Strong, safe and flexible.

The made-to-measure motor management system.

SIMOCODE pro
Safe and reliable motor management: SIMOCODE pro takes off

In many automated processes, plant downtimes have proven themselves to be extremely costly. Costs that can easily be reduced. When the correct technology is applied, faults can either be prevented or when a fault does occur, it can be quickly resolved.

For more than 20 years, SIMOCODE has been perfectly mastering these tasks in many low-voltage power distribution boards worldwide. New market requirements such as the increased application of power management systems or state-based motor monitoring have led to the development of the market’s leading motor management system: SIMOCODE pro.

More powerful, easy to handle and flexible: SIMOCODE pro – the motor management system

SIMOCODE pro is the flexible and modular motor management system for low-voltage motors, which can easily and directly be connected to automation systems via PROFIBUS DP. It covers all functional requirements between the motor feeder and automation system. Further, it combines in just one compact system all required protection, monitoring and control functions for every motor feeder. This therefore helps you to increase the process control quality and reduce costs at the same time – from planning through installation right to operation or service of a plant or system.

SIMOCODE pro Safety

Due to new regulations and standards in safety technology, the fail-safe disconnection of motors grows more and more important. With the fail-safe expansion modules, safety technology becomes an integral part of the motor management system. Thus, SIMOCODE pro is standard setter in the implementation of this trend.

Clearly focusing current and future requirements, the Siemens motor management system has comprehensive features on board:

- Multi-functional, electronic full motor protection, independent from the automation system
- Fail-safe disconnection of motors
- Integrated control functions
- Detailed operating, service and diagnostic data
- Open communication via PROFIBUS DP, the standard among the field bus systems
**SIMOCODE pro – Highlights**

- Overload protection for motor currents up to 820 A
- Integrated thermistor motor protection
- Integrated earth fault monitoring
- Integrated safety functions for disconnection of motors up to SIL 3/PL e
- Temperature detection (e.g. Pt100/Pt1000/KTY/NTC)
- Voltage detection up to 690 V
- Power and cos-phi/Power Factor
- Analog inputs and outputs
- Communications via PROFIBUS DP up to 12 Mbit/sec
- Standardized and unified, seamless integration
- Graphical parameterizing interface
- Measuring curves can be recorded/traced
- Device internal error memory/error history
- Just 45 mm wide
- Removable current transformer
- Global approvals (e.g.: ATEX, UL/CSA, CCC)
- And a lot more!
Advantages in all areas:

**SIMOCODE pro connects**

- Protecting/monitoring
- Controlling/interlocking
- Fail-safe disconnection
- Data/communications

SIMOCODE pro combines all of the functions required for your motor feeder and connects this to higher-level systems via PROFIBUS DP.
Advantages in all areas

**General:**
- Improved system availability
- Fault prevention using monitoring of the motor state
- Faster troubleshooting – faults are resolved using detailed diagnostics data
- Autonomous functions guarantee the availability of the motor feeder even when communications or supervisory control systems fail
- SIMOCODE pro Safety with integrated safety functions on all levels

**Process management:**
- Higher process transparency and higher information density at the supervisory control level than for conventional solutions
- All of the process quantities are available
- Unified and seamless integration (Totally Integrated Automation)
- Standardized motor blocks ease integration in the control system and simplify handling

**Operations management:**
- Reduced maintenance and service costs thanks to the integrated status monitoring
- Service and maintenance personnel are supported by an extensive range of service and diagnostics data
- Faults can be more easily reconstructed as measuring curves are recorded and faults logged
- Power-related measured quantities are detected – allowing integration into higher-level power management systems – saving energy costs (Totally Integrated Power)

**Switchboard:**
- Flexible and space-saving motor feeders thanks to the small dimensions and modular design
- Integrated PROFIBUS interface makes motor feeders communication-capable
- More functionality in a smaller space when compared to conventional solutions
- Lower wiring costs as the control circuit hardware is replaced by integrated control functions
- Graphic parameterization speeds up commissioning and simplifies plant documentation
Functionality as it is needed:
SIMOCODE pro is flexible

We offer you two device series that are functionally harmonized with one another so that you can enjoy the benefits of SIMOCODE pro in all areas of the process industry and power generation:

**SIMOCODE pro C**
The compact motor management system for direct and reversing starters: Presently the most cost-effective, communication-capable motor management system of its class. This makes SIMOCODE pro C the optimum solution – especially when changing over from a conventional to a communication-capable motor feeder.

