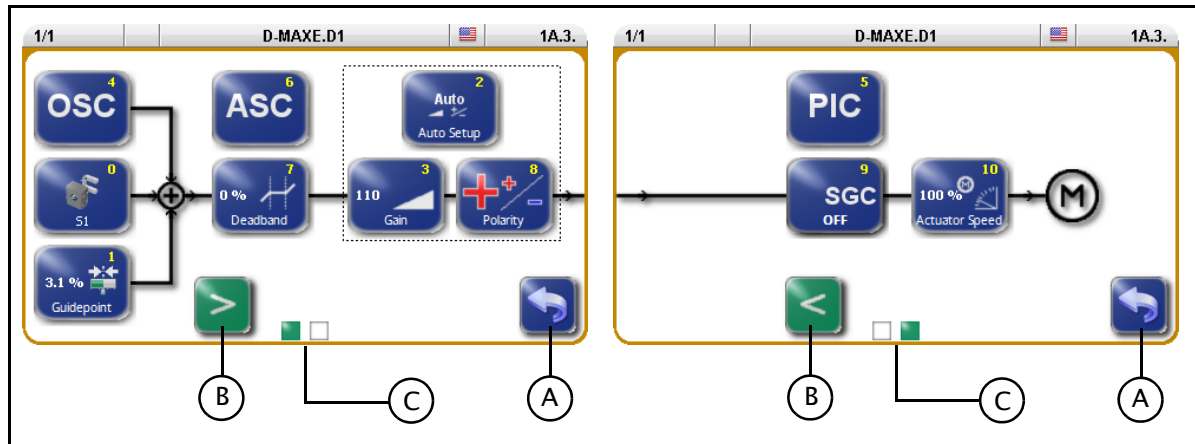
Precondition:

"Manual" or "Automatic" operation mode is selected



- Press and release button 6 on the user level
Menus are available for setting up the parameters of the selected job.

Not all menus are available in the "Automatic" operation mode.



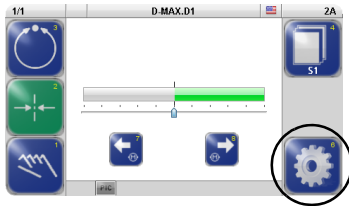
Buttons

- 0 Calibrate sensor
- 1 Guidepoint
- 2 Auto Setup
- 3 Gain
- 4 OSC (oscillator)
- 5 PIC
- 6 ASC (Automatic Signal Control)
- 7 Deadband
- 8 Polarity
- 9 SGC (Speed Gain Control)
- 10 Actuator Speed

Legend

- A Exit menu
- B Change page
- C Page display

Servo-Center menu



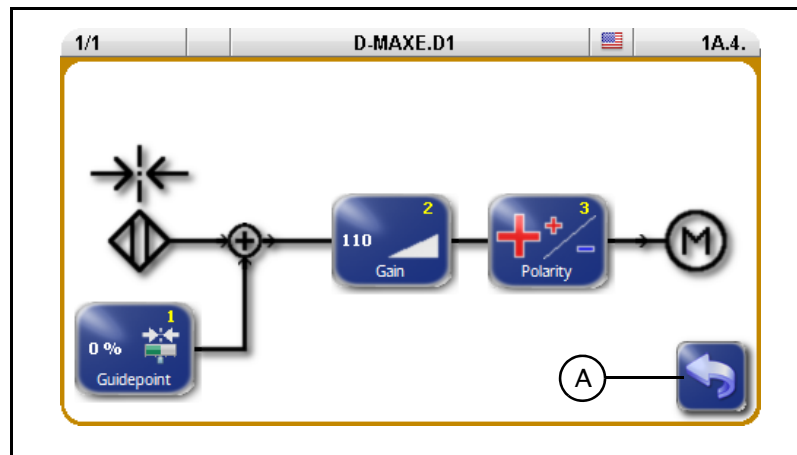
Precondition:

"Servo-Center" operation mode is selected

- Press and release button 6 on the user level
Menus are available for setting up the parameters of the servo-center transducer.

Not all menus are available in the "Servo-Center" operation mode.

The *Polarity* menu is only available if the *Setup* menu is selected in the "Manual" operation mode and then *4 Servo-Center* is selected.



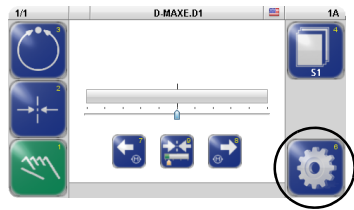
Buttons

- 1 Guidepoint
- 2 Gain
- 3 Polarity

Legend

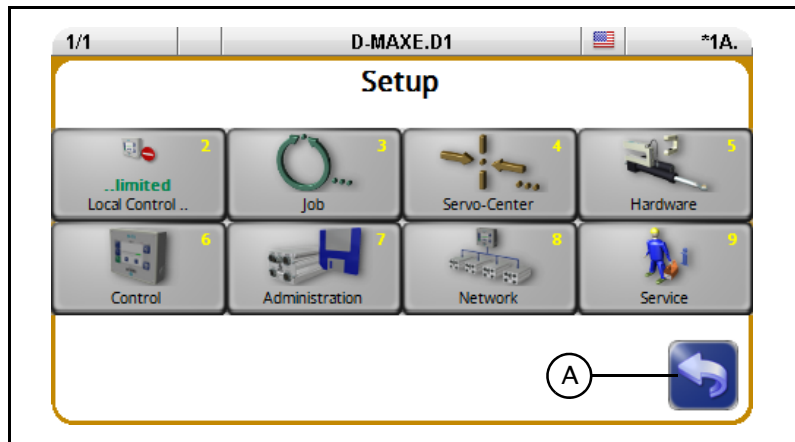
- A Exit menu

Setup Menu



- Press button 6 in the operator level for *more than 2sec*. Menus are available for setting up the parameters of the selected job or D-MAXE system.

Not all menus are available in the "Servo-center" and "Automatic" operation modes or in restricted local operation. Only the menus that can be operated in the current system status are displayed.



Buttons

- 2 Local Control
- 3 Job
Switch to the Job menu (see page 5-5)
- 4 Servo-Center
Switch to the Servo-center transducer menu (see page 5-6)
- 5 Hardware
 - 1 Sensors
 - 2 Actuator
 - 3 Digital Inputs
 - 4 Digital Outputs
- 6 Control
 - 1 Modes
 - 2 Jobs
 - 3 Left/Right buttons
 - 4 Local Control
 - 5 Unit
 - 6 Hardlock
- 7 Administration
 - Labels
 - Serial Number
 - Backup and Restore
 - Device Names
- 8 Network
 - Maxnet Settings and Distributed System
 - Customer Settings

- 9 Service
 - 1 Measurements
 - 2 Simulate Outputs

Details regarding the menus are explained in section [Menus, page 7-1](#) .

Legend

- A Exit menu

6 COMMISSIONING

Before commissioning

The following assembly and electrical connection tasks must be performed before commissioning:

- The modules of the D-MAXE system must be assembled properly.
- The modules of the D-MAXE system must be properly connected to the power supply and integrated into the 'EMERGENCY STOP' circuit of the customer's system.
- The sensors and actuators must be properly connected to the D-MAXE system.
- It is also important to become familiar with the basic operation of the operator interface OI-TS.

Commissioning

Once all assembly and connection tasks have been checked and are in proper condition, the D-MAXE system can be placed in operation.



WARNING:

Before commissioning, ensure that:

- ⇒ Commissioning of the D-MAXE system is performed while the web is stopped.
- ⇒ No one is in the danger zone of the moving parts.



Note:

The D-MAXE system has been preset to the customer application and checked before it leaves the factory. However, this does not apply to individual or replacement part deliveries.



WARNING:

There is a risk of crushing and cutting injuries on the web material itself and/or due to the motion of the web.



- ⇒ Do not grasp moving parts (rollers, web, etc.) or anything close to them during commissioning.
- ⇒ Do not touch the edges of the material web.

To commission the D-MAXE system, make the basic settings described in the following steps.



Note:

If the system documentation contains "D-MAXE Supplementary Operating Instructions" with a chapter on Commissioning, the commissioning sequence given there must be followed for the specific application.

1. Turn on the electrical power

When the system is turned on, the last operating mode to be selected is active.

2. Select the language

It may be necessary to change the language for menu guidance on the operator interface.

→ see menu [A Language, page 4-4](#)

3. Select drive (device)

→ see menu [B Select Device, page 4-4](#)



Note:

Each drive must be set separately.

4. Take over *Local Control*

If the parameter *Local Control* is set to "...limited", it needs to be set to "...taken over".

→ See menu [2 Local Control, page 7-2](#)



5. Select Manual mode

Switch the D-MAXE system into Manual mode with the button 1 on the operator interface.

There is no guiding of the web course in Manual mode. The D-MAXE System control parameter can now be configured.

6. Set the sensor type

Check and set the type of the connected sensor(s).

→ see [1y.5.1.1.2 Type, page 7-13](#)

7. Calibrate sensor(s)

Calibrate the connected sensor/sensors.

→ see [1y.5.1.1.1 Calibration, page 7-12](#)

8. Calibrate *LineSpeed*

If the LineSpeed parameter is being used, this parameter must be calibrated.

→ see menu [1y.5.1.5 Line Speed, page 7-14](#)

9. Set the *Polarity* for the Servo–Center operation mode
→ see menu [1y.4.3 Polarity, page 7–10](#)

10. Set the *Gain* for the Servo–Center operation mode
→ see menu [1y.4.2 Gain, page 7–10](#)

11. Calibrate the *Encoder/motor encoder*
If an encoder or motor encoder is used, it must be calibrated.
→ see menu [1y.5.1...1 Calibration, page 7–15](#)



12. Select job
Select the job with the parameters to set with button 4.
→ see [Select jobs, page 5–3](#)

13. Turn off the *OSC/PIC*
If the optional parameters 'OSC' or 'PIC' are found in the selected job, these parameters must first be switched to the OFF state (see also the Operating Instructions "D–MAXE/OSC" or "D–MAXE/PIC").

14. Set *Polarity*
→ see menu [1y.3.y8 Polarity, page 7–8](#)

15. Set *Gain*
→ see menu [1y.3.y3 Gain, page 7–4](#)

16. Turn on the *OSC/PIC*
If the optional parameters 'OSC' or 'PIC' are present, these parameters must be correctly set. To do this, perform the commissioning sequence as described in the relevant Operating Instructions.

17. Set up additional jobs
Steps 12 to 16 must be performed for each job.

18. Limit *Local Control*
If the parameter *Local operation* has been set to "...taken over" (see Item 4), it now needs to be re–set to "...limited".
→ See menu [2 Local Control, page 7–2](#)

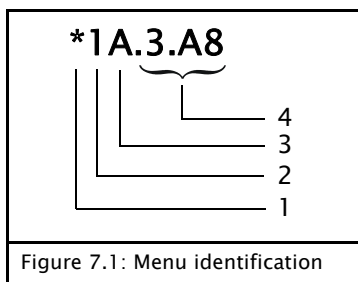
7 MENUS

Notes

This section is a description of menus that are needed for commissioning and to make other settings in the D-MAXE system.

Menu identification

Each menu has its own identification. This makes it possible to retrace every step in the control tree of the D-MAXE system precisely.



