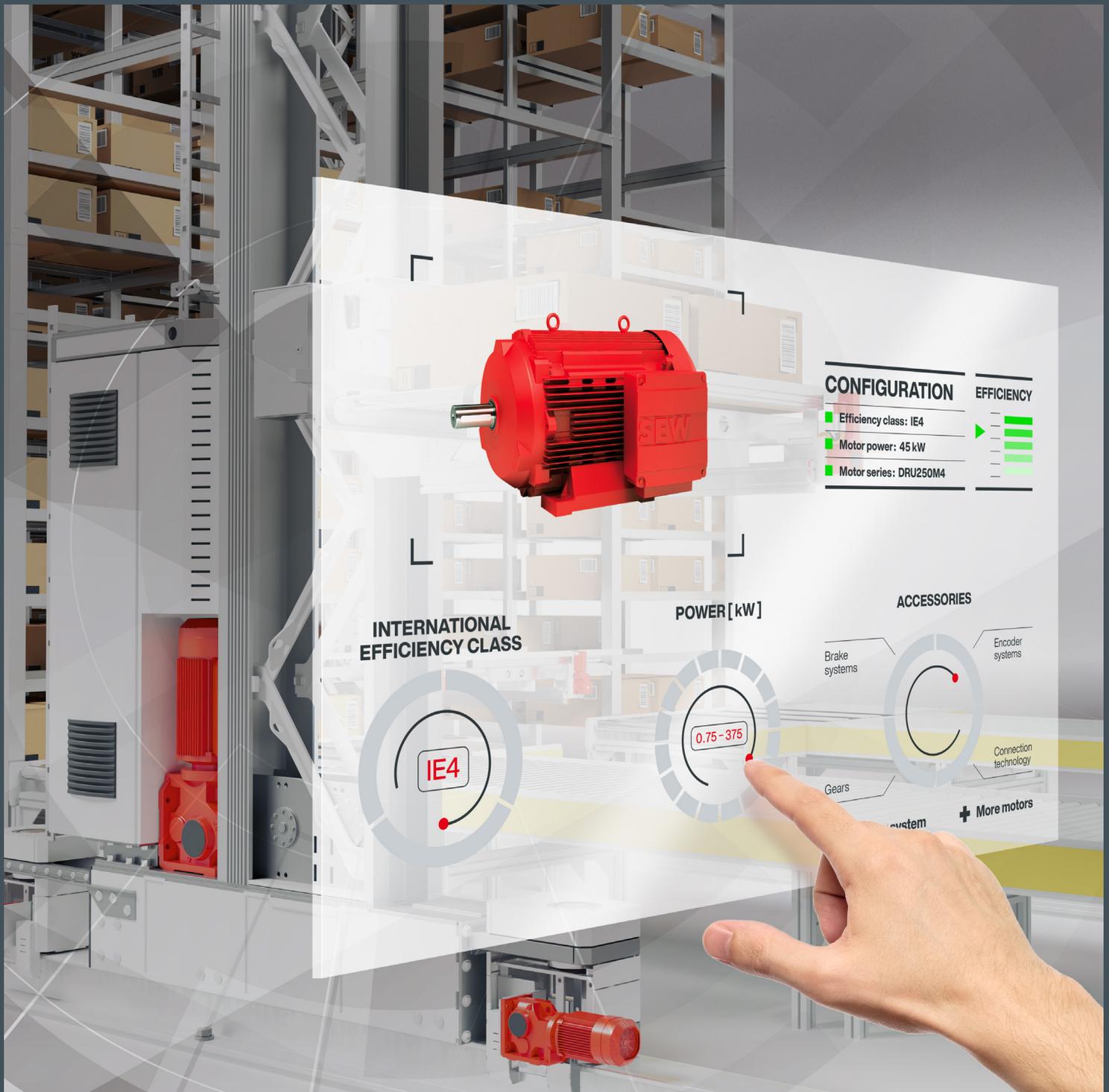


# Efficiency and high performance from the modular system of motors

Asynchronous and synchronous motors  
**DR.. series**



# Complete – motors, accessories and options in one modular system

## Select the right motor for your application

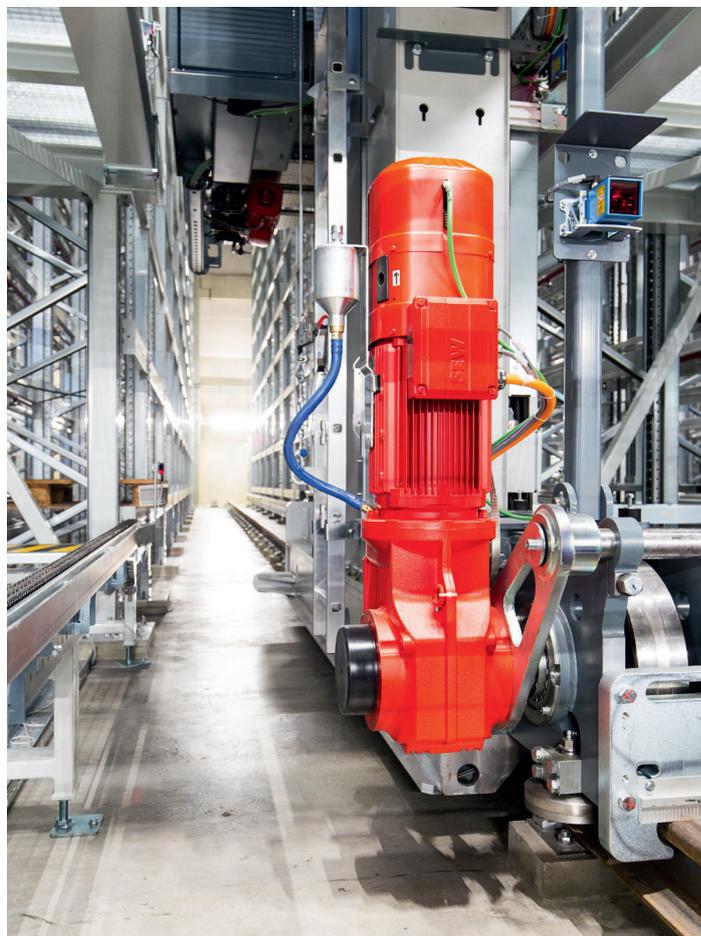
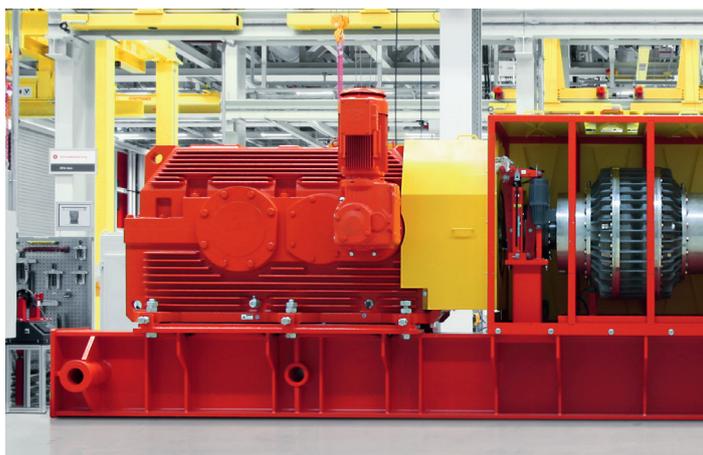
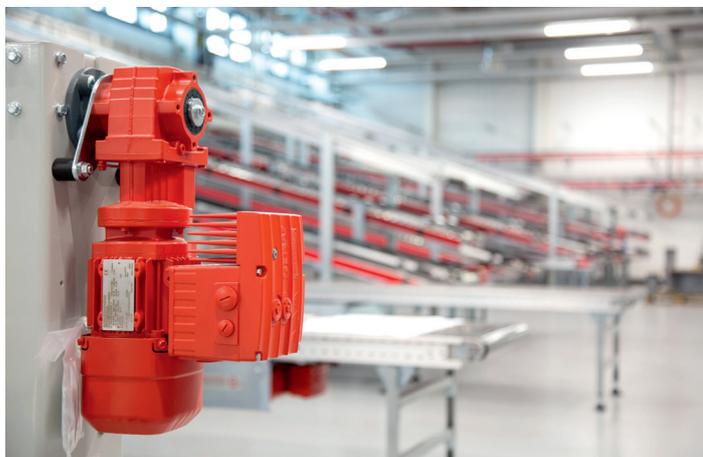
Millions of drive combinations ensure you will find exactly the drive you need.

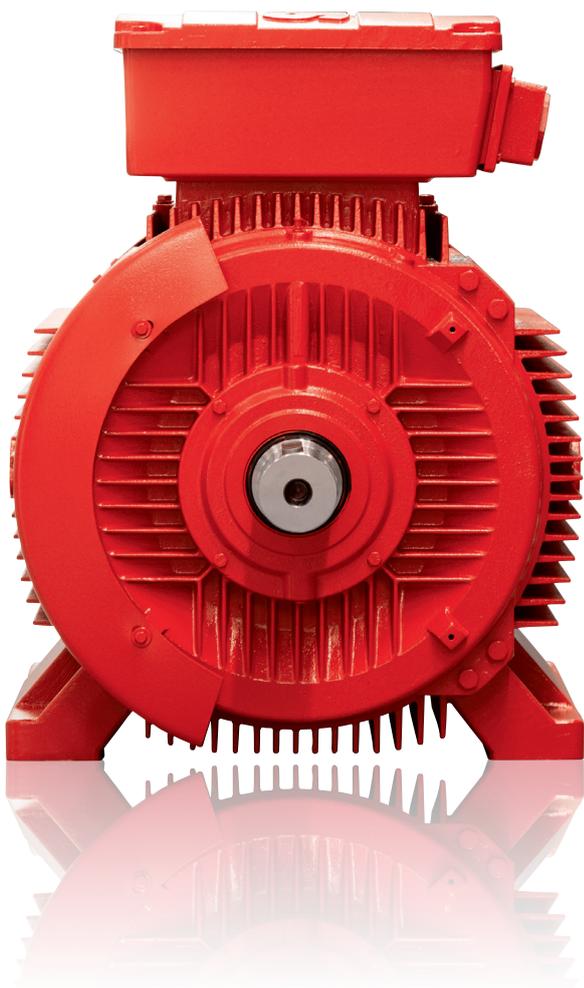
The modular system of motors in the DR.. series contains an extensive portfolio of asynchronous and synchronous motors from SEW-EURODRIVE, together with a wide range of accessories and options.

In total, four motor types are available for the different energy efficiency classes, and they can be used as a line motor or in frequency inverter operation, depending on the requirements. The portfolio also includes other motors for special applications, such as for use in potentially explosive atmospheres and torque motors for use under “continuous standstill conditions”.

The full, diverse range of motor options and designs from the modular system is furthermore available for every motor in the DR.. series – whatever the energy efficiency class and application.

This means asynchronous motors, synchronous motors, and all other motor designs from SEW-EURODRIVE can create millions of drive combinations and can be used in almost any application.





## DR.. series motors An overview

The motors of the DR.. series uphold all international standards and comply with the IEC motor standard, product markings, etc.

# 1

## Synchronous motors

Efficiency class **IE5**, DR2C.. series  
Page 4

# 2

## Asynchronous motors

Efficiency class **IE4**, DRU.. series  
Page 6  
Efficiency class **IE3**, DRN.. series  
Page 8

# 3

## Other motors

Pole-changing AC motors, DR2S.. series  
Page 11  
Asynchronous servomotors, DR2L.. series  
Page 12  
Torque motors, DRM../DR2M.. series  
Page 15  
AC motors, DR..J series with LSPM technology  
(**efficiency classes IE2 and IE4**)  
Page 14

# 4

## Accessories and options

The modular principle  
Page 16  
Accessories and options  
Page 18  
Digital motor integration  
Page 19



## More information online

Links to more detailed information on our range of motors can be found on the back cover.

