

# Technical Data Sheet

## optibelt ALPHA FLEX ACT10 - ST

### PU Timing Belt, Endless

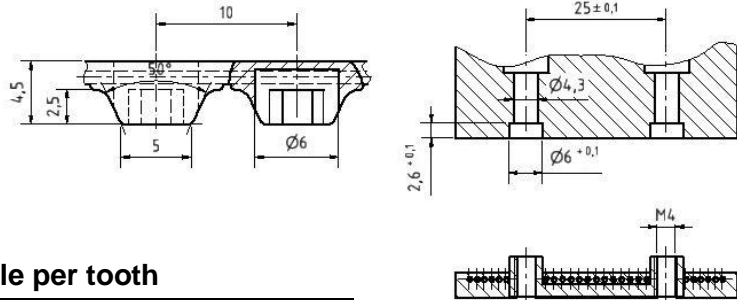


#### Dimensions, Tolerances

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):	25mm (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



#### Specific nominal power transmittable per tooth

Speed, small pulley $n_k$ [1/min]	Specific nom. power $P_{N\ spez}$ [W/mm]	Speed, small pulley $n_k$ [1/min]	Specific nom. power $P_{N\ spez}$ [W/mm]	Speed, small pulley $n_k$ [1/min]	Specific nom. power $P_{N\ spez}$ [W/mm]
0 <sup>1</sup>	0,000	1200	0,757	3600	1,518
20	0,020	1300	0,802	3800	1,562
40 <sup>2</sup>	0,039	1400	0,845	4000	1,602
60	0,057	1500	0,886	4500	1,696
80 <sup>3</sup>	0,075	1600 <sup>7</sup>	0,926	5000	1,776
100	0,093	1700	0,965	5500	1,846
200 <sup>4</sup>	0,176	1800	1,002	6000	1,906
300	0,251	1900	1,039	6500	1,957
400 <sup>5</sup>	0,321	2000	1,074	7000	1,999
500	0,386	2200	1,142	7500	2,036
600	0,447	2400	1,205	8000	2,064
700	0,505	2600	1,265	8500	2,085
800 <sup>6</sup>	0,560	2800	1,321	9000	2,100
900	0,612	3000	1,375	9500	2,109
1000	0,663	3200 <sup>8</sup>	1,425	10000	2,111
1100	0,711	3400	1,473	$v_{max} = 60\text{ m/s}$	

#### Nominal power $P_N$

$$P_N = P_{N\ spez} \cdot z_k \cdot z_{eB} \cdot b / 10^3 \quad [\text{kW}]$$

$P_{N\ spez}$  Specific nominal power transmittable per tooth [W/mm]

$z_k$  Number of teeth, small pulley

$z_{eB}$  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 $M_N$

$$M_N = P_N \cdot 9.55 \cdot 10^3 / n_k \quad [\text{Nm}]$$

$n_k$  Speed, small pulley [1/min]

#### Nominal tensile force $F_N$

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

$$F_{N\ spez} = P_{N\ spez} \cdot 6 \cdot 10^4 / (n_k \cdot t) \quad [\text{N/mm}]$$

$F_{N\ spez}$  Specific nominal tensile force transmittable per tooth [N/mm]

$t$  Tooth pitch [mm]

<sup>1</sup>  $F_{N\ spez}$  [N/mm] 6,000 <sup>2</sup> 5,818 <sup>3</sup> 5,658 <sup>4</sup> 5,272 <sup>5</sup> 4,628 <sup>6</sup> 4,200 <sup>7</sup> 3,474 <sup>8</sup> 2,750

#### Cord tensile forces, belt weight

Belt width <sup>1</sup> $b$ [mm]	50	100
Breaking strength $F_{Br}$ [N]	28400	60800
Allowable tensile force <sup>2</sup> $F_{zul}$ [N]	7100	15200
Weight per metre [kg/m]	0,271	0,542
Min. belt length [mm]	1500	1500

<sup>1</sup> Smaller and intermediate widths possible

<sup>2</sup> Allowable tensile force  $F_{zul}$  equivalent to 25% breaking strength  $F_{Br}$  of the cords

#### Timing belt pulleys, inside and outside idlers

Minimum number of teeth of the pulley:  $z_{min} = 24$

Minimum pitch diameter of the pulley:  $d_{w\ min} = 76,39\text{mm}$

Plane, cylindrical idlers:

Minimum pitch diameter of an inside idler:  $d_{min} = 70\text{ mm}$

Minimum pitch diameter of an outside idler:  $d_{min} = - /$  beside the cleats depending on cleat thickness

We would be pleased to offer advice about technical characteristics and drive design as well as special requirements. Further information can be found in Optibelt documentation. © Optibelt GmbH 02/2024. Subject to technical modification and change, errors and omissions excepted.

#### Position of cut-outs (threads)

