CONTROL TECHNIQUES DYNAMICS

HIPERFACE SERVO SERIES

060 FRAME

High Dynamic AC brushless servo motor

HIPERFACE® by SICK
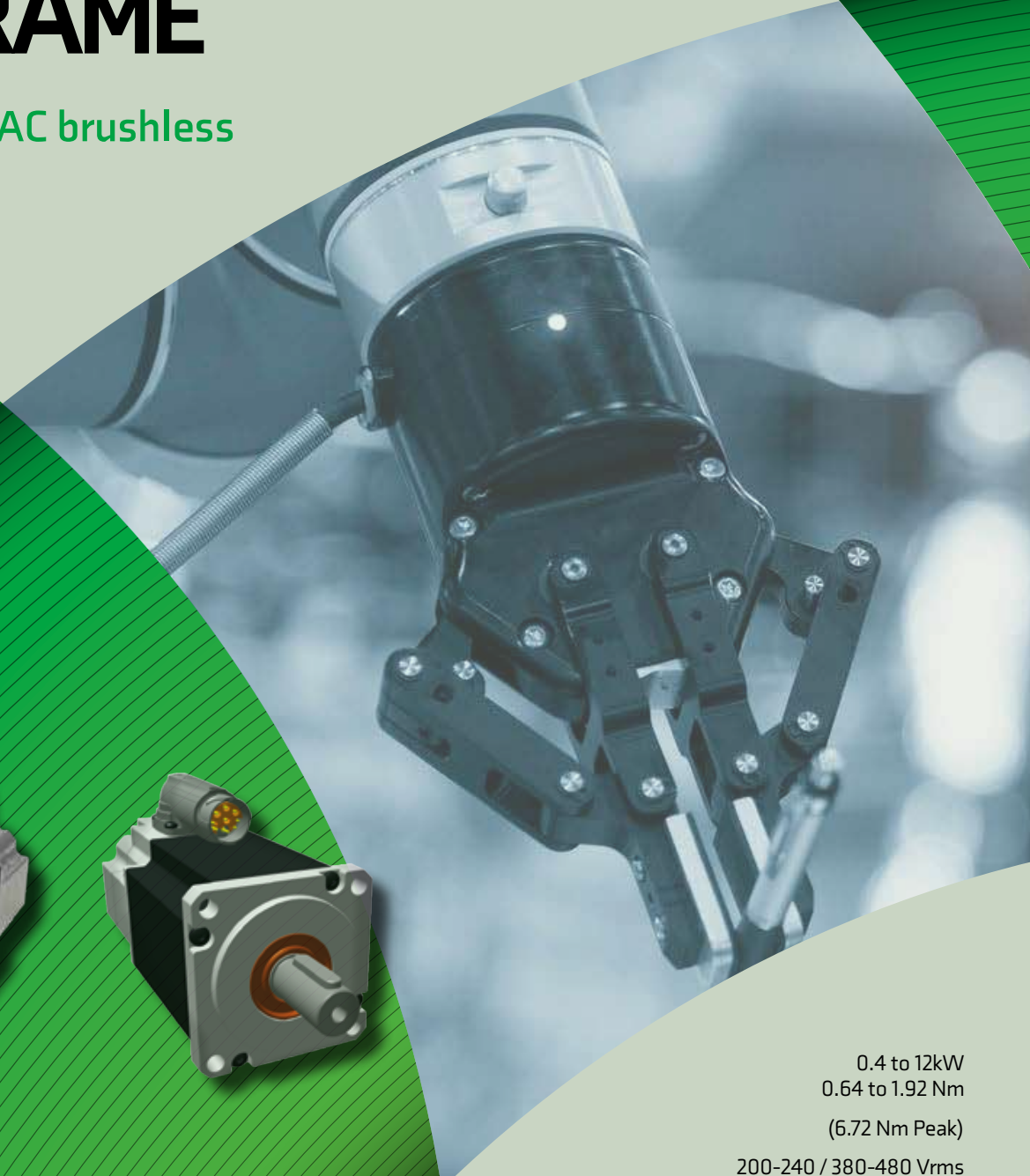
HIPERFACE® DSL

0.4 to 12kW
0.64 to 1.92 Nm

(6.72 Nm Peak)

