

alphira® – Basic precision

The basic class among planetary gearheads



alphira®

Specifications \ Version	alphira®		
	+	++	+++
Positioning accuracy	██████████	██████████	██████████
Rigidity	██████████	██████████	██████████
Smooth-running	██████████	██████████	██████████
Speed capacity	██████████	██████████	██████████
Power density	██████████	██████████	██████████
Max. axial/radial forces	██████████	██████████	██████████

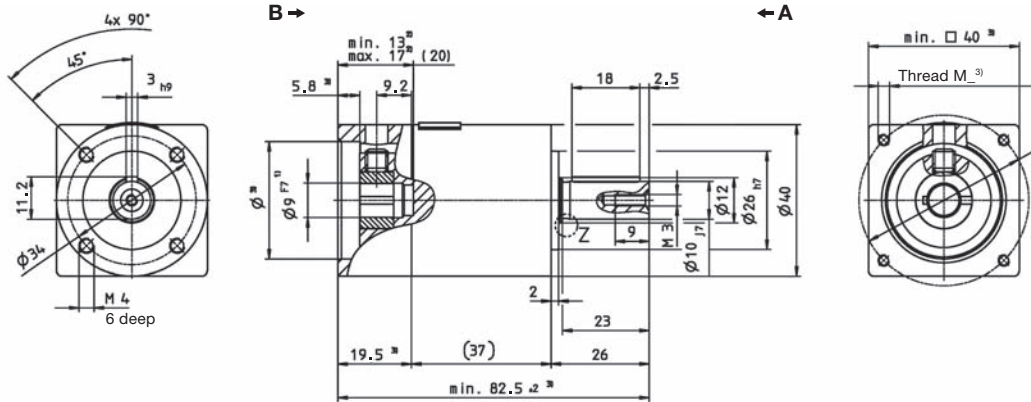
alphira 040 1/2-stage

			1-stage				2-stage						
Ratio	i		4	5	7	10	16	20	25	35	50	70	100
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	–	11.5	11.5	10.5	–	–	11.5	11.5	11.5	11.5	10.5
		in.lb	–	102	102	93	–	–	102	102	102	102	93
Nominal output torque (with n_{1N})	T_{2N}	Nm	–	5.7	5.7	5.2	–	–	5.7	5.7	5.7	5.7	5.2
		in.lb	–	50	50	46	–	–	50	50	50	50	46
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	–	26	26	26	–	–	26	26	26	26	26
		in.lb	–	230	230	230	–	–	230	230	230	230	230
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	–	4000	4000	4000	–	–	4000	4000	4000	4000	4000
Max. input speed	n_{1Max}	rpm	–	8000	8000	8000	–	–	8000	8000	8000	8000	8000
Mean no load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	–	0.05	0.05	0.05	–	–	0.05	0.05	0.05	0.05	0.05
		in.lb	–	0.44	0.44	0.44	–	–	0.44	0.44	0.44	0.44	0.44
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25						
Torsional rigidity	C_{t21}	Nm/arcmin	–	0.58	0.58	0.52	–	–	0.58	0.58	0.58	0.58	0.52
		in.lb/arcmin	–	5.1	5.1	4.6	–	–	5.1	5.1	5.1	5.1	4.6
Max. axial force ^{b)}	F_{2AMax}	N	230				230						
		lb _f	51				51						
Max. radial force ^{b)}	F_{2RMMax}	N	200				200						
		lb _f	45				45						
Efficiency at full load	η	%	97				95						
Service life (For calculation, see the Chapter "Information")	L_h	h	> 20000				> 20000						
Weight incl. standard adapter plate	m	kg	0.31				0.52						
		lb _m	0.69				1.15						
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	dB(A)	≤ 66										
Max. permitted housing temperature		°C	+90										
		F	194										
Ambient temperature		°C	0 to +40										
		F	32 to 104										
Lubrication			Lubricated for life										
Paint			Alu, polished										
Direction of rotation			Motor and gearhead same direction										
Protection class			IP 64										
Moment of inertia (relates to the drive)	J_t	kgcm ²	–	0.04	0.04	0.04	–	–	0.04	0.04	0.04	0.04	0.04
		10 ⁻³ in.lb.in ²	–	0.036	0.036	0.036	–	–	0.036	0.036	0.036	0.036	0.036

