Drive^{IT} Low Voltage
General Purpose Motors

Industrial IT enabled

ABB

Making you more competitive

ABB's General purpose motors are readily available from central stock locations and distributors throughout the world. While designed for standard and straightforward uses, the motors can be modified to meet most specifications. Built to the highest manufacturing standards, the General purpose motors use the best materials sourced from around the world. This brings a quality and reliability that can see motors operating for over 30 years. Competitively priced, the motors meet Eff2 energy efficient classification, with Eff1 as option.

Industrial^{IT}

As a key element of its business strategy, ABB has committed to a broad program of product development and positioning under the Industrial^{IT} umbrella. This initiative is geared towards increasing standardization of ABB products as the 'building blocks' of larger solutions, while incorporating functionality that will allow multiple products to interact seamlessly as components of real-time automation and information systems.
Motors and generators represent one of the fundamental building blocks in the Industrial^{IT} architecture.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impacts. The ABB Group of companies operates in around 100 countries and employs around 133,000 people.

Drive^{IT} Low Voltage General Purpose Motors

Sizes 56 to 400, from 0.055 to 710 kW

Contents Page

General information

Standards

ABB motors are of the totally enclosed, three phase squirrel cage type, built to comply with international IEC and EN standards. Motors conforming to other national and international specifications are also available on request.

All production units are certified to ISO 9001 international quality standard as well ISO 14000 environmental standard and confirm to all applicable EU Directives.

IEC / EN

Electrical	Mechanical
IEC/EN 60034-1	IEC 60072
IEC/EN 60034-2	IEC/EN 60034-5
IEC 60034-8	IEC/EN 60034-6
IEC 60034-12	IEC/EN 60034-7
	IEC/EN 60034-9
	IEC 60034-14

Motors for EU motor efficiency levels

A Europe-wide agreement will ensure that the efficiency levels of electric motors manufactured in Europe are clearly displayed. In contrast to the American legislation on motor efficiency the European agreement does not establish mandatory efficiency levels.
It basically establishes three classes giving motor manufacturers an incentive to qualify for a higher class.

ABB is one of only a handful of leading motor manufacturers in Europe to have a motor range to meet or exceed the minimum efficiencies stated in the highest level of the EU agreement of LV motors.

These efficiency levels apply to 2- and 4-pole, three phase squirrel cage induction motors rated for 400V, 50 Hz with S1 duty class with the output 1.1 to 90 kW, which account for the largest volume on the market.

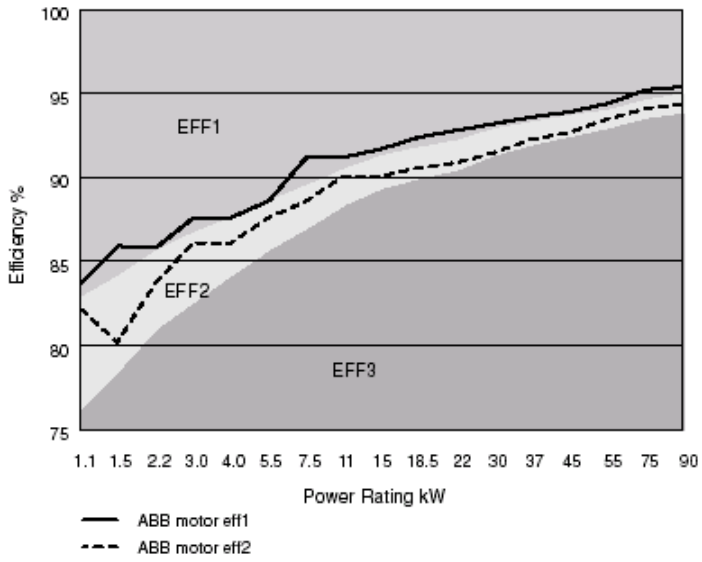
The efficiency of motors from different manufacturers are collated in a database, EURODEEM, published by the European Commission. It is accessible over the Internet at http://iamest.jrc.it/projects/eem/eurodeem.htm.

EU efficiency classes for 2-pole motors

Output kW	2-pole Boarderline EFF2/EFF3	EFF1/EFF2
1.1	76.2	82.8
1.5	78.5	84.1
2.2	81.0	85.6
3	82.6	86.7
4	84.2	87.6
5.5	85.7	88.6
7.5	87.0	89.5
11	88.4	90.5
15	89.4	91.3
18.5	90.0	91.8
22	90.5	92.2
30	91.4	92.9
37	92.0	93.3
45	92.5	93.7
55	93.0	94.0
75	93.6	94.6
90	93.9	95.0

ABB Three phase induction motors, 400 V 50 Hz - EU motor efficiency levels

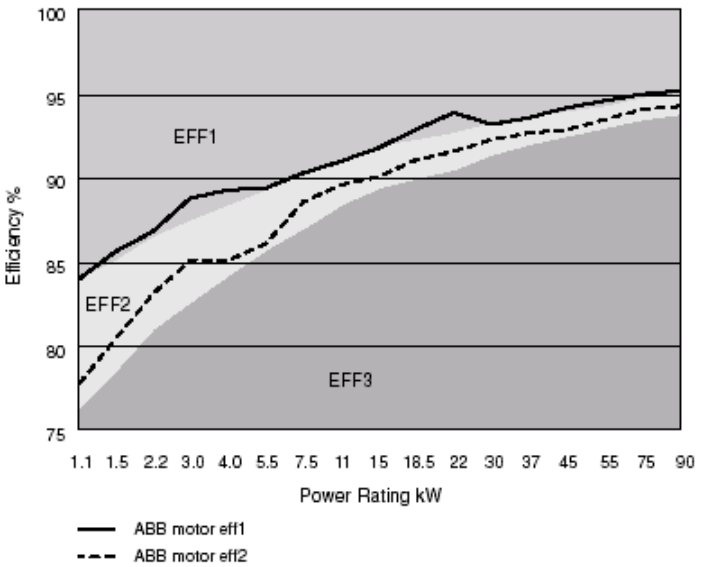
2-pole



EU efficiency classes for 4-pole motors

Output kW	4-pole Boarderline EFF2/EFF3	EFF1/EFF2
1.1	76.2	83.8
1.5	78.5	85.0
2.2	81.0	86.4
3	82.6	87.4
4	84.2	88.3
5.5	85.7	89.2
7.5	87.0	90.1
11	88.4	91.0
15	89.4	91.8
18.5	90.0	92.2
22	90.5	92.6
30	91.4	93.2
37	92.0	93.6
45	92.5	93.9
55	93.0	94.2
75	93.6	94.7
90	93.9	95.0

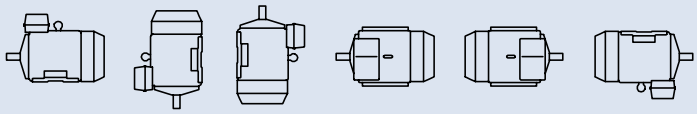
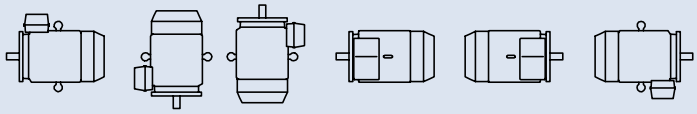
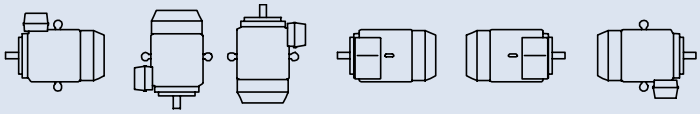
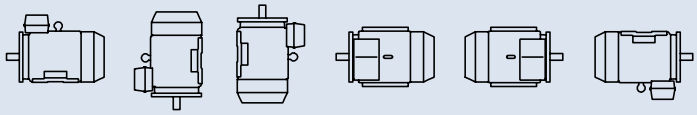
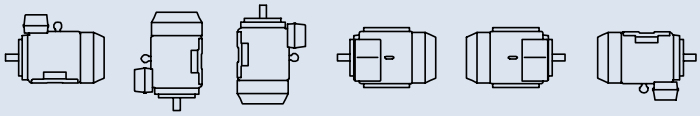
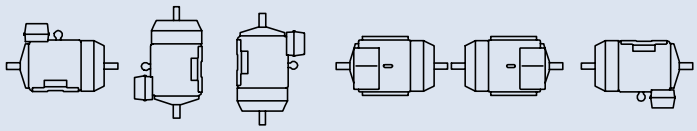
4-pole



General technical specification

Mechanical and electrical design

Mounting arrangements

	Code I/Code II						Product code pos. 12
Foot-mounted motor.	IM B3 IM 1001	IM V5 IM 1011	IM V6 IM 1031	IM B6 IM 1051	IM B7 IM 1061	IM B8 IM 1071	A = foot-mounted, term.box top R = foot-mounted, term.box RHS L = foot-mounted, term.box LHS
							
Flange-mounted motor, large flange	IM B5 IM 3001	IM V1 IM 3011	IM V3 IM 3031	*) IM 3051	*) IM 3061	*) IM 3071	B = flange mounted, large flange
							
Flange-mounted motor, small flange	IM B14 IM 3601	IM V18 IM 3611	IM V19 IM 3631	*) IM 3651	*) IM 3661	*) IM 3671	C = flange mounted, small flange
							
Foot- and flange-mounted motor with feet, large flange	IM B35 IM 2001	IM V15 IM 2011	IM V36 IM 2031	*) IM 2051	*) IM 2061	*) IM 2071	H = foot/flange-mounted, term.box top S = foot/flange-mounted, term.box RHS T = foot/flange-mounted, term.box LHS
							
Foot- and flange-mounted motor with feet, small flange	IM B34 IM 2101	IM V17 IM 2111	IM 2131	IM 2151	IM 2161	IM 2171	J = foot/flange-mounted, small flange
							
Foot-mounted motor, shaft with free extensions	IM 1002	IM 1012	IM 1032	IM 1052	IM 1062	IM 1072	
							

*) Not stated in IEC 60034-7.

Cooling

Designation system concerning methods of cooling refers to standard IEC 60034-6.

Example

IC 4 (A) 1 (A) 6

International Cooling

Circuit arrangement
0: Free circulation (open circuit)
4: Frame surface cooled

Primary coolant
A for air (omitted for simplified designation)

Method of movement of primary coolant
0: Free convection
1: Self-circulation
6: Machine-mounted independent component

Secondary coolant
A for air (omitted for simplified designation)
W for water

Method of movement of secondary coolant
0: Free convection
1: Self-circulation
6: Machine-mounted independent component
8: Relative displacement

Degrees of protection: IP code/IK code

Classification of degrees of protection provided by enclosures of rotating machines are refers to:

- Standard IEC 60034-5 or EN 60529 for IP code
- Standard EN 50102 for IK code

IP protection:
Protection of persons against getting in contact with (or approaching) live parts and against contact with moving parts inside the enclosure.

