

BRUSHLESS NX

0.45 to 64N.m

The NX series is the new brushless servo motor range.

The NX series brushless servo motors are characterized by a 10-pole innovative design for highest quality of motion, improved torque density and a compact and robust design.

With a large choice of torque and speed and an economical design, the NX series is the ideal solution for servo application.



230V AND 400V POWER SUPPLY

MOTION QUALITY AND HIGH DYNAMIC CHARACTERISTICS

ROBUST AND COMPACT CONSTRUCTION

ROTOR WITH CONCENTRATED-FLUX RARE EARTH MAGNETS

10-POLE DESIGN

RESOLVER AS STANDARD

PROTECTION

NX1 TO NX8 : IP64, OPTION IP65

CLASS F INSULATION

OUTPUT CABLES ON NX1 AND NX2

**ADJUSTABLE CONNECTORS ON NX2 TO NX8
CE, UL RECOGNISED (NX3 TO NX6)**

* NX8V : IP44

NX Series

| Motor | Torque M_0 (N.m) | Max Speed (rpm) | | Inertia ($\text{kg.m}^2 \cdot 10^{-5}$) |
|-------------------------|-----------------------|--------------------|------|----------------------------------------------|
| | | 230V | 400V | |
| NX110EAP | 0.45 | 6000 | - | 1.3 |
| NX205EAV | 0.45 | 5000 | 7500 | 2.1 |
| NX205EAS | 0.45 | 7500 | - | 2.1 |
| NX210EAT | 1 | 4000 | 6000 | 3.8 |
| NX210EAP | 1 | 6000 | - | 3.8 |
| NX310EAP | 2 | 2300 | 4000 | 7.9 |
| NX310EAK | 2 | 4000 | - | 7.9 |
| NX420EAV | 4 | - | 2000 | 29 |
| NX420EAP | 4 | 2300 | 4000 | 29 |
| NX420EAJ | 4 | 4000 | - | 29 |
| NX430EAJ | 5.5 | 3200 | - | 42.6 |
| NX430EAF | 5.5 | 4000 | - | 42.6 |
| NX430EAV | 5.5 | - | 1000 | 42.6 |
| NX430EAP | 5.5 | - | 3000 | 42.6 |
| NX430EAL | 5.5 | - | 4000 | 42.6 |
| NX620EAV | 8 | - | 2000 | 98 |
| NX620EAR | 8 | 2200 | 3900 | 98 |
| NX620EAJ | 8 | 4000 | 4500 | 98 |
| NX630EAV | 12 | - | 1350 | 147 |
| NX630EAR | 12 | 1450 | 2700 | 147 |
| NX630EAK | 12 | 2800 | - | 147 |
| NX630EAG | 12 | 4000 | - | 147 |
| NX630EAN | 12 | - | 4000 | 147 |
| NX820EAL | 16 | 3600 | - | 320 |
| NX820EAX | 16 | - | 1900 | 320 |
| NX820EAR | 16 | - | 3900 | 320 |
| NX840EAJ | 28 | 2200 | - | 620 |
| NX840EAQ | 28 | - | 2100 | 620 |
| NX840EAK | 28 | - | 3500 | 620 |
| NX860EAD | 41 | 2600 | - | 920 |
| NX860EAJ | 41 | - | 2600 | 920 |
| NX860VAG ⁽¹⁾ | 64 | 2000 | - | 920 |
| NX860VAJ ⁽¹⁾ | 64 | - | 2600 | 920 |

⁽¹⁾ Ventilated motor

CUSTOM SOLUTION

WINDING, SHAFT, FLANGE...

