

YASKAWA

External Drive Axis Packages

for MOTOMAN Robots with YRC1000 Controller

YRC1000

New generation
Sigma-7



YRC1000 External Axes Drives

As a leading developer and manufacturer of robots, servomotors and controllers, Yaskawa is able to cover a very large part of the in-house value creation chain.

Not only are our robot motors perfectly tailored to our controllers but our external axes come from the same single source. Both the external

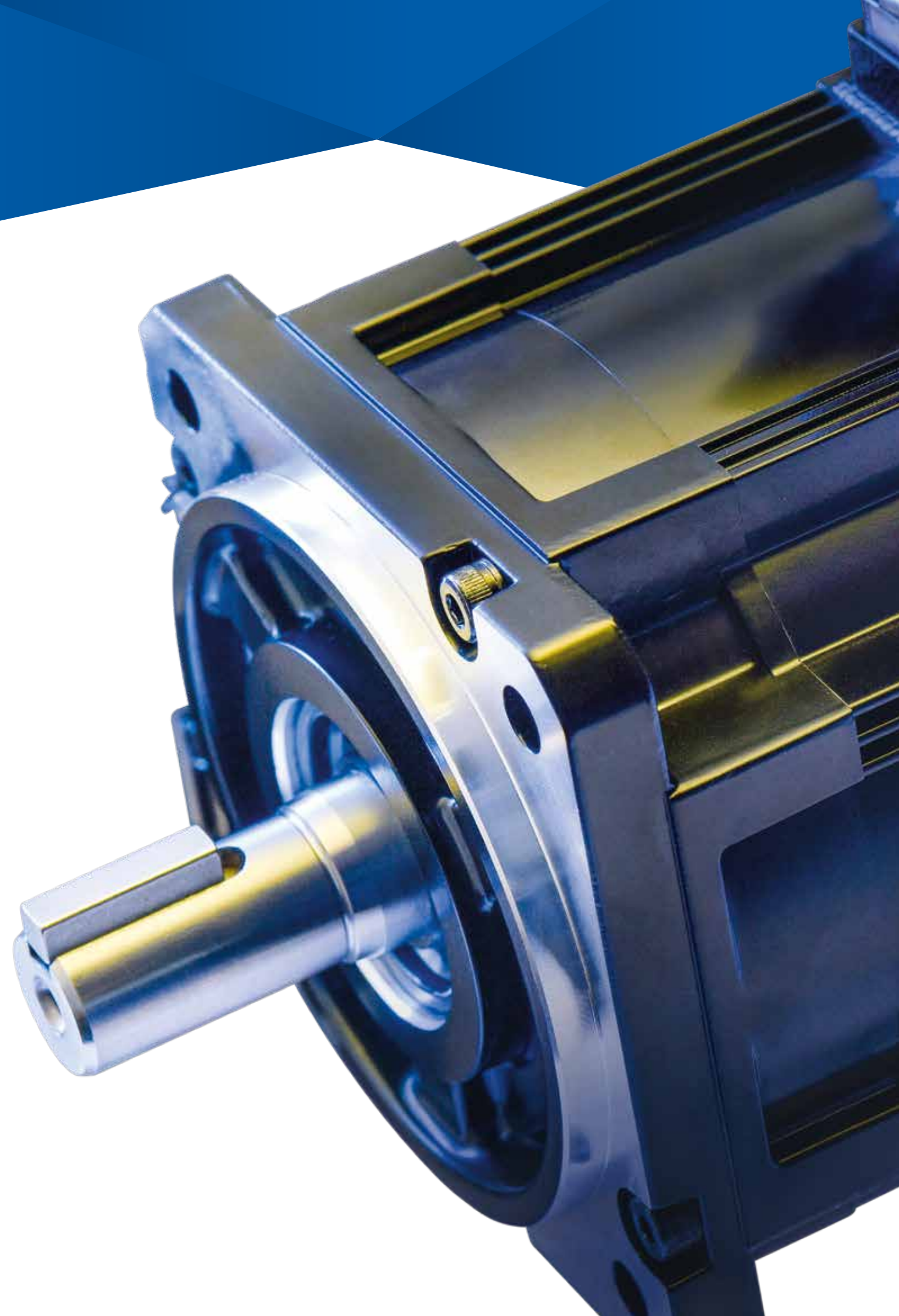
axes and the robot axes can easily be controlled by our YRC1000 controller.

