

**BERGER LAHR**

**Twin Line** – Modular  
Positioning Technology with  
Stepper or Servo Motor



*a company of*  
**Schneider**  
Electric

Twin Line – positioning technology  
with compact dimensions and  
modular design.

# Unique. With Servo or Stepper

## Berger Lahr Product Range



PLC/IPC

Motion control



Motion controllers

IEC 61131-3

Power amplifiers

Stepper motor amplifiers



Servo amplifiers



Intelligent compact drives



Motors

Stepper motors

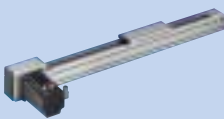


AC synchronous servo motors



Robotics

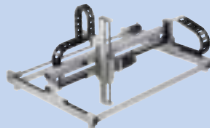
Linear modules with belt drives



Linear modules with spindle drives



Cartesian robots



# Motor

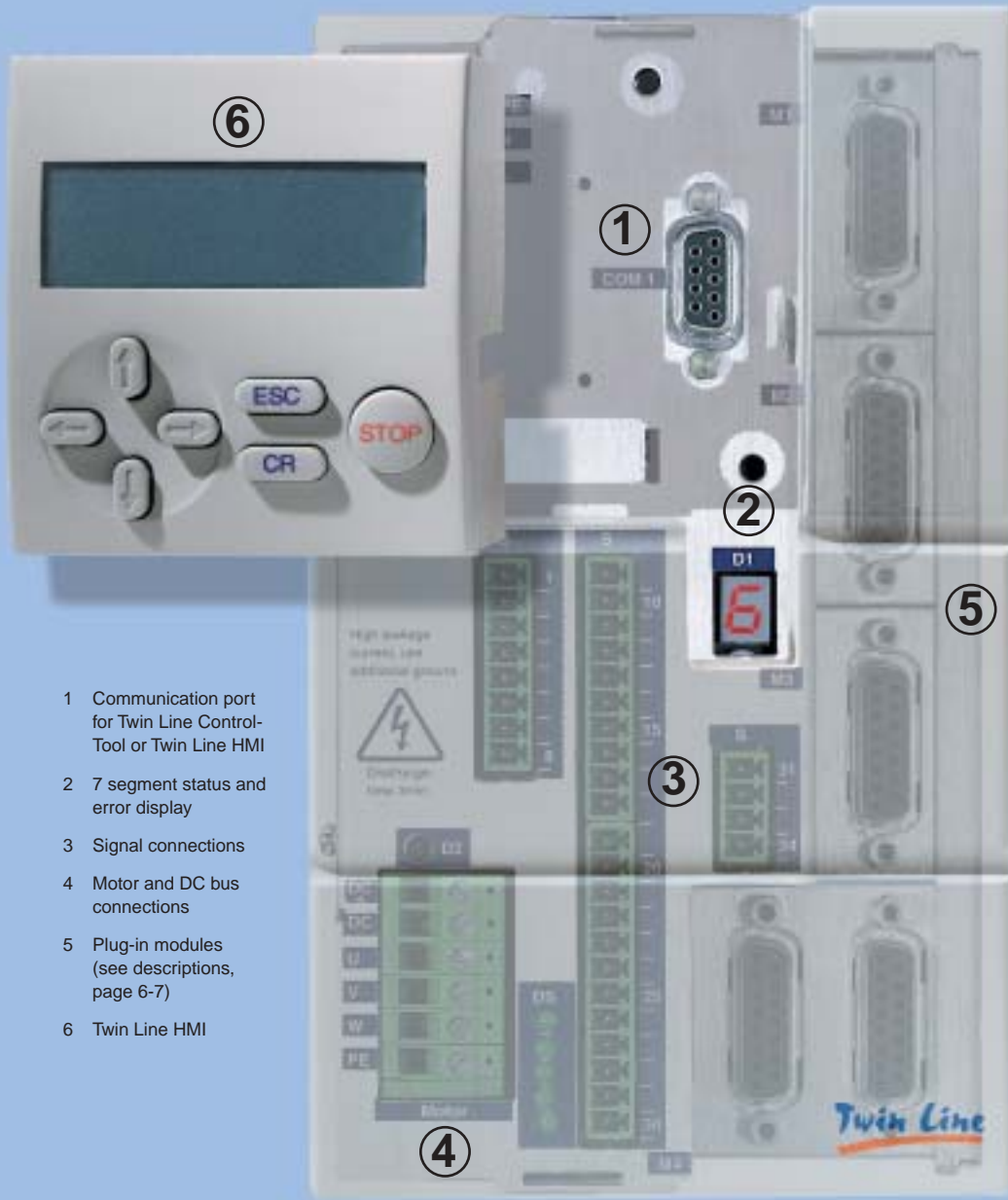
Berger Lahr is your one-stop partner for all automation tasks. The complete product range comprises robotics, motors, compact drives, power amplifiers and motion controllers.

