

# SIEMENS

EFFICIENT. SECURE. FUTURE-PROOF.

# SINAMICS G220

The high-performance variable frequency drive for all industries  
[siemens.com/sinamics-g220](https://www.siemens.com/sinamics-g220)





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## Meet current and future challenges in motion control

Most objectives in motion control involve increasing productivity and availability – not only right now, but also years down the line. SINAMICS G220 is an innovative variable frequency drive that enables you to meet these objectives. As the first SINAMICS drive to join the Siemens Xcelerator portfolio, the Siemens-wide business platform for digital transformation, SINAMICS G220 is equipped with the necessary functions to make your applications more efficient, secure and future-proof.

### Key benefits



**Ease of use** with user-friendly configuring, commissioning and engineering



**Secure technology,** guaranteeing safe and reliable operation



**Energy efficiency,** making your applications more sustainable



**Future-proof solution,** opening up new possibilities via digitalization



**Safety Integrated** functions for personnel and plant protection

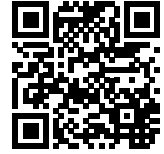


**Perfect fit** for use in all industries

# Reduce selection and commissioning times



SINAMICS G220 is compatible with most of our proven engineering tools. All of them are easy to use, which shortens selection and commissioning times. If you require additional functionalities, you can easily upgrade the hardware or add software options. For a fast and convenient support service, all product information is available digitally via the QR code.



Scan this code or click on this link for more information [siemens.com/sinamics-g220](https://www.siemens.com/sinamics-g220)

## Selection tools

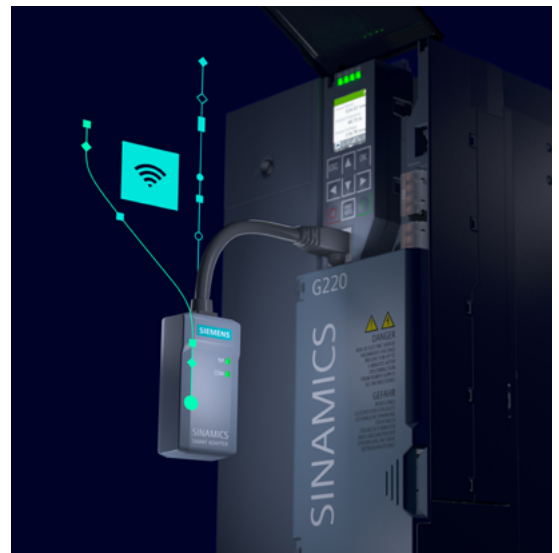
- Our **SINAMICS Selector\*** app guides you to the right frequency drive.
- **Siemens Product Configurator (SPC)** and **TIA Selection Tool (TST)** help you configure your drive and mechanical system.

## Commissioning tools

- The **integrated web server** enables efficient set up, fast diagnostics and maintenance via a wide range of clients. The SINAMICS Smart Adapter enables Wi-Fi access from your smart devices.
- **SINAMICS Startdrive** in TIA Portal provides you with step-by-step instructions for commissioning and integrating the system in an automated environment.
- The **FDI package for PCS7/neo integration** ensures that your application runs smoothly.



# Enjoy a new level of efficiency



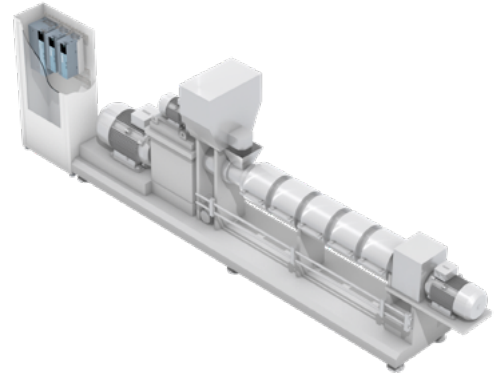
In addition to streamlining the selection and commissioning process, SINAMICS G220 increases productivity and energy efficiency in the operating phase. This reduces both operating costs and CO<sub>2</sub> emissions, making your applications more sustainable.

## **Reduce harmonics with Clean Power technology**

Protect your power network by meeting the most stringent harmonic standards with SINAMICS G220 Clean Power. The integrated Active Infeed Unit keeps harmonics to a minimum (THDi <5%). This also reduces energy losses in the system.