Also protection of the machine against ingress of solid foreign objects. Protection of machines against the harmful effects due to the ingress of water

IK code :
Classification of degrees of protection provided by enclosure for motors against external mechanical impacts.

IP 5 5

Characteristic letter

Degree of protection to persons and to parts of the motors inside the enclosure
2: Motors protected against solid objects greater than 12 mm
4: Motors protected against solid objects greater than 1 mm
5: Dust-protected motors

Degree of protection provided by the enclosure with respect to harmful effects due to ingress of water
3: Motors protected against spraying water
4: Motors protected against splashing water
5: Motors protected against water jets
6: Motors protected against heavy seas

IK 08

International mechanical protection

Characteristic group

Relation between IK code and impact energy:

IK cod	IK 0	IK 01	IK 02	IK 03	IK 04	IK 05	IK 06	IK 07	IK 08	IK 09	IK 10
Impact energy Joule	*	0.15	0.2	0.35	0.5	0.7	1	2	5 ABB Standard	10	20

** not protected according to EN 50102*

Insulation

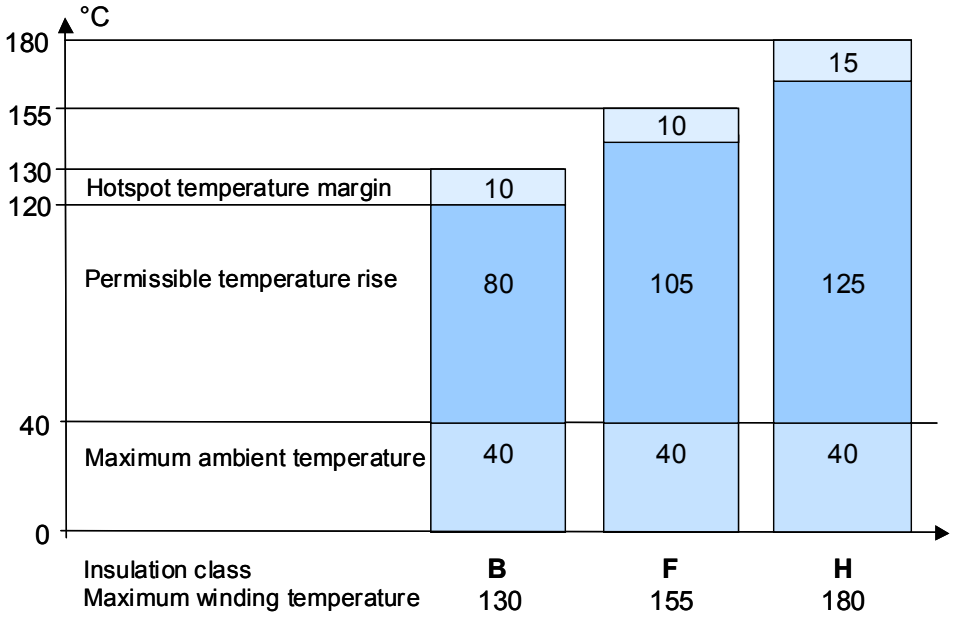
ABB uses class F insulation systems, which, with temperature rise B, is the most common requirement among industry today.

The use of Class F insulation with Class B temperature rise gives ABB products a 25° C safety margin. This can be used to increase the loading by up to 12 per cent for limited periods, to operate at higher ambient temperatures or altitudes, or with greater voltage and frequency tolerances. It can also be used to extend insulation life. For instance, a 10 K temperature reduction will extend the insulation life.

Class F insulation system
- Max ambient temperature 40° C
- Max permissible temperature rise 105 K
- Hotspot temperature margin + 10 K

Class B rise
- Max ambient temperature 40° C
- Max permissible temperature rise 80 K
- Hotspot temperature margin + 10 K

Insulation system temperature class
- Class F 155° C
- Class B 130° C
- Class H 180° C



Safety margins per insulation class

Frequency converter drives

Squirrel cage induction motors offer excellent availability, reliability and efficiency. With a frequency converter – a variable speed drive (VSD) – the motor will deliver even better value. A variable speed drive motor can be started softly with low starting current, and the speed can be controlled and adjusted to suit the application demand without steps over a wide range. Also the use of a frequency converter together with a squirrel cage motor usually leads to remarkable energy and environmental savings.

However, all motors are not suitable for variable speed drive. There are several points that have to be taken into account in the design and selection of the motor, if it is intended for variable speed operation.

Within the General purpose motor range ABB offers motors designed for both Direct On Line (DOL) and variable speed applications.

For demanding applications the use of ABB Process performance motors is recommended.

The following points must be taken into account, when selecting a motor to a variable speed drive:

1. Dimensioning

The voltage (or current) fed by the frequency converter is not purely sinusoidal. This may increase the losses, vibration, and noise of the motor. Furthermore, a change in the distribution of the losses may affect the motor temperature balance and lead to an increase in the temperature of the bearings. In each case, the motor must be correctly sized according to the instructions supplied with the selected frequency converter.

When using ABB converters, please use ABB's DriveSize dimensioning programme or the loadability curves of the corresponding converter type for sizing the motors. The loadability curve for applicable General purpose motors used with ABB's ACS 600- and ACS 800- frequency converters can be found in figure 3.

2. Speed range

In a frequency converter drive, the actual operating speed of the motor may deviate considerably from its nominal speed (i.e. the speed stamped on the rating plate).

For higher speeds, ensure that the highest permissible rotational speed of the motor or the critical speed of the entire equipment is not exceeded. When high speed operation exceeds the nominal speed of the motor, the following points should be checked:

– Maximum torque of the motor
– Bearing construction
– Lubrication
– Balancing
– Critical speeds
– Shaft seals
– Ventilation
– Fan noise

Guideline values of maximum speeds for M3AA motors within the General purpose motor range are described in figure 1 below. Exact values are available on request.

Figure 1. Guideline values of maximum speeds for General purpose motor in aluminium frame:

Motor size	Speed r/min	
	2-pole	4-pole
M3AA 90-100	6000	6000
M3AA 112-200	4500	4500
M3AA 225-280	3600	3600

At low speed operation the motor's ventilation fan looses its cooling capacity, which causes a higher temperature rise in the motor and in the bearings. A separate constant speed fan can be used to increase cooling capacity and loadability at low speed. It is also important to check the performance of the grease at low speeds.

3. Lubrication

Variable speed operation affects on the bearing temperature, which must be taken into account when selecting the lubrication method and grease type. For example the life time of sealed bearings can be remarkably shorter than in direct on line operation. More information can be found from product specific sections of this catalogue and from ABB's Low Voltage Motors Manual.

4. Insulation protection

Frequency converter supply causes higher voltage stresses at the windings of the motor than the sinusoidal supply. Thus, the insulation system and possible filters must be selected according to the used voltage, cable length and converter type.

When using ABB's low voltage frequency converters, selection criterias mentioned in figure 2 must be followed.

5. Bearing currents

Bearing voltages and currents must be avoided in all motors. Assuming the use of a standard ABB Single drive, with IGBT components and a 6-pulse diode supply unit, insulated bearings and/or properly dimensioned filters at the converter output must be used according to the instructions in figure 2. (For other alternatives and converter types, please contact ABB.) When ordering, clearly state which alternative will be used.

For more information about bearing currents and voltages, please contact ABB.

6. Cabling, grounding and EMC

The use of a frequency converter puts higher demands on the cabling and grounding of the drive system. The motor must be cabled by using shielded symmetrical cables and cable glands providing 360° bonding (also called EMC-glands). For motors up to 30 kW unsymmetrical cables can be used, but shielded cables are always recommended.

More information about grounding and cabling of a variable speed drive can be found from the manual "Grounding and cabling of the drive system" (Code: 3AFY 61201998 R0125 REV A) and the ABB's Low Voltage Motors Manual.

For fulfilling the EMC requirements, special EMC cable(s) must be used in addition to the correct cable gland mounting, with special, extra earthing pieces. Please refer to the manuals of the frequency converter.

1

Validity

Measures mentioned in Figure 2 apply to the applicable motors within the General motors range (not high-output versions) with a ABB's single drives, based on IGBT components and using 6-pulse diode supply unit. For other alternatives and converter types, please contact ABB.

Figure 2. Selection rules for insulation and filtering in variable speed drives

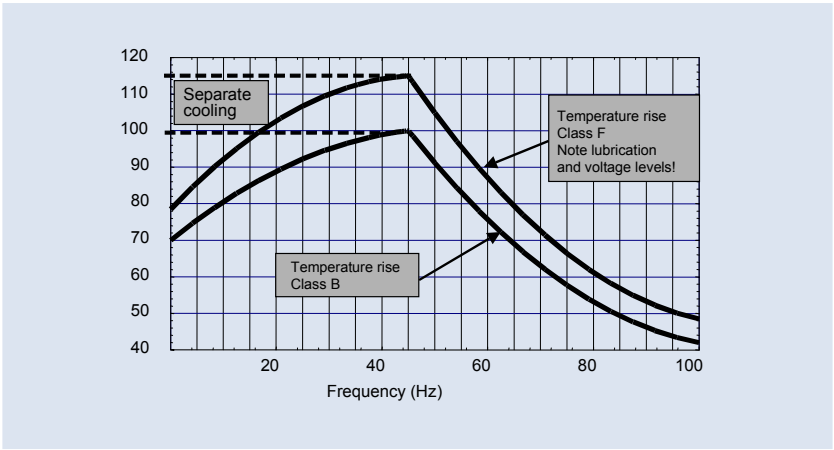
	Motor nominal power P_N or frame size P_N < 100 kW	P_N ≥ 100 kW or ≥ IEC 315	P_N ≥ 350 kW ≥ IEC 400
U_N ≤ 500 V	Standard motor	Standard motor + Insulated N-bearing	Standard motor + Insulated N-bearing + Common mode filter
U_N ≤ 600 V	Standard motor + dU/dt-filter **OR** Reinforced insulation	Standard motor + dU/dt-filter (reactor) + Insulated N-bearing **OR** Reinforced insulation + Insulated N-bearing	Standard motor + Insulated N-bearing + dU/dt-filter + Light Common mode filter **OR** Reinforced insulation + Insulated N-bearing + Common mode filter
U_N ≤ 690 V	Reinforced insulation + dU/dt-filter	Reinforced insulation + dU/dt-filter (reactor) + Insulated N-bearing	Reinforced insulation + Insulated N-bearing + dU/dt-filter + Light common mode filter

dU/dt filter (reactor)
Series reactor. DU/dt -filter decreases the changing rate of the phase and main voltages and thus reduces voltage stresses in the windings. DU/dt -filters also decrease so-called common mode currents and the risk of bearing currents. DU/dt -filters are designed so that dU/dt -rate of main voltages at motor terminals is less than 1 kV/s. See ABB manual, ACS 600 dU/dt -filter selection guide.