With Twin Line, we offer a flexible and adaptable solution up to 8 kW. Depending on the application, Twin Line is a **power amplifier** or a **positioning controller** with or without PLC functionality. We also provide the suitable stepper or servo motors. You do not need additional peripheral equipment such as mains filter, heat sink, motion controller, intelligent ballast resistor and the desired modules are all integrated.

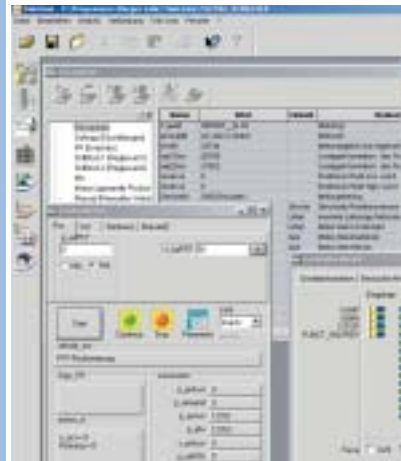


The uniform software for all applications ensures fast project design and commissioning.

# Complete and Integrated. Open



- 1 Communication port for Twin Line Control-Tool or Twin Line HMI
- 2 7 segment status and error display
- 3 Signal connections
- 4 Motor and DC bus connections
- 5 Plug-in modules (see descriptions, page 6-7)
- 6 Twin Line HMI





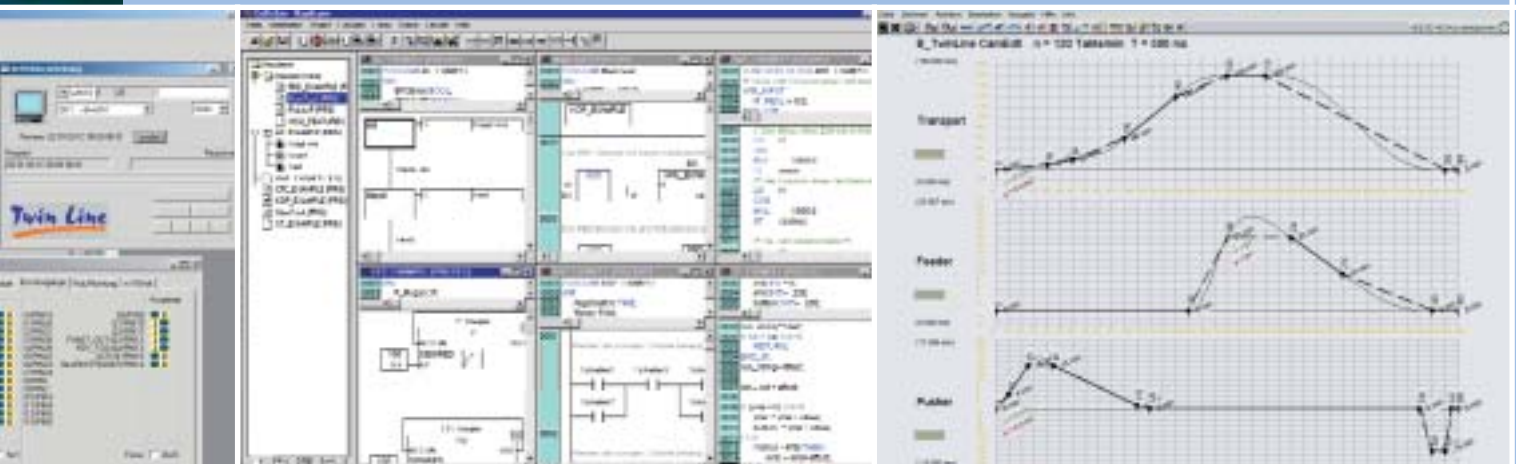
# Commissioning via Plug-in HMI Module

Commissioning via PC or notebook and the TLCT (Twin Line Control Tool) software has never been easier. The software allows you to read and write controller parameters and motor data, set input and output signals, trace signal curves on screen and optimise the controller behaviours in interactive or Autotuning modes.