Experience the ease with which our components can be integrated and the way in which they blend harmoniously into your overall installation.

The cable package consists of power and signal cables, available in lengths of 3 – 30 m in 3 m increments. Optionally with external axis disconnection for 1 – 3 external axes in YRC1000 controller.

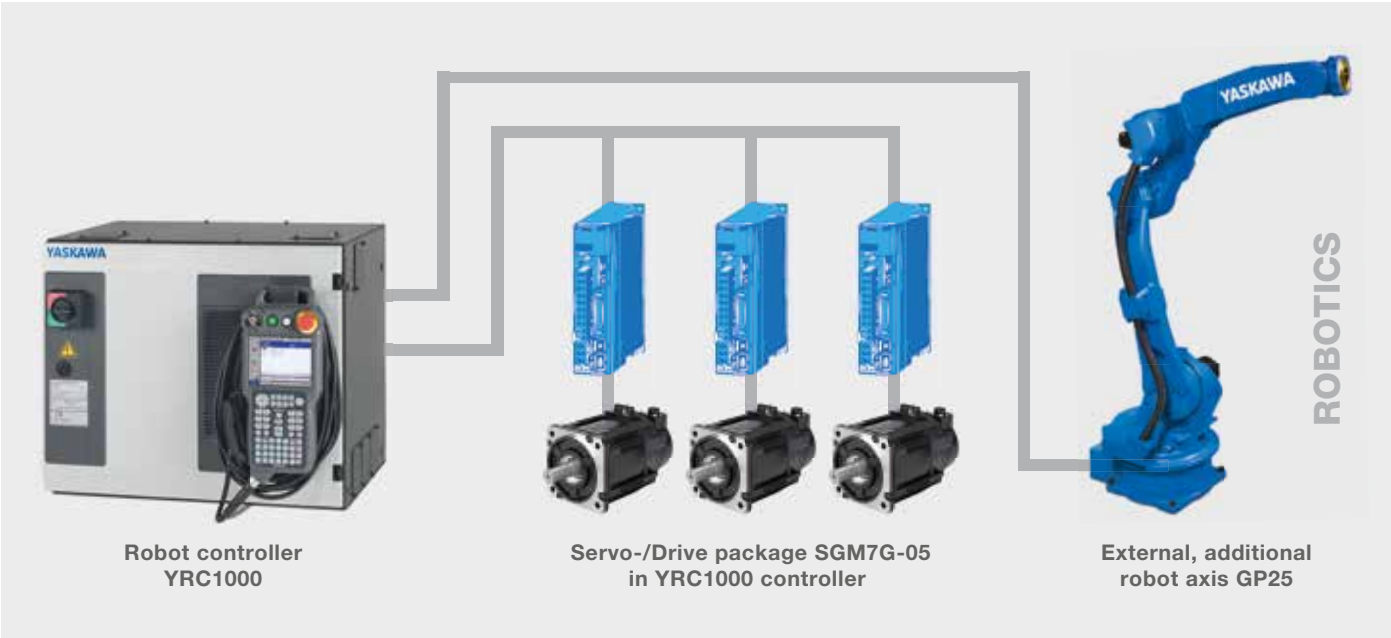
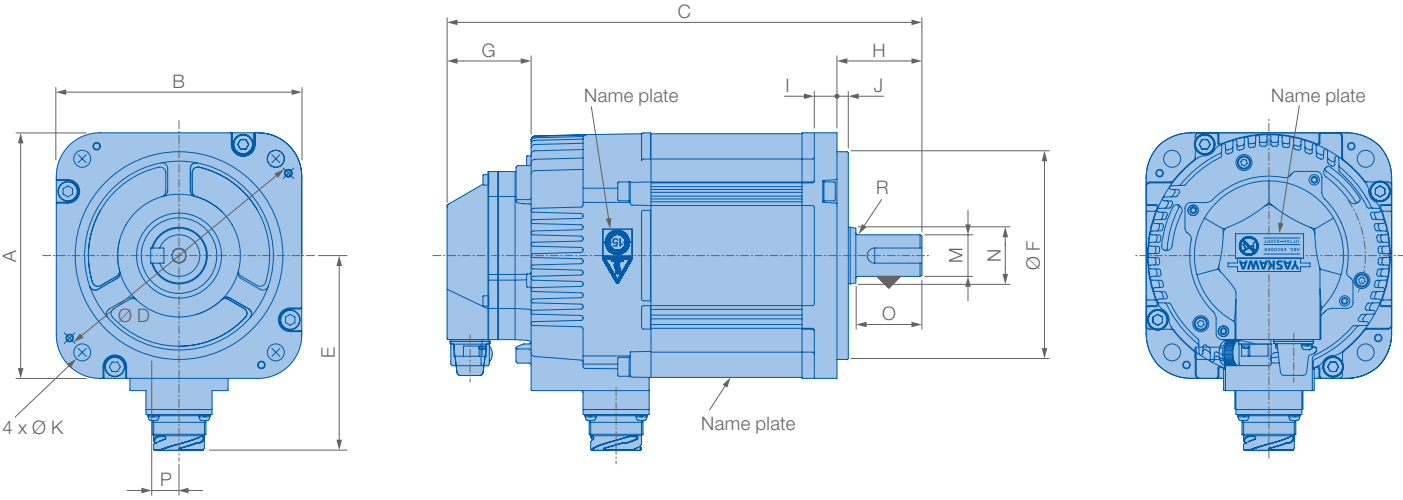
KEY BENEFITS

