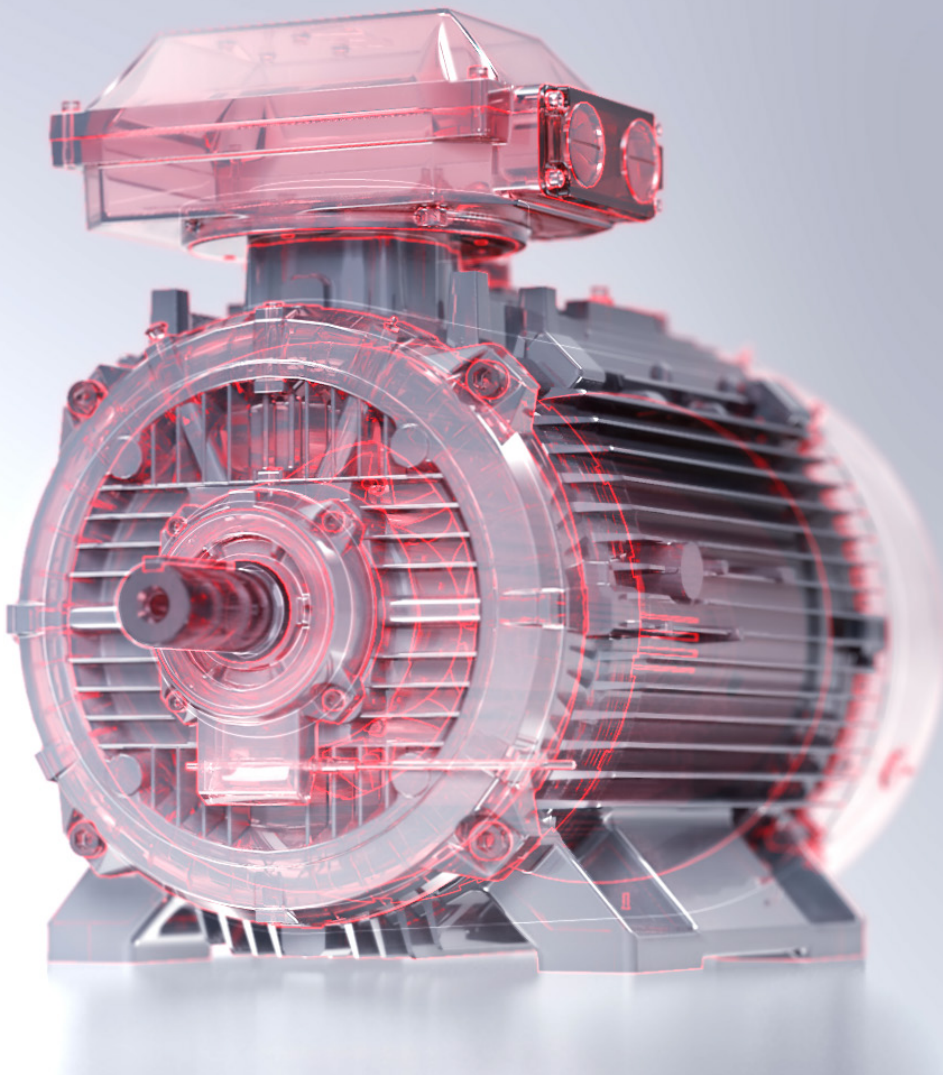


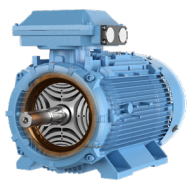
PRODUCT OFFERING

# IEC Low voltage motors

Product overview



## IEC Low voltage motors

| General performance motors                                                                             |                                                                                                                                                                                       | Process performance motors                                                                                                                                                                                                              |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cast iron                                                                                              |                                                                                                                                                                                       | Cast iron                                                                                                                                                                                                                               | Aluminum                                                                                                                                                                                                                                | Synchronous reluctance motors                                                                                                                                                                                                                     |
|                       |                                                                                                                                                                                       |                                                                                                                                                        |                                                                                                                                                       |                                                                                                                                                                |
| Best suited for applications where simplicity and off-the-shelf availability is of highest importance. |                                                                                                                                                                                       | Fully flexible motors for any customer need for reliability, availability and highest efficiency.                                                                                                                                       | Fully flexible motors for any customer need for reliability, availability and efficiency, light weight and easy to clean.                                                                                                               | SynRM IE5 motors save energy, with up to 40 percent lower energy losses, drop-in replacement for induction motors.                                                                                                                                |
| Product type                                                                                           | M2BAX                                                                                                                                                                                 | M3BP                                                                                                                                                                                                                                    | M3AA                                                                                                                                                                                                                                    | M3AL, M3BL                                                                                                                                                                                                                                        |
| Efficiency classes                                                                                     | IE2, IE3, IE4                                                                                                                                                                         | IE2, IE3, IE4                                                                                                                                                                                                                           | IE2, IE3                                                                                                                                                                                                                                | up to IE5                                                                                                                                                                                                                                         |
| IEC Frame sizes                                                                                        | 71 – 355                                                                                                                                                                              | 71 – 500                                                                                                                                                                                                                                | 56 – 250                                                                                                                                                                                                                                | IE5 range: 132 – 315<br>High output range: 160 – 315                                                                                                                                                                                              |
| Power range                                                                                            | 0.18 – 355 kW                                                                                                                                                                         | 0.37 – 1300 kW                                                                                                                                                                                                                          | 0.09 – 90 kW                                                                                                                                                                                                                            | 5.5 – 350 kW                                                                                                                                                                                                                                      |
| Poles                                                                                                  | 2 – 6                                                                                                                                                                                 | 2 – 12                                                                                                                                                                                                                                  | 2 – 6                                                                                                                                                                                                                                   | 1000 – 3000 r/min                                                                                                                                                                                                                                 |
| Voltage                                                                                                | 220 – 690 V                                                                                                                                                                           | 230 – 690 V                                                                                                                                                                                                                             | 230 – 690 V                                                                                                                                                                                                                             | –                                                                                                                                                                                                                                                 |
