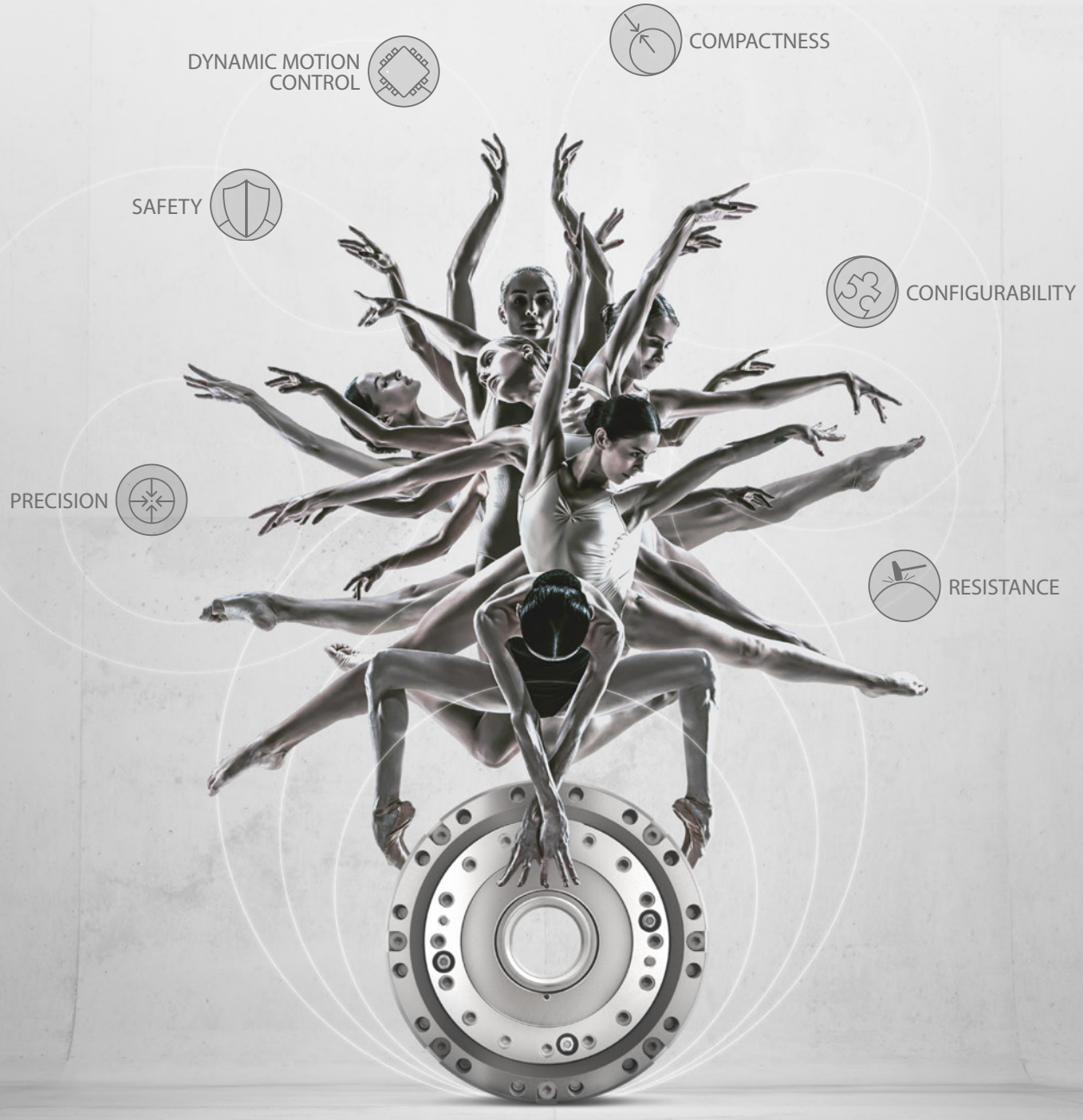
Sumitomo Drive Technologies

TUAKA.
PERFECTION IN MOTION.

