

Ensure open, efficient, and reliable operations

TeSys™ Tera, an intelligent motor management system with advanced features for sustainable energy management

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The future is digital

For over 100 years, the TeSys name has been synonymous with motor management reliability, efficiency, and simplicity. Every day, billions of TeSys components help power motors that drive the operations of industrial companies in more than 70 countries worldwide.

As we enter a new era of digitalization and sustainability, demands are growing. A recent Deloitte study revealed that 86% of manufacturing executives see smart factory solutions as the key to maintaining competitiveness over the next five years.

Manufacturers are increasingly prioritizing efficiency and resilience in their operations, with a strong emphasis on meeting decarbonization targets and reducing their carbon footprint.

To achieve these goals, they must collaborate and develop smart factory solutions that incorporate advanced motor control systems, capable of providing critical data and insights.



Transforming operations through advanced connectivity

TeSys Tera device provides complete protection, control, and monitoring of single and three-phase AC induction motors, linking the motor feeder with the automation system.

It is a flexible system that integrates seamlessly into your automation network through major communication protocols like Modbus, Profibus, Modbus TCP, EtherNet/IP, and Profinet.

By accurately monitoring current, voltage, and power, TeSys Tera can predict the future of your operations, reducing operational costs and improving process availability. Customers can select from pre-configured designs, common communication protocols, and plug-and-play solutions to speed up installations and updates.

With advanced features and power monitoring capabilities, TeSys Tera can help improve energy management, making your facility more sustainable.



What can TeSys Tera
do for me?



Built on 100 years of innovation

Consolidates all motor feeder functions with added automation system connectivity.

- Advanced motor protection for up to 810 A, from basic to critical applications
- Improving the entire project life cycle



Efficient

- Best protection for your LV motors
- Faster fault finding
- Monitor and record critical data and insights



Connectivity

- Integrated to your automation system through multiple industrial protocols: Modbus, Profibus, Modbus TCP, EtherNet/IP, Profinet



Safe & reliable

- Easy software implementation
- Graphic parameterization
- Local control intelligence
- Advanced notice of potential issues through intuitive pre-fault alarms



Modular

- Lower installation time
- Easy replacement
- Reduced customer downtime



Versatile

- Quick adaption to changing application needs
- Easy customization
- Integrate a variety of process inputs

Advanced features to support efficient and sustainable energy management



Load Shedding & Auto Restart Function

TeSys Tera's Load Shedding features strategically reduces non-critical loads during periods of high demand or power shortages, ensuring uninterrupted critical operations.

Additionally, the Auto Restart function enables the system to automatically restart critical processes in a controlled sequence after a power outage, minimizing operational disruption and downtime.