1. Local Control

Identifies the status of local operation

→ see [2 Local Control, page 7-2](#)

2. Operating mode

1 – Manual

2 – Servo-Center

3 – Automatic

3. Job

Identifies the currently selected job

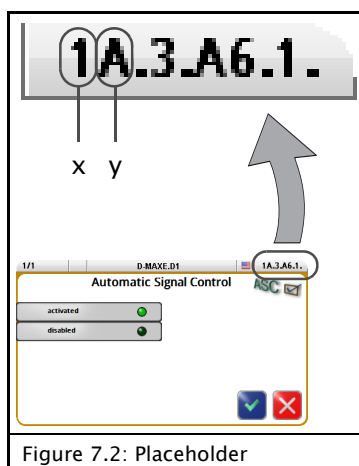
4. → see [Jobs, page 11-5](#)

5. Menu levels

Identifies the position of a menu within the menu structure of the D-MAXE system

Conventions

The following conventions apply to the menus described here:



x

Placeholder "x" is the operation mode currently selected on the drive (in the example x = 1).



Note:

The menus in the D-MAXE system are described in "Manual" mode (x = 1), since that is the only mode in which all menus can be reached.

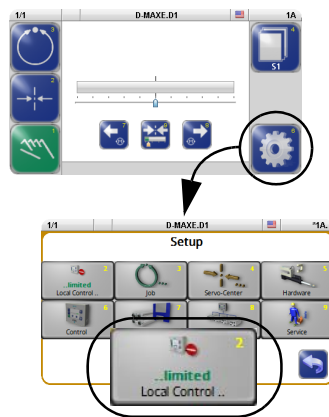
y

Placeholder "y" is the currently selected job on the drive (in the example y = A).

This place in the menu identification changes depending on the job selected by the customer.

→ see [Jobs, page 11-5](#)

2 Local Control



The *Local Control* menu can be used to block control signals which are a hindrance during initial operation or an error search. Control signals can be:

- a parallel interface (connector X1)
- an application in a "distributed system" that administers various components at the same time
→ see menu [1y.8.8 Distributed System, page 7-24](#)
- a Gateway to external fieldbus systems



Note:

This menu is only available if control signals are at hand from the aforementioned sources.

An * (asterisk) appears before the menu identification to indicate that local operation is limited. The menu identification is in the header at the far right.



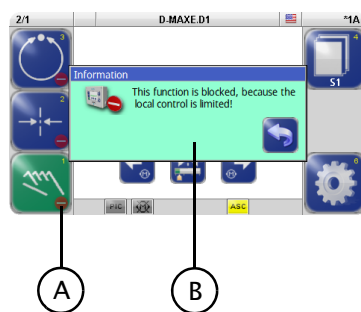
* Local Control was taken over.



(*) Other control signals are active. However, these control signals are blocked when local control is applied.



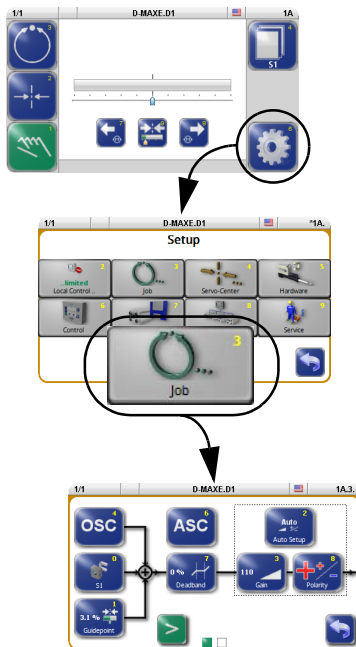
If there is no * against the menu identification, no other control signals are available.



A Buttons which are blocked by an active control signal are marked.

B Information appears if a user attempts to operate a locked button.

1y.3 Job



This section is a description of menus that are used to set up the parameters of a job. A similar set of parameters is available for each job in the system. The settings of this job apply to "Automatic" mode.

However, the number of available parameters that can be set for a job depends on customer-specific programming of the D-MAXE system.

Each job is marked with a capital letter on the right-hand side in the menu identification in the header.

"Manual" mode:

- All buttons are available.

"Automatic" mode:

- Only selected buttons are available.

"Servo-Center" mode:

- These parameters cannot be set.

Precondition

- the correct device / the correct drive is selected
Check: Check the display in the header
- the correct job is selected
Check: Check display on button 4

1y.3.y0 Calibrate sensors



The menu for calibrating the sensor that is used can be called directly.

→ see [1y.5.1.1.1 Calibration, page 7-12](#)

1y.3.y1 Guidepoint



The guidepoint of the selected job can be adjusted for the corresponding drive with the *Guidepoint* menu.



Note:

The *Offset* parameter can also be set directly with buttons 7 and 8 in "Automatic" operation mode on the user level.

→ see [Shift guide point, page 5-3](#).

1y.3.y2 Auto Setup

The *Auto Setup* menu is used to calibrate parameters Gain (page 7-4) and Polarity (page 7-8) automatically for "Automatic" mode of the selected drive.

**WARNING:**

The drive moves during automatic setup.

⇒ There is a danger of body parts being crushed against the actuator.

**Note:**

The sensors must be calibrated before the automatic setup.

1y.3.y3 Gain

You can use the *Gain* menu to adjust the guide sensitivity of the selected drive.

1y.3.y4 OSC

You can use the *OSC* menu to select the optional oscillator 'OSC' of the D-MAXE system.

The oscillator 'OSC' is only present in a job of the D-MAXE system if the software has been programmed accordingly. Commissioning and operation are described in separate operating instructions.

1y.3.y5 PIC

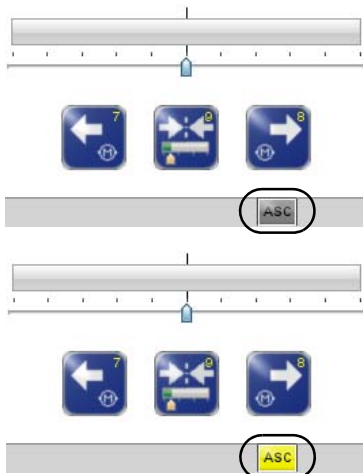
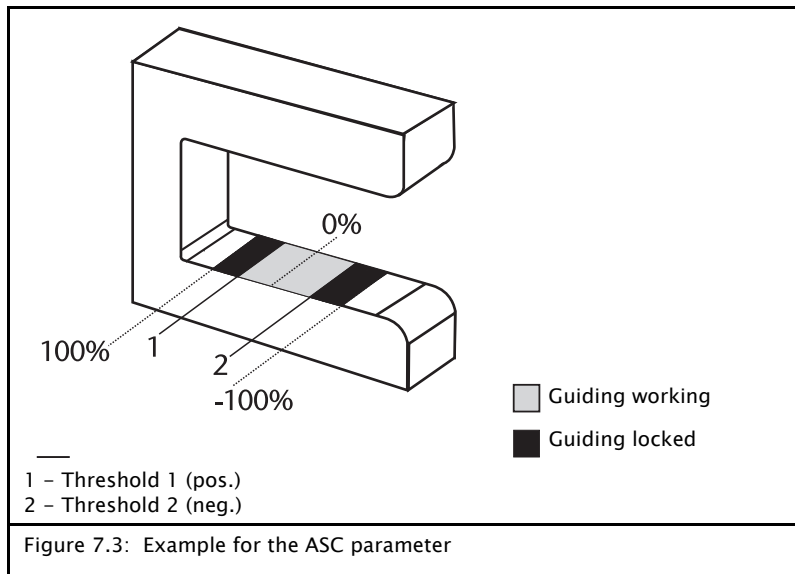
The *PIC* menu allows the user to control the web course even if there is no direct feedback available from the drive to the sensor.

The 'PIC' controller is only present in a job of the D-MAXE system if the software has been programmed accordingly. Commissioning and operation are described in separate operating instructions.

1y.3.y6 ASC

You can use the *ASC* menu (Automatic Signal Control) to

- activate and deactivate the ASC parameter and
- set up ASC threshold 1 or 2. These thresholds restrict the outward visual range of the sensor.



If the D-MAXE system is in "Automatic" mode and the ASC parameter is activated, the web is guided as long as it is within the restricted field of view of the sensor. This is indicated by the gray "ASC" icon in the status line.

If the web leaves the limited field of view of the sensor, guiding is blocked. This is indicated by the yellow "ASC" icon in the status line.



1y.3.y6.1 Turn ASC on or off

The ASC parameter is activated or disabled.



1y.3.y6.2 Enter the limit value 1

The value that is entered must be positive.
Standard value = 90%



1y.3.y6.3 Enter the limit value 2

The value that is entered must be negative.
Standard value = -90%

1y.3.y7 Deadband

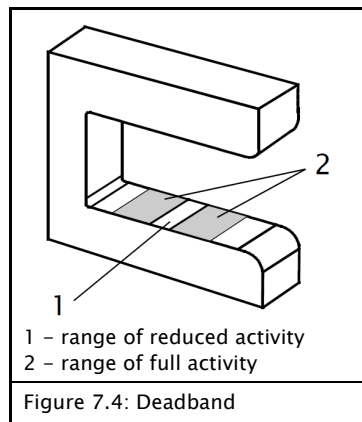


The *Deadband* menu is used to define a range around the guide point within the sensor field of view in which guiding is reduced or is not active at all in the "Automatic" operation mode.

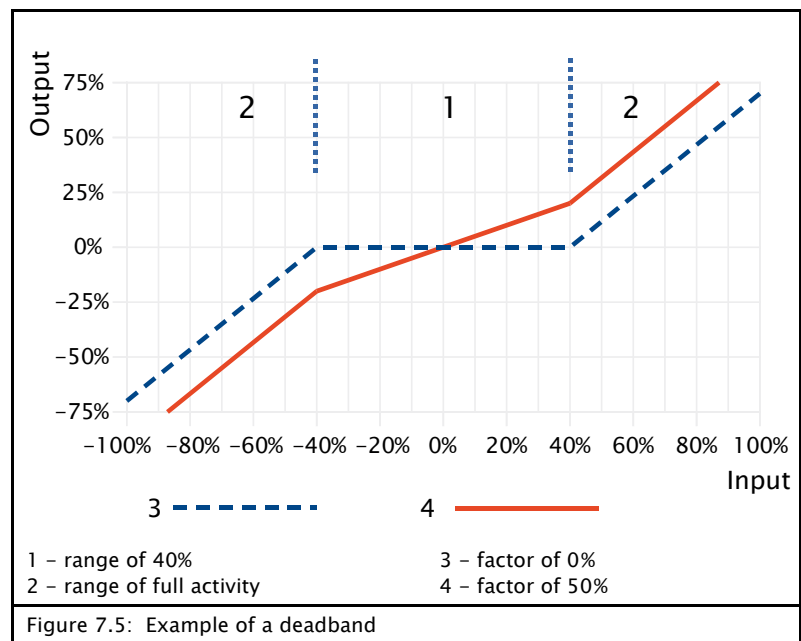


Note:

Available in the form described here beginning with firmware version 016b of the D-MAXE controller



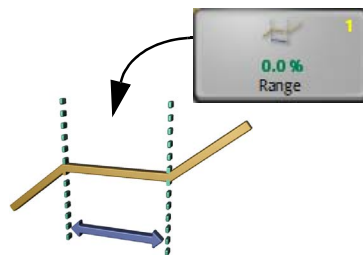
- If the web edge is in the range of reduced activity (1), there is no guiding or only accordingly reduced guiding.
- If the web edge is outside the range of reduced activity (2), guiding is with full activity.

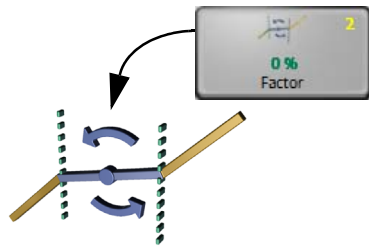


The following two parameters must be set for the deadband.

1y.3.y7.1 Range

- A value of 0% means that there is no range with reduced activity. This is also the default value for the range.
- A value of 50% means that half the sensor field of view has been defined as a range with reduced activity.





