

# ROLLERDRIVE SERIES EC5000

ø 60 mm, cylindrical, IP54, for 0 to 40 °C



24V

## Application area

Drive for unit handling conveyor systems, such as transporting cardboard cartons, containers, platens, (truck) tires or lightweight pallets at normal ambient temperature. Suitable for straight conveyors and especially zero-pressure accumulation conveyors. Also usable in aligning conveyor segments or transfers or other "conveyor system branches".

48V

20W

35W

50W

AI

BI

## Compact design

The motor integrated in the tube allows a very compact design of the conveyor system.

## Very energy-efficient

The brushless drive features energy recovery when braking. The conveyor system can operate without pneumatics or conventional drives, which must be operated continually.

## Flexible possible applications

RollerDrive is available in many variations, allowing it to be used in all types of different conveyor systems. For the user, this translates into a single interface instead of many. The different gear ratios allow selecting the perfect pairing between speed and torque. The electronic holding brake (Zero-Motion-Hold) holds conveying goods in position, even on gravity conveyors.

## Low-noise

The use of decoupling elements achieves particularly low-noise running.

## Maintenance-free and installation-friendly

The drive with internal commutation electronics does not require any maintenance. It features an overload protection that prevents damages due to overtemperature or blockage. It is connected securely without complex screw connection by using a motor cable with 5-pin snap-in plug.



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## Technical data

|  |  |       |
|--|--|-------|
| Rated voltage  | 24 V   | 48 V  |
| Power  | 50 W   | 50 W  |
| Rated current  | 3.4 A  | 1.7 A |
| Starting current   | 7.5 A  | 3.8 A |
| Max. noise emission (installed)  | 55 dB (A), application-dependent   |       |
| Length of motor cable  | 500 mm   |       |
| Max. reference length  | 1500 mm  |       |
| Ambient temperature in operation   | 0 to 40 °C   |       |
| Max. load capacity for each zone with RollerDrive with polyamide drive head    | 2500 N   |       |
| Max. load capacity for each zone with RollerDrive with welded steel drive head | 5000 N   |       |
| Motor shaft  | Stainless steel, 11 mm HEX, thread M12 x 1   |       |
| Anti-static version  | Yes (< 10 <sup>6</sup> Ω)  |       |
| Tube wall thickness  | 2 mm   |       |
| Tube material  | Zinc-plated steel, stainless steel   |       |
| Tube sleeving  | PVC sleeve 2 mm<br>Lagging 2 mm (only for stainless steel tube material and polyamide drive head or no drive head) |       |
| Drive head material  | Polyamide, steel   |       |

### Maximum load capacity

The maximum load capacity of the RollerDrive EC5000 depends on the drive head of the RollerDrive. The values refer to a two-dimensional loading of the tube. In case of one-dimensional loading, such as pallets, the loading per RollerDrive is reduced. When transporting pallets, it must be noted that not all rollers are supporting the pallet. Further information can be found starting with page 104.

|  |        |
|--|--------|
| Maximum load capacity of a RollerDrive without drive head  | 1100 N |
| Maximum load capacity of a RollerDrive with polyamide PolyVee drive head   | 550 N  |
| Maximum load capacity of a RollerDrive with welded steel PolyVee drive head or welded steel double sprocket head | 1100 N |

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## Design versions

48V

### 50 W, polyamide PolyVee drive head and without drive head

20W

35W

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| Gear ratio | Max. conveying speed [m/s] | Min. conveying speed [m/s] | Rated torque [Nm] | Acceleration torque [Nm] | Zero motion hold [Nm] |
|------------|----------------------------|----------------------------|-------------------|--------------------------|-----------------------|
| 9:1        | 2.41                       | 0.12                       | 0.63              | 1.58                     | 1.58                  |
| 13:1       | 1.67                       | 0.09                       | 0.91              | 2.29                     | 2.29                  |
| 18:1       | 1.20                       | 0.06                       | 1.27              | 3.17                     | 3.17                  |
| 21:1       | 1.03                       | 0.05                       | 1.48              | 3.70                     | 3.70                  |
| 30:1       | 0.72                       | 0.03                       | 2.13              | 5.34                     | 5.34                  |
| 42:1       | 0.52                       | 0.03                       | 2.96              | 7.40                     | 7.40                  |
| 49:1       | 0.44                       | 0.03                       | 3.45              | 8.63                     | 8.63                  |
| 78:1       | 0.28                       | 0.01                       | 5.07              | 13.00                    | 13.00                 |
| 108:1      | 0.20                       | 0.01                       | 7.07              | 13.00                    | 13.00                 |

