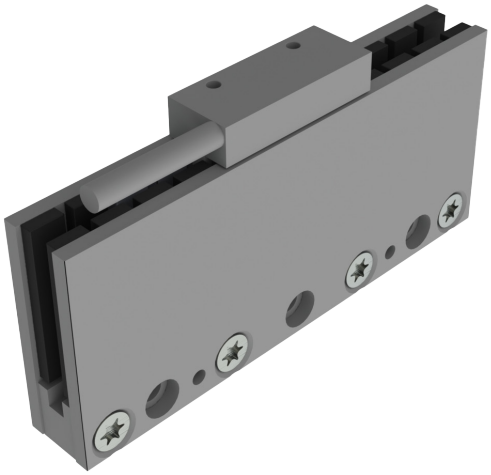
# KMC91S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS



| Magnet plate dimensions | | | |
|---|---|---|---|
| **Code** | **KMM910066** | **KMM910099** | **KMM910264** |
| **Le (mm)** | 66 | 99 | 264 |
| **M5 bolts** | 2 | 3 | 8 |
| **Mass (kg/m)** | 3,2 | | |
| *Magnet plates can be butted together.* | | | |

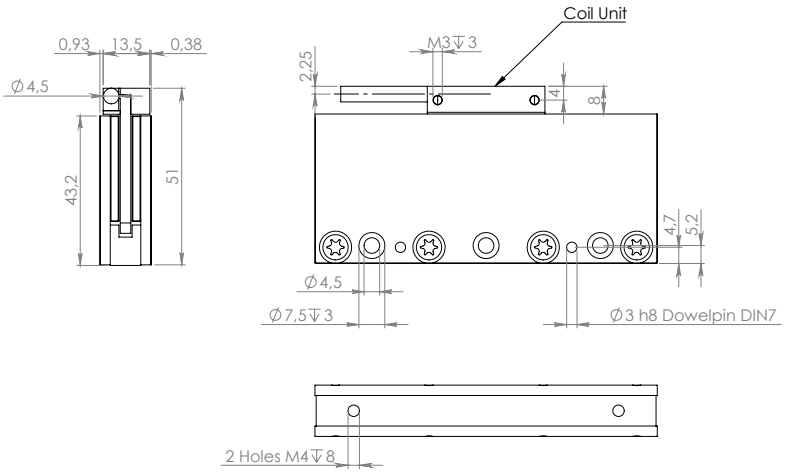
| | Parameter | Remarks | Sym | Unit | KMC91S | |
|---|---|---|---|---|---|---|
| Performance | **Winding type** | | | | IU03H | IU07H |
| | **Motortype, max voltage ph-ph** | | | | 3-phase synchronous Ironless, 45V $_{ac\ rms}$ (60V$_{dc}$) | |
| | **Peak force @ 20°C/s increase** | Magnet @ 25ºC | $F_u$ | N | 36 | 72 |
| | **Continuous force*** | Coils @ 80ºC | $F_c$ | N | 10 | 20 |
| | **Maximum speed**** | @ 60 V | $V_{max}$ | m/s | 5 | 5 |
| | **Motor force constant** | Mount. sfc. @ 20ºC | K | N/A$_{rms}$ | 11,4 | 11,4 |
| | **Motor constant** | Coils @ 25ºC | S | N$^2$/W | 9,2 | 18,3 |
| Electrical | **Peak current** | Magnet @ 25ºC | $I_p$ | A$_{rms}$ | 3,1 | 6,2 |
| | **Maximum continuous current** | Coils @ 80ºC | $I_c$ | A$_{rms}$ | 0,87 | 1,75 |
| | **Back EMF Phase-Phase$_{peak}$** | | $B_{emf}$ | V/m/s | 9,3 | 9,3 |
| | **Resistance per phase*** | Coils @ 25ºC ex. cable | $R_{ph}$ | Ω | 4,7 | 2,4 |
| | **Induction per phase** | | $I_{ph}$ | mH | 0,75 | 0,38 |
| | **Electrical time constant*** | Coils @ 25ºC | $T_e$ | ms | 0,16 | 0,16 |
| Thermal | **Max. continuous power loss** | All coils | $P_c$ | W | 13 | 26 |
| | **Thermal resistance** | Coils to mount. sfc. | $R_{th}$ | ºC/W | 3,6 | 1,8 |
| | **Thermal time constant*** | up to 63% max. coiltemp. | $T_{th}$ | s | 25 | 25 |
| | **Temperature sensor** | | | | none | none |
| Mechanical | **Coil unit weight** | ex. cables | W | kg | 0,031 | 0,062 |
| | **Coil unit length** | ex. cables | L | mm | 34 | 67 |
| | **Motor attraction force** | | $F_a$ | N | 0 | 0 |
| | **Magnet pitch NN** | | t | mm | 16,5 | 16,5 |
| | **Cable mass** | | m | kg/m | 0,07 | 0,07 |
| | **Cable Type (power)** | Length 3 m | d | mm (AWG) | 4,3 (24) | |
| | **Cable Type (sensor)** | | | | N/A | |
| | **Cable life (Power FLEX)***** | minimum | | | 15,000,000 cycles | |
| | **Bending radius static** | minimum | | | 5x cable diameter | |
| | **Bending radius dynamic** | minimum | | | 8x cable diameter | |

** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*
**** Depending on bending radius, velocity and acceleration.*

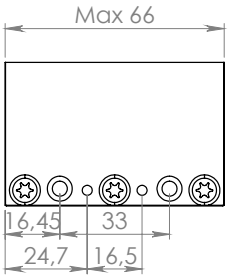
# KMC91S SERIES - IRONLESS LINEAR MOTOR

## DIMENSIONS AND SPECIFICATIONS

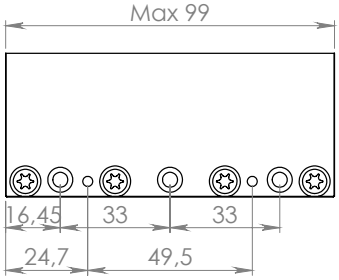
### MAGNET PLATES



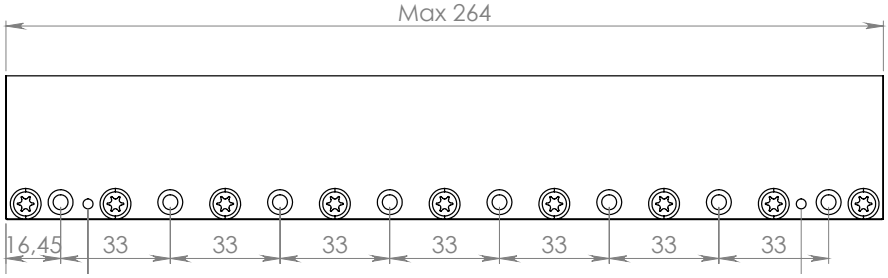

KMM910066



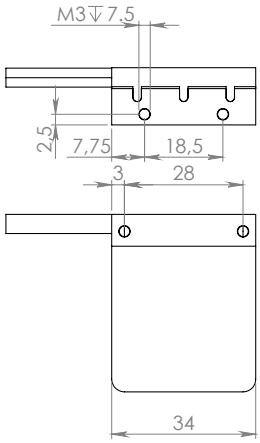

KMM910099



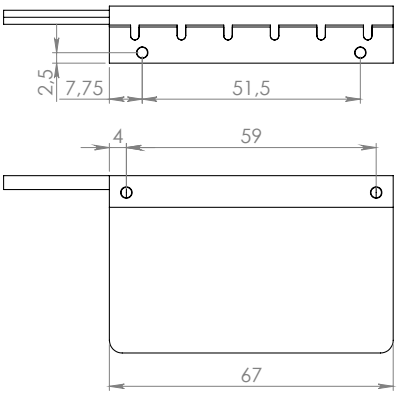

KMM910264




KMC91S-IU03H




KMC91S-IU07H




*Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files, 3D models and the manual can be downloaded from our website.*
** All sizes are in mm*