# » Introduction

CASM electric cylinders powered by brushless DC motors are ideally suited for fast and powerful movements. Replacement of pneumatic cylinders has never been easier. Just parameterize the cylinder by using the Drive Assistant software and benefit from variable speed, high positioning accuracy, high force and long lifetime. The highly efficient electric cylinder will help to increase productivity with less energy consumption and therefore less CO_2 emissions. Due to the tremendous energy savings electric cylinders provide, when compared to pneumatic solutions, the investment cost will be paid back in a short time period.

After the parameterization, the DC powered cylinder can be operated independently by PLC or by switches. The motion controller is already built in.

» CASM with Dunkermotoren connecting diagram

PLC

Power Supply

Electric cylinder CASM with brushless DC motor and integrated controller

Initial parameterization
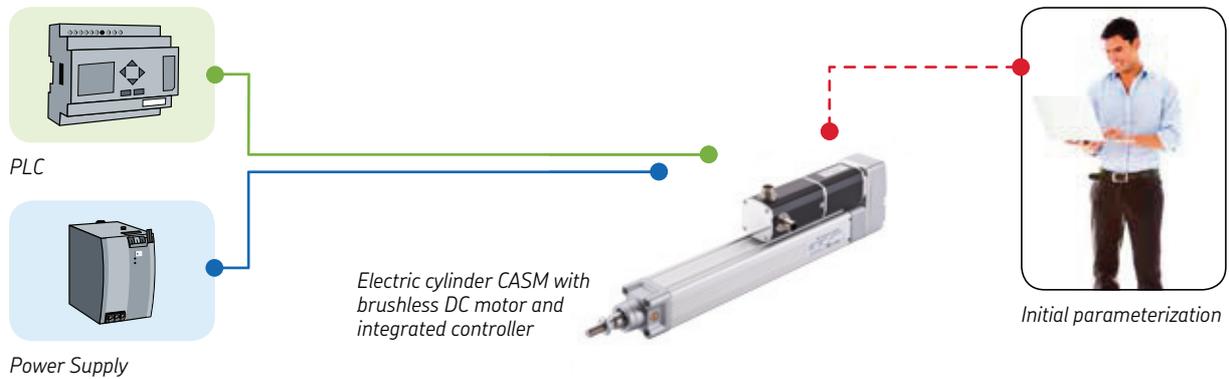
» Size comparision

Data Overview													
Motor type			BG 45x30 PI			BG 65x50 PI			BG 75x75 PI			BG 75x75 PI		
Linear unit			CASM-32			CASM-40			CASM-40			CASM-63		
Screw type			LS	BS	BN	LS	BS	BN	LS	BS	BN	LS	BN	BF
Peak force	F_{peak}	N	300	700	462	600	1170	526	600	2375	1484	1000	1885	942
Mean load	F_m	N	300	327	131	465	440	198	600	1020	459	692	583	292
Max. linear speed	V_{max}	mm/s	60	150	500	70	300	825	70	300	825	70	530	1060
Max. acceleration	a_{max}	m/s^2	1	6	6	1	6	6	1	6	6	1	6	6

Required information for orders:
» CASM size (32/40/63)
» Stroke length (mm)
» Screw type (LS/BS/BN/BF)
» Adapter type (parallel/in-line)
» Accessoires (if required)
» Motor type (e.g. BG 45x30 PI | 24V)
» Brake (yes/no)
» Motor cables length (1/3/6/10m)

» Linear Drive-Assistant

Parameterize CASM with brushless DC motors with just a few clicks, using the Drive Assistant (requires a Windows PC).

Drive Assistant

» Select your linear unit, gearbox and motor and parameterize up to 14 positions in mm, not in encoder counts

» Choose individual motion profiles (acceleration, speed, deceleration) for each position

» Upload parameters into the motor by using the USB interface cable to get an independent system

» Get real time information about your connected motor

Operation

» Let your powered system move either with standard switches, with PLC binary outputs or with an autonomous positioning loop.

» Get feedback of the motor in case it is moving, has reached its position but also if it hasn't found the home position or if there is an error.

» Positioning Modules

Simple
» Move between two positions
» Define one speed, acceleration and deceleration for both positions
» "Move-enable" for safety functions

Standard
» Move between six positions
» Define one speed, acceleration and deceleration for each position
» "Move-enable" for safety functions

Advanced
» Move between 14 positions
» Define individual speed, acceleration and deceleration for each position

Typical Applications
Replacement of pneumatic cylinders
Tilt tray sorters, cutting machines, opening and closing hoods, clamping and fixturing, folding, stopping, labelling, etc …

Typical Applications
Conveyor sorters (diverters) of packaging machines, positioning functions, valve control systems, adjustable filling and portioning systems

Typical Applications
Electric presses, woodworking machines, handling applications, testing equipment, special applications where different speeds or plenty of positions are needed

» Automatic Mode

The automatic mode allows the creation of an autonomous positioning loop without any PLC. As soon as the automatic mode is activated (such as by a switch), the actuator moves from one position to the next one with its defined motion profile.

Automatic mode
» Autonomous loop, moving from one position to the next one, as long as the automatic mode is active
» Selection of the positions to be taken in the loop by a mouseclick
» Activation of automatic mode such as by a switch

Typical Applications
Applications with actuators running autonomously, with no need to be coordinated with other actuators, like pumps, cutters, testing equipment etc …