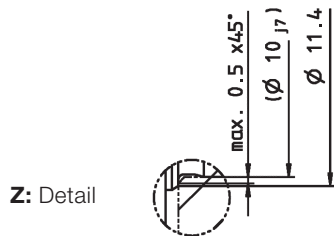
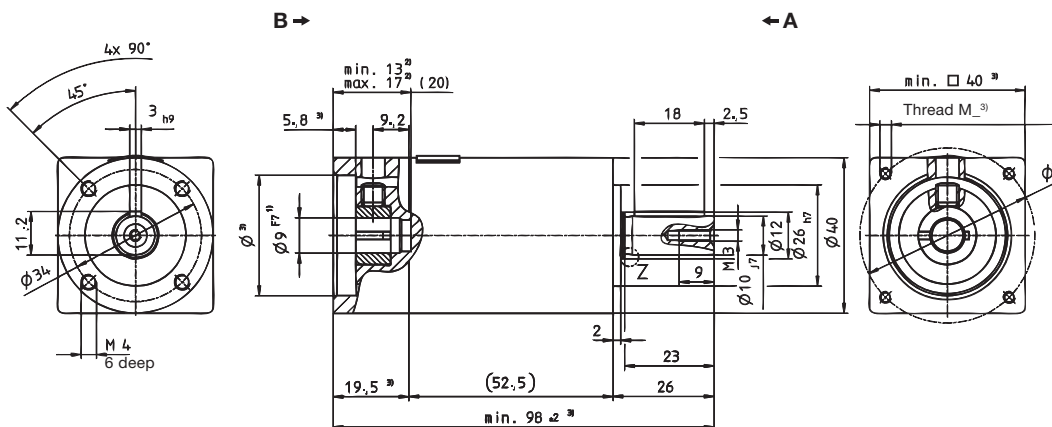
^{a)} For higher ambient temperatures, please reduce input speed

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:



2-stage:



Non-tolerated dimensions ±1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing.