**SIMOCODE pro V**
The variable motor management system: It offers an even higher functional scope. It can be expanded by pre-cisely those functions that you require in your motor feeder. Up to five optional expansion modules can be connected.
**Clever solution:**  
**Mixed operation in one plant**  
Depending on the functions required, SIMOCODE pro C and SIMOCODE pro V can be used at the same time in one system without any additional costs. This means that you remain flexible - and save a lot of money.

**Straightforward integration:**  
**Integrated PROFIBUS DP interface**  
SIMOCODE pro has an integrated PROFIBUS DP interface which means that the motor feeder can be integrated into every PROFIBUS DP-capable automation system.

**SIMOCODE pro supports among other things:**  
- Communications with up to three PROFIBUS DP masters  
- Fail-safe communication via PROFIsafe*  
- Cyclic services (DPV0) and acyclic services (DPV1)  
- Time synchronization via PROFIBUS*  
- Time stamping with high temporal accuracy*)

**Functionality guaranteed:**  
**Independently executed protection and control functions**  
One of the most outstanding features of SIMOCODE pro is the fact that all of the protection and control functions can be independently executed. This means that even if the bus or automation system fails, the full functionality is kept. And, it is guaranteed that the motor feeder is protected – i.e. the motor feeder remains available. A defined behavior in fault cases can be adjusted.

* for SIMOCODE pro V
One system for all motor feeders:
**Measuring currents up to 820 A**
SIMOCODE pro monitors motors with rated motor currents up to 820 A. Various current measuring modules are available. The modular design and the integrated, seamless system allow a significantly easier and flexible integration of the motor feeder.

**By the way:** Voltage, power and cos-phi/power factor
Instead of current measuring modules, for SIMOCODE pro V you can optionally use current/voltage measuring modules. This means that in addition to the motor current, you can also measure voltages up to 690 V and monitor power-related measured quantities.

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**Versatility par excellence:**
**SIMOCODE pro is extremely versatile**

There is a wide range of modules at your disposal so that SIMOCODE pro can provide you with what you need in the field coupled with the most flexible device functionality possible. Additional interesting functions will be added.

Below is an overview of the wide range of versions that you can expect now and in the future.
Easier handling:
The operator panel
The operator panel is used to control the motor feeder. It is integrated in a control cabinet door and features IP54 degree of protection. Thus, SIMOCODE pro or the feeder can be directly operated from the control cabinet. The system interface integrated in the operator panel at the front allows for convenient PC/PG-based parameter assignment and diagnostics directly on the control cabinet door. To be able to read measuring values, operational and diagnostics data directly at the control cabinet, the operator panel for SIMOCODE pro V is optionally available with a display.

It’s your choice:
Expansion modules for SIMOCODE pro V
SIMOCODE pro V not only offers even more protection, control and monitoring functions than SIMOCODE pro C. By using our expansion modules it can also be expanded as required.

Digital modules*
The type and number of digital input and relay outputs of SIMOCODE pro V can be increased step-by-step using digital modules.

This allows you to:
• Input or output additional process signals and implement additional functions
• Externally supplied digital inputs can be retrofitted (24 V DC or 110–240 V AC/DC)
• Bistable relay outputs can be added – the switching status of the relay outputs is kept stable even if the power supply voltage fails

Temperature module*
In parallel with thermistor motor protection, up to three analog temperature sensors (e.g. Pt100, Pt1000) can be integrated in your process with the help of the temperature module. This makes temperature monitoring, e.g. of bearings, gear oil or coolant, extremely easy.

Analog module*
With the analog module, the motor management system with SIMOCODE pro V can be expanded by analog inputs and outputs (0/4...20 mA). This facilitates the effortless process monitoring of filling levels, flow rates, dry running conditions or filter contamination.

Earth fault module*
Using the earth fault module, in addition to the earth fault monitoring function integrated into the basic unit, you can configure an even more precise external earth fault monitoring using a summation current transformer.

