

DRUM MOTOR 220M-H

216.0Ø 0.37kW - 5.5kW, with steel helical gearbox

Product description

Drum motor very robust able to provide high torques and withstand high radial loads

Characteristics

- Salt water resistant aluminum bearing housing
- Induction motor three phases alternating current
- Dual voltage
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation

Applications

- Conveyors for heavy and frequent use
- Logistics applications
- Airport and postal conveyors
- Warehouse loading conveyors
- Telescopic conveyors
- Agricultural plants
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent wash down applications

TECHNICAL DATA

Motor Data

| | |
|------------------------------------|--|
| Type of Motor | Asynchronous squirrel-cage, IEC 34 (VDE 0530) |
| Insulation class of motor windings | Class F, IEC 34 (VDE 0530) |
| Voltage | 230/400 V ± 5% (IEC 34/38) Special voltage on request |
| Frequency | 50/60 Hz |
| Internal shaft sealing system | Double-lipped FPM or nitrile rubber, NBR |
| Protection rate | IP66 |
| Thermal protection | Bimetallic Contact |
| Ambient temperature, 3-phase motor | -25 to +40 °C |

General technical data

| | |
|-------------------------|---------|
| Max. Roller length (RL) | 2000 mm |
|-------------------------|---------|

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.



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Materials

The following drum motor components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

| Components | Version | Material | | | | |
|-----------------------|-----------------------------------|-----------|-------|-----------------|---------------|---------|
| | | Aluminium | Steel | Stainless Steel | Brass /Nickel | Polymer |
| Shell | Crowned | | Std | TS10N | | |
| | Cylindrical | | Std | TS10N | | |
| | Cylindrical + key (for sprockets) | | Std | TS10N | | |
| | Special crowns and grooves | | Std | TS10N | | |
| End housing | Standard | Std | | TS10N | | |
| | With V-grooves | | Std | TS10N | | |
| | With O-grooves | | Std | TS10N | | |
| | With chain sprockets | | Std | TS10N | | |
| Shaft | Standard | | Std | TS10N | | |
| | Cross-drilled and threaded, M10 | | Std | TS10N | | |
| Electrical connection | Straight connector | | | TS10N | Std | |
| | Elbow connector | | | TS10N | | Std |
| | Terminal box | Std | | TS10N | | |

Please contact Rulmeca for further versions.

TS10N Version - End Housing in stainless steel with NBR lip seals.

Options

- Rubber Lagging for standard belts
- Profiled Lagging for plastic modular belts
- Backstop /Anti run-back bearing
- Dynamic balancing
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than $\pm 5^\circ$)
- Version TS9N - as TS10N but with re-greasable labyrinth seals

Note

The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Frequency Converters

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TECHNICAL DATA FOR DRUM MOTOR 220M/H - 3PHASE - 50HZ