## **Achieve optimal dynamics with SINAMICS Motor Control Extended**

The drive system offers best-in-class motor control, which allows you to achieve optimal dynamics and be more energy efficient. Synchronous reluctance motors can be optimally controlled, even if they are near standstill or have a high load torque.



### Integration in TIA Portal and Industrial Edge

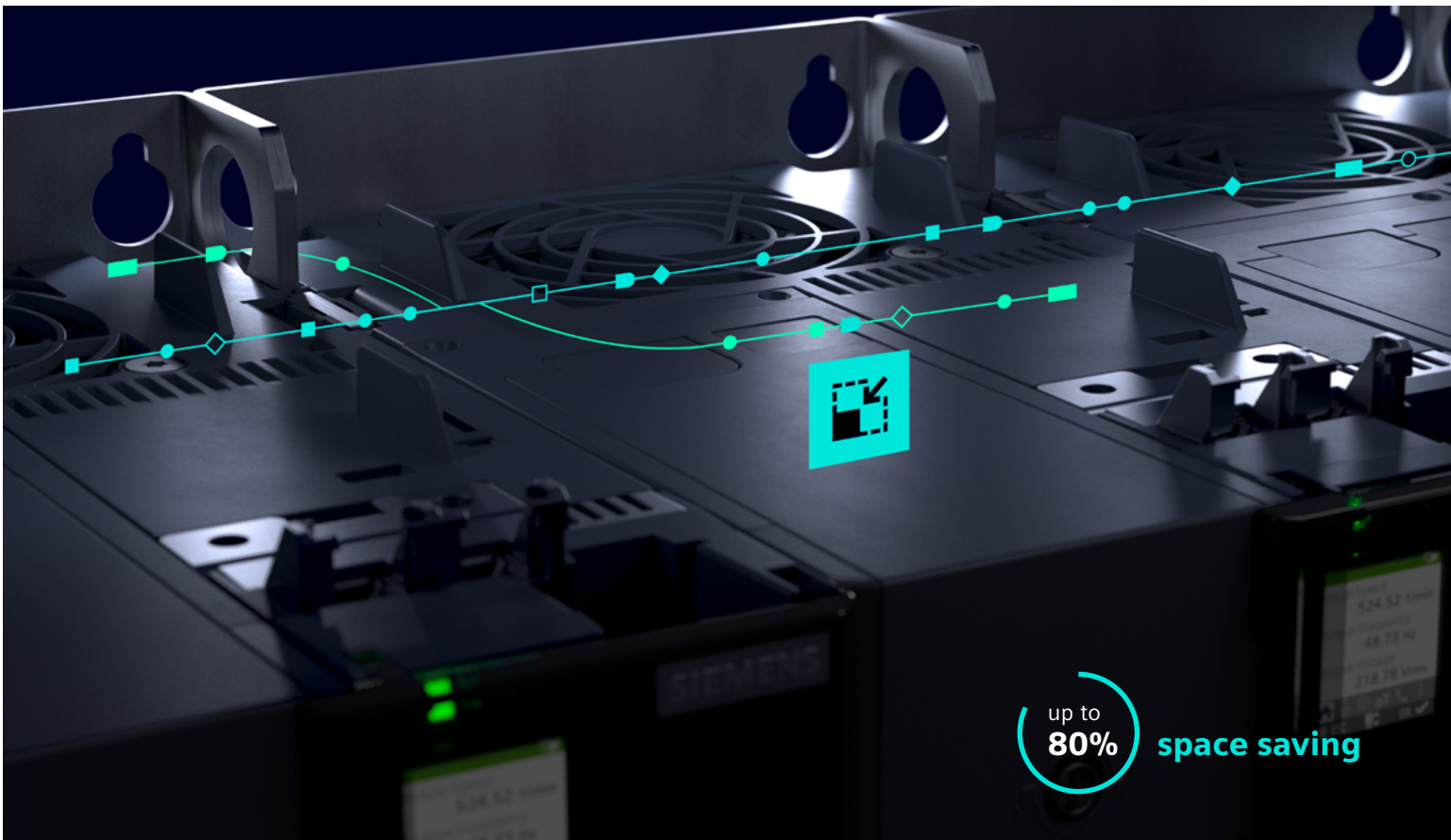
- Increase productivity thanks to seamless interaction with SIMATIC PLCs and HMI
- Save time and resources in the design phase by using the digital twin and SINAMICS DriveSim Advanced
- Optimize processes based on more transparent drive train and application data



