SIMOCODE M-CP

The smart motor management system for industry

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SIEMENS

SIMOCODE
motor management

Wherever motors keep processes running in industry, SIMOCODE is on-site and at the cutting edge of technology. Requirements in the various industrial sectors are increasing, plants are becoming more complex, and products more demanding. It's more and more difficult to keep an eye on all your critical data in order to guarantee smooth and above all safe processes.

SIMOCODE is the intelligence behind your motors that's been managing constant-speed, low-voltage motors for many years. It offers comprehensive protection, monitoring, and control functions. Enjoy the benefits of detailed operational, service, and diagnostic data – including for the fail-safe disconnection of motors.

SIMOCODE M-CP

SIMOCODE pro

Challenges and their solutions

Diverse industries present a wide variety of demanding challenges.
Solutions are required for more transparent measurement data, reliable monitoring of electrical currents, flexible applications, saving space, and system redundance.

And SIMOCODE has them all!

Versatile motor protection

From monitoring rotary machines in the chemical industry to the precise control of individual motors in the paper industry – in short, wherever electricity flows in industry – SIMOCODE can support the analysis of ongoing processes. By monitoring all electrical variables, irregularities in operating behavior can be detected early on when warning limits are exceeded. Combined with integrated thermistor motor protection, this provides comprehensive motor protection.

Real-time communication

This makes SIMOCODE a must when it comes to alerts about impending system failures, or collecting scattered real-time data on motor and system conditions in the cloud and communicating it in a variety of ways.

System redundance

System redundance also provides extra protection from system failure. It enables communication with redundant control systems via PROFINET and offers maximum system availability.

Energy management

SIMOCODE continuously records all electrical data during motor operation, including current, voltage, and power. For more transparent energy consumption, these measured values can be transferred to a higher-level energy management system via fieldbus protocols and analyzed to identify potential savings.

New from SIMOCODE:
The M-CP product range

Discover future-proof motor management: From pumps and compressors to fans and from the mining to the chemical industry, SIMOCODE M-CP controls and monitors your motors efficiently and reliably. Optimally designed for use in motor control centers, it offers highly compact and powerful hardware, the latest Ethernet-based communication, and easily scalable device functions – and it's embedded in complete solutions for time-saving planning and commissioning and safe, smooth operation.

MCC plug-in unit (MCC = motor control center)

SIMOCODE M-CP **from planning to operation**

Thanks to intelligent software solutions, you can plan, integrate, commission, diagnose, and maintain your motor management system quickly, easily, and reliably with SIMOCODE M-CP.

Planning support with Control Panel Design

SIMOCODE M-CP is an integral part of Control Panel Design in the TIA Selection Tool. This software solution simplifies electrical pre-planning for the machine control cabinet. Whether it's the main and control current components, power supplies, or SIMOCODE M-CP as a motor management system – everything can be designed with just a few clicks. Short-circuit calculation, cable dimensioning, and standards-compliant documentation are all performed automatically.

Digital system planning with CAx data

CAx data is available for SIMOCODE M-CP for the electrical planning of switchboards using CAE systems: for example, product data, EPLAN macros, 2D dimensional drawings and 3D models, and device circuit diagrams. This reduces the effort needed for planning as well as configuration, design, and documentation. Simply download the CAx data from the Siemens Industry Mall, SiePortal, or the CAx Download Manager. See page 17 for the relevant link/QR code.

Easy engineering in TIA Portal

SIMOCODE ES is based on the TIA Portal engineering framework and enables you to solve all automation tasks consistently, efficiently, and intuitively. The TIA Portal Openness* interface can be used to automate engineering for a wide range of devices.

With SIMOCODE ES in TIA Portal, you can easily configure, parameterize, commission, and diagnose SIMOCODE M-CP. For example, you'll benefit from convenient parameterization (in list form or graphic/CFC-based*), clear presentation of diagnostic information and measured values, and online functions via USB or Ethernet. Licenses for additional functions* can also be transferred to a SIMOCODE M-CP device via this software.

Hardware configuration with SIMOCODE M-CP in TIA Portal

* Expected availability from mid-2025

Reliable commissioning with function test and no device hardware

With the SIRIUS Sim* PC-based simulation tool, the behavior of the SIMOCODE M-CP basic unit, measuring module, and operator panel can be realistically simulated – with no need for device hardware – in conjunction with virtual actuators, sensors, and motors and with simulated variables like current and voltage. The parameters for SIMOCODE M-CP are set in the SIMOCODE ES software the same as in real devices and are loaded with the software directly into the simulated device.