* for SIMOCODE pro V
Diversity par excellence:
SIMOCODE pro provides safety

In process automation, the use of safety technology is becoming more and more important. In plants, situations can easily occur that require the protection of humans and the environment by the fail-safe disconnection of a machine. Play it safe – with SIMOCODE pro Safety.

Apply SIMOCODE pro with a fail-safe digital module and benefit from a flexible, modular motor management system and integrated safety technology in one system.
SIMOCODE pro can protect humans and machines by using a combination of different protection and monitoring functions. When a hazard occurs, it will allow for the fail-safe disconnection of respective loads. Thus, the requirements of the safety standards IEC 61508/62061 and ISO 13849-1 for functional safety of up to SIL 3 or PL e respectively are complied with.

Fail-safe digital module DM-F Local*
- For applications that require a local fail-safe disconnection (e.g. emergency stop)
- For applications which require a fail-safe disconnection via a fail-safe hardware output, e.g. a fail-safe signal of a controller

Fail-safe digital module DM-F PROFIsafe*
- For applications in which the shutdown signal is being generated by a fail-safe controller (F-CPU) and transmitted to the DM-F PROFIsafe module via PROFIBUS, using the standardized profile PROFIsafe

* for SIMOCODE pro V
For consistent system protection:
SIMOCODE pro Safety

Applications with DM-F Local: Processing of an F-control’s safe disconnection signal or direct sensor connection

Benefit from SIMOCODE pro Safety:
• Functional switching and fail-safe disconnection are combined in the motor management system without additional expenditure
• Functions for contactor monitoring are already integrated in the modules
• SIMOCODE pro submits detailed diagnostic information to the controller

DM-F Local for Solution Local
The fail-safe disconnection of a motor can be realized by using the expansion module DM-F Local. Adjustable functions on the module allow for various applications.

When a fail-safe controller is used, the DM-F Local processes its hardware signals for the fail-safe disconnection of the motor.

If a controller without safety functions is applied, a fail-safe sensor such as emergency stop can be connected to the DM-F local.

Application with DM-F PROFIsafe: Processing of an F-control’s safe disconnection signal via PROFIBUS / PROFIsafe

DM-F PROFIsafe for Solution PROFIsafe
In combination with a SIMATIC S7 F controller, which is able to operate via PROFIsafe, the fail-safe disconnection signal is transmitted to the fail-safe digital module DM-F PROFIsafe directly via PROFIBUS.
Extensive functions:
SIMOCODE pro optimizes process control and plant operation

Whether process management, operations management or switchboards – SIMOCODE pro connects all of the areas through extensive data and functions. It provides you with advantages all the way!

Protecting & Monitoring

Extensive protection: multi-functional, electronic full motor protection

SIMOCODE pro offers an extensive protection of the motor feeder by combining various multistage protection and monitoring functions:

Protection functions:
• Overload protection (Class 5–40)
• Thermistor motor protection
• Phase failure monitoring
• Unbalance protection
• Stall protection
• Earth fault monitoring
• Current limit monitoring
• Operating hours monitoring
• Motor stop time monitoring
• Number-of-starts monitoring
• And a lot more

Expanded monitoring functions:
• Temperature monitoring Pt100/ Pt1000*
• Voltage monitoring*
• Power monitoring*
• Cos-phi/power factor monitoring*
• Phase sequence detection*
• Input, output and monitoring of 0/4...20 mA signals*

Recording of measured curves*

Controlling

Absolutely flexible: Integrated control functions

SIMOCODE pro already has many pre-defined motor control functions – including all of the necessary interlocks.

Your advantage: You save a whole lot of hardware and wiring and obtain a motor feeder that is highly standardized regarding its circuit diagrams.

Control functions:
• Direct on-line starter
• Reversing starter
• Star-delta starter*
• Star-delta starter with reversal of rotational direction*
• Two speeds, motors with separate windings (pole changing) also with reversal of rotational direction*
• Two speeds, motors with separate Dahlander windings, also with reversal of rotational direction*
• Solenoid valve actuation*
• Positioner actuation*
• Circuit-breaker control
• Soft starter actuation*
• Soft starter actuation with reversal of rotational direction*

Easy adaptation:
using logic blocks and standard functions

Protection and control functions can, when required, be flexibly adapted to the requirements of your motor feeder. This is achieved using logic blocks that can be freely set regarding parameters – such as truth tables, counters and edge evaluation – and using standard functions such as line supply failure monitoring*, emergency start or external faults. Arithmetic functions additionally facilitate the conversion of measured values into any formats or units.