1y.3.y7.2 Factor

- A factor of 0% means that there is no activity in range 1. This is also the default value for the factor.
- A factor of 50% means that the activity in range 1 is half as great as in the active range 2.

Web guiding processes with unfavorable sensor position

Web guiding processes in which the sensor cannot be arranged as it usually is in the first half of the control roller output range develop an extremely unsettled and unstable guiding behavior.

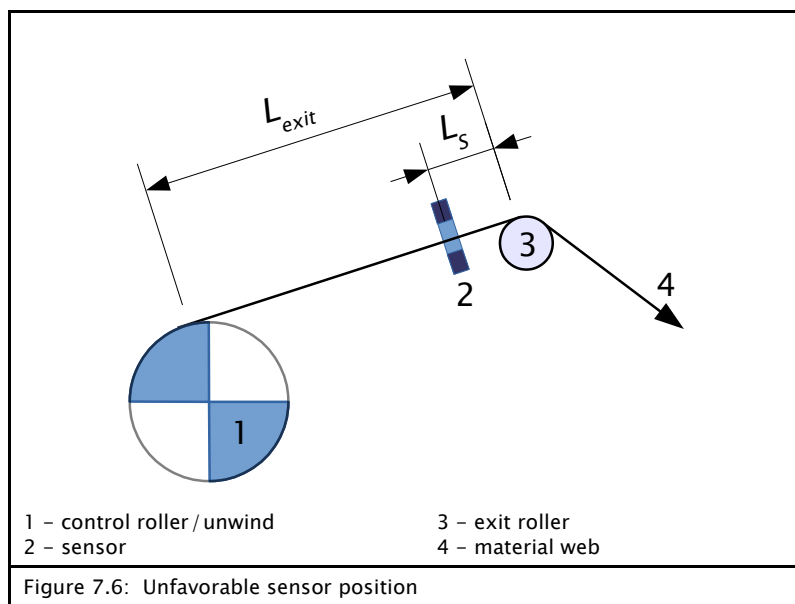


Figure 7.6: Unfavorable sensor position

Preconditions:

This problem can be handled with the *Deadband* parameter under the following conditions:

- Exit length L_{exit} of web guiding is equal to or greater than about 1.5 times the maximum web width B_{max} .

$$L_{\text{exit}} \geq 1.5 \cdot B_{\text{max}}$$

- The distance L_s from the sensor to the exit roller is equal to or greater than about 10% of the exit length L_{exit} .

$$L_s \geq 10\% \cdot L_{\text{exit}}$$

- Other than a few large web offsets, there are only slow web offsets to compensate for.
- The material web that is used naturally runs evenly and smoothly.

Settings:

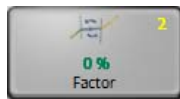
- Set the range of reduced activity to 0%



- Adjust the guiding sensitivity of the drive (page 7-4) aggressively
It is no problem if the drive overreacts somewhat. To reach the full adjusted speed, a value of over 100 must be reached if a sensor with a field of view of about 18 mm is used (for example SE-42). Sensors with a larger field of view require higher setting values.



- Enlarge the area of reduced activity until the drive is responding almost smoothly while the material web is running.



- Increase the factor to strike a good compromise between compensated drive movements and guiding accuracy.
The optimum value for the factor is usually between 10% and 50%.

1y.3.y8 Polarity

The *Polarity* menu is used to set the guiding direction of the selected drive for "Automatic" mode.

1y.3.y9 Speed Gain Control

The *Speed Gain Control* menu is used to determine whether web speed will affect how guiding is performed.

The *Speed Gain Control* menu is only present in a job of the D-MAXE system if the software has been programmed accordingly.

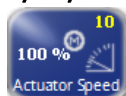
The information about web speed is fed in through either a digital network or an analog signal (see menu [1y.5.1.5 Line Speed](#), page 7-14).



If the *Speed Gain Control* parameter is activated, guiding depends on web speed. This is indicated by the gray “SGC” icon in the display.

This icon flashes when the web speed is too low and no guiding is being performed.

1y.3.y10 Actuator Speed

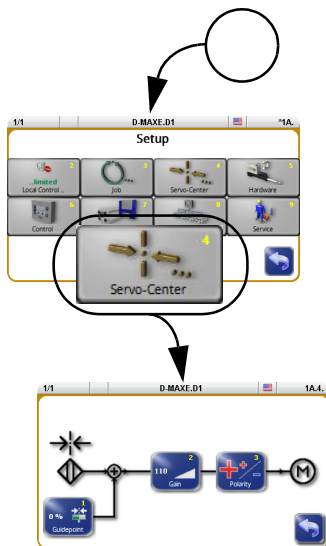


You can use the *Actuator Speed* menu to set the maximum speed of the motor on the selected drive.

1y.4 Servo-Center

This section describes menus that are used to set up the properties for "Servo-Center" mode.

The availability of the *Guidepoint* parameter depends on the customer-specific programming of the D-MAXE system.



"Manual" mode:

- All buttons are available.

"Servo-Center" mode:

- Only selected buttons are available.

"Automatic" mode:

- These buttons cannot be set.

1y.4.1 Guidepoint



The optional *Guidepoint* menu is used to adjust the servo-center transducer guide point for the selected drive to requirements in the client's system.

If this information is not required for the relevant customer application, the parameter should be set to the default value=0. If it is necessary to enter another value, the process is described in "Supplementary Operating Instructions" and is included in the system documentation.

1y.4.2 Gain



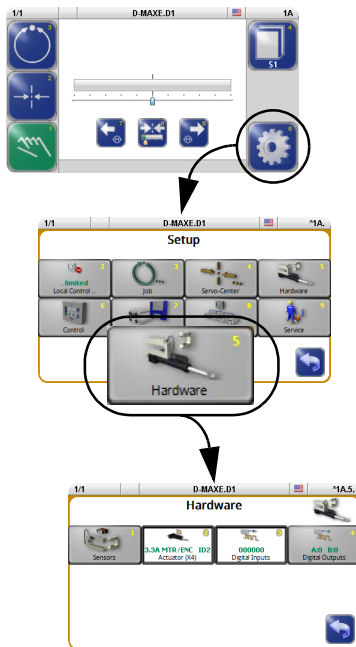
The *Gain* menu is used to set the guide sensitivity of the servo-center transducer for the "Servo-Center" operation mode on the selected drive.

1y.4.3 Polarity



The *Polarity* menu is used to set the guide direction of the servo-center transducer for the "Servo-Center" operation mode on the selected drive.

1y.5 Hardware



This section contains a description of menus that can be used to view and set up the properties of the connected input and output devices.

"Manual" mode:

- All buttons are available.

"Servo-Center" mode:

- All buttons are available.

"Automatic" mode:

- Only selected buttons are available.

1y.5.1 Sensors



The analog sensors present in the system must be calibrated. Each sensor in the system must be calibrated on the controller to which the sensor is connected.

1y.5.1.1 Sensor S1 X5/1

...

1y.5.1.4 Sensor S4 X9/2



The sensors connected to connections S1 X5/1 to S4 X9/2 can be calibrated. (On a D-MAXE 3, X9/1 is also connected to X11/2, and X9/2 is also connected to X11/1 and is referred to as X11/1 in the menus.)



Note:

It is possible that special sensors are used in the customer's system, for example a capacitive sensor or a camera. Sensors of this type cannot be calibrated with the procedure described here. The information required for a calibration is available in a set of special operating instructions for the sensor or in "Supplementary Operating Instructions" in the system documentation.



Note:

There can be menus for all sensor connections even if not all the connections are assigned. Therefore the connections that are used must be correctly selected.

Additional information may be found in the system diagram of the system documentation.



1y.5.1.1.1 Calibration

The *Calibration* menu is used to adapt the sensors to the properties of the web material.



WARNING:

To calibrate a sensor, it may be necessary to move the material web inside the sensor's field of view by hand. There is a risk of being cut by the web and crushed against the actuator.



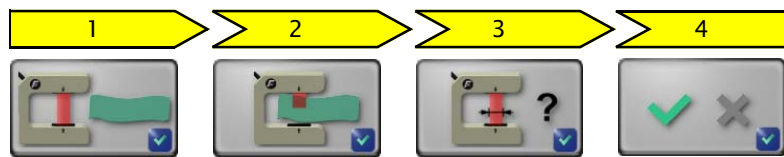
⇒ Do not touch the edges of the material web.

⇒ Perform the calibration operation only when the machine has been stopped and secured to prevent restart.



Note:

It is essential to follow the instructions for installation of the sensor in the corresponding Operating Instructions.

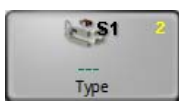


1. The reference value for the uncovered sensor must be determined. To do this, remove the material web completely from the sensor's field of view.
2. The reference value for the covered sensor must be determined. To do this, the sensor's field of view must be completely covered by the material web.
3. Optional:
The connected sensor's field of view is entered in mm or inch (see menu [1y.6.5 Unit, page 7-20](#)).
You will find more details about the field of vision in the 'Supplementary operating instructions' or in the overview in the system documentation.
If the value is not known, the system can accept the suggested value.
4. The result of the calibration is displayed and can be saved.



Note:

If an error occurs during calibration, the error will appear in the menu and calibration must be repeated.



1y.5.1.1.2 Type

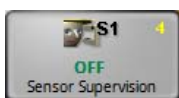
The *Type* menu specifies which sensor type is connected in the D-MAXE system in use. Menus can be adapted to the sensor type and the analogue entries are set.

| Type | Sensor type | Analogue sensor inputs | Effect on operation |
|-------|-------------------|------------------------|--|
| SE-46 | SE-46 line sensor | Set to 0-10 mA | If it is detected that the required parameters are set incorrectly, a message box appears when the Job menu opens with the option of setting those parameters correctly. |
| SE-26 | SE-26 line sensor | No change | A special sequence for calibration is provided in item 1y.3.y0 Calibrate sensors, page 7-3 of the Job menu Note: The 1y.5.1.1.1 Calibration menu is not changed. |
| --- | All other sensors | No change | No special effects |



1y.5.1.1.3 Field of View

You can use the menu to scale the field of view of the connected sensor.



1y.5.1.1.4 Sensor Supervision

You can use the *Sensor Supervision* menu to turn this parameter on and off.



Note:

This parameter's functions are only of use if the sensor features a output signal of 4 .. 20mA.

The parameter is used to detect a faulty connection between the D-MAXE Controller and a connected sensor. This parameter can only be evaluated if corresponding customer-specific programming is present.



1y.5.1.1.5 Current Range

The *Current Range* menu shows in which range the sensor input on the D-MAXE controller was configured according to the last valid sensor calibration.

1y.5.1.5 Line Speed



The *Line Speed* menu is used to calibrate the analog Line Speed signal. This signal can be used for example to influence the guiding sensitivity of the drive (see menu [1y.3.y9 Speed Gain Control, page 7–8](#)).



1. The reference value for the minimum web speed must be determined.
To do this, the material web with the relevant application must be running at minimum web speed in the customer system.
2. The reference value for the maximum web speed must be determined.
To do this, the material web with the relevant application must be running at maximum web speed in the customer system.
3. If the result determined from the reference values for web speed-dependent guiding can be used, the display shows "Successful!".



Note:

If the result for guiding is too low, an error appears in the menu and the calibration must be repeated.

1y.5.1.7 Encoder

...

1y.5.1.8 Motor Encoder



An incremental position transducer (encoder/motor encoder) can be connected to each drive on the D-MAXE to record positions. This makes position monitoring and evaluation possible.

In most applications, the encoder is used together with a sensor positioning system.

