

**SIEMENS**

*Ingenuity for life*



# MOTION-CONNECT

The easy, fast and reliable connection

Brochure

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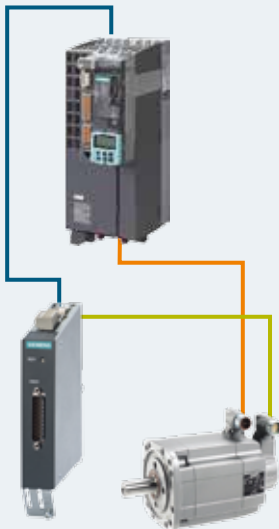

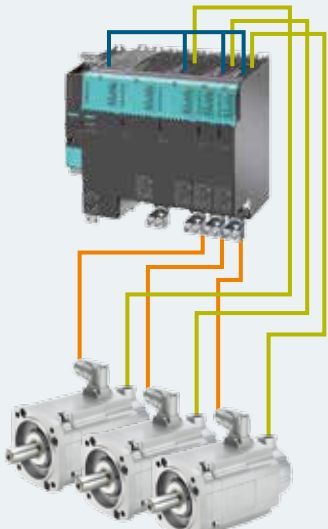
[usa.siemens.com/motion-connect](http://usa.siemens.com/motion-connect)

# Simply ideal, simply a plus

## MOTION-CONNECT—the original and best connections for your machines

The MOTION-CONNECT® connection system is the ideal solution for your machine. Representing the connection to every motion control system, it allows for easy and reliable customization to meet your needs.



**System-tested reliability**

SINAMICS S120/S110 single-axis system	MOTION-CONNECT connection system	SINAMICS S120 multi-axis system
	 <p>Pre-assembled power cables</p> <p>Pre-assembled signal cables</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: left;"> <p><b>Motor without DRIVE-CLiQ</b></p> <p>Connection via SMC:</p> <ul style="list-style-type: none"> <li>■ Signal cable to SMC</li> <li>■ DRIVE-CLiQ cable to SINAMICS</li> </ul> </div> <div style="text-align: left;"> <p><b>Motor with DRIVE-CLiQ</b></p> <p>Advantage:</p> <ul style="list-style-type: none"> <li>■ Electronic rating plate facilitates commissioning</li> </ul> </div> </div>	
<p> <span style="color: orange;">■</span> Power cable                <span style="color: blue;">■</span> DRIVE-CLiQ without 24V DC cores                <span style="color: yellow;">■</span> DRIVE-CLiQ with 24V DC cores         </p>		

### The original—tailored to your machine

MOTION-CONNECT provides connection systems and components that are perfectly suited to your individual areas of application. A comprehensive range of original innovations made by Siemens—which we can tailor to your needs. MOTION-CONNECT cables offer you top quality and system-tested reliability.

### MOTION-CONNECT 800PLUS and MOTION-CONNECT 500 overview

Connections to SINAMICS S120 Motor Modules	In the control cabinet
	
<p>From left to right:</p> <ul style="list-style-type: none"> <li>① Power cable (for motors with SPEED-CONNECT connector size 1)</li> <li>② Power cable (for motors with full-thread connector size 1.5)</li> <li>③ DRIVE-CLiQ cable (for motor / externally-mounted encoder with DRIVE-CLiQ interface and RJ45 connector)</li> <li>④ DRIVE-CLiQ cable (for externally-mounted encoder with DRIVE-CLiQ interface and M17 connector)</li> <li>⑤ DRIVE-CLiQ cable (for externally-mounted encoder with DRIVE-CLiQ interface and M12 connector)</li> <li>⑥ Signal cable (for motor / externally-mounted encoder with M23 connector via SMCxx)</li> <li>⑦ DRIVE-CLiQ cable (for connecting components with DRIVE-CLiQ interfaces within the control cabinet)</li> </ul>	

# MOTION-CONNECT connection system

## The right cable for every motion control task

### Our product matches your requirements

Whatever your machine requirements, MOTION-CONNECT offers the solution. That's why we offer two different cable types—MC500 and MC800PLUS.

Theme	MC500	MC800PLUS
MOTION-CONNECT standard	<p><b>Rugged, high-performance, easy-to-use</b> thanks to pre-assembled cables with rugged IP67 metal connectors and reliable quick-release locks (SPEED-CONNECT)</p> <p><b>Outstanding and proven quality</b> thanks to consistent quality management and system-tested cables</p>	
Product-specific features	<ul style="list-style-type: none"> <li>Cost-effective solution for predominantly fixed installations</li> <li>Tested for traversing paths up to 5 meters</li> </ul>	<ul style="list-style-type: none"> <li>Meets requirements for use in cable carriers</li> <li>Oil-resistant</li> <li>Tested for traversing paths up to 50 meters</li> </ul>

Technical overview of MOTION-CONNECT					
Product	Type	Max. traversing velocity v [m/min]	Max. bends* [million]	Max. acceleration* a [m/s <sup>2</sup> ]	Max. traversing path* [m]
MC500	Power cable	0–30	0–0.1	0–2	0–5
	Signal cable	0–180	0–2	0–5	0–5
MC800 PLUS	Power cable (up to 16 mm <sup>2</sup> ) and signal cable	0–300	0–10	0–50	0–50
	Power cable (25–50 mm <sup>2</sup> )	0–300	0–10	0–50	0–20