* for SIMOCODE pro V
SIMOCODE pro provides you with all of the data required for process and plant operation. This data is available in the switchboard and, to the same extent, also in the supervisory control system. In addition to the many process quantities, it is especially the service and diagnostics data that support your service and maintenance personnel.

SIMOCODE pro helps you to identify approaching faults and avoid them using preventive measures. However, if a fault actually occurs, then it can be quickly localized and resolved. This means that downtimes are limited to a minimum or don’t even occur in the first place.

### Safety functions

**Optimum safety:**

- Fail-safe disconnection up to SIL 3 (IEC 61508/62061) or PL e with Category 4 (ISO 13849-1) via PROFIBUS / PROFIsafe or via hardware signal
- Flexible, parameterizable safety relay function

### Communications

**Communications via PROFIBUS DP – extensive data available everywhere**

**Operational data:**
- Motor switching state (on, off, counter-clockwise, clockwise, slow, fast)
- Current in phases 1, 2, 3 and maximum current
- Phase voltage 1, 2, 3*
- Active power*
- Apparent power*
- Power factor*
- Phase unbalance
- Phase sequence*
- Time to trip
- Temperature rise, motor model
- Remaining cooling time of the motor
- Temperature (e.g. motor temperature)*
- Actual value, analog signals*
- And much more

**Service data:**
- Motor operating hours
- Motor stop times
- Number of motor starts
- Number of overload trips
- Internal comments saved in the device
- Device operating hours
- Consumed power*
- Time interval until the next positively driven test*
- And much more

**Diagnostics data:**
- Numerous detailed early warning and fault messages, also for further processing in the device or in the master control system
- Device-internal fault and event log with time stamp
- Time stamp for any selectable status, alarm and fault messages*
- Value of the last tripping current
- Checkback faults (e.g. no current flowing in the main circuit after an On control command)
- Signaling of the fail-safe disconnection function’s test requirements*
- And much more

* for SIMOCODE pro V
Perfectly matched:

SIMOCODE pro with SIVACON

With SIMOCODE pro, you have at your fingertips a cost-effective motor management system that is fit for the future. It combines long-standing experience with state-of-the-art technology and has been successfully employed in the SIVACON low-voltage power distribution board by Siemens for decades.

In addition to communication-capable soft starters, circuit breakers and AS-Interface modules, a flexible and communication-capable motor management system for low-voltage power distribution boards is offered with SIMOCODE pro. SIMOCODE pro is used in SIVACON in fixed-mounted, plug-in and withdrawable unit design. It allows for the configuration of compact, communication-capable load feeders with higher performance.

With the combination of SIVACON and SIMOCODE pro data transfer with automation systems can be implemented cost-effectively. The standardized, non-proprietary PROFIBUS DP is used as bus system – this allows connections to be established to the widest range of automation devices.
Totally Integrated:
Software for integration

More transparency, more data:
optimum process control for all process control systems using SIMOCODE pro

Today, not only sensor data, but also the data of the motor feeder are integrated in the process control system. SIMOCODE pro provides these data to all process control systems via PROFIBUS. This means that SIMOCODE pro increases the degree of transparency of your process and ensures a significantly higher information density in the control system – without any additional costs. Based on Totally Integrated Automation, data is integrated seamlessly and in a unified way. Standard motor blocks simplify the integration and make handling easier.

User-friendly integration into the SIMATIC PCS 7 process control system
Using the PCS 7 library, SIMOCODE pro can be simply integrated into the SIMATIC PCS 7 process control system in a user-friendly fashion. The PCS 7 library SIMOCODE pro for this purpose has standard motor blocks and faceplates to operator control and visualization of the motor. In addition, the maintenance-relevant monitoring functions and alarm parameters set in SIMOCODE pro can be directly visualized on a central maintenance station. Furthermore, the power values detected by SIMOCODE pro for every motor feeder offer the perfect basis for superior power management with SIMATIC PCS 7 powerrate.