A perfect interaction between human and machine, that is the basis of all our work.
With the utmost passion and feeling for the biggest and the smallest details, our engineers take the Sumitomo Drive Technologies DNA to the next level with the **TUAKA** product family.

Welcome **TUAKA**. Welcome future.



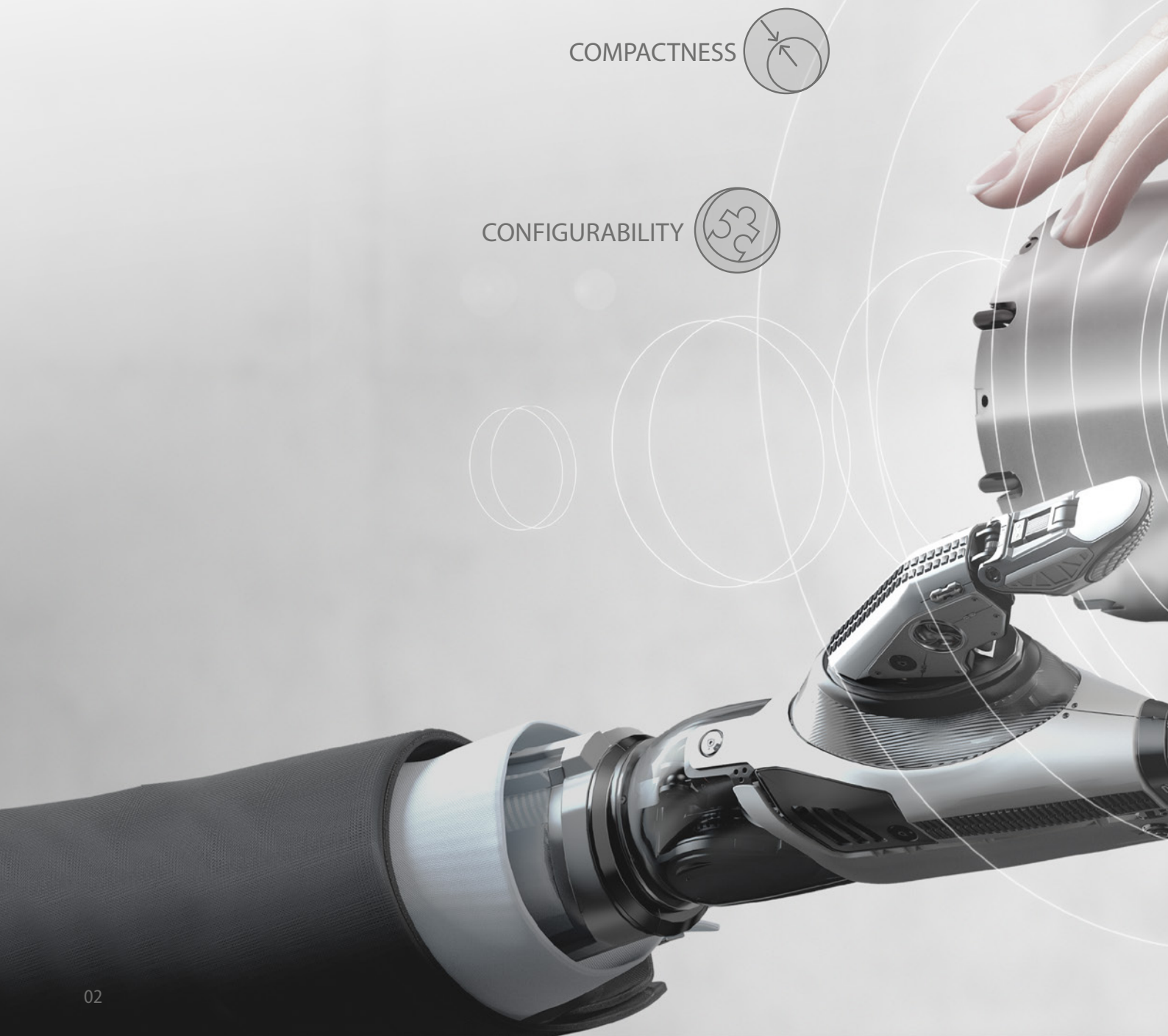
HUMAN AND MACHINE – HAND IN HAND.