Common mode and light common mode filters
Common mode filters are made of toroidal cores installed around motor cables. These filters reduce so-called common mode currents in VSD applications and thus decrease the risk of bearing currents. Common mode filters do not significantly affect the phase or main voltages on the motor terminals.

Insulated Bearings
Bearings with insulated inner or outer races are used as the standard solution. So-called hybrid bearings, i.e. bearings with non-conductive ceramic balls, can also be used in special applications. More information for spare part selection is available on request.

Figure 3. Motor loadability with ACS 600 and ACS 800, Field weakening point 50 Hz.



Drive^{IT} Integral Motors

Totally enclosed squirrel cage three phase low voltage motors, Sizes 71 - 100, 0.37 to 2.2 kW

8

Features

Drive^{IT} Integral Motor - the choice for a demanding environment
Demanding environments place a requirement for high protection class motors with good vibration endurance. This is why the integral motor is IP 55 protected. In addition to the wide selection of digital and analogue user interfaces, the integral motor offers higher integration into the modern control system with its fieldbuses, to meet the demands for distributed control.

Products according to your needs
Integral motor models are available as 2, 4 or 6 pole versions. The integral motor is delivered as an integrated, ready-to-use unit equipped with a brake, separate ventilation, or any other selected variants. The pre-set parameters offer configuration required by most of the simple applications and make commissioning and use as easy as possible. For more demanding applications, an optional control panel or PC software tool can be used to select from a range of more advanced application macros.

Fulfil EMC limits at every level
Electro Magnetic Compatibility is an important issue in AC automation. The integral motor complies with European distribution limits with the help of built-in EMC filters, so that no external filtering is needed. Standard models of the integral motor fulfil EMC requirements in industrial environments and models with RFI filter in the domestic environments.

Excellent features for OEM's
The integral motor provides a low cost way to enhance an application's performance: it is not limited to "soft starting" applications in which integrated motor-drive combinations have traditionally been used.

Features include up to 180 % overload capacity during start-up, PTC interface, built-in mechanical brake control and electrical braking produce an unbeatable combination for material handling applications. The robust design withstands supply voltage fluctuations and the wide selection of fieldbus options makes integration into automation systems easy.

One of the most interesting features is the Positioning Macro, which together with an optional encoder makes it possible to eliminate expensive PLCs in simple positioning applications. This feature is useful for example in controlling conveyor lines or opening doors.

Intelligent control for pumps and fans
The built-in PID controller's two parameter sets make the integral motor ideally suited for pump and fan applications. The integral motor can be configured to indicate directly parameters such as the flow rate of a pumped fluid, for instance. With the integral motor it is possible to make a connection to building automation via a LonWorks fieldbus adapter.

Typically no overload capacity is needed in pump or fan applications. This allows the integral motor to be optimised for squared torque use.

The integral motor offers
- Mounting to demanding environment
- Ready-to-use configuration with pre-set parameters
- Full configurable functionality when using an IP65 control panel
- Easy adaptation to automation systems with wide range of fieldbuses
- Built-in EMC filter and brake chopper
- Simple positioning tasks with Positioning application macro
- Optimised selection integral motor models and integrated variants

Connections

To achieve maximum compatibility the integral motor provides all necessary connections and options. Options are IP 65 protected which means that they can withstand extremely hostile environments like places with high moisture. Options are placed straight on the side of the drive and no extra installing space is required.

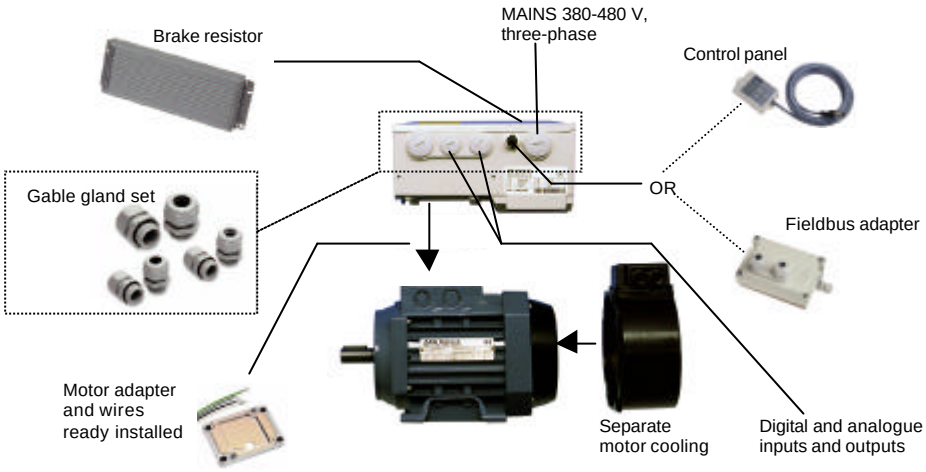
The various options are shown below. After the integral motor has been specified, it will be delivered as a ready assembled and parametrized unit.

With analogue inputs you can set the output frequency or control positioning speed or direction. As there are two analogue inputs, intelligent PID control is possible.

Analogue output can indicate chosen operating data values like output current or DC bus voltage.

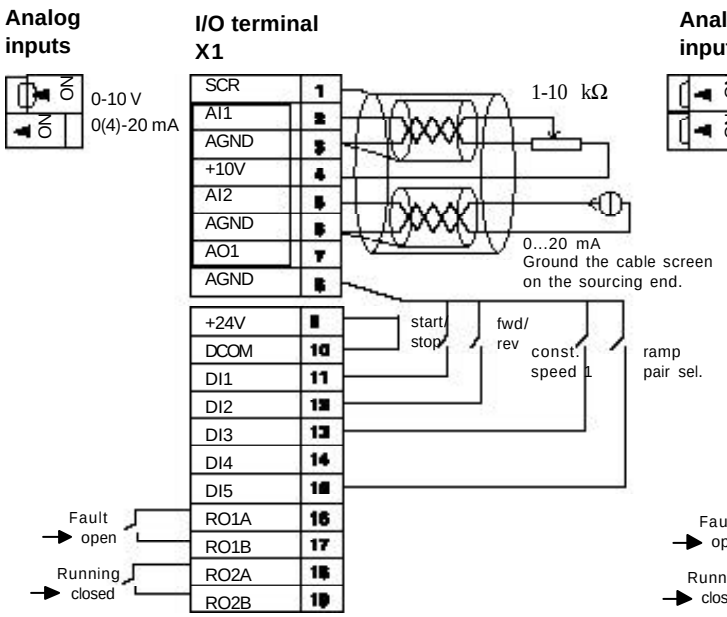
With digital inputs the integral motor can be e.g. started, stopped or the rotation direction changed. Digital inputs are also used in positioning function.

Two relay outputs pass fault and alarm signals or indicate when selected parameter values are exceeded.

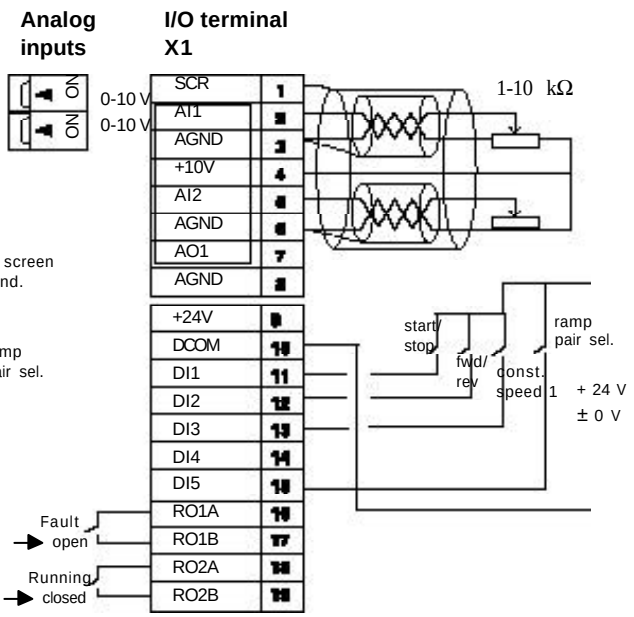


I/O Connection Examples
These connections are shown as examples only. More detailed information can be found from the frequency converter part's User's Manual.

Drive NPN connected



Drive PNP connected with external power supply



8

Ordering information

Sample order

1. Standard design
When ordering an integral motor, please state the following minimum data in the order, as in the example.

2. Special designs
In addition to the minimum data all special features desired shall be stated expressly in the text of the order.

3. Note
- If the order is based on a quotation please state the number
- If the same motors were supplied before (replacement motors) please state their serial number (see motor rating plate).

Motor type	M3VK 80C
Pole number	4
Mounting arrangement (IM-code)	IM B3 (IM 1001)
Rated output	0.75 kW
Product code	3GVK082662-ASC
Variant codes if needed	
Type of drive	Standard drive

A B C D E F G

M3VK 80C 3GVK 082 662 - A S C, 450 etc.

1-4 | 5-6 | 7 | 8-10 | 11 | 12 | 13 | 14

A Motor type
B Motor size
C Product code
D Mounting arrangement code
E Voltage and frequency code
F Generation code
G Variant codes

Explanation of the product code:

Positions 1 to 4
3GVK = Business area LV Motors
Totally enclosed fan cooled squirrel cage integral motor with aluminium frame

Positions 5 and 6
IEC-frame
07 = 71
08 = 80
09 = 90
10 = 100

Position 7
Speed (Pole pairs)
1 = 2 poles
2 = 4 poles
3 = 6 poles

Position 8
6 = Standard Drive
7 = Drive with RFI filter

Position 9-10 - Running number series

Position 11
- (Dash)

Position 12
Mounting arrangement
A = Foot-mounted motor.
B = Flange-mounted motor. Large flange with clearance holes.
C = Foot-mounted motor. Small flange with tapped holes.
F = Foot- and flange-mounted motor. Special flange.
H = Foot- and flange-mounted motor. Large flange with clearence holes.
J = Foot- and flange-mounted motor. Small flange with tapped holes.
V = Flange-mounted motor. Special flange.

Position 13
Voltage and frequency code
Single-speed
D = 380-420 VD 50 Hz
440-480 VD 60 Hz
S = 220-240 VD 50 Hz
380-420 VY 50 Hz
440-480 VY 60 Hz
X = Other voltage/frequency

Position 14
Generation code = A, B, C...

