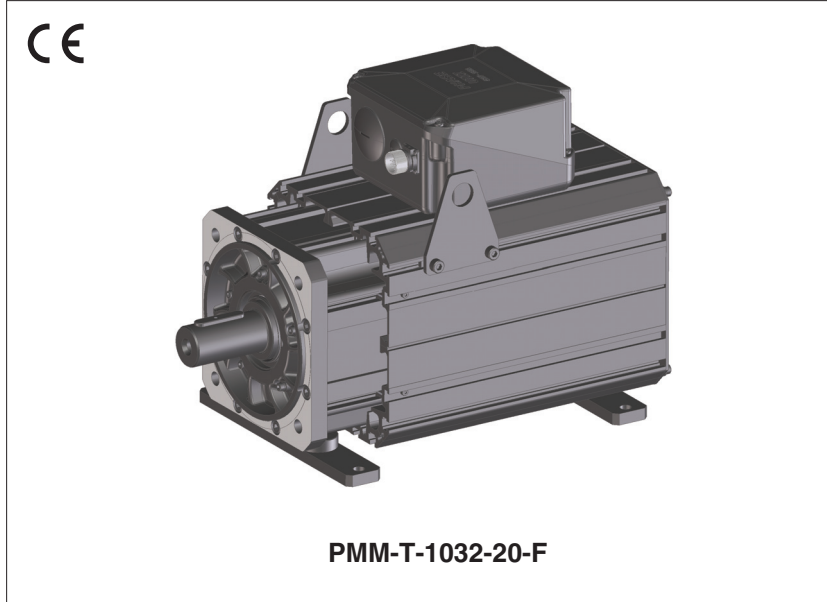


# Electric motors for SSP servopumps

high performance, synchronous, permanent magnets



**PMM** are AC brushless servo motors. Based on rare earth Permanent Magnets, they provide the highest level of efficiency and of dynamic performance, making them the best choice for SSP systems.

These motors, equipped with cooling fan, allow high power density for very compact solutions.

Atos PMM includes 8 different rated power from 9 kW to 100 kW, divided in 2 sizes front flange.

Power range: **9 kW to 100 kW**

## 1 MODEL CODE

<b>PMM</b>	-	<b>T</b>	-	<b>1</b>	-	<b>009</b>	-	<b>20</b>	-	<b>F</b>	-	<b>*</b>			
Permanent Magnet Synchronous Motor								Cooling F = Fan cooling		Series number					
Speed sensor T = Resolver								Rated speed [rpm], see section 2: 20 = 2000							
Size, see section 2:								Rated power [kW], see section 2:							
1 = for rated power 009, 015, 024, 032								009 = 9 kW		015 = 15 kW		024 = 24 kW		032 = 32 kW	
2 = for rated power 042, 055, 080, 100								042 = 42 kW		055 = 55 kW		080 = 80 kW		100 = 100 kW	

## 2 TECHNICAL CHARACTERISTICS

Code	Rated Power [kW]	Rated Voltage [Vn]	Rated Torque [Nm]	Max Torque [Nm]	Rated Speed [rpm]	Max Speed [rpm]	Rated Current [A]	Max Current [A]	Torque constant [Nm/A]	Efficiency [%]	Inertia [kg cm <sup>2</sup> ]
PMM-*-1009-20	8,8	353	41,9	105	2000	3000	16,77	49	2,7	92	50
PMM-*-1015-20	16,5	363	78,7	210			29,68	92	2,86	94	90
PMM-*-1024-20	24,8	361	118,2	310			44,58	134	2,86	95	130
PMM-*-1032-20	31,4	315	145,2	410			61,34	199	2,54	95	170
PMM-*-2042-20	42,4	366	202,2	415			79,98	201	2,77	95	283
PMM-*-2055-20	55,6	353	265,2	550			110,87	264	2,6	97	390
PMM-*-2080-20	79,6	361	380,1	830			146,24	384	2,83	97	590
PMM-*-2100-20	100,7	321	480,9	1100			203,48	548	2,56	97	780