| Frequency                                                                                              | 50 Hz                                                                                                                                                                                 | 50 Hz, 60 Hz                                                                                                                                                                                                                            | 50 Hz, 60 Hz                                                                                                                                                                                                                            | –                                                                                                                                                                                                                                                 |
| IP Class                                                                                               | IP55 as standard                                                                                                                                                                      | up to IP 66                                                                                                                                                                                                                             | up to IP 66                                                                                                                                                                                                                             | IP 55, higher on request                                                                                                                                                                                                                          |
| Cooling                                                                                                | IC411, TEFC                                                                                                                                                                           | IC411, TEFC                                                                                                                                                                                                                             | IC411, TEFC                                                                                                                                                                                                                             | IC411, IC416, IC418                                                                                                                                                                                                                               |
| Starting                                                                                               | DOL, VSD                                                                                                                                                                              | DOL, VSD                                                                                                                                                                                                                                | DOL, VSD                                                                                                                                                                                                                                | VSD                                                                                                                                                                                                                                               |
| MEPS                                                                                                   | EU, CN, AU                                                                                                                                                                            | EU, CN, AU, BR, KR, USA, CA                                                                                                                                                                                                             | EU, CN, AU, BR, KR, UL, RS, SARS                                                                                                                                                                                                        | –                                                                                                                                                                                                                                                 |
| Certification                                                                                          | Marine                                                                                                                                                                                | Marine                                                                                                                                                                                                                                  | Marine                                                                                                                                                                                                                                  | –                                                                                                                                                                                                                                                 |
| Protection type                                                                                        | –                                                                                                                                                                                     | –                                                                                                                                                                                                                                       | –                                                                                                                                                                                                                                       | –                                                                                                                                                                                                                                                 |
| Suggested applications and industries.                                                                 | Pumps, fans, conveyors, food and beverage machinery, compressors, general machinery.                                                                                                  | Pumps, fans, compressors, crushes, mills, centrifugal machines, presses, grinders and general process applications.                                                                                                                     | Pumps, fans, compressors, centrifugal machines, Food and beverage applications – target easy cleaning and general process applications.                                                                                                 | Pumps, fans, compressors, extruders, conveyors, mixers.                                                                                                                                                                                           |
| Link to web page                                                                                       | <a href="https://new.abb.com/motors-generators/iec-low-voltage-motors/general-performance-motors">new.abb.com/motors-generators/iec-low-voltage-motors/general-performance-motors</a> | <a href="https://new.abb.com/motors-generators/iec-low-voltage-motors/process-performance-motors/process-induction-motors">new.abb.com/motors-generators/iec-low-voltage-motors/process-performance-motors/process-induction-motors</a> | <a href="https://new.abb.com/motors-generators/iec-low-voltage-motors/process-performance-motors/process-induction-motors">new.abb.com/motors-generators/iec-low-voltage-motors/process-performance-motors/process-induction-motors</a> | <a href="https://new.abb.com/motors-generators/iec-low-voltage-motors/process-performance-motors/synchronous-reluctance-motors">new.abb.com/motors-generators/iec-low-voltage-motors/process-performance-motors/synchronous-reluctance-motors</a> |

