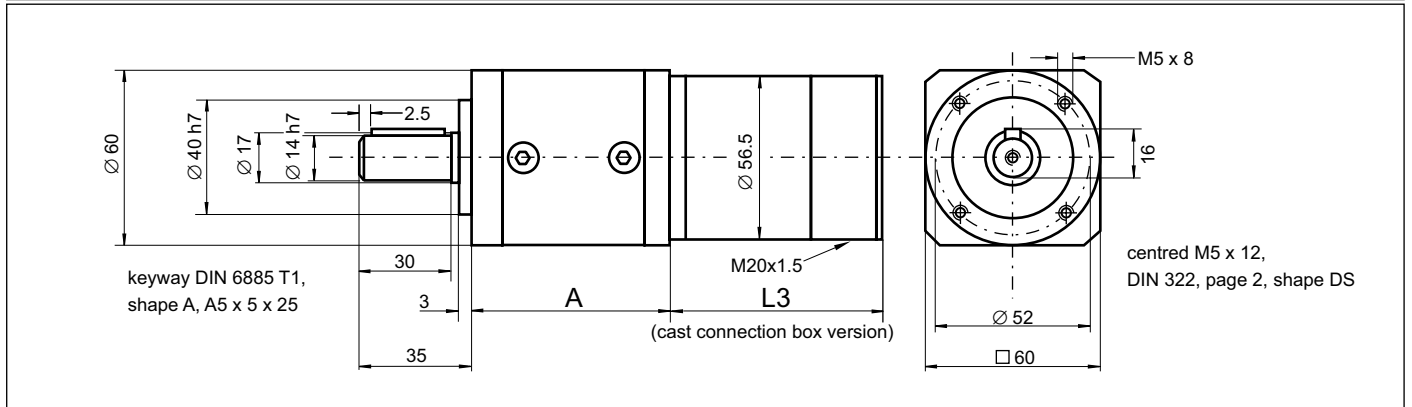


30 Stepping motor with planetary gear head series SM 56 PE

degree of protection: IP54 torque shaft bearing: ball bearing max. axial load: 600 N based on the center of the output shaft max. radial load: 500 N lubrication: life time lubrication operating temperature: -25°C/+90°C mounting position: any	motor type	length L3 ± 1 mm	inertia kgcm ²
	SM 56.1.18	76	0.125
	SM 56.2.18	102	0.25
	SM 56.3.18	130	0.375



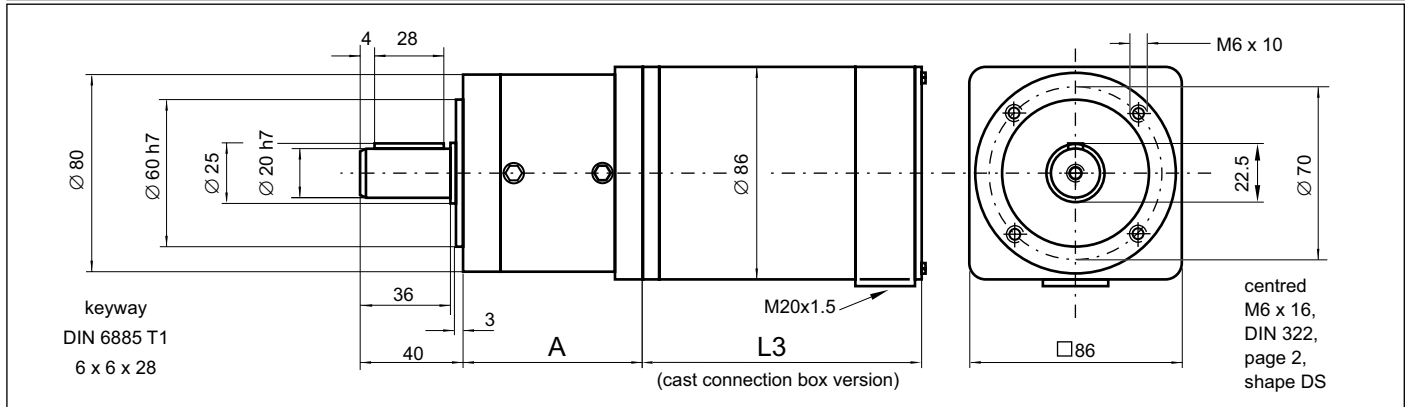
planetary gear head series PE											
type	ratio	max. torque output Nm			inertia referred to motor shaft 10 ⁻² kgcm ²	stiffness of distortion Nm/arcmin	absolute backlash angular minutes	efficiency approx. %	length A mm	weight without motor kg	number of stages
		SM 56.1	SM 56.2	SM 56.3							
PE3	3	1.1	2	3.2	2.3	<10	96	55	0.65	1	
PE4	4	1.5	2.7	4.3							
PE5	5	1.9	3.8	5.4							
PE8	8	3.1	5.4	8.6							
PE9	9	3.3	5.7	9.2	2.5	<12	94	67	0.82	2	
PE12	12	4.4	7.7	12.2							
PE15	15	5.5	9.6	15.3							
PE16	16	5.7	10.2	16.3							
PE20	20	7.3	12.8	20.4							
PE25	25	9.1	15.9	25.5							
PE32	32	11.7	20.4	32.6							
PE40	40	14.6	25.5	40							
PE64	64	18	18	18	2.5	<15	90	80	1	3	
PE60	60	20.6	36	44							
PE80	80	27,5	44	44							
PE100	100	34.4	44	44							
PE120	120	41.3	44	44							
PE160	160	44	44	44							
PE200	200	40	40	40							
PE256	256	44	44	44							
PE320	320	40	40	40							
PE512	512	18	18	18	0.1						