### 3 ELECTRIC CHARACTERISTICS

Type	Brushless Permanent Magnet 3 Phase AC servomotors
Insulation	Motor: class F according to DIN 0530; Winding: class H according to DIN 0530
Thermal protection	PT1000/PTC130 (except for motor 55 kW: KTY84/PTC130)
Protection	IP54
Cooling	Fan
Mounting	B35
Concentricity and squareness	Grade R according to IEC 72-DIN
Bearings	Heavy duty, life lubricated

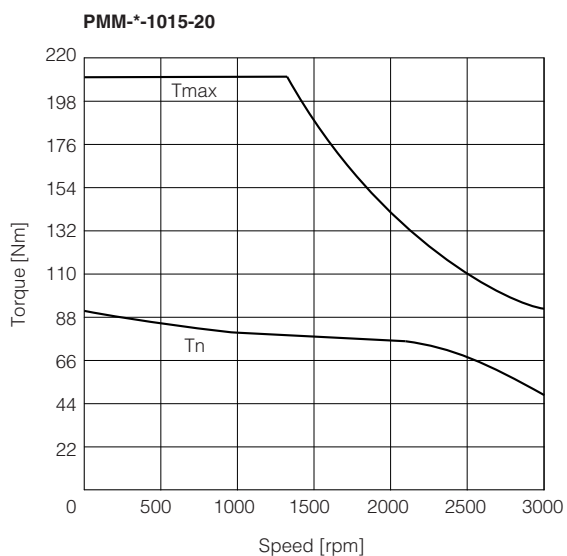
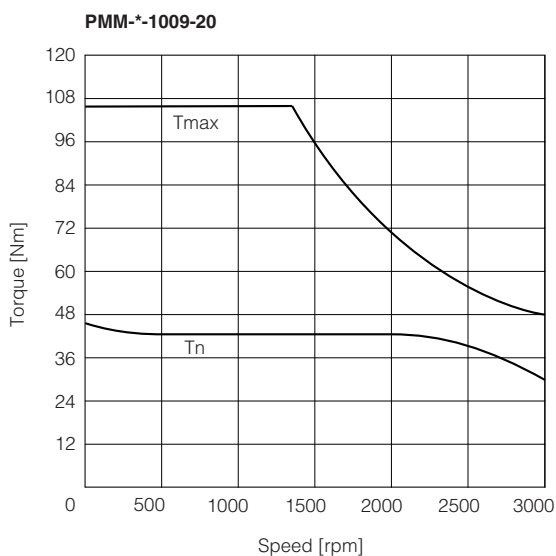
### 4 GENERAL CHARACTERISTICS

Assembly position	Any position
Ambient temperature	-20 ÷ +40°C de-rating for higher temperature
Altitude	up to 1000m, de-rating for higher altitude
Loads on the shaft	Axial and radial loads are not allowed on the shaft
Surface protection (motor body)	Black painting RAL9005
Compliance	CE according to EMC Directive 2014/30/EU and LVD Directive 2014/35/EU RoHS Directive 2011/65/EU as last update by 2015/863/EU REACH Regulation (EC) n°1907/200