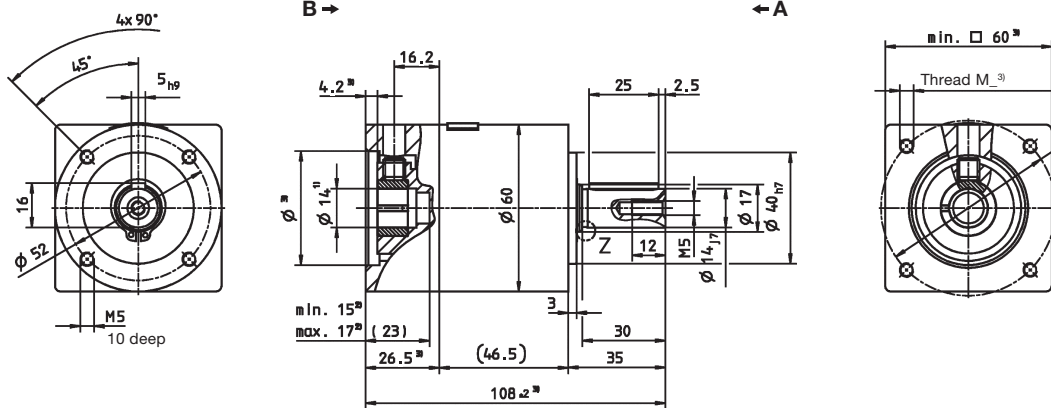
alphira 060 1/2-stage

			1-stage				2-stage						
Ratio	i		4	5	7	10	16	20	25	35	50	70	100
Max. acceleration torque <small>(max. 1000 cycles per hour)</small>	T_{2B}	Nm	32	32	32	29	32	32	32	32	32	32	29
		in.lb	283	283	283	257	283	283	283	283	283	283	283
Nominal output torque <small>(with n_{1N})</small>	T_{2N}	Nm	16	16	16	15	16	16	16	16	16	16	15
		in.lb	142	142	142	133	142	142	142	142	142	142	133
Emergency stop torque <small>(permitted 1000 times during the service life of the gearhead)</small>	T_{2Not}	Nm	75	75	75	75	75	75	75	75	75	75	75
		in.lb	664	664	664	664	664	664	664	664	664	664	664
Nominal input speed <small>(with T_{2N} and 20°C ambient temperature) ^{a)}</small>	n_{1N}	rpm	3700	3700	3700	3700	3700	3700	3700	3700	3700	3700	3700
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque <small>(with $n_1=3000$ rpm and 20°C gearhead temperature)</small>	T_{012}	Nm	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
		in.lb	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25						
Torsional rigidity	C_{t21}	Nm/arcmin	2.1	2.1	2.1	1.9	2.1	2.1	2.1	2.1	2.1	2.1	1.9
		in.lb/arcmin	19	19	19	17	19	19	19	19	19	19	17
Max. axial force ^{b)}	F_{2AMax}	N	750				750						
		lb _f	169				169						
Max. radial force ^{b)}	F_{2PRMax}	N	650				650						
		lb _f	146				146						
Efficiency at full load	η	%	97				95						
Service life <small>(For calculation, see the Chapter "Information")</small>	L_h	h	> 20000				> 20000						
Weight incl. standard adapter plate	m	kg	0.88				1.1						
		lb _m	1.9				2.4						
Operating noise <small>(with $n_1=3000$ rpm no load)</small>	L_{PA}	dB(A)	≤ 68										
Max. permitted housing temperature		°C	+90										
		F	194										
Ambient temperature		°C	0 to +40										
		F	32 to 104										
Lubrication			Lubricated for life										
Paint			Alu, polished										
Direction of rotation			Motor and gearhead same direction										
Protection class			IP 64										
Moment of inertia <small>(relates to the drive)</small>	J_t	kgcm ²	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
		10 ⁻³ in.lb.in ²	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

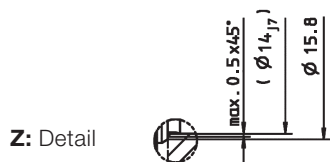
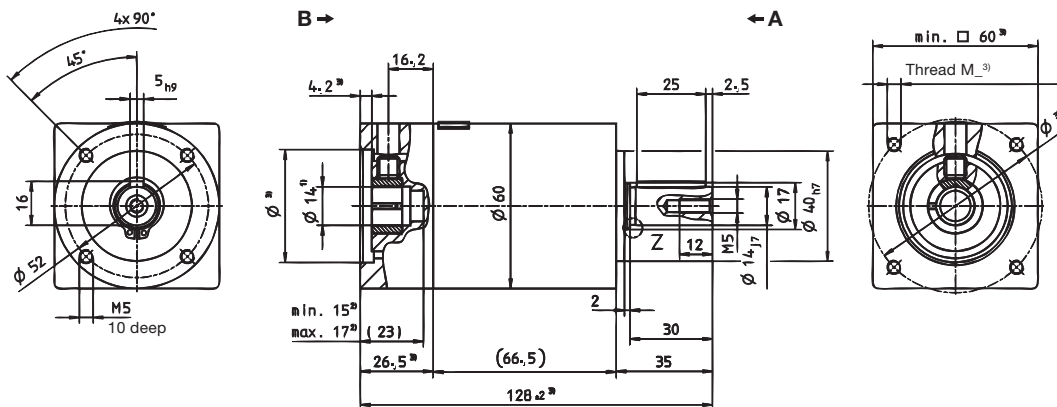
^{a)} For higher ambient temperatures, please reduce input speed

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:



2-stage:



Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
- 2) Min./Max. permissible motor shaft length. Longer motor shafts are adaptable, please contact us.
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Motor mounting according to operating manual