### Individual features for more productivity and sustainability

- Support for high-efficiency motors including IE5
- Fast PROFINET RT/IRT connection and MRP/MRPD/S2 redundancy via the plug-in communication module
- Designed for long cable lengths, integrated DC-link choke in all power ratings, optional EMC filter and energy-saving functions

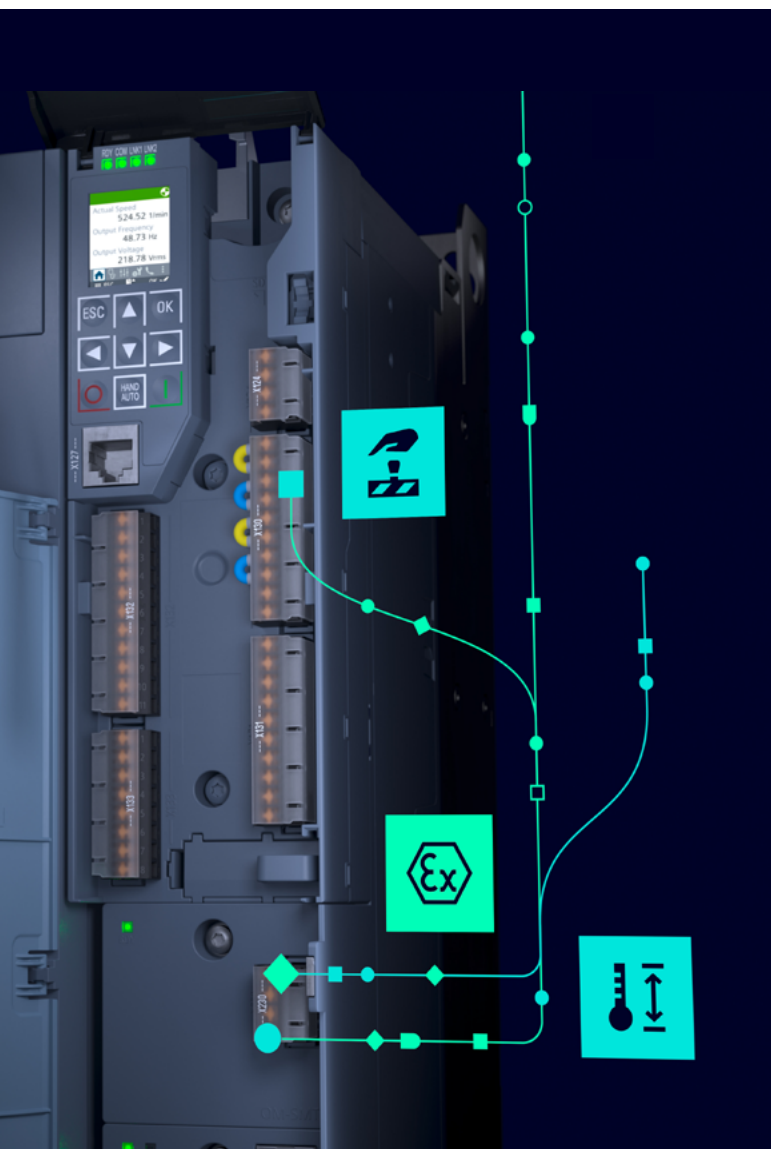
Optimal extruder operation relies on the capacity control provided by SINAMICS G220, ensuring both flexibility and energy efficiency.



up to **80%** space saving

# Rely on **safe and secure technology**

To keep your machines running smoothly, SINAMICS G220 includes comprehensive functions for machine safety and cybersecurity. All Safety Integrated functions can be directly controlled via PROFIsafe and the terminals, while Security Integrated can be easily managed via the Security wizard, including through User Management & Access Control (UMAC).



