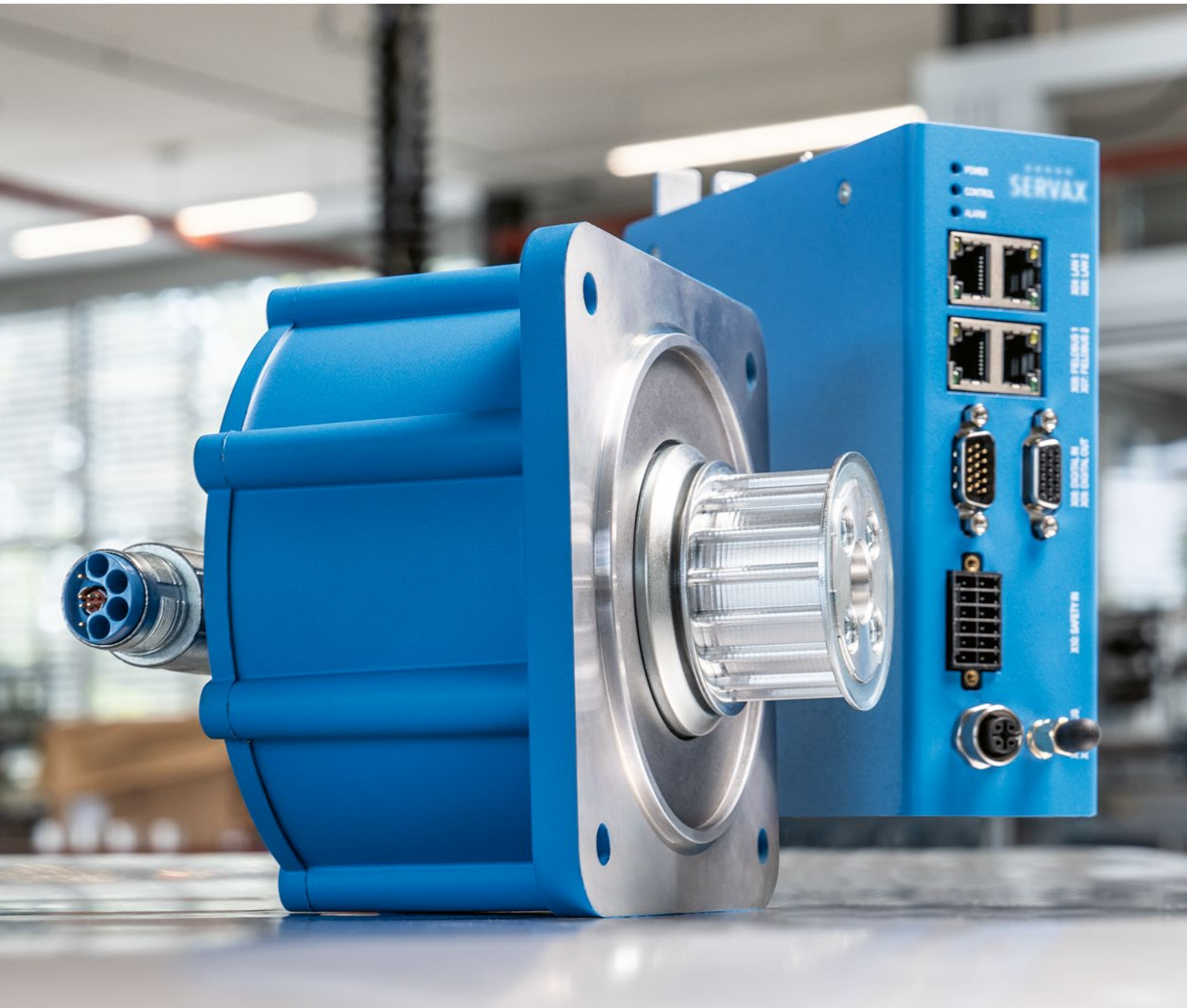
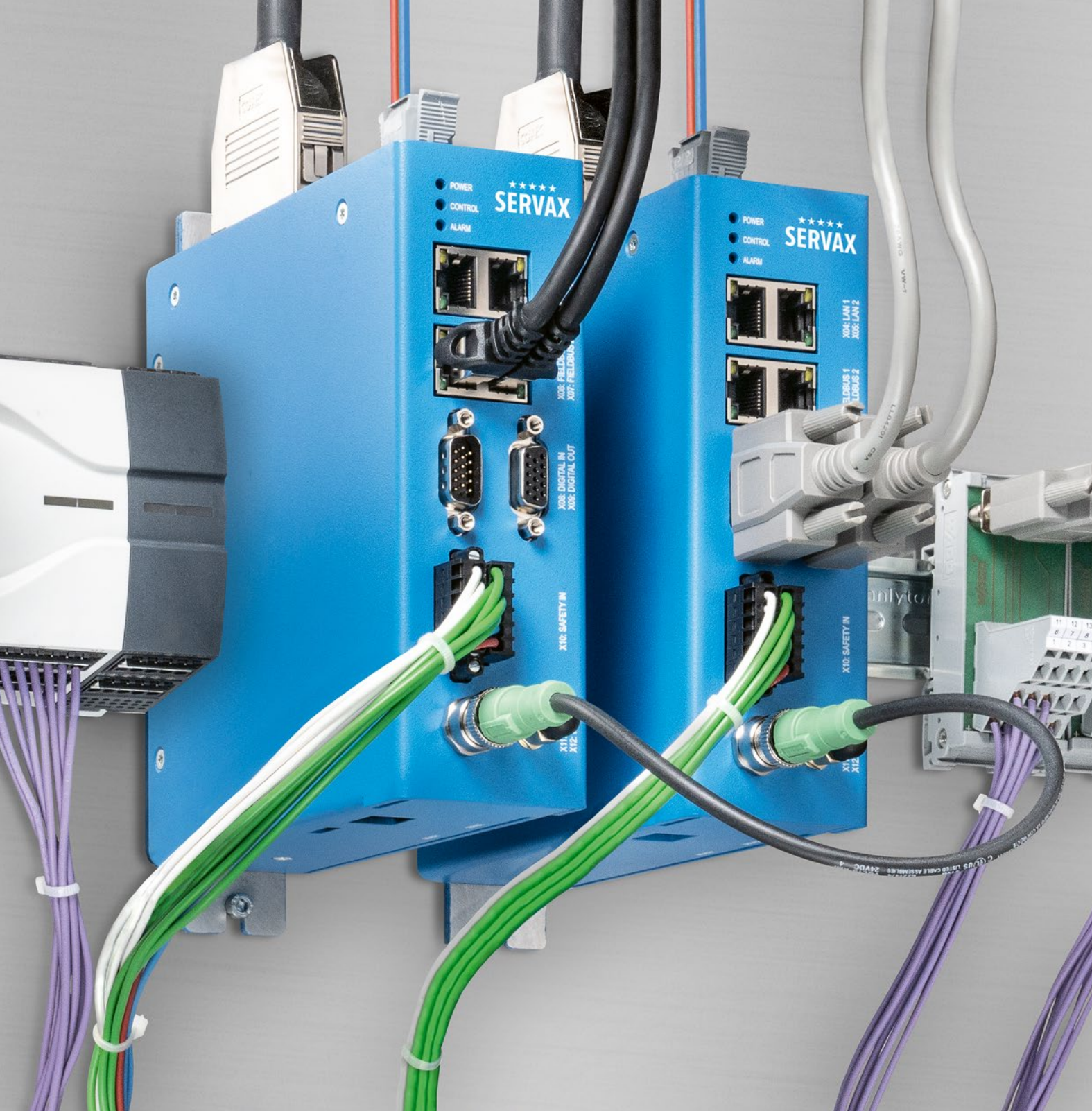