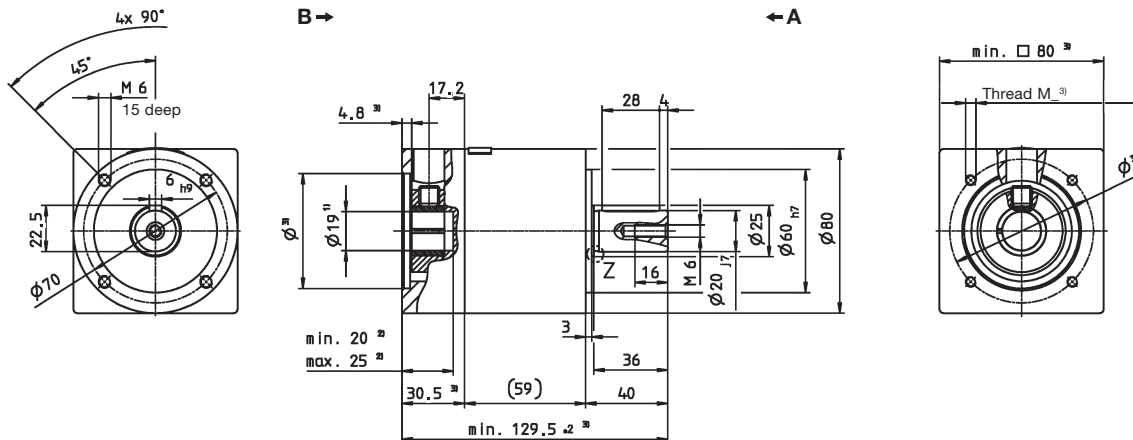
alphira 080 1/2-stage

			1-stage				2-stage						
Ratio	<i>i</i>		4	5	7	10	16	20	25	35	50	70	100
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	80	80	80	72	80	80	80	80	80	80	72
		in.lb	708	708	708	637	708	708	708	708	708	708	637
Nominal output torque (with n_{1N})	T_{2N}	Nm	40	40	40	35	40	40	40	40	40	40	35
		in.lb	354	354	354	310	354	354	354	354	354	354	310
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	190	190	190	190	190	190	190	190	190	190	190
		in.lb	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400
Max. input speed	n_{1Max}	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Mean no load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
		in.lb	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25						
Torsional rigidity	C_{t21}	Nm/arcmin	6.1	6.1	6.1	5.5	6.1	6.1	6.1	6.1	6.1	6.1	5.5
		in.lb/arcmin	54	54	54	49	54	54	54	54	54	54	49
Max. axial force ^{b)}	F_{2AMax}	N	1600				1600						
		lb _f	360				360						
Max. radial force ^{b)}	F_{2PRMax}	N	1200				1200						
		lb _f	270				270						
Efficiency at full load	η	%	97				95						
Service life (For calculation, see the Chapter "Information")	L_h	h	> 20000				> 20000						
Weight incl. standard adapter plate	<i>m</i>	kg	2.1				2.8						
		lb _m	4.6				6.2						
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	dB(A)	≤ 70										
Max. permitted housing temperature	°C		+90										
	F		194										
Ambient temperature	°C		0 to +40										
	F		32 to 104										
Lubrication	Lubricated for life												
Paint	Alu, polished												
Direction of rotation	Motor and gearhead same direction												
Protection class	IP 64												
Moment of inertia (relates to the drive)	J_t	kgcm ²	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		10 ⁻³ in.lb.in ²	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48