| P_N [kW] | n_p (rpm) | I_T [A] | gs | i | V_A [m/s] | V_N [m/s] | n_A [min ⁻¹] | M_N [Nm] | F_T [N] | TE [N] | RL [mm] |
|---------------|----------------|--------------|----------|-------|----------------|----------------|-------------------------------|---------------|--------------|-----------|---------------------|
| 0.37 | 8 (705) | 1.75 | 3 (220H) | 59.72 | 0.13 | 0.13 | 11.8 | 291 | 2707 | 25000 | min 450 max 2000 |
| | | | | 49.84 | 0.16 | 0.16 | 14.1 | 236 | 2195 | | |
| | | | 2 (220M) | 37.49 | 0.21 | 0.20 | 18.8 | 190 | 1767 | 11500 | min 400 max 2000 |
| | | | | 29.62 | 0.27 | 0.25 | 23.8 | 152 | 1414 | | |
| | | | | 24.17 | 0.33 | 0.32 | 29.2 | 118 | 10989 | | |
| | | | | 20.17 | 0.40 | 0.40 | 35.0 | 95 | 884 | | |
| | | | | 15.84 | 0.50 | 0.50 | 44.5 | 76 | 707 | | |
| | | | | 12.74 | 0.63 | 0.63 | 55.3 | 60 | 558 | | |
| | | | | 9.77 | 0.82 | 0.80 | 72.2 | 47 | 437 | | |
| | | | | 8.10 | 0.98 | 1.00 | 87.0 | 38 | 353 | | |
| 6.36 | 1.25 | 1.25 | 110.8 | 30 | 279 | | | | | | |
| 0.55 | 8 (710) | 2.75 | 3 (220H) | 59.72 | 0.13 | 0.13 | 11.9 | 432 | 4019 | 25000 | min 500 max 2000 |
| | | | | 49.84 | 0.16 | 0.16 | 14.2 | 351 | 3265 | | |
| | | | 2 (220M) | 37.49 | 0.21 | 0.20 | 18.9 | 282 | 2623 | 11500 | min 450 max 2000 |
| | | | | 29.62 | 0.27 | 0.25 | 24.0 | 226 | 2102 | | |
| | | | | 24.17 | 0.33 | 0.32 | 29.4 | 176 | 1637 | | |
| | | | | 20.17 | 0.40 | 0.40 | 35.2 | 141 | 1312 | | |
| | | | | 15.84 | 0.51 | 0.50 | 44.8 | 113 | 1051 | | |
| | | | | 12.74 | 0.63 | 0.63 | 55.7 | 89 | 828 | | |
| | | | | 9.77 | 0.82 | 0.80 | 72.7 | 70 | 651 | | |
| | | | | 8.10 | 0.99 | 1.00 | 87.7 | 56 | 521 | | |
| 6.36 | 1.26 | 1.25 | 111.6 | 45 | 419 | | | | | | |
| 0.75 | 8 (690) | 3.40 | 3 (220H) | 59.72 | 0.13 | 0.13 | 11.6 | 592 | 5510 | 25000 | min 500 max 2000 |
| | | | | 49.84 | 0.16 | 0.16 | 13.8 | 481 | 4476 | | |
| | | | 2 (220M) | 37.49 | 0.21 | 0.20 | 18.4 | 385 | 3581 | 11500 | min 450 max 2000 |
| | | | | 29.62 | 0.26 | 0.25 | 23.3 | 307 | 2856 | | |
| | | | | 24.17 | 0.32 | 0.32 | 28.5 | 239 | 2223 | | |
| | | | | 20.17 | 0.39 | 0.40 | 34.2 | 191 | 1777 | | |
| | | | | 15.84 | 0.49 | 0.50 | 43.6 | 153 | 1423 | | |
| | | | | 12.74 | 0.61 | 0.63 | 54.2 | 122 | 1135 | | |
| | | | | 9.77 | 0.80 | 0.80 | 70.6 | 96 | 893 | | |
| | | | | 8.10 | 0.96 | 1.00 | 85.2 | 77 | 716 | | |
| 6.36 | 1.23 | 1.25 | 108.5 | 62 | 577 | | | | | | |
| 1.10 | 6 (950) | 3.60 | 3 (220H) | 59.72 | 0.18 | 0.16 | 15.9 | 705 | 6558 | 25000 | min 500 max 2000 |
| | 4 (1420) | 2.70 | | 49.84 | 0.22 | 0.20 | 19.1 | 564 | 5246 | | |
| | | 59.72 | | 0.27 | 0.25 | 23.8 | 452 | 4205 | | | |
| | | 49.84 | | 0.32 | 0.32 | 28.5 | 353 | 3284 | | | |