200-240 / 380-480 Vrms

Nidec
–All for dreams

CTD

COMBINED TECHNOLOGIES

CTD
Unimotor hd

Unimotor hd is Control Techniques Dynamics high dynamic brushless AC servo motor range. With high peak torque, low inertia and the most compact dimensions, Unimotor hd is optimized for applications requiring rapid acceleration and deceleration.
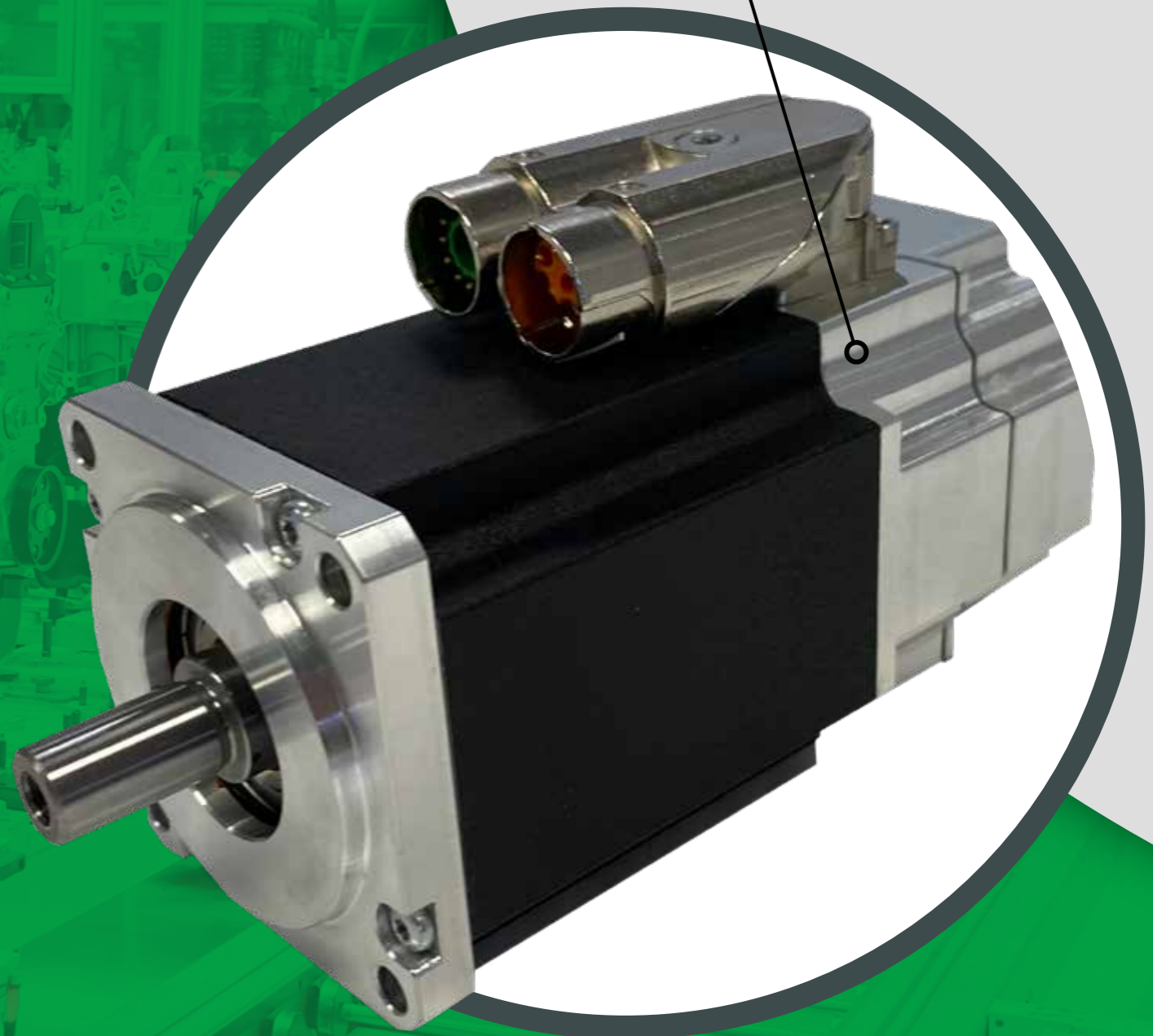
SICK
Sensor Intelligence