## IEC Low voltage motors

### Motors for explosive atmospheres

#### Flameproof



Certified for maximum safety, for environments with gas explosion risk.

#### Increased safety Ex ec



Certified for maximum safety, for environments with gas explosion risk.

#### Dust ignition proof Ex t



Certified for maximum safety, for environments with dust explosion risk.

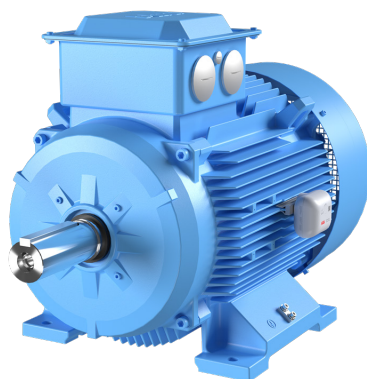
|                                        |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product type                           | M3JP, M3KP                                                                                                                                                                                                                                                                | M3GP, M3AA                                                                                                                                                                                                                                                                                                                    | M3GP, M3AA                                                                                                                                                                                                                                                                                                                              |
| Efficiency classes                     | IE2, IE3, IE4                                                                                                                                                                                                                                                             | IE2, IE3, IE4                                                                                                                                                                                                                                                                                                                 | IE2, IE3, IE4                                                                                                                                                                                                                                                                                                                           |
| IEC Frame sizes                        | 80 – 450                                                                                                                                                                                                                                                                  | M3GP 71 – 450<br>M3AA 90 – 250                                                                                                                                                                                                                                                                                                | M3GP 71 – 450<br>M3AA 90 – 250                                                                                                                                                                                                                                                                                                          |
| Power range                            | 0.18 – 950 kW                                                                                                                                                                                                                                                             | 0.12 – 1000 kW                                                                                                                                                                                                                                                                                                                | 0.25 – 1000 kW                                                                                                                                                                                                                                                                                                                          |
| Poles                                  | 2 – 12                                                                                                                                                                                                                                                                    | 2 – 12                                                                                                                                                                                                                                                                                                                        | 2 – 12                                                                                                                                                                                                                                                                                                                                  |
| Voltage                                | 230 – 690 V                                                                                                                                                                                                                                                               | 230 – 690 V                                                                                                                                                                                                                                                                                                                   | 230 – 690 V                                                                                                                                                                                                                                                                                                                             |
| Frequency                              | 50 Hz, 60 Hz                                                                                                                                                                                                                                                              | 50 Hz, 60 Hz                                                                                                                                                                                                                                                                                                                  | 50 Hz, 60 Hz                                                                                                                                                                                                                                                                                                                            |
| IP Class                               | up to IP 66                                                                                                                                                                                                                                                               | up to IP 66                                                                                                                                                                                                                                                                                                                   | up to IP 66                                                                                                                                                                                                                                                                                                                             |
| Cooling                                | IC411 as standard                                                                                                                                                                                                                                                         | IC411 as standard                                                                                                                                                                                                                                                                                                             | IC411 as standard                                                                                                                                                                                                                                                                                                                       |
| Starting                               | DOL, VSD                                                                                                                                                                                                                                                                  | DOL, VSD                                                                                                                                                                                                                                                                                                                      | DOL, VSD                                                                                                                                                                                                                                                                                                                                |
| MEPS                                   | EU, CN, AU, BR                                                                                                                                                                                                                                                            | EU, CN, AU, BR                                                                                                                                                                                                                                                                                                                | EU, CN, AU                                                                                                                                                                                                                                                                                                                              |
| Certification                          | IECEX/ATEX, CCC, Inmetro, marine                                                                                                                                                                                                                                          | IECEX/ATEX, CCC, Inmetro, cUL, marine                                                                                                                                                                                                                                                                                         | IECEX/ATEX, CCC, Inmetro, marine                                                                                                                                                                                                                                                                                                        |
| Protection type                        | Ex db IIB or C T4 Gb and Ex db eb IIB or C T4 Gb                                                                                                                                                                                                                          | Ex ec IIC T3 Gc                                                                                                                                                                                                                                                                                                               | For zone 21: EPL Db, T 125°C, IP65<br>For zone 22: EPL Dc, T 125°C, IP55 or IP65<br>Dust groups IIIB and IIIC                                                                                                                                                                                                                           |
| Suggested applications and industries. | Applications where explosion hazards may exist due to flammable gases, flammable and combustible liquid-vapors.                                                                                                                                                           | Applications where explosion hazards may exist due to flammable gases, flammable and combustible liquid-vapors.                                                                                                                                                                                                               | Applications where explosion hazards may exist due to flammable dust.                                                                                                                                                                                                                                                                   |
| Link to web page                       | <a href="https://new.abb.com/motors-generators/motors-and-generators-for-explosive-atmospheres/flameproof-motors/lv-flame-proof-motors">https://new.abb.com/motors-generators/motors-and-generators-for-explosive-atmospheres/flameproof-motors/lv-flame-proof-motors</a> | <a href="https://new.abb.com/motors-generators/motors-and-generators-for-explosive-atmospheres/increased-safety-motors/low-voltage-increased-safety-ex-ec-motors">https://new.abb.com/motors-generators/motors-and-generators-for-explosive-atmospheres/increased-safety-motors/low-voltage-increased-safety-ex-ec-motors</a> | <a href="https://new.abb.com/motors-generators/motors-and-generators-for-explosive-atmospheres/dust-ignition-proof-motors/low-voltage-dust-ignition-protection-motors">https://new.abb.com/motors-generators/motors-and-generators-for-explosive-atmospheres/dust-ignition-proof-motors/low-voltage-dust-ignition-protection-motors</a> |