On-Unit Programming

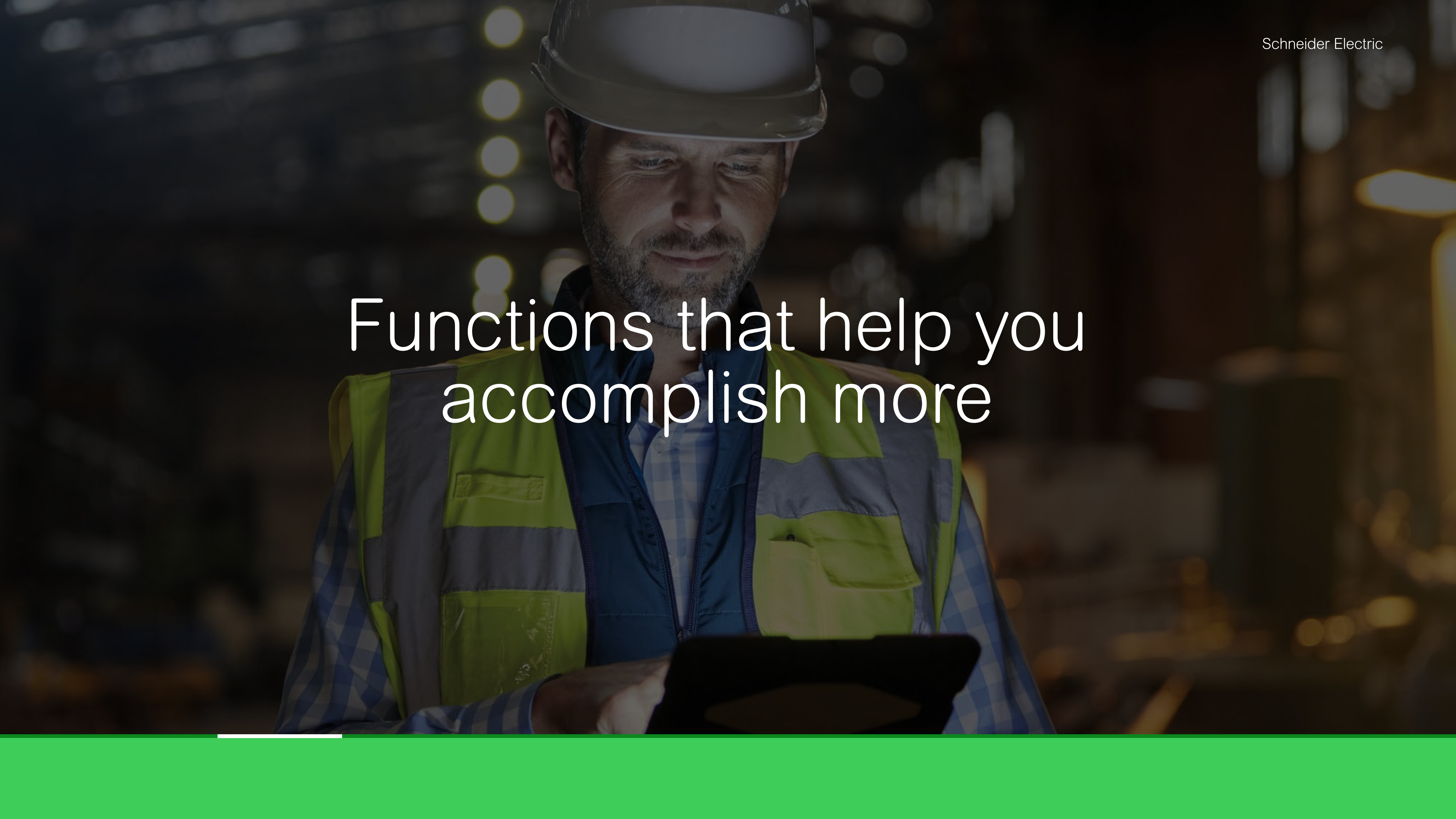
TeSys Tera's on-unit programming allows peace of mind during and after installation with quick adaptations meeting customer process needs.

The on-unit programming combined with reduced reliance on PLCs through custom logic integrated with SoMove offers quicker response times and real-time performance, leading to faster diagnostics that increases uptime.



Transparent

TeSys Tera's data provides detailed diagnosis over various automation platforms like EcoStruxure, enabling preventive and predictive maintenance to the users, resulting in an 80% reduction in downtime and improved overall system reliability.

A construction worker wearing a white hard hat and a high-visibility yellow and blue safety vest over a blue and white checkered shirt. He is looking down at a tablet computer he is holding in his hands. The background is a blurred industrial or construction site with warm lighting.