From factory automation to logistics and process automation, SICK's sensor solutions are keeping industries moving. As a technology and market leader, SICK provides sensor intelligence and application solutions that create the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.
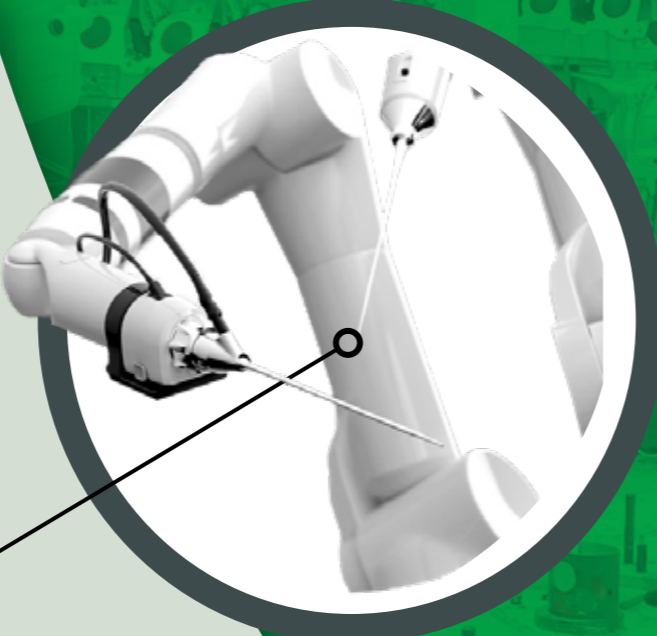
Matched Solutions

With CTD's motor combined with Sick's Hiperface or Hiperface DSL technology, we can offer a solution dedicated to meet requirements of high levels of precision, dynamism and reliability, along with safety as a priority in all different motion sequences.

Our Unimotor hd is suitable for various applications :-

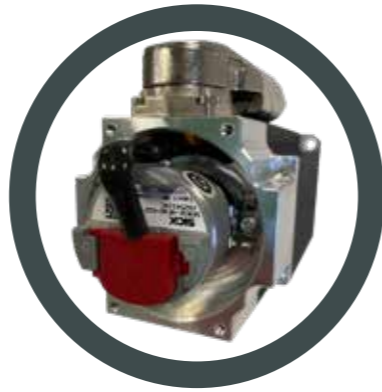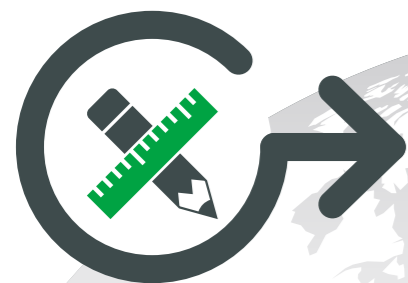**Mobile Robotics**   **Industrial Robotics**   **Textiles**   **Printing**   **Packaging**

Performance
The outstanding performance of our motors is the fruit of over 50 years of engineering experience in motor design.

Technology
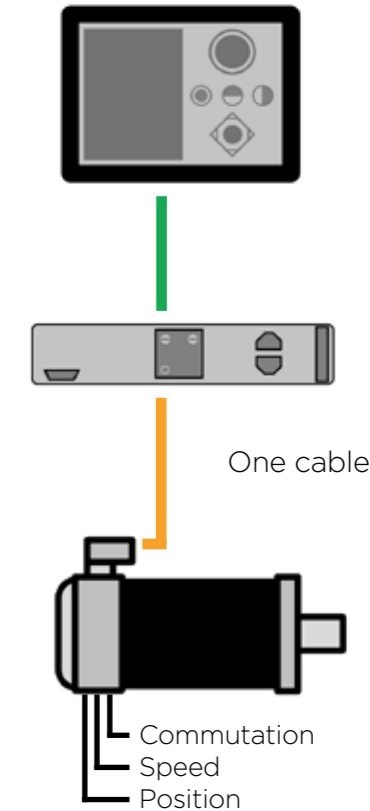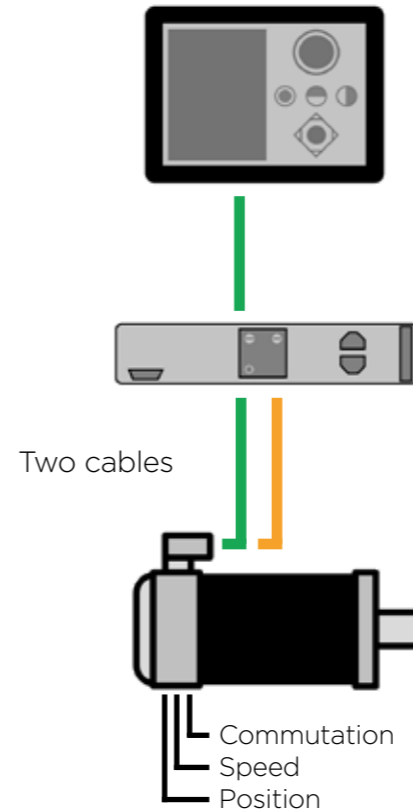Robust design and the highest build quality ensure the enduring reliability of the motors installed around the world.