# Drive system for protective machine doors SMD2

The new multi-talented protective door drive







## Protective door drive system SMD2

Compact, safe, dynamic

The new generation of SERVAX drive systems for protective machine doors SMD2 is the product of decades of market experience and technological progress and is designed to serve the key requirements of our customers.

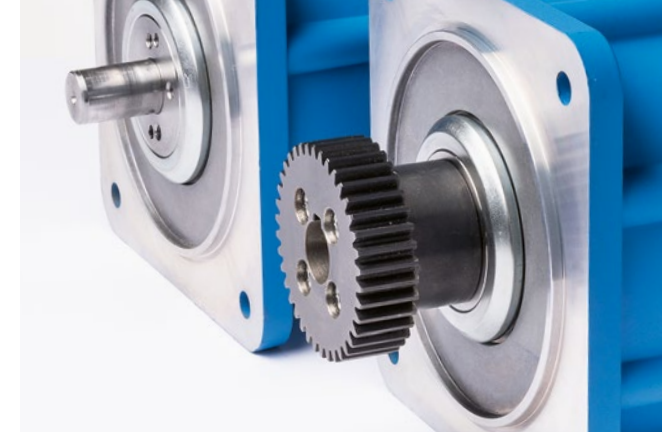
The protective machine door drive ensures outstanding safety with high travel speeds, and offers quick and easy commissioning and operation. Multiple interfaces and a compact build make this Swiss quality product the ideal drive for a broad range of applications.