Integration into SIMATIC PDM
It goes without saying that SIMOCODE pro is also integrated into SIMATIC PDM (PDM = Process Device Manager) for plant-wide device parameter setting and diagnostics. This means that a standard, unified tool is embedded in the process control system for intelligent field devices such as SIMOCODE pro.
Diagnostics and maintenance with SIMOCODE ES

With SIMOCODE ES, SIMOCODE pro is comfortably parameterized and diagnosed either centrally via PROFIBUS or directly at the control cabinet. SIMOCODE ES provides important information when maintenance is required or when faults occur by displaying all of the operating, service and diagnostics data of the motor feeder.

This helps to prevent faults, more quickly localize these when a fault occurs and also resolve the problem. The system can be parameterized online – also during operation – thus avoiding unnecessary plant downtimes. Among other things, the following data is displayed in easy to understand dialog boxes:

- Warnings, faults, messages
- Motor operating hours, motor starts
- Error log/error history
- Trends and measuring curves

Integration into SIMATIC S7 with the object manager for SIMOCODE pro

Our OM SIMOCODE pro object manager is part of SIMOCODE ES and allows SIMOCODE ES to be incorporated in STEP 7. Devices can be configured, unified with S7, and parameterized simply because SIMOCODE ES can be directly executed from STEP 7. This means that SIMOCODE pro is “totally integrated” into SIMATIC S7.
Easy planning, high degree of engineering security, fast commissioning: SIMOCODE pro in the switchboard

SIMOCODE pro is modular and is extremely compact. Therefore, it is predestined for use in low-voltage switchboards or motor control centers. The extensive functions of SIMOCODE pro can be flexibly adapted to every customized version of a motor feeder. Optional expansion modules provide an additional degree of security when engineering the system. The integrated control functions make additional locking hardware unnecessary. Standardized load feeders such as these decisively simplify planning and mechanical design.

For the time-saving commissioning of a power distribution board, also ergonomic tools such as SIMOCODE ES are required.

Parameter assignment and commissioning of the power distribution board with SIMOCODE ES

Control and protective functions as well as wiring of the control circuit are realized through integrated control functions in SIMOCODE pro and parameterized with SIMOCODE ES.

With SIMOCODE ES, SIMOCODE pro offers a user-friendly and clearly structured interface for fast parameterization and commissioning. The integrated print function facilitates the documentation of all parameters in accordance with DIN ISO 7200.

Parameterization via drag & drop with the graphical editor

The graphical editor for SIMOCODE ES supports a very ergonomic and user-friendly parameterization via drag & drop. In so doing, the inputs and outputs of function modules can be graphically "soft-wired" and parameters can be set. The configured functions can be described in more detail by inserting comments of any type and the device parameterization can be graphically documented. This again significantly speeds up commissioning and visibly simplifies the documentation.
Your project in excellent company: SIMOCODE pro put into practice

The paper machine 4 of the paper manufacturer Lang situated in the Swabian town of Ettringen daily produces approximately 500 tons of uncoated paper. Within the scope of a plant modernization, the decision-makers at Lang searched for a possibility of integrating this machine in the new SIMATIC PCS 7 process control system in a way which ensures both efficiency and future profitability. SIMOCODE pro meets these requirements best. 130 electrical drives in the area of raw material processing are now controlled by the motor management system and connected to the control system via PROFIBUS DP. This solution brings significant advantages for the paper manufacturing process. All motor feeders are not only actuated and protected but also reliably integrated into a comprehensive diagnostic concept. The behavior of every single drive can be permanently monitored – virtually in real time – from the control center.

“It is extremely advantageous for the entire paper manufacturing process to be able to monitor the behavior of every single drive from the control center.”

Helmut Lieberg, Qualified Engineer for Measuring and Control Technology at Lang Papier

Comprehensive diagnostics easily realized

All benefits at a glance

- Easy, cost- and space-saving realization of a comprehensive diagnostic concept
- High bus quality and transfer speed
- More precise and rapid fault localization and rectification thanks to detailed diagnostics
- Enhanced flexibility for plant expansions and device replacements
- Increased productivity
The time between September and December is the high season for sugar. Particularly during these four months, it is vital for sugar producers to handle 24-hour shifts without interruptions. Therefore, Südzucker AG, which is situated in the Swabian town of Rain am Lech, opted for a modernization of diverse plant sections. The core of these modernization measures was the SIMOCODE pro motor management system, which allows for a precise control and monitoring of the process air. The functionality of all motors can now be monitored at any time – either from the control center or directly on site. With SIMOCODE pro even gradients can be recorded in the devices. This newly gained transparency helps to consistently prevent faults. Furthermore, service works can be carried out efficiently thanks to the easy device replacement, which takes less than 30 seconds with the memory module.

