TOX®-Servocontroller

General data and operating conditions

The central intelligence: The freely parameterizable servo controller is a single-axis servo controller with integrated logic.

It controls and regulates the TOX®-ElectricDrive system with all required functions. Benefits are the immediate processing of process data and a direct response to their deviations. The process data can be viewed during and after production for a complete quality certificate, and documented accordingly.

**Operating conditions**

<table>
<thead>
<tr>
<th>Operating conditions</th>
<th>With grounded star-circuit</th>
<th>Unlimited use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit type</td>
<td>With grounded star-circuit</td>
<td>Unlimited use</td>
</tr>
<tr>
<td>IT-net</td>
<td>IT-net</td>
<td>Follow instructions for special measures!</td>
</tr>
<tr>
<td>Standards</td>
<td>Conformity</td>
<td>Low voltage directive (2006/95/EC)</td>
</tr>
<tr>
<td>Conformity</td>
<td>CE</td>
<td>Low voltage directive (2006/95/EC)</td>
</tr>
<tr>
<td>Approvals</td>
<td>UL 508C</td>
<td>Power Conversion Equipment (File-No. 32659)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Enclosure type</td>
<td>cNot in the connecting area of the motor side connectors.</td>
</tr>
<tr>
<td>Enclosure type</td>
<td>EN 60529</td>
<td>IP20 Contact protection according to type 1</td>
</tr>
<tr>
<td>NEMA 250</td>
<td>NEMA 250</td>
<td>cNot in the connecting area of the motor side connectors.</td>
</tr>
<tr>
<td>Climatic conditions</td>
<td>Operation*</td>
<td>3K3 (-10...+55°C) Derating of rated output current +45...+55°C: 2.5% /°C</td>
</tr>
<tr>
<td>Relative air moisture</td>
<td>max. 85%, without condensation</td>
<td></td>
</tr>
</tbody>
</table>

*Attention: In case of an installation at 1000 m above sea level the reduction of the nominal current will be 5%/1000 m.
For TOX®-ElectricDrive-systems up to 10 kN press force

Dimensions

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>b1</th>
<th>e</th>
<th>f</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>481</td>
<td>350</td>
<td>288</td>
<td>348</td>
<td>5.3</td>
</tr>
</tbody>
</table>

* Mounting plate existing (comes with the switch cabinet)
- Built-in depth of switch cabinet: 400 mm
- Dimensions of ballast resistor W/H/D: T / H / B 30 / 60 / 355 mm
TOX®-Servocontroller

For TOX®-ElectricDrive-systems 25 - 100 kN press force

Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>a</th>
<th>b</th>
<th>b1</th>
<th>e</th>
<th>f</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ-K</td>
<td>90</td>
<td>481</td>
<td>350</td>
<td>288</td>
<td>348</td>
<td>8.1</td>
</tr>
<tr>
<td>EX-K</td>
<td>120</td>
<td>481</td>
<td>350</td>
<td>288</td>
<td>348</td>
<td>8.1</td>
</tr>
</tbody>
</table>

* Mounting plate existing (comes with the switch cabinet)
- Built-in depth of switch cabinet: 400 mm
- Dimensions of ballast resistor W/H/D: T/H/B 30 / 60 / 355 mm
For TOX®-ElectricDrive-systems 200 - 700 kN press force

Dimensions

Basic device + mounting base (here mains filter integrated) mm

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>b1</th>
<th>b2</th>
<th>e</th>
<th>c1</th>
<th>d</th>
<th>g</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>206</td>
<td>606</td>
<td>556</td>
<td>630</td>
<td>294</td>
<td>170</td>
<td>585</td>
<td>6.5</td>
<td>26.5</td>
</tr>
</tbody>
</table>

* Mounting plate existing (comes with the switch cabinet)
- Built-in depth of switch cabinet: 400 mm
- Dimensions of ballast resistor W/H/D: T/H/B 30 / 60 / 355 mm
TOX®-Servocontroller

Wiring diagram

Block diagram
Use of the TOX®-ElectricDrive system.
Simplified diagram.

TOX®-Servocontroller

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**Wiring diagram**

**Block diagram**
Use of the TOX®-ElectricDrive system.
Simplified diagram.

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**Servocontroller**

- **X105**
- **MXI1**
- **MSI**
- **X3**
- **X7**
- **X105**
- **E/S**
- **MX02**
- **X4, X5**
- **PC**
- **Etheren**, **programming**, **process data**
- **Force sensor**
- **Resolver**
- **Motor**
- **Control, digital, PLC**

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- **Ballast-resistor**
- **Emergency switch button light grille/protective door**
- **Standard interface, ProfNet**
- **approx. 150 – 500 ms delay**
- **safety category 3**

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- **Emergency switch**
- **undelayed**

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- **Emergency switch box with a delay of approx. 150 – 500 ms as per risk analysis and afterrunning test**

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- **green: Scope of delivery TOX®-ElectricDrive Set**
- **red: supplied by customer**

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Subject to technical modifications.