Functions that help you
accomplish more

Providing advanced protection, metering, and diagnostics



Protection functions

- Thermal overload protection (Class 5-40)
- Locked rotor and stalled rotor
- Thermal motor protection via temperature sensor
- Phase reversal
- Ground fault detection
- Under voltage/over voltage
- Under power/over power
- Voltage dip management
- Max number of start
- Excessive start time
- Variations of Power Factor



Metering functions

- Phase and average current
- Line to line & average voltage
- Temperature monitoring
- Ground current
- Active & reactive power
- Active & reactive energy
- Power factor
- Frequency
- THD measurement
- Analog input, output measurement



Statistical & diagnostic functions

- Motor statistics - motor operating hours
- Motor stop times - controller operations, start curve showing motor start record
- Trip records of last 20 detected trips with time stamp
- Pre-alarm of potential faults
- Checkback faults (no current)

Motor control function

A motor managed by a TeSys Tera Controller can be controlled via multiple configurable control stations, both locally, using digital inputs on the product, via the human machine interface (HMI) or remotely via the network.

TeSys Tera has many pre-defined motor control modes. This includes all necessary interlocks with a choice of maintained or momentary input signal (either two or three wire).

Overload

Monitoring of motors whose control is not managed by the controller.

Direct Online (DOL)

Starting of non-reversing motors.

Reverse Direct Online (RDOL)

Starting of reversing motors.

Star-Delta

Two-step starting of motors.

Reverse Star-Delta

Two-step starting of reversing motors.

Soft Starter

Control the start/stop of soft starter.



Dahlander

Starting of reversing motors with only one stator winding at two speed.

Reverse Dahlander

Starting of reversing motors with only one stator winding at two speed.

Pole Changing

Starting of motors at two speed.

Reverse Pole Changing

Starting of reversing motors at two speed.

Circuit Breaker

Closing and opening a circuit breaker to control the motors.

A decentralized motor controller

A custom logic mode is available allowing for user created specific control schemes as per the application.

TeSys Tera's integral controller supports programming in different languages such as structured text mode or in function block diagrams through SoMove. This can also be achieved using freely parameterizable logic blocks - such as truth tables, counters, and more as a graphical parameterizing interface, helping users to define Custom logic independent of PLC's.

An overhead view of an industrial manufacturing environment. Two car chassis are positioned on a conveyor system. Six yellow robotic arms are actively welding the chassis. The floor is made of grey metal plates with a circular pattern. The scene is dimly lit, with the primary light source being the sparks from the welding process.

Designed for multiple
applications

Supported application segments

Segment		Examples
Process & Special Machine Segments	Water	Water treatment (blowers and agitators)
	Metal, Minerals, and Mining	• Cement • Glass • Steel • Ore-extraction
	Oil and Gas Processing	• Petrochemical • Refinery, offshore platform
	Pulp and paper	
	Pharmaceutical	
	Chemical Industry	• Cosmetics • Detergents • Fertilizers • Paint
	Transportation Industry	• Automotive transfer lines • Airports
	Other Industry	• Tunnel machines • Cranes
Complex Machine Segments	Includes highly automated or coordinated machines used in:	• Pumping systems • Paper conversion • Printing lines • HVAC



Supported application segments

The motor management system supports many industries and associated business sectors including the following:

Industry	Sectors	Application
Building	• Office buildings • Shopping centers • Industrial buildings • Ships • Hospitals • Cultural facilities • Airports	Control and manage the building facilities: • Critical HVAC systems • Water • Air • Gas • Electricity • Steam
Industrial	• Metal, minerals, and mining: cement, glass, steel, ore-extraction • Microelectronic • Petrochemical • Pulp and paper industry • Chemical industry • Pharmaceutical • Food and beverage	• Control and monitor pump motors • Ventilation • Control load traction and movements • View status and communicate with machines • Process and communicate the data captured • Remote data management for one or several sites via internet
Energy and Infrastructure	Water treatment and transportation	• Control and monitor pump motors • Ventilation • Remote control of wind turbine • Remote data management for one or several sites via internet



A simpler ordering and selection process



Technical Information



Find the best combination for your application

The product selector allows you to select the best components from the current product range. Automatic product and accessory selection reduces the risk of mistakes, saving you time.



DTM Library

TeSys Tera has a DTM library with a software module installed in a FDT container that uses the open FDT/DTM technology.