Twin Line is programmed with the CoDeSys programming system according to IEC 61131-3. Comprehensive library functions are provided for user-friendly programming. For example, predefined functions are available for point-to-point positioning, referencing, manual or velocity mode, electronic gear and electronic cam functionality.

Jerk-free motion curves can be created with the Cam Editor which provides numerous motion algorithms such as 5th degree polynomials. Curves generated this way can be transmitted to the positioning controller by means of the TLCT via a standardised data interface.

Whether with stepper or servo motor – Twin Line is always operated, parameterised and diagnosed the same way via the plug-in HMI (Human Machine Interface) module. The module can be used with all Twin Line devices, it is simply plugged in or connected via a cable to the serial port (except stepper drives).



Twin Line is equipped with the appropriate micro-modules for application-specific configuration.

# Modular. With Integrated Safe



## Modules for all Twin Line devices:

**Module RS 422-C** Detects encoder signals which are provided as A/B signals in “Electronic Gear” mode.

**Module PULSE-C** Detects the positioning data as pulse/ direction signal or as pulse-forward/ pulse-backward signal.

**Module HIFA-C** Detects the motor position of AC synchronous servo motors which are equipped with a SinCoder® encoder (single-turn or multi-turn).

**Encodersimulation ESIM1-C / ESIM2-C / ESIM3-C** Provides the position data of the AC synchronous servo motor as incremental A/B signal with index pulse. These signals can be evaluated by an NC master controller, or they can be used to drive an additional controller.

**Module RM-C** For rotation monitoring of stepper motor motion.

**Module IOM-C** Extension module with digital analogue inputs and outputs which can be used as required. It is possible to assign predefined functions to the inputs and outputs.

# ty Technology

**Synchronous serial interface SSI-C** For encoder simulation with serial transmission of absolute position information to a master NC controller.

**Communication module RS 485-C** Serial interface for command processing.

**Communication module CAN-C** CAN-Bus module for online command processing. The user can configure the Berger Lahr profile, the CANopen DS-402 profile or DeviceNet.

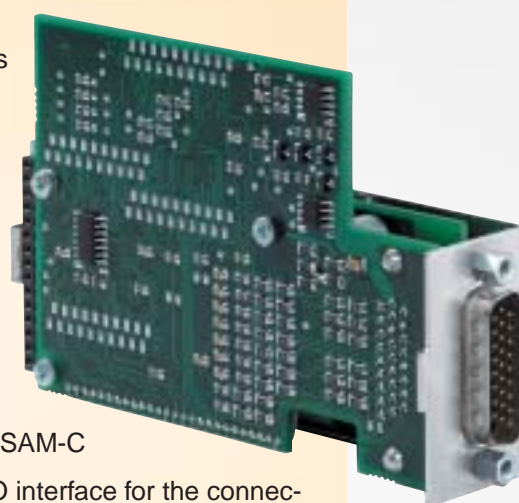
**Communication module IBS-C** Interbus-S module for online command processing.

**Communication module PBDP-C** 12 Mbit Profibus-DP module for online command processing.

**Module MODB-C** This module enables Modbus-ASCII or Modbus-RTU networking of the controller.

## Safety module for TLCx:

The **Safety Monitor Module SAM-C** provides safety functions for operator protection such as safe stop and reduced speed. The power supply to the motor remains on. In the case of Emergency Stop situations, SAM-C offers safe deceleration and switching off of the power supply for the motor by means of internal safe blocking of the power stage controller. The power supply does not need to be switched off by means of power contactors. All functions conform to safety category 3 according to EN 954-1. SAM-C features a 24 V I/O interface for the connection of protective door contacts, Emergency Stop devices, etc.





Twin Line – the complete solution  
as a power amplifier all the way to a freely  
programmable positioning controller.