SIMOCODE M-CP in the SIRIUS Sim simulation tool

Simple device diagnostics and parameter setting via Web server

SIMOCODE M-CP can be parameterized and monitored with password protection via the Web server integrated in the basic unit, with no additional software required: Browser-enabled end devices can be used to adjust parameters in list form* and retrieve diagnostic information and measured values from the motor management system.

Integrated diagnostics in the switchboard

When it's integrated in the SIVACON S8plus low-voltage switchboard and working in conjunction with the SIMARIS control diagnostic station, SIMOCODE M-CP supports high process quality by continuously evaluating energy and condition data. This is one of the ways that SIMOCODE M-CP contributes to increased plant availability. In addition, the energy and condition data is available to the local control level on-site, to higher-level systems, and to cloud-based IoT analytical systems.

SIMARIS control diagnostic station

* Expected availability from mid-2025

What makes SIMOCODE M-CP **special**

Smart, simple, and ground-breaking, SIMOCODE M-CP is optimized for use in motor control centers and combines a wide range of innovations in the smallest of spaces.

Made for motor control centers

A safe, efficient, and reliable switchboard system is the backbone of all operating and production processes. Motor control centers not only offer high availability for industrial systems, infrastructure, and buildings, they also help companies increase their energy and operational efficiency. In the digital age, a smart switchboard system makes a significant contribution to an efficient and transparent distribution system. With SIMOCODE M-CP in your switchboard, these demanding tasks are easily mastered.

Space-saving plug-in unit

The compact device fits easily into the plug-in system and can be flexibly replaced and expanded. Mounting the basic unit right behind the front panel enables space-saving installation and high packing density in the switchboard. This is ensured by the compact design and by the choice between front panel mounting and rail mounting.

Innovative bus physics

Fast, space-saving, and cost-effective: With SIMOCODE M-CP, you'll benefit from innovative Single Pair Ethernet (SPE) communication, the new bus physics. It features a data transmission rate appropriate for plug-in technology, continuous Ethernet communication from the controller to the intelligent devices in the plug-in module, and high cost-efficiency – thanks to reduced wiring via flexible, thin, two-wire cables and conventional control plugs in the MCC plug-in unit.

Customizable functionality

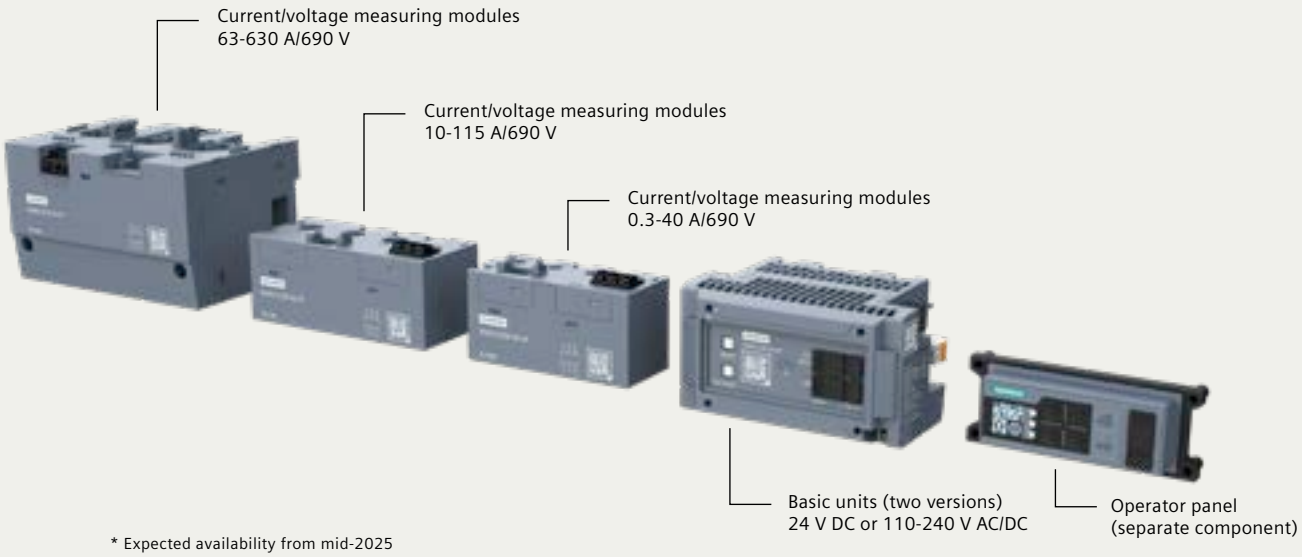
You can activate more device functions at any time by purchasing a license* that's transferred to the device. This is ideal for modifying the performance range of the devices for different areas of application and changing requirements, even after installation. For example, a 1-Wire interface can be activated on the basic unit and up to 12 temperature sensors connected to it. SIMOCODE M-CP allows switchboard manufacturers and end users to benefit from low device variance, needs-based functions, and maximum flexibility.