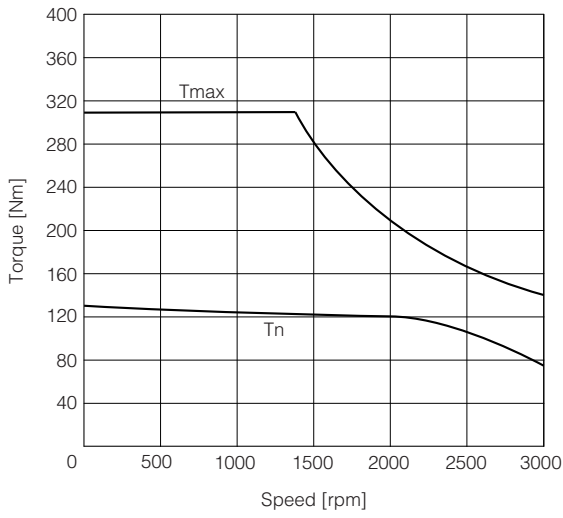
### 5 DIAGRAMS

**T<sub>n</sub>** = Rated torque. It is the maximum torque admissible for a S1 operating conditions

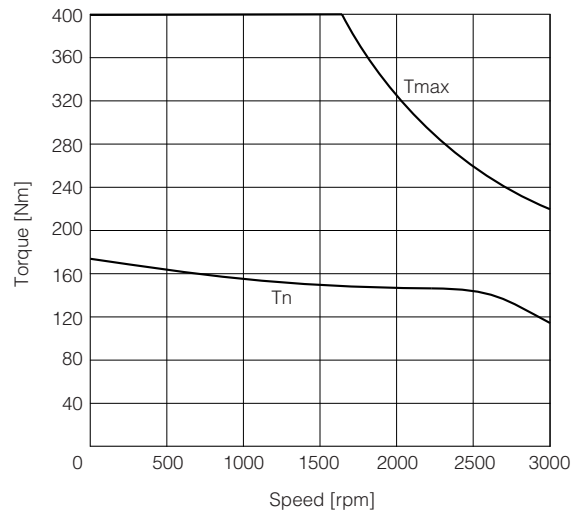
**T<sub>max</sub>** = Maximum torque. It is the peak torque allowable for very short time, according to the specific working cycle.



