

Technical Data Sheet

Optibelt ALPHA linear 8M-Ar

Polyurethane Timing Belt, Thermoplastic PU, Open Ended

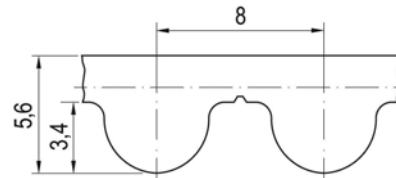


Dimensions, Tolerances

Profile:	8M
Tooth pitch t:	8 mm
Total thickness:	5.6 mm
Tooth height:	3.4 mm
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane: Thermoplastic, 92 Shore A, white
Tension cord: Aramid, Ø 1.0 mm



Specific nominal tensile force transmittable per tooth

Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\ spez}$ [N/mm]	Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\ spez}$ [N/mm]	Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\ spez}$ [N/mm]
0	7.200	1200	4.458	3600	2.936
20	7.083	1300	4.353	3800	2.859
40	6.973	1400	4.255	4000	2.785
60	6.871	1500	4.162	4500	2.616
80	6.775	1600	4.075	5000	2.464
100	6.684	1700	3.993	5500	2.328
200	6.294	1800	3.914	6000	2.203
300	5.981	1900	3.840	6500	2.089
400	5.720	2000	3.769	7000	1.983
500	5.495	2200	3.636	7500	1.886
600	5.298	2400	3.514	8000	1.795
700	5.123	2600	3.401	8500	1.710
800	4.966	2800	3.296	9000	1.630
900	4.822	3000	3.197	9500	1.555
1000	4.691	3200	3.105	10000	1.484
1100	4.570	3400	3.018		

Nominal tensile force F_N

$$F_N = F_{N\ spez} \cdot z_{eB} \cdot b \quad [N]$$

$F_{N\ spez}$ Specific nominal tensile force transmittable per tooth [N/mm]
 z_{eB} Number of teeth in mesh, small pulley, limited to $z_{eB\ max}$
 $z_{eB\ max}$ 12, maximum allowable no. of teeth
 b Belt width [mm]

Nominal torque M_N

$$M_N = F_N \cdot d_{w1} / (2 \cdot 10^3) \quad [Nm]$$

$$d_{w1} = z_1 \cdot t / \pi \quad [mm]$$

d_{w1} Pitch diameter, driver pulley [mm]
 z_1 Number of teeth, driver pulley
 t Tooth pitch [mm]

Nominal power P_N

$$P_N = F_N \cdot z_1 \cdot t \cdot n_1 / (6 \cdot 10^7) \quad [kW]$$

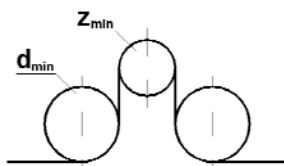
n_1 Speed, driver pulley [1/min]

Cord tensile forces, belt weight

Belt width * b [mm]	20	25	30	50	85	100	150
Allowable tensile force** F_{zul} [N]	2000	2600	3400	6000	10600	12600	19200
Breaking strength F_{Br} [N]	10000	13000	17000	30000	53000	63000	96000
Weight per metre [kg/m]	0.096	0.120	0.144	0.240	0.408	0.480	0.720

* Smaller and intermediate widths possible ** Allowable tensile force F_{zul} equivalent to 20% breaking strength F_{Br} of the cords

Timing belt pulleys, inside and outside idlers, clamping plates



Minimum number of teeth of the pulley: $z_{min} = 18$
Minimum pitch diameter of the pulley: $d_{w\ min} = 45.84\ mm$
Minimum no. of teeth in mesh, clamping plate: $z_{CP\ min} = 6$
Minimum diameter of a plane inside idler: not recommended
Minimum diameter of a plane outside idler: $d_{min} = 100\ mm$