The product code must be, if needed, followed by variant codes.

General purpose integral motors

For constant torque applications

TEFC squirrel cage three-phase integral motors M3VK
IP55, IC 411; Insulation class F, temperature rise class B

Output kW	Type designation	Product code	Input current I_{1N} A	Cont. output current I_{2N} [1),2)] A	Max. curent 150 % I_{max} [3)] A	Max.starting current 180 %[4)] A	Over current limit (peak) A	Line fuse[5)] A	Power losses Power circuit W	Power losses Control circuit W	Total weight kg
3000 r/min = 2 poles		**380-480 V 50 Hz**			**Standard Drive**						
0.37	**M3VK 71A**	3GVK 071 661-••C	1.6	1.8	2.7	3.2	7.1	4	17	16	10
0.55	**M3VK 71B**	3GVK 071 662-••C	1.6	1.8	2.7	3.2	7.1	4	17	16	11
0.75	**M3VK 80A**	3GVK 081 661-••C	2.2	2.4	3.6	4.3	9.5	4	23	17	14
1.1	**M3VK 80B**	3GVK 081 662-••C	3.2	3.4	5.1	6.1	13	6	33	18	16
1.5	**M3VK 80C**	3GVK 081 663-••C	4.1	4.1	6.2	7.4	16	10	45	19	16
1.5	**M3VK 90S**	3GVK 091 661-••C	4.1	4.1	6.2	7.4	16	10	45	19	18
2.2	**M3VK 90L**	3GVK 091 662-••C	6.0	5.4	8.1	9.7	21	10	66	20	21
1500 r/min = 4 poles		**380-480 V 50 Hz**			**Standard Drive**						
0.37	**M3VK 71B**	3GVK 072 662-••C	1.6	1.8	2.7	3.2	7.1	4	17	16	11
0.55	**M3VK 80A**	3GVK 082 661-••C	1.6	1.8	2.7	3.2	7.1	4	17	16	14
0.75	**M3VK 80B**	3GVK 082 662-••C	2.2	2.4	3.6	4.3	9.5	4	23	17	15
0.95	**M3VK 80C**	3GVK 082 663-••C	3.2	3.4	5.1	6.1	13	6	33	18	16
1.1	**M3VK 90S**	3GVK 092 661-••C	3.2	3.4	5.1	6.1	13	6	33	18	18
1.5	**M3VK 90L**	3GVK 092 662-••C	4.1	4.1	6.2	7.4	16	10	45	19	21
2.2	**M3VK 100LA**	3GVK 102 661-••C	6.0	5.4	8.1	9.7	21	10	66	20	26
1000 r/min = 6 poles		**380-480 V 50 Hz**			**Standard Drive**						
0.37	**M3VK 71A**	3GVK 083 661-••C	1.6	1.8	2.7	3.2	7.1	4	17	16	14
0.55	**M3VK 80B**	3GVK 083 662-••C	1.6	1.8	2.7	3.2	7.1	4	17	16	15
0.75	**M3VK 90S**	3GVK 093 661-••C	2.2	2.4	3.6	4.3	9.5	4	23	17	18
1.1	**M3VK 90L**	3GVK 093 662-••C	3.2	3.4	5.1	6.1	13	6	33	18	21
1.5	**M3VK 100L**	3GVK 103 661-••C	4.1	4.1	6.2	7.4	16	10	45	19	28
3000 r/min = 2 poles		**380-480 V 50 Hz**			**Drive with RFI filter**						
0.37	**M3VK 71A**	3GVK 071 761-••C	1.6	1.8	2.7	3.2	7.1	4	17	18	12
0.55	**M3VK 71B**	3GVK 071 762-••C	1.6	1.8	2.7	3.2	7.1	4	17	18	13
0.75	**M3VK 80A**	3GVK 081 761-••C	2.2	2.4	3.6	4.3	9.5	4	23	19	15
1.1	**M3VK 80B**	3GVK 081 762-••C	3.2	3.4	5.1	6.1	13	6	33	20	17
1.5	**M3VK 80C**	3GVK 081 763-••C	4.1	4.1	6.2	7.4	16	10	45	21	18
1.5	**M3VK 90S**	3GVK 091 761-••C	4.1	4.1	6.2	7.4	16	10	45	21	19
2.2	**M3VK 90L**	3GVK 091 762-••C	6.0	5.4	8.1	9.7	21	10	66	22	23
1500 r/min = 4 poles		**380-480 V 50 Hz**			**Drive with RFI filter**						
0.37	**M3VK 71A**	3GVK 072 762-••C	1.6	1.8	2.7	3.2	7.1	4	17	18	13
0.55	**M3VK 80A**	3GVK 082 761-••C	1.6	1.8	2.7	3.2	7.1	4	17	18	15
0.75	**M3VK 80B**	3GVK 082 762-••C	2.2	2.4	3.6	4.3	9.5	4	23	19	16
0.95	**M3VK 80C**	3GVK 082 763-••C	3.2	3.4	5.1	6.1	13	6	33	20	17
1.1	**M3VK 90S**	3GVK 092 761-••C	3.2	3.4	5.1	6.1	13	6	33	20	19
1.5	**M3VK 90L**	3GVK 092 762-••C	4.1	4.1	6.2	7.4	16	10	45	21	22
2.2	**M3VK 100LA**	3GVK 102 761-••C	6.0	5.4	8.1	9.7	21	10	66	22	28
1000 r/min = 6 poles		**380-480 V 50 Hz**			**Drive with RFI filter**						
0.37	**M3VK 71A**	3GVK 083 761-••C	1.6	1.8	2.7	3.2	7.1	4	17	18	15
0.55	**M3VK 80B**	3GVK 083 762-••C	1.6	1.8	2.7	3.2	7.1	4	17	18	16
0.75	**M3VK 90S**	3GVK 093 761-••C	2.2	2.4	3.6	4.3	9.5	4	23	19	19
1.1	**M3VK 90L**	3GVK 093 762-••C	3.2	3.4	5.1	6.1	13	6	33	20	22
1.5	**M3VK 100L**	3GVK 103 761-••C	4.1	4.1	6.2	7.4	16	10	45	21	29

The two bullets in the product code indicate choice of mounting arrangement, voltage and nominal frequecy.

1) Power stages are designed for the continuous I_{2N} current.
These values apply at altitudes less than 1000 m ASL.
2) With 8 kHz switching frequency derate I_{2N} to 70% in -10°C...40°C
or to 60% in 40°C...50°C.
3) 150 % of nominal current I_{2N} allowed for one minute every 10 minutes.
4) 180 % of nominal current I_{2N} allowed for two seconds.
5) Fuse type: UL class CC or T. For non-UL installations IEC269gG.

Use 60°C rated power cable (75°C if T_{amb} above 45°C).
Follow local rules for cable cross-sections.
Shielded motor cable is recommended.
Max. wire sizes/Power terminals (mm^2):
single core: 4 (AWG 12), stranded: 2.5 (AWG 14)/torque 0.8 Nm
Max. wire sizes/Control terminals (mm^2):
0.5-1.5 (AWG 22...AWG 16)/torque 0.4 Nm.

General purpose integral motors

For constant torque applications

TEFC squirrel cage three-phase integral motors M3VK
IP55, IC 411; Insulation class F, temperature rise class B

Output kW	Type designation	Product code	Input current I_{1N} A	Cont. output current I_{2N} [1] A	Max. curent 150 % I_{max} [2] A	Max.starting current 180 % [3] A	Over current limit (peak) A	Line fuse [4] A	Power losses Power circuit W	Power losses Control circuit W	Total weight kg
3000 r/min = 2 poles		**380-480 V 50 Hz**			**Standard Drive**						
1.1	**M3VK 80C**	3GVK 081 673-••C	3.2	3.4	5.1	6.1	13	6	33	18	16
1.5	**M3VK 90L**	3GVK 091 672-••C	4.1	4.1	6.2	7.4	16	10	45	19	21
2.2	**M3VK 90LB**	3GVK 091 673-••C	6.0	5.4	8.1	9.7	21	10	66	20	23
1500 r/min = 4 poles		**380-480 V 50 Hz**			**Standard Drive**						
1.1	**M3VK 90L**	3GVK 092 672-••C	3.2	3.4	5.1	6.1	13	6	33	18	21
1.5	**M3VK 100LA**	3GVK 102 671-••C	4.1	4.1	6.2	7.4	16	10	45	19	26
2.2	**M3VK 100LC**	3GVK 102 673-••C	6.0	5.4	8.1	9.7	21	10	66	20	30
3000 r/min = 2 poles		**380-480 V 50 Hz**			**Drive with RFI filter**						
1.1	**M3VK 80C**	3GVK 081 773-••C	3.2	3.4	5.1	6.1	13	6	33	20	17
1.5	**M3VK 90L**	3GVK 091 772-••C	4.1	4.1	6.2	7.4	16	10	45	21	22
2.2	**M3VK 90LB**	3GVK 091 773-••C	6.0	5.4	8.1	9.7	21	10	66	22	25
1500 r/min = 4 poles		**380-480 V 50 Hz**			**Drive with RFI filter**						
1.1	**M3VK 90L**	3GVK 092 772-••C	3.2	3.4	5.1	6.1	13	6	33	20	22
1.5	**M3VK 100LA**	3GVK 102 771-••C	4.1	4.1	6.2	7.4	16	10	45	21	27
2.2	**M3VK 100LC**	3GVK 102 773-••C	6.0	5.4	8.1	9.7	21	10	66	22	32

The two bullets in the product code indicate choice of mounting arrangement, voltage and nominal frequecy.

1) Power stages are designed for the continuous I_{2N} current.
These values apply at altitudes less than 1000 m ASL.
2) With 8 kHz switching frequency derate I_{2N} to 70% in -10°C...40°C or to 60% in 40°C...50°C.
3) 150 % of nominal current I_{2N} allowed for one minute every 10 minutes.
4) 180 % of nominal current I_{2N} allowed for two seconds.
5) Fuse type: UL class CC or T. For non-UL installations IEC269gG.

Use 60°C rated power cable (75°C if T_{amb} above 45°C).
Follow local rules for cable cross-sections.
Shielded motor cable is recommended.
Max. wire sizes/Power terminals (mm^2):
single core: 4 (AWG 12), stranded: 2.5 (AWG 14)/torque 0.8 Nm
Max. wire sizes/Control terminals (mm^2):
0.5-1.5 (AWG 22...AWG 16)/torque 0.4 Nm.