For example: SoMove software enables the configuration, monitoring, control and customization of the control functions of the Tera controller, as part of the TeSys Tera Motor Management System.

TeSys Tera Overview

Adaptable to meet your needs

Main controller

One system for all motor feeders: up to 810 A

+Sensor module

Horizontal installation of current and voltage sensors for voltage power related measurements.

+HMI

Configuration, monitoring and control are all controlled by the operator panel. Door mounted device enabling replacement using FDR in the event of device failures.



+Expansion module

- 1 Digital Modules**
Expand the Digital IO's up to 32DI and 13 DO.
- 2 Analog module**
Expand the Tera system by analog inputs and outputs (4-20mA). This makes process monitoring 4 AI and 2 AO extremely easy, for example filling levels, flow rates, dry running or filter contamination.
- 3 Temperature module**
You can integrate up to three analog temperature sensors (e.g. Pt100, Pt1000, KTY, NTC) to your process in addition to thermistor protection. 15 additional temperatures inputs.
- 4 Ground fault module**
In addition to the calculated ground fault function integrated on basic unit, you can configure more precise measured earth fault monitoring using a CBT.

TeSys Tera offer overview



TeSys Tera offer overview

CT/VT Sensor Module

Two mounting options available

- ✓ Main module in front of sensor module
- ✓ Main module adjacent to sensor module



With Side Connectors

Current Range	Voltage Range	Freq. Range	PF Range
0.3 - 3 A	120 – 240 VAC	60 Hz	0.4 - 1.0
2.5 - 25 A			
10 - 100 A			

LTMT

Series

CT

Sensor

V

Voltage Input

100

Current Range

3: 0.3 - 3 A
25: 2.5 - 25 A
100: 10 -100A

UT

Mounting



HMI Terminal

LTMTCUF

LTMTCUF Control Operator Unit

- ✓ Local control
- ✓ Parameters configuration
- ✓ Real-time values displayed
- ✓ Alarm monitoring
- ✓ FDR (fast device replacement)