"Like athletics, we have to consistently use the best equipment to be in top shape during the competition."

Günter Leinfelder, Senior Electrician at Südzucker AG

Targeted motor management prevents process faults

All benefits at a glance

- Flexible application even under confined space conditions – thanks to compact dimensions and the separate installation of basic unit and current measuring module
- Optimized servicing as a result of reduced response times and the pluggable memory module, which reads out and records all parameters
- Maximized plant availability – thanks to the possibility of processing and monitoring performance-specific parameters in the device by means of current/voltage measuring modules up to 690 V
- Load monitoring by calculating the active power and the power factor
The Atlanta-based Clyde Bergemann Inc. is a well-known OEM supplier of state-of-the-art boiler cleaning systems. To be able to offer customers efficient and future-proof solutions for the modernization of their boiler systems, the process engineers searched for a flexible system meeting the following requirements: A modern motor management capable of reliable maintaining a high boiler performance and assuring the continuous removal of soot deposits. A solution without a permanently wired control technology. A system facilitating the basic operation of the sootblowers independently of the PLC. SIMOCODE pro perfectly satisfied these criteria. With its distributed design, the system features many useful additional functions which considerably ease the engineers’ work and reduce costs. As a flexible and modular system, SIMOCODE pro can be easily connected to PROFIBUS, offers a standardized interface and provides detailed operational, service and diagnostics data. It can be easily parameterized and guarantees a reliable cleaning operation even under harsh ambient conditions.

A clean solution:
SIMOCODE pro for reliable boiler cleaning

“Thanks to the numerous additional functions and diagnostic options of SIMOCODE pro, we have clearly out-paced our competitors.”

Sandeep Shah, Head of the Technology Division

All benefits at a glance

- Easy installation and maintenance
- Cost savings over the entire service life of the sootblowers
- Time savings thanks to easy parameter setting in standardized circuit diagram and hardware configuration
- Increased functional variety thanks to expansion modules
- Manual operation of the sootblowers in fault cases by means of local on-site control
- Active plant monitoring thanks to detailed diagnostics
- Precise, fast fault localization and rectification
Thanks to the numerous additional functions and diagnostic options of SIMOCODE pro, we have clearly outpaced our competitors.

Sandeep Shah, Head of the Technology Division

The Paulaner brewery in Munich produces approximately 2.5 m. hectoliters of beer per year. 24 hours a day – seven days a week. To be able to maintain this production output and make the plant fit for the future, the decision-makers decided in favor of the modularly expandable SIMOCODE pro V system when modernizing the control technology in the filtration system. Particularly the high functional variety of SIMOCODE pro getting far beyond mere current measuring convinced the Heads of the Industrial Engineering Division at Paulaner. Thanks to the increased number of signal connections realized with connection of additional digital modules, all filtration and cooling process steps can now be centrally monitored and controlled. Process data are directly transferred to the control center. The high plant transparency assures a precise detection and fast rectification of faults as well as the configuration of standardized diagnostic routines.

“From our point of view, the SIMOCODE pro motor management system is the only real diagnostic solution as it immediately detects pump and fan maloperation. It is exactly the motor management system we have been looking for.”

Herbert Eger, Senior Electrician at the Industrial Engineering Division at Paulaner

For a constantly high beer quality: SIMOCODE pro convinces with functional variety

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Herbert Eger, Senior Electrician at the Industrial Engineering Division at Paulaner

All benefits at a glance

• Space-saving and flexible application
• Easy device replacement
• More precise and rapid fault localization and rectification thanks to detailed diagnostics
• Unified basis for the configuration of standardized diagnostic routines
• Higher plant availability as a result of the increased control system transparency
### Modules and accessories:

**SIMOCODE pro – a system overview**

<table>
<thead>
<tr>
<th><strong>Basic unit, SIMOCODE pro C</strong></th>
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<tbody>
<tr>
<td><strong>Description:</strong> Basis component of SIMOCODE pro C, PROFIBUS DP interface, 12 Mbps 4 inputs / 3 monostable relay outputs, thermistor connection</td>
</tr>
</tbody>
</table>
| **Range:** Rated control supply voltage:  
  - 24 V DC  
  - 110…240 V AC/DC |