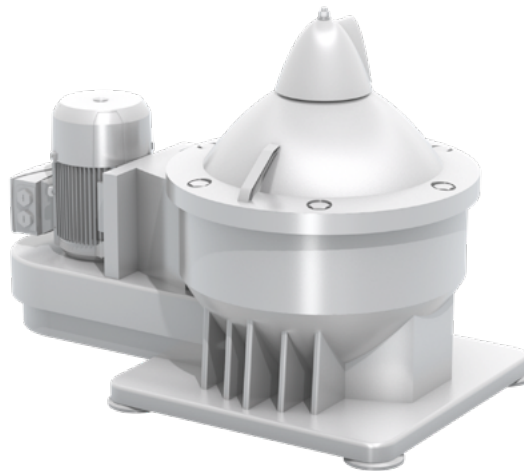
## Protect personnel and plants with Safety Integrated

- SINAMICS G220 includes safety functions up to safety integrity level (SIL) 3/performance level (PL) e/Category 4. Commissioning and testing these functions is now much easier thanks to the improved usability concept. Additionally, test stops are now done automatically.
- For additional safety, Safe Torque Off (STO) is pre-commissioned and immediately ready for use.
- With Safe Motor Temperature (SMT), the drive is suitable for applications in ATEX environments. The input for PTC sensors is ATEX-certified, ensuring thermal motor protection.
- Extended safety functions can be added easily through software options:
  - SLS (Safely-Limited Speed)
  - SDI (Safe Direction)
  - SSM (Safe Speed Monitor)
  - SS1 (Safe Stop 1)



**Keep systems and data safe with Security Integrated**

- Combining plant security, network security and system integrity, Security Integrated is a defense-in-depth concept that shields your applications from any cybersecurity threats.
- By default, only necessary functions are enabled in the factory settings and they are preconfigured with secure settings.
- Security Integrated ensures safe communication between the drive and TIA Portal or web clients.
- Integrity and authenticity checks prevent the installation of manipulated firmware.



SINAMICS G220 is ideally suited for centrifuge applications – separating the components of a mixture based on their size and density at high speed.



**Ensure availability in harsh environments with a high protection class**

- SINAMICS G220 is available with IP55 protection, which protects the drive from dust or water.
- 3C3 coating on electronic components makes them extremely robust, ensuring longer lifetimes in corrosive environments.
- PROFINET S2 system redundancy guarantees the availability of your systems.

# Future-proof your applications

SINAMICS G220 offers digital tools and services to streamline processes in each phase, making them more time and cost-efficient. Thanks to additional hardware modules and an expandable software portfolio, SINAMICS G220 meets the specific requirements to future-proof your business.



## Accelerate time-to-market with the digital twin

- SINAMICS G220 allows for easy and fast design and commissioning thanks to the digital twin. This way, you can test the drive's behavior, identify any issues and make adjustments in the design phase – without requiring any hardware.
- The digital twin is available in SINAMICS Startdrive (TIA Portal) with SINAMICS DriveSim Advanced, which is the ultimate solution for optimizing your drive system.



## Optimize your drive and plants with the IIoT Option Module

- SINAMICS G220 can be easily connected to the Industrial Edge ecosystem via the IIoT option module. This module exchanges high frequency data between the drive and Industrial Edge, increasing transparency and providing valuable insights.
- This data can be used for extensive monitoring and diagnostics, which provide the basis for improving the system and boosting its reliability.



In addition, the insights that are gathered from this data and analyzed via Analyze MyDrives can be used for predictive maintenance and prevent downtime.



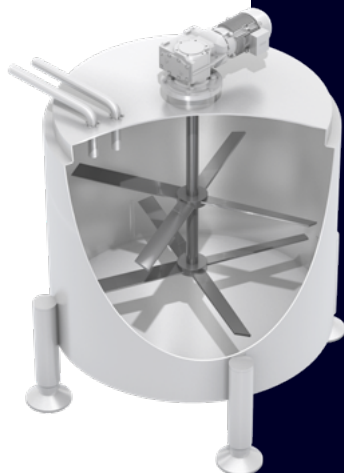


**Enjoy maximum flexibility with hardware and software options**

- To fulfill specific requirements, SINAMICS G220 is customizable with communication modules and option modules. They can be easily plugged into the drive and swapped out if any of your requirements change.
- While the majority of SINAMICS Drive Software functions are already included in the firmware, additional software options are available for specific needs. SINAMICS Safety Integrated Extended offers additional safety functions while SINAMICS Motor Control Extended enhances motor performance.
- All offerings are part of included in a seamless portfolio that complies with global standards. As a result, SINAMICS G220 can be implemented in any plant worldwide.



SINAMICS G220 is well-suited for mixer applications, producing smooth and homogeneous products.