## IEC Low voltage motors

### ABB Ability™ Smart Sensor for motors

The ABB Ability™ Smart Sensor is a key element of the ABB Ability™ Digital Powertrain. It turns rotating equipment, such as motors, into smart, wirelessly connected assets and helps to detect potential asset disturbances and plan maintenance before reliability, productivity and safety are impacted.

- Helps to detect potential machine disturbances and energy savings and to take actions to make operations more efficient, predictable and safe
- Pinpoint detection accuracy - superior sensors enable detection of even slight anomalies in the equipment's condition at a very early stage
- Ease of use - quick installation and activation for instant monitoring; for ABB and third-party equipment

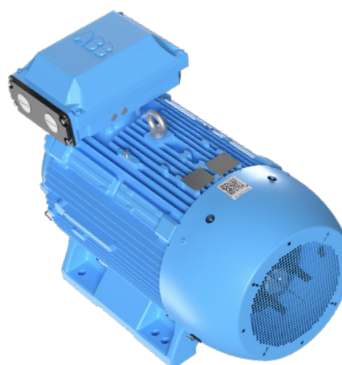


### ABB Access - unlocking your drives, motors and PLCs

With ABB Access, you can unlock all aspects of your drives, motors and PLCs, from one central location. Simply scan the QR code on the ABB product to get started.

ABB Access, helps you easily find up-to-date product online data. It also provides easy access to documentation and manuals. If you happen to experience issues with your ABB product, this can be fastly and easily reported online to reach expert support from ABB.

Want to check ABB Access in action, but you don't have ABB motor at hand? No problem! Simply scan the QR code and get familiarized with ABB Access.



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