8

General purpose integral motors

For pump and fan use, squared torque applications

TEFC squirrel cage three-phase integral motors M3VK
IP55, IC 411; Insulation class F, temperature rise class B

Output kW	Type designation	Product code	Input current I_{1N} A	Cont. output current I_{2NSQ} [1),2),3)] A	Over current limit (peak) A	Line fuse[4)] A	Power losses Power circuit W	Power losses Control circuit W	Total weight kg
3000 r/min = 2 poles		**380-480 V 50 Hz**		**Standard Drive**					
0.75	**M3VK 80A**	3GVK 081 861-••C	1.6	2.2	7.1	4	17	16	14
1.1	**M3VK 80B**	3GVK 081 862-••C	2.2	2.8	9.5	4	23	17	16
1.5	**M3VK 80C**	3GVK 081 863-••C	3.2	3.8	13	6	33	18	16
1.5	**M3VK 90S**	3GVK 091 861-••C	3.2	3.8	13	6	33	18	18
2.2	**M3VK 90L**	3GVK 091 862-••C	4.1	5.0	16	10	45	19	21
3.0	**M3VK 100L**	3GVK 101 861-••C	6.0	6.6	21	10	66	20	27
1500 r/min = 4 poles		**380-480 V 50 Hz**		**Standard Drive**					
0.75	**M3VK 80B**	3GVK 082 862-••C	1.6	2.2	7.1	4	17	16	15
1.1	**M3VK 90S**	3GVK 092 861-••C	2.2	2.8	9.5	4	23	17	18
1.5	**M3VK 90L**	3GVK 092 862-••C	3.2	3.8	13	6	33	18	21
2.2	**M3VK 100LA**	3GVK 102 861-••C	4.1	5.0	16	10	45	19	26
3.0	**M3VK 100LB**	3GVK 102 862-••C	6.0	6.6	21	10	66	20	30
3000 r/min = 2 poles		**380-480 V 50 Hz**		**Drive with RFI filter**					
0.75	**M3VK 80A**	3GVK 081 961-••C	1.6	2.2	7.1	4	17	18	15
1.1	**M3VK 80B**	3GVK 081 962-••C	2.2	2.8	9.5	4	23	19	17
1.5	**M3VK 80C**	3GVK 081 963-••C	3.2	3.8	13	6	33	20	18
1.5	**M3VK 90S**	3GVK 091 961-••C	3.2	3.8	13	6	33	20	19
2.2	**M3VK 90L**	3GVK 091 962-••C	4.1	5.0	16	10	45	21	22
3.0	**M3VK 100L**	3GVK 102 961-••C	6.0	6.6	21	10	66	22	28
1500 r/min = 4 poles		**380-480 V 50 Hz**		**Drive with RFI filter**					
0.75	**M3VK 80B**	3GVK 082 962-••C	1.6	2.2	7.1	4	17	18	16
1.1	**M3VK 90S**	3GVK 092 961-••C	2.2	2.8	9.5	4	23	19	19
1.5	**M3VK 90L**	3GVK 092 962-••C	3.2	3.8	13	6	33	20	22
2.2	**M3VK 100LA**	3GVK 102 961-••C	4.1	5.0	16	10	45	21	27
3.0	**M3VK 100LB**	3GVK 102 962-••C	6.0	6.6	21	10	66	22	31

The two bullets in the product code indicate choice of mounting arrangement, voltage and nominal frequecy.

1) Power stages are designed for the continuous I_{2NSQ} current.
These values apply at altitudes less than 1000 m ASL.
2) With 8 kHz switching frequency derate I_{2NSQ} to 70% in -10°C...40°C
or to 60% in 40°C...50°C.
3) No overloadability
4) Fuse type: UL class CC or T. For non-UL installations IEC269gG.

Use 60°C rated power cable (75°C if T_{amb} above 45°C).
Follow local rules for cable cross-sections.
Shielded motor cable is recommended.
Max. wire sizes/Power terminals (mm^2):
single core: 4 (AWG 12), stranded: 2.5 (AWG 14)/torque 0.8 Nm.
Max. wire sizes/Control terminals (mm^2):
0.5-1.5 (AWG 22...AWG 16)/torque 0.4 Nm.

For 6 poles integral motors in Pump&Fan application select a product from General purpose codes.

8

General purpose integral motors

For pump and fan use, squared torque applications

TEFC squirrel cage three-phase integral motors M3VK
IP55, IC 411; Insulation class F, temperature rise class B

Output kW	Type designation	Product code		Input current I_{1N} A	Cont. output current I_{2NSQ} [1),2),3)] A	Over current limit (peak) A	Line fuse[4)] A	Power losses Power circuit W	Power losses Control circuit W	Total weight kg
3000 r/min = 2 poles			**380-480 V 50 Hz**		**Standard Drive**					
1.1	**M3VK 80C**	3GVK 081 873-••C		2.2	2.8	9.5	4	23	17	16
1.5	**M3VK 90L**	3GVK 091 872-••C		3.2	3.8	13	6	33	18	21
2.2	**M3VK 90LB**	3GVK 091 873-••C		4.1	5.0	16	10	45	19	23
3.0	**M3VK 100LB**	3GVK 101 873-••C		6.0	6.6	21	10	66	20	31
1500 r/min = 4 poles			**380-480 V 50 Hz**		**Standard Drive**					
1.1	**M3VK 90L**	3GVK 092 872-••C		2.2	2.8	9.5	4	23	17	21
1.5	**M3VK 100LA**	3GVK 102 871-••C		3.2	3.8	13	6	33	18	26
2.2	**M3VK 100LC**	3GVK 102 873-••C		4.1	5.0	16	10	45	19	30
3000 r/min = 2 poles			**380-480 V 50 Hz**		**Drive with RFI filter**					
1.1	**M3VK 80C**	3GVK 081 973-••C		2.2	2.8	9.5	4	23	19	17
1.5	**M3VK 90L**	3GVK 091 972-••C		3.2	3.8	13	6	33	20	22
2.2	**M3VK 90LB**	3GVK 091 973-••C		4.1	5.0	16	10	45	21	24
3.0	**M3VK 100LB**	3GVK 101 973-••C		6.0	6.6	21	10	66	22	31
1500 r/min = 4 poles			**380-480 V 50 Hz**		**Drive with RFI filter**					
1.1	**M3VK 90L**	3GVK 092 972-••C		2.2	2.8	9.5	4	23	19	22
1.5	**M3VK 100LA**	3GVK 102 971-••C		3.2	3.8	13	6	33	20	27
2.2	**M3VK 100LC**	3GVK 102 973-••C		4.1	5.0	16	10	45	21	31

The two bullets in the product code indicate choice of mounting arrangement, voltage and nominal frequecy.

1) Power stages are designed for the continuous I_{2NSQ} current.
These values apply at altitudes less than 1000 m ASL.
2) With 8 kHz switching frequency derate I_{2NSQ} to 70% in -10°C...40°C
or to 60% in 40°C...50°C.
3) No overloadability
4) Fuse type: UL class CC or T. For non-UL installations IEC269gG.

Use 60°C rated power cable (75°C if T_{amb} above 45°C).
Follow local rules for cable cross-sections.
Shielded motor cable is recommended.
Max. wire sizes/Power terminals (mm^2):
single core: 4 (AWG 12), stranded: 2.5 (AWG 14)/torque 0.8 Nm.
Max. wire sizes/Control terminals (mm^2):
0.5-1.5 (AWG 22...AWG 16)/torque 0.4 Nm.

For 6 poles integral motors in Pump&Fan application select a product from General purpose codes.

8

Technical Specification for Frequency Converter

Mains connection
Power renge: 0.55 - 3.0 kW
Voltage: 3-phase, 380 to 480 V ± 10 %
Frequency: 48 to 63 Hz
Power factor: 0.98

Motor connection
Voltage: 3-phase, from 0 to U_{supply}
Frequency: 0 to 250 Hz

Constant torque applications
Continuous loading capability:
- Rated output current I_{2N}

Overload capacity (max. ambient temperature of 40°C):
- At constant torque: 1.5 · I_{2N} for one minute every 10 minutes
- Starting torque: 1.8 · I_{2N} for two seconds
  Characteristic data for short time, intermittent and periodic load cycles are available on request.

Switching frequency:
- Standard 4 kHz
- Low noise 8 kHz *)

Squared torque applications
Continuous loading capability:
- Rated output current I_{2NSQ}

No overload capacity
Switching frequency:
- Standard 4 kHz
- Low noise 8 kHz *), with derating

Programmable control connections
Two analogue inputs:
- Voltage signal: 0 (2) to 10 V, 200 kΩ single ended
- Current signal: 0 (4) to 20 mA, 500 Ω single ended
- Potentiometer reference: 10 V ± 2 % max. 10 mA, 1 kΩ ≤ R ≥ 10kΩ
- Response time: < 64 ms
- Resolution: 0.1 %
- Accuracy: ± 1 %

One analogue output: 0 (4) to 20 mA, load < 500 Ω
Auxiliary voltage: 24 V DC, max 180 mA
Five digital inputs: 12-24 V DC with internal or external supply, PNP and NPN logic
- Input impedance: 1.5 kΩ
- Response time: < 5 ms

Two relay outputs:
- Switching voltage:12 to 250V AC or max.30 V DC/0.5 A
- Max. continuous current: 10 mA to 2 A

Built-in brake chopper
Pulse encoder: Connected to digital inputs DI4 and DI5, max. 25 V DC / 100 mA, max. pulse frequency 200 kHz
Serial communication for external control:
- Modbus protocol as standard, other fieldbus options available: PROFIBUS-DP, InterBus-S, DeviceNet, CANOpen, LONWORKS®

Programmable features *)
Nine application macros for easy configuration:
- Factory, ABB Standard, 3-Wire, Alternate, Motor Potentiometer, Hand-Auto, PID-Control, Pre-magnetize, Positioning

Acceleration time: 0.1 to 1800 s
Deceleration time: 0.1 to 1800 s
Skip frequencies: Two bands
Start and stop: Flying start, Torque boosting, Premagnetising function, DC hold function, DC injection braking
Functions:
- Output current and frequency limit, Programmable volts/herz ratio, IR compensation, Slip compensation, PID-control with sleep function, Seven preset speeds, Automatic fault reset, Two acceleration and two deceleration ramps, Control for electromechanical brake

Protection
Limits
- Over current trip limit: 3.5 · I_2
- DC current regulation limit: 0.5...1.5 · I_2
- DC over voltage trip limit: 875 V
- DC under voltage trip limit: 333 V
- Power-loss ride-through: 500 ms
- Over temperature limit: 105°C inside power module

Inverter protection:
- Output short circuit, Input phase loss, Inverter overload, Output earth-fault, Serial communication error, Loss of AI signal, I/O terminal short circuit, Auxiliary voltage short circuit, Brake resistor overload

Motor protection:
- Stall protection, Over temperature protection by I^2t estimation or PTC thermistors.

