

Technical Data Sheet

optibelt ALPHA LINEAR / V 50/100/150 ATC10 - ST PU-Timing Belt with Cut-Outs for ATC-IN Inserts Open-Ended / Endless Joined, Optionally with Fabric PAZ/PAR

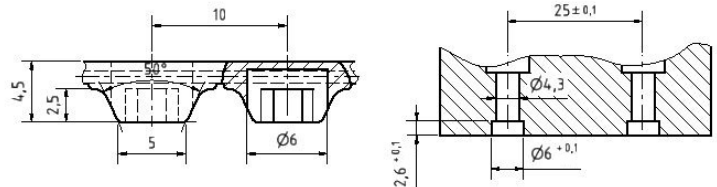


Dimensions, Tolerances

Profile:	AT10
Tooth pitch t:	10 mm
Total thickness:	4.5 mm
Tooth height:	2.5 mm
Tooth tip width:	5.0 mm
Tooth flank angle:	50°
Centre distance (thread):	25 mm (M4)
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm

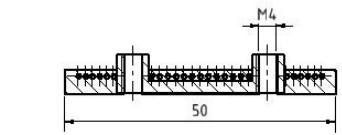
Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, Ø 0.9 mm
Fabric, optional:	Polyamide, tooth (PAZ), white, back (PAR), green



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	6.000	1200	3.787	3600	2.531
20	5.906	1300	3.702	3800	2.466
40	5.818	1400	3.622	4000	2.404
60	5.736	1500	3.546	4500	2.261
80	5.658	1600	3.474	5000	2.131
100	5.586	1700	3.407	5500	2.014
200	5.272	1800	3.342	6000	1.906
300	5.020	1900	3.282	6500	1.807
400	4.810	2000	3.223	7000	1.714
500	4.628	2200	3.114	7500	1.629
600	4.469	2400	3.013	8000	1.548
700	4.327	2600	2.919	8500	1.472
800	4.200	2800	2.832	9000	1.400
900	4.083	3000	2.750	9500	1.332
1000	3.977	3200	2.673	10000	1.267
1100	3.878	3400	2.600		



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, driver pulley, limited to z_{eB max}
- z_{eB max} ALPHA linear: 12, ALPHA V: 6
- 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]
- z₁ Number of teeth, driver pulley
- t Tooth pitch [mm]

Nominal power P_N

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

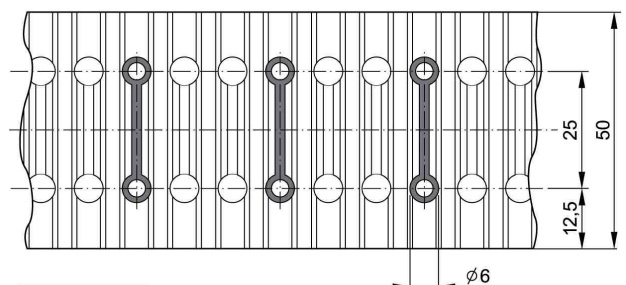
- n₁ Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Belt width b [mm]	50	100	150
F _{Br} [N], ALPHA LINEAR	23720	47480	71240
F _{zul} [N] ¹ , ALPHA LINEAR	5930	11870	17810
F _{zul} [N] ¹ , ALPHA V	2965	5935	8905
Minimum belt length [mm]	850	1050	1150
Weight per metre [kg/m]	0.250	0.500	0.750

¹ Allowable tensile force F_{zul} = 25 % / 12.5 % (ALPHA LINEAR / V) of cord breaking strength F_{Br}

Position of cut-outs (threads)



Timing belt pulleys, idlers, clamping plates

- Minimum no. of teeth of the pulleys: z_{min} = 24
- Minimum pitch diameter of the pulleys: d_{w min} = 76.39 mm
- Minimum no. of teeth in mesh, clamp. plate: z_{CP min} = 8
- Minimum-Ø of a plane inside idler: d_{min} = 70 mm
- Minimum-Ø of a plane outside idler: d_{min} = - / beside the cleats depending on cleat thickness