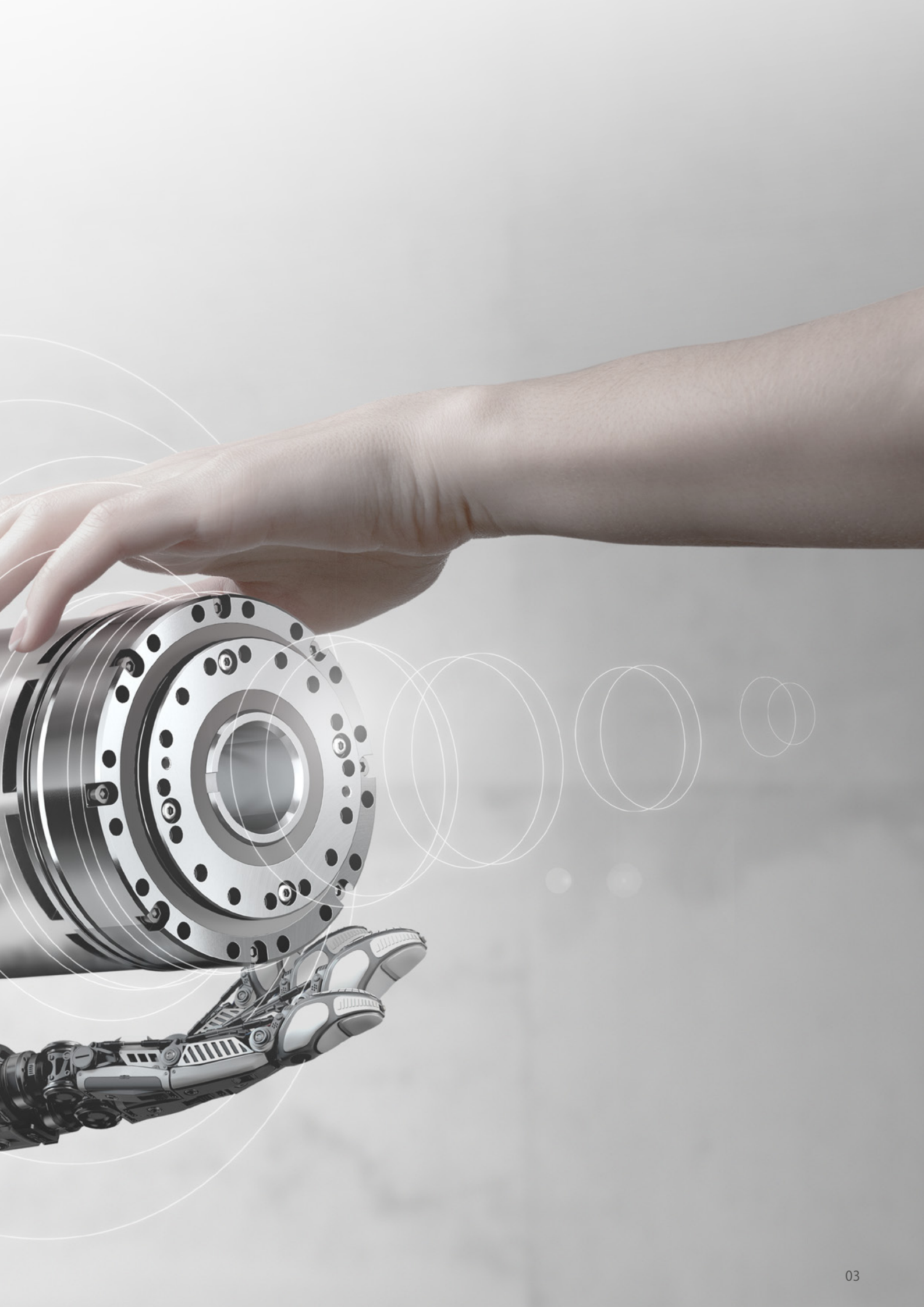
TUAKA actuators combine the mindset of German engineering with the highest demand for configurable technology. With this ultra-compact product line, we set a new benchmark in actuator technology which puts us one step ahead of the industrial standard.