**INCREMENTAL, ABSOLUTE, HIPERFACE
ENCODER OPTION, ...**

**ATEX 94/9/CE FLAMEPROOF ENCLOSURE
VERSION**

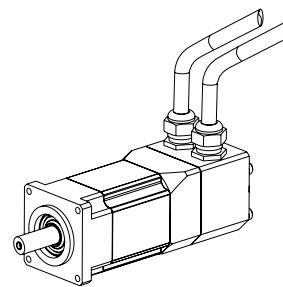
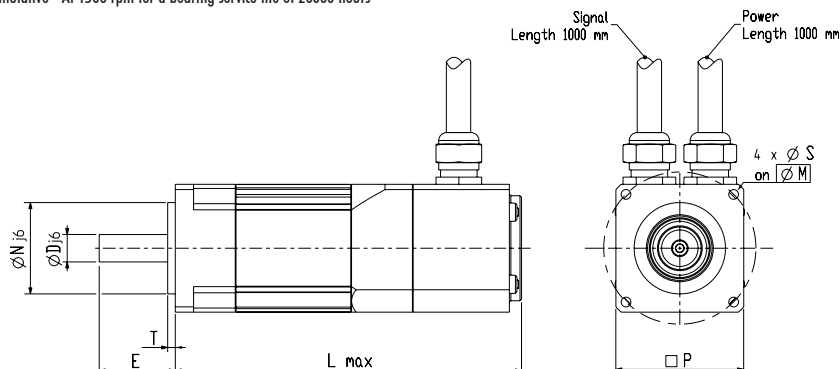
SERVO MOTOR KIT VERSION

SERVO MOTORS

NX1 and NX2 Dimensions (cable version)

| Motor | N (mm) | D (mm) | E (mm) | T (mm) | P (mm) | S (mm) | M (mm) | No brake | | With brake | | Fr* (daN) | Fa* (daN) |
|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|-----------|----------------|-----------|--------------|--------------|
| | | | | | | | | Weight (kg) | L (mm) | Weight (kg) | L (mm) | | |
| NX110 | 30 | 9 | 25 | 2.5 | 42.5 | 3.2 | 50 | 0.8 | 110 | 1 | 140 | 15 | 6.9 |
| NX205 | 40 | 11 | 25 | 2.5 | 56.5 | 5.5 | 63 | 0.8 | 102 | 1.1 | 136 | 28 | 15.5 |
| NX210 | 40 | 11 | 25 | 2.5 | 56.5 | 5.5 | 63 | 1.3 | 122 | 1.6 | 156 | 30 | 16.7 |

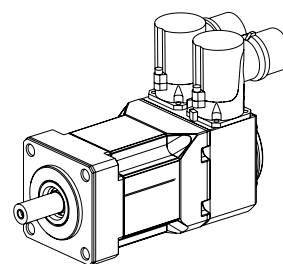
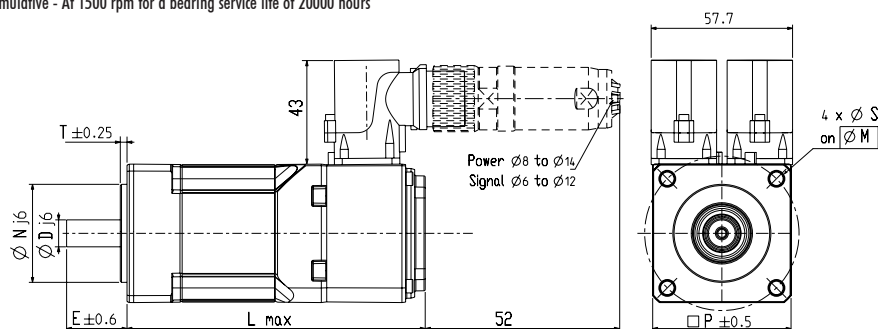
*Fr and Fa not cumulative - At 1500 rpm for a bearing service life of 20000 hours



NX2 Dimensions (connector version)

| Motor | N (mm) | D (mm) | E (mm) | T (mm) | P (mm) | S (mm) | M (mm) | No brake | | With brake | | Fr* (daN) | Fa* (daN) |
|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|-----------|----------------|-----------|--------------|--------------|
| | | | | | | | | Weight (kg) | L (mm) | Weight (kg) | L (mm) | | |
| NX205 | 40 | 11 | 25 | 2.5 | 56.5 | 5.5 | 63 | 0.8 | 102 | 1.1 | 136 | 28 | 15.5 |
| NX210 | 40 | 11 | 25 | 2.5 | 56.5 | 5.5 | 63 | 1.3 | 122 | 1.6 | 156 | 30 | 16.7 |