**Note:**

Generally the encoder is already preset when it ships from the factory. Therefore a resetting is required only when replacement parts are installed.

**Note:**

The menus for the motor encoder (menu 8) are not present unless a corresponding motor is present on the selected drive.

**1y.5.1...1 Calibration**

You can use the *Calibration* menu to calibrate a connected incremental position transducer (encoder/motor encoder) for the selected drive. The servo-center transducer assigned to this drive determines the reference position of the travel path.

WARNING:

The selected drive must be moved to calibrate the encoder.



There is a risk of being cut by the web and crushed against the actuator.



⇒ Do not touch the edges of the material web.

⇒ Perform the calibration operation only when the machine has been stopped and secured to prevent restart.

**CAUTION:**

Changing the encoder limits may result in danger of crushing or could damage the mechanical stops.

**Note:**

The servo center transducer must be positioned within the restricted travel path before it is possible to approach the servo-center position in "Servo-Center" mode.



1. The calibration sequence is started.



WARNING:

The selected drive moves.

⇒ Do not grasp moving parts or anything close to them.

2. The drive is automatically moved to the servo-center position.

Once the servo-center position is reached, the sequence automatically continues with step 3.



Note:

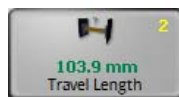
If the center position is not reached, the servo-center transducer itself must first be checked. The parameters of the [1y.4 Servo-Center, page 7-10](#) must then be checked and reset, if required.

3. The value for the first limit must be determined. To do this move the drive with the arrow buttons to the position of the first limit.

4. The value for the opposite limit must be determined. To do this move the drive to the position of the opposite limit.

5. The menu displays a recommended distance between the two limits. This value is to be checked and corrected if necessary.

6. The calibration of the encoder was successful and the settings can be saved.



1y.5.1...2 Travel Length

The *Travel Length* menu is used to correct the calibrated travel path of the encoder.

The measured distance is to be entered into this menu.



Note:

The encoder must be calibrated before this parameter can be set



1y.5.1...3 Search Reference

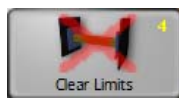
You can use the *Search Reference* menu to recover lost thresholds without having to perform a calibration again. Limit values can be lost for example because the encoder was adjusted with the electrical power turned off.



WARNING:

The drive moves while the reference search is active.

⇒ The actuator poses a crushing hazard.



1y.5.1...4 Clear Limits

You can use the *Clear Limits* menu to delete limits that are present for the selected encoder.



CAUTION:

Deleting the encoder limits may result in additional danger of crushing or could damage the mechanical stops.

1y.5.2 Actuator



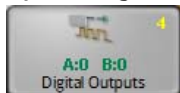
Shows the motor that is connected to the selected drive (see table on page [11-6](#))

1y.5.3 Digital Inputs



Display of the 6 digital inputs

1y.5.4 Digital Outputs



Configuration of the physical properties of digital outputs A and B

1y.5.4.1 Digital Output A

...

1y.5.4.2 Digital Output B



The outputs are automatically set to 'Set' or 'Cleared' depending on the configuration and current operating state.

→ see table [Parallel output matrix, page 11–4](#)



1y.5.4...1 Delay

A delay time can be defined for the transition from 'Cleared' to 'Set'.

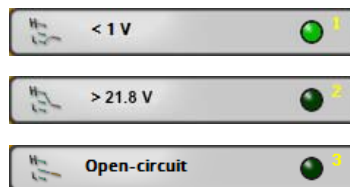


1y.5.4...2 <Set> State

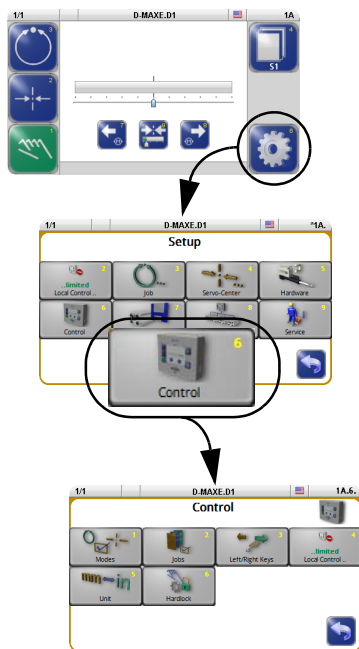
1y.5.4...3 <Cleared> State

To adjust the digital outputs for each of the components connected to them, the physical properties of the relevant state ('Set'/'Cleared') can be defined for each output A or B.

You can select individually for each state between:



1y.6 Control



This section includes information about menus that contain basic properties for operating the D-MAXE Controller.

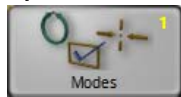
"Manual" mode:

- All buttons are available.

"Servo Center" and "Automatic" mode:

- Only the *Local Control* button is available.

1y.6.1 Modes



Activate or deactivate the "Automatic" and "Servo-Center" operation modes



Note:

"Manual" mode cannot be deactivated.

1y.6.2 Jobs



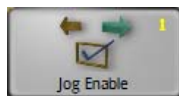
Activate or deactivate jobs

→ see table [Jobs, page 11–5](#)

1y.6.3 Left/Right buttons



Define different properties of the Right/Left buttons



1y.6.3.1 Jog Enable

The functions listed here can be allowed or turned off in reference to the individual operation modes.



1y.6.3.2 Jog Direction

The working direction of the buttons is set.

**1y.6.3.3 Jog Speed**

The adjusting speed of the buttons is set.

**1y.6.3.4 Jog Soft Start**

The adjusting speed of the buttons set in menu 1y.6.3.3 is reached after the time indicated here.

1y.6.4 Local Control

Apply or restrict *Local operation*

→ see also [2 Local Control, page 7-2](#)

1y.6.5 Unit

Setting up the desired length unit



Note:

Rounding errors may occur when the unit changes.

1y.6.6 Hardlock

The *Hardlock* menu is used to set up three parameters. When the operating mode switches to "Manual" the position of the drive is kept active at that time by these three parameters.

Power is normally turned off to the drive in "Manual" mode. The de-energized drive may be shifted by an external force in the case of unfavorable conditions in the client's system. The drive can be actively maintained in its position in 'Manual' mode to avoid such circumstances.



Note:

This parameter can only be used if an encoder is available for the selected drive.

1y.6.6.1 Hardlock

Turn the Hardlock parameter on and off

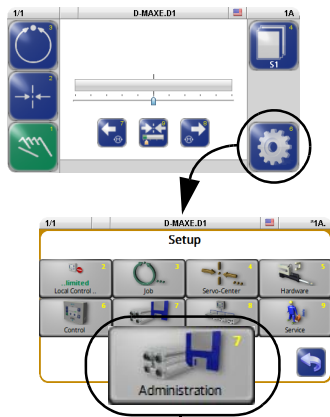
1y.6.6.2 Gain

Set the gain for the Hardlock parameter

1y.6.6.3 Polarity

Set the polarity for the Hardlock parameter

1y.7 Administration



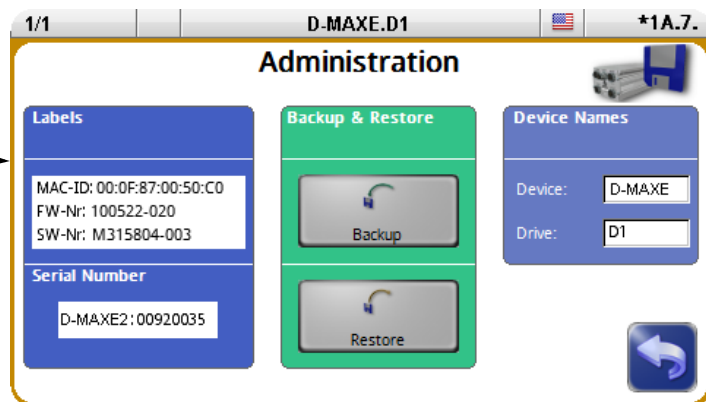
This section includes a list of menus containing information about the D-MAXE Controller. This information is required when ordering replacement parts or for service inquiries.

"Manual" mode:

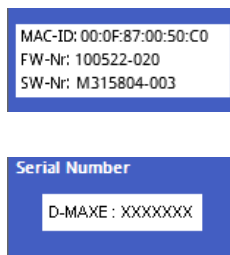
- All buttons or input fields are available for use.

"Servo Center" and "Automatic" mode:

- Only selected buttons or input fields are available for use.



Labels



This screen contains the details on the label which is affixed to the D-MAXE Controller housing.

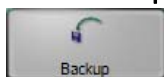
- MAC ID, firmware number and the D-MAXE Controller software number
- D-MAXE Controller serial number

Backup & Restore



Note:
On a D-MAXE 2 or D-MAXE 3 Controller, "Manual" operation mode must be selected on both drives.

Backup



You can use the *Backup* menu to save all current user settings of the D-MAXE Controller to a backup copy in the module.

If a backup has already been saved, the old values will be overwritten by the current ones.

**Note:**

On a D-MAXE 2 or D-MAXE 3 Controller, a drive is selected from which the settings for all drives are saved simultaneously. Therefore, only one backup is required.

Restore

You can use the *Restore* menu to set all settings of the D-MAXE Controller to the values of a backup copy.

**Note:**

On a D-MAXE 2 or D-MAXE 3 Controller, a drive is selected from which the settings for all drives are saved simultaneously. Therefore, only one backup is required.

**Note:**

On a D-MAXE 2 or D-MAXE 3 Controller, a drive is selected from which the settings for all drives are restored simultaneously from a backup. Therefore, only one restore is required.

1y.7.8.1 .. from previous backup

The settings from a backup saved by the customer are restored.

**Note:**

If no backup has been performed yet in the D-MAXE system, this menu is not available.

1y.7.8.2 .. factory settings

The factory settings are restored.

**Note:**

This process must only be performed when it has been requested after consultation with an employee of Fife-Tidland GmbH.

**Note:**

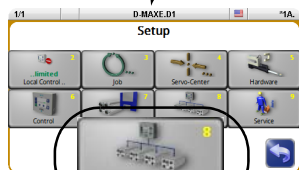
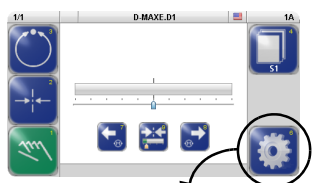
If nothing appears in the operator interface display after a restart, select a device with the header
Then commissioning of the D-MAXE Controller must be performed.

Device Names

| | |
|---------|--------|
| Device: | D-MAXE |
| Drive: | D1 |

- The device name and
- the drive name can be changed.

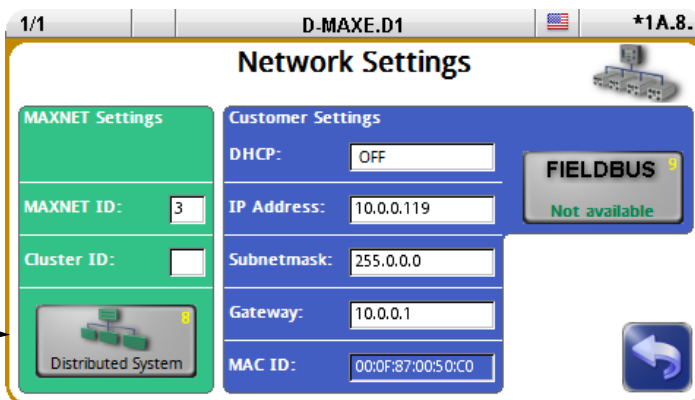
1y.8 Network



You can use these menus to view network settings and make changes to them.

Operating modes:

- The buttons and input fields are available in all operational modes.