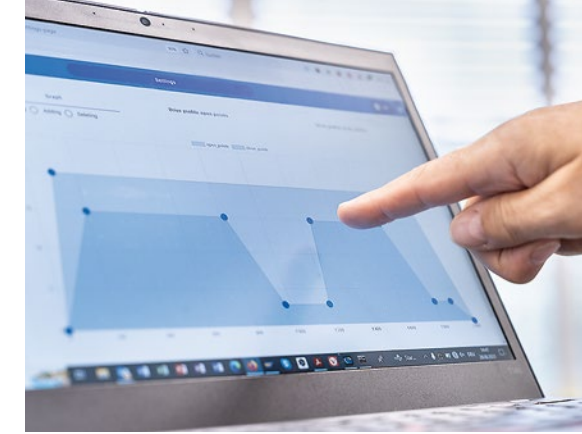
The main system components of an SMD2



## Multitalented with distinct advantages



Motor SMD2-M with/without pre-assembled power coupling



Configuration software using web server technology

### Utmost safety and dynamic performance

Thanks to SERVAX, strict personal safety and highly dynamic performance can now be provided by one and the same drive for protective machine doors. The SMD2 combines high performance and an end-to-end dual channel architecture which provides redundant monitoring and allows the operating mode to be switched safely from maximum personal safety to maximum dynamic motion in robotic operation. SERVAX has consistently geared the hardware architecture to a category 3 single fault safety and made every effort to maximise safety levels.

The system automatically factors in changes to the load friction and thus ensures consistent cycle times and closing forces. Rolling friction is systematically compared to the reference value, so that any deviations can be compensated.

### Safety features

- › End-to-end dual channel control and rotary encoder architecture
- › Functional security in accordance with EN 13849-1 (PLd, cat.3) for STO/SS1/SLS/SLT/SBC, certified by TÜV Süd
- › Automatically set driving profile values for a closing cycle compliant with standards, selectable for EN 14120/12453/16005

### Force and dynamic performance

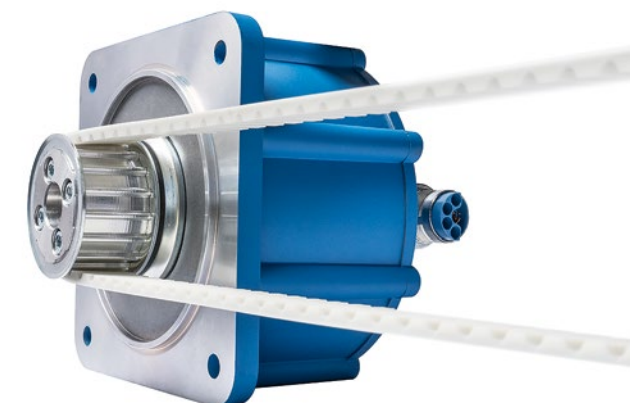
- › Dynamic operation mode with minimal opening/closing times  
Example: 1.2 sec. for 200 kg door weight and 1000 mm opening width – up to 180 cycles per hour
- › Applicable for door weights up to 1000 kg
- › Automatic determination of opening width and door weight, and friction profile with adaptive force compensation

### Quick and easy commissioning and operation

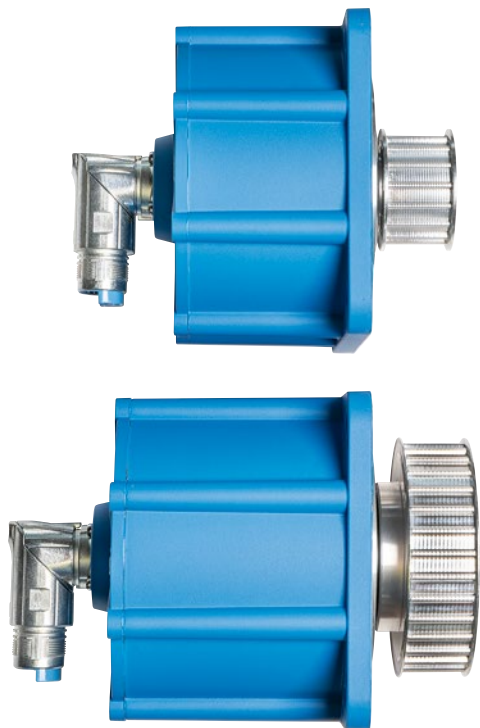
Commissioning an SMD2 drive system will save you valuable time, as most of the parameters are already preconfigured in the software. This effectively reduces the coordination effort, facilitates quick and easy commissioning and ensures safe and reliable continuous operation from the very start.