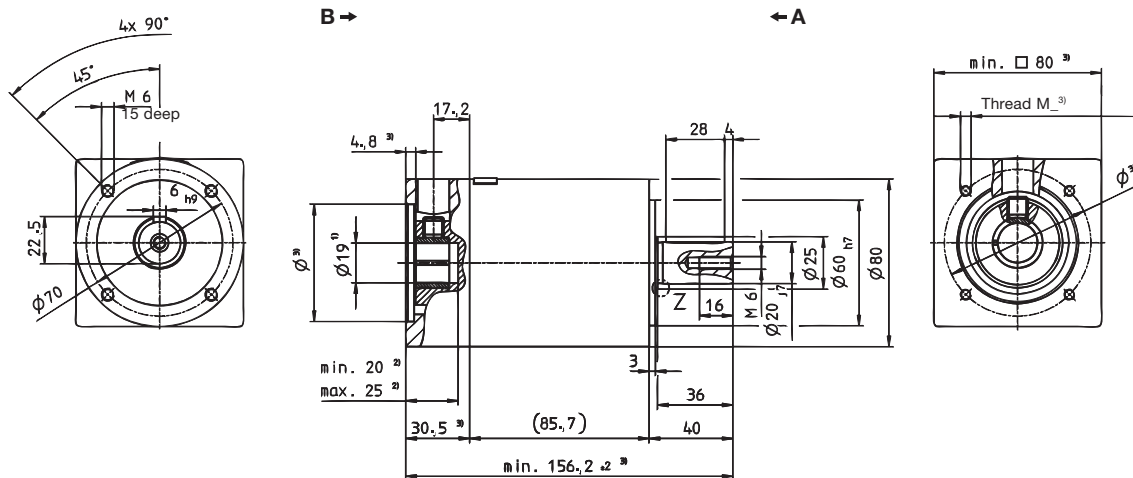
^{a)} For higher ambient temperatures, please reduce input speed

^{b)} Relates to center of the output shaft or flange, at 100 rpm

1-stage:



2-stage:



Non-tolerated dimensions ± 1 mm

- 1) Check motor shaft fit.
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- 3) The dimensions depend on the motor.
- 4) Smaller motor shaft diameter is compensated by a bushing.

Motor mounting according to operating manual



alpha 115 1/2-stage

		1-stage				2-stage							
Ratio	<i>i</i>	4	5	7	10	16	20	25	35	50	70	100	
Max. acceleration torque (max. 1000 cycles per hour)	T_{2B}	Nm	200	200	200	180	200	200	200	200	200	200	180
		in.lb	1770	1770	1770	1593	1770	1770	1770	1770	1770	1770	1593
Nominal output torque (with n_{1N})	T_{2N}	Nm	100	100	100	90	100	100	100	100	100	100	90
		in.lb	885	885	885	797	885	885	885	885	885	885	797
Emergency stop torque (permitted 1000 times during the service life of the gearhead)	T_{2Not}	Nm	480	480	480	480	480	480	480	480	480	480	480
		in.lb	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248	4248
Nominal input speed (with T_{2N} and 20°C ambient temperature ^{a)})	n_{1N}	rpm	2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	
Max. input speed	n_{1Max}	rpm	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	
Mean no load running torque (with $n_1=3000$ rpm and 20°C gearhead temperature)	T_{012}	Nm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
		in.lb	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
Max. torsional backlash	j_t	arcmin	≤ 20				≤ 25						
Torsional rigidity	C_{t21}	Nm/arcmin	16.5	16.5	16.5	14.5	16.5	16.5	16.5	16.5	16.5	16.5	14.5
		in.lb/arcmin	146	146	146	128	146	146	146	146	146	146	128
Max. axial force ^{b)}	F_{2AMax}	N	2100				2100						
		lb _f	472				472						
Max. radial force ^{b)}	F_{2PRMax}	N	1550				1550						
		lb _f	349				349						
Efficiency at full load	η	%	97				95						
Service life (For calculation, see the Chapter "Information")	L_h	h	> 20000				> 20000						
Weight incl. standard adapter plate	<i>m</i>	kg	5.2				6.9						
		lb _m	11.5				15.2						
Operating noise (with $n_1=3000$ rpm no load)	L_{PA}	dB(A)	≤ 72										
Max. permitted housing temperature		°C	+90										
		F	194										
Ambient temperature		°C	0 to +40										
		F	32 to 104										
Lubrication			Lubricated for life										
Paint			Alu, polished										
Direction of rotation			Motor and gearhead same direction										
Protection class			IP 64										
Moment of inertia (relates to the drive)	J_i	kgcm ²	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
		10 ⁻³ in.lb.in ²	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61

^{a)} For higher ambient temperatures, please reduce input speed

^{b)} Relates to center of the output shaft or flange, at 100 rpm