MAXNET Settings

Display and change the network settings for MAXNET:

- The MAXNET ID is used for addressing of individual D-MAXE devices.
- The Cluster ID is used to
 - operate identical systems in a network.
 - operate more than 31 devices in a network

| MAXNET ID | Cluster ID | Use |
|------------------|---------------------------|--|
| Cannot be edited | Not visible | A system distributed over several devices and present once in the network |
| Cannot be edited | Visible and can be edited | A system distributed over several devices and present several times in the network |
| Can be edited | Visible and can be edited | Grouped independent drives (more than 31 are possible) |
| Can be edited | Not visible | Independent drives (maximum of 31 possible) |



Note:

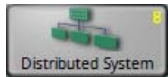
The MAXNET address/the MAXNET cluster address is only to be changed in accordance with the appropriate instructions in "Supplementary Operating Instructions" (see system documentation) or following consultation with a member of staff at Fife-Tidland GmbH.

**Note:**

If nothing appears in the operator interface display after a restart, select a drive with the header.

Customer Settings

- Display and change the network settings for TCP/IP
- show the MAC-ID of the D-MAXE controller
- optional:
Display of the fieldbus type and its properties

1y.8.8 Distributed System

The parameters under the *Distributed System* menu are used to group the devices connected to a common network and their menu structures depending on how they are used and to display them selectively on a D-MAXE operator interface.

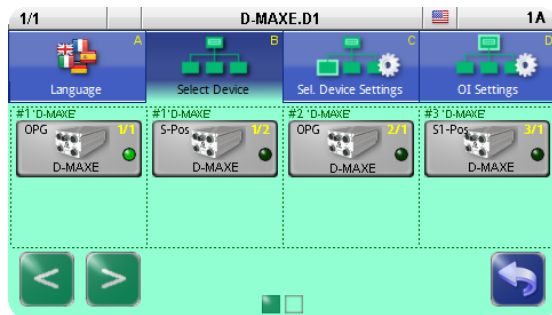
**Note:**

These parameters have no effect on how the connected devices operate. They are evaluated by the operator interfaces only to provide clearer display. Applications that are not set up or are assigned incorrectly have no effect on the functionality of devices.

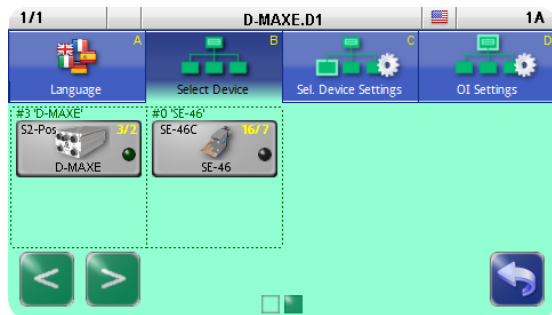
Figure 7.7 shows an example of a distributed system consisting of three D-MAXE Controllers and a SE-46 sensor. Each individual element of the distributed system has its own menu structure. These elements must be operated from a separate operator interface OI-TS.

All devices present in the distributed system can be selected in operator interface OI-TS.

- Touch the header and select *Select Device*
All the devices of the distributed system that are present in the network are displayed.



first page of the display



second page of the display

- #1/1: D-MAXE Controller with address 1/Drive 1: Guiding (e.g. offset pivot guide)
- #1/2: D-MAXE Controller with address 1/Drive 2: Sensor positioning
- #2/1: D-MAXE Controller with address 2/Drive 1: Guiding (e.g. offset pivot guide)
- #3/1: D-MAXE Controller with address 3/Drive 1: Sensor positioning
- #3/2: D-MAXE Controller with address 3/Drive 2: Sensor positioning (on the second page of the display)
- #16/7: SE-46 Sensor (on the second page of the display)

Figure 7.7: Example of a distributed system – non structured display

To be able to navigate effectively within such a complex network, individual "devices" and the corresponding menu structures are combined to form applications. Thus an application consists of several menu structures in a distributed arrangement (see [Figure 7.8](#)).

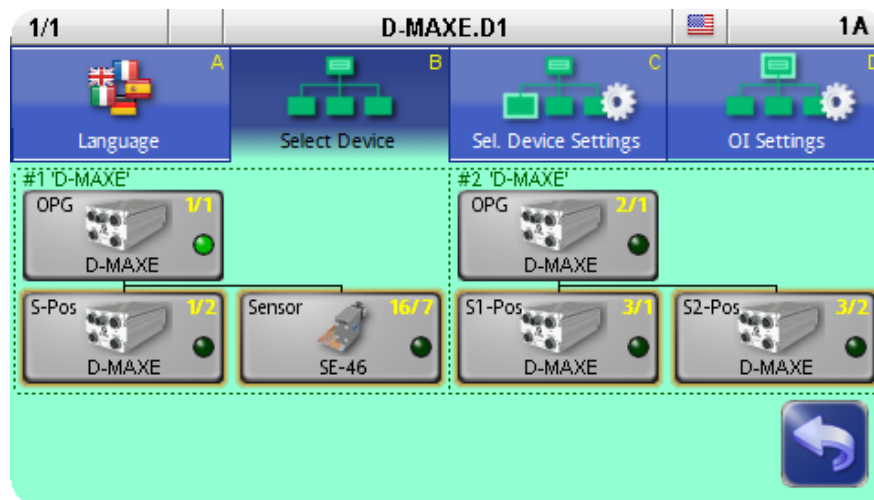
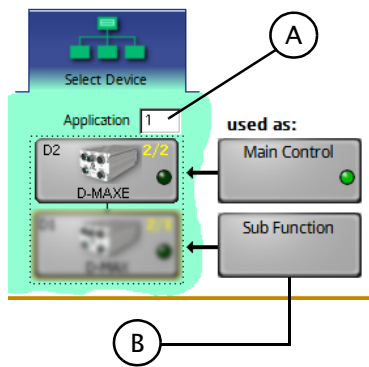


Figure 7.8: Example of a distributed system – structured display

**A: Application**

The *Application* menu provides an orderly summary and names for the menu structures with distributed arrangement ($n = 1 \dots 99$).

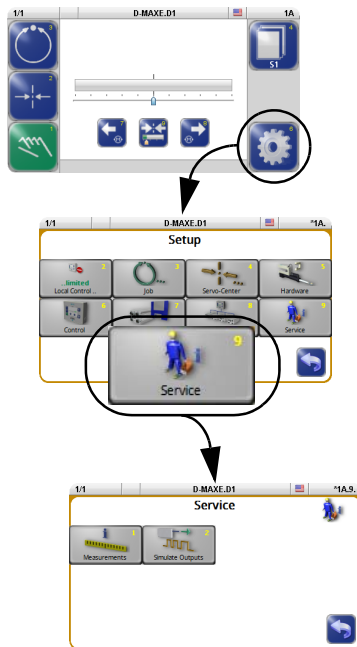
All the devices that belong to an application have the same number n .

B: used as

Every device inside an application has a *Sub Function* with its menu structure.

A menu structure for each application is marked as the *Main Control*. All other menu structures are *Sub Function*.

1y.9 Service



The purpose of these menus is to show information about settings of the D-MAXE system that is important for Customer Service.

"Manual" mode:

- All buttons are available.

"Servo Center" and "Automatic" mode:

- Only selected buttons are available.

1y.9.1 Measurements



Display of values of the D-MAXE system



1y.9.1.1 Sensors



1y.9.1.2 Encoder



1y.9.1.3 Digital Inputs (Connection X1)



1y.9.1.7 Measured Values

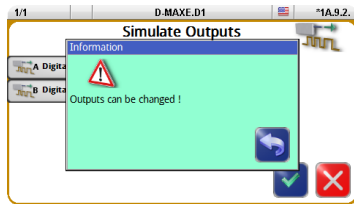


1y.9.1.9 Sensor Current

1y.9.2 Simulate Outputs



Used to test components connected to the digital outputs



CAUTION:

Actions may be initiated in the connected components!

8 MAINTENANCE



WARNING:

Danger of injury by crushing

⇒ Maintenance work must only be performed on the D-MAXE system when the power is turned off, the machine is stopped, and it is protected against being turned back on.

Maintenance work

No maintenance work is required on the D-MAXE Controller or operator interface.

To clean the display on the operator interface:

Depending on how dirty the environment is, carefully wipe off the operator interface display at regular intervals with a soft dry cloth.

If the display becomes very dirty, a moist cloth can be used to clean it. A mild detergent can be used to dissolve grease.

**Note:**

Do not use any solvents or aggressive cleaning agents to clean the display. Doing so could damage the display.

9 D-MAXE DECOMMISSIONING

Decommissioning

1. Turn off the electrical power to the D-MAXE system.
2. Remove all cables from the modules of the D-MAXE system.
3. Disassemble the modules of the D-MAXE system.
4. Modules of the D-MAXE system can be stored according to the specified ambient conditions (see [Transport and storage, page 3-1](#)).

OR

The modules of the D-MAXE system must be disposed of according to national requirements.

10 TROUBLESHOOTING

Troubleshooting Procedure

The D-MAXE system is capable of detecting errors as they occur and displaying them. The system also makes information available that may help exclude possible errors.

Display possibilities

The following display possibilities are available on modules of the D-MAXE system:

- LEDs on the front sides of the D-MAXE Controller
- Icons in the display of the D-MAX operator interface

Procedure

1. Check the LEDs on the individual modules of the D-MAXE systems

→ see table [page 10-2](#)

2. Check the icons that appear in the display of the D-MAX operator interface

→ see table [page 10-4](#)

3. Check possible causes for faulty behavior. Frequent causes are connections or settings on the D-MAXE system

→ see table [page 10-6](#)

4. Check the faulty behavior and possible causes. Often the cause is incorrect parameter settings

→ see table [page 10-9](#)



Note:

The Operating Instructions of other components (e.g. sensors and actuators) should also be consulted for troubleshooting purposes. If there is any customer-specific programming, refer to the "Supplementary Operating Instructions" as well.