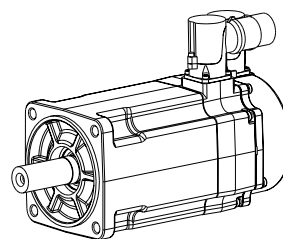
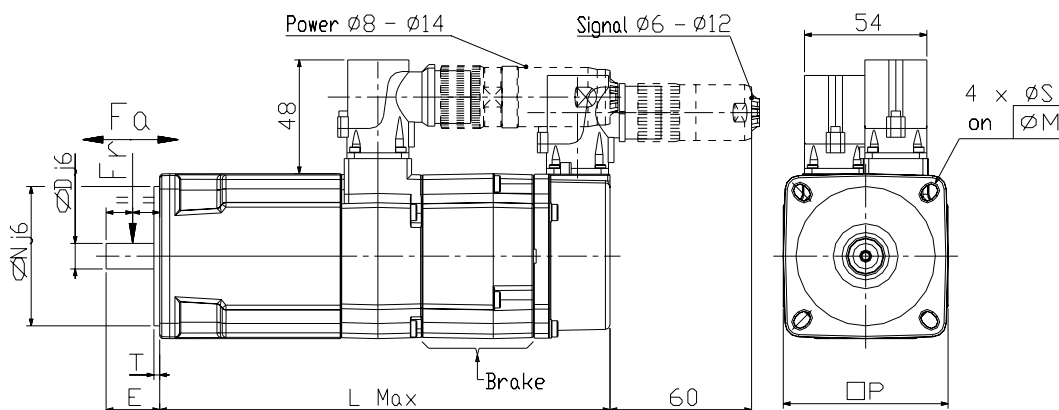
*Fr and Fa not cumulative - At 1500 rpm for a bearing service life of 20000 hours



NX3, NX4 and NX6 dimensions

| Motor | N (mm) | D (mm) | E (mm) | T (mm) | P (mm) | S (mm) | M (mm) | No brake | | With brake | | Fr* (daN) | Fa* (daN) |
|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|-----------|----------------|-----------|--------------|--------------|
| | | | | | | | | Weight (kg) | L (mm) | Weight (kg) | L (mm) | | |
| NX310 | 60 | 11 | 23 | 2.5 | 71 | 5.5 | 75-80 | 2 | 146 | 2.4 | 194 | 36 | 20 |
| NX420 | 80 | 19 | 40 | 3 | 91.5 | 7 | 100 | 3.7 | 175 | 4.5 | 226 | 72 | 24 |
| NX430 | 80 | 19 | 40 | 3 | 91.5 | 7 | 100 | 4.6 | 200 | 5.4 | 251 | 82 | 24 |
| NX620 | 110 | 24 | 50 | 3.5 | 121 | 9 | 130 | 6.9 | 181 | 8 | 236 | 82 | 52 |
| NX630 | 110 | 24 | 50 | 3.5 | 121 | 9 | 130 | 8.8 | 210 | 10 | 265 | 86 | 54 |

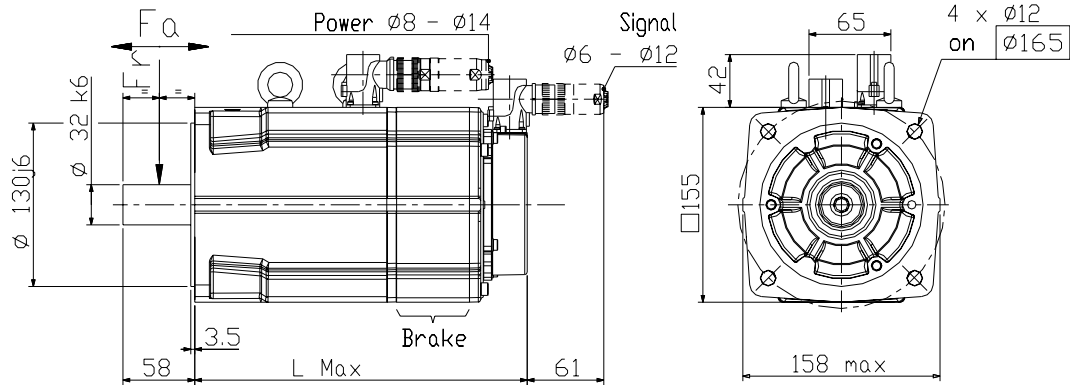
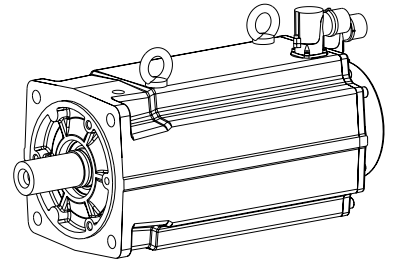
*Fr and Fa not cumulative - At 1500 rpm for a bearing service life of 20000 hours