Because our demand is to exceed yours.
Shake on it!

COMPACTNESS

CONFIGURABILITY





EN GARDE!

Since time immemorial, we have always taken on new challenges in industrial drive technology. With the development of the **TUAKA** actuators, our engineers have achieved the highest accolade. This has allowed us to achieve the highest expansion stage (V3) within the **TUAKA** family, which is itself a true master in terms of precision and dynamic motion control.

Made in Germany – Reborn.

DYNAMIC MOTION CONTROL


PRECISION

SAFETY IN FOCUS.

The **TUAKA** product family redefines the highest standard for safety and durability.
This allows our new technology to unfold its full potential, because the symbiosis between human and machine always remains perfectly controllable.

Reassuringly safe.


SAFETY
RESISTANCE
K
A

THE BASIC OPTIONS:

Integrated disc brake
matched to the motor torque

Integrated torque sensor
matched to the entire torque range of the gearbox

Choice of encoder
SICK SES/SEM, Heidenhain KBI1335, RLS AksIM-2™

Second Encoder at gear output
Absolute multiturn

Advanced safety functions
SS1, SS2, SLS, SLP, SBT, Safe process data (FSOE)

THE ACCESSORIES:

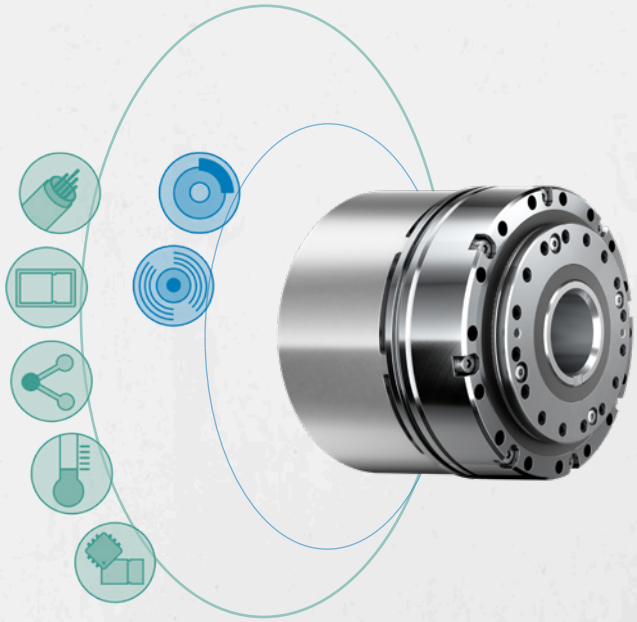
Internal protection of hollow shaft for cable installation
Static tube made from resin material to protect wires

Housing protection according IP class 50 or 62 or 66
Standard protection: IP20

Standard connector set (all industrial types)
Standard wires without connectors (ferrules only)

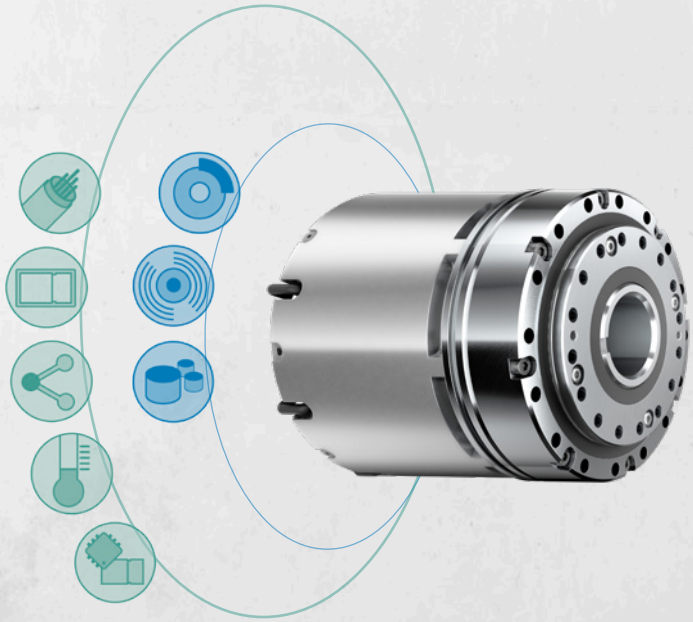
Additional heat sink
For increase of power consumption, designed around the available space of the customer