Environmental limits
Ambient operating temperature:
- Output current = I_{2N} and f_{switch} = 4 kHz: -10 to 40°C
- Output current = 0.7 · I_{2N} and f_{switch} = 8 kHz: -10 to 40°C
- Output current = 0.6 · I_{2N} and f_{switch} = 8 kHz: 40 to 50°C
- Output current = I_{2NSQ} and f_{switch} = 4 kHz: -10 to 40°C
- Output current = 0.7 · I_{2NSQ} and f_{switch} = 8 kHz: -10 to 40°C
- Output current = 0.6 · I_{2NSQ} and f_{switch} = 8 kHz: 40 to 50°C
- Refer to page 16 for more derating information

Installation altitude:
- Output current = I_2: 0 to 1000 m
- Output current reduced by 1% for every 100 m above 1000 m. Max altitude 2000 m.

Protection class: IP 65
Colour: NCS 1502-Y, RAL 9002, PMS 420 C
Contamination levels: According to IEC-721-3-3

Electromagnetic Compatibility (EMC):
- Standard Drive: Fulfils EN 61800-3 2nd Environment distribution limits
- Drive with RFI filter: Fulfils EN 61800-3 1st and 2nd Environment distribution limits

Harmonic emissions:
- Units with < 1 kW input power fulfil EN 61000-3-2
- Units with > 1 kW input power are to be used only in professional applications

Product compliance
- Low Voltage Directive 73/23/EEC with amendments
- EMC Directive 89/336/EEC with amendments
- Quality Assurance systems ISO 9001 and ISO 14001
- CE, UL, cUL and C-Tick approvals

**) Adjustable only with control panel.*

Frequency Converter Options

IP 65 Control Panel Kit

Variant code: 611

Full configurable functionality is available when using the optional control panel. With the control panel, parameters can be exchanged between two drives using the parameter upload/download procedure.

Fieldbus Gateways and RS485/232 Adapter

Variant code: see the table below

The integral motor can be connected to all major automation systems with the help of the large variety of fieldbuses. The fieldbus gateways are available in robust IP 65 boxes, which can be conveniently fitted on one side of the drive. The Modbus protocol is standard in all integral motor units and can be used by means of an RS485/232 adapter (CFB-RS).

Fieldbus technical data

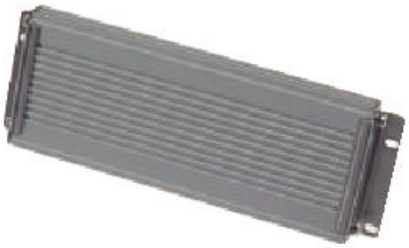
Fieldbus	Type code	Variant code	Protocol mode	Device profile	Baudrate (min.-max.)
PROFIBUS	CFB-PDP	612	DP	Profidrive V.2	9.6 kbits/s - 12 Mbits/s
InterBus-S	CFB-IBS	613	PCP	Drivecom (Profile 21)	500 kbits/s
DeviceNet	CFB-DEV	616	N.A.	AC Drive	125 - 500 kbits/s
CANOpen	CFB-CAN	614	N.A.	Drives and Motion control (DS402 V.1.1)	10 - 1000 kbits/s
LonWorks®	CFB-LON	615	LonTalk®	Variable Speed Motor Drive 6010	78 kbits
Modbus	CFB-RS	617	RTU	Vendor Specific	300 - 19200 bit/s

N.A. = Not applicable

Integral Brake Resistors

Variant code: see the table below

The integral motor brake resistor offers an optimal solution for braking, as braking choppers are a standard feature of the drives. The IP 65 brake resistors can be fitted on one side of the integral motor.



Brake resistor technical data

Integral motor output kW (general purpose ratings)	Brake resistor Type code	Variant code	Resistance Ohm W	Max. average resistor power W	Max. instantaneous resistor power
0.37...0.55 kW	CA-BRK-R1-1	618	390	39	700
0.75 kW	CA-BRK-R1-1	618	390	39	950
1.1 kW	CA-BRK-R1-2	619	125	39	1500
1.5 kW	CA-BRK-R1-2	619	125	39	2100
2.2 kW	CA-BRK-R2	620	125	45	3080

8

Cable gland set

Variant code: 230

A selection of cable glands for integral motor. The glands are for the following cable diameters: 5-9 mm (2 pcs), 6-12 mm (2 pcs) and 9-16 mm (2 pcs).

More options for frequency converter available separately

- AnyBus Communicator fieldbus gateways (Profibus-DP and DeviceNet)
- DriveWindow Light 2 start-up and maintenance PC tool.

General purpose integral motors
Variant codes, motor part

S = Included as standard.
NA = Not applicable.
R = On request.
P = New manufacture only.

Code	Variant	Frame size 71	80	90	100
	Balancing				
052	Balancing to grade R (IEC 60034-14).	P	P	P	P
423	Balanced without key.	P	P	P	P
424	Full key balancing.	P	P	P	P
	Bearings and lubrication				
040	Heat resistant grease. (-25 - +150°C)	P	P	P	P
042	Locked drive-end.	P	P	S	S
057	2RS bearings at both ends.	P	P	P	P
	Branch standard designs				
178	Stainless steel/acid proof bolts.	P	P	P	P
425	Corrosion protected stator and rotor core.	P	P	P	P
	Cooling system				
068	Metal fan.	P	P	P	P
183	Separate motor cooling (fan axial, N-end).	**P**	**P**	**P**	**P**
	Drain holes				
065	Plugged drain holes.	P	P	NA	NA
066	Modified drain hole position.	P	P	P	P
076	Draining holes with plugs.	S	S	S	S
	Earthing bolt				
067	External earthing bolt.	P	P	P	P
	Heating elements				
450	Heating element, 100-120 V.	P	P	P	P
451	Heating element, 200-240 V.	P	P	P	P
	Mounting arrangements				
007	IM 3001 flange mounted, IEC flange, from IM 1001 (B5 from B3).	P	P	P	P
008	IM 2101 foot/flange mounted, from IM 1001 (B34 from B3).	P	P	P	P
009	IM 2001 foot/flange mounted, from IM 1001 (B35 from B3).	P	P	P	P
047	IM 3601 flange mounted, IEC flange, from IM 3001 (B14 from B5).	P	P	P	P
048	IM 3001 flange mounted, IEC flange, from IM 3601 (B14 from B5).	P	P	P	P
	Painting				
114	Special paint colour, standard grade. RAL-colour no. must be specified.	P	P	P	P

General purpose integral motors
Variant codes, motor part

S = Included as standard.
NA = Not applicable.
R = On request.
P = New manufacture only.

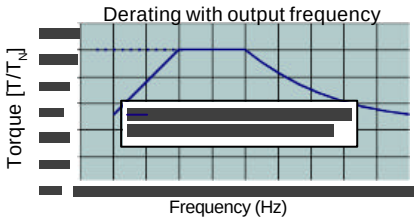
Code	Variant	Frame size 71	80	90	100
	Protection				
005	Protective roof, vertical motor, shaft down.	P	P	P	P
073	Sealed against oil at D-end.	P	P	P	P
158	Degree of protection IP 65.	P	P	P	P
	Rating & instruction plates				
003	Individual serial number.	P	P	P	P
013	Restamping to output for class F temperature rise.	P	P	P	P
098	Stainless rating plate.	P	P	P	P
138	Mounting of additional identification plate, aluminium.	P	P	P	P
	Shaft & Rotor				
069	Two shaft extensions as per basic catalogue	P	P	P	P
165	Shaft extension with open key way	R	R	R	R
410	Stainless / acid proof steel shaft (standard or non-standard design)	P	P	P	P
	Standards and regulations				
029	Fulfilling Underwriters Laboratory (UL) requirements	R	R	R	R
	Stator winding temperature sensors				
436	PTC-thermistors (3 in series), 150°C	P	P	P	P
	Testing				
140	Test confirmation	R	R	R	R
	Variable speed drives				
470	Prepared for hollow shaft pulse tacho (L&L equivalent)	P	P	P	R
473	2048 pulse tacho (L&L equivalent)	P	P	P	R
477	Separate motor cooling (fan axial, N-end) and 2048 pulse tacho (L&L equivalent)	P	P	P	R

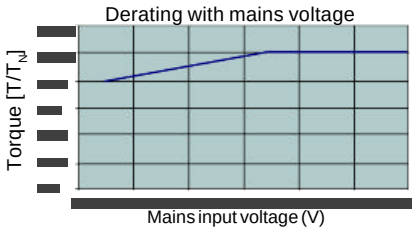
General purpose integral motors
Variant codes, frequency converter part

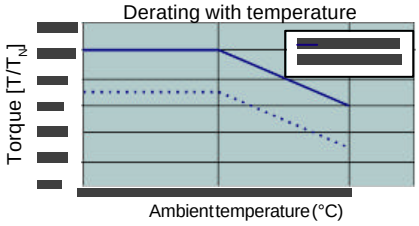
S = Included as standard.
NA = Not applicable.
R = On request.
P = New manufacture only.

Code	Variant	Frame size 71	80	90	100
	Unit body				
230	Standard cable gland set	P	P	P	P
	Brake resistor				
618	Inverter brake resistor for 0.37 kW, 0.55 kW & 0.75 kW unit (general purpose ratings)	P	P	P	NA
619	Inverter brake resistor for 1.1 kW & 1.5 kW unit (general purpose ratings)	NA	P	P	P
620	Inverter brake resistor for 2.2 kW unit (general purpose ratings)	NA	NA	P	P
	Panel kit				
611	Inverter control panel kit	P	P	P	P
	Fieldbus type				
612	CFB-PDP	P	P	P	P
613	CFB-IBS	P	P	P	P
614	CFB-CAN	P	P	P	P
615	CFB-LON	P	P	P	P
616	CFB-DEV	P	P	P	P
617	CFB-RS	P	P	P	P

Derating Information



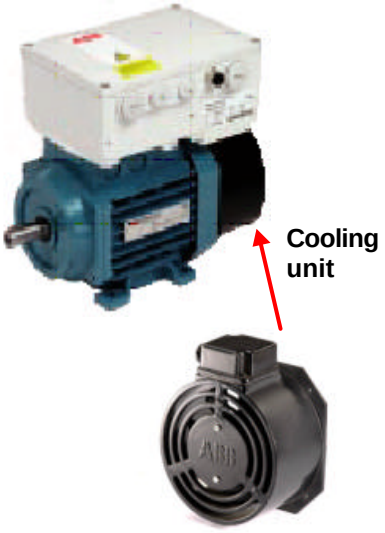




If the integral motor is used at low frequencies, separate cooling is recommended, particularly if the motor load is high and the speed is low.