ordering indication: (example) SM 56.2.18J3 PE8

bold faced types: preferential versions (on stock)
 output torques are limited by the nominal output torque of the gear heads

stepping motor with planetary gear head series SM 87/SM 88 PE 31

degree of protection: IP54 torque shaft bearing: ball bearing max. axial load: 1200 N based on the center of the output shaft max. radial load: 950 N lubrication: life time lubrication operating temperature: -25°C to +90°C mounting position: any	motor type	Length L3 ± 1 mm	inertia (without gear head) kgcm ²
	SM 87.1.18	85.5	0.65
	SM 87.2.18	117.5	1.3
	SM 87.3.18	149.5	1.95
	SM 87.4.18	181.5	2.6
	SM 88.1.18	93.5	1.35
	SM 88.2.18	125.5	2.7
	SM 88.3.18	157.5	4.05
	SM 88.4.18	189.5	5.4



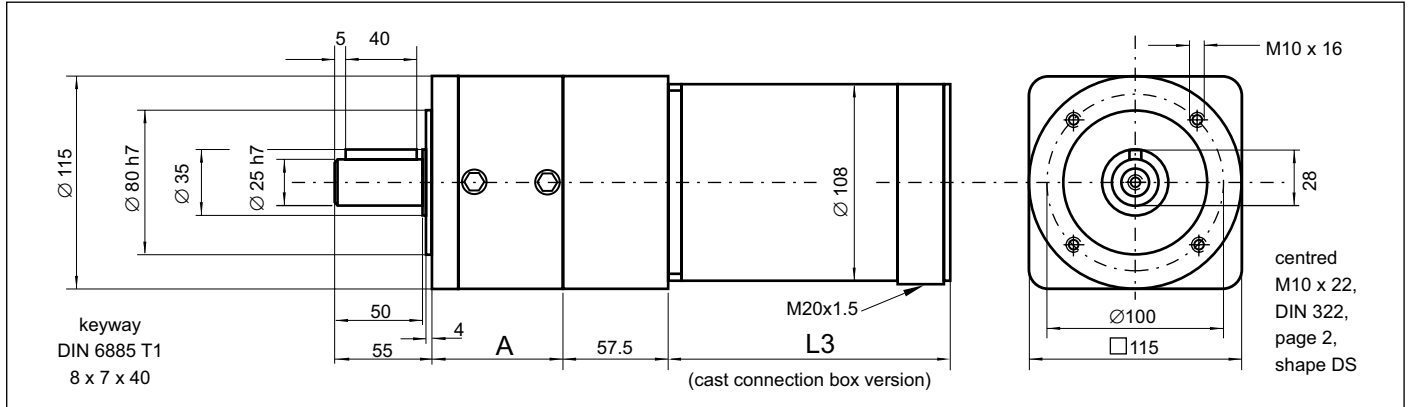
planetary gear head series PE																
type	ratio	max. torque output Nm								inertia referred to motor shaft 10 ⁻² kgcm ²	stiffness of distortion Nm/arcmin	absolute backlash angular minutes	efficiency approx. %	Length A mm	weight without motor kg	number of stages
		SM 87.1	SM 88.1	SM 87.2	SM 88.2	SM 87.3	SM 88.3	SM 87.4	SM 88.4							
PE3	3	4.3	7.2	8.6	14.4	12.9	21.6	17.3	28.8	63	6	<7	96	72 (93.5) (bei SM 88.4)	1.6	1
PE4	4	5.8	9.6	11.5	19.2	17.2	28.8	23	38.4	25						
PE5	5	7.2	12	14.4	24	21.6	36	28.8	48	14						
PE8	8	11.5	19.2	23	38.4	34.5	50	46.1	50	8						
PE9	9	12.7	21.1	25.4	42.3	38	63.4	50.7	84.6	63	6.5	<9	94	89 (110.5) (bei SM 88.4)	2.2	2
PE12	12	16.9	28.2	33.8	56.4	50.7	84.6	67.7	112.8	26						
PE15	15	21.2	35.2	42.3	70.5	63.4	105.8	84.6	110	62						
PE16	16	22.6	37.6	45.1	75.2	67.6	112.8	90.2	120	25						
PE20	20	28.2	47	56.4	94	84.6	120	112.8	120	15						
PE25	25	35.3	58.7	70.5	110	105.7	110	110	110	15						
PE32	32	45.1	75.2	90.2	120	120	120	120	120	8						
PE40	40	56.4	94	110	110	110	110	110	110	8						
PE64	64	50	50	50	50	50	50	50	50	6	6.3	<11	90	106.5 (127) (bei SM 88.4)	2.8	3
PE60	60	81	110	110	110	110	110	110	110	25						
PE80	80	108	120	120	120	120	120	120	120	18						
PE100	100	120	120	120	120	120	120	120	120	15						
PE120	120	110	110	110	110	110	110	110	110	60						
PE160	160	120	120	120	120	120	120	120	120	8						
PE200	200	110	110	110	110	110	110	110	110	8						
PE256	256	120	120	120	120	120	120	120	120	8						
PE320	320	110	110	110	110	110	110	110	110	6	6					
PE512	512	50	50	50	50	50	50	50	50	6						

