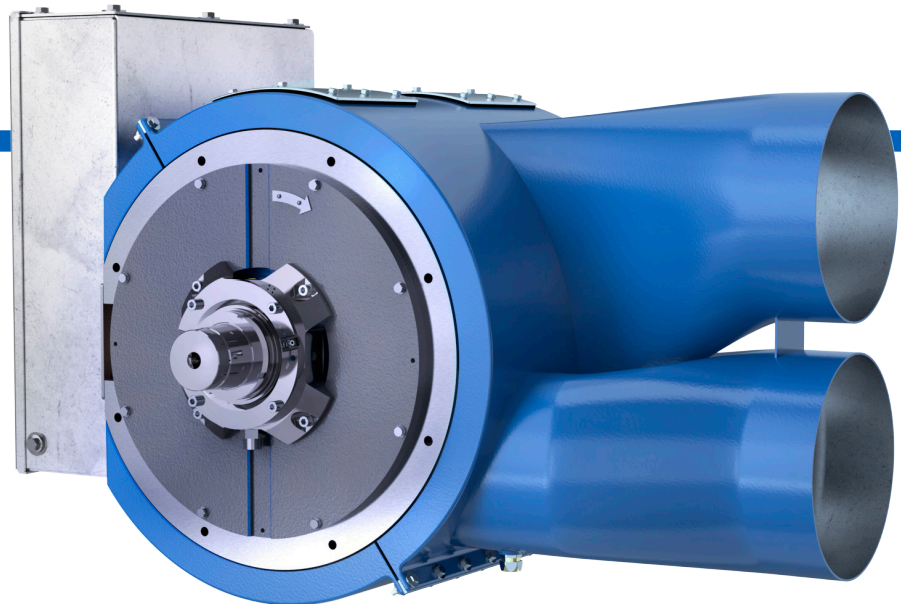


# SOLID ROTOR MACHINE FOR INDUSTRIAL APPLICATIONS SRI0355



## **Built for a wide range of high-speed applications**

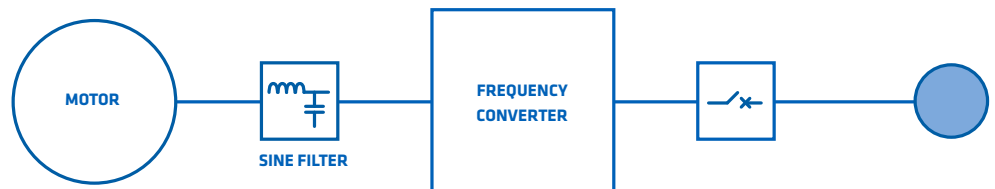
With our robust solid rotor motor, you get rid of the gearbox, while allowing the application to reach higher speeds and unmatched energy efficiency.

The structure is more compact and lighter in weight, requiring up to 50% less space than a conventional design. The solid rotor construction provides high mechanical integrity and rigidity. Without the gearbox, you can reach higher system efficiencies.

Our high-speed drive system consists of solid rotor motors together with our variable frequency drive technology. Together with the frequency converter, you get full control and variable speed over the entire operating range.