### 50 W, welded steel PolyVee drive head and welded steel double sprocket head

| Gear ratio | Max. conveying speed [m/s] | Min. conveying speed [m/s] | Rated torque [Nm] | Acceleration torque [Nm] | Zero motion hold [Nm] |
|------------|----------------------------|----------------------------|-------------------|--------------------------|-----------------------|
| 49:1       | 0.44                       | 0.03                       | 3.45              | 8.63                     | 8.63                  |
| 78:1       | 0.28                       | 0.01                       | 5.07              | 13.00                    | 13.00                 |
| 108:1      | 0.20                       | 0.01                       | 7.07              | 13.00                    | 13.00                 |

Before the run-in, the values may differ up to  $\pm 20\%$ . After a run-in phase, the values vary only in the range of  $\pm 10\%$  for 95 % of all RollerDrive used.

## Dimensions

Ordering dimensions for tube sleeves starting at page 99

RL = Reference length/ordering length

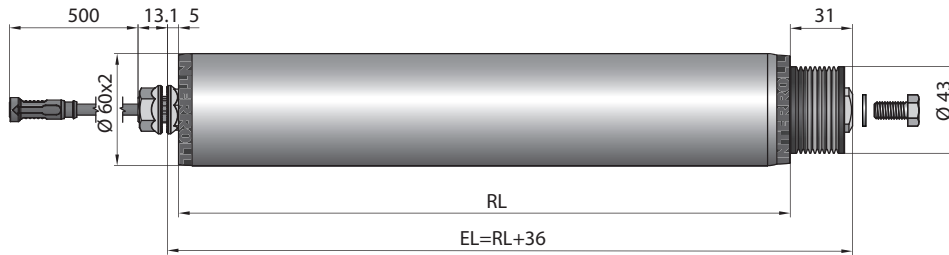
EL = Installation length, clear width between side profiles

The minimum reference length depends on the gear box variant and the drive or the bearing assembly. A sufficient axial play is already taken into account, so that the actual clear width between side profiles is required. A hexagon hole measuring at least 11.2 mm is recommended for fastening on the cable side. If the RollerDrive is inserted obliquely, the fastening hole must be designed larger accordingly. A drilled hole with a diameter of 8.5 mm should be planned for the opposite side.

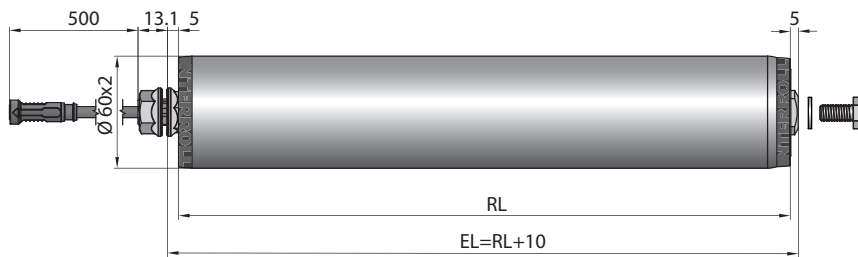
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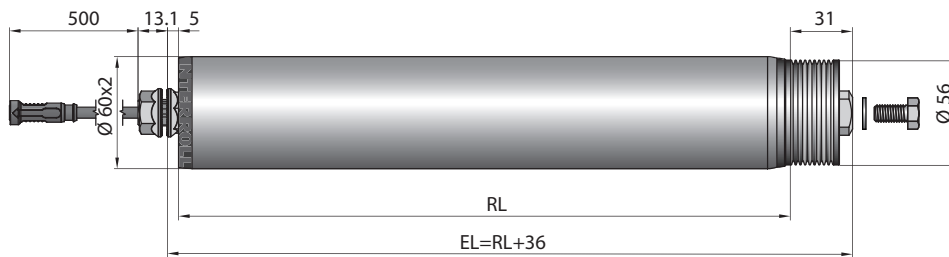
## Polyamide PolyVee drive head with M8 female thread



## M8 female thread, without grooves



## Welded steel PolyVee drive head with M8 female thread



## Welded 5/8" steel double sprocket head with 13 teeth and M8 female thread