\* Mechanically tested

Highlights	
<b>SPEED-CONNECT</b>	Fast, stable and reliable connections can be made using the pre-assembled cables with SPEED-CONNECT connectors. The cap nut is hand-tightened with a short rotation in clockwise direction and secures the interlock. The cables with SPEED-CONNECT connectors supplement the MOTION-CONNECT® cable portfolio with proven, full-thread connectors.
<b>RJ45 DRIVE-CLiQ connector</b>	The standard connector in a rugged metal design for motor connections that have a DRIVE-CLiQ interface.
<b>M17 DRIVE-CLiQ connector</b>	The proven and rugged connection system with IP67 degree of protection and SPEED-CONNECT or full-thread connector — e.g. for the ideal implementation of an isolation point for DRIVE-CLiQ.
<b>M12 DRIVE-CLiQ connector</b>	The compact and rugged connection system with IP67 degree of protection for connecting direct measuring systems with a DRIVE-CLiQ interface.
<b>Plug-and-play thanks to system test</b>	Servo, main, linear and torque motors — with MOTION-CONNECT, you will find pre-assembled power and signal cables for every application. A perfect connection that, thanks to plug-and-play, is easy-to-install and saves a great deal of time and money.
<b>Well-protected</b>	Up to IP67 degree of protection when plugged-in / tightened
<b>Immune to interference</b>	Maximum interference immunity as a result of 360-degree shielding

	MOTION-CONNECT 500	MOTION-CONNECT 800PLUS
<b>Main application</b>	Mainly fixed installation, production machines	Cable carriers, machine tools
<b>Approvals</b>		
<b>Power/signal cables</b>		
▪ VDE	Yes	Yes
▪ c/UL or UL/CSA	758/C22.2 N.210	758/C22.2 N.210
▪ RoHS conformity	Yes	Yes
<b>Electrical specifications</b>		
<b>Rated voltage</b>		
<b>Power cable U<sub>0</sub>/U</b>		
▪ Power conductors	600/1000V	600/1000V
▪ Signal conductors	24V (EN) 1000V (UL/CSA)	24V (EN) 1000V (UL/CSA)
<b>Signal cable</b>	30V	30V
<b>Test voltage</b>		
<b>Power cable</b>		
▪ Power conductors	4 kV <sub>rms</sub>	4 kV <sub>rms</sub>
▪ Signal conductors	2 kV <sub>rms</sub>	2 kV <sub>rms</sub>
<b>Signal cable</b>	500V <sub>rms</sub>	500V <sub>rms</sub>
<b>Operating temperature</b>		
<b>On the surface</b>		
▪ Fixed	-20 to +80° C	-50 to +80° C
▪ Movable	0 to +60° C	-20 to +60° C
<b>Mechanical specifications</b>		
<b>Max. tensile stress power/signal/DRIVE-CLiQ cable</b>		
▪ Fixed	50 N/mm <sup>2</sup> / 50 N/mm <sup>2</sup> / 80 N/mm <sup>2</sup>	50 N/mm <sup>2</sup>
▪ Movable	20 N/mm <sup>2</sup> / 50 N/mm <sup>2</sup> / 30 N/mm <sup>2</sup>	20 N/mm <sup>2</sup>
<b>Min. bending radius power/signal/DRIVE-CLiQ cable</b>		
▪ Fixed	5 x D <sub>max</sub> / 60 mm / 35 mm	4 x D <sub>max</sub> / 35 mm (DRIVE-CLiQ cable)
<b>Torsional stress</b>	Absolute 30°/m	Absolute 30°/m
<b>Bends</b>		
▪ 1.5 to 16 mm <sup>2</sup> power/signal/DRIVE-CLiQ cable	100,000 / 2 million / 100,000	10 million
▪ 25 to 50 mm <sup>2</sup> power cable	100,000	10 million
<b>Traversing velocity<sup>1)</sup></b>		
▪ 1.5 to 16 mm <sup>2</sup> power/signal/DRIVE-CLiQ cable	30 m/min / 180 m/min / 30 m/min	Up to 300 m/min
▪ 25 to 50 mm <sup>2</sup> power cable	30 m/min	Up to 300 m/min
<b>Acceleration<sup>1)</sup> power/signal/DRIVE-CLiQ cable</b>	2 m/s <sup>2</sup> / 5 m/s <sup>2</sup> / 2 m/s <sup>2</sup>	Up to 50 m/s <sup>2</sup>
<b>Chemical specifications</b>		
<b>Insulation material</b>	CFC-free, silicon-free	Halogen-free, CFC-free, silicon-free DIN 472 815/IEC 754-1
<b>Oil-resistant</b>	VDE 0472, Part 803 test type B/EN 60 811-2-1 (only hydraulic oil)	VDE 0472, Part 803 test type B/EN 60 811-2-1
<b>Outer sheath</b>		
<b>Power cable</b>	PVC DESINA color orange RAL 2003	PUR DIN VDE 0282, Part 10 DESINA color orange RAL 2003
<b>Signal cable</b>	PVC DESINA color green RAL 6018	PUR DIN VDE 0282, Part 10 DESINA color green RAL 6018
<b>Flame retardant</b>	EN 60 332.1-1 to 1-3	EN 60 332.1-1 to 1-3

<sup>1)</sup> Dependent upon travel path

General note: MOTION-CONNECT cables are not suitable for outdoor use and are not self-supporting.

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