ordering indication: (example) SM SM 87.1.18 M3 PE8

bold faced types: preferential versions (on stock)
 output torques are limited by the nominal output torque of the gear heads

32 Stepping motor with planetary gear head series SM 107 PE

degree of protection: IP54 torque shaft bearing: ball bearing max. axial load: 2800 N based on the center of the output shaft max. radial load: 2000 N lubrication: life time lubrication operating temperature: -25°C to +90°C mounting position: any	motor type	Length L3 ± 1 mm	inertia (without gear head) kgcm ²
	SM 107.1.18	111	4
	SM 107.2.18	161	8
	SM 107.3.18	211	12
	SM 107.4.18	261	16



planetary gear head series PE												
type	ratio	max. torque output Nm				inertia referred to motor shaft 10 ⁻² kgcm ²	stiffnes of distortion Nm/arcmin	absolute backlash angular minutes	efficiency approx. %	Length A mm	weight without motor kg	number of stages
		SM 107.1	SM 107.2	SM 107.3	SM 107.4							
PE3	3	10.8	20.8	29.7	39.4	2.6	12	<7	96	74	6.5	1
PE4	4	14.4	27.7	39.6	52.6	1.79						
PE5	5	18	34.7	49.5	65.7	1.53						
PE8	8	28.8	55.4	79.2	105	1.32						
PE9	9	30.6	58.9	84.2	112	2.62	13	<9	94	101	9	2
PE12	12	40.8	78.5	112	149	2.56						
PE15	15	51	98.2	140	186	2.53						
PE16	16	54.4	105	150	198	1.75						
PE20	20	68	131	187	248	1.5						
PE25	25	85	164	230	230	1.49						
PE32	32	109	209	260	260	1.3						
PE40	40	136	230	230	230	1.3						
PE64	64	120	120	120	120	1.3	12	<11	90	128	11.5	3
PE60	60	192	260	260	260	2.57						
PE80	80	256	260	260	260	1.5						
PE100	100	260	260	260	260	1.5						
PE120	120	230	230	230	230	2.5						
PE160	160	260	260	260	260	1.3						
PE200	200	230	230	230	230	1.3						
PE256	256	260	260	260	260	1.3						
PE320	320	230	230	230	230	1.3						
PE512	512	120	120	120	120	1.3						

ordering indication: (example) SM 107.2.18 M12 PE8

bold faced types: preferential versions (on stock)
 output torques are limited by the nominal output torque of the gear heads