Safe in use

Ready for all eventualities: The integrated fail-safe shutdown (SIL 1)* can be activated, which allows you to integrate SIMOCODE M-CP directly into safe system concepts. For applications that require a safety-related shutdown up to SIL 3, you can combine SIMOCODE M-CP with a SIRIUS 3SK safety relay.

Transparent condition and energy data

Continuous recording of all relevant electrical data like current, voltage, and power – including in the cloud – ensures transparency in real time. SIMOCODE M-CP therefore improves motor and application protection as well as energy monitoring by allowing you to quickly identify power peaks, outages, and optimization potential based on the data.

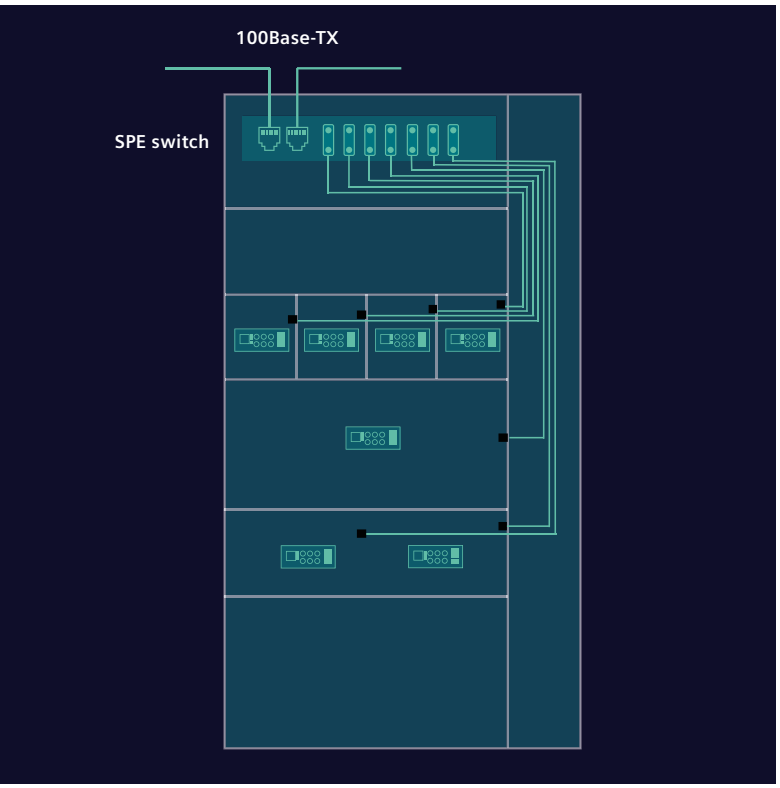


* Expected availability from mid-2025

How SIMOCODE M-CP **communicates**

Continuous Ethernet communication from the control level to the MCC plug-in unit, with no additional gateway and with reduced wiring effort: Innovative Single Pair Ethernet (SPE) ensures fast data transmission you can rely on.

Simple connection, less cabling, and faster operational readiness. SIMOCODE M-CP relies on SPE 10Base-T1L according to IEEE 802.3cg for the fieldbus – the optimal combination of robust transmission physics and simple connection technology. It's perfect for MCC plug-in technology; the bus connection is easily made via a 3-pin plug contact on the SIMOCODE M-CP basic unit. And in the switchboard, SPE features a smaller space requirement and thinner, more flexible cables with just one pair of wires.