Digitalization is the key to making processes more efficient, increasing machine availability and streamlining workflows.



# The perfect fit for all industries



Thanks to its comprehensive features and innovative design, SINAMICS G220 is suitable for various industries, including processing, manufacturing, and marine. It can be implemented in moving, processing, pumping, ventilating, compressing, and positioning applications, meeting even the most stringent requirements.



## Food & Beverage

With SINAMICS G220, we are providing the food and beverage industry with a drive solution that allows them to meet individual customer requirements quickly, flexibly and in the highest quality. In addition, the drive ensures that all processes are energy-efficient and reliable.



**Pharma**

The pharmaceutical industry is characterized by fast changes and requires a drive system that can match this pace. Thanks to its flexible design, SINAMICS G220 can be easily adapted to changing requirements. Its communication redundancy and security enable reliable production for users while energy efficiency gives users a competitive edge.



**Chemicals**

Applications in the chemical industry need to be robust, reliable and safe, meaning that the same applies to the drive systems. SINAMICS G220 offers 3C3 coating and IP55 protection, which makes it fit for use in harsh environments. To further increase reliability, SINAMICS G220 supports S2 redundancy.



**Oil & Gas**

High levels of efficiency and safety are crucial in the oil and gas industry – SINAMICS G220 can fulfill both requirements. Security Integrated ensures system availability and Safety Integrated functions keep people and machines safe, even in ATEX environments.



**Marine**

Harmonics need to be strictly limited in the marine industry, which is why SINAMICS G220 Clean Power is the ideal drive solution for auxiliary applications, such as deck machinery or winches. It reduces harmonics and thereby also lowers system losses, increasing the energy efficiency of applications and improving their environmental footprint.

# Technical data



System	Drive Offerings			
	IP20	IP55*	IP20*	IP55*
				
Drive variant	SINAMICS G220		SINAMICS G220 Clean Power*	
Supply voltage / power kW (hp)				
3AC 200 ... 240V	0.55 – 30 kW / 0.75 – 40 hp	1.1 – 30 kW / 1.5 – 40 hp		
3AC 380 ... 500V	1.1 – 55 kW / 1.5 – 75 hp	1.1 – 55 kW / 1.5 – 75 hp	7.5 – 55 kW / 10 – 75 hp	7.5 – 55 kW / 10 – 75 hp
3AC 525 ... 690V	3 – 55 kW / 4 – 75 hp	3 – 55 kW / 4 – 75 hp		
Motors supported	Asynchronous motor (induction), synchronous reluctance motor, permanent magnet motor			

## Hardware options

### Operator panels

#### SINAMICS SDI Pro 5.5" \*

Color touch display (5.5"), multilingual operator interface, multi-drive access



### Communication modules

#### CM-PN

PROFINET, Modbus TCP/IP, Ethernet/IP



### Wi-Fi access

#### SINAMICS Smart Adapter

Wi-Fi connection to access the drive via mobile devices (smartphone, tablet, laptop)



### Optional modules

#### OM-DQ (Drive-CLiQ)

Fast connection and setup via two DRIVE-CLiQ ports



#### OM-IloT\* (Industrial Internet of Things)

High-frequency data transfer to Industrial Edge



#### OM-SMT (Safe Motor Temperature)

ATEX-certified input for PTC sensors of motors in Ex-environment



## Software options

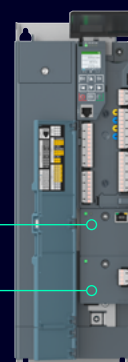
### Safety Extended

SS1, SLS, SSM, SDI

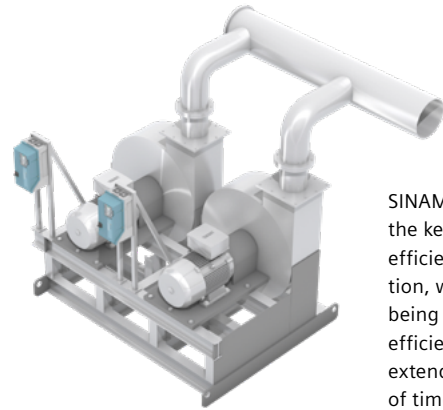


### Motor Control Extended

Optimal motor control near standstill



## TECHNICAL DATA



SINAMICS G220 is the key to energy-efficient fan operation, while also being reliable and efficient over extended periods of time.