- Fully integrated additional robot axis
- Compatible with multi-synchronous operation
- Power categories from 0.1 up to 5.5 kW
- Functional unit consisting of SGM7 servomotor, servo/control package as well as power and signal cables
- Up to 3 servo packages can be integrated in the YRC1000 controller in standard configuration



Set-up

Example:
SGM7G-20APK-YR1



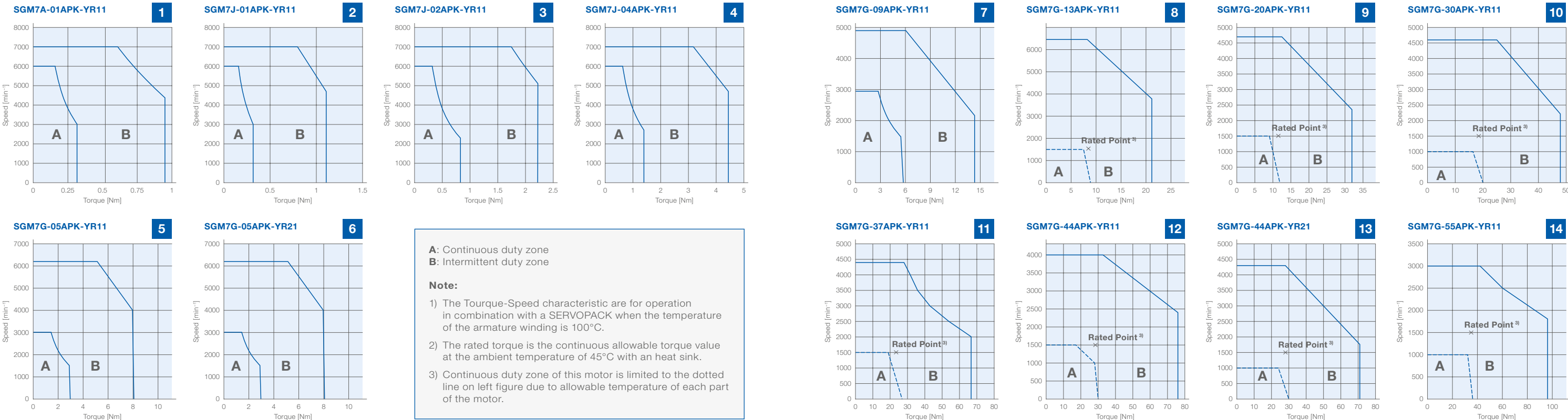
Technical Data/Parameters SGM7 Servomotors