NX8 Dimensions

| Motor | No brake | | With brake | | Fr* | Fa* |
|-------|-------------|--------|-------------|--------|-----|-----|
| | Weight (kg) | L (mm) | Weight (kg) | L (mm) | | |
| NX820 | 13 | 200 | 16.5 | 266 | 151 | 28 |
| NX840 | 20 | 260 | 23.5 | 326 | 165 | 33 |
| NX860 | 27 | 320 | 30.5 | 386 | 172 | 37 |

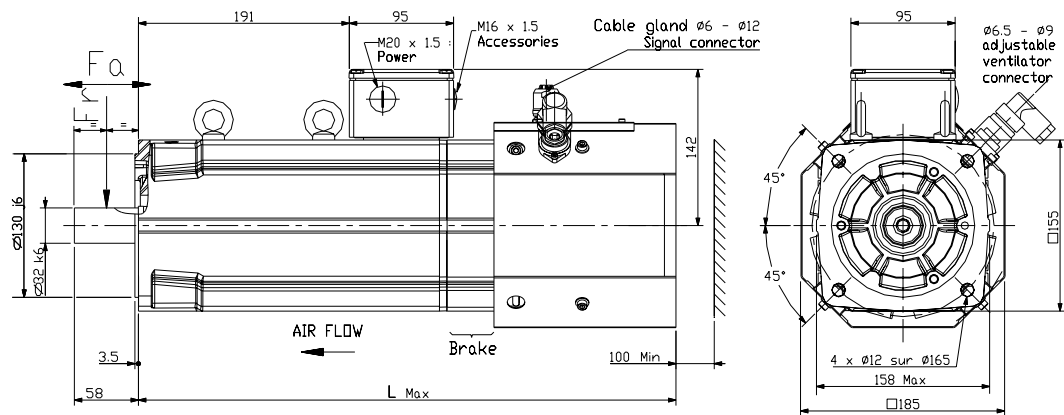
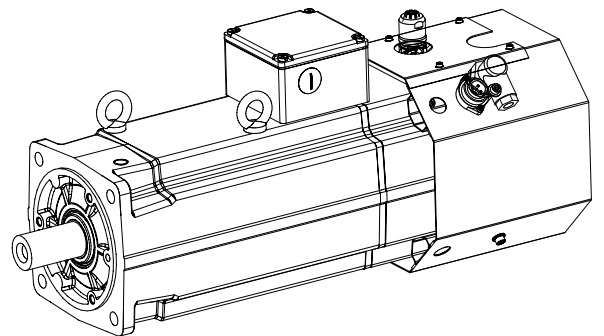
*Fr and Fa not cumulative - At 1500 rpm for a bearing service life of 20000 hours



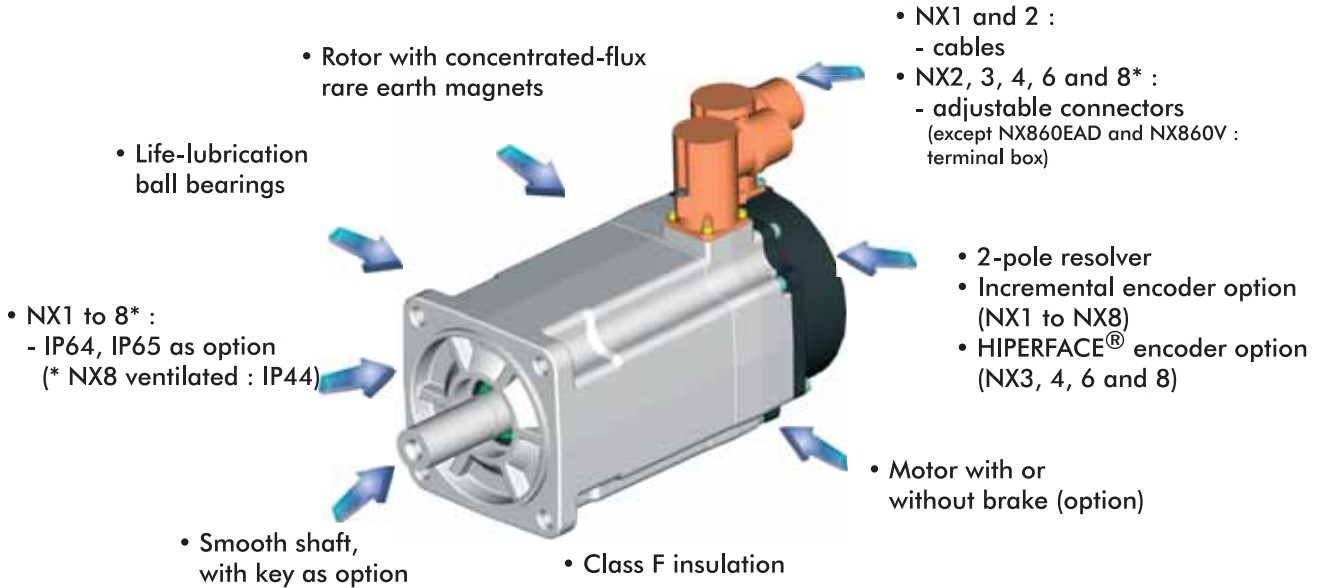
NX8 dimensions (Ventilated version)