### Seamless power range

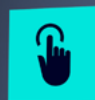
#### SINAMICS G220

#### SINAMICS G220 Clean Power\*

<b>Target verticals</b>	Food and beverage, pharma, oil and gas, chemicals, marine, general machinery	
<b>EMC</b>	C2 (400V), C3 (690V)	C2
<b>Cooling</b>	Air cooling using an integrated fan	
<b>Ambient temperatures</b>	IP20: -20 to 45 °C / to 60 °C (> 45°C with derating) IP55: -20 to 40 °C / to 55 °C (> 40°C with derating)	
<b>Motor cable length</b>	150 m (EMC Category C2) / 300 m	
<b>Motor control</b>	U/f, FCC, ECO, vector control encoderless/with encoder, torque control encoderless/with encoder	
<b>Overload capability</b>	<b>HO:</b> 200% 3s, 150% 57s, <b>LO:</b> 150% 3s, 110% 57s every 300s	
<b>Inputs / outputs</b>	6 DI (1 PTI), 1 F-DI, 3 DO (1 NO 2 NO/NC relay), 1 F-DO, 2 AI, 1 AO, 1 input for PTC/KTY84/Pt1000 motor temperature sensor	
<b>Communication</b>	PROFINET (RT/IRT, MRP & S2 redundancy), Modbus TCP/IP, Ethernet/IP	
<b>Safety functions</b>	Safe Torque Off (STO), Safe Stop 1 (SS1), SIL 3, PL e, Cat. 4 via terminals or PROFIsafe	

\* Available soon

Efficient usability is achieved through the integrated SINAMICS Smart Drive Interface (SDI Standard)



# Dimensions



## IP20



	FSA	FSB	FSC
Supply voltage	3 AC 380 ... 500V, -20% / +10%		
Rated power	1.1 kW...4.0kW	5.5kW...7.5kW	11 kW... 15kW
<b>Height of the drive</b>	250 mm	355 mm	355 mm
<b>Height including shielding plates</b>	420 mm	548 mm	589 mm
<b>Width</b>	73 mm	85 mm	125 mm
<b>Depth</b>	219 mm	219 mm	219 mm

	FSD1	FSD2	FSE
Supply voltage	3 AC 380 ... 500V, -20% / +10%		
Rated power	18.5kW...22kW	30kW...37kW	45 kW...55 kW
<b>Height of the drive</b>	400 mm	442 mm	520 mm
<b>Height including shielding plates</b>	650 mm	692 mm	803 mm
<b>Width</b>	150 mm	200 mm	250 mm
<b>Depth</b>	256 mm	256 mm	256 mm



## IP55\*

	FSB	FSC	FSD1
Supply voltage	3 AC 380 ... 500V, -20% / +10%		
Rated power	1.1 kW...7.5kW	11 kW...15kW	18.5kW...22kW
<b>Height</b>	415 mm	460 mm	571 mm
<b>Height including shielding plates</b>	621 mm	690 mm	857 mm
<b>Width</b>	225 mm	245 mm	209 mm
<b>Depth</b>	265 mm	290 mm	324 mm

	FSD2	FSE
Supply voltage	3 AC 380 ... 500V, -20% / +10%	
Rated power	30kW...37kW	45 kW...55 kW
<b>Height</b>	650 mm	778 mm
<b>Height including shielding plates</b>	976 mm	1168 mm
<b>Width</b>	270 mm	327 mm
<b>Depth</b>	329 mm	390 mm

# Service offerings

To ensure that you are benefiting as much as possible from your SINAMICS G220, we offer a variety of services – from technical support and repairs to extended coverage options. The most comprehensive offering is Service Protect, which includes 7.5 years of extended warranty.



## Support and consulting services

- Technical support via phone, e-mail and chat
- **Siemens Industry Online Support App**



## Warranty

- Standard: 24 months
- Plus 6 months free of charge (FOC) with product registration via **myregistration.siemens.com**



## Spares and repairs, field services

- Spare part exchange as standard
- In-house repair with express repair offering
- Worldwide field service



## Added-value services

- Digital services
- Training services
- Service agreements
- Extended manufacturer cover – Service Protect (+3 years or +5 years)
- Retrofit and modernization service



Siemens Industry  
Online Support App



Product  
registration



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