---

# High-efficiency motors for sustainable machine concepts

---

## Synchronous motor, DR2C.. series

Potential uses / typical applications: frequency inverter operation

### Operating mode applications:

- S1: continuous duty with constant load
- S9: operation with periodic load and speed change

→ Dynamic applications, partial load operation, and start-stop operation, e.g. storage/retrieval systems



---

## International efficiency classes

IE3

IE4

IE5

<b>Power range kW</b>	0.69 – 20	
<b>Nominal torque Nm</b>	3.3 – 63	
<b>Sizes</b>	71 – 132S	
<b>Voltages V</b>	System voltage 400	
<b>Speed class rpm</b>	2000 / 3000	
<b>Technology</b>	Permanent-field synchronous motor	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>– Europe, Turkey, Switzerland: CE</li> <li>– Great Britain: UKCA</li> </ul> Planned: <ul style="list-style-type: none"> <li>– USA: UR/UL</li> <li>– Canada: CSA</li> <li>– China: CEL</li> <li>– Ukraine: UA.TR</li> <li>– Colombia: RETIE</li> <li>– Eurasian Economic Union: EAC</li> </ul>	<ul style="list-style-type: none"> <li>– Synchronous motors come under local MEPS regulations in China only.</li> <li>– Motors in the DR2C.. series can be used worldwide without any further country approvals.</li> </ul>
<b>Features and advantages</b>	<ul style="list-style-type: none"> <li>– <b>Efficient:</b> motor energy efficiency class IE5 in line with inverter operation from IEC TS 60034-30-2. Much higher levels of efficiency in the partial load range than an asynchronous motor. Energy losses can be up to 50% lower than with an IE3-only line motor.</li> <li>– <b>Versatile:</b> can be combined with our diverse modular systems. With or without gear unit, with central or decentralized inverters. This creates an energy-efficient system, component by component.</li> <li>– <b>Space-saving:</b> minimal installation space requirements in a wide variety of applications. The DR2C.. motors can be up to two sizes smaller than comparable IE3 asynchronous motors with the same power rating.</li> </ul>	



---

# Efficiency, including in line operation

---

## Asynchronous motor, DRU.. series

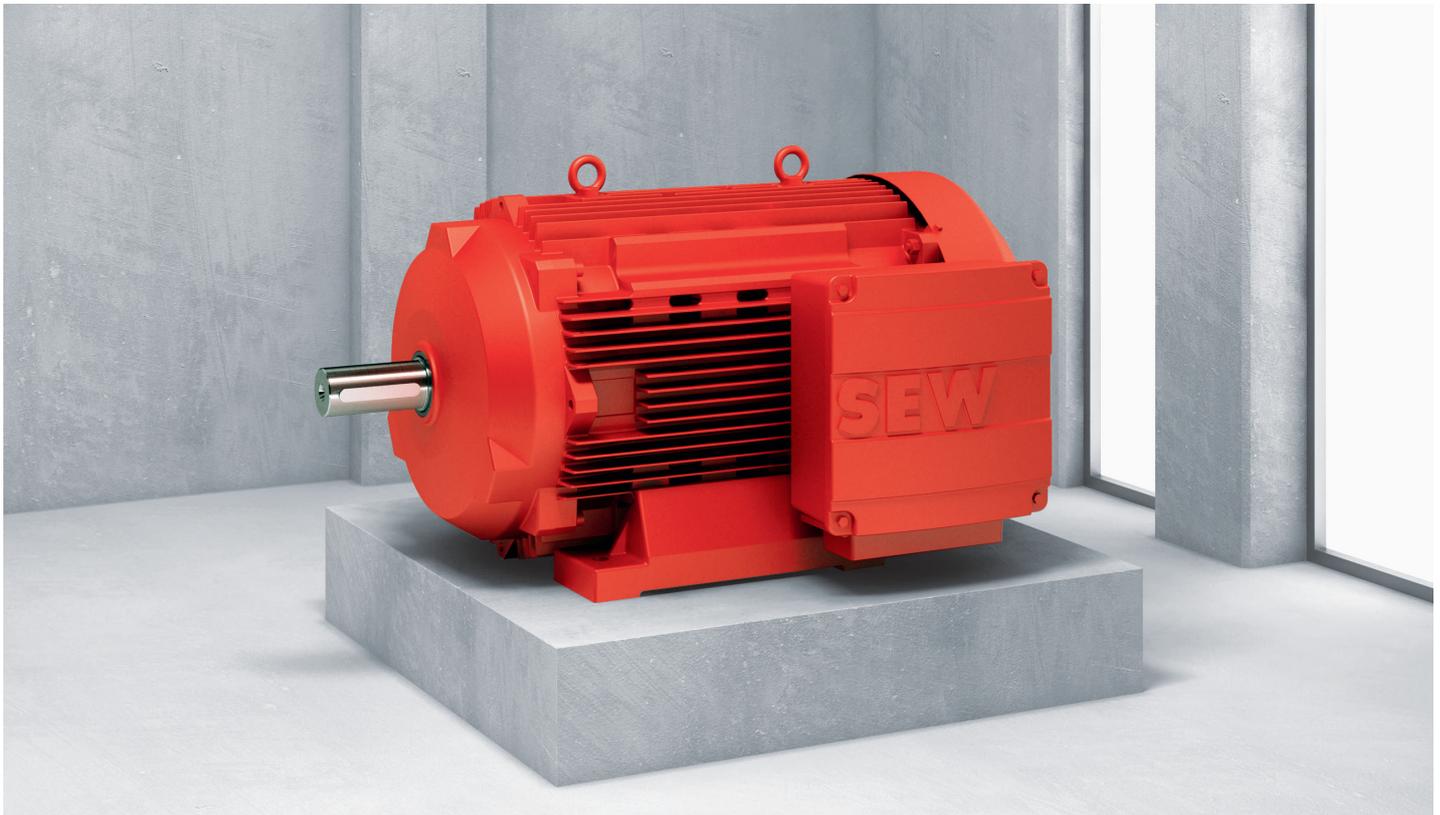
Potential uses / typical applications:

Line motor, suitable for frequency inverter operation

### Operating mode applications:

– S1: continuous duty with constant load

→ Applications in continuous duty, e.g. conveyor applications



---

## International efficiency classes

**IE3**

**IE4**

**IE5**

<b>Number of poles</b>	4-pole	
<b>Power range kW</b>	0.75 – 375	
<b>Sizes</b>	90 – 355	
<b>Voltages V</b>	Fixed voltages	
<b>Frequency Hz</b>	50, 60	
<b>Technology</b>	Asynchronous motor with squirrel-cage rotor	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>- Europe, Turkey, Switzerland: CE</li> <li>- USA: UR/UL, ee</li> <li>- Canada: CSA, CSA Energy Verified</li> <li>- Brazil: ENCE</li> <li>- Ukraine: UA.TR</li> <li>- Morocco: CMIM</li> <li>- China: CEL</li> <li>- Great Britain: UKCA</li> </ul>	<p>Other country approvals without markings</p> <ul style="list-style-type: none"> <li>- Australia</li> <li>- New Zealand</li> <li>- Egypt</li> </ul>
<b>Features and advantages</b>	<ul style="list-style-type: none"> <li>- <b>Sustainable:</b> Thanks to the increased efficiency of the asynchronous motor, the CO<sub>2</sub> savings across the entire product life cycle are huge.</li> <li>- <b>Robust:</b> long bearing service life, high thermal reserves</li> <li>- <b>Exceeds requirements:</b> IE4 as required by European regulation (EU) 2019/1781 from 75 to 200 kW; SEW-EURODRIVE is already also supplying motors with smaller power ratings from 0.75 kW and larger power ratings of up to 375 kW.</li> </ul>	



---

# In use worldwide thanks to international registrations

---

## Asynchronous motor, DRN.. series

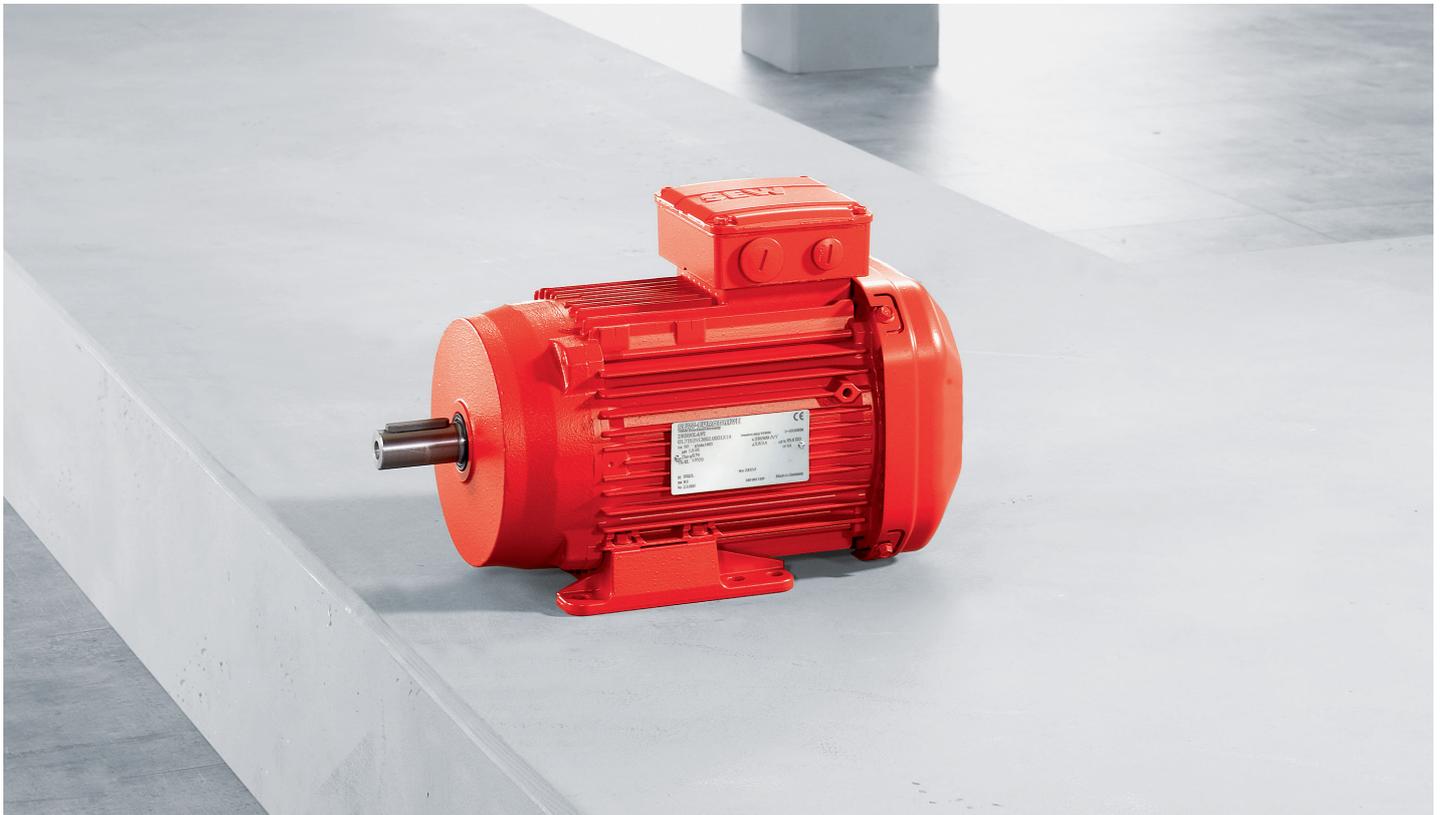
Potential uses / typical applications:

Line motor, suitable for frequency inverter operation

### Operating mode applications:

– S1: continuous duty with constant load

→ Especially energy-efficient in operating mode S1:  
in continuous duty, with constant load