| Motor | No brake | | With brake | | Fr* | Fa* |
|--------|-------------|--------|-------------|--------|-----|-----|
| | Weight (kg) | L (mm) | Weight (kg) | L (mm) | | |
| NX860V | 30.5 | 424 | 34 | 490 | 172 | 37 |

*Fr and Fa not cumulative - At 1500 rpm for a bearing service life of 20000 hours



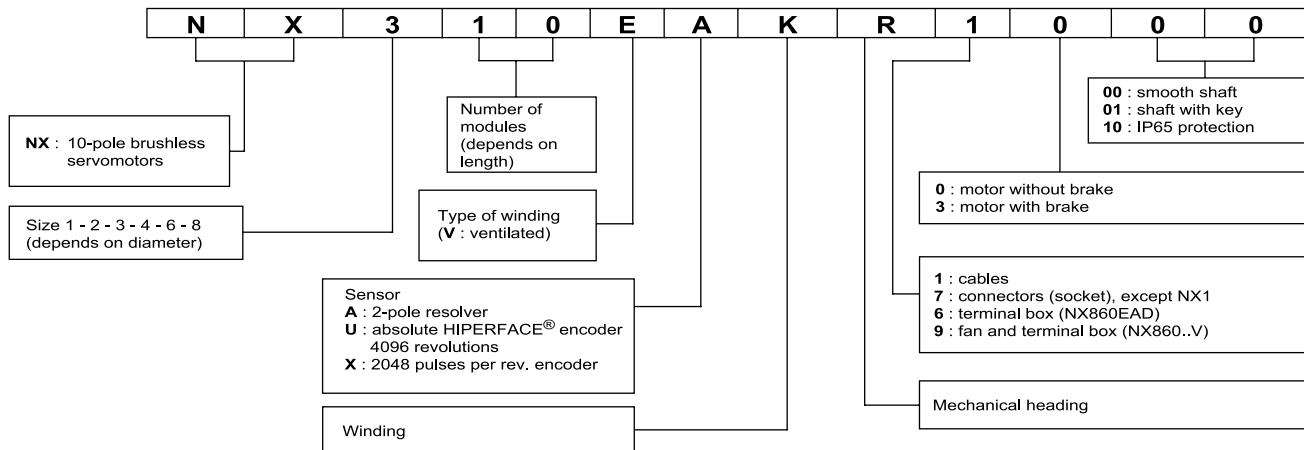
NX SERIES : A ROBUST AND SECURE CONSTRUCTION FOR HIGH LEVEL PERFORMANCES



(1) : NX3 to NX6



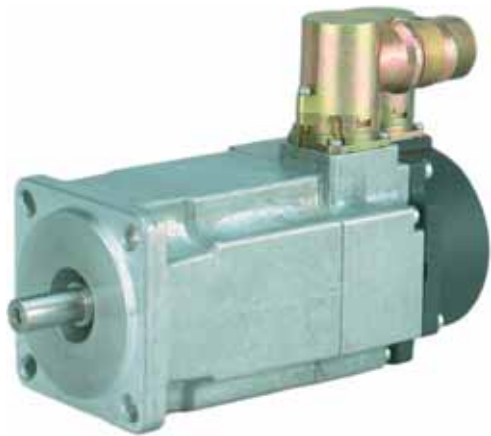
NX SERVO MOTOR CODIFICATION



HIPERFACE® ENCODER OPTION For NX size 3 to 8

The HIPERFACE® encoder is a mixture of an absolute encoder (single or multiturn) and of an incremental encoder of sine/cosine type.

Absolute position is sent via an RS485 connection at power-on; then position is incrementally counted from this absolute position by using sine/cosine signals.



