

Technical data

Mains connection	
Voltage and power range	1-phase, 200 to 240 V \pm 10% 0.37 to 2.2 kW (0.5 to 3 hp) 3-phase, 200 to 240 V \pm 10% 0.37 to 11 kW (0.5 to 15 hp) 3-phase, 380 to 480 V \pm 10% 0.37 to 22 kW (0.5 to 30 hp)
Frequency	48 to 63 Hz
Motor connection	
Voltage	3-phase, from 0 to U_{supply}
Frequency	0 to 500 Hz
Continuous loading capability	I_{2N} maximum continuous output current at ambient temperature of +40 °C. No overloadability, derating 1% for every additional 1 °C up to 50 °C. I_{LD} continuous output current at max. ambient temperature of +50 °C. 10% overloadability for one minute every ten minutes. At start 1.6 x I_{2N} for 2 s
Switching frequency	
Default	4 kHz
Selectable	4 to 16 kHz with 4 kHz steps
Acceleration time	0.1 to 1800 s
Deceleration time	0.1 to 1800 s
Motor control method	Scalar U/f
Environmental limits	
Ambient temperature	-10 to +40 °C (14 to 104 °F) without derating, +40 to 50 °C (104 to 122 °F) with derating, no frost allowed
Altitude	Rated current available at 0 to 1000 m (0 to 3281 ft) reduced by 1% per 100 m (328 ft) over 1000 to 2000 m (3281 to 6562 ft)
Relative humidity	Lower than 95% (without condensation)
Degree of protection	IP20/optional NEMA 1 enclosure
Enclosure colour	NCS 1502-Y, RAL 9002, PMS 420 C
Contamination levels	IEC721-3-3 No conductive dust allowed Class 1C2 (chemical gases) Class 1S2 (solid particles) Class 2C2 (chemical gases) Class 2S2 (solid particles) Class 3C2 (chemical gases) Class 3S2 (solid particles)
Transportation	
Storage	
Operation	
Product compliance	
Low Voltage Directive 2006/95/EC Machinery Directive 2006/42/EC EMC Directive 2004/108/EC Quality assurance system ISO 9001 Environmental system ISO 14001 UL, cUL, CE, C-Tick and GOST R approvals RoHS compliant	

Programmable control connections	
Two analog inputs	
Voltage signal	
Unipolar	0 (2) to 10 V, $R_{in} > 312 \text{ k}\Omega$
Bipolar	-10 to 10 V, $R_{in} > 312 \text{ k}\Omega$
Current signal	
Unipolar	0 (4) to 20 mA, $R_{in} = 100 \Omega$
Bipolar	-20 to 20 mA, $R_{in} = 100 \Omega$
Potentiometer reference value	10 V \pm 1% max. 10 mA, $R < 10 \text{ k}\Omega$
Resolution	0.1%
Accuracy	\pm 2%
One analog output	0 (4) to 20 mA, load $< 500 \Omega$
Auxiliary voltage	24 V DC \pm 10%, max. 200 mA
Five digital inputs	12 to 24 V, PNP and NPN, programmable DI5 0 to 16 kHz pulse train
Input impedance	2.4 k Ω
One relay output	
Type	NO + NC
Maximum switching voltage	250 V AC/30 V DC
Maximum switching current	0.5 A/30 V DC; 5 A/230 V AC
Maximum continuous current	2 A rms
One digital output	
Type	Transistor output
Maximum switching voltage	30 V DC
Maximum switching current	100 mA/30 V DC, short circuit protected
Frequency	10 Hz to 16 kHz
Resolution	1 Hz
Accuracy	0.2%
Serial communication	
Fieldbuses	Modbus EIA-485, embedded
Cable	Shielded twisted pair, impedance 100 to 150 ohms
Termination	Daisy-chained bus, without dropout lines
Isolation	Bus interface isolated from drive
Transfer rate	1.2 to 76.8 kbit/s
Communication type	Serial, asynchronous, half duplex
Protocol	Modbus
Chokes	
AC input chokes	External option. For reducing THD in partial loads and to comply with EN/IEC 61000-3-12.
AC output chokes	External option. To achieve longer motor cables