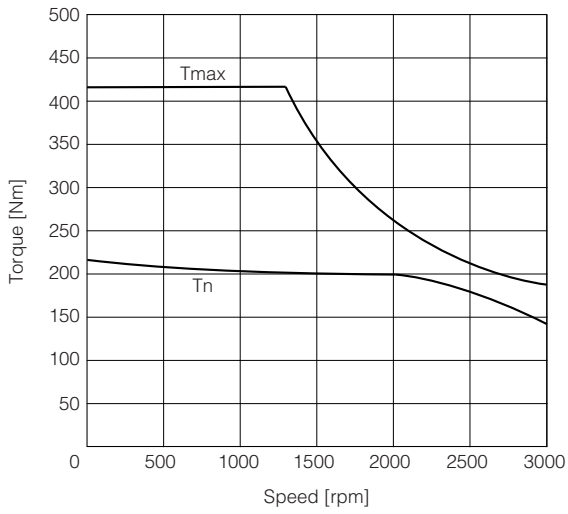
**PMM-\*-1024-20**



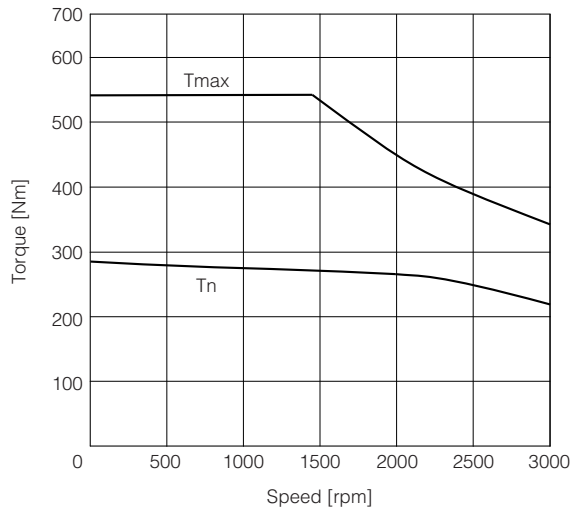
**PMM-\*-1032-20**



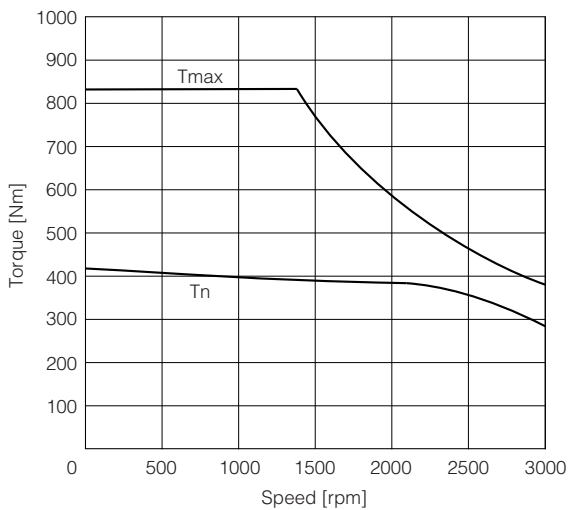
**PMM-\*-2042-20**



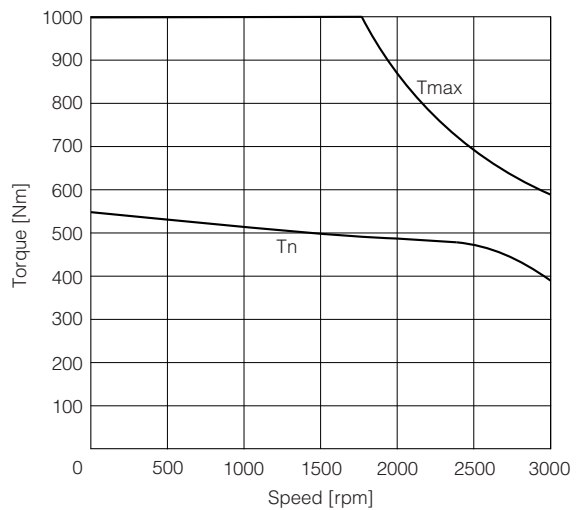
**PMM-\*-2055-20**



**PMM-\*-2080-20**



**PMM-\*-2100-20**



## 6 ELECTRIC CONNECTIONS

### 6.1 Power connection - 4 phases <sup>(C1)</sup>

PIN	TECHNICAL SPECIFICATION	NOTES
1	Phase W	Input - power supply
2	Phase V	Input - power supply
3	Phase U	Input - power supply
6	GND	Gnd - power supply

### 6.2 Fan power connection <sup>(C2)</sup>

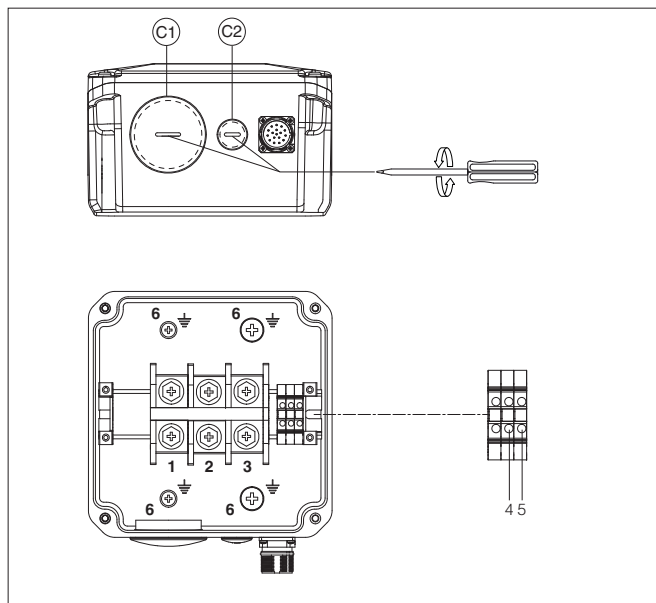
PIN	TECHNICAL SPECIFICATION	NOTES
4	Fan	Input - power supply
5	Fan	Input - power supply