M3VK

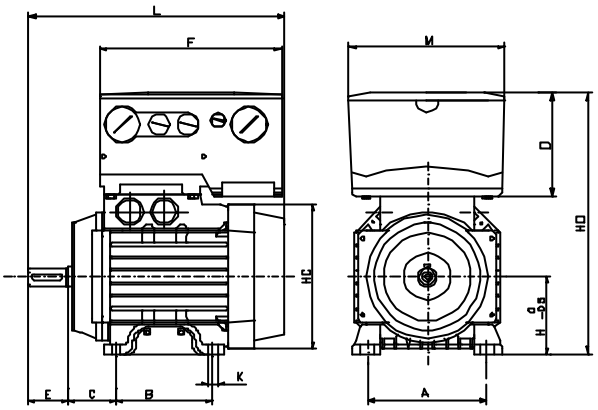
M3VK with separate cooling unit



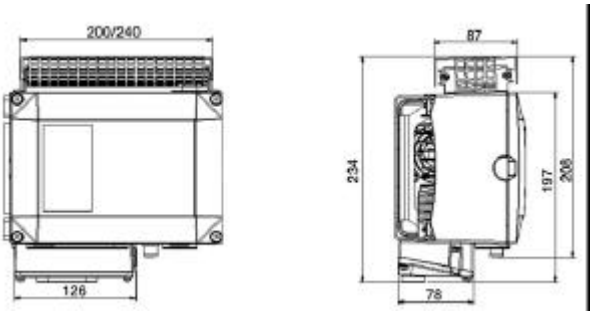
8

General purpose integral motors

Dimensions



Dimensions with integrated options added



EFF2

Integral Motor Standard Drive	Product Code Drive with RFI filter	Dimensions A	B	C	E	H	HC	K	L	D std*	D w RFI*	HD std*	HD w RFI*	F	M
3GVK 071 661-••C	3GVK 071 761-••C	112	90	45	30	71	130	7	283	110	146	261	297	221	171
3GVK 071 662-••C	3GVK 071 762-••C	112	90	45	30	71	130	7	283	110	146	261	297	221	171
3GVK 081 661-••C	3GVK 081 761-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 081 662-••C	3GVK 081 762-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 081 663-••C	3GVK 081 763-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 091 661-••C	3GVK 091 761-••C	140	100	56	50	90	170	10	282	110	146	300	336	221	171
3GVK 091 662-••C	3GVK 091 762-••C	140	125	56	50	90	170	10	307	110	146	300	336	261	171
3GVK 072 662-••C	3GVK 072 762-••C	112	90	45	30	71	130	7	283	110	146	261	297	221	171
3GVK 082 661-••C	3GVK 082 761-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 082 662-••C	3GVK 082 762-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 082 663-••C	3GVK 082 763-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 092 661-••C	3GVK 092 761-••C	140	100	56	50	90	170	10	282	110	146	300	336	221	171
3GVK 092 662-••C	3GVK 092 762-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 102 661-••C	3GVK 102 761-••C	160	140	63	60	100	190	12	349	110	146	310	346	261	171
3GVK 083 661-••C	3GVK 083 761-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 083 662-••C	3GVK 083 762-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 093 661-••C	3GVK 093 761-••C	140	100	56	50	90	170	10	282	110	146	300	336	221	171
3GVK 093 662-••C	3GVK 093 762-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 103 661-••C	3GVK 103 761-••C	160	140	63	60	100	190	12	349	110	146	310	346	221	171

* std = Standard Drive, w RFI = Drive with RFI filter

EFF1

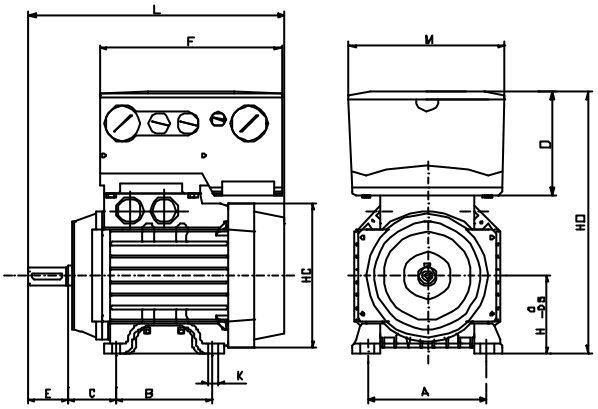
Integral Motor Standard Drive	Product Code Drive with RFI filter	Dimensions A	B	C	E	H	HC	K	L	D std*	D w RFI*	HD std	HD w RFI*	F	M
3GVK 081 673-••C	3GVK 081 773-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 091 672-••C	3GVK 091 772-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 091 673-••C	3GVK 091 773-••C	140	125	56	50	90	170	10	307	110	146	300	336	261	171
3GVK 092 672-••C	3GVK 092 772-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 102 671-••C	3GVK 102 771-••C	160	140	63	60	100	190	12	349	110	146	310	346	221	171
3GVK 102 673-••C	3GVK 102 773-••C	160	140	63	60	100	190	12	349	110	146	310	346	261	171

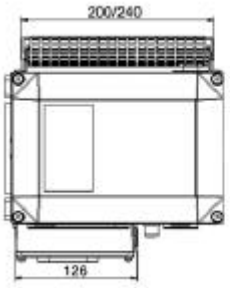
* std = Standard Drive, w RFI = Drive with RFI filter

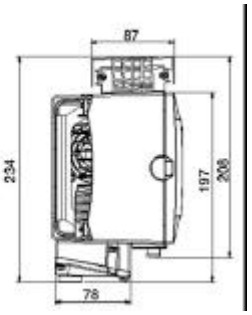
General purpose integral motors

Dimensions in pump and fan use

Dimensions with integrated options added







Integral Motor Standard Drive	Product Code Drive with RFI filter	Dimensions A	B	C	E	H	HC	K	L	D std*	D w RFI*	HD std*	HD w RFI*	F	M
3GVK 081 861-••C	3GVK 081 961-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 081 862-••C	3GVK 081 962-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 081 863-••C	3GVK 081 963-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 091 861-••C	3GVK 091 961-••C	140	100	56	50	90	170	10	282	110	146	300	336	221	171
3GVK 091 862-••C	3GVK 091 962-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 101 861-••C	3GVK 101 961-••C	160	140	63	60	100	190	12	349	110	146	310	346	261	171
3GVK 082 862-••C	3GVK 082 962-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 092 861-••C	3GVK 092 961-••C	140	100	56	50	90	170	10	282	110	146	300	336	221	171
3GVK 092 862-••C	3GVK 092 962-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 102 861-••C	3GVK 102 961-••C	160	140	63	60	100	190	12	349	110	146	310	346	221	171
3GVK 102 862-••C	3GVK 102 961-••C	160	140	63	60	100	190	12	349	110	146	310	346	261	171

* std = Standard Drive, w RFI = Drive with RFI filter

Integral Motor Standard Drive	Product Code Drive with RFI filter	Dimensions A	B	C	E	H	HC	K	L	D std*	D w RFI*	HD std	HD w RFI*	F	M
3GVK 081 873-••C	3GVK 081 973-••C	125	100	50	40	80	150	10	275	110	146	280	316	221	171
3GVK 091 872-••C	3GVK 091 972-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 091 873-••C	3GVK 091 973-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 101 873-••C	3GVK 101 973-••C	160	140	63	60	100	190	12	349	110	146	310	346	261	171
3GVK 092 872-••C	3GVK 092 972-••C	140	125	56	50	90	170	10	307	110	146	300	336	221	171
3GVK 102 871-••C	3GVK 102 971-••C	160	140	63	60	100	190	12	349	110	146	310	346	221	171
3GVK 102 873-••C	3GVK 102 973-••C	160	140	63	60	100	190	12	349	110	146	310	346	221	171

* std = Standard Drive, w RFI = Drive with RFI filter

Notes:

Notes:

ABB Motors' total product offer

ABB offers several comprehensive ranges of AC motors and generators. We manufacture synchronous motors for even the most demanding applications, and a full range of low and high voltage induction motors. Our in-depth knowledge of virtually every type of industrial processing ensures we always specify the best solution for your needs.

Low voltage motors and generators

General purpose motors for standard applications

– Aluminium motors
– Steel motors
– Cast iron motors
– Open drip proof motors
– Brake motors
– Single phase motors
– Integral motors

Process performance motors for more demanding applications

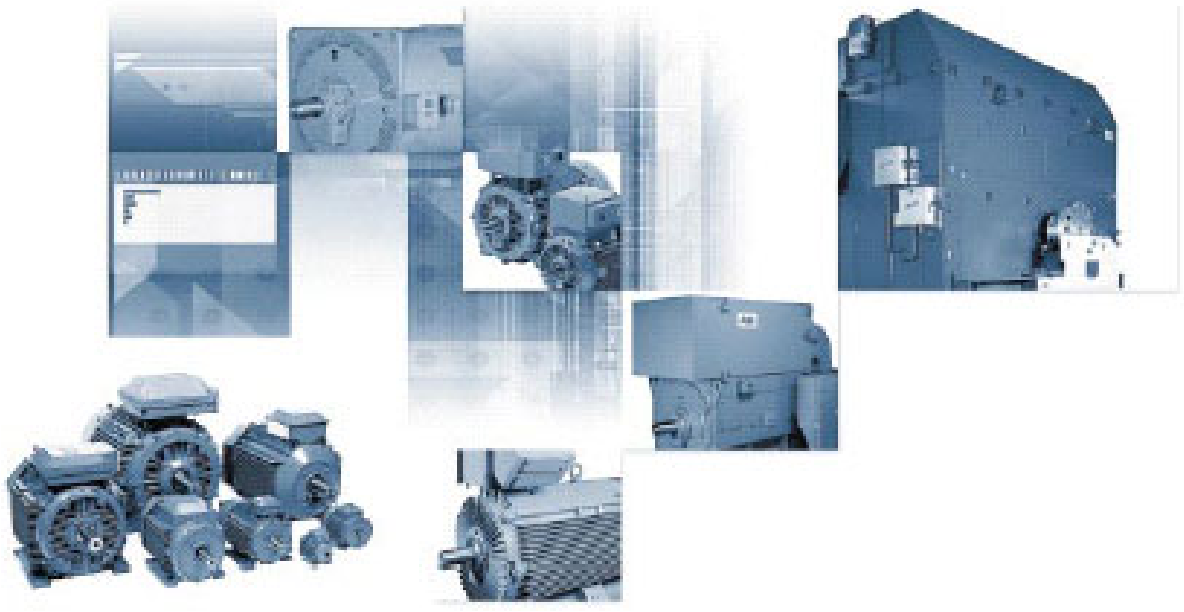
– Aluminium motors
– Cast iron motors

Other applications

– Motors for hazardous areas
– Marine motors
– Permanent magnet motors
– High speed motors
– Wind turbine generators
– NEMA motors
– Water cooled motors
– Motors for roller table drives
– Slip ring motors
– Wood dryer motors
– Fan application motors

