Dynamic Line

Servo Motors DL2 with special flange

Translation of original manual

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<th>Document</th>
<th>Part</th>
<th>Version</th>
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<td>20130326</td>
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This instruction manual describes the motors of the series Dynamic Line DL2 with special flange. This manual is only valid together with Dynamic Line DL2 servo motor DL2. The safety and warning notes listed in this instruction manual as well as in other documentation must be observed at any rate to ensure a safe operation. Non-observance of the safety instructions leads to the loss of any liability claims. The safety and warning instructions specified in this manual do not lay claim on completeness. KEB reserves the right to change/adapt specifications and technical data without prior notice. The pictograms used here have the following meaning:

- **Danger**
  - Is used when the life or health of the user is in danger or considerable damage to property can occur.

- **Warning**
  - Is used when a measure is necessary for safe and disturbance free operation.

- **Caution**
  - Is used when a measure is necessary for safe and disturbance free operation.

- **Attention observe at all costs**
  - Is used, if a measure simplifies the handling or operation of the unit.

- **Information**
  - Is used, if a measure simplifies the handling or operation of the unit.

- **Aid**
  - Is used, if a measure simplifies the handling or operation of the unit.

- **Tip**
  - Is used, if a measure simplifies the handling or operation of the unit.

The use of our units in the target products is outside of our control and therefore lies exclusively in the area of responsibility of the machine manufacturer.

The information contained in the technical documentation, as well as any user-specific advice in spoken and written and through tests, are made to best of our knowledge and information about the application. However, they are considered for information only without responsibility. This also applies to any violation of industrial property rights of a third-party. A selection of our units in view of their suitability for the intended use must be done generally by the user. Tests can only be done by the machine manufacturer in combination with the application. They must be repeated completely, even if only parts of hardware, software or the unit adjustment are modified. Repairs may be carried out only by the manufacturer or repair places authorized by him. Unauthorised opening and tampering may lead to bodily injury and property damage and may entail the loss of warranty rights. Original spare parts and authorized accessories by the manufacturer serve as security. The use of other parts excludes liability for the consequences arising out of.

The suspension of liability is also valid especially for operation interruption damages, loss of profit, data loss or other damages. This also applies if we have been pre-referred to the possibility of such damages. If individual regulations should be futile, not effective or impracticable, then the effectivity of all other regulations or agreements is not affected by this.
## Technical Data

### Part Code

<table>
<thead>
<tr>
<th>B 2</th>
<th>s</th>
<th>M</th>
<th>8</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
</tr>
</thead>
</table>

- **Encoder**
- **Connection**
- **voltage supply**
- **Speed**
- **Design**
- **Cooling**
- **Motor type**
- **Unit type**
- **Size/construction length**

**see instruction manual Dynamic Line DL2 servo motor SM.5**

**Motor type**: 8: Dynamic Line DL2 with special flange

**Unit type**: SM: Servo motor

**Size/construction length**: B1...B3
## Technical Data

### 2. Technical Data

#### 2.1 Servo motor BxSM8xx-xxxx

For inverter rated voltage 400 to 480 V AC

<table>
<thead>
<tr>
<th>Motor type</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated speed</td>
<td>$n_N$ [rpm]</td>
<td>3000</td>
<td>4000</td>
</tr>
<tr>
<td>Stall torque</td>
<td>$M_{d0}$ [Nm]</td>
<td>0.92</td>
<td>1.8</td>
</tr>
<tr>
<td>Current at stall torque</td>
<td>$I_{d0}$ [A]</td>
<td>1.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Number of poles</td>
<td>2x6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nominal rating

| Rated torque | $M_{dN}$ [Nm] | 0.9 | 0.87 | 0.76 | 1.83 | 1.75 | 1.5 | 2.6 | 2.5 | 2.3 |
| Rated current | $I_{dN}$ [A] | 1.0 | 1.2 | 1.3 | 1.7 | 2.1 | 2.3 | 2.6 | 2.9 | 3.6 |
| Rated power | $P_{dN}$ [kW] | 0.28 | 0.37 | 0.48 | 0.58 | 0.73 | 0.94 | 0.83 | 1.03 | 1.35 |
| Voltage constant | $k_e$ [V/1000rpm] | 76.5 | 62.8 | 50.1 | 90.5 | 72.1 | 56 | 87 | 74.4 | 51.5 |
| Winding resistance | $R_{uv}$ [Ω] | 37.2 | 24.6 | 15.7 | 17.7 | 11.1 | 6.9 | 9.3 | 7.6 | 3.4 |
| Winding inductance | $L_{uv}$ mH | 66.0 | 44.4 | 28.3 | 41.4 | 26.3 | 15.9 | 25.1 | 18.4 | 8.8 |

Maximum values

| max. torque | $M_{max}$ [Nm] | 2.7 | 5.4 | 7.8 |
| max. current (peak value) | $I_{max}$ [A] | 3.6 | 4.5 | 5.5 | 6.1 | 7.7 | 9.9 | 9.2 | 10.8 | 15.5 |
| max. speed | $n_{max}$ [rpm] | 9000 |

Mechanical data

| Rotor inertia | $J_l$ [kgcm$^2$] | 0.30 | 0.56 | 0.79 |
| Mass | $M$ [kg] | 2.3 | 3.0 | 3.7 |
| Total length | $l_38$ [mm] | 169 | 195 | 221 |

1) Peak value at operating temperature  
2) at 20°C  
3) with resolver, without holding brake

### Technical data of the holding brake

| Holding torque | $M_{Br}$ [Nm] | 4.5 |
| Rated voltage | $U_{Br}$ [VDC] | 24 |
| Rated current (20°C) | $I_{Br}$ [A] | 0.58 |
| Mass | $M$ [kg] | 0.28 |
| Rotor inertia | $J_{Br}$ [kgcm$^2$] | 0.18 |
Dimensions Servo motor BxSM8xx-xxxx

Brake with / without holding brake in the flange

<table>
<thead>
<tr>
<th>Encoder type</th>
<th>Motor type</th>
<th>Resolver</th>
<th>r</th>
<th>Encoder</th>
<th>r</th>
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<td>I38</td>
<td>169</td>
<td>149</td>
<td>211</td>
<td>184</td>
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<tr>
<td>B2</td>
<td>I38</td>
<td>195</td>
<td>175</td>
<td>237</td>
<td>210</td>
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<tr>
<td>B3</td>
<td>I38</td>
<td>221</td>
<td>201</td>
<td>263</td>
<td>236</td>
</tr>
</tbody>
</table>

Speed-/torque characteristics for Ulink = 540V (400V class); 330V (230V class)

- **B1**

- **B2**

- **B3**
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