# Compact. High Degree of Integra



**Twin Line TLD 1xx** as power amplifier is available for 3-phase steppers and for AC synchronous motors.

Device-specific operating modes and functions:  
Parameterisation, manual mode, speed and current control, electronic gear



**Twin Line TLC 4xx** as positioning controller for data set processing can store 64 motion data sets. These data sets records can be accessed from a master controller (such as a PC/PLC) via the digital signal interface. TLC 4xx is also available for stepper and servo motors in the power range up to 8.0 kW (with IP 54 protection up to 1.5 kW)

Device-specific operating modes and functions:  
Point-to-point, velocity, reference motion, manual motion, teach-in, output cam switching signal





# tion with Small Outside Dimensions



**Twin Line TLC 5xx** as positioning controller with fieldbus interface is controlled by a master (such as PC/PLC) via the fieldbus interface. TLC 5xx is also available for stepper and servo motors in the power range up to 8.0 kW (with IP 54 protection up to 1.5 kW)

Device-specific operating modes and functions:  
Point-to-point, velocity, electronic gear, reference motion, manual motion, oscillator, teach-in, capture inputs, output cam switching signal

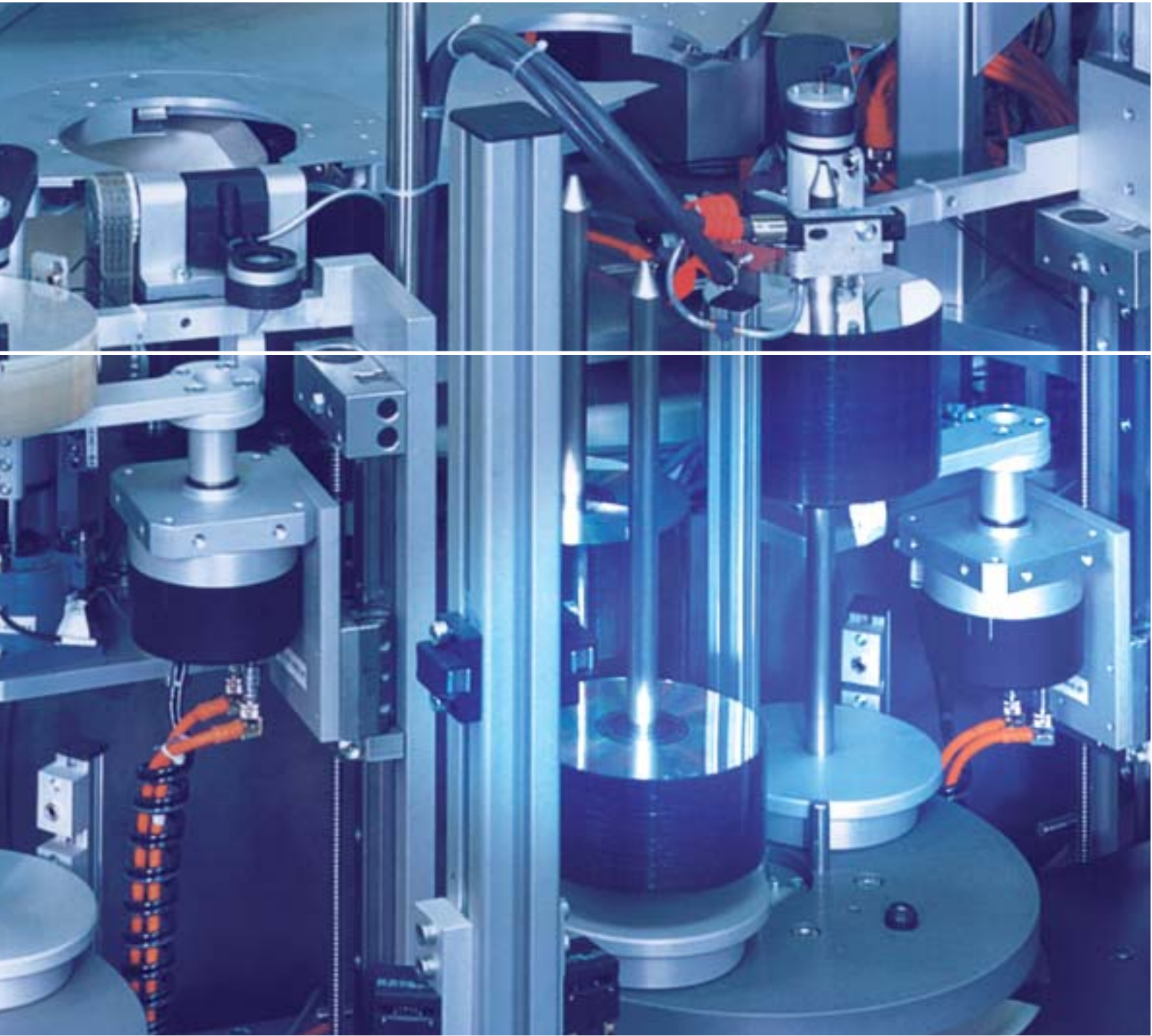


**Twin Line TLC 6xx** as a freely programmable positioning controller features integrated PLC and motion functionality. It is programmed with the CoDeSys programming system according to IEC 61131-3. Available programming languages: LD: Ladder diagram, FBD: Function block diagram, IL: Instruction list, ST: Structured text, SFC: Sequential function chart, CFC: Continuous function chart

Device-specific operating modes and functions:  
Point-to-point, velocity, electronic gear, reference motion, manual motion, oscillator, teach-in, capture inputs, output cam switching signal, electronic cam function (CAM)

Twin Line adapts to your specific automation task both in performance and functionality.