Structure in the switchboard

- Integration of the Single Pair Ethernet switch into the conventional network infrastructure via 100Base-TX (RJ45) cabling
- Continuous Ethernet communication, with no gateways or protocol transitions
- Star topology from the Single Pair Ethernet switch to the MCC plug-in unit
- Twisted, shielded 2-wire cable for the bus connection

* Expected availability from mid-2025

More communication options

Communication with the automation network

Ethernet-based communication offers you a high degree of flexibility for your system: SIMOCODE M-CP can communicate with the automation technology via PROFINET (preset), EtherNet/IP* (switchover required), or Modbus TCP* (parameterization required), with no need to replace devices.

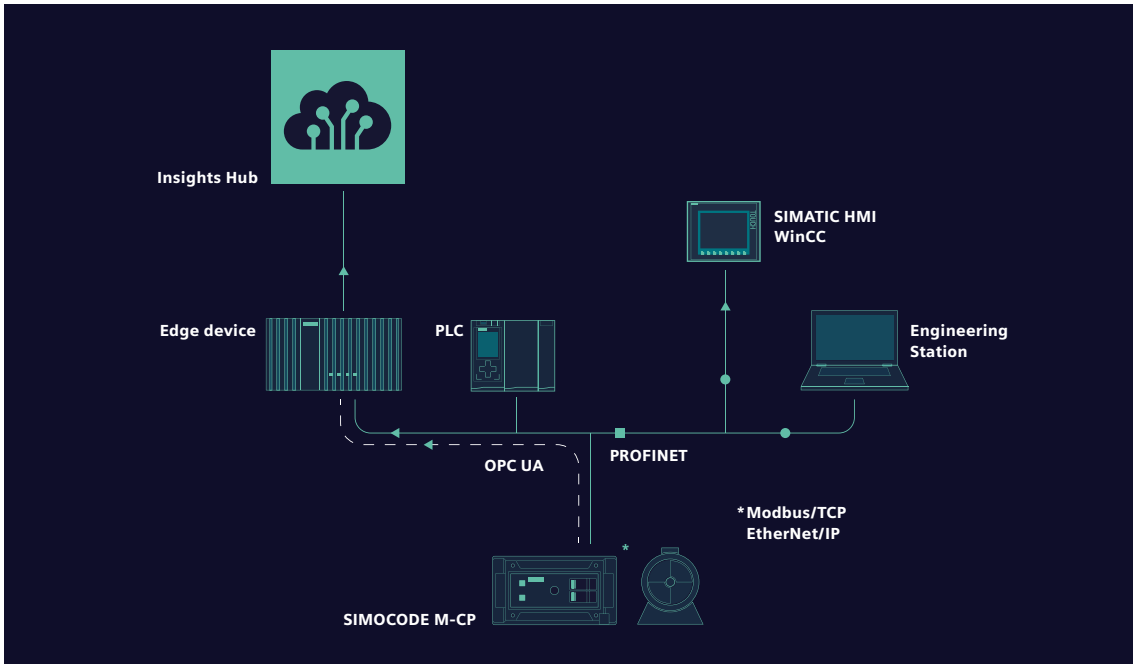
Communication with higher-level monitoring systems

The basic unit also has an integrated OPC UA server that's protected by authentication and encryption. For example, this enables energy monitoring and condition monitoring systems to access SIMOCODE M-CP as a "second data channel" via OPC UA and query parameter and diagnostic data, measured values, and status information.

Communication via Web server

In conjunction with an optionally loadable license, the Web server integrated in the basic unit enables password-protected access to status information, measured values, statistical and diagnostic data, and device parameterization* using mobile devices, panel PCs, or HMI systems. SIMOCODE M-CP can be expanded with these devices to become "operator panel with display": The server provides special Web pages that display the function of the operator panel on different display sizes. This makes it possible to operate all MCC plug-in units conveniently – regardless of their installation position – using a single mobile end device or HMI, which saves you time and costs.

* Expected availability from mid-2025



SIMOCODE M-CP firmly anchored on-site – **and yet it’s flexible**

Not only can SIMOCODE M-CP be installed in all motor control centers using plug-in technology to save space: An initialization module also minimizes the effort required for parameterization.

