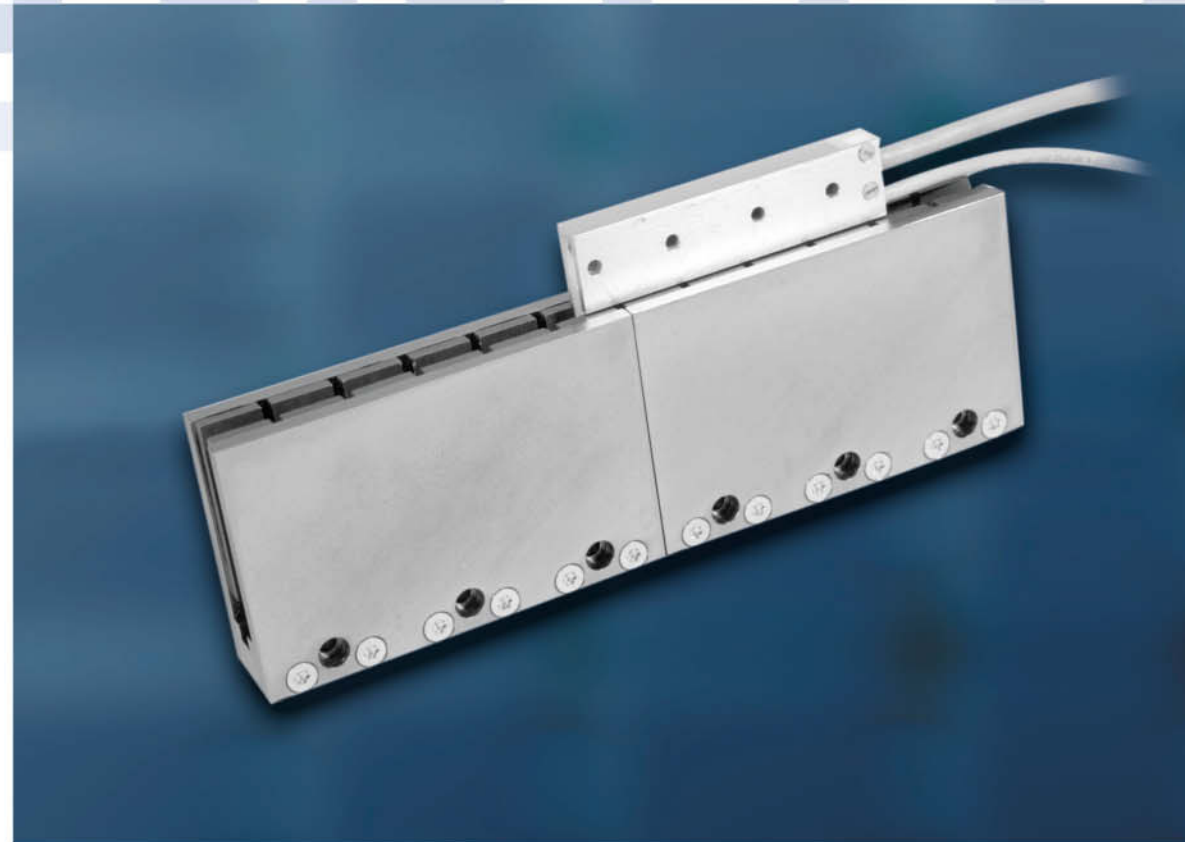


## **Tecnotion presents its full range of UM-motors**

Tecnotion's linear UM-motors are based upon the ironless principle. They stand out for their great dynamics and for the fact that they show no 'cogging'.

For the production of the UM-motors, Tecnotion applies the unique knowledge and manufacturing techniques the company has developed in close cooperation with its partners within the Philips organisation.

The result is a range of high quality and very reliable linear motors which are available on competitive conditions.



## Specifications

|   | Symbol | Unit              | UM 3                                  |      | UM 6   |      | UM 9   |      | UM 12   |      |  |
|---|--------|-------------------|---------------------------------------|------|--------|------|--------|------|---------|------|--|
|   |        |                   | N                                     | S    | N      | S    | N      | S    | N       | S    |  |
| Motortype, max. voltage ph-ph               |        |                   | 3-phase synchronous Ironless, 300Veff |      |        |      |        |      |         |      |  |
| Peak Force (temp. rise 20°C/s) magnet @25°C | Fp     | N                 | 100                                   |      | 200    |      | 300    |      | 400     |      |  |
| Peak Current                                | Ip     | Arms              | 2.8                                   | 5.0  | 5.5    | 10.0 | 8.3    | 15.0 | 11.0    | 20.0 |  |
| Continuous force* coils @110°C              | Fc     | N                 | 22..29                                |      | 44..58 |      | 66..87 |      | 88..116 |      |  |
| Maximum Continuous Current coils @110°C     | Ic     | Arms              | 0.8                                   | 1.5  | 1.6    | 2.9  | 2.4    | 4.4  | 3.2     | 5.8  |  |
| Max. Continuous Power loss All coils        | Pc     | W                 | 47                                    |      | 95     |      | 142    |      | 190     |      |  |
| Maximum speed @300V                         | vmax   | m/s               | 10                                    | 18   | 10     | 18   | 10     | 17   | 10      | 16   |  |
| Motor Force Constant                        | K      | N/Arms            | 36.3                                  | 19.9 | 36.3   | 19.9 | 36.3   | 19.9 | 36.3    | 19.9 |  |
| Back EMF phase-phase peak                   | Bemf   | V / m/s           | 30                                    | 16   | 30     | 16   | 30     | 16   | 30      | 16   |  |
| Motor Constant coils@25°C                   | S      | N <sup>2</sup> /W | 24                                    |      | 48     |      | 71     |      | 95      |      |  |
| Magnet Pitch NN                             | τ      | mm                | 30                                    |      |        |      |        |      |         |      |  |
| Resistance per phase coils@25°C             | Rf     | Ω                 | 18.5                                  | 5.5  | 9.3    | 2.8  | 6.2    | 1.8  | 4.6     | 1.4  |  |
| Induction per phase                         | Lf     | mH                | 6                                     | 1.8  | 3      | 0.9  | 2      | 0.6  | 1.5     | 0.4  |  |
| Electrical time constant coils@25°C         | te     | ms                | 0.35                                  |      | 0.35   |      | 0.35   |      | 0.35    |      |  |
| Thermal Resistance                          | Rth    | °C/W              | 1.8                                   |      | 0.90   |      | 0.60   |      | 0.45    |      |  |
| Motor Attraction Force                      | Fa     | N                 | 0                                     |      |        |      |        |      |         |      |  |
| Length of Coil unit                         | L      | mm                | 78                                    |      | 138    |      | 198    |      | 258     |      |  |
| Weight of Coil unit Ex cable                | M      | gr                | 84                                    |      | 162    |      | 240    |      | 318     |      |  |
| Weight of Cable                             | m      | gr/m              | 80                                    |      |        |      |        |      |         |      |  |
| Temperature Sensor                          |        |                   | PTC 1kΩ and KTY 21                    |      |        |      |        |      |         |      |  |

\* Depends on application: cooling surface, air speed and ambient temperature.

# TECNOTION®

This leaflet gives you the UM's vital technical data. For additional information, please contact

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### Dimensions Magnettracks

| Le                                   | 90 mm    | 120 mm | 150 mm | 390 mm |
|--------------------------------------|----------|--------|--------|--------|
| M4 bolts                             | 3        | 4      | 5      | 13     |
| Mass                                 | 4.8 kg/m |        |        |        |
| Magnetplates can be butted together. |          |        |        |        |