<table>
<thead>
<tr>
<th><strong>Basic unit, SIMOCODE pro V</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> Basis component of SIMOCODE pro V, PROFIBUS DP interface, 12 Mbps 4 inputs / 3 monostable relay outputs, thermistor connection, can be functionally expanded using expansion modules</td>
</tr>
</tbody>
</table>
| **Range:** Rated control supply voltage:  
  - 24 V DC  
  - 110…240 V AC/DC |

<table>
<thead>
<tr>
<th><strong>Current measuring modules and current/voltage measuring modules</strong>*</th>
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</thead>
<tbody>
<tr>
<td><strong>Description:</strong> The motor current in the main circuit is measured separately from the basic unit using a measuring unit. Current/voltage measuring modules also measure voltages up to 690 V in the main circuit.</td>
</tr>
</tbody>
</table>
| **Range:** Straight-through current transformer for rated motor currents:  
  - 0.3…3 A  
  - 2.4…25 A  
  - 10…100 A  
  - 20…200 A  
  Current transformer with busbar connections for rated motor currents:  
  - 20…200 A  
  - 63…630 A  
  The matching 3UF18 intermediate current transformers are available to measure and monitor motor currents up to 820 A. |

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<thead>
<tr>
<th><strong>Operator panel</strong></th>
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<tbody>
<tr>
<td><strong>Description:</strong> For SIMOCODE pro operation at the control cabinet door with up to 10 LEDs for status display and up to 5 pushbuttons. The SIMOCODE pro V series is optionally available with display.</td>
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<th><strong>Expansion modules</strong>*</th>
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<tbody>
<tr>
<td><strong>Digital modules</strong></td>
</tr>
<tr>
<td><strong>Description:</strong> To expand a basic unit by additional digital I/Os; a maximum of 2 digital modules can be connected per basic unit.</td>
</tr>
</tbody>
</table>
| **Range:** Relay outputs:  
  - Monostable  
  - Bistable  
  Input voltage:  
  - 24 V DC  
  - 110…240 V AC/DC |

| **Earth fault module** |
| **Description:** To expand the basic unit by one input for the external earth fault detection with a summation current transformer, a maximum of 1 earth fault module can be connected per basic unit. |

| **Temperature module** |
| **Description:** For expansion of the basic device by inputs for up to 3 temperature sensors (Pt100, Pt1000, KTY, NTC), a maximum of one temperature module can be connected per basic unit. |

| **Analog module** |
| **Description:** To expand the basic unit with two passive analog inputs and one output (0/4...20 mA), maximally one analog module can be connected per basic unit. |

<table>
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<th><strong>Fail-safe expansion modules</strong>*</th>
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<tbody>
<tr>
<td><strong>Fail-safe digital module DM-F Local</strong></td>
</tr>
<tr>
<td><strong>Description:</strong> For fail-safe disconnection via hardware signal, attainable SIL 3 (IEC 61508/62061) or PL e with Category 4 (ISO 13849-1)</td>
</tr>
</tbody>
</table>

| **Fail-safe digital module DM-F PROFIsafe** |
| **Description:** For fail-safe disconnection via PROFIIBUS/PROFIsafe, attainable SIL 3 (IEC 61508/62061) or PL e with Category 4 (ISO 13849-1) |
| **Range:** Rated control supply voltage:  
  - 24 V DC  
  - 110…240 V AC/DC |

* for SIMOCODE pro V
### Decoupling module
**Description:** For current/voltage measuring modules for the detection of voltage in non-grounded mains

### Memory module
**Description:** Supports the back-up of a system's complete parameterization and its transfer to a new system, e.g. for device replacement, without additional tools or detailed device knowledge

### Addressing plug
**Description:** To assign a PROFIBUS address without PC/PG at a basic unit by plugging into the system interface

### Door adapter
**Description:** To feed out the system interface, e.g. from a control cabinet; this makes the system interface more easily accessible when parameterizing or troubleshooting using a PC/PG

### Connection cable
**Description:** To connect the basic unit, current measuring or current/voltage measuring module, operator panel or expansion modules