Design
Our motors have been designed to integrate a permanent magnet brake, for a more lighter and compact solution with higher torque.
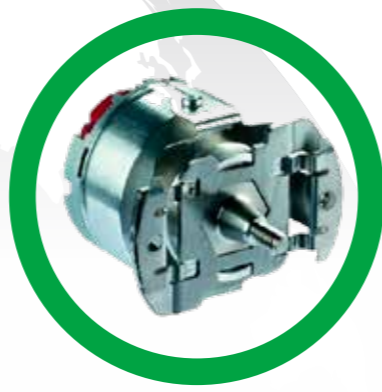
Intelligence
Precision motor control is combined with high performance embedded intelligence, ensuring maximum productivity and efficiency of your machinery.

HIPERFACE® by SICK

HIPERFACE DSL

Two cables

One cable

Commutation
Speed
Position

Commutation
Speed
Position

HIPERFACE® by SICK
- Motor power and signal separated
- Sine/Cosine + digital interface (Total 8 cable cores)
- Smooth motion due to high resolution
- Batteryless multiturn absolute as an option
- Electronic type label for auto set-up & Traceability
- Supports Functional Safety

HIPERFACE DSL
- Single cable solution (Motor power and signal in 1)
- Full digital communication (Total 2 cable cores)
- Smooth motion due to high resolution
- Batteryless multiturn absolute as an option
- Transmission of other sensor signals e.g. winding temp.sensor
- Electronic type label for auto set-up & Traceability
- Supports Functional Safety
- Supports I4.0 Condition Monitoring
- Usage Histogram as standard

TECHNICAL SPECIFICATIONS

Frame size 060

Motor frame size (mm)	060ED			060UD		
Voltage (Vrms)	200 - 240			380 - 480		
Frame length	A	B	C	A	B	C
Continuous stall torque (Nm)	0.64	1.28	1.92	0.64	1.28	1.92
Peak torque (Nm)	2.24	4.48	6.72	2.24	4.48	6.72
Standard inertia (kg cm²)	0.18	0.33	0.48	0.18	0.33	0.48
Winding thermal time constant (sec)	42	47	52	42	47	52
Standard motor weight (kg)	1.6	2.0	2.2	1.6	2.0	2.2
Number of poles	10	10	10	10	10	10
Speed 6000 (rpm) Kt (Nm/A) = Ke (V/krpm) =	0.47 28.5			0.8 49		
Rated torque (Nm)	0.64	1.28	1.92	0.64	1.28	1.92
Stall current (A)	1.36	2.72	4.09	1.04	1.77	2.49
Rated power (W)	400	800	1200	400	800	1200
R (ph-ph) (Ohms)	5.15	1.90	1.15	15.75	5.76	3.42
L (ph-ph) (mH)	23.8	11.1	7.3	71.0	33.2	22.0
Recommended power conn' size	Y-TEC			Y-TEC		
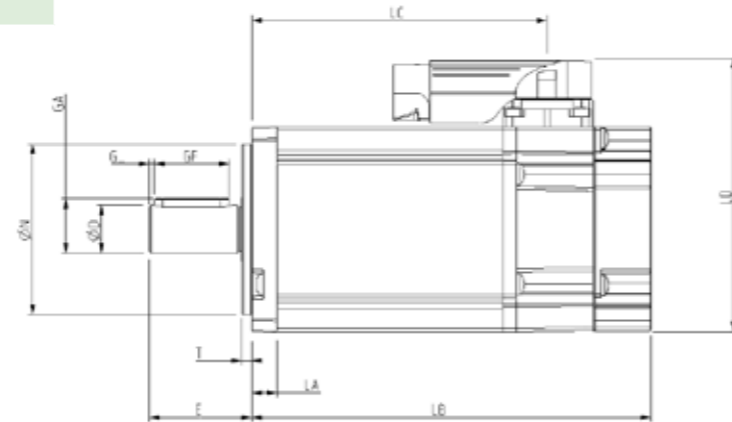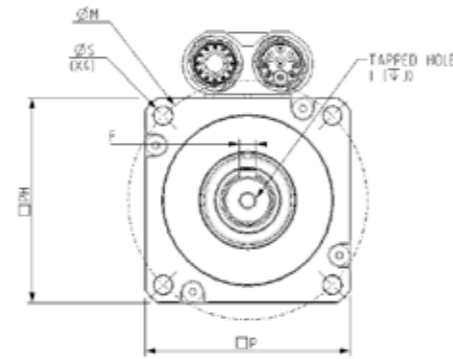
All data subject to +/-10% tolerance
Stall torque, rated torque and power relate to maximum continuous operation tested in a 20°C ambient at **12 kHz drive switching frequency**
All other figures relate to a 20°C motor temperature.
Maximum intermittent winding temperature is 140°C