---

## International efficiency classes



<b>Number of poles</b>	2, 4, 6, or 8-pole	
<b>Power range kW</b>	0.09 – 375	
<b>Sizes</b>	63 – 355	
<b>Voltages V</b>	Fixed voltages, voltage ranges	
<b>Frequency Hz</b>	50, 60, 50/60	
<b>Technology</b>	Asynchronous motor with squirrel-cage rotor	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>- Europe, Turkey, Switzerland: CE</li> <li>- USA: UR/UL, ee</li> <li>- Canada: CSA, CSA Energy Verified</li> <li>- Brazil: ENCE</li> <li>- Ukraine: UA.TR</li> <li>- Colombia: RETIE, RETIQ</li> <li>- China: CEL, CCC</li> <li>- Eurasian Economic Union: EAC</li> <li>- India: ISI</li> <li>- Mexico: NOM</li> <li>- Morocco: CMIM</li> <li>- South Korea: KEL</li> <li>- Great Britain: UKCA</li> </ul>	<p>Other countries without markings:</p> <ul style="list-style-type: none"> <li>- Australia</li> <li>- New Zealand</li> <li>- Singapore</li> <li>- Egypt</li> <li>- Saudi Arabia</li> <li>- Japan</li> </ul>
<b>Features and advantages</b>	<ul style="list-style-type: none"> <li>- <b>Compact:</b> size/power assignment according to IEC 60072 / EN 50347</li> <li>- <b>Universal:</b> many numbers of poles, large power range</li> <li>- <b>Available worldwide:</b> thanks to plannable and early observation of directives and laws, assembly in all SEW-EURODRIVE locations</li> </ul>	

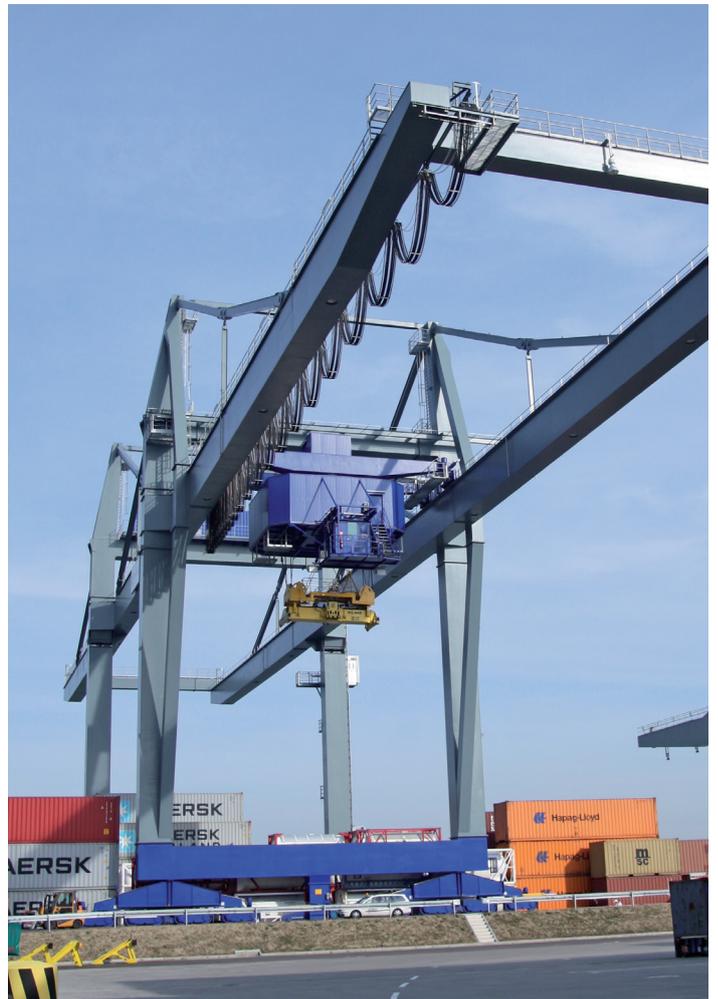


---

# Motors for special applications and uses

---

Over the following pages, you will find a brief overview of other motors for special applications and uses – in some cases, these motors are not subject to an energy efficiency classification.



## Asynchronous motor DR2S.. series

### Potential uses / typical applications:

- Line motor, suitable for operation on a frequency inverter
- Pole-changing motor variant available for applications with two different speeds (different speeds without a frequency inverter)



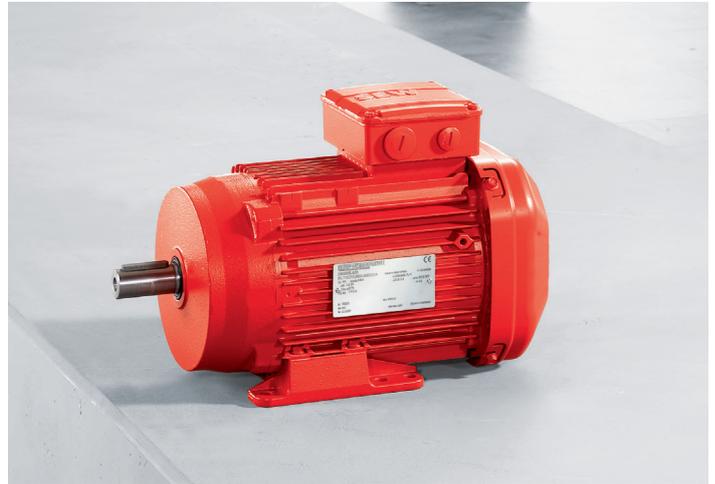
<b>Energy efficiency class</b>	IE1 / -	
<b>Number of poles</b>	2, 4, or 6-pole; 8/2; 8/4; 4/2	
<b>Power range kW</b>	0.09 – 96	
<b>Sizes</b>	56 – 280	
<b>Voltages V</b>	Fixed voltages, voltage ranges	
<b>Frequency Hz</b>	50, 53, 60, 50/60	
<b>Technology</b>	Asynchronous motor with squirrel-cage rotor	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>- Europe, Turkey, Switzerland: CE</li> <li>- USA: UR/UL</li> <li>- Canada: CSA</li> <li>- Ukraine: UA.TR</li> <li>- Colombia: RETIE</li> <li>- Great Britain: UKCA</li> <li>- Morocco: CMIM</li> <li>- Eurasian Economic Union: EAC</li> </ul>	<p>Other countries without markings:</p> <ul style="list-style-type: none"> <li>- Singapore</li> <li>- Egypt</li> <li>- Saudi Arabia</li> <li>- Japan</li> </ul> <p>In some cases, the motors can be imported into the countries listed on the basis of various exemptions only.</p>
<b>Features and advantages</b>	<p>High power density in a compact design, <b>various operating modes</b> available:</p> <ul style="list-style-type: none"> <li>- Operating mode S1: in continuous duty with a constant load</li> <li>- Operating mode S3: intermittent periodic duty with rest period at low mass moments of inertia (15, 25, 40, and 75%)</li> <li>- Operating mode S9: operation with non-periodic load and speed change</li> </ul> <p><b>Available worldwide:</b> assembly in all SEW-EURODRIVE locations</p>	