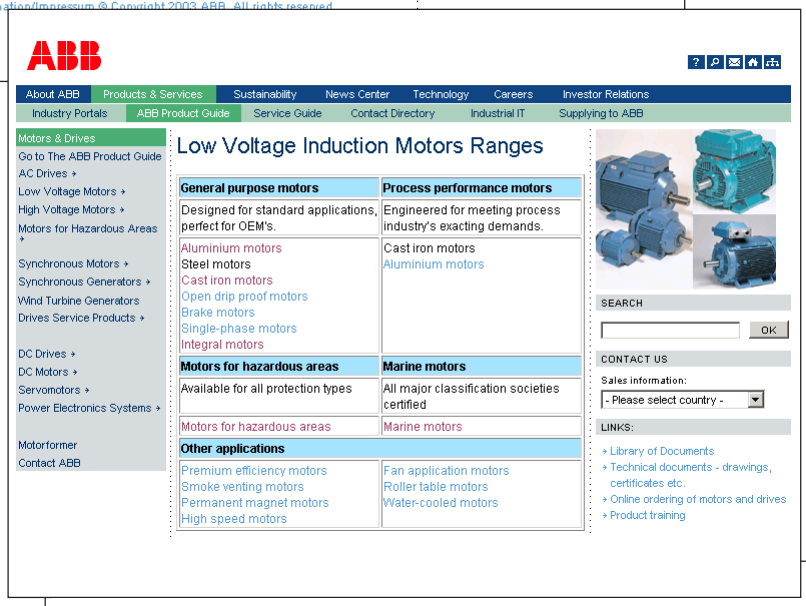
High voltage and synchronous motors and generators

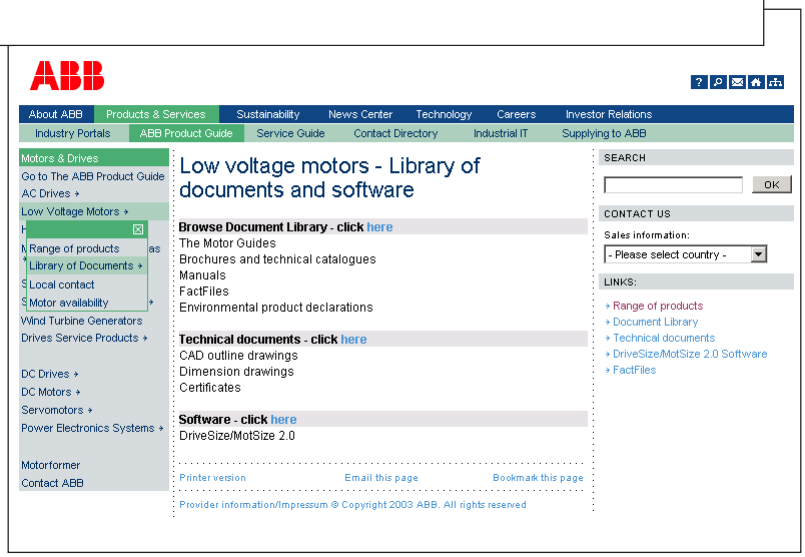
– High voltage cast iron motors
– Induction modular motors
– Slip ring motors
– Motors for hazardous areas
– Servomotors
– Synchronous motors and generators
– DC motors and generators



Visit our web site

www.abb.com/motors&drives





Motors & Drives
=> Low Voltage Motors
=> Range of Products
=> General purpose motors
- Aluminium motors
- Steel motors
- Cast iron area motors
- Open drip proof motors
- Brake motors
- Single phase motors
- Integral motors

Process performance motors
Motors for hazardous areas
Marine motors
Roller table motors
Water cooled motors
Permanent magnet motors
High speed motors
Wind turbine generators
Library of documents
=> Technical documents
Local contacts

Drive^{IT} Low Voltage Motors

Manufacturing sites (*) and some of the larger sales companies.

Australia
ABB Industry Pty Ltd
2 Douglas Street
Port Melbourne,
Victoria, 3207
Tel: +61 (0) 3 9644 4100
Fax: +61 (0) 3 9646 9362

Austria
ABB AG
Wienerbergstrasse 11 B
A-1810 Wien
Tel: +43 (0) 1 601 090
Fax: +43 (0) 1 601 09 8305

Belgium
Asea Brown Boveri S.A.-N.V.
Hoge Wei 27
B-1930 Zaventem
Tel: +32 (0) 2 718 6311
Fax: +32 (0) 2 718 6657

Canada
ABB Inc., BA Electrical Machines
10300 Henri-Bourassa Blvd,
West, Saint-Laurent, Quebec
Canada H4S 1N6
Tel: +1 514 832-6583
Fax: +1 514 332-0609

China*
ABB Shanghai Motors
Company Limited
8 Guang Xing Rd.,Rong Bei
Town, Songjiang County,
Shanghai 201613
Tel: +86 21 5778 0988
Fax: +86 21 5778 1364

Chile
Asea Brown Boveri S.A.
P.O.Box 581-3
Santiago
Tel: +56 (0) 2 5447 100
Fax: +56 (0) 2 5447 405

Denmark
ABB A/S
Automation Technology Electrical Machines
Petersmindevej 1
DK-5000 Odense C
Tel: +45 65 477 070
Fax: +45 65 477 713

Finland*
ABB Oy
LV Motors
P.O.Box 633
FIN-65101 Vaasa
Tel: +358 (0) 10 22 11
Fax: +358 (0) 10 22 47372

France
ABB Automation
Rue du Général de Gaulle
Champagne-sur-Seine
F-77811 Moret-sur-Loing Cedex
Tel: +33 (0) 1 60 746 500
Fax: +33 (0) 1 60 746 565

Germany
ABB Automation Products GmbH
Edisonstrasse 15
68623 Lampertheim
Tel: +49 (0) 6206 503 503
Fax: +49 (0) 6206 503 600

Hong Kong
ABB (Hong Kong) Ltd.
Tai Po Industrial Estate,
3 Dai Hei Street,
Tai Po, New Territories,
Hong Kong
Tel: +852 2929 3838
Fax: +852 2929 3505

India*
ABB Ltd.
32, Industrial Area, N.I.T
Faridabad 121 001
Tel: +91 (0) 129 502 3001
Fax: +91 (0) 129 502 3006

Indonesia
PT. ABB Sakti Industri
JL. Gajah Tunggal Km.1
Jatiuwung, Tangerang 15136
Banten, Indonesia
Tel: + 62 21 590 9955
Fax: + 62 21 590 0115 - 6

Ireland
Asea Brown Boveri Ltd
Components Division
Belgard Road
Tallaght, Dublin 24
Tel: +353 (0) 1 405 7300
Fax: +353 (0) 1 405 7327

Italy*
ABB SACE SpA
LV Motors
Via Della Meccanica, 22
I-20040 Caponago - MI
Tel: +39 02 959 6671
Fax: +39 02 959 667216

Japan
ABB K.K.
26-1 Cerulean Tower
Sakuragaoka-cho, Shibuya-ku
Tokyo 150-8512
Tel: +81 (0) 3 578 46251
Fax: +81 (0) 3 578 46260

Korea
ABB Korea Ltd.
7-9fl, Oksan Bldg., 157-33
Sungsung-dong, Kangnam-ku
Seoul
Tel: +82 2 528 2329
Fax: +82 2 528 2338

Malaysia
ABB Malaysia Sdn. Bhd.
Lot 608, Jalan SS 13/1K
47500 Subang Jaya, Selangor
Tel: +60 3 5628 4888
Fax: +60 3 5631 2926

Mexico
ABB México, S.A. de C.V.
Apartado Postal 111
CP 54000 Tlalnepantla
Edo. de México, México
Tel: +52 5 328 1400
Fax: +52 5 390 3720

The Netherlands
ABB B.V.
Dept. LV motors (APP2R)
P.O.Box 301
NL-3000 AH Rotterdam
Tel: +31 (0) 10 4078 879
Fax: +31 (0) 10 4078 345

Norway
ABB AS
Automation Technology Products Division
P.O.Box 6540 Rodeloekka
N-0501 Oslo 5
Tel: +47 22 872 000
Fax: +47 22 872 541

Singapore
ABB Industry Pte Ltd
2 Ayer Rajah Crescent
Singapore 139935
Tel: +65 6776 5711
Fax: +65 6778 0222

Spain*
ABB Automation Products S.A.
Division Motores
P.O.Box 81
E-08200 Sabadell
Tel: +34 93 728 8500
Fax: +34 93 728 8741

Sweden*
ABB Automation Technology Products AB
Motors & Machines
LV Motors
S-721 70 Västerås
Tel: +46 (0) 21 329 000
Fax: +46 (0) 21 124 103

Switzerland
ABB Schweiz AG
Normelec/CMC Components
Motors&Drives
Badenerstrasse 790
Postfach
CH-8048 Zürich
Tel: +41 (0) 58 586 0000
Fax: +41 (0) 58 586 0603

Taiwan
ABB Ltd.
6F, No. 126, Nanking East Road, Section 4i
Taipei, 105 Taiwan, R.O.C.
Tel: +886 (0) 2 2577 6090
Fax: +886 (0) 2 2577 9467

Thailand
ABB Limited (Thailand)
161/1 SG Tower,
Soi Mahadlekluang 3,
Rajdamri, Bangkok 10330
Tel: +66 2 665 1000
Fax: +66 2 6042

The United Kingdom
ABB Automation Ltd
9 The Towers, Wilmslow Road
Didsbury
Manchester, M20 2AB
Tel: +44 (0) 161 445 5555
Fax: +44 (0) 161 448 1016

USA
ABB Inc.
Electrical Machines
P.O.Box 372
Milwaukee
WI 53201-0372
Tel: +1 262 785 3200
Fax: +1 262 785 8628

Venezuela
Asea Brown Boveri S.A.
P.O.Box 6649
Carmelitas,
Caracas 1010A
Tel: +58 (0) 2 238 2422
Fax: +58 (0) 2 239 6383

http://www.abb.com/motors&drives
http://online.abb.com/motors&drives

Printed in Finland, 09-2003/15.000,Waasa Graphics

Catalogue BU/General purpose motors GB 09-2003