DRUM MOTOR 220M-H

216.0Ø 0.37kW - 5.5kW, with steel helical gearbox

TECHNICAL DATA FOR DRUM MOTOR 220M/H - 3PHASE - 50HZ

| P_N [kW] | n_p (rpm) | I_f [A] | gs | i | V_A [m/s] | V_N [m/s] | n_A [min ⁻¹] | M_N [Nm] | F_T [N] | TE [N] | RL [mm] | | | | | | |
|---------------|----------------|--------------|----------|-------|----------------|----------------|-------------------------------|---------------|--------------|-----------|---------------------|------|------|-----|------|-------|---------------------|
| 1.10 | 4 (1420) | 2.70 | 2 (220M) | 37.49 | 0.43 | 0.40 | 37.9 | 282 | 2623 | 11500 | min 450 max 2000 | | | | | | |
| | | | | 29.62 | 0.54 | 0.50 | 47.9 | 226 | 2102 | | | | | | | | |
| | | | | 24.17 | 0.66 | 0.63 | 58.8 | 178 | 1656 | | | | | | | | |
| | | | | 20.17 | 0.80 | 0.80 | 70.4 | 141 | 1312 | | | | | | | | |
| | | | | 15.84 | 1.01 | 1.00 | 89.6 | 112 | 1042 | | | | | | | | |
| | | | | 12.74 | 1.26 | 1.25 | 111.5 | 90 | 837 | | | | | | | | |
| | | | | 9.77 | 1.64 | 1.60 | 145.3 | 70 | 651 | | | | | | | | |
| | | | | 8.10 | 1.98 | 2.00 | 175.3 | 56 | 521 | | | | | | | | |
| 1.50 | 4 (1420) | 3.80 | 3 (220H) | 59.72 | 0.27 | 0.25 | 23.9 | 646 | 5730 | 25000 | min 450 max 2000 | | | | | | |
| | | | | 49.84 | 0.32 | 0.32 | 28.7 | 481 | 4476 | | | | | | | | |
| | | | 2 (220M) | 37.49 | 0.43 | 0.40 | 38.1 | 385 | 3581 | 11500 | min 450 max 2000 | | | | | | |
| | | | | 29.62 | 0.54 | 0.50 | 48.3 | 307 | 2856 | | | | | | | | |
| | | | | 24.17 | 0.66 | 0.63 | 59.2 | 243 | 2260 | | | | | | | | |
| | | | | 20.17 | 0.80 | 0.80 | 70.9 | 191 | 1777 | | | | | | | | |
| | | | | 15.84 | 1.01 | 1.00 | 90.3 | 153 | 1423 | | | | | | | | |
| | | | | 12.74 | 1.26 | 1.25 | 112.2 | 123 | 1144 | | | | | | | | |
| | | | | 9.77 | 1.64 | 1.60 | 146.4 | 96 | 893 | | | | | | | | |
| | | | | 8.10 | 1.98 | 2.00 | 176.5 | 77 | 716 | | | | | | | | |
| | | | | 6.36 | 2.53 | 2.50 | 224.8 | 62 | 572 | | | | | | | | |
| | | | | 2.20 | 4 (1430) | 5.60 | 3 (220H) | 49.84 | 0.32 | | | 0.32 | 28.7 | 705 | 6558 | 25000 | min 500 max 2000 |
| | | | | | | | | 39.14 | 0.41 | | | 0.40 | 36.5 | 564 | 5246 | | |
| | | | | | | | 2 (220M) | 29.62 | 0.55 | | | 0.50 | 48.3 | 451 | 4195 | 11500 | min 450 max 2000 |
| | | | | | | | | 24.17 | 0.67 | | | 0.63 | 59.2 | 358 | 3330 | | |
| | | | | | | | | 20.17 | 0.80 | | | 0.80 | 70.9 | 282 | 2623 | | |
| 15.84 | 1.02 | 1.00 | 90.3 | | | | | 226 | 2102 | | | | | | | | |
| 12.74 | 1.27 | 1.25 | 112.2 | | | | | 180 | 1674 | | | | | | | | |
| 9.77 | 1.66 | 1.60 | 146.4 | | | | | 140 | 1302 | | | | | | | | |
| 8.10 | 2.00 | 2.00 | 176.5 | 115 | 1070 | | | | | | | | | | | | |
| 6.36 | 2.54 | 2.50 | 224.8 | 90 | 837 | | | | | | | | | | | | |