# Versatile. Configured for Your



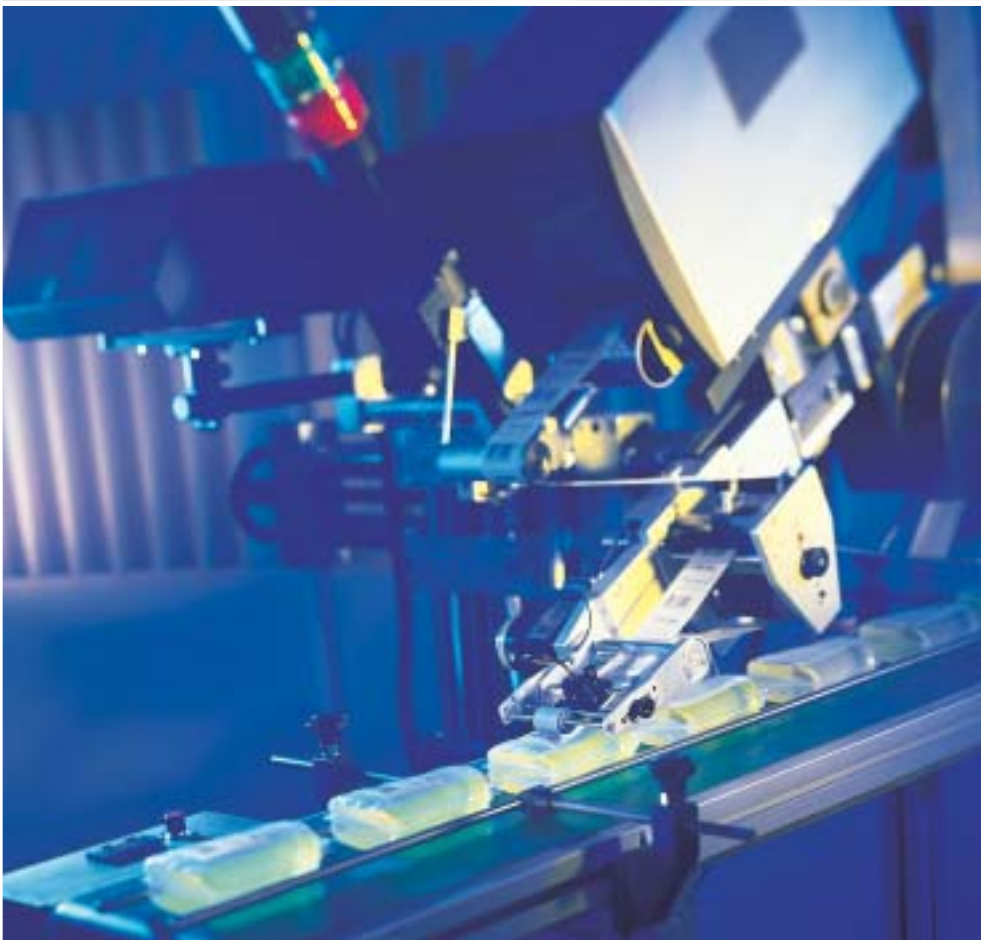


# Specific Application

Twin Line is adapted to your specific automation task. This means that you pay for only as much technology as you actually need.

Twin Line is available with the corresponding micro-modules and the suitable stepper or servo motor.

Twin Line is the flexible solution for numerous applications such as packing, cutting, filling, gluing, pick-and-place applications, forming, palletising, stamping, labelling.







Berger Lahr offers you the positioning and automation solutions you need, based on our tried and proven series of products. Our comprehensive engineering and consulting service is ready to support and advise you every step of the way. Berger Lahr is a member company of the Schneider Electric Group. With its Merlin Gerlin, Square D and Telemecanique brands, Schneider Electric is one of the leading providers of electrical and automation engineering solutions.

we control **motion**