## Motors for special applications and uses

### Asynchronous servomotor DR2L.. series

#### Potential uses / typical applications:

Dynamic applications with high levels of inertia, such as palletizers and storage/retrieval systems, gantry order-picking robots, winding drives and drum drives, lifting axes in gantries



<b>Number of poles</b>	4-pole	
<b>Nominal torque Nm</b>	2.5 – 300	
<b>Maximum torque Nm</b>	5 – 1100	
<b>Speed class rpm</b>	1200 / 1700 / 2100 / 3000	
<b>Sizes</b>	71 – 225	
<b>Voltages V</b>	System voltage 400	
<b>Technology</b>	Asynchronous motor with squirrel-cage rotor	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>– Europe, Turkey, Switzerland: CE</li> <li>– USA: UR/UL</li> <li>– Canada: CSA</li> <li>– Ukraine: UA.TR</li> <li>– Great Britain: UKCA</li> <li>– Morocco: CMIM</li> <li>– Eurasian Economic Union: EAC</li> </ul>	<p>Asynchronous servomotors are not subject to any MEPS regulations.</p> <p>Motors in the DR2L.. series can be used worldwide without any further country approvals.</p>
<b>Features and advantages</b>	<ul style="list-style-type: none"> <li>– <b>High dynamics</b>, because a reinforced motor shaft means an overload of up to 3.5 times the nominal motor torque can be achieved – up to a maximum of 1100 Nm.</li> <li>– <b>Reliable control at high inertias</b> due to higher intrinsic inertias than in the case of conventional permanent-field servomotors.</li> <li>– <b>Less installation space required:</b> Maximum use of the thermal capabilities gives the motor a high power density. The compact design reduces the installation space required.</li> </ul>	

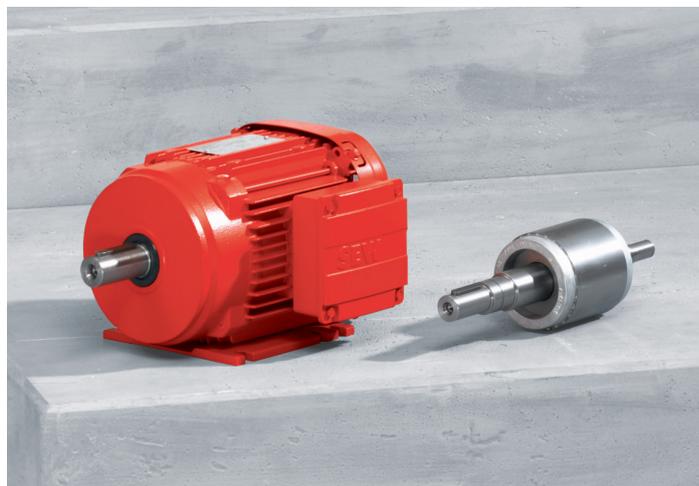


## Motors for special applications and uses

### Synchronous servomotor DR..J series (LSPM technology)

#### Potential uses / typical applications:

- Designed for operation on simple inverters with V/f control
- Line operation for applications with low external inertias
- Frequently used in spinning pumps in the plastic fiber industry



<b>Energy efficiency</b>	IE2 – IE4	
<b>Number of poles</b>	4-pole	
<b>Power range kW</b>	0.18 – 5.5	
<b>Nominal torque Nm</b>	1.2 – 25.5	
<b>Sizes</b>	71 – 100	
<b>Voltages V</b>	Fixed voltages	
<b>Frequency Hz</b>	50, 87	
<b>Technology</b>	Permanent-field synchronous motor with damper cage	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>- Europe, Turkey, Switzerland: CE</li> <li>- USA: UR/UL</li> <li>- Canada: CSA</li> <li>- Ukraine: UA.TR</li> <li>- China: CEL, CCC</li> <li>- Eurasian Economic Union: EAC</li> <li>- Morocco: CMIM</li> <li>- Great Britain: UKCA</li> <li>- India: ISI (for line operation only)</li> </ul>	Motors in the DR2..J series can be used worldwide without any further country approvals.
<b>Features and advantages</b>	<ul style="list-style-type: none"> <li>- <b>Self-start in line operation</b> up to an inertia ratio of 1:5</li> <li>- <b>Constant speed:</b> The DR..J motor runs at a constant speed regardless of the load, synchronous to the operating frequency without slip.</li> <li>- <b>Expand energy efficiency:</b> You can use DR...J synchronous motors anywhere in the world, even in the highest efficiency class IE4.</li> <li>- <b>Reduce size:</b> A DR...J motor can be up to two sizes smaller than a comparable standard asynchronous motor.</li> </ul>	

## Torque motor DR2M.. series

### Potential uses / typical applications:

For all applications where a stop position needs to be reached and safely maintained after a short movement, e.g. pressing tools, switches, rotary feeders, valves, simple winding drives.