The initialization module* for motor control centers is permanently integrated in the switchboard and saves the device parameters there. This means that feeder-related parameter and address data is assigned to a specific feeder. When a plug-in module is replaced, the new plug-in module is automatically parameterized from the initialization module in the switchboard.

Example of a SIVACON S8plus switchboard with SIMOCODE M-CP

Your benefits:

- The device parameters and device address are automatically stored in the initialization module installed in the motor control center, and they're also loaded from it if required.
- The relevant feeder-related parameter and address data is automatically assigned to a specific outgoing motor feeder.
- Change modules in the blink of an eye! You don’t need any special SIMOCODE knowledge to replace a plug-in module.
- Integrating SIMOCODE M-CP into your motor control center significantly simplifies the operation of the switchboard, because no manual addressing and parameterization s necessary.

* Expected availability from mid-2025

SIMOCODE M-CP **in use**

SIMOCODE M-CP is extremely versatile. The precise control and monitoring of motors is essential for smooth system operation. SIMOCODE M-CP prevents costly failures by providing the right protective measures to keep everything moving. Here you'll find out how it works.

Rotary machine condition monitoring is much easier

In the chemical industry, rotating machinery like pumps, blowers, compressors, and agitators need to be continuously monitored in order to prevent system failures and increase the efficiency and safety of production. Monitoring usually requires countless sensors that measure vibration, pressure, temperature, and other relevant parameters. However, each individual sensor must first be installed, wired, and integrated in the automation system, and the effort involved is enormous.

This changes with SIMOCODE M-CP because condition monitoring is integrated right in the motor management system, which means that no upstream sensors are required. The motor itself and the function* integrated in the current/voltage measuring modules for recording the real-time values of current and voltage are sufficient for monitoring.

The function* can be activated by acquiring a license, and it then provides the output data for targeted analyses: for example, for motor current signature analyses (MCSA) and AI and data-based analyses to detect anomalies, irregularities, or damage to motors and machines.

* Expected availability from mid-2025

What makes SIMOCODE M-CP **sustainable?**

With SIMOCODE M-CP, you'll protect your systems and the environment in equal measure, with no compromises. You can respond to industrial requirements at any time: Whether it's energy efficiency or resource-saving components, SIMOCODE M-CP offers sustainable solutions for every situation.

Transparent product information

The Environmental Product Declaration (EPD) for SIMOCODE M-CP makes your products' sustainability transparent for the entire product lifecycle.

ID Link

Using a QR code – the ID Link – on the product packaging and products, you can quickly and easily identify new devices and those already installed in the switchboard using a mobile device. It can also be used to access current product information, operating instructions, and manuals for the device digitally on-site. This makes it easier to find documents while also reducing paper consumption and waste.

Transparent energy consumption

By measuring and providing electrical data, SIMOCODE M-CP supports higher-level energy monitoring and energy management that can identify potential savings and derive optimization measures. This helps protect natural resources and reduce your carbon footprint.

Long service life

The high quality of our products pays off with a long service life, which reduces the number of old, unusable appliances.
The condition monitoring integrated in SIMOCODE M-CP also helps increase system availability and extend the service life of your motors by providing early warnings in the event of irregularities

Firmware updates

But it isn't just the hardware that's durable: Long-term firmware updates help ensure that SIMOCODE M-CP remains functional and up-to-date for years to come.

Recycling

By using recycled materials for production and packaging, we're contributing to an ecologically sound manufacturing cycle.

SIMOCODE M-CP **components**

From basic units to operator panels and current/voltage measuring modules: Here's an overview of all components for the SIMOCODE M-CP motor management system.