The fan automatically starts with motor temperature over 85°C

Power Input: 53W

Current draw: 0.33A

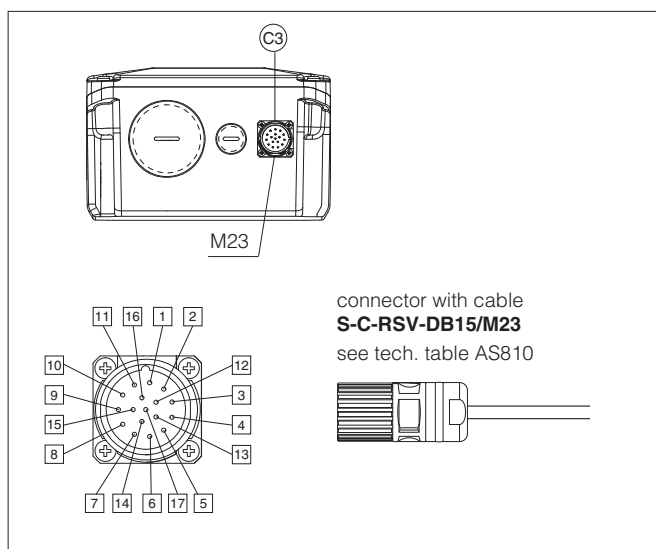
Power supply: 230 V @ 50 ÷ 60 Hz



Connections	Motor size							
	1009	1015	1024	1032	2042	2055	2080	2100
<sup>(C1)</sup>	M40	M50	M50	M50	M50	M63	M63	M63
<sup>(C2)</sup>	M20	M20	M20	M20	M20	M20	M20	M50

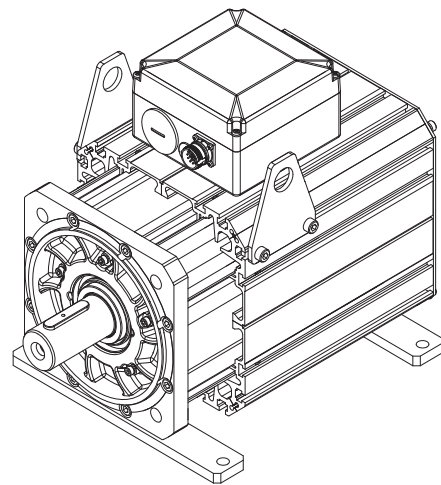
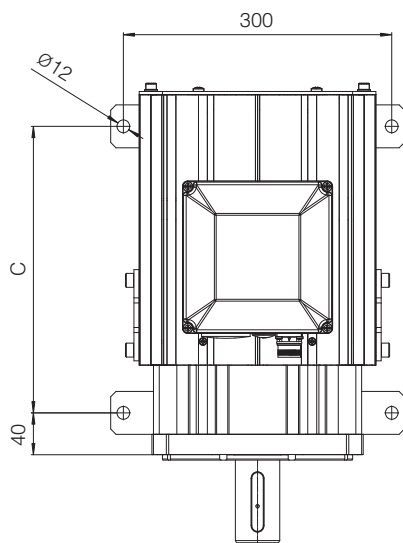
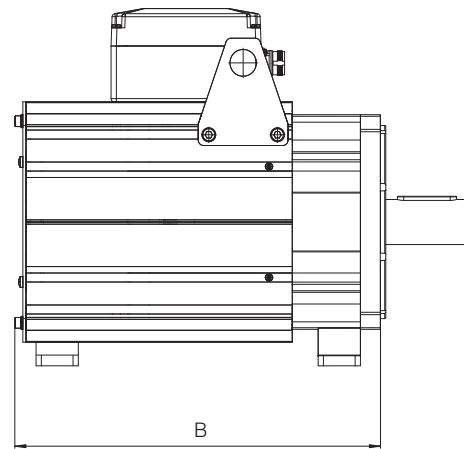
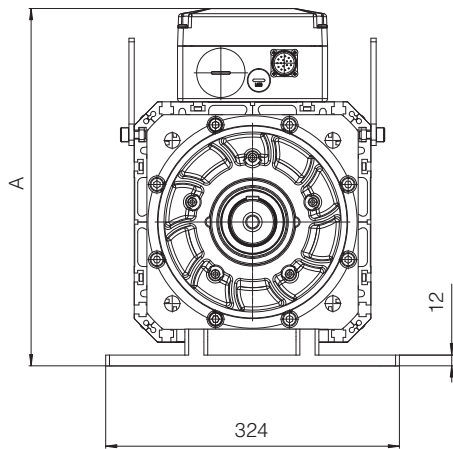
### 6.3 Signal connector - 17 pin <sup>(C3)</sup>

PIN	TECHNICAL SPECIFICATION
1	NC
2	NC
3	NC
4	SIN-, 1C/R
5	COS+, 1C/R
6	COS-, 1C/R
7	RESEX+
8	Thermal sensor+
9	Thermal sensor-
10	RESEX-
11	NC
12	NC
13	NC
14	SIN+, 1C/R
15	NC
16	NC
17	NC



