

Control Systems & Software

MCS2 Modular Concept

Module	Variant	Description
Driver	SMARSLIDE (Stick-Slip)	These modules are the core component of every MCS2 configuration. They each include power circuits to drive up to three attached positioning stages and read sensor data from a sensor module to perform closed-loop position control. Several modules may be combined to control multiple of three stages.
	SMARSHIFT (Electromagnetic)	
	SMARFLEX (Piezo Scanner)	
Interface	USB	Provides connectivity to a control PC via USB.
	Ethernet	Provides connectivity to a control PC via Ethernet.
I/O	Digital	This module provides low-level digital interfaces, including the following functionalities: input trigger (Emergency Stop, Trajectory Streaming, Synchronization, Command Group Trigger), output trigger (Position Compare, Position Reached, Actively Moving), High Speed Data Reader
	Analog	This module provides low-level digital and analog interfaces, including the following functionalities: input trigger (Emergency Stop, Trajectory Streaming, Synchronization, Command Group Trigger), general purpose digital input, output trigger (Position Compare, Position Reached, Actively Moving), High Speed Data Reader general purpose digital output general purpose analog input, e.g. for control-loop feedback general purpose analog output
	EtherCAT®	Provides connectivity via EtherCAT® for a single Driver Module.
Sensor	SMARSLIDE	These modules convert the analog sensor data into digitized data which are processed by the driver modules.
	SMARSHIFT	
	SMARFLEX	
Hand Control	Internal	The hand control module offers a touchscreen, physical buttons and two analog joysticks to manually interact with the positioning system. Physical axes of the positioning system can be easily mapped to joystick axes for easy manual positioning. If the stages are equipped with position sensors, the actual position of the stage can be read on the module's touchscreen.
	External	