Hiperface® SKS36 & SKM36

- **Two cable architecture**
- 128 Sine/Cosine periods per turn[1]
- Measures absolute position over 4096 revolutions (SKM36)
- Safe speed SIL2 (PLd) Functional Safety certification (SKS36S, SKM36S)
- Electronic type label

HIPERFACE® by SICK

[1] Typical resolution available in the drive after interpolation 18/19 bit

Technical data	SKS36 / SKM36
Differential non-linearity	± 40 arc secs
Integral non-linearity	± 80 arc secs
Operating temp range	-20 ... +110ºC
Resistance to shocks[2]	100g/6ms
Resistance to vibration[2]	50g (10Hz..2000Hz)
Available memory	1792 bytes
Safety level[3] (SKS36S & SKM36S)	SIL2 (IEC61508/62061) PLD (EN ISO 13849)

On request: Hiperface® feedback devices with either higher or lower resolution
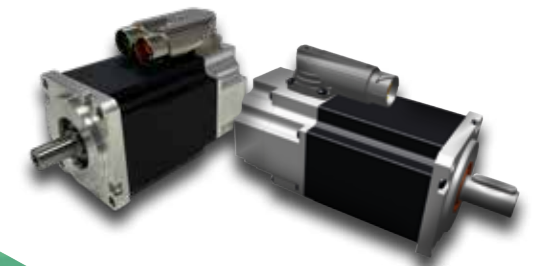
Hiperface DSL® EKS36 & EKM36

- **Single cable architecture**
- Absolute position with a resolution of 262,144 steps/turn (18 bit)
- Measures absolute position over 4096 revolutions (EKM36)
- Input for temperature winding sensor
- Safe speed SIL2 (PLd) Functional Safety certification (EKS36-2, EKM36-2)
- Electronic type label and Usage Histogram for condition monitoring

HIPERFACE DSL

Technical data	EKS36 / EKM36
Signal noise	± 5 arc secs
System accuracy	± 120 arc secs
Operating temp range	-20 ... +115ºC
Resistance to shocks[2]	100g/6ms
Resistance to vibration[2]	50g (10Hz..2000Hz)
Available memory	8192 bytes
Safety level[3] (EKS36-2 & EKM36-2)	SIL2 (IEC61508/62061) PLd (EN ISO 13849)

[2] Shock in accordance with EN 60068-2-27. Vibration in accordance with EN 60068-2-6

[3] A drive monitor which fulfils all the requirements detailed in the SICK operating manual of the motor feedback system is required to achieve the safety performance detailed.

On request: Hiperface DSL® feedback devices with either higher or lower resolution

Motor dimension

	Feedback (SICK)				Flange thickness	Register length	Register diameter	Overall height	Flange square	Fixing hole diameter	Fixing hole PCD	Motor housing	Mounting bolts	
	Unbraked length		Braked length											
	LB (± 0.9)	LC (± 1.0)	LB (± 0.9)	LC (± 1.0)	LA (± 0.5)	T (± 0.1)	N (j6)	LD (± 0.3)	P (± 0.3)	S (H14)	M (± 0.5)	PH (± 0.5)		
060A	100	66.5	137	103.5	7.5	3.0	50.0	80.0	60.0	5.5	70.0	60.0	M5	mm
060B	120	86.5	157	123.5										
060C	140	106.5	177	143.5										

Shaft dimensions

	Shaft diameter	Shaft length	Key height	Key length	Key to shaft end	Key width	Tapped hole thread size	Tapped hole depth	
	D (j6)	E	GA	GF	G	F (h9)	I	J (± 1)	
060A-C	14.0	30.0	16.0	22.0	1.5	5.0	M5 x 0.8	10.0	mm

Brake specifications

Supply volts	Input power	Static torque	Release time	Moment of inertia
Vdc	Watts	Nm	ms nom	kg.cm²
24	7.2	1.4	50	tbc

For ordering codes and further information, contact us via:
ctdsales@mail.nidec.com

CTD

HIPERFACE®
by **SICK**

HIPERFACE®
DSL

Connect with us at:

www.controltechniquesdynamics.com
www.sick.com

Nidec
All for dreams