External Driver
Wired to the axis and configured Plug & Play



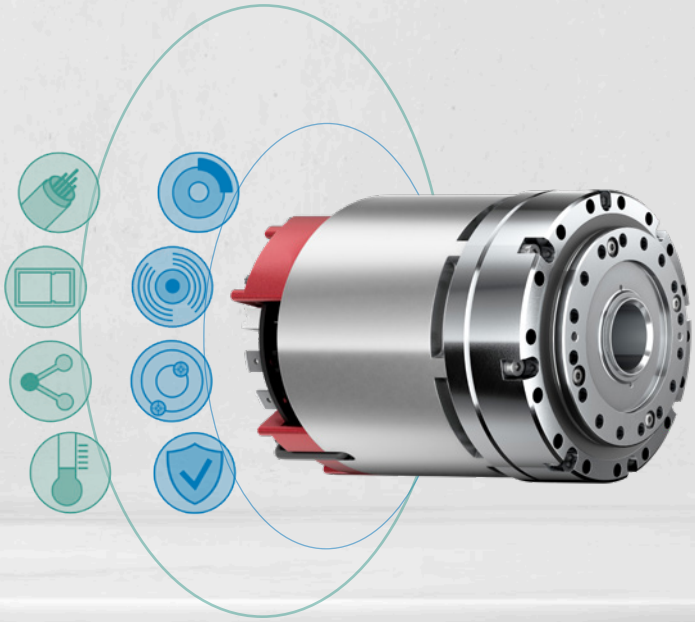
TUAKA ACTIVE

Gearbox + Motor



TUAKA SERVO

Gearbox + Motor + Encoder



TUAKA DRIVE

Gearbox + Motor + Encoder +
Safety Driver (SBC, STO)

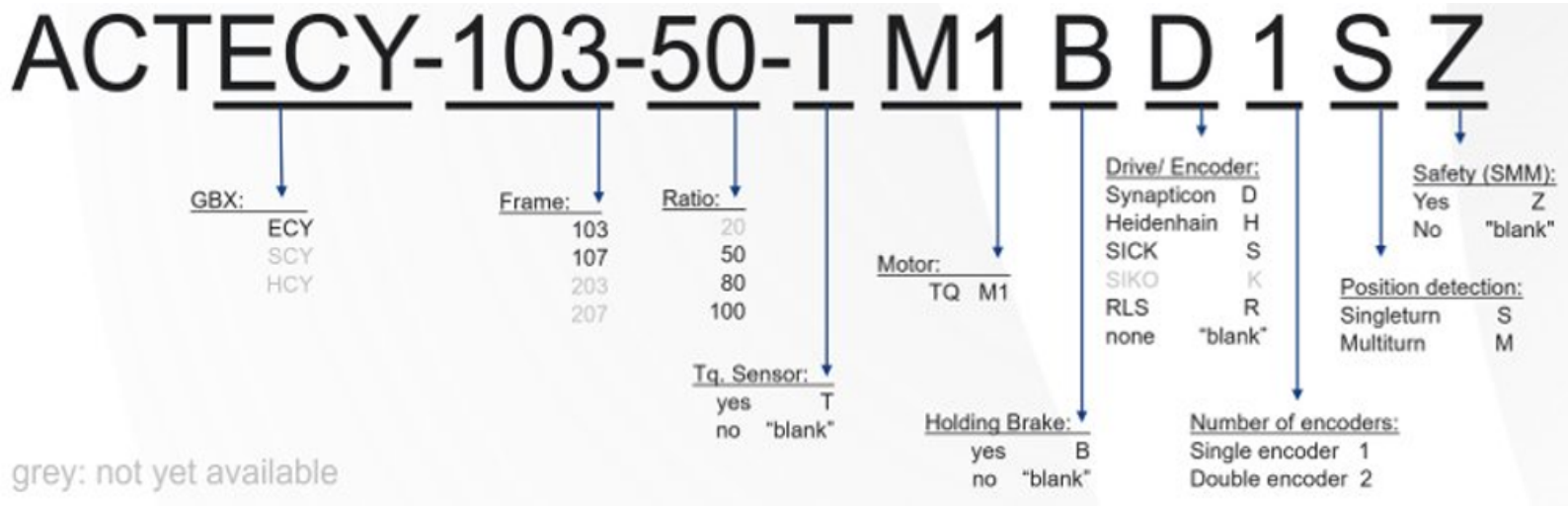
THE SPECIFICATIONS:

				FRAME	107			203		
				Ratio	100	80	50	100	80	50
General										
Operating ambient temperature				°C	10 … 55					
Operating ambient humidity (no condensation)				% rH	20 … 80					
Storage Temperature (no condensation)				°C	0 … 60					
Max. installation altitude				m	1000					
Lifetime (rated) [▲: uprating for 10000 under development]				h	7000			10000		
Common data (for more Gearbox details see Sumitomo ECY-Catalogue)										
Gearbox outer diameter				mm	Ø95			Ø74		
Peak output torque				Nm	▲157	▲137	▲98	70	56	44
Rated output torque [▲: uprating under development]				Nm	▲67	▲63	▲39	31	29	21
Max. rotation output speed				1/min	28	35	56	62	77	123
				deg/s	167	209	334	370	463	740
Max. rotation angle				°	infinite					
Rated power consumption				W	333	391	388	287	336	388
Max. power consumption				W	1453			1259		
Supply voltage				V	48					
Operating Performance										
Thermal Rating	Max. application-time of peak Torque @ 5rpm (Output)	Radiation plate Ø200mm		s	tbd			tbd		
	Max. application-time of peak Torque @ 3/4 max speed	Radiation plate Ø200mm		s	tbd			tbd		
	Max. Torque at 50%ED @ 5rpm (Output)	Radiation plate Ø200mm		Nm	tbd			tbd		
	Max. Torque at 50%ED @ max speed	Radiation plate Ø200mm		Nm	tbd			tbd		
	Max. Torque at 100%ED @ 5rpm (Output)	Radiation plate Ø200mm		Nm	tbd			tbd		
	Max. Torque at 100%ED @ max speed	Radiation plate Ø200mm		Nm	tbd			tbd		
Max. output acceleration @ max. acceleration torque				$arcmin/s^2$	tbd			tbd		
Repetition accuracy (cw to ccw) @ operation with included driver		No load | Full load		arcsec	tbd | tbd			tbd | tbd		
Torque Sensing Accuracy		Max. absolute deviation		Nm	< 5.4 Nm			tbd		
		Average absolute deviation		Nm	< 1.3 Nm			tbd		
Brake specification – option										
Type				–	Disc – spring type – overexcitation implemented					
Max. allowable braking work per 1 cycle				J	69			29		
Total work capacity				J	20700			5800		
Geometry Information										
Max. outer diameter				mm	Ø95 Exception: SERVO (with SICK): Ø106			Ø74 Exception: SERVO (with SICK): Ø79		
Hollow shaft diameter que				mm	Ø26.5 Exception: SERVO with SICK encoder: Ø22.5 DRIVE with 2nd encoder: Ø23.0			Ø19.5 Exception: DRIVE with 2nd encoder: Ø17		
Overall basic length				mm	ACTIVE: 78.1 SERVO (with RLS, Heidenhein): 87.9 SERVO (with SICK): 100.6 DRIVE: 107.6			ACTIVE: 58.9 SERVO (with RLS, Heidenhein): 68.3 SERVO (with SICK): 79.9 DRIVE: 89.2		
Brake option				mm	+ 18.1			+ 17.6		
Torque Sensor option				mm	+ 0 (!)			+ 0 (!)		
Overall basic weight				g	ACTIVE: 2400 SERVO (RLS, Heidenhein): 2940 SERVO (SICK): 2995 DRIVE: 3095			ACTIVE: 1050 SERVO (RLS, Heidenhein): 1430 SERVO (SICK): 1470 DRIVE: 1615		
Brake option				g	+ 360			+ 265		
Torque Sensor option				g	+ 0 (!)			+ 0 (!)		