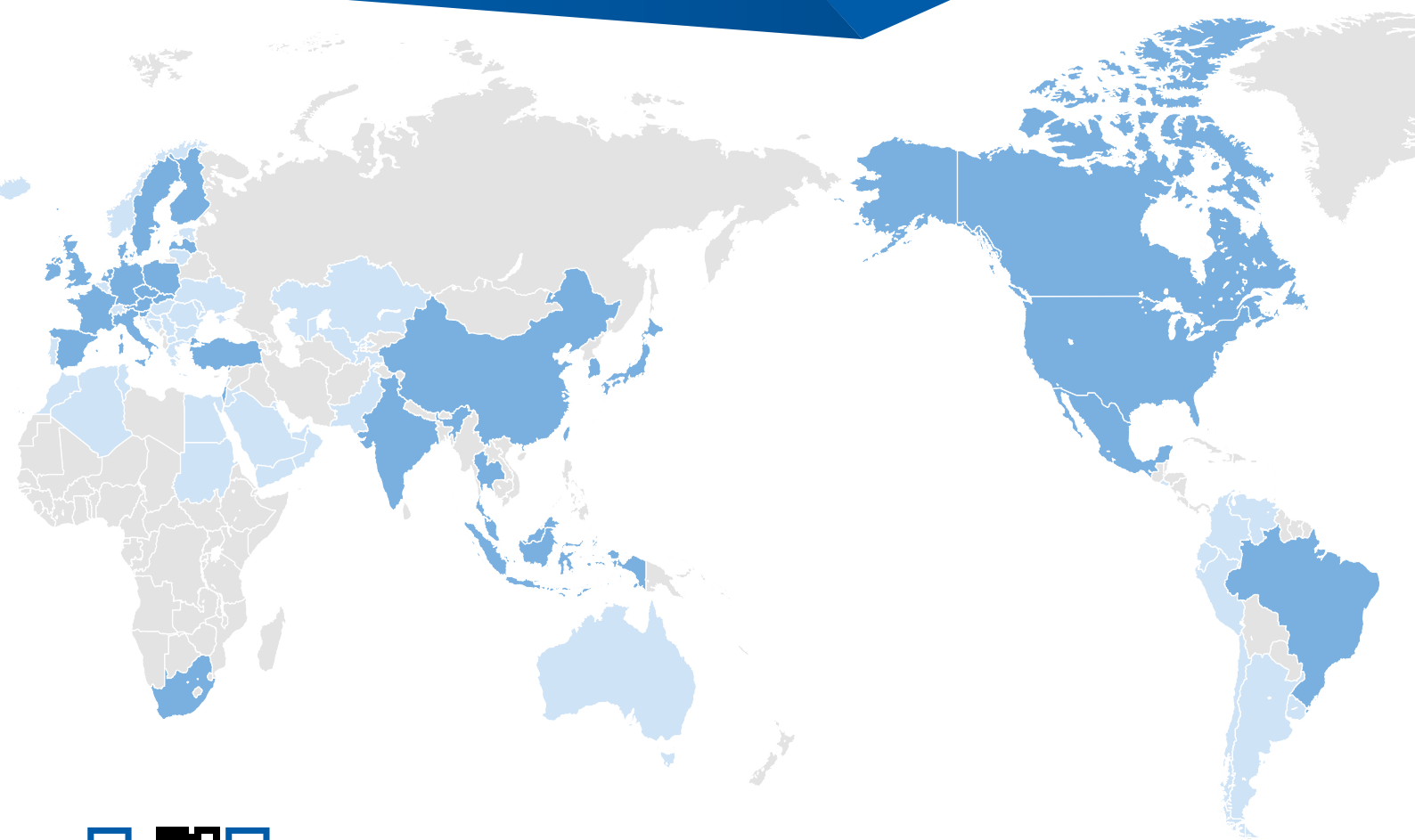
Technical Data	Models													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SGM7A-01APK-YR1*	SGM7J-01APK-YR1*	SGM7J-02APK-YR1*	SGM7J-04APK-YR1*	SGM7G-05APK-YR1*	SGM7G-05APK-YR2*	SGM7G-09APK-YR1*	SGM7G-13APK-YR1*	SGM7G-20APK-YR1*	SGM7G-30APK-YR1*	SGM7G-37APK-YR1*	SGM7G-44APK-YR1*	SGM7G-44APK-YR2*	SGM7G-55APK-YR1*
SAP	186772	186765	186762	186750	186825	195078	186828	192010	195859	194182	194184	197032	195858	197142
A/B [mm]	60 x 60	40 x 40	60 x 60	60 x 60	130 x 130	130 x 130	130 x 130	130 x 130	130 x 130	180 x 180	180 x 180	180 x 180	180 x 180	180 x 180
C [mm]	86.6	122	125.5	144	198	198	223	234	252	271	283	364	295	403
D [mm]	63.3	46	70	70	145	145	145	145	145	200	200	200	200	200
E [mm]	42.5	20	30	30	82	82	82	104	104	134	134	134	134	150
F [mm]	50 (h7)	30 (h7)	50 (h7)	50 (h7)	110 (h7)	110 (h7)	110 (h7)	110 (h7)	110 (h7)	114.3 (0/-0.025)	114.3 (0/-0.025)	114.3 (0/-0.025)	114.3 (0/-0.025)	114.3 (0/-0.025)