				
	Basic unit	**Operator panel mounted on basic unit**	**Operator panel mounted separately in front panel Basic unit on rail**	**Current/voltage measuring module**
Article no.	3UF8011-2AB00-0 3UF8011-2AU00-0	3UF8200-1AA00-0	3UF8200-1AA00-0	3UF8110-1AA00-0
Voltage variant of basic unit/ voltage and current range of measuring module	24 V DC 110 - 240 V AC/DC			690 V/0.3...40 A
Description	Basic unit for front panel or rail mounting; 6 x DI, 4 x RO, thermistor input, ground-fault transformer input, 1-wire sensor input (master)	The operator panel plugs into the front of the basic unit and is attached to the basic unit using the mounting adapter. It's connected to the basic unit via the USB-C interface.	The operator panel can be mounted separately from the basic unit in the front panel cut-out, while the basic unit is mounted on a rail. Both devices are connected using the connection cable (length: 0.5 m or 1.0 m).	ATEX certified motor overload protection in accordance with IEC/EN 60079* ATEX/IECEx Dry-running protection for pumps (optional) Voltage measurement up to 690 V Straight-through transformers
Ethernet interface	Single Pair Ethernet (IEEE 802.3cg 10Base-T1L SPE, bus connection via terminal), PROFINET, EtherNet/IP, Modbus TCP	Single Pair Ethernet (IEEE 802.3cg 10Base-T1L SPE, bus connection via terminal), PROFINET, EtherNet/IP, Modbus TCP		
System interfaces	USB-C (for parameterization, commissioning, and diagnostics and connection to operator panel) Interface for connecting current/ voltage measuring module	USB-C (for parameterization, commissioning, and diagnostics with PC and SIMOCODE ES)	USB-C (for parameterization, commissioning, and diagnostics with PC and SIMOCODE ES)	
Front panel mounting	Mounting using supplied screws	Mounting using supplied screws	1 x mounting adapter for operator panel (wide 3UF8922-0BA00-0 or narrow 3UF8922-0AA00-0)	
Front panel mounting IP54	1 x IP54 seal 3UF8923-0AA00-0	1 x IP54 seal 3UF8923-0AA00-0	1 x mounting adapter for operator panel (wide 3UF8922-0BA00-0 or narrow 3UF8922-0AA00-0) 1 x IP54 seal 3UF8923-0AA00-0	
Rail mounting	2 x rail adapters 3UF8920-0AA00-0	2 x rail adapters 3UF8920-0AA00-0 1 x mounting adapter 3UF8910-0AA00-0	2 x rail adapters 3UF8920-0AA00-0 1 x connection cable 3UF8932-0BA00-0 or 3UF8937-0BA00-0	1 x rail adapter 3UF8920-0AA00-0; 1 x connection cable 3UF7932-0..00-0
Direct mounting on base plate				2 x push-in lugs 3RV2928-0B 1 x connection cable 3UF7932-0..00-0
Dimensions W x H x D (mm)	118 x 65 x 77,5	118 x 65 x 77,5 / 88 x 36,3 x 19	88 x 36,3 x 19	98 x 49 x 40,8

* Expected availability from mid-2025

More downloadable functions*

Click or scan here for licenses to expand the functions of SIMOCODE M-CP devices:

To SiePortal

coming soon

Current/voltage measuring module	**Current/voltage measuring module**	**Current/voltage measuring module Busbar connection**	**Initialization module**
3UF8111-1AA00-0	3UF8112-1AA00-0	3UF8112-1AA00-0	3UF8902-0AA00-0
690 V/10...115 A	690 V/63...630 A	690 V/63...630 A	
			An initialization module can be permanently integrated in the switchboard with the plug-in technology frequently used in motor control centers. This allows feeder-related parameter and address data to be permanently assigned to the feeder. Initialization module for automatic parameterization of SIMOCODE M series for fixed installation in switchboard. A Y-connection cable is required to connect the initialization module to the basic unit and measuring module. 3UF7932-0CA00-0 (0.5 m) or 3UF7937-0CA00-0 (1.0 m)
1 x rail adapter 3UF8920-0AA00-0; 1 x connection cable 3UF7932-0..00-0	1 x connection cable 3UF7932-0..00-0 Rail required	1 x mounting set for rail connection 3UF8950-0AA00-0 1 x connection part set 3UF8951-0AA00-0 (S6) or 3RT1966-4PA00 (S10, S12) 1 x connection cable 3UF7932-0..00-0	
2 x push-in lugs 3RP19 1 x connection cable 3UF7932-0..00-0	1 x connection cable 3UF7932-0..00-0 Fixing screws required	1 x mounting set for rail connection 3UF8950-0AA00-0 1 x connection part set 3UF8951-0AA00-0 (S6) or 3RT1966-4PA00 (S10, S12) 1 x connection cable 3UF7932-0..00-0	
121 x 49 x 50,5	145 x 85 x 99	145 x 85 x 99	18,5 x 39 x 6

* Expected availability from mid-2025

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