<b>Number of poles</b>	8-pole	
<b>Nominal torque Nm</b>	0.6 – 13	
<b>Sizes</b>	71 – 132	
<b>Voltages V</b>	Fixed voltages	
<b>Frequency Hz</b>	50, 60	
<b>Technology</b>	Asynchronous motor with squirrel-cage rotor	
<b>Conformity/ approvals</b>	<ul style="list-style-type: none"> <li>- Europe, Turkey, Switzerland: CE</li> <li>- USA: UR/UL</li> <li>- Canada: CSA</li> <li>- Ukraine: UA.TR</li> <li>- Great Britain: UKCA</li> <li>- Morocco: CMIM</li> <li>- Eurasian Economic Union: EAC</li> </ul>	<p>Other countries without markings:</p> <ul style="list-style-type: none"> <li>- Singapore</li> <li>- Egypt</li> <li>- Saudi Arabia</li> <li>- Japan</li> <li>- India</li> </ul> <p>In some cases, the motors can be imported into the countries listed on the basis of various exemptions only.</p>
<b>Features and advantages</b>	<ul style="list-style-type: none"> <li>- <b>Full torque</b> is supplied by the torque motor even when the rotor is blocked.</li> <li>- <b>No damage caused by blockage</b> and no damage in the event of counterrotation, because the motor is designed for this.</li> <li>- <b>Flexible use</b> thanks to torque motors in three different rated torques. We can therefore provide you with the optimum drive for your application.</li> </ul>	

# The modular principle

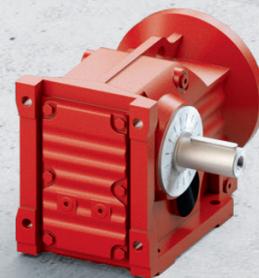
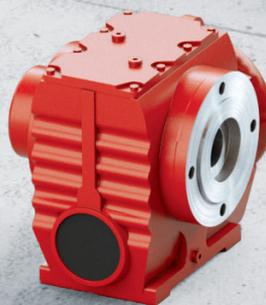
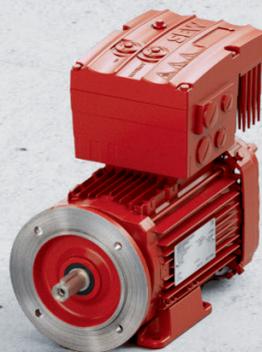
For all efficiency levels

## Motors / mechanical attachments / decentralized technology

- IEC motors in various designs
- Designs that differ from IEC
- Gearmotor variants
- Decentralized technology: mounted frequency inverters or installation close to the motor (no space needed in the control cabinet)

## Gear unit attachment

Direct mounting or adapter



## Ventilation

Can be selected depending on the thermal capacity utilization of the motor

- Non-ventilated
- Forced air cooled
- Fan-cooled
- Flywheel fan

## Encoders

- Add-on speed sensor with various interfaces
- Built-in encoder with low and high resolution
- Resolver
- Mounting adapter for third-party encoders

## Mechanical attachments – brake, backstop

- Working brake, holding brake, safety brake available as a spring-loaded single brake
- With and without manual brake release; automatic disengaging function or lockable
- Backstop – allows only one direction of rotation
- Brake rectifier for integration in the terminal box and control cabinet



# Optimally equipped for every application and every use case

## Other accessories and options

The extensive portfolio of accessories and options completes the modular system of motors and is available for every motor in the DR.. series – simply make your selection and integrate your chosen products into the motor configuration.

### Oil seals

- Various materials (NBR, FKM)
- Various designs, such as Premium Sine Seal conductive

### Bearings

- Current-insulated or reinforced bearings

### Winding

- Reinforced winding insulation with increased resistance for frequency inverter operation

### Condition monitoring

- Temperature sensor, temperature detection
- Brake diagnostics for monitoring function and wear
- Preparation for recording vibration measurements

### Connection

- Various connection variants inside the terminal box
- Various integrated or attached plug connectors

### Functional safety

for brakes and encoders

### Environmental influences

- Surface protection
- IP degrees of protection
- Winding protection
- Corrosion protection



## Digital motor integration

### MOVILINK® DDI lets data flow

Single-cable technology is standardizing connection technology for motors – one hybrid cable is all that is needed for the power supply and the data connection.

The digital MOVILINK® DDI transmits data between the motor and the gear unit.