P_N Nominal mechanical power
 n_p Number of poles
rpm Actual rotor rpm at full load
 I_f Amperage (230/400V) at full load
gs Gear stages
i Gear ratio
 V_A Theoretical actual belt (tangential) speed at full load*
 V_N Nominal belt (tangential) speed
 n_A Revolutions of shell at full load*

M_N Nominal Torque at full load
 F_T Belt pull (tangential force) on shell at full load*
TE T1 + T2 maximum allowable belt tension (radial load)
RL Reference length
• Valid for unlagged shells / values can deviate at partly or no load conditions

DRUM MOTOR 220M-H

216.0Ø 0.37kW - 5.5kW, with steel helical gearbox

TECHNICAL DATA FOR DRUM MOTOR 220M/H - 3PHASE - 50HZ

| P_N [kW] | np (rpm) | I_r [A] | gs | i | V_A [m/s] | V_N [m/s] | n_A [min ⁻¹] | M_N [Nm] | F_T [N] | TE [N] | RL [mm] |
|---------------|-------------|--------------|----------|-------|----------------|----------------|-------------------------------|---------------|--------------|-----------|---------------------|
| 3.00 | 4 (1395) | 7.20 | 3 (220H) | 31.49 | 0.50 | 0.50 | 44.3 | 616 | 5730 | 25000 | min 550 max 2000 |
| | | | | 24.15 | 0.65 | 0.63 | 57.8 | 481 | 4476 | | |
| | | | 2 (220M) | 20.17 | 0.78 | 0.80 | 69.2 | 385 | 3581 | 11500 | min 500 max 2000 |
| | | | | 15.84 | 1.00 | 1.00 | 88.1 | 307 | 2856 | | |
| | | | | 12.74 | 1.24 | 1.25 | 109.5 | 245 | 2279 | | |
| | | | | 9.77 | 1.61 | 1.60 | 142.8 | 192 | 1786 | | |
| | | | | 8.10 | 1.95 | 2.00 | 172.2 | 154 | 1433 | | |
| 6.36 | 2.48 | 2.50 | 219.3 | 123 | 1144 | | | | | | |
| 4.00 | 2 (2820) | 8.30 | 3 (220H) | 49.84 | 0.64 | 0.63 | 56.6 | 649 | 6037 | 25000 | min 550 max 2000 |
| | | | | 39.14 | 0.82 | 0.80 | 72.0 | 511 | 4754 | | |
| | | | 2 (220M) | 29.62 | 1.08 | 1.00 | 95.2 | 409 | 3805 | 11500 | min 500 max 2000 |
| | | | | 24.17 | 1.32 | 1.25 | 116.7 | 327 | 3042 | | |
| | | | | 20.17 | 1.58 | 1.60 | 139.8 | 255 | 2372 | | |
| | | | | 15.84 | 2.01 | 2.00 | 178.0 | 204 | 1898 | | |
| | | | | 12.74 | 2.50 | 2.50 | 221.4 | 163 | 1516 | | |
| 5.50 | 2 (2860) | 10.60 | 3 (220H) | 40.21 | 0.80 | 0.80 | 71.1 | 702 | 6530 | 25000 | min 550 max 2000 |
| | | | | 31.87 | 1.01 | 1.00 | 89.7 | 562 | 5228 | | |
| | | | | 25.80 | 1.25 | 1.25 | 110.9 | 450 | 4186 | | |
| | | | | 19.89 | 1.63 | 1.60 | 143.8 | 351 | 3265 | | |
| | | | | 15.56 | 2.08 | 2.00 | 183.8 | 281 | 2614 | | |
| | | | | 13.00 | 2.49 | 2.50 | 220.0 | 225 | 2093 | | |

P_N Nominal mechanical power
 np Number of poles
 rpm Actual rotor rpm at full load
 I_r Amperage (230/400V) at full load
 gs Gear stages
 i Gear ratio
 V_A Theoretical actual belt (tangential) speed at full load*
 V_N Nominal belt (tangential) speed
 n_A Revolutions of shell at full load*