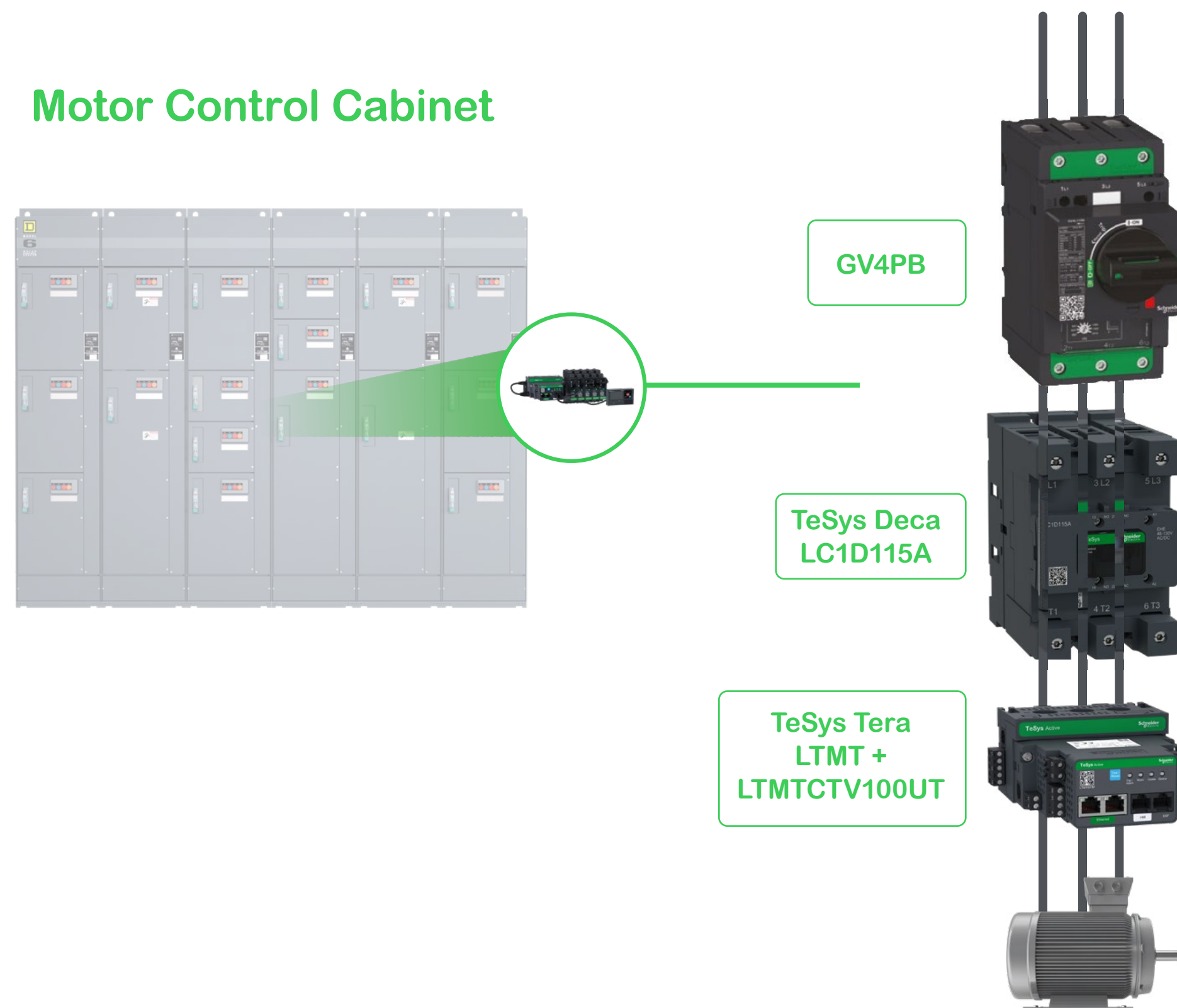
-
- ✓ Powered by main controller
 - ✓ Allows switching from local to remote
 - ✓ Supports most languages



TeSys Tera Motor Management Module

3-product structure with TeSys Deca and TeSys Giga for a compartmentalized panel system.

Motor Control Cabinet



This is an example configuration, could be used with Giga or other GV sizes.

Combinations

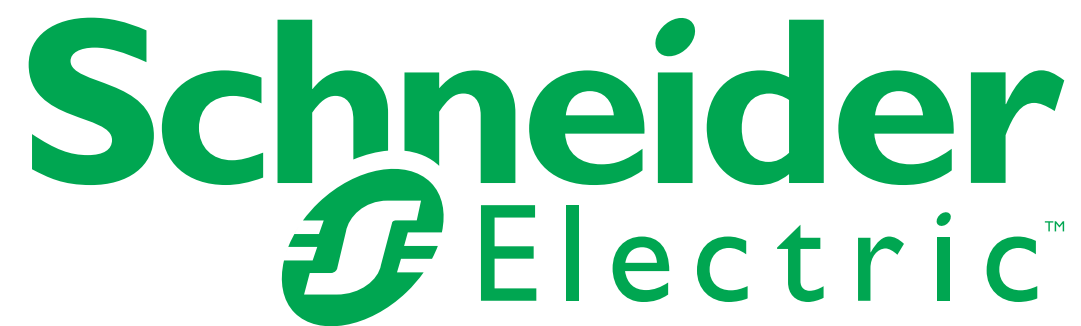
- Mounting below contactor and circuit-breaker
- Power cables pass vertically on long side
- Size within width of contactor
- One type of protection for all motor sizes
- Rating upto 100 AMPS



LTMT



LTMTCTV3UT
LTMTCTV25UT
LTMTCTV100UT



For more information about
Schneider Electric's TeSys Tera, visit:

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