G [mm]	11.5	18.3	18.3	18.3	36	36	36	36	45	37	37	37	37	37
H [mm]	6.6	20	25	25	42	42	47	45	45	63	63	63	63	92
I [mm]	6	5	6	6	12	12	12	12	12	18	18	18	18	18
J [mm]	3	2.5	3	3	5	5	5	6	6	3.2	3.2	3.2	3.2	3.2
K [mm]	5.5	4.3	5.6	5.6	9	9	9	9	9	13.5	13.5	13.5	13.5	13.5
M [mm]	8 (h6)	8 (h6)	14 (h6)	14 (h6)	14 (h6)	14 (h6)	17 (h6)	22 (h6)	22 (h6)	28 (h6)	28 (h6)	28 (h6)	28 (h6)	38 (h6)
N [mm]	10	10	20	20	23	23	23	29	29	44	44.6	44.6	44.6	44
O [mm]	6	11	13	15	25	25	30	35	35	51	51	51	51	88.8
P [mm]	—	—	—	—	9	9	32	14	14	17	17	17	17	22
R (radius) [mm]	0.4	0.4	0.4	0.4	1	1	1	1	1	1	2	2	2	1
Feather key	—	—	—	—	DIN 6885-B 5 x 5 x 20	DIN 6885-B 5 x 5 x 20	DIN 6885-B 5 x 5 x 25	DIN 6885-B 8 x 7 x 35	DIN 6885-B 8 x 7 x 35	DIN 6885-B 8 x 7 x 40	DIN 6885-B 8 x 7 x 40	DIN 6885-B 8 x 7 x 40	DIN 6885-B 8 x 7 x 40	DIN 6885-B 10 x 8 x 60
Threaded hole Thread depth [mm]	M4 x 10	M4 x 10	M4 x 10	M5 x 14	M5 x 15	M5 x 15	M6 x 16	M6 x 15	M8 x 20	M8 x 20	M8 x 20	M8 x 20	M8 x 20	M10 x 30