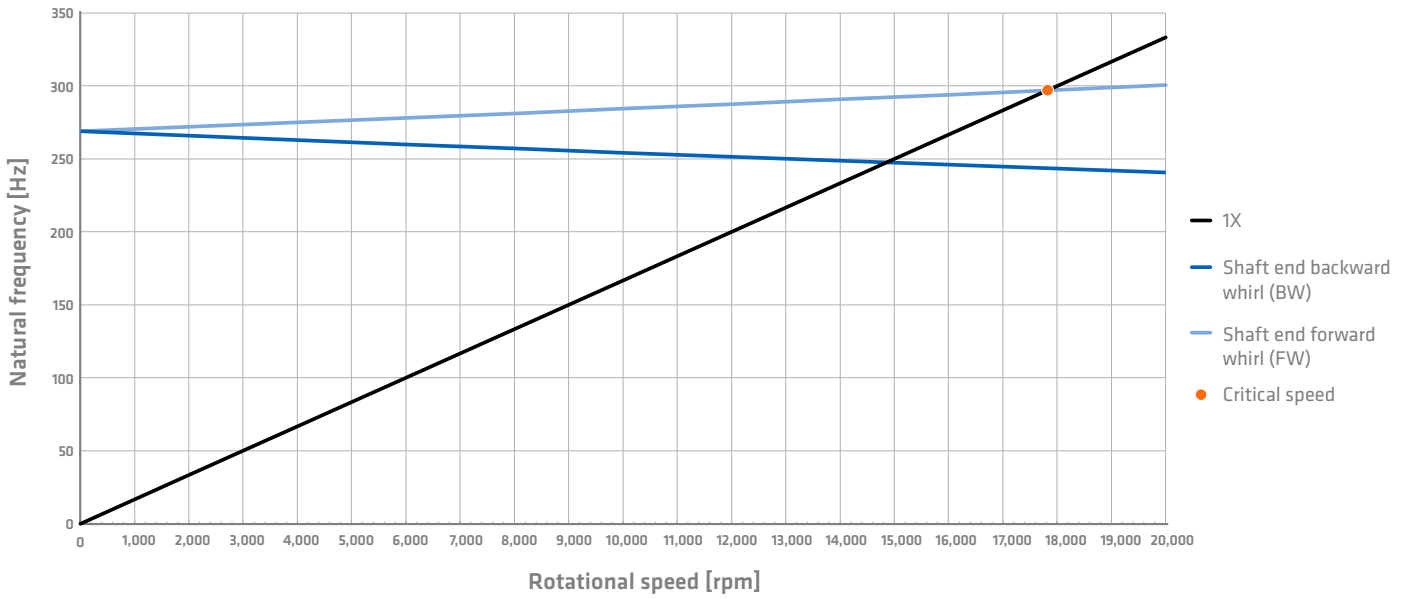
SRI0355I is intended for semi-integrated applications with the impeller directly mounted on the shaft end. The machine's rigid solid rotor and short bearing span enable higher critical speeds and a wider operating range with directly mounted impellers. Due to the major impact of the impeller on bearing performance and rotordynamics, these factors are always case-specifically evaluated.

As an example of the achievable vibration-free operating speed, the Campbell diagram on page 3 shows the first critical speed (forward-whirl) at 17,820 rpm when SRI0355I is calculated with a 30 kg impeller mounted on the shaft end.



Machine designation	SRI0355		Description
Machine type	Solid rotor semi-integrated machine		
Rated speed [rpm]	10,000 (maximum 14,000)		
Overspeed [rpm]	Maximum 15,000		No load
Number of phases	3		
Winding connection	Delta	Star	External star point
VFD output requirements	See specification DN0210		
Number of poles	2		
Mass [kg]	1,000		
Mounting direction	Horizontal		
Mounting types	IM2001 (B35)		Flange on both ends
Temperature rise class	IEC 180		
Insulation class	IEC 180		
Duty cycle	S1		Continuous duty
Cooling types	IC3A7		IEC 60034-6
Rotation direction	Bi-direction		
Maximum cooling medium inlet temperature [°C]	Air +25		With derating up to +40
Required mass flow [m³/s]	0.8		
Cooling circuit pressure drop [kPa]	2.1		
IP class	IP4X		Depending on external cooling system
Dimension drawing	10043420		Available in PDF format
Maximum ambient temperature [°C]	+40		
Minimum ambient temperature [°C]	+5		
Maximum humidity [%]	95		
Bearings	Spindle bearings		
Bearing insulation	Ceramic rolling elements		
Lubrication	Oil + air		Mounted remotely
External vibration [g]	Maximum 0.2		
Maximum external axial forces to shaft [N]	+250 / -500		+ = towards D1
Coupling half mass [kg]	Maximum 30		At the end of the motor shaft
Machine vibration class	Grade A		IEC 60034-14
Bearing lifetime	> 43,800 h (5 years)		L <sub>10mrh</sub> ISO/TS 16281
Power terminal location	Side terminal box, entry from the top		
Stator thermal protection	2 x 3 PT100		2 sensors / phase
Bearings thermal protection	2 x 1 PT100		1 sensor / bearing
Shaft height [mm]	355		
Shaft end diameter [mm]	Conical shaft end by default		Can be tailored up to d90
Design standard	EN 60034		

A Campbell diagram example of the SRI0355 machine with a 30-kg impeller on the shaft end.  
 We can provide a case-specific rotor dynamic analysis.



Nominal grid voltage	P [kW]	n [rpm]	Connection	T [Nm]	Terminal voltage (V)	I motor [A]	I VFD [A]	Cos φ	Efficiency
400 V	560	10,000	Delta	535	360	1,215	1,070	0.78	95.4
480 V	560	12,000	Delta	446	420	1,050	870	0.76	96.3
	520	14,000	Delta	355	420	956	810	0.79	96.0
690 V	560	12,000	Star	535	625	701	590	0.78	95.4
	520	14,000	Delta	355	490	896	750	0.73	95.4

**Technical drawings – reference dimensions for IC3A7 cooling**