LEDs on the D-MAXE Controller

While the device is being turned on, the LEDs on the D-MAXE Controller are lit red briefly. This makes it possible to check their functionality. The LEDs indicate errors and/or show information about normal operation of the D-MAXE Controller.






| LED | Status | Indicates | Remedy |
|-----------------------|-------------------------|---|--|
| Error messages | | | |
| E1 (X2/1) | Off | No Ethernet connection | Check plug and cable |
| | Yellow | 10mbps connection or half-duplex connection | Check switch and cable |
| E2 (X2/2) | Off | No Ethernet connection | Check plug and cable |
| | Yellow | 10mbps connection or half-duplex connection | Check switch and cable |
| PR | Off | No power supply | Are the power supplies correctly connected to the X6? See Electrical connection, page 3-6 Is a fuse blown? See Fuse replacement, page 10-11 |
| | Red | Power supply voltage too low, internal voltage outside tolerance or internal temperature too high | Check voltages and/or temperature See 1y.9.1.7 Measured Values, page 7-27 |
| | Yellow | No motor voltage | Check motor voltages; See item 2 in 1y.9.1.7 Measured Values, page 7-27 Is a fuse blown? See Fuse replacement, page 10-11 |
| Information | | | |
| E1 E2 | Green or Green flashing | Ethernet connection detected | |
| NW | Green | External device was recognized (e.g an operator interface OI-TS) | |
| PR | Green | Power supply and temperature are OK | |



**D-MAXE operator
interface OI-TS**






| Faulty behavior | Possible cause | Remedy |
|--|--|--|
| Incorrect actions are performed or none at all | The touch screen is calibrated incorrectly | Test the touch screen (see Debugging, page 4-5) Recalibrate if necessary (see Settings, page 4-5) |

Icons in the display of the D-MAX operator interface

The icons in the display of the D-MAX operator interface provide information about system states. These system states are not necessarily errors; they may also be intended operating states. Therefore these icons must be evaluated individually for troubleshooting to determine whether what seems to be an error may actually be a normal operating state of the D-MAXE system.

| Icon | Indicates | Possible error remedy |
|---|--|--|
| Error messages | | |
|  | No motor voltage | <p>Is the power supply correctly connected to X6? Note: Two power supplies must be connected to the D-MAXE Controller!</p> <p>see Electrical connection, page 3-6</p> <p>Is a fuse blown? See Fuse replacement, page 10-11</p> |
|  | Power backfeed from motor (motor acting as generator) | <p>Are external forces acting on the motor? Eliminate the external forces</p> <p>Is the motor under heavy load? This message appears briefly when heavy loads are being braked.</p> |
| | Short circuit in the motor cable or motor | Check motor and/or cable for damage or short circuits. |
|  | Motor at maximum current | <p>It is normal for this icon to appear briefly while a motor accelerates.</p> <p>If the icon appears persistently: Is the actuator at end of stroke or mechanically blocked?</p> |
|  | No motor detected or no motor connected | If a motor is connected, check the motor and/or cable. |
|  | <p>Error display</p> <p>An error has been detected on the selected actuator.</p> | <p>Check the voltages</p> <p>see 1y.4.2 Gain, page 7-10</p> |

| Icon | Indicates | Possible error remedy |
|---|---|--|
| Error messages | | |
|  | A threshold of the travel path has been reached. It is only possible to move in one direction – away from this limit. | <p>If this message appears even though no threshold has been reached, the thresholds have been moved.</p> <p>To restore the basic values, switch to "Servo-Center" mode and approach the servo-center position.</p> <p>If the error persists, check the parameters in 1y.4.2 Gain, page 7-10 and 1y.4.3 Polarity, page 7-10.</p> |
|  Flashing | The web speed for web speed-dependent guiding is equal to 0. | However, if the web speed is not equal to 0, check the signal for web speed. |


| | | |
|--|---|--|
|  and  | The ASC function on the selected actuator has been activated and triggered and the motor is locked. | <p>If locking was not intended, check the sensor signal and ASC thresholds.</p> <p>see 1y.9.1.1 Sensors, page 7-27 and 1y.3.y6 ASC, page 7-4</p> |
|  | The motor is locked because of an external signal (e.g. PIOX, fieldbus, application control). | <p>If you did not intend for the motor to be locked, check the digital inputs. It is possible that external locking is active</p> <p>see 1y.9.1.3 Digital Inputs (Connection X1), page 7-27</p> <p>If there is customer-specific programming, refer to the "Supplementary Operating Instructions" in the system documentation for information about the X1 parallel interface.</p> |
|  or  | The D-MAXE system is expecting commands from external devices. | <p>The devices may not be connected to the network.</p> <p>Check whether these devices are correctly connected to the network.</p> |

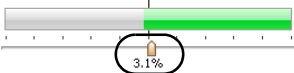
Faulty behavior and setting errors

Often the cause of incorrect or undesirable guiding behavior is an incorrect setting on the D-MAXE system. These errors can easily be eliminated by changing the appropriate settings on the D-MAXE system.

Possible causes for faulty D-MAXE behavior

Errors caused by connections or settings on the D-MAXE system can result in many kinds of faulty behavior in the system. Often it is difficult to deduce the cause directly from a faulty behavior. You should therefore check the possible causes in the following table and eliminate any that are present.

| Possible causes for faulty behavior | Remedy | Reference |
|--|---|---|
| No response on the desired actuator. Wrong actuator selected? | Select "Manual mode" and check whether the correct actuator is selected. | Select devices/actuators, page 5-2 |
|  An asterisk "(*)" appears in the header before the menu identification. Local Control has been taken over. | Limit Local Control. Local Control must be limited to ensure that the system can run as a whole. | see item 2 Local Control, page 7-2 |
| Is activation by means of the digital inputs possible? | Check the digital inputs. | see item 1y.9.1.3 Digital Inputs (Connection X1), page 7-27 in section 1y.5 Hardware |
| Is activation by means of a fieldbus possible (e.g. Profibus) ? | Check the fieldbus status. | see 1y.8 Network, page 7-23 |
| | Check the fieldbus data. | see 1y.8 Network, page 7-23 For more information about fieldbus data, refer to the "Supplementary Operating Instructions" in the system documentation. |
| Are the digital outputs being used? | Check the status (set/deleted) of the digital outputs. | see item 1y.5.4 Digital Outputs, page 7-17 in section 1y.5 Hardware |

| Possible causes for faulty behavior | Remedy | Reference |
|--|---|---|
| Sensors | Check the signals of the connected sensors (range ± 32767). | see item 1y.9.1.1 Sensors, page 7-27 in section 1y.9 Service |
| | It may be necessary to recalibrate the sensors. | see item 1y.5.1.1.1 Calibration, page 7-12 in section 1y.5 Hardware |
| | See also the Operating Instructions for the relevant sensors | |
| Are encoders being used? | Check whether the encoders are 'counting'. | see item 1y.9.1.2 Encoder, page 7-27 in section 1y.9 Service For more information about the encoders, refer to the "Supplementary Operating Instructions" in the system documentation. |
| Are you using the correct motor? | Check the motor | see item 1y.5.2 Actuator, page 7-17 in section 1y.5 Hardware and table Actuators, page 11-6 For further information about the motor refer to the system diagram in the system documentation. |
|  <p>A cursor appears below the bar graph at the location to which the guide point was moved, together with a numeric entry.</p> | <p>Is the offset of the guidepoint set the way you want it?</p> <p>Correct the guidepoint if necessary.</p> | Shift guide point, page 5-3 |

| Possible causes for faulty behavior | Remedy | Reference |
|---|---|--|
| Incorrect results in displays or with web width measurements. | <p>The measurement range is not set or is set incorrectly.</p> <p>Check the measurement range of the sensors and/or encoders you are using.</p> | <p>see item 1y.5.1.1.3 Field of View, page 7-13 (Sensor) or item 1y.5.1.2 Travel Length, page 7-16 (Encoder) in section 1y.5 Hardware</p> <p>For further information see the "Supplementary Operating Instructions" in the system documentation.</p> |
| | <p>The length unit is set incorrectly.</p> <p>Check the length unit.</p> | <p>see item 1y.6.5 Unit, page 7-20 in section 1y.6 Control</p> |

Faulty behavior

The table below shows examples of faulty behavior, causes, and how to remedy the fault. Often the cause is incorrect parameter settings.

| Faulty behavior | Reason | Remedy | Reference |
|--|--|---|---|
| The actuator is moving too fast or too slow. | The motor speed is not set correctly. | Adjust the motor speed | see 1y.3.y10 Actuator Speed, page 7-9 in section 1y.3 Job |
| The actuator does not move in "Automatic" mode. | The gain is set too low. | Increase the gain | see 1y.3.y3 Gain, page 7-4 in section 1y.3 Job |
| | The actuator is mechanically locked. | Free the actuator and clean the area. | |
| The actuator vibrates in the Automatic operating mode.. | The gain is set too high. | Reduce the gain | see 1y.3.y3 Gain, page 7-4 in section 1y.3 Job |
| | Cable connections are loose. | Check all cable connections to make certain they are securely fastened. | |
| The actuator moves in the wrong direction in "Automatic" mode. | The polarity is set incorrectly. | Reverse the polarity | see 1y.3.y8 Polarity, page 7-8 in section 1y.3 Job |
| | Wrong job selected. | Select "Manual: mode and check whether the correct job is selected. | see Select jobs, page 5-3 |
| The actuator does not move in "Servo Center" mode. | The gain for the servo-center transducer is set too low. | Increase the gain | see 1y.4.2 Gain, page 7-10 in section 1y.4 Servo-Center |
| | The actuator is at the stop because the polarity is set incorrectly. | Reverse the polarity for the "Servo-center" operation mode. | see 1y.4.3 Polarity, page 7-10 in section 1y.4 Servo-Center |
| The actuator vibrates in the "Servo-center" operating mode. | The gain for the servo-center transducer is set too high. | Decrease the gain | see 1y.4.2 Gain, page 7-10 in section 1y.4 Servo-Center |

| Faulty behavior | Reason | Remedy | Reference |
|---|--|---|---|
| The actuator does not reach the servo-center position in "Servo Center" mode. | The polarity for the servo-center transducer is set incorrectly. | Reverse the polarity | see 1y.4.3 Polarity, page 7-10 in section 1y.4 Servo-Center |
| | The servo-center transducer is not receiving a signal. | <p>Check the distance between the servo-center transducer and the measuring point.</p> <p>WARNING: It may be necessary to move the actuator to adjust the servo-center transducer. There is a risk of cutting injuries on the web and crushing injuries on the actuator. ⇒ Do not touch the edges of the material web. ⇒ Perform the adjustment only when the machine is stopped and protected against being turned on.</p> <p>Type: Switching Distance ISCT-03: about 1 mm ISCT-20: about 1.5 mm ISCT-21: about 2 mm ISCT-22: about 5 mm ISCT-23: about 10 mm</p> | |

Fuse replacement

The printed circuit boards in the D-MAXE controller are static sensitive devices. All standard ESD precautions must be followed when touching or handling the printed circuit boards.

These fuses should be replaced by qualified personnel only. Follow the instructions shown below for fuse replacement.

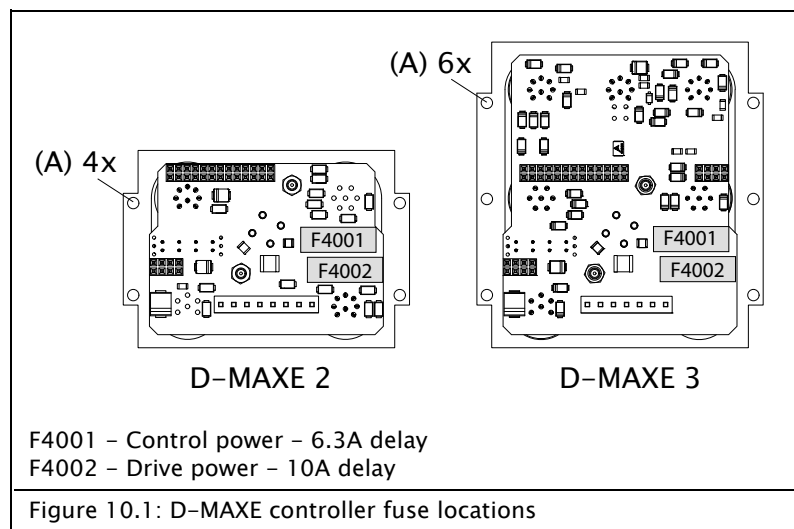


A common cause for blown fuses is an incorrect power supply connection – especially reversed polarity. Before applying power after replacing fuses, verify correct power supply wiring per [Figure 3.7](#):

If the units will not power on after fuses are replaced and correct power supply connections have been verified, the units must be returned to Maxcess for repair.

Controller fuses

1. To access the controller fuses, remove the screws (A) that secure the power end cover assembly to the enclosure. Carefully remove the assembly.
2. Replace the necessary fuse(s).
3. Ensure that all connectors are engaged properly.
4. Re-install the end cover assembly and tighten the screws.