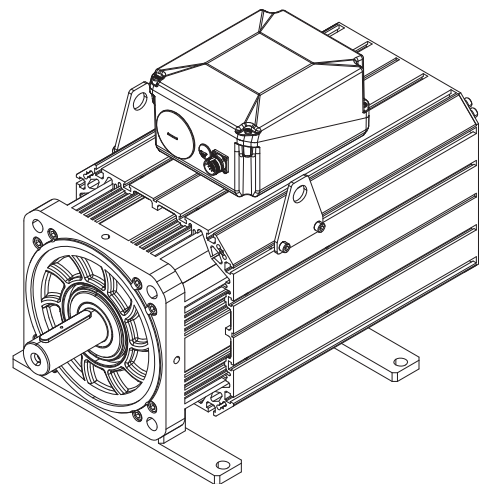
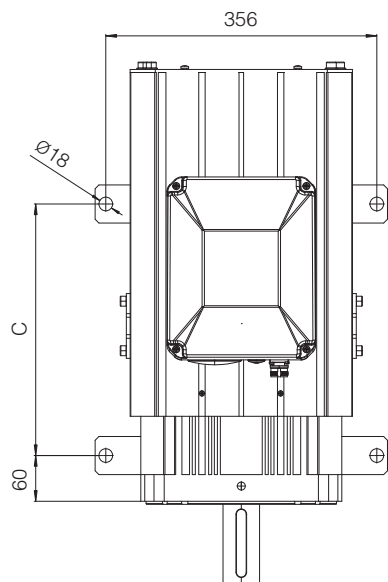
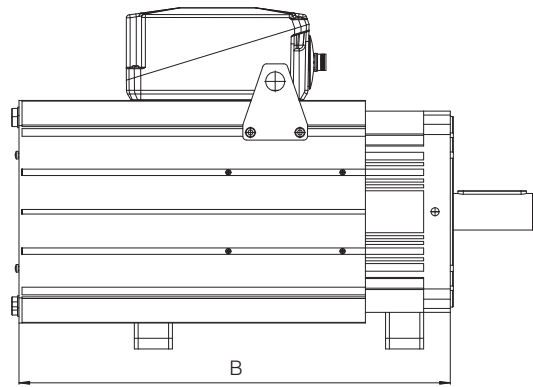
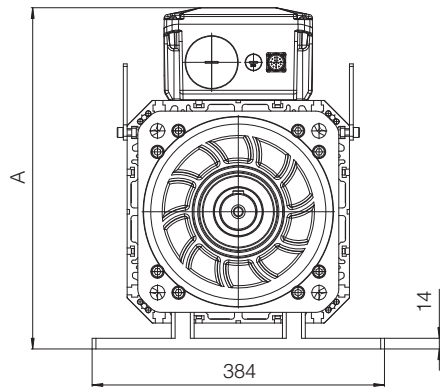
**7 DIMENSIONS**

**PMM-T-1\***



Motor code	Dimensions [mm]			Mass [kg]
	A	B	C	
<b>1009</b>	335	342	168	46
<b>1015</b>	355	414	240	59
<b>1024</b>	355	483	312	72
<b>1032</b>	355	555	385	87

**PMM-T-2\***



Motor code	Dimensions [mm]			Mass [kg]
	A	B	C	
<b>2042</b>	435	525	275	120
<b>2055</b>	450	580	330	141
<b>2080</b>	450	715	476	182
<b>2100</b>	490	785	583	223

**15 RELATED DOCUMENTATION**

<b>AS050</b>	Basics for Smart Servopumps - SSP	<b>AS800</b>	Programming tools for pumps & servopumps
<b>AS100</b>	SSP Smart Servopumps	<b>AS810</b>	Accessories for servopumps
<b>AS200</b>	Sizing criteria for servopumps	<b>AS910</b>	Operating and maintenance information for servopumps
<b>AS300</b>	PGI cast iron internal gear pumps, high pressure	<b>GS510</b>	Fieldbus
<b>AS350</b>	PGIL aluminium internal gear pumps	<b>S-MAN-HW</b>	Servopumps installation manual
<b>AS500</b>	D-MP electronic drives	<b>S-MAN-SW</b>	Servopumps programming software manual