**Range:** In various lengths

### PC cable
**Description:** For serial PC / programming device communication with SIMOCODE pro via the system interface

**Range:** Additional optional adapter for USB interface

### SIMOCODE ES
**Description:** Parameterization and service software for SIMOCODE pro, executable under Windows 2000/XP/Vista

**Range:** Versions:
- SIMOCODE ES Basic for parameterization / diagnostics via system interface on the device
- SIMOCODE ES Standard for parameterization / diagnostics via system interface on the device with integrated graphical editor
- SIMOCODE ES Premium for parameterization / diagnostics via PROFIBUS or system interface on the device with integrated graphical editor

### PCS 7 function block library
**Description:** To integrate SIMOCODE pro into the PCS 7 process control system

**Range:** Various license models and PCS 7 versions
As competent and reliable partner, we do not only offer tried-and-tested products and systems, but also comprehensive support – from initial information to planning, configuration and ordering, right to commissioning, ongoing operation and technical service:

- Access to all important and up-to-date information: From the website to the newsletter, to the download of complete brochures
- Ordering and information platform for all products and systems
- Efficient tools for increased productivity, e.g. CAx DVD for your configuration process
- Service & Support Portal for comprehensive technical information on configuration and system documentation

We thus provide you with a comfortable basis for optimizing your processes. In short: Support for improved efficiency!

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<tr>
<th>Product information</th>
<th>Product selection</th>
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<tr>
<td><strong>Comprehensive information on Industrial Controls</strong></td>
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| Amongst others, fast and targeted information on:  
  - SIRIUS Industrial Controls  
  Ensure your success with our trendsetting system solutions! | **Product selection** |
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### Product & system engineering

Software for Industrial Controls: easy, fast and safe

Our software supports you throughout all project phases – from planning to parametrization, right to operation.

- Parameter Assignment and Configuration with SIRIUS Industrial Controls
- Planning and Dimensioning of electrical power distribution systems with SIMARIS

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<th><a href="http://www.siemens.com/industrial-controls/mall">www.siemens.com/industrial-controls/mall</a></th>
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### Product documentation

**Online support: full-range of technical product information**

24/7 access to comprehensive technical information on our products and systems to support you from the planning to the configuration to the operation phase.

- Product data sheets, manuals/operating instructions
- Certificates, characteristic curves, downloads
- FAQs

| www.siemens.com/industrial-controls/support |

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**Technical Product Data for CAx Applications:**

Immediate availability of configuration-relevant CAx data types for your CAD/CAE system

This DVD provides you with a comprehensive pool of configuration-relevant CAx data types:

- Commercial and technical product master data
- 2-D dimension drawings, isometric illustrations and 3-D models
- Product data sheets
- Tender specifications

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<th>Order number E86060-D1000-A207-A7-6300 via Industry Mall</th>
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**Easy download of product image material**

Our image database contains all current

- Product images
- 2-D dimension drawings, isometric illustrations and 3-D models
- Internal circuit diagrams
- Symbols

in diverse versions for free download.

| www.siemens.com/industrial-controls/picdb |

### Product training

**Training: expand your knowledge**

Our training offer both comprises an overview as well as detailed competencies regarding selected products and systems. Amongst others, you can expand your product and system know-how of SIRIUS.

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<th><a href="http://www.siemens.com/sitrain">www.siemens.com/sitrain</a></th>
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<td>Or contact us personally via the information hotline: via infoline telephone: +49 911 895 7575 or via fax: +49 911 895 7576</td>
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### Product hotline

**Technical Assistance:**

Competent Industrial Controls expert consulting

We support you with all technical enquiries regarding our products and systems – both before and after delivery.

- Product selection
- Old/new conversions, competitor conversions
- Special versions, special requirements
- Commissioning, operation

Tip: the Service & Support Portal, including the FAQ database, can be called up via www.siemens.com/industrial-controls/technical-assistance. You can also directly submit your support request to a technical consultant.

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<td>Personally from Mo. through Fr. 8.00 am to 5.00 pm (CET) via telephone: +49 911 895 5900 via e-mail: <a href="mailto:technical-assistance@siemens.com">technical-assistance@siemens.com</a> via fax: +49 911 895 5907</td>
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