SinCos HIPERFACE® encoder :

- Absolute position within 4096 revolutions
- 15 bits absolute position resolution on one rev.
- 1024 sine / cosine signals per rev.

With 637f Drive:

- Incremental encoder resolution : 16 bits (65536 points/rev)
- Maximum speed 6000 rpm
- Speed ripple : $\approx 0.3\%$ at 4000 rpm
- Maximum position error : ± 45 arc sec

MOUNTING OF STEGMANN SRM50 HIPERFACE® ENCODER ON NX3 TO NX8

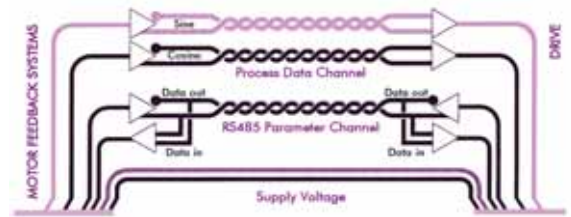
**ABSOLUTE POSITION WITHIN
4096 REVOLUTIONS**

**ABSOLUTE POSITION RESOLUTION :
15 BITS PER REVOLUTION**

**SINE/COSINE SIGNALS :
1024 CYCLES PER REVOLUTION**

**ON NX3 TO NX8 MOTORS, SAME
TORQUE, SPEED AND INERTIA AS FOR THE
RESOLVER MOUNTING**

HIPERFACE® ENCODER PRINCIPLE

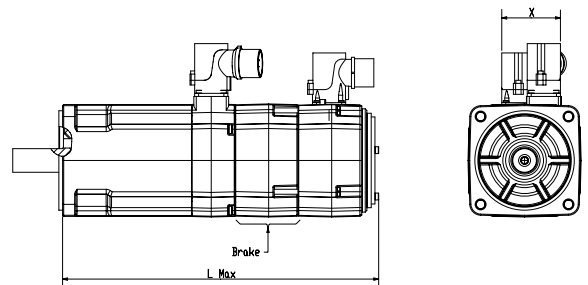


Extract from STEGMANN documentation

RS485 channel : parameter channel

- Encoder parameter setting
- Initial absolute position sent at power-on
- Sine / cosine : process data channel
- Analog sine / cosine signals with 1024 cycles per rev.
- Conversion of sine / cosine signals to incremental signals done inside drive

NX DIMENSIONS WITH HIPERFACE® ENCODER



NX dimensions with hiperface

| Motor | L | | X (mm) |
|-------|------------------|--------------------|-----------|
| | No brake (mm) | With brake (mm) | |
| NX310 | 173 | 199 | 44 |
| NX420 | 205 | 256 | 47.5 |
| NX430 | 230 | 281 | 47.5 |
| NX620 | 214 | 268 | 55 |
| NX630 | 243 | 297 | 55 |
| NX820 | 236 | 282 | 65 |
| NX840 | 296 | 342 | 65 |
| NX860 | 356 | 402 | 65 |

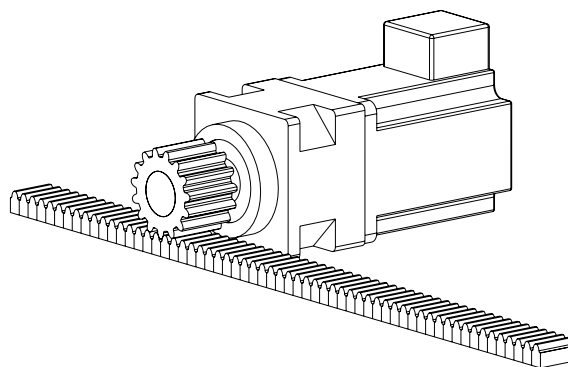
Other dimensions unchanged compared to resolver mounting

MECHANICAL AND ELECTRICAL ADAPTATIONS

Based on standard offer

As a servo motor specialist, SSD Drives Parvex has developed its organization and know-how to adapt its standard motors for OEM and machine builders :

- **Mechanical adaptations** : shaft, flange, nema flange, housing, ...
- **Electrical adaptations** : speed, speed/torque, voltage, winding, ...
- **Specific sensor mounting** : Endat, Hiperface, incremental encoder, absolute encoder, hall effect sensor, ...
- **Motor accessories** like gearboxes, cables, connectors, ...



ELECTRICAL ADAPTATIONS

MECHANICAL ADAPTATIONS

SPECIAL WINDINGS

SPECIFIC FEEDBACK SENSORS

GEARBOXES