	FRAME	107			203		
	Ratio	100	80	50	100	80	50
Encoder specification							
Encoder resolution	bit	SERVO: 19 DRIVE @ input: 20 DRIVE @ output (option): 20			SERVO: 19 DRIVE @ input: 20 DRIVE @ output (option): 20		
Encoder accuracy	arcsec	SERVO: ±90 DRIVE @ input: ±72 DRIVE @ output (option): ±72			SERVO: ±90 DRIVE @ input: ± 90 DRIVE @ output (option): ±72		
Encoder multi-turn	–	SERVO (RLS): yes, non-volatile memory, 16bit SERVO (Heidenhain): yes, battery-based, 16bit SERVO (SICK): yes, mechanical DRIVE: yes, battery-based, 18bit					
Encoder communication	–	SERVO (RLS): BiSS, RS422 (UART), SPI, SSI, PWM [not recommended] SERVO (Heidenhain): EnDat 2.2 SERVO (SICK): Hiperface® DRIVE: integrated (BiSS-C)					
Driver Option ACTIVE & SERVO							
Type	–	Synapticon Somanet Node (external – but wired and configurated)					
Communication	–	EtherCAT, DS402, CoE, FoE, FSoE					
Hardware protections	–	Overcurrent, overvoltage, undervoltage, overtemperature, PWM deadtime, PWM shoot through					
Input/output (GPIO)	–	4x GPIO/SPI**/I²C**/UART, 2x single-ended 0 – 10 V, 2x differential ±5 V					
Standard safety functions	–	STO/SBC according to SIL 3 PL-e cat.3					
Driver DRIVE							
Type	–	Synapticon Circulo 9			Synapticon Circulo 7		
Communication	–	EtherCAT, DS402, CoE, FoE, FSoE					
Hardware protections	–	Overcurrent, overvoltage, undervoltage, overtemperature, PWM deadtime, PWM shoot through					
Input/output (GPIO)	–	5x DIO(3.3/5V), 1x DO(3.3/5V), 1x DI(24V), 1x Analog In Single Ended (0 – 10V), 1x Analog In Differential (not available in combination with Torque Sensor)					
Standard safety functions	–	STO/SBC according to SIL 3 PL-e cat.3					
Safe Motion Module – option	–	FSoE, STO, SBC, SS1/2, SOS, SMS, 4x SLS, Safe Process Data (position, velocity), 2x safe digital inputs, 1x safe digital output (OSSD), 1x safe analog input (not available in combination with Torque Sensor)					

Updated specifications can be found here:

Or visit us at:
sumitomodrive.eu/TUAKA-Actuators


ACTECY-103-50-T M1 B D 1 S Z
GBX:
ECY
SCY
HCY
Frame:
103
107
203
207
Ratio:
20
50
80
100
Tq. Sensor:
yes T
no "blank"
Motor:
TQ M1
Holding Brake:
yes B
no "blank"
Drive/ Encoder:
Synapticon D
Heidenhain H
SICK S
SIKO K
RLS R
none "blank"
Number of encoders:
Single encoder 1
Double encoder 2
Position detection:
Singleturn S
Multiturn M
Safety (SMM):
Yes Z
No "blank"
grey: not yet available

HOMBERGER