M_N Nominal Torque at full load
 F_T Belt pull (tangential force) on shell at full load*
 TE T1 + T2 maximum allowable belt tension (radial load)
 RL Reference length
 • Valid for unlagged shells / values can deviate at partly or no load conditions

DRUM MOTOR 220M-H

216.0Ø 0.37kW - 5.5kW, with steel helical gearbox

TECHNICAL DATA FOR DRUM MOTOR 220M/H - 3PHASE - 50HZ

| Rated power [kW] | Poles n. | Gear stages n. | Standard weight [kg] for standard RL [mm] | | | | | | | | | | | | | |
|------------------|----------|----------------|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|
| | | | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | |
| 0.37 | 8 | 3 | --- | 64 | 67 | 70 | 73 | 76 | 79 | 82 | 85 | 88 | 91 | 94 | 97 | |
| | | 2 | 48,0 | 51 | 54 | 57 | 60 | 63 | 66 | 69 | 72 | 75 | 78 | 81 | 84 | |
| 0.55 | 8 | 3 | --- | --- | 71 | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | 98 | 101 | |
| | | 2 | --- | 55 | 58 | 61 | 64 | 67 | 70 | 73 | 76 | 79 | 82 | 85 | 88 | |
| 0.75 | 8 | 3 | --- | --- | 71 | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | 98 | 101 | |
| | | 2 | --- | 55 | 58 | 61 | 64 | 67 | 70 | 73 | 76 | 79 | 82 | 85 | 88 | |
| 1.10 | 6 | 3 | --- | --- | 68 | 71 | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | 98 | |
| | | 4 | 3 | --- | 61 | 64 | 67 | 70 | 73 | 76 | 79 | 82 | 85 | 88 | 91 | 94 |
| | | | 2 | 46,0 | 49 | 52 | 55 | 58 | 61 | 64 | 67 | 70 | 73 | 76 | 79 | 82 |
| 1.50 | 4 | 3 | --- | 61 | 64 | 68 | 71 | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | |
| | | 2 | 48,0 | 51 | 54 | 57 | 60 | 63 | 66 | 69 | 72 | 75 | 78 | 81 | 84 | |
| 2.20 | 4 | 3 | --- | --- | 68 | 72 | 75 | 78 | 81 | 84 | 87 | 90 | 93 | 96 | 99 | |
| | | 2 | --- | 55 | 58 | 61 | 64 | 67 | 70 | 73 | 76 | 79 | 82 | 85 | 88 | |
| 3.00 | 4 | 3 | --- | --- | --- | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | 98 | 101 | |
| | | 2 | --- | --- | 60 | 63 | 66 | 69 | 72 | 75 | 78 | 81 | 84 | 87 | 90 | |
| 4.00 | 2 | 3 | --- | --- | --- | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | 98 | 101 | |
| | | 2 | --- | --- | 60 | 63 | 66 | 69 | 72 | 75 | 78 | 81 | 84 | 87 | 90 | |
| 5.50 | 2 | 3 | --- | --- | --- | 74 | 77 | 80 | 83 | 86 | 89 | 92 | 95 | 98 | 101 | |
| idler | ... | UT 220M | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | 41 | 43 | 45 | 47 | 49 | |
| | ... | UT 220H | --- | 29 | 31 | 33 | 35 | 37 | 39 | 41 | 43 | 45 | 47 | 49 | 51 | |

Cable specification

Available cable options:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1 / 3 / 5 m.

Min.Length with option

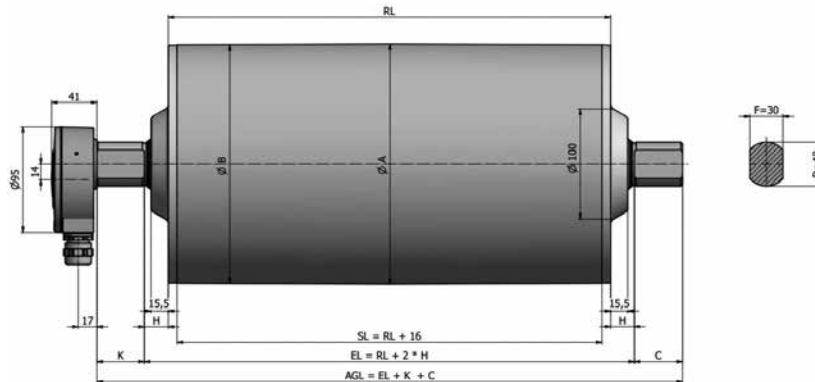
The following options increase the minimum length of the drum motor.