Technical Data SGM7 Servomotors

Technical Data	Models													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	SGM7A-01APK-YR1*	SGM7J-01APK-YR1*	SGM7J-02APK-YR1*	SGM7J-04APK-YR1*	SGM7G-05APK-YR1*	SGM7G-05APK-YR2*	SGM7G-09APK-YR1*	SGM7G-13APK-YR1*	SGM7G-20APK-YR1*	SGM7G-30APK-YR1*	SGM7G-37APK-YR1*	SGM7G-44APK-YR1*	SGM7G-44APK-YR2*	SGM7G-55APK-YR1*
Rated power ^{1) 3)}	[kW]	0.1	0.1	0.2	0.4	0.45	0.45	0.85	1.3	1.8	2.9	3.7	4.4	5.5
Nominal torque ^{1) 3)}	[Nm]	0.318	0.318	0.83	1.4	2.86	2.86	5.39	8.34	11.5	18.5	23.5	28.4	35
Continuous max. tourque	[Nm]	0.318	0.318	0.83	1.4	2.94	2.94	5.68	8.83	12	19.8	27	30.1	36.1
Rated speed ^{1) 3)}	[min ⁻¹]	3000	3000	2300	2700	1500	1500	1500	1500	1500	1500	1500	1500	1500
Nominal current ^{1) 3)}	[A eff.]	0.78	0.85	2	2.8	7.3	7.3	6.9	13.8	16.4	22.2	22.8	25.6	24.7
Rated power	[kW/s]	7.22	13.8	20.9	32.5	9.7	9.7	20.9	35.9	52.7	63.4	85	55.6	84.5
Nominal angle acceleration	[Rad/s²]	22700	43200	25200	23200	3400	3400	3880	4300	4580	3430	3620	1960	3760
Peak torque	[Nm]	0.955	1.11	2.23	4.46	8	8	14.2	21	32	48	67	76	96
Peak current	[A eff.]	2.6	3.1	5.8	9.3	19.6	19.6	17	35	47	60.5	68	68	67
Max. speed	[min ⁻¹]	7000	7000	7000	7000	6200	6200	5000	6000	4700	4600	4400	4000	3000
Moment of inertia [kg x m² x 10 ⁻⁴]		0.14	0.0735	0.329	0.603	8.42	8.42	13.9	19.4	25.1	54	65	145	145
Torque constant	[Nm/A eff.]	0.453	0.413	0.444	0.544	0.444	0.444	0.859	0.647	0.748	0.859	1.09	1.18	1.51
Temperature class		B	B	B	B	F	F	F	F	F	F	F	F	F
Input voltage	[V]	200	200	200	200	200	200	200	200	200	200	200	200	200
Holding torque motor brake	[Nm]	0.318	0.318	0.83	1.4	2.9	4.3	8	12.7	19.6	28.4	43.1	43.1	74
Emergency braking torque (CAT0)	[Nm]	tbd	tbd	tbd	tbd	4.4	6.5	12	19.1	29.4	44	65	65	111
Input voltage motor brake	[DC V]	24	24	24	24	24	24	24	24	24	24	24	24	24
Heat sink	[mm]	Al 250 x 250 x 6	Al 200 x 200 x 6	Al 250 x 250 x 6	Al 250 x 250 x 6	Fe 400 x 400 x 20	Fe 400 x 400 x 20	Fe 400 x 400 x 20	Fe 400 x 400 x 20	Fe 400 x 400 x 20	Fe 550 x 550 x 30	Fe 550 x 550 x 30	Fe 550 x 550 x 30	Fe 550 x 550 x 30

Diagram Speed ^{1) 2)}/Torque





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All drawing dimensions in mm.
Technical data may be subject to change without previous notice.
Please request detailed drawings at robotics@yaskawa.eu.

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