- › Simple system upgrade, as the motor is mechanically compatible with its predecessor
- › Electronic identification plate for swift commissioning
- › Freely definable driving profiles with up to 32 support points
- › High positioning accuracy of 0.02 mm for a belt pulley diameter of 51 mm
- › Multilingual system configuration without software, using an integrated web server

We developed the SMD2 drive system at our Headquarters in Switzerland and manufacture it locally. Together with our unique vertical range of manufacture, this helps us to maintain full control of the development and manufacturing process of our products and ensure genuine Swiss quality.



Gearless power transmission



### Durable and versatile

We have carefully selected maintenance-free system components to ensure permanently high operational availability of the protective door drive. An integrated temperature sensor in the winding head ensures that the motor runs at optimal load at all times.

The compact control unit of the SMD2 protective door drive system takes up little space and thus helps you save money when dimensioning the control cabinet. The system also features numerous communications interfaces for connections – including future communications protocols – to various machine automation units.

- › Compact, fanless control unit and gearless synchronous motor
- › System voltage 48VDC with upstream voltage adjustment of 110–500VAC, 1/3 phase
- › Immediate operational readiness with absolute multiturn encoder
- › Full integration with machine controls by way of bus communication via Profinet IO or CANopen
- › Master/Follower operation for a harmonious motion sequence with large door elements or corner doors

SMD2-M in two performance classes

## Technical data

		SMD2-M-M-10	SMD2-M-M-15
Door parameters	Door weight	20–300 kg	40–1000 kg
	Travel distance	200–8000 mm	
	Tensile force max. <sup>1</sup>	529 / 353 / 264 N	792 / 529 / 396 N
	Travel speed max. <sup>1</sup>	1.6–3.2 m/s	
Drive unit SMD2-M	Transmission	Toothed belt, toothed rack	
	Technology	16-pole permanent magnet direct drive	
	Rotational speed, nom./max.	400/600 min <sup>-1</sup>	400/600 min <sup>-1</sup>
	Power, nom./max.	7.4 / 21.4 A	10.1 / 29.5 A
	Torque nom./max.	4.7 / 13.5 Nm	6.9 / 20.2 Nm
	Power consumption (S3 20%)	440 W	650 W
	Encoder system	Dual channel, 13 bit, absolute multiturn encoder	
	Electronic identification plate	Yes	
	Temperature control	Pt1000, in the winding head	
	Protection class	IP65	
Control unit SMD2-C	Electrical connection	Hybrid angle plug, pivotable to 270°, with quick lock	
	Weight	4.3 kg	5.7 kg
	System motor cable	Preferred models 3/5/7/10/15/20/25/30 m, special lengths available	
	Supply voltage	48 VDC	
	Power consumption max.	1.6 kW	
	Ambient temperature operation	+5 to +40 °C	
	Storage medium	SD memory, pluggable, for device exchange	
	Dimensions [W×H×D]	52×160×160 mm	
	Brake resistance	Integrated or external	
	Inputs/Outputs	– 13 digital inputs – 8 digital outputs	
Functional safety	Control voltage external	12–24 VDC	
	Control voltage supply internal	– Inputs 24 VDC, 2.0 A overall – Outputs 24 VDC, 2.0 A overall	
	Cycle times control unit	Power = 50 µs, rotational speed = 100 µs, position = 200 µs	
	Repeat accuracy position	±0.02 mm with effective diameter 51 mm	
	Bus communication	TCP-IP, Profinet IO, CANopen with Master/Follower	
	Standards	CE (MD 2006/42/EC, IEC 61800-5-1 & -5-2)	
	Functions	STO, SS1, SLS, SLT, SBC	
	Standards	IEC 61508 (SIL 2), IEC 62061 (SIL CL 2), EN 13849-1 (PL d, Cat. 3)	
	Architecture	End-to-end dual channel with cross-comparison	
	Safe inputs, dual channel	4	
	Safe output, dual channel	1, for SBC	

<sup>1</sup> With an effective diameter of the drive pulley of 51/76/102 mm, the permissible setting range is 45–153 mm

# customized drives, perfectly crafted

SERVAX drives have been at the core of sophisticated machines and systems for many decades. They offer clear advantages for all areas of mechanical engineering, especially for the textile, tool and plastics processing industries: They stand out with their efficiency, full system integration, flexible design, cost-effectiveness, low heat emission and ready availability.

Our product range includes certified, automatic protective machine door systems and the versatile VITAX grinding systems.

We will be happy to show you the added value you can achieve with perfectly integrated drives.

**Get in touch with us!**

[www.servax.com](http://www.servax.com)