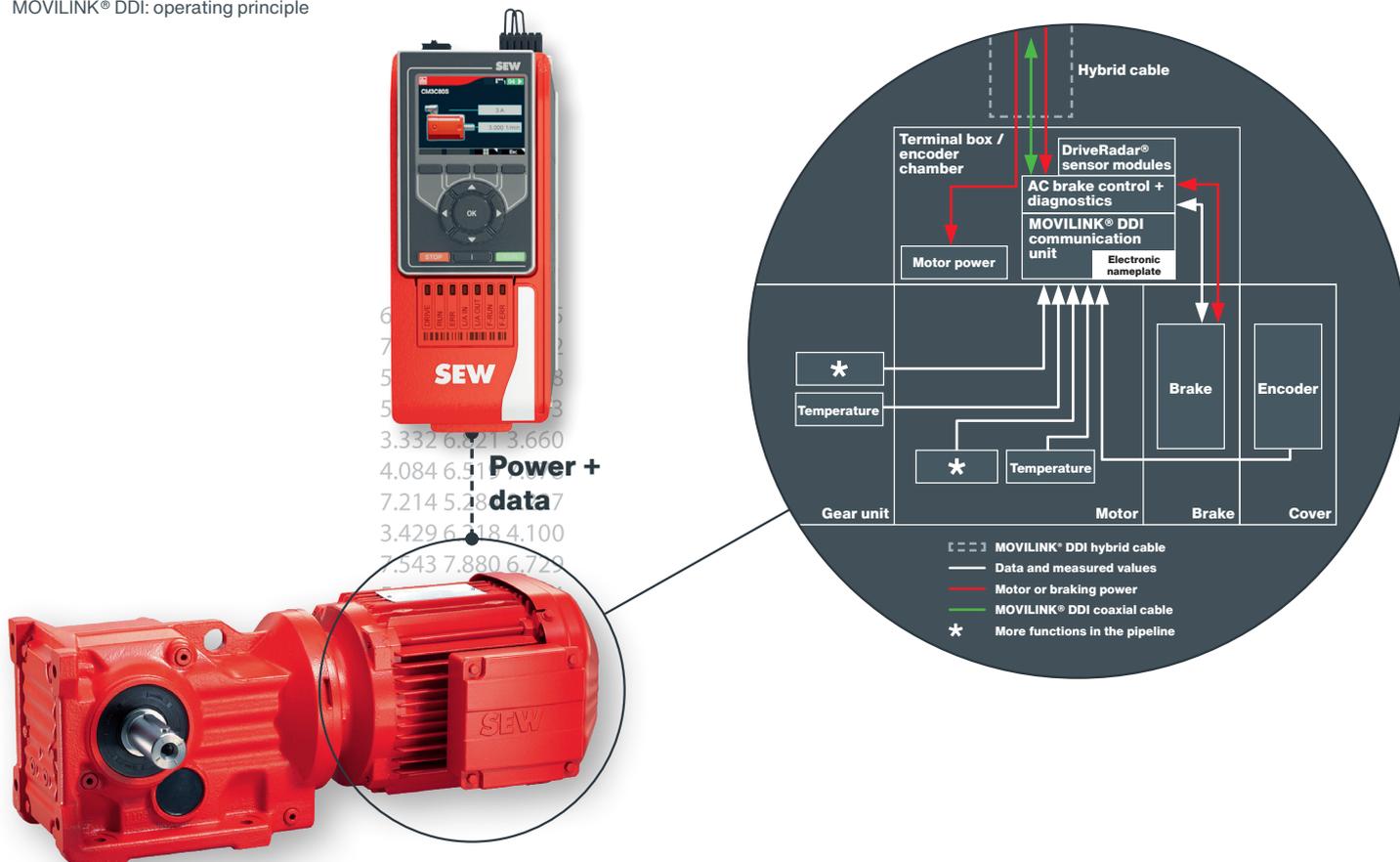
#### Accessories and options

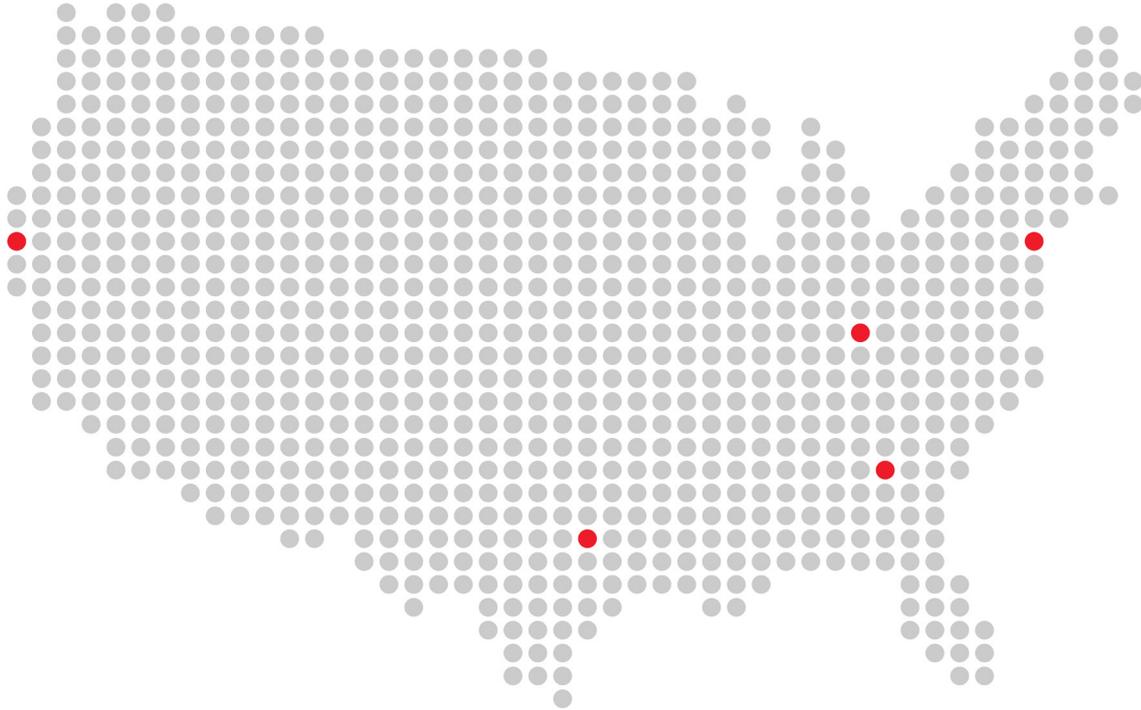
- Various plug connectors
- Built-in and add-on encoder
- Brake rectifier

#### Digital motor integration

- Information from the electronic nameplate
- Automatic startup of the inverter
- Easy stocktaking
- Automatic detection of motor replacement
- Encoder position
- Diagnostics data
  - For condition monitoring or predictive maintenance
  - Examples of diagnostics data: motor temperature, vibrations, humidity, mounting position, etc.
- Brake wear

MOVILINK® DDI: operating principle





## U.S. locations

---

### U.S. Headquarters/Southeast Region

SEW-EURODRIVE, Inc.  
220 Finch Road  
Wellford, SC 29385  
P: (864) 439-7537  
cslyman@seweurodrive.com

### Southwest Region

SEW-EURODRIVE, Inc.  
202 W. Danieldale Rd.  
DeSoto, TX 75115  
P: (214) 330-4824  
csdallas@seweurodrive.com

### Western Region

SEW-EURODRIVE, Inc.  
30599 San Antonio St.  
Hayward, CA 94544  
P: (510) 487-3560  
cshayward@seweurodrive.com

### Midwest Region

SEW-EURODRIVE, Inc.  
2001 West Main St.  
Troy, OH 45373  
P: (937) 335-0036  
cstroy@seweurodrive.com

### Northeast Region

SEW-EURODRIVE, Inc.  
2107 High Hill Rd.  
Bridgeport, NJ 08014  
P: (856) 467-2277  
csbridgeport@seweurodrive.com

### Industrial Gears

SEW-EURODRIVE, Inc.  
148 Finch Rd.  
Wellford, SC 29385  
P: (864) 439-8792  
igssorders@seweurodrive.com