11 TECHNICAL DATA

General information

D-MAXE Controller

Power supply

24 to 48V nominal

21 V minimum to 51 V maximum

The negative pole serves as a signal ground and is electrically connected with the housing. [NOTE 1]

Maximum power consumption

D-MAXE Controller – connection for control

130W maximum

D-MAXE Controller – connection for drive

200W maximum at 24V or

400W maximum at 48V

Dimensions

Length: 184mm [7.24 in] without cables

Width: 87mm [3.45 in]

Height: 60mm [2.36 in] D-MAXE 1, D-MAXE 2

93mm [3.66 in] D-MAXE 3

Weight

1.0kg [2.2 lbs] D-MAXE 1, D-MAXE2

1.2 kg [2.65 lbs] D-MAXE 3

Protection class

IP54 according to DIN EN 60529

Ambient conditions

Ambient temperature: 0°C to 60°C [32 to 140°F] [NOTE 2]

Relative humidity: 10% to 95% non-condensing

Altitude above sea level: maximum 3000m [9842 ft]

Maximum output current

4.0A/drive

Fuse protection

Control power – 6.3A delay

[Bussmann S506-6.3-R or Littelfuse 021806.3P]

Drive power – 10A delay

[Bussmann S506-10-R or Littelfuse 0218010.P]

NOTE 2. The unit should always be mounted with good thermal contact to a large metal body such as a guide or machine frame. Some applications with very large drive and accessory load currents may require ambient temperature de-rating.

D-MAX operator interface OI-TS

Power supply

12 to 24V nominal
10V minimum to 30V maximum

Power consumption

2W

Dimensions

Wall mounting: 128 x 105 x 38mm [5 x 4.1 x 1.49 inches]
Desk installation: 128 x 105 x 33+5mm

Weight

0.6kg [1.3 lbs] (OI-TS only, without mounting accessories)

Protection class

IP64 according to DIN EN 60529

Ambient conditions

Ambient temperature: 0°C to 60°C [32 to 140°F]
Relative humidity: 10% to 95% non-condensing
Altitude above sea level: maximum 3000m [9842 ft]

Inputs and outputs of the D-MAXE Controller

Communication interface

based on Ethernet – 100Mbps full duplex [Note 3]

Electromechanical drive

Maximum 4A/drive

Hydraulic servo-valve

±50mA
with or without lock valve (24V or 48V, maximum 4A)

Motor Power Amplifier MPA

±10mA (with MPA locking signal)

Servo-center transducer

Analog, inductive servo-center transducer

Sensor input

Maximum ±20mA
Preset range 0 to 10mA
Sensor inputs can be calibrated individually

Line Speed

0 – 10mA
Calibration optionally possible between 0 to 20mA

Power supply for accessory devices

+12V \pm 5%, 2000mA total

–12V \pm 5%, 150mA total

+24V \pm 5%, 1000mA each sensor connection and serial connection [Note 4]

Parallel interface

6 digital inputs

Low-level: 0 to 0,9V

High-level: 4.6 to 24V; maximum power consumption
6mA to ground

2 outputs

Optionally switching to positive or ground

Positive switching: 24V (at least 22.5V at 200mA) [Note 5]

Ground switching: 0V (maximum 1.0V at 500mA)

Maximum voltage: 28V

Overcurrent and short-circuit protection

+12V available as auxiliary voltage

Note 1. Guiding amplifiers of type D-MAXE 1, D-MAXE 2 and D-MAX 3 normally have a 0-ohm connection between the primary-side protective ground wire [PE] and the DC-side ground [GND]. This is necessary to meet EMC requirements as specified by VDE 0838, part 3 2002-05 DIN EN 61000-3-3, Electromagnetic Compatibility (EMC) – part 3-3 and to ensure that connected accessory devices (sensors, encoders, actuators and operator interfaces) work properly.

Note 2. The unit should always be mounted with good thermal contact to a large metal body such as a guide or machine frame. Some applications with very large drive and accessory load currents may require ambient temperature de-rating.

Note 3. Connectors X2/1 and X2/2 provide access to an integrated two-port Ethernet switch. The dual Ethernet ports in the D-MAXE also support slave mode beacon-based DLR (Device Level Ring) technology and will automatically participate as a beacon-based slave when the DLR protocol is detected. In this mode, the two Ethernet ports function in accordance with DLR traffic rules to provide network redundancy and diagnostic capability.

Note 4. The supply output at each sensor connection and the serial connection can be individually switched between +12V and +24V. When the control supply input is less than 24V, the +24V output can be 1V below the input supply.

Note 5. When the control input supply is less than 24V, the positive switching output can be 1V below the input supply.

Parallel input matrix

Because of the option for customer-specific programming, there may be some deviations in the parallel input matrix. Customer-specific software adjustments of this type are described in the "Supplementary Operating Instructions" for the D-MAXE system and are included in the system documentation.

| Mode | Inputs | | | | | |
|-------------------|--------|---|---|---|---|---|
| | 5 | 4 | 3 | 2 | 1 | 0 |
| Locking, external | – | – | – | – | – | H |
| Automatic | – | – | L | L | H | – |
| Manual | – | – | L | H | L | – |
| Servo Center | – | – | H | L | L | – |
| Move drive left* | L | H | – | – | – | – |
| Move drive right* | H | L | – | – | – | – |
| RGPC left* | L | H | – | – | – | – |
| RGPC right* | H | L | – | – | – | – |
| RGPC RESET* | H | H | – | – | – | – |

L = Low level ($\leq 0,9V$ or blank)

H = High level (3,6V – 24V)

Empty field = not relevant for the specific command

* Inputs 4 and 5 for moving the drive in "Manual" and "Servo Center" modes

Offset of the guide point (RGPC) in "Automatic" mode

Parallel output matrix

| Status | Outputs | |
|--|---------|----|
| | B* | A* |
| LOSS OF NULL (Automatic mode) | – | 1 |
| Drive servo-centered (Servo-Center mode) | 1 | – |

The menu [1y.5.4 Digital Outputs, page 7-17](#) can be used to adjust the assignment of the logical state (1 or 0) to the electrical state (active low, active high, high-impedance).

If there are differences compared to the table, they are described in the "Supplementary Operating Instructions" in the system documentation.

Jobs

| | Job | Connection | Type of Guiding |
|----------|------------|-------------------|---------------------------------|
| A | S1 | X5/1 | Edge guiding* |
| B | S2 | X5/2 | Edge guiding* |
| C | S3 | X9/1** | Edge guiding* |
| D | S4 | X9/2** | Edge guiding* |
| E | S1 – S2 | X5/1&2 | Center guiding or slave guiding |
| F | S3 – S4 | X9/1&2** | Center guiding or slave guiding |
| G | S1 – S3 | X5/1 & X9/1** | Center guiding or slave guiding |
| H | S2 – S4 | X5/2 & X9/2** | Center guiding or slave guiding |
| J | X5 | X5/2 | Line center guiding |
| K | X9 | X9/2** | Line center guiding |
| L | X5 | X5/1 | Line edge guiding |
| M | X9 | X9/1** | Line edge guiding |

* It is possible that the sensor being used is already returning a center signal. In this case, center guiding will be performed.

** On a D-MAXE 3, S3 is connected to both X9/1 and X11/2, and S4 is connected to both X11/1 and X9/2 and will generally be referred to as X11/1.

**Note:**

Because of the possibility of customer-specific programming, individual jobs cannot be present or cannot be used differently than listed in the table. Customer-specific software adjustments of this type are described in the "Supplementary Operating Instructions" for the D-MAXE system and are included in the system documentation.

Actuators

| Display content* | Current | **Nom. voltage | Motor / Valve | ID | Typical modules |
|---------------------|----------|----------------|--------------------------------|--------------|---------------------------|
| 1.3A MTR/ENC ID0 | 1.3A | 24 VDC | M352553 Motor encoder | Series ID 00 | DS-25 |
| 2.0A MTR/ENC ID1 | 2.0A | 24 VDC | M332325 Motor encoder | Series ID 01 | DS-70 D-LA-70 |
| 3.3A MTR/ENC ID2 | 3.3A | 24 VDC | M281466 Motor encoder | Series ID 02 | GMA-D1 |
| 3.3A MTR/ENC ID3 | 3.3A | 24 VDC | M352554 Motor encoder | Series ID 03 | DLAB-3-6 |
| 0.8A MTR/ENC ID4 | 0.8A | 24 VDC | M280791 Motor encoder | Series ID 04 | D-Pro-Trac 200 |
| 4.0A MTR/ENC ID5 | 4.0A | 24 VDC | M315031 Motor encoder | Series ID 05 | GMA-D3 |
| 0.4A MTR/ENC ID7 | 0.4A | 24 VDC | M280791 Motor encoder | Series ID 07 | D-PT-150 |
| 0.6A M/ENC(EGH) ID8 | 0.6A | 48 VDC | M388282 Motor encoder | Series ID 08 | D-Pro-Trac 200 |
| 0.6A NO TACH 2.05K | 0.6A | 48 VDC | M352555 Motor (tachless) | 2.05K | Tachless Symat 25 |
| 1.3A NO TACH 3.48K | 1.3A | 48 VDC | M351418 Motor (tachless) | 3.48K | Tachless Symat 50 |
| 0.2A NO TACH 5.11k | 0.2A | 24 VDC | M319177 Motor (tachless) | 5.11K | Pro-Trac 150 |
| 0.6A MOTOR 6.81K | 0.6A | 48 VDC | M136115 Motor | 6.81K | Pro-Trac 200 |
| 0.6A MOTOR 8.66K | 0.6A | 48 VDC | M328091 Motor | 8.66K | MicroSymat Symat 25 |
| 8,0A MOTOR 11K | 8.0A | 36 VDC | M137384 Motor | 11K | AG-11, AB-12, LAB-8 |
| 1.3A MOTOR 14K | 1.3A | 48 VDC | M136112 Motor | 14K | Symat 70 |
| | | | M126687 Motor | | Symat 50 |
| 1.3A MOTOR 14K | 1.3A | 48 VDC | M126688 Motor | 14K | GMA-1 |
| 1.6A MOTOR 16.9K | 1.3 A*** | 48 VDC | M136103 Motor (1,6 A) | 16.9K | GMA-1 |
| 0.4A MOTOR 20.5K | 0.4A | 48 VDC | M352556/ M352557 Motor | 20.5K | NarroWeb 25 |
| 2.0A MOTOR 24.9K | 2.0A | 48 VDC | M136111 Motor | 24.9K | GMA-3 |
| 2.6A MOTOR 30.1K | 2.6A | 48 VDC | M146713 Motor | 30.1K | LAB-10, LAB-10A |
| 0.6A MOTOR 8.66K | 0.6A | 48 VDC | M136105 Motor | 8.66K | LA-9 |
| 3.5A MOTOR 36.5K | 3.5A | 48 VDC | M126246 Motor M126687 Motor | 36.5K | AB-1 LRA |

| Display content* | Current | **Nom. voltage | Motor/Valve | ID | Typical modules |
|---------------------|-----------------------------|----------------|--|-------|--|
| 1.0A MOTOR 44.2K | 1.0A | 48 VDC | M352559 Motor M352560 Motor | 44.2K | NarroWeb 50 |
| 50mA HYDR 64.9K | ±50mA | 24 VDC | Hydraulic proportional valve | 64.9K | |
| 48V LVALVE 78.7K | 0.6A | 48 VDC | Hydraulic proportional valve and 48V locking valve | 78.7K | |
| 24V LVALVE 95.3K | 1.2A | 24 VDC | Hydraulic proportional valve and 24V locking valve | 95.3K | |
| 50mA HYDR AXC 121K | ±50mA | 24 VDC | Hydraulic servo-valve | 121K | Zero-overlapped valve |
| 48V LVALVE AXC 154K | 0.6A | 48 VDC | Hydraulic servo-valve | 154K | Zero-overlapped valve with 48V locking valve |
| 24V LVALVE AXC 205K | 1.2A | 24 VDC | Hydraulic servo-valve | 205K | Zero-overlapped valve with 24V locking valve |
| 10mA MPA 287K | ±10mA | 24 VDC | MPA Motor driver | 287K | MPA-01/-02/-30 |
| CUSTOM MTR 825K | Adjusted motor | | | 825K | Not a motor from Fife |
| – | No motor or valve detected. | | | None | |

* see [1y.5.2 Actuator, page 7-17](#)

** The maximum possible mains power voltage on the D-MAXE Controller is 51 VDC. The D-MAXE Controller regulates the voltage down to the necessary level required by the connected motor/valve.