Available lengths: 1 / 3 / 5 m.

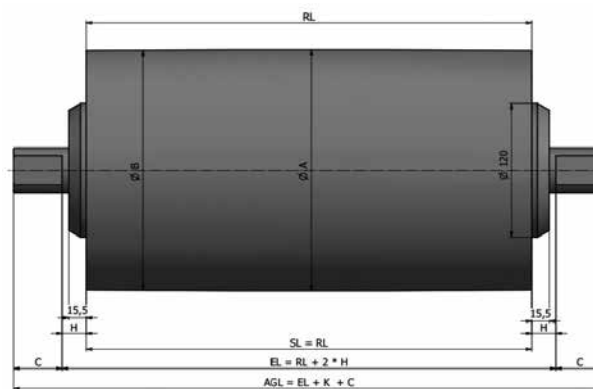
| Option | RL min. with option mm |
|-------------|------------------------|
| Brake | RL min. + 50 mm |
| Encoder SKF | RL min. + 0 mm |
| Encoder RLS | RL min. + 50 mm |

DRUM MOTOR 220M-H

216.0Ø 0.37kW - 5.5kW, with steel helical gearbox



Drum motor standard version
with terminal box in aluminium $\leq 4,0$ kW



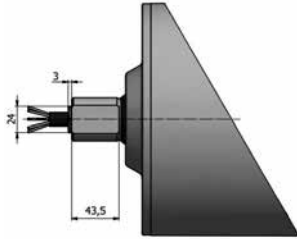
Idler Pulley in stainless steel (TS10N/TS12N)

| Drum shell shape | ØA [mm] | ØB [mm] |
|------------------|---------|---------|
| Crowned | 216.0 | 214.5 |
| Cylindrical | 216.0 | 216.0 |

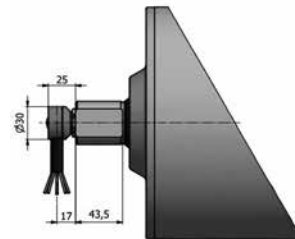
| Shaft dimension | Width across flats [mm] | H [mm] | K [mm] | C [mm] |
|-----------------|-------------------------|--------|--------|--------|
| Ø40mm | 30.0 | 21.5 | 41.5 | 43.5 |

DRUM MOTOR 220M-H

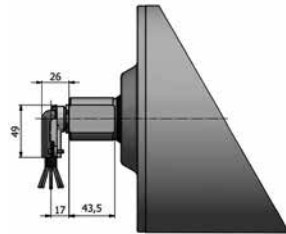
216.0Ø 0.37kW - 5.5kW, with steel helical gearbox



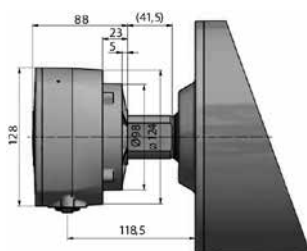
Straight connector in brass or stainless steel $\leq 4,0$ kW



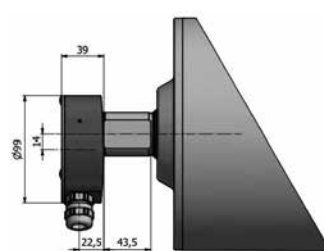
Elbow connector in stainless steel $\leq 4,0$ kW



Elbow connector in aluminium $\leq 4,0$ kW



Large terminal Box $\geq 5,5$ kW



Terminal box in stainless steel $\leq 4,0$ kW