*** 1,3A is used for the 1.6A motor.

Cable lengths

| Connection | Cable lengths (maximum) |
|-------------------------------|------------------------------------|
| Sensors (except SE-26 / -26A) | 50m [164 ft] |
| Sensor SE-26A | 25m [82 ft] |
| Parallel interface | 50m [164 ft] |
| Servo-center transducer | 50m [164 ft] |
| Servo-valves | 50m [164 ft] |
| Locking valve | 50m [164 ft] |
| Drive | 14m [46 ft] |
| RGPC-50 | 100m [328 ft] |
| Ethernet | 100m [328 ft] |
| Operator interface | 50m [164 ft] |

Standards

Modules of the D-MAXE system have been engineered according to the standards and guidelines of the European Union. A declaration of conformity is available on file.

Modules of the D-MAXE system are in compliance with the following standards:

| | | |
|--------------------|---------------------|-----------|
| EN 61326-1 | Radiated Emissions | Class A |
| | Conducted Emissions | Class A |
| FCC 47 CFR Part 15 | | Class A |
| ANSI C63.4 | | Class A |
| EN 61000-4-2 | | 4kV / 8kV |
| EN 61000-4-3 | | 10V/m |
| EN 61000-4-4 | | 2kV / 1kV |
| EN 61000-4-5 | | 2kV / 1kV |
| EN 61000-4-6 | | 3Vrms |

Accessories (optional)**Input devices****RGPC-50 / 51**

External input device for moving the guidepoint

RCAL-20

External input device for easier sensor calibration of edge sensors

RCAL-26

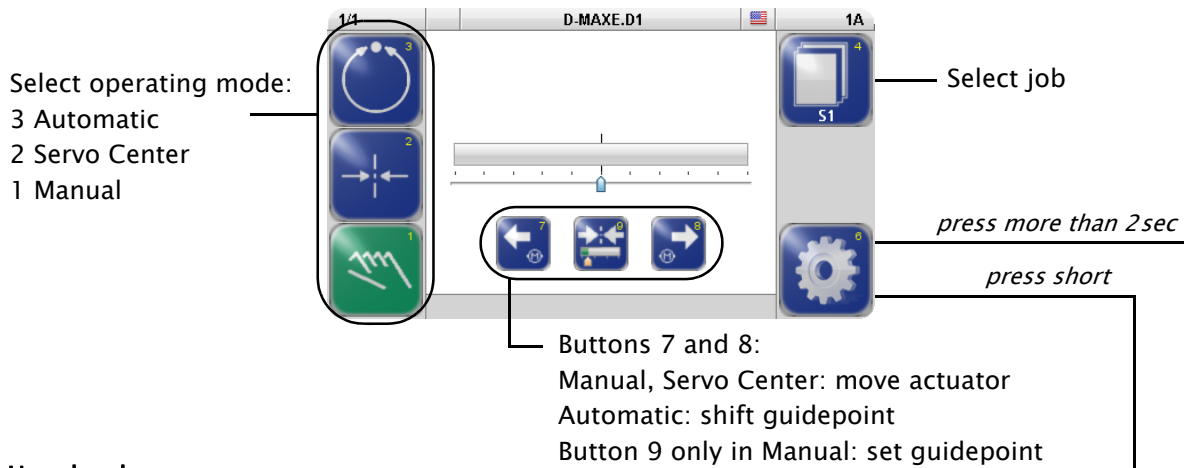
External input device for easier sensor calibration of line sensor SE-26/SE-26A

Assembly accessories

Wall bracket for D-MAXE Controller

Wall bracket for operator interface

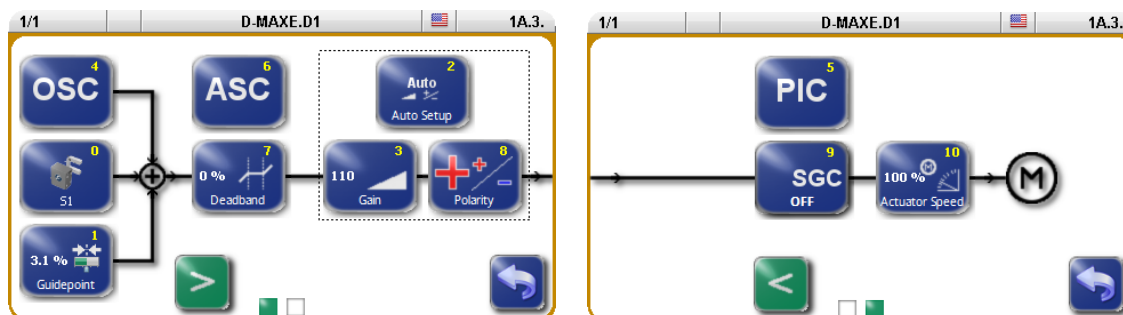
12 APPENDIX A – OVERVIEW



User level

Menu level

Job*/Servo center transducer** menu



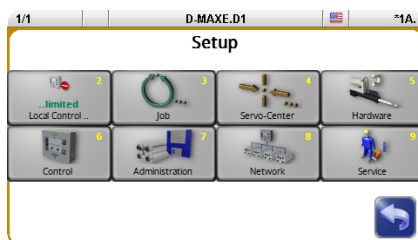
* Operating mode Manual/Automatic

- 0 Calibrate sensor
- 1 Guidepoint
- 2 Auto Setup
- 3 Gain
- 4 OSC
- 5 PIC
- 6 ASC
- 7 Deadband
- 8 Polarity
- 9 SGC (Speed Gain Control)
- 10 Actuator Speed

** Operating mode Servo Center

- 1 Guidepoint
- 2 Gain
- 3 Polarity

Setup menu ***




















- 2 **Local Control**
- 3 **Job**
Switch to Job menu
- 4 **Servo-Center**
Switch to Servo-Center transducer menu

- 5 **Hardware**
 - 1 Sensors
 - 2 Actuator
 - 3 Digital Inputs
 - 4 Digital Outputs
- 6 **Control**
 - 1 Modes
 - 2 Jobs
 - 3 Left/Right buttons
 - 4 Local Control
 - 5 Unit
 - 6 Hardlock
- 7 **Administration**
 - 1 Labels
 - 2 Serial Number
 - 3 Backup & Restore
 - 4 Device Names

- 8 **Network**
 - MAXNET Settings
 - Customer Settings
- 9 **Service**
 - 1 Measuring Points
 - 2 Set Digital Outputs

*** the set of menus depends on the selected operating mode and/or on the programming

13 APPENDIX B – SYMBOLS

| Symbols | Description |
|---|---|
|  | Error display – This icon appears if an error is detected on the selected drive. |
|  | The selected drive is expecting MAXNET data from a device, but does not receive any data. The device that should send MAXNET data is either not connected or not turned on. |
|  | The selected drive expects data from a Gateway, but does not receive any data, since no data can be received on the Gateway. |
|  | No motor was detected or no motor is connected. |
|  | The motor current supply is outside the valid range. |
|  | Motor backfeed overvoltage (generator function of the motor) or short circuit in the motor cable. |
|  | The motor is locked |
|  | The motor works at maximum motor current. |
|  | The motor is actively locked in "Manual" mode (hardlock). |
|  | The limit values of the encoder have been reached. |
|  | RCAL is active on the selected drive. This symbol appears between the time when the first and second button on the RCAL-20/26 (optional device) is pressed. |
|  | The optional oscillator 'OSC' is available in the selected job. |
|  | The optional controller 'PIC' is available in the selected job. |
|  | SGC: Guiding depends on the web speed. If this symbol is flashing, the web speed is equal to 0 and no guiding is being performed. |
|  | ASC (Automatic Signal Control) is activated. |
|  | ASC is triggered. This icon appears if the ASC function has been activated and triggered on the selected drive. |
|  | ASC is triggered. These icons appear if the ASC function has been activated and triggered on the selected drive and the motor has been blocked. |

14 APPENDIX C – TERMS

ASC (Automatic Sensor Control)

If the web is outside of the defined range of the sensor's field of vision, guiding is stopped.

Automatic

Operating mode

The web course is automatically corrected by an actuator based on sensor information.

Automatic calibration

The Gain and Polarity parameters are calibrated automatically.

CM (Customized Menu)

Customer-specific system menu

This system menu is only present if the D-MAXE controller has been programmed accordingly.

Deadband

A range is defined around the guide point in the sensor field of view in which guiding is reduced or is not active at all in the "Automatic" operation mode.

Device

Devices refer to the drives on the D-MAXE Controllers present on D-MAXE the network as well as any customer-specific CM system menus or Gateways.

Drive

The drive may be the motor of an actuator, for example, which provides the necessary correction within a control loop.

Encoder

Incremental position transducer to record positions

Hardlock

The Hardlock parameter allows you to maintain the actuator active in its position in "Manual" mode.

Job

Jobs are types of controllers that are in principle available in a D-MAXE system.

LOSS OF NULL

In "Automatic" operation mode, indicates that the actuator will be moved at more than 50% of its maximum speed to compensate for a guiding error.
This target speed depends on the guiding error and the set gain.

LS (Line Speed)

Designation of the web speed signal which is supplied to X1.

Manual

Operating mode
There is no guiding of the web course.

OI (Operator Interface)

Designation of an operator interface.

OSC

Designation of an optionally available oscillator.

PIC

Designation of an optionally available controller.

RCAL

Designation of an external input device for sensor calibration

RCAL

Designation of an external input device for sensor calibration.

RGPC (Remote Guide Point Control)

Designation of an external activation system for offset of the guidepoint.

SC (Servo Center)

SC is the abbreviation for the "Servo Center" mode.

Servo Center

Operating mode
The actuator is moved to the mechanical center position depending on the servo-center transducer.

Servo-center position

Then the control rollers of the actuator are aligned parallel to the rollers of the customer system.

Servo-center transducer

Assigns the servo-center position for "Servo Center" mode

SGC (Speed Gain Control)

Guiding depends on web speed.

Supplementary Operating Instructions

Customer-specific software adjustments of the software are described in the "Supplementary Operating Instructions" for the D-MAXE system and are included in the system documentation.

Web / strip

The web / strip is the customer's material, which is affected in its direction of movement as it is guided by the D-MAXE system.

For simplicity sake, these Operating Instructions will refer only to the web.

15 SERVICE

Requests for Service

When requesting service, please have a copy of the order confirmation ready with the order number.

When ordering replacement parts, please indicate, (where possible) Part Number, Drawing Number and Model description (see [page 3-1](#)).

Please be careful to keep all documents accompanying the product in a safe place. This will allow us to help you more quickly in the event that service is required.

Addresses

To request service, or if you need replacement parts, please contact one of the following addresses.

Fife-Tidland GmbH

| | |
|--|---------------------|
| Max-Planck-Straße 8 | Siemensstraße 13-15 |
| 65779 Kelkheim | 48683 Ahaus |
| Deutschland | Deutschland |
| Telefon: +49.6195.7002.0 | |
| Fax: +49.6195.7002.933 | |
| E-Mail: service@maxcess.